



Information: www.travel-vision.com

Dish Diversity System

INSTALLATION & USER'S MANUAL
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PREFACE

The information in this Installation and User's Manual is subject to change in order to improve reliability, design or function without prior notice.

In no event Travel Vision B.V. will be liable for technical or editorial errors or omissions herein.

Nor for incidental, special or consequential damages from the furnishing, performance or use of this Installation and User's Manual.

WARNINGS AND NOTICES

Follow instructions and heed all warnings in this Installation and User's Guide.

To reduce the risk of electric shock, do not remove the cover of the Dish Diversity Switch.

No user serviceable parts inside.

Refer servicing to qualified personnel.

Disconnect mains power before start working on the system.

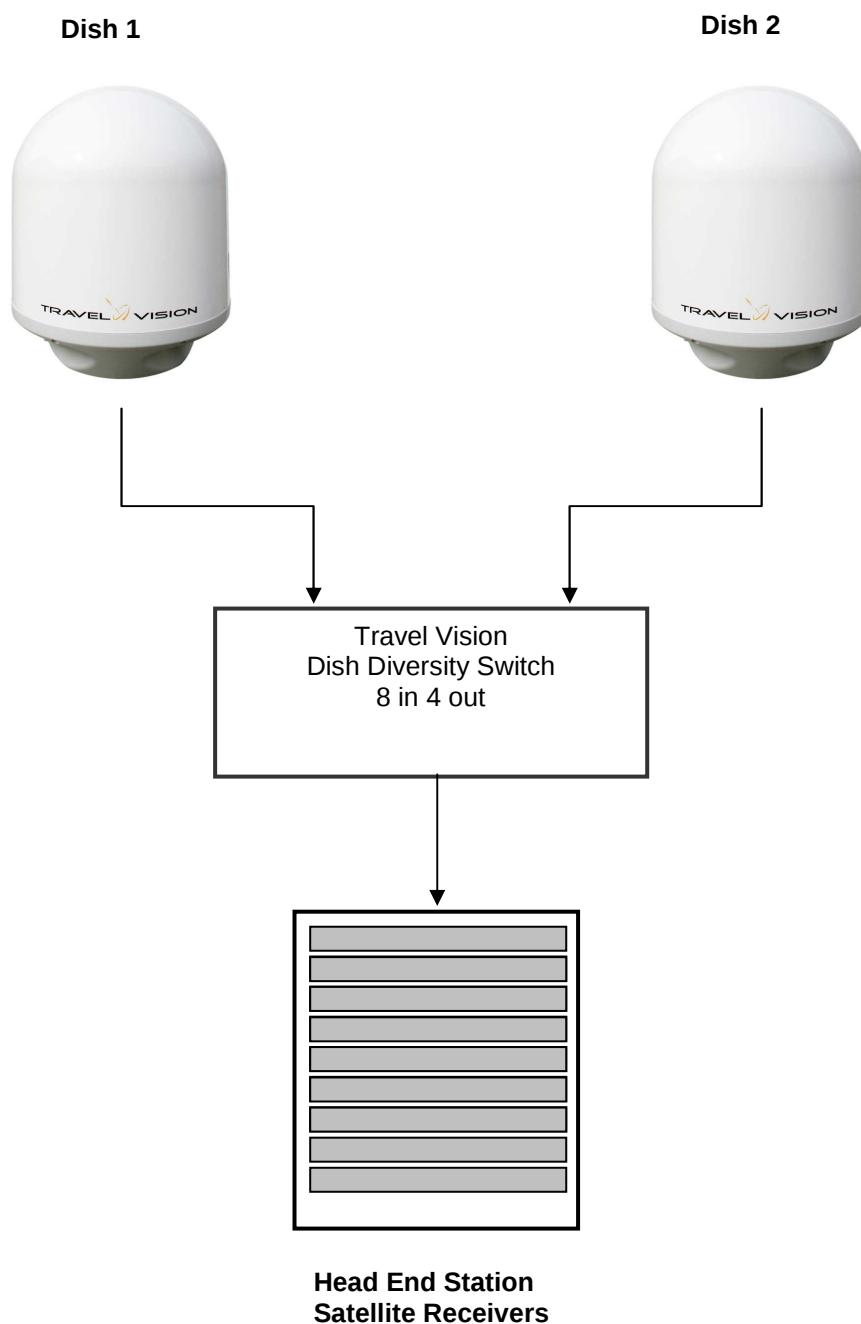
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1. System Description

