SatKing ORBIT

Fully Automatic

Motorised Satellite TV System

User's manual

ver 1.0

www.satkingorbit.com.au

Contents

1. General Information

1-1. Introduction 2
1-2. Proper use and operation 3
1-3. Safety notes 4

2. Contents

2-1. Components bundle 5
2-2. Name of parts 6

3. How to assemble dish (reflector) 7

4. Connection diagram 9

5. Functional description 10

5-1. Get ready to use 11
5-2. Searching the satellite 11
5-3. Back to HOME position & Turning off 11
5-4. STB power detection On/Off 11

6. Extra functions

6-1. Error message 12
6-2. Factory reset 12
6-3. Software upgrade 12
6-4. Advanced settings 13

7. Troubleshooting 14

8. Specifications

8-1. Dimension 15
8-2. Specifications 15

9. Caravan/Motorhome installation

9-1. Required space for the SatKing ORBIT 16
9-2. Equipment for installation 17
9-3. Installation 17
9-4. Battery connection 21
9-5. Options 22

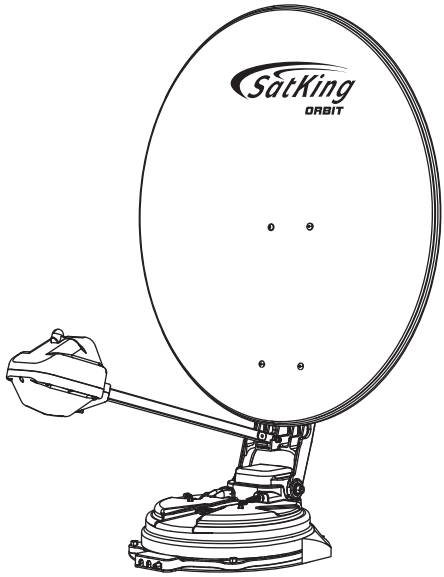
1. General Information

1-1. Introduction

These instructions describe the functions and operation of the SatKing ORBIT fully automatic satellite system.
Correct and safe operation of the system can only be ensured by following these instructions.

Your SatKing ORBIT is an intelligent satellite TV reception antenna system which can align itself towards a preset satellite automatically when the system is located within the footprint of the selected satellite. The latest Australian coverage map is available on www.satkingorbit.com.au.

For general operation, please ensure that the system always has a clear view of the Northern Sky. If the satellite's signal beam is interrupted by obstacles such as buildings or trees, the unit will not function and no satellite TV signal will be received, move your van slightly and try again. For more information on general use of this unit consult your local dealer for assistance.



1-2. Proper use and operation

This product has been designed for fixed installation on vehicles with maximum speeds of 130 km/h. It is designed to automatically aim an antenna at geostationary television satellites. The power to the system is supplied by a standard vehicle electrical system with a rated voltage of 12 Volts.

12V DC is default and recommended for use. If 24V DC has to be used, separate DC to DC downconverter must be used.

Use of the equipment for any other purpose to the one specified is not permitted.

Please also note the following instructions from SatKing:

- It is not possible to add or remove components on this product.
- The use of other components other than those originally supplied.
- When completing installation you or your contractor must strictly follow all instructions in the supplied user manual. Failure to follow the user manual may cause damage to the SatKing ORBIT or your vehicle.
- The product does not require any regular maintenance; all service must be carried out at approved service centre's.
- All relevant guidelines of the automotive industry must be observed and complied with.
- The equipment must only be installed on solid vehicle roofs.
- Avoid cleaning your vehicle with the mounted satellite system in a drive-through car wash or a car wash with a high-pressure cleaner.
- The SatKing ORBIT comes with a 2 year warranty, for full warranty details please visit our website www.satkingorbit.com.au
- After Sales Support Line 1300 139 255 or support@satking.com.au
- If you are using VAST all card activation and channel entitlement issue's are handled by the VAST call centre 1300 993 376. Their hours are 9am till 12pm and 2pm till 4.30pm QLD time.

1-3. Safety notes

Please carefully read and follow the operating instructions in this manual.

Upon installation of the ORBIT, please ensure the installation is done with supplied cables and ensure the controller cable is not modified in anyway, this carries data.

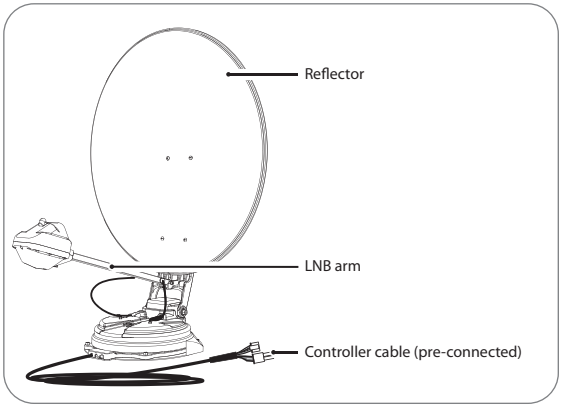
The driver of the vehicle must inspect the antenna unit before driving off to ensure that the antenna is properly stored in safe. Check to see if the antenna is fully folded.

As the user of this equipment, you are responsible for yourself ensuring compliance with the relevant laws and regulations.

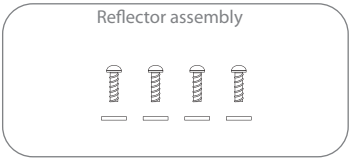
The manufacturer does not take liability for direct or indirect consequential damage of the system, motor vehicles or other equipment by reason of unsuitable battery usage or erroneous installation or wrong wire connection.

2. Contents

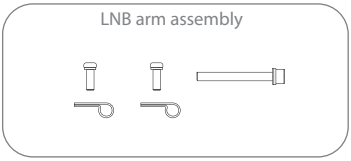
2-1. Components bundle



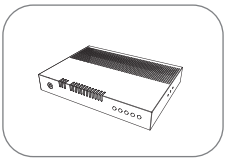
Main unit



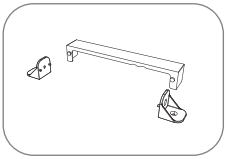
Truss head M6 × 15 (4),
M6 Flat mold washer (4)



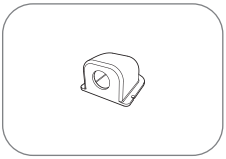
Cable clamp (2), Sems1 M4 × 10 (2)
Sems2 M6x55 (1)



