



## Bluestar Installation and Operation Manual

(mandatory reading for both the installer *AND* customer)



## The Easy To Use *Fully* Automatic Satellite TV System

© 2017 Aardvark Electronics

2 Maple Drive

Mackay QLD 4740

Ph 07 49555879

Fax 07 49556216

Web : [www.vansat.com.au](http://www.vansat.com.au)

Email : [support@vansat.com.au](mailto:support@vansat.com.au)

**DISCLAIMER: - Aardvark Electronics (the producers of the VANSAT system) are not responsible for service and channel availability, faults, Broadcaster/GOV policy changes or platform changes outside of the Vansat system that either may prevent reception now or in the future or require you to upgrade your hardware to receive services. Continuing the setup beyond this page signifies your acceptance of this.**

## Vansat Bluestar Series VII Specifications

**Power** – DC 12 > 24V

**Current** – Typically 1 amp during normal operation and 4 amp temporary for search (search time varies but is normally 1 > 2 minutes after power on)

**LNB Type** – KU Band. High Gain Dual Polarity (V/H), TWIN OUTPUT & Automatic Skewing

**LNB LO Frq** – 10700 MHz (10.7 GHz)

**Reflector (Dish)** – Offset 85cm Powder Coated

**Dimensions (Folded)** - Length 108 cm x Width 81 cm x Height 19 cm

**Dimensions (Raised)** - Length 108 cm x Width 81 cm x Height 98 cm

**Weight (Rooftop Unit)** – 15 Kgs

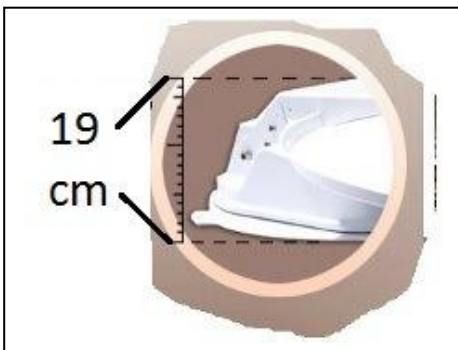
**Gear Box** – All Steel Construction

**Wiring Loom** – 8.5 Meter Length with pre-fitted connectors (3.5M loom from dome with an additional 5M extension cable included if needed)

**Control Box** – Multi Satellite with Adaptive Search. Upgradable Firmware

**Elevation Range** – 30 > 70 Degrees (Australia Wide Coverage)

**Mounting Plate** – Aluminium. 33cm Square (each side), roof attachment bolt holes 30cm apart (side to side – may vary by a few millimeters)

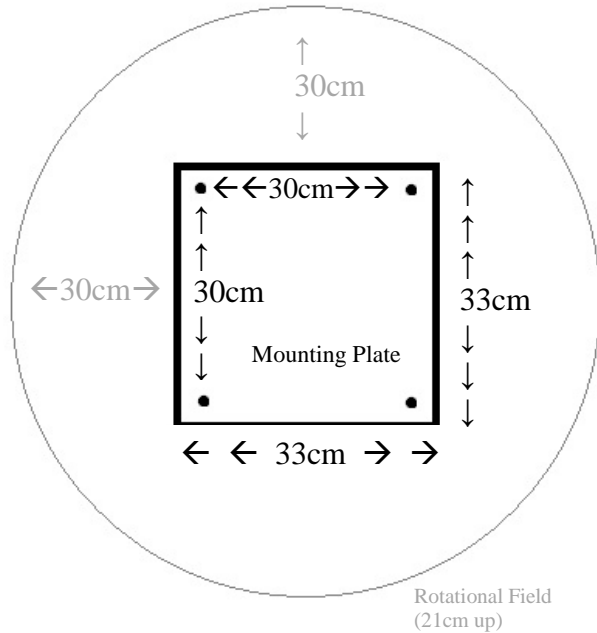


- \* 19cm Ride Height When Folded
- \* Auto Shut Down Feature  
(must be wired to enable this)

