2009 MPEG4 HD Transition Hardware Configuration Reference Guide

Starz Entertainment is launching six (6) HD channel feeds using MPEG4 (Advanced Video Coding) and DVB S2 satellite modulation. This combination of technologies permits all six (6) HDTV services to be broadcast together as one satellite transponder multiplex signal.

Galaxy 13 (127 degrees W.L.)
Vertical Beam
Transponder 15

- **Starz HD East**
- **Starz HD West**
- **Starz Edge HD**
- **Starz Kids & Family HD**
- **Starz Comedy HD**
- **Encore HD**

MPEG4 to MPEG2 Single (1) HD Service Transcode Configuration: Motorola DSR6050

For those systems where a legacy of deployed set top boxes demand MPEG2 Video compression, a DSR-6050 Receiver/Transcoder will decrypt one (1) MPEG4 HD service and convert it to an MPEG2 HD Single Program Transport Stream.   ASI and Gigabit Ethernet IP transport stream output options are available from the DSR6050.
See instructions beginning on page 2 for configuration details.

MPEG4 to MPEG2 Triple (3) HD Service Transcode Configuration: Motorola DSR6300

For those systems where a legacy of deployed set top boxes demand MPEG2 Video compression, a DSR-6300 Receiver/Transcoder will decrypt three (3) MPEG4 HD services and convert them to an MPEG2 HD Three-Program Transport Stream.
ASI and Gigabit Ethernet IP transport stream output options are available from the DSR6300.
See instructions beginning on page 5 for configuration details.

MPEG4 Multiplex Pass-Through Configuration: Motorola DSR4410MD

For those systems with 100% of customer premise set top boxes that can decode and output video from MPEG4 HD video sources, a DSR4410MD will output some or all of the six MPEG4 services as a multi-program transport stream. ASI and Gigabit Ethernet IP transport stream output options are available from the DSR4410MD.
~77.5Mbps of HD service data + ~3.5Mbps null packets = 81.0Mbps total output
See instructions beginning on page 8 for configuration details

HD/SDI Configuration: Motorola DSR4410MD→Sencore MRD3187

For those systems that require an HD/SDI Video (with embedded audio) source for local encoding or other distribution, a DSR4410MD must be used in conjunction with a Sencore MRD3187, to convert the 4410MD ASI transport stream to an HD/SDI format.
See instructions beginning on page 12 for configuration details.

Because of their unique features, it is critical to specify exactly which Motorola DSR model is being used, when requesting authorization.

DSR-6050 Receiver and Transcoder

The DSR-6050 is a single channel HD receiver and MPEG4 to MPEG2 transcoder available through Motorola. Questions concerning the installation, operation, or authorization of the IRD should be directed to the Starz IRD Rollout Project Hotline at 1-800-308-6272 or irdrollout@motorola.com

DSR-6050 Front Panel

DSR-6050 Rear Panel
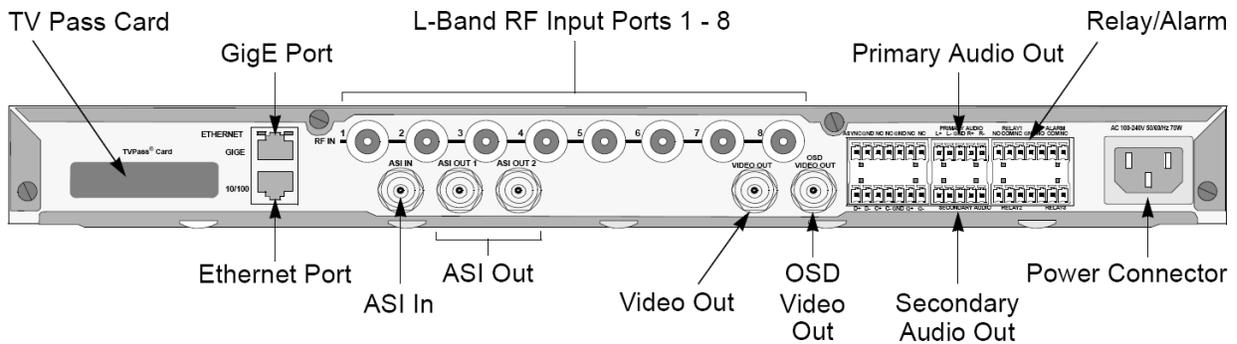
TV Pass Card
GigE Port
L-Band RF Input Ports 1 - 8
Primary Audio Out
Relay/Alarm
Ethernet Port
ASI Out
ASI In
Video Out
OSD Video Out
Secondary Audio Out
Power Connector

Physical Installation

Install the receiver in a 19-inch universal rack and connect the power cord to an available AC outlet. All Light Emitting Diodes (LED) on the IRD will go through a self-test and the LCD will temporarily display "MOTOROLA DSR-6050" along with the firmware version. Once the unit has completed the power up sequence, it will display the Main "DSR-6050" Menu as shown below:

This can take up to 1 minute to appear.

