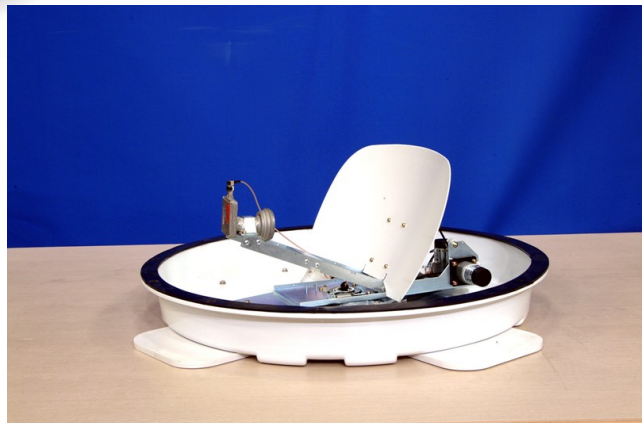


# MAJESTIC<sup>®</sup>

Mobile Dome Positioner Antenna

## ***SATPOS20D***



**Installation & User Manual**  
**Built in HD Digital Tuner**

This manual contains important product information on the use and maintenance of your SATPOS20D Dome Positioner satellite system. Please refer this manual for installation, operation, maintenance and contact information. Prior to contacting the manufacturer or dealer, have this manual and serial number available for reference.

## ELECTRICAL HAZARD WARNING

THE COAXIAL CABLE THAT CONNECTS THE OUTDOOR ANTENNA CARRIES ELECTRICAL CURRENT.

EXERCISE EXTREME CAUTION WHEN HANDLING THIS CABLE. DO NOT CUT, BREAK OR SPLICE THIS LINE. DO NOT INSERT OR CONNECT ANY DEVICES SUCH AS SPLITTERS OR ANY OTHER DEVICE FOR ANY REASON. THIS LINE IS NOT COMPATIBLE WITH ANY OTHER EQUIPMENT. DAMAGE WILL OCCUR TO ANY DEVICE OTHER THAN THE SATPOS20D OUTDOOR ANTENNA IF CONNECTED TO THE ANTENNA PORT.

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## 1 Introduction

The SATPOS20D satellite system is the innovative and a technologically advanced satellite Dome Positioner system. The SATPOS20D has a unique combination of state-of-the-art components with the most sophisticated satellite acquisition and tracking programs to provide the following features:

- Fast satellite acquisition
- Compatible with any Satellite Receiver
- Compatible with all Direct Broadcast Satellites (DBS)
- Built-in Digital Broadcast Receiver (DVB)  
Digital Receiver for HD signals

### 1.1 SATPOS-20D System Overview

A complete satellite TV system, illustrated in Figure 1-1, includes the SATPOS20 antenna connected to a control box (IDU), a satellite TV receiver, and a television set.