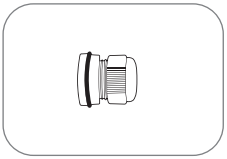
Controller



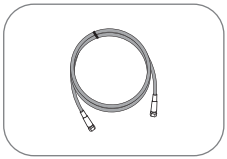
Controller bracket,
Rear cable cover



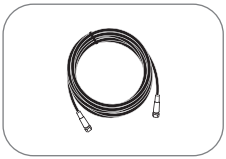
Cable holder



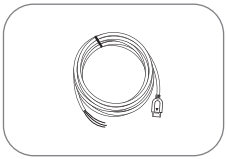
Cable gland



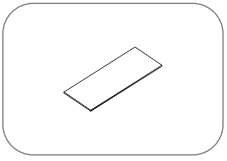
STB cable (3m)



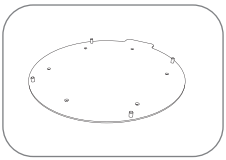
Signal cable (7m)
(x2 for twin output)



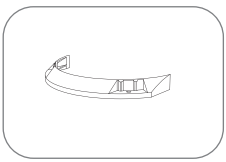
Power input cable



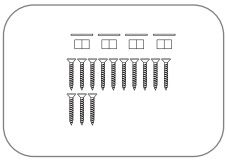
LNB protection pad



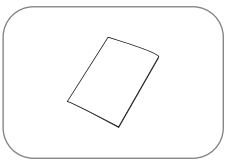
Mounting plate



Deflector



M4 × 20(13), Washer(4)
M8 locking nut(4)

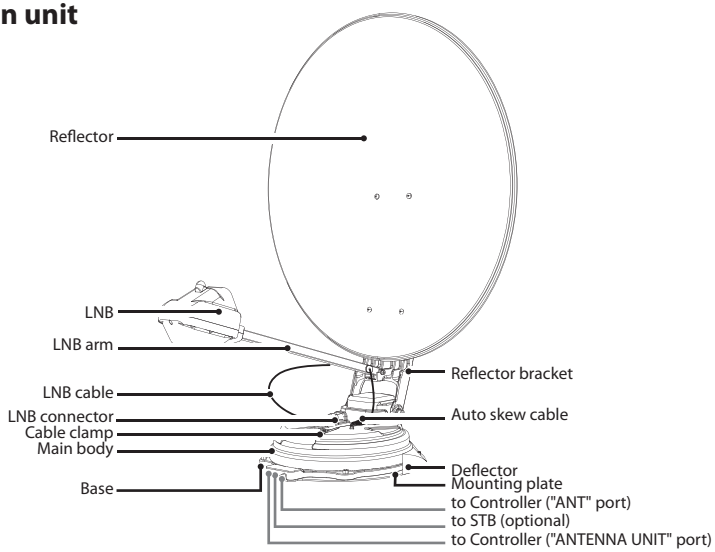


User manual

※ Actual components may differ from the above images.

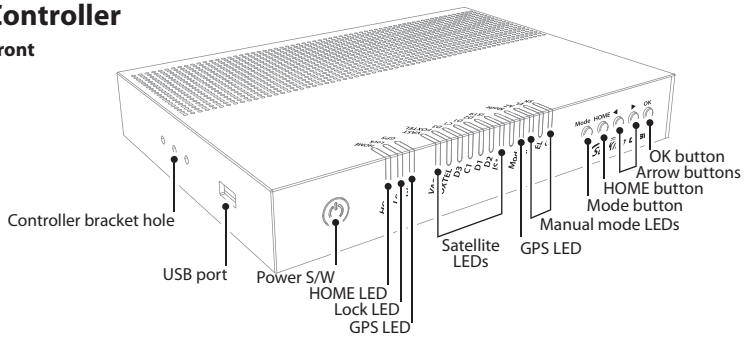
2-2. Name of parts

Main unit



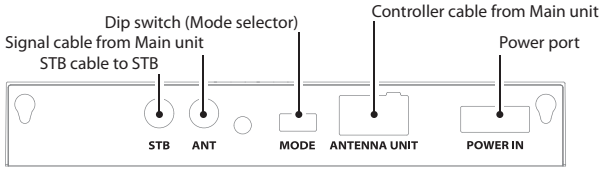
Controller

• **Front**



LED Indicator	On	Off	Blinking

• **Back**



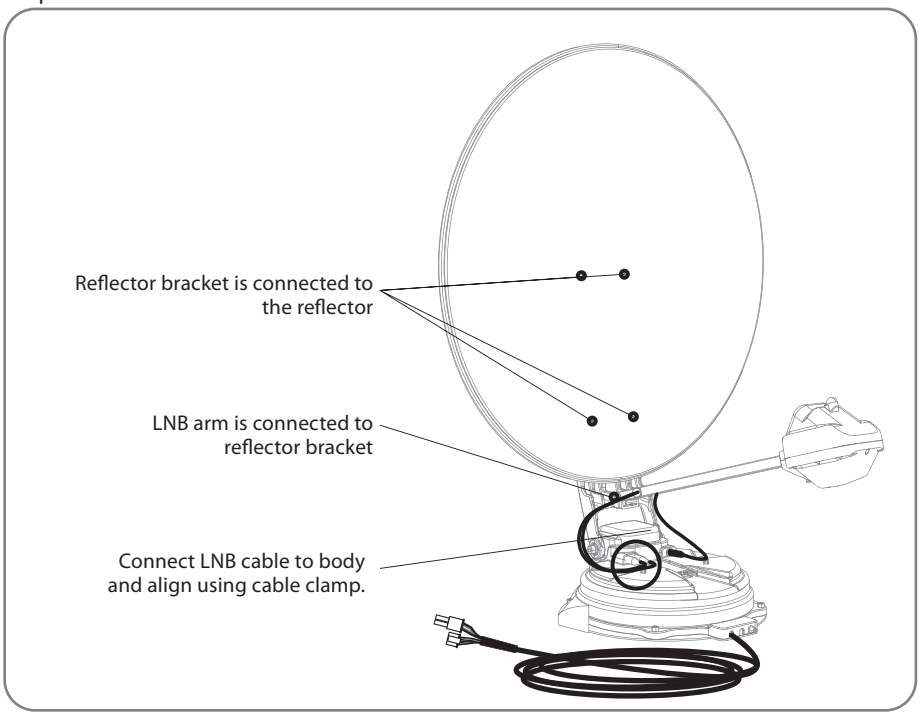
Note. Make sure that dip switch is set for right mode. (see page10)

3. How to assemble dish (reflector)

Step 1 : Press POWER button on the controller to turn on the unit and press OK button on any satellite

Step 2 : When reflector bracket is lifted up to vertical direction(about 90 degrees), turn the unit off