If the unit fails to power up properly, please contact Motorola at 1-888-944-4357.

Connecting the Satellite Feed

Connect a coaxial cable (RG-6 rated to at least 1450MHz) from the **Galaxy 13 Vertical** LNB to **Port 1** on the rear panel of DSR-6050. Port 1 DC voltage to power an LNB is "Off" by default. This prevents failure(s) related to redundant DC voltage within a system. If LNB power is required, it can be activated for RF Port 1 using the Installation sub-menu labeled "Port Config".
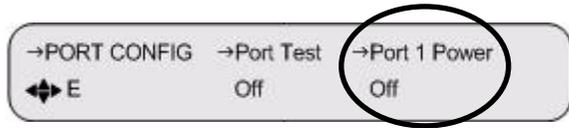
Confirming Video During Installation

To view video and On-Screen Diagnostics during installation, connect the OSD Video output port on the unit to a video display with an NTSC analog composite video input. After the unit is authorized and is properly providing an output of Starz services, disconnect the Video Output. DSR6050 Analog Video output is strictly for diagnostic use. *There is no analog audio*, despite the presence of such connectors.

## Connecting ASI or GigE Outputs: Digital Transport Stream

Connect the ASI 2 or GigE output ports to a down-stream processing device.
These provide an MPEG2 HD Single Program Transport Stream.
These outputs (ASI & GigE) are active simultaneously. ASI 2 is the only MPEG2 ASI output.
ASI 1 is MPEG4 pass-through and will yield no video using MPEG2-only HD set-top-boxes.
DSR6050 performs "PID Aliasing" to the digital outputs, yielding MPEG Service/Program number 1, regardless of the Service/Program number used via satellite.
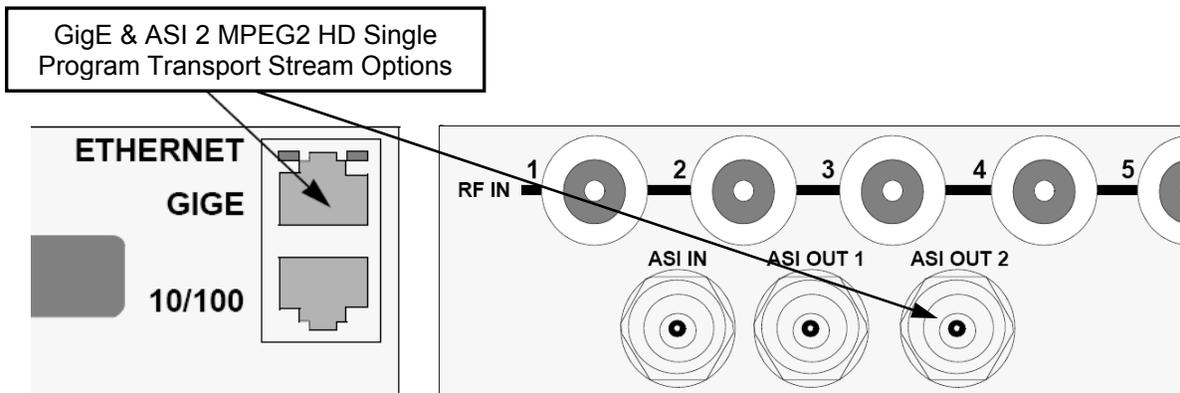
GigE & ASI 2 MPEG2 HD Single Program Transport Stream Options

Satellite and Channel Information Chart

The Satellite and Channel Information Chart below, provides detailed information for the acquisition of the HD signals from the correct multiplex. This information is required to properly install and configure the DSR-6050.

Satellite: **Galaxy 13 @ 127 degrees W. Long.**
Polarity: **Vertical**

Transponder 15, **1150.00** MHz L-band
Modulation Mode: **8PSK-DVBS2**
Symbol Rate: **30.00** Msps
FEC: **8/9**

VCT ID: **706**
MPEG Service ID/Virtual Channel Number:
- **1:** Starz HD East
- **2:** Starz Kids and Family HD
- **3:** Starz Edge HD
- **4:** Starz Comedy HD
- **5:** Encore HD
- **6:** Starz HD West

DSR6050 Front Panel Programming

1. From the Main Menu use the ◄► to select **Install** and press **ENTER**.
2. If "**MANUAL TUNE**" does not appear in the upper left corner of the display, use the ▼▲ buttons to access the **MANUAL TUNE** menu.
3. Within the **MANUAL TUNE** menu, set the "**Xpndr**" [transponder] setting to **15.** Press **ENTER**.
4. Using the ◄► arrow buttons, move the cursor to the upper-left corner of the menu.
5. Press ▼ button to access the **MODULATION** menu.
6. Within the **MODULATION** menu, change the **Mode** entry to **8PSK-DVBS2**.
7. Change the **Symbol** rate to **30**.000000 and **Code** to **8/9**, using **ENTER** to save each setting.
8. Using the ◄► arrow buttons, move the cursor to the upper-left corner of the menu.
9. Press **ENTER** to display the Main (**DSR-6050**) Menu.
10. Wait for the green SIGNAL LED to illuminate. This can take several seconds.

