Model D9854
Advanced Program Receiver

Installation and Operation Guide

Please Read This Entire Guide

Veuillez lire entièrement ce guide

Bitte das gesamte Handbuch durchlesen

Sírvase leer completamente la presente guía

Si prega di leggere completamente questa guida

Important:

Please read this entire guide before you install or operate this product. Give particular attention to all safety statements.

Important:

Veuillez lire entièrement ce guide avant d'installer ou d'utiliser ce produit. Prêtez une attention particulière à toutes les règles de sécurité.

Zu beachten:

Bitte lesen Sie vor Aufstellen oder Inbetriebnahme des Gerätes dieses Handbuch in seiner Gesamtheit durch. Achten Sie dabei besonders auf die Sicherheitshinweise.

Importante:

Sírvase leer la presente guía antes de instalar o emplear este producto. Preste especial atención a todos los avisos de seguridad.

Importante:

Prima di installare o usare questo prodotto si prega di leggere completamente questa guida, facendo particolare attenzione a tutte le dichiarazioni di sicurezza.

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Notices

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Safety Precautions

This symbol alerts you to the presence of uninsulated dangerous voltage inside the product enclosure that poses a risk of electric shock.

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

This symbol alerts you to important operating and maintenance (servicing) instructions included with this product.

CAUTION

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVERS FROM THIS UNIT. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL. SEE ADDITIONAL SAFETY INSTRUCTIONS BELOW.

WARNING

TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

1. Read Instructions – All the safety and operating instructions should be read before the product is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the product and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Cleaning – Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
   Exception: A product that is meant for uninterrupted service and that, for some specific reason, such as the possibility of the loss of an authorization code for a CATV converter, is not intended to be unplugged by the user for cleaning or any other purpose, may exclude the reference to unplugging the product in the cleaning description above.
6. Attachments – Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Water and Moisture – Do not use this product near water – for example, near a bath tub, wash bowl, kitchen sink, or laundry tub; in a wet basement; or near a swimming pool; and the like.
8. Accessories – Do not place this product on an unstable cart, stand, tripod, bracket, or table.
   The product may fall, causing serious injury to a child or adult, and serious damage to the product.

Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer, or sold with the product. Any mounting of the product should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.

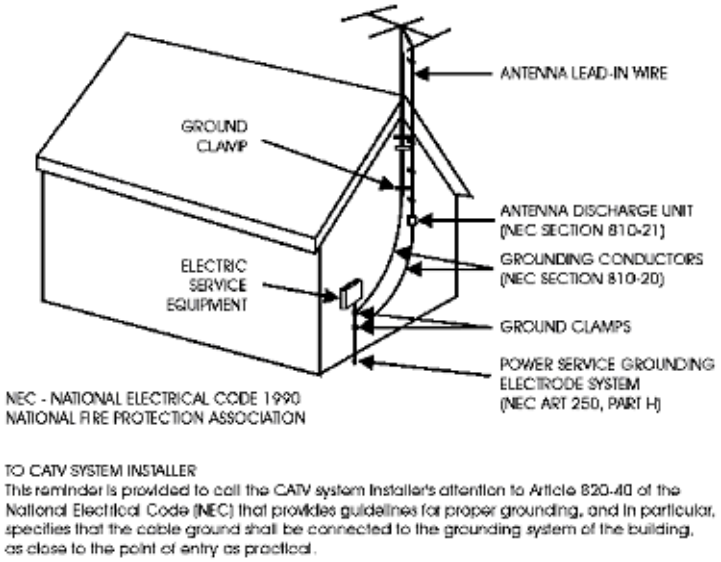
9. A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

PORTABLE CART WARNING

10. Ventilation – Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
11. Power Sources – This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. For products intended to operate from battery power, or other sources, refer to the operating instructions.
12. Grounding or Polarization – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
    Alternate Warnings – This product is equipped with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

13. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.
14. Protective Attachment Plug – The product is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.
15. Outdoor Antenna Grounding – If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Figure 1. Outdoor antenna grounding



16. Lightning – For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

17. Power Lines – An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
18. Overloading – Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.
19. Object and Liquid Entry – Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
20. Servicing – Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
21. Damage Requiring Service – Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    a) When the power-supply cord or plug is damaged,

    b) If liquid has been spilled, or objects have fallen into the product,

    c) If the product has been exposed to rain or water,

    d) If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation,

    e) If the product has been dropped or damaged in any way, and

    f) When the product exhibits a distinct change in performance – this indicates a need for service.
22. Replacement Parts – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
23. Safety Check – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
24. Wall or Ceiling Mounting – The product should be mounted to a wall or ceiling only as recommended by the manufacturer.
25. Heat – The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

Protect yourself from electric shock and your system from damage!

- This product complies with international safety and design standards. Observe all safety procedures that appear throughout this guide, and the safety symbols that are affixed to this product.
- If circumstances impair the safe operation of this product, stop operation and secure this product against further operation.

Avoid personal injury and product damage! Do not proceed beyond any symbol until you fully understand the indicated conditions!

	You will find this symbol on the product and/or in the literature that accompanies this product. It indicates important operating or maintenance instructions.
	You may find this symbol on the product and/or in the literature that accompanies this product. It indicates a live terminal; the symbol pointing to the terminal device.
	You may find this symbol on the product and/or in the literature that accompanies this product. It indicates a protective earth terminal.
	You may find this symbol on the product and/or in the literature that accompanies this product. It indicates excessive or dangerous heat.

Power

- **Important! This is a Class I product. You must earth this product.**
- **This product plugs into a socket-outlet. The socket-outlet must be near this product, and must be easily accessible. Connect this product only to the power source that is indicated on the back panel of this product. If this product does not have a mains power switch, the power cord serves this purpose.**

Enclosure

- Do not allow moisture to enter this product.
- Do not open the enclosure of this product unless otherwise specified.
- Do not push objects through openings in the enclosure of this product.

Cables

- Always disconnect all power cables before servicing this product.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Do not walk on or place stress on cables or plugs.

Factory service

- Refer service only to service personnel who are authorized by the factory.

Règles de sécurité

Protégez-vous des risques d'électrocution et protégez votre système contre les endommagements éventuels.

- Ce produit respecte les standards internationaux de sécurité et de conception. Veuillez observer toutes les procédures de sécurité qui apparaissent dans ce guide, ainsi que les symboles de sécurité qui figurent sur le produit.
- Si, du fait des circonstances, ce produit cesse de fonctionner normalement, cessez de l'utiliser et empêchez-en l'utilisation future.

Évitez le risque de blessures et de dommages aux produits! Ne procédez à aucune tâche tant que vous n'aurez pas entièrement assimilé les conditions indiquées par un symbole!

	Ce symbole figure dans la documentation accompagnant ce produit. Il indique d'importantes instructions de fonctionnement ou d'entretien.
	Ce symbole peut être attaché à ce produit. Il indique une borne sous tension; la direction indique la borne.
	Ce symbole peut être attaché à ce produit. Il indique une borne de terre de protection.
	Ce symbole peut être attaché à ce produit. Il indique une température excessive ou dangereuse.

Alimentation

- **Important! Ce produit fait partie de la classe I. Vous devez le mettre à la terre.**
- **Ce produit se branche dans une prise murale. Cette dernière doit être placée à proximité du produit et doit être facilement accessible.**
- **Ne branchez ce produit qu'à la source d'alimentation indiquée sur son panneau arrière.**
- **Si ce produit n'a pas d'interrupteur d'alimentation générale, le cordon d'alimentation remplit ce rôle.**

Enceinte

- Ne laissez pas l'humidité pénétrer dans ce produit.
- N'ouvrez pas l'enceinte de ce produit, sauf instructions contraires.
- Ne forcez pas d'objets dans les ouvertures du boîtier.

Câbles

- Débranchez toujours tous les cordons d'alimentation avant de réparer ce produit.
- Tirez toujours sur la prise ou le connecteur pour débrancher un câble. Ne tirez jamais directement sur le câble.
- Ne marchez pas sur les câbles ou les prises et n'y exercez aucune pression.

Réparations effectuées à l'usine

- Ne confiez les travaux de réparations qu'au personnel autorisé par l'usine.

Sicherheitsvorkehrungen

Schützen Sie sich gegen elektrischen Schlag, und Ihr Gerät gegen Beschädigung!

- Dieses Gerät entspricht internationalen Sicherheits-und Ausführungsnormen. Beachten Sie alle in diesem Handbuch enthaltenen Sicherheitshinweise sowie die am Gerät angebrachten Warnzeichen.
- Sollten örtliche Umstände den sicheren Betrieb dieses Gerätes beeinträchtigen, schalten Sie es ab und sichern es gegen weitere Benutzung.

Vermeiden Sie Verletzungen sowie Beschädigung des Gerätes! Wenn Sie zu einem der folgenden Warnzeichen gelangen, nicht weiterarbeiten, bis Sie seine Bedeutung voll verstanden haben!

	Dieses Symbol erscheint auf dem Gerät und/oder in der ihm beiliegenden Literatur. Es bedeutet wichtige, zu beachtende Betriebs-oder Wartungsanweisungen.
	Wenn dieses Zeichen am Gerät angebracht ist, warnt es vor einer spannungsführenden Stelle.
	Dieses Symbol kennzeichnet auf dem Gerät die Anschlußstelle der Sicherheitserde.
	Wenn dieses Zeichen am Gerät angebracht ist, warnt es vor heißen Stellen, die zu Verbrennungen führen können.

Netzspannung

- **Wichtig!** Dieses Gerät ist ein Produkt der Schutzklasse I. Es muß geerdet werden.
- **Das Gerät ist an einer Steckdose anzuschließen. Diese muß sich leicht zugänglich in unmittelbarer Nähe des Gerätes befinden.**
- **Die Netzversorgung muß den auf der Rückwand des Gerätes angegebenen Werten entsprechen.**
- **Falls sich kein Hauptschalter am Gerät befindet, dient das Netzkabel diesem Zweck.**

Gehäuse

- Das Innere des Gerätes ist vor Feuchtigkeit zu schützen.
- Das Gehäuse ist nicht zu öffnen.
- Niemals einen Gegenstand durch die Gehäuseöffnungen einführen!

Kabel

- Vor jeglicher Wartung des Gerätes sind alle Kabel zu entfernen.
- Hierzu grundsätzlich am Stecker oder Verbindungsstück und niemals am Kabel selber ziehen.
- Nicht auf die Kabel oder Stecker treten oder diese einer Zugbelastung aussetzen.

Hersteller-Wartung

Wartungsarbeiten sind nur durch vom Hersteller autorisierte Techniker vorzunehmen.

Precauciones de seguridad

¡Protéjase contra la electrocución y proteja su sistema contra los daños!

- Este producto cumple con los criterios internacionales de seguridad y diseño. Observe todas los procedimientos de seguridad que aparecen en esta guía, y los símbolos de seguridad adheridos a este producto.
- Si las circunstancias impiden la operación segura de este producto, suspenda la operación y asegure este producto para que no siga funcionando.

¡Evite lastimarse y evite dañar el producto! No avance más allá de cualquier símbolo hasta comprender completamente las condiciones indicadas!

	Encontrará este símbolo en el impreso que acompaña a este producto. Este símbolo indica instrucciones importantes de funcionamiento o mantenimiento.
	Es posible que este símbolo esté pegado al producto. Este símbolo indica un terminal vivo, la flecha apunta hacia el aparato terminal
	Podría encontrar este símbolo pegado al producto. Este símbolo indica un terminal de protección de tierra.
	Podría encontrar este símbolo pegado al producto. Este símbolo indica calor excesivo o peligroso.

Power

- **Importante! Este es un producto de Clase I. Tiene que estar conectado a tierra.**
- **Este producto se conecta a un enchufe. El enchufe necesita estar cerca del producto y ser fácilmente accesible.**
- **Conecte este producto únicamente a la fuente de suministro eléctrico indicada en el panel posterior del producto.**
- **Si el producto no tiene interruptor para la linea principal, utilice el cordón toma de corriente para este propósito.**

Cubierta

- No permita que la humedad penetre en este producto.
- No abra la cubierta del producto a menos que se indique lo contrario.
- No introduzca objetos a través de las aberturas de la cubierta del producto.

Cables

- Siempre desconectar todos los cables eléctricos antes de revisar o reparar el producto.
- Tire siempre del enchufe o del conector para desconectar un cable. Nunca tire del cable mismo.
- No camine ni aplique presión sobre los cables o enchufes..

Revisión y reparación de fábrica

Solo personal aprobado por la fábrica puede darle servicio al producto.

Precauzioni di sicurezza

Proteggetevi da scosse elettriche e proteggete il vostro sistema da possibili danni!

- Questo prodotto soddisfa le norme internazionali per la sicurezza ed il design. Seguite tutte le procedure di sicurezza contenute in questa guida e i simboli di sicurezza applicati al prodotto.
- Se circostanze avverse compromettono la sicurezza d'uso di questo prodotto, interrompetene l'uso e assicuratevi che il prodotto non venga più utilizzato.

Evitare infortuni alla persona e danni al prodotto! Non procedere oltre a qualunque simbolo fino a quando non si siano comprese pienamente le condizioni indicate!

	Questo simbolo, che appare nella letteratura di accompagnamento del prodotto, indica importanti istruzioni d'uso e di manutenzione.
	Sul prodotto potete vedere questo simbolo che indica un dispositivo terminale sotto tensione; la freccia punta verso il dispositivo.
	Potrete trovare il presente simbolo applicato a questo prodotto. Questo simbolo indica un terminale protettivo di messa a terra.
	Potrete trovare il presente simbolo attaccato a questo prodotto. Questo simbolo indica un calore eccessivo o pericoloso.

Alimentazione

- **Importante! Questo prodotto è di Classe I. Va messo a terra.**
- **Questo prodotto si inserisce in una presa di corrente. La presa di corrente deve essere in prossimità del prodotto, e deve essere facilmente accessibile.**
- **Collegare questo prodotto solamente alla fonte di alimentazione indicata sul pannello posteriore di questo prodotto.**
- **Se questo prodotto non è dotato di un interruttore principale, il cavo di alimentazione funge a questo scopo.**

Chiusura

- Proteggete da umidità questo prodotto.
- Non aprire la chiusura di questo prodotto a meno che non sia specificato diversamente.
- Non inserire oggetti attraverso le fessure della chiusura.

Cavi

- Staccare sempre tutti i cavi di alimentazione prima di svolgere l'assistenza tecnica al prodotto.
- Per scollegare un cavo tirate la spina o il connettore, non tirare mai il cavo stesso.
- Non calpestare o sottoporre a sollecitazioni i cavi o le prese.

Riparazionoi di fabbrica

- Per le riparazioni contattate solamente personale tecnico autoizzato dalla fabbrica.

Important Safety Instructions

Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses ground(ing) for clarity, but it can be interpreted as having the same meaning as earth(ing).

Electric Shock Hazard

This equipment meets applicable safety standards.

> ⚠ **WARNING:**
>
> **To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. Refer all servicing to qualified service personnel only.**

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times. The protective ground connection is essential to safe operation and must be verified before connecting the power supply.

Know the following safety warnings and guidelines:

- **Dangerous Voltages**
  - Only qualified service personnel are allowed to perform equipment installation or replacement.
  - Only qualified service personnel are allowed to remove chassis covers and access any of the components inside the chassis.
- **Grounding**
  - Do not violate the protective grounding by using an extension cable, power cable, or autotransformer without a protective ground conductor.
  - Take care to maintain the protective grounding of this equipment during service or repair and to re-establish the protective grounding before putting this equipment back into operation.

Installation Site

When selecting the installation site, comply with the following:

- **Protective Ground** - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition** - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water. Ensure that this equipment is operated in an environment that meets the requirements as stated in this equipment's technical specifications, which may be found on this equipment's data sheet.

Installation Requirements

WARNING:

Allow only qualified service personnel to install this equipment.
The installation must conform to all local codes and regulations.

Equipment Placement

WARNING:

Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.

To protect against equipment damage or injury to personnel, comply with the following:

- Install this equipment in a restricted access location.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.
- The mounting surface or rack should be appropriately anchored according to manufacturer's specifications. Ensure this equipment is securely fastened to the mounting surface or rack where necessary to protect against damage due to any disturbance and subsequent fall.

Ventilation

This equipment has openings for ventilation to protect it from overheating. To ensure equipment reliability and safe operation, do not block or cover any of the ventilation openings. Install the equipment in accordance with the manufacturer's instructions.

Rack Mounting Safety Precautions

Mechanical Loading

Make sure that the rack is placed on a stable surface. If the rack has stabilizing devices, install these stabilizing devices before mounting any equipment in the rack.

> ⚠ **WARNING:**
>
> **Avoid personal injury and damage to this equipment. Mounting this equipment in the rack should be such that a hazardous condition is not caused due to uneven mechanical loading.**

Reduced Airflow

When mounting this equipment in the rack, do not obstruct the cooling airflow through the rack. Be sure to mount the blanking plates to cover unused rack space. Additional components such as combiners and net strips should be mounted at the back of the rack, so that the free airflow is not restricted.

> ⚠ **CAUTION:**
>
> **Installation of this equipment in a rack should be such that the amount of airflow required for safe operation of this equipment is not compromised.**

Elevated Operating Ambient Temperature

Only install this equipment in a humidity- and temperature-controlled environment that meets the requirements given in this equipment's technical specifications.

> ⚠ **CAUTION:**
>
> **If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install this equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.**

Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:

> ⚠ **WARNING:**
>
> 
>
> **Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.**

- Use caution when moving this equipment/cart combination to avoid injury from tip-over.
- If the cart does not move easily, this condition may indicate obstructions or cables that may need to be disconnected before moving this equipment to another location.
- Avoid quick stops and starts when moving the cart.
- Check for uneven floor surfaces such as cracks or cables and cords.

Grounding

This section provides instructions for verifying that the equipment is properly grounded.

Safety Plugs (USA Only)

Equipment protection Class I - Scientific Atlanta supplies a mains cord with a 3-terminal (grounding-type) safety plug. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Grounding-Type Plug** - For a 3-terminal plug (one terminal on this plug is a protective grounding pin), insert the plug into a grounded mains, 3-terminal outlet.

  Note: This plug fits only one way. If this plug cannot be fully inserted into the outlet, contact an electrician to replace the obsolete 3-terminal outlet.

Safety Plugs (European Union)

- **Class I Mains Powered Equipment** - Provided with a 3-terminal AC inlet and requires connection to a 3-terminal mains supply outlet via a 3-terminal power cord for proper connection to the protective ground.

  Note: The equipotential bonding terminal provided on some equipment is not designed to function as a protective ground connection.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60417-5020 chassis icon ( ), or 5017 ( ), the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

AC Power

Important: This equipment is Class I equipment, it must be grounded.

- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- Connect this equipment only to the power sources that are identified on the equipment-rating label normally located close to the power inlet connector(s).
- If this equipment has two power sources be sure to disconnect all power sources before working on this equipment.
- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.
- Unplug this equipment when unused for long periods of time.

Circuit Overload

Know the effects of circuit overloading before connecting this equipment to the power supply.

> ⚠ **CAUTION:**
>
> **Consider the connection of this equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Refer to the information on the equipment-rating label when addressing this concern.**

General Servicing Precautions

> ⚠ **WARNING:**
>
> **Avoid electric shock! Opening or removing this equipment's cover may expose you to dangerous voltages.**

Be aware of the following general precautions and guidelines:

- **Servicing** - Refer all servicing to qualified service personnel. Servicing is required when this equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into this equipment, this equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Wristwatch and Jewelry** - For personal safety and to avoid damage of this equipment during service and repair, do not wear electrically conducting objects such as a wristwatch or jewelry.
- **Lightning** - Do not work on this equipment, or connect or disconnect cables, during periods of lightning.
- **Labels** - Do not remove any warning labels. Replace damaged or illegible warning labels with new ones.
- **Covers** - Do not open the cover of this equipment and attempt service unless instructed to do so in the instructions. Refer all servicing to qualified service personnel only.
- **Moisture** - Do not allow moisture to enter this equipment.
- **Cleaning** - Use a damp cloth for cleaning.

Safety Checks - After service, assemble this equipment and perform safety checks to ensure it is safe to use before putting it back into operation.

Accessories

Use only attachments or accessories specified by the manufacturer.

Contents

About This Manual

Objective

This manual describes how to install, use and maintain the Model D9854 Advanced Program Receiver.

Note: The manual describes all available options for the D9854 receiver. Your D9854 receiver may only have some of the features described in this manual.

Audience

The audience of this manual includes **users (operators)** and **service personnel** who are responsible for the installation, configuration, operation, monitoring and service of the D9854 receiver.

Required Knowledge

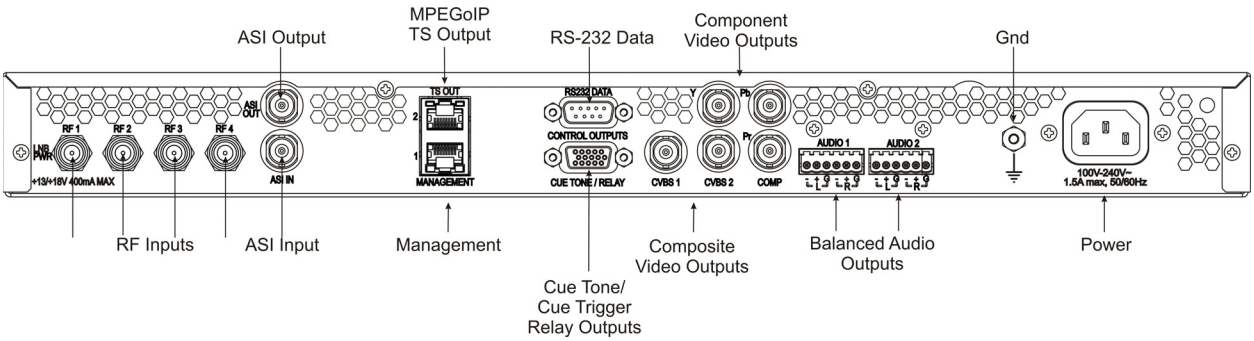
To use this documentation, the user should have a basic knowledge of the technology used in relation to this product. Service personnel should have additional skills and be familiar with cabling, electronic circuitry, and wiring practices.

This manual is intended for operators who are responsible for the configuration, remote operation and maintenance of the D9854 receiver.

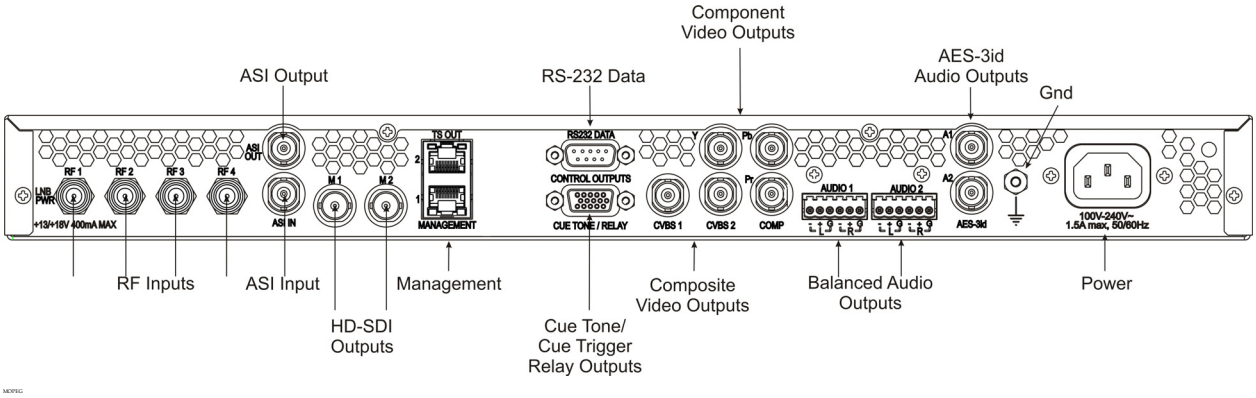
Chapter 1
Quick Setup - Read Me First!

Connecting the Receiver

Proceed as follows to connect the Model D9854 Advanced Program Receiver to other equipment.



Base Model



SDI Model, with SD/HD-SDI and AES outputs

1. Connect the L-Band signal to RF1. 13V or 18V LNB power is only available on the RF1 port. The factory default setting for LNB power is OFF.
2. Connect the ASI OUT port to an ASI device for digital tier applications.
3. Connect the Composite Video Output to a video monitor.
4. Connect the terminal block balanced audio outputs labeled AUDIO 1 and AUDIO 2 to monitoring equipment.
5. Apply power by connecting the receiver to a power outlet. The message “Application Starting” will appear on the front panel. The boot process approximately 1 minute for the unit to initialize. When ready, the front panel display shows the startup screen.
6. The Ethernet Management port does not currently provide SNMP or management control. It is used for software application downloads only.

7. Connect the HD-SDI outputs (M1 and M2) to HD compatible signal processing equipment or HD signal monitoring equipment, if applicable.

Maintenance of EMC Compliance

The power cord (consisting of appliance coupler, flexible cord, and plug) supplied with this product meets the requirements for use in the country for which this product was purchased. In general, the power cord must be approved by an acceptable, accredited agency responsible for evaluation in the country where the product will be used.

Double-shielded (braid/foil or braid/braid) cables should be used for all ASI I/O and RF inputs. Single-shield cables are acceptable for all other inputs and outputs. For terminal block (Alarms) I/O, no shielding is required.

Set up for Network Connection

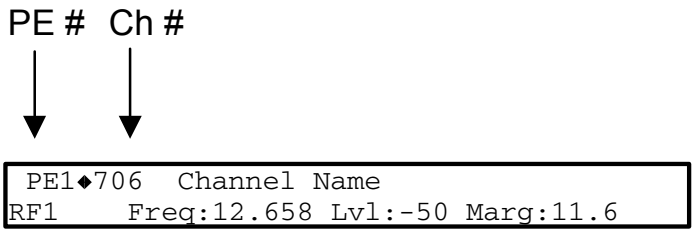
1. Press **MENU** to display the Main menu.
2. Press ▶ to go to the Setup menu. Press **SELECT**. Press ▶ to go to the IP menu. Press **SELECT**.
3. Use the ▲▼ arrow keys to navigate up and down the IP menu, and the ◀▶ arrow keys to move across the IP menu to set the IP Address, Mask and Gateway parameters. Use the number keys to directly enter numbers in the fields. For more information on keypad operation, see Front Panel Controls & Display.
4. Press **SELECT** each time to save the changes. Press **MENU** four times to return to the startup screen.

Quick Setup Instructions for RF Acquisition

1. Press **MENU** to display the Main menu.
2. Press ▶ to get to the Setup menu. Press **SELECT**. Press ▶ to move to the TS Input menu. Press **SELECT**.
3. To setup the ASI input port, go to step 4. To setup the RF1 input port, go to step 5.
4. Press **SELECT** twice. Press ▼ to set the ASI port to Act (Activate). Press **SELECT**. Press **MENU** three times to return to the start-up menu. Go to step 12.
5. Press **SELECT**. Press ▶ to go to RF1. Press **SELECT** twice. Use ▼ to set the RF1 port parameter to Act (Activate). Press **SELECT**.
6. Press ▼ to move to the LO1, LO2, Xover menu. Verify these parameters for your application. If no change is needed, go to Step 7. If required, you may modify these settings. Use ▶ to move to the parameter that you want to modify. Press **SELECT**. Use the numerical keypad to enter new frequencies. Press **SELECT**.
7. Press ▼ five times to move to the Modulation and Rolloff menu. Press **SELECT**. Use ▲▼ to choose DVB-S or DVB-S2. Press **SELECT**. If DVB-S2 is used, press ▶ to choose Rolloff. Press **SELECT**. Use ▲▼ to choose the value. Press **SELECT**.
8. Press ▲ to move to the Freq., Sym Rate, and FEC menu. Press SELECT. Enter the RF frequency. Press **SELECT**. Press ▶ to move to the Sym. Rate menu. Press **SELECT**. Enter the symbol rate. Press **SELECT**. If DVB-S2 is used, proceed to step 9. If DVB-S is used, press ▶ to go to FEC. Press **SELECT**. Use ▲▼ to select AUTO. Press **SELECT**.
9. Press ▼ twice to move to the Net ID menu. Press ▶ to choose Net ID. Press **SELECT**. Enter the value. Press **SELECT**.
10. Press ▼. Press **SELECT**. Use ▲▼ to change the LNB power, if needed. Only the RF1 port is capable of providing 13V or 18V. Press **SELECT**.
11. Press **MENU** three times. Press ▶ to move to Save & Exit. Press **SELECT**. Save & Exit will return you to the Main: Setup menu; Abandon & Exit will go back to the last menu accessed with the original parameters; Cancel will go back to the last menu accessed with changes saved.
12. The receiver will search for the signal and display “Acquisition Successful”. It will find the first available channel on the network. Press **MENU** twice to return to the start-up menu.

13. If the front LED is solid green, the unit is authorized. Proceed with **Assigning a Program Channel to a PE (Program Entry)**, page 1-6. If the front LED is flashing green, the unit is unauthorized. Please contact your service provider and provide the TID number for authorization. The TID can be found on the About menu. To locate the TID, press **MENU**, press ▶ twice, and then **SELECT**. Make a note of the TID number. Press **MENU** twice to return to the start-up screen.

Assigning a Program Channel to a PE (Program Entry)



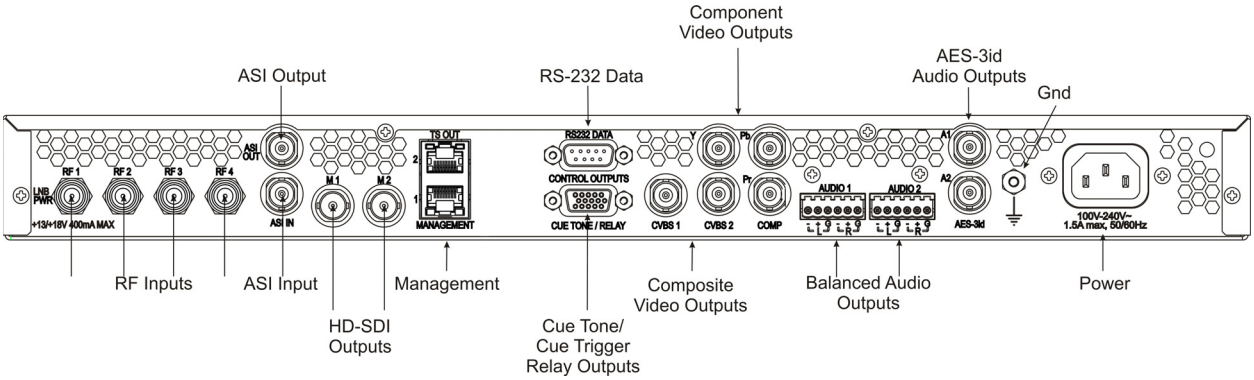
1. At the start-up screen, PE1 is initially displayed.
2. Use the ▲▼ keys to scroll through the available program channels or directly enter the channel number using the 0 to 9 keys; press **SELECT** to save the channel selection.

Important: In addition to ASI out availability on both models, your D9854 will be configured for either HD-SDI or MOIP output. Please follow the procedure for your model to configure the outputs.

ASI Out for both models

1. Press **MENU** to move to the MAIN MENU.
2. Press ▶ to move to the Setup menu. Press **SELECT**.
3. Press ▼ to move to the Outputs menu. Press **SELECT**.
4. Press ▶ to move to the TS Out menu. Press **SELECT**.
5. Press **SELECT** to access the ASI menu. Press ▼. Press SELECT. Use ▲▼ to select the output mode. The factory default is "No Output". It is recommended to set the Output Mode to MAP Svc Chans Only. Refer to **Factory Default Settings**, page B-2, for information on the default settings in order to choose the desired Output Mode. Press **SELECT**. Press ▶ to select "YES" if requested to "RESYNC ALL?". Press **SELECT**. Press ▶ to move to Descrambling Mode Menu. Press **SELECT**. Use ▲▼ to select the scrambling mode. Press **SELECT**.
6. Press **APPLY**. Press **SELECT**.
7. Press **MENU** 5 times to return to the startup menu.

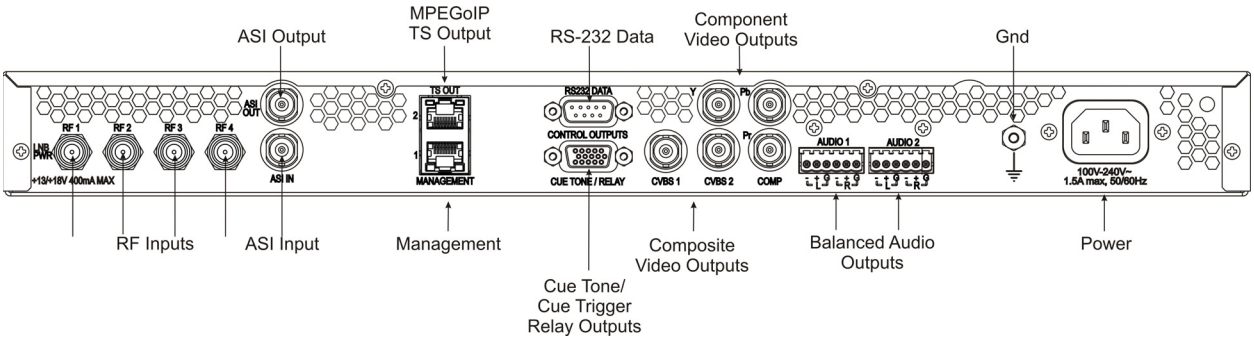
HD-SDI Outputs (SDI Model, with SD/HD-SDI and AES outputs)



SDI Model, with SD/HD-SDI and AES outputs

1. Press **MENU**.
2. Press ▶ to move to the Setup menu. Press **SELECT**.
3. Press ▶ three times to move to the Services menu. Press **SELECT**.
4. Press **SELECT** to enter the Video menu.
5. Press **SELECT** to enter the PV Format menu, then use ▲▼ to navigate and configure the output. Press **SELECT** to save the changes.
6. Press down arrow to move to the **SD Format** menu. Press **SELECT** to enter the menu and use ▲▼ to navigate and configure the output. Press **SELECT** to save the changes.
7. Press **MENU** two times. Press ▶ to move to the Outputs Menu. Press **SELECT**. Press ▶ two times to enter the M1/M2 Menu. Press **SELECT**. Press **SELECT** and use ▲▼ to enter ASI or SDI output on port 1. Press **SELECT** to save changes. Press ▶ to move to M2. Press **SELECT** and use ▲▼ to enter ASI or SDI output on port 2. Press **MENU** repeatedly to return to the startup screen.

MOIP Outputs (Base Model)



Base Model

1. Press **MENU** to move to the Main Menu.
2. Press ▶ to move to the Setup menu. Press **SELECT**.
3. Press ▼ to move to the Outputs menu. Press **SELECT**.
4. Press ▶ to move to the TS Out menu. Press **SELECT**.
5. Press ▶ to move to the MOIP menu. Press **SELECT**. Press ▶. Press **SELECT** for Rate Control. Use ▲▼ to select "USER". Selecting "Auto" for **Rate Control** results in the device setting the output rate to be the same as the input rate. Press **SELECT**. Press ▶ to move to the User Rate menu. Press **SELECT** and use the keypad to enter the desired bit rate. Press **SELECT** to save changes.
6. Press ▼ to move to the Output Mode. Press **SELECT**. Use ▲▼ to choose the output mode for your application. Press **Select**. Press ▶ to move to Descrambling Mode menu. Press **SELECT**. Use ▲▼ to select the scrambling mode. Press **SELECT**.
7. Press ▼. Press ▶ to move to Insert Null Packet. Press **SELECT**. Use ▲▼ to change the selection to "No". Press **SELECT**.
8. Press ▼ two times. Press **SELECT**. Use ▲▼ to change the selection to UDP or RTP. Press **SELECT**.
9. Press ▼. Press **SELECT**. Enter the Destination Address using the keypad. Press **SELECT**. Press ▶ to move to the UDP Port. Press **SELECT** and enter the Port number using the keypad. Press **SELECT** to save the change. Press ▶ to move to the source port. Press **SELECT** and enter the Port number using the keypad. Press **SELECT** to save the change. The default is zero, which allows the system to assign a port.
10. Press ▼. Press ▶ two times to move to PCR@IP Start menu. Press **SELECT**. Press ▼ to set value to "No". Press **SELECT** to save the value.
11. Press ▼ two times. Press ▶ to move to PCR Addition. Press ▼ to select "No".
12. Press **MENU** to exit the menu level and save the changes.

Setting the DPM Mode

A program can be set to one of three Digital Program Mapping (DPM) modes, either Drop, Pass or Map respectively. Refer to **Setup Menu: Outputs**, page 4-62 for more information on the DPM modes.

LCD Setting	Description
Drop	Removes the service and its associated PMT reference from the transport output.
Pass	Permits the source content and PMT reference to appear in the transport output with the same references unless the source material is MAPped on another PE.
Map	Provides the flexibility to define all the outgoing PID numbers for a PE, including those not currently on transmission.

To set the DPM Mode:

1. Press **MENU** to display the Main Menu.
2. Press ▶ to move to the Setup menu. Press **SELECT**.
3. Press ▶ five times to move to the Outputs menu. Press **SELECT**.
4. Press ▶ to move to the TS Out menu. Press **SELECT**.
5. Press ▶ twice to move to the DPM menu. Press **SELECT**.
6. Press **SELECT** to access the Global menu.
7. Press **SELECT** to choose ASI for Resync All.
8. Press **MENU**. Press ▶ to move to the ASI menu. Press **SELECT**. Verify the PE1"InCh" and "OutCh" programs.
9. Press ▶ three times to choose Act. Press **SELECT**. Use ▲▼ to select the DPM action for the PID associated with the PE. Press **SELECT**. Press **APPLY**.
10. Press **MENU** six times to return to the start-up screen.

Chapter 2
Introduction

Overview

Introduction

This chapter is a general introduction to the Model D9854 Advanced Program Receiver. It describes the most common applications and interfaces of the receiver.

In This Chapter

This chapter contains the following topics.

D9854 Advanced Program Receiver

General Description

The Model D9854 Advanced Program Receiver is designed for satellite content distribution applications requiring DVB-S and DVB-S2 reception capabilities with advanced digital outputs for digital tier program distribution. A built-in decoder will be capable of decoding a MPEG-2 or MPEG-4 High Definition (HD) program for analog monitoring or high-quality HD-SDI output version will be available for re-encode applications.

The ASI transport output or the optional MPEGoIP output will provide a number of output modes including the capability of carrying a decrypted program for digital tier distribution. This helps ensure that compressed video programs are efficiently distributed to households equipped with digital set-top boxes. Digital Program Insertion (DPI) information will also be available along with the video and audio PIDs (Packet Identifiers) for external ad insertion in compressed digital format.

Key Features

The D9854 receiver provides the following key features:

- Four L-Band inputs
- DVB-S QPSK demodulation
- DVB-S2 QPSK/8PSK demodulation
- PowerVu® conditional access with DES or DVB descrambling
- Supports Basic Interoperable Scrambling System (BISS) conditional access
- 4:2:0 High Definition MPEG-4 AVC and MPEG-2 1080i and 720p decoding
- 4:2:0 MPEG-2 Standard Definition and MPEG-4 AVC decoding
- Aspect ratio conversion (4:3, 16:9, 14:9) with Active Format Descriptor (AFD) control for SD programs
- AFD support for down-conversion of HD programs with aspect ratio conversion
- Closed Captioning support for EIA-608 and EIA-708
- MPEG & Dolby® Digital (AC-3) audio decoding
- Four audio outputs providing either two stereo pairs (four mono channels) of balanced audio each with the ability to use part of their output for applications such as SAP, cue tones, etc.
- Web browser interface for easy setup, control and monitoring
- DVB-VBI and SCTE 127 support
- DVB-CI support for CAM-based conditional access
- DTMF cue tone & cue trigger outputs for ad-insertion
- Digital Program Mapping providing uplink control for service replacements in blackout areas
- Utility data up to 38.4 kbps via RS-232
- Field upgradeable software and security
- Front panel LCD and keypad for monitoring and control
- Multiprotocol Encapsulation (MPE) output

Optional Features

The following features are available options:

- MPEGoIP output only available on the Digital Transport Model
- User-switchable redundant ASI outputs or SDI or HD-SDI outputs
- SD or HD-SDI video output with embedded audio
- AES-3id digital audio output

Software Update

All software in the D9854 receiver is stored in non-volatile memory that can be electrically programmed. New software releases for the D9854 receiver can be downloaded via the Ethernet 10/100/1000 BaseT Management interface.

Transport Stream Outputs

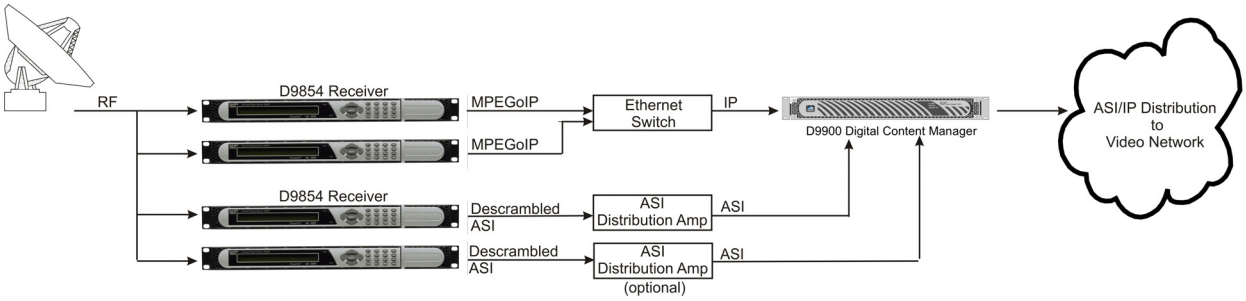
DVB-ASI Transport Stream Output

The D9854 receiver has one DVB-ASI output. This output can be used as an input for a DVB-T transmitter or other types of DVB-ASI reception equipment.

MPEGoIP Output

The optional MPEGoIP output provides a number of output modes including the capability of carrying a decrypted program for digital tier distribution. This helps ensure that compressed video programs are efficiently distributed to households equipped with digital set-top boxes. Digital Program Insertion (DPI) information will also be available along with the video and audio PIDs (Packet Identifiers) for external ad-insertion in compressed digital format.

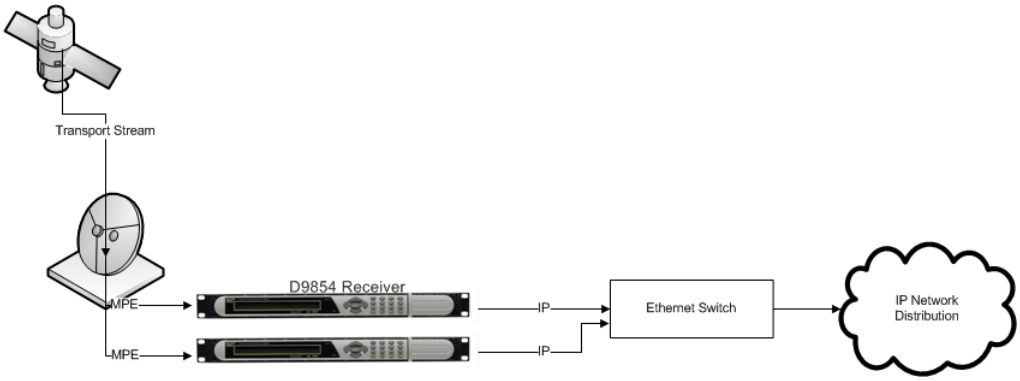
The diagram below shows an example of the D9854 receiver used in an MPEGoIP application.



MPE Output

The Multiprotocol Encapsulation (MPE) output provides a means to carry packet oriented IP protocols on top of a transport stream. The MPE output receives IP packets from the transport stream and the IP data can be sent through an Ethernet switch to an IP router or directly to a receiving device.

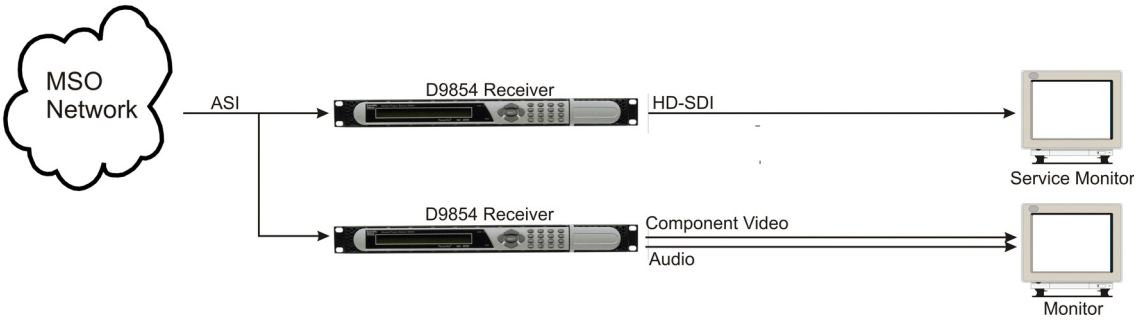
The diagram below shows an example of the D9854 receiver used in an MPE application.



HD-SDI Outputs

The D9854 Advanced Program Receiver is designed for satellite content distribution applications requiring DVB-S and DVB-S2 reception capabilities with advanced digital outputs for digital tier program distribution. A built-in decoder is capable of decoding an MPEG-2 or MPEG-4 High Definition (HD) program for analog monitoring. A high-quality HD-SDI output version is available for re-encoding applications.

The diagram below shows an example of the D9854 receiver used in HD-SDI monitoring applications.



Control and Management Interfaces

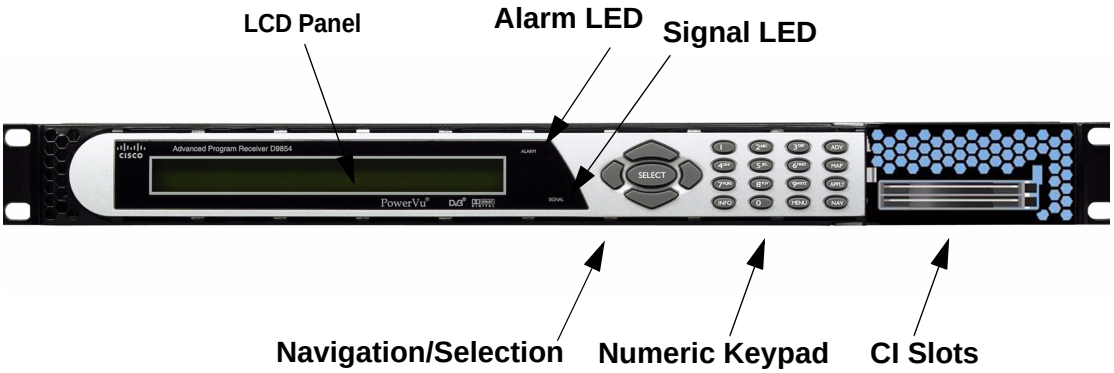
Ethernet

The Management interface for the D9854 receiver is the 10/100/1000 BaseT Ethernet interface. It is used for upgrading the software application.

Front Panel Control

The front panel keypad and LCD are used to control and monitor the operating parameters of the D9854 receiver.

The following diagram shows the front panel with its different sections.



Chapter 3
Installation

Overview

Introduction

This chapter describes how to install the D9854 Advanced Program Receiver. Before installing the D9854 Advanced Program Receiver, read all safety precautions and guidelines thoroughly.

Qualified Personnel

Only appropriately qualified and trained personnel should attempt to install, operate or maintain the D9854 receiver.

> ⚠ **WARNING:**
>
> **Allow only qualified personnel to install this product. Otherwise, personal injury or equipment damage may occur.**

In This Chapter

This chapter contains the following topics.

Section A - Rack Installation

General

Power Connection

To operate the receiver, you must connect it to an AC power source. For information about connecting the chassis to AC power, see Appendix A - Technical Specifications.

As Cisco units are designed for continuous operation, some products do not have a power switch. In this case the mains cord and/or DC power supply cable serve(s) as the mains disconnect device.

> ⚠ **WARNING:**
>
> **Make sure that at least one end of the power cable(s) remains easily accessible for unplugging, if you need to switch off the unit. For example: Ensure that the socket outlet is installed near the product.**

> ⚠ **WARNING:**
>
> **To avoid electrical shock, connect the three-prong plug on this product to an earth-grounded three-pin socket outlet only.**

Installing the D9854 Receiver

Rack Mounted

The D9854 receiver is a 1U unit with connector access at the rear panel. The receiver is intended for mounting in a standard 19" rack with minimum 1U spacing between units to allow adequate ventilation/air flow.

The D9854 receiver is vented from front to back. Multiple units can be stacked in a rack, provided that adequate cooling is available.

Cooling

The D9854 receiver is cooled by the use of internal fans. The air intake is from the front and the air outlet is on the rear.

Note: Adequate cooling must be provided equalling 107 W (maximum) at 25°C per unit to avoid overheating.

> ⚠ **CAUTION:**
>
> **The inlet air temperature must not exceed 50°C/122°F at any time.**

Grounding

You must ensure that the unit is properly connected to ground in order to meet safety and EMC requirements. Before any other connection is made, the unit must be connected to a protected ground terminal as described below:

- Via the three wire power cord of the AC power supply. This connection is mandatory.
- In addition, via the protective ground terminal on the rear panel of the unit. This connection provides additional protection of the equipment.

To Mount the D9854 Receiver

To mount the D9854 receiver in a rack, do the following:

1. Mount L-brackets in the rack to support each D9854 receiver to be installed.
2. Place the receiver in its position in the rack.
3. Mount the receiver securely to the rack by securing the mounting flanges to the rack using the four screws provided.
4. Make sure the air outlet holes on the back of the receiver are not obstructed to allow air flow from the front to the back of the chassis.

To Connect AC Power

To connect AC power to the D9854 receiver do the following:

1. Connect the power cord (supplied with the D9854 receiver) between the rear panel power receptacle and a 100 to 120/200 to 240 V AC power outlet.
2. Make sure that the power cable is connected to protective ground.
   See **Grounding**, page 3-4 for more information.

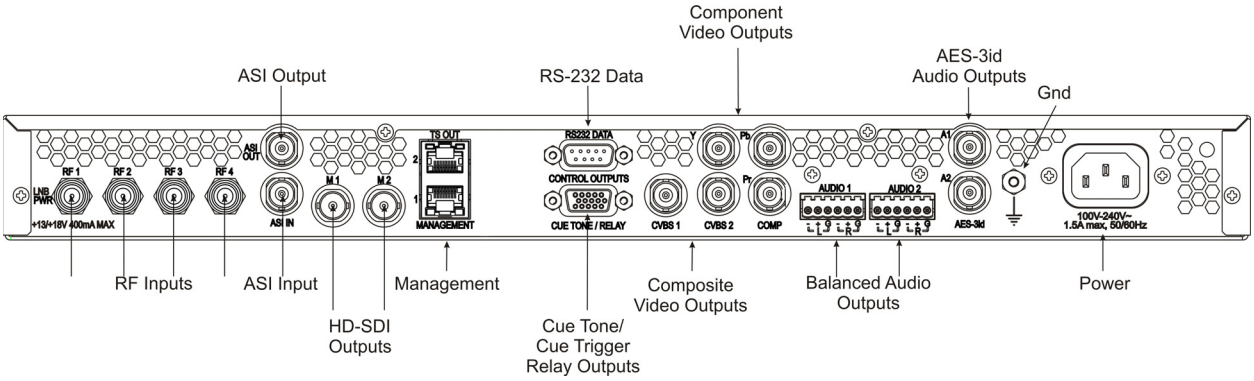
The D9854 receiver is equipped with one power supply located in the rear of the chassis. Note the location of the power supply in the event of alarms/warnings resulting in replacement of a power supply. Alarm messages appear in the Message Log.

