

v100 Ku-to-Ka Convertible

Installation and Operation Manual

Serial number of the product

This serial number will be required for the all troubleshooting or service inquiries.

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CERTIFICATIONS

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FCC Declaration of Conformity

Intellian Technologies, manufactures of stabilized maritime VSAT antenna systems for satellite communication at sea, supplies stabilized maritime VSAT antenna systems to the satellite communication service providers for their ESV (Earth Station on Vessels) networks.

FCC §25.222 defines the provisions for blanket licensing of ESV antennas operation in the Ku-band. It defines the antennas radiation, and each article regulates the followings;

§25.222 (a)(1)(i)(A):	Regulation for Azimuth Direction & Co Polarization
§25.222 (a)(2)(i)(B):	Regulation for Other Direction & Co Polarization
§25.222 (a)(1)(i)(C):	Regulation for Cross Polarization

Intellian Technologies, Inc. declares that v100GX complies with the threshold level as defined in 25.222(a)(1)(i)(A):, and declares that v100GX is in accordance with all defined regulations from 25.222(a)(1)(i)(B) to 25.222(a)(1)(i)(C) at the below stated input power spectral density, with an N value of 1.

Product description	Intellian v100/v100GX, 103cm Ku-band maritime VSAT antenna system	
EIRP spectral density limit	-16.18 dBW/ 4 KHz	

Intellian Technologies, Inc. declares that the above antenna will maintain a pointing error of less than or equal to 0.2 degree under specified ship motion conditions in accordance with the requirements of \$25.222 (a)(1)(ii).

Intellian Technologies, Inc. declares that the above antennas will automatically cease the transmission with a mute command to the modem within 100 milliseconds if the target satellite and the axis of the main lobe of the ESV antenna exceeds 0.5 degree and will not resume until such angle is less than or equal to 0.2 degree in accordance with the requirements of §25.222 (a)(1)(iii)

Radiation pattern data is available upon request to verify the conformance.

Authority:

Steve Cha Director, Research & Development



Signature:

Date: May 13, 2013

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R&TTE Declaration of Conformity (DoC)

We, Intellian Technologies, Inc. located at 2F Dongik Bldg., 98 Nonhyun-dong, Kangnam-gu, Seoul 135-080, Korea declare under our sole responsibility that the product(s) described in the below to which this declaration relates is in conformity with the *essential requirements* and *other relevant requirements* of the Radio and Telecommunications Terminal Equipment(R&TTE) Directive (1999/5/EC).

Product Information:

Product Name(s):	Intellian v100/v100GX, 103cm Maritime VSAT Antenna System
------------------	---

To provide the presumption of conformity in accordance to Annex III(encompassing Annex II) of Directive 1999/5/EC; the following harmonized standards and normative documents are those to which the product's conformance is declared, and by specific reference to the essential requirements of Article 3 of the Directive 1999/5/EC.

1995/5/EC Article	Standard(s) Applied in Full	Date of Withdraw
SAFETY (Art 3.1.a)	IEC EN 60950-1: 2001 (1 st Edition)	Not Referenced
EMC (Art. 3.1.b)	IEC EN 60945: 2002 ETSI EN 301 489-1 V1.8.1: 2008	Not Referenced
SPECTRUM (Art. 3.2)	ETSI EN 301 428 V1.3.1: 2006-02 ETSI EN 302 340 V1.1.1: 2006-04	Not Referenced

Supplementary Information:

Notified Body Involved: (Testing Organization)	SK Tech Co., Ltd. 820-2, Wolmoon-Ri, Wabu-Up, Namyangju-Si, Kyunggi-Do, 472-905, Korea
Technical/ComplianceIntellian Technologies, Inc. (R&D Department)File Held by:32-1-4 Block, Jinwi Industrial Park Jinwi-Myeon, Pyeongtaek-Si, Gyeon	
Place and Date of issue:	Seoul, Korea on 20 Oct 2012

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Date:

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Doc Number IT12-DC1020-01

INTRODUCTION

Intellian v100 Introduction

Intellian v100 Features

System Configuration

Intellian v100 Introduction

Intellian v100 (1.03m) is a Ku-band 3-axis stabilized VSAT maritime antenna system. The v100 provides advanced VSAT solutions for Ku-band satellite services that are also designed to be convertible to Ka-band network. v100 is equipped with a new mounting architecture of RF module consisting of BUC and LNB.

The v100 is built to meet or exceed the industry's most stringent standards such as FCC, ETSI, R&TT and MIL-STD-167. The antenna's 3-axis stabilized platform and advanced shock-resistant and vibration damping design of the Pedestal is fully optimized to withstand the demanding maritime conditions and to ensure reliable broadband communications. The unlimited azimuth range ensures continuous tracking without unwrapping the cables in the antenna and the low elevation angle (-20°) supports seamless signal reception at extremely high latitudes.

Equipped with Intellian's next generation Antenna Control Software, 'Aptus[®]', the v100 antenna can be remotely accessed, monitored and controlled through Serial connection or secured TCP/IP network. Its graphic-based user interface provides easy-to-use operating environment. The v100 has also embedded webserver and secured web user interface called Aptus Web for remote management of the antenna on a web browser. Network connection can be easily setup through the front Management Ethernet Port on the ACU that supports automatic IP configuration.

The v100 is fully integrated with ABS (Automatic Beam Switching) function with various platform compatibility such as the OpenAMIP protocol of iDirect and the ROSS Open Antenna Management (ROAM) protocol of Comtech. The v100 is supplied with both cross-pol and co-pol feeds and comes equipped with Intellian's patent pending Global PLL LNB by standard.

Intellian v100 Features

Balance-free installation

The v100 is equipped with an integrated RF module consisting of BUC and LNB. This BUC and LNB mounting assembly is attached to the rear side of the reflector in order to support easy conversion and balance-free installation.

Optimized reflector for Ku or Ka-band

The v100 is designed and engineered to operate on both Ku and Ka-band. The reflector of the v100 is capable of handling either Ku or Ka-band without the need to replace the reflector when the system is converted to Ka-band. The system is supplied with a Ku-band feed chain as standard. The 1m reflector for the v100 satisfies EIRP and G/T performance of both Ku and Ka-band.

Gyro-free satellite search capability

Intellian's new generation gyro-free satellite search function enables the v100 to acquire and lock onto the satellite without requiring a separate input from the ship's gyrocompass.

DVB/DVB-S2 and NBD detection capability

Intellian v100 is capable of detecting DVB-S/DVB-S2 signal, SCPC, and Narrow- Band signal using integrated digital tuner and the narrow band detector (NBD).

Graphical and user-friendly antenna control software

Intellian's next generation Antenna Control Software, 'Aptus[®]' is developed based on the Intellian developed 'Antenna Remote Management System (ARMS) Software Development Kit (SDK)'. This graphic-based software is designed to remotely monitor and control Intellian antennas through an IP network.

Dedicated Management Ethernet Port

The v100 has a Management Ethernet Port on the ACU front that enables direct and simple network connection between a PC and the ACU. The Management Port supports DHCP network connection by default, allowing automatic IP configurations, Internet access and quick access to Intellian's remote management solution, the Aptus Web.

Wireless access via Wi-Fi

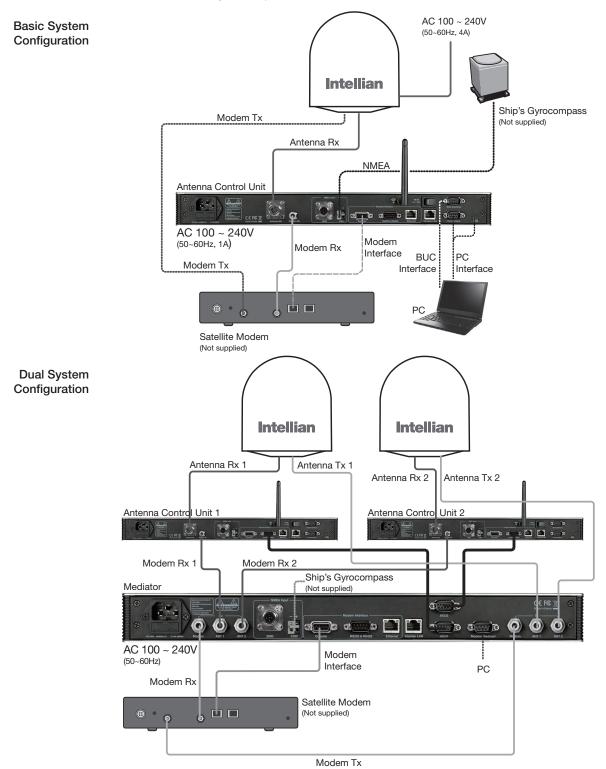
The built-in Wi-Fi wireless network card enables the ACU to be wirelessly connected that can be either turned on and off by a switch. Any kind of wireless devices such as PCs, laptops and smartphones can be used to connect to the ACU and monitor, control and change the settings of Intellian antenna system wirelessly.

Intelligent firmware upgrade

Intellian v100 provides easy and intelligent firmware upgrade methods. Firmware upgrade can be automatically initiated by plugging a firmware stored USB Memory Stick to the USB Port on the ACU front or by launching 'Firmware Upgrade' on the Aptus[®] or Aptus Web. User can also manually select a firmware file on a local disk and complete the upgrade. The firmware can be rolled back to a previous version as the ACU's built-in memory stores the current and previous firmware files.

System Configuration

For your satellite communication system to work properly, the system will have to be connected with all of the provided components as shown in the figure below. Separate purchase of a satellite modem, ship's gyrocompass, and Intellian Dual VSAT Mediator may be required.



INSTALLING THE ANTENNA

System Package

Antenna Unit ACU (Antenna Control Unit) Installation Kit

Planning the Installation

Selection of Antenna Installation Site Configure Radiation Hazard/Block Zones System Cables Power Requirement Tools Required for Installation

Antenna Installation

Unpacking the Wooden Crate Antenna Dimensions Antenna Mounting Templates Position the Radome Mount the Radome RF Cable Connections Secure the RF Cables

System Package

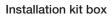
The package of Intellian v100 consists of antenna unit, lifting straps, ACU and installation kit box.

Antenna unit











Antenna Unit

The antenna unit includes an antenna pedestal inside a radome assembly unit. The pedestal consists of a satellite antenna main dish with RF components mounted on a stabilized pedestal. The radome protects the antenna pedestal assembly unit from the severe marine environment.

Antenna Unit



ACU (Antenna Control Unit)

The digital VFD (Vacuum Fluorescent Display) allows for easy operation of the ACU, even in the dark.



Front panel



Rear panel

The functions of the ACU are as follows :

- · Setting the satellite
- Editing satellite information
- Setting the antenna parameter
- Setting the antenna manual search
- Setting the LNB local frequency
- Setting radiation hazard or block zone
- Setting modem connections
- Setting GPS and Gyrocompass
- Display power status
- Built-in real-time diagnostics function
- Backup and restore the system settings
- Set up the interface with a PC
- Supports Wi-Fi ACU operation
- Recording antenna activities and firmware upgrade through USB
- Built-in web-based remote control management
- Front panel Management Ethernet port

Installation Kit

Contains the items required for securing the antenna unit and ACU to the vessel.