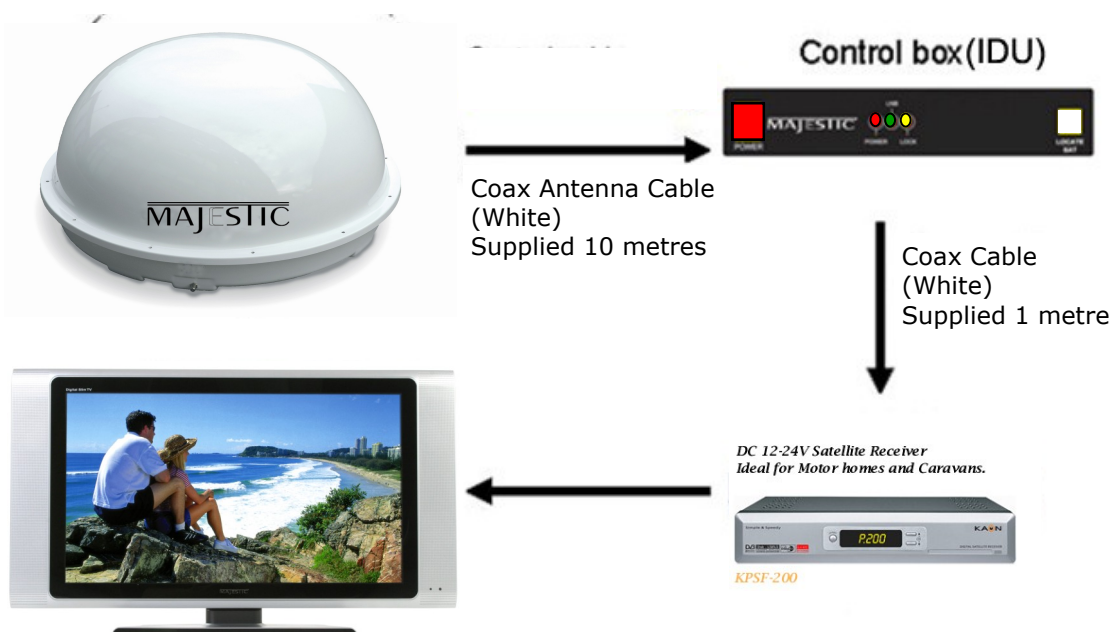


Figure 1-1

## 1.2 System Compatibility

The SATPOS20D satellite antenna is fully compatible with Digital Video Broadcasting (DVB) satellites, as well as OPTUS D1 satellite. At present, there is one Direct Broadcast Satellite position over New Zealand.

## 1.3 Direct Broadcast Satellite Overview

Direct Broadcast Service (DBS) satellites broadcast audio, video and data information from satellites located 22,000 miles in space. A receiving station, such as the SATPOS20D, should include a dish and satellite receiver to receive the signals and process them for use by the consumer audio and video equipment. The system requires a clear view of the satellite in the sky to maximize the signal reception.

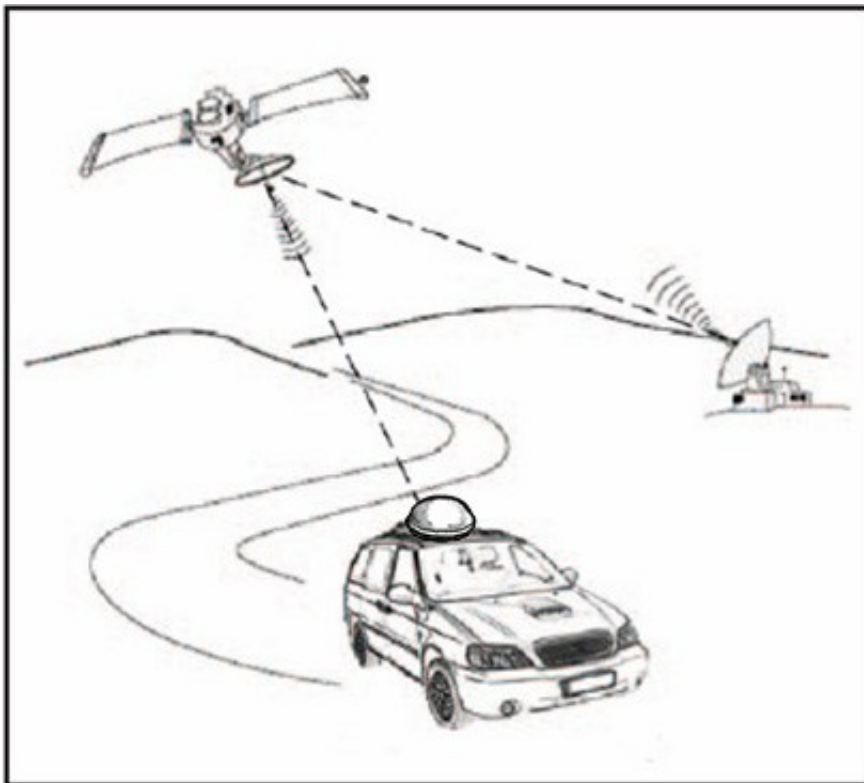


Figure 1-2

## 1.4 Line of Sight (LOS) Interruption

The SATPOS20D needs a clear line of sight (LOS), view to the satellite for uninterrupted reception. Objects such as tall buildings, bridges, tunnels and trees that block this view will cause a loss of signal. The signal will be quickly restored once the antenna has a clear line of sight again.

Heavy rain, cloud, snow or ice may also interfere with the signal reception quality. If the satellite signal is lost due to blockage or severe weather condition, services from the receiver will be lost (picture will freeze frame and may disappear). When the satellite signal strength is again high enough, then the receiver will resume providing desired programming services.

## 1.5 System Components

The standard SATPOS20D antenna system consists of the Outdoor Unit (ODU, dome antenna), the Indoor Unit (IDU), including Power Supply.

### **SATPOS20D Outdoor Unit (ODU):**

The Outdoor Unit houses the electronics, dish, LNB within a radome.



Figure 1-3

**SATPOS20D Outdoor Unit (Inside):**



Figure 1-4

**SATPOS20D Indoor Unit (IDU):**

The 2011 Digital IDU unit supplies power and controls the SATPOS20D Antenna. The Digital IDU is designed to provide improved performance and decode HD and Standard digital signal.