Section B - Rear Connector Panel

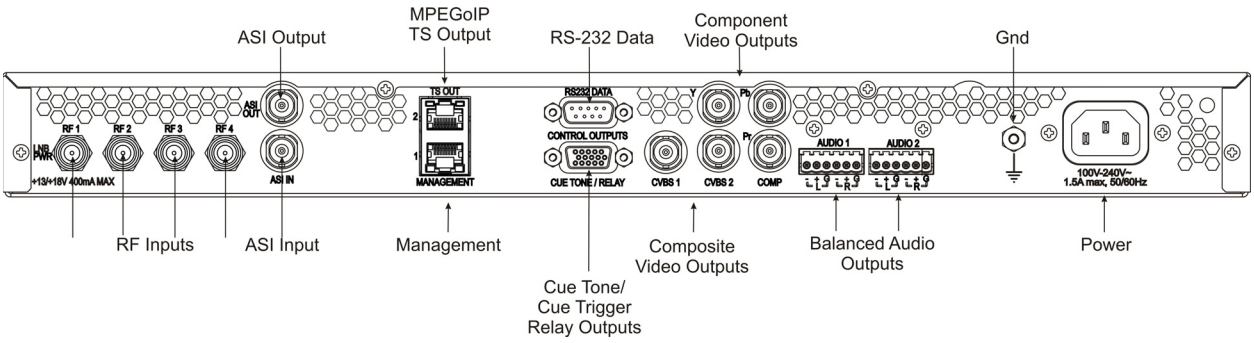
Overview

D9854 Receiver Rear Connector Panel

The following diagrams show the rear connector panel so the two D9854 receiver models available, Base and SDI with SD/HD-SDI and AES outputs.



Base Model



SDI Model, with SD/HD-SDI and AES outputs

Connectors

The following table describes the function and type of the various connectors.

Connector	Function	Connector Type
RF Inputs	Each input accepts an LNB signal input. RF1 provides LNB power for use when no external LNB power source is available. RF2 to R4 require an external LNB power source.	F
ASI Input	Asynchronous Serial Interface Input.	BNC

Connector	Function	Connector Type
ASI Output	One Asynchronous Serial Interface Output.	BNC
Management	For code downloading/application upgrading for the D9854 receiver.	RJ45
HD-SDI Outputs	M1 and M2 provide HD serial digital video with embedded audio output for HD applications according to SMPTE 292M.	BNC
RS-232 Data	RS-232 data output: 7 bits, even parity, 1 stop bit, up to 38.4 kb/s. These outputs are user-configurable via the Setup menu on the front panel.	9-pin sub-D female
Cue Tone/Cue Trigger Relay Outputs	Program relay provides programmed responses for alarms, cue trigger states for ad-insertion equipment, or a cue tone output for connection to ad-insertion equipment.	15-pin sub-D female
Composite Video Outputs	CVBS 1 and CVBS 2 provide two identical SD composite video outputs for monitoring applications.	BNC
Component Video Outputs	SD to HD upconverted component video output for HD monitoring applications.	BNC
AES-3id Audio Outputs	AES-3id outputs. One output for each stereo channel.	BNC
Balanced Audio Outputs	Audio 1 and Audio 2 provide two stereo pairs or four mono channels.	Terminal Blocks
Ground	Screw	Grounding point for the receiver.
Power	AC power	IEC 60320 Sheet 14

Section C - Connecting the Input/Output Signals

Connecting the RF Inputs

Do as follows to connect to the RF inputs:

1. Connect up to four LNB RF cables to the RF connectors labelled RF1 through RF4 on the rear of the unit.

   Use 75-ohm (braid/foil or braid/braid), low insertion loss coaxial cable.

   Each input accepts an LNB signal input. RF2 to RF4 require an external LNB power source

Connecting the ASI Input

Do as follows to connect to the ASI input:

1. If desired, connect to the ASI IN port to an asynchronous serial interface for uplink monitoring.

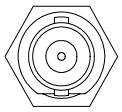
Connecting the Video Outputs

Connector for the Video Output

The video output connectors are of the BNC type.

Video Connector

The following table shows the video connector.

Connector	Interface type	Connector type
	SMPTE 292M	BNC female

To Connect the Component Video Output

1. Connect a video monitor to the connectors labeled Pr, Pb, and Y.

To Connect the Composite Video Output

Do as follows to connect to the Composite Video Output:

1. Connect a video monitor to the CVSB 1 and CVSB 2 connectors. The two outputs are identical. Use a 75-ohm double-braided coax cable.

To Connect the HD-SDI Outputs

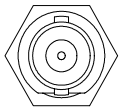
Connect HD rebroadcast equipment to the connectors labeled M1 and M2, and/or if required, connect them to a video monitor.
There are two connectors to provide active loop-through possibility.

Connecting the Audio Outputs

Connectors for the Digital Audio Output

The configuration of the D9854 receiver outputs two stereo channels. The D9854 receiver also supports encoding of audio embedded in the HD-SDI video signal.

The following drawing shows the audio connector.

Connector	Interface type	Connector type
	AES 292M	BNC female.

Note: The digital audio output is always 75-ohm single-ended.

To Connect the Digital Audio Outputs

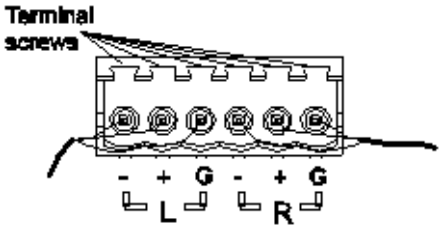
Connect the audio outputs as follows:

1. Connect digital audio output broadcast equipment to the AES-3id connectors. The two stereo channels are useful for Dolby Digital 5.1 passthrough applications. Use a high-quality, double-shielded RJ6 coaxial cable.

   Hint: For digital audio connections, use a balanced cable designed for 110-ohm AES-EBU digital audio.

To Connect the Balanced Audio Output

1. Connect the AUDIO 1 and AUDIO 2 balanced audio outputs to monitoring equipment. Use a multi-conductor, pluggable cable from the receiver's AUDIO 1 and AUDIO 2 (Left and Right) terminals to your equipment, as shown in the following illustration.

Connector	Connector type
	Terminal Block

2. Feed the stripped ends of the positive, negative and ground wires into the appropriate terminals as labelled, and then screw the terminal screws (located on the top of the terminal block) finger tight to each wire.

Connecting the Ethernet Management Interface

The Ethernet Interface

The RJ-45 interface for 10/100/1000 BaseT Ethernet is currently intended for upgrading/downloading the software application.

Note: You must set up the IP address, the default gateway and the subnet mask to match the network connection. This is done through the front panel menu. For further information, see **Set up for Network Connection**, page 1-3.

Informative Notes

Proper cables are required for reliable Ethernet operation; to run up to a maximum segment length of 100 m and up to 100baseT, the cable has to comply with the EIA/TIA Category 5 (or higher) wire specifications, and for 1000baseT, Category 6 is required.

To Connect the Ethernet Interface

1. Connect an RJ-45 cable between the Ethernet connector on the D9854 receiver and the Ethernet port of your PC.

You need to set up the IP address on the D9854 receiver (via the front panel display). For information on setting up the IP address via the front panel, see **Set up for Network Connection**, page 1-3.

Connecting the IP TS Output

The Ethernet Interface

The RJ-45 interface IP TS OUT is 10/100/1000 BASE-T Ethernet. It is intended for both MPEGoIP and MPE outputs. The MPEGoIP output of the transport stream is encapsulated in the IP packets to a groomer (e.g., Digital Content Manager 9900) for distribution. The MPE output receives IP packets from the transport stream.

Informative Notes

For reliable Ethernet operation; to run over a maximum segment length of 100 m and up to 100baseT, the cable has to comply with the EIA/TIA Category 5 (or higher) wire specifications, and for 1000baseT, Category 6 is required.

To Connect the Ethernet Interface

1. Connect a crossed RJ-45 cable between the Ethernet connector on the D9854 receiver and the Ethernet port of the equipment after the D9054 HDTV Encoder.

The equipment after the D9854 receiver could be an IP router or a switch.

Connecting the ASI Output

To Connect the ASI Output

Do as follows to connect to the ASI output:

1. Connect the output signal from the D9854 receiver ASI OUT connector.

   Use a Belden “Brilliance” cable with foil/braid construction. The shield must provide 99% or better shielding effectiveness.

   The equipment after the D9854 receiver could be a Model D9887 HDTV Receiver.

Connecting an External Alarm System

Connector for an External Alarm System

The D9854 receiver and Alarm relay functionality. See **Connecting the Cue Tone/ Cue Trigger Interface**, page 3-15 for more information on Cue Tone and Cue Trigger equipment connections. These outputs are user-configurable via the Setup Menu on the front panel.

The Alarm output connector is a 15-pin sub-D female connector. The following diagram shows the connector and the pin allocation table for the Alarm output pins.

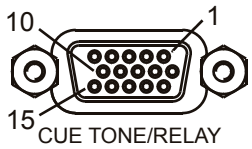
The connector pin states depend on the selected Relay Mode. The Relay Mode is set on the front panel via the Main: Setup: Outputs menu.

To Change the Relay Mode

The Alarm relay is a program relay that can be configured to provide programmed responses for alarms, cue trigger states for ad-insertion equipment, or a cue tone output for connection to ad-insertion equipment. As a default, the Alarm Relay is configured for Trigger mode.

To change the Relay Mode for alarm monitoring purposes:

1. On the front panel menu, go the Main: Setup: Outputs, and select **Cueing**.
2. Use the down arrow key to scroll through the menu to Relay Mode.
3. Change the state to **Alarm** and press the **Select** key to save the new setting. As a result, the rear panel connector pin states will change to that shown in the table below for Alarm mode.

Connector	Normally closed pin	Common pin	Normally open pin	Relay Mode
	11	10	15	Trigger (default)
	15	10	11	Alarm

Note: A Normally closed state implies the state when power is applied to the relay in a normal operating state, without a trigger or alarm condition present.

Connecting the RS-232 Data Interface

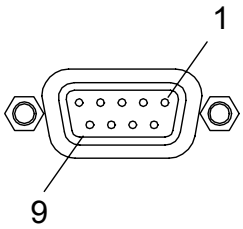
The RS-232 Data Interface

The DCE DB-9 female connector is intended for low-speed data: 7 bits, even parity, 1 stop bit, up to 38.4 kb/s (default). These outputs are user-configurable via the Setup Menu on the front panel.

The interconnect cable from the D9854 receiver to a PC should be straight through (i.e., no handshaking), shielded and equipped with a DB-9 male connector at one end to mate with the rear panel RS-232 Data interface, and a female DB-9 connector to connect to the PC.

Pin Allocation, RS-232 Data Connector

The table shows the RS-232 Data connector and the pin allocation:

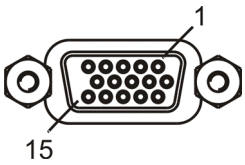
Connector	Pin	Pin allocation
	1	Not connected
	2	TxD
	3	RxD
	4	Not connected
	5	Ground
	6	Not connected
	7	Not connected
	8	Not connected
	9	Not connected

Connecting the Cue Tone/Cue Trigger Interface

The Cue Tone Interface/Cue Trigger Interface

The D9054 HD Encoder is equipped with a connector labeled Cue Tone/Relay for alarm relay outputs for remote alarm signaling. This connector provides Cue Tone, Cue Trigger and Alarm relay functionality. These outputs are user-configurable via the Setup Menu on the front panel.

The connector is a 15-pin sub-D female connector. The following diagram shows the connector and the pin allocation table for Cue Tone, Cue Trigger and Alarm relay connections.

Connector	Pin	Pin allocation
	1	Cue Trig 1
	2	Cue Trig 2
	3	Cue Trig 3
	4	Cue Trig 4
	5	Cue Trig 5
	6	Cue Trig 6
	7	Cue Trig 7
	8	Cue Trig 8
	9	Not connected
	10	Alarm - Ground
	11	Alarm - Normally open
	12	Chassis ground
	13	Cue Tone -
	14	Cue Tone +
	15	Alarm - Normally closed

Connecting the CueTone Interface

1. Connect the Cue Tone pins, 13 and 14 to a device to facilitate ad-insertion using DTMF Analog Cue Tones.

Connecting the CueTrigger Interface

1. Connect the Cue Trigger pins (1 to 8) to up to 8 serial control devices or a device to control ad-insertion. These outputs are user-configurable on the front panel menu.

Setting Admin User Privileges via a Telnet Connection

Administrator User Privileges

Up to 10 usernames/passwords can be defined for login use via a telnet or Web GUI (i.e., http) session on the D9854 receiver.

When a user tries to login via a telnet or http connection, the user is required to provide a username and a password. The user is granted access only if this username/password pair exists in the authentication table.

The first user defined in the authentication table is considered the "Admin User" and is granted special privileges. The Admin user is allowed to add new users, delete users, change usernames and modify his own passwords. All other users are only allowed to modify their passwords.

Starting a Telnet Session

To start a communication session with the receiver using a utility such as Telnet or Tera Term Pro, type the following command:

1. telnet <ip address>
2. At the username prompt, enter the default username:
   <admin>
3. At the password prompt, enter the default username:
   <localadmin>

Adding a New User

To add a new user, type the following command:

pwd add_user <new username> <new password> <confirmed_password>

Note: The <new password> and <confirmed_password> should be identical and the new username should not match any of the usernames already defined in the authentication table.

Deleting a User

To delete a user, type the following command:

pwd del_user < username>

Changing a Username

To modify a username, type the following command:

pwd change_username < username> < new_username> <confirmed_username>

Note: The <new username> and <confirmed_username> should be identical and the new username should not match any of the usernames already defined in the authentication table.

Changing a Password (allowed by all Users)

Passwords can be changed by all users.

To modify a password, type the following command:

pwd change_password < username> < new_password> <confirmed_password>

Note: The <new_password> and <confirmed_password> should be identical. Each user, including the admin user, can modify only his own password.

Printing the List of Users

To print the list of users, type the following command:

pwd list_users

Note: Only usernames will be printed. Passwords will not be visible.

Resetting the Login Authentication Table

At any time the user authentication table can be reset from the front panel. This option is under the Setup, IP menu. When the authentication table reset is required, the username and password are reset to the software defaults. The username and password defaults are as follows unless you have been provided customer-specific defaults in addition to the one normally supplied.

Default username - admin

Default password - localadmin

Common Interface Modules

Only CAMs purchased from Cisco are currently supported. The following lists the supported CAMs:

Common Interface Modules	Part Number
Aston Professional CAM, for Descrambling CONAX (Maximum 12 Services)	4016669
Aston Consumer CAM for Descrambling CONAX (Maximum 2 Services)	4016670
CAM for Descrambling CryptoWorks	V9523361
Aston Professional CAM for Descrambling Irdeto (Maximum 12 Services)	4016671
Aston Consumer CAM for Descrambling Irdeto (Maximum 2 Services)	4016672
Aston Professional CAM for Descrambling MediaGuard (Maximum 12 Services)	V9528197
Aston Consumer CAM for Descrambling MediaGuard (Maximum 2 Services)	V9528198
Aston Professional CAM for Descrambling Viaccess (Maximum 12 Services)	V9528199
Aston Consumer CAM for Descrambling Viaccess (Maximum 2 Services)	V9528240

Chapter 4
Front Panel Operation

Overview

Introduction

This chapter describes how to set up the D9854 Advanced Program Receiver using the front panel keys and display. This information is primarily applicable for standalone operation.

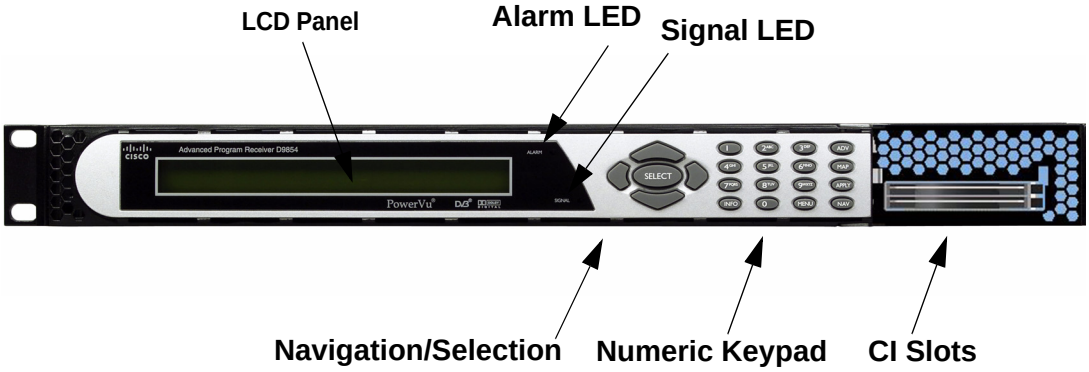
In This Chapter

This chapter contains the following topics.

About the Front Panel

Introduction

The D9854 receiver is operated using controls and indicators on the front panel. These include the numeric keypad, the Navigation/Selection keypad, the LCD, the Alarm and Signal indicators. These are shown in the following illustration.



LCD

The LCD provides information on the selections available at any menu level, current settings for parameters, and certain status and alarm indications. This is a 2x40, backlit LCD display. The top line may be status data or identifier information. It can also display optional functions available for tuning operations. The bottom line will show selections or parameter values available using the navigation/selection keypad. The items are selected by pressing the **SELECT** (center key) or **DOWN Arrow** key on the navigation/selection keypad.

Keypad

The numeric keypad is used to enter alphanumeric values. The **MENU** key sets the software to the initial menu and returns to the previous menu. The **MENU** key can also be used to cancel a numeric entry at any point during the entry sequence, and the **LEFT Arrow** key allows backspacing through the entry.

CI Slots

The CI slots allow the use of CAM (Conditional Access Module) Smart Card to decrypt purchased programming. For setup information, see **Setup Menu: Common Interface (CI)**, page 4-57. For a list of supported CAMs, refer to **Common Interface Modules**, page 3-18.

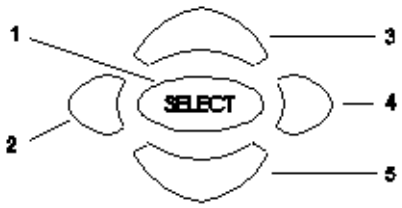
Front Panel LEDs

The functions of the LEDs are described in the table below.

LED	Signal State/Color	Explanation
ALARM	Red	Solid for five seconds indicates a Warning.
	Red	Flashing indicates an Alarm.
SIGNAL	Green	Solid indicates all of the following conditions: • all RF inputs are enabled, all inputs are locked to a signal, and are not muted. • all routed ASI outputs are operating without an error.
	Green	Flashing indicates one of the following conditions: • difficulty with an input, route or output. • one or more RF inputs, or the ASI input are not synchronized. • one or more ASI outputs are routed, but muted by a fault condition. • no RF signal is present or detected, or it is muted. • receiver is not authorized to receive the program.
	Off	Off indicates all of the following conditions: • no RF input signal is available, enabled or detected, or the input is muted. • no ASI input is present • no valid inputs are available.

Navigation/Selection Keypad

The navigation keys (**LEFT**, **RIGHT**, **UP** and **DOWN**) and the **SELECT** key are the primary controllers. Each navigation key performs various functions, depending on the current state of the menu system (i.e., sometimes the left navigation key backspaces over an entry and sometimes moves the cursor to a different menu item). Once the cursor is over the desired function, pressing the **SELECT** (center key) key selects the current item. Pressing the **SELECT** key stores any entered values.



Keypad Convention

Overview

Throughout this manual, there are references to parts of a keypad on the front of the receiver. This is the Navigation/ Selection keypad (see diagram at right), which changes its function, depending on the current state of the menu. For clarity, the following table shows which parts of this integral interface are being referenced by which term.

Button	Description	Function
1	SELECT	Runs the highlighted command or opens the highlighted menu.
2	LEFT arrow	When moving through menus, highlights the menu item to the left. When entering data, moves the cursor to the left. In some menus, backspaces over the data entry.
3	UP arrow	Highlights the menu item above.
4	RIGHT arrow	When moving through menus, highlights the menu item to the right. When entering data, moves the cursor to the right.
5	DOWN arrow	Highlights the menu item below.

When you see this...	It means...	
LEFT Arrow key	Press the key on the left side of the Navigation/Selection Keypad.	
RIGHT Arrow key	Press the key on the right side of the Navigation/Selection Keypad.	
UP Arrow key	Press the key on the top of the Navigation/Selection Keypad.	
DOWN Arrow key	Press the key on the bottom of the Navigation/Selection Keypad.	
SELECT key	Press the key in the center of the Navigation/Selection Keypad.	SELECT
INFO key	Press the key on the lower left of the numeric keypad for context-sensitive help messages, when available. When entering characters in numeric or alphanumeric fields, this key can be used to toggle between upper and lower case.	1 2 ABC 3 DEF ADV 4 GHI 5 JKL 6 MNO MAP 7 PQRS 8 TUV 9 WXYZ APPLY INFO 0 MENU NAV
MENU key	Press the key on the lower right of the numeric keypad. Starts the on-screen display. Also functions as the Escape key so you can back out of menus and data entry fields.	
Alphanumeric Entry	Pressing the numeric keys 2-9 once will enter the respective digit into a data entry field. Pressing these buttons again will enter the first of the letters displayed beside the number. Repeatedly pressing the button will toggle through all of that key's possible choices. When entering text, the 1 button can be used to insert spaces (press twice). To delete a character, press 0 twice.	

When you see this...	It means...	
ADV	Toggles between Program Entry and Channel number.	
MAP	Edit, insert and delete Digital Program Mapping (DPM) Modes on Program Entries or on PIDS within Program Entries.	
APPLY	Activates current changes without having to exit the menu.	
NAV	For future use.	

Front Panel Setup

Locking/Unlocking the Front Panel

Depending on the customer's default settings, the receiver is shipped with a locked or unlocked front panel. You can lock or unlock the front panel using the front panel keypad.

Proceed as follows to unlock the front panel using the front panel keypad:

1. From the Startup screen, press **SELECT** and then **INFO**. This will unlock the front panel keypad and allow you make changes to all the operating parameters; however, if the keypad remains untouched for the duration of the set timeout period (default is 60 seconds), the keypad will change back to the Lock state unless you change the keypad state on the Admin Menu. Likewise you toggle the keypad lock state back using SELECT and INFO at any time provided the KB Lock state on the Admin Menu is Enabled. For more information on front panel keypad buttons, see **Keypad Convention**, page 4-4.

   Note: If the lock level is 3 or 4, you must enter a password to unlock the front panel. For more information on lock level password, see **Setup Menu: Admin**, page 4-26.

2. To disable Lock completely, navigate to **Setup**, **Admin**, **KB Lock** in the LCD display and press the **SELECT** key.
3. Change the **KB Lock** state from **Enabled** to **Disabled**.
4. The front panel will now be unlocked allowing you to change any of the operating parameters.

To lock the front panel, perform the same procedure, except use ▶ to change the state. In this case you will not be prompted to confirm the operation.

Startup Screen

Menu Structure

On power-up and initialization, the startup screen is displayed similar to that shown below. The screen also indicates the signal status.

```
 PE1  ◆12345  Channel Name
RF1    Freq:12.658 Lvl:-50 Marg:11.6
```

```
PE:  1
Auth:Y
```

Startup Screen

Channel Authorization Status Screen

Channel Authorization Status

From the startup screen, press the right or left arrow keys on the front panel keypad to move to the PE entry authorization status screen. This screen indicates whether the selected channel is authorized.

Auth Status	Description
Y	Indicates the channel is authorized.
N	Indicates the channel is not authorized.

LCD Panel

The LCD panel displays basic signal and program information in the LCD display, as described in the following illustration:

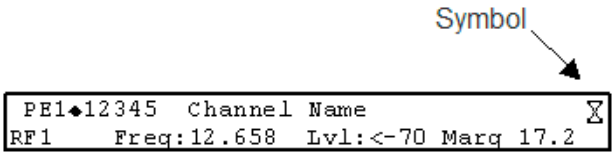
```
 PE1◆12345  Channel Name                 ⧖
RF1    Freq:12.658  Lvl:<-70 Marg 17.2
```

LCD Setting	Description
PE	Program Entry (PE). The receiver supports up to 16 program entries at the analog outputs. PE1 is used by the PowerVu signal only. PE2 to PE16 is used by the Conditional Access Module (CAM) only.
12345	Channel for program monitoring.
Channel name	Name of the monitored program.

LCD Setting	Description
RF	Active RF input port. **Note:** ASI will be shown if the ASI input port is active.
Freq:	Downlink frequency of the tuned signal in GHz.
Lvl:	Signal level in dBm.
Marg:	Carrier-to-noise (C/N) margin in dB.
DEGD	The Degraded indicator only appears if there is a degraded tuning information in use. This occurs if the SI tables are not consistent on the incoming stream. The receiver will attempt to identify the service list based on the information available. Check the SI acquisition and stream information to ensure that the channels, network, and tuning information is operating as expected.

LCD Symbol

Various symbols will periodically appear in the top right-hand corner of the LCD panel, indicating which user actions are currently acceptable. The following displays the location of the symbol:



The following table describes the various symbols:

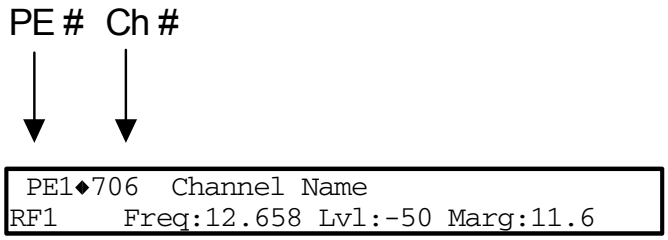
LCD Symbol	Description
⌛	The Hourglass indicates that parameters are being saved in the background. You can continue to perform any operation desired. **Note:** If a power-cycle/interruption occurs while the hourglass is displayed, some parameters may not be saved. Refrain from powering off the unit while the hourglass is displayed.
ℹ	The Info symbol indicates that the INFO key is active. In most cases, this will display contextual information on the LCD screen.

LCD Symbol	Description
S	The Select symbol indicates that the SELECT key is active.
◀▶	The Left/Right symbol indicates that the RIGHT/LEFT arrow key is active; e.g., pressing the RIGHT/LEFT arrow key will have an affect, such as moving the cursor to the right/left.
▲▼	The up/down symbol indicates that the UP/DOWN arrow key is active.
DL	The Download In Progress (DL) symbol indicates that the receiver is currently downloading a software update and storing it into memory in the background. **Note:** Service interruption occurs during a reboot, which is always required when the receiver's software is updated.
DT	The Download Trigger (DT) symbol indicates new software is ready for download, but a download trigger by the receiver is required before it will be downloaded. **Note:** Service interruption occurs during a reboot, which is always required when the receiver's software is updated.
D	The Download symbol indicates that a software download for a version of software already in memory has been detected.
*	The Session Open symbol indicates that you are changing a group of related items.

Assigning a Program to the Program Entry

To assign a program to the PE:

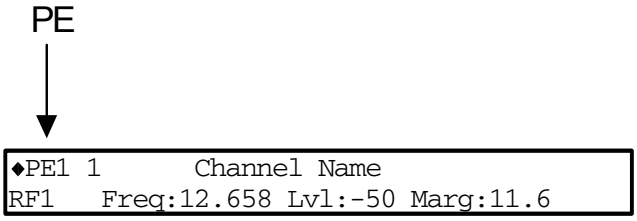
1. Press MENU until you display the startup screen.



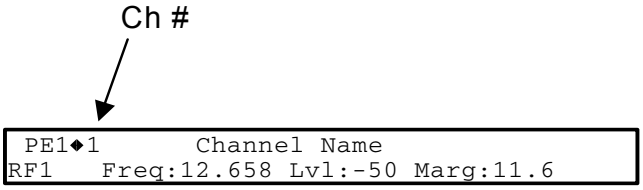
   The PE (Program Entry) channel is initially displayed.

   Note: PE1 is the default.

2. Press the ADV key to select PE1.



3. Press the UP or DOWN arrow key to scroll through the available program entries.
4. Press ADV again to select the channel number.

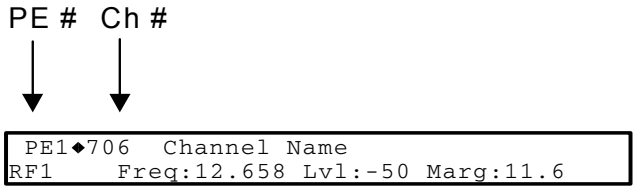


5. Directly enter the channel number using the 0 to 9 keys.

Deleting a Program from the Program Entry

To delete a program from the PE:

1. Press MENU until the startup screen appears.
2. Navigate to the program that you want to delete.



3. Press SELECT to select the program number.
4. Enter program number 0 in the PE entry to delete the program. You can also use the MAP key to re-insert a program after you have deleted it by pressing MAP.

Program Entry Output Mode

A program can be set to one of three output modes, either Drop, Pass or Map respectively.

LCD Setting	Description
Drop	Removes the service and its associated PMT reference from the transport output.
Pass	Permits the source content and PMT reference to appear in the transport output with the same references.
Map	Provides the flexibility to define all the outgoing PID numbers for the PE, including those not currently on transmission.

See **Setting Up Digital Program Mapping (DPM)**, page 4-81 for more information.

Main Menu

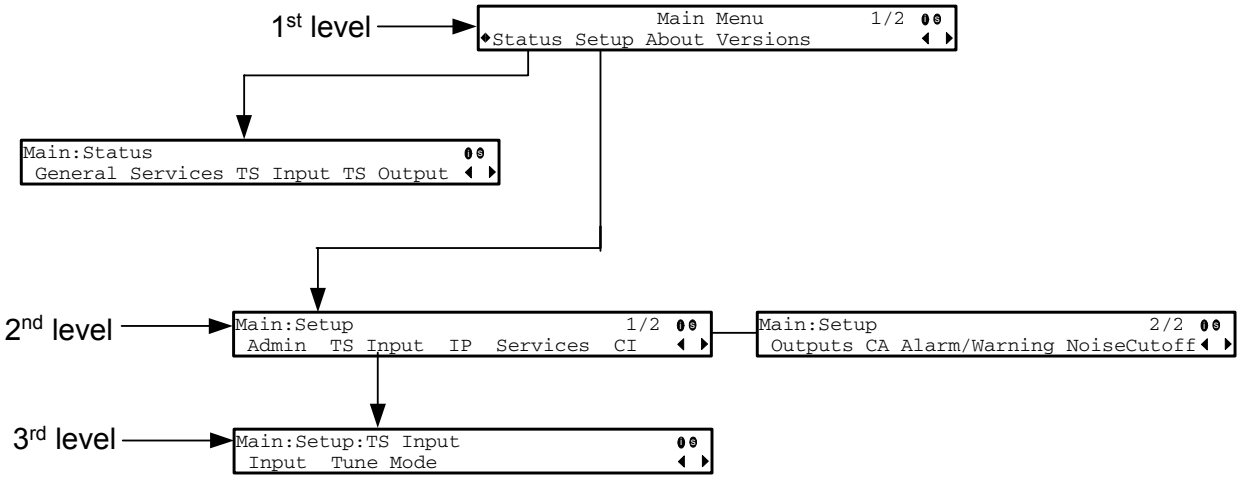
Operation of the D9854 receiver begins at the Main menu. From the startup screen, press the MENU key to view the Main menu.

```
                Main Menu          1/2
◆Status Setup About Versions
```

```
                Main Menu          2/2
 Diagnostics
```

Menu Selection

Select the desired function by moving the cursor left or right by pressing the LEFT or RIGHT arrow key. Once a selection is made by pressing the SELECT key, the LCD presents the second menu level for the selected function. Succeeding levels for each function include all the hierarchical levels for the function in the front panel LCD. For example, the TS Input level is shown as Main: Setup: TS Input, with each succeeding level separated by a colon (:), as shown in the example below. The front panel menus are described on the following pages.



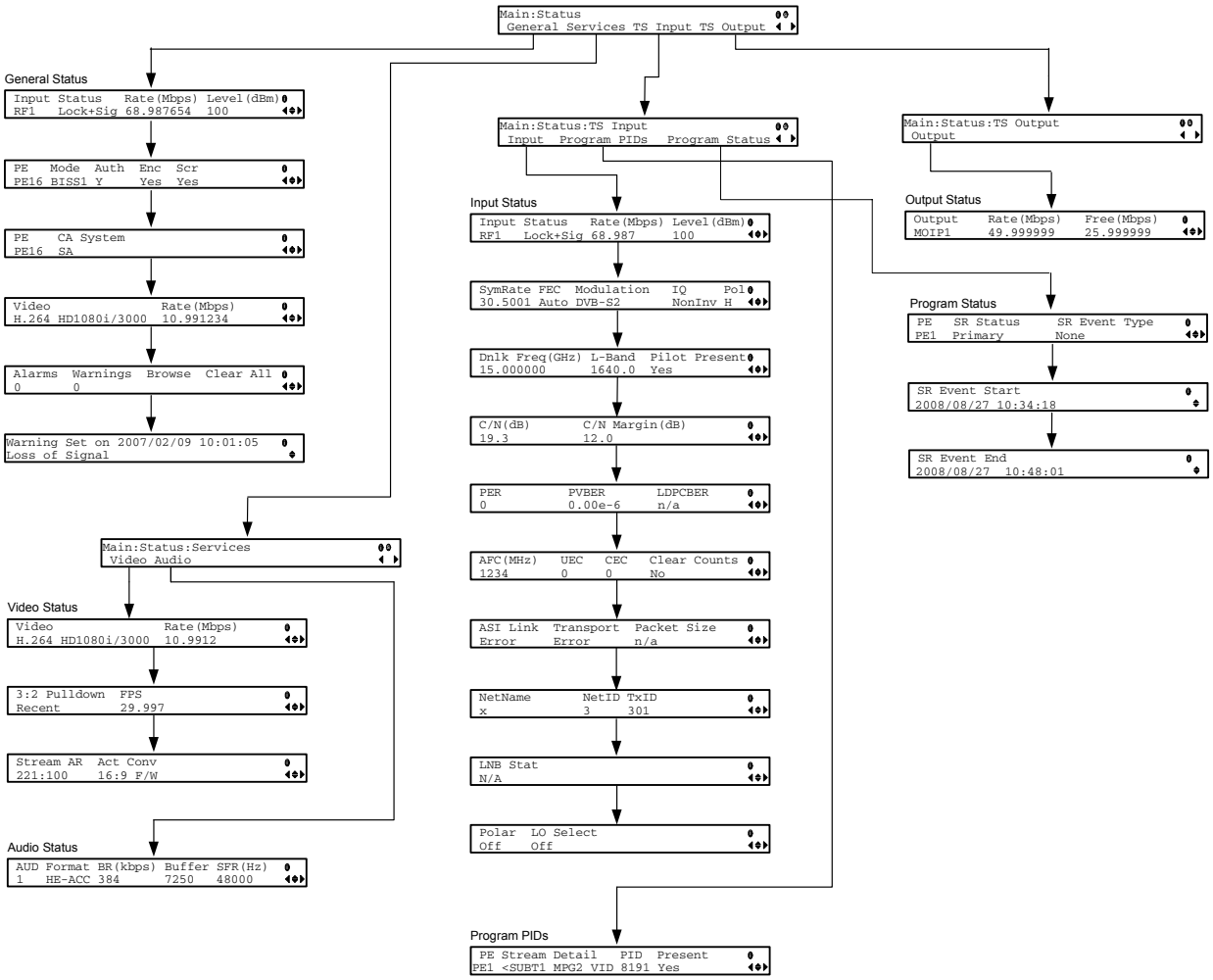
Status Menu

Structure

To view the Status menu from the Main menu, press the SELECT key. The Status menu indicates the status of the input and output signals, the video and audio services, and allows you to browse and/or configure the alarms and warnings.

The Status menu is split into four parts; General, Services, TS Input and TS Output. Each parameter is described in this section. For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Status menu has the following structure:



Status Menu: General

GENERAL STATUS

Input

Description: Indicates the active input port receiving the signal.

Status

Description: Indicates the current signal lock status for the selected RF input.

Parameters: Signal Lock - See table.

Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

Rate (Mbps)

Description: Indicates the bit rate of the received input signal.

Parameters: in Mbps.

Level (dBm)

Description: Indicates the signal level of the received signal.

Parameters: in dBm.

PE

Description: Indicates the Program Entry number.

Parameters: PE1 to PE16.

Mode

Description: Indicates the type of CA used for the received signal, e.g., SA or BISS.

Auth

Description: Indicates whether the receiver is authorized to receive the signal.

Parameters: Yes, No.

Enc

Description: Indicates whether the received signal is encrypted.

Parameters: Yes or No.

Scr

Description: Indicates whether the received signal is scrambled.

Parameters: Yes or No.

CA System

Description: Indicates the Conditional Access (CA) system used for the received signal.

Parameters: SA or BISS.

Video

Description: Indicates the input stream type and source resolution of the received signal/program.

Parameters: SD480i/2997, SD480i/3000, SD576i/2500, HD720p/5000, HD720p/5994, HD720p/6000, HD1080i/2500, HD1080i/2997, HD1080i/3000, Unknown or Unsupported.

Rate (Mbps)

Description: Indicates the bit rate of the received video program.

Alarms

Description: Displays the number of currently active Alarms.

Warnings

Description: Indicates the number of currently active Warnings.

Browse

Description: Select this option to scroll through the current alarms and warnings.

Clear All

Description: Select this option to clear all the current warnings and alarms. You will be prompted to verify whether you want to clear all the alarms and warnings.

Parameters: Abort, Continue. Select Abort to cancel the operation or Continue to clear all the warnings and alarms.

Status Menu: Services

SERVICES

VIDEO STATUS

Video

Description: Indicates the input stream type and source resolution of the received signal/program.

Parameters: SD480i/2997, SD480i/3000, SD576i/2500, HD720p/5000, HD720p/5994, HD720p/6000, HD1080i/2500, HD1080i/2997, HD1080i/3000, Unknown, or Unsupported.

Rate (Mbps)

Description: Indicates the bit rate of the received video program.

Parameters: Typically 25.0, 29.97, 30.0, 50.0, 59.94, 60.0, unknown or unsupported.

3:2 Pulldown

Description: Indicates whether 3:2 pulldown mode is detected.

Parameters: Yes, No or Recent.

FPS

Description: Indicates the frame rate in frames per second.

Stream AR

Description: Indicates the stream aspect ratio. This is the conversion that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection.

Parameters: 4:3, 14:9 or 16:9.

Act Conv

Description: This is the type of aspect ratio conversion that the receiver will perform based on your selection.

Parameters: None, 4:3 L/B, 4:3 P/B, 14:9, 14:9, 4:3 F/H or 16:9 F/W.

AUDIO STATUS

AUD

Description: Indicates the audio channel within the stream when the signal contains more than two audio pairs.

Parameters: AUD1 for audio channel Aud1.

AUD2 for audio channel Aud2.

AUD1 to AUD4 for two stereo audio channels.

Format

Description: Indicates the received audio channel format.

Parameters: MPEG, AC3, AAC, HEAAC or DDP.

BR (Kbps)

Description: Indicates the audio bit rate of the received audio channel.

Parameters: in Kbps.

Buffer

Description: Indicates the audio input buffer level.

Parameters: in bytes.

SFR (Hz)

Description: Indicates the audio sampling frequency.

Parameters: 32, 44.1 or 48 Hz.

TS INPUT

INPUT

Input

Description: Indicates the active input port receiving the signal.

Parameters: RF1, RF2, RF3, RF4, or ASI.

Status

Description: Indicates the current signal lock status for the input.

Parameters: Signal Lock - See table.

Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

Rate (Mbps)

Description: Indicates the bit rate of the received input signal.

Parameters: in Mbps.

Status Menu: TS Input

Level (dBm)

Description: Indicates the signal level of the received signal.

Parameters: in dBm.

SymRate

Description: Indicates the Symbol Rate of the received signal.

Parameters: in Msymbols/second.

FEC

Description: Indicates the FEC (Forward Error Correction) rate of the received signal.

Parameters: N/A, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8, 8/9 or 9/10.

Modulation

Description: Indicates the modulation type for the received signal.

Parameters: N/A, QPSK, 8PSK, DVB-S or DVB-S2.

IQ

Description: Indicates the IQ (Input Signal Inversion) for the received signal.

Parameters: Inv or NonInv.

Pol

Description: Indicates the signal polarization setting. This setting is only applicable when LNB Power is set to H-NIT or V-NIT. The selected setting must match the polarization of the transmitted signal.

Parameters: Horiz (Horizontal), Vert (Vertical) or Auto.

Dnlk Freq (GHz)

Description: Indicates the current downlink frequency.

Parameters: in GHz.

L-Band

Description: Indicates the current L-Band frequency.

Parameters: in MHz.

Pilot Present

Description: Indicates whether a Pilot is present for the received signal. The Pilot is set on the modulator for input signal synchronization purposes.

Parameters: Yes or No.

C/N (dB)

Description: Indicates the current Carrier-to-Noise ratio.

Parameters: in dB.

C/N Margin (dB)

Description: Indicates the current Carrier-to-Noise Margin for the received signal. The Carrier-to-Noise margin is the actual distance that C/N is from the noise threshold.

Parameters: Values can be displayed in the range of -32.0 to +30.0 dB.

PER

Description: Indicates the current PER (Packet Error Rate).

PVBER

Description: Indicates the PV (Post-Viterbi) BER for the received signal (DVB-S).

LDPCBER

Description: Indicates the LDPC error rate for the selected input (DVB-S2).

AFC (MHz)

Description: Indicates the current Automatic Frequency Control count.

Parameters: in MHz.

UEC

Description: Indicates the current Uncorrected Error Count for the received signal.

CEC

Description: Indicates the current Corrected Error Count for the received signal.

Clear Counts

Description: Select this option to clear the error counters. You will be prompted to confirm the operation.

Parameters: Yes or No.

ASI Link

Description: Indicates whether there is a transport stream link error.

Parameters: Yes, No or N/A.

Transport

Description: Indicates the current transport synchronization status

Parameters: Sync - No Sync, Normal or N/A.

Packet Size

Description: Indicates the packet Size (in bytes) for the selected input.

Parameters: 188 bytes or 204 bytes.

Net Name

Description: Indicates the name assigned to the network.

Parameters: Up to 12 alphanumeric characters.

NetID

Description: Indicates the Network ID of the uplink signal the receiver is to receive when using the selected preset. The receiver's Network ID must match the Network ID associated with the transmitted signal that identifies the NIT to be used.

Note: Each network must be assigned a unique ID (number).

Parameters: 1 to 65535.

TxID

Description: Indicates the Transport ID.

Parameters: 1 to 65535.

LNB Stat

Description: Indicates the current LNB connection status.

Parameters: No Load, Overloaded, OverTemp, Short Circuit, Disabled, Normal or N/A.

Polar

Description: Indicates the polarity of the received signal.

Parameters: H (Horizontal), V (Vertical) or Off.

LO Select

Description: Indicates whether a 22 kHz tone is available on input port RF1. This is applicable for dual-band applications.

Parameters: On or Off.

PROGRAM PIDS

PE

Description: Indicates the Program Entry number.

Parameters: PE1 to PE16.

Stream

Description: Indicates the name assigned to the Program Entry.

Parameters: Up to 4 alphanumeric characters.

Detail

Description: Indicates any detail associated with the program PID (e.g., MPG2 PID).

Parameters: MPG1 VID, MPG2 VID, 422 VID, H264 VID, HD VID, MPG4 VID, MPG AUD, MPG2 AUD, DVB AC3, DVB DDP, AAC AUD, HEAAC, AUD, MPG4 AUD, DBE AUD, DTS AUD, DVB TXT, DVB VBI, DVB SUBT, DVB ASYN, DVB SYNS, DVB SYND, DVB MPE, DVB DCAR, DVB OCAR, SA VBI, ATSC AC3, ATSC DDP, SA UTLD, SCTE DPI, SA HSD, SA CDDL, SA WBD, SA SUBT, ECM, EMM, PCR, or UNKNOWN.

PID

Description: Indicates the program PID number.

Parameters: 1 to 8192.

Present

Description: Indicates whether the PID is present in the incoming stream.

Parameters: Yes or No.

TS OUTPUT

OUTPUT STATUS

Output

Description: Indicates the output type.

Parameters: ASI or MPEGoIP.

Rate (Mbps)

Description: Indicates the current output bit rate.

Parameters: 0 to 213 Mbps.

Free (Mbps)

Description: Indicates the available bit bandwidth (no stuffing).

Parameters: in Mbps.

PROGRAM STATUS

PE

Description: Indicates the Program Entry number.

Parameters: PE1 to PE16.

SR Status

Description: This displays the status of an alternate authorized program/service from the same transport stream when the receiver is not authorized to view the primary program.This is an uplink initiated function that maps the alternate service to the original (primary) service PIDs, replacing the original service with the alternate service at the digital transport output. No local intervention is required by the receiver operator for provision of this service replacement feature.

Parameters: Not Started - Indicates that an event has not started.

Primary - Indicates that a service replacement event is active, but the primary program is being displayed.

Alternate - Indicates that a service replacement event is active, and that the receiver has tuned to and is displaying the alternate program/event as it is not authorized to view the scheduled event.

SR Event Type

Description: Indicates the type of service replacement event.

Parameters: None - Indicates that no service replacement event is scheduled.

Scheduled - Indicates that all receivers will tune to the alternate program at the scheduled time. This setting is only applicable to current PE1 (i.e., PowerVu) programs; not PE2 through PE16.

CA - Indicates that only receivers unauthorized to view the scheduled program will tune to the alternate program according to the selected authorization tier bits. This setting is only applicable to current PE1 (i.e., PowerVu) programs; not PE2 through PE16.

Cue Trigger - Indicates that only receivers authorized by the Cue Trigger mask will tune to the scheduled program/event. Cue triggers can only be initiated /controlled on PE1 (i.e., PowerVu).

SR Event Start

Description: Displays the start time of the service replacement event when one is scheduled; otherwise, the default start time is displayed. The default start time is 2007/09/01 00:00:00.

SR Event End

Description: Displays the end time of the service replacement event when one is scheduled; otherwise, the default end time is displayed. The default end time is 2007/09/01 00:00:00.

Setup Menu

Structure

To view the Setup menu from the Main menu, press the RIGHT arrow key once and the SELECT key. The Setup menu is split into nine parts; Administration, TS Input, IP, Services, CI, Outputs, CA, Alarms/Warnings, and Noise Cutoff. For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Setup menu allows you to set all the parameters associated with the following:

- Administration - lock level, password, factory reset, keypad lock, download mode and date and time
- TS Input - frequency parameters for acquiring and locking on to an RF signal, or receiving an ASI input
- IP - parameters for setting up the Ethernet ports
- Services - audio video, captions, and VBI
- CI - parameters to decrypt programming available from service provider programmers via CAM Smart Cards
- Outputs - parameters for setting up the transport stream out, which includes DPM and transcoding
- CA - conditional access
- Alarms/Warnings - enables alarms/warnings traps and relays
- Noise Cutoff - muting thresholds

The Setup menu has the following structure:

```
Main:Setup                    1/2
 Admin TS Input IP Services CI
```

```
Main:Setup                    2/2
 Outputs CA Alarm/Warning NoiseCutoff
```

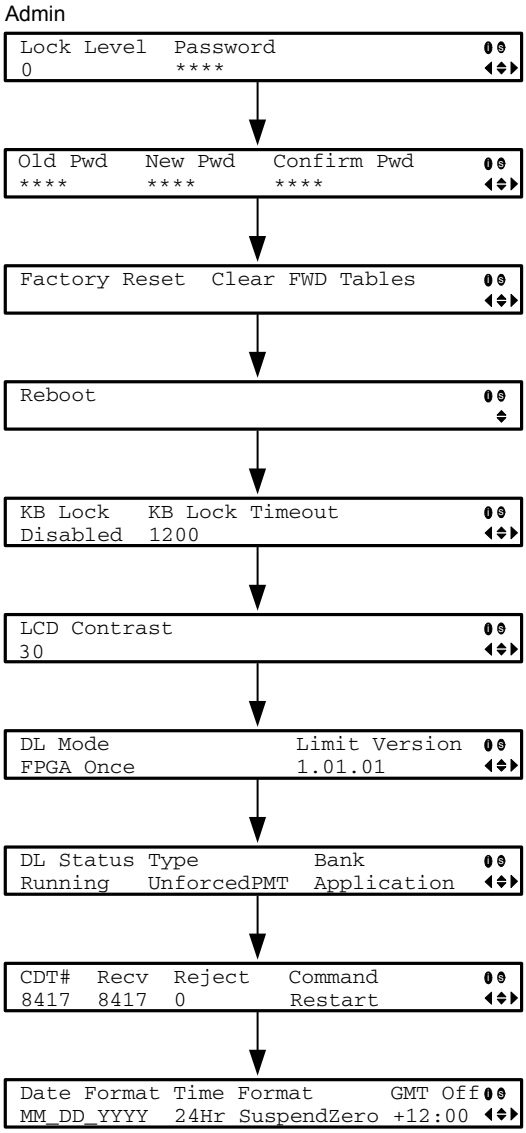
Setup Menu: Admin

Structure

To view the Admin menu from the Main menu, press the SELECT key.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Admin menu has the following structure:



ADMIN

Lock Level

Description: Sets the front panel keypad lock level.

Parameters: 0, 1, 2, 3 or 4.

Password

Description: Enter the password to successfully set the current lock level. The default password for all lock levels is 1234.

Old Pwd, New Pwd, Confirm Pwd

Description: To change the password, enter the old password (Old Pwd). Next, enter the new password (New Pwd, four digits in the range from 0000 to 9999) and re-enter the new password for confirmation (Confirm Pwd). To change the password, the receiver must be in Lock Level 0. The default password is 1234.

Factory Reset

Description Select this option to perform a reset of receiver settings back to the factory set (default) values. A warning message prompts you to confirm the operation.

Parameters: Reboot Unit - you are prompted to verify the operation.

Abort or Continue.

Clear FWD tables

Description Select this option to Clear the Forward Tables, which removes stored database information applicable to upgraded software versions. A warning message prompts you to confirm the operation.

Parameters: Abort or Continue.

Reboot

Description: Allows you to reboot the receiver. You will be asked to confirm the operation.

Parameters: Select Continue to reboot the receiver or Abort to cancel the operation.

KB Lock

Description Sets the front panel keypad lock state.

Parameters: Enabled or Disabled.

KB Lock Timeout

Description: Sets the keypad lock timeout period. The lock timeout period takes effect when the keypad has not been touched (i.e., a key has not been pressed) when on the Main Menu for the set period. Avoid setting the period to a short duration when the keypad is used often.

Parameters: 5 to 1800 seconds. The default is 60 seconds.

LCD Contrast

Description Adjusts the contrast of the LCD menu panel.

Parameters: 1 (lowest contrast) to 30 (highest contrast).

DL Mode

Description Sets the download mode.

