

# EXECUTIVE / MiniDome OSD



## **USERS MANUAL** **USING THE MOTOSAT DISH POINTING SYSTEM** **EXECUTIVE / MiniDome OSD**

*MotoSAT Corporation*  
*Created April 22, 2003*  
*1-800-247-7486*

# **CONGRATULATIONS!**

...on your purchase of your Satellite RV-TV system from MotoSAT.

We are excited here at MotoSAT to introduce to you the cutting edge of Satellite technology. The features of the new dish positioning system will have you feeling in total control.

## **SYSTEM FEATURES**

- Totally automated. Just select "Find Satellite" and the dish will do the rest
- Control your satellite system with your receivers remote control
- On-Screen menus allow for easy configuration of your system
- Move to any satellite at will with your remote control
- Locate ANY satellite and add it to your system
- Quick reacquiring of last acquired satellite
- Re-peaking option if vehicle has settled
- Auto Stow within one minute if the vehicle has been moved
- Manual stowing of Dish without having to turn on TV
- Works with DirecTV, Dish Network and Bell Express VU with Infrared remote capability

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## DO YOU HAVE THE RIGHT RECEIVER?

**Note: Receivers with remotes that do not output Infrared will not operate the OSD.**

Your MotoSAT dish will work with most all new receivers, but some of the older receivers may not operate properly. Please make sure that your receiver type is listed below\*:

**DISH NETWORK** - The Positioner will operate with **most** all Dish Network Satellite Receivers, past and current (some exceptions may apply, see above). Please consult MotoSAT Technical support with any questions or concerns.

**DirectTV** – Works with:

\*RCA Models - 420 Series (420, 440 480) and 430 Series (430, 450, 485).

Sony SAT-A65, B65, A65-A, B65-A

Hughes GCEBO, GCEBOA, GAEB0, GABEOA, Remotes on these models are EXTREMELY sensitive and are not recommended.

## SYSTEM SHIPPED COMPONENTS

Your MotoSAT satellite system would have shipped with these components.



# THE MotoSAT Executive OSD Positioner

NOTE – You will need to place the MotoSAT Positioner (OSD) inside the same cabinet that your receiver is located. Wireless communication is happening between the MotoSAT Positioner and the TV Receiver that is not possible when units are separated (see Figure 1).



## LIGHTS & BUTTONS

**GREEN LIGHT** - The green light on the far-left side of the front panel shows that the Dish LNB is getting power from the Satellite TV Receiver.

**RED LIGHT 1** – The first red light on the left, when blinking, shows that the Positioner is receiving a command from your Remote.

**RED LIGHT 2** – The second red light, when blinking, shows that the dish is moving.

**POWER** - The MotoSAT Positioner only has one button for turning the system ON and OFF. When pressed, it will turn ON the positioner and glow blue.

- a. When pressed for longer than **10 seconds**, this button will automatically stow a raised dish.
- b. **When pressed for longer than 30 seconds, this button will erase the Remote Setting and then the display will ask you to press the Guide button on your remote to pick your receiver type. This task will also erase all satellite selections except 101° (DirecTV), 119° (Dish NetWork) and 91° (Bell ExpressVu)**

**This is a Memory Reset Function**

# FUNCTIONS OF YOUR MotoSAT SYSTEM

## **AUTOMATIC SEARCH AND LOCK ON THE CORRECT SATELLITE**

MotoSAT gives you on-screen control of your satellite system. No matter where you find yourself in the United States, your system is smart enough to make sure you have connected to the satellite of your choice. Simply choose "Find Satellite" on the Main Menu screen displayed on your TV and follow the on-screen instructions.

## **STOWING THE DISH**

Stowing the dish is only necessary when using the MotoSAT Executive "open face" dish, which does need to be stowed for traveling. You have the option of stowing the dish from the on-screen controls, or by pressing and holding the **ON** button of the Positioner for more than 10 seconds.

## **QUICK RE-ACQUIRING OF LAST KNOWN SATELLITE**

Sometimes you may have wanted to stow the dish because of high winds or some other reason. As long as the vehicle has not moved, you may choose this option from the main menu and the dish will rise up and go directly to the satellite without having to do a search pattern.

## **MOVING THE DISH TO ANOTHER SATELLITE**

You have the option of moving your dish to another satellite at will when a different satellite has different programming. To change satellites while you're watching TV, press the OFF button on the remote...this action will bring up the MotoSAT Power Off menu that allows you to switch to another satellite. Here you may highlight the satellite you wish to move to.

*NOTE – All MotoSAT systems normally come with only one Satellite location. Adding other satellite locations is easy. All you need are the "working" satellite longitudes from your dealer and enter these longitudes in the "Add or Remove Satellite" menu.*

## **RE-PEAKING ON SATELLITE IF RIG HAS SETTLED**

If you own a bus or other rig that settles over time, this option is for you. Instead of stowing and relocating the satellite, which is time consuming, you may simply choose "Re-Peaking" and the dish will begin to re-peak on the satellite to strengthen the signal. To get to the re-peaking options, simply press the OFF button on the remote and the "Power Off Button" menu will appear.

*NOTE – You must be on the satellite for this function to work. Re-Peaking only recenters the dish on the satellite.*

## **ADDING AND REMOVING SATELLITES**

Normally, your MotoSAT dish will come with 1 satellite location. You have the ability to add other satellites to your system, and then quickly move the dish to each of them any time you like.