Step 3 : Connect the reflector to the reflector bracket



Step 4 : Combine LNB arm with reflector bracket

Step 5 : Connect LNB cables and auto skew cable to the connector on the body, and cover the connectors on both sides with waterproof cap for protection

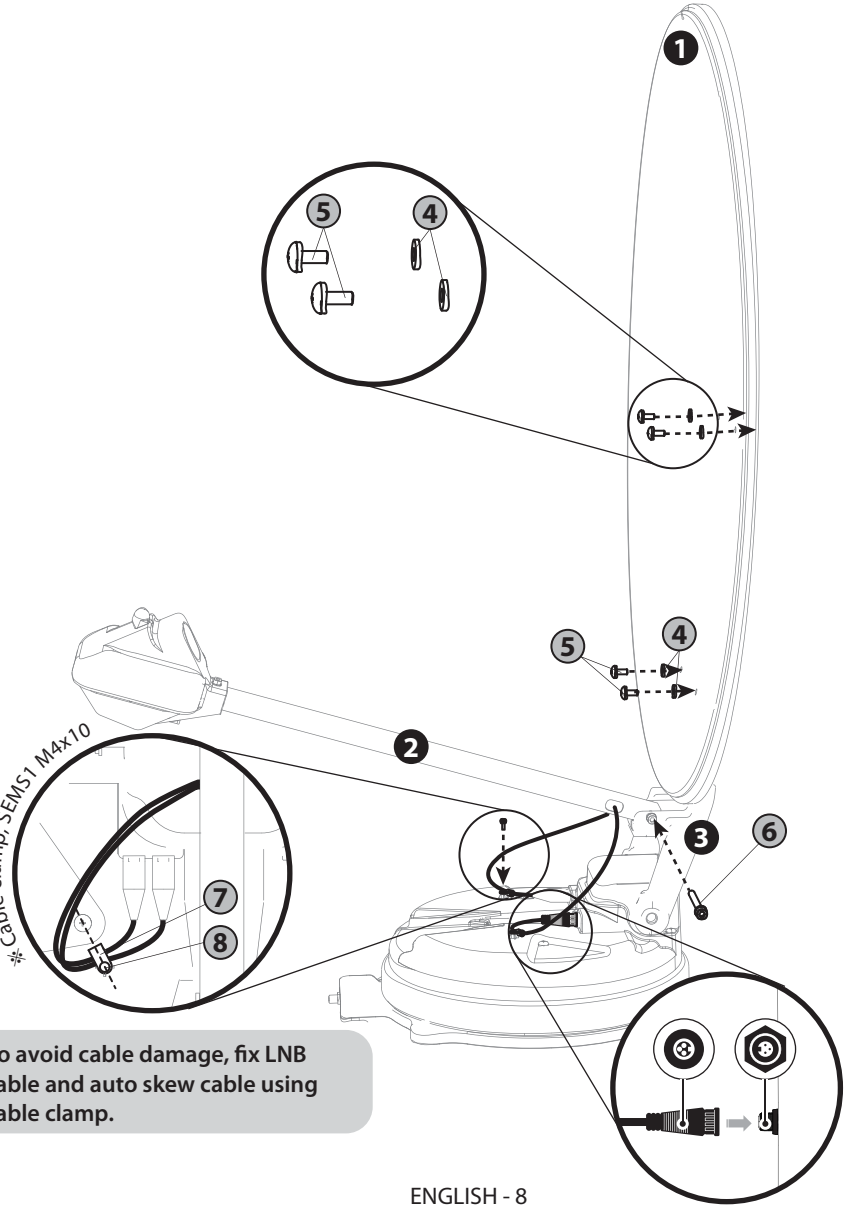
Step 6 : Align LNB cables on the body using cable clamps

※ To avoid cable damage, fix LNB cable and auto skew cable as enlarged image on following page.

Step 7 : Power on and check the installation is completed by selecting HOME position

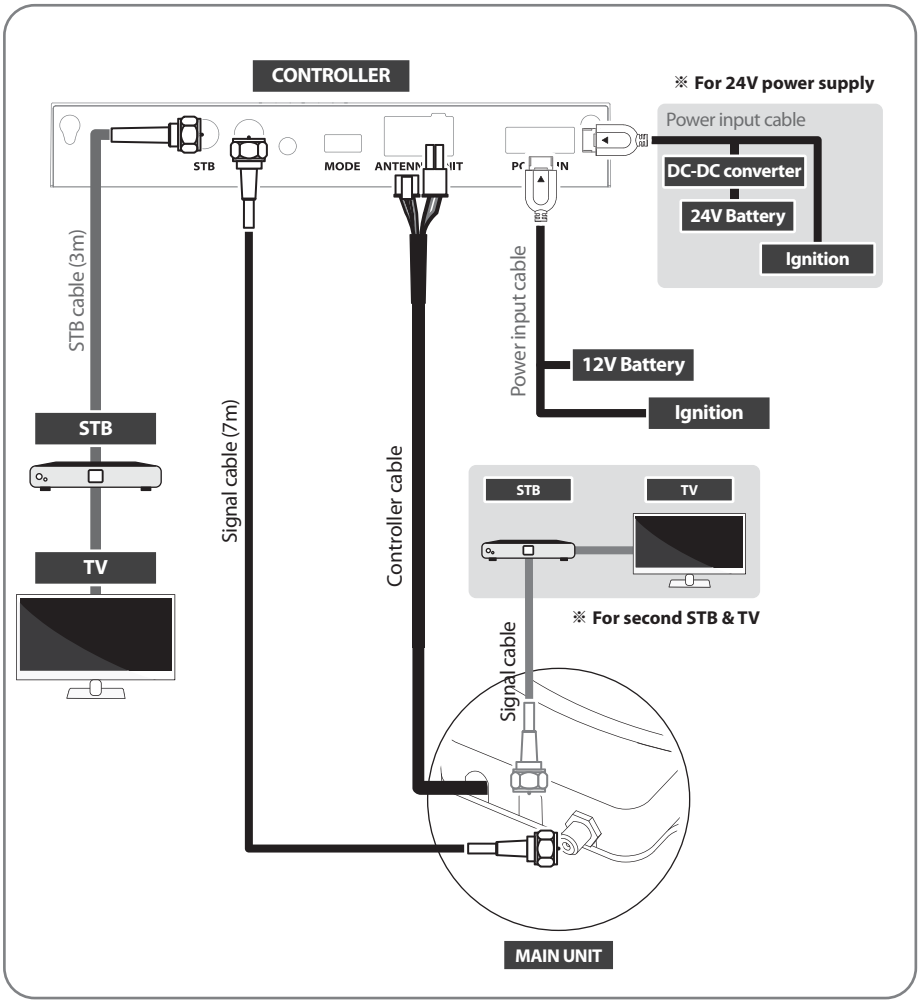
Required parts for assembly

No	Part name	Quantity
①	Reflector	1
②	LNB arm	1
③	Reflector bracket	1
④	M6 flat mold washer	4
⑤	Truss head M6x15	4
⑥	SEMS2 M6x55	1
⑦	Cable clamp	2
⑧	SEMS1 M4x10	2



※ To avoid cable damage, fix LNB cable and auto skew cable using cable clamp.