Parameters: FPGA Once, Always or Never.

DL Mode Setting	Description
Always	Unforced download will be accepted and saved in memory.
FPGA Once	An unforced download will be accepted, followed by a reboot of the receiver, and the DL Mode will change to Never.
Never	Unforced downloads will not be accepted.

Note: Forced downloads (initiated by the uplink) are always accepted and always result in a reboot of the receiver. ***Service interruption will occur!***

Limit Version

Description: Indicates the current FPGA version number.

Parameters: Read-only alphanumeric value.

DL Status, Type, Bank

Description: Indicates the DL Mode status, type and bank (i.e., type of code).

Parameters: DL Status - Idle, Running, Timeout. Idle indicates the receiver is waiting for a download. Running indicates the receiver is processing a download. Timeout indicates the receiver didn't complete the download.

Type - rear panel is only supported at present.

Bank - the type of code, either Application or FPGA.

CDT#

Description: Indicates the total number of expected CDTs, the number received, the number rejected and the download command.

Parameters: This is the number of tables expected to be received during the current download operation.

Recv

Description: This is the number of CDTs received since the last completed or aborted download, or power-cycle.

Parameters: Read-only numeric value.

Reject

Description: This is the rejected table count. Tables are rejected whenever validation fails due to things like CRC failure or incorrect code or receiver type.

Parameters: Read-only numeric value.

Command

Description: Indicates the download command.

Parameters: Restart, Abort or None. Abort stops a download that is currently being received. Restart restarts a previously aborted download. Note that the download does not resume from where it was aborted, but restarts from the beginning. None means no action is to be performed.

Date Format, Time Format, GMT Off

Description: Sets the Date and Time formats and the GMT offset. Time information is normally broadcast as part of the transmitted digital signal. It is usually the broadcasters local time relative to GMT (Greenwich Mean Time).

Parameters: Date - The following formats are supported: YYYY_MM_DD, DD_MM_YYYY, MM_DD_YYYY.

Time - The following formats are supported: 24Hr, 24Hr SuspendZero (the leading zero is dropped from the time), 12Hr, 12Hr SuspendZero (the leading zero is dropped from the time).

GMT Off - Time is displayed using a time zone instead of the true local time. If the current broadcast time is not your local time, you must change this time setting in the range from -12.0 to +12.0 hours in 0.5 hour increments.

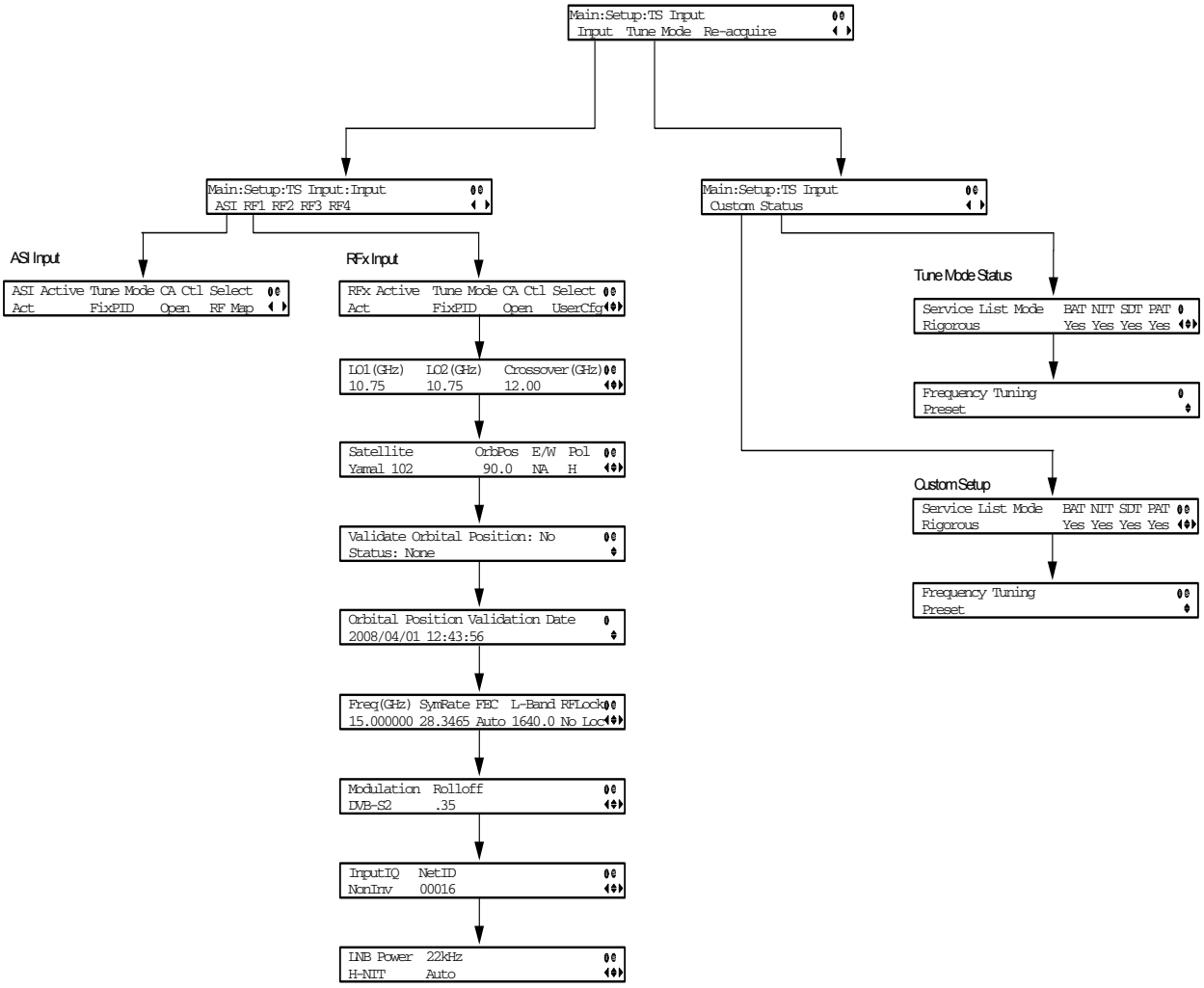
Setup Menu: TS Input

Structure

To view the TS (Transport Stream) Input menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key once and the SELECT key to view the TS Input menu.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The TS Input menu has the following structure:



ASI INPUT

ASI Active

Description: Sets the input to be active or inactive.

Parameters: Act or No.

Tune Mode

Description: Sets the mode used to build channel lists from allowed service lists.

Parameters: Auto, Basic, FixPID or Custom. The default is Basic.

CA Ctl

Description: Sets the type of CA (Conditional Access) to determine which programs can be viewed via the receiver.

Parameters: Std (standard) for PowerVu signal or Open conditional access for free-to-air (i.e., in-the-clear signals).

Select

Description: This sets the parameters the receiver uses for signal switching.

Parameters: RF Map or Preset. RF Map uses the orbital positioning settings to find and lock onto a signal, while it can be ignored for Preset.

RF1, RF2, RF3, RF4

RFx INPUT

RFx Active (RF1, RF2, RF3, RF4)

Description: Sets the input to be active or inactive.
Note: Setting a new input to be Active will deactivate the currently Active input.

Parameters: Act or No.

Tune Mode

Description: Sets the mode used to build channel lists from allowed service lists.

Parameters: Auto, Basic, FixPID, and Custom. The default is Basic.

CA Ctl

Description: Sets the type of CA (Conditional Access) to will determine which programs can be viewed via the receiver.

Parameters: Std (standard) for PowerVu signal or Open conditional access for free-to-air (i.e., in-the-clear signals).

Select

Description: This sets the parameters the receiver uses for signal switching.

Parameters: SW Map or UserCfg. SW Map uses the orbital positioning settings to find and lock onto a signal, while it can be ignored for UserCfg.

LO1 (GHz)

Description: This is the Local Oscillator frequency #1. This option sets the satellite antenna LNB local oscillator #1 frequency.

Parameters: 0.0 to 15.0 GHz. Must be lower than the value for LO2.

LO2 (GHz)

Description: This is the Local Oscillator frequency #2. It sets the satellite antenna LNB local oscillator #2 frequency. This option is only used in dual-band LNB applications.

Parameters: 0.0 to 15.0 GHz. Must be higher than the value for LO1. In single-band LNB applications, set this value to 0.0.

Crossover (GHz)

Description: This is the crossover frequency, which is an internal threshold frequency used for selecting the LO1 or LO2 frequency, depending on the current Downlink frequency settings. This option is only used in dual-band LNB applications.

Parameters: 0.0 to 15.0 GHz. In single-band LNB applications, set this value to 0.0.

Satellite

Description: This is the name of the satellite currently selected. Choose the satellite you want to use to receive the signal from the list of satellites available. When you select a satellite, the orbital position (OrbPos) is displayed. This is important for automatic switching from one RF input to another in the event of loss of the signal, allowing the receiver to acquire an alternate signal.

Parameters: When the satellite is not listed, enter the known orbital position (OrbPos) of the satellite you want to use to receive the signal.

OrbPos

Description: This is the location in orbit of the satellite currently being used. The satellite position (in degrees) in combination with the direction (either **E** (East) or **W** (West)) denotes the satellite position the dish connected to the current RF Input should point. This is used when the satellite is not available in the look-up menu list.

For manual configuration, simply enter the location of the satellite using the numerical keypad. The receiver will not recognize the satellite name and identify it as Unknown. This setting is required to resolve any ambiguity between RF inputs during automatic disaster recovery.

Parameters: Degrees.

E/W

Description: Denotes the satellite position the dish connected to the current RF Input should point. This is used when the satellite is not available in the look-up menu list.

Parameters: E, W or NA.

Pol

Description: Marks the polarity of the signal connected to this RF input.

Parameters: H (horizontal), Vert (vertical), A (Auto). Auto is only applicable for This setting is only applicable when LNB Power is set to H-NIT or V-NIT.

Validate Orbital Position

Description: This option allows you to configure and validate the RF inputs to match those expected by the network. The receiver will check to see if all the frequencies in the Network Information Table (NIT) can be tuned to.

Parameters: Yes or No.

Orbital Position Validation Date

Description: This displays the last date that the 'Validate Orbital Position' operation was performed.

Parameters: N/A.

Freq (GHz)

Description: This is the current Downlink operating frequency used by the receiver for tuning the received digital signal.

Parameters: 0.0 to 15.0 GHz.

SymRate

Description: This is the symbol rate. The symbol rate must match that of transmitted signal.

Parameters: 1.0 to 45.0 Ms/s for DVB-S.

1.0 to 30.0 Ms/s for DVB-S2 if Pilot Present is set to Yes.

5.0 to 30.0 Ms/s for DVB-S2 if Pilot Present is set to No.

FEC

Description: This is the Forward Error Correction inner code rate. The FEC must match the FEC of the transmitted signal.

Parameters: 1/2, 2/3, 3/4, 5/6, 7/8 for DVB-S or Auto for DVB-S2.

L-Band

Description: This is the L-Band operating frequency used by the receiver. This value is determined by the values set in the Freq and LO options.

Parameters: 950 to 2150 MHz.

RF Lock

Description: Indicate whether the receiver is locked to the received signal.

Parameters: Lock or NoLock.

Modulation

Description: Sets the modulation type for the received signal.

Parameters: DVB-S or DVB-S2.

Rolloff

Description: Sets the rolloff factor of the incoming signal.

Parameters: .20, .25, .35. Use .20 or .35 when DVB-S modulation is used, and either of the three when DVB-S2 is used. Use a small number to reject or filter carriers close to the same frequency.

InputIQ

Description: This is the Input signal spectrum inversion setting, which allows the operator to track and select inverted and non-inverted digital signals.

Parameters: When set to Auto, received digital signals are tracked and inverted for correct selection, as required. When set to Inv (inverted), the received digital signal is always inverted. Conversely, when set to NonInv (non-inverted), the received digital signal is never inverted. Normally set to Auto, Inv and NonInv are typically used to automatically reject or filter out unwanted signals.

NetID

Description: This is the Network ID of the uplink signal the receiver is to receive when using this preset. The receiver's Network ID must match the Network ID associated with the transmitted signal.

Parameters: 1 to 65535. The default value is 1.

LNB Power

Description: This setting determines if power is provided via the RF1 Input to an external LNB connection.

Parameters: Off, 13V, 18V, V-NIT or H-NIT. When LNB Power is set to V-NIT or H- NIT, the signal polarization is automatically read from the NIT.

Note: Power will not be applied to the LNB when Power is set to Off.

22kHz

Description: This applicable for dual-band LNB applications. It sets whether or not 22 kHz tone is available on RF1.

Parameters: On, Off or Auto (actual presence of 22 KHz control signal depends on whether downlink frequency is greater than the crossover frequency).

TUNE MODE

CUSTOM

Services List Mode

This menu is where you set up your custom and fixed PID properties (when Tune Mode is Fixed PID). Select the channel to set up and then edit it.

Description: All of the options on this menu allow you to select which tables to use to obtain tuning and channel lists. The values set on this menu only apply when Tune Mode is set to ***Custom***.

Parameters: Degraded or Rigorous. Rigorous means all the default settings must be present in the received signal. Degraded means only the table parameters present in the received signal will be used to install the receiver. The default is Rigorous.

The following table shows some possible configurations for the allowed service lists and the different frequency tuning settings.

Allowed Service Lists	Custom	Fixed PID
BAT	N	N
NIT	N	N
SDT	N	N
PAT	Y	N
Frequency Tuning	Preset	Preset

Frequency Tuning

Description: Sets whether the receiver is to be tuned to the received signal using the NITor a Preset.

Parameters: NIT or Preset.

STATUS

Services List Mode

Description: Indicates which tables are used to obtain tuning and channel lists. This values on this menu only apply when Tune Mode is set to ***Custom***.

Parameters: Degraded or Rigorous. Rigorous means all the default settings must be present in the received signal. Degraded means only the table parameters present in the received signal will be used to install the receiver. The default is Rigorous Install.

The following table displays the default settings for the allowed service lists and frequency tuning settings.

Allowed Service Lists	Auto	Basic	Custom	Fixed PID
BAT	N	N	N	N
NIT	Y	Y	N	N
SDT	Y	N	N	N
PAT	Y	N	Y	N
Frequency Tuning	NIT	NIT	Preset	Preset

Frequency Tuning

Description: Indicates whether the receiver is tuned to the received signal using the NIT or a Preset.

Parameters: NIT or Preset.

RE-ACQUIRE

Description: Re-acquires the signal using the tuning parameters from user settings.

Parameters: Abort or Continue. Select Abort to cancel the operation or choose Continue to complete the operation.

Setup Menu: IP

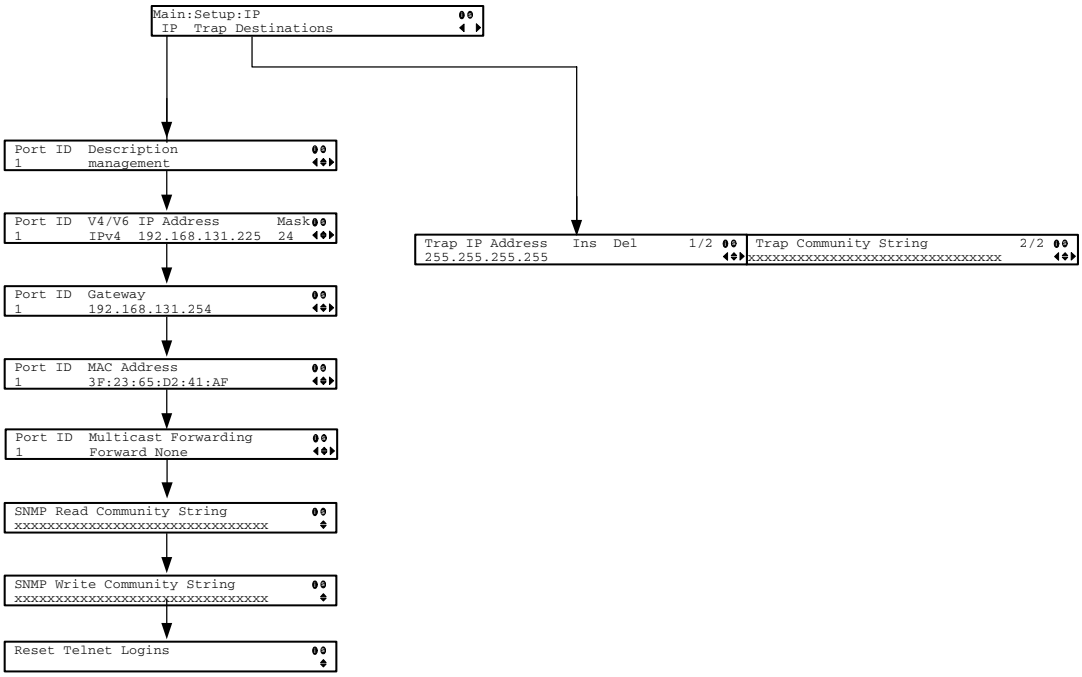
Structure

To view the IP menu from the Main menu, press the RIGHT arrow key once and the then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key twice and the SELECT key to view the IP menu.

The IP menu allows you to set the parameters for communicating with other equipment via the Ethernet Data and Management ports for MPEGoIP and MPE applications and upgrading application software.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The IP menu has the following structure:



IP

Port ID

Description: Displays the ID for the Ethernet port.

Parameters: 1 or 2. The default is 1.

Description

Description: Sets the description or name for the Ethernet port.

Parameters: Up to 20 alphanumeric characters in length.

V4/V6

Description: Displays the TCP IP communication protocol version supported on the Ethernet port.

Parameters: This value is not editable. Only V4 is currently supported.

IP Address

Description: Sets the IP Address for its participation in a Network environment.

Parameters: 12 digits in length (###.###.###.###).

Mask

Description: Sets Subnet Mask for its participation in a Network environment.

Parameters: 8 to 30.

Gateway

Description: Sets the Network Gateway Address on the Network, used to expose the receiver to a WAN.

Parameters: The IP Address/Mask and Gateway Address should be changed together, i.e., as a group. The following table shows the most commonly used Subnet mask values to enter for a chosen IP address mask, which will depend on the size of your network.

Mask	Subnet Mask
8	255.0.0.0
16	255.255.0.0
24	255.255.255.0

MAC Address

Description: Displays the MAC address of the receiver. It is set at the factory and is a read-only value.

Parameters: N/A.

Multicast Forwarding

Description: Sets whether all the MPE data is forwarded to Gateway. It can forward up to 5 multicast IP addresses.

Note: The Port ID must be set to 2.

Note: The receiver supports up to a maximum of 10 Mbps throughput when forwarding 1500 byte packets.

Parameters: Forward None or Forward All.

SNMP Read Community String

Description: The SNMP Community Read field is used when communicating with a device within an SNMP environment. These commands allow you to set the password to read and write data to a device to display diagnostics traps/alarms. The options are public (default) and or a custom string.

Parameters: Use the default community string called public or enter a custom community string. To set a custom community string, enter an alphanumeric character string up to 31-characters in length identifying the password for the device. Note that the community string is case-sensitive.

SNMP Write Community String

Description The SNMP Community Write field is used when communicating with a device within an SNMP environment. These commands allow you to set the password to read and write data to a device to display diagnostics traps/alarms. The options are public (default) and or a custom string.

Parameters: Use the default community string called public or a custom community string. To set a custom community string, enter an alphanumeric character string up to 31-characters in length identifying the password for the device. Note that the community string is case-sensitive.

Reset Telnet Logins

Description: Resets the username and password for Telnet and HTTP logins to its default values.

Note: To change your password, refer to **Setting Admin User Privileges via a Telnet Connection**, page 3-16. If you need to change your username, you must be an Admin user.

TRAP DESTINATIONS

Trap IP Address

Description: This sets the destination for SNMP trap messages for events (i.e., fault messages).

Parameters: Up to 12 digits in length, e.g., 155.128.100.200.

Ins, Del

Description: You can choose to Insert or Delete entries. Up to 25 entries can be assigned to the Trap IP Address and Community String fields. To add a new entry, press **Ins** and enter the new entry in the IP Address or Community String field. To delete an existing entry, scroll to the IP address or community string you want to delete and press **Del**.

Trap Community String

Description: This sets the Community string for the Trap IP Address above.

Parameters: Public or custom string. Up to 35 characters. The default is public.

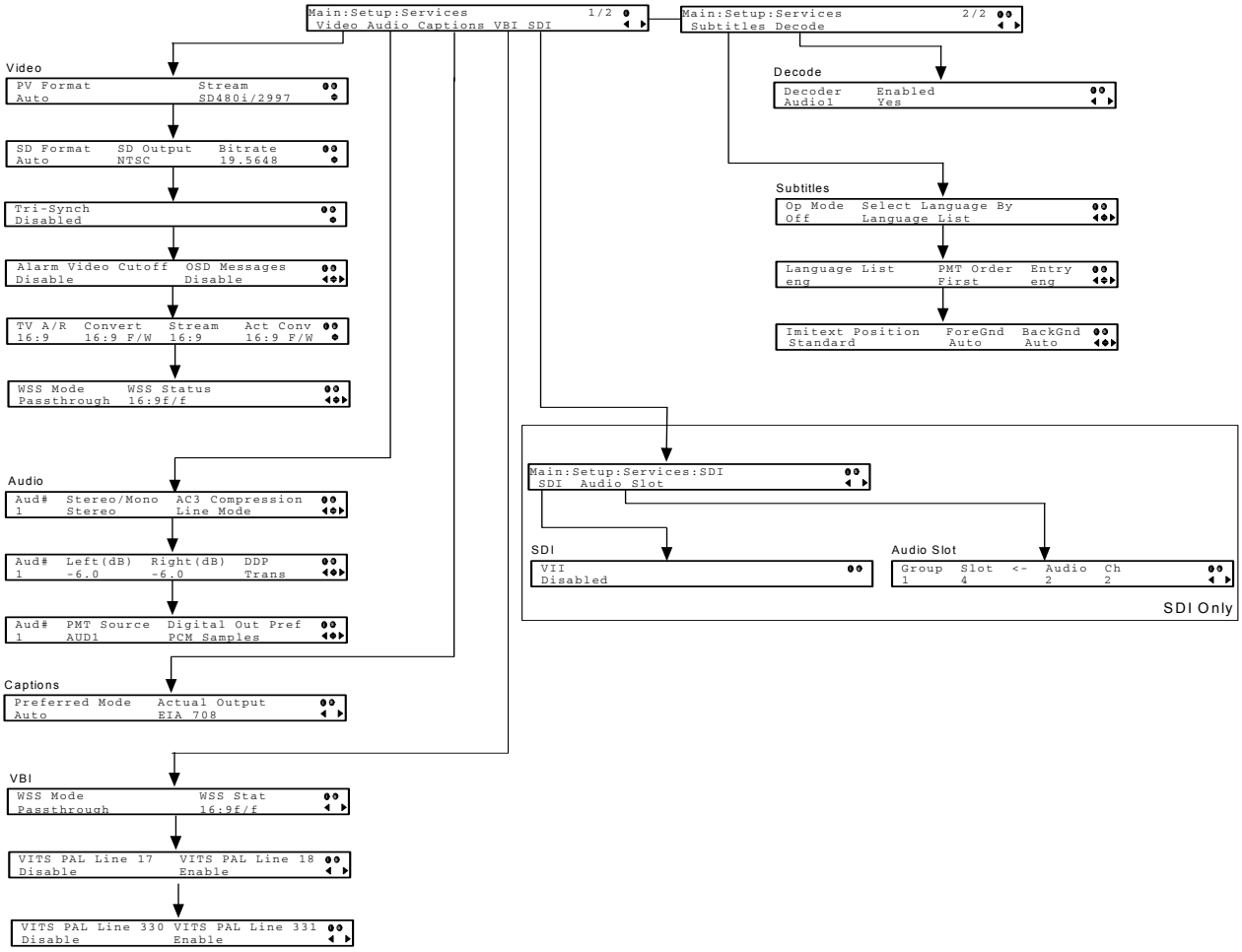
Setup Menu: Services

Structure

To view the Services menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key three times and the SELECT key to view the Services menu.

The Services menu allows you to set up all the operating parameters associated with audio, video and captions services.

Each parameter is described below. The menu has the following structure:



VIDEO

PV Format

Description: Indicates the output video format. This value is read-only.

Parameters: Auto, SD, HD 720p, or HD 1080i.

Stream

Description: This is the format of the incoming stream. It is determined by the the SD Format setting and the actual format of the incoming stream. This value is read-only.

SD Format

Description: Selects the video format for the output when the input video is SD format.

Parameters: Auto, NTSC, PAL-N (AR), PAL-M or PAL-B/G/I/D. Use NTSC for 525-line systems and PAL-B/G/I/D for 625-line systems.

SD Output

Description: Indicates the SD Output video signal format.

Parameters: NTSC, PAL-N (AR), PAL-M or PAL-B/G/I/D.

Bitrate

Description: Indicates the video output bit rate.

Parameters: 1.0 to 15.0 Mbps.

Tri-Synch

Description: Indicates whether component Tri-Synch is enabled or disabled.

Parameters: Enabled or Disabled.

Alarm Video Cutoff

Description: Sets whether the video output is cut off if any enabled alarm is active on the receiver. When video is cut off, there will be no horizontal or vertical synchronization on the output. This is useful for downstream redundancy switching by detecting a loss of video signal.

Note: This same function also exists under Setup: Alarm/Warning.

Parameters: Enable or Disable. The default is Disable.

OSD Messages

Description: Sets whether alarms and warnings are to be displayed on the on-screen display (e.g., TV monitor).

Parameters: Enable or Disable.

TV A/R

Description: This is the aspect ratio of your TV.

Parameters: 4:3 or 16:9 (wide aspect ratio). The default is 4:3. Set it to the corresponding value.

Convert

Description: This is the conversion that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection.

Parameters: Auto, None, Auto AFD (Auto setting using Active Format Descriptor), 16:9 L/B (letter box), 4:3 P/B (pillar box), 14:9, 4:3 CCO (Centre Cut Out), 16:9 SCALE. The default is set to Auto.

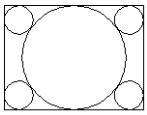
Stream

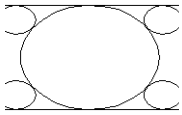
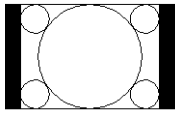
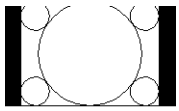
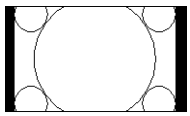
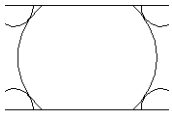
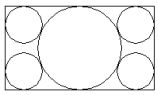
Description: This indicates the aspect ratio of the incoming signal. This is read-only.

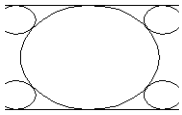
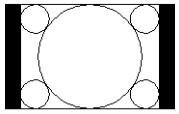
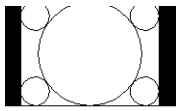
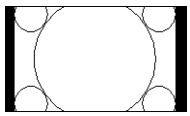
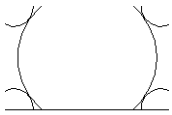
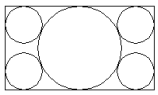
Act Conv

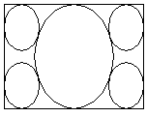
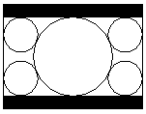
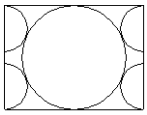
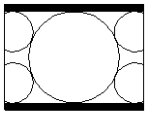
Description: This is the type of (aspect ratio) conversion the receiver will perform based on what you have selected. This is read-only.

Refer to the following table for the conversions performed by the receiver based on your selection, and the effect on the picture displayed by the receiver in each case (without Auto AFD).

Stream	TV A/R	Conversion	Act Conv	Description	Image
4:3	4:3	None	None	Normal Picture	 4:3
4:3	4:3	Auto	None	No conversion	
4:3	4:3	16:9 L/B	None	Conversion is not possible. Normal picture.	
4:3	4:3	4:3 CCO	None	Conversion is not possible. Normal picture.	

Stream	TV A/R	Conversion	Act Conv	Description	Image
4:3	4:3	4:3 P/B	None	Conversion is not possible. Normal picture.	
4:3	4:3	14:9	None	Conversion is not possible. Normal picture.	
4:3	4:3	16:9 SCALE	None	Conversion is not possible. Normal picture.	
4:3	16:9	None	None	Picture is short & fat.	 4:3 Stretch
4:3	16:9	Auto	4:3 P/B	Uses 4:3 P/B.	 4:3 PB
4:3	16:9	16:9 L/B	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 CCO	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 P/B	4:3 P/B	4:3 picture is centered in a pillar-style box.	 4:3 PB
4:3	16:9	14:9	14:9	Compromises some up-sampling. Some black bars and cropping are visible.	 14:9
4:3	16:9	16:9 SCALE	16:9 SCALE	Vertically up-samples the centre of the 4:3 picture and crops the top and bottom of the screen.	 16:9 FH
16:9	16:9	None	None	Normal	 16:9

Stream	TV A/R	Conversion	Act Conv	Description	Image
4:3	4:3	4:3 P/B	None	Conversion is not possible. Normal picture.	
4:3	4:3	14:9	None	Conversion is not possible. Normal picture.	
4:3	4:3	16:9 SCALE	None	Conversion is not possible. Normal picture.	
4:3	16:9	None	None	Picture is short & fat.	 4:3 Stretch
4:3	16:9	Auto	4:3 P/B	Uses 4:3 P/B.	 4:3 PB
4:3	16:9	16:9 L/B	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 CCO	None	Conversion is not possible. Picture appears short and fat.	
4:3	16:9	4:3 P/B	4:3 P/B	4:3 picture is centered in a pillar-style box.	 4:3 PB
4:3	16:9	14:9	14:9	Compromises some up-sampling. Some black bars and cropping are visible.	 14:9
4:3	16:9	16:9 SCALE	16:9 SCALE	Vertically up-samples the centre of the 4:3 picture and crops the top and bottom of the screen.	 16:9 FH
16:9	16:9	None	None	Normal	 16:9

Stream	TV A/R	Conversion	Act Conv	Description	Image
16:9	16:9	Auto	None	No conversion. Normal picture.	
16:9	16:9	16:9 L/B	None	Conversion is not possible. Normal picture.	
16:9	16:9	4:3 CCO	None	Conversion is not possible. Normal picture.	
16:9	16:9	4:3 P/B	None	Conversion is not possible. Normal picture.	
16:9	16:9	14:9	None	Conversion is not possible. Normal picture.	
16:9	16:9	16:9 SCALE	None	Conversion is not possible. Normal picture.	
16:9	4:3	None	None	Picture appears tall and thin.	 16:9 Compressed
16:9	4:3	16:9 L/B	16:9 L/B	Vertically down-samples the picture and applies black bars at the top & bottom of the screen.	 4:3 LB
16:9	4:3	4:3 CCO	4:3 CCO	Horizontally up-samples the centre portion of the picture to fill the 720.	 4:3 Crop
16:9	4:3	4:3 P/B	None	Conversion is not possible. Picture appears tall and thin.	
16:9	4:3	14:9	14:9	Compromises some up-sampling. Some black bars and some cropping are visible.	 14:9
16:9	4:3	16:9 SCALE	None	Conversion is not possible. Picture appears tall and thin.	

Note: Active Format Descriptor (AFD) - normally it is necessary to set both the TV Aspect Ratio and Conversion to correctly display the video program on the TV system. The Auto AFD option enables the receiver output to automatically match the display format of the video program to the TV system based on specific (uplink) program information carried in the transport stream. In this case, the receiver performs the conversion based on the TV Aspect Ratio setting combined with the program-specific uplink information to provide the "best fit" for display of the program material on the TV. This feature is primarily used in 16:9 and 14:9 (wide screen) applications.

WSS Mode

Description: This is the Wide Screen Signalling output mode. It is used to select how the receiver affects PAL WSS when it is present in the VBI.

Parameters: Auto, Suppress or Passthrough. The table below describes each of the options. The default is Auto.

WSS Mode	Description
Passthrough	Passes WSS (unmodified, as received by the D9854 receiver) on VBI LIne 23 when present
Auto:Create	Creates WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Auto:Modify	Modifies WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Suppress	Disables Line 23 VBI processing. WSS is not output on line 23.

WSS Status

Description: This indicates the current value of PAL WSS in VBI line 23. If VBI line 23 is not present, this field is blank. If PAL WSS is present on VBI line 23, the receiver interprets the data and displays the information in this field. In WSS Auto mode, this field indicates the modified value received for aspect ratio conversion.

Parameters: Possible displayed status messages are: 4:3 f/f (full format), 14:9 L/B (letter box) Centre, 14:9 L/B Top, 16:9 L/B Centre, 16:9 L/B Top, 16:9 L/B Centre, 14:9 F/F Centre, 16:9 f/f, Undefined value.

AUDIO

Aud#

Description: This is the audio output number to which all settings on the two audio menus will apply.

Parameters: 1 or 2. When you change this option on one of the Audio Menus, it changes on the other as well. The two audio (Aud#) menus allow you to configure the two balanced audio outputs on the rear panel (Audio 1 and Audio 2), known in the receiver as Aud1 and Aud2, respectively.

Stereo/Mono

Description: This setting configures how audio received on the audio input is handled.

Parameters: Stereo (Left and Right are passed directly through to Left and Right), R-MONO (Right is passed to both the Left and Right), L-MONO (Left is passed to both the Left and Right), and Mixed (Left is passed to both the Left and Right, and Right is passed to both the Left and Right).

AC3 Compression

Description: This is only applicable if the received signal is Dolby Digital (AC-3). This specifies the Dolby Digital (AC-3) Compression range of the received audio.

Parameters: Line Mode, Custom 1, Custom 0 or RF Mode. RF Mode is recommended for analog cable modulators.

Left (dB)

Description: This is the volume adjustment for the Left audio channel.

Parameters: -6.0 dB to +6.0 dB. Any value can be entered with the numeric keypad (in the appropriate range), but the UP and DOWN arrows will make increments/decrements at 0.5 dB steps.

Right (dB)

Description: This is the volume adjustment for the Right audio channel.

Parameters: -6.0 dB to +6.0 dB. Any value can be entered with the numeric keypad (in the appropriate range), but the UP and DOWN arrows will make increments/decrements at 0.5 dB steps.

DDP

Description: Sets the Dolby Digital Plus output mode. If **Trans** is selected, it will transcode to Dolby Digital (AC-3) audio output. If **Passthrough** is selected and the bitrate is less than 1536 kbps (48 Khz), passthrough is performed and Dolby Digital Plus compressed out is received. If **Passthrough** is selected and the bitrate is more than 1536 Kbps, transcoding will be performed. This setting affects only the AES-3id and SDI outputs.

Note: Dolby Digital Plus is only available on Audio 1. Ensure that the Aud# is set to Aud1.

Note: Ensure that the Digital Out Pref is set to Compressed for digital passthrough. Otherwise, only decoded PCM will be available. This parameter has no effect if the audio source is not Dolby Digital Plus.

Parameters: Trans (Transcoded) or Pass (Passthrough).

PMT Source

Description: Selects the PMT source for the audio channel.

Parameters: None, AUDI to AUD64.

Note: The Web GUI supports AUD1 to AUD4 only.

Digital Out Pref

Description: This sets the output preference for the SDI output or AES-3id output.

Parameters: PCM Samples or Compressed.

Mode	Description
PCM Samples	If the audio source is MPEG Layer II format, the output will be routed to the SDI output as PCM.
Compressed	If the audio source is AES compressed, the output will routed to the AES-3id output, compressed.

CAPTIONS

Preferred Mode

Description: This is the mode of closed-captioning to use, there are multiple in the stream.

Parameters: Auto, SA Custom, EIA 708, DVS 053, Type 3, DVS 053 Type 4 SA, DVS 053 Type 4 ATSC, Reserved or DVS 157. The default is Auto.

Note: SA Custom is not supported when telecine video coding is enabled.

Actual Output

Description: This is the actual caption mode used. This is read-only.

Parameters: Auto, SA Custom, EIA 708, DVS 053, Type 3, DVS 053 Type 4 SA, DVS 053 Type 4 ATSC, Reserved or DVS 157.

VBI

WSS Mode

Description: This is the Wide Screen Signalling output mode. It is used to select how the receiver affects PAL WSS when it is present in the VBI.

Parameters: Passthrough, Auto:Create, Auto:Modify, and Passthrough. The table below describes each of the options. The default is Auto.

WSS Mode	Description
Passthrough	Passes WSS (unmodified, as received by the D9858 transcoder) on VBI Line 23 when present.
Auto:Create	Creates WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Auto:Modify	Modifies WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Suppress	Disables Line 23 VBI processing. WSS is not output on line 23.

WSS Stat

Description: This indicates the current value of PAL WSS in VBI line 23. If VBI line 23 is not present, this field is blank. If PAL WSS is present on VBI line 23, the receiver interprets the data and displays the information in this field. In WSS Auto mode, this field indicates the modified value received for aspect ratio conversion.

Parameters: Possible displayed status messages are: 4:3 f/f (full format), 14:9 L/B (letter box) Centre, 14:9 L/B Top, 16:9 L/B Centre, 16:9 L/B Top, 16:9 L/B Centre, 14:9 F/F Centre, 16:9 f/f, Undefined value.

VITS PAL Line 17, 18, 330, 331

Description: Select whether to enable or disable Vertical Interval Test Signal on PAL Lines 17, 18, 330, or 331.

Parameters: Enable or Disable

SDI

VII

Description: This selects whether to enable or disable the SDI V11 interface.

Parameters: Enabled, Disabled.

Audio Slot

Group, Slot <- Audio Ch

Description: This selects the audio channel grouping, and audio channels from the available audio group.

Parameters: Group: This the channel group - 1 to 4.

Slot: This is the HANC? position - 1 to 4.

Audio: This is the audio source - 1, 2.

Ch: This is the source audio channel - 1, 2.

SUBTITLES

This menu allows you to configure the type of subtitling (i.e., DVB or Imitext) displayed by the receiver, and how the receiver displays subtitling on the TV.

Op Mode

Description: This determines the mode to use to display the program subtitles.

Parameters: Off, On, DVB, or Imitext. The following table describes each of the available options.

Op Mode Selection	Description
Off	No subtitles are displayed.
On	Functions as an "Auto" setting. DVB subtitles are displayed when only DVB subtitles are transmitted on the channel, and likewise, Imitext subtitles are displayed when only Imitext subtitles are transmitted on the channel. When both DVB and Imitext subtitles are available on the same channel, only DVB subtitles will be displayed.
DVB	Displays only DVB titles. For example, if DVB is selected, but both DVB and Imitext titles are being transmitted on the same channel, only DVB subtitles will be displayed.
Imitext	Displays only Imitext subtitles. For example, if Imitext is selected, but both DVB and Imitext titles are being transmitted on the same channel, only Imitext subtitles will be displayed.

Select Language By

Description: This is used to select the language type to display the subtitles.

Parameters: Language List, Language Entry, and PMT Order. The default setting is Language List. Language Entry and Language PMT Order are more applicable for advanced applications. The following table describes each of the available options and how to set them.

Select Language By Option	Description
Language List	Each subtitling PID can contain multiple languages. Use this setting to select the language from the Language List by toggling through the available selections. If Language List is selected, PMT Order and Entry fields are not used.
Language Entry	Use this setting with Entry to directly enter the language code when the language you want is not in the list. In this case enter the three-character code provided by your uplink service provider under Entry using the numeric keypad (e.g., eng for English).
PMT Order	Use this setting to select one of up to eight languages as assigned in the PMT for the tuned channel on the receiver. Toggle through the PMT Order to select the correct language within the order (i.e., First to Eighth), available from your uplink service provider.

Language List

Description: Select the language from the Language List by toggling through the available selections. If Language List is selected, PMT Order and Entry fields are not used.

PMT Order

Description: Select the correct language within the order (i.e., First to Eighth), available from your uplink service provider.

Parameters: First to Eighth.

Entry

Description: Use Language Entry with this setting to directly enter the language code when the language you want is not in the list.

Parameters: Enter the three-character code provided by your uplink service provider under Entry using the numeric keypad (e.g., eng for English).

Imitext Position

Description: This is used to set the position of on-screen subtitle text.

Parameters: Standard or Extended.

ForeGnd

Description: This is used to set the colour of Imitext subtitles only.

Parameters: Auto, Yellow and White. Auto displays text in the colour transmitted by the subtitling equipment. Yellow and White override the colour set by the uplink, and display text in the selected colour.

BackGnd

Description: This is used to set the background on which Imitext subtitles are displayed.

Parameters: Auto, Shadow, Opaque, Semi or None. The following table identifies the affect each setting has on the displayed subtitle text.

BackGnd Option	Description
Auto	Follows (i.e., same as) the uplink subtitling equipment setting.
Shadow	Applies an outline to the right side of each text character. No background box is applied to subtitles, i.e., text is visible directly on top of video.
Opaque	Applies a black box to each text character.
Semi	Applies a semi-transparent box to subtitle text.
None	No shadow or outline is applied to subtitle text.

DECODE

Decoder

Description: This selects the service to be decoded by the receiver.

Parameters: Video or Audio1 to Audio4.

Enabled

Description: Enables or disables the selected decoder.

Parameters: Yes or No.

Setup Menu: Common Interface (CI)

Structure

To view the CI menus from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key four times and the SELECT key to view the CI menu.

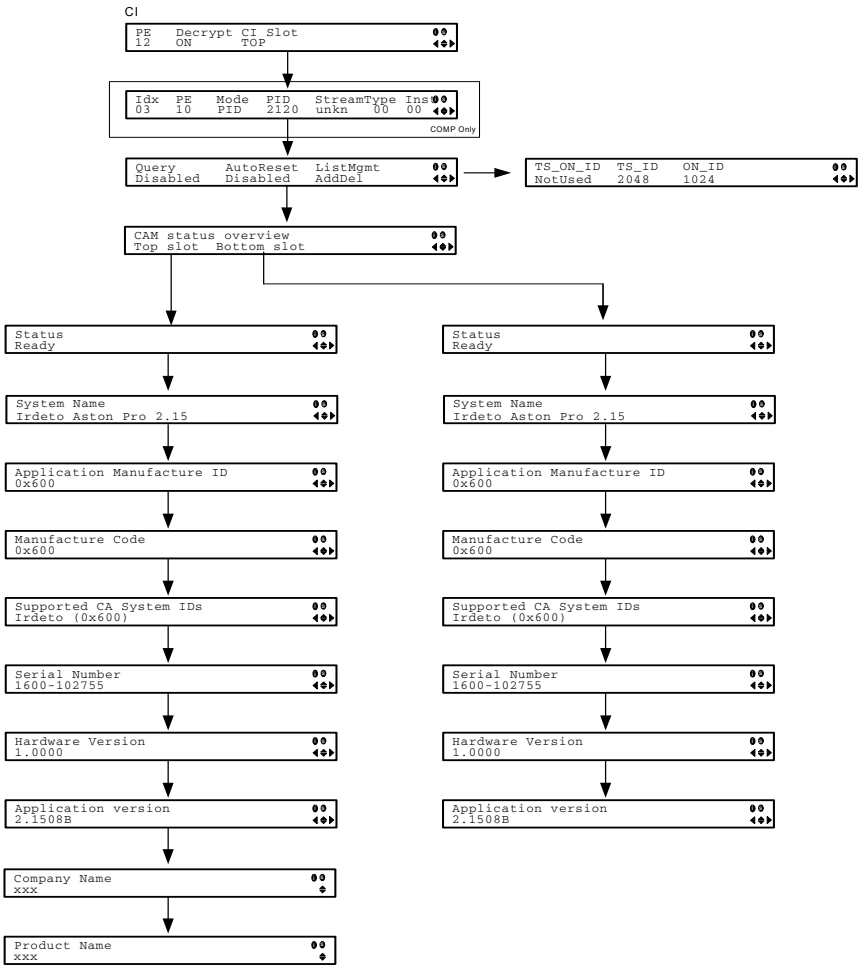
The Common Interface (CI) slots are located under the door on the front panel. They allow use of a CAM (Conditional Access Module) Smart Card to decrypt purchased programming.

Note: You must be authorized to view the programming available via the Smart Card from your service provider.

Note: CAMs must be purchased from Cisco. For a list of the supported CAMs, see **Common Interface Modules**, page 3-18.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The CI menu has the following structure:



CI

PE

Description: This selects the Program Entry to decrypt the associated program.

Parameters: PE1 to PE16

If PE1 is selected (default), Auto is automatically selected in the CI Slot parameter. The software automatically assigns the top or bottom slot that matches the stream. If PE1 is in Auto mode, the Decrypt parameter must be ON (COMP and OFF are invalid).

If you select PE2 to PE16, you can optionally select COMP for the Decrypt parameter. If you select COMP, you can customize the PID and stream type for decryption.

Decrypt

Description: Determines whether to decrypt the program selected for the PE on the selected CAM.

Parameters: ON (default), OFF, COMP (PE2 to PE16 only)

If you are configuring PE2 to PE16, you can select COMP to customize the PID or stream type to decrypt the program.

CI Slot

Description: Indicates the CI slot location of the CAM.

Parameters: Top, Bottom, Auto (PE1 only)

If you are configuring PE1, you can select Auto and the CI slot is automatically assigned to the card that matches the stream (top or bottom).

If you are configuring PE2 to PE16, you can select to decrypt the CAM located in the top or bottom slot.

COMP only

For PE1 to PE16, if you selected COMP for the Decrypt parameter, you can customize the PID or stream type to decrypt the program.

To add a record, press the **Edit** button, select Insert and define the appropriate parameters.

Note: To delete an existing record, select Delete and confirm your deletion.

There are three different methods in setting a customized record.

If you set by	Parameter Settings
PID	Set **Mode** to PID and enter **PID** number.
Stream Type	Set **Mode** to Stream, select a **Stream** type (audio, video, subtitle, ttx, or user) and enter **Inst** (instance) of the stream type. There is an additional configuration if you select user as the Stream type (see below).
Stream Type: User	Set **Mode** to Stream, **Stream** type to User, manually enter the stream code in **Type**, and then the **Inst** (instance) of the stream type.

Idx

Description: Indicates the customized record number. This is read-only.

Parameters: 1-64 (up to 32 records for each CAM).

PE

Description: Set the Program Entry to decrypt the associated program.

Parameters: 1 to 16.

Mode

Description: Set the Mode to PID if you want to enter the PID number. Set the Mode to Stream to manually customize the stream parameters.

Parameters: PID or Stream.

PID

Description: Select the program PID number. It is only used if the Mode was set to PID.

Parameters: 0 to 8192.

Stream

Description: Set the stream category if the PID value is unknown.

Set to User if you want to manually enter a stream code for the stream type.

Parameters: Aud (audio), Vid (video), Subtitle (subt), TTX, User.

Type

Description If you selected User in the Stream parameter, you can manually enter the stream type value.

Parameters: 0 to 255 bytes.

Inst

Description: Set the instance of the selected stream.

Parameters: 1 to 64.

Query

Description: Set to Enable to query the CAM prior to decryption to ensure that the program can be decrypted.

Parameters: Enabled or Disabled (default).

Auto Reset

Description: Set to Enable to automatically reset the card.

Parameters: Enable or Disabled (default).

List Mgmt

Description: Set to AddDel (default) to add or delete programs individually in the CAM.

Set to Update All to automatically update and reset all the programs each time you add or modify the programs available via the CAM.

Parameters: AddDel or Update All.

TS_ON_ID

Description: Set to Enable if you want to restrict the incoming transport stream.

If the incoming stream does not match the transport stream and original network ID specified (TS_ID and ON_ID), the program will not be decrypted.

Parameters: Enable or Disable (default).

TS_ID

Description: Specify the Transport ID.

Parameters: 0 to 65535

ON_ID

Description: Specify the Transport Original Network ID.

Parameters: 0 to 65535.

Top/Bottom Slot

CAM Status Overview

Description: View the status of the CAM that is located in the top or bottom slot.

Parameters: Top slot or Bottom slot.

Status

Description: Displays the status of the CAM.

Parameters: Ready or Not Ready.

System Name

Description: Indicates the system name of the CAM.

Application Manufacture ID

Description: Displays the factory loaded application number of the CAM.

Manufacture Code

Description: Indicates the manufacture's code.

Supported CA System IDs

Description: Displays the CA system identification name of the CAM. Some CAMs may support multiple CA system IDs.

Serial Number

Description: Indicates the unique serial number of the CAM.

Hardware Version

Description: Displays the hardware version number of the CAM.

Application Version

Description: Displays the software version number of the CAM.

Company Name

Description: Displays the company name of the CAM.

Product Name

Description: Displays the product name of the CAM.

Setup Menu: Outputs

Structure

To view the Outputs menus from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key four times and the SELECT key to view the Outputs menu.

The Outputs menu allows you to set up the rear panel control relays for alarms, cue tones and cue triggers, and the transport stream outputs, Digital Program Mapping (DPM) and transcoding.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Outputs menu has the following structure:

CUEING

Cueing Mode

Description: This sets whether the Cueing Mode is Cue Trigger or Cue Tone.

Parameters: Trigger, Tone. Cue tones are standard Dual-Tone Multi-Frequency (DTMF) tones. The tones are generated at the Cue Tone/Relay output on the rear panel of the receiver.

Cue trigger refers to open-collector pins which can be generated at the Cue Tone/Relay output on the rear panel of the receiver.

Trigger Polarity

Description: This sets the Trigger Polarity.

Parameters: High, Low. When High, an active signal sent by the uplink results in a floating or open collector. An inactive signal results in a GND signal. When Low, the reverse of High is true.

Repeat

Description: This parameter specifies how many consecutive tone sequences are generated.

Parameters: 1, 2, 3. The default is 3. The other values are provided when a scenario demands repetition to ensure that the ad-insertion equipment receives the signal.

Tone (ms)

Description: This is the duration of the tone in milliseconds.

Parameters: 0 to 80. The default is 40.

Silence (ms)

Description: The is the silence duration between the tones in milliseconds.

Parameters: 0 to 80. The default is 40.

Seq#

Description: This is the tone sequence to use. The receiver supports up to 16 tone sequences.

Parameters: Press Select and then use the up/down arrows to move through all 16 available sequences, pressing Select again to choose the one you want. Any edits you make to State, Tones, Mode and Delay will be applied to that Seq#.

State

Description: This sets the state.

Parameters: Enabled, Disabled. When disabled, no cue tone is output.

Tones

Description: These are the cue tone digits used in your network.

Parameters: 1 to 999.

Mode

Description: This option specifies what to transmit in the sequence.

Parameters: * for Start Tone, # for End Tone, and */# for transmitting the Start Tone and then the End Tone after waiting the specified delay time in the option below.

Delay (sec)

Description: This is the delay, in seconds, that is sent when ***/#** is used in the Mode option above.

Parameters: 1 to 255. The default is 30.

Relay Mode

Description: This relay can be programmed to respond to an Alarm state, or the state of one of the eight cue trigger pins. The response is generated at the Cue Tone/Relay output on the rear panel of the receiver.

Parameters: Alarm, Trigger.

The following table shows what the possible field settings are and their relationship to the receiver output.

Relay Mode	Condition	Relay Contact NC - C	Relay Contact C - NO
Alarm	Unit Power Off	Open	Close
	Alarm State	Open	Close
	No Alarm	Close	Open
Trigger	Active (selected in PNC)	Close	Open
	Inactive	Open	Close

Cue Trigger Bit

Description: Select one of the eight Cue Trigger Bits corresponding to the Cue Trigger port pins.