ACU box			
Description	Q'ty	Size	Remarks
Antenna Control Unit (ACU)	1	43.1 x 38 x 4.4cm	Antenna Control Unit
User Manual	1		
RF Hazard Sticker	1		Radiation Safety Distance Label
Mounting Tamplate	1		
Wi-Fi Antenna	1	110mm	
USB Flash Drive	1		

Components box			
Description	Q'ty	Size	Remarks
ACU Bracket (Rack)	2		ACU-19inch Rack
ACU Bracket (Table)	2		ACU-Table
RG6 Cable	1	3m	ACU to Modem
AC Power Cord (CEEE7/7)	1	1.5m	ACU Power
AC Power Cord (USA)	1	1.8m	ACU Power
AC Input Cable to Power Box	1	3m	AC Power to Antenna Power Box
PC Serial Cable	1	1.8m	ACU to PC
USB Cable (A-A)	1	1.8m	ACU to PC
Ethernet Cable (RJ45/LAN)	1	1.8m	ACU to PC
iDirect Interface Cable	1	1.5m	ACU to modem
D-sub 9 pin Male Connector	2	-	ACU
N to F Adaptor	1		N(Male) to F(Female) Adaptor
Hex Bolt	5	M12 x 100L	
Flat Washer	5	M12	— Antenna-Deck 4 Sets :
Spring Washer	5	M12	Installation 1 Set : Spare
Hex Nut	10	M12	
Hex Head Wrench Bolt	5	M6 x 40L	
Spring Washer and Flat Washer	5	M6	Radome (Spare Bolts)
Sems Bolt	2	M4 x 8	
Self-Tapping Screw	5	M4 x 16	Table Mount Bracket
Flat Head Screw	10	M4 x 12L	Rack Mount Bracket ACU
Sems Bolt	5	M3 x 12L	Table Mount Bracket ACU

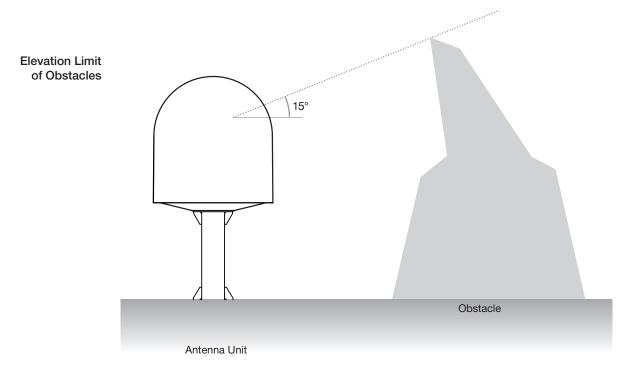
Planning the Installation

Selection of Antenna Installation Site

Install the antenna in accordance with the following procedures to insure maximum performance of the antenna. The ideal antenna site has a clear view of the horizon or satellite all around. Please be sure there are no obstacles within 15° above the center of the antenna. Any obstacles can prevent the antenna from transmitting and receiving the satellite signal.

Do not install the antenna near the radar especially on the same plane as its energy levels may overload the antenna front-end circuits. It is recommended to position the antenna at least 4 feet (1.2 m) above or below the level of the radar and minimum of 15 feet (4.6 m) away from the high power short wave radars.

The mounting platform should be rigid enough and not subjected to excessive vibration. The movement of the antenna can be minimized by installing at the center of the vessel. If these conditions can be only partially satisfied, find the best compromised installation site between the various considerations.



Configure Radiation Hazard/Block Zones

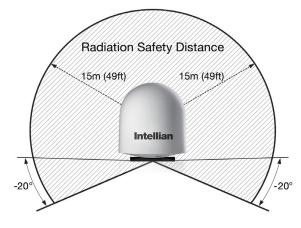
It is important to set up the radiation hazard or block zones for Intellian VSAT communication systems. The ACU can be programmed with relative azimuth and elevation sectors to create up to five zones where transmit power would endanger personnel who are frequently in that area or blockage exists. Several things happen when the antenna is within one of these zones.

- 1. "BLOCK" will be displayed on the ACU screen.
- 2. Tracking continues as long as the signal level is greater than the predefined threshold value. When the signal level drops below the threshold value the antenna will wait "Search Wait Time" parameter amount of time and re-target the satellite you targeted last. The antenna will continue to re-target the satellite until the satellite is re-acquired and tracking can be resumed.
- **3.** A transmit inhibit output from the ACU will disable/mute the modem transmission.

RF Hazard Precautions

The antenna is designed to be used with radiation transmit equipment manufactured by others. Exposure to RF radiation, including exposure associated with an improper use of the transmit equipment, may be hazardous to persons close to the above deck unit. Ensure safety of personnel who work on the system.

During transmission, ensure to keep the minimum safety distance. The recommended minimum safety distance to the reflector on the focal line is about 15m, based on a radiation level of 5mW/ cm2 that applies under occupational/controlled environment. No hazard exists >20° below the antenna's mounting plane.



Safe access from radiation hazard

System Cables

Before installing the system cables, you need to take the following points into consideration.

- 1. All cables need to be well clamped and protected from physical damage and exposure to heat and humidity.
- 2. Cable with an acute bend is not allowed.
- 3. Where a cable passes through an exposed bulkhead or deck head, a watertight gland or swan neck tube should be used.
- RF Cable (Customer Furnished)

Due to the voltage losses across the length of the RF coax on L-Band, Intellian recommends the following 50 ohm coax cable types for standard system installations. For cables that run longer than 200 meters, please consult Intellian Technologies.

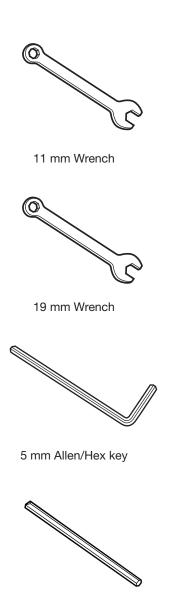
Recommended RF Cables

Coaxial Cable Type	Attenuation in dB/100M	Attenuation in dB/M	Recommended Cable Length
LMR300	30.3	0.303	35M
LMR400	19.6	0.196	60M
LMR500	15.9	0.159	80M
LMR600	12.8	0.128	100M
LMR900	8.6	0.086	150M
LMR1200	6.5	0.065	200M

Power Requirement

Intellian v100 has been designed to work on a vessel's power supply rated at 100-240V AC.





5 mm Allen/Hex key (for Power drill)

Power Drill



Phillips Head Screwdriver



Flat Head Screwdriver

Head Screwdriver (for Power drill)

Antenna Installation

Unpacking the wooden crate of v100

Step 1.

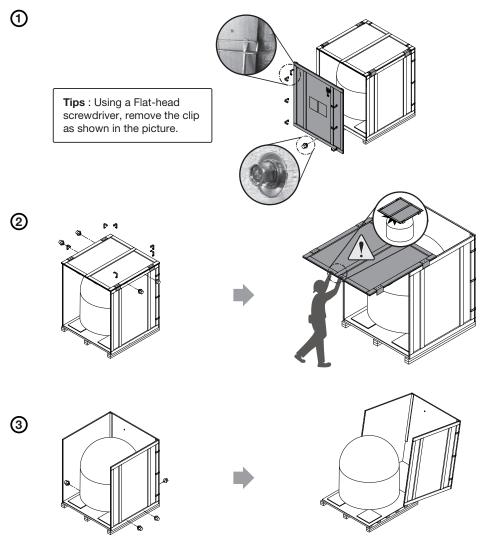
When uncrating the wooden crate, follow the procedures below.

1. Locate one of the side panels designed for fork lift. Detach this side panel by removing the fixing screw (1EA) and clips (8EA).

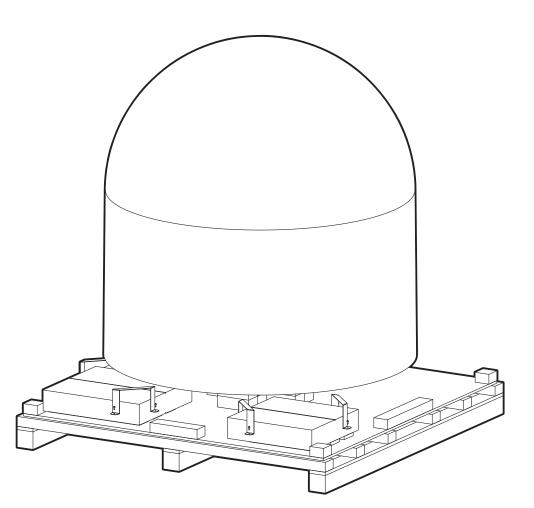
2. Remove the fixing screws (4EA) and clips (6EA) on the top panel. Detach the top panel by carefully pulling it as shown in the picture below.

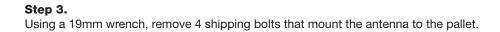
CAUTION : The side brackets at the edge of the top panel secure the side panels and top panel in position. When pulling the top panel, ensure that the top panel doesn't fall on the radome.

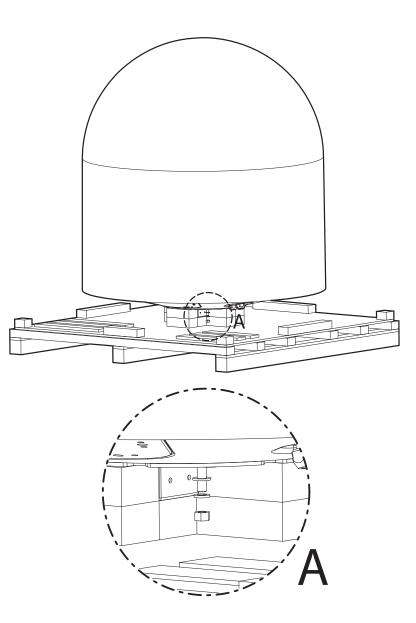
3. Remove the fixing screws (5EA) from the remaining side panels, then detach the side panels with clips on.





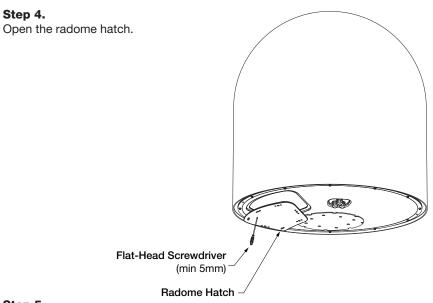








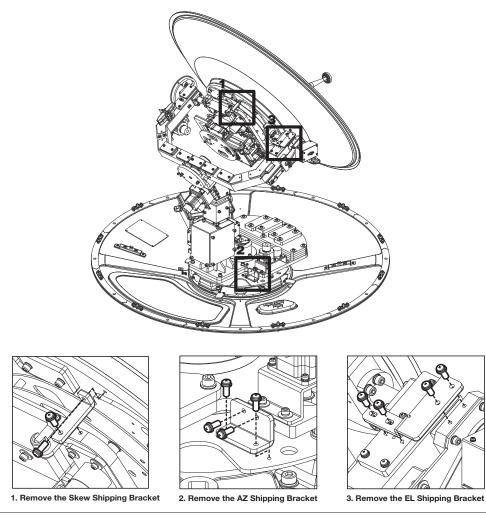
WARNING: When lifting the antenna by using the lifting strap, ensure to disassemble the antenna and the pallet.

