

General Information Module

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Cable, Connectors & Tools

- Qualified RV technicians need to be familiar with two types of coax (RG-59 & RG-6) for typical installation and repair as well as the different types of connectors and their applications. NOTE: The word “series” is often substituted for “RG”.
- RG-59 coax is smaller in diameter and has a center conductor of 22 AWG in size.
- RG-6 coax has a larger center conductor of 18 AWG (30 thousandths larger) in size which results in less signal loss per foot and allows it to carry LNBF voltage better.
- RG-6 coax must be run 100% of the way from the sat dish to the sat receiver.
- F-connectors come in different sizes for different coax applications (RG-59 smaller, RG-6 larger).
- Popular compression style connectors require a compression style crimper, not the SP-6311 used for hex crimps. (See SP-7500 below).



CS-2000 The CS-2000 cable stripper allows for quick and accurate stripping of either RG-59 or RG-6 coaxial cable. *



SP-6311 The SP-6311 hex crimping tool gives tight, neat crimp. *



SP-7500 The SP-7500 compression crimping tool provides easy, secure, long-lasting connection. *

**These tools are available for purchase from your instructor.*

Correct Coax Connector Installation

TOOLS NEEDED:



SP-6311, RG-6
Connector
and Stripper

OR



SP-6311, RG-6
Connector and
CS-2000

INSTALLATION

STEP 1.



Square cut

STEP 2.



Insert coax into stripper.

STEP 3.



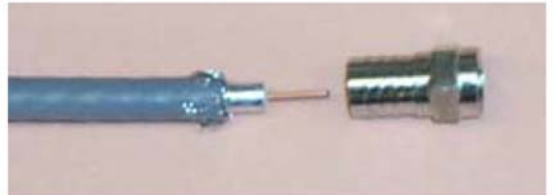
Strip coax.

STEP 4.



Fold back braid.

STEP 5.



Place connector on coax.

STEP 6.



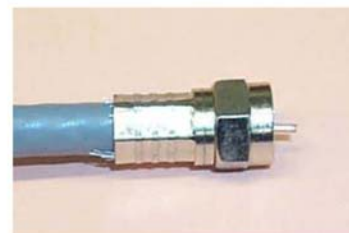
Crimp

STEP 7.



Inspect

STEP 8.



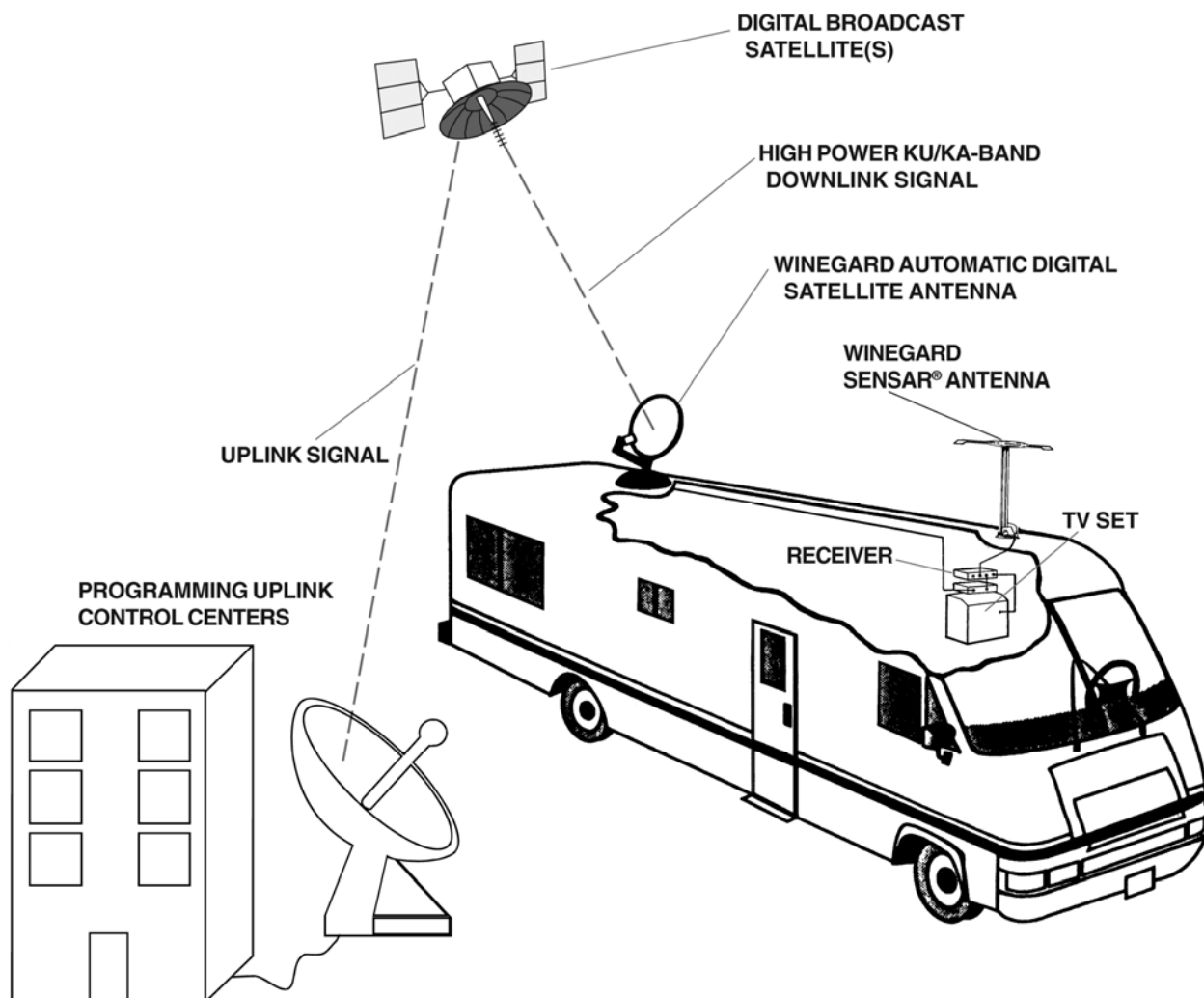
Tug on connector
to test.

Satellite Systems

Satellite Basics

How Does Digital Satellite TV Work?

Satellite programming originates from an “uplink” facility on earth. The facility receives many signals from different sources, combines the signals digitally and transmits them to the satellites. The satellites (22,300 miles above Earth) receive the uplink signal, amplify it and then transmit it back to earth in the KU and KA frequency bands. This signal is received by your satellite antenna whose shape reflects and concentrates the signal to the LNBF (Low Noise Block Converter Feed) attached to the antenna. The LNBF is located at the “focal point” of signal reflection, that is, the point at which the maximum amount of signal is effectively concentrated. The LNBF amplifies and converts the signal to the 950 to 1450 MHz range. The signal is then passed through a coaxial cable to the electronics box, then to the receiver where individual channel selection and processing take place.



Keys to Success

12 Volt Power: Some of Winegard's automatic satellite systems are dependent on 12 volt DC power to function correctly. It is necessary when installing and testing units to have clean and filtered power sources for the satellite system. Winegard recommends either a dedicated line to the coach battery or a 12 VDC output power supply which can be plugged into available AC outlets. NOTE: The power cord for the Carryout[®] antenna has a fuse in it.

Receiver Setup: Many problems start here. Setting up the receiver is an important part of satellite system installation as Winegard units will not work without correct receiver setups. Also it is important to note that receiver setup varies on different satellite systems and the manual should always be read for correct setup methods. Additionally, there are differences in programming providers as to how the receiver will be set up.

** Note: The vibration incurred in a mobile environment (RV) prohibits the use of receivers that record on internal hard drives. They may work for a short time, but if they become defective due to mobile use, this is not a warranty issue. Be sure to warn the RVer of this risk.*

Dish Switch Setup: Some Winegard satellite systems require that the installer be aware of the programming package to which the customer has subscribed. DIRECTV and DISH Network are two of the more common. This is important because different providers use different satellites in the sky and as a result the satellite dish will need to point in different directions. In order for the satellite dish to "know" where to point, the installer must correctly set the dish switches. Different models of Winegard satellite systems have different styles of switches so always refer to your installation manual for correct switch settings.