To ADD a satellite, please go to the "Add or Remove Satellite" menu.

## **SAFETY STOWING OPTIONS**

Your MotoSAT system has certain Stow features that you may desire to use or not. There are three options:

- You can automatically stow dish if the power goes off on the Satellite Receiver.
- You can automatically stow the dish if AC power is lost to the rig.
- You can automatically stow the dish if the signal is lost. This feature is good if you accidentally move the rig without stowing the dish first.

To change any of these items, please go to the "Options" menu screen.

## **CHANGING DISH SIZE**

Your installer normally sets this function. You have the option of choosing an 18" dish or a 24" dish. Default is 18". This setting is found on the "Options" menu screen. (MiniDome is same as 18" dish).

**CHANGING REMOTE CONTROL TYPE**

Your installer normally sets this function. However, you may have purchased a new Satellite Receiver, in which case, you will need to tell the MotoSAT positioner which kind of Satellite Receiver you are now using. Holding the front panel button in for 30 seconds can also do this function. If the power button is held in for 30 seconds it will also erase satellites stored in memory. (See POWER pg. 4 for details).

To make this selection, please go to the "Options" menu screen.

**TESTING DISH**

A Test Dish function is automatically executed at time of installation. Any further selection of this feature will check all functional capabilities of the mount. If Test Dish fails, go to Trouble Shooting.

# USING YOUR MotoSAT SYSTEM

There are four basic operations that you will use any time you want to watch television.

1. TURNING ON THE SYSTEM
2. FINDING SATELLITE
3. STOWING THE DISH
4. TURNING OFF THE SYSTEM

Of course there are many other functions you may perform, but for now, let's focus on getting the TV working.

## TURNING ON THE SYSTEM

Two things need to be turned ON in order for your system to function.

- The MotoSAT Positioner box
- Your television

NOTE: Your Satellite Receiver will be turned on by The MotoSAT Positioner when it needs to be turned on. The MotoSAT "ON" button illuminates blue when it is on. Obviously, the TV must be turned on.

When the system turns on, you should immediately see the MotoSAT Positioner Main Menu Screen seen below, if not, press "Menu" on your satellite receivers' remote.

## CHANGING RECEIVER OUTPUT TO CHANNEL 3 OR 4\*

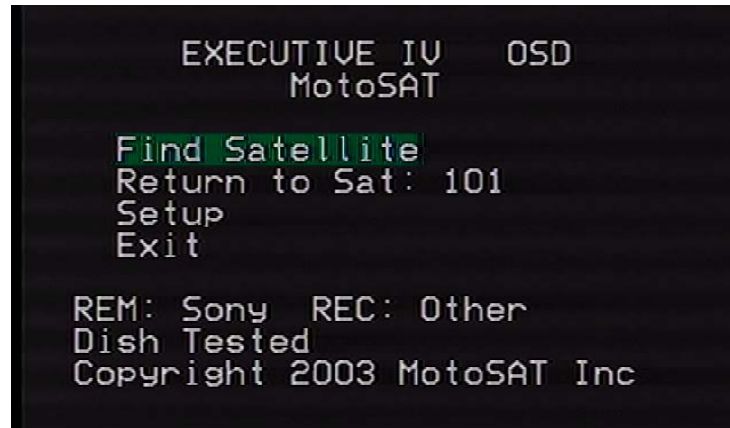
To change the output of your satellite receiver from 3 to 4 or back, simply (with FIND SATELLITE selected) press the 3 key on your remote for channel 3 and/or 4 for channel 4.

**Note: DON'T FORGET TO CHANGE THE CHANNELS ON YOUR TV TO CORRESPOND TO THE CHANGE JUST MADE.**

**\*Some OSD Positioners have a manual 3 / 4 switch in the back. If your system has this manual switch, then, you must do it manually.**



## THE MAIN MENU SCREEN

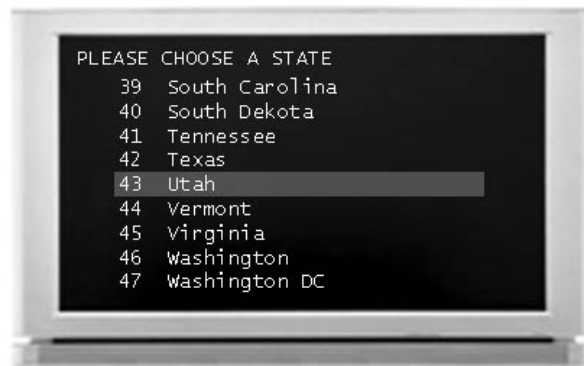


*If you do not see the MotoSAT Screen appear when you power up the system, please go to TROUBLESHOOTING at the end of the manual.*

**FIND SATELLITE** - While the Main Menu screen is on your TV screen, use your Receiver's Remote to navigate this screen. In this case, you will be using the UP and DOWN arrows on the remote control.