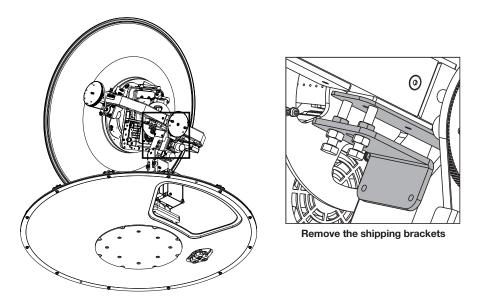


Step 5.

Open the top radome and remove the shipping restraints.

A. Remove shipping brackets securing the Skew, AZ axis and EL axis.



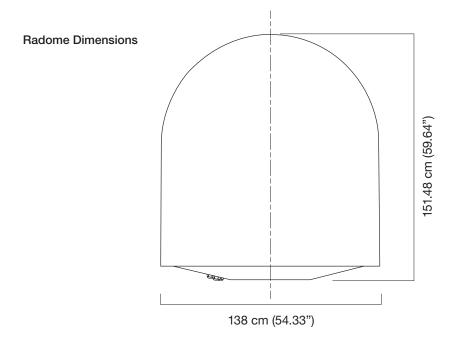


B. Remove the shipping brackets securing the CL axis.

C. Re-assemble the top radome and tighten the radome retention bolt (M6) to a torque setting of 3.5 N·m. To ensure security, apply Loctite #242 or equivalent.

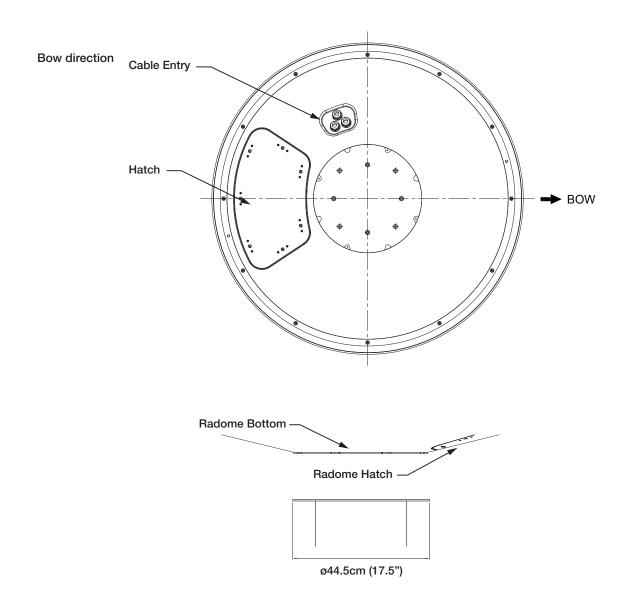
Antenna Dimensions

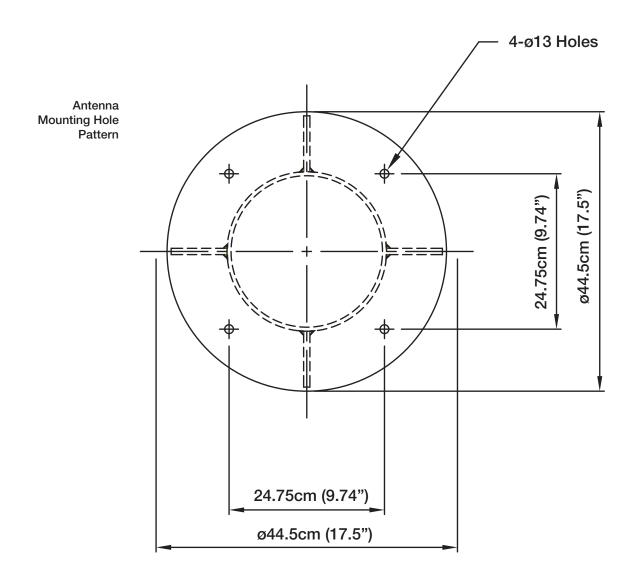
The method of installation and mounting of antenna may vary with vessel design but the following procedures are applicable in most situations, and will result in a secure and effective installation. Confirm the height and diameter of the antenna before installing it.



Antenna Mounting Templates

The mounting holes must be in the exact same place as shown in the diagram below.

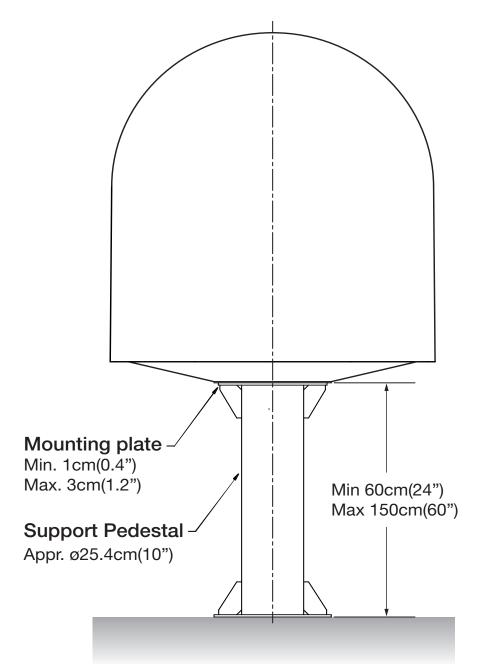




Position the Radome

The radome should be positioned with the BOW marker aligned as closely as possible to the ship's centerline.

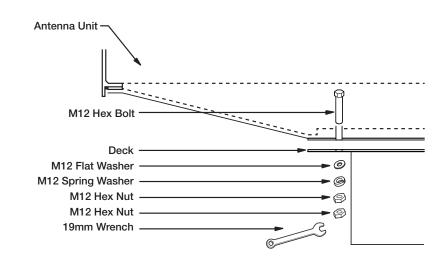
Recommended size of the support pedestal



Mounting the Radome

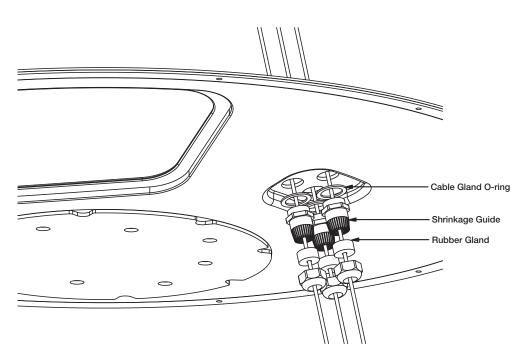
Bolt the radome base directly to the support pedestal.

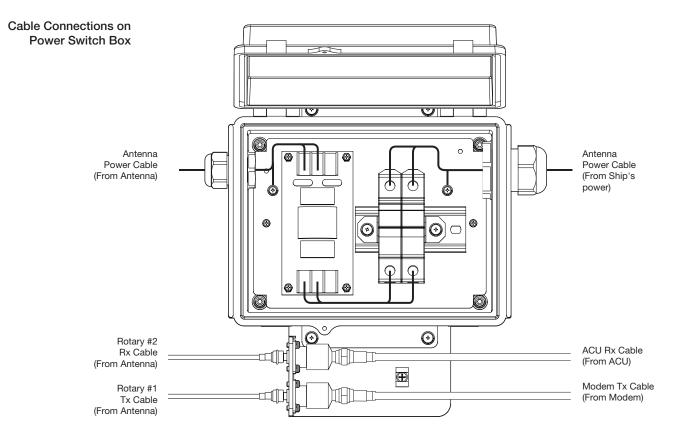
Note: Make sure to use the Intellian supplied bolts from the accessory box when you mount the radome. Apply Loctite #262 or equivalent to the bolt thread, and fasten it to a torque setting of $110 \text{ N} \cdot \text{m}$.



RF Cable Connections

Ensure that the switch on the power switch box is off during the installation period. When all the cables have been installed, turn on the switch.





 NOTE: Intellian recomministallations. 	nends the following size of the in	put power cable for standard system
Cable Length	Cable Cross Sectional Area	AWG (American Wire Gauge) Size

Ouble Length		And (American Mile dauge) bize
Up to 100m	2.62mm ²	13
Up to 200m	4.17mm ²	11
After connectio	n seal the cable cland and tie th	e nower cable securely in place

After connection, seal the cable gland and tie the power cable securely in place.
The antenna power is supplied from the power switch box equipped with the circuit breakers, and the power switch box should be installed near the antenna.

NOTE: Tightening torque

Tightening Torque
1.0 N-m
0.6 N-m
1.5 N-m

INSTALLING THE ACU

Mounting the ACU

19" Rack Mount Type Table Mount Type ACU Dimensions Selection of ACU Installation Site

Gyrocompass Connection

Connecting the System with a Gyrocompass Connecting the System without a Gyrocompass

PC to ACU Communication Setup

TCP/IP Connection

Wi-Fi Connection

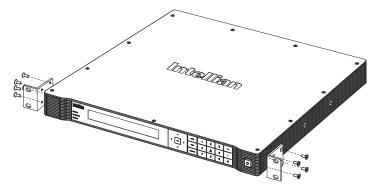
Setup Wi-Fi Connection Setting up the ACU in order to access Wi-Fi Setting up the PC in order to access Wi-Fi

ACU Connector Guide

Mounting the ACU

Intellian supplies two types of mounting methods (a) 19" Rack Mount Type and (b) Table Mount Type to mount the ACU.

19" Rack Mount Type



19" Rack Mount Type

- The ACU should be installed using the two supplied Rack Mounting Brackets which allow for a side 19" rack mounting configuration.
- Using the Flat Head Screw supplied, attach the mounting brackets to the sides of the ACU.
- Place the ACU in the location where it is going to be installed.
- Connect the cables to the rear of the ACU.

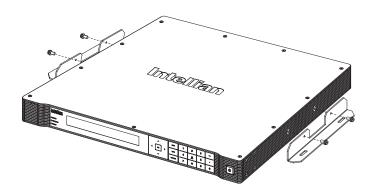


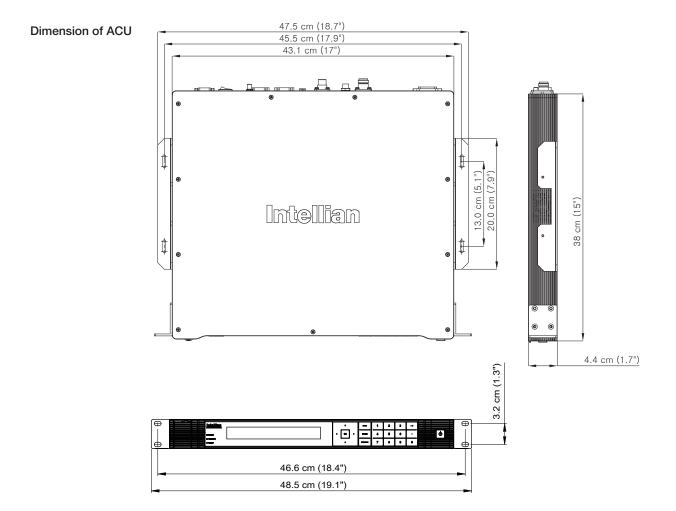
Table Mount Type

- The ACU should be installed using the two supplied Table Mounting Brackets which allow for a top or bottom mounting configuration.
- Using the Sems Bolt supplied, attach the mounting brackets to the sides of the ACU.
- Place the ACU in the location where it is going to be installed.
- Using a pencil to mark the 4 hole positions (2 each side), and use the appropriate drill bit to screw down the brackets.
- Connect the cables to the rear of the ACU.