4. Connection diagram

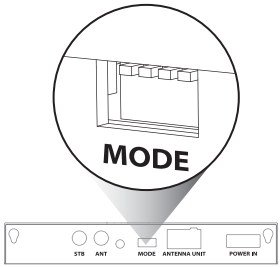


- Use controller cable to connect the antenna to the controller. Controller cable is pre-connected to the main body.
- STB cable and signal cable are different lengths. Please check the lengths to use the correct cable for the job.
- Please ensure the supplied cables are used and not modified in anyway.

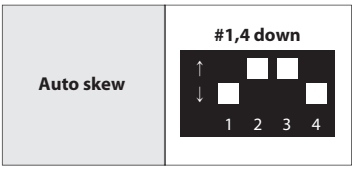
5. Functional description

5-1. Get ready to use

See below the controller has correct pre-setting.
Do not change setting unless mismatch with below example.

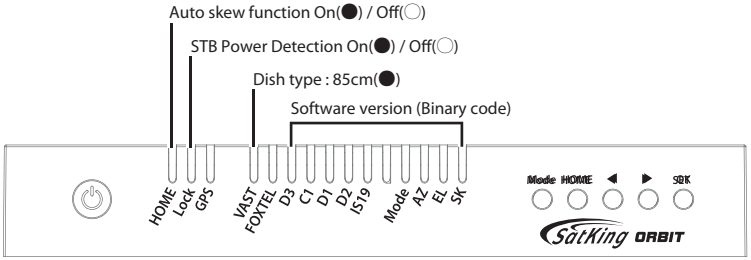


Controller Back



※ Incorrect setting causes deterioration of reception performance.

a. When the all cable connections are completed, press Power button.
b. All satellite LEDs will flash and then system is displayed like below image.



c. HOME LED and a satellite, either the default satellite "VAST" or the last selected satellite, will be solid this means the antenna is ready to go.
(If the antenna is not at HOME, HOME LED flashes while moving to HOME position)

※ HOME position is when the antenna completely folded down and facing backward.

d. GPS LED flashes while searching for the current location. When GPS position is confirmed the LED will become solid.

※ The ORBIT can still locate the satellite without the GPS locked.

e. Waiting until both HOME & GPS LEDs are solid is recommended as this will allow the unit to find the selected satellite faster with more precise alignment accuracy.

5-2. Searching the satellite

a. Select the satellite using the arrow buttons on the controller and press OK.
b. Lock LED will flash during search and become solid when the satellite is found.
c. If you have selected the wrong satellite, move to the correct satellite name using arrows and press OK to confirm new satellite.

5-3. Back to HOME position & Turning off

a. After use and before travelling, press HOME to return the unit to HOME position.
b. To fully turn off the unit, long press Power button when the unit is at HOME.
c. If you will stay in your location for an extended period or wish to save power you can leave the unit up simply by pressing the Power button and powering the unit off, the signal will still come through to your satellite TV receiver.

5-4. STB power detection On/Off

a. Ensure that the unit is turned off.
b. Press and hold right arrow button then also press the Power button.
c. When HOME LED becomes solid this means STB power detection is switched.

※ **When STB power detection (Lock LED) is ON,**
the antenna operates only while STB power is ON.

※ **When STB power detection (Lock LED) is OFF,**
the antenna operates with its controller regardless of STB power status.

6. Extra functions

6-1. Error message

Error message LEDs (HOME /Lock /GPS) will be illuminated at the same time if there is a problem with the main unit and detail is indicated as :

NO	LED indicator	Error detail
1	VAST	Low power
2	FOXTEL	Tuner error
3	D3	AZ motor error
4	C1	EL motor error
5	D1	SK motor error
6	D2	AZ motor current error
7	IS19	EL motor current error
8	-	-
9	Mode	High power
10	AZ	SK motor current error
11	EL	EL range error (Over the limit)
12	SK	LNB error

6-2. Factory reset

a. Ensure that the unit is turned off.
b. Press and hold HOME button then also press the Power button.
c. Factory reset takes less than 10 seconds.
d. When HOME LED becomes solid this means the factory reset is finished.
   (If the antenna is not at HOME, HOME LED blinks while HOME positioning)

6-3. Software upgrade

a. Transfer software program to a USB stick. (Do not place inside a folder)
   i. Go to website www.satkingorbit.com.au to download software program.
   ii. If controller does not recognise USB drive, plug USB into a PC.
   iii. Right click USB, go to "Properties" and check the File system is FAT32.
   iv. If not, right click USB, go to "Format" and re-setup a file system to FAT32.

b. Ensure that the unit is turned off and plug the USB into USB port of the controller.
c. Press and hold OK button then also press the Power button.
d. HOME / Lock / GPS LEDs blink at the same time while checking the program.
e. Software upgrade takes about 10 seconds.
f. When the upgrade is completed, all Satellite LEDs flash once.
g. HOME / Lock / GPS LEDs are off during the controller reboot.
h. When HOME LED becomes solid, the antenna is ready to use.
i. If failed, HOME / Lock / GPS LEDs blink 5 times and back to the previous system.

※ CBI type USB is not supported.

6-4. Advanced settings

a. Change VAST STB Home Transponder (TP)

In very low signal areas or in bad weather it may be an advantage to change the home TP in your VAST receiver, this will allow the VAST receiver to search for the strongest TP first.

※ **Due to signal levels all channels may scan in but not be available.**

b. SatKing VAST Receivers

i. Press Menu_Select Installation and press "OK"_Enter Password 1234.
ii. Press yellow button (TP Edit)_Change frequency to 11807.
iii. Green bars should appear down the bottom of the TV screen, once this happens press the red button. (start search)

c. UEC DSD 4121

i. Press Menu_Select #6 Advanced Options and press "OK".
ii. Select #2 Install Setup_press "OK".
iii. Enter password 1234_Select #1 Sat Signal Setup_press "OK".
iv. Select #1 Freq MHz_press "OK".
v. Manually enter 11807 and press "OK". Select #5 Accept these settings and press "OK".
vi. Select #4 satellite Rescan and press "OK".