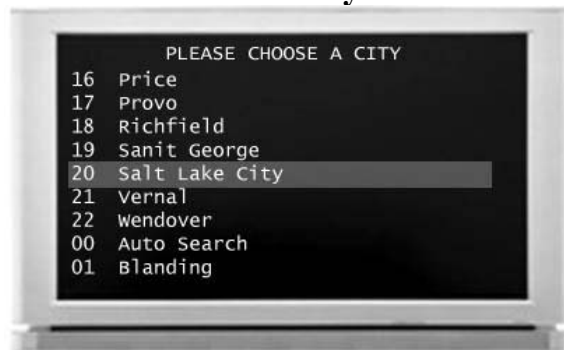
Highlight the "Find Satellite" command and then press the "SELECT" button on your remote. This menu will appear:

### Choose State Menu



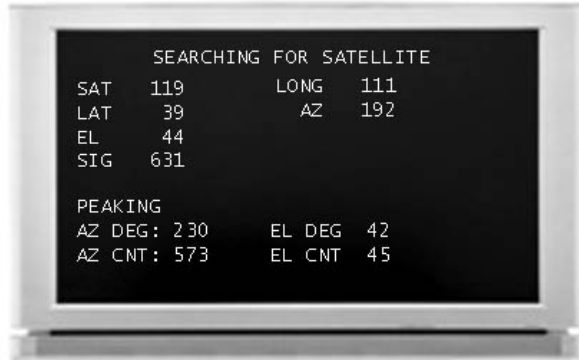
Please select your State and press the Select Key on your Remote to bring up the City window.

### Choose City Menu



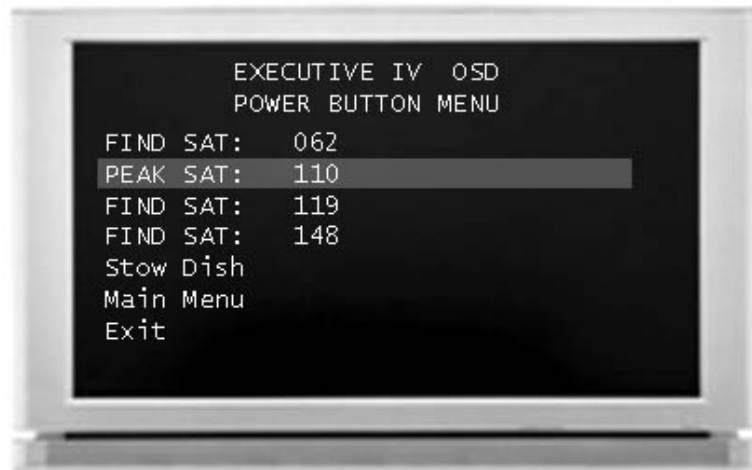
Please choose the city you are in or closest to. Once you do that, the below menu will appear and the dish will start to move automatically. **Note: Pressing the #1 button at this time will open up the receivers Signal Strength Menu and allow you to monitor the satellite finding and peaking process.**

## Searching Menu



Once the dish has found satellite, the MotoSAT screens will disappear, and you will be watching TV.

## POWER BUTTON MENU



When you're watching TV and you hit the "Power Off" button on your Satellite Receiver, the first screen that will appear will be this Power Button Menu. Here you have the option to move your dish to a different satellite, Stow your Dish, or to go to the Main Menu screen or simply exit.

Notice that you have the option to PEAK on your current satellite. This is used for when your rig has settled, or the dish has moved slightly and you want to re-peak so that your signal strength is as good as it can be.

**If you turn your receiver OFF and the Main Menu Screen does not appear, press the Menu button to acquire.**

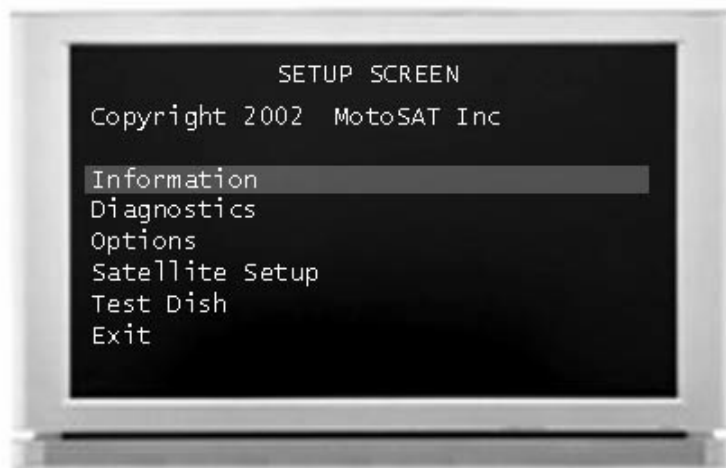
**Pressing the Menu button, with any other screen showing, will bring you back to the Main Menu Screen.**

## MAIN MENU



The Main Menu allows you to perform some basic operations. It also shows which Satellite TV service you are subscribed and whether or not your dish has ever tested.

## SETUP SCREEN



Choosing **INFORMATION**, **DIAGNOSTICS**, **OPTIONS**, and **SATELLITE SETUP** will take you to those screens.

**TEST DISH** - Selecting Test Dish will put the dish through a full motor and limit test. This is normally performed by your installer, and we recommend you run a Test Dish anytime you have a Motor Error Message.

**EXIT** – Selecting Exit will take you back to the Main Menu.

## INFORMATION SCREEN

```

                INFORMATION
Date Code: Rom: 316   EE: 316
Board Revision: 4
MFG Date: 03/25/2003
Vendor: MotoSAT
Addr: 2343 S 2300 W
City: West Valley City
State: UT           Zip: 84119
Phone: 801-972-6996
Fax: 801-972-5407
Web: www.motosat.com

```

The information screen shows manufacturing information about your system. When it was built, and who it was built by... which of course is MotoSAT. Also included is MotoSAT's address, phone numbers and web site as well as Hardware and Software Revision information.