Do not proceed if the front panel **SIGNAL** LED does not illuminate. This indicates network acquisition.

Making a Channel Selection

To gain authorization and output, the operator must select a channel via the front panel menus.

1. From the Main Menu use the ◄► button to select **Channel.** Press **ENTER**.
2. If "**MPEG SELECT**" does not appear in the upper left corner of the display, use the ▼▲ buttons to access the **MPEG SELECT** menu.
3. Press the ► to **Program** and press **ENTER.**
4. Use the ▼▲ buttons to change the **Program** number to:
   1 for: **Starz HD**
   2 for: **Starz Kids & Family HD**
   3 for: **Starz Edge HD**
   4 for: **Starz Comedy HD**
   5 for: **Encore HD**
5. Press **ENTER** to save.

If you receive an error when selecting the channel, contact Starz at **1-800-308-6272.**

Retrieving Unit Address

The Unit Address can be obtained from a front panel sub-menu of Diag[nostics]. Stickers on the bottom of the unit and on the outside of the shipping carton also have the address, accompanied by scanner readable bar-coding for the address. The typical unit address should fall between 000-03152-93696 and 000-03153-42847.

1. From main menu use the ◄► to **Diag** and press **ENTER.** Use ▼ button to view the **UNIT ADDRESS** Menu.
2. Document the Unit Address for authorization purposes.

Provide a completed launch form with the appropriate unit address to the Starz IRD Rollout Project Hotline by either faxing to 720-852-5885 or emailing to irdrollout@motorola.com

Calling for IRD Authorization

Starz will administer network authorizations for your unit Monday through Friday 8:30 AM to 5:30 PM MDT. Once you have successfully installed the unit, configured it as per these instructions, confirmed that you have successfully acquired the desired signal, please contact the Starz IRD Rollout Project Hotline at 1-800-308-6272. Please have your unit address, company name and headend city/state information available.

Once the unit is authorized, the **AUTHORIZED** LED will illuminate.
ASI 2 & Gigabit Ethernet outputs will become active with MPEG2 HD service data.

DSR 6300 Three-Channel MPEG4 HD to MPEG2 HD Transcoder

The DSR-6300 IRD is a three-channel receiver and transcoder available through Motorola. Questions concerning the installation, operation, or authorization of the IRD should be directed to the Starz IRD Rollout Project Hotline at 1-800-308-6272 or irdrollout@motorola.com

DSR-6300 Front Panel

DSR-6300 Rear Panel
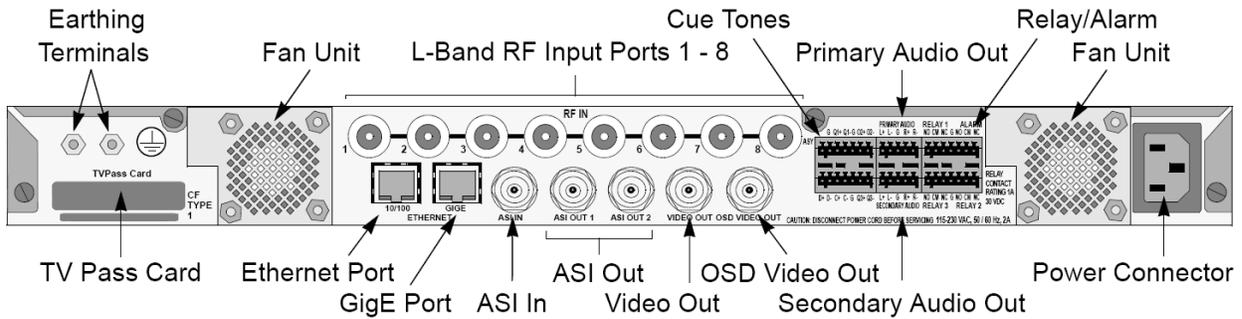
DSR-6300 Physical Installation

Install the receiver in a 19-inch universal rack and connect the power cord to an available AC outlet. All Light Emitting Diodes (LED) on the IRD will go through a self-test and the LCD will temporarily display "MOTOROLA DSR-6300" along with the firmware version. Once the unit has completed the power up sequence, it will display the Main "DSR-6300" Menu as shown below:
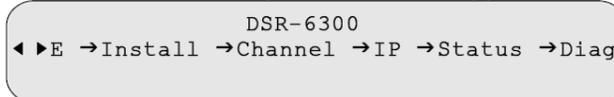
This can take up to 1 minute to appear.

```
              DSR-6300
◀ ▶E  →Install →Channel →IP →Status →Diag
```

If the unit fails to power up properly, please contact Motorola at 1-888-944-4357.