WARNING: Ensure that the cables connected to the ACU are long enough to prevent damage when the ACU is pulled out from the rack.

Table Mount Type



ACU Dimensions

Selection of ACU Installation Site

The ACU should be installed below deck, in a location that is:

- Dry, cool, and ventilated.
- The front panel should be easy accessible to user.

Gyrocompass Connection

Connecting the System with a Gyrocompass

The ship's gyrocompass provides true heading input to the antenna which easily allows the antenna to target and acquire the desired satellite. Intellian always recommends to connect a gyrocompass to the antenna through the gyrocompass interface on the ACU. If the ship's gyrocompass output is other than NMEA 0183 and NMEA 2000, separate purchase of an NMEA converter is required.

Recommended Cable

- NMEA 0183 / NMEA 2000 Gyrocompass Cable (Customer supplied)
- Connector Type: 2 conductors for NMEA 0183, 5 conductors for NMEA 2000
- NMEA heading sentence: xx HDT (4800 Baud, 8, N,1) If there is no HDT sentence, then use HDM sentence instead.
- NMEA 2000 heading PGN Number = 127250 (Vessel Heading)



Gyrocompass Connection

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Connecting the System without a Gyrocompass

For a vessel where the ship's gyrocompass is not installed or is difficult to be connected, the Intellian Gyro-Free satellite search function will be automatically enabled to allow the antenna to lock onto the desired satellite without requiring an external heading input.

The table below provides an example of the Gyro-Free satellite search algorithm. The Search 1 or Search 3 satellite search pattern will be triggered according to the existence of heading input and the setting of the heading device.

- Search 1: The antenna will search for the target satellite by turning its azimuth angle in CCW(Counter Clockwise) direction until the antenna receives the lock signal from the modem or the DVB(Digital Video Broadcasting) transponder of the target satellite is decoded by the antenna.
- Search 3: The antenna will search for the target satellite by turning its azimuth angle directly to the position calculated using the ship's heading input and lock onto the satellite.

Setting of Heading Device			
Existence of Heading Data	No Device	NMEA / NMEA 2000	Ground Test
With Heading Data	Search 1	Search 3	Search 3
Without Heading Data	Search 1	Search 1	Search 3

Quick Setup Procedure

- Set the satellite with DVB transponder as the target satellite.
- Set "No Device" to the heading device.
- The antenna will search for the target satellite by turning its azimuth angle in CCW direction and lock onto the satellite signal until the antenna receives a lock signal from the modem or the DVB transponder of the target satellite is decoded.
- Set the heading device as NMEA.
- Enter "Manual search" menu and touch "Function" key to save the current settings. Intellian ACU will automatically calculate and save the bow offset.
- Upload the real TARGET satellite pre-configured from the library.

PC to ACU Communication Setup

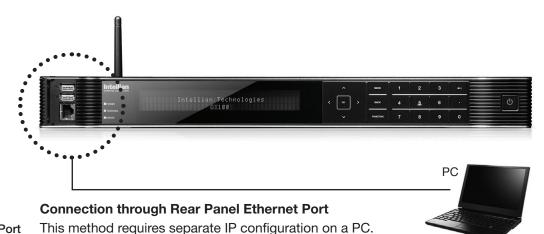
You can establish data communication between a PC and the ACU using one of the following methods.

TCP/IP Connection

Management Connection through Front Panel Management Port Ethernet Port

This method is most recommended. Network is automatically configured by DHCP without the need of additional PC IP configuration nor intervention to Modem to ACU connection in use.

- 1. Connect an Ethernet cable from a PC Ethernet port to the Management port on the front of the ACU.
- 2. Network connection is established.
- 3. Use the following IP address to access Intellian Aptus® or Aptus Web page.
- 192.168.2.1 (Default)



Ethernet Port

- 1. Connect an Ethernet cable from a PC Ethernet port to an available LAN port of a Switch/Hub.
- Go to Control Panel > Network and Sharing Center > Change Adapter Settings and right-click on the Local Area Connection then click Properties
- 3. Select TCP/IPv4, then click Properties.
- 4. Change the network settings on a PC;
- Default IP: 192.168. 0.222 (Secondary: 10.10.1.2)
- Subnet Mask: 255.255.255.0
- Gateway: 192.168.0.223 (Secondary: 10.10.1.1)
- 5. Use the following IP address to access Intellian Aptus® or Aptus Web page.
- Default: 192.168.0.223 (Secondary: 10.10.1.1)

Serial/USB Connection

Serial Connection	Connection through Serial Port		
	 Connect a 9-pin Serial cable from the PC INTERFACE connector on the ACU to the 9-pin serial port on your PC. 		
	2. If there is not a 9-pin serial port on the PC, use a USB-Serial adapter.		
	3. To access Intellian Aptus [®] , see Aptus section.		
USB Connection	Connection through USB Port There are two USB(USB-to-Serial) ports are available on the ACU. One is on the front and the other is on the rear.		
	 Connect a USB cable from a USB port on your PC to the USB port on the ACU. 		

2. To access Intellian Aptus®, see Aptus section.

Wi-Fi Connection

Setup Wi-Fi Connection

- Setting up the ACU in order to access Wi-Fi
- Setting up the PC (Adhoc Mode) in order to access Wi-Fi
- Remote Access Confirmation



1. Turning on the Wi-Fi switch

Turn on the switch on the back of the ACU, and 30 seconds after enabling the power supply, confirm if a red light appears on the switch.

Setting up the PC in order to access Wi-Fi

- 1. Setting up my computer's wireless IP address
 - Control Panel> Network and Sharing Center > Change Adapter Settings > Right click on the "Local Area Connection"> Click Properties

After selecting TCP/IPv4, click on the properties menu.

nternet Protocol Version 4 (TCP/IPv	4) Properties
General	
You can get IP settings assigned auto supports this capability. Otherwise, yo administrator for the appropriate IP s	ou need to ask your network
Obtain an IP address automatica	illy
Use the following IP address	
IP address:	10 . 10 . 10 . 2
S <u>u</u> bnet mask:	255.255.255.0
Default gateway:	10 . 10 . 10 . 1
Obtain DNS server address auto	matically
• Use the following DNS server ad	dresses
Preferred DNS server:	
Alternate DNS server:	• • •
Validate settings upon exit	Advanced
	OK Cancel

2. Change the network settings to the settings listed below.

Case #1

If iARM Module's IP is known The iARM module's default IP is 192.168.1.223

PC IP : 192.168.1.222 Subnet Mask : 255.255.255.0 GateWay : 192.168.1.223

Case #2 If iARM Module's IP is unknown

The iARM module's secondary IP is 10.10.10.1

PC IP : 10.10.10.2 Subnet Mask : 255.255.255.0 GateWay : 10.10.10.1 3. Connect WIFI in Ad-hoc mode.

After clicking on the Windows Wireless Connection icon, click on intellian-WIFI (Default)

4. Enter the Network Security Key.

Key: intellian1234 (Default)

Connect to a Net	work	X
Type the netwo	ork security key	
<u>S</u> ecurity key:	intellian1234	
		OK Cancel

5. You can confirm the logo and version data by accessing http://192.168.1.223

Intellian	
Aptus Aptus Web v100 v1.00	Aptus Web v X.XX
Control & Monitoring Username Password	Login intellian / 12345678
Login Cancel	

Login by entering the ID / Password listed below.

Username: intellian (Default) Password: 12345678 (Default)

6. When you login, make sure that all the data within every page is being displayed correctly.

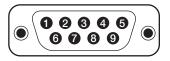
ACU Connector Guide

Console Port



ACU Console Port D-Sub 9 pin Female

Pin	Signal
1	GND
2	GPS OUT +
3	MODEM_LOCK
4	MODEM_CTRL1 (TX MUTE)
5	GPS IN +



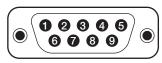
D-Sub 9 pin Male connector Supplied Component

Pin	Signal
6	GPS OUT -
7	MODEM_SIGNAL_IN
8	MODEM_CTRL2
9	GPS IN -

NOTE: NMEA GPS IN/OUT Sentence: GPGLL (4800 Baud, 8, N, 1)

• RS232/422 Connector (Modem & BUC Interface)

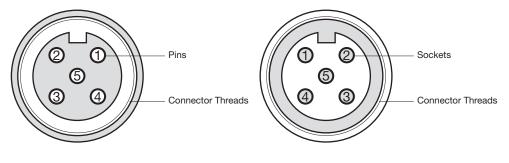
	D-S	ub 9 pin RS232 Connector	
Pin	Signal	Pin	Signal
1	-	6	-
2	RXD	7	-
3	TXD	8	-
4	-	9	-
5	GND		



D-Sub 9 pin RS422 Connector

Pin	Signal	Pin	Signal
1	-	6	-
2	RXD +	7	RXD -
3	TXD +	8	TXD -
4	-	9	-
5	GND		

NMEA 2000 Connector



Male Connector

Female Connector

Pin	Signal	Pin	Signal
1	Shield	1	Shield
2	NET-S, (power supply positive, +V)	2	NET-S, (power supply positive, +V)
3	NET-C, (power supply common, -V)	3	NET-C, (power supply common, -V)
4	NET-H, (CAN-H)	4	NET-H, (CAN-H)
5	NET-L, (CAN-L)	5	NET-L, (CAN-L)

OPERATING THE ACU

Introduction

Normal Mode

Setup Mode

Installation Settings

Antenna Settings

Manual Search Setup Antenna LNB Polarization Angle Search Parameters Setup Antenna Parameters Setup Block Zone Antenna Diagnostic Test

Satellite Settings

Load Satellite Edit Satellite Information Add Satellite Information Check NID

System Settings

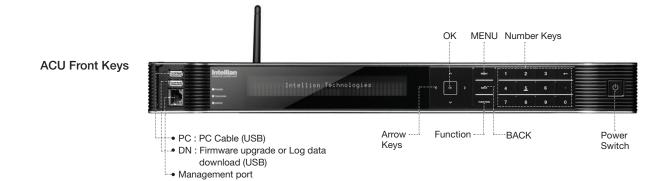
Set LNB Local Oscillator Frequency Set Location Set Modem Port System Backup & Restore Display Versions

Introduction

This section of the handbook describes how to setup your system after installing the ACU. It includes the following functions:

Mode	Function			
Normal Mode	Startup			
	Monitoring current antenna status			
	Installation settings			
	Selecting satellite			
	Setting GPS and Gyrocompass			
	Setting Bow adjustment			
	Setting Modem connection			
	Setting LNB Local Frequency			
	Antenna settings			
	Antenna manual search			
	Setting Antenna LNB Pol Angle			
	Setting Antenna Search parameters			
	Setting Antenna parameters			
Setup Mode	Setting block zone			
	Performing diagnostic tests			
	Satellite settings			
	Load Satellite			
	Edit satellite information			
	Add Satellite			
	System settings			
	Setting LNB Local Frequency			
	Setting GPS and Gyrocompass			
	Setting Modem port			
	System management			
	Setting Key lock			

NOTE: Many of the above functions will only be required after initial installation of your system.