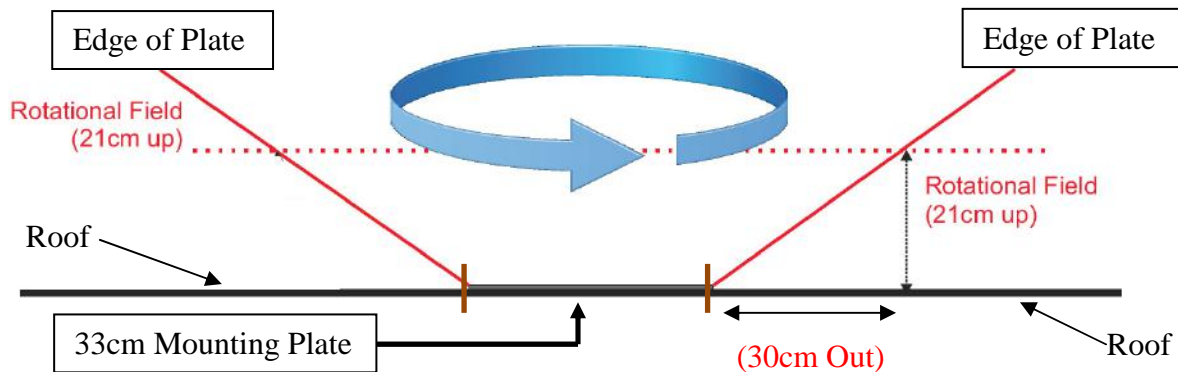
**Satellite DVBS1 and DVBS2 Compliant**

**CAS** – Irdeto 1 and 2 Compatible via optional CAM Module

**Roof Space Required** – Refer to the Below Figure. To Calculate for Maximum Elevation (how far back the dish will pivot at the northern tip of Queensland) measure outwards a distance of 30cm from each side of the Mounting plate. From this point measure upwards 21cm. This point in space will be the maximum angle the rear of the dish will ever go back.



Mounting Plate 33cm Square.  
 Mounting Holes 30cm Apart.  
 The Grey Circle shows the Rotational Field of the Dish. This field Pattern is measured at 30cm from the outside frame of the base starting at a Height of 21cm. You must ensure you have clear space **ABOVE** 21cm at a distance of 30cm from all sides of the Base Plate. Obstacles **BELOW** 21cm at a distance of 30cm from the Base Plate **WILL NOT** be of concern.



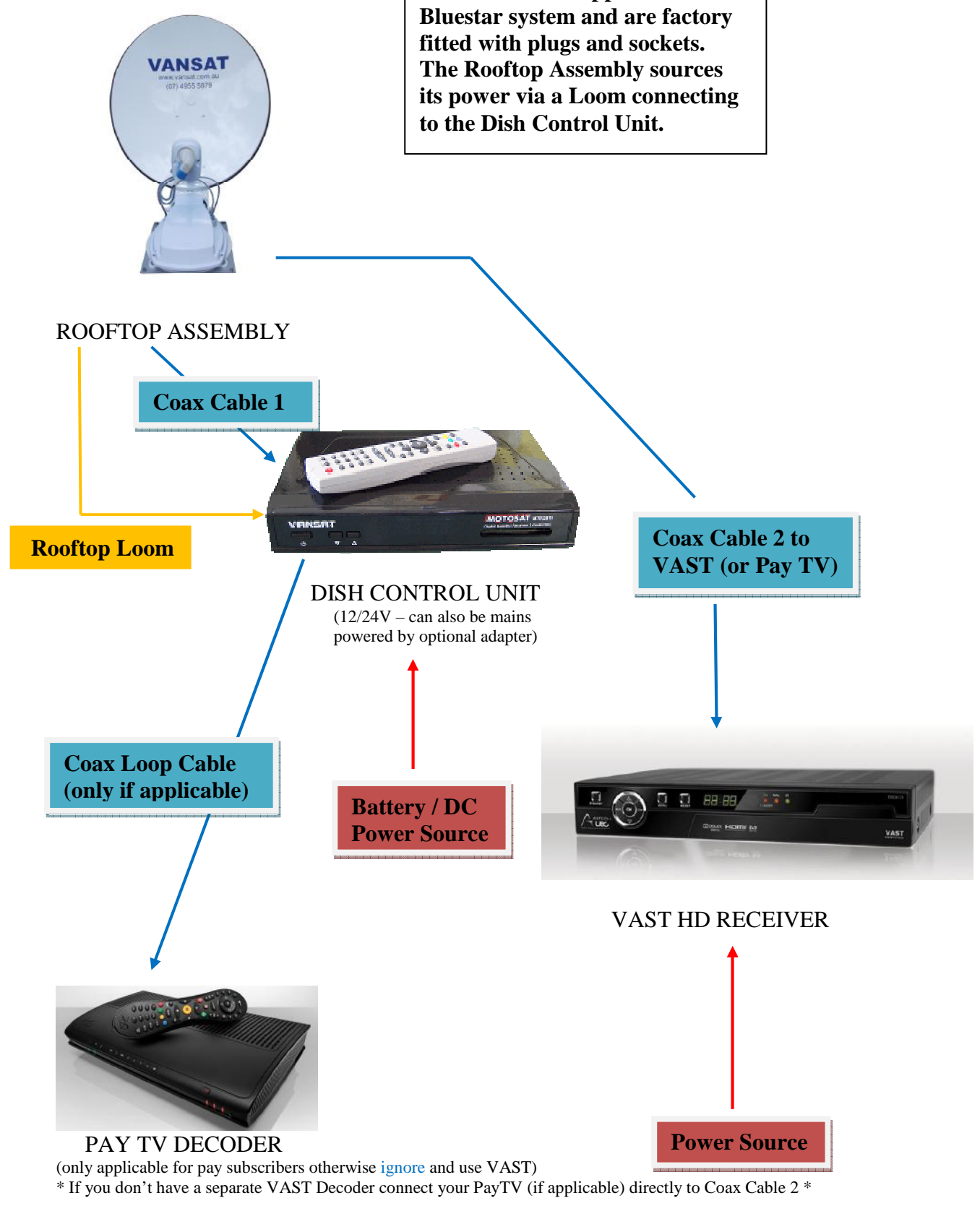
*Should you not have the necessary rotational area to fit the system, simply “pad” the base plate the unit sits on to give it more height and therefore more clearance to suit your installation.*