Connecting the Satellite Feed Input

Connect a coaxial cable (RG-6 rated to at least 1450MHz) from the **Galaxy 13 Vertical** LNB
to **Port 1** on the rear panel of DSR-6300. Port 1 DC voltage to power an LNB is "Off" by default. This prevents failure(s) related to redundant DC voltage within a system. If LNB power is required, it can be activated for RF Port 1 using the Installation sub-menu labeled "Core".

```
→Core       →Contrast  →LNB Power
◀♦▶ E        18          Off
```
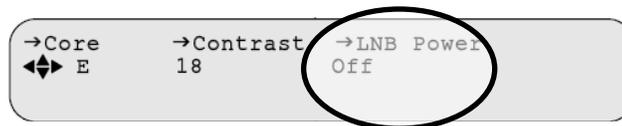
Connecting ASI or GigE Outputs: DSR6300 MPEG2 Digital Transport Stream

Connect the ASI 2 or GigE output ports to a down-stream processing device.

These provide an MPEG2 HD Three (3) Program Transport Stream.

These outputs (ASI & GigE) are active simultaneously. ASI 2 is the only MPEG2 ASI output.

ASI 1 is MPEG4 pass-through (groomed to include only the three decrypted services) and will yield no video using MPEG2-only HD set-top-boxes.

The <u>ASI OUT 1</u> connector provides a basic three-service passthrough output, with *no transcoding*.

The <u>GIGE</u> and <u>ASI OUT 2</u> connectors are the primary production output ports. These two ports provide transcoded output and deliver six (6) services: three (3) MPEG2 HD services and three (3) MPEG2 SD services. See note below.
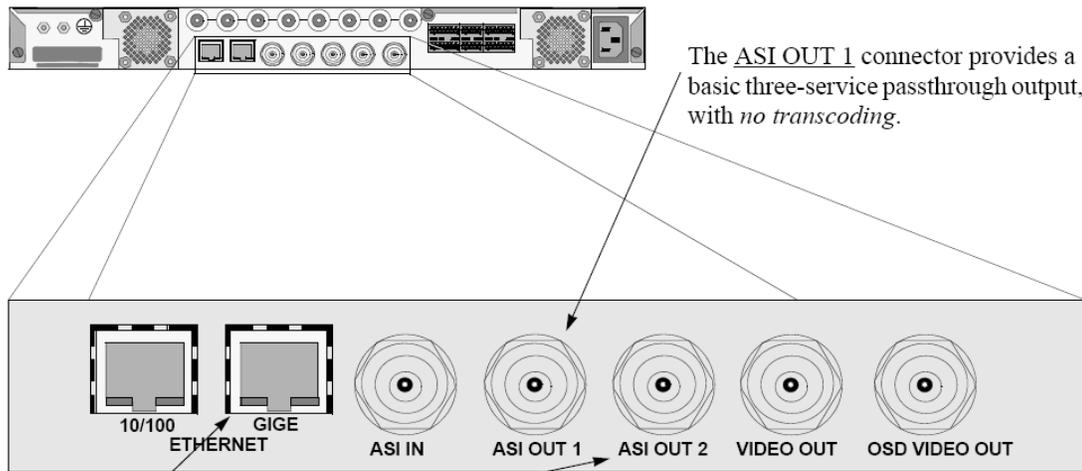
DSR-6300 MPEG2 Output Services (Maximum Capacity)

HD Service	Resolution	Bit Rate	MPEG Program ID
X	HD	VBR or CBR	1
	SD	CBR	2
Y	HD	VBR or CBR	3
	SD	CBR	4
Z	HD	VBR or CBR	5
	SD	CBR	6

Note: The uplink signal provider can authorize up to three (3) HD services (X, Y, and Z).

Note: If the uplink signal provider chooses to disable SD service output in the transcoded output, then programs 2, 4, and 6 will not be output.

Unless a programmer / signal source has and uses a DSR-6300 model authorization option, the unit will assign the first three services listed in the Program Association Table (PAT) to its transcode slots X, Y, and Z in that same order. Uplink programmers who use a DSR-6300 model authorization option can designate which HD services are routed to each of the three DSR-6300 transcoder slots.

HD video services can be output at a Variable video Bit Rate (VBR). SD versions are always output using Constant Bit Rate (CBR). The table above shows how Program IDs are assigned and an SD version of each HD service is added to the transcoded transport stream.

Satellite and Channel Information Chart

The Satellite and Channel Information Chart below, provides detailed information for the acquisition of the HD signals from the correct multiplex. This information is required to properly install and configure the DSR-6300.