### DIAGNOSTICS SCREEN

```

                DIAGNOSTIC SCREEN
Temp:           77   Dish:           24
Toggle'n:      YES   Gain:          25.00
LNB V:         0. -18  MvSky:          528
Imm Sig:        8    mVolt:          528
AVG Sig:        8    Vid V:          0.00
POT 0:         135   Aud V:          0.00
12 Volt:       12.34  5Volt:          4.97
AZ Limit:      1275  Count:           0
EL Limit:       734  Count:           31

```

This screen is used by MotoSAT technical support to help trouble shoot your system when things go wrong. The information here lets us pinpoint a problem so that it can be fixed as quickly as possible. Notice the Temp (Temperature) reading on the top left corner. This temperature is the actual temperature of the cabinet that the Positioner is located in. If the temperature gets above 150° a message will appear on screen, warning of high temperatures. **If the temperature goes above 175°... the message will appear to let you know your circuits are frying, over 185 will void warranty.**

### OPTIONS MENU

```

                OPTIONS
Stow Dish On
Power Off:      YES
AC Power Loss: YES
Signal Loss:    YES
Sensitivity:    5
Dish Size:      24
Tone Setting:   15
Change Remote Type
Exit

```

**STOW DISH ON** - You have the option of having the dish stow when Power is turned off, when AC power is turned off and when the signal is lost (a nice safety feature for when you drive off with the dish up). You may change these options to NO by selecting them with your remote and pressing the LEFT and RIGHT keys.

**SENSITIVITY** - **18-inch dishes** should be set to 3.  
**24-inch dishes** it should be set to 5.

**DISH SIZE** – Depending on which size dish you ordered (the default is 18”), the dish size will need to be set... The installer normally will do this. (Executive 18” or 24”, MiniDome 18”)

**TONE SETTING** – (This optional setting is available on software versions 305 and later. To obtain latest software go to [www.motosat.com/osd](http://www.motosat.com/osd) and follow software loading procedures.) This setting option adjusts the ability of the OSD to recognize the proper tone setting to allow for proper satellite acquiring.

- a. The tone settings for **RCA, Dish Network, and Bell Express Vu** receivers should be 7.
- b. The tone settings for **Sony and Hughes** receivers it should be set to 15.

**Why would you need to adjust the Tone Settings?**

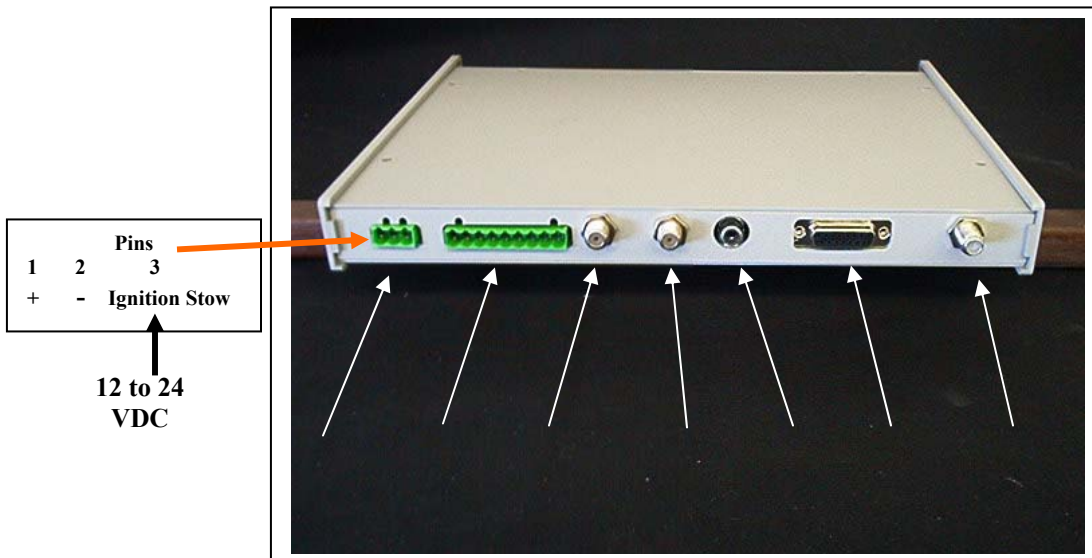
**If your system stops or peaks on the proper satellite, but continues to search or, if your system stops or peaks and stays on an improper satellite you will need to adjust TONE SETTING.**

Tone setting may be adjusted in increments of 100 by using the right or left arrow keys.

- a. If the system stops on the **right satellite** but moves on then, **lower** the tone setting value.
- b. If the system stops on the **wrong satellite** and stays there, **raise** the tone setting value.