Touch Key Functions

Touch key	Function
MENU	Enter SETUP mode
BACK	In SETUP mode, returns to previous menu or option or saves the adjusted settings. In Normal mode, returns to the first page of antenna current status.
FUNCTION	Saves the adjusted settings.
Arrow keys	Selects from the alternative options to increase or decrease the selected character to a desired value.
ОК	Enter next step / menu
Number keys	Inputs the numbers.

Normal Mode

Startup

With the system installed and power applied, the ACU screen will show the following sequence.

Start up

INTELLIAN TECHNOLOGIES INC.

1. The data communication is being established between the antenna and the ACU.

Initialize antenna info

INITIALIZE - ANTENNA INFO INTELLIAN v100

2. The ACU receives antenna information.

Initialize elevation & cross level angle

INITIALIZE - EL POSITION INTELLIAN v100

3. The elevation angle and cross level angle are initialized.

Initialize azimuth angle

INITIALIZE – AZIMUTH POSITION INTELLIAN v100

4. The azimuth angle is initialized.

Initialize target satellite position

INITIALIZE - SAT POSITION INTELLIAN v100

5. The antenna returns to the target satellite position.

Search status

4	S	E	A	R	С	Н	1			1:	3	8	=	Ø	E		T	E	L	S	T		1	8		S	I	G	:: ::	3	Ø	1		V	L		ŀ
	A	Ζ	::	2	9	2		7	¢		2	Ø	2		7)		E	L	::		4	8		3			S	K	:: ::			7	2		Ø	

6. The antenna is searching for the target satellite.

Tracking status

·	T	R	A	C	K	I	Ν	G		1	3	8		Ø	E		T	E	L	S	T		1	8		S	I	G	::	5	Ø	1	# #	V	L		ŀ	
	A	Ζ		2	9	2		7	¢		2	Ø	2		7)		E	I	::		4	8	=	3		S	K	: :			7	2		Ø	F	n	

7. The antenna has locked onto the satellite.

Monitoring Antenna Current Status

When the ACU power is on, it displays the status of the antenna. The current status of the antenna is displayed as shown below.

Current search status

•	SEARCHI	130	3.0E	TELST_	18 SI	G:301	VL I	ŀ
	AZ:292.	7 (20	22.7>	EL: 4	8.3	SK: -7	72.0	

1. The antenna is searching for the target satellite.

Current tracking status

-	TRACKING	138.ØE [.]	TELST_1	8 SIG:301∰VL ⊧
	AZ:292.7 <	202.7>	EL: 48	.3 SK: -72.0 Fn

2. The antenna has locked onto the target satellite.

Current IF signal level (SIG/dB scale/AGC) is displayed. SIG and dB scale will be displayed when NBD (Narrow band detection) mode for TRACKING SIGNAL is chosen to be used and AGC will be displayed when DVB mode of TRACKING SIGNAL is chosen to be used.

The symbol "•" will be only displayed when the satellite signal is strong enough to locked onto. [VL] indicates the LNB's local frequency corresponding to 13V is in use for the signal reception.

VL: 13V + 0 kHz, HL: 18V + 0 kHz, VH: 13V + 22 kHz, HH: 18V + 22 kHz

Touch the UP or DOWN arrow key to increase or decrease the LNB pol angle. UP or DOWN arrow key can be displayed or hidden by touching OK button 3 times consequently. Pol angle can be adjusted only when UP or DOWN arrow key is displayed (enabled). True azimuth [292.7] position of the antenna is the sum of ships heading 090.0 [HDG] and antenna relative [202.7].

NOTE: However, if the "GYRO TYPE" is set to "NONE" or "NMEA" but without receiving a proper input signal, "---.-" will be displayed at "True Azimuth"

Save current satellite info

SAVE	CURRENT	SAT	INFO	÷
÷ YES				NO

3. Touch FUNCTION key to save current satellite information or abort and return to the main display. "Fn" will be displayed only if the antenna is in tracking mode.

Current tracking status	◀ TRACKING 138.0E TELST_18 SIG:301曲VL ▶													
	AZ: 292.7(202.7) EL: 48.3 SK: -72.0 Fn													
	4. Touch RIGHT arrow key to display NBD, GPS and ship's heading information.													
Tracking & Heading information	◀ NBD F:1247000 BW:1000 SIG:301● ►													
	004.53E 52.22N HDG:090.0 L:10000 Fn													
	5. NBD, GPS and ship's heading information are shown.													
	 Detected Band Width: 1000 kHz SIG/dB scale (Signal Level): 140/14.0dB (When NBD mode for tracking signal is chosen) W (West)/E (East) Longitude: 4.53° E N (North)/S (South) Latitude: 52.22° N HDG (Ship's Heading): 90° LNB local oscillator (LO) frequency: 10000 MHz 													
Antenna & ACU versions	◀ V3-11B-PJW ANT SERIAL 1.00(1.00) ►													
	VP-T537 ACU SERIAL 1.00													
	 7. Touch RIGHT arrow key to display the below information. Antenna part number, antenna serial number and PCU and Stabilizer firmware version. ACU part number, ACU serial number, ACU firmware version and Library version. Touch BACK Key to return to the first page of the antenna current status. 													
Select USB	◀ [USB FUNCTION] SELECT USB FUNCTION ►													
functions	🗯 UPGRADE FIRMWARE 🐙													
	UPGRADE FIRMWARE # 8.Touch RIGHT arrow key to display the USB FUNCTION* This menu will be displayed automatically if a USB flash drive is plugged into the USB port located in the front panel of the ACU.													
	 USB FUNCTION* UPGRADE FIRMWARE: upgrade the system by using the firmware files 													

- (files format: *.FWP) from the specified folder in the USB flash drive.
- COPY LOG DATA: Copy the up-to-date log data from the system to the USB flash drive.



Upgrade the system



9. Touch OK key to upgrade firmware.

Refer to the error messages below if any errors occur.

UPGRADE FIRMWARE

- FIRMWARE FILE NOT FOUND: the system cannot find the FWP file.
- INVALID FIRMWARE: the file is not in a recognizable FWP format.
- MORE THAN 1 FILE EXIST: there is more than 1 firmware file that exists from the specified folder in the USB flash drive.
- CHECK USB CONNECTION: the USB flash drive is not connected.

COPY LOG DATA

- COPY LOG DATA TO USB [30%]: display the copy progress in percentages.
- NOT ENOUGH SPACE IN USB: USB occupies no memory space.
- CHECK USB CONNECTION: the USB flash drive is not connected.

Real-time diagnostic result

4	IDIAGNOSTIC1		SENSOR	BOX	ŀ
	CODE109	.:::.	RESULTS :	FAILED	₩FN

10. Touch RIGHT arrow key to display the real-time diagnostic result. The real-time diagnostic code will be displayed automatically if there is any error found during the system operation. However, this page will not be displayed if there is no error message.

Erase Error message



11. Touch FUNCTION key to erase diagnostic error message.

Setup Mode

Enter the SETUP mode simply follow the instructions below.

Searching / Tracking mode

•	TRA	CKIN	G 1	38.0	ΕT	ELST	_18 \$	3IG:	301#	VL Þ
	AZ:	292.	7 (202.	$7\rangle$	EL:	48.3	SK:	-72.	Ø Fn

1. While the antenna is in SEARCHING/TRACKING mode, touch MENU key to enter SETUP mode. * indicates the key pad lock function is on (Refer to KEY LOCK menu to setup the key pad lock function). When key pad lock function is activated touch MENU key or when "Fn" menu is activated touch FUNCTION key then ENTER PASSWORD menu will be displayed.

Enter password

ENTER PASSWORD

2. If the key pad lock function is on, enter the password before accessing to the SETUP mode. If the key pad lock function is off, access to the SETUP mode directly as Step 3.

Setup mode

SETUP MODE ? + YES

NO

3. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode or touch RIGHT arrow key to move cursor to NO and touch OK key to abort and return to the main display.

Exit setup mode

		EXIT	SETUP	MODE	?
÷	YES			Ν	10

4. While the antenna is in SETUP mode, touch FUNCTION key as shortcut key to exit SETUP mode.

•:::

Installation Settings

÷ YES

During the first time installation, it is required to setup the installation settings.

Setup mode

SETUP MODE ?

NO

1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode

Installation menu

+ANTENNA	+SATELLITE
+SYSTEM	→+INSTALLATION

2. Touch arrow keys to move cursor to INSTALLATION menu and touch OK key to enter it.

Select satellite

.......

	S	E	L	E	С	T		S	A	T	E	L	L	I	T	E
[1]	T	E	L	S			1	8		1	3	8		Ø	Ø	E

3. Touch UP and DOWN arrow keys to select the satellite that you wish to track and touch OK key to load the selected satellite.

Latitude & Longitude

	LATITUDE	LONGITUDE
.#.	37.00N 👻	126.53E

4. Set the current LATITUDE and LONGITUDE

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase or decrease the value. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter.

Gyro type

	GYRO TYPE	BOW OFFSET
.#.	NMEA 🐨	000

5. Set the ship's GYRO TYPE* & BOW OFFSET

A search pattern 1 or 3 will be initiated according to which gyrocompass type is selected and the existence of the gyrocompass input. Ensure that the supported gyrocompass type is set correctly. If the ship's gyrocompass output is different than NMEA, A search pattern 1 will be initiated automatically if the gyrocompass input does not exist and the gyrocompass type that is selected is different than GROUND TEST.

The BOW OFFSET is to offset the angle difference between the antenna's bow and the ship's bow (Range: $0 - 360^{\circ}$).

NOTE: The bow offset will not be saved automatically if Search 1 pattern is initiated. In this case, the antenna will need to retarget the desired satellite using Search 1 every time if the antenna restarts.

Gyro search mode

	Setting of Heading Device				
Existence of Heading Data	No Device	NMEA/ NMEA 2000	Ground Test		
With Heading Data	Search 1	Search 3	Search 3		
Without Heading Data	Search 1	Search 1	Search 3		
GYRO TYPE* NO DEVICE NMEA					

Set modem type and LNB local frequency

	MODEM TYPE	13V +	ØKHz
.#.	IDIRECT-I/O 🐙	10000	MHZ

6. MODEM TYPE 1) is to select a proper data communication port and protocol on the ACU to interface with the satellite modem. The settings related to the modem interface will be set automatically once the modem type is selected.