Parameters: 1 to 8.

Cue Tone Test

Description: Specify the cue tone digits you want to test locally.

Parameters: 000 to 999.

Mode

Description: Specify what to test in sequence.

Parameters: * for Start Tone and # for End Tone.

Run Test

Description: Verifies the cue tone test according to the Cue Tone Test and Mode set above.

Parameters: Yes or No.

M1/M2

M1 Port Type

Description: This option allows the operator to set the output format for the M1 port.

Parameters: ASI, SDI.

M2 Port Type

Description: This option allows the operator to set the output format for the M2 port.

Parameters: ASI, SDI.

TS OUT

ASI

Name

Description: This is the name assigned to the transport output for ease of reference.

Parameters: 20-character string.

Rate Control

Description: This is the DPM output rate control (in Mbps) when using an RF input source.

Parameters: Auto, User. The table below describes the affect each of the settings has on the output bit rate.

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

User Rate (Mbps)

Description: This parameter controls the output rate. It is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI. Note that output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

Parameters: 0 to 213 Mbps.

Output Mode

Description: This selects the DPM output mode.

Parameters: No Output, Passthrough, Service Chans Only, MAP Passthrough, MAP Svc Chans Only or Full DPM Control.

Output Mode	Description
No Output	No ASI output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Chans Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Svc Chans Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM settings on the DPM: ASI or MOIP1 menus. This is a manual control setting.

Descramble Mode

Description: This parameter selects whether the receiver should scramble the output even if it is authorized to receive the channel.

Parameters: Scrambled, Descrambled. Default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

Insert Null Packet

Description: This parameter selects whether to insert null packets in the output stream.

Parameters: Yes, No.

MOIP1

Name

Description: This is the name assigned to the transport output for ease of reference.

Parameters: 20-character string.

Rate Control

Description: This is the DPM output rate control (in Mbps) when using an RF input source.

Parameters: Auto, User. The table below describes the effect each of the settings has on the output bit rate.

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

User Rate (Mbps)

Description: This parameter controls the output rate. It is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI. Note that output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

Parameters: 0 to 999.99999 Mbps.

Output Mode

Description: This selects the DPM output mode.

Parameters: No Output, Passthrough, Service Chans Only, MAP Passthrough, MAP Svc Chans Only or Full DPM Control.

Output Mode	Description
No Output	No MPEGoIP output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Chans Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Svc Chans Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM setting.

Descramble Mode

Description: This parameter selects whether the receiver should scramble the output even if it is authorized to receive the channel.

Parameters: Scrambled, Descrambled. Default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

Insert Null Packet

Description: This parameter selects whether to insert null packets in the output stream.

Parameters: Yes or No.

Instance Name

Description: This is the DPM output instance name.

Parameters: Up to 31 characters.

MOIP

Description: Selects the transport protocol to be used for the output stream.

Parameters: RTP or UDP.

Send SAP

Description: This selects whether to send Session Announcement Protocol messages.

Parameters: Yes or No.

SAP ID

Description: This is the SAP identifier (ID)/string.

Parameters: Up to 49 characters.

DestAddr

Description: Enter the multicast destination IP address.

Parameters: 0 to 255 for each of the four fields in the format ###.###.###.###. For example, 225.1.1.1.

UDPPort

Description: This selects the destination port number.

Parameters: 1 to 65535.

Note: If you selected RTP for MOIP, you must select an even destination port number.

SrcPort

Description: This selects the source UDP port number.

Parameters: 0 to 65535.

TS/IP

Description: This selects the maximum number of transport packets per IP packet.

Parameters: 1 to 7.

Min IP/s

Description: This selects the minimum number of transport packets per IP packet.

Parameters: 0, 2 to 1000.

PCR@IP Start

Description: This selects whether to always transmit a new Ethernet Packet when a new Program Clock Reference (PCR) arrives.

Parameters: Yes or No.

MGMT Port Mode, DATA Port Mode

Description: This selects the Management and Data MPEGoIP modes.

Note: If No Output was selected for MOIP1 Output Mode, updates to the port modes will have no affect.

Parameters: No Output, IGMP or Always Output.

MGMT Mode DATA Mode	Description
No Output	Disables the MPEGoIP interface.
Always Output	Always outputs data on the port. **Note:** You cannot select Always Output for both ports simultaneously.

SAP Multicast Address

Description: This is the SAP destination IP address.

Parameters: 0 to 255 for each of the four fields in the format ###.###.###.###.

PCR Addition

Description: This selects whether to add a PCR to the output stream.

Parameters: Yes or No.

Setup Menu: Outputs: TS Out: DPM

Structure

To view the DPM menu from the TS Out menu, press the RIGHT arrow key twice. The DPM menu provides access to functionality associated with Global and ASI and MOIP1 outputs.

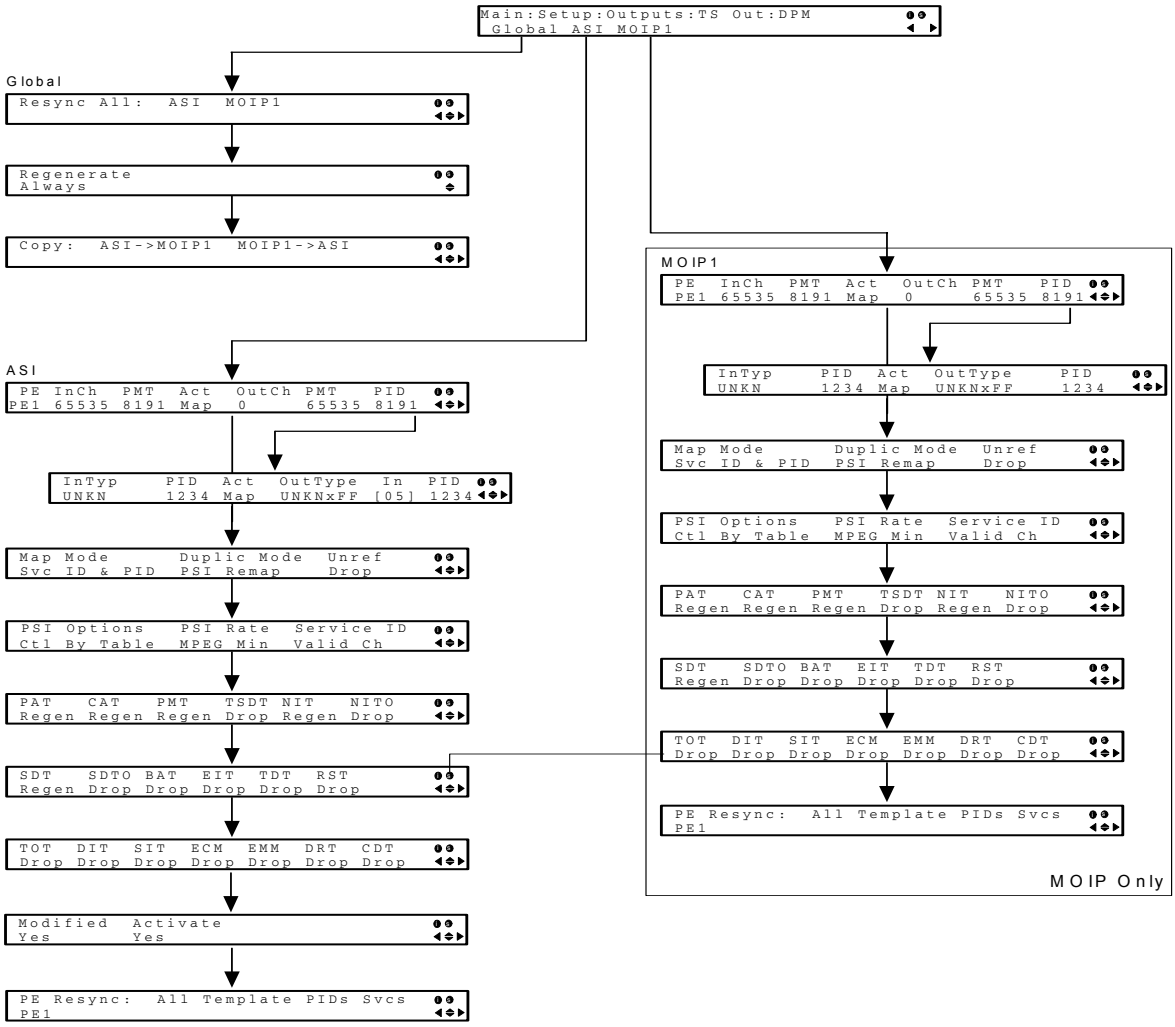
The DPM menu allows you to groom functionality on a program basis where individual service PID modifications are provided on a limited scale.

Use the digital program mapping features to:

- configure the transport output bit rate
- configure the output mode for a program entry
- configure the service and PID output settings in a program entry

Note: Any changes made to the ASI and MOIP1 DPM values will automatically change the TS Output mode for ASI and MOIP to Full DPM Control.

The DPM menu has the following structure:



Setup Menu: Outputs: TS Out: DPM

GLOBAL

Resync All:

Description: This resynchronizes all DPM output with the PMT data for all program entries.

Parameters: ASI or MOIP1.

Regenerate

Description: This selects whether to regenerate the PSI tables.

Parameters: Always or As Needed (only if the content has changed).

Copy:

Description: This copies all DPM data from either the ASI output to the MOIP1 output (MPEG over IP) or from the MOIP1 output to the ASI output depending on your selection.

Parameters: ASI->MOIP1 or MOIP1->ASI.

ASI/MOIP1

PE

Description: This selects the DPM Program Entry to view/modify.

Parameters: 1 to 16.

InCh

Description: Displays the input channel of the current PE.

Parameters: 1 to 65535.

PMT

Description: This is the input PMT. This value is only to map to the output PMT if the PE Action is set to MAP.

Parameters: 1 to 8192.

Act

Description: Selects the DPM program action for the PE.

Parameters: Pass, Map or Drop. Default is Pass.

OutCh

Description: This selects the DPM output channel you want to map to the input channel (InCh). This value is only used if the PE Action is set to MAP.

Parameters: 0 to 65535.

PMT

Description: This is the DPM output PMT/service ID, which is the same as the input PMT if it is present. the This value is only used if the PE Action is set to MAP

Parameters: 0 to 65535.

PID (Press Select to view this level)

InTyp

Description: This indicates the input program stream category/service type. This value is read-only.

PID

Description: This indicates the input program PID. This value is read-only. It is only used if the PID Action is set to Map.

Parameters: 1 to 8190.

Act

Description: This selects the DPM action for the PID associated with the PE.

Parameters: Pass, Drop or Map.

OutType

Description: This selects the output program stream category/service type. This value is only used if the PID Action is set to MAP.

Parameters: UNKN, CDT, LSDT, DATA, TTX, MPE, DPI, VBI, SUBT, AUD, VID, PCR or INVL.

In

Description: This selects the output stream instance.

Parameters: 1 to 64.

PID

Description: This selects the output program PID.

Parameters: 1 to 8192.

Map Mode

Description: This parameter selects the DPM map mode.

Parameters: Svc ID, Svc ID & PID.

Map Mode	Description
Svc ID	The elementary PIDs are not changed. Channels are remapped by changing their PSI references. When this mode is selected, PE detailed PID mapping cannot be edited.
Svc ID & PID	Channels and the elementary service PIDs can be mapped.

Duplic Mode

Description: This selects the method of DPM program duplication, which modifies the PSI to duplicate a program and its content. This parameter is only used if Map Mode is set to Svc ID & PID.

Parameters: PSI Remap or Pkt Copy. Pkt Copy is recommended for most applications.

Duplic Mode	Description
PSI Remap	Every input PID can be mapped to one output PID. If PID mapping conflicts exist, DPM will use the Precedence Rule to decide which output PID to use. All PMTs using the input PID will be updated to reference the output PID specified by the winner.
Pkt Copy	An input PID can be mapped to multiple output PIDs. The PID will be duplicated as many times as needed (up to a certain hardware limitation).

Unref

Description: This selects the DPM action to use for unreferenced content. Unreferenced content is the remainder of the transport that is not filtered by the program entries.

Parameters: Drop All or Pass All. Default is Drop All.

Output	Unref
ASI	Pass, Drop
MOIP1	Pass, Drop

PSI Options

Description: This option allows the operator to specify which PSI tables to include in the program/output stream.

Parameters: Pass All, Drop All or Control by Table.

PSI Options	Description
Pass All	Transmits the incoming PSI Tables as is; does not modify the content and rate.
Drop All	Does not transmit any PSI Tables.
Ctl By Table	The operator can enter the Tables menu to select the output mode for each table. The default table selections will be all pass, and only with CDT dropped.

PSI Rate

Description: This selects the DPM regeneration rate. This applies the PowerVu rates (consistent with the uplink). This parameter is only used if Remapping Control is set None.

Parameters: Auto, MPEG Min or SA Std.

PSI Rate	Description
Auto	Matches the generated PSI tables' output rate as the incoming rate.
MPEG Min	Transmits the generated PSI tables on the longest intervals that are allowed by MPEG standard.
SA Std	Transmits the generated PSI tables based on PowerVu standard intervals.

Service ID

Description: This parameter specifies whether the receiver should always generate PSI tables for the Mapped PE even if the selected input channel is not available, or for only valid service channels/IDs.

Parameters: Valid Ch, All Ch.

Svc ID	Description
Valid Ch	Only transmits the PSI tables for the mapped program if the program exists on the input stream.
All Ch	Transmits the PSI tables for the mapped program even if the program does not exist in the input stream. All Ch is only valid if the PAT, NIT, SDT and PMT are set to Regenerate.

PAT, CAT, PMT, TSDT, NIT, NITO, SDT, SDTO, BAT, EIT, TDT, RST, TOT, DIT, SIT, ECM, EMM, DRT, CDT

Description: Selects the tables which will be passed, dropped, regenerated, or passed with rate control (PwRC) from the output.

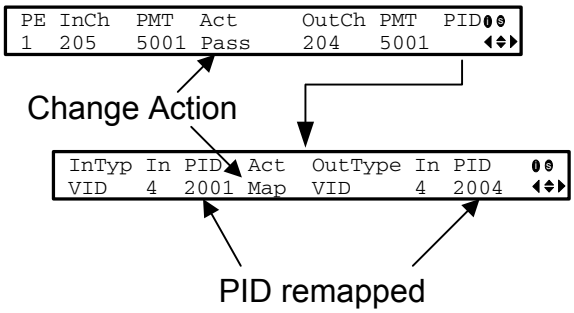
Setting	Mode Options	Description	Default
PAT	Pass, Drop, Regen	Program Allocation Table	Pass
CAT	Pass, Drop, Regen	Conditional Access Table	Pass
PMT	Pass, Drop, Regen	Program Map Table	Pass
TSDT	Pass, Drop	Transport Section Description Table	Pass
NIT	Pass, Drop, Regen, PwRC	Network Information Table	Pass
NITO	Pass, Drop, PwRC	Network Information Table - Other	Pass
SDT	Pass, Drop, Regen, PwRC	Service Description Table	Pass
SDTO	Pass, Drop, PwRC	Service Description Table - Other	Pass
BAT	Pass, Drop, PwRC	Bouquet Allocation Table	Pass
EIT	Pass, Drop	Event Information Table	Pass
TDT	Pass, Drop	Time-Date Table	Pass
RST	Pass, Drop	Running Status Table	Pass
TOT	Pass, Drop	Time Offset Table	Pass
DIT	Pass, Drop	Discontinuity Information Table	Pass
SIT	Pass, Drop	Selection Information Table	Pass
ECM	Pass, Drop	Encrypted Control Message	Pass

Setting	Mode Options	Description	Default
EMM	Pass, Drop	Entitlement Management Message	Pass
DRT	Pass, Drop	Disaster Recovery Table	Pass
CDT	Pass, Drop	Code Download Table	Pass

Setting Up Digital Program Mapping (DPM)

To set up DPM:

1. Verify that you are receiving a valid signal and that you have set up the channels that you want to pass, drop or map.
2. Go to the Setup: Outputs, TS Out: DPM: Global menu and select **Resync All** for the selected output, ASI or MOIP1. This copies the input services PIDs to the remapped output service PIDs.
3. Go to Setup: Outputs: TS Out: DPM: ASI, and select the PE containing the channel you want to configure.
4. Set the **Act** for the selected PMT to either **Pass**, **Drop,** or **Map** depending on the action desired.
5. Use the RIGHT arrow key to move to the right and select PID to display the detailed menu level.
6. Configure the input to output channel mapping. Video and PCR can be output on the same PID or different PIDs. If output on the same PID, they will appear identical to the input. The example below shows the PMT passed, but the services PIDs remapped.



Note: If the parameters cannot be saved, the problem may be that the incorrect Map Mode has been selected. Ensure that Svc ID & PID is selected when remapping PIDs, otherwise a message such as “Bad configuration data” will be displayed and you will need to change the parameters to obtain the correct output.

7. Go to Setup: Outputs, TS Out: ASI, and set the **Output Mode** to **Full DPM Control**. Also, if necessary set the Descramble Mode according to whether the program is to be Scrambled or Descrambled for downstream viewing/ monitoring.

8. On the same menu, set the following parameters:

Parameter	Description
Map Mode	Svc ID & PID
Duplic Mode	Pkt Copy
Unref	Drop
PSI Options	Ctl By Table
PSI Rate	Any
Svc ID	Any

9. Set the table parameters as follows:

Parameter	Description
PAT	Regen
CAT	Regen
PMT	Regen
TSDT	Drop
NIT	Regen or Drop
NITO	Drop
SDT	Regen
SDTO	Drop
BAT	Drop
EIT	Drop
TDT	Pass
RST	Pass
TOT	Pass
DIT	Pass

Parameter	Description
SIT	Pass
ECM	Drop
EMM	Drop
DRT	Drop
CDT	Drop

10. Press MENU three times to exit the TS Out menu and save the data. If the changes cannot be saved/made, a message will be displayed indicating "Bad configuration data". The following options are available: Abandon, Exit or Return. Select Return to re-enter the parameter.

    Note: When remapping an input program channel to an output channel, ensure that the PIDs are mapped to different PIDs to avoid PID collisions.

PE Resync: All, Template, PIDs, Svcs

Description: Each PE output can be synchronized to its input according to one of four output modes.

Parameters: Services only (Svcs), PIDS only (PIDs), using a Template or All (Services and PIDS).

Synchronizing Output Services

To synchronize the output to the input Services Only:

This operation synchronizes the inputs to the outputs according to the service assignments only. This is useful when you already have PID assignments set for the services but want to ensure that the services are mapped correctly.

1. On the DPM menu, map the output services as desired.
2. Select PE Resync: Svcs. The receiver will synchronize the PE output according to the available input services only, and ignore the input to output service PID mapping.

To synchronize the output to the input PIDs only:

This operation synchronizes the inputs to the outputs according to the PID assignments only. This is useful when you have already have the services set up but want to synchronize to the incoming PIDs.

1. On the DPM menu, map the output services as desired.
2. Select PE Resync: PIDs. The receiver will synchronize the PE output according to the input PIDs only, and ignore the service assignment categories/names.

To synchronize the output to All (Services and PIDs):

This operation synchronizes the inputs to the outputs of the current PMT according to the service assignments and then the PID assignments. This is similar to a sample and hold function.

1. On the Detailed Program Mapping Active menu, map the outputs services as desired.
2. Select PE Resync: All. The receiver will synchronize the PE output according to the services and then the PIDs assigned to each service.

To synchronize the output to a Template:

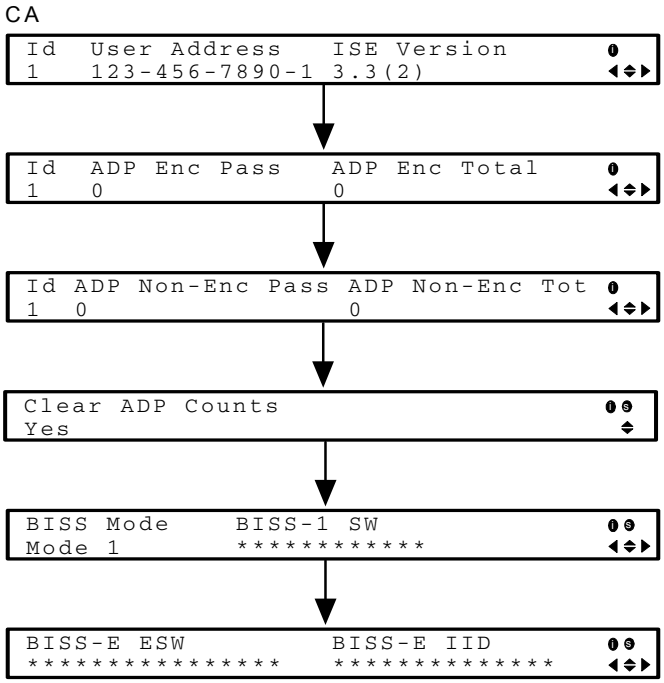
Using a template allows you to preset the input to output mapping of a PE according to the preset template. This is helpful in preconfiguring any number of PEs for future use.

Setup Menu: CA

CA Menu

To view the CA menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key six times and the SELECT key to view the CA menu.

The CA menu provides information about the ISE, the status of the ADP transmission, and allows you to set the BISS mode and session words available from your service provider. The CA menu has the following structure:



CA

Id

Description: This is the ISE number.

Parameters: 1.

User Address

Description: Indicates the ISE User Address.

Parameters: 14 hexadecimal characters.

ISE Version

Description: Indicates the ISE version number.

Parameters: 7 characters.

ADP Enc Pass

Description: Indicates the current Encrypted Addressed Data Packet Count. This count indicates the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

ADP Enc Total

Description: Indicates the total number of current Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

ADP Non-Enc Pass

Description: Indicates the current Non-Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

ADP Non- Enc Total

Description: Indicates the current Non-Encrypted Addressed Data Packet Count. These counts indicate the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Non-Enc Pass and ADP Non-Enc Total numbers should be identical.

Clear ADP Counts

Description: To help the operator make accurate analyses of the receiver's functionality, the ADP Enc Pass, ADP Enc Total, ADP Non- Enc Pass and ADP Non-Enc Total numbers can be cleared by using this feature. These same values are also reset whenever the receiver is turned on, reset or power-cycled.

Parameters: Yes, No.

BISS Mode

Description: This is used to set the Basic Interoperable Scrambling System (BISS) mode for the receiver.

Parameters: Mode 1 or Mode E.

BISS-1 SW

Description: This used to set the BISS Mode 1, odd and even session words.

Parameters: You can enter the fixed 12-character Session Word (SW). Once entered it cannot be viewed, only displayed as asterisks (*).

Contact your program provider for the respective session word and/or injected ID.

BISS-E ESW, BISS-E IID

Description: This used to set the BISS Mode E, odd and even session words.

Parameters: You can enter the 16-character Encrypted Session Word (ESW) and the 14-character Injected ID. Once entered, neither of these values can be viewed, only displayed as asterisks.

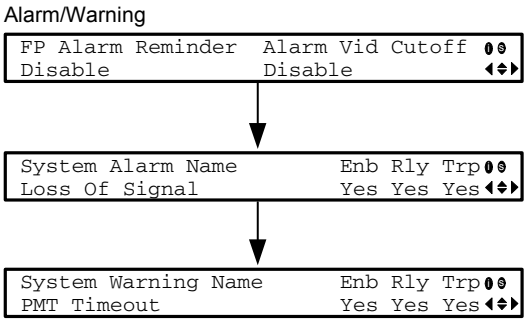
Contact your program provider for the respective session word and/or injected ID.

Setup Menu: Alarm/Warning

Structure

To view the Alarm/Warning menu from the Main menu, press the RIGHT arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key six times and the SELECT key to view the Alarm/Warning menu.

The Alarm/Warning menu allows to you to browse the active alarms and warnings, and set whether the output will be disabled in the event of an alarm. This menu has the following structure:



ALARM/WARNING

FP Alarm Reminder

Description: When this function is enabled, the highest priority alarm flashes on the LCD display for a two-second interval every 10 seconds. The alarm will continue to flash periodically until it is either cleared or the function is disabled.

Parameters: Enable or Disable.

Alarm Vid Cutoff

Description: Sets whether the video output is cut off if any enabled alarm is active on the receiver. When video is cut off, there will be no horizontal or vertical synchronization on the output. This is useful for downstream redundancy switching by detecting a loss of video signal.

Note: This function also exists under Setup: Services: Video.

Parameters: Enable or Disable. The default is Disable.

System Alarm Name

Description: Displays a list of the alarm/fault messages. You can scroll through the list using the UP and DOWN Arrow keys.

Parameters: Enable - Yes, No. When set to Yes, the alarm message will be reported. When set to No, the fault won't be reported and the alarm relays will not be triggered or change state.

Note: Enable must be set to Yes for the Relay and Trap settings to be functional.

Rly - Yes, No. When set to Yes, the rear panel alarm relay will be triggered to enable external equipment connected to the alarm port. Trp - Yes, No. When set to Yes, the SNMP trap message will be sent to the trap destination; otherwise the fault message will be ignored.

"No*" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.

System Warning Name

Description: Displays a list of the warning messages. You can scroll through the list using the UP and DOWN Arrow keys.

Parameters: Enable - Yes, No. When set to Yes, the warning message will be reported. When set to No, the fault won't be reported.

Note: Enable must be set to Yes for Relay and Trap messages reporting to be functional.

Rly - Yes, No. When set to Yes, the rear panel alarm relay will be triggered to enable external equipment connected to the alarm port.

Trp - Yes, No. When set to Yes, the SNMP trap message will be sent to the trap destination; otherwise the warning message will be ignored.

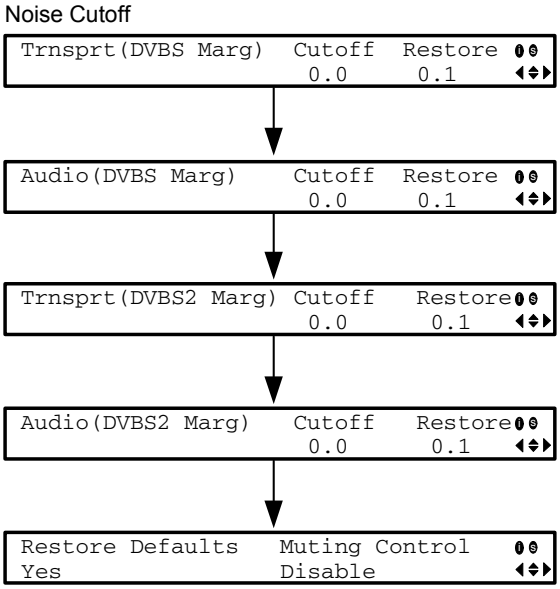
"No" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.

Setup Menu: Noise Cutoffs

Structure

To view the Noise Cutoffs menu from the Main menu, press the RIGHT Arrow key once and then the SELECT key to reach the Setup menu. Then press the RIGHT arrow key eight times and the SELECT key to view the Noise Cutoffs menu.

The Noise Cutoffs menu allows you to set the muting thresholds for both audio and video in the event of a noisy signal. This menu has the following structure:



NOISE CUTOFF

Trnsprt (DVBS Marg)/Trnsprt (DVBS2 Marg)

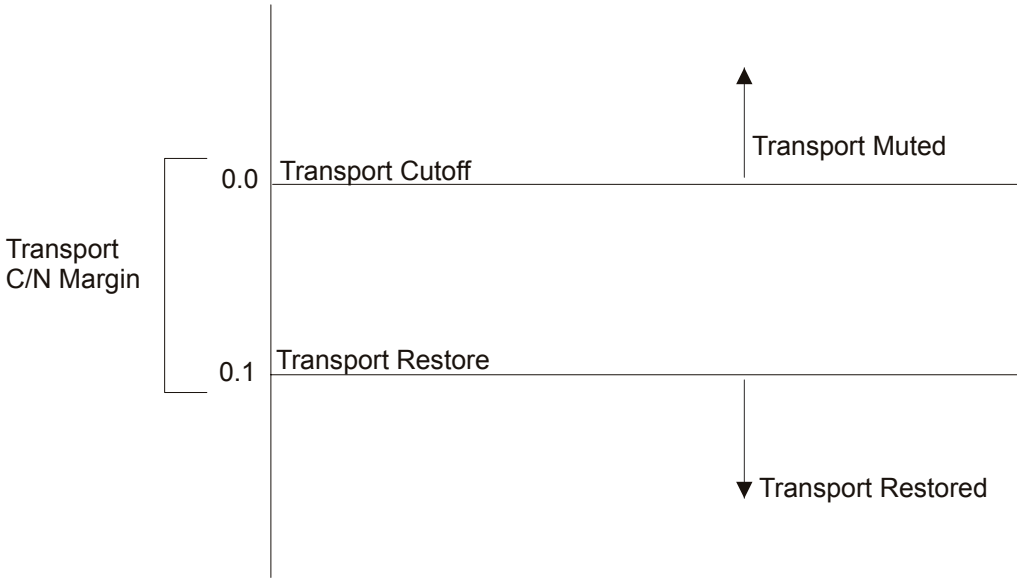
Description: This sets how the receiver reacts when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation. This allows you to set the transport C/N margin values for the receiver. The receiver uses these noise values/settings as limits during normal operation to determine whether to mute the transport in the event of a noisy signal, poor signal or no signal condition.

Parameters: Cutoff - This is the lower limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Cutoff is 0.0.

Restore - This is the upper limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Restore is 0.1.

Note: Muting Control must be set to Enable for these settings to be active.

Transport Default C/N Margin Relationship



Audio (DVBS Marg)/Audio (DVBS2 Marg)

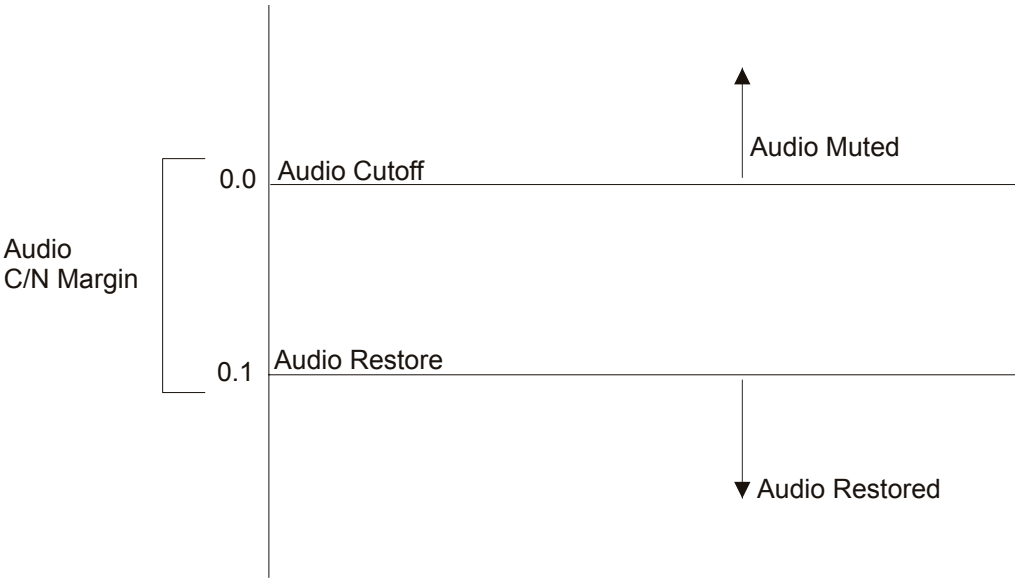
Description: This is used to set the Audio channel Cutoff and Restore C/N margin values (limits) to mute audio when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation.

Parameters: Cutoff - This is the lower limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Cutoff is 0.0.

Restore - This is the upper limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Restore is 0.1.

Note: Muting Control must be set to Enable for these settings to be active.

Audio Default C/N Margin Relationship



Restore Defaults

Description: This restores the RF options to their factory set (default) values.

Parameters: Yes, No.

Muting Control

Description: This allows you to mute the transport stream and audio in the event of an unstable signal, poor signal or no signal condition.

Parameters: Enable, Disable. The default is Enable.

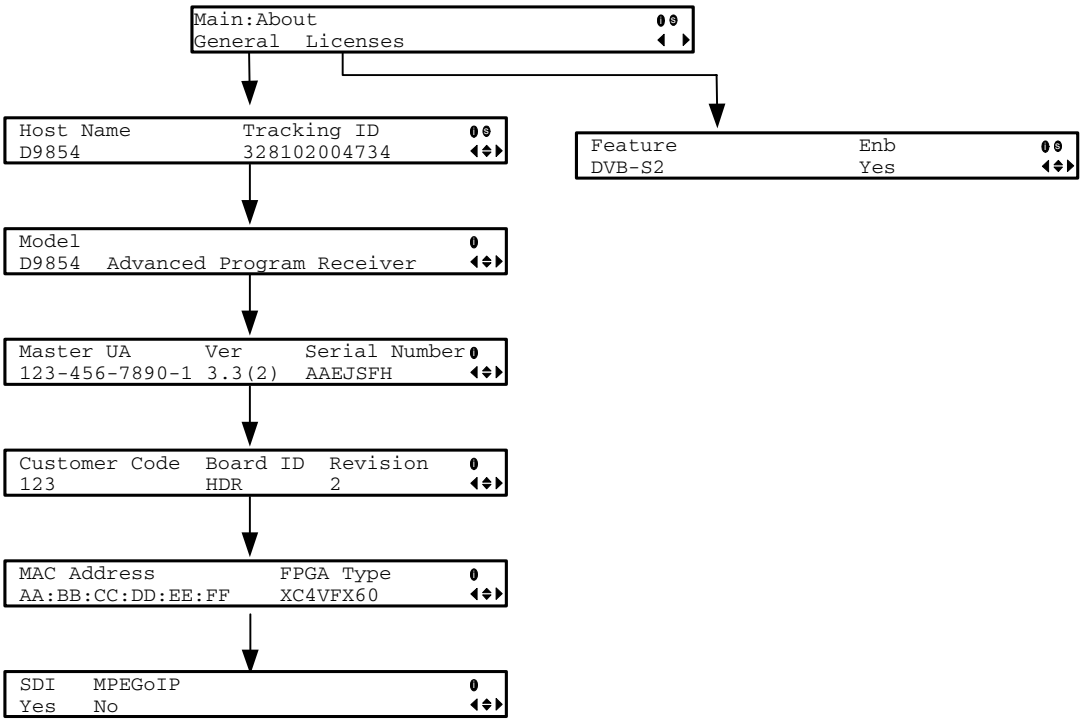
About Menu

Structure

To view the About menu from the Main menu press the RIGHT arrow key three times and then the SELECT key.

The About menu provides basic hardware information that is useful when requesting customer support from Cisco.

Each parameter is described below. The About menu has the following structure:



ABOUT

GENERAL

Host Name

Description: Select this option to change the Host ID. It is a user configurable name that appears on the Web Interface title to identify the receiver.

Tracking ID

Description: This is the unique Tracking ID number that identifies the product version.

Model

Description: Indicates the model number of the receiver.

Master UA

Description: Indicates the Master User Address (UA), which is required to request program authorization from the uplink.

Ver

Description: Indicates the unique version number of the receiver.

Serial Number

Description: Indicates the unique serial number of the receiver.

Customer Code

Description: Indicates the unique Customer Code assigned to an organization by Cisco.

Board ID

Description: Indicates the board type.

Revision

Description: Indicates the board revision number.

MAC Address

Description: Indicates the MAC address of the Ethernet port.

FPGA Type

Description: Indicates the FPGA type/number information.

SDI

Description: Indicates whether the receiver is equipped with an SDI output.

MPEGoIP

Description: Indicates whether the receiver is equipped with an MPEG over IP output.

LICENSES

Feature

Description: Displays a list of software licenses for the D9854 Advanced Program Receiver.

Parameters: HD Decode, H.264 Decode, DVB-S2, MPEGoIP Out.

Enb

Description: Indicates whether the selected software license is enabled or disabled.

Parameters: Yes or No.

Note: All software licenses are enabled for this release (temporarily). Any of these required licenses will need to be purchased from Cisco in subsequent software releases.

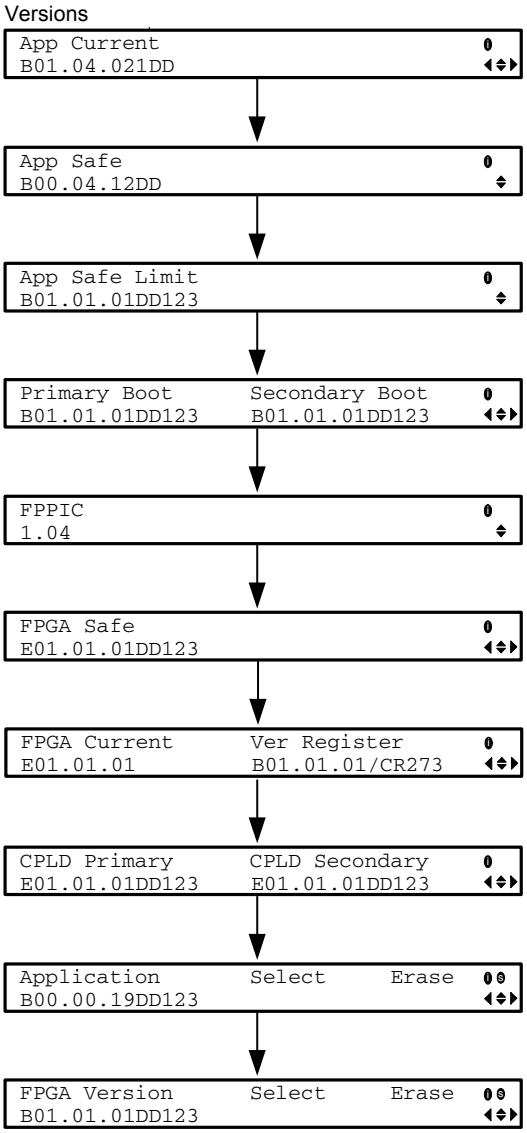
Versions Menu

Structure

To view the Versions menu from the Main menu press the RIGHT arrow key four times and then the SELECT key.

The Versions menu provides basic software information that is useful when requesting customer support from Cisco.

The menu has the following structure:



VERSIONS

App Current

Description: Indicates the currently running loaded application version number.

App Safe

Description: Indicates the factory loaded application version number.

App Safe Limit

Description: Indicates the minimum version number that can be used/ downloaded for the factory loaded application.

Primary Boot/Secondary Boot

Description: Indicates the receiver primary and secondary Boot application version numbers.

FPPIC

Description: Indicates the FP Programmable Interrupt Controller (PIC) version number.

FPGA Safe

Description: Indicates the safe limits for the Field Programmable Gate Array (FPGA) version number.

FPGA Current

Description: Indicates the current limits for the Field Programmable Gate Array (FPGA) version number.

Ver Register

Description: Indicates the release number read from the Field Programmable Gate Array (FPGA) version registers.

CPLD Primary, CPLD Secondary

Description: Indicates the primary and secondary Complex Programmable Logic Device (CPLD) version numbers.

Application, Select, Erase

Application: Select this option to choose a different application version number the next time the receiver is rebooted, or to erase a particular application version.

Select: Select this option to choose the selected Application version for the next reboot. You will be prompted to Abort or Continue.

Erase: Select this option to erase the selected Application version. You will be prompted to Abort to Continue. Select Abort to discontinue the operation or choose Continue to complete the operation.

FPGA Version, Select, Erase

FPGA Version	Select this option to choose a different FPGA application version number the next time the receiver is rebooted, or to erase a particular application version.
Select	Select this option to choose a different FPGA application version number the next time the receiver is rebooted, or to erase a particular application version. You will be prompted to Abort or Continue.
Erase	Select this option to erase the selected FPGA version. You will be prompted to Abort to Continue. Select Abort to discontinue the operation or choose Continue to complete the operation.

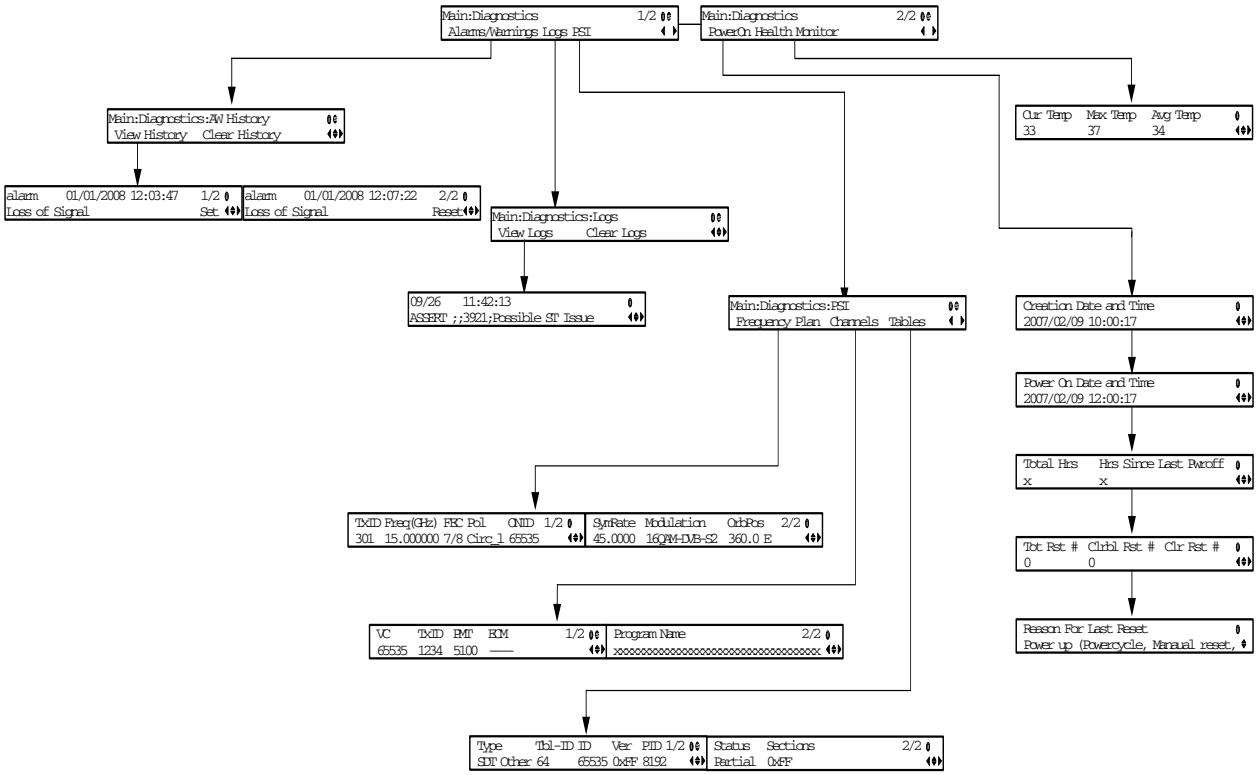
Diagnostics Menu

Structure

To view the Diagnostics menus from the Main menu, press the RIGHT arrow key five times and then the SELECT key.

For instructions on how to select and store settings, see **About the Front Panel**, page 4-2.

The Diagnostics menu has the following structure:



ALARMS/WARNINGS

AW HISTORY

View History

Description: Select this option to view the system event messages. Press SELECT to view the messages using the UP/DOWN arrow keys.

Clear History

Description: Select this option to clear any existing history information.

LOGS

View Logs

Description: Select this option to view the system log messages. Press SELECT to view the messages using the UP/DOWN arrow keys.

Clear Logs

Description: Select this option to clear any existing log history information.

PSI

Frequency Plan

This is the Frequency Plan sub-menu. You cannot make any changes here, but you can view the available frequency plans stored in the receiver. The following is a list of the expanded abbreviations:

TxID - Transport ID

Freq (GHz) - Downlink Frequency (GHz)

FEC - Forward Error Correction inner code rate

Pol - Polarity of the received signal (H, V, or Off)

ONID - Original Network ID

SymRate - Symbol Rate (Msym/s)

Modulation - Modulator constellation setting

OrbPos - Orbital Position (in degrees)

CHANNELS

Channels

This is the Virtual Channel sub-menu. You cannot make any changes here, but you can view the available channels and their settings. The following is a list of the expanded abbreviations:

VC - Virtual Channel

TxID - Transport ID

PMT - Program Map Table

ECM - Entitlement Control Message

Program Name - Name of the program

TABLES

PSI Tables

This is the Tables received sub-menu. You cannot make any changes here, but you can view the PSI tables received and their settings. The following is a list of the expanded abbreviations:

Type - Table Type (i.e., NIT, PMT, etc.)

Tbl-ID - Unique Table ID

ID - MPEG/DVB Table ID

Ver - Table Version number

PID - Program PID number

Status - Reception status

Sections - PSI tables are received in sections. This indicates the section number received. This information is useful for diagnostics/troubleshooting purposes.

POWER ON

Creation Date and Time

Description: Displays the date and time when the receiver was manufactured.

Power On Date and Time

Description: Displays the date and time when the receiver was powered up.

Total Hrs, Hrs Since Last Pwoff

Description: Displays the total numbers of hours (Total Hrs) that the receiver has been operating, and the number of hours since the last power-off (Hrs Since Last Pwoff).

Tot Rst #, Clrbl Rst #, Clr Rst

Description: Displays the total numbers of times the receiver has been restarted (Total Rst #), and the number of restarts since the last time the restart count was cleared (Clrbl Rst #).

Clear Rst # Select this option to clear/reset the Clrbl Rst # counter to 0.

Reason For Last Reset

Description: Displays the reason for the last restart, i.e., power cycle or manual reset.

HEALTH MONITOR

Cur Temp, Max Temp, Avg Temp

Description: Displays the current temperature operating temperature (Cur Temp), the maximum operating temperature (Max Temp) that has been reached, and the average operating temperature (Avg Temp).

Parameters: Degrees Celsius.

Chapter 5
Setup and Monitoring

Overview

In This Chapter

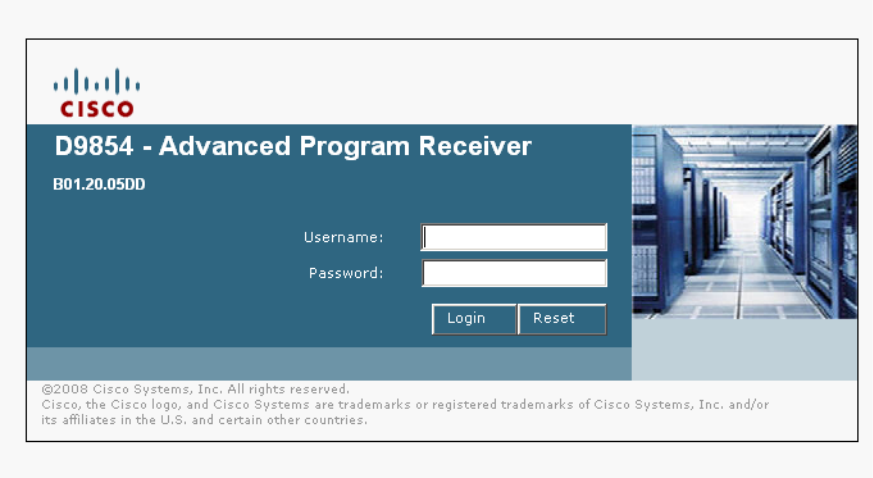
This chapter contains the following topics.

Logging On to the Web Interface

To Log on to the Web Interface

Proceed as follows to log on to the Web Interface:

1. Open MS Internet Explorer.
2. Type the IP address of the D9854 Advanced Program Receiver in the Address bar and press Enter.



3. Type the **Username** and **Password**.

   Note: The username and password are case-sensitive. The default username is **`admin`** and the default password is **`localadmin`**. If you have forgotten your username and password you can reset them to its factory defaults from the front panel menu of the D9854 Advanced Program Receiver.

   Important: The password and user name will be remembered for the whole of the web session. Close the web browser if you want to prevent others from accessing the settings of the D9854 Advanced Program Receiver.

   If your session expires, you must refresh the browser and log back in.

4. Click **Login**.

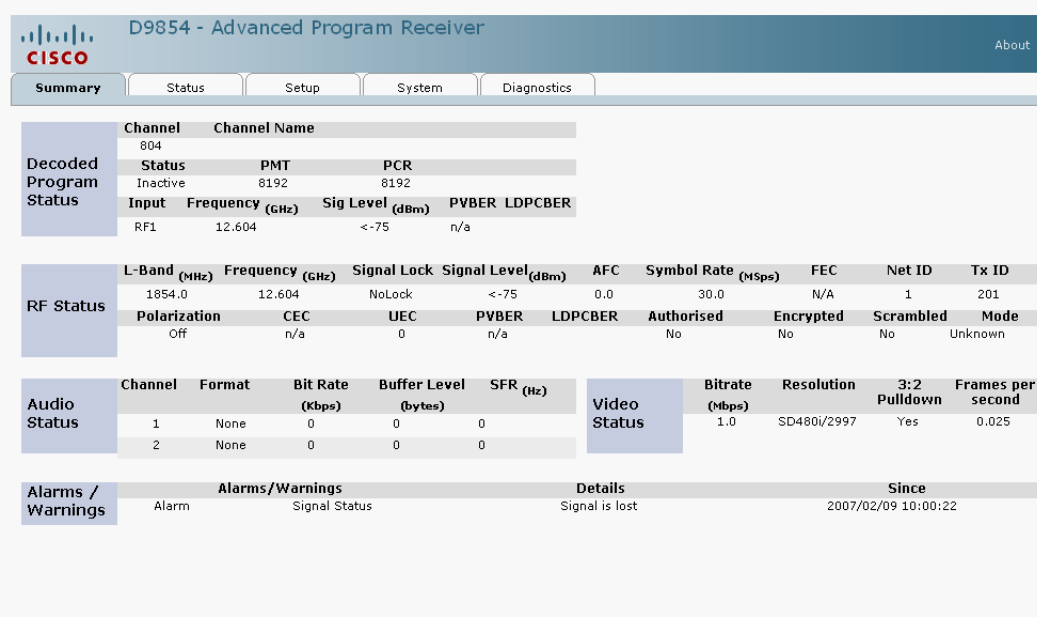
   Click **Reset** to clear the Username and Password fields and re-enter the login information.

Web Interface - Summary Screen

To get an Overview of the Main D9854 Settings

Proceed as follows to get an overview of the main D9854 Advanced Program Receiver settings:

1. Log on to the Web Interface.
2. Click the **Summary** tab.

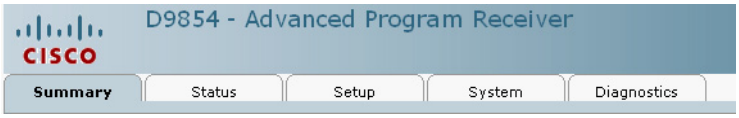


The summary screen displays the main settings of the D9854 Advanced Program Receiver.

Tab Pages

Tab Pages

The GUI of the D9854 has a number of tab pages.