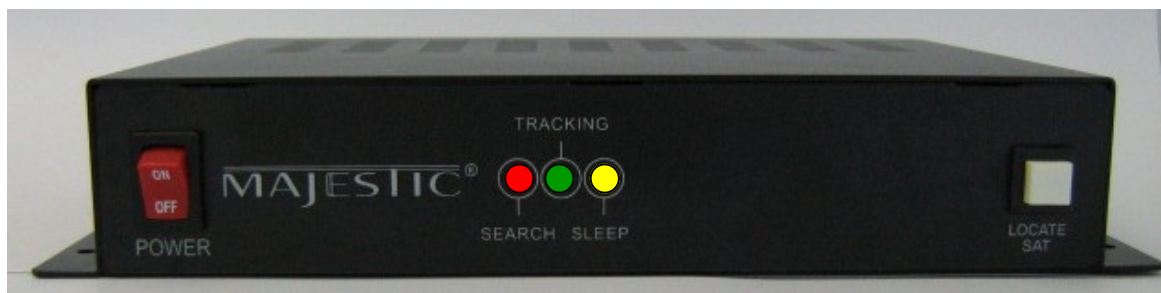


Figure 1-5

## 2 Installation

This section offers a general explanation of how properly to install the SATPOS20D antenna. Installation of the SATPOS20D must be accomplished by or under the supervision of an authorized dealer for the Limited Warranty to be valid and in force. The steps in the installation and setup process are as follows:

1. Preparing for the installation
2. Select location
  - Mount the antenna (ODU) on top of the vehicle
3. Equipment and cable installation
  - Install the Indoor Unit (IDU), Power Supply near the Satellite Receiver and TV
  - Connect the cables
4. Initial power-up and system checkout
  - Select the satellite

### 2.1 Unpacking the SATPOS20D

The following items are included in the packaging of the SATPOS20D:

Item	Description	Quantity
1	Outdoor Antenna Assembly (ODU)	1 each
2	Digital Indoor Unit (IDU)	1 each
3	Power Cable	1 each
4	Coax Cable (10m)	1 each
5	Coax Cable (1m)	1 each
6	Installation & User Manual	1 set

Be sure to verify the complete shipment of your system before beginning the installation.

#### 2.1.1 Preparing the SATPOS20D Antenna for Installation

Upon opening the shipping container remove the items listed in the table above



## 2.1.2 Installation Tools and Materials

The SATPOS20D system is designed for simple installation and setup. However, the following list of equipment or items should be available during installation of the SATPOS20D:

- Electric drill and drill bits (Define the size?) eg. 5mm & 2mm
- Philips and flat tip screwdrivers (Define the size?) eg. #2 & #0
- Socket wrench
- Silicon sealant
- Fastener suitable for specific application

## 2.2 Antenna Installation

### 2.2.1 Select Location

Perform a through site inspection on the roof for the antenna to be mounted.

1. The antenna must have a clear view of the sky and horizon at all the direction to avoid blockage of the satellite signal.
2. The antenna should be on the centerline of the vehicle.
3. The antenna should be mounted on as level a surface as possible.
4. Initial power-up and system checkout
5. Using two people, place the antenna onto the roof. Do not try to install the antenna by yourself.
  - Now that the location has been determined, place the antenna in its final desired location.
  - Make sure that it is the centerline of the vehicle

### 2.2.2 Equipment and cable installation

This offers a general explanation of how to install the Indoor Unit and satellite receiver properly to the inside of vehicle connecting with coax cable.

1. The RF cable is routed from the antenna to the IDU inside the vehicle.
2. Once decide where to place the IDU and satellite receiver, and make sure that both units are placed in a dry and protected area.
3. The IDU and satellite receiver should be placed away from any heat source and in an area with proper ventilation.

4. Ensure that there are at least 3cm of space around both units for ventilation and connection of cables.

**Do not stack the units on top of each other.**

5. The following describes the basic wiring configurations for the SATPOS20D antenna system.

- Connect the RF cable to the SATPOS20D port on the back of the IDU
- Connect one end of the supplied coax cable to the receiver



Figure 2-1

### 2.2.3 Initial power-up and system checkout

Once all of the system cables have been connected, and when the Power Supply is connected to the IDU then the antenna will have power applied and it should be ready to checkout the system.

The light indicators on the IDU have three different modes of operation.