** Note: On certain Winegard models, the switch settings also account for the direction in which the satellite system is mounted on the RV.*

Leveling: From crank-up dishes to fully automatic units it cannot be stressed enough how important leveling is to signal acquisition. Using a typical search on a crank-up dish as an example, if we raised the dish to 31 degrees, found north on our compass and adjusted the directional dial, we would then only need to rotate the dish to the correct azimuth and we should be watching television. However if the coach is off level when we begin to rotate the satellite dish, the elevation will change. This makes signal acquisition very difficult. Even the automatic systems will be looking in the wrong place. This will complicate the search routine of the automatic units and cause them to take longer to acquire signal if they are able to acquire it at all. The maximum degrees off level is + or - 3 degrees for domes and + or - 5 degrees for TRAV'LER antennas without additional leveling aids.

Sealing the roof: *Be sure to use the type of sealant the RV manufacturer recommends.* The connectors (if any) should have a thin layer of silicone on them to help keep moisture out. You should also be sure to seal around the area where the coaxial cable exits domed units. On systems that utilize GPS, we also recommend using sealant to hold the GPS antenna in place.

Obstructions: When installing all Winegard Satellite systems, it is necessary to consider any large roof fixtures which the satellite system could physically hit while rotating elevating or any obstructions which could block signal acquisition. For specific requirements on satellite system location and necessary easements on the roof, refer to the installation manual. Power lines can also be an obstruction. Bounced signals from a reflected source such as a metal building, can affect search time greatly or you could move the RV away from the obstruction.

Portable Dishes: Many customers realize the advantage of having a portable satellite system when parked in areas that may not give them a clear view of the Southern sky. The ability to pick up their satellite dish and move it allows the customer more leverage in attaining signal. However, this also requires more user input/involvement when finding signal. It is necessary to explain to the customer the steps involved in finding signal with portable satellite systems. This is also a good time to let the customer experiment with the Winegard digital compass as well as the Winegard satellite finder meter.

For the Carryout automatic portable satellite TV antenna, see receiver set-up, page 23 and 24 for solving problems. NOTE: The power cord for the Carryout[®] antenna has a fuse in it.

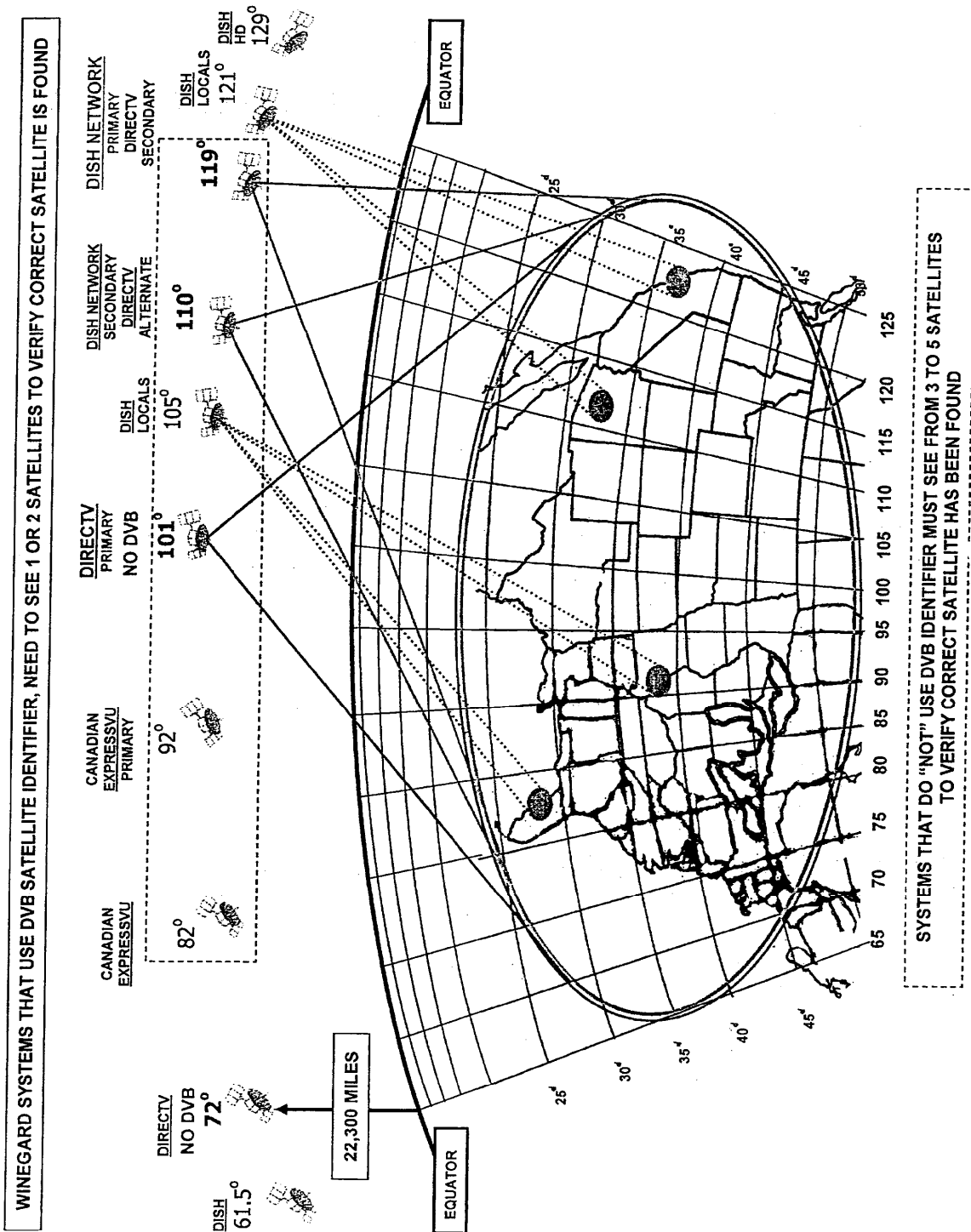
** Note: It is important to know that the park cable in, as wired from the manufacturer, will not work as a satellite hook-up. Changing the coax so that it does not go thru the power supply for the local TV antenna is required. The power supply will not pass the voltage required for satellite operation.*

Diplexer/Combiner: Winegard part number DP-3020 was designed to accommodate a dual LNBF and an amplified over-the-air antenna. This diplexer combines both the satellite and the over-the-air signals onto a single coax cable. The DP-3020 is configured with two Sat Rcvr outputs – perfect for a 2 receiver installation. A diplexer can also be used to combine the signal of a satellite dish and an over-the-air RV antenna together onto the same coax feed. **This method cannot be used with HDTV satellite receivers. Two diplexers are required.** One at the “head” end of the coax and one at the “end”. The diplexer at the “head” combines the two signals and the diplexer at the “end” of the coax separates the over-the-air TV antenna signal and the satellite signal. This could be very useful if the RV has only one cable run to the rear TV, for example. NOTE: Not for use with TRAV’LER satellite antennas – only domed models.

Winegard Technical Assistance: If a technician needs assistance, the Winegard website; www.winegard.com has manuals, tech tips, troubleshooting guides, warranty, installation and warranty submission information. Dealer Connection is a new link that is located on the Winegard homepage. Clicking on it will take you directly to the dealer link. The dealer link will provide registered dealers with tech tips, product FYIs, announcements, training info and much more. Winegard also has a technical service department to answer your questions; they can be reached at 1-800-788-4417.