7. Troubleshooting

There are a number of common issues that can affect the signal reception quality or the operation of the SatKing ORBIT. The following sections address these issues and potential solutions.

A. No function when you power on the controller

i. Check again that all the cable connections have been made correctly.

- ✓ Connection between the battery and controller.
- ✓ Connection between the controller and the antenna. Make sure that the cable is plugged into the correct port on the antenna.

ii. Check if the power input cable has been damaged.

iii. Check the battery polarities(+/-).

B. Failed to lock to the selected satellite

i. Satellite signals can be blocked or degraded by buildings and trees.
Make sure there are no obstructions in a northerly direction, maybe move van slightly.

ii. Select another satellite, VAST or FOXTEL both come from the same position but use different parameters so changing the satellite will force the unit to search different parameters.

C. Mechanical problems

i. If the antenna does not move into desired position,

Try to power OFF/ON again or remove the power jack from the controller and then re-connect.

ii. If the antenna makes a noise whilst remaining static,
Try to power OFF/ON again or remove the power jack from the controller and then reconnect. If problem persists, please contact your local distributor for assistance.

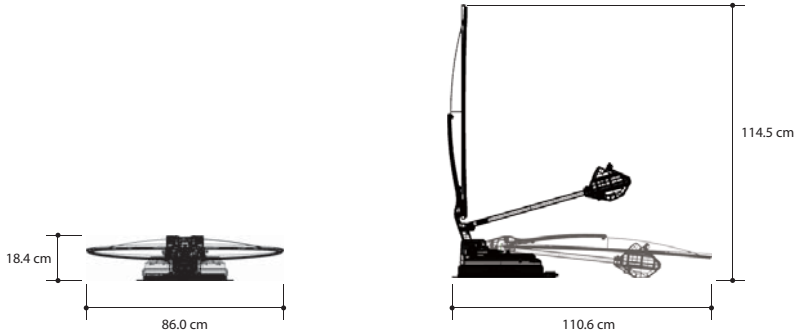
iii. If the system has been improperly wired, the system may not operate. Contact your local dealer for assistance.

D. Terrestrial antenna (Also known as local antenna)

i. We recommend that you retain your local antenna as there will be some locations where there are trees blocking the satellite signal and there is no clear view of the sky but there is adequate terrestrial TV signal available.

8. Specifications

8-1. Dimension



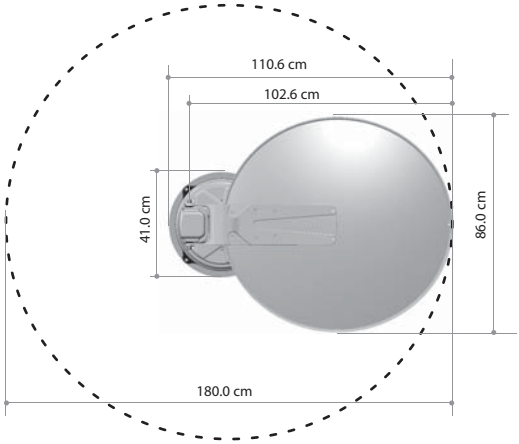
9-2. Specifications

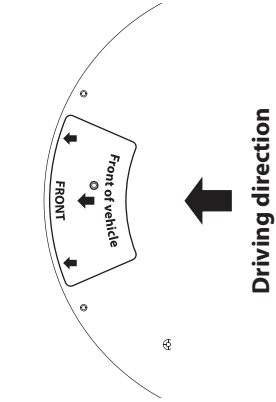
MODEL NAME	***SatKing ORBIT 85***
Dish size (Offset dish)	86.0(W) x 91.0(L) cm
Dimension / Weight	110.6(L) x 86.0(W) x 18.4(H) cm / 15.1 kg
Work Condition	Stationary
Polarization	Linear (Horizontal / Vertical)
LNB Output	Dual Output
LNB Input Frequency	11.7 ~ 12.75 GHz
LNB Output Frequency	1000 - 2050 MHz
Angle Range	(EL) 0° ~ 145° / (AZ) 390° / (SK) -60° ~ +60°
Satellite Searching Time	80 seconds (Average)
Power Requirement	DC 12V
Power Consumption	60W searching (4W standby)
Operating Temperature	-20°C ~ +60°C
Tuner	DVBS, DVBS2
GPS	24 channels
Gear Drive	Heavy Duty Full Metal

9. Caravan/Motorhome installation

9-1. Required space for the SatKing ORBIT

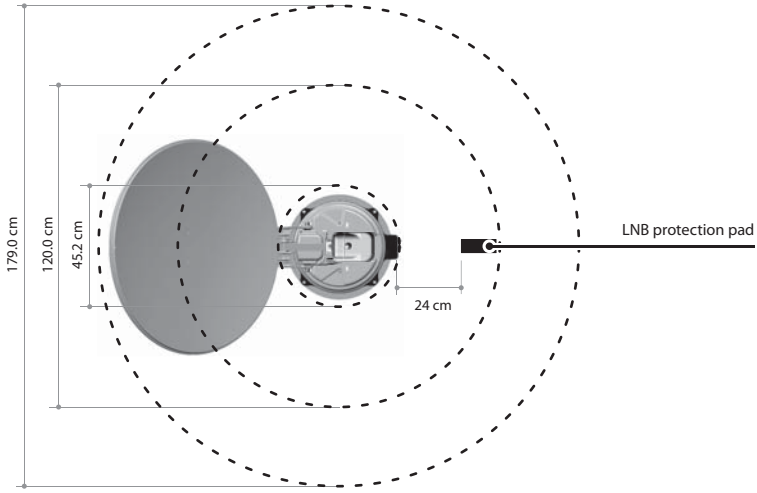
Please allow that there is enough space around the SatKing ORBIT for antenna section to complete a full 360° scan of the sky and return to the HOME position.