The options on the next page will be displayed and required to be set if "USER SETTING" is selected.

	MODEM TYPE* • USER SETTING • IDIRECT-I/O • IDIRECT-AMIP • COMTECH-I/O • COMTECH-ROSS • HUGHES	 SATLINK-SERIAL SATLINK-VACP ELEKTRIKOM-AMIP GILAT-SE-II IPSTAR-SOTM 	
LNB local frequency	18V -	+ ØKHZ	13V+22KHZ
		2MHZ 👻	11300MHZ

	1	8	V		2	2KH	Z	
.::.	1	1	30	Ø	M	ΗZ	· …	

7. Set the LNB local oscillator frequency for each voltage power. (13V +0 kHz, 18V +0 kHz, 13V +22 kHz, 18V +22 kHz)

Load	LOAD ?						
	→ YES NO						
	8. Touch BACK key to load the current setting or abort and return to the main display.						
Loading settings	LOADING						
	DO NOT TURN OFF ! •••••OOOOOOO						
	 Setting is being loaded to the system. The ACU will restart the system automatically after uploading the setting. DO NOT TURN OFF ACU POWER while the data is being uploaded. 						
Tracking status	◀ TRACKING 138.0E TELST_18 SIG: 301● VL ▲ AZ: 292.7< 202.7> EL: 48.3 SK: -72.0 Fr						

10. Antenna has locked onto the target satellite.

Antenna Settings

Manual Search

Search the desired satellite manually.

Setup mode	SETUP	MADE 2
	→ YES	NO
	1. Touch LEFT arrow key to move cursor to YE	S and touch OK key to enter SETUP mode.
Antenna menu		+SATELLITE
	+SYSTEM	+INSTALLATION
	2. Touch OK key to enter ANTENNA menu.	
Manual search menu	(4 → +MANUAL SEARCH	+SET POL ANGLE 🕨
	+SEARCH PARAM	+SET PARAMETERS
	3. Touch OK key to enter MANUAL SEARCH m	ienu.
Antenna movement	STEP SIZE AZIMUTH	ELEVATION AGC
	# 00.2 # 4 231.7 »	. 48.3 ∓ 301 Fn
	4. Current IF tracking signal level (AGC)/(SIG/dl peaking AZIMUTH (0°-360°) and ELEVATION (0 Touch NUMBER key to change the STEP SIZI arrow keys to increase or decrease the azimuth increase or decrease the elevation angles. Touch FUNCTION key to save current settings	0°-90°) angle for best signal level. E (Range: 0.1~99.9). Touch LEFT and RIGHT h angles. Touch UP and DOWN arrow keys to
Save	SAVE CURREI	NT SAT INFO?
	÷ YES	NO
	5. If the current settings are able to locate the satellite information". This will help to reduce the system. Touch LEFT arrow key to move cursettings.	the satellite acquisition time after restarting

NOTE: If the gyrocompass type is not NMEA or the gyrocompass is not connected to the ACU, the information cannot be saved.

Setup Antenna LNB pol Angle

Setup mode

Je			SETUP	MODE	?	
	÷	YES				NO

1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode.

Antenna menu

→+ANTENNA	+SATELLITE
+SYSTEM	+INSTALLATION

2. Touch OK key to enter ANTENNA menu.

Set pol angle menu

·I	+MANUAL	SEARCH	÷	+SET	POL	ANGLE	ŀ
	+SEARCH	PARAM		+SET	PARA	METERS	

3. Touch RIGHT arrow key to move cursor to SET POL ANGLE menu and touch OK key to enter it.

LNB pol angle type

LNB pol angle Signal

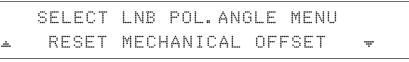
SELECT LNB POL. ANGLE MENU A CALIBRATION #

4. Touch UP and DOWN arrow keys to select the LNB pol angle menu and touch OK key to run the selected operation 'CALIBRATION', 'MANUAL ADJUST' or 'RESET MECHANICAL OFFSET'. Select MANUAL ADJUST to control LNB pol angle manually. If the control board, LNB pol potentiometer or belt is replaced, select CALIBRATION to calibrate LNB pol angle. If the satellite skew offset is unknown, you may select RESET MECHANCAL OFFSET to reset the mechanical skew offset (Overall system skew offset = satellite skew offset + mechanical skew offset).

5. Touch UP and DOWN arrow keys to increase or decrease the LNB pol angle manually and the correspondent SIGNAL level will be displayed next to it. Touch BACK key to return to the main display.

NOTE: LNB POL ANGLE menu will be displayed only if MANUAL ADJUST is selected.

Mechanical Skew Offset



6. Press OK keys to reset the mechanical skew offset.

Search Parameters

Setup mode	SETUP MODE ?						
	⇒ YES	NO					
	1. Touch LEFT arrow key to move cursor to	YES and touch OK key to enter SETUP mode.					
Antenna menu	++ANTENNA	+SATELLITE					
	+SYSTEM	+INSTALLATION					
	2. Touch OK key to enter ANTENNA menu.						
Manual search menu	+MANUAL SEARCH	+SET POL ANGLE 🕨					
	→+SEARCH PARAM	+SET PARAMETERS					
	3. Touch arrow keys to move cursor to SEAF	RCH PARAM menu and touch OK key to enter it.					
Search param	SEARCH WAIT TIM	E INCREMENT STEP					
	. 030 v	0.50					
Search 1 range	SEARCH1 AZ	SEARCH1 EL					
	. <u> </u>	06					
Search 3 range	SEARCH3 AZ	SEARCH3 EL					
		Ø4					

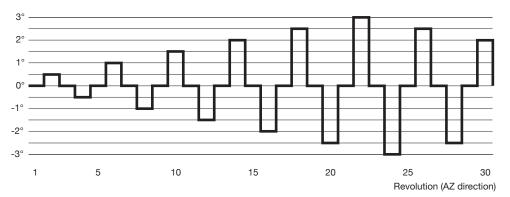
4. Set SEARCH 1 and 3 AZ (Azimuth) range and EL (Elevation) range. SEARCH 2 is reserved for future use.

A search pattern 1 or 3 will be initiated according to which gyrocompass type is selected and the existence of the gyrocompass input.

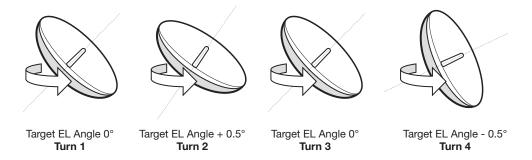
Search 1: A search pattern 1 will automatically be initiated when the ship's heading input does not exist/is failed. The antenna will go to the relative azimuth position 0° at the calculated elevation and search in the azimuth CCW direction and search up $+0.5^{\circ}$ & down -0.5° with a total 6°(\pm 3°) in elevation. The search cycle will repeat until the antenna receives the lock signal from the modem or the DVB transponder of the target satellite is decoded by the antenna. If the desired signal is found and above the predefined detect level, the ACU will enter to Search 3. However, the antenna will not initiate Search 3 pattern but go into TRACKING mode immediately if the desired signal is above the predefined tracking threshold level. If the detected signal is below the predefined tracking threshold level, the search 1 will repeat and start 3° away from the current position.





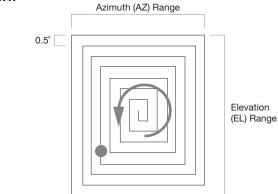


Search 1 antenna motion



Search 3: A search pattern 3 will automatically be initiated when AGC/SIG falls below the current tracking level threshold value. If the desired signal is found and above the predefined tracking level, the ACU will terminate Search 3 and go into TRACKING mode. A search pattern will automatically be initiated when AGC/SIG falls below the current threshold setting (indicates that satellite signal has been lost). Search is conducted in a two-axis pattern consisting of alternate movements in azimuth (AZ) and elevation (EL) as forming expanding square indicated as below diagram.

Search 3 pattern



Setup Antenna Parameters

These parameters should only be changed by an authorized Intellian service technician. Improper setting of these parameters will cause your system to perform improperly.

Setup mode		SETU	P MODE ?					
	÷ YE			NO				
	1. Touch LEFT arrow key to	1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode.						
Antenna menu	+ANTENNA	1	+SATE	+SATELLITE				
	+SYSTEM		+INS]	FALLA	TION			
	2. Touch OK key to enter A	NTENNA menu.						
Set parameters menu	+MANUAL	SEARCH	+SET	POL	ANGLE			
	+SEARCH	PARAM		PARA	METERS			
	3. Touch arrow keys to move cursor to SET PARAMETERS menu and touch OK key to enter it.							
Password	Password ENTER PASSWORD							
			· ·····					
	4. Touch 4 digit password t Setup parameters is only re			-	nna system.			
	These parameters should c Improper setting of these p							
Set detect & tracking DVB	DETECT I	IVB	TRACH	<ing< th=""><th>DVB</th></ing<>	DVB			
	. . 040	÷		020				
	5. Set DETECT DVB and TF to be used (Range: 1-200).	RACKING DVB v	vhen DVB mode of ⊺	FRACKING	i SIGNAL is chosen			
	DETECT DVB is to set the satellite signal detection level and TRACKING DVB is to set the							

DETECT DVB is to set the satellite signal detection level and TRACKING DVB is to set the satellite signal tracking level.

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase and decrease the selected character. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter. Touch BACK key to select the parameter you wish to edit and touch BACK key again to save or abort and return to the main display.

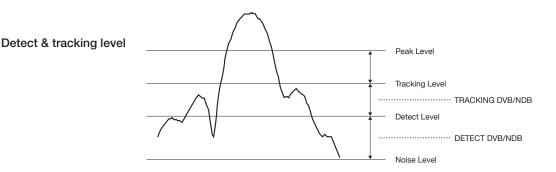
Set detect & tracking NBD

DE	TECT NE	D	TRACKING	NBD
.#.	040	÷	020	

6. Set DETECT NBD and TRACKING NBD when NBD (Narrow Band Detection) mode of TRACKING SIGNAL is chosen to be used (Range: 1-200).

DETECT NBD is to set the satellite signal detection level and TRACKING NBD is to set the satellite signal tracking level.

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase and decrease the selected character. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter. Touch BACK key to select the parameter you wish to edit and touch BACK key again to save or abort and return to the main display.



BOW & EL adjust

BOW OFFSET	EL.ADJUST
000 -	+ Ø. Ø

7. Set BOW OFFSET and EL. ADJUST

BOW OFFSET is to offset the angle difference between the antenna's bow and the ship's bow (Range: $0 - 360^{\circ}$) and EL. ADJUST is to offset the angle difference between the mechanical elevation angle and actual elevation angle (Range: $\pm 5^{\circ}$).

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase and decrease the selected character. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter. Touch BACK key to select the parameter you wish to edit and touch the BACK key again to save or abort and return to the main display. Select operation process

OPERATION A SAVE

8. Execute the command of the selected item from **OPERATION***.

OPERATION*

- SAVE: save and execute the current settings.
- **IDLE ON/OFF:** the motor brakes will be released while IDLE MODE is ON. The antenna will restart automatically if IDLE MODE is re-set from ON to OFF touch BACK key is pressed to exit SETUP mode.