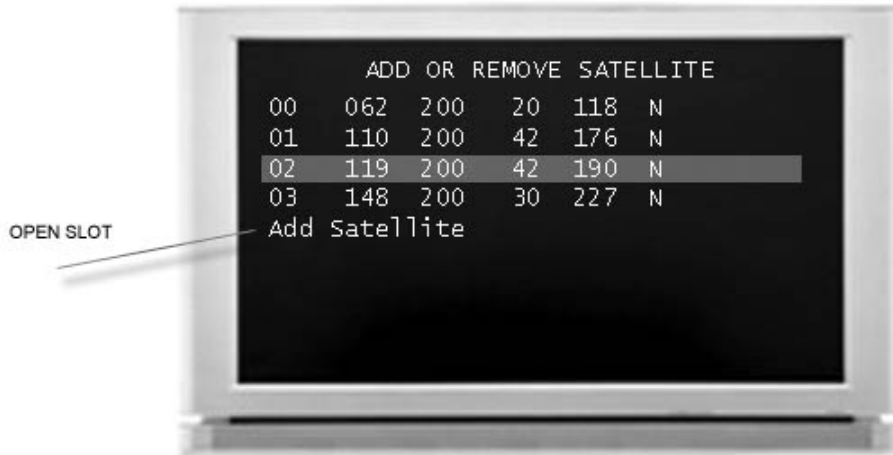
**CHANGE REMOTE TYPE** – (Note: The remote control that came with the Satellite Receiver must be used. Remotes not outputting and Infrared signal is not authorized or acceptable. Universal remote controls must match manufacture of the satellite receiver or your system will not work properly). Your system should be working fine from the installer, but there may be a time when you purchase a new Receiver system. This would be the time that you would change the new satellite receiver to be recognized by the MotoSAT system. If you select this option, you will be shown a number of remote types that will appear like a slideshow. Press the “GUIDE” button on your remote when the correct remote type appears. With some remotes, you will receive a second screen where you will be asked to select what model receiver you have. Highlight the correct receiver, and press select. That’s it!

**IGNITION STOW** – This option is done by tapping into a circuit that is activated at the time you are ready to start your RV. This means, any 12-24 VDC circuit that comes alive when you want to move your RV, such as Brake Light, TV Travel Turn off Switch, etc. This voltage, when present, will cause the dish to return to the stowed position for traveling automatically. See inset below.



Power	Control	Cable	Out to TV	Antenna In	Video	Data Interface	Satellite In
+ -				or	Out		(LNB)
Ignition			Dry-Camping connection				
Stow							

## SATELLITE SETUP SCREEN



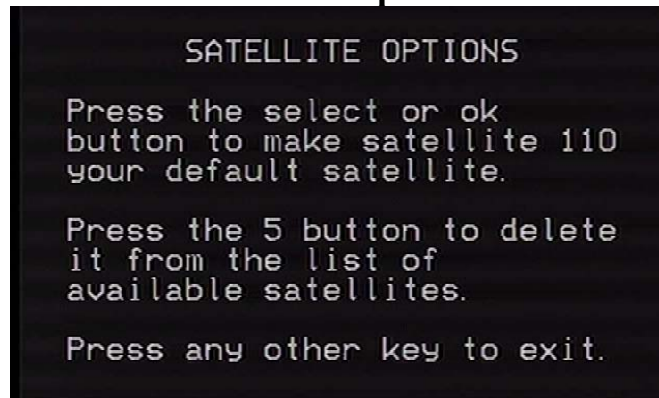
The great thing about your satellite system is that you can switch from one satellite to another at will to take advantage of different programming on different satellites. **Note: some receivers may not load their Guide properly on alternate satellites. This is a receiver issue; contact your receiver manufacture for assistance.**

This screen is a where you add and remove satellites to the positioner. You may also change the satellite that you want the system to search for when you select the **Find Satellite Option on the Main Menu**. All satellites in orbit are given a Longitude number. Numbers like 91, 101, 110, 119, are all satellite locations. On the above screen are listed 4 satellites with one open slot left to add another satellite. The maximum number of satellites you can have programmed is 5.

**To ADD** a satellite, simply highlight “Add Satellite” and press “Select” on the remote. You then will simply enter a longitude address on that screen, and that’s it!

To change the satellite options, highlight the satellite you want to change press **Select** or **OK**. You may not change the satellite that is considered the default if you try to select that one nothing will happen. When you select a satellite to change its options another screen will come up, press the **Select** or **OK** button to make it the default, press the 5 button to delete it.