Travel Vision's Dish Diversity System was developed to fit the needs of ship owners to have a diversity switch that does not depend on the brand and type of satellite antennas. It doesn't need to communicate with the antenna controller units. It simply takes a RF-signal sample from both dishes and entirely autonomous it determines which satellite dish gives the strongest signal and routes that 4 signal bands to the receivers. The system has a mechanism to compensate different cable lengths and signal levels.



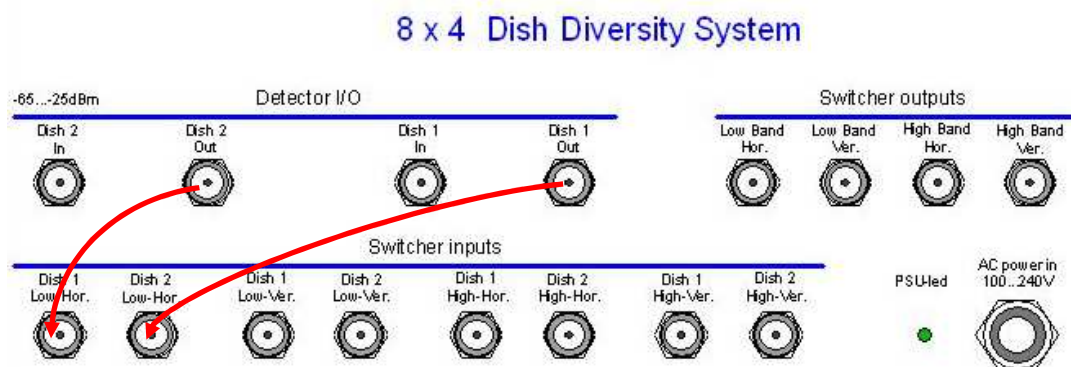
2. Hardware Installation

2.1 General Installation

The Dish Diversity Switch is provided with an Euro style Power cord and plug. Make sure that the mains power is disconnected before you start installing the system or working on the system.

2.2 Coax cable routing

Interfacing the Dish Diversity Switch



The red loops in the drawing above are coaxial loops that connect the output of the signal level detector to an input of the switch.

By default the loops are placed onto the Low band Horizontal input. This means also that the coax cable with Dish1 LNB Low band Horizontal shall be connected to input Detector Dish1 In and Dish2 LNB Low band Horizontal In to input Detector Dish2.

Any signal band can be used for signal strength measurement as long both detector inputs are fed with the same signal band. It is preferred to use a signal band that has multiple steady carriers.