.ů.

• **REBOOT:** the antenna will restart automatically if REBOOT ANTENNA is ON.

Setup Block Zone

Up to 5 block or radiation hazard zones can be programmed with relative azimuth and elevation sectors.

Setup mode

de			SETUP	MODE	?		
	÷	YES				NO	

1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode.

Antenna menu

÷+ANTENNA	+SATELLITE
+SYSTEM	+INSTALLATION

2. Touch OK key to enter ANTENNA menu.

Block zone menu

•

→+BLOCK ZONE +DIAGNOSTIC

3. Touch RIGHT arrow key to move cursor to BLOCK ZONE menu and touch OK key to enter it. Up to 5 block zones is allowed to be programmed.

Block zone 1

Block zone range

	1 BLOCK On	.ii.								
	START 2	AZ.	1 ØØ	END Ø	EL.	1 90	Ih	1 I	T	₽

4. Set ZONE 1 BLOCK

Touch UP and DOWN arrow keys to select "ON" to setup the block zone for ZONE 1. Touch OK key to use ZONE 1 BLOCK and set zone 1 block range.

Touch BACK key to select the parameter you wish to edit and touch BACK key again to save or abort and return to the main display.

Set the AZ.1 START, AZ.1 END and EL.1 LIMIT while ZONE 1 BLOCK is ON.

This is the clockwise of the two points. AZ.1 START is where the relative azimuth starts and AZ.1 END is where the relative azimuth ends (Range: 0- 360°). EL.1 Limit is where the elevation starts (Range 0- 90°).

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase and decrease the selected character.

Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter. Touch BACK key to select the parameter you wish to edit and touch BACK key again to save or abort and return to the main display.

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Block zone 2

ZONE 2 BLOCK 🔺 OFF 🐙

5. ZONE 2 to ZONE 5 BLOCK setting is same as ZONE 1 BLOCK. Touch OK key to set ZONE 2 BLOCK and set next parameter.

Save

	SAVE ?	
÷ YES		NO

6. Touch LEFT arrow key to move cursor to YES and touch OK key to save and execute the current settings. Or touch RIGHT arrow key to move cursor to NO and touch OK key to abort and return to the main display.

Antenna Diagnostic Test

Refer to the diagnosis codes for the test results.

Setup mode	SETUP	MODE ?
	→ YES	NO
	1. Touch LEFT arrow key to move cursor to YE	S and touch OK key to enter SETUP mode.
Antenna menu	++ANTENNA	+SATELLITE
	+SYSTEM	+INSTALLATION
	2. Touch OK key to enter ANTENNA menu.	
Diagnostic menu	+ BLOCK ZONE	→+DIAGNOSTIC ►
	3. Touch arrow keys to move cursor to DIAGN	OSTIC menu and touch OK key to enter it.
Full diagnostic test	DIAGNOSTIC	COMMUNICATION
	* FULL TEST *	READY
	4. Touch UP and DOWN arrow keys to select and touch OK key to execute the selected diag Menus for DIAGNOSTIC are FULL TEST and C	gnostic test.
Full diagnostic test result	DIAGNOSTIC	FULL TESTING
	FULL TEST	**********
	5. A full diagnostic is successfully completed.	
Single diagnostic test result	DIAGNOSTIC	COMMUNICATION
	CODE 101	RESULT : PASSED

6. A single diagnostic test is successfully completed.

Diagnosis Code:

CODE 101: Data communication test between the antenna and the ACU

CODE 102: Azimuth motor test.

CODE 103: Elevation motor test.

CODE 104: Cross-level motor test.

CODE 105: Azimuth encoder test.

CODE 106: Cross-level encoder test.

CODE 107: Rate sensor test.

CODE 108: Tilt sensor test.

CODE 109: Sensor box motor test.

CODE 110: LNB/NBD test.

CODE 111: LNB pol motor test.

CODE 112: Sub-reflector test. (Skip for v-Series communication products)

CODE 113: Antenna power test.

CODE 114: ACU power test.

CODE 115: Receiver power test. (Skip for v-Series communication products) CODE 116: Home sensor test.

An example of test result after a full test: •2••••••••••••

- •: test is passed
- 2: test is failed (CODE102)
- -: test is skipped (TVRO products only)
- ?: test is in process

Satellite Settings

Load Satellite

Setup mode

Satellite menu

Load sat menu

↓ YES	NO					
1. Touch LEFT arrow key to move cursor to	o YES and touch OK key to enter SETUP mode.					
+ANTENNA	→+SATELLITE					
+SYSTEM	+INSTALLATION					
2. Touch RIGHT arrow key to move cursor	to SATELLITE and touch OK key to enter it.					
→+LOAD SAT.	+EDIT SAT.					
+ADD SAT.	+CHECK NID					

SETUP MODE ?

3. Touch OK key to enter LOAD SAT. menu.

Load satellite

	LOAD	SATELLITE	
 [1]	TELST_	_18 138.00E	. ii.

4. Touch UP and DOWN arrow keys to select satellite that you wish to track. Touch OK key to load the selected satellite.

Load

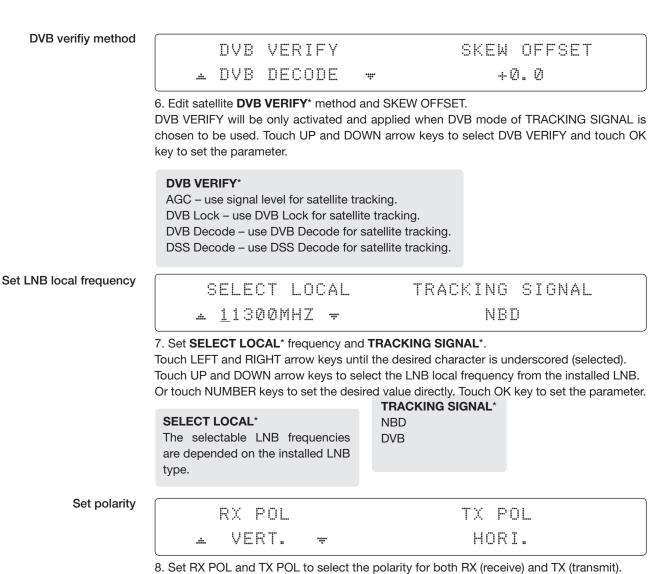
	LOAD ?	
 YES		NO

5. Touch LEFT arrow key to move cursor to YES and touch OK key to load the selected satellite and execute the current settings. Or touch RIGHT arrow key to move cursor to NO and touch OK key to abort and return to the main display.

Edit Satellite Information

SETUP MODE ?					
	÷ YES	NO			
	1. Touch LEFT arrow key to move curs	or to YES and touch OK key to enter	SETUP mode.		
Satellite menu	+ANTENNA	÷+SATELLITE			
	+SYSTEM	+INSTALLAT	ION		
	2. Touch RIGHT arrow key to move cur	sor to SATELLITE and touch OK key	to enter it.		
Edit sat menu	+LOAD SAT.	÷+EDIT SAT.			
	+ADD SAT.	+CHECK NID			
	3. Touch RIGHT arrow key and OK key	to enter EDIT SAT. menu.			
Edit satellite	EDIT	SATELLITE			
	LII TELS	T_18 138.00E	. ii.		
	4. Touch UP and DOWN arrow keys to OK key to edit the selected satellite.	select the satellite that you wish to e	dit and touch		
Edit longitude & name	LONGITUDE	EDIT NAM	E		
	. 138.0E ₩	TELST_18			

 $\ensuremath{\mathsf{5}}.$ Edit satellite orbit position, LONGITUDE and satellite NAME.



Touch UP and DOWN arrow keys to select VERTICAL or HORIZONTAL. Touch OK key to set the parameter.

Set DVB tracking frequency

DVB FREQ.	SYMBOL	NID
	21300kSps	ØXØØAD

9. Set DVB FREQUENCY, SYMBOL RATE and NID when DVB mode of TRACKING SIGNAL is chosen to be used.

45,000 is the maximum allowed symbol rate value. NID (network ID) range is from 0 x 0000 to 0 x FFFF (hexadecimal digit).

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase or decrease the value. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter.

Set NBD tracking frequency

NBD	FREQ.	BANDWIDTH
. 1070.	000MHZ#	01.000MHz

10. Set NBD IF FREQUENCY and BANDWIDTH when NBD (Narrow Band Detection) mode of TRACKING SIGNAL is chosen to be used.

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase or decrease the value. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter.

Save

		SAVE ?	
÷	YES		NO

11. Touch LEFT arrow key to move cursor to YES and touch OK key to save and execute the current settings. Or touch RIGHT arrow key to move cursor to NO and touch OK key to abort and return to the main display.

Add Satellite Information

Setup mode	SET	UP MODE ?			
	÷ YES	NO			
	1. Touch LEFT arrow key to move cursor t	o YES and touch OK key to enter SETUP mode.			
Satellite menu	+ANTENNA	÷+SATELLITE			
	+SYSTEM	+INSTALLATION			
	2. Touch RIGHT arrow key to move cursor	r to SATELLITE and touch OK key to enter it.			
Add sat menu	+LOAD SAT.	+EDIT SAT.			
	÷+ADD SAT.	+CHECK NID			
	3. Touch DOWN arrow key and OK key to	enter ADD SAT. menu.			
Set longitude & name	4 LONGITUDE	EDIT NAME 🕨			
	.▲ 000.00E +	SAT.00			
	4. Set satellite LONGITUDE and satellite N	NAME.			
DVB verify method	DVB VERIFY	SKEW OFFSET			
	. ■ DVB DECODE #	+00.0			
	5. Edit the satellite DVB VERIFY * and SKEW OFFSET.				
	-	pplied when DVB mode of TRACKING SIGNAL is I arrow keys to select DVB VERIFY and touch OK			
	DVB VERIFY * AGC – use signal level for satellite track DVB Lock – use DVB Lock for satellite t DVB Decode – use DVB Decode for sate DSS Decode – use DSS Decode for sate	racking. ellite tracking.			

t LNB local frequency	SELECT LOCAL	TRACKING	STGNAL	
	.10000MHZ#	NB		
	 6. SELECT LOCAL* to set LNB local oscillator frequency and TRACKING SIGNAL*. The selectable LNB frequencies are depended on the installed LNB type. Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase or decrease the value. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter. 			
	SELECT LOCAL * The selectable LNB frequencies are depended on the installed LNB type.	TRACKING SIGNAL* NBD DVB		
Set polarity	RX POL	T	X POL	
Set polarity		e) and TX (transmit) polari:	ORI.	
Set DVB tracking		H e) and TX (transmit) polari ect VERTICAL or HORIZOI	ORI.	
		e) and TX (transmit) polari:	ORI. zation. NTAL.	
Set DVB tracking		H e) and TX (transmit) polari ect VERTICAL or HORIZON SYMBOL 200000KSps E and NID when DVB mod rate value. NID (network the desired character is u rease or decrease the value	ORI. zation. NTAL. NID ØXØØØØ de of TRACKING ID) range is from 0 x 0 inderscored (selected)	
Set DVB tracking		H e) and TX (transmit) polarized ect VERTICAL or HORIZON SYMBOL 20000KSps E and NID when DVB mod rate value. NID (network the desired character is un rease or decrease the value ed value directly.	ORI. zation. NTAL. NID ØXØØØØ de of TRACKING ID) range is from 0 x 0 inderscored (selected)	

Touch UP and DOWN arrow keys to increase or decrease the value. Or touch NUMBER keys to set the desired value directly. Touch OK key to set the parameter. Save

		?	
÷	YES		NO

10. Touch LEFT arrow key to move cursor to YES and touch OK key to save and execute the current settings. Or touch RIGHT arrow key to move cursor to NO and touch OK key to abort and return to the main display.