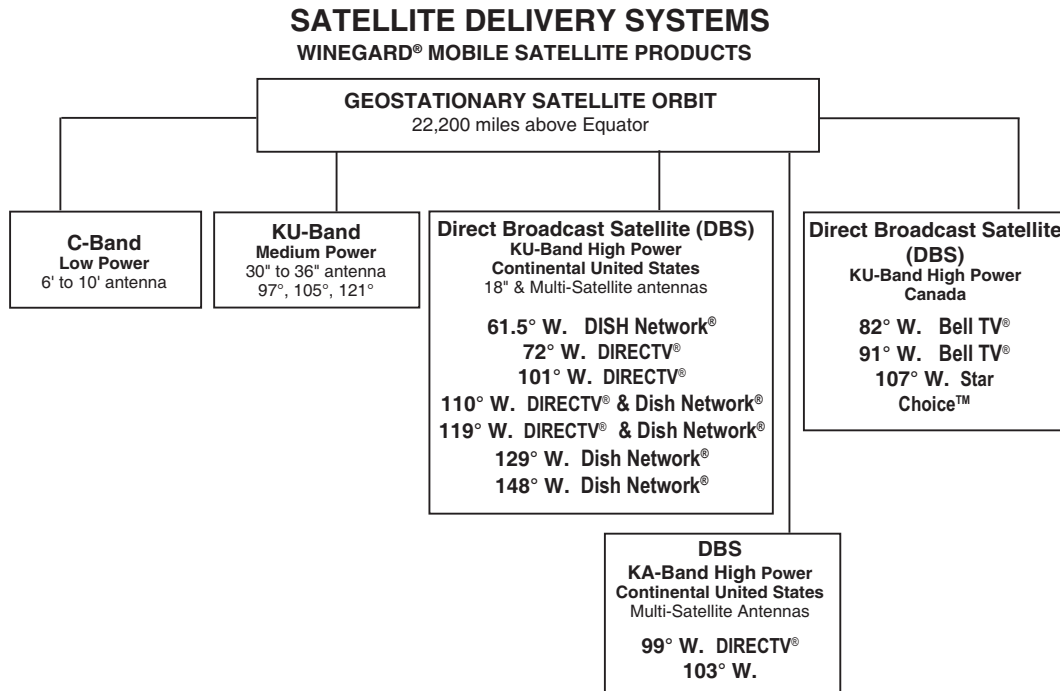
Transponder Maps

This graph was intended only to show that two types of signals come from the satellites. **Flood beams** cover the continental US and **spot beams** cover a smaller area like a city. Spot beams typically contain local programming (NBC, CBS, etc.). With the arrival of DTV, many RVers are using their over-the-air TV antenna to receive “local” programming – (NBC, CBS, etc.)



Note: This graph is not complete as more satellites continue to be added.
 The non-HD satellites for DIRECTV are 101° and 119°.
 The non-HD satellites for DISH Network are 119° and 110°.
 The HD satellites for DIRECTV are primarily KA-band 99° and 103°.
 The HD satellites for DISH Network is primarily 129° or 61.5°.

Star Choice™ is now known as Shaw Direct.



DISH Network is a registered trademark of EchoStar Satellite L.L.C.
 DIRECTV is a registered trademark of DIRECTV, Inc., a unit of Hughes Electronics Corp.
 Bell TV is a registered trademark of Bell Canada, Inc.
 Star Choice is a trademark of Star Choice Communications Inc., a div. of Shaw Communications Inc.

Satellite Receivers

While there are a wide variety of satellite receivers on the market for customers to choose from, Winegard Company recommends using caution when selecting one for a mobile environment. The way RV satellite systems function can cause complications or incompatibility with some satellite receivers.

Receivers which allow the customers to record programming are equipped with internal hard drives which are not designed for mobile use. The constant vibration which they receive from being in an RV can shorten the life of the receiver. Additionally these hard drives need to be kept in a controlled temperature environment which is difficult in a mobile application. This is especially true considering the tight confines of an RV and the tendency for customers to put receivers in cabinets which do not allow them to correctly “breathe”.

It is important to remember when shopping for receivers that they are designed for home use and as a result many of them receive signal from multiple satellite inputs constantly and this is not possible with RV Domed satellite systems. While Winegard automatic domed satellite systems do access two or three satellites depending on the service provider, they do not view multiple satellites at the same time. Winegard automatic Domed satellite systems access multiple satellites by “togglng,” between them when the customer changes channels with the receiver’s remote control. As a result of “togglng,” Winegard automatic Domed satellite systems will only receive signal from one satellite at a time. This inability to receive both signals simultaneously constantly can cause functionality issues.

While Winegard understands the appeal of recordable, HDTV, and dual tuner receivers, in an effort to make your experience as similar to “home-viewing” as possible, we caution against using such receivers with Domed satellite systems to avoid incompatibility issues. However, dual tuner/DVR receivers are acceptable for use with the TRAV’LER line of multi-satellite antennas.

To ensure that the customer has a pleasurable and complication free viewing experience, Winegard recommends using the following receivers.

DISH Network- Winegard currently recommends the DISH 311 receiver for standard definition. For HDTV, use the VIP211 or VIP211K with/without external hard drives.

DIRECTV- Winegard currently recommends any single input receiver for standard definition such as the D10, D11, or D12 with a Domed antenna system. For HDTV with a Domed antenna system, use the H10, H20, H21. Please note that High Definition content is limited with a Domed antenna system on DirecTV with the migration of HD content to Ka band satellites 99 & 103.

QUESTION:

Can I use the same receiver in the coach that I have in my house?

ANSWER:

Yes, your basic home receiver will work just as well in your coach. The exception to this is a receiver with a program record function. If your receiver can record programming for later viewing it likely contains a hard drive that can be permanently damaged by the shocks and vibration normal to travel. Also domed dishes can “see” one satellite at a time. This may limit operation (viewing) options. Remember, TRAV’LER antennas see all the satellites at the same time. Just remember to unplug the DVR or TiVO when driving.

**Winegard does not consider problems caused as a result of using incompatible receivers or incorrect receiver setup to be grounds for warranty claims.*

**If a customer has not used their satellite receiver for an extended period of time, it may be necessary to call the subscription provider to reactivate service.*

FYI – Winegard Mobile Satellite Compatibility with DISH Network Dual Tuner/Dual Television Output Satellite Receivers (**Domed Dishes/AS-2003**).

**NOTE: ALL INFORMATION IS CURRENT AS OF 8/28/09.
INFORMATION SUBJECT TO CHANGE WITHOUT NOTICE.**

The standard DISH Network 311 or HD DISH Network ViP 211k receivers can be used with all Winegard domed mobile satellite products. These receivers provide programming to one or more televisions watching one program. These receivers provide the greatest compatibility with all Winegard mobile satellite products.

However, with proper setup and understanding of how the system works, it is possible to use new DISH Network Dual Tuner/Dual Television output receivers with **dual receiver** capable Winegard domed Automatic Satellite products (MV3500A, MV3500T, RT1200T, RT1200S, GM-1518 Carryout, and future products). Below are detailed instructions of how to set up your Dual Television Output DISH Network Receiver for use with your Winegard domed Automatic Satellite System. Also included below are receiver operation instructions, as you must have an understanding of how the receiver works in order to properly use the system.

Note on Winegard domed Automatic Satellite Systems:

Winegard domed Automatic Satellite Dishes “toggle” from satellite 119° to 110° to receive DISH 500 programming. And if SW64 Switch is installed, the dish will toggle between 119 and 110 when a standard receiver is used. When an HD receiver is used, 119, 110, 129 or 61.5 are available for toggling. The toggle feature is only controlled by the satellite tuner hooked up to the primary coax cable. In this case, the primary coax cable will be hooked up to “Satellite In 1”. The secondary tuner may only watch programming on the current satellite; it cannot control the toggle function. See installation manual.

Note on DISH Network Dual Television Receivers:

DISH Network Dual Tuner Receivers require two cables from the satellite dish to be run into two satellite inputs on the back of the receiver. For the purpose of this FYI, “Satellite Input 1” will be the physical connection of the primary coax cable from the Winegard Satellite Dish to “Satellite Input 1” on the back of the receiver; “Satellite Input 2” is the physical connection of the secondary coax cable from the Winegard Satellite Dish to “Satellite Input 2” on the back of the receiver. Each physical input is then controlled by a “Tuner” in the receiver.