**Origin of Manufacture** – Europe (final assembly and testing in Australia)

**Warranty** – Three (3) Years

# VANSAT BLUESTAR WIRING DIAGRAM

**Wiring Diagram – All cables and connectors are supplied with the Bluestar system and are factory fitted with plugs and sockets. The Rooftop Assembly sources its power via a Loom connecting to the Dish Control Unit.**



(only applicable for pay subscribers otherwise ignore and use VAST)  
 \* If you don't have a separate VAST Decoder connect your PayTV (if applicable) directly to Coax Cable 2 \*

## ROOFTOP MECHANISM INSTALLATION

**Safety First – Have you read and understood our Safety Warnings on Page 5 ??**

Pick an area anywhere on the roof of your mobile home that will allow the unit to be mounted as flat and level as possible with good support and that will permit the dish, once fitted and raised, to have a full 360 degree rotation and a full elevation range. Thoroughly clean the area where the base of the assembly will be affixed of all dirt, debris and wax using methylated spirits. The mechanism preferably should be fitted so that the dish is pointing rearward on the vehicle when it is in the shutdown position. If however space dictates that this is not feasible the unit can be mounted across the vehicle as long as a **suitable wind deflector** is placed next to the dish to prevent excessive wind (and possible damage). Please contact us at [support@vansat.com.au](mailto:support@vansat.com.au) as we have (for purchase) a variety of wind deflectors and optional jigs available for difficult installations.



If the dish is packed separately to the mechanism you will be able to attach it after you install the rotating mechanism. At first power-on, the arm will lift (after approx 10 seconds). When the mechanism begins to rotate you can simply press the PAUSE button on the MOTOSAT remote to stop the rotation and fit the dish – firmly tighten the four stainless screws.

Carefully transport the rooftop mechanism to the roof supporting it by its base only. **DO NOT** carry it by lifting the rotating mechanism or dish. **THIS IS IMPORTANT.** Failure to transport the mechanism correctly can result in damage to the internal workings or deforming of the satellite dish.



**IMPORTANT – Support the mechanism by slipping your hands under either side of the stainless base.** (see arrows on left picture) **DO NOT** carry or attempt to turn the revolving part (the bit with the white cover). **DO NOT** carry by, or attempt to move the dish. Damage may result if incorrectly handled.