- When the POWER LED is lit, it indicates that the IDU is turned on and tracking the satellite
- The LNB indicator lights up when your decoder is powering the LNB
- When the antenna acquires the desired satellite, the LOCK LED light is turned on

Power can be turned off by pressing the POWER button as shown in Figure 2-2

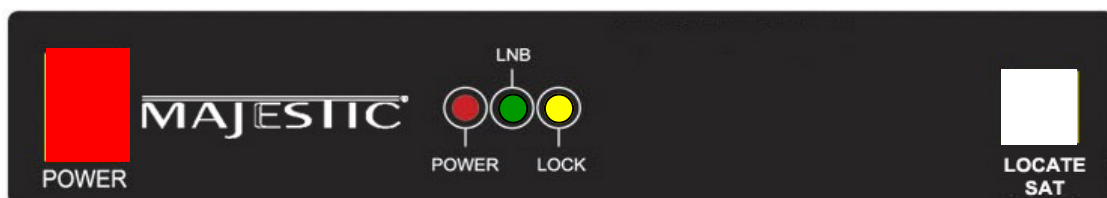


Figure 2-2

## SATPOS20D

Make sure that the television is on and set for the correct video input source from the receiver:

- Turn on the power switch of the IDU, satellite receiver and TV/monitor.
- Ensure the **Green** "LNB" LED is lit.
- The next step is pressing LOCATE SAT button. This action is to search the satellite and to make the satellite acquisition. The **Red** Power come on whilst the unit is tracking to the satellite.
- Once satellite is acquired and secured, the LOCK light will come on.
- The Unit can be turned off at this stage, once the unit has locked onto the satellite.

The Digital IDU Unit is designed to give quicker lock on time. The NEW IDU provides easier software upgrade to previous Analog SATPOS20 version

## 3 Operation

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### 3.1 Operating the SATPOS20D

The SATPOS20D system is easy to use. Under normal conditions, operation of the SATPOS20D requires no intervention from the user. Antenna unit initialization and satellite acquisition is completely automatic.

**The vehicle should be stationary for start-up and watch TV.**

### 3.2 The Satellite Acquisition with the SATPOS20D system

#### 3.2.1 Power on

- Turn on the power to the TV and satellite receiver
- Turn on the receiver using the POWER switch
  - ☺ Under normal conditions, the SATPOS20D will acquire the correct satellite and produce television programming in less than 1 minute.

**To minimize the time it takes the antenna system acquiring the satellite, do not change the channel during the startup process.**

#### 3.2.2 Changing Channels

If you have followed the installation instructions, your system should be set to the satellite of your choice and the system should have downloaded the appropriate channel guides. When the SATPOS20D system and satellite receiver is properly configured, it is easy to change the channel using the remote control that normally comes with the receiver unit.

#### 3.2.3 Watching TV at stationary location

The SATPOS20D is designed to operate as efficiently and as reliably as possible when the vehicle is parked. It is also the quickest satellite acquisition system available among the Dome Positioner antennas. After parking the vehicle and confirming that the antenna is receiving the satellite signal, you may turn off the IDU to avoid unnecessary use of power. Because the LNB receives its power from the ODU, and the antenna will continue to receive the satellite TV signals and relay them to the receiver.

#### 3.2.3 Memorizing the satellite position

Your new SATPOS20D system has a built-in function that remembers the position of satellite which has been tracked and acquired. If you move a vehicle from the location where you have watched satellite TV programs, pressing Sat Locate button will make satellite acquisition fast without the full search.

## 4 Troubleshooting

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### 4.1 Causes and Remedies for Operational Issues

There are a number of common issues that can affect the signal quality and/or the operation of the SATPOS20D antenna system. The following sections address these issues and potential solutions.

#### 4.1.1 System Not Power-On

- Verify that the Indoor Unit (IDU) and receiver are powered on
- Check the blown fuses
- Verify vehicle battery has been connected properly

#### 4.1.2 Improper Wiring

- Check the system is properly wired
- Verify that the IDU, ODU, and receiver units are properly connected
- Check the antenna unit cable connections with proper RF connectors

#### 4.1.3 Incorrect Satellite or LNB Configuration

- Check the satellite trying to acquire
- Select receiver menu, set the correct LNB frequency setting
- Check the LNB skew angle

#### 4.1.4 Search Failure

- Move the vehicle to clear location from obstruction
- Check the satellite coverage area

**Satellite signals can be blocked by trees and buildings, overpasses, underpasses or obstructive equipments on the vehicle.**

#### 4.1.5 Snow, Rain or Dew pooling on Dome

- Check the satellite trying to acquire—Optus D1
- Wipe and clean the outside of the Dome if heavy water droplets are present. Droplets will adhere to a dirty surface and create a barrier
- Check the drain holes in the base are free and clear.