Important Note: The DISH Network receiver uses two “Tuners” to watch separate programs on separate televisions. “Tuner 1” is not necessarily tied to Television 1, and “Tuner 1” is not necessarily tied to “Satellite Input 1.” “Tuner 1” corresponds to the Television tuner that was turned on first. This is also the tuner that controls the toggle feature. See examples (in the following pages) of installation instructions for detailed guide of tuner control. Many end users (customers) do not understand this, making for a lot of calls to RV dealers and to Winegard and DISH Network. Use the instructions given for models 322, 522, 625, ViP222, ViP222k, ViP622, ViP722, ViP722k. **Note:** The successful operation for these receivers is not guaranteed. If you have trouble with dual receivers, neither Winegard nor DISH Network will pay warranty for lack of success or understanding of the operation of receivers and their use.

Testing was done using a DIRECTV HR-21 Receiver and a DISH Network ViP 622 on 10-16-2008. Changes made by DIRECTV or DISH Network that change how the DVR operates could effect how the RoadTrip Satellite System works with DVRs.

DIRECTV DVR Functionality:

The first thing to understand is that DIRECTV DVRs allow for 2 different types of setup. The two types that are discussed are interchangeable at any time, but would have to be considered an inconvenience to the customer and not something that they would want to do often.

Single Tuner Mode:

In this setup everything is straight-forward and simple. Only 1 coax wire is connected from the RoadTrip to the receiver. The customer watches a single tuner and also records off of that tuner. **The RoadTrip Satellite System would move to the appropriate satellite for any recordings/timers.**

The major limitation with this setup is that it does not allow for customers to watch a live program while recording another program. They would have the ability to watch what they are recording, or watch a previously recorded show while they are recording something else. This would be considered a major drawback for many customers.

Dual Tuner Mode:

In this setup 2 coax wires are connected from the RoadTrip to the receiver, 1 wire (referred to as "Tuner 1") controls the movement of the dish between satellites, and the other wire (referred to as "Tuner 2") is a slave.

By default, at startup Tuner 2 is what the customer is viewing, while Tuner 1 is used in the background for timers. While channel surfing on Tuner 2, the dish wouldn't move to an alternate satellite. **However, if the customer were to set a timer, the RoadTrip Satellite System would move to the appropriate satellite to record the program, since Tuner 1 controls toggling.**

Things get a little complicated, if the customer begins to record something they are already watching. If the customer is channel surfing (using Tuner 2 by default) and begins to record a show that they are tuned to, the DVR will use Tuner 2 to record that program. Tuner 1 will now be used for channel surfing. **Essentially everything is now reversed.** At this point, the RoadTrip would toggle while channel surfing but the recording would be interrupted by a satellite switch.

While this may seem very complicated, with this issue would very rarely come up with a DIRECTV customer. On the alternate satellite, DIRECTV only offers 7 nationally broadcasted channels (all HD channels, most of which have a standard definition counterpart on the primary satellite) that are spoken in English. The remaining programming is spot beamed or foreign language channels. Also, DIRECTV has hinted that in the next year, they plan to remove those channels from the 119 satellite, and use that satellite exclusively for local programming and international programming.

DISH Network DVR Functionality:

DISH Network, like DIRECTV, allows the user to setup their DVR system in 2 different modes. With DISH Network, switching between the 2 modes is simple, and is done with the press of a button. This would NOT be considered an inconvenience for the customer to switch between the 2 modes.

Single Mode:

DISH Network refers to it as Single Mode because in this mode multiple TVs all watch the same thing. Single Mode, unlike with DIRECTV, uses both tuners at the same time, so 2 wires are connected from the RoadTrip Satellite System to the receiver. If using Single Mode, it would be easiest for the customer to connect the RoadTrip's primary coax (the wire that controls toggling) to Tuner 2, and the secondary (slave wire) to Tuner 1. The reason for this is that in this setup all recordings are handled by Tuner 2. **With this setup, the satellite dish would move to the correct satellite to record programs on timers.** The only time Tuner 1 records anything, is if Tuner 2 is already in use recording something else. The customer can set priorities of which Tuner is used to record which shows in that case.

For regular viewing, if Tuner 2 is not being used for a recording, it is very easy for the customer to use that tuner to channel surf across multiple satellites (since Tuner 1 cannot toggle). By default, they will use Tuner 1 for viewing, but using the DISH Network Picture-in-Picture mode, they can simply "SWAP" to the other Tuner.

Dual Mode:

DISH Network refers to it as Dual Mode because different TVs can watch different programming at the same time. While in Dual Mode, whichever Tuner is turned on FIRST will use the primary coax line (with the ability to toggle to other satellites). So if Tuner 1 or 2 is scheduled to record a program, and both tuners are off, the Tuner will turn on and use the primary line and record from the appropriate satellite. If Tuner 1 is in use and using the primary line, and Tuner 2 is scheduled to record a program, it will not have the ability to move to another satellite, and the same is true vice-versa.

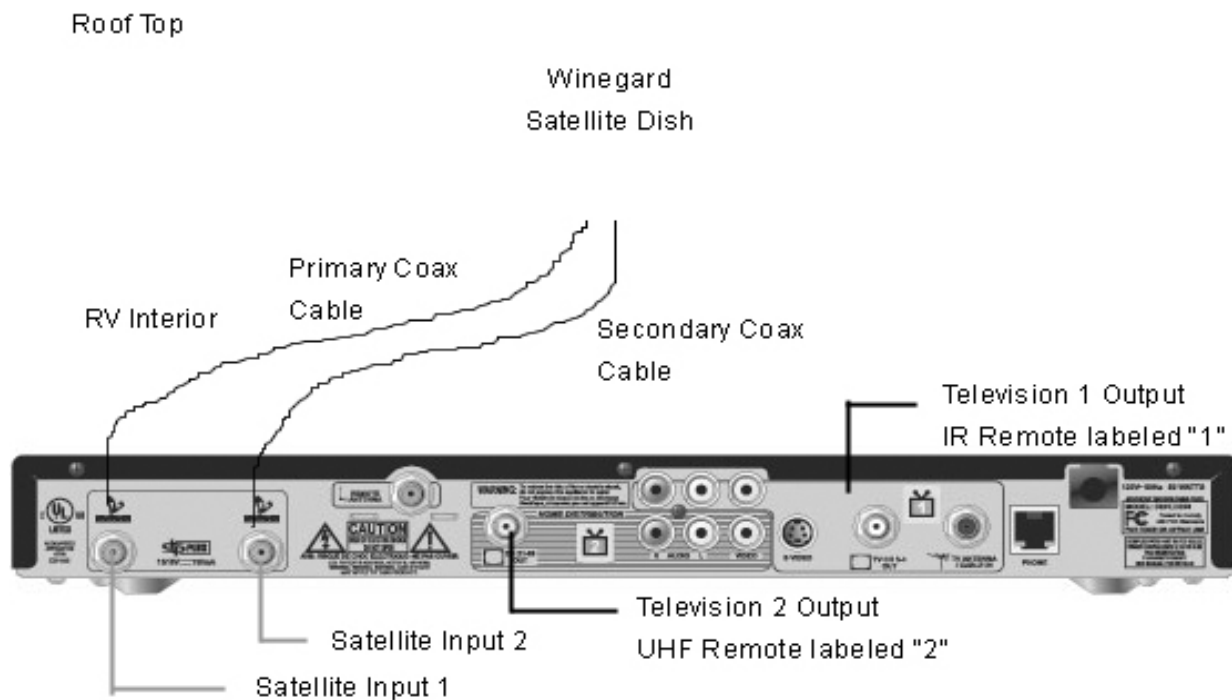
DISH Network is slightly more complicated in Dual Mode, but with the ability for the customer to easily switch between Single Mode and Dual Mode. Once they understand how their system works, it is fairly easy to setup to never miss a recording.

Neither system, nor any other system in a dome, is capable of recording or watching from 2 different satellites at the same time.