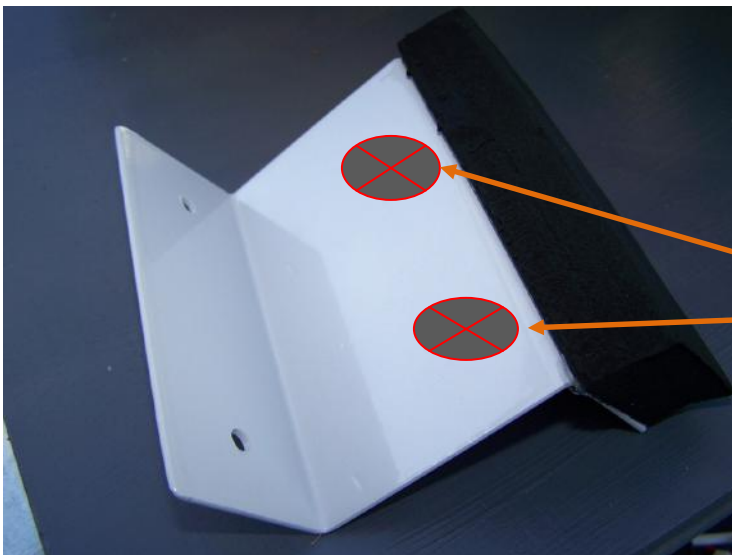


**Mark and drill the four bolt holes. The assembly should be positioned over ceiling battens. Apply a generous amount of the supplied adhesive to the underside of the base, remembering to also apply in and around the bolt holes. You have two options of attaching the unit. (1) You can simply affix using coach screws directly into the battens or (2) using the four supplied affixing bolts (ensure loading distributing washers and nuts are fitted inside if using the bolt method). Any excess bolt length can be trimmed. Apply adhesive to the bolt heads to prevent water ingress. Either method is acceptable as long as the unit is secure!!**



**Base of Unit mounted. Note that only two of the mounting bolts are visible in the picture. Your unit will be affixed with four (4) bolts and Adhesive (Glue) under the steel Base plate.**

**The bump stop should now be installed. This device provides additional support to the dish if the vehicle is driven on rough terrain.**

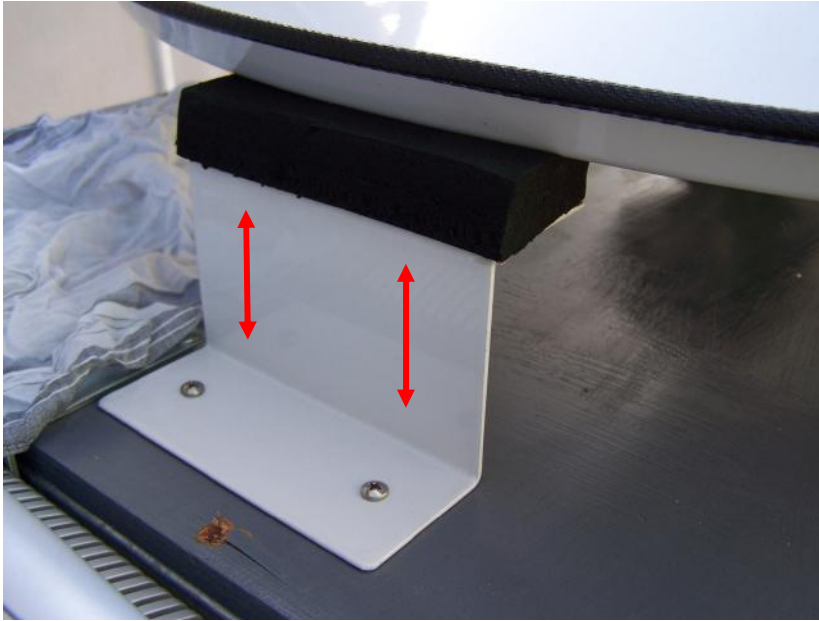


**Bump Stop**

**Wingnuts to adjust height of rubber stopper**



**Apply adhesive to bottom of the stop and affix to the roof using the supplied stainless screws (cover the tops of the screws also with adhesive).**



**Bump Stop Fitted. Note you can loosen the two wingnuts (not shown) to adjust the top of the stop up and down so that the dish is **LIGHTLY** resting on it.**

**The completed job should resemble the below (except yours will have adhesive on the bolts and screw heads of course).**



**Dome fully fitted to the Rooftop**

## Cable Entry and Wiring Configuration

Position the Junction box as far away from the revolving mechanism (dome) as needed to ensure the cable will not foul as the unit rotates. Some thought should be given to positioning the junction box over an internal cavity like a cupboard. The cable length from the dome is 3.5M.