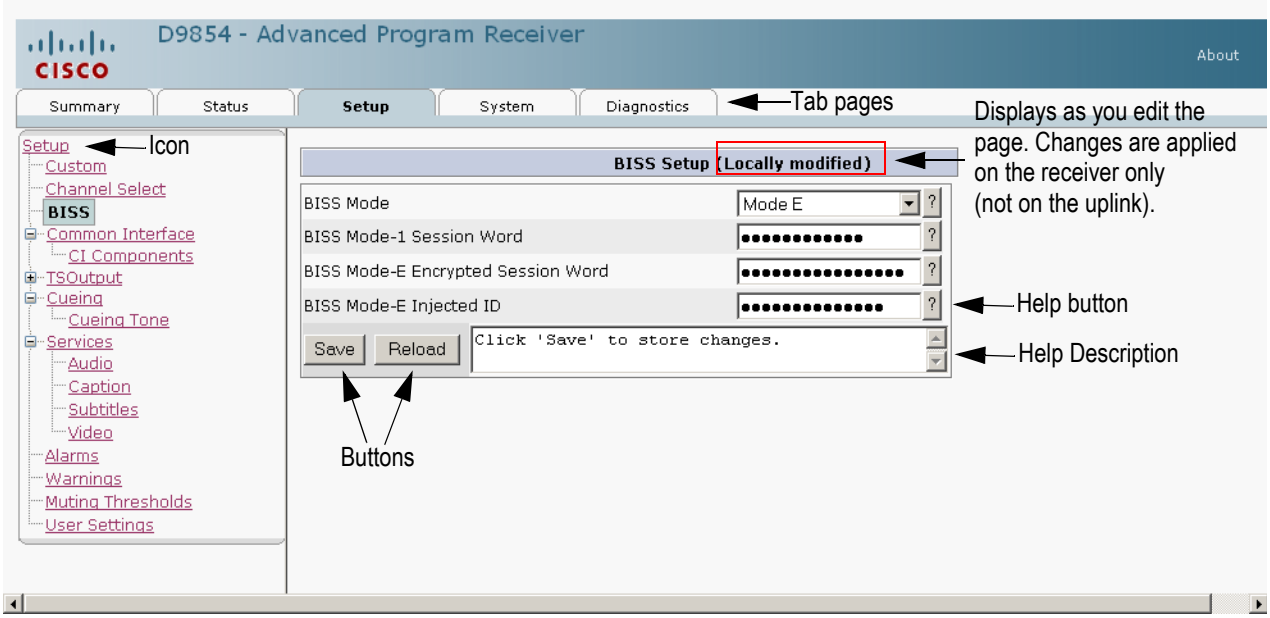
The function for the tab pages is as follows:

- Summary
  From this page you can obtain an overview of the D9854 operation.
- Status
  From this page you can view detailed input status, video status and CA system status.
- Setup
  From this page you can:
  - configure the TS input and output,
  - set custom tuning,
  - configure program entries,
  - set up BISS,
  - configure CI (Common Interface) settings,
  - set the cueing parameters,
  - set up services,
  - set up alarms and warnings,
  - configure muting thresholds,
  - configure user settings.
- System
  From this page you can:
  - view alarm and warning status information,
  - set up and view backup and restore controls,
  - configure ethernet ports,
  - view the operating temperatures,
  - configure trap destinations,
  - view factory loaded application version number.
- Diagnostics
  - view PSI Tables,
  - view Frequency and Channel tables,
  - view alarm and warning history information,
  - view logs.

D9854 Web Interface Environment

Web Interface Environment

The following is an example of a D9854 Web Interface page.



The Help Window

The GUI of the D9854 has the following help button, accompanied by a help window:

A brief description of the field is displayed when you click the **Help** button.

The Window Buttons

The GUI of the D9854 has the following general buttons:

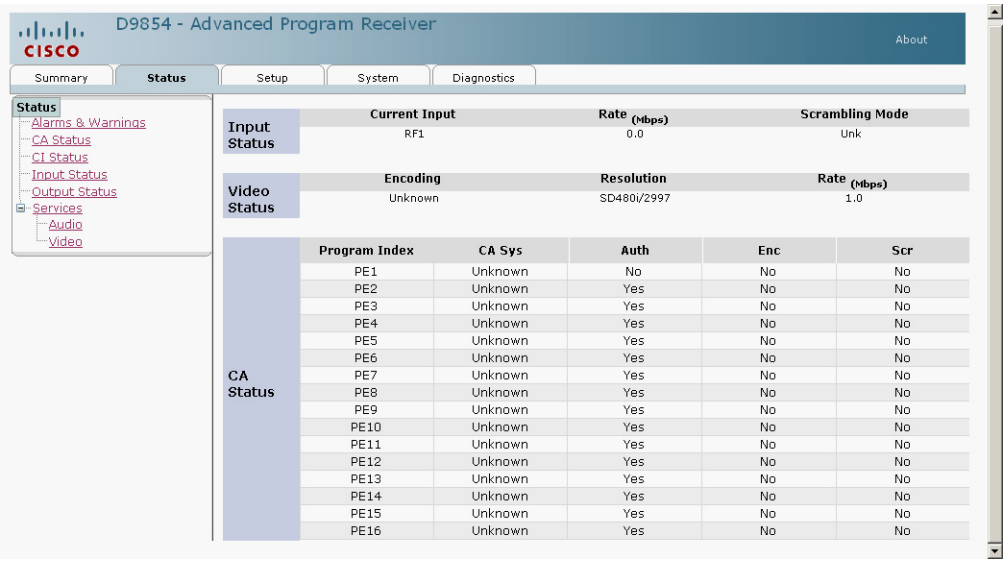
Button	Description
Save	Saves and applies the settings to the receiver.
Reload	Reads existing data from the D9854. If edits were made in a setup page, then unsaved changes are discarded.
Restore Defaults	Discards any changes made and sets data to default values.
Clear Counters	Resets counters on the displayed page.

Viewing the Input and Output Status

To View the Input and Output Status

Proceed as follows to view the status pages:

1. From the user interface of the D9854, click the **Status** tab, and then click the **Status** icon from the sub-page.



The following table describes the input, video, and CA statuses:

Status	Description
Input Status	
Current Input	The active input port receiving the signal (RF1, RF2, RF3, RF4, or ASI).
Rate (Mbps)	Bit rate of the received input signal, in Mbps.
Scrambling Mode	Indicates whether the received signal is scrambled (Yes, No, or Unknown).
Video Status	
Encoding	The input stream type of the received signal/ program.
Resolution	Source resolution of the received signal/program. The possible parameters are: SD480i/2997, SD480i/ 3000, SD576i/2500, HD720p/5000, HD720p/5994, HD720p/6000, HD1080i/2500, HD1080i/2997, HD1080i/3000, Unknown, or Unsupported.

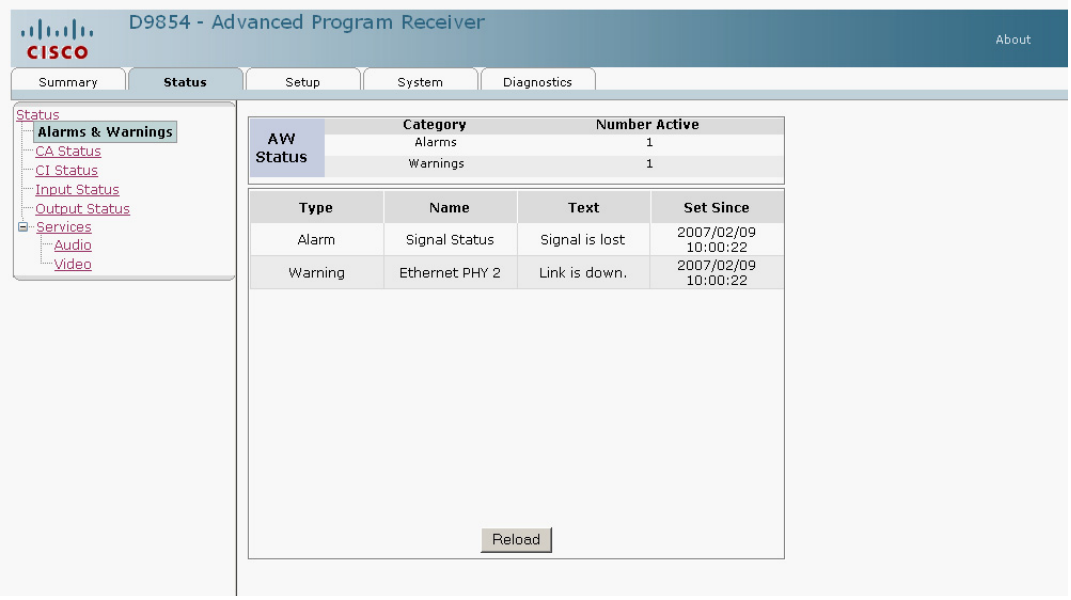
Status	Description
Rate (Mbps)	Bit rate of the received video program. Typically, the values are 25.0, 29.97, 30.0, 50.0, 59.94, 60.0, unknown or unsupported.
CA Status	
Program Index	The Program Entry number (PE1 to PE16).
CA Sys	The Conditional Access (CA) system used for the received signal (SA, BISS, or Unknown).
Auth	Indicates whether the receiver is authorized to receive the signal (Yes or No).
Enc	Indicates whether the received signal is encrypted (Yes or No).
Scr	Indicates whether the received signal is scrambled (Yes or No).

Viewing the Alarm and Warning Messages

To View the Alarms and Warnings

Proceed as follows to view the Alarms and Warning page:

From the user interface of the D9854, click the **Status** tab, and then the **Alarms & Warnings** icon from the sub-page.



The Alarm and Warning Status page displays all the active event messages for the D9854 system. For more information on alarm messages, refer to **Messages**, page 6-3.

The following table shows the alarm/warning status table information:

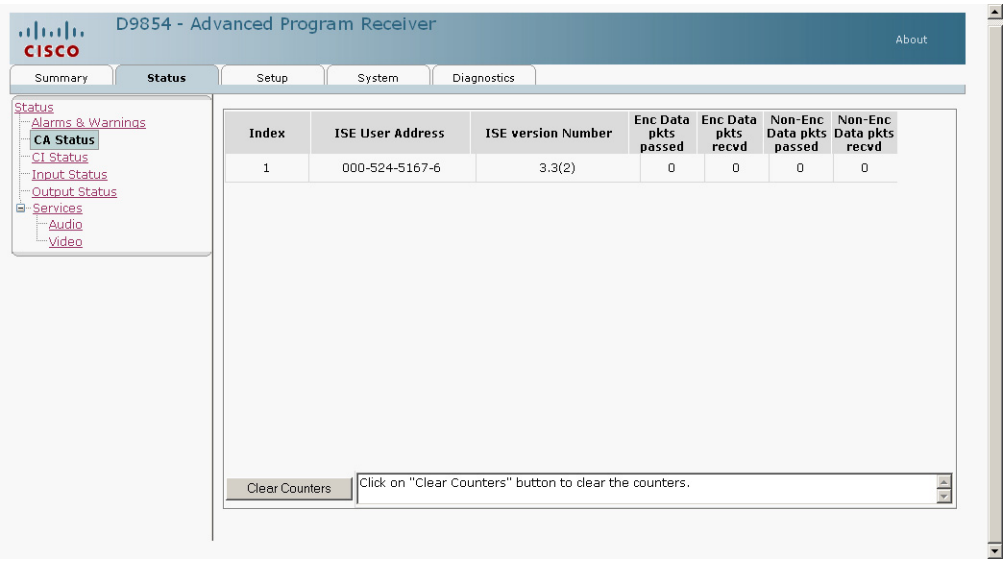
Status	Description
Category	Type of message (alarm or warning).
Number Active	Displays the number of alarms and warnings that have an active status.
Type	Shows whether it is an alarm or a warning message.
Name	Name of the alarm or warning.
Text	Content of the message.
Set Since	Date and time of the alarm or warning.

Viewing the CA Status

To View the CA Status

Proceed as follows to view the CA Status page:

From the user interface of the D9854, click the **Status** tab, and then the **CA Status** icon from the sub-page.



The following describes the columns in the CA Status table:

Status	Description
Index	The ISE number.
ISE User Address	The ISE User Address. It consists of 14 hexadecimal characters.
ISE Version Number	The ISE version number. It consists of 7 characters.
Enc Data pkts passed	Current Encrypted Addressed Data Packet Count. This count indicates the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.
Enc Data pkts recvd	The total number of current Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.

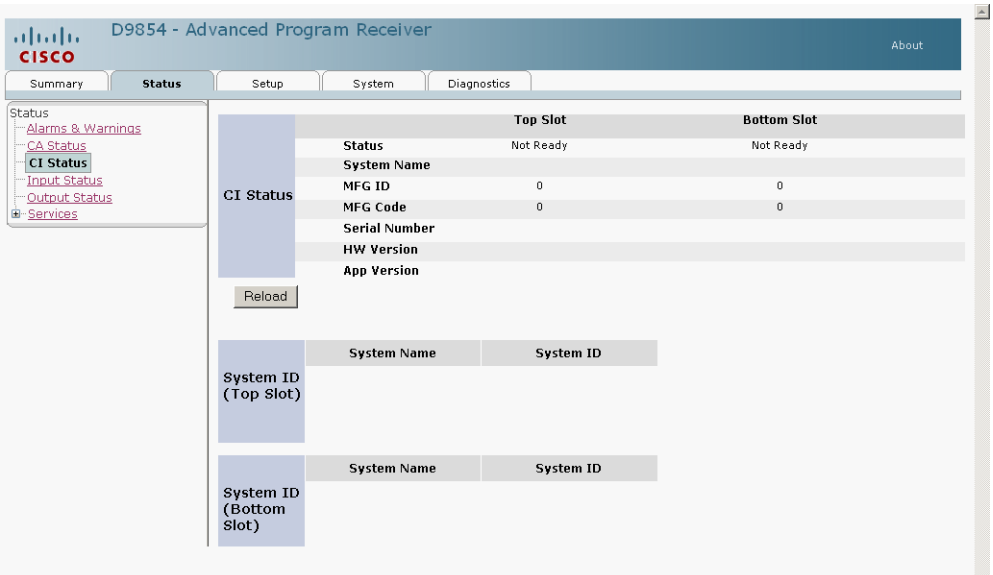
Status	Description
Non-Enc Data pkts passed	The current Non-Encrypted Addressed Data Packet count. This count indicates the amount of transmitted ADP information being accurately received and processed. Ideally, the ADP Enc Pass and ADP Enc Total numbers should be identical.
Non-Enc Data pkts recvd	The current Non-Encrypted Addressed Data Packet Count. These counts indicate the amount of transmitted ADP information which is being accurately received and processed. Ideally, the ADP Non-Enc Pass and ADP Non-Enc Total numbers should be identical.

Viewing the CI Status

To View the Common Interface (CI) Status

Proceed as follows to view the CI Status page:

From the user interface of the D9854, click the **Status** tab, and then the **CI Status** icon from the sub-page.



The following table describes the CI Status:

CI Status	Description
Status	Status of the CAM (Ready or Not Ready).
System Name	System name of the CAM.
MFG ID	The factory loaded application number of the CAM.
MFG Code	The manufacturer's code.
Serial Number	The unique serial number of the CAM.
HW Version	The hardware version number of the CAM.
App Version	The software version number of the CAM.

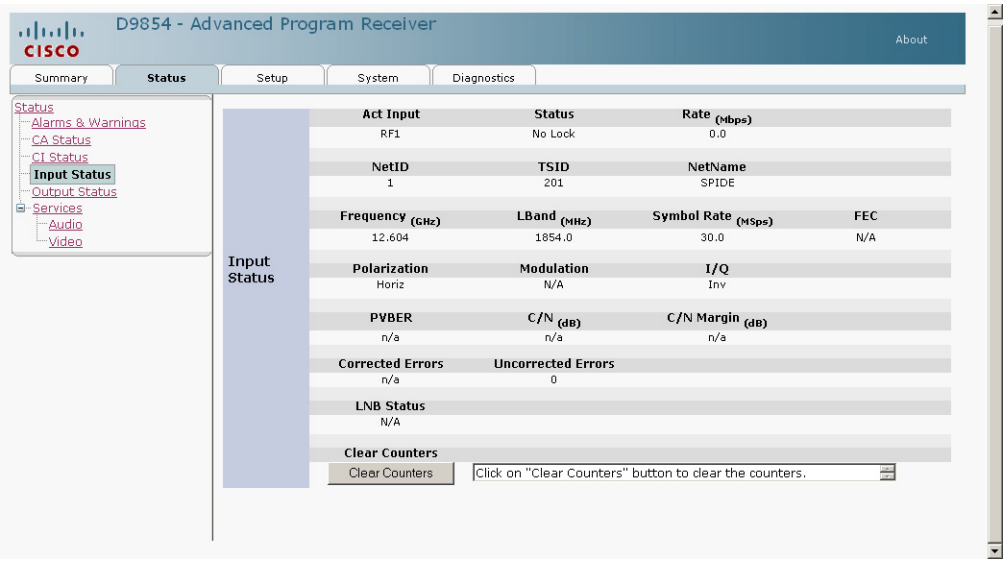
The System Name and ID number of the CAM are displayed in the System ID (Top/Bottom Slot) tables.

Viewing the Input Status

To View the Input Status

Proceed as follows to view the Input Status page:

From the user interface of the D9854, click the **Status** tab, then click the **Input Status** icon from the sub-page.



The RF Input Status page displays the active input port receiving the signal. The following table lists the parameters in the Input Status table:

Parameter	Description
Act Input	The active input port receiving the signal (RF1, RF2, RF3, RF4, or ASI).
Status	Current signal lock status for the input. For details on the statuses, see the table below.
Rate (Mbps)	Bit rate of the received input signal, in Mbps.
NetID	The Network ID (in the range from 1 to 65535) of the uplink signal the receiver is to receive when using the selected preset. The receiver's Network ID must match the Network ID associated with the transmitted signal that identifies the NIT to be used. **Note:** Each network must be assigned a unique ID (number).
TSID	The Transport ID (in the range from 1 to 65535).
NetName	Name assigned to the network (up to 12 alphanumeric characters).

Parameter	Description
Frequency (GHz)	The current downlink frequency, in GHz.
LBand (MHz)	The current L-Band frequency, in MHz.
Symbol Rate (MSps)	Symbol rate of the received signal, in Msymbols/ second.
FEC	The FEC (Forward Error Correction) rate of the received signal (N/A, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 7/8, 8/9 or 9/10).
Polarization	The signal polarization setting. This setting is only applicable when LNB Power is set to H-NIT or V-NIT. The selected setting must match the polarization of the transmitted signal. The parameters are: Horiz (Horizontal), Vert (Vertical) or Auto.
Modulation	The modulation type for the received signal (N/A, QPSK, 8PSK, DVB-S or DVB-S2).
I/Q	The IQ (Input Signal Inversion) for the received signal (Inv or NonInv).
PVBer	The PV (Post-Viterbi) BER for the received signal (DVB-S).
C/N (dB)	Current Carrier-to-Noise ratio, in dB.
C/N Margin (dB)	Current Carrier-to-Noise Margin for the received signal. The Carrier-to-Noise margin is the actual distance that C/N is from the noise threshold. Values can be displayed in the range of -32.0 to +30.0 dB.
Corrected Errors	Current Corrected Error Count for the received signal.
Uncorrected Errors	Current Uncorrected Error Count for the received signal.
LNB Status	Current LNB connection status (No Load, Overloaded, OverTemp, Short Circuit, Disabled, Normal or N/A).

The following table indicates the current signal lock status for the selected RF input:

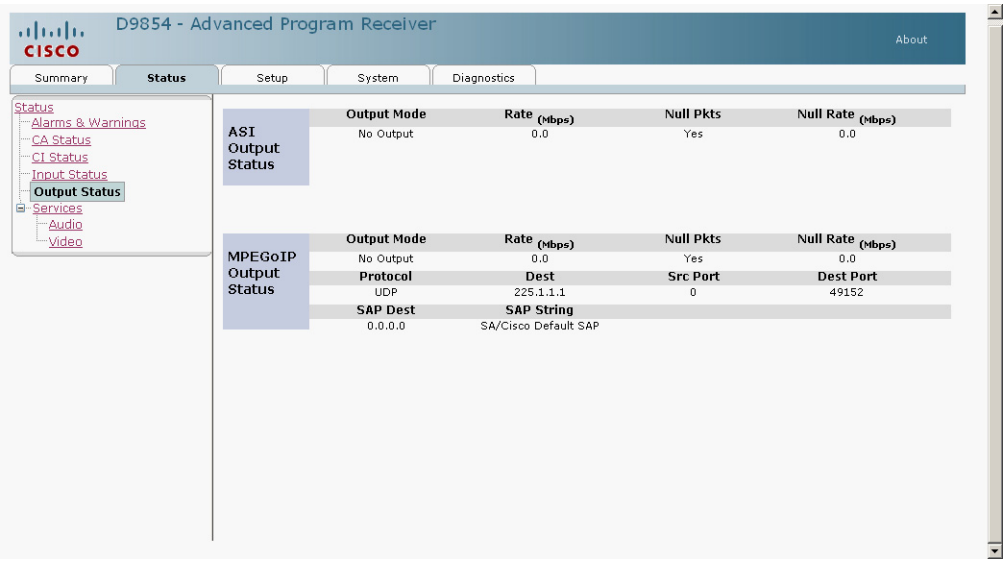
Status	Description
Locked	Indicates the receiver is locked to a carrier with no valid content.
Lock+Sig	Indicates the receiver is locked to a carrier with valid content.
No Lock	Indicates the receiver is not locked to a carrier.

Viewing the Output Status

To View the Output Status

Proceed as follows to view the Output Status page:

From the user interface of the D9854, click the **Status** tab, and then click the **Output Status** icon from the sub-page.



The Output Status page displays the following ASI and MPEGoIP Output Status information:

ASI Output Status	Description
Output Mode	The DPM output mode. For a description of each output mode, see **Output Mode**, page 5-17.
Rate (Mbps)	The output rate (0 to 213 Mbps). It is only used if Rate Control is set to User.
Null Pkts	Displays whether to insert null packets in the output stream (Yes or No).
Null Rate (Mbps)	The null packet rate, in Mbps.

MPEGoIP Output Status	Description
Output Mode	The DPM output mode. For a description of each output mode, see **Output Mode**, page 5-17.
Rate (Mbps)	The output rate (0 to 999.99999 Mbps). It is only used if Rate Control is set to User.

MPEGoIP Output Status	Description
Null Pkts	Displays whether to insert null packets in the output stream (Yes or No).
Null Rate (Mbps)	The null packet rate, in Mbps.
Protocol	The transport protocol used for the output stream (RTP or UDP).
Dest	The multicast destination IP address. The field displays a range from 0 to 255, in the format ###.###.###.###.
Src Port	The source UDP port number, in the range from 1 to 65535.
Dest Port	The destination port number, in the range from 1 to 65535.
SAP Dest	The SAP destination IP address. The field displays a range from 0 to 255, in the format ###.###.###.###.
SAP String	This is the SAP identifier (ID)/string. It displays up to 49 characters.

Output Mode

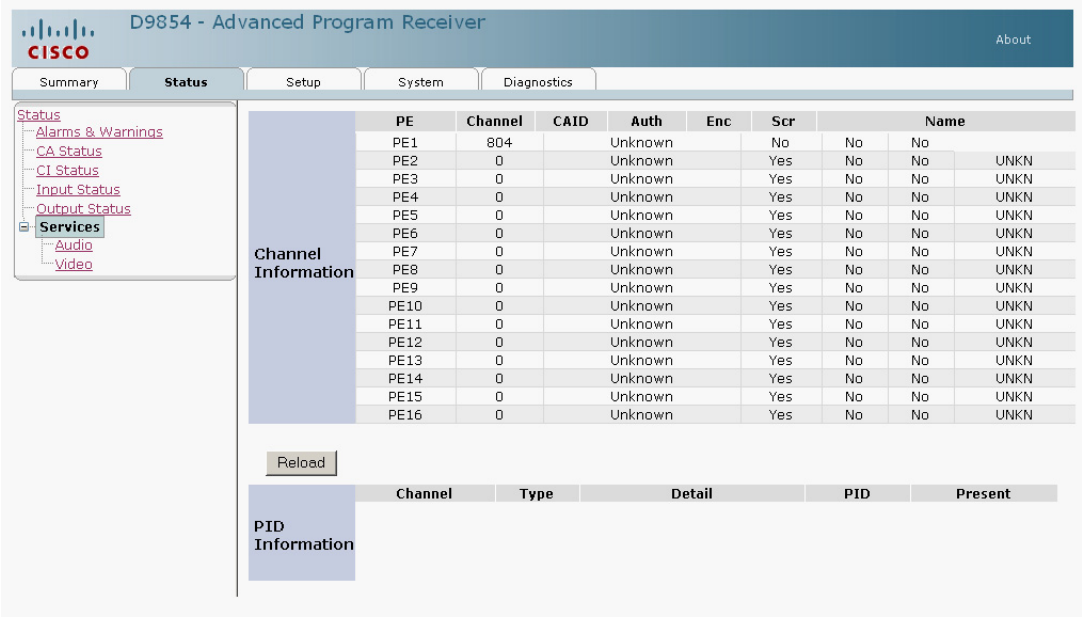
Output Mode	Description
No Output	No ASI output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Chans Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Svc Chans Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM settings on the DPM: ASI or MOIP1 menus. This is a manual control setting.

Viewing the Services Status

To View the Services Status

Proceed as follows to view the Services page:

From the user interface of the D9854, click the **Status** tab, and then click **Services** icon from the sub-page.



The following table describes the channel information displayed:

Channel Information	Description
PE	Indicates the Program Entry number (PE1 to PE16).
Channel	Displays the input channel of the current PE. The channel is displayed in a range from 1 to 65535.
CAID	Indicates the Conditional Access (CA) system used for the received signal (SA, BISS, or Unknown).
Auth	Indicates whether the receiver is authorized to receive the signal (Yes or No).
Enc	Indicates whether the received signal is encrypted (Yes or No).
Scr	Indicates whether the received signal is scrambled (Yes or No).

The following table describes the PID information displayed:

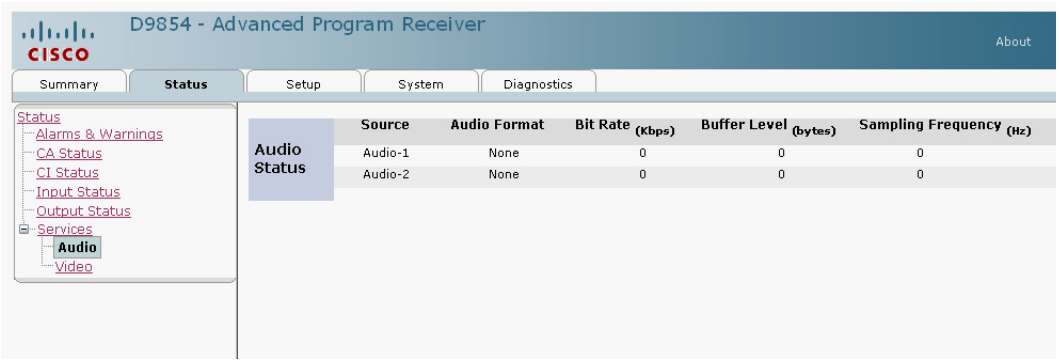
PID Information	Description
Channel	The Program Entry number (PE1 to PE16).
Type	Name assigned to the Program Entry, up to 4 alphanumeric characters.
Detail	Displays any detail associated with the program PID (e.g., MPG2 PID). The parameters are: MPG1 VID, MPG2 VID, 422 VID, H264 VID, HD VID, MPG4 VID, MPG AUD, MPG2 AUD, DVB AC3, DVB DDP, AAC AUD, HEAAC, AUD, MPG4 AUD, DBE AUD, DTS AUD, DVB TXT, DVB VBI, DVB SUBT, DVB ASYN, DVB SYNS, DVB SYND, DVB MPE, DVB DCAR, DVB OCAR, SA VBI, ATSC AC3, ATSC DDP, SA UTLD, SCTE DPI, SA HSD, SA CDDL, SA WBD, SA SUBT, ECM, EMM, PCR, or UNKNOWN.
PID	The program PID number, in the range from 1 to 8192.
Present	Indicates whether the PID is present in the incoming stream (Yes or No).

Viewing the Audio Status

To View the Audio Status

Proceed as follows to view the Audio Status page:

From the user interface of the D9854, click the **Status** tab, expand **Services**, and then click **Audio** icon from the sub-page.



The following table describes the Audio Status information displayed:

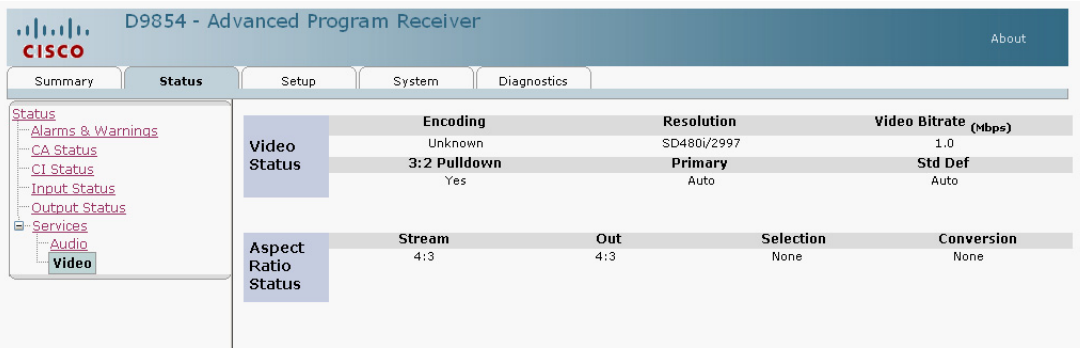
Audio Status	Description
Source	The audio channel within the stream when the signal contains more than two audio pairs. AUD1 for audio channel Aud1. AUD2 for audio channel Aud2. AUD1 to AUD4 for two stereo audio channels.
Audio Format	The received audio channel format (MPEG, AC3, AAC, HEAAC or DDP).
Bit Rate (Kbps)	Audio bit rate of the received audio channel, in kbps.
Buffer Level (Bytes)	The audio input buffer level, in bytes.
Sampling Frequency (Hz)	The audio sampling frequency (32, 44.1, or 48 Hz).

Viewing the Video Status

To View the Video Status

Proceed as follows to view the Video Status page:

From the user interface of the D9854, click the **Status** tab, expand **Services**, and then click **Video** icon from the sub-page.



The following table describes the Video Status information displayed:

Video Status	Description
Encoding	The input stream type of the received signal/ program.
Resolution	The input source resolution of the received signal/ program (SD480i/2997, SD480i/3000, SD576i/2500, HD720p/5000, HD720p/5994, HD720p/6000, HD1080i/2500, HD1080i/2997, HD1080i/3000, Unknown or Unsupported).
Video Bitrate (Mbps)	Bit rate of the received video program. Typically 25.0, 29.97, 30.0, 50.0, 59.94, 60.0, unknown or unsupported.
3:2 Pulldown	Indicates whether 3:2 pulldown mode is detected (Yes, No or Recent).
Primary	The output video format (Auto, SD, HD 720p, or HD 1080i).
Std Def	Displays the video format for the output when the input video is SD format (Auto, NTSC, PAL-N (AR), PAL-M or PAL-B/G/I/D. Use NTSC for 525-line systems and PAL-B/G/I/D for 625-line systems).

The following table describes the Aspect Ratio Status information displayed:

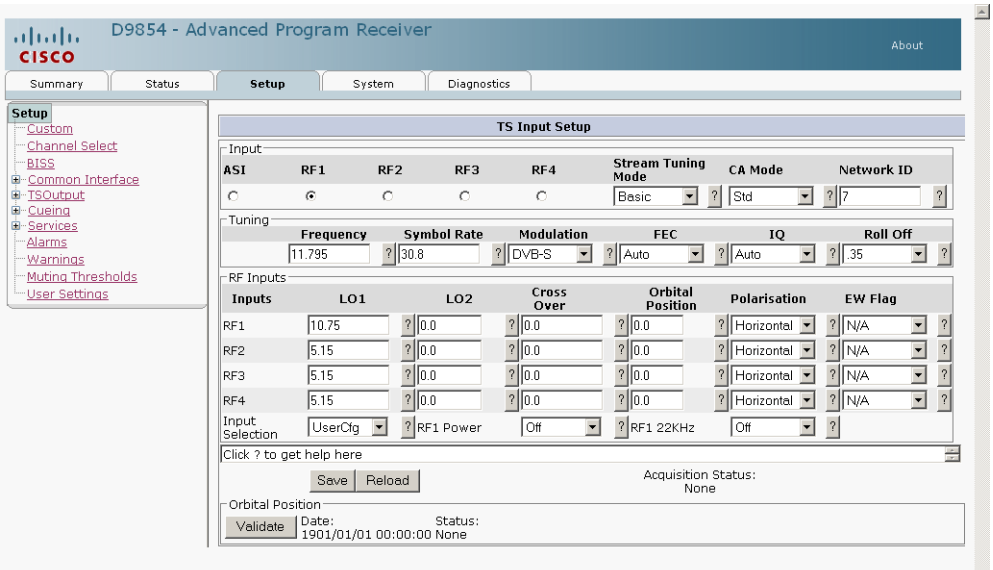
Aspect Ratio Status	Description
Stream	The stream aspect ratio. This is the conversion that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection. The parameters are: 4:3, 14:9 or 16:9.
Out	This is the aspect ratio of your TV. The parameters are: 4:3 or 16:9 (wide aspect ratio). The default is 4:3.
Selection	This is the conversion that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection. The parameters are: Auto, None, Auto AFD (Auto setting using Active Format Descriptor), 16:9 L/B (letter box), 4:3 P/B (pillar box), 14:9, 4:3 CCO, 16:9 SCALE. The default is set to Auto.
Conversion	This is the type of aspect ratio conversion that the receiver will perform based on your selection (None, 4:3 L/B, 4:3 P/B, 14:9, 14:9, 4:3 F/H or 16:9 F/W).

Setting up the TS Input

To Set up the Transport Stream (TS) Input

Proceed as follows to set up the TS Input:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Setup** icon from the sub-page.



2. Select a TS input to activate (ASI, RF1, RF2, RF3, or RF4).
3. From the **Stream Tuning Mode** drop-down, select the mode used to build channel lists from allowed service lists. The selections are Auto, Basic, FixPID, or Custom. The default is Basic.
4. Select the type of Conditional Access (**CA Mode**) to determine which programs can be viewed via the receiver from the CA Mode drop-down. Select Std (standard) for PowerVu signal or Open conditional access for free-to-air (e.g., in-the-clear signals). The default is Std.
5. Enter the **Network ID** of the uplink signal the receiver is to receive when using this preset. The receiver's Network ID must match the Network ID associated with the transmitted signal. You can enter a value in the range from 1 to 65535. The default is 1.
6. Enter the current downlink operating **Frequency** used by the receiver for tuning the received digital signal. You can enter a value in the range from 0.0 to 15.0 GHz.
7. Type the **Symbol Rate**. The symbol rate must match that of transmitted signal. You can enter a value in the range from 1.0 to 45.0 Ms/s for DVB-S, 1.0 to 30.0 for DVB-S2 if Pilot Present is set to Yes on the Front Panel, or 5.0 to 30.0 for DVB-S2 if Pilot Present is set to No on the Front Panel.
8. Select the **Modulation Type** for the received signal (DVB-S or DVB-S2).

9. Enter the Forward Error Correction (**FEC**) inner code rate. The FEC rate must match the FEC of the transmitted signal. You can select 1/2, 2/3, 3/4, 5/6, 7/8 or Auto.
10. Set the input signal spectrum inversion setting (**IQ**), which allows the operator to track and select inverted and non-inverted digital signals.

    When set to Auto, received digital signals are tracked and inverted for correct selection, as required. When set to Inv (inverted), the received digital signal is always inverted. Conversely, when set to NonInv (non-inverted), the received digital signal is never inverted.
11. Select the **Roll Off** factor of the incoming signal (.20, .25, .35). Set the value to .20 or .35 when DVB-S modulation is used, and either of the three when DVB-S2 is used. Use a small number to reject or filter carriers close to the same frequency.
12. For RF1, RF2, RF3, and/or RF4, enter the Local Oscillator frequency #1 (**LO1**), which sets the satellite antenna LNB local oscillator #1 frequency. You can enter a value in a range from 0.0 to 15.0 GHz. This value must be lower than the value for LO2.
13. For RF1, RF2, RF3, and/or RF4, enter the Local Oscillator frequency #2 (**LO2**), which sets the satellite antenna LNB local oscillator #2 frequency. This option is only used in dual-band LNB applications. You can enter a value in a range from 0.0 to 15.0 GHz. This value must be higher than the value for LO1. In single-band LNB applications, set this value to 0.0.
14. Enter the **Cross Over** frequency for RF1, RF2, RF3, and/or RF4. This is an internal threshold frequency used for selecting the LO1 or LO2 frequency, depending on the current downlink frequency settings. This option is only used in dual-band LNB applications.

    You can enter a value in a range from 0.0 to 15.0 GHz. In a single-band LNB applications, set this value to 0.0.
15. Set the **Orbital Position** for RF1, RF2, RF3, and/or RF4, in degrees. This is the location in orbit of the satellite currently being used. The satellite position (in degrees) in combination with the direction (either E (East) or W (West)) denotes the satellite position the dish connected to the current RF Input should point. This is used when the satellite is not available in the look-up menu list.

    For manual configuration, enter the location of the satellite using the numerical keypad. The receiver will not recognize the satellite name and identify it as Unknown. This setting is required to resolve any ambiguity between RF inputs during automatic disaster recovery.

16. Select the signal **Polarisation** setting (Horizontal, Vertical, or Automatic). This setting is only applicable when the LNB Power is set to H-NIT or V-NIT. The selected setting must match the polarisation of the transmitted signal.
17. Select the **EW Flag** for RF1, RF2, RF3, or RF4. This is the satellite position the dish connected to the current RF Input should point. The options are East, West, or Not Applicable.
18. Select the signal **Polarisation** setting. This setting is only applicable when LNB Power is set to H-NIT or V-NIT. The selected setting must match the polarization of the transmitted signal. You can set the signal to H (Horizontal), V (Vertical) or A (Auto).
19. Select UserCfg in the **Input Selection** to lock to the RF input set by the user. Select SW Map to use the orbital position settings to select the RF input. It is recommended that you validate the orbital position for SW Map option.
20. The LNB Power setting determines if power is provided via the RF1 Input to an external LNB connection.

    You can set the LNB Power to Off, 13V, 18V, V-NIT or H-NIT. When LNB Power is set to V-NIT or H-NIT, the signal polarization is automatically read from the NIT.

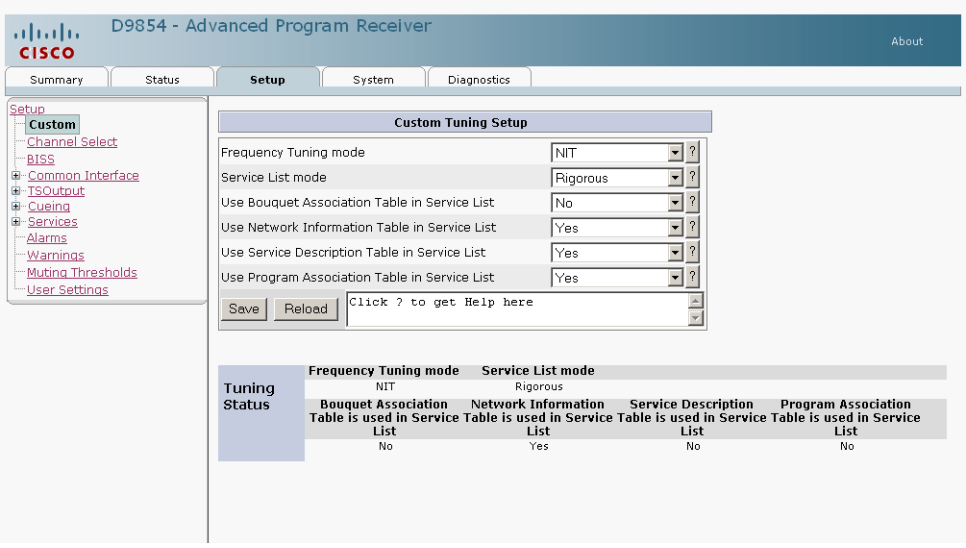
    Note: Power will not be applied to the LNB when Power is set to Off.
21. The RF1 22KHz is only applicable for dual-band LNB applications. It sets whether or not the 22 kHz tone is available on the RF1. The selections are On, Off, or Auto (actual presence of 22 KHz control signal depends on whether downlink frequency is greater than the crossover frequency).
22. Click **Apply**.
23. Click **Validate** to validate the RF inputs to match those expected by the network. The receiver will check to see if all frequencies in the Network Information Table (NIT) can be tuned to. The Date is displayed as the last date that the Validate operation was performed.

Setting up Custom Tuning Parameters

To Set up the Custom Tuning parameters

Proceed as follows to set up the Custom Tuning parameters:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Custom** icon from the sub-page.



2. Set the **Frequency Tuning** mode, which determines whether the receiver is to be tuned to the received signal using the NIT or User Cfg (user configurations).

3. The **Service List mode** determines which tables to use to obtain tuning and channel lists.

   Select Rigorous if all the default settings must be present in the received signal.

   Select Degraded if only the table parameters present in the received signal will be used to install the receiver. The default is Rigorous.

4. The remaining fields allow you to set up your custom and fixed PID properties. The following table shows some possible configurations for the allowed service lists and the different frequency tuning settings.

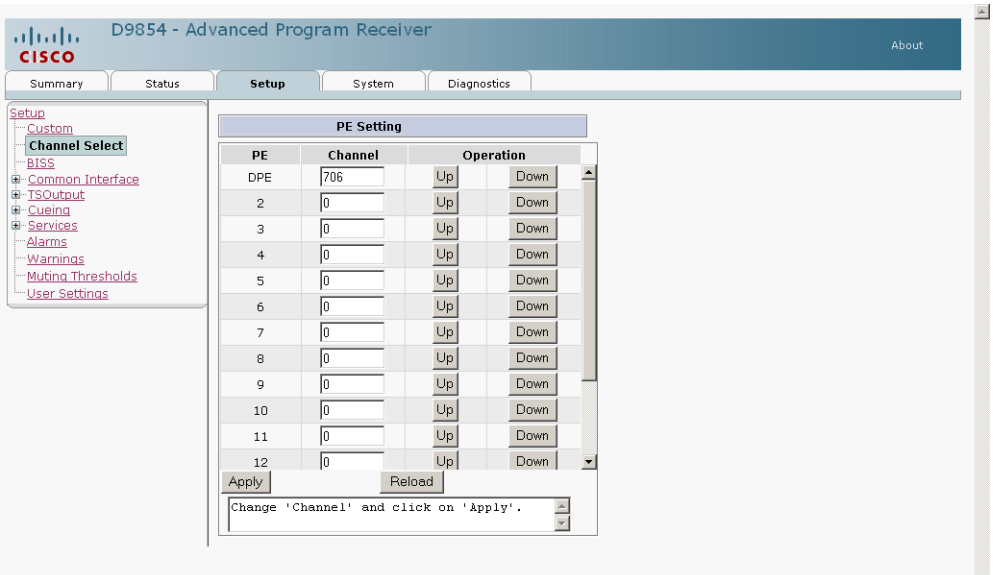
Allowed Service Lists	Custom	Fixed PID
Bouquet Association Table (BAT) (not supported)	N	N
Network Information Table (NIT)	N	N
Service Description Table (SDT)	N	N
Program Association Table (PAT)	Y	N
Frequency Tuning mode	User Cfg	User Cfg

Setting up the Program Entry Configurations

To Set up the Program Entry (PE) Configurations

Proceed as follows to set up the Program Entry configurations:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Channel Select** icon from the sub-page.



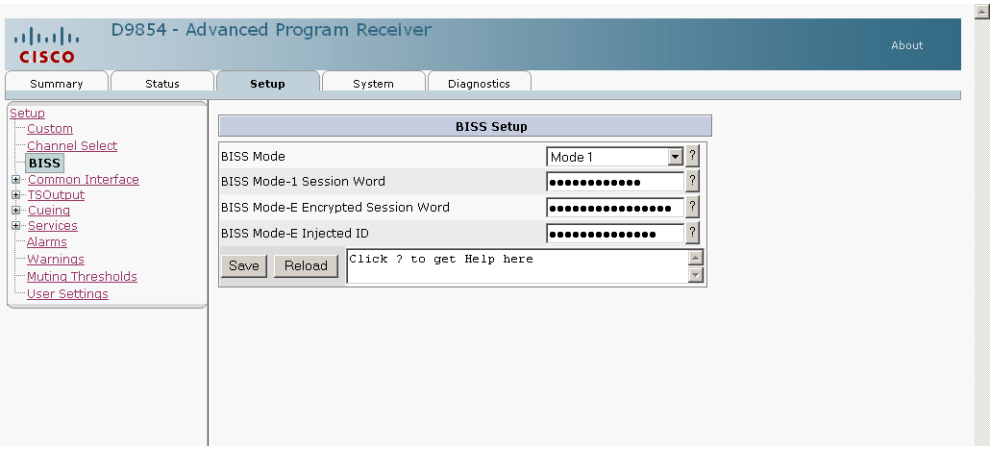
2. Enter a channel number for up to 16 program entries. Alternatively, use the Up and Down buttons to increase or decrease the channel number.
3. Click **Apply**.

Setting up the BISS Mode

To Set up the BISS Mode

Proceed as follows to set up the BISS mode:

1. From the user interface of the D9854, click the **Setup** tab and then click the **BISS** icon from the sub-page.



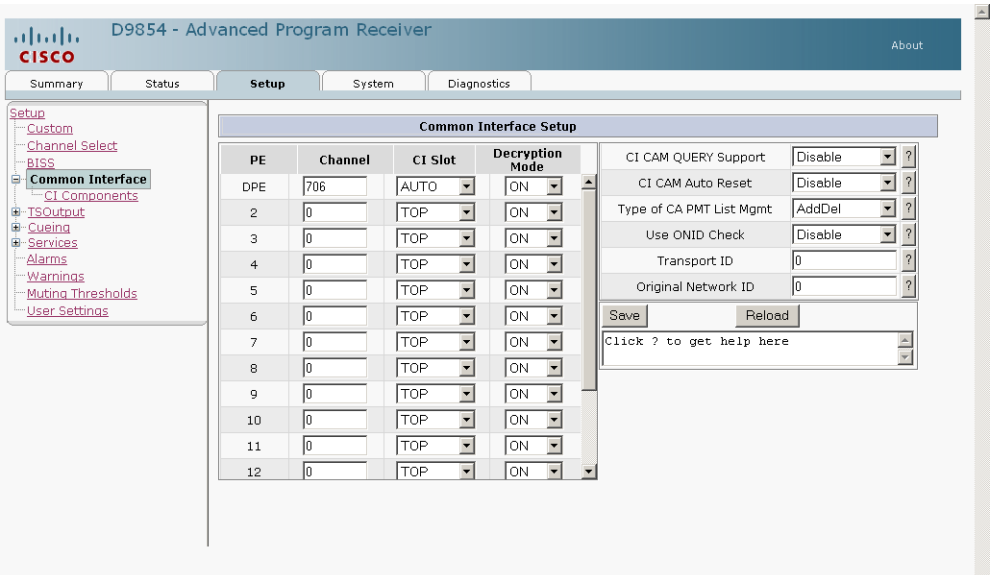
2. Set the Basic Interoperable Scrambling System (**BISS**) **Mode** for the receiver (Mode 1 or Mode E).
3. If you selected BISS Mode 1, enter a fixed 12-character **BISS Mode-1 Session Word**. Once entered it cannot be viewed, only displayed as asterisks (*). Contact your program provider for the session word.
4. If you selected BISS Mode E, enter the 16-character **BISS Mode-E Encrypted Session Word** and the 14-character **BISS Mode-E Injected ID**. Once entered, neither of these values can be viewed, only displayed as asterisks. Contact your program provider for the respective session word and/or injected ID.

Configuring the Common Interface (CI) Information

To Configure the Common Interface (CI)

Proceed as follows to configure CI:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Common Interface** icon from the sub-page.



2. For PE1 (DPE), ensure that the CI Slot to Auto and the Decryption mode to On (default) for the software to automatically assign the top or bottom slot that matches the stream. COMP and OFF Decryption modes are invalid.
3. If you use PE2 to PE16, you must select to decrypt the CAM that is located in the Top or Bottom slot in the **CI Slot** drop-down.
4. The **Decryption Mode** determines whether to decrypt the program selected for the PE on the selected CAM (Yes, No, Comp). Select Comp to customize the PID or stream type to decrypt.
5. If you selected Comp, you must configure the parameters in the CI Components Setup page. For details, see **Setting up the Common Interface: CI Components**, page 5-31.
6. Select Enable in the **CI CAM Query Support** drop-down to query the CAM prior to decryption to ensure that the card can be decrypted. The default is Disable.
7. Select Enable in **CI CAM Auto Reset** to automatically reset the card. The default is Disable.
8. In the **Type of CA PMT List Mgmt**, select AddDel (default) to add or delete programs individually in the CAM. Set to Update All to automatically update and reset all the programs each time you add or modify the programs available via the CAM.

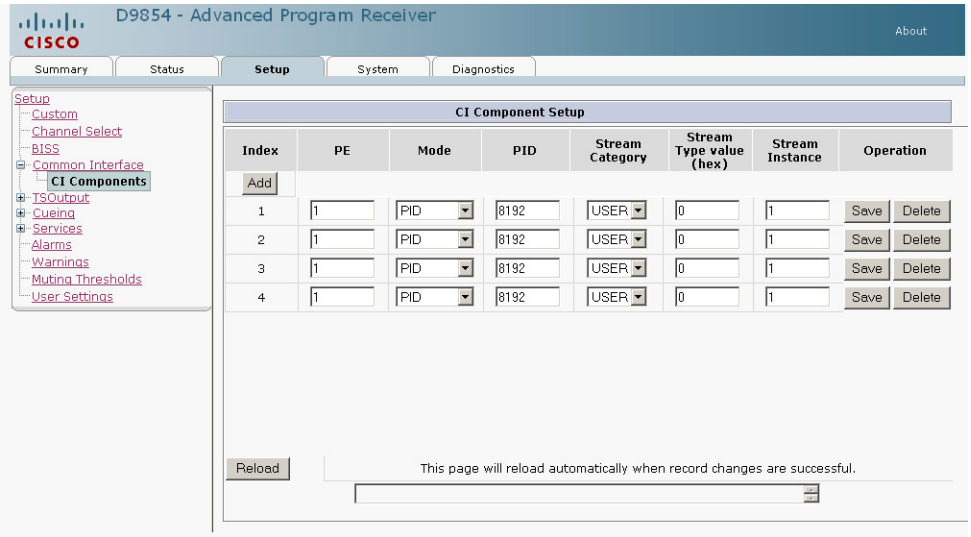
9. Select Enable in the **Use ONID Check** drop-down if you want to restrict the incoming transport stream to the transport ID and transport original network ID listed below. If the incoming stream does not match the specified transport stream, the CAM will not decrypt. The default is Disable.
10. If you set the **Use ONID Check** to Enable, you must define the **Transport ID** and **Original Network ID**. If the incoming stream does not match the specified IDs here, the CAM will not decrypt. You can enter a value in a range from 0 to 65535.
11. Click **Save**.