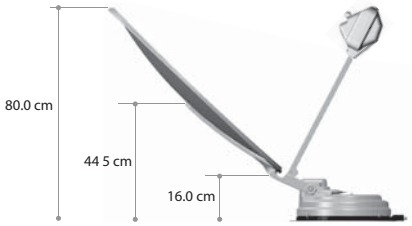




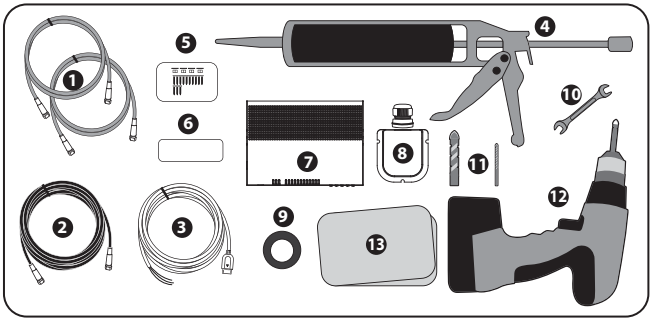
※ **Mounting plate direction**

Driving direction





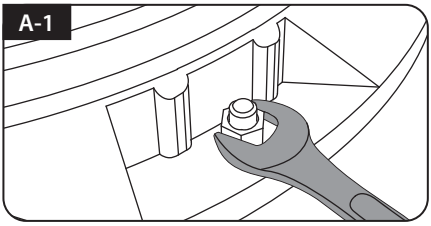
9-2. Equipment for installation



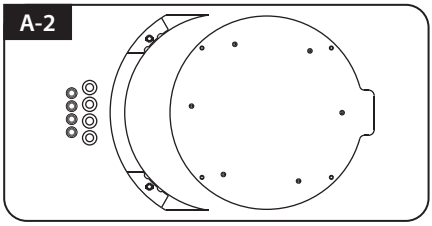
1. Signal cable × 2
2. Controller Cable
3. Power input cable
4. Sikeflex
5. M4×20(13), Washer(4), M8 locking nut(4)
6. LNB protection pad
7. Controller
8. Cable gland & holder
9. Electrical tape
10. Spanner
11. 2mm drill bit, 25mm drill bit
12. Power drill
13. Cleaner

9-3. Installation

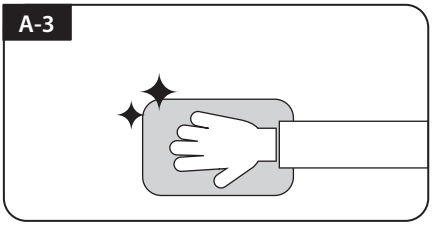
A. Mounting plate installation on a vehicle roof



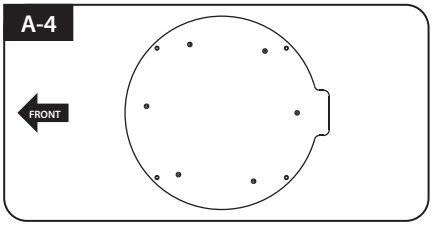
Loosen nuts and remove nuts and washers on the main unit



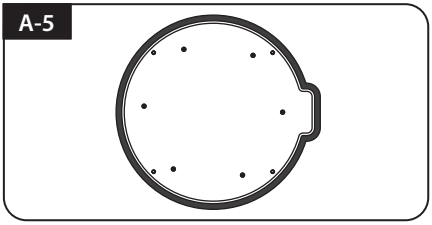
Keep the main unit and parts aside for re-assembly after mounting plate



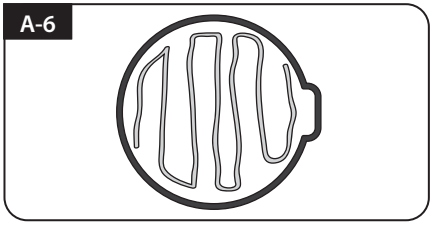
Clean the surface with cleaner



Locate mounting plate in the centre of the vehicle roof



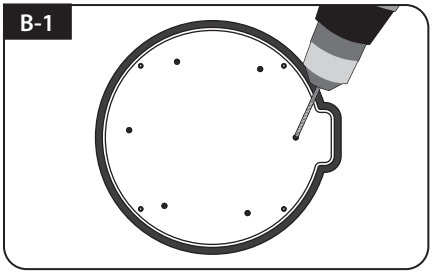
Attach electrical tape outside of the mounting plate by 5mm away from the plate edges



Put aside the mounting plate to apply sikaflex with in the attached tape line but leave 2cm inward gap from the line

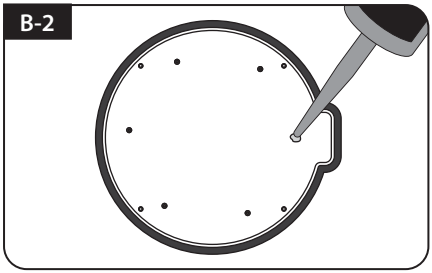
B. Screw 6pcs of M4x20 bolt to fix the mounting plate

B-1



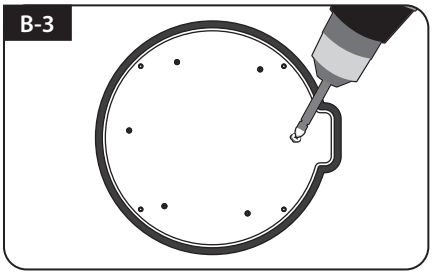
Place the mounting plate on the sikaflex and make 6 holes (2mm) with a power drill

B-2



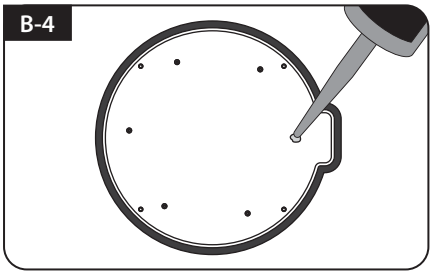
Apply sikaflex on the holes

B-3



Insert screws

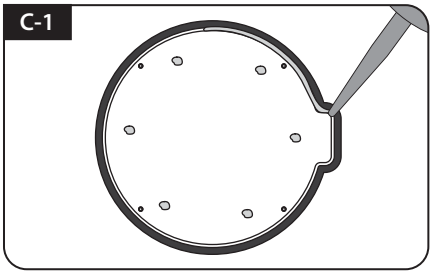
B-4



Re-apply sikaflex to cover bolts screwed

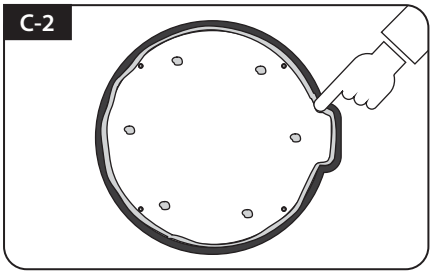
C. Apply sikaflex between mounting plate and electrical tape

