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Installation Guide: GEOSATpro GS120 DiSEqC Motorized Satellite Dish Mover



Items needed for installation:

1. DiSEqC / USALS Compatible GEOSATpro GS120 Motor or Similar
2. Fortec Star Mercury II / Visionsat IV-200 Satellite Receiver with USALS
3. Assembled 76cm – 1.2 Meter Dish
4. LNB (KU-Band Standard Type)
5. 5' Coax Jumper
6. Portable TV with cables for connecting to the satellite receiver output

Satellite aiming Calculator is available at: <http://www.geosatfinder.com>

Available channels and broadcaster information can be found at: <http://www.lyngsat.com>

What to learn more about Free to Air Satellite and share your FTA experience with a helpful and friendly group? Visit: <http://www.satelliteguys.us>

1. Assemble the motor using the motor assembly manual. Securely tighten the bolt that attaches the post to the motor with an Allen wrench. A loose bolt will cause the dish to slip out of position.



Place Motor Post Through Top of Dish Post Clamp and Secure

2. Mount the assembled dish onto the motor post. Place the dish post clamp top bolt through the elevation bracket then through the top alignment hole in the motor post. Securely tighten the bolt.
3. Determine the Longitude and Latitude for the installation location. If your system was supplied with **GEOSATFinder** aiming coordinates, your location coordinates are printed near the top of the sheet or use a GPS unit to locate the install position coordinates. Longitude references the East / West location and Latitude the North / South.
4. Install a perfectly plumb, level and stable post. If the post is not exactly level the dish will not track the satellite arc. Assemble the motor and mount on a post. With the motor in the 0 position rotate the motor assembly on the mounting post towards magnetically corrected South. Find true south at <http://www.geosatfinder.com> or by adding or subtracting the magnetic declination for your area to the compass reading. Example: Sacramento, CA, the magnetic declination is -15.6 subtracted from 180 degrees equals 164.4. This is not a critical step, but it will be easier to locate the first satellite if the motor is first roughly aimed.



Motor Mount Latitude Scale = Install Location Latitude

5. Set the motor mount latitude scale to the latitude of the installation location. Securely tighten the two latitude adjustment bolts as this setting should not need to be readjusted.



Dish Elevation Angle

6. Set the Dish Elevation Angle on the dish elevation bracket using the Dish Angle Table on page 6 of the GeoSat GS120 Motor Manual. The dish elevation angle will be between 20 and 30 degrees. Loosely secure the two dish elevation bolts, as the elevation may need to be adjusted for the dish to properly track the satellite arc.



LNB Set to 12 O'clock Position

7. Set LNB rotation to 12 o'clock position. The motor will rotate the lnb and dish as it moves through satellite positions.

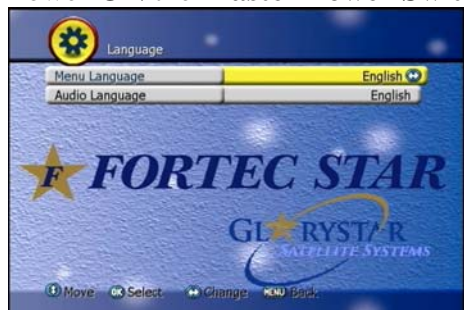


Carefully Route and Secure Coax Cables

8. Connect a coax cable from the LNB to the motor port labeled “To LNB”.
9. Clear all obstructions to permit dish movement. Always keep the area clear when programming and moving the motorized dish.
10. **Warning: The dish may suddenly move when connected to the receiver!** Unplug the receiver from the electrical outlet. Connect a short temporary coax cable between the motor “To Receiver” and the receiver “Digital - LNB IN” ports. Route and secure all coax cables in a manner to avoid interference and / or damage to the cables during motor movement.
11. Stand clear of the motorized dish and plug the receiver into an electrical outlet.
12. Verify the green LED power indicator status light is lit on the motor. Please consult with the motor operation manual for description of modes of the status indicator light.
13. To verify that the dish will clear any obstacles, press and hold the manual movement button on the motor until shortly before the motor reaches an obstacle or the West mechanical limit of the motor. Press the button twice within one second and hold to drive the motor to an obstruction or limit to the East. If the dish cannot be installed in a location free of obstacles, please consult with the GS120 Operation Manual on adjusting the mechanical limits for motor travel or refer to the Fortec Star Mercury II Owners Manual on setting electronic East and West Limits. Failure to prevent the dish from contacting objects will result in damage to the dish and motor.