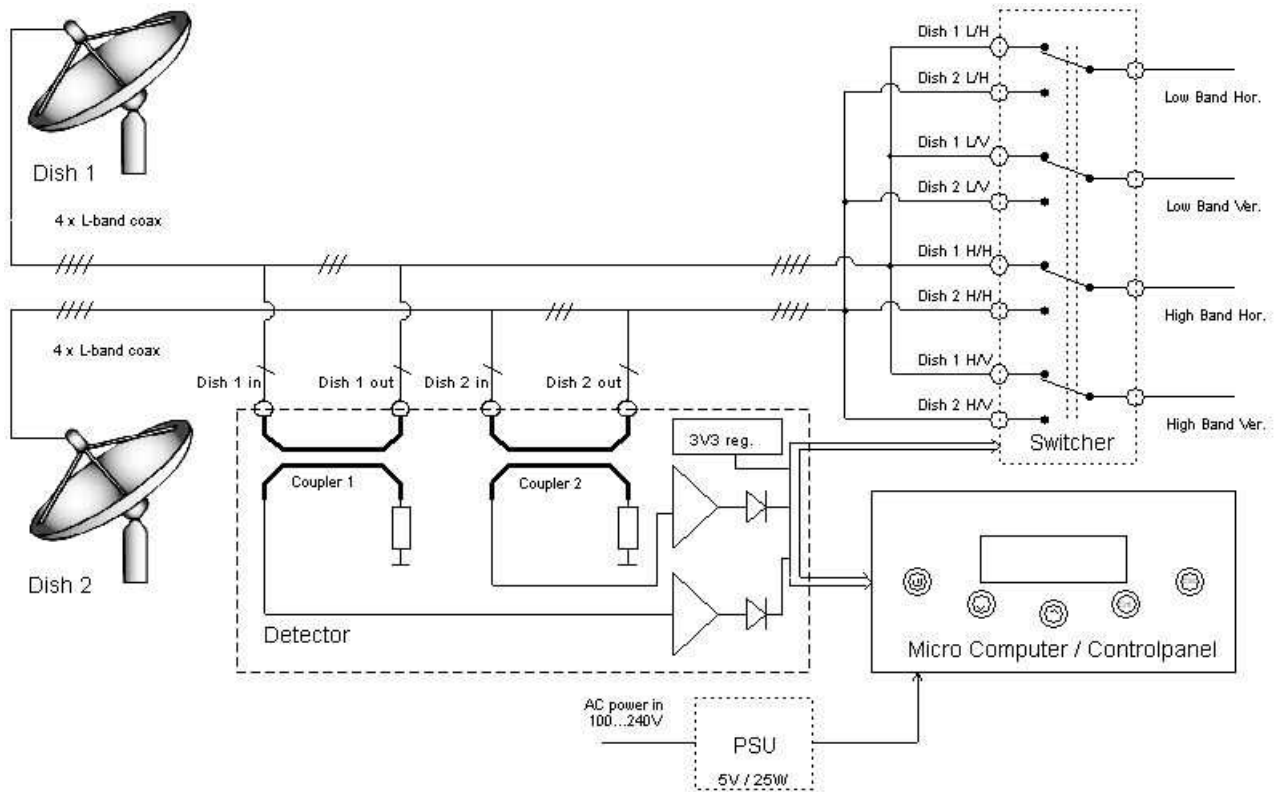
Although the switch section was designed to give minimum attenuation and maximum flatness over the entire L-band, it does introduce an additional signal loss of approximately 3dB.

The signal band that is routed through the Detector experiences an additional attenuation of approximately 1dB.

This additional attenuation is mainly introduced by the F-connectors and the coaxial wiring internally and the loops externally.

This means that if the systems signal level overhead is smaller than 4 dB, low gain amplifiers must be used to compensate the additional losses introduced by the Dish Diversity System.