Satellite: **Galaxy 13 @ 127 degrees W. Long.**

Polarity: **Vertical**

Transponder 15, **1150.00** MHz L-band

Modulation Mode: **8PSK-DVBS2**

Symbol Rate: **30.00** Msps

FEC: **8/9**

VCT ID: **706**

**MPEG Service IDs/Virtual Channel Numbers:**
   1: Starz HD East
   2: Starz Kids and Family HD
   3: Starz Edge HD
   4: Starz Comedy HD
   5: Encore HD
   6: Starz HD West

DSR6300 Front Panel Programming

1. From the Main Menu use the ◄► to select **Install** and press **ENTER**.
2. If "**MANUAL TUNE**" does not appear in the upper left corner of the display, use the ▲▼ buttons to access the **MANUAL TUNE** menu.
3. Within the **MANUAL TUNE** menu, set the "**Xpndr**" [transponder] setting to **15.** Press **ENTER**.
4. Using the ◄► arrow buttons, move the cursor to the upper-left corner of the menu.
5. Press ▼ button to access the **MODULATION** menu.
6. Within the **MODULATION** menu, change the **Mode** entry to **8PSK-DVBS2**.
7. Change the **Symbol** rate to **30**.000000 and **Code** to **8/9**, using **ENTER** to save each setting.
8. Using the ◄► arrow buttons, move the cursor to the upper-left corner of the menu.
9. Press **ENTER** to display the Main (**DSR-6300**) Menu.
10. Wait for the green **SIGNAL** LED to illuminate. This can take several seconds.

Do not proceed if the front panel **SIGNAL** LED does not illuminate. This indicates network acquisition.

11. Move the cursor to the upper-left corner of the screen and press the▼ button twice to access the PORT ASSIGNMENT menu (under Install):

```
→PORT ASSIGNMENT →ID   →VCT    →Chnl
◄♦► E            1     00000   0000
```

12. Confirm that the ID field matches the RF input port connected and tuned (typically Port 1). If it is not set to the port being used, press the ► button and **ENTER** buttons and use the ▲▼ buttons to change the Port ID value. Press the **ENTER** button to save the selection.

13. Press the ► button to move the cursor to the **VCT** label. Press the **ENTER** button to enter the field. The cursor will blink alternatively with ▲▼ symbols left of the **VCT** field. Use the ▲▼ buttons to automatically display **VCT 706**. Press the **ENTER** button to save it.

14. Press the ► button to access the Chnl (Channel) field and press **ENTER**. The cursor will blink alternatively with ▲▼ symbols left of the **Chnl** field. Use the ▲▼buttons to display the available Channel numbers (1-6). Select any of the available choices (like 1) and press ENTER to save it.

    *Note: Once the **VCT** and **Channel** values are set in the **PORT ASSIGMENT** menu, the **PORT** menu (shown below) automatically programs the correct satellite name (Sat) and polarity (Polar), which are required for authorization. Make no changes to the **PORT** menu. The **Mode** field there must remain set to **Auto**.*

```
→PORT   →I  →Mode  →Sat    →Polar
◄♦► E   1   Auto   GI5     Vertical
```

The Sat ID (GI5) shown here is an example and does not apply to this Starz signal.

15. To view the DSR-6300's unit address, use the ◄► buttons to move the cursor to the upper-left corner of any menu and press the **ENTER** button to return to the **DSR-6300** Main Menu.
16. Press ◄► arrow buttons to access the **Diag** (Diagnostics) field and press **ENTER**.
17. Press the ▼ button to view the **UNIT ADDRESS** and write it on the line below:

Unit Address:_____

18. To authorize the DSR-6300, call the Starz IRD Rollout Project Hotline and supply the following information:

- Decoder Model: DSR-6300
- Unit Address: *(This is the number that was recorded on the bottom of the previous page.)*
- *Which Services (up to three) are being authorized for transcode to the MPEG2 outputs.*

Important: When communicating with the Starz IRD Rollout Project Hotline, make it clear that this unit is a DSR-6300. Provide a completed launch form with the appropriate unit address to the Starz IRD Rollout Project Hotline by either faxing to 720-852-5885 or emailing to irdrollout@motorola.com

Calling for IRD Authorization

Starz will administer network authorizations for your unit Monday through Friday 8:30 AM to 5:30 PM MDT. Once you have successfully installed the unit, configured it as per these instructions, confirmed that you have successfully acquired the desired signal, please contact the Starz IRD Rollout Project Hotline at 1-800-308-6272. Please have your unit address, company name and headend city/state information available.

Go to the DSR-6300's front panel and verify the AUTHORIZATION LED is lit green. The Starz IRD Rollout Project Hotline can authorize one DSR-6300 for up to three services from this multiplex.