Junction Box with the loom from the dome entering a 1” hole into vehicle.

Drill a 1 inch hole to allow easy insertion of the wiring loom and signal cables.

**IMPORTANT** - DO NOT permanently seal the cables/loom into the roof/wall cavity. They should be fitted in such a fashion as to allow them to be easily removed (by feeding through) should the rooftop mechanism ever require servicing.



Wiring loom shown from inside the vehicle. **DO NOT** seal them permanently in the roof cavity.



If the 3.5M dome cable is long enough to reach the MOTOSAT control unit without using the included 5M extension cable please skip this step:



If using the supplied 5M extension cable ensure that when joining the two Coax Cables that the **plugs** are not allowed to twist as you tighten them.

When using the extension cable carefully click the two black connectors together (take care you do-not bend any of the pins when doing this and that none of the wires “sneak” out the rear of the connectors). For the two coaxial signal connectors (thin cables), gently tighten **BOTH PLUGS** with pliers holding the plug and socket at the same time. Do not allow the coax cables to twist as you tighten these plugs as damage may occur.

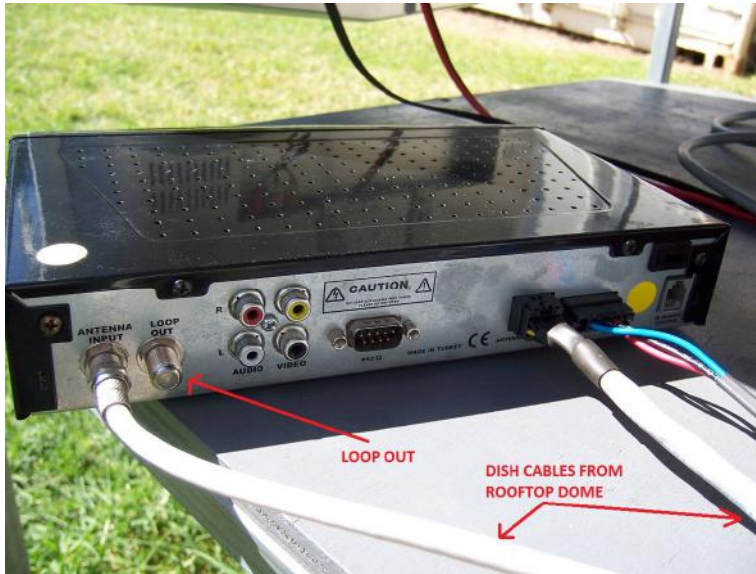
The junction box can now be secured (using the supplied stainless screws) and glued to the roof of the vehicle. Also apply adhesive/silicon to the points where the two cables enter the junction box.



The Junction Box fully assembled and fitted to the vehicle roof (adhesive not shown)

## INTERNAL MOTOSAT CONTROL UNIT INSTALLATION

The control unit can either be flush mounted to a cupboard wall (on its side or upside down is also fine) or simply left free standing. Do not however block the ventilation holes. Screw either one of the two signal coax cables coming from the roof (does not matter which one) to the rear of the MOTOSAT control unit at the point marked ANT IN. Take care when affixing the coax plug that the coax lead does not rotate causing damage to the lead. The other connectors can then be attached.



MOTOSAT Control Unit with wiring looms shown. On the back left you will see a connection labeled “Loop Out” (next to ANT IN). This socket may be used later depending on your installation and number of decoders. **Never cut and “split” the coax cables from the roof using a splitter as this will cause signal degradation and may prevent the system from locking.**

Power is via 12V/24V DC only (a 240V adapter is available as an option for purchase from us for mains operation). Wire for 12V/24V as follows:-

**RED** : +12/24 DC Volts (see note further down this page)

**BLACK** : Ground (or Negative)

**BLUE** : Vehicle/Car Ignition (**IMPORTANT** – while the unit will fully function without this wire connected, the system will not auto-close on vehicle startup. Note also that 12V/24V must be present on the RED cable for this to work)



### The system Power Loom.

Do not bypass or leave out the fuse on the lead. Use thick cable for the positive and negative connections.