## Satellite Options

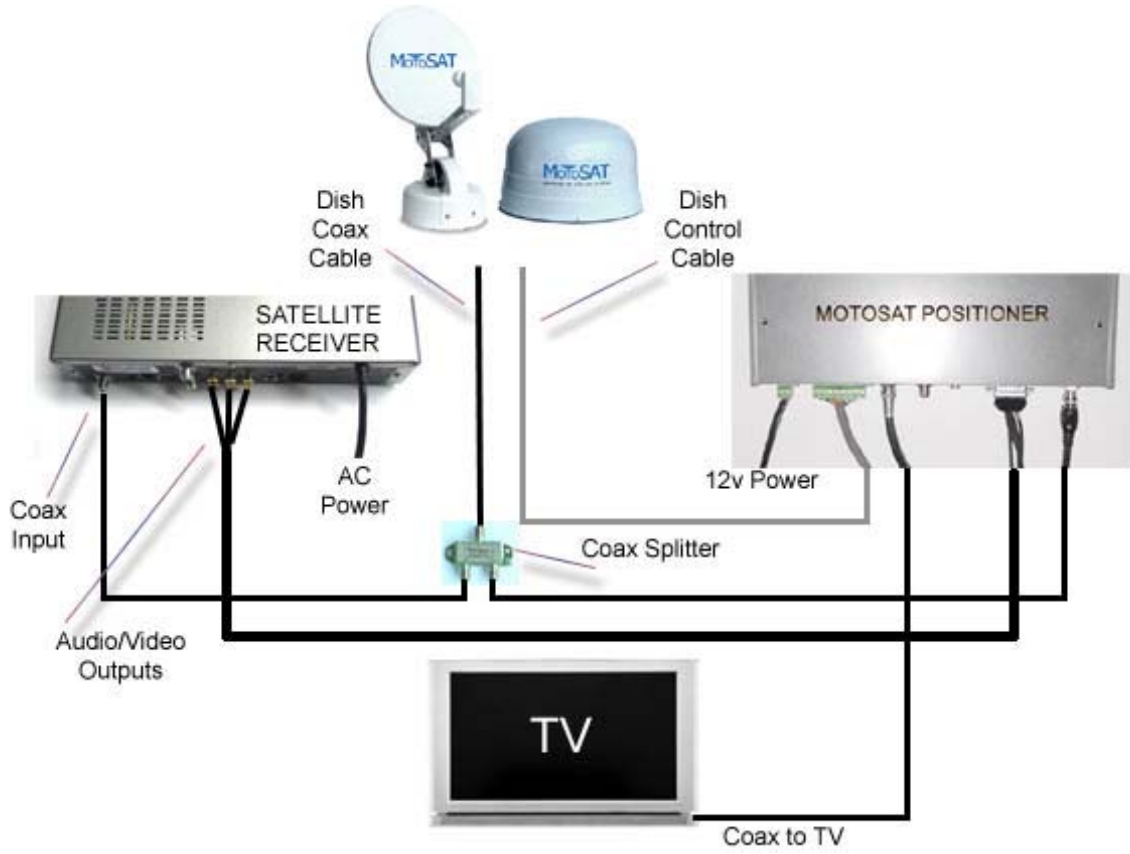


To get to the Satellite Options Screen press the Select or OK button on a highlighted satellite on the satellite setup screen. Note: You can not change the options on the satellite that is considered the default. If you select the default satellite, nothing will happen. If you select one of the other satellites then you may press the select or OK button to make it the default or the 5 button to delete it.

## WIRING DIAGRAM

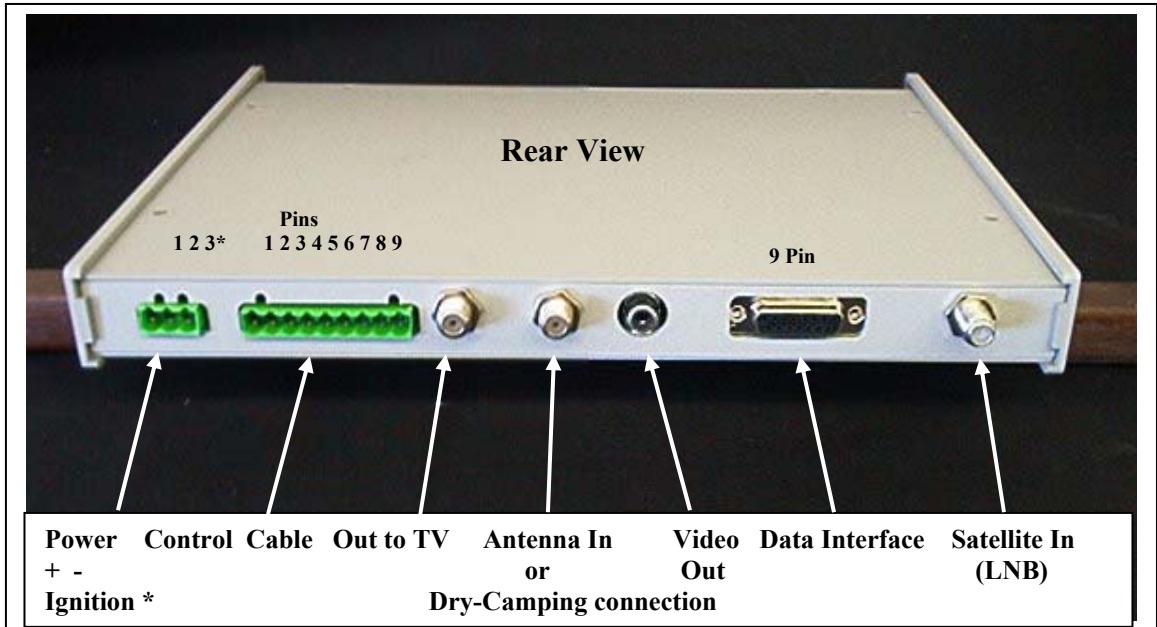
A professional installer should have installed your unit, however, you may need to unplug and re-plug in cables from time to time. The diagram below shows how your dish is wired inside your Rig.