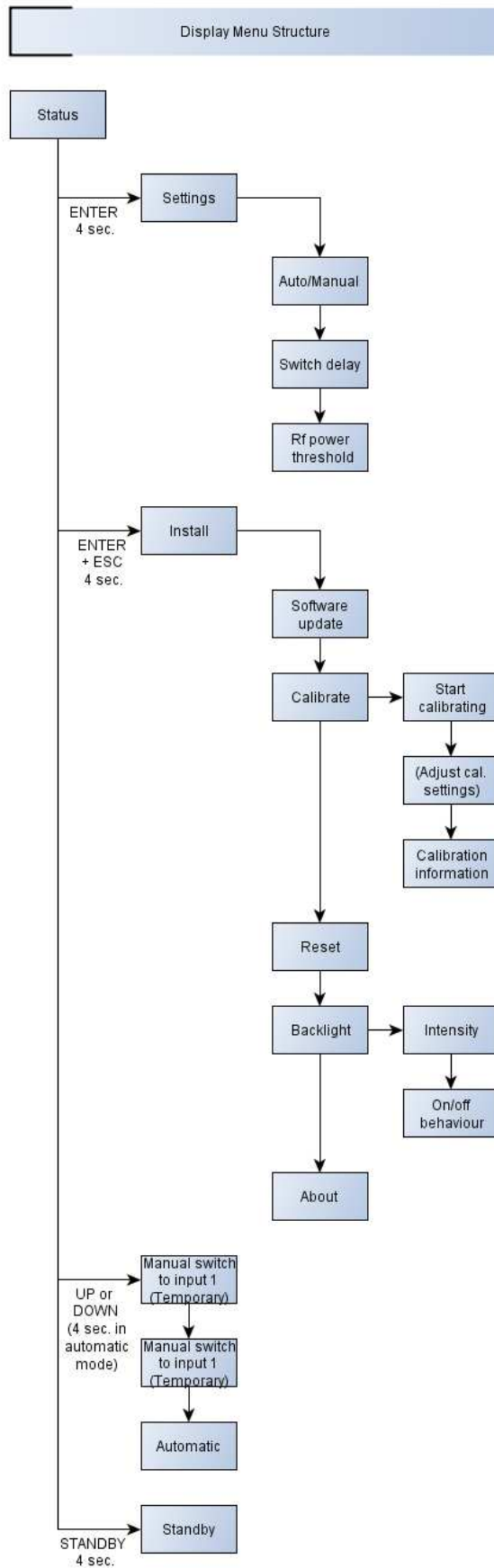
2.3 Wiring Schematic



3. Software configuration

The Dish Diversity Switch operates under embedded software control. If power is applied to the unit, the software will start automatically and no user intervention is needed. The embedded software can be updated using an USB memory stick.

3.1 Software Flowchart



When mains power is connected, after all RF cables are put into place, the software starts and will display the measured signal levels from Dish A(Dish1) and Dish B (Dish2).
If the detector has no signal or a level that is too low the display will show <-65 dBm.
If the level is too high, the display will show >-25 dBm
The level displayed is in dBm units. The level display cannot be compared to the levels that one would read from a spectrum analyzer. The reason is that the used level detector measures the RF power across the entire L-band.

When a key, or combination of keys is/are pressed (for 4 seconds) an user can enter the menu and alter setting or calibrate the system.

3.2 Calibration

Calibration shall be done after complete installation of all coax cables.
The purpose of calibration is to compensate for different cable lengths and signal levels.
Make sure that both satellite dishes are tracking the same satellite and have a clear view. Calibration can be done the best if the vessel anchored or on a steady course at calm seas.
Enter the installation menu by pressing the <Enter> and <Esc> keys (for 4 seconds). Then scroll down the menu pressing the ↓ key until Calibrate is displayed. Then press <Enter> to start the calibration routine. At this point the control unit reads multiple RF-signal samples from both dishes. The samples are compared against each other and stored into non volatile memory.
Leave the menu by pressing <Esc>. Then reset the system by either selecting Reset in the menu or power cycle the system.

3.3 Default Settings

The following settings are default. They can be changed by the user. Changing these settings will affect the systems performance. We advise not to change any settings unless you know very well what you are doing.

<u>Setting</u>	<u>Default</u>
Auto/Manual	Auto
Switch Delay	1 second
RF Power Threshold	02 dB
Backlight	On
Backlight Intensity	maximum

4. Specifications

Power Supply	Universal 100..240 Volt AC, 50..60 Hz 25 Watt maximum
Power cord plug type	Euro
Dimensions	29 cm (L) x 23,5 cm (W) x 11 cm (H)
RF detector	
Frequency range	L-band (950..2150 MHz)
Impedance	75 Ohm
Connectors	F-connector female (high performance type)
Pass through loss	<1dB typical
RF level handling	-65dBm to -25dBm
Switch Section	
Frequency range	L-band (950..2150 MHz)
Impedance	75 Ohm
Connectors	F-connector female (high performance type)
Pass through loss	<3dB typical
RF level handling	-65dBm to 30dBm (1Watt absolute maximum)
Isolation between Ports	> 30 dB typical
Isolation Port to Port	> 35 dB typical
DC current path	All port have a DC pass (jumper selection pass no-pass)
Maximum DC current	800 mA