DSR-4410MD Integrated Decoder

The DSR-4410MD IRD is a multiple channel receiver available through Motorola. Questions concerning the installation, operation, or authorization of the IRD should be directed to the Starz IRD Rollout Project Hotline at 1-800-308-6272 or irdrollout@motorola.com

DSR-4410MD Front Panel

DSR-4410MD Rear Panel
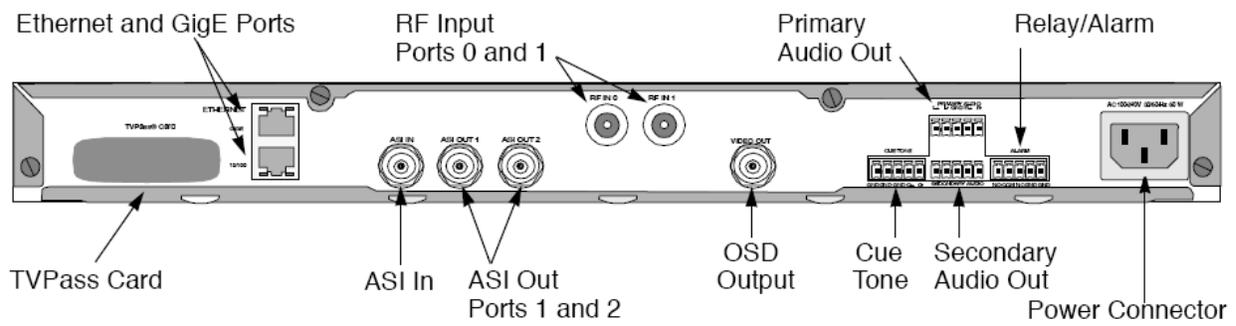
Physical Installation

Install the receiver in a 19-inch universal rack and connect the power cord to an available AC outlet. All Light Emitting Diodes (LED) on the IRD will go through a self-test and the LCD will temporarily display "MOTOROLA DSR-4410MD" along with the firmware version. Once the unit has completed the power up sequence, it will display the Main "DSR-4410MD" Menu as shown below:

This can take up to 1 minute to appear.

DSR-4410MD
◄ ► E   → Install → Channel → IP → Status → Diag

If the unit fails to power up properly, please contact Motorola at 1-888-944-4357.

Connecting the Satellite Feed

Connect a coaxial cable (RG-6 rated to at least 1450MHz) from the **Galaxy 13 Vertical** LNB to **Port 0** on the rear panel of DSR-4410MD. RF Input Port DC voltage to power an LNB is "Off" by default. This prevents failure(s) related to redundant DC voltage within a system. If LNB power is required, it can be activated using the Installation sub-menu labeled "Core".

→ Core   → Contrast   TSID(hex)
◄♦► E   18
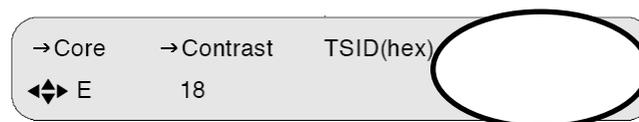
Connecting ASI or GigE Outputs: Digital Transport Stream
Connect the ASI 1, ASI 2 or GigE output ports to a down-stream processing device.
These provide an MPEG4 HD Multiple Program Transport Stream.
These outputs (ASI 1, ASI 2 & GigE) are active simultaneously. DSR4410MDs MPEG4 pass-through and will yield <u>no</u> <u>video</u> using MPEG2-only HD set-top-boxes.
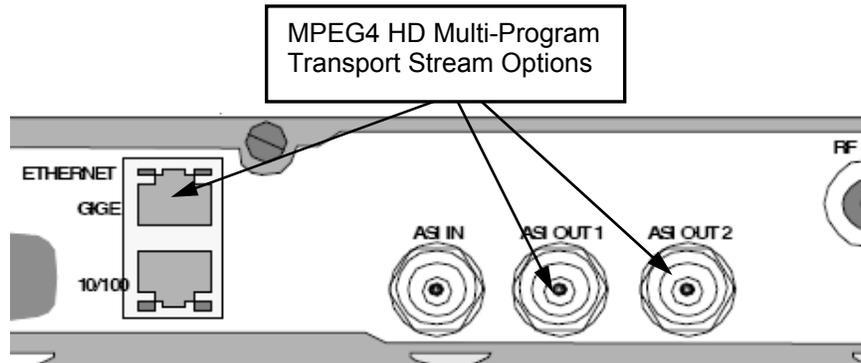
MPEG4 HD Multi-Program Transport Stream Options

Satellite and Channel Information Chart
The Satellite and Channel Information Chart below, provides detailed information for the acquisition of the HD signals from the correct multiplex. This information is required to properly install and configure the DSR-4410MD.