Check NID

Setup mode	SETUP MODE ?										
	→ YES	NO									
	1. Touch LEFT arrow key to move cur	sor to YES and Touch OK key to enter SETUP mode.									
Satellite menu	+ANTENNA	÷+SATELLITE									
	+SYSTEM	+INSTALLATION									
	2. Touch RIGHT arrow key to move cu	irsor to SATELLITE menu and touch OK key to enter									
Check NID menu	+LOAD SAT.	+EDIT SAT.									
	+ADD SAT.	→+CHECK NID									
	3. Touch DOWN arrow key and OK ke	y to enter CHECK NID menu.									
NID verification	[CHECK NID] F:	12490 S:27490 0X00AD									
	PRESS OK	RECEIVED NID[0X0000]									

4. CHECK NID is to verify the NID (Network ID) of the current tracking transponder. Touch OK key to verify the NID [0 x 0000] only when "PRESS OK" function is activated. "PRESS OK" function will only be activated when DVB Lock signal is confirmed by the antenna. However, "NO LOCK" message will be displayed if DVB Lock signal can't be confirmed.

System Settings

Set LNB Local Oscillator Frequency

Setup mode SETUP MODE ? NO 1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode. System menu +ANTENNA +SATELLITE +INSTALLATION ++SYSTEM 2. Touch DOWN arrow key to move cursor to SYSTEM and touch OK key to enter it. Set local frequency menu ++SET LOCAL +SET LOCATION · ŀ +MODEM PORT +MANAGEMENT 3. Touch OK key to enter SET LOCAL menu to set the LNB local frequency. LNB info ÷13V + 0KHZ •# 18V + ØKHZ ŀ 10000MHZ 11300MHZ 13V + 22KHZ 18V + 22KHZ .▲ 09750MHZ ₩ 10750MHZ 4. Set LNB local oscillator frequency for each correspondent voltage power. (13V +0 kHz, 18V +0 kHz, 13V +22 kHz, 18V +22 kHz)

Touch BACK key and Touch LEFT and RIGHT arrow keys to select the parameter you wish to edit. Touch OK key to edit parameter. Or touch BACK key again to return to the main display.

LNB LOCAL: The selectable LNB frequencies are depended on the installed LNB type.

Save

		SAVE 1	
÷Y	'ES		NO

5. Touch LEFT arrow key to move cursor to YES and touch OK key to save current settings. Or move cursor to NO and touch OK key to abort and return to the main display.

Set Location

Setup mode

SETUP MODE ? → YES

NO

1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode.

System menu

+ANTENNA	+SATELLITE
÷+SYSTEM	+INSTALLATION

2. Touch DOWN arrow key to move cursor to SYSTEM and touch OK key to enter it.

Set location menu

4	+SET LOCAL	→+SET LOCATION	ŀ
	+MODEM PORT	+MANAGEMENT	

3. Touch RIGHT arrow key to move cursor to SET LOCATION and touch OK key to enter it.

Gyro type and Baud rate

GYRO TYPE	BAUD RATE	
NMEA	. <u>.</u> 4800 ₩	

4. Set the ship's GYRO TYPE* and BAUD RATE.

A search pattern 1 or 3 will be initiated according to which gyrocompass type is selected and the existence of the gyrocompass input. Set the BAUD RATE as 4800, 9600, 19200 or 38400 according to your device.

A search pattern 1 will be initiated automatically if the gyrocompass input does not exist and the gyrocompass type is selected other than GROUND TEST.

NOTE: The bow offset will not be saved automatically if Search 1 pattern is initiated. In this case, the antenna will need to re target the desired satellite using Search 1 every time if the antenna restarts.

Gyro search type

	Setting of Heading Device							
Existence of Heading Data	No Device	NMEA / NMEA 2000	Ground Test					
With Heading Data	Search 1	Search 3	Search 3					
Without Heading Data	Search 1	Search 1	Search 3					

GYRO TYPE*

NO DEVICE NMEA NMEA 2000 GROUND TEST

Latitude & longitude

5. Set the current LATITUDE and LONGITUDE

Touch LEFT and RIGHT arrow keys until the desired character is underscored (selected). Touch UP and DOWN arrow keys to increase or decrease the value.

Or touch NUMBER keys to set the desired value directly.

Touch the OK key to set the parameter.

Heading

•

HEADING 090.0

6. Entry of ship's heading.

Ensure that the supported gyrocompass type is set correctly. If the ship's gyrocompass output is other than NMEA and Synchro, a purchase of an NMEA converter is required.

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Save

	SAVE ?	
÷ YES		NO

7. Touch LEFT arrow key to move cursor to YES and touch OK key to save current settings. Or move cursor to NO and touch OK key to abort and return to the main display.

Set Modem Port

Setup mode

le		SETUP	MODE	?	
	 YES				NO

1. Touch LEFT arrow key to move cursor to YES and touch OK key to enter SETUP mode.

System menu

+ANTENNA	+SATELLITE
÷+SYSTEM	+INSTALLATION

2. Touch DOWN arrow key to move cursor to SYSTEM menu and touch OK key to enter it.

Modem port menu

+ +SET LOCAL	+SET LOCATION +
→+MODEM PORT	+MANAGEMENT

3. Touch DOWN arrow keys to move cursor to MODEM PORT menu and touch OK key to enter it.

Set Mediator & modem type

USE	MEDIA	TOR			۲Į	0	D	Е	M		T	Y	P	E	
.#.	NO	. ii .]	[]	0	Ī	R	Ε	С	T		I	/	0	

4. USE MEDIATOR is to enable the usage of MEDIATOR if the antenna is connected to the Intellian Dual VSAT Mediator.

NOTE: USE MEDIATOR must be disabled if there is no MEDIATOR connected to the ACU. Improper setting of this parameter will cause your ACU's modem interface working incorrectly.

MODEM TYPE* is to select a proper data communication port and protocol on the ACU to interface with the satellite modem. The settings related to the modem interface will be set automatically once the modem type is selected.

The options on the next page will be displayed and required to be set if "USER SETTING" is selected.

MODEM TYPE*

- USER SETTING
- IDIRECT-I/O
- SATLINK-SERIALSATLINK-VACP

• ELEKTRIKOM-AMIP

- IDIRECT-AMIP
- COMTECH-I/O
- GILAT-SE-II
- COMTECH-ROSS
- HUGHES
- IPSTAR-SOTM

Set modem protocol

	MODEM PORT		PROTOCOL
.::.	ETHERNET	₩ I/	O CONSOLE

5. **MODEM PORT**^{*} is to select a proper data communication port on the ACU to interface with the modem.

PROTOCOL* is to select a proper communication protocol on the ACU to interface with the modem.

MODEM PORT*

ETHERNET RS422 RS232

PROTOCOL*

I/O CONSOLE is a protocol for interchanging of information (GPS Out, TX mute, and modem lock) between the ACU (through Console port) and a modem.

OPEN AMIP is an ASCII based protocol developed by iDirect for interchanging of information between the ACU and a modem. OpenAMIP is not intended for any purpose except to allow the ACU and a modem to perform synchronized automatic beam switching (ABS).

SERIAL GPS is a protocol for sending GPS Out information from the ACU (through RS232/422 port) to a modem.

ROSS: ROSS Open Antenna Management (ROAM) protocol is developed by Comtech EF Data Cooperation to offer common management interface for Comtech EF Data's Roaming Oceanic Satellite Server (ROSS) and ACU.

VCAP is the interface between the SatLink mobile VSAT IDU and the Intellian antenna controllers for Intellian mobile antennas.

ELEKTRIKOM-AMIP is a OPEN AMIP based protocol, and proceed the additional protocol.

GILAT-SE-II is a NMEA0183 based protocol to monitor the status of the antenna and the modem. It is passed through the Gilat SkyEdgell modem RS232 serial port.

SOTM is a protocol interface between the ACU and the IPSTAR modem's beam switching controller to perform automatic beam switching (ABS).

Use TX mute

GPS	OUT SENTI	ENCE	USE TX MUTE	
	GPGLL	 .	YES	

6. **GPS OUT SENTENCE*** is to select the GPS OUT SENTENCE type USE TX MUTE is to select whether or not to USE TX MUTE function from the satellite modem. A transmit inhibit output from the ACU will disable/mute the modem transmit via a voltage whenever the antenna is blocked, searching, or is mis-pointed 0.5 degrees from the peak satellite position.

GPS OUT SENTENCE* GPGLL GPGGA SIMPLE GPGGA

Use EXT.LOCK

	USE EXT.LOCK	EXT.	LOCK ACTIVE
.:::.	YES	÷	LOW

7. USE EXT. LOCK is to select whether or not to use external lock signal from the satellite modem. USE EXT. LOCK item will only be activated when PROTOCOL is set as I/O CONSOLE.

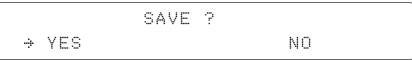
EXT. LOCK ACTIVE is referred that modem lock output from the modem provides a logic input through a 5 V (HIGH) or 0 V (LOW). current to the ACU to identify when it is on the correct satellite. *EXT. LOCK ACTIVE item will only be activated when PROTOCOL is set as I/O CONSOLE.*

TX mute activation

ТΧ	MUTE ACT	IVE	
.::.	LOW		

8. TX MUTE ACTIVE is a transmit inhibit output from the ACU to disable/mute the modem transmit through a 5 V (HIGH) or 0 V (LOW) current whenever the antenna is blocked, searching, or is mis-pointed 0.5° from peak satellite position. *TX MUTE ACTIVE item will only be activated when PROTOCOL is set as I/O CONSOLE.*

Save



9. Touch LEFT arrow key to move cursor to YES and touch OK key to save current settings. Or move cursor to NO and touch OK key to abort and return to the main display.

Management

Setup mode	S	ETUP MODE ?
	÷ YES	NO
	1. Touch LEFT arrow key to move cu	rsor to YES and touch OK key to enter SETUP mode.
System menu	. A hi T T hi hi A	+SATELLITE
	+ANTENNA	
	÷+SYSTEM	+INSTALLATION
	2. Touch DOWN arrow key to move o	cursor to SYSTEM menu and touch OK key to enter it.
Backup and restore menu	4 +SET LