

# GPS INSTALLATION & USER GUIDE



Compatible with the following controllers

**TV**

**Nomad 3**  
**Nomad SD/SD2**

**Internet**

**MESA**

# INDEX

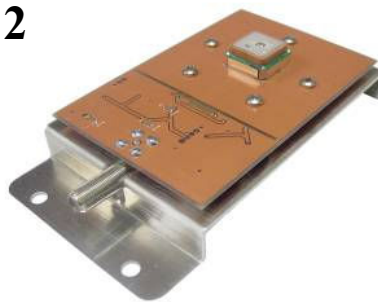
<b>BILL OF MATERIALS</b>	
<b>Components for configuration</b>	<b>3</b>
<b>BLOCK DIAGRAM OF INSTALLATION</b>	<b>4</b>
<b>CONTROLLERS</b>	
<b>Rear View and Definitions</b>	<b>5</b>
<b>OPERATION</b>	
<b>TV</b>	<b>6</b>
<b>MESA</b>	<b>7</b>
<b>GPS OPERATION</b>	<b>8</b>
<b>INSTALLATION TIPS /ERROR CODES</b>	<b>9</b>
<b>INSTALLATION PICTURES</b>	<b>10</b>
<b>GPS WIRING DIAGRAM</b>	<b>11</b>
<b>CONTACT INFORMATION</b>	<b>12</b>

# Components For GPS Assembly

1



2



3



## Pictures

1. How the GPS Assembly is shipped.
2. Components that go into a GPS Kit. (Mounting Bracket, GPS Module (PC Board))
3. Splitter (voltage passing from the single port side through to the dual port side)

## Part Number

### 213-GPS-002 GPS Kit

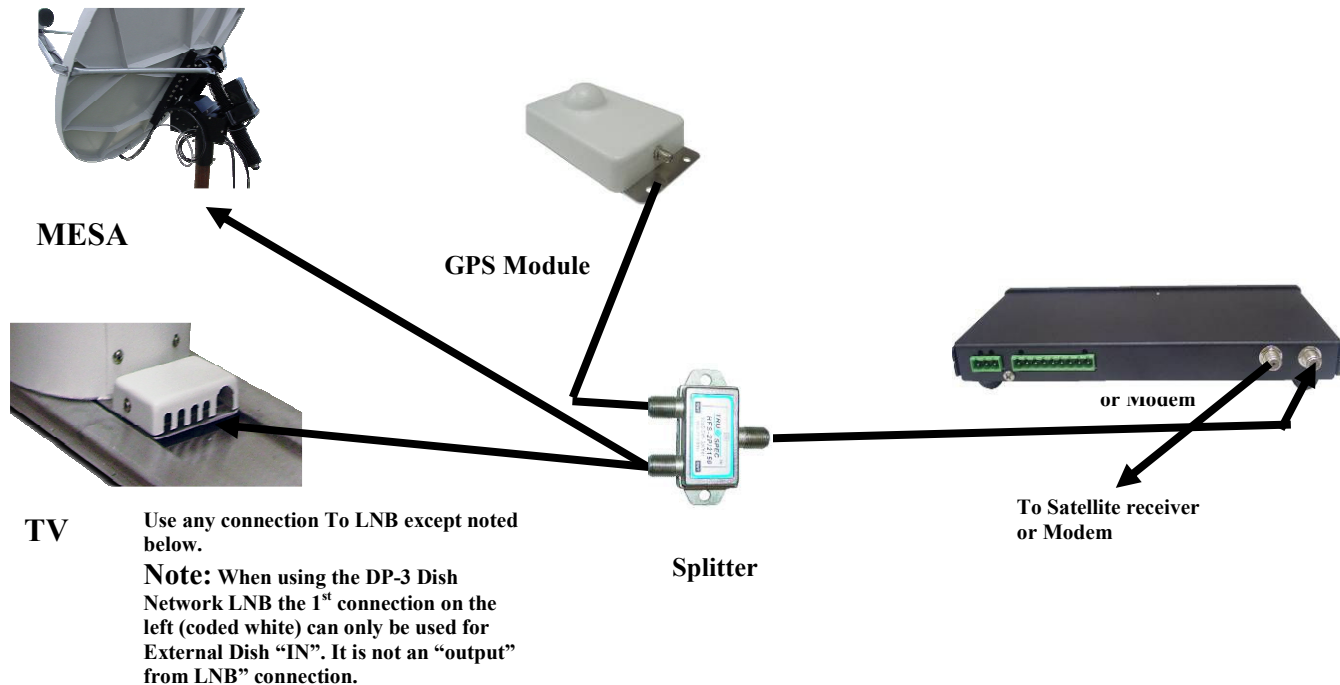
#### Kit Includes

1 ea.	413-GPS-002	GPS Antenna Assembly
1 ea.	339-HFS2P	High Frequency Splitter 900-1250
1 ea.	901-GPS Manual	GPS-002 Installation Guide

# GPS LAYOUT

For use with NOMAD 3, SD/SD2 or MESA Controllers **ONLY**

**Note:** For TV - Nomad 3 Software version 37.6 and Nomad SD/SD2 Version 27 (or greater) is required.



The GPS Module should be placed in an area that is not covered at any time so that it can receive GPS satellite signals.

The GPS Module must be mounted onto the coax that is in a direct line from mount to the Nomad 3, SD/SD2 or MESA Controller. The GPS Module is powered by the satellite receiver or MESA Controller and it must be in line for proper operation.

The High Frequency Splitter must be connected in the above manner and mounted in such a way as to keep it out of standing water.

For TV application the Splitter can be connected to any connector at the base of the dish with exception of position 4 but it must go eventually through the Nomad 3, SD or SD2 Controller to the satellite receiver.

For MESA application the splitter must be placed onto the LNB line.

Apply Dielectric grease to all exposed connections to protect from the elements.

## Nomad 3, SD, SD2 or MESA

### REAR VIEW



The Rear Panel consists of a plug in connections **Main Power** and **Motor Control Cable (optional with the MESA)** and F-Connectors **To TV Receiver or Internet Modem** and **To TV Mount or Internet LNB**.

### CONNECTIONS

**DC Voltage:** This connection provides the +12 or +15 volt DC input power to the controller.

**Control Cable:** This connection sends power to the motors and receives positioning data from the mount. (Optional with the MESA)

**To TV Receiver or Internet Modem:**

This connector provides power to the GPS Module from the satellite receiver. When used on the MESA Controller, the controller provides the power to the GPS Module.

**To TV Mount or Internet LNB:**

This connector provides connection to the mount by way of the High Frequency splitter and receives both GPS data and the LNB signal from the mount.

**TV NOTE:** For **DirecTV** 5 LNB Slim Line High Definition Receivers, install the B-Band Converter (BBC) **between** the Nomad Controller and the mount. For DirecTV receivers with 'built in' B-Band Converters **do not** run the coax from the Nomad controller to the receiver. For **Dish Network** Receivers that use a Separator, install it **between** the Nomad Controller and the receiver.

# OPERATION

The following is a basic operation of the Nomad Controllers and is meant to get the system up and running in a short period of time.

## TV POWER UP

### Nomad 3

After making all the proper connections of the Nomad 3 Controller to the system, turn ON the power using the POWER button. The unit will begin to do a self test routine. This will take a few seconds. If the satellite receiver was connected through the Nomad 3 and has been powered on for at least 5-10 minutes then you may push the FIND button at any time even before the DVB LED goes out. You may do this because the receiver has been powering the GPS device and the GPS has been storing valid data. If you want to make sure that valid data has been received by the GPS then do the following:

- The DVB LED will stay illuminated for approximately 7-10 seconds at which time it is checking to see if a GPS System has been installed.
- If a GPS is detected the LOCK LED will begin to alternately flash until communications is established.
- When LOCK LED stays on solid and the DVB LED goes out the system has established contact with the GPS satellites and is ready for proper operation.
- Press FIND and the dish will begin its search routine and locate the preprogrammed satellite(s) or if you had previously pressed FIND the system will automatically start its search routing.
- For additional information concerning operation of the Nomad Controller, consult your Nomad 3 Controller USERS GUIDE.

### Nomad SD or SD2

After making all the proper connections of the Nomad SD or SD2 Controller to the system, turn ON the power using the POWER button. If the satellite receiver was connected through the Nomad SD or SD2 and has been powered on for at least 5-10 minutes it has been powering the GPS device and the GPS has been storing valid data.

- Press FIND and the dish will begin its search routine and locate the preprogrammed satellite(s) after receiving proper GPS satellite data.
- For additional information concerning operation of the Nomad Controller, consult your Nomad SD or SD2 Controller USERS GUIDE.

# MESA GPS Operation

## MESA Controller

After making all the proper connections to the MESA Controller, turn ON the power using the POWER button. The unit will begin internal self checks. One of those checks will be to see if it has a valid GPS read. This could take a few minutes.

- When power is first applied to the MESA Controller it will immediately begin to acquire GPS satellites.
- When sufficient GPS satellites are detected the GPS LED will illuminate indicating that the system has established contact with the GPS satellites and is ready for proper operation.
- Press the FIND button and the dish will begin its search routine and locate the preprogrammed satellite.
- If the FIND button is depressed before the GPS LED is on solid the system will not activate until it does or if no GPS information is received within 5 minutes the system will activate and use the GPS information that was stored previously and use that data to acquire the targeted satellite.