**Do-not use a Cigarette Plug.**



**NOTE: Why thick cable? The power consumption is very low in normal operation but during the search (typically 1-2 minutes) the current draw is around 4 amps. If you use light power cable the unit will search slower and may even stall with an ERR message on the display. Low battery voltage will also cause this. Hard wire to your van and **do not use a cigarette plug**. (a cigarette plug is fine for the VAST decoder however if applicable)**

AV  
Cable



HDMI  
Cable



**RED/WHITE/YELLOW AV Cable (or HDMI digital cable): In the packing that the MOTOSAT control unit was shipped in is an AV cable and a HDMI cable for connecting the MOTOSAT control unit to the television (use either one but NOT both). Please always connect this to the tv even if you are using a separate decoder (like Vast or PayTV) for reception. The reason for this is if you ever have a problem with the unit it will allow the technician to receive feedback from the MOTOSAT control unit on where the problem may be located. **INSTALLERS PLEASE DO NOT SKIP DOING THIS!!****

### **OPERATING INSTRUCTIONS**

**Before powering on the control unit ensure that the dish has clearance above and around it – ie no obstacles in its path of travel, and that you have a clear view of the sky.**

**Switch your television on and change the input to either AV (maybe called composite) using the “Source” or “AV” button, or if the connection was made via HDMI then to HDMI in the input/source menu. Fit batteries to the control unit remote and press the RED power (standby) button at the top. The dish will begin to lift and perform a search.**

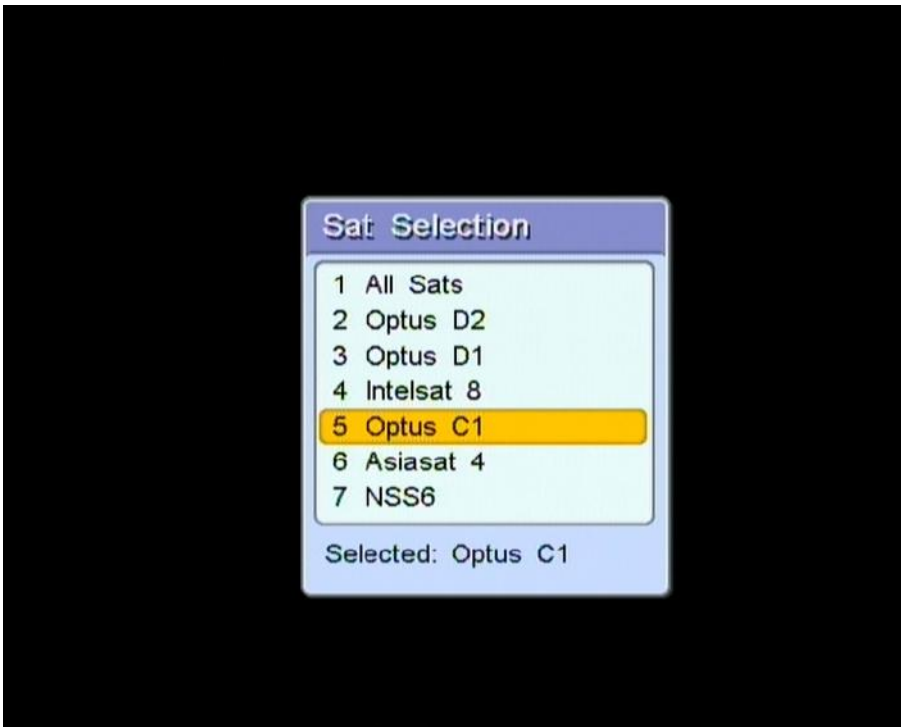
The initial search time may take as long as 20 minutes before the satellite locks and a picture appears **BUT** subsequent searches will be much quicker (generally around 1-2 minutes). The reason for this is that the unit is adaptive. It will begin the next search using the last successful search as the starting point. This way if you travel from point A to point B, the system will start using the location information from point A as a quick start. For the initial “out of the box” search it will use point A, which of course was our factory in Mackay!