Installation

Connect Winegard Dish to Satellite Receiver

1. Install satellite dish to roof of RV. Connect second coax cable to ground block connection inside of dome. This is the secondary coax cable. See owner's manual for two receiver installation.
2. Route power cable to power source and 2 coax cables to your dual tuner/dual television dish satellite receiver.
3. Connect primary coax cable (cable connected to control board of dish) to coax connector labeled "Satellite In 1" on back of Receiver. Connect secondary coax cable to "Satellite In 2" on back of Receiver. See figure below.



4. Connect "Television 1 Output" to TV 1 using the desired connection. Television 1 is controlled by the IR remote labeled "1".
5. Connect "Television Output 2" to TV 2 using desired connection, most likely the coax connection into a video switch. Television 2 is controlled by the UHF remote labeled "2".

Dish Receiver Setup

Tuner Assignment

The tuner that each television output controls is dependent on the order of which each satellite tuner is turned on. If tuner 1 (television 1) is turned on first, it will control the Satellite Input 1 connection on the back of the receiver. This television will have the ability to toggle. If tuner 2 (television 2) is turned on first, it will control Satellite Input 1 on the back of the receiver, and will have the ability to toggle. If you cannot determine which satellite is in control of the toggle feature, or if you want the other television to control the toggle feature, turn off both television tuners, then power on the tuner that you want to control the toggle feature. Multiple satellite viewing on multiple TVs with a TRAV'LER antenna works the same as it does at home.

Installing the SW42 or SW64 switch to enable toggling.

1. Be sure that both satellite receiver tuners are turned off.
2. Push the power button on the Television 1 remote to power on Tuner 1. Do not turn on Television 2 yet. Consult your receiver manual to bring up the point dish screen.
3. After finding the point dish screen, power on your Winegard Automatic System.
- 4a. Stationary System.
After locating and locking onto the correct satellite, you have 6 minutes to run the check switch test. Consult your receiver manual for instructions on running the check switch.
- 4b. In-Motion System.
After locating and locking onto the correct satellite, the dish will continuously track the signal for 6 minutes. At the end of 6 minutes, the dish will come to a stop and go into sleep mode. You now have 6 minutes to run the check switch. Consult your receiver manual for instructions on running the check switch.
5. You should now have the SW42 or SW64 switch installed with no X's in the satellite chart. If you do not have the SW42 switch, or if you have any X's in the satellite chart, you should retest the check switch.

Your Winegard Satellite System will now automatically toggle from satellite 119 to 110 and back. And if SW64 is installed, you can toggle to 119 , 110 or 129 satellites. Important: Only the television using Tuner 1 will control toggle. NOTE: Winegard cannot guarantee success due to incompatibility with this type of receiver.

Setting Television 2 to display on second TV

Refer to your Dish Receiver manual for setup of a second receiver on a second TV. If you are using the coaxial output of your dish receiver for TV 2, you must set the receiver to the channel that you want to watch Dish programming on (domed dishes).

Tuner Examples Assume that both TV outputs begin in the off position on Dish receiver.

1. **Power on TV 1.** (TV 1 uses tuner 1.) **Power on TV 2.** (TV 2 uses tuner 2.) Only TV 1 will control toggle.
2. **Power on TV 2.** (TV 2 uses tuner 1.) **Power on TV 1.** (Television 1 uses tuner 2.) Only TV 2 will control toggle.
3. **Power on TV 1.** (TV 1 uses tuner 1.) **Power on TV 2.** (TV 2 uses tuner 2.) Only TV 1 will control toggle. Power off TV 1. TV 2 remains on tuner 2. TV 2 will not toggle.

DISH Network Receiver Setup



BEFORE turning the Carryout on, you'll need to follow the steps below to clear out any existing receiver settings.

Press **Menu** on your remote. Select option **6 System Setup**.



Select option **1 Installation**.



Select option **1 Point Dish**.



Move over to select **Check Switch**.



With the Carryout still turned off, select **Test**. It will go through a number of steps, then return to the screen shown here with previous information cleared. If at any point it asks you to save, select **Save** or **Yes**.



Now **turn on** the Carryout. Allow it 3-4 minutes to acquire satellites.

Next, select **Test** again. This time it will install the proper switch for use with the Carryout. Once the steps are complete you will see something similar to what is shown to the right.



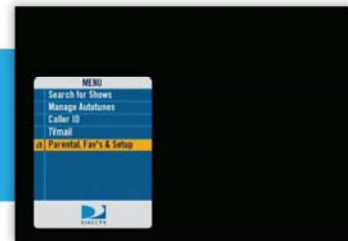
When you see the SW64 as the Installed Switch, your Carryout is ready for use.

DIRECTV Receiver Setup



Plug in the Carryout and allow it a few minutes to acquire the satellites, then follow the steps shown below.

The wording and look used in your receiver may differ slightly. Press **Menu**, then select **Setup**.



Then select **System Setup**.



In your Receiver's Menu, you will need to identify the **Satellite Menu**. Once there, find the option for **Satellite Setup**.



Select the option for **3 LNBS** or **3 Satellites**. If given the option of **SWM** or **Multiswitch**, select **Multiswitch**.



The receiver will automatically verify your setup.



You may see errors for certain satellites during this step, but that is normal.



Your Carryout is now ready for use.

Receiver Setup for Domed Dishes

(TRAV'LER antennas will be covered later).

Winegard's domed automatic satellite systems toggle between primary and alternate satellites in order to receive multi-satellite programming. In order to correctly toggle, it is necessary to set up your satellite receiver correctly. After the search routine is complete, it is the satellite receiver that controls dish movement. This applies when a TV show from an alternate satellite is selected.

DIRECTV® programming

To enable toggling between primary 101° W satellite and alternate 119° W satellite, (consult receiver manual for procedure.), DIRECTV receivers must be set for “oval dish 2” sat selection or “3 LNBS 18 x 20” if that is the lowest selection possible with the receiver you're using (but NOT “round”). After receiver is set for the correct dish selection, when you request a channel located on a different satellite, the unit will automatically toggle to that satellite. Many newer DIRECTV receivers have SWM settings. You will need to change Switch Type to Multi-Switch and THEN change Dish Type to 3 LNBS 18 x 20. Do not use any SWM settings. Now select “Continue”. B-bands are not used. Winegard no longer recommends upgrading a dome antenna to DIRECTV HD. The best solution is switching to a DIRECTV TRAV'LER model SK-3005.

DISH Network® programming (DISH 500)

DISH Network receivers must have the “SW42” switch installed in order to toggle between the primary 119° satellite and the alternate 110° satellite. For newer domes, SW64 is used for both standard and HD receivers.

(Consult your receiver manual for the procedure to reach the “check switch” menu.) Note for HDTV, the correct switch to be installed is SW64 (New electronics may be required) for our domed dishes. However, if you see “SW64 Switch Installed” on the outside of the shipping carton, SW64 will be the switch for DISH Network and Bell TV standard and HDS receivers and yes, it is as above for DIRECTV customers. See DIRECTV programming. For manual (open face) dishes with 1 LNBF, the installed switch is “unknown”.

To install the “SW42/SW64” switch: See the RoadTrip owners manual for SW64 set-up (HD) if required.

1. Before turning on your satellite system, make sure that your satellite receiver and television are turned on and your receiver is on the “point dish” menu. (Consult your owner's manual to reach this menu.)
2. Turn on the satellite system and wait for signal acquisition on satellite 119°.
3. After signal is acquired, you have 6 minutes to complete the check switch test for stationary units. Satellite systems which allow for in-motion viewing must have the check switch test performed 6 minutes after the unit has entered sleep mode. Sleep mode will begin six minutes after satellite acquisition if the coach has not moved or six minutes after the coach has finished moving. Consult your receiver manual for instructions on running this test. Be sure that Superdish and Alternate are unchecked if applicable. Onscreen options may vary by receiver.
4. During the Check Switch Test, the receiver will begin checking the switch by toggling between satellites. When this is completed, SW42/SW64 will appear at the top of the screen. Satellite designation will appear below, showing odd and even transponders. ***If a switch other than SW42 or SW64 appears, or you have an X in one of the boxes below the satellites, repeat Check Switch Steps.**

NOTE: Be sure the “Superdish” and “Alternate” boxes ARE NOT checked.