Satellite: **Galaxy 13 @ 127 degrees W.L.**   VCT ID: **706**
Polarity: **Vertical**

Transponder 15, **1150.00** MHz L-band

Modulation Mode: **8PSK-DVBS2**

Symbol Rate: **30.00000** Msps

FEC: **8/9**

MPEG Service IDs/Virtual Channel Numbers:

1: Starz HD East
2: Starz Kids and Family HD
3: Starz Edge HD
4: Starz Comedy HD
5: Encore HD
6: Starz HD West

DSR4410MD Front Panel Programming

1. From the Main Menu use the ◄► to select **Install** and press **ENTER**.
2. If "**MANUAL TUNE**" does not appear in the upper left corner of the display, use the ▼▲ buttons to access the **MANUAL TUNE** menu.
3. Within the **MANUAL TUNE** menu, set the "**Xpndr**" [transponder] setting to **15.** Press **ENTER**.

```
→MANUAL TUNE  →Input  →Mode  →Xpnr LFreq
◄♦► E              Port 0  Xpndr   01   1430.00
```

4. Using the ◄► arrow buttons, move the cursor to the upper-left corner of the menu.
5. Press ▼ button to access the **MODULATION** menu.
6. Within the **MODULATION** menu, change the **Mode** entry to **8PSK-DVBS2**.
7. Change the **Symbol** rate to **30.000000** and **Code** to **8/9**, using **ENTER** to save each setting.
8. Using the ◄► arrow buttons, move the cursor to the upper-left corner of the menu.
9. Press **ENTER** to display the Main (**DSR-4410MD**) Menu.
10. Wait for the green **SIGNAL** LED to illuminate. This can take several seconds.

Do not proceed if the front panel **SIGNAL** LED does not illuminate. This LED indicates acquisition.

Assignment of MPEG Program IDs to ACP Unit Addresses

11. From main menu use the ◄► to select **Install** and press **ENTER.**
12. Press ▼ button to access the **ACP SETUP**: (three menus down from MANUAL TUNE)

```
→ACP SETUP   →Mode
◄♦► E           Manual
```

13. Press ► to **Mode** and press **ENTER**. Use ▲▼ to change the **MODE** setting to **"Manual"** and press **ENTER.** Press ◄ to return the cursor to the upper left corner and press ▼ to access the ACP menu:

```
→ACP →No →Program  Unit Address    KS  AS   EM
◄♦►E   ♦00 ♦00013     000-03453-71824  0   AU   EN
```

14. Press ► to access the **No** (number) field. The **No** field range is numbered 00-63, with each value representing a service slot, capable of assignment to a specific service's Program ID. Press **ENTER** to move the cursor down and flashing alternatively with ▲▼ symbols. Use the ▲▼ buttons change within the range of 00 to 63. Press **ENTER** to save any change and return to the top line of the menu. Note the unique **Unit Address** for each slot number.

The **ACP** number (**No**) zero (**00**) Unit Address is the primary/base/anchor address that is first entered into the authorization system to create the DSR4410MD entry. It can also be assigned a Program ID and be separately entered in the uplink as an authorized ACP unit address.

Press ► to the **Program** field and press **ENTER**. The cursor will flash alternatively with ▲▼ symbols. Use the ▲▼ buttons to reveal the available **Program** numbers the acquired signal. Once a Program ID has been assigned to a specific **ACP** service slot number, it will no longer appear in the list for subsequent **ACP** service slot **Program** entries. Press **ENTER** to save the desired Program ID assignment. The cursor should bounce over to the **No** field, to speed along manual programming of each **ACP No** needed.

For each service that you plan to offer, assign that value to a unique ACP number and associated Unit Address. Use the following chart to document the multiple ACP Unit Addresses seen and the Program ID assignments made within the ACP menu. (shown above)

Program **# 1:** Starz HD East
Program **# 2:** Starz Kids and Family HD
Program **# 3:** Starz Edge HD
Program **# 4:** Starz Comedy HD
Program **# 5:** Encore HD
Program **# 6:** Starz HD West

Making a Channel Selection

To start decryption (authorization) of the services, the operator _must_ select and save valid Virtual Channel Table (**VCT**) ID and **Channel** numbers for the multiplex.
Follow these steps to enter a valid **VCT** ID and **Channel** number.

3. From the Main Menu use the ◄► button to select **Channel.** Press **ENTER**.
4. If "**CHANNEL**" does not appear in the upper left corner of the display, use the ▼▲ buttons to access the **CHANNEL** menu.
5. Press the ► to **VCT** and press **ENTER.**
6. Use the ▼▲ buttons to change the **VCT** number to: **706**
7. Use the ▼▲ buttons to change the **Channel** number to:

    1 for: **Starz HD**
    2 for: **Starz Kids & Family HD**
    3 for: **Starz Edge HD**
    4 for: **Starz Comedy HD**
    5 for: **Encore HD**

8. Press **ENTER** to save.

If you receive an error when selecting the channel, contact Starz at **1-800-308-6272.**

Provide a completed launch form with the along with the appropriate unit address(es) to the Starz IRD Rollout Project Hotline by either faxing to 720-852-5885 or emailing to irdrollout@motorola.com

Calling for IRD Authorization

Starz will administer network authorizations for your unit Monday through Friday 8:30 AM to 5:30 PM MDT. Once you have successfully installed the unit, configured it as per these instructions, confirmed that you have successfully acquired the desired signal, please contact the Starz IRD Rollout Project Hotline at 1-800-308-6272. Please have your unit address(es), company name and headend city/state information available.