Fortec Star Mercury II Receiver Set-up and Operation

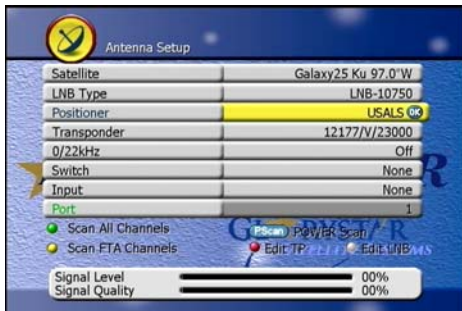
Power ON the **Master Power Switch** on the rear panel of the receiver



Press **MENU**



Select **ANTENNA SETUP**, Press **OK**



Select Satellite and choose **Galaxy25Ku 97W** by pressing **LEFT** or **RIGHT ARROW**, Select LNB Type and set to **LNB-10750** (Standard), Select Transponder and press the **RIGHT ARROW** to select an Active Transponder (example: **12177 V 23.000**), Select Positioner and set to **USALS**, Press **OK**



Select **LONGITUDE** and enter your installation location Longitude using the **Numeric Keys** Use the **RIGHT ARROW** to select if the location is entered as **EAST** or **WEST** Longitude (North American coordinates are entered as West). Example Sacramento, CA enter 121.2W.

Select **LATITUDE** and use the **Numeric Keys** to enter the install location Latitude. Use the **RIGHT ARROW** to select if the location is entered as **NORTH** or **SOUTH** (North American coordinates are entered as North). Example: Sacramento, CA enter 38.5N.

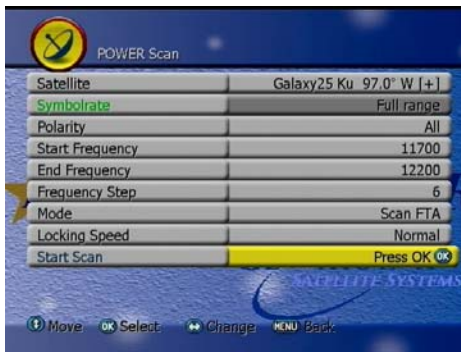
Select “Go to position” and Press **OK**. The dish will rotate to the Galaxy25 satellite position based on the calculated values.

Slightly loosen the motor on the mounting mast and rotate the motor assembly East or West on the post in very small movements while observing the **Signal Quality** meter. If a Signal Quality reading cannot be obtained or if the Quality is low or erratic, raise or lower the Satellite Dish Elevation by a degree and repeat the slow pan left or right rotation. Once the satellite is located, the Signal Quality reading will be displayed.

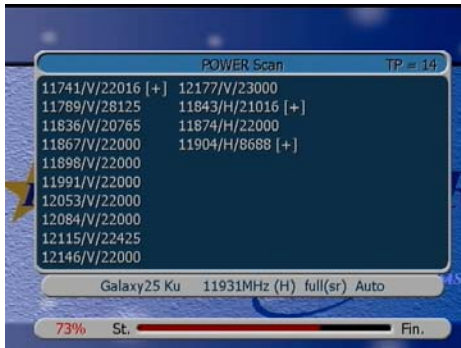


The Fortec Star Mercury displays reliable programming if the Signal Quality is at least 50%. The higher the Signal Quality reading, the more reliable reception. Transponder 12177 should be 65% or better.

Press the **P.SCAN KEY** to select Power Scan to find all available TV and Radio channels on the Galaxy25 Ku satellite.



Select Mode and choose **Scan FTA** to set the search for all available free and unencrypted channels. Select Start Scan and Press **OK**.



The receiver identifies all available transponders on the satellite.



Next the receiver locates all free channels.



Upon completing the scan an on-screen prompt will ask, "**Do You Want to Save?**", Select **YES** and Press **OK**.

To program additional satellites enter the MENU, Select ANTENNA SETUP and chose a second satellite from the antenna setup list (AMC4 101W). Set the LNB type to LNB-10750. Activate USALS for the POSTIONER setting to drive the motor automatically to satellite position (AMC4). Set TRANSPONDER to an active frequency (11822 H 5700).

Press the GREEN "ZOOM" KEY to Power Scan for all available Free TV and Radio channels on the AMC4 Ku satellite. The receiver will automatically scan the satellite for new transponder frequencies

then identify the available free TV and radio channels. When completed, an on-screen prompt will ask, "Do You Want to Save?" Press the RIGHT ARROW to select YES and Press OK.

Now that multiple satellites are programmed, when the satellite channel is changed on the receiver, the motor will automatically move the dish to the correct satellite location and the selected channel will appear.