# MotoSAT WIRING DIAGRAM





# MotoSAT Positioner (Rear view)



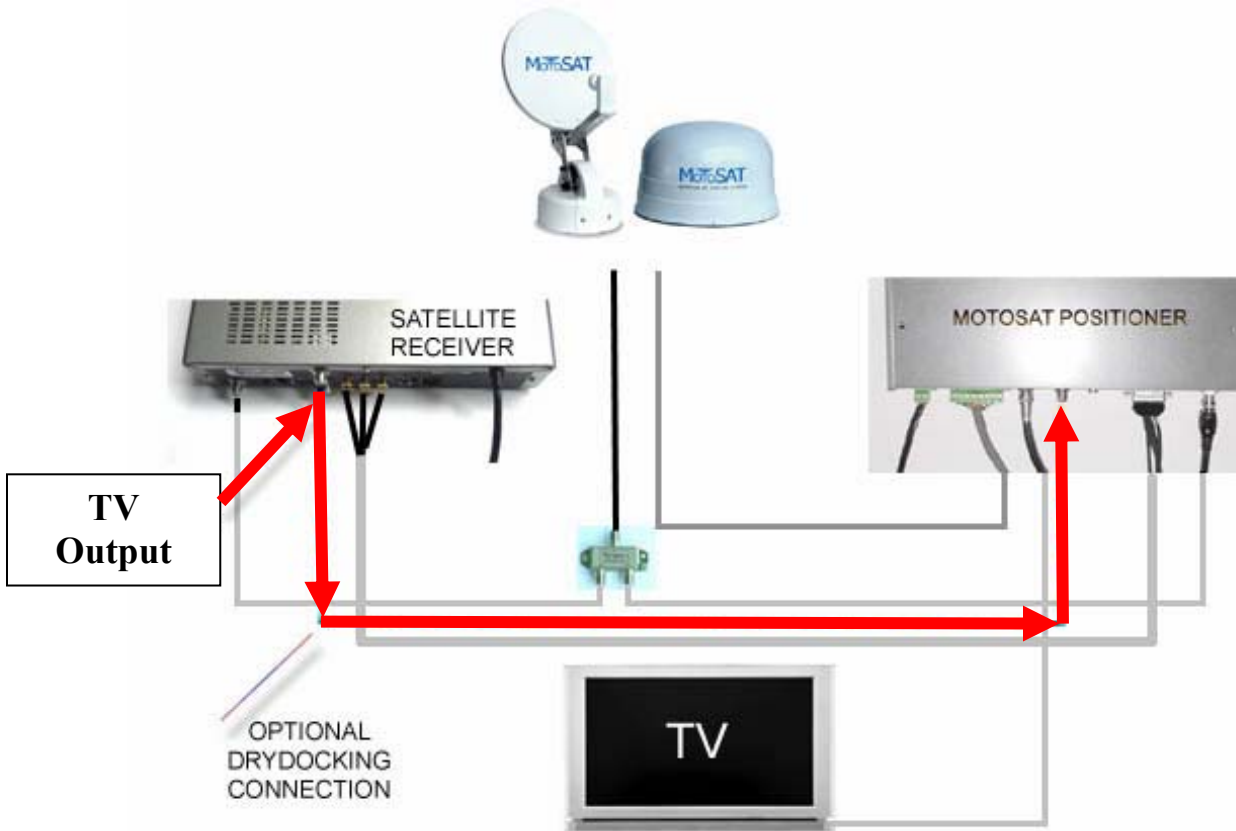
**\*Ignition = When 12 to 24 VDC is applied to pin 3 the dish will return to stowed position automatically.**

**\*\*Pin 9 – Purple wire going to this position is optional.**

## Positioner Dimensions

**1 ¼" inch tall, by 11" inches wide, by 9" deep**

# Dry-Camping (Energy Conservation Wiring Option)



**DRY-CAMPING** - This Dry Camping connection allows you to conserve power by turning off the MotoSAT positioner after you've found satellite. This Cable **must be connected for this option to work**. When ON Satellite, simply turn OFF your OSD Positioner. All power to the Positioner will be disconnected and your system will continue to operate by bypassing the MotoSAT Positioner. There will be no usage of power by the Positioner. **NOTE: All Automatic Stow functions (except Ignition Stow) will be disabled due to lack of power to the Positioner when the DRY-CAMPING option is activated. The Automatic Stow Functions mentioned in Options Menu can only activate if power to the positioner remains on.**

Also excellent help for trouble shooting.

# TROUBLESHOOTING

## **THE MOTOSAT SCREEN DOES NOT APPEAR**

1. If you can't get a MotoSAT menu to appear on your television, make sure it isn't something simple like cables not being connect properly or that the power is OFF on your Television, TV Receiver, or MotoSAT positioner.
2. Next... It may be that your Television is on the wrong channel. Turn the Television channel to 3... and if that doesn't work... Change it to 4. (In this case you are not changing the Satellite Receiver Channels, just the television itself.)
3. If that didn't work, press the OFF button on the Satellite Receiver Remote Control. This should bring up the "Power Off" Menu. On this menu is a selection that will take you to the Main Menu.
4. Disconnect and reconnect 12 VDC to Positioner.

## **"Please Wait" APPEARS AND DOES NOT GO AWAY**

1. Positioner and Receiver not stacked properly (see figure 1).
2. Audio cables not connected.
3. On Dish Network receivers 2700/2800 series, audio volume may not be turned to maximum.
5. Improper remote option selected.
6. Receiver latched up. Disconnect 110 power and reconnect (don't just turn Off then ON, remove the power and reapply).
7. Dish Network/Bell View Express receivers must have a security or Smart card inserted all the way.
8. Fluorescence lights, in front of the receiver, have been known to cause the system to stay on "Please wait" after you selected the "City".

## **"Satellite Receiver turns ON then OFF"**

1. Video and/or Audio wires are not connection to the controller properly.
2. Positioner and Receiver not stacked properly (see figure 1).
3. Remove power from the Satellite Receiver and reapply.