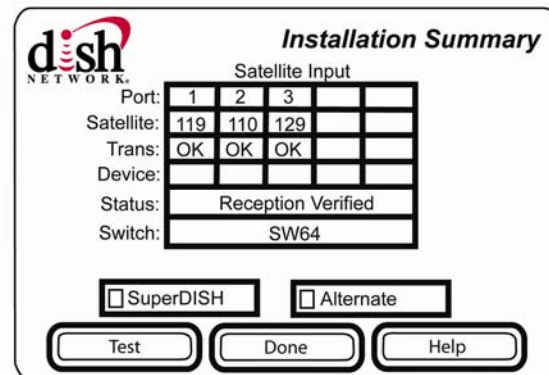
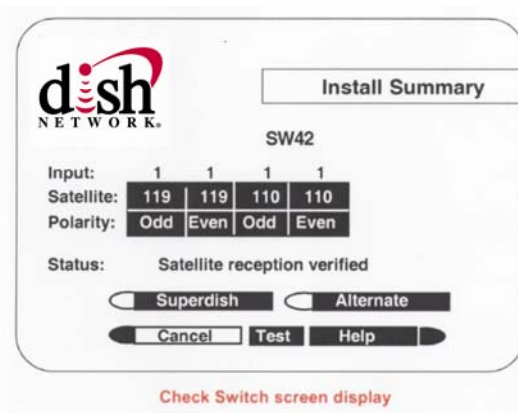
5. Your system is now set up to toggle between satellites. It will automatically move to the correct satellite when a channel is selected with your remote control.

NOTE: Once these steps are completed, you won't have to perform this test again, unless Check Switch was performed on another satellite dish, such as a home dish.

NOTE: Perform these same 5 steps for a receiver for the secondary position on the primary coax. Then move this receiver to the secondary position. By doing this, (installing the SW42 or SW64 for HD satellite receivers), they will then download a complete guide, getting all subscribed to TV channels. As the dish toggles to those satellites, remember only the receiver on the primary coax controls the toggle function.

QUESTION:

I can't get my receiver to find the SW42 or SW64 switch. What should I do ?



ANSWER:

- 1) Start by disconnecting the “Satellite In” cable from the back of your receiver.
 - 1a) An alternative method to No. 1 above is to move the dish off signal, then turn off the power to the dish.
- 2) With the “Sat In” cable disconnected or no power to the dish, run a check switch to clear any “bad” information out of the system.
- 3) The check switch should read, “No switch detected” when it finishes.
- 4) Reconnect the cable or restore power and start a new search with the dish.

- 5) Once the dish finds the signal and quits moving, run the check switch again. NOTE: It may be necessary to repeat Steps 1 – 5 again before proceeding to Step 6.
- 6) If these steps don't work, try a different satellite receiver.

Note: Read your manual to determine the proper time to run the check switch. Each Winegard automatic antenna is slightly different as to when the switch test should be run.

Note: For Bell TV, follow the DISH Network set-up; they use satellites 92 / 81.

HDTV

How is HDTV different?... Basically, HDTV, or High Resolution Television, has 10 times more picture detail on the TV screen. This combination of digital signal and digital sound create an outstanding image with high quality sound. HDTV can be received with traditional outdoor antennas. There is no “snow” or “fringe area” with this technology. Like DBS satellite technology, HDTV signal is either strong enough for perfect picture or not strong enough resulting in no picture.

Some HDTV sets come HD-Ready (receiver/decoder built in) however most HDTV sets are HD-Capable. These sets require the addition of external receiver/decoder to receive digital. It is important for customers to understand which HDTV they have to ensure they are getting true HD television. There are lots of misunderstandings about HD technology.

HDTV sets have an aspect ratio of 16:9 which is closer to the ratios used in movie theatres which allow for the viewer to see more of the image which was actually captured by the cameras. Currently broadcasters pan and scan the image down to 4:3 ratio to fit on standard televisions or letterbox it. Letterboxing presents the full picture in the middle part of the screen with black bars above and below. With the 16:9 format of HDTV, panning and scanning doesn't remove much from the original picture and letterboxing doesn't block out much of your screen.

However the real benefit of HDTV is the high resolution. Imagine 720 or 1080 lines of resolution compared to 525 lines used in analog production. There are two main scanning systems being used in current HDTV. They are “interlaced” and “progressive.” With interlaced systems, the screen shows every odd line at one scan on the screen followed by every even line on the second scan. Since there are 30 frames shown per second, the screen shows one half the frames every sixtieth of a second. With large screens a resulting problem can be flicker; this is usually not a problem with small screens. With progressive scanning, the whole picture is shown every sixtieth of a second. This gives a smoother picture.

HDTV conversion is a process that will unfold over several years. We are witnessing the merging of three huge industries: entertainment, consumer electronics and personal computers. HDTV is currently available from your satellite provider on select channels and also available in many areas for free using your Winegard Over-the-Air antenna.

For HDTV by our satellite dome antennas you will need the DISH Network and the SW64 switch.

Quick tip, when selecting an HDTV, P is better than I , example (1080P). The higher the contrast ratio the sharper the picture. They can range from 1,000/1 to 1,000,000/1. The larger the screen, the more important contrast ratio is (the higher the better).

WINEGARD MOBILE PRODUCTS LIMITED WARRANTY (2 YEARS PARTS; 1 YEAR LABOR)

Except when stated differently in the Product Manual

Winegard Company warrants this product against defects in materials or workmanship for a period of two (2) years from the date of original purchase. During year one (1) of such warranty, Winegard Company will also pay authorized labor costs to an authorized Winegard dealer to repair or replace defective products. No warranty claim will be honored unless at the time the claim is made, Customer presents proof of purchase to an authorized Winegard dealer (to locate the nearest authorized Winegard dealer, contact Winegard Company, 3000 Kirkwood Street, Burlington, Iowa 52601, Telephone 800-288-8094 or visit www.winegard.com). ***Customer must provide proof of purchase with a dated sales receipt for the Winegard product to verify the product is under warranty. If the date of purchase cannot be verified, the warranty period shall be considered to begin thirty (30) days after the date of manufacture.***

If a defect in material or workmanship is discovered, Customer may take the product to an authorized Winegard dealer for service. Customer must provide proof of purchase to verify the product is under warranty. If the product is brought to an authorized Winegard dealer for service prior to expiration of year one (1) of the warranty period and a defect in material or workmanship is verified by Winegard Technical Services, Winegard Company will cover the Winegard dealer's labor charges for warranty service. The Winegard dealer must contact Winegard Technical Services in advance for pre-approval of the service. Approval of the service is at the sole discretion of Winegard Company.

Alternatively, Customer may ship the product prepaid to Winegard Technical Services (located at 3111 Kirkwood Street, Burlington, Iowa 52601, Telephone 800-788-4417). Customer must return the product along with a brief description of the problem and provide Winegard Technical Services with Customer's name, address, and phone number. Customer must also provide proof of purchase to verify the product is under warranty. If the product is returned before the expiration of the warranty period, Winegard Company will (at its option) either repair or replace the product.

This Limited Warranty does not apply if the product has been damaged, deteriorates, malfunctions or fails from: improper installation, misuse, abuse, neglect, accident, tampering, modification of the product as originally manufactured by Winegard in any manner whatsoever, removing or defacing any serial number, usage not in accordance with product instructions or acts of nature such as damage caused by wind, lightning, ice or corrosive environments such as salt spray and acid rain. This Limited Warranty also does not apply if the product becomes unable to perform its' intended function in any way as a result of the television signal provider making changes in technology or service.

RETURN AUTHORIZATION POLICY

A Return Material Authorization (RMA) is required prior to returning any product to Winegard Company or Winegard Warranty Services under this warranty policy. Please call our Technical Services Department at 800-788-4417 or send an email to warranty@winegard.com to obtain the RMA number. Please furnish the date of purchase when requesting an RMA number. Enclose the product in a prepaid package and write the RMA number in large, clear letters on the outside of the package. To avoid confusion or misunderstanding, a shipment(s) without an RMA number(s) or an unauthorized return(s) will be refused and returned to Customer freight collect.