Setting up the Common Interface: CI Components

To Set up the CI Components for the Common Interface

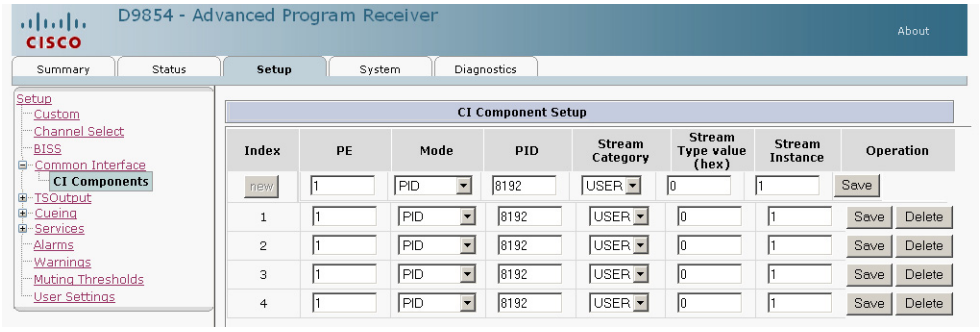
Proceed as follows to set up the CI components:

1. From the user interface of the D9854, click the **Setup** tab, expand **Common Interface**, and then click the **CI Components** icon from the sub-page.



2. If you selected Comp as the Decryption Mode in the Common Interface Setup page, you can insert and maintain customized records in the CI Component Setup page. Each record customizes the PID or stream type to decrypt. The Index number is a read only field that indicates the record number. You can maintain up to 64 records, 32 records for each CAM.

3. To insert a new record, click **Add**. A new row appears at the top of the table (see below).



4. There are various configurations when creating a new record.
5. The following table summarizes the various methods:

If you set by	Parameter Settings
PID	Set **Mode** to PID and enter **PID** number.
Stream Type	Set **Mode** to Stream, select **Stream Category** (audio, video, subtitle, ttx, or user) and enter **Stream Instance** of the stream type. There is an additional configuration if you select user as the Stream Category (see below).
Stream Type: User	Set **Mode** to Stream, **Stream Category** to User, manually enter the stream code in **Stream Type value (hex)**, and then the **Stream Instance** of the stream type.

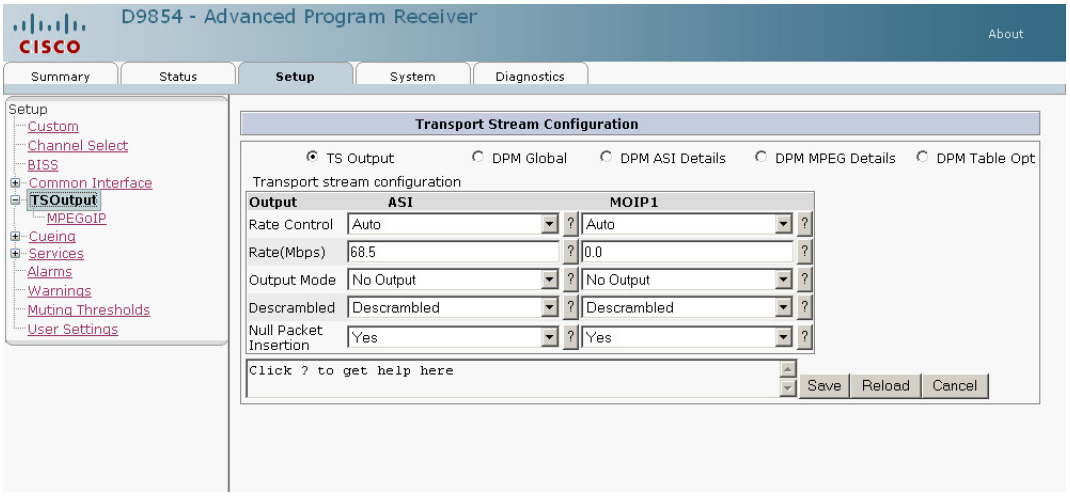
6. If you know the PID number, ensure that PID is selected under **Mode** and enter the appropriate **PID** number. Click **Save**.
7. To enter the stream type, select Stream under **Mode**, select the stream type in the **Stream Category** (Vid, Aud, Subt, or TTX) and enter the instance of the stream type in **Stream Instance**. You can enter a range from 1 to 64. Click **Save**.
8. If you do not know the stream type, you can specify a specific hex value as the stream type. Select Stream under **Mode**, select User under **Stream Category**, enter the hex value of the stream under **Stream Type value (hex)** and the instance of the customized stream type in **Stream Instance**. You can enter a two digit hexadecimal value for the Stream Type and a range from 1 to 64 for the Stream Instance. Click **Save**.
9. To delete a record, identify the record you want to remove and click **Delete**.

Configuring the Transport Stream: TS Output

To Set up the Transport Stream (TS) Output

Proceed as follows to set up the TS Output:

1. From the user interface of the D9854, click the **Setup** tab and then click the **TSOutput** icon from the sub-page and select **TS Output** radio button.



2. There are two different transport stream configurations: ASI and MOIP1. The following describes both ASI and MOIP1 columns.

   Note: Any changes made to the ASI and MOIP1 DPM values will automatically change the TS Output mode for ASI and MOIP to Full DPM Control.

3. Select the DPM output **Rate Control** (in Mbps) when using an RF input source in ASI and/or MOIP1 column. The following table describes the affect each of the settings has on the output bit rate:

Rate Control	Description
Auto	The output rate follows that set by the uplink. The output rate will be the same as the input rate (including all null packets). This means the output bit rate is determined automatically based on the input source symbol rate and FEC value.
User	The output rate is specified as the Output Rate parameter. It is determined by the user setting regardless of the input source.

4. Enter the output **Rate**, which is only used if Rate Control is set to User. This setting is used when the signal source is RF or ASI.

   Note: Output data may be lost when the user-selected bit rate is set to a value that is less than the actual signal bit rate. This allows you to set the output bit rate to a value expected by equipment connected to the ASI output.

   You can enter a range from 0 to 213 Mbps for ASI and/or 0 to 999.99999 Mbps for MOIP1.

5. Select the DPM output mode. The following table describes each mode:

Output Mode	Description
No Output	No ASI output will be generated.
Passthrough	The output will be identical to the input. The output channel will not be modified. PE/PID remapping options, PSI regeneration and User Rate are not supported in this mode.
Service Chans Only	Only service channels will be output.
MAP Passthrough	The output will be identical to the input, except that it will be generated using the DPM and PID mapping settings.
MAP Svc Chans Only	Only service channels will be output according to the DPM and PID mapping settings.
Full DPM Control	The output will be generated according to the DPM settings on the DPM: ASI or MOIP1 menus. This is a manual control setting.

6. In **Descrambled** drop-down, select whether the receiver should scramble the output even if it is authorized to receive the channel. The default is Descrambled.

Descramble Mode	Description
Scrambled	Scrambles the output channel even if the PE is authorized and can descramble the channel.
Descrambled	Descrambles the output channel, and passes in-the-clear channels.

7. Select Yes to insert null packets in the output stream under **Null Packet Insertion**. Otherwise, select No.
8. Click **Save**.

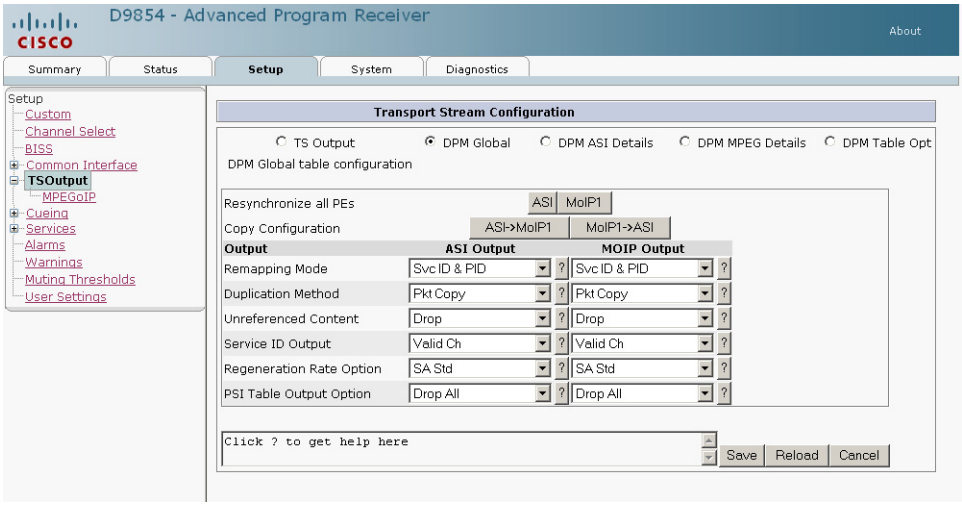
Configuring the Transport Stream: DPM Global

To Set up the DPM Transport Stream

Proceed as follows to set up the DPM:

Note: The following procedure defines all the available fields. For a typical setup of the DPM, see **Typical set up for Digital Program Mapping (DPM)**, page 5-42.

1. From the user interface of the D9854, click the **Setup** tab and then click the **TSOutput** icon from the sub-page and select **DPM Global** radio button.



2. Click **ASI** or **MOIP1** to resychronize all DPM output with the PMT data for all program entries.

   Note: Any changes made to the DPM Global table configuration automatically changes the Output Mode to Full DPM Control in the Transport Stream Configuration page.

   When you initially make a change, the page refreshes and the Transport Stream Configuration page appears with the Output Mode changed to Full DPM Control. Click **Save** and continue to edit the DPM Global table parameters.

3. Click **ASI->MOIP1** to copy all DPM data from ASI output to the MOIP1 output. Click **MOIP1->ASI** to copy the MOIP1 output to the ASI output.

4. There are two different transport stream configurations: ASI and MOIP1. The following describes both ASI and MOIP1 columns.

5. In the **Remapping Mode** drop-down, select the DPM map mode. The following table describes each mode:

Map Mode	Description
Svc ID	The elementary PIDs are not changed. Channels are remapped by changing their PSI references. When this mode is selected, PE detailed PID mapping cannot be edited.
Svc ID & PID	Channels and the elementary service PIDs can be mapped.

6. Select the **Duplication Method** of the DPM program, which modifies the PSI to duplicate a program and its content. This parameter is only used if Remapping Mode is set to Svc ID & PID. The following table describes the each duplication method:

Duplic Mode	Description
PSI Remap	Every input PID can be mapped to one output PID. If PID mapping conflicts exist, DPM will use the Precedence Rule to decide which output PID to use. All PMTs using the input PID will be updated to reference the output PID specified by the winner.
Pkt Copy	An input PID can be mapped to multiple output PIDs. The PID will be duplicated as many times as needed (up to a certain hardware limitation).

Pkt Copy is recommended for most applications.

7. Select the DP action to use for **Unreferenced Content.** Unreferenced content is the remainder of the transport that is not filtered by the program entries. You can select Drop All (default) or Pass All.

Output	Unref
ASI	Pass, Drop
MOIP1	Pass, Drop

8. In the **Service ID Output** drop-down, select whether the receiver should always generate PSI tables for the Mapped PE even if the selected input channel is not available, or for only valid service channels/IDs. The following table describes each service ID:

Svc ID	Description
Valid Ch	Only transmits the PSI tables for the mapped program if the program exists on the input stream.
All Ch	Transmits the PSI tables for the mapped program even if the program does not exist in the input stream. All Ch is only valid if the PAT, NIT, SDT and PMT are set to Regenerate.

9. Select the **DPM Regeneration Rate Option**. This applies the PowerVu rates (consistent with the uplink). This parameter is only used if Remapping Control is set to None. The following table describes each PSI rate:

PSI Rate	Description
Auto	Matches the generated PSI tables' output rate as the incoming rate.
MPEG Min	Transmits the generated PSI tables on the longest intervals that are allowed by MPEG standard.
SA Std	Transmits the generated PSI tables based on PowerVu standard intervals.

10. The **PSI Table Output Option** drop-down allows the operator to specify which PSI tables to include in the program/output stream. The following table describes each option:

PSI Options	Description
Pass All	Transmits the incoming PSI Tables as is; does not modify the content and rate.
Drop All	Does not transmit any PSI Tables.
Ctl By Table	The operator can enter the Tables menu to select the output mode for each table. The default table selections will be all pass, and only with CDT dropped.

11. Click **Save**.

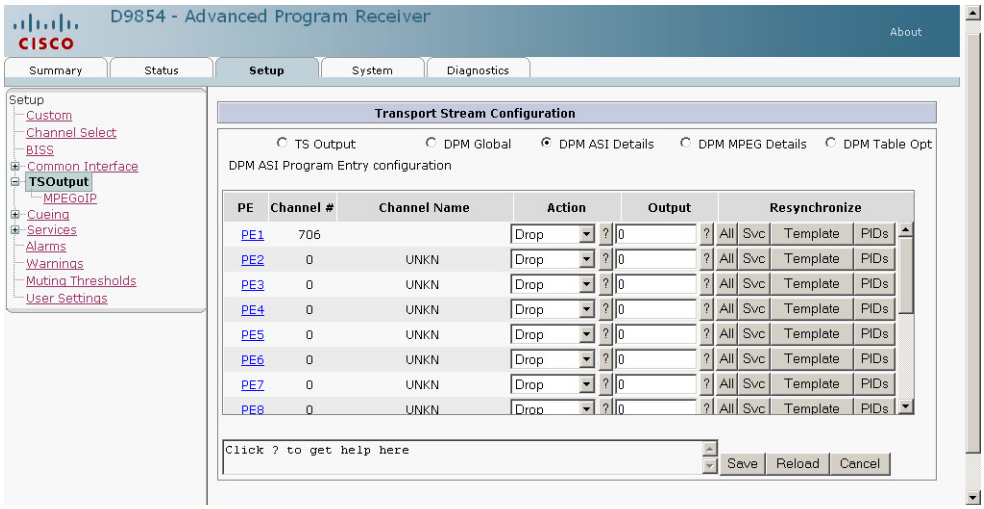
Configuring the Transport Stream: DPM ASI/MPEG Details

To Set up the DPM ASI/MPEG Details

Proceed as follows to set up the DPM ASI/MPEG Details:

Note: The following procedure defines all the available fields. For a typical setup of the DPM, see **Typical set up for Digital Program Mapping (DPM)**, page 5-42.

1. From the user interface of the D9854, click the **Setup** tab and then click the **TSOutput** icon from the sub-page and select **DPM ASI Details** or **DPM MPEG Details** radio button.



2. For each DPM program entry (**PE**), it displays the input **Channel #** and **Channel Name**.

   Note: Any changes made to the DPM ASI/MPEGoIP Program Entry configuration automatically changes the Output Mode to Full DPM Control in the Transport Stream Configuration page.

   When you initially make a change, the page refreshes and the Transport Stream Configuration page appears with the Output Mode changed to Full DPM Control. Click **Save** and continue to edit the DPM ASI/MPEGoIP PE parameters.

3. In the **Action** drop-down, select the DPM program action for the PE (Pass, Map, or Drop). The default is Pass.

4. Enter the DPM Output channel you want to map to the input channel (Channel #). This value is only used if the PE **Action** is set to Map. You can enter a range from 1 to 65535.

5. Each PE output can be synchronized to its input according to one of the four output modes. Click **All** to synchronize services and PIDs, **Svc** to synchronize services only, **Template** to synchronize using a template, or **PIDs** to synchronize using PIDs only.

6. Click **Save**.

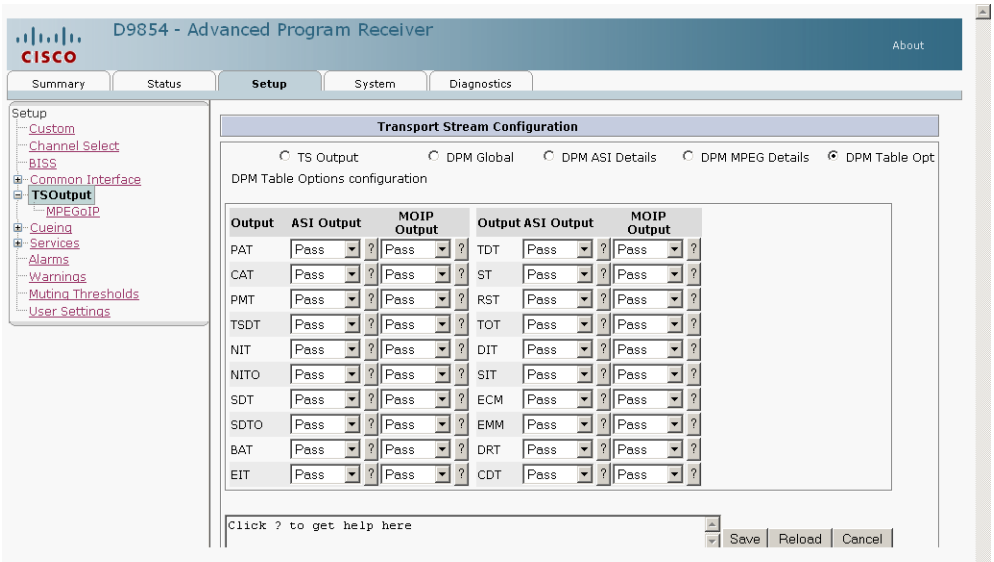
Configuring the Transport Stream: DPM Table Opt

To Set up the DPM Table Options

Proceed as follows to configure the DPM Table options:

Note: The following procedure defines all the available fields. For a typical setup of the DPM, see **Typical set up for Digital Program Mapping (DPM)**, page 5-42.

1. From the user interface of the D9854, click the **Setup** tab and then click the **TSOutput** icon from the sub-page and select **DPM Table Opt** radio button.



Note: Any changes made to the DPM Table Options configuration automatically changes the Output Mode to Full DPM Control in the Transport Stream Configuration page.

When you initially make a change, the page refreshes and the Transport Stream Configuration page appears with the Output Mode changed to Full DPM Control. Click **Save** and continue to edit the DPM Table parameters.

2. Select the tables which will be passed, dropped, regenerated or passed with rate control (PwRC) from the ASI or MOIP Output.

Setting	Mode Options	Description	Default
PAT	Pass, Drop, Regen	Program Allocation Table	Pass
CAT	Pass, Drop, Regen	Conditional Access Table	Pass
PMT	Pass, Drop, Regen	Program Map Table	Pass
TSDT	Pass, Drop	Transport Section Description Table	Pass

Setting	Mode Options	Description	Default
NIT	Pass, Drop, Regen, PwRC	Network Information Table	Pass
NITO	Pass, Drop, PwRC	Network Information Table - Other	Pass
SDT	Pass, Drop, Regen, PwRC	Service Description Table	Pass
SDTO	Pass, Drop, PwRC	Service Description Table - Other	Pass
BAT	Pass, Drop, PwRC	Bouquet Allocation Table	Pass
EIT	Pass, Drop	Event Information Table	Pass
TDT	Pass, Drop	Time-Date Table	Pass
RST	Pass, Drop	Running Status Table	Pass
TOT	Pass, Drop	Time Offset Table	Pass
DIT	Pass, Drop	Discontinuity Information Table	Pass
SIT	Pass, Drop	Selection Information Table	Pass
ECM	Pass, Drop	Encrypted Control Message	Pass
EMM	Pass, Drop	Entitlement Management Message	Pass
DRT	Pass, Drop	Disaster Recovery Table	Pass
CDT	Pass, Drop	Code Download Table	Pass

3. Click **Save**.

Typical set up for Digital Program Mapping (DPM)

Proceed as follows for a typical DPM set up:

Note: Any changes made to the required configurations will automatically change the Output Mode to Full DPM Control in the Transport Stream Configuration page.

When you initially make a change, the page refreshes and the Transport Stream Configuration page appears with the Output Mode changed to Full DPM Control. Click **Save** and continue to edit the remaining parameters.

1. Verify that you are receiving a valid signal and that you have set up the channels that you want to pass, drop or map.
2. From the user interface of the D9854, click the **Setup** tab and then click the TSOutput icon from the sub-page and select **DPM Global** radio button.
3. For **Resynchronize all PEs**, click **ASI** or **MOIP1**. This copies the input services PIDs to the remapped output service PIDs.
4. Select the **DPM ASI Details** radio button.
5. Determine the **PE** containing the channel you want to configure. In the **Action** drop-down, select Pass, Drop, or Map depending on the action desired.
6. Configure the input to output channel mapping. Video and PCR can be output on the same PID or different PIDs. If output on the same PID, they will appear identical to the input.

   Note: If the parameters cannot be saved, the problem may be that the incorrect Map Mode has been selected. Ensure that SvcID & PID is selected when remapping PIDs, otherwise an error message will be displayed and you will need to change the parameters to obtain the correct output.
7. Click **Save**.
8. Select the **TS Output** radio button.
9. From the **Output Mode**, under the **ASI** column, select Full DPM Control.
10. If necessary, select the **Descrambled** mode according to whether the program is to be Scrambled or Descrambled for downstream viewing/monitoring.
11. Click **Save**.
12. Select the DPM Global radio button and set the following parameters:

Parameter	Description
Remapping Mode	Svc ID & PID
Duplication Method	Pkt Copy

Parameter	Description
Unreferenced Content	Drop
PSI Table Output Option	Ctl By Table
Regeneration Rate Option	Any
Service ID Output	Any

13. Click **Save**.
14. Select the **DPM Table Opt** radio button and set the following parameters:

Parameter	Description
PAT	Regen
CAT	Regen
PMT	Regen
TSDT	Drop
NIT	Regen or Drop
NITO	Drop
SDT	Regen
SDTO	Drop
BAT	Drop
EIT	Drop
TDT	Pass
RST	Pass
TOT	Pass
DIT	Pass
SIT	Pass
ECM	Drop
EMM	Drop
DRT	Drop

Parameter	Description
CDT	Drop

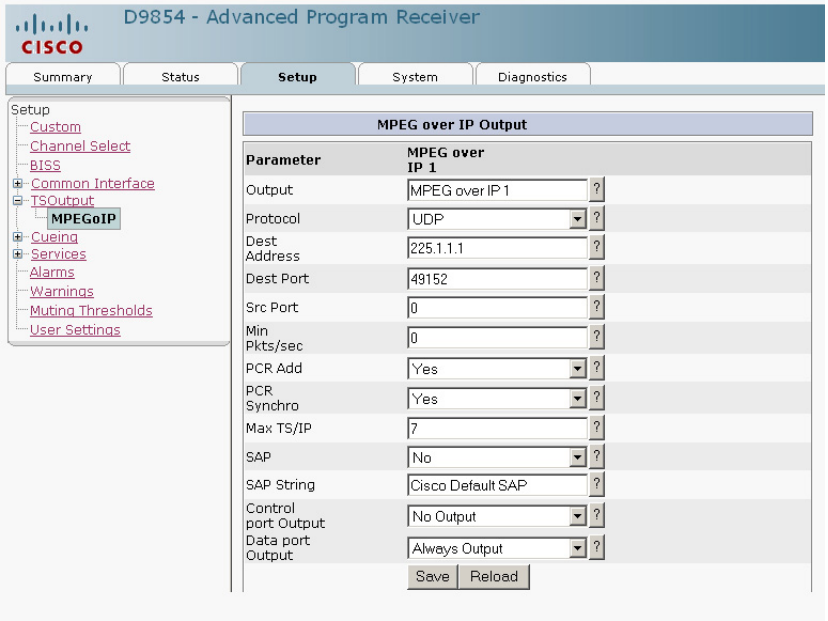
15. Click **Save**.

Setting up the TS Output: MPEGoIP

To Set up MPEGoIP for TS Output

Proceed as follows to set up MPEGoIP for TS Output:

1. From the user interface of the D9854, click the **Setup** tab, expand **TSOutput** and then click the **MPEGoIP** icon from the sub-page.



2. Enter a name assigned to the transport output for ease of reference. You can enter up to 20 characters.
3. Select the transport **Protocol** to be used for the output stream (RTP or UDP).
4. In the **DestAddress** field, enter the multicast destination IP address in the range from 0 to 255, in the format ###.###.###.###. For example, 225.1.1.1.
5. In the **Dest Port** field, enter the destination UDP port number, in the range from 1 to 65535.

   Note: If RTP was selected for **Protocol**, you must enter an even destination port number.
6. In the **Src Port** field, enter the source UDP port number, in the range from 1 to 65535.
7. In **Min Pkts/sec**, enter the minimum number of transport packets per IP packet. You can enter 0 or in the range from 2 to 1000.
8. Select Yes in **PCR Add** to add a PCR to the output stream. Otherwise, select No.
9. From the **PCR Synchro** drop-down, select Yes to always transmit a new Ethernet Packet when a new Program Clock Reference (PCR) arrives. Otherwise, select No.

10. Set the maximum number of transport packets per IP packet in Max TS/IP. You can enter a value in the range from 1 to 7.
11. Select Yes in **SAP** to send Session Announcement Protocol messages. Otherwise, select No.
12. In **SAP String**, enter the SAP identifier (ID)/string. You can enter up to 49 characters.
13. In **Control Port Output** and **Data port Output**, select the control and data MPEGoIP modes.

    Note: If No Output was selected in Output Mode for MOIP1 in TS Output (see **Configuring the Transport Stream: TS Output**, page 5-33), updates to the port modes will have no affect.

    The following table displays the modes:

Control Mode Data Mode	Description
No Output	Disables the MPEGoIP interface.
IGMP	Only outputs data when requested via IGMP.
Always Output	Always outputs data on the port. **Note:** You cannot select Always Output for both ports simultaneously.

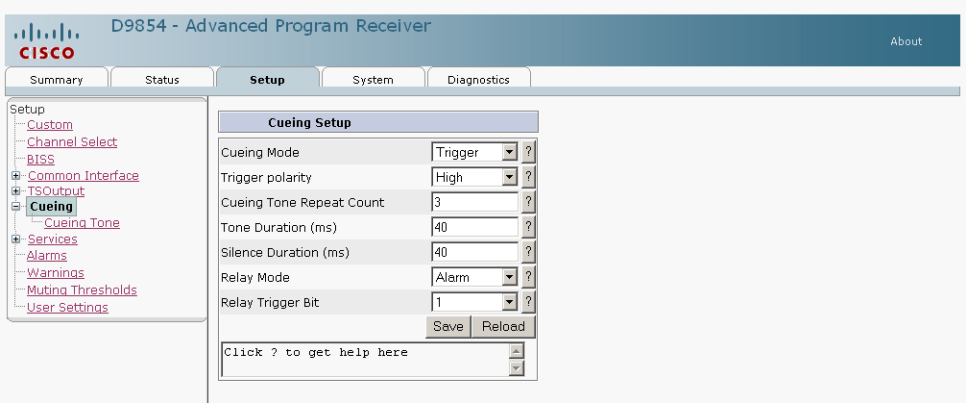
14. Click **Save**.

Setting up Cueing Parameters

To Set Up Cueing Parameters

Proceed as follows to set up the cueing parameters:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Cueing** icon from the sub-page.



2. Set whether the **Cueing Mode** is Cue Trigger or Cue Tone.

   Cue tones are standard Dual-Tone Multi-Frequency (DTMF) tones. The tones are generated at the Cue Tone/Relay output on the rear panel of the receiver.

   Cue trigger refers to open-collector pins which can be generated at the Cue Tone/Relay output on the rear panel of the receiver.

3. Set the **Trigger Polarity**. Select High and an active signal sent by the uplink results in a floating or open collector. An inactive signal results in a GND signal. Select Low, and the reverse of High is true.

4. Type the number of consecutive tone sequences are generated in the **Cueing Tone Repeat Count**. You can enter 1, 2, or 3. The default is 3. The other values are provided when a scenario demands repetition to ensure that the ad-insertion equipment receives the signal.

5. Enter the **Tone Duration**, in milliseconds, in the range from 0 to 80. The default is 40.

6. Enter the **Silence Duration** between the tones, in milliseconds. The duration is in the range from 0 to 80. The default is 40.

7. Select the **Relay Mode** that can be programmed to respond to an Alarm state, or the state of one of the eight cue trigger pins. The response is generated at the Cue Tone/Relay output on the rear panel of the receiver. The following table shows what the possible field settings are and their relationship to the receiver output:

Relay Mode	Condition	Relay Contact NC - C	Relay Contact C - NO
Alarm	Unit Power Off	Open	Close
	Alarm State	Open	Close
	No Alarm	Close	Open
Trigger	Active (selected in PNC)	Close	Open
	Inactive	Open	Close

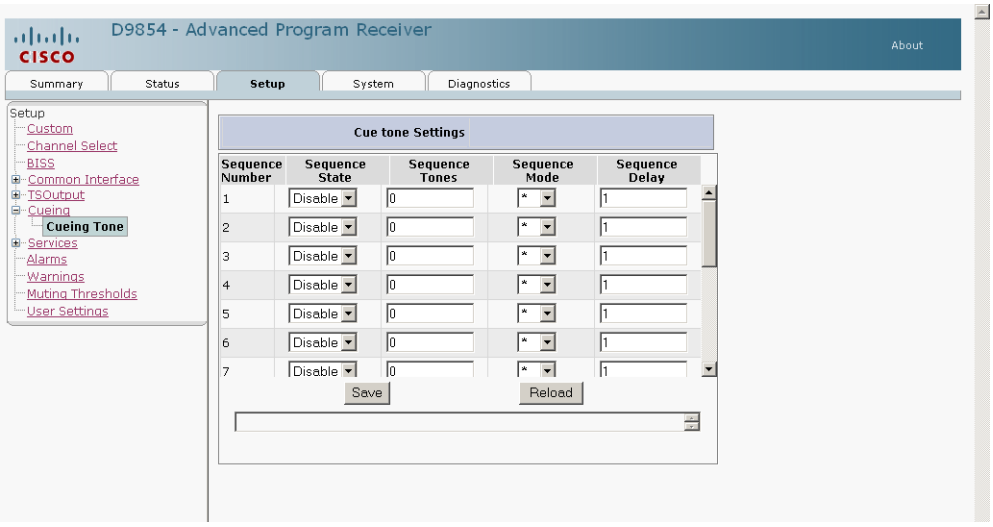
8. Select one of the **Cue Trigger Bits** corresponding to the Cue Trigger port pins (1 to 8).
9. Click **Save**.

Setting up Cueing: Cue Tones

To Set Up Cue Tones

Proceed as follows to set up cue tones:

1. From the user interface of the D9854, click the **Setup** tab, expand **Cueing**, and then click the **Cueing Tone** icon from the sub-page.



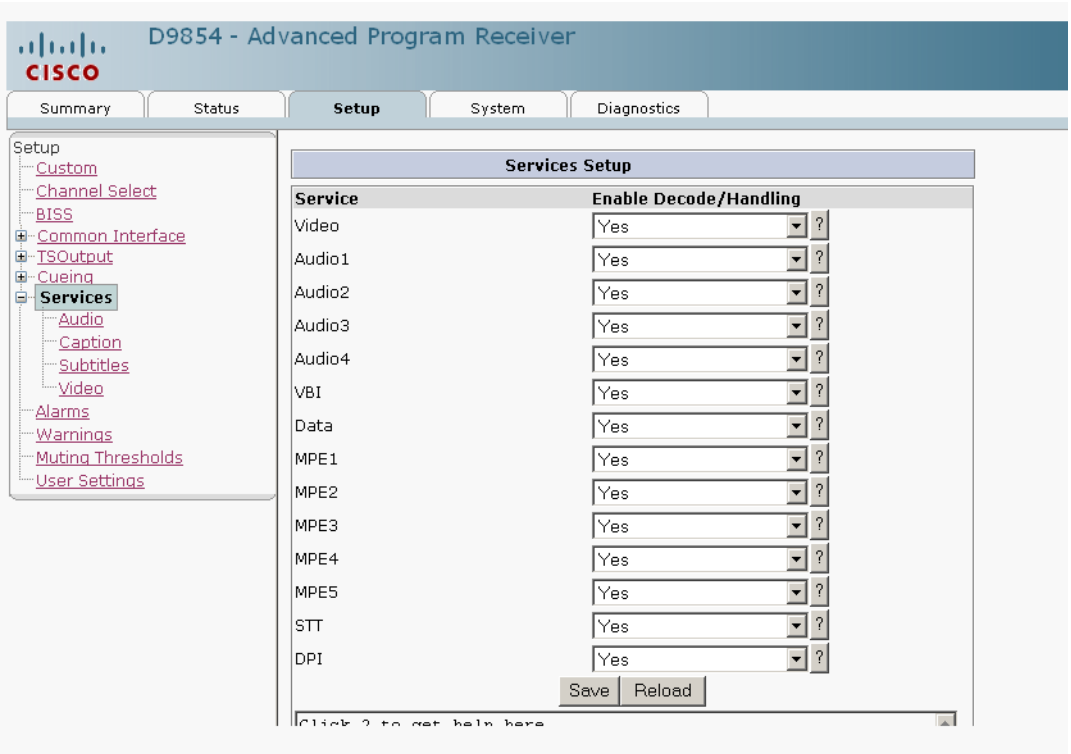
2. The Sequence Number lists the tone sequences. The receiver supports up to 16 tone sequences. You can configure the state, tones, mode, and delay for each tone sequence.
3. Set the **Sequence State** (Enabled or Disabled). When disabled, no cue tone is output.
4. Enter the **Sequence Tones**, which are the cue tone digits used in your network (1 to 999).
5. Select the **Sequence Mode**, which specifies what to transmit in the sequence. Select * for Start Tone, # for the End Tone, and */# for transmitting the Start Tone and then the End Tone after waiting the specified delay time in the option below.
6. Enter the **Sequence Delay**, in seconds, that is sent when */# is used in the Mode option above. You can enter a value in the range from 1 to 255. The default is 30.
7. Click **Save**.

Setting up Services

To Set Up Services

Proceed as follows to set up the service to be decoded by the receiver.

1. From the user interface of the D9854, click the **Setup** tab and then click the **Services** icon from the sub-page.



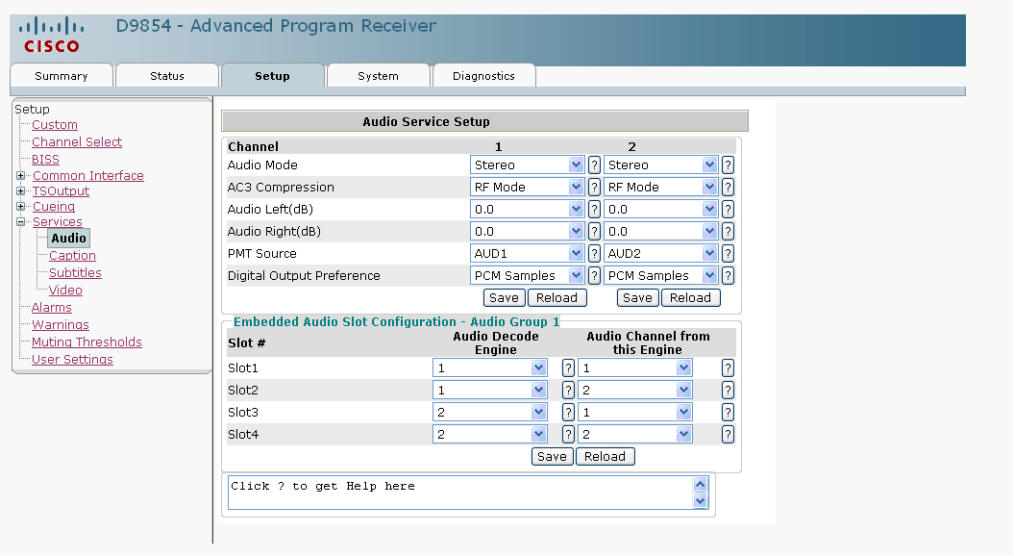
2. The Service column displays all the services that can be enabled to decode. Select Yes or No in the **Enable Decode/Handling** column.
3. Click **Save**.

Setting up Services: Audio

To Set Up the Audio Service

Proceed as follows to set up the audio service:

1. From the user interface of the D9854, click the **Setup** tab, expand **Services**, and then click the **Audio** icon from the sub-page.



2. There are two audio settings. It allows you to configure the two balanced audio outputs on the rear panel (Audio 1 and Audio 2), known in the Web Interface as 1 and 2, respectively.

3. Set the **Audio Mode**, which configures how audio received on the audio input is handled.

   Select Stereo (Left and Right are passed directly through to Left and Right), R-Mono (Right is passed to both the Left and Right), L-MONO (Left is passed to both the Left and Right), or Mixed (Left is passed to both the Left and Right, and Right is passed to both the Left and Right).

4. The **AC3 Compression** is only applicable if the received signal is Dolby Digital (AC-3). This specifies the Dolby Digital (AC-3) Compression range of the received audio. The selections are Line Mode, Custom 1, Custom 0 or RF Mode. RF Mode is recommended for analog cable modulators.

5. **Audio Left** is the volume adjustment for the Left audio channel. You can select a value in the range from -6.0 dB to +6.0 dB, in increments of 0.5 dB.

6. **Audio Right** is the volume adjustment for the Right audio channel. You can select a value in the range from -6.0 dB to +6.0 dB, in increments of 0.5 dB.

7. Select the **PMT Source** for the audio channel (None, AUD1, AUD2, AUD3, or AUD4).

The following options only appear if the D9854 contains SDI:

8. Set the **Digital Output Preference** for the SDI output or AES-3id output. The following describes the options:

Mode	Description
PCM Samples	If the audio source is MPEG Layer II format, the output will be routed to the SDI output as PCM.
Compressed	If the audio source is AES compressed, the output will routed to the AES-3id output, compressed.

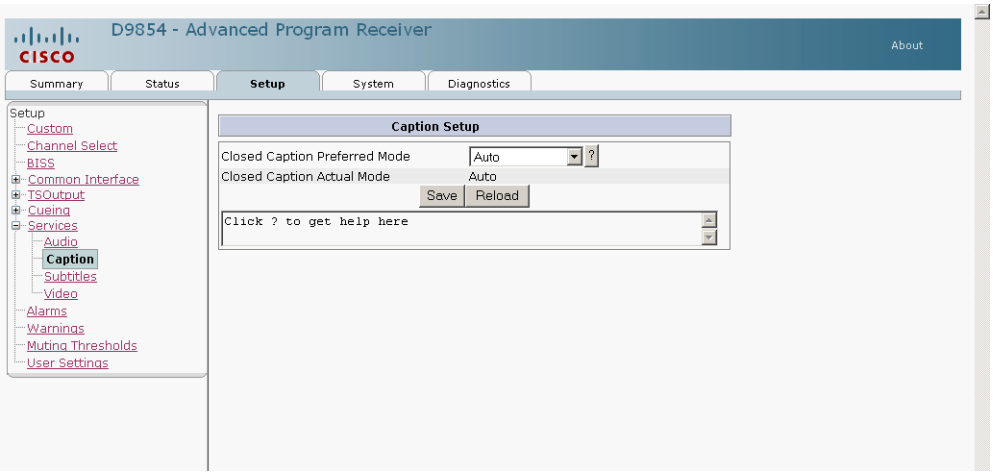
9. In the **Embedded Audio Slot Configuration** section, select the audio source (1 or 2) in the **Audio Decode Engine** column and the source audio channel (1 or 2) in the **Audio Channel from this Engine** column for **Slot1** to **Slot4**. The Slot is the HANC? position.
10. Click **Save**.

Setting up Services: Caption

To Set Up the Caption Parameters for Services

Proceed as follows to set up the caption parameters:

1. From the user interface of the D9854, click the **Setup** tab, expand **Services**, and then click the **Caption** icon from the sub-page.



2. Select the Closed Caption Preferred Mode. There are multiple in the stream. The default is Auto.

   Note: SA Custom is not supported when telecine video coding is enabled.

3. The **Closed Caption Actual Mode** displays the actual caption mode used. This is read-only.

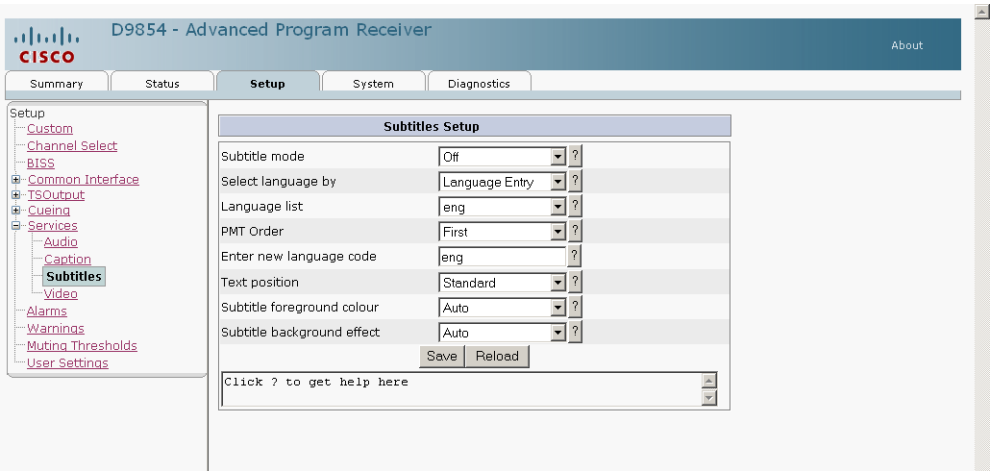
4. Click **Save**.

Setting up Services: Subtitles

To Set Up Subtitles for Services

Proceed as follows to set up the subtitles:

1. From the user interface of the D9854, click the **Setup** tab, expand **Services**, and then click the **Subtitles** icon from the sub-page.



2. Select the Subtitle mode to use to display the program subtitles. The following table describes each of the available options:

Op Mode Selection	Description
Off	No subtitles are displayed.
On	Functions as an "Auto" setting. DVB subtitles are displayed when only DVB subtitles are transmitted on the channel, and likewise, Imitext subtitles are displayed when only Imitext subtitles are transmitted on the channel. When both DVB and Imitext subtitles are available on the same channel, only DVB subtitles will be displayed.
DVB	Displays only DVB titles. For example, if DVB is selected, but both DVB and Imitext titles are being transmitted on the same channel, only DVB subtitles will be displayed.
Imitext	Displays only Imitext subtitles. For example, if Imitext is selected, but both DVB and Imitext titles are being transmitted on the same channel, only Imitext subtitles will be displayed.

3. Select language by is used to select the language type to display the subtitles. The default is Language List. Language Entry and PMT Order are more applicable for advanced applications. The following table describes each of the available options and how to set them:

Select Language By Option	Description
Language List	Each subtitling PID can contain multiple languages. Use this setting to select the language from the Language List by toggling through the available selections. If Language List is selected, PMT Order and Entry fields are not used.
Language Entry	Use this setting with Entry to directly enter the language code when the language you want is not in the list. In this case enter the three-character code provided by your uplink service provider under Entry using the numeric keypad (e.g., eng for English).
PMT Order	Use this setting to select one of up to eight languages as assigned in the PMT for the tuned channel on the receiver. Toggle through the PMT Order to select the correct language within the order (i.e., First to Eighth), available from your uplink service provider.

4. Select the language from the **Language List**. If Language List is selected, PMT Order and Language Entry are not used.
5. Select the correct language within the **PMT Order** (First to Eighth), available from your uplink service provider.
6. If you selected Language Entry, **Enter a new language code** when the language you want is not in the list. You can enter the three-character code provided by your uplink service provider under Entry (e.g., eng for English).
7. Set the **Text position** of the on-screen subtitle text (Standard or Extended).
8. The **Subtitle foreground colour** sets the colour of Imitext subtitles only. Auto displays text in the colour transmitted by the subtitling equipment. Yellow and White overrides the colour set by the uplink and display text in the selected colour.

9. The Subtitle background effect sets the background on which Imitext subtitles are displayed. The following table identifies the affect each setting has on the displayed subtitle text:

BackGnd Option	Description
Auto	Follows (i.e., same as) the uplink subtitling equipment setting.
Shadow	Applies an outline to the right side of each text character. No background box is applied to subtitles, i.e., text is visible directly on top of video.
Opaque	Applies a black box to each text character.
Semi	Applies a semi-transparent box to subtitle text.
None	No shadow or outline is applied to subtitle text.

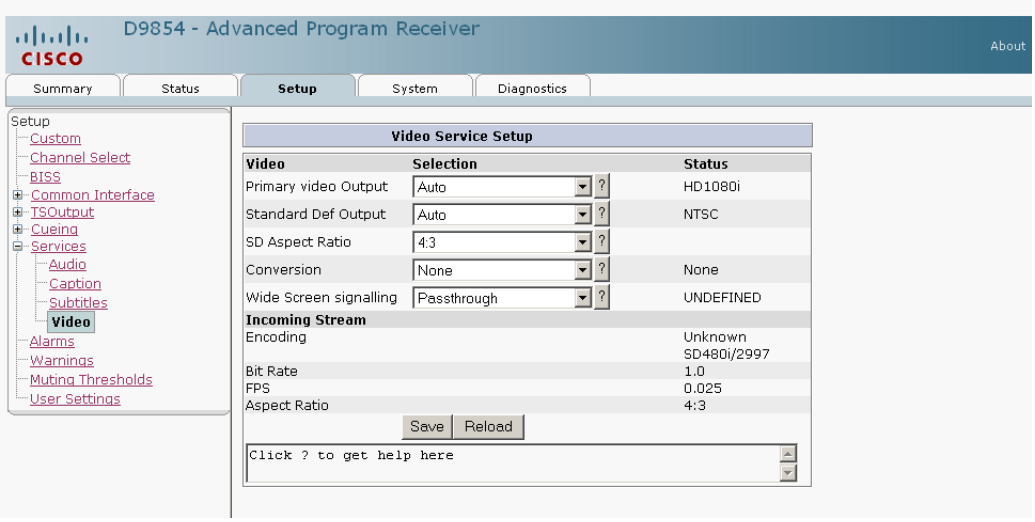
10. Click **Save**.

Setting up the Video Service

To Set up the Video Service

Proceed as follows to set up the video service:

1. From the user interface of the D9854, click the **Setup** tab, expand **Services** and then click the **Video** icon from the sub-page.



2. The Status column displays the current settings and the Selection column allows you to change the video settings as follows:
3. Select the **Primary Video Output** format. The options are Auto, HD 720p, or HD 1080i.
4. In the **Standard Def Output** drop-down, select the video format for the output when the input video is SD format. The options are Auto, NTSC, PAL-N (AR), PAL-M, or PAL-B/G/I/D. You must use NTSC for 525-line systems and PAL-B/G/I/D for 625-line systems.
5. Select the **SD Aspect Ratio** of your TV (4:3 or 16:9, wide aspect ratio). The default is 4:3. Set it to the corresponding value.
6. Select the **Conversion** that the receiver will perform on the incoming signal for the picture to be displayed correctly (i.e., to correspond to the aspect ratio of your TV) on your TV, based on your selection.

   The options are None, Auto, Auto AFD (Auto setting using Active Format Descriptor), 16:9 L/B (letter box), 4:3 P/B (pillar box), 14:9, 4:3 CCO, and 16:9 Scale. The default is Auto.

7. Select the **Wide Screen Signalling** output mode. It is used to select how the receiver affects PAL WSS when it is present in the VBI. The table below describes each of the options. The default is Auto.

WSS Mode	Description
Passthrough	Passes WSS (unmodified, as received by the D9854 receiver) on VBI LIne 23 when present
Auto:Create	Creates WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through.
Auto:Modify	Modifies WSS to output the correct aspect ratio, when performing aspect ratio conversion, otherwise it is passed through
Suppress	Disables Line 23 VBI processing. WSS is not output on line 23.

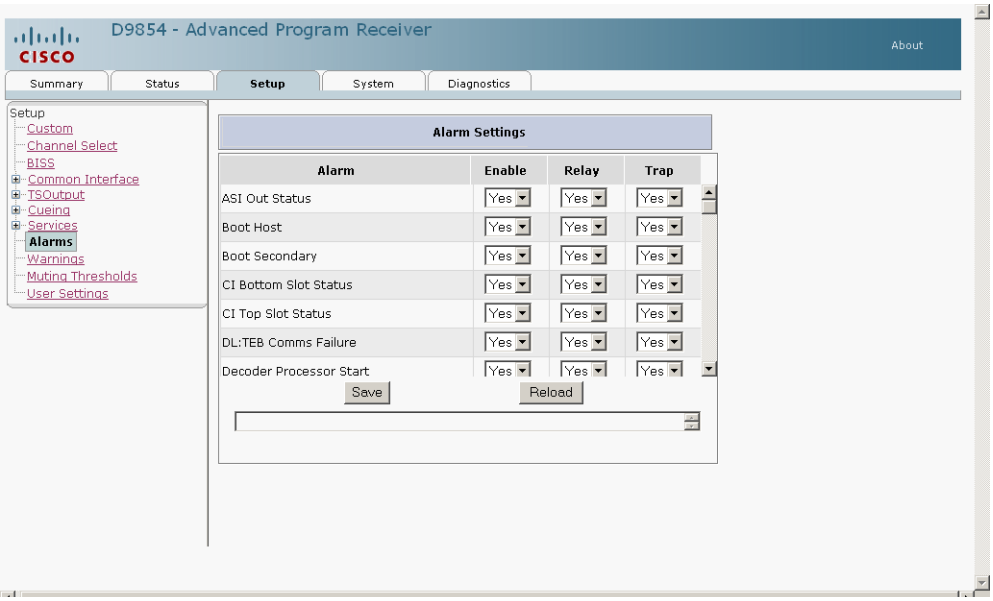
8. The **Incoming Stream** section indicates the encoding, bit rate, FPS and aspect ratio of the incoming signal. The fields are read-only.
9. Click **Save**.

Setting up Alarms

To Set Up Alarms

Proceed as follows to set up the alarms:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Alarms** icon from the sub-page.



2. The Alarm Settings page displays a list of the alarm/fault messages. For more information on alarm messages, refer to **Messages**, page 6-3.

3. Set **Enable** to Yes and the alarm message will be reported. Set to No and the fault won't be reported and the alarm relays will not be triggered or change state.

   Note: Enable must be set to Yes for the Relay and Trap settings to be functional.

4. Set **Relay** to Yes for the rear panel alarm relay to be triggered to enable external equipment connected to the alarm port.

5. Set **Trap** to Yes and the SNMP trap message will be sent to the trap destination; otherwise, the fault message will be ignored.

   "No" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.

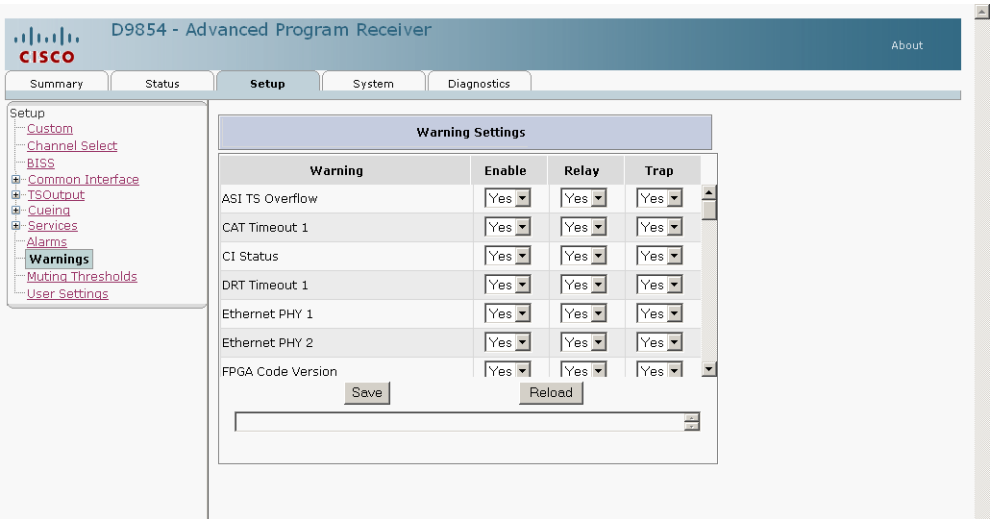
6. Click **Save**.