Visionsat IV-200 Receiver Set-up and Operation

Power ON the **Master Power Switch** on the rear panel of the receiver



Select **English**, Press **OK**



Select your **Time Zone**, Press **OK**



Select if **Daylight Saving** or **Region**, Press **OK**



"Would you like to Auto Detect", Select **NO**, Press **OK**



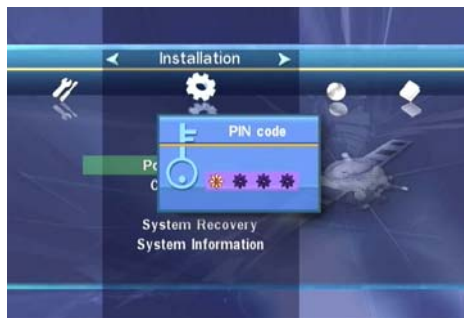
In Dish Setting Menu: Select Satellite **97.0W Galaxy25**, Transponder Frequency **12177**, LNB Power **ON**, LNB Type **Single**, LNB Frequency **10750** (Standard), LNB 22KHZ **OFF**, DiSeqC SW **OFF**, Legacy SW **OFF**
Press **MENU** to exit Dish Setting Menu



“Setting is Changed. Do you want to save? Select **YES**, Press **OK**



Select Satellite **POSITIONER SETTING**, Press **OK**



Enter PIN code **0000**



Select Satellite **97.0W Galaxy25**, Transponder Frequency **12177**, Positioner **USALS**

Select Dish Longitude and enter your installation location Longitude using the **Numeric Keys**. Use the **DOWN ARROW** to select if the location is entered as **EAST** or **WEST** Longitude (North American coordinates are entered as West). Example Sacramento, CA enter 121.2 W. Press **OK**. Select Dish Latitude and use the **Numeric Keys** to enter the install location Latitude.

Use the **RIGHT ARROW** to select if the location is entered as **NORTH** or **SOUTH** (North American coordinates are entered as North). Example: Sacramento, CA enter 038.5 N. Press **OK**. Select **GO To** and Press **OK**.

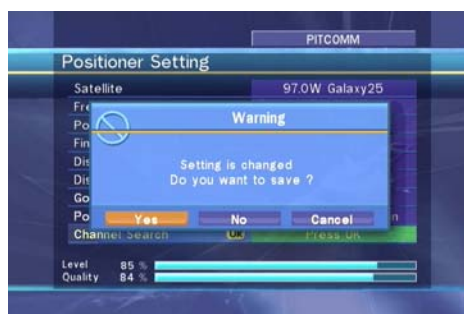
The dish will rotate to the Galaxy25 satellite position based on the calculated values. Slightly loosen the motor on the mounting mast and rotate the motor assembly East or West on the post in very small movements while observing the **Signal Quality** meter. If a Signal Quality reading cannot be obtained or if the Quality is low or erratic, raise or lower the Satellite Dish Elevation by a degree and repeat the slow pan left or right rotation.



Once the satellite is located, the Signal Quality reading will be displayed. The Visionsat IV-200 displays reliable programming if the Signal Quality is at least 50%. The higher the Signal Quality reading, the more reliable reception. Transponder 12177 should be 70% or better.



Select Channel Search and Press **OK**



“Setting is Changed. Do you want to save? Select **YES**, Press **OK**



Select Satellite **97.0W Galaxy25**, Search Mode **BLIND**, Frequency **AUTO**, Polarity **ALL POLARITY**, Search Type **FTA**, Dish Setting **10750** Select Start Search, Press **OK**



This window appears while the receiver is search for new transponders. The process may take several minutes to complete.



A few minutes, after all satellite channels are found an on-screen prompt will appear," Channel Search - - - TV Channels Found - - - Radio Channels Found" Press **OK** to save the new channels and exit.



View the channels found on Galaxy25.

To program additional satellites enter the MENU and repeat the steps above for another satellite and active transponder.

Final Notes: See <http://www.lyngsat.com> for a list of satellites, transponders and available free channels. Once the dish has moved into position, verify that the Signal Quality is peaked. It may be necessary to slightly adjust the motor azimuth (rotation) on the mounting mast and/or the dish elevation to peak the Signal Quality. Power Scan the satellite for available channels. Repeat for each available satellite. Move the dish back to a channel from the first satellite and verify good signal quality. If the reading has degraded you may need to fine-tune the motor azimuth setting and/or the dish elevation settings to reflect high quality readings between the multiple satellite locations. If the post has been installed level and plumb, the latitude adjustment on the side of the motor should not need to be adjusted.

Now that multiple satellites are programmed, when the satellite channel is changed on the receiver, the motor will automatically move the dish to the correct satellite location and the selected channel will appear.