C-1



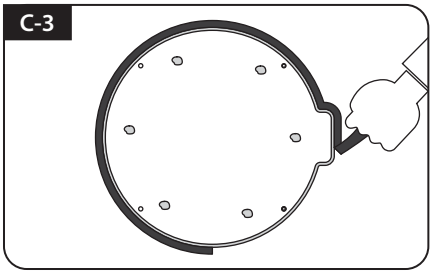
Apply sikaflex around mounting plate edge

C-2



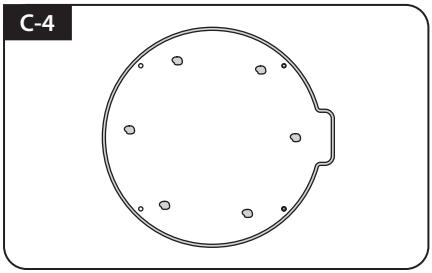
Clean away the excess sikaflex

C-3



Remove electrical tape and allow to dry

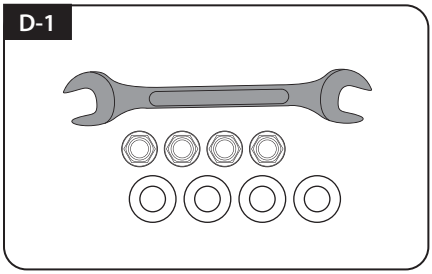
C-4



Prepare to place the antenna on to the four upright bolts

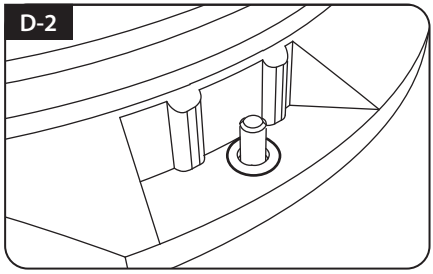
D. Fix the antenna main unit with 4 pcs of nuts using spanner

D-1



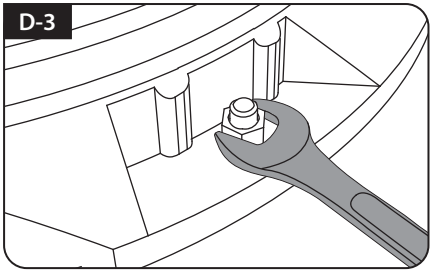
Parts required, spanner, four(4) nuts, four(4) washers and deflector

D-2



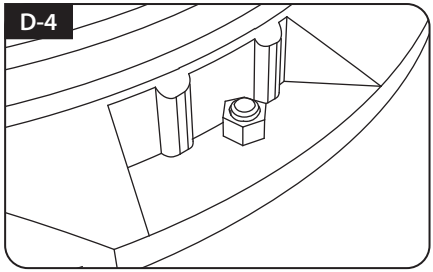
Place the antenna and deflector on the aluminium plate and put the washers over each bolt

D-3



Fit the supplied nuts to each of the four bolts and tighten firmly with spanner

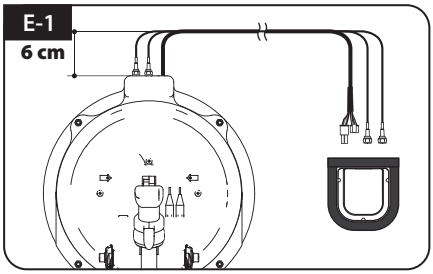
D-4



Make sure you check and four (4) nuts are tightened

E. Cable holder installation 1

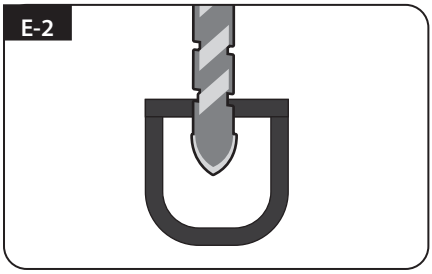
E-1



Connect signal cable to antenna, place cable holder and apply electrical tape 5mm from the outside of the cable holder

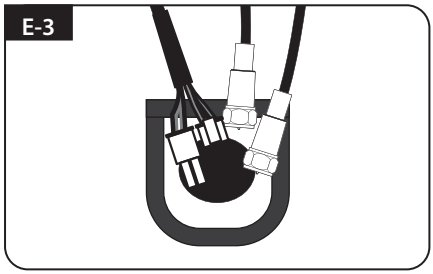
※ To avoid cable damage, fix cables as above image. Keep cables straight in 6cm from the antenna port and make curves toward cable holder.

E-2



Drill a 25mm hole (or larger) in the centre of the tape marking

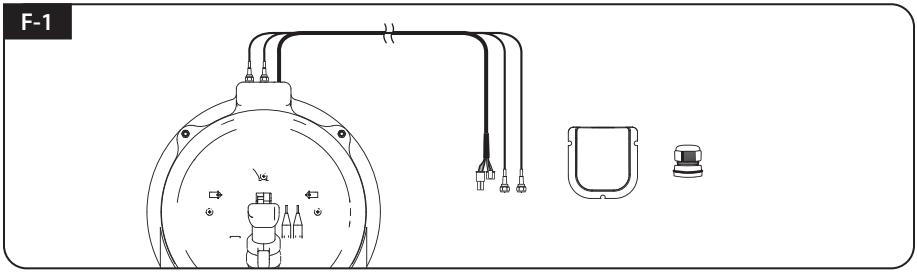
E-3



Make sure that hole size is big enough to insert all cables together by one and one

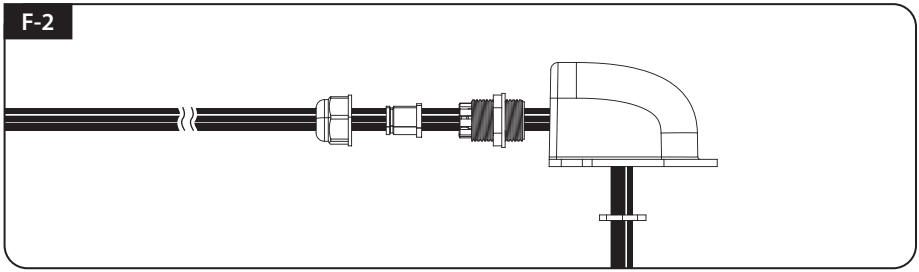
F. Cable holder installation 2

F-1



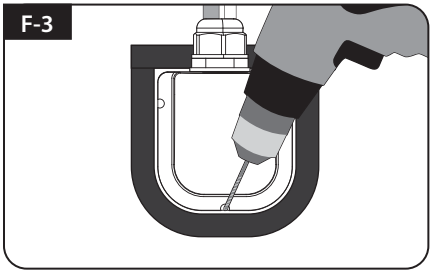
Get controller cable, signal cables, cable holder and gland

F-2



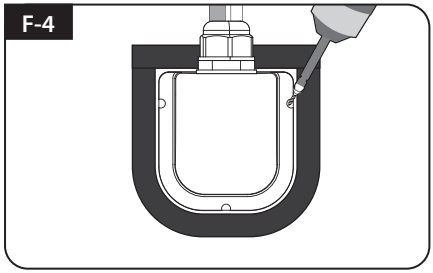
Put the cables inside the Cable holder as above picture.