Setting up Warnings

To Set Up Warnings

Proceed as follows to set up the warning parameters:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Warnings** icon from the sub-page.



2. The Warning Settings page displays a list of the warning messages.
3. Set **Enable** to Yes and the warning message will be reported. Set to No and the fault won't be reported.

   Note: Enable must be set to Yes for Relay and Trap messages reporting to be functional.

4. Set **Relay** to Yes for the rear panel relay to be triggered to enable external equipment connected to the alarm port.
5. Set **Trap** to Yes and the SNMP trap message will be sent to the trap destination; otherwise, the warning message will be ignored.

   "No" indicates the trap or relay is enabled, but Enable is set to No, which will prevent relay or trap operation.

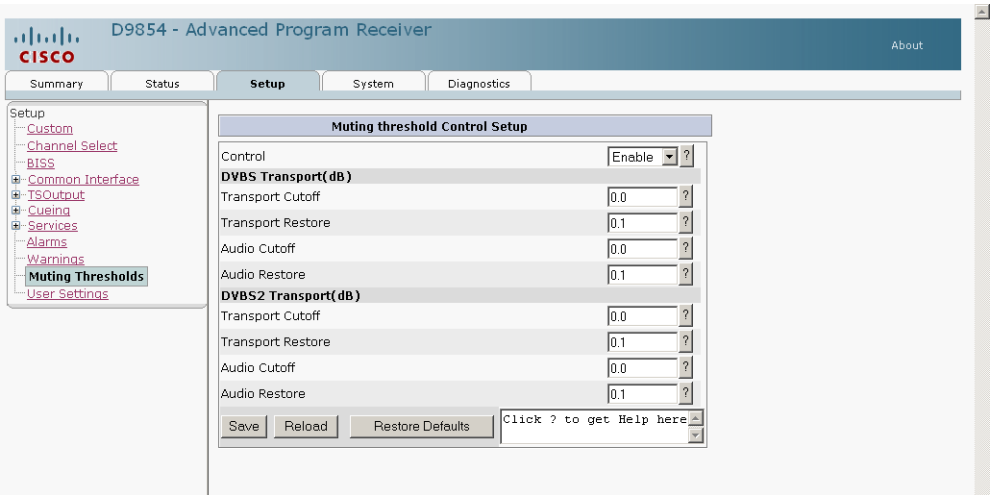
6. Click **Save**.

Setting up Muting Threshold Controls

To Set Up the Muting Threshold Controls

Proceed as follows to set up the muting threshold controls:

1. From the user interface of the D9854, click the **Setup** tab and then click the **Muting Thresholds** icon from the sub-page.



2. The **Control** option allows you to mute the transport stream and audio in the event of an unstable signal, poor signal or no signal condition (Enable or Disable). The default is Enable.

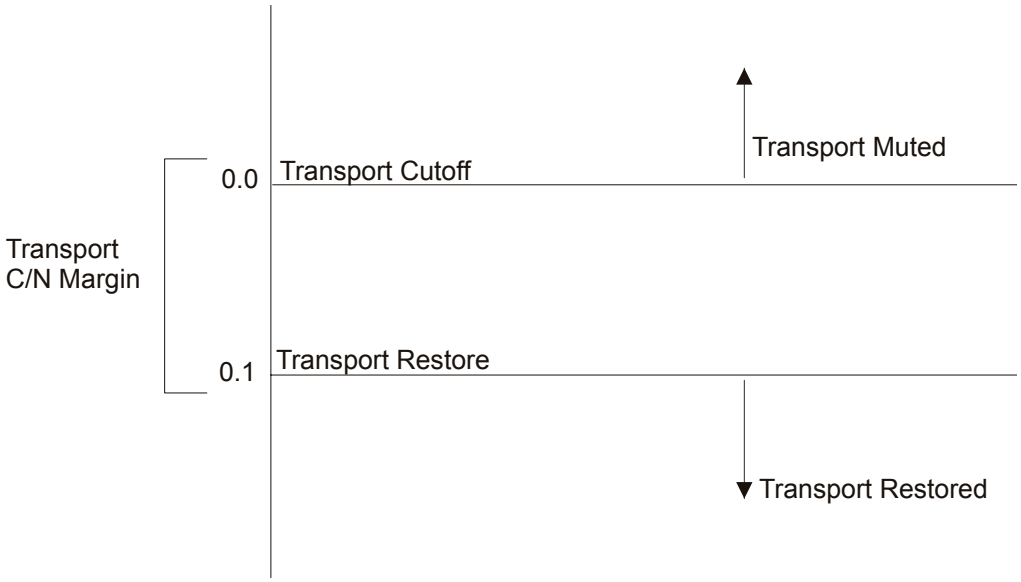
3. The **Transport Cutoff** and **Restore** for both **DVBS** and **DVBS2 Transport** sets how the receiver reacts when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation. This allows you to set the transport C/N margin values for the receiver. The receiver uses these noise values/settings as limits during normal operation to determine whether to mute the transport in the event of a noisy signal, poor signal or no signal condition.

   The **Transport Cutoff** is the lower limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Cutoff is 0.0.

The **Transport Restore** is the upper limit for the transport C/N margin setting. The transport will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Transport Restore is 0.1.

Note: Muting Control must be set to Enable for these settings to be active.

Transport Default C/N Margin Relationship



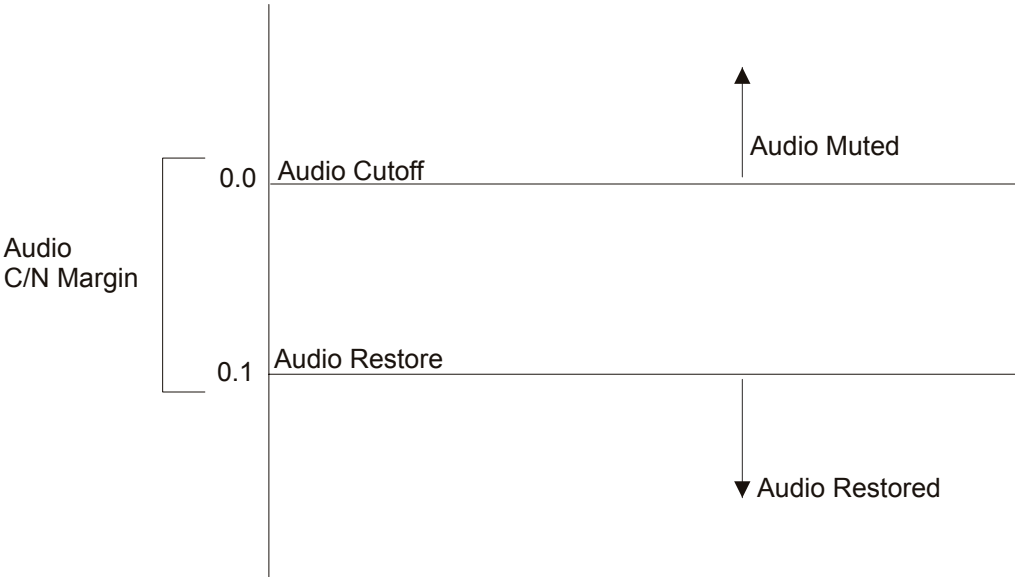
4. The Audio Cutoff and Restore for both DVBS and DVBS2 Transport sets the Audio channel Cutoff and Restore C/N margin values (limits) to mute audio when the signal quality is severely degraded when using DVB-S or DVB-S2 modulation.

   The Audio Cutoff is the lower limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Cutoff is 0.0.

The Audio Restore is the upper limit for the audio C/N margin setting. Audio will be muted when the C/N margin is below the Cutoff setting, and un-muted (e.g., restored) when the C/N margin rises above the Restore setting for a preset period of time. The adjustable operating range is from -2.0 to 20.0 dB. The default setting for Audio Restore is 0.1.

Note: Muting Control must be set to Enable for these settings to be active.

Audio Default C/N Margin Relationship



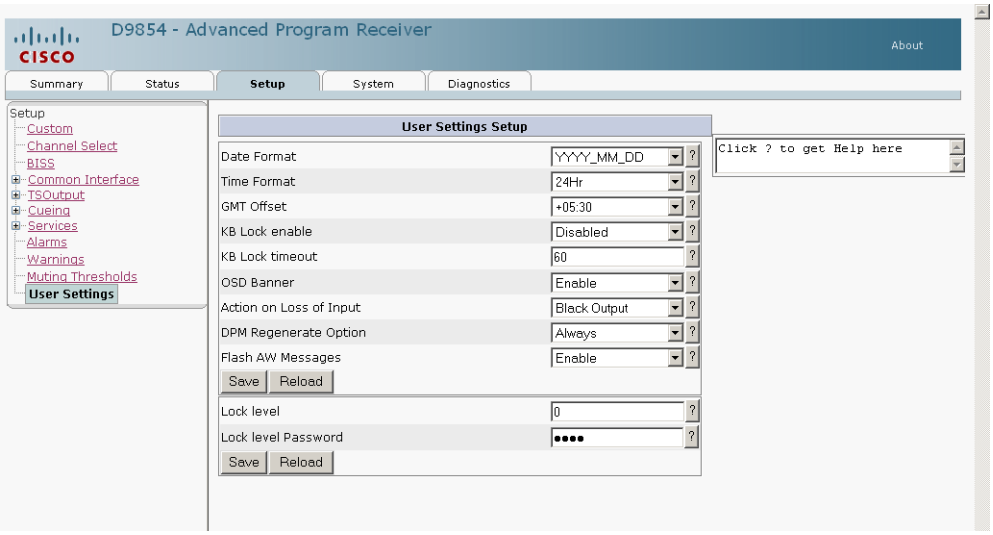
5. Click **Save** to save and apply the settings.
   Click **Restore Defaults** to restore the RF options to their factory set (default) values.

Configuring User Settings

To Configure your user settings

Proceed as follows to configure your user settings:

1. From the user interface of the D9854, click the **Setup** tab, and then the **User Settings** icon from the sub-page.



2. Set the **Date Format** of the receiver. The following formats are supported: YYYY_MM_DD, DD_MM_YYYY, MM_DD_YYYY.

3. Set the **Time Format** of the receiver. Time information is normally broadcast as part of the transmitted digital signal. It is usually the broadcasters local time relative to GMT (Greenwich Mean Time). The following formats are supported: 24Hr, 24 Hr SuspendZero (the leading zero is dropped from the time), 12Hr, 12Hr SuspendZero (the leading zero is dropped from the time).

4. Set the **GMT Offset**. The time is displayed using a time zone instead of the true local time. If the current broadcast time is not your local time, you must change this time setting in the range from -12.0 to +12.0 hours in 0.5 hour increments.

5. Select the **KB Lock enable** to set the front panel keypad lock state (Enabled or Disabled).

6. **KB Lock Timeout** sets the keypad lock timeout period. The lock timeout period takes effect when the keypad has not been touched (i.e., a key has not been pressed) when on the Main Menu for the set period. Avoid setting the period to a short duration when the keypad is used often. Enter a value in the range from 5 to 1800 seconds. The default is 60 seconds.

7. Set whether alarms and warnings are to be displayed on the on-screen display (e.g., TV monitor) in **OSD Banner** (Enable or Disable).

8. The **DPM Regenerate Option** selects whether to regenerate the PSI tables. Select Always or As Needed (only if the content has changed).
9. Set **Flash AW Messages** to Enable to flash alarms and warnings on the front panel of the receiver.
10. Click **Save** to save the user settings.
11. The **Lock level** sets the front panel keypad lock level (0, 1, 2, or 3).

    Note: Lock level 4 can only be changed through a telnet session or a PNC uplink signal.
12. Enter the **Lock level Password** to successfully set the current lock level. The default password for all lock levels is 1234.
13. Click **Save** to save the lock level settings.

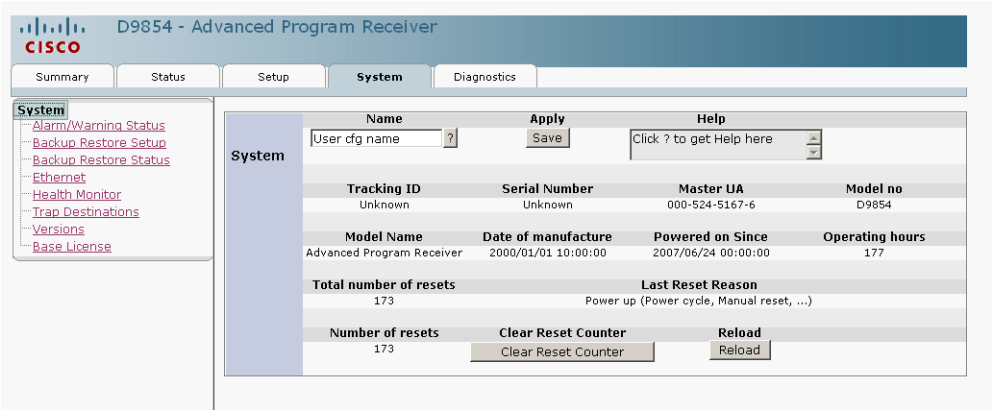
Viewing the System Status

To View the System Status

Proceed as follows to view the System status page:

1. From the user interface of the D9854, click the **System** tab, and then the **System** icon from the sub-page.

   The System page displays the parameters associated with the D9854 system, such as serial number, model number, number of resets and reset reason.



2. You may optionally change the device **Name** and click **Save**. The default name is D9854.

3. Click **Clear Reset Counter** to clear the **Number of resets** field and it resets the counter back to 0.

Viewing the Alarm/Warning Status

To View the Alarm and Warning Status Information

Proceed as follows to view the Alarm/Warning Status page:

From the user interface of the D9854, click the **System** tab and then the **Alarm/ Warning Status** icon from the sub-page.

The Alarm and Warning Status page displays all the active event messages for the D9854 system.

The following table shows the alarm/warning status table information:

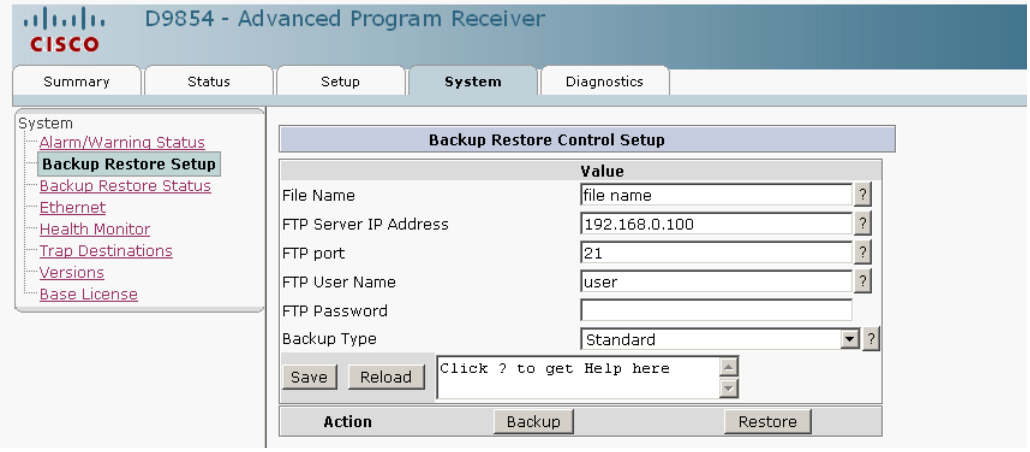
Status	Description
Category	Type of message (alarm or warning).
Number Active	Displays the number of alarms and warnings that have an active status.
Type	Shows whether it is an alarm or a warning message.
Name	Name of the alarm or warning. For more information on alarm messages, refer to **Messages**, page 6-3.
Text	Content of the message.
Set Since	Date and time of the alarm or warning.

Setting up Backup Restore

To Set Up your Backup Restore

Proceed as follows to configure the backup and restore control:

1. From the user interface of the D9854, click the **System** tab and then **Backup Restore Setup** icon from the sub-page.



Note: You must have access to an FTP Server (e.g. WinFTP) on a network or a local PC before you can setup backup/restore controls.

2. Type the **File Name** of the backup/restore file. You can enter up to 31 characters.

3. Set the **FTP Server IP Address** of the FTP server used to restore the backup/restore file. The address is up to 12 characters in length (e.g. 171.300.100.200 and in the range from 0 to 255.

4. Set the **FTP port** of the FTP server used to store the backup/restore file. You can enter a port number in the range from 1 to 65535.

5. Set the **FTP Username** and **Password** to access the FTP server.

   Note: The FTP Password is not retained in the receiver. You must re-enter the password before initiating the backup or restore operation.

6. Select the backup data sets (**Backup Type**) to be included in the backup/restore file. The following table lists the backup files and their descriptions:

Status	Description
Standard	Select Standard to save user settings to the backup file.
Extended	Select Extended to save user settings and tuning information to the backup file.

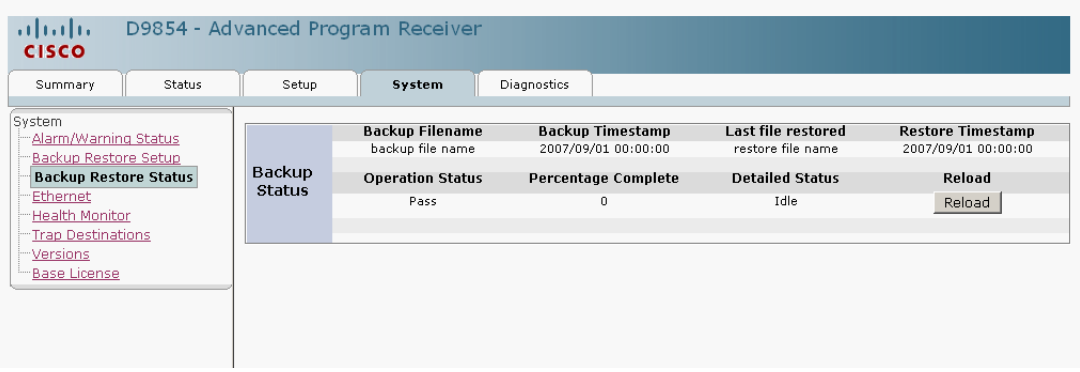
7. Click **Backup** to save the settings to a backup file. Click **Restore** to retrieve the last backed up file.
   While backup or restore is in progress, the operation status, file transfer percentage, and detailed status windows appear.

Viewing Backup Restore Status

To View Backup Restore Status Information

Proceed as follows to view the Backup Restore Status page:

From the user interface of the D9854, click the **System** tab and then the **Backup Restore Status** icon from the sub-page.



The following table shows the backup status table information:

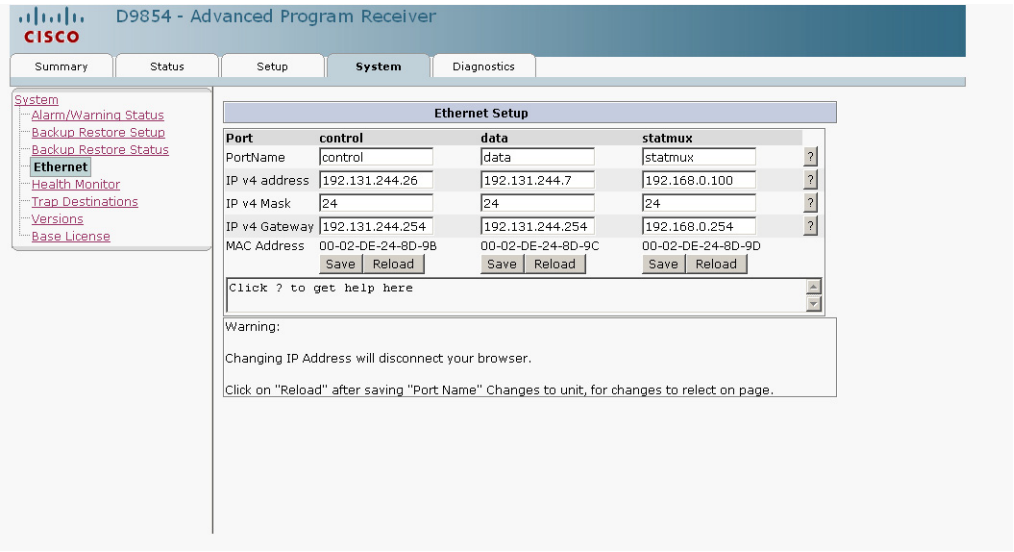
Status	Description
Backup Filename	Name of the file to use.
Backup Timestamp	Date and time of the last successful backup file saved.
Last file restored	Name of the last file that was restored.
Restore Timestamp	Date and time of the last successful restore.
Operation Status	Status of the current backup operation (Inprogress, Pass, or Fail).
Percentage Complete	Percentage of backup function completed.
Detailed Status	Detailed processing step for tracking backup progress.

Setting up Ethernet Ports

Setting up the Ethernet Ports

Proceed as follows to configure the Ethernet ports:

1. From the user interface of the D9854, click the **System** tab, and then **Ethernet** icon from the sub-page.



2. The Ethernet Setup page allows you to set the parameters for communicating with other equipment via the Ethernet Data and Management ports for MPEGoIP and MPE applications and upgrading application software.
3. In **PortName**, enter the description or name for the Ethernet port. You can enter up to 20 alphanumeric characters in length.
4. Set the **IPv4 address** for its participation in a Network environment. The address is 12 digits in length (###.###.###.###).
5. Enter the **IP v4 Mask** for its participation in a Network environment (8 to 30).

6. Set the **IP v4 Gateway Address** on the Network, used to expose the receiver to a WAN. The IP v4 Address/IPv4 Mask and IP v4 Gateway Address should be changed together, i.e., as a group. The following table shows the most commonly used Subnet mask values to enter for a chosen IP address mask, which will depend on the size of your network.

Mask	Subnet Mask
8	255.0.0.0
16	255.255.0.0
24	255.255.255.0

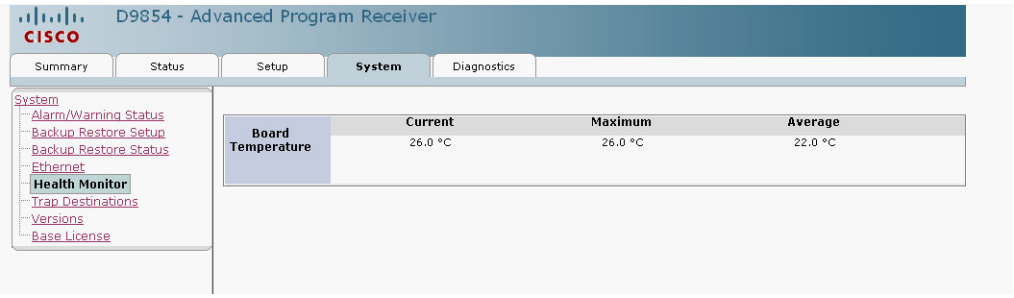
7. The MAC Address displays the MAC address of the receiver. It is set at the factory and is a read-only value.
8. Click **Save**.

Viewing Temperatures

To View the operating Temperatures

Proceed as follows to view the Health Monitor page:

From the user interface of the D9854, click the **System** tab, and then the **Health Monitor** icon from the sub-page.



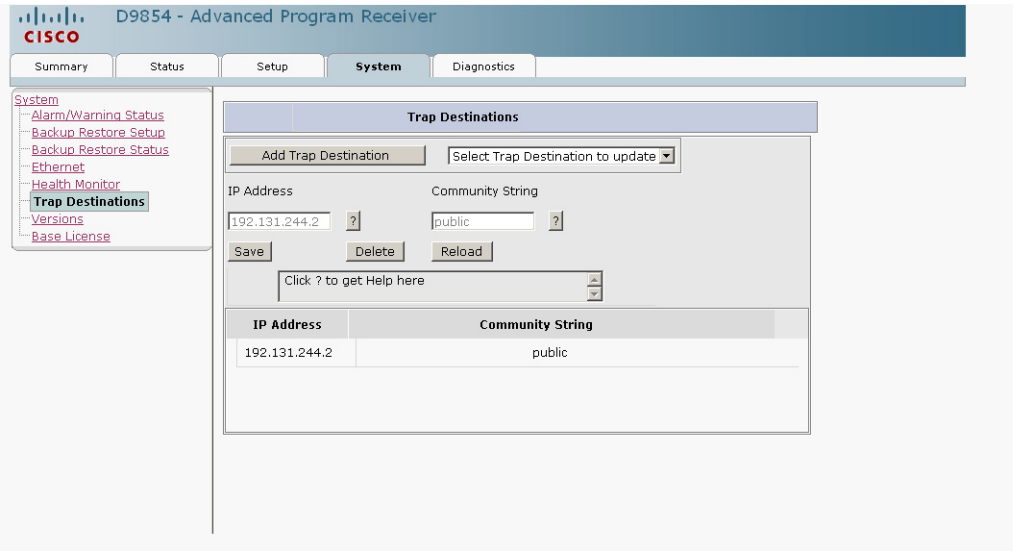
The Health Monitor page displays the current operating temperature (Current), the maximum operating temperature (Maximum) that has been reached, and the average operating temperature (Average). The values are displayed in Degrees Celsius.

Setting up SNMP Trap Destinations

To Add a Trap Destination

Proceed as follows to add a Trap Destination:

1. From the user interface of the D9854, click the **System** tab, and then the **Trap Destinations** icon from the sub-page.



2. Click **Add Trap Destination**.
3. Type the **IP Address** that sets the destination for SNMP trap messages for events (i.e. fault messages). You can enter up to 12 characters (e.g., 155.128.100.200).
4. Type the **Community String** for the trap destination (IP Address entered above).

   Enter **public** or **custom** string. The default is public. You can enter a string up to 35 characters.
5. Click **Save**. The new trap destination is created and listed in the table below.

To edit an existing Trap Destination

Proceed as follows to edit an existing Trap Destination:

1. From the user interface of the D9854, click the **System** tab, and then the **Trap Destinations** icon from the sub-page.
2. From the Select Trap Destination to update drop-down, select the trap destination entry you want to edit.
3. Edit the **IP Address** and/or **Community String** for the SNMP trap messages.
4. Click **Save**. The entry is updated.

To Delete a Trap Destination

Proceed as follows to delete a Trap Destination:

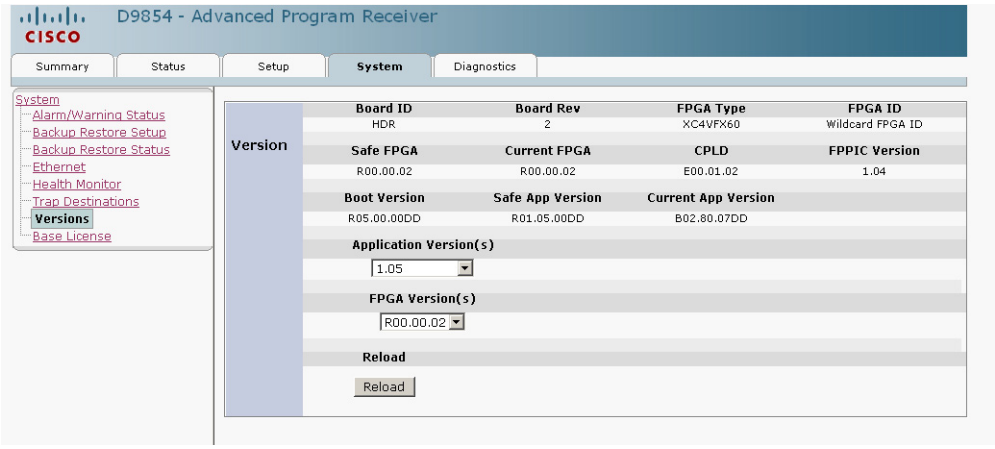
1. From the user interface of the D9854, click the **System** tab, and then the **Trap Destinations** icon from the sub-page.
2. From the Select Trap Destination to update drop-down, select the trap destination entry you want to delete.
3. Click **Delete**. The trap destination is deleted.

Viewing Version Information

To View the Version Information

Proceed as follows to view the Version information:

From the user interface of the D9854, click the **System** tab, and then **Versions** icon from the sub-page.



The Version page displays the factory loaded application version number, currently running application version number, current and safe limits for the Field Programmable Gate Array (FPGA) version number, and the Complex Programmable Logic Device (CPLD) version number.

In the Application Version(s) drop-down, you can choose different application version number to view.

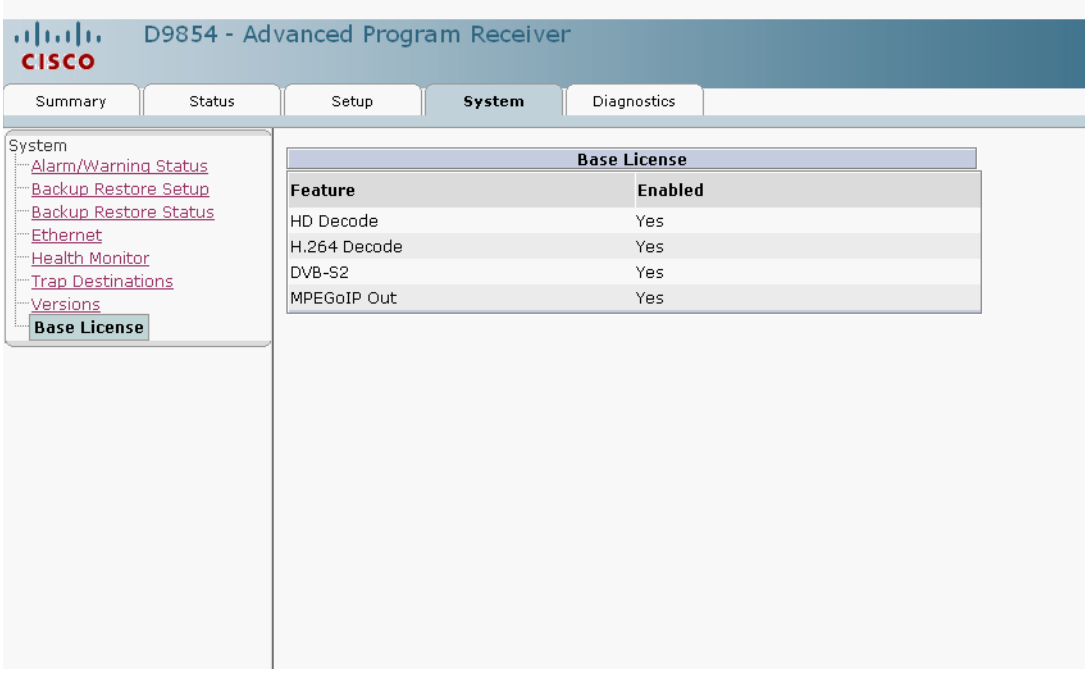
In the FPGA Version(s) drop-down, you can choose a different FPGA application version number to view.

Viewing License Information

To View the License Information

Proceed as follows to view the Base License information:

From the user interface of the D9854, click the **System** tab, and then **Base License** icon from the sub-page.



The Base License page displays a list of software licenses for the D9854 Advanced Program Receiver and whether each of the software licenses are enabled or disabled.

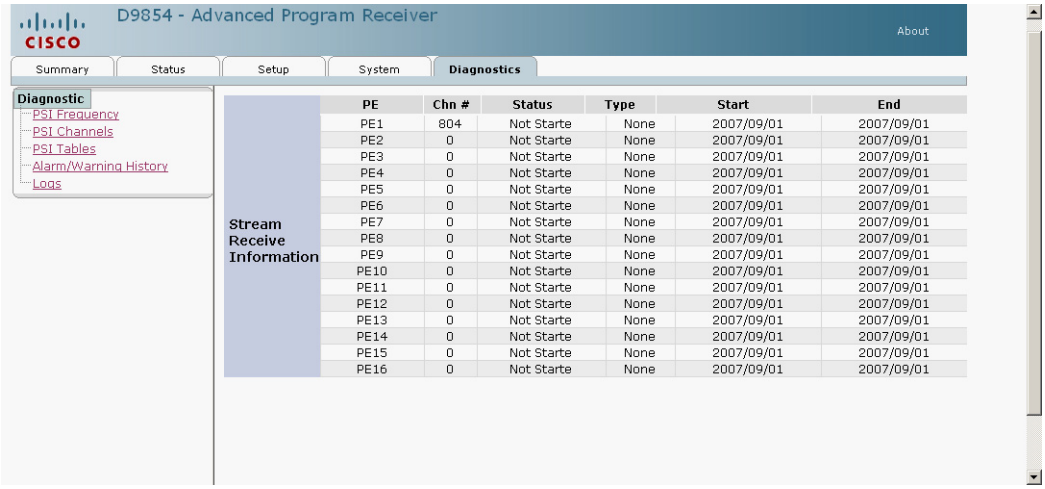
Note: All software licenses are enabled for this release (temporarily). Any of these required licenses will need to be purchased from Cisco in subsequent software releases.

Viewing the Program Entry Stream Information

To View the PE Stream Information

Proceed as follows to view the PE stream information:

From the user interface of the D9854, click **Diagnostics** tab.



PE	Chn #	Status	Type	Start	End
PE1	804	Not Starte	None	2007/09/01	2007/09/01
PE2	0	Not Starte	None	2007/09/01	2007/09/01
PE3	0	Not Starte	None	2007/09/01	2007/09/01
PE4	0	Not Starte	None	2007/09/01	2007/09/01
PE5	0	Not Starte	None	2007/09/01	2007/09/01
PE6	0	Not Starte	None	2007/09/01	2007/09/01
PE7	0	Not Starte	None	2007/09/01	2007/09/01
PE8	0	Not Starte	None	2007/09/01	2007/09/01
PE9	0	Not Starte	None	2007/09/01	2007/09/01
PE10	0	Not Starte	None	2007/09/01	2007/09/01
PE11	0	Not Starte	None	2007/09/01	2007/09/01
PE12	0	Not Starte	None	2007/09/01	2007/09/01
PE13	0	Not Starte	None	2007/09/01	2007/09/01
PE14	0	Not Starte	None	2007/09/01	2007/09/01
PE15	0	Not Starte	None	2007/09/01	2007/09/01
PE16	0	Not Starte	None	2007/09/01	2007/09/01

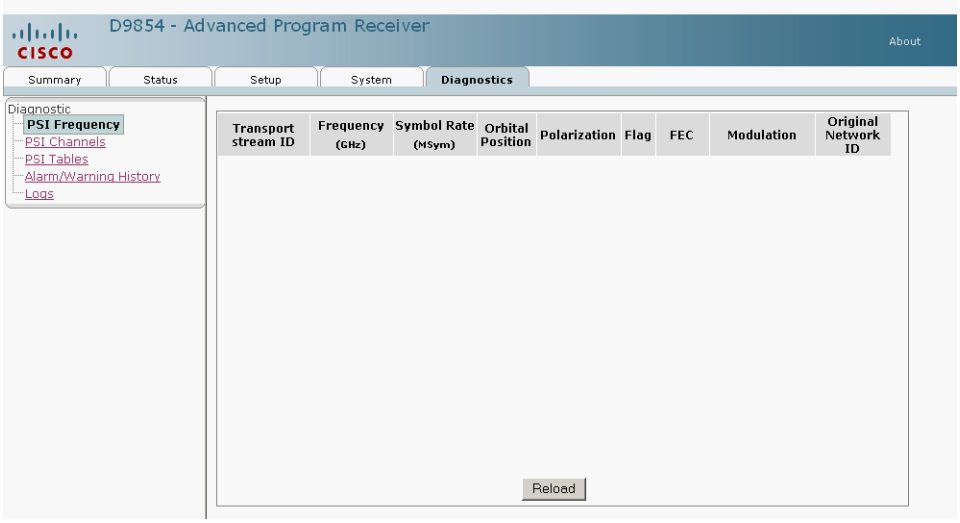
The Stream Receive Information page displays the channel number, status and type of the program entries (PE).

Viewing PSI Frequency Information

To View the PSI Frequency Information

Proceed as follows to view the PSI Frequency table:

From the user interface of the D9854, click **Diagnostics** tab, and then the **PSI Frequency** icon from the sub-page.



You cannot make any changes in the PSI Frequency table and can only view the available frequency plans stored in the receiver. The following is a list of the various columns:

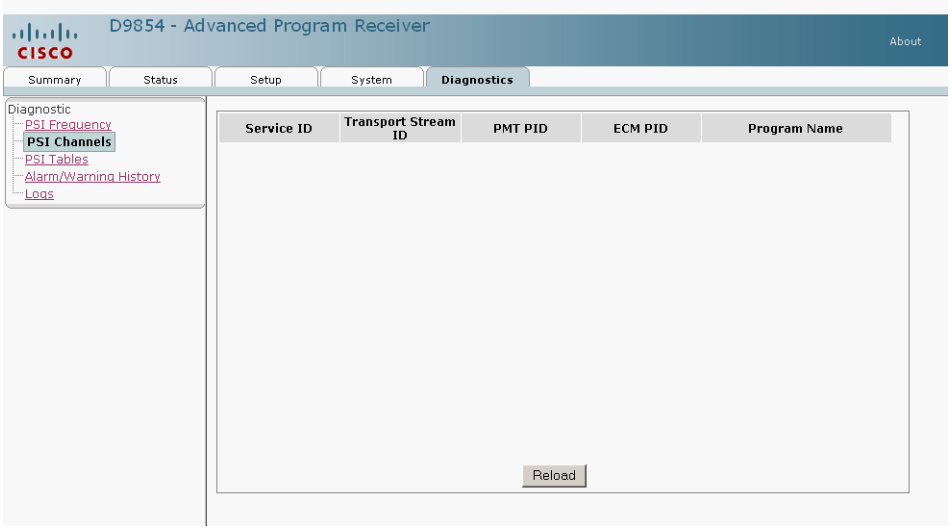
Abbreviation	Description
Transport Stream ID	Transport ID
Frequency (GHz)	Downlink Frequency (GHz)
Symbol Rate (MSym)	Symbol Rate (Msym/s)
Orbital Position	Orbital Position (in degrees)
Polarization	Polarity of the received signal (H,V, or Off)
Flag	Satellite position (in degrees), in combination with the direction (East or West)
FEC	Forward Error Correction inner code rate
Modulation	Modulator constellation setting
Original Network ID	Original Network ID

Viewing the PSI Channels

To View the PSI Channels

Proceed as follows to view the PSI Channels table:

From the user interface of the D9854, click **Diagnostics** tab, and then the **PSI Channels** icon from the sub-page.



You cannot make any changes in the PSI Channels table and can only view the available channels and their settings. The following is a list of the various columns:

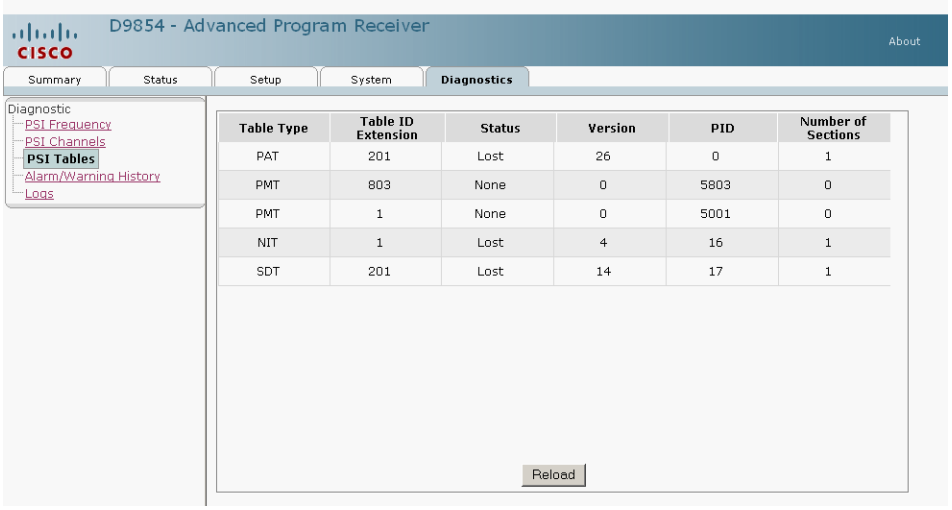
Abbreviation	Description
Service ID	Virtual Channel
Transport Stream ID	Transport ID
PMT PID	Program Map Table PID
ECM PID	Entitlement Control Message PID
Program Name	Name of the program

Viewing the PSI Tables

To View the PSI Tables

Proceed as follows to view the PSI tables:

From the user interface of the D9854, click **Diagnostics** tab, and then the **PSI Tables** icon from the sub-page.



You cannot make any changes in the PSI table and can only view the PSI tables received and their settings. The following is a list of the various columns:

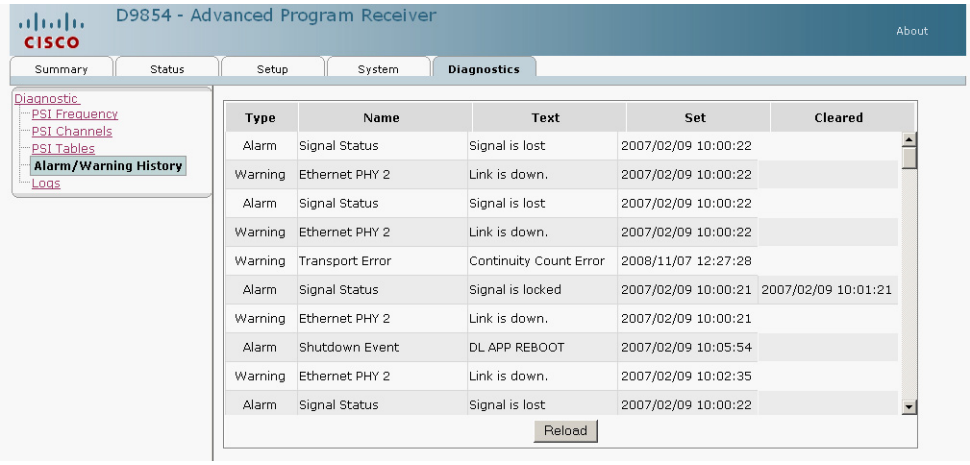
Abbreviation	Description
Table Type	Table Type (i.e., NIT, PMT, etc.)
Table ID Extension	MPEG/DVB Table ID
Status	Reception Status
Version	Table Version number
PID	Program PID number
Number of Sections	PSI tables are received in sections. This indicates the section number received. This information is useful for diagnostics/troubleshooting purposes.

Viewing Alarm/Warning History

To View the Alarm and Warning History Information

Proceed as follows to view the Alarm/Warning History page:

From the user interface of the D9854, click the **Diagnostics** tab and then the **Alarm/ Warning History** icon from the sub-page.



Type	Name	Text	Set	Cleared
Alarm	Signal Status	Signal is lost	2007/02/09 10:00:22	
Warning	Ethernet PHY 2	Link is down.	2007/02/09 10:00:22	
Alarm	Signal Status	Signal is lost	2007/02/09 10:00:22	
Warning	Ethernet PHY 2	Link is down.	2007/02/09 10:00:22	
Warning	Transport Error	Continuity Count Error	2008/11/07 12:27:28	
Alarm	Signal Status	Signal is locked	2007/02/09 10:00:21	2007/02/09 10:01:21
Warning	Ethernet PHY 2	Link is down.	2007/02/09 10:00:21	
Alarm	Shutdown Event	DL APP REBOOT	2007/02/09 10:05:54	
Warning	Ethernet PHY 2	Link is down.	2007/02/09 10:02:35	
Alarm	Signal Status	Signal is lost	2007/02/09 10:00:22	

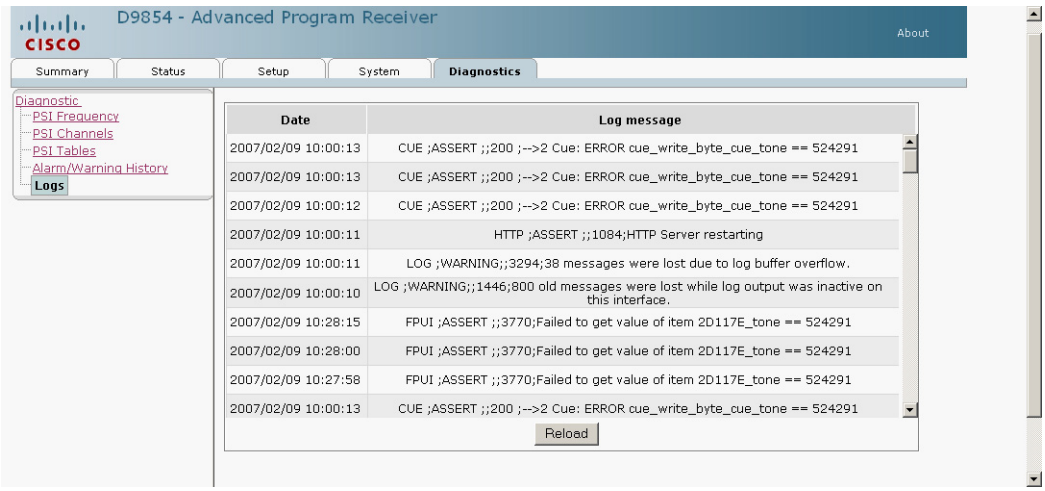
The Alarm and Warning History page displays all the past system event messages and their set and cleared dates and times. For more information on the alarm messages, refer to **Messages**, page 6-3.

Viewing Log Messages

To View the Log Messages

Proceed as follows to view the Log messages page:

From the user interface of the D9854, click the **Diagnostics** tab and then the **Logs** icon from the sub-page.



The Logs page displays all the system log messages with their dates and times.

Chapter 6
Service and Maintenance

Overview

Introduction

This chapter gives information to assist you in upgrading firmware to the D9854 Advanced Program Receiver. It also describes how the status of the D9854 receiver is communicated via front panel LEDs.

In This Chapter

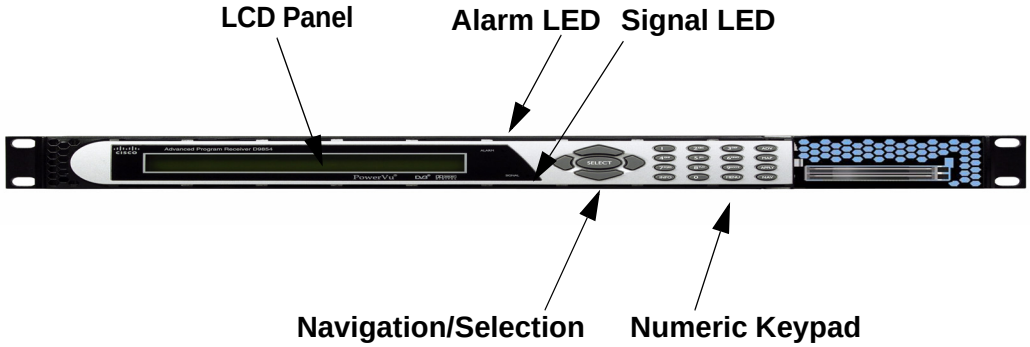
This chapter contains the following topics.

Section A - Front Panel LEDs

Introduction

Overview

To help signal the status of operation or the presence of an alarm, the D9854 receiver makes use of front panel LEDs. The photograph below shows the location of the LEDs on the front panel of the D9854 receive.



LED Function

The functions of the LEDs are described in the table below.

LED	Signal State/Color	Explanation
ALARM	Red	Solid for five seconds indicates a Warning.
	Red	Flashing indicates an Alarm.
SIGNAL	Green	Solid indicates all of the following conditions: • all RF inputs are enabled, all inputs are locked to a signal, and are not muted. • all routed ASI outputs are operating without an error.
	Green	Flashing indicates one of the following conditions: • difficulty with an input, route or output. • one or more RF inputs, or the ASI input are not synchronized. • one or more ASI outputs are routed, but muted by a fault condition. • no RF signal is present or detected, or it is muted. • receiver is not authorized to receive the program.
	Off	Off indicates all of the following conditions: • no RF input signal is available, enabled or detected, or the input is muted. • no ASI input is present. • no valid inputs are available.

Messages

General

The status of the D9854 receiver and its immediate surroundings is reported to the front panel in the form of messages and alarms. You can enable or disable messages in the Alarm/Warning settings.

D9854 Receiver Message List

The following table shows an alphabetical list of the available messages and their default alarm status. The Set Messages and Clear Messages are displayed in the Warning History when the messages are set or cleared respectively.

Note: Only alarm conditions can be used to trigger rear panel relays to control external alarm equipment. Warnings are not associated with relay operation.