System Power Button

System  
Remote  
Control

Pressing the SAT button will allow you to specify which satellite you wish to view (hint – 99% of people want C1/D3 for VAST & PayTV services):



Reception of the following FOUR Satellites is possible in most areas of Australia:

Optus C1/D3 (VAST & PayTV)

Optus D1 (some ABC/SBS channels)

Optus D2 (foreign language and Christian channels)

Intelsat 19 (various programming)

The following two satellites may only be visible over the eastern side of Australia and reception will be difficult in many areas:-

Asiasat 4

NSS6

(channels, satellites, broadcaster and/or government policy changes, products, platform changes affecting service availability now and in the future are beyond the control of VANSAT)

### ADDING AN EXTERNAL VAST DECODER OR PAYTV DECODER

To access the full suite of channels available you will need to connect an external decoder. In most cases this will be either a VAST or PayTV decoder (PayTV subscribers should read the disclaimer further down).

Below is an example of the rear of an external VAST Decoder. Connect the spare black (or white) coax lead from the roof to the SAT IN port on the rear of the VAST Decoder.



Connection to your TV can be made via the YELLOW / WHITE / RED cable OR (and preferably) a HDMI cable. The HDMI connection will give you superior picture and sound quality. If your decoder and TV both have this fitting we would recommend purchasing a HDMI cable. This will also have the benefit that it will free up an AV port on the TV. Many modern TV's only have the one AV port which may be taken up with the connection to the VANSAT MOTOSAT control unit. Switch your TV to HDMI (or AV if applicable) to watch the external decoder.

# VAST TELEVISION GUIDE

Channels listed as they show in order on an external VAST decoder. Availability now and in the future is beyond this documents creator. The list and accuracy thereof is no guarantee that you will be entitled to receive these services, it is only an indication of what channels to expect. Any questions or queries regarding channels should be emailed to VAST at [vast.administration@mysattv.com.au](mailto:vast.administration@mysattv.com.au) (or phone 1300993376 but email preferred) – hours of operation are 9am > 4.30pm Weekdays.

Channels in **GREEN** are received by users who registered in the Northern Zone  
Channels in **BLUE** are received by users who registered in the Southern Zone  
Channels in **BROWN** are received by users who registered in the Western Zone



Australia VAST reception is divided into Three Zones. When you cross from one Zone to another Zone the system will continue to function as normal. To swap over to a new Zone's viewing email VAST at [vast.administration@mysattv.com.au](mailto:vast.administration@mysattv.com.au) or call 1300993376 (email preferred).



**VAST SMART CARD**  
The smartcard must go into the slot so the **gold contacts and the smart card number are facing downwards.**