F-3



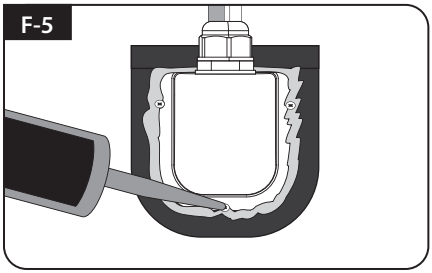
Place the assembled cable holder inside the tape markings. Drill three(3) 2mm holes

F-4



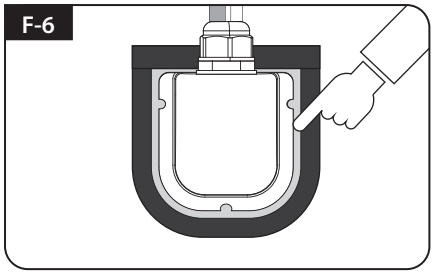
Fix cable holder on the vehicle roof with three(3) of M4 x 20 screws at drill holes made

F-5



Apply sikaflex around cable holder and on the top of the screws for waterproof

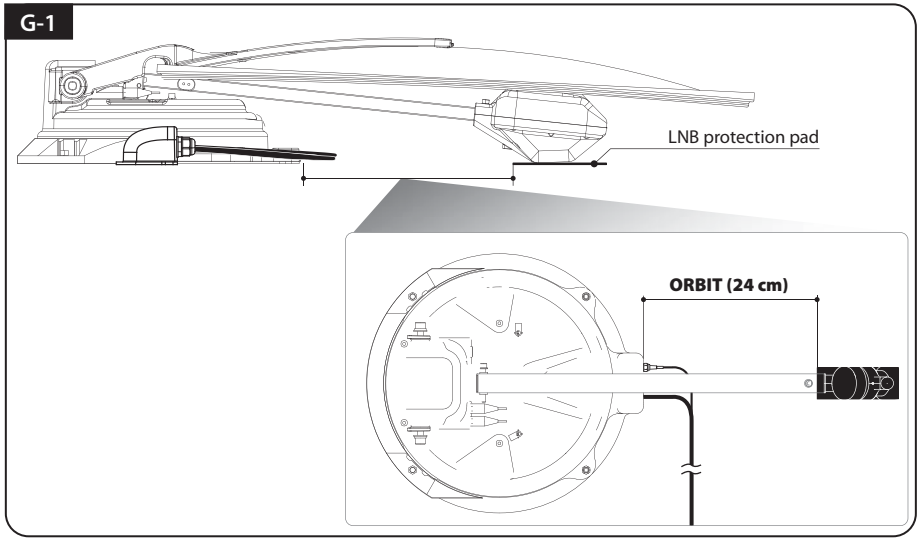
F-6



Connect cables to relative ports. Remove electrical tape then tidy sikaflex before dry

G. LNB protection pad attachment

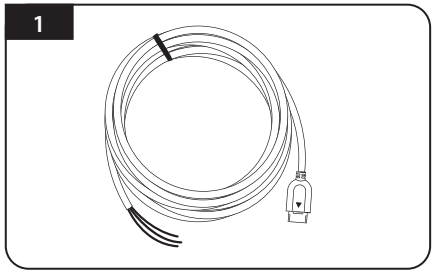
G-1



Attach LNB protection pad, placing one end by 24cm away from antenna port.
Check that LNB bracket sits on the pad properly and does not touch cables when home positioning

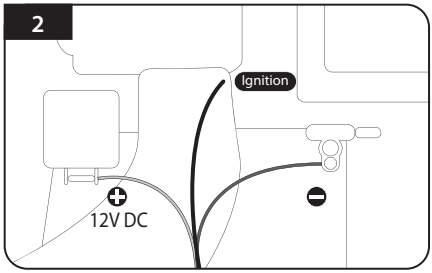
9-4. Battery connection

1



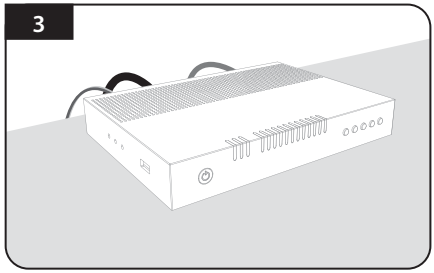
Get power input cable for battery connection

2



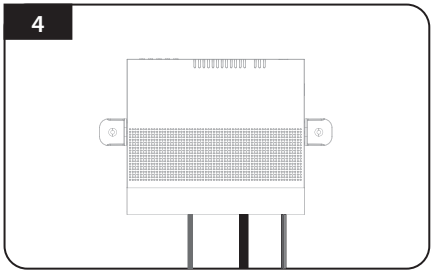
Match the power cables to the battery polarities, red-red, black-black and yellow ignition cable- ignition port of the vehicle

3



Plug the cables to the controller
(Power, signal, STB and controller cables)

4



If desire to place the controller on the wall, fix it with provided bracket and screws

Once all cables are connected, connection part can be hidden using rear cable cover

9-5. Options

a. SKU-9160 SatKing 2x4 Satellite TV Multiswitch

The Satellite TV multiswitch allows you to increase theORBIT's twin LNB outputs to 4.
This is required when you wish to use Foxtel IQ and VAST at the same time. Note you will also need to purchase 3x F to F 1metre cables.

b. SKU-5569 SatKing ORBIT mounting kit

If you would like to transfer your ORBIT to another van you will need this kit, package includes:
1x Mounting plate, 1x Controller cable, 2x Receiver cables, 1x WP gland, 1x Cable holder, 4x Nuts, 1x Spanner, 1x Power cable, 1x Controller bracket

c. SKU-6605 SatKing 24V to 12V Downconverter

If you wish to use the SatKing Orbit on a 24v vehicle you require this device to reduce the voltage to suit the Orbit as it runs on 12V.

Your ORBIT's Serial Number

Customer Help Line: 1300 139 255
Support Email: support@satkingorbit.com.au
Website: www.satkingorbit.com.au