#### 4.1.6 Satellite Receiver

- Check the satellite trying to acquire
- Select receiver menu, set the correct LNB frequency setting
- Check the LNB skew angle

#### 4.1.7 Flashing 'Power LED & Lock LED' on IDU Black Box

- Check cable connections and plugs from the Dish to the IDU Black Box and to the Receiver (decoder). Make sure these are tight and secure.
- If problem is still present call Majestic Auckland Office to speak with our Technical Support Person 09 415 6936
- Majestic Office can also direct you to our nearest Service Agent

#### 4.1.8 Flashing LED—all three (Communication Error)

- Double check cable connections and plugs from the Dish to the IDU Black Box and to the Receiver (decoder). Make sure these are tight and secure.
- If problem is still present call Majestic Auckland Office to speak with our Technical Support Person 09 415 6936
- Majestic Office can also direct you to our nearest Service Agent

#### 4.1.9 No Signal or 'Rain Fade' showing on TV but the Green and Orange LED on IDU (Black Box) are ON

- Check that the Digital Decoder is turned ON
  - Check cable connections between Decoder and IDU to the Dish
  - Check the Satellite parameter settings in your decoder
1. Satellite Name—Optus D1
  2. Decoder LNB Settings for — Freeview = 11300 and SKY = 10750
  3. Transponder Frequency—Refer to your Decoder Manual
- If problem is still present call Majestic Auckland Office to speak with our Technical Support Person 09 415 6936
  - Majestic Office can also direct you to our nearest Service Agent

## 5 Maintenance

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The SATPOS20D Satellite System has been designed to be maintenance and trouble free. For optimum signal strength, keep the dome clean from dirt, bugs, and other debris. Periodic washing and cleaning of the dome with mild soap and water is recommended.

If you have any comments or questions, please contact the Majestic Service Department.

## Appendix A - System Specification

Frequency Band	Ku Band
Operating Frequency	12.25GHz ~ 12.75GHz
LNB Local Frequency	11.3GHz
Dish Diameter	60cm
Radome Diameter	70cm
Radome Height	38cm
Antenna Weight	12kg
Antenna Gain	32dBi
Polarization Type	V/H
Stabilization Type	2-Axis DC Motor
Elevation Range	15° ~ 62° (selectable)
Tracking Rate	<50°/sec
Azimuth Range	370°
Temp Range	-22°C ~ 55°C
Humidity	95%@40°C
Power	12VDC@1.8A(Max)
Target Satellite	Optus D1



## Appendix B - Glossary

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**Azimuth:** The horizontal angle of observer's bearing measured clockwise from a reference direction. It is circular rotation around the vehicle hereby.

**Elevation:** Angle in degrees measured from the ground level.

**Signal Strength:** Intensity of electronic signal received from the satellite transmission.

## Limited Product Warranty

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Majestic warrants the SATPOS20D product purchased against defects in materials for a period of ONE (1) years and against labour costs for a period of ONE (1) year from the date of original retail purchase by the original purchase. It is the customer's responsibility to verify the date of purchase returning the warranty card included with the product to Majestic within 30 days of purchase, or by providing a dated sales receipt for the Majestic product under warranty with the warranty claim. If this date cannot be verified, the warranty period will begin 30days after the date of manufacture of the original product purchased.

If you discover a defect, Majestic will, at its option, replace or repair the product at no charge to you, provided you return it during the warranty period. Please attach your name, address, telephone number, a description of the problem and a copy of sales receipt as proof of date of original retail purchase, to each product returned to warranty service. Alternatively, you may bring the product to an Authorized Majestic dealer/distributor for repair. If the product was installed by an Authorized Majestic dealer/distributor, Majestic will cover the dealer's/distributor's labour charges for warranty repairs, provided that the dealer/distributor contacts Majestic for pre-approval of the charges.

This Limited Warranty does not apply if the product has been damaged by accident, abuse, misuse or misapplication or has been modified without the written permission of Majestic; if the unit has not been installed by an authorized installer; if any Majestic serial number has been removed or defaced; or if any factory-sealed part of the system has been opened without authorization.

THE EXPRESS WARRANTIES SET FORTH ABOVE ARE THE ONLY WARRANTIES GIVEN BY MAJESTIC WITH RESPECT TO ANY PRODUCT FURNISHED HEREUNDER; MAJESTIC MAKES NO OTHER WARRANTIES, EXPRESSED, IMPLIED OR ARISING BY CUSTOM OR TRADE USAGE, AND SPECIFICALLY DISCLAIMS ANY WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE, SAID EXPRESS WARRANTIES SHALL NOT BE ENLARGED OR OTHERWISE AFFECTED BY TECHNICAL OR OTHER ADVICE OR SERVICE PROVIDED BY MAJESTIC