WINEGARD COMPANY DOES NOT ASSUME ANY LIABILITIES FOR ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, MADE BY ANY OTHER PERSON.

ALL OTHER WARRANTIES WHETHER EXPRESS, IMPLIED OR STATUTORY INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE AND MERCHANTABILITY ARE LIMITED TO THE TWO YEAR PERIOD OF THIS WARRANTY.

In states that do not allow limitations on implied warranties, or the exclusion of limitation of incidental or consequential damages, the above limitations or exclusions do not apply.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion of limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

This warranty gives Customer specific legal rights. Customer may also have other rights that may vary from state to state.

SATELLITE RECEIVER WARRANTY:

See manufacturer's limited warranty policy.



WARRANTY CLAIM APPLICATION

1. RGM/RMA #: _____

DISTRIBUTOR INFORMATION

(Skip this section if claim is originating from a Dealer or Consumer)

2. Distributor Name: _____ 3. Account #: _____
 4. Street Address: _____ 5. City: _____ 6. State: ____ 7. Zip: _____
 8. Phone: _____ 9. Fax: _____ 10. E-Mail: _____

DEALER INFORMATION

(Skip this section if claim is originating from a Consumer)

11. Dealer Name: _____ 12. Dealer #: _____
 13. Street Address: _____ 14. City: _____ 15. State: ____ 16. Zip: _____
 17. Phone: _____ 18. Fax: _____ 19. E-Mail: _____
 20. Work Order #: _____ 21. Date of Service: ____ / ____ / ____ 22. Technician: _____

CONSUMER INFORMATION

23. Consumer Name: _____ 24. (Skip this item if Consumer is not a Mobile Customer)
 RV Brand/Model/Year: _____
 25. Street Address: _____ 26. City: _____ 27. State: ____ 28. Zip: _____
 29. Phone: _____ 30. Fax: _____ 31. E-Mail: _____
 32. Winegard Product Model: _____ 33. Serial #: _____ 34. Date of Purchase: ____ / ____ / ____

PROBLEM INFORMATION

35. Description of Problem: _____

 36. Diagnosis: _____

 37. Corrective Action: _____

38. Materials

Qty	Part #	Description	Cost	Parts Returned	
				Y	N
Total Material Charges					

39. Labor _____ hrs @ \$ _____ per hour	Total Labor Charges \$ _____
40. Shipping Charges Shipping Method <input type="checkbox"/> UPS <input type="checkbox"/> FEDEX <input type="checkbox"/> OTHER _____	\$ _____
41. Miscellaneous Charges	
Tax <i>Explanation</i> _____	\$ _____
Other Charges <i>Explanation</i> _____	\$ _____
42. Total Charges \$ _____	

FOR WINEGARD USE ONLY	
Call #	
RMA #	
Shipment #	
Claim #	
Authorized by	
Date	
Ref. RMA #	

Fax to: (319) 754-0715 **E-mail to:** Warranty@winegard.com
Mail to: Technical Services, Winegard Company, 3111 Kirkwood Street, Burlington, IA 52601
 In order to process your claim the Consumer proof of purchase documentation is required to be sent to Winegard Company along with the product and this completed warranty claim application.

Winegard Warranty Claim Application Instructions

Upon completion of the repair of a Winegard product that is deemed a Winegard manufacturing error and is within the stated warranty period, complete the warranty claim application form. The completed form and the proof of purchase are to be both faxed or mailed to Winegard and attached to the defective product and returned to Winegard Company at the address listed on the bottom of the form. The warranty claim application must be completely filled out using the following instructions.

1. **Claim# (RGM/RMA)...** This is the RGM (Return Goods Memo) / RMA (Returned Material Authorization) number that was given at the time Winegard sent service parts. This number is on the packing list of the replacement parts.

Distributor Information (This is the name of the distributor filing the warranty claim.)

2. **Distributor Name ...** The name of the distributor filing the warranty claim

3. **Distributor Account # ...** The distributor's Winegard account number if known.

4. – 7. **Address/City/St/Zip ...** Use the ship to address.

8. – 10. **Phone/Fax/Email ...** Use the service department numbers. Include an email address if at all possible.

Dealer Information (This is the name of the dealership or service center providing the warranty work.)

11. **Dealer Name ...** The name of the dealership providing the service work

12. **Dealer # ...** Use the Winegard dealer number that was issued to this dealer or leave blank if a dealer number has not been issued yet. Winegard will be issuing dealer numbers in the near future.

13. – 16. **Address/City/St/Zip ...** Use the ship to address.

17. – 19. **Phone/Fax/Email ...** Use the service department numbers. Include an email address if at all possible.

20. **Work Order # ...** This is the number we will reference to in any communication or claims processing. If an invoice is also used include it with the WO#.

21. **Date of Service ...** This is the date the service work is completed.

22. **Technician ...** The name of the person that is familiar with this service in case questions as to what was performed arise.

Consumer Information (This is the person that owns the Winegard product being serviced).

23. **Consumer Name...** Name of the consumer.

24. **RV Brand/ Model/Yr....**This is the RV manufacturer, their model name and the year of manufacture of the consumers RV if applicable. Does not apply if the warranty is for a Home satellite system or Home off-air antenna system. Example... Damon Intruder 2006.

25. – 28. **Address/City/St/Zip ...** Use the ship to address.

29. – 31. **Phone/Fax/Email ...** Use the consumers home phone. You can substitute a cellphone number if a Fax # is not available. Include an email address if at all possible.

32. **Winegard Product Model...** The model number of the Winegard product being serviced. Look at the instruction manual for this information if it is not on the product.

33. **Serial Number...** If the product has a serial number, enter it here. Most of the RV satellite products are now serialized. For satellite receivers use the CAID number that begins with R00.

34. **Date of Purchase....** This is the date of retail sales to the consumer. Include a copy of the proof of purchase with the Winegard product listed on it. It may be an aftermarket sale or a copy of the RV invoice if the product came installed on the RV. If this information is not provided the warranty date will be the Winegard manufacturing date.

Requirements for a Proof of Purchase.

1. Must clearly state the Winegard product model.
2. Must clearly indicate the date of the retail purchase of the Winegard product.

3. In the case of an OEM installed product, the retail date of purchase of that OEM product with the Winegard product listed on the invoice or the Factory installed options document.
4. Must include the consumers name, address and telephone number.
5. Must include the seller's name address and telephone number.
6. Must be legible at the time of receipt by Winegard Warranty Administration.

Problem Information (This is the problem with the product).

35. **Description of Problem....** The symptoms the consumer is describing for the reason of the service.

36. **Diagnosis...** The Winegard manufacturing error that was determined by the person servicing the product.

37. **Corrective Action...** What was performed to correct the Winegard manufacturing error.

38. **Materials...**Used to correct the problem

Qty...Quantity of the of the parts used

Part # ... The Winegard part number used

Description... A brief description of the part used.

Cost.... The price the dealer paid for the part plus 20% mark up* unless it was sent no charge.
* Individual State laws may apply.

Parts Returned... Check either Y (Yes) or N (No) if the parts were sent back to Winegard. Most parts have to be returned prior to the claim processing unless specifically instructed by Winegard Tech Service Representative not to. See Flat Rate list for those parts that are exempt from being returned.

39. **Labor...**Used to correct the problem

Hours... The number of hours claimed based on the Flat Rate list.

Per hour... The servicing dealers posted shop rate.

40. **Shipping Charges...**

Shipping Method.... Which carrier was used for return shipping.

\$ The reimbursable amount of shipping expenses to return the part. Our UPS account number 530-400 should be used for return shipping expenses.

41. **Miscellaneous Charges**

Other.... Any other reimbursable costs associated with this repair. Must be accompanied by a separate description and receipt.
Example... Custom fees

Tax..... Any reimbursable tax paid by the dealer to effect this service or if labor and parts are required to be taxed locally.