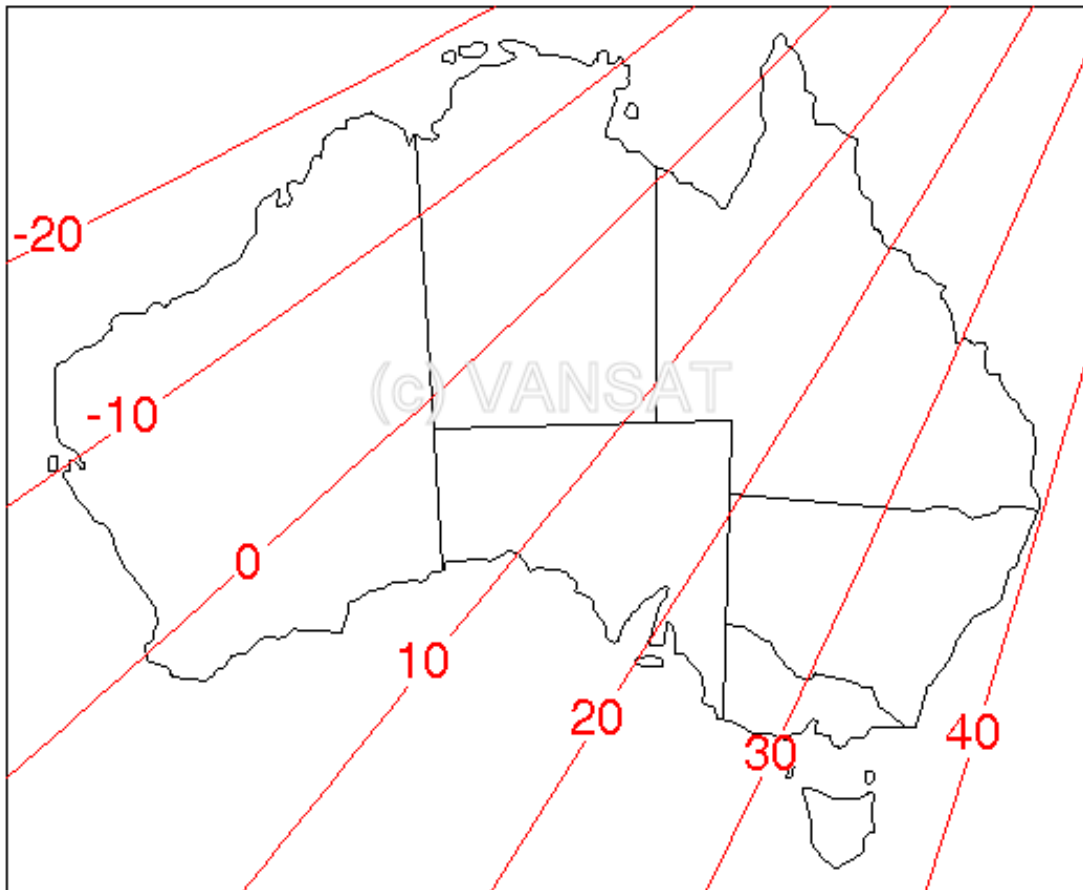
**Record Your Smartcard Number Here:**

\_\_\_\_\_



### MAN V/S MACHINE (optional)

Ok, so the machine is automatic. Fancy you can do the alignment better than the electronic brain? Ensure the MOTOSAT is connected to the television via AV (or HDMI) and switch the television to the appropriate input. On the remote control for the MOTOSAT Control Unit press FUNC and go down to "Manual Adjust" and press OK. In the screen that appears you will see "Level" and "Quality" bars at the bottom. Using the left/right/up/down arrows you can step the dish in various directions. The LNB twist (Skew) is adjusted with the RED and GREEN buttons on the bottom of the remote. Each skew number corresponds to approximately 4 degrees of twist. Looking at the map below you will see the Skew angle for Optus C1/D3. As an example, for Brisbane the "official" skew is +40. So the machine skew is +10 (40 divided by 4 = 10). Another example, for Derby at the top of WA the "official" skew angle is -16 so the machine skew is -4 (16 divided 4 = 4). Don't worry if you mess things up, you can simply press the Yellow button on the bottom of the remote to force a return to the previous position or switch the MOTOSAT off and back on again and it will auto-align.



LNB TWIST

## UNDOCUMENTED FEATURES (some good bits we've added ☺)

*Viewing the Mechanical & Electronic positioning* – while the system is searching if you press INFO on the remote it will show you the mechanical (and electronic) values the system is currently searching. The Skew value is the LNB twist.

*System Default to Factory Settings* – someone had a play with the remote and muddled up the channel list or altered the search settings? You can restore to factory default. Press Menu and then the left arrow to SYSTEM – Press OK, go down to Service – Press OK. Here you can RESTORE the system to the out of the box settings using the FACTORY RESET feature. **DO NOT** backup your own settings (with the BACKUP option) as you will overwrite our factory programmed settings and you may render your system unstable or non-operational ☹.

*Pause Rotation* – to pause the mechanical operation during the search press the “PAUSE” button on the remote. Pressing it again will resume the search sequence. For normal TV viewing the pause button will “freeze” the picture.

*Arcade Action!* – Ok, everyone complains that there is never anything good on TV. We've added some retro style games to relieve the boredom. You will find them in the Menu Options under “Games”.



Got a great picture of your van/motorhome with the dish in a great location? Please email them with your name to [photos@vansat.com.au](mailto:photos@vansat.com.au) and we will post them on our website! HAVE FUN !



© 2017 Aardvark Electronics  
2 Maple Drive  
Mackay QLD 4740  
Ph 07 49555879  
Fax 07 49556216  
Web : [www.vansat.com.au](http://www.vansat.com.au)  
Email : [support@vansat.com.au](mailto:support@vansat.com.au)