# TV GPS Operation

## Nomad 3

The GPS can receive its power from the satellite receiver. It can also receive power from the Nomad 3 controller. To receive power from the satellite receiver it must be plugged in and sending power to the GPS by way of the Nomad 3 Controller in order for the GPS to receive satellite coordinates. Note: the Nomad Controller does not have to be powered on. If the satellite receiver is unplugged it must be plugged in for approximately 5-10 minutes prior to pressing FIND in order for the GPS module to be updated with current GPS information.

If the receiver is providing power while driving then the GPS information will be gathered and stored every 5 minutes. Upon arrival at a site for deployment, the GPS Module will have current data stored. If the receiver is powered on then you may press FIND at any time after the housekeeping routine of the Nomad 3 Controller is complete. The receiver is not required to be on all the time just as long as it is powered on at least 5 minutes prior to deployment.

In the case of the Nomad 3, if you do not have the receiver in line with the controller when you turn on the Nomad Controller you must wait for the LOCK LED to stop blinking and stay on solid before pressing the FIND button.

The system may be deployed without receiving the latest GPS coordinates. When deployed without latest information it will act on the last coordinates stored. To do this, press the FIND Button once and then again. The second time, hold the FIND button for an additional 3 seconds. This procedure eliminates the need for GPS data and starts the search routine.

## Nomad SD or SD2

The GPS can receive its power from the satellite receiver. It can also receive power from the Nomad SD or SD2 controller. To receive power from the satellite receiver it must be plugged in and sending power to the GPS by way of the Nomad SD or SD2 Controller for it to receive the GPS satellite coordinates. Note: the Nomad SD or SD2 Controller does not have to be powered on. If the satellite receiver is unplugged it must be plugged in for approximately 5-10 minutes prior to pressing FIND in order for the GPS module to be updated with current GPS information.

If the receiver is providing power while driving then the GPS information will be gathered and stored every 5 minutes. Upon arrival at a site for deployment, the GPS Module will have current data stored. If the receiver is powered on then you may press FIND at any time after the housekeeping routine of the Nomad SD or SD2 Controller is complete. The receiver is not required to be on all the time just as long as it is receiving power at least 5 minutes prior to deployment.

The system may be deployed without receiving the latest GPS coordinates. When deployed without latest information it will act on the last coordinates stored. To do this, press the FIND Button once and then again. The second time, hold the FIND button for an additional 3 seconds. This procedure eliminates the need for GPS data and starts the search routine.



# INSTALLATION TIPS

When installing the GPS Module to work with your TV or MESA system it must be placed in a location that can give it an unobstructed view of the sky.

## DO NOT

- Do not place the GPS Module under the dish or any object that can block the GPS signal reception from the satellites.
- Do not place in a location subject to standing water.
- Do not install the splitter where water damage could occur.

## DO

- Protect all outside coax connections from moisture using a form of dielectric grease.
- Secure all coax connections properly.
- Read all instructions before beginning.

## ERROR CODES

### Nomad SD/SD2

- If the controller is configured for SHAW Direct and no GPS detected is detected upon POWER UP sequence the **FIND LED will blink 22 times** and repeat indicating “No GPS Detected”.

#### Probable Cause

- |                                  |   |                                    |
|----------------------------------|---|------------------------------------|
| 1. Splitter installed improperly | - | Refer to Installation Diagram      |
| 2. Splitter bad                  | - | Check for voltage at the GPS/Mount |
| 3. No GPS installed              | - | Contact installing dealer          |
| 4. GPS not connected to Nomad    | - | Refer to Installation Diagram      |
| 5. GPS is bad                    | - | Replace GPS                        |
- If the controller is configured for *other* than SHAW Direct then the above still applies. SHAW Direct software version 1000 and above *requires* that a GPS be installed.

## Sample TV Installation



# GPS WIRING DIAGRAM



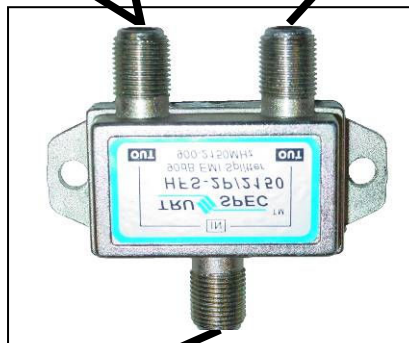
**MESA Mount**



**TV Mount**

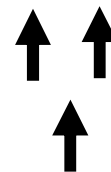


**GPS**



**Splitter**

This splitter is  
Voltage passing  
**ONE WAY**



In from LNB



**For additional information at this time contact  
MotoSAT Technical Support @ 800-247-7486**

Thank you for your assistance,

**Your Friends at MotoSAT**

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