42. **Total Charges** The sum of all of the parts, labor, shipping, other and tax that is reimbursable.

Ship product to:

Technical Services
Winegard Company
3111 Kirkwood Street
Burlington, IA. 52601

Call 319-754-0738 for warranty claim inquiries only.

(For additional forms, order number WF-411).

WINEGARD COMPANY

FLAT RATE SCHEDULE

The following is the current Flat Rate Schedule for warranty work performed on Winegard products

Claims submitted for repairs which exceed the Flat Rate without prior authorization will be adjusted.

Any part tested good will be returned at your expense and the claim denied.

DESCRIPTION OF REPAIR PERFORMED	TIME ALLOWED	RETURN PARTS	PRIOR AUTHORIZATION
RM-4610 (RM-5500, RM-61DE, RM-DM61, RM-55DE, RM-DM55 etc.)			
Replace LNBF	0.5	YES	YES
Replace gears/slide bracket	1.0	YES	YES
Replace directional handle/ceiling plate	0.5	YES	YES
Replace crank handle	0.25		
Replace coax connector	0.25		
Replace entire unit	1.5	YES	YES
Replace gear housing	1.0	YES	YES
Replace digital elevation sensor or display	0.5	YES	
Replace antenna head/bracket	0.5	YES	
Replace lift tubes	0.5	YES	YES
Replace wall plate switch	0.5	YES	
Tighten elevation gear set screws	1.0	YES	
Tighten bearing cap nut	0.5	YES	
RM-DM46, RM-4600			
Replace LNBF	0.5	YES	
Replace gears (one or both)	0.5	YES	YES
Replace directional handle/ceiling plate	0.5	YES	YES
Replace crank handle	0.25		
Replace coax connector	0.25		
Replace entire unit	1.0	YES	YES
Replace gear housing	1.0	YES	YES
Replace digital elevation sensor &/or display	0.5	YES	
Tighten elevation gear set screws	1.0	YES	
Tighten bearing cap nut	0.5	YES	
<u>DM-4000 & DE-4600 DIGITAL MAGIC™</u>			
Replace sensor	0.5	YES	
Replace display	0.5	YES	
Replace both pieces	1.0	YES	YES
MV-0022, MV-0099, MV-2222, MV-1111, MV-4000, MV-4002, MV-4005 MOVIN' VIEW™			
Replace power switch	0.5	YES	
Replace demultiplexer or splitter	1.0	YES	
Replace GPS	1.0	YES	YES
Replace coax and/or wiring	1.0	YES	YES
Replace control module	1.0	YES	YES
Replace power module	1.0	YES	YES
Replace DVD module	1.0	YES	YES
Replace LNBF	1.0	YES	YES
Replace motor (one or both)	1.0	YES	YES
Replace dome	0.5	YES	YES
Replace entire unit	2.0	YES	YES

Repairs involving Parts Cost of \$200.00 (or more) or exceeding stated flat rate time **REQUIRE** Prior Authorization from Winegard Technical Service.

DESCRIPTION OF REPAIR PERFORMED	TIME ALLOWED	RETURN PARTS	PRIOR AUTHORIZATION
MV-0500, MOVIN' VIEW™			
Replace power switch	0.5	YES	
Replace limit switch	1.0	YES	
Replace GPS	1.0	YES	YES
Replace coax and/or wiring	1.0	YES	YES
Replace control module	1.0	YES	YES
Replace DVD module	1.0	YES	YES
Replace LNBF	1.0	YES	YES
Replace motor (one or both)	1.0	YES	YES
Replace dome	0.5	YES	YES
Replace entire unit	2.0	YES	YES
MV-3500, MOVIN' VIEW™			
Replace power switch	0.5	YES	
Replace limit switch	1.0	YES	
Replace GPS	1.0	YES	YES
Replace coax and/or wiring	1.0	YES	YES
Replace control module	1.0	YES	YES
Replace LNBF	1.0	YES	YES
Replace motor (one or both)	1.0	YES	YES
Replace dome	0.5	YES	YES
Replace entire unit	2.0	YES	YES
MV3500A/MV3535A, MOVIN' VIEW™			
Replace power switch	0.5	YES	
Replace limit switch	1.0	YES	
Replace coax and/or wiring	1.0	YES	YES
Replace control module	1.0	YES	YES
Replace LNBF	1.0	YES	YES
Replace motor (one or both)	1.0	YES	YES
Replace reflector	0.5	YES	YES
Replace dome	0.5	YES	YES
Replace entire unit	2.0	YES	YES
MV3500T/MV3535T, MOVIN' VIEW™			
Replace power switch	0.5	YES	
Replace limit switch	1.0	YES	
Replace GPS	1.0	YES	YES
Replace coax and/or wiring	1.0	YES	YES
Replace control module	1.0	YES	YES
Replace LNBF	1.0	YES	YES
Replace motor (one or both)	1.0	YES	YES
Replace reflector	0.5	YES	YES
Replace dome	0.5	YES	YES
Replace entire unit	2.0	YES	YES
RTS/RTT, RoadTrip™			
Replace power switch	0.5	YES	
Replace limit switch	1.0	YES	
Replace GPS (<i>Model RTT Only</i>)	1.0	YES	YES
Replace coax and/or wiring	1.0	YES	YES
Replace control module	1.0	YES	YES
Replace LNBF	1.0	YES	YES
Replace motors (one or both)	1.0	YES	YES
Replace reflector	0.5	YES	YES
Replace dome	0.5	YES	YES
Replace entire unit	2.0	YES	YES

DESCRIPTION OF REPAIR PERFORMED	TIME ALLOWED	RETURN PARTS	PRIOR AUTHORIZATION
MA1000, Motorized Sensar			
Replace power switch	1.0	YES	
Replace antenna head	0.5	YES	YES
Replace wall switch.....	0.5	YES	YES
Replace entire unit.....	1.0	YES	YES
VS-0303VS-0503/5312, VS-0604/6412, Video Selectors			
Replace entire unit.....	0.5	YES	YES
PS-1208 Power Supply			
Replace entire unit.....	0.5	YES	YES
RM-9946, RM-8000, AS-2003			
Remove and replace control panel	0.5	YES	
Replace LNB	0.5	YES	
Replace electronic box.....	1.0	YES	
Replace gears	1.0	YES	
Software update.....	1.0	YES	
Replace lift assembly (gear Housing)	1.0	YES	YES
Replace dish/backup assembly	0.5	YES	
Replace entire unit including cable assembly.....	2.0	YES	YES
Replace cable assembly	1.0	YES	
RV-2001A, RV-2005, RV-3095, RV-5090, RV-6004, RV-7004			
Replace antenna head	0.5	YES	
Replace antenna with lift	1.0	YES	YES
Replace gears (worm and elevating).....	0.5	YES	
Replace on/off power supply	0.5	YES	
Replace base plate and reseal	1.0	YES	YES
Replace gear housing.....	1.0	YES	
Tighten nylon nut on gear housing	0.5		
Replace crank handle.....	0.25		
LP-1000			
Replace electronics.....	1.0	YES	YES
Replace system	2.0	YES	YES
SK-1000, SK-3003, SK-3005, SK-7002			
Replace LNBF &/or bracket.....	1.0	YES	YES
Replace IDU	0.5	YES	YES
Replace Power Supply &Power Cord.....	0.5	YES	YES
Replace Reflector	0.25	YES	YES
Replace Lift Assembly	1.5	YES	YES
Replace Lift Assembly and Roof Mounting Plate	1.0	YES	YES
Replace Wiring Harness Assembly	1.0	YES	YES
WB-2000, WB-2700			
Replace IDU	1.0	YES	YES
Replace Data Cable	1.0	YES	YES

Times include ½ hr diagnosis time if applicable. Further diagnosis time must pre-authorized by Winegard.

Repairs involving Parts Cost of \$200.00 (or more) or exceeding stated flat rate time **REQUIRE** Prior Authorization from Winegard Technical Services.