## **LOCATES SATELLITE THEN CONTINUES SEARCH OR DOES NOT STOP ON CORRECT SATELLITE.**

1. If you are using a Dish Network receiver's model numbers 2700 or 2800 the volume control for the receiver must be set at maximum. Failure to do so will result in not finding the satellite.

## **DURING SEARCH, THE DISH STOWS BEFORE FINDING SATELLITE.**

1. No power from satellite receiver to OSD Positioner. (No GREEN light on Positioner.)
2. Dish movement may be restricted.

## FIGURE 1 Proper Placement of Equipment

Receiver has to be placed just **back** of clear plastic front. If placed forward of this location it will cause error “Please Wait” because the Positioner cannot communicate with the receiver.



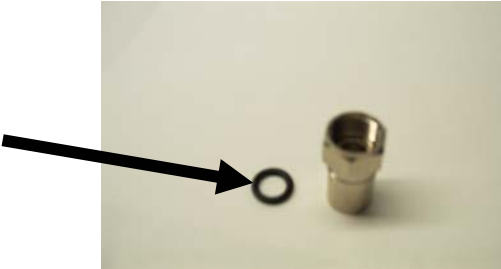
**Approximate set back distance is 1/4"**

**FIGURE 2**  
**“O” Ring Style Connectors**

**O-Ring style of F-Connectors (for Coax Cable)**

Use of Coax connectors shown below will void warranty and can cause equipment intermittent problems. **This type of connector is not recommended nor authorized to be used on any MotoSAT product.**

If you use O-Ring style connectors, the O-Rings **must be removed** before being allowed to be used in any MotoSAT installation.



**These are actual connectors removed from customers systems. UGH!!!!**

**Totally unacceptable!!**



## FIGURE 3

# MotoSAT

## Bulletin 010501

### A/B Switches

**Product effected:** All MotoSAT products and all satellite systems in general.

**Problem:**

- a. Insertion of A/B switch into satellite signal cable going to the roof mounted antenna can cause selective dropping of channel frequencies.
- b. Loss of certain channels can result. (Usually, but not limited to, Network Feeds on DTV).

**Explanation:** The practice of utilizing a mechanical switch (A/B switch) to disconnect the roof mount antenna and connect to a ground mount can cause problems. The problems are extremely difficult to diagnose since symptoms can be related to many different areas. They will often show up as:

- a. Loss of one or more channels.
- b. Loss of one or more transponders.
- c. Not allowing the automatic system to find the satellite.
- d. Freeze framing on one or more channels.
- e. Lower than normal signal strength on one, several or all of the transponders.

**Solution:** If you have an A/B switch in-line with your roof mount antenna (automatic or not) and you exhibit one or more of the above symptoms, then bypass the A/B switch and see if the problem goes away. If it does, remove the A/B Switch and find a way NOT TO USE IT.

Call for more details or suggestions contact your MotoSAT dealer.

# Updating of Operating Software in the OSD Positioner

Your OSD Positioner contains software which may be reloaded (updated) by the use of a computer and a 9 pin serial cable. The procedure for updating your software to the latest version is as follows:

1. Go to MotoSAT web site to obtain the most current revision of software. The site is [www.motosat.com/osd](http://www.motosat.com/osd).
2. Select OSD Software and download to a folder of your choice.
3. Select Exec OSD Manual and download to a folder that you can access. Some changes may affect the way your system currently operates, so you will want to have the latest manual.
4. Connect your 9 pin serial cable from your computer to the back of the OSD Positioner.
5. Turn off the OSD Positioner
6. Start HyperTerminal on the computer. This is usually done by going to
  - a. Start - Programs – Accessories – Communications – HyperTerminal  
(Note: make sure that HyperTerminal is setup for XON/SOFF flow control, 8 data bits, 1 stop bit, no parity, 9600 baud).
7. Turn on the OSD Positioner and press the "\*" key within 3 seconds. You will get some copyright info and a local prompt (local>). If you see nothing, you are connected to the wrong communications port. If you see, "Main Menu OSD Diags" you took too long to press the "\*" key. Turn the Positioner back off then on again. The "\*" key must be pressed within 3 seconds of the ON button being pressed.
8. At the local> prompt, type "eload". Local> eload will appear. Press "Enter".
9. In the HyperTerminal menu, select "transfer" and then select "send text file".
10. Select the file "EeDataNNN.text" where NNN is the version number of the data being loaded.
11. When finished you will get the local> prompt back.
12. At the local> prompt, type "fbulk". Local> fbulk will appear. Press "Enter".
13. You will get a local> prompt back, at this prompt type "fload". Local> fload will appear. Press "Enter".
14. In the HyperTerminal menu, select "transfer" and then select "send text file".
15. Select "the file OsdFlashNNN.txt" where NNN is the version number of the data being loaded.
16. At the local> prompt, type "default". Press "Enter".
17. When you get back to the local> prompt, you are done.

Your OSD Positioner now has the latest version of the MotoSAT software loaded. You are now ready to take advantage of any and all software updates which will affect the overall performance of your system.

## **MORE INFORMATION...**

Please visit [www.motosat.com](http://www.motosat.com) for the latest information regarding your MotoSAT products or e-mail [info@motosat.com](mailto:info@motosat.com) for additional information.

## **CONTACTING MOTOSAT...**

MotoSAT Technical Assistance can be reached at 800-247-7486. Our hours of operation are 9AM to 5PM Monday through Friday Mountain Time.

## **OUR ADDRESS IS...**

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