Once the unit is both configured and authorized, the ACP menu's "**AS**" field will tell us the Authorization Status (**AS**) of the individual channels: **AU** (authorized) and **FP** (fixed key program) indicate decryption and output of that service. Simply change the value for the **No** field to see the individual Authorization Status (**AS**) for each service's unique **Program** number entered.
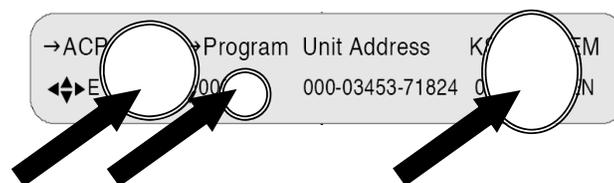
Use the ACP menu to confirm the status of each individual channel desired from the DSR4410MD.

If the DSR4410MD Program number/ACP assignments are simply not aligned with the Uplink authorization scheme, Program number corrections will immediately allow "AU" status (decryption) to occur. In this way, some basic "trial and error" may allow authorization and save a call to the Starz IRD Rollout Project Hotline. Using email or a fax to deliver the IRD Rollout Project Hotline staff your ACP, Program and Unit Address information can help minimize errors and mis-communication. For this reason, Starz Entertainment distributes a launch form to their affiliates and another simple form is included on page 2 of these directions.

Sencore MDR3187A

Front of Unit

Rear of Unit

MDR3187A Settings

9. From the front panel push **INPUT**
10. Use the ▼▲ buttons to select **RDS 2**
11. Press **ENTER** to enter modulation
12. Use the ▼▲ buttons to select **DVB-S/S2 2-4**
13. Press **ENTER** to save Then Press **ENTER** again
14. Use the ▼▲ buttons to select **SOURCE**
15. Press **ENTER** to select **A** Press **ENTER** to save
16. Use the ▼▲ buttons to select **INPUT**
17. Press **ENTER** to select **DVB_S2** Press **ENTER** to save
18. Use the ▼▲ buttons to select **FREQ**
19. Press **ENTER** to select **1310.0MHZ** Press **ENTER** to save
20. Use the ▼▲ buttons to select **SYM RT**
21. Press **ENTER** to select **30.0Mpbs** Press **ENTER** to save
22. Use the ▼▲ buttons to select **INPUT B**
23. Use the ▼▲ buttons to select **RDS 1**
24. Press **ENTER** to select **ASI/310M 1-3** Press **ENTER** to save

Converting MPEG program ASI to HD SDI with Embedded Audio

To use HD-SDI with embedded audio for encoding or monitoring, you will need to feed ASI from the DSR-4410MD IRD into the MRD3187A.

MDR3187A ASI to HD-SDI

1. From the front panel push **OUTPUT**
2. Use the ▼▲ buttons to select **RDS 1**
3. Press ENTER to enter HD Video 1-1
4. Use the ▼▲ buttons to select **VIDEO**
5. Press **ENTER** Then Press **ENTER** again
6. Use the ▼▲ buttons to select **SELECT FORMAT**
7. Press **ENTER** to select **MANUAL** Press **ENTER** to save
8. Use the ▼▲ buttons to select **FORMAT**
9. Press **ENTER** to select **1920X1080i 16x9 29.97** Press **ENTER** to save
10. Use the ▼▲ buttons to select **ANALOG OUT**
11. Press **ENTER** to select **RGBHV** Press **ENTER** to save
12. Use the ▼▲ buttons to select **DISP MODE**
13. Press **ENTER** to select **LETTERBOX** Press **ENTER** to save
14. Use the ▼▲ buttons to select **SDI CC EMBED**
15. Press **ENTER** to select **708** Press **ENTER** to save
16. Use the ▼▲ buttons to select **CC ENBED LINE**
17. Press **ENTER** to select **4 or 12** Press **ENTER** to save

Sencore MRD-3187
Setup of HD-SDI

OUTPUT

RDS 1 → ENTER

HD VIDEO 1-1 → ENTER

VIDEO → ENTER → ENTER

SELECT FORMAT → ENTER

MANUAL → ENTER

FORMAT → ENTER

1920 x 1080i 16x9 29.97 → ENTER

ANALOG OUT → ENTER

RGBHV → ENTER

DISP MODE → ENTER

LETTERBOX → ENTER

SDI CC EMBED: → ENTER

708 → ENTER

CC ENBED LINE → ENTER

4 → ENTER

RASTER COLOR → ENTER

BLACK → ENTER

Front of Unit

Rear of Unit

Converting MPEG program ASI to HD SDI with embedded audio