Alarms

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Signal Status	Set	ASI Signal - No Content	Cause: Loss of ASI/ RF lock. Loss of Transport data. Invalid frequency parameters. External to IRD. Remedy: Check tuning parameters and ASI/RF cables.	ASI Link Locked, but no TS content.	Minor
		RF Signal - No Content		RF Tuner locked, but no TS content.	
		Signal is lost		Loss of signal	
		Tuning Parameters Invalid		One of the tuning parameters is invalid	
	Clear	Signal is locked		Signal OK	
		Tuning Parameters Valid		Tuning parameters are valid	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
PE n: ISE Not Auth	Set	Channel is not authorized	Cause: The channel is unauthorized for the current program. Remedy: Contact your (uplink) service provider to determine whether you are authorized to receive the current program.	Program unauthorized because the tier bits do not match.	Minor
		Channel requires an authorization key		Program is unauthorized because the unit does not have an authorization key.	
		Channel is blacked out		Program is unauthorized because at a minimum, it needs to match one blackout code.	
		Channel uses an unknown CA system	Cause: Conditional access not supported. Remedy: Contact your (uplink) service provider to determine whether you are authorized to receive the current program at this time.	Non-SA conditional access system.	
		Channel authorization refused		There is mismatch in the Conditional access.	
		Channel requires an IRD with CA support		Conditional access is not supported.	
		Channel requires the PE to have an ISE	Cause: Hardware issue. Remedy: Clear alarms, reset unit, and notify customer service if problem persists.	Hardware fault.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
	Clear	Fault Reset			
		Channel is authorized			
CI Top Slot Status	Set	Initialization Fail	Cause: CAM is damaged or not fully inserted, hardware issue, CAM software crash or you don't have subscription rights for the card. Remedy: Re-insert the CAM.	Initialization of CAM in top slot failed.	Major
		No Descrambling		All elementary streams of all selected programs are not descrambled.	
	Clear	CAM Operation OK			
CI Bottom Slot Status	Set	Initialization Fail	Cause: CAM is damaged or not fully inserted, hardware issue, CAM software crash or you don't have subscription rights for the smart card. Remedy: Re-insert the CAM, and/or check your rights for the smart card.	Initialization of CAM in top slot failed.	Major
		No Descrambling		All elementary streams of all selected programs are not descrambled.	
	Clear	CAM Operation OK			
PE n CI Status	Set	Program Not Descrambled	Cause: Hardware issue, CAM software crash or you don't have subscription rights for the smart card. Remedy: Reinsert the CAM and/or check your rights for the smart card.	All elementary streams for this service selected for descrambling were not descrambled by the CAM.	Major
		1 or more ES Not Descrambled		At least 1 elementary stream is not descrambled, but the CAM is still descrambling other elementary streams for this service.	
	Clear	Descrambling OK			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
PE n: Loss of Input	Set	Loss of input detected	Cause: Loss of input. Remedy: Ensure input has a valid stream.	Loss of input.	Minor
	Clear	Fault reset			
Digital Program Mapping	Set	PID Collision	Cause: Uplink settings may have changed since setting up the unit. Please check your DPM settings. Remedy: Correct the DPM settings. Check the uplink to find the appropriate system settings.	Two source service PIDs are being mapped to the same output PID. This will cause data corruption in the stream.	Minor
		Program Collision		Two source channel numbers are being mapped/passed to the same channel number in the output.	
		Mode-i PMT out of range		PMT PID to be used for Mode-i is outside of valid MPEG PID range.	
	Clear	Digital Program Mapping - OK			
Shutdown Event	Set	DL APP REBOOT	Cause: User request requires reboot or internal system error. Remedy: If it is an internal system error fault, clear alarms, reset the unit, notify customer service if the problem persists.	New application downloaded, system requires reboot.	Major
		I2C Failure		Internal system error.	
		User requested FPGA change		Runnable FPGA change requires reboot.	
		User requested APP change		Runnable application change requires reboot.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		User requested factory reset		Factory reset requires reboot.	
		User requested reboot		User reboot request.	
		PRODUCTION - Protect Flash		Reboot after production tables removed.	
		osal_SetDataForAllTasks	Cause: Possible software issue. Remedy: Clear alarms, reset unit, notify customer service if problem persists.	Application initialization error.	
		aw_LoadFaultList			
		osal_Init			
		NVS FLASH mounted			
		DB_Table_Cl::populateNvsRecords			
		STAPI_Init			
		dprm startup			
		dprm clear startup			
		DB_Array32_Cl init failed			
		DB_FlagArray32_Cl init failed			
		Wrong DB Item detected: item = AAA, table = BBB			
		DB_Item_Cl::addItem() failed			
		Memory allocation error on DB table construction			
		DB_Table_Cl::addTable() failed			
		DB_Table_Cl::addItem() failed: too many DB Items			
		DBT Init Failed: AAA			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		Framework Registration Error			
		7109 exception! Code = X, Address = Y, Task = Z			
		Memory Error: AAA, Phase X			
		Time Control object creation failed			
		Wrong UIC Item detected: item = AAA, table BBB			
		Memory allocation error on UIC table construction			
		Error adding UIC table(AAA)			
		UD - ud_init_phase_4() FAILED to allocate memory from System Partition			
		UD - ud_init_phase_4() FAILED to create partition			
		FW: Memory or List Full		Internal system error.	
		Framework Registration Error			
		WDOG task: wachdog aud st wdog has expired		Software detected an error in operation.	
		WDOG task: watchdog MC OCM has expired			
		WDOG task: watchdog MC SCRIPT has expired			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		WDOG task: watchdog Secondary WD has expired			
		WDOG task: watchdog MCM[S] has expired			
SMI Setup	Set	Phase lock error on SMI SDRAM	Cause: Hardware Issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	SDRAM on SMI bus not working.	Major
		SMI SDRAM exhaust test failed			
	Clear	SMI SDRAM setup successful		SDRAM on SMI Bus OK.	
		SMI SDRAM exhaust test passed			
LMI setup	Set	LMI SDRAM exhaust test failed	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	DDR RAM on LMI bus not working.	Major
	Clear	LMI Video SDRAM exhaust test passed		DDR RAM on LMI bus OK.	
Param Storage	Set	DB NVS flushing ignored	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Non-volatile storage system failed to update fully.	Major
		RAM flush to NVS failed			
		DB Factory Reset failed		Non-volatile storage system failed during factory reset.	
	Clear	DB flushing completed		Successful NVS update.	
		DB Factory Reset completed		Successful action.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Flash STORAGE	Set	RECORD: init failed	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Non-volatile storage system corrupted. Possible loss of configuration.	Major
		RECORD MANAGER: Record contents check error, erasing all		NVS Corruption, and loss of configuration data	
		RECORD: sector setup check error, erasing sector		NVS Corruption, and loss of sector data	
	Clear	RECORD: init done			
LNB PS	Set	LNBPS: No Load	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	LNB power overload	Minor
		LNBPS: Over Temperature			
		LNBPS: Over Loaded			
		LNBPS: Short Circuit			
	Clear	LNBPS: Normal		LNB power OK	
		LNBPS: Disabled			
		LNBPS: Off			
Signal Quality	Set	Audio Muted due to RF noise	Cause: RF Signal quality is poor due to interference or signal level issues. Remedy: Check RF settings, re-aim dish, and add signal amplifier.	Signal is locked but BER is beyond Audio muting threshold.	Minor
		Unstable RF Signal		Signal lock status is toggling frequently.	
		Poor Quality RF Signal		Signal is locked but BER is beyond muting threshold.	
	Clear	Signal Quality Fault Cleared			
		Audio Unmuted			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
Transport Processing	Set	PTI lockup	Cause: Possible software issue Remedy: Clear alarms, reset unit, and notify customer service if problem persists	Programmable transport input module stopped processing any data packet.	Minor
	Clear	PTI running			
Temperature Alarm	Set	Temperature over Alarm threshold	Cause: Room temperature too high, or air flow is blocked. Remedy: Check openings on front and rear panels for blockage. Lower room temperature or improve air flow to device.	Temperature is above safe operating range.	Major
	Clear	Temperature normal			
Fan	Set	Fan Failure Alarm	Cause: Hardware issue. Remedy: Unit should be returned to customer service as soon as possible.	Fan failure	Major
		Fan RPM Alarm		Fan RPM out of normal operating range.	
	Clear	Clear Fans Alarm			
FPGA Temperature Alarm	Set	Temperature over Alarm threshold	Cause: Room temperature too high, or air flow is blocked. Remedy: Check openings on front and rear panels for blockage. Lower room temperature or improve air flow to device.	FPGA temperature is above safe operating range.	Major
	Clear	Temperature normal			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
ASI Out Status	Set	ASI Overflow. Output Muted. Reduce content.	Cause: Uplink settings may have changed since setup of the unit. Variable Bit Rate/Statmuxed streams may be in use. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and/or drop programs not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	Current transport rate exceeds configured rate for ASI output. Output has been muted to protect downstream devices.	Minor
	Clear	ASI Output Restored			
MPoIP Status	Set	MPEGoIP Overflow. Output Muted. Reduce content.	Cause: Uplink settings may have changed since setup of the unit. Variable Bit Rate/Statmuxed streams may be in use. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and/or drop programs not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	Current transport rate exceeds configured rate for MPEG over IP output. Output has been muted to protect downstream devices.	Minor
	Clear	MPEGoIP Output Restored			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
BOOT HOST	Set	KB not accessible	Cause: Hardware issue Remedy: Clear alarms, reset unit, and notify customer service if the problem persists.	KB is not detected by Boot code.	Major
		LCD not connected		LCD is not detected by Boot code.	
		FLASH Not Found		Flash memory not detected.	
		EMI SDRAM Test Failed		RAM Failure - memory testing failed.	
		BOOT Invalid		Boot SW cannot be read from memory correctly.	
		FPGA Invalid		FPGA Image cannot be read from memory correctly.	
		APP Invalid		Application SW cannot be read from memory correctly.	
	Clear	BOOT passed			
Boot Secondary	Set	FLASH Not Found	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Flash memory not detected.	Major
		EMI SDRAM Test Failed		RAM Failure - memory testing failed.	
		BOOT Invalid		Boot SW cannot be read from memory correctly.	
		FPGA Invalid		FPGA Image cannot be read from memory correctly.	

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
		APP Invalid		Application SW cannot be read from memory correctly.	
	Clear	BOOT passed			
Decoder Processor Start	Set	DB Startup failed	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, and notify customer service if the problem persists.	Transfer of operational parameters to secondary processor failed.	Major
		No Response		Secondary processor not responding.	
		Synchronization Failure		Communication with secondary processor failing.	
LEC Timeout	Set	LEC Table Missing/ timeout:channels currently unavailable	Cause: Possible LEC Server or Uplink issue. Remedy: If using RF input, contact the content provider. If using ASI output, ensure the source has not been changed for the content provider. Clear alarm and notify customer service if the problem persists.	ECT Table is not received in the GDS stream.	
	Clear	LEC received			

Alarm	Message Type	Message	Cause/Remedy	Description	Severity
FPGA status	Set	FPGA Init failed to go high	Cause: Hardware issue. Remedy: Clear alarms, reset the unit, notify customer service if the problem persists.	FPGA setup failure or the FPGA binary identity does not match the FPGA registers.	Major
		FPGA Init and Done failed to go low			
		FPGA Init went LOW (CRC error)			
		FPGA Done failed to go high			
		Invalid FPGA data			
		Invalid PCB version			
		FPGA mismatch, required=#.#.#.#, Running=#.#.#.#			
	Clear	FPGA loaded successfully and reset			
		FPGA code ver OK			

Warnings

The following table shows an alphabetical list of the available messages and their default warning status.

Warning	Message Type	Message	Cause/Remedy	Description
ASI TS Overflow	Set	ASI Output Overflow	Cause: Uplink settings may have changed since setting up the unit. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and drop the programs that are not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	The output rate is higher than level set by the user.
	Clear	ASI Output Overflow Cleared		
MPoIP TS Overflow	Set	MPEGoIP Output Overflow	Cause: Uplink settings may have changed since setting up the unit. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and drop the programs that are not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	The output rate is higher than the level set by the user.
	Clear	MPEGoIP Output Overflow Cleared		

Warning	Message Type	Message	Cause/Remedy	Description
Transport Error	Set	Continuity Count Error	Cause: Possible uplink or signal issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Transport packet continuity count jumped. Possible packet loss.
		Buffer Overflow		The transport stream is faster than the maximum buffer or the decode engines are having difficulty handling the data sent to them.
		Transport Error Indicator		Transport packets are marked as "errored" upstream of the decoder.
		Transport Rate Error: FPGA Overflow	Cause: Uplink settings may have changed since setting up the unit. Remedy: Increase the output rate, drop unreferenced content in DPM Options, and/or drop programs not needed for downstream devices. Contact your (uplink) service provider to verify the expected bit rate settings.	The output rate is higher than level set by the user.
	Clear	Continuity Count Error Cleared		Trap expires after 30 seconds.
		Buffer Overflow Cleared		
		Transport Error Indicator Cleared		
		Transport Rate Error: FPGA Overflow Cleared		
CI Status	Set	Different CA Systems in Top/Bottom Slots	Cause: Different CA systems are used in the slots. Remedy: Replace the CA cards to use the same CA system.	Different CA Systems in Top/Bottom slots.
	Clear	OK		
Video Format Mismatch	Set	Video format mismatch		Video Format Mismatch.
	Clear	Video format match		

Warning	Message Type	Message	Cause/Remedy	Description
Temperature Warning	Set	Temperature over Warning threshold	Cause: Room temperature too high, or air flow is blocked. Remedy: Check openings on front and rear panels for blockage. Lower the room temperature or improve air flow to the device.	Temperature is above normal operating range.
	Clear	Temperature normal		
FPGATemperature Warning	Set	Temperature over Warning threshold	Cause: Room temperature is too high, or air flow is blocked. Remedy: Check the openings on front and rear panels for blockage. Lower the room temperature or improve air flow to the device.	FPGA temperature is above normal operating range.
	Clear	Temperature normal		
TDT timeout #	Set	tdt timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Time Date Table was never received.
		tdt is lost		No longer receiving Time Date.
	Clear	tdt fault cleared		
SDT timeout #	Set	sdt # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Service Description Table was never received.
		sdt # is lost		No longer receiving Service Description.
	Clear	sdt fault cleared		

Warning	Message Type	Message	Cause/Remedy	Description
PMT timeout #	Set	pmt # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Program Mapping Table was never received.
		pmt # is lost		No longer receiving Program Mapping Table.
	Clear	pmt fault cleared		
PAT timeout #	Set	pat # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Program Association Table was never received.
		pat # is lost		No longer receiving Program Association Table.
	Clear	pat fault cleared		
NIT timeout #	Set	nit timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Network Information Table was never received.
		nit is lost		No longer receiving Network Information Table.
	Clear	nit fault cleared		
CAT timeout #	Set	cat timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Conditional Access Table was never received.
		cat is lost		No longer receiving Conditional Access Table.
	Clear	cat fault cleared		

Warning	Message Type	Message	Cause/Remedy	Description
DRT timeout #	Set	drt # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Disaster Recovery Table was never received.
		drt # is lost		No longer receiving Disaster Recovery Table.
	Clear	drt fault cleared		
MCT Timeout #	Set	mct # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Inband Control Table was never received.
		mct # is lost		No longer receiving Inband Control Table.
	Clear	mct fault cleared		
ECT Timeout #	Set	ect # timed out	Cause: Uplink is not sending or is sending intermittently. Remedy: Clear warning. If the problem persists, determine if uplink is sending the current SI information table. Disable the warning if not using the table.	Event Control Table was never received.
		ect # is lost		No longer receiving Event Control Table.
	Clear	ect fault cleared		
Memory Usage Host	Set	Excessive (stack/ partition) memory usage	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	SW exceeding allowable memory usage.
	Clear	Normal (stack/ partition) memory usage		

Warning	Message Type	Message	Cause/Remedy	Description
Memory Usage Secondary	Set	Excessive (stack/ partition) memory usage	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software exceeding allowable memory usage.
	Clear	Normal (stack/ partition) memory usage		
FPGA Code Version	Set	FPGA newer than SW, Supported=%02u.%02u.%02u.%02u, Running=%02u.%02u.%02u.%02u	Cause: FPGA version is newer than the software can support. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software indicates FPGA version is newer than it can support.
	Clear	FPGA code ver OK		
Ethernet PHY n	Set	Link is down.	Cause: No ethernet cable connected, faulty cabling, multiple devices sharing MAC address on same IP segment, or possible HW issue. Remedy: Check cabling, check MAC addresses, clear warnings, reset the unit, and notify customer service if the problem persists.	Ethernet MAC PHY device is attempting to reconnect to external devices.
	Clear	Connection OK		
FW: Resource Use Host	Set	Memory or List Near Full	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software exceeding allowable usage of internal constructs.
	Clear	Normal Level		
FW: Resource Use Second	Set	Memory or List Near Full	Cause: Possible software issue. Remedy: Clear warnings, reset the unit, and notify customer service if the problem persists.	Software exceeding allowable usage of internal constructs.
	Clear	Normal Level		

Section B - Power Supply Replacement

Introduction

Removal and Replacement

There are no user-serviceable parts in the D9854 receiver supply. If the power supply requires replacement, contact your service provider or Cisco for information on how to return the unit for repair.

Chapter 7
Customer Information

Overview

In This Chapter

This chapter contains the following topics.

Product Support

Scientific-Atlanta, LLC, a wholly-owned subsidiary of Cisco Systems, Inc. (hereafter "Cisco"), provides its customers who have purchased support agreements with telephone support from anywhere in the world. If you require technical telephone assistance or product training support, or if you have any questions concerning their Cisco Atlanta product, you may contact the appropriate Customer Support Center from those listed below. Charges may apply for customers without a current and applicable product support agreement.

Customers	Location	Phone Number
Programmers and Broadcasters	USA and Canada	Toll-free: 1.888.949.4786 +1.770.236.4786 dmn_support@cisco.com
Telcos and Cable Service Providers	Cisco Services	Toll-free: 1.800.722.2009 Local: 678.277.1120 (press 2 at the prompt) customer-service@cisco.com
All Customers	Europe	+32.56.445.155 or +32.56.445.197 saemea-support@cisco.com
All Customers	Asia	+852.2588.4746 saapac-support@cisco.com

Customers who call a Customer Support Center are asked specific questions in order to identify their needs. In this way, each call can be directed to the customer support representative most experienced with their Cisco product. Customer Support Centers also provide the following pre- and post-sales support services for Cisco products.

Training Support

On and off-site training plus technical support services are available for purchase for both equipment operators and system administrators.

Warranty and Post-Warranty Support

Warranty and post-warranty support services are available to help customers return Cisco products for service or repair.

Customer Responsibility

When returning equipment, the customer is solely responsible for equipment packaging and transportation costs to the factory.

At the customer's request, Cisco will make reasonable efforts to provide warranty service at the customer's premises, provided that the customer pays current field service rates plus direct travel and accommodation expenses.

In Case of Repair

If your product requires repair, perform the following steps:

1. Notify Cisco of the problem immediately, providing the model number and serial number of the equipment plus details of the problem. Upon receipt of this information, service information and shipping instructions will be provided.
2. Upon receipt of instructions, return the product by prepaid freight. Refer to the section Returning Products for details.

In Case of a Fault

If your product requires repair, perform the following steps:

1. Notify Cisco of the problem immediately, providing the model number and serial number of the equipment plus details of the problem. Upon receipt of this information, service information and shipping instructions will be provided.
2. Upon receipt of instructions, return the product by prepaid freight. Refer to the section Returning Products for details.

Returning Products

Introduction

You must have a return material authorization (RMA) number to return a product. Contact the nearest customer service center and follow their instructions.

Returning a product to Cisco for repair includes the following steps:

- Obtaining a RMA number
- Obtaining a customer service center shipping address
- Packing and shipping the product

Obtaining an RMA Number and Shipping Address

You must have an RMA number to return products.

RMA numbers are valid for 60 days. If you already have a number, but it is older than 60 days, you must contact a customer service representative to revalidate the number. You can return the product after the RMA number is revalidated.

Follow these steps to obtain an RMA number and shipping address.

1. Contact a customer service representative to request a new RMA number or revalidate an existing one.
2. Provide the following information to the customer service representative:
   - Product name, model number, part number, serial number (if applicable)
   - Quantity of products to return
   - A reason for returning the product
   - Your company name, contact, telephone number, email address, and fax number
   - Any service contract details
   - Purchase order number of repair disposition authority, if available

   Note: If you cannot provide a purchase order number:
   - A proforma invoice listing all costs incurred will be sent to you at the completion of product repair.
   - Customer service must receive a purchase order number within 15 days after you receive the proforma invoice.
   - Products can accrue costs through damage or misuse, or if no problem is found. Products incurring costs will not be returned to you without a valid purchase order number.
3. The customer service representative issues the RMA number and provides the shipping address.

   Note: Absence of the RMA number may delay processing of product repair and/or result in the equipment being returned unrepaired. Include the RMA number in all correspondence.

Packing and Shipping the Product

Follow these instructions to pack the product and ship it to Cisco.

1. Are the product's original container and packing material available?
   - If **yes**, pack the product in the container using the packing material.
   - If **no**, pack the product in a sturdy, corrugated box, and cushion it with packing material.

   Important:
   - You are responsible for delivering the returned product to Cisco safely and undamaged. Shipments damaged due to improper packaging may be refused and returned to you at your expense.
   - Do not return any power cords or accessories.
2. Write the following information on the outside of the container:
   - Your name
   - Your complete address
   - Your telephone number
   - RMA number
3. Ship the product to the address provided by the customer service representative.

   Note: Cisco does not accept freight collect. Be sure to prepay and insure all shipments.

Appendices

Appendix A
Technical Specifications

Overview

Introduction

This appendix contains the technical specifications for the Model D9854 Advanced Program Receiver.

Note: The technical specifications are subject to change without prior notice.

In This Appendix

This appendix contains the following topics.

Section A - L-Band Input and Processing

General

Parameter	Specification
System	MPEG-2/DVB Compatible DVB-S EN 300 421, EN 300 468
Demodulation	DVB-S QPSK, DVB-S2 QPSK and 8PSK
Number of RF Inputs	4 (only one active at a time)

LNB LO Stability

DVB-S and DVB-S2

Symbol Rate	Stability
1 to 4.99 MSymbols/s	≤± 125 kHz
5.0 to 9.99 MSymbols/s	≤ ± 1.0 MHz
10.0 to 45 MSymbols/s	≤ ± 3.0 MHz

Parameter	Specification
LNB Phase Noise Requirement	-35 dBc/Hz at δF = 100 Hz -53 dBc/Hz at δF = 1 kHz -76 dBc/Hz at δF = 10 kHz -96 dBc/Hz at δF = 100 kHz -106 dBc/Hz at δF = 1 MHz -117 dBc/Hz at δF = 10 MHz

LNB Power and Control

Parameter	Specification
Voltage (RF1to RF3, RF4 does not have an LNB supply)	13 V Vertical/circular right, 18 V Horizontal/circular left Off
Current	350 mA maximum LNB Alarms: No load - 6 mA Overload - 360 mA minimum

DVB-S/DVB-S2

DVB-S/DVB-S2 Satellite Receiver

Parameter	Specification
L-Band Input	
Number of Inputs	4
Input Connector Type	F-type, female, 75 Ω
Input Impedance	75 Ω
Return Loss	> 10 dB
Isolation Between Inputs	> 40 dB
L-band Frequency	950 to 2150 MHz
Tuning Step Size	1 MHz
Receive Spectrum Sense	Normal and Inverted
L-Band Power	
Input Power Level per Carrier	-25 to -65 dBm (full transponder power)
DVB-S Modulation (EN 300 421)	
Modulation	QPSK
Convolutional FEC Rates	1/2, 2/3, 3/4, 5/6, 7/8
Symbol Rate Range	1.0 to 45 MSymbols/s
Eb/No (C/N) Ratio	See DVB-S2 Satellite Receiver Input, DVB-S Eb/No (C/N) Ratio Table
DVB-S2 Modulation (EN 302 307)	
Modulation	QPSK, 8PSK
Pilots On/Off	Pilots On
QPSK LDPC FEC Rates	1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
8PSK LDPC FEC Rates	3/5, 2/3, 3/4, 5/6, 8/9, 9/10
LDPC FEC Frame Length	Normal
Symbol Rate Range	1 to 30 Ms/s
Maximum Channel Bit Rate	90 Mbit/s
Maximum User Bit Rate	78.55 Mbit/s

DVB-S Eb/No (C/N) Ratio

Convolutional FEC Rate	Eb/No Ratio (dB) in Linear Channel and IF Loop configuration	C/N at DVB Threshold (BW = Symbol Rate)
1/2	4.5	4.1
2/3	5.0	5.9
3/4	5.5	6.9
5/6	6.0	7.9
7/8	6.4	8.5

C/N = Eb/No + 10 log (2 x FEC X 188/204)

The D9854 receiver displays the C/N Ratio.

DVB-S2 Error Rate Performance Es/No (C/N) Ratio

Mode	Simulated Es/No (dB) for FEC Frame length = 64,800	Typical Performance (dB) in Linear Channel and IF Loop configuration
QPSK 1/2	1.00	1.2
QPSK 3/5	2.23	2.4
QPSK 2/3	3.10	3.2
QPSK 3/4	4.03	4.2
QPSK 4/5	4.68	4.8
QPSK 5/6	5.18	5.3
QPSK 8/9	6.20	6.4
QPSK 9/10	6.42	6.6
8PSK 3/5	5.50	5.8
8PSK 2/3	6.62	6.8
8PSK 3/4	7.91	8.1
8PSK 5/6	9.35	9.6
8PSK 8/9	10.69	10.9
8PSK 9/10	10.98	11.3

Section B - Video Inputs/Outputs and Processing

General

Item	Specification
System	MPEG-2/DVB Compatible EN 300 421, EN 300 468

Video Outputs

Analog SD Video Output

Item	Test Signal	Specification CVBS1	Specification CVBS2
Number of Channels		One SD source program	One SD source program
Video Decompression Type		MPEG-2 4:2:0	MPEG-2 4:2:0
Output Impedance		75 Ω	75 Ω
525 Line			
Bar level	NTC-7 comp	700 mV ± 7 mV (± 1%)	700 mV ± 35 mV (± 5%)
Line Time Distortion	VITS17	≤ 1%	≤ 1%
Bar Tilt	NTC-7 comp	< 0.5%	< 0.5%
Sync Level	NTC-7 comp	40 IRE ± 0.5 IRE	40 IRE ± 2.0 IRE
DC Offset	NTC-7 comp	± 100 mV	± 100 mV
Chrominance-to-Luminance Gain Inequality	NTC-7 comp	100 ± 5%	100 ± 5%
Chrominance-to-Luminance Phase Inequality	NTC-7 comp	< 20 nS	< 20 nS
K factor K 2T	NTC-7 comp	< 1%	< 1%
Jitter		< 5 nS	< 5 nS
Frequency Response	FCC multi-burst	0.5 MHz, 0 dB 1.25 MHz, 0 dB ± 0.2 dB 2 MHz, 0 dB ± 0.2 dB 3 MHz, 0 dB ± 0.3 dB 3.58 MHz, 0 dB ± 0.3 dB 4.1 MHz, 0 dB ± 0.3 dB	0.5 MHz, 0 dB 1.25 MHz, 0 dB ± 0.2 dB 2 MHz, 0 dB ± 0.2 dB 3 MHz, 0 dB ± 0.3 dB 3.58 MHz, 0 dB ± 0.3 dB 4.1 MHz, 0 dB ± 0.3 dB
Differential Gain	NTC-7 comp	< 3.0%	< 3.0%
Differential Phase	NTC-7 comp	< 3º	< 3º
Luminance Non-linearity		< 5%	< 5%
Line Time Distortion	NTC-7 comp	≤ 1%	≤ 1%
Weighted Signal Video -to-Noise	50% Grey Field	≤ -70 dB rms	≤ -70 dB rms
Weighted Signal Video -to-Noise	Luminanace Ramp	≤ -55 dB rms	≤ -55 dB rms
Return Loss		DC to 10 MHz, > 30 dB	DC to 10 MHz, > 30 dB

Video Outputs, Continued

Item	Test Signal	Specification CVBS1	Specification CVBS2
625 Line			
Bar level	VITS17	700 mV ± 7 mV (± 1%)	700 mV ± 35 mV (± 5%)
Line Time Distortion	VITS17	≤ 1%	≤ 1%
Bar Tilt	VITS17	< 0.5%	< 0.5%
Sync Level	VITS17	300 mV ± 3 mV	300 mV ± 15 mV
DC Offset	VITS17	± 100 mV	± 100 mV
Chrominance-to-Luminance Gain Inequality	Colour Bars	100 ± 5%	100 ± 5%
Chrominance-to-Luminance Phase Inequality	Colour Bars	< 20 nS	< 20 nS
K factor K 2T	VITS17	< 1%	< 1%
Jitter		< 5 nS	< 5 nS
Frequency Response	VITS18	0.5 MHz, 0 dB 1 MHz, 0 dB ± 0.2 dB 2 MHz, 0 dB ± 0.3 dB 4 MHz, 0 dB ± 0.3 dB 4.8 MHz, +0 dB, -0.5 dB	0.5 MHz, 0 dB 1 MHz, 0 dB ± 0.2 dB 2 MHz, 0 dB ± 0.2 dB 4 MHz, 0 dB ± 0.3 dB 4.8 MHz, +0 dB, -0.5 dB
Differential Gain	VITS330	< 3.0%	< 3.0%
Differential Phase	VITS330	< 3°	< 3°
Luminance Non-linearity	VITS17	< 5%	< 5%
Weighted Signal Video-to-Noise	50% Grey Field	≤ -70 dB rms	≤ -70 dB rms
Weighted Signal Video-to-Noise	Luminanace Ramp	≤ -55 dB rms	≤ -55 dB rms
Return Loss		DC to 10 MHz, > 30 dB	DC to 10 MHz, > 30 dB

Analog SD Video Output, CVBS1 and CVBS2 for monitoring

Item	Specification
Number of Channels	One down-converted source HD program
Video Decompression Type	MPEG-2 4:2:0
Output Level	1.0 Vpp ± 5%
Output Impedance	75 Ω

HD Component Video Output (Monitoring Output)

Item	Test Signal	Typical Performance Values	
		Y	Pb, Pr
Amplitude	100% Color Bars	700 mV ± 5%	700 mV ± 5%
Sync Amplitude	100% Color Bars	300 mV ± 5%	300 mV ± 5%
Bandwidth	Multi-burst	DC to 30 MHz, ± 0.6 dB	DC to 15 MHz, ± 0.6 dB
Noise, Unified Weighting	Flat Field	-70 dB	-70 dB
Linearity	5-step	3%	3%
Interchannel Delay	100% Color Bars	2 nS	2 nS
DC Offset		± 50 mV	± 50 mV
Return Loss		DC to 30 MHz, -20 dB	DC to 30 MHz, -20 dB

Aspect Ratio

Item		Specification	
Aspect Ratio Conversions for Down-Conversion		Aspect Ratio Conversions for SD Programs	
4:3 :	16:9	4:3	16:9
16:9 Letterbox 14:9 Letterbox Center	Center Cutout	16:9 Letterbox 14:9 Letterbox Center Cutout	Scale to 16:9

Embedded Data in SDI

VBI Processing

Item	Specification
Closed Captioning	
Output formats	SMPTE 334M embedded in HD-SDI

Embedded Audio

Item	Specification
Format	According to SMPTE 299M
Audio sampling frequency	48 kHz locked to the video. According to SMPTE 272M
Resolution	20 bits

Audio Outputs

Analog Audio Outputs

Item	Specification
Number of Channels	2 stereo pairs/4 mono channels, 5.1 channel downmix Audio decompression: MPEG or Dolby Digital (AC-3). HE-AAC single stereo pair or Dolby Digital Plus single stereo pair available as future software download.
Frequency Response	±0.5 dB, 20 Hz to 20 kHz (ref., 100 KΩ)
Total Harmonic Distortion	< 0.3% at 1 kHz (ref. 100 KΩ)
Dynamic Range	85 dB (CCIR/Arm weighting)
Crosstalk	80 dB at 1 kHz (typical)

Digital Audio Outputs

Item	Specification
Number of Channels	2 (one stereo channel each)
Format	AES-3id
Connector	BNC

Conditional Access

Item	Specification
PowerVu CA	DES or DVB
DVB Scrambling	BISS Mode 1, Biss Mode E
DVB-CI	Interface: 2 CI slots - EN 50221 CA Method: Multicrypt, Simulcrypt CAS: Irdeto, Viaccess, Nagravision, Conax CAS: MediaGuard, Cryptoworks available in an anticipated future software release Note: Viasat (uses NDS/VideoGuard) only authorizes decoders equipped with an ASI output to receive/decrypt Viasat-encrypted programs.

Section C - Transport Stream Outputs

ASI Output

Item	Specification
Number of outputs	1
Type of connector	75 Ω BNC
Output impedance	75 Ω according to EN 50083-9
Data amplitude	800 mV peak-peak ± 10% according to EN 50083-9
Return loss	>17 dB, 27 to 270 MHz
Transport stream bit rate	1 to 120 Mbit/s ± 100 ppm
ASI bit rate	200 Mbit/s ± 100 ppm
Transport stream formats	According to EN 50083-9. 188 bytes structure, 204 bytes without Reed Solomon, Burst or packet format.

MPEGoIP Output (optional)

Item	Specification
Number of outputs	1
Type of connector	RJ-45, 10/100/1000 BaseT
Output modes	UDP RAW, RTP
IP Addressing	Multicast
TS Streaming	MPTS
TS Bit Rate	1 to 120 Mbps

MPE Output

Item	Specification
Number of outputs	1
Type of connector	RJ-45, 10/100/1000 BaseT
Output modes	IPv4 datagrams
IP Addressing	Multicast, up to 5 addresses
TS Input	up to 5 PIDs
Bit Rate	up to 10 Mbps (for 1500 byte packets)

Section D - Control and Management Interfaces

Ethernet Management Interface

Item	Specification
Number of connectors	1
Type of connector	Eight-pin RJ-45
Ethernet type	10/100/1000 Base-T
Required setup	IP address, default gateway and subnet mask

Ethernet Data Interface

Item	Specification
Number of connectors	2
Type of connector	Eight-pin RJ-45
Ethernet type	10/100/1000 Base-T
Required setup	IP address, default gateway and subnet mask

RS-232 Data Interface

Item	Specification
Connector type	9-pin sub-D female
Data rates	RS-232 asynchronous data at selectable rates up to 38.4 kb/s: 300, 1200, 2400, 4800, 9600, 19,200, 38,400 b/s

Alarm Interface

Item	Specification
Number of outputs	3, each having one set of contacts closed and one set open during normal operation. Alarms are signalled by reversing the polarity of the two contact sets.
Type of connector	Terminal block
Max. voltage	≤30 V AC, ≤30 V DC
Max. current	≤1 A

Contact Closure Interface

Item	Specification
Connector type	9-pin sub-D female
Minimum duration of event guaranteed to be detected	250 ms, 1 frame period, e.g., for 1080i/25 Hz 40 ms for DPI applications
Max. on generator impedance	100 Ω
Min. off generator impedance	100 kΩ

Section E - Power and General Specifications

General

Item	Specification
LCD	2 lines of 40 characters, backlit LCD.
Keypad	Arrow keys, 0 to 9, SELECT, MENU, INFO, ADV, MAP, APPLY and NAV keys.
LEDs	Green LED for Signal status. Red LED for Alarm indication.

Power

AC Power Connector

Item	Specification
Type of connector	IEC 320 style C14 appliance receptable
AC input	100 to 240 V AC, 50/60 Hz
Power	37 W max.
Current	0.34 A @ 240 V AC typical, 0.5 A @ 120 V AC typical
Power Quality	ANSI/IEEE Std C62.41.1-2002

Power

To operate the receiver, you must connect it to an AC power source.

WARNING:

Make sure that at least one end of the power cable(s) remains easily accessible for unplugging, if you need to switch off the unit. For example: Ensure that the socket outlet is installed near the product.

WARNING:

To avoid electrical shock, connect the three-prong plug on this product to an earth-grounded three-pin socket outlet only.

Mechanical

Item	Specification
Height	1 U (4.37 cm) (1.72″)
Width	44.07 cm (17.35″)
Depth	35.0 cm (13.78“)
Weight	4.5 kg (10 lb.)

Environment

Item	Specification
Storage	
General	The product is within the original packaging.
Humidity	5 to 95% non-condensing
Temperature	-20 to +70°C (-4 to 158°F)
Operation	
Humidity (non-condensing)	95% humidity is valid up to 40°C 91% humidity is valid up to 45°C 70% humidity is valid up to 50°C
Temperature	0°C to +50°C (32°F to 122°F)
Altitude	
Operating	10,000 ft. (3048 m) max.
Non-operating	30,000 ft. (9144 m) max.

Appendix B
Default Settings

Overview

Introduction

The D9854 Advanced Program Receiver is factory configured with default settings unless you have requested a custom factory configuration. This appendix lists the factory default settings.

Factory Default Settings

Administration

Parameter	Default
Lock Level	0
Password	1234
KB Lock	Disabled
KB Lock Timeout	60
LCD Contrast	30
DL Mode	Always
Date Format	DD_MM_YYYY
Time Format	24 Hr
GMT Off	+05.3
OSD Banner (Web GUI only)	Enable
Action on Loss of Input (Web GUI only)	Black Output
DPM Regenerate Option (Web GUI only)	Always
Flash AW Messages (Web GUI only)	Enable

RF Input

Parameter	Description
Tune Mode	Basic
CA Ctl	Std
Select	UserCfg
LO1 (GHz)	5.15
LO2 (GHz)	0.0
Crossover (GHz)	0.0
OrbPos	0.0
E/W	NA
Pol	H (horizontal)
Freq (GHz)	3.449
Sym Rate	28.3465 MS/s
FEC	Auto
Modulation	DVB-S
Roll-off	.35
InputIQ	Auto
NetID	1
LNB Power	Off
22kHz	Off

Tune Mode

Parameter	Description
Service List Mode	Rigorous
Frequency Tuning	NIT
Use BAT in Service List	No
Use NIT in Service List	Yes
Use SDT in Service List	Yes
Use PAT in Service List	Yes

IP

Parameter	Default
Port ID	1
V4/V6	IPv4
IP Address	192.131.244.254
Mask	24
Gateway	255.255.255.0
SNMP Read Community String	public
SNMP Write Community String	public
Multicast Forwarding (Front Panel only)	Forward All, if Port ID is set to 2

Video

Parameter	Default
PV Format	Auto
SD Format	Auto
Tri-Synch (Front Panel only)	Disabled
TV A/R	4:3
Convert	None
WSS Mode	Passthrough

Audio

Parameter	Default
Stereo/Mono	Stereo
AC3 Compression	RF Mode
Left (dB)	0
Right (dB)	0
DDP (Front Panel only)	Trans
PMT Source	AUD1
Digital Out Pref	PCM Samples

Subtitles

Parameter	Default
Op Mode	Off
Select Language By	Language Entry
Language List	eng
PMT Order	First
Entry	eng
Imitext Position	Standard
ForeGnd	Auto
BackGnd	Auto

CI

Parameter	Default
Decrypt	ON
CI Slot	Top
Query	Disable
Auto Reset	Disable
List Mgmt	AddDel
TS_ON_ID	Disable

Cueing

Parameter	Default
Cueing Mode	Trigger
Trigger Polarity	High
Repeat	3
Tone (ms)	40
Silence (ms)	40
Relay Mode	Alarm
Cue Trigger Bit	1
State	Disable
Mode	*
Delay (sec)	1

TS Out - ASI

Parameter	Default
Name	ASI
Rate Control	User
User Rate	68.5
Output Mode	No Output
Descramble Mode	Descrambled
Insert Null Packet	Yes

TS Out - MOIP1

Parameter	Default
Name	MOIP1
Rate Control (Front Panel only)	User
User Rate (Front Panel only)	0
Output Mode (Front Panel only)	No Output
Descramble Mode (Front Panel only)	Descrambled
Insert Null Packet (Front Panel only)	Yes
Instance Name (Front Panel only)	MPEG over IP 1
MOIP	UDP
Send SAP	No
SAP ID	Cisco Default SAP
DestAddr	225.1.1.1
UDPPort	49152
SrcPort	0
TS/IP	7
Min IP/s	0
PCR@IP Start	Yes
Mgmt Port Mode	No Output
DATA Port Mode	Always output
PCR Addition	Yes

DPM - ASI/MOIP1

Parameter	Default
PMT (Front Panel only)	8192
Act (Front Panel only)	Drop
OutCh (Front Panel only)	0
PMT (Front Panel only)	8191
Map Mode	SVC ID & PID
Duplic Mode	Pkt Copy
Unref	Drop
PSI Options	Drop All
PSI Rate	SA Std
Service ID	Valid Ch
PAT	Pass
CAT	Pass
PMT	Pass
TSDT	Pass
NIT	Pass
NITO	Pass
SDT	Pass

Parameter	Default
SDTO	Pass
BAT	Pass
EIT	Pass
TDT	Pass
RST	Pass
TOT	Pass
DIT	Pass
SIT	Pass
ECM	Pass
EMM	Pass
DRT	Pass
CDT	Pass

Noise Cutoff

Parameter	Default
Trnsprt (DVB-S/DVB-S2 Marg) Cutoff	0.0
Trnsprt (DVB-S/DVB-S2 Marg) Restore	0.1
Audio (DVB-S/DVB-S2 Marg) Cutoff	0.0
Audio (DVB-S/DVB-S2 Marg) Restore	0.1
Muting Control	Enable

Backup Restore Control Setup (Web GUI only)

Parameter	Default
File Name	file name
FTP Server IP Address	192.168.0.100
FTP port	21
FTP User Name	user
FTP Password	USER
Backup Type	Standard

Appendix C
Lock Levels

Overview

Introduction

This appendix contains the lock levels for the D9854 Advanced Program Receiver.

In This Appendix

This appendix contains the following topics.

D9854 Receiver Lock Levels

Four (4) lock levels (**0**, **1**, **2**, **3**, and **4**) are available for protecting your receiver and its settings against unauthorized use or modification (see the table below for full details).

Level	Description
0	All settings are unlocked (receiver lockout disabled)
1	All settings are unlocked except Factory Reset, Password options and receiver parameters.
2	All settings are unlocked except RF and ASI Input Tuning parameters.
3	All settings locked (access via password only), except IP address and RF power.
4	All settings locked (access via password only, can be changed via telnet session or PNC uplink signal)

If a change made to the current Lock Level setting is not saved, the previously saved setting is restored.

Note: The user cannot select **NONE** as a Lock Level.

Video

Parameter	Lock Level
PV Format	2
SD Format	2

Aspect Ratio

Parameter	Lock Level
SD Aspect Ratio	2
AR Selection	2
AR Conversion	2
WSS Mode	2

Closed Caption

Parameter	Lock Level
Preferred Mode	2

Subtitles

Parameter	Lock Level
Op Mode	2
Lang Menu	2
Lang List	2
PMT Order	2
Manual Entry	2
Imitext Position	2
Foreground	2
Background	2

Download

Parameter	Lock Level
Mode	2
DL Type	2
DL Bank	2
Command	2

Runnable Application

Parameter	Lock Level
Index	2
Select	2
Erase	2

Runnable FPGA

Parameter	Lock Level
Index	2
Select	2
Erase	2

Audio

Parameter	Lock Level
Audio Sel Key	2
Mode	2
AC3 Comp	2
Left	2
Right	2
PMT Source	2

PV Muting Thresholds

Parameter	Lock Level
Transport Cutoff	2
Transport Restore	2
Audio Cutoff	2
Audio Restore	2

LDPC Muting Thresholds

Parameter	Lock Level
Transport Cutoff	2
Transport Restore	2
Audio Cutoff	2

Parameter	Lock Level
Audio Restore	2

Muting Thresholds

Parameter	Lock Level
Restore Defaults	2
Control	2

Fixed PID

Parameter	Lock Level
CH	1
Ch Stream IDX	1
PID	1
Stream Type	1

IP

Parameter	Lock Level
Port ID Key	3
Name	3
V4 IP Addr	3
V4 Mask	3
V4 Def Gateway	3

SNMP Comm

Parameter	Lock Level
Read String	2
Write String	2
Sys Name	2
Sys Location	2
Sys Contact	2

Trap Destination

Parameter	Lock Level
Index	2
IP Addr	2

Active Settings

Parameter	Lock Level
ACQ Mode	1
CA Mode	1
Input Sel	1
Freq Sel	1
Ser List Mode	1
Use BAT	1
Use NIT	1
Use SDT	1
Use PAT	1

Active Tuning

Parameter	Lock Level
Net ID	1
ASI	1
RF1	1
RF2	1
RF3	1
RF4	1
Input	1
Modulation	1
Frequency	1

Parameter	Lock Level
Sym Rate	1
FEC	1
LNB Power	3
Polarization	1
IQ	1
22 kHz Tone	1
Rolloff	1

Active Inputs

Parameter	Lock Level
RF Sel Key	1
LNB Type	1
LNB Trim1	1
LNB Trim2	1
Crossover	1
LO Select	1
LOF 1	1
LOF 2	1
Orbital Pos	1
E/W Flag	1
Orb Polarization	1

BISS

Parameter	Lock Level
Mode	2
BISS 1 SW	2
BISS E SW	2
BISS E ID	2

Program Entry

Parameter	Lock Level
PE Index	2
Channel Num	2
CA Resource	2
Resource ID	2
CH Cmd	2

Program Status

Parameter	Lock Level
PE Index	2
Channel Num	2

Decode Enable

Parameter	Lock Level
Decoder	2
Enabled	2

Power On

Parameter	Lock Level
Clr Reset Count	0

User Setting

Parameter	Lock Level
Date Format	2
Time Format	2
GMT Offset	2

Parameter	Lock Level
KB Lock Enable	2
KB Lock Timeout	2
M1 Port Type	2
M2 Port Type	2
Contrast	2
Menu Type	2
Clear ADP	2
Regenerate	2
Banner	2
Reboot	2

Admin

Parameter	Lock Level
Lock Level	3
Lock Level Pwd	3
Lock Level Pwd Cur	0
Lock Level Pwd New	0
Lock Level Pwd Conf	0
Factory Reset	0
Clean Unused Tbls	0

DPM Transmit

Parameter	Lock Level
Output Mode	2
Descramble Mode	2
Rate Ctrl	2
Rate	2
Ins Null Pkt	2

DPM Global Configuration

Parameter	Lock Level
Instance ID	2
Instance Name	2
Map Mode	2
Dup Method	2
Reg Rate	2
Unref Content	2
PSI Output	2
PSI PAT	2
PSI CAT	2
PSI PMT	2
PSI TSDT	2
PSI NIT	2
PSI NITO	2
PSI SDT	2
PSI SDTO	2
PSI BAT	2
PSI EIT	2
PSI TDT	2
PSI ST	2
PSI RST	2
PSI TOT	2
PSI DIT	2
PSI SIT	2
PSI ECM	2
PSI EMM	2
PSI DRT	2

Parameter	Lock Level
PSI CDT	2
Svc ID Output	2
Modified	2
Activate	2

DPM PE Maps

Parameter	Lock Level
Instance ID	2
PE	2
Action	2
PMT PID	2
Output Channel	2
PID Map	2

DPM PID Map

Parameter	Lock Level
Index	2
In Use	2
Instance Name	2
PE	2
Row	2
Stream Type	2
Stream CAT	2
Stream Inst	2
Action	2
Output PID	2

IP Configuration

Parameter	Lock Level
Enabled	2
Instance Name	2
TP Proto	2
Dest IP Addr	2
SAP Multicast IP Addr	2
Dest Port	2
Src Port	2
Min IP Per Sec	2
PCR Addition	2
PCR Start New Pkt	2
Send Sap	2
Send Sap Str	2
Max TPKT Per IP	2
SAP Str	2
Intf Mode 1	2
Intf Mode 2	2

Alarm Setting

Parameter	Lock Level
Enable	2
Relay	2
Trap	2

Warning Setting

Parameter	Lock Level
Name	2

Parameter	Lock Level
Enable	2
Relay	2
Trap	2

Fault Status

Parameter	Lock Level
Text ID	2
Fault Num	2
Name	2
Type	2
Severity	2
Last Date Time	2
Trap State	2
Details	2
Relay	2

Fault History

Parameter	Lock Level
Sequence	2
Name	2
Type	2
Set Date Time	2
Reset Date Time	2
State	2
Details	2

Log History

Parameter	Lock Level
Sequence	2

Parameter	Lock Level
Cur Date	2
Cur Time	2
Message	2

Appendix D
Equipment and Accessories

Overview

Introduction

This appendix contains names and part numbers of equipment and accessories for the D9854 Advanced Program Receiver.

In This Appendix

This appendix contains the following topics.

Accessory Kits for the D9854 Receiver

Accessory Kit

The accessory kit for the D9854 receiver contains the following items:

Part Number	Description
4021470 Rev C	Model D9854 Advanced Program Receiver Installation and Operation Guide

Appendix E
Compliance

Applicable Standards and Notices

Safety

The D9854 Advanced Program Receiver has been approved for safety by the Standards Council of Canada and the OHSA (NRTL) Accredited Testing Laboratory to the following standards:

CAN/CSA-C22.2 No. 60950-1-03

UL Std No. 60950-1-2003

Also, this product is being evaluated under the IECEE CB scheme to the following international standard:

IEC 60950-1 (1st Ed)

For the CB report and Certificate, the product is evaluated for the country differences outlined in CB Bulletin 109A:

EMC

Electrostatic Discharge (ESD) results from the static electricity buildup on the human body and other objects. This static discharge can degrade components and cause failures.

Take the following precautions against electrostatic discharge.

- Use an anti-static bench mat and a wrist strap or ankle strap designed to safely ground ESD potentials through a resistive element.
- Keep components in their anti-static packaging until installed.
- Avoid touching electronic components when installing a module.

Electromagnetic Compatibility Regulatory Requirements

Ethernet cables should be of single-shielded or double-shielded type. Coaxial cables should be of the double-braided shielded type. Where this equipment is subject to USA FCC and/or Industry Canada rules, the following statements apply:

FCC Notices

This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions supplied in this manual may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the

equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the television receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment to an AC outlet on a circuit different from that to which the receiver is connected.
4. Contact your dealer/ reseller or an experienced radio/ TV technician for help.

The user may find the booklet "Interference handbook" prepared by the Federal Communications Commission helpful. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, stock no. 004-000-00450-7.

Shielded cables should be used to interconnect this device with any other/ peripheral equipment (i.e., data sources, terminals, monitors, etc.) to ensure compliance with Class B limits. Failure to do so may result in radio or TV interference. Cables should be of braided shield construction with metal end shells.

Industry Canada Notice

This digital apparatus does not exceed the limits for Class B radio noise emissions from digital apparatus as set out in the radio interference regulations of the Industry Canada.

Le present appareil numerique n'emet pas de bruites radioelectriques qui dépassant les limites applicables aux appareils numeriques de Class B prescrites dans le reglement sur le brouillage radioelectrique edicte par Industrie Canada.

Unauthorized Modifications

The manufacturer is not responsible for any radio or TV interference resulting from unauthorized modifications made to this equipment. It is the responsibility of the user to correct such interference at his own expense.

Appendix F
Software End User License Agreement

END USER LICENSE AGREEMENT WITH OPEN SOURCE SUPPLEMENT

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25. [28]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX modifications, HPUX modifications

26. [29]Dave Katz <dkatz@cisco.com> RS/6000 AIX port

27. [30]Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver

28. [31]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port

29. [32]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication

30. [33]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305

31. [34]Danny Mayer <mayer@ntp.org>Network I/O, Windows Port, Code Maintenance

32. [35]David L. Mills <mills@udel.edu> Version 4 foundation: clock discipline, authentication, precision kernel; clock drivers:

Spectracom, Austron, Arbiter, Heath, ATOM, ACTS, KSI/Odetics; audio clock drivers: CHU, WWV/H, IRIG

33. [36]Wolfgang Moeller <moeller@gwdgv1.dnet.gwdg.de> VMS port

34. [37]Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility

35. [38]Tom Moore <tmoore@fievel.daytonoh.ncr.com> i386 svr4 port

36. [39]Kamal A Mostafa <kamal@whence.com> SCO OpenServer port

37. [40]Derek Mulcahy <derek@toybox.demon.co.uk> and [41]Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver

38. [42]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de>monitoring/trap scripts, statistics file handling

39. [43]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port

40. [44]Wilfredo Snchez <wsanchez@apple.com> added support for NetInfo

41. [45]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules

42. [46]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory

43. [47]Ray Schnitzler <schnitz@unipress.com> Unixware1 port

44. [48]Michael Shields <shields@tembel.org> USNO clock driver

45. [49]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver

46. [50]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfiguremakeover, various other bits (see the ChangeLog)

47. [51]Kenneth Stone <ken@sdd.hp.com> HP-UX port

48. [52]Ajit Thyagarajan <ajit@ee.udel.edu>IP multicast/anycastsupport

49. [53]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp>TRAK clock driver

50. [54]Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver

51. [55]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

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1.4 tokenizer.js 0.1

1.4.1 Available under license :

```
/*****************************************************************/
/*** ***/
/*** Tokenizer.js - JavaScript String Tokenizer Function ***/
/*** ***/
/*** Version : 0.2 ***/
/*** Date : 01.05.2005 ***/
/*** Copyright : 2005 Adrian Zentner ***/
/*** Website : http://www.adrian.zentner.name/ ***/
/*** ***/
/*** This library is free software. It can be freely used as ***/
/*** long as this this copyright notice is not removed. ***/
```

/*** ***/

/**********/

1.5 zlib 1.2.3 :3

1.5.1 Available under license :

version 1.2.3, July 18th, 2005

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The data format used by the zlib library is described by RFCs (Request for Comments) 1950 to 1952 in the files http://www.ietf.org/rfc/rfc1950.txt (zlib format), rfc1951.txt (deflate format) and rfc1952.txt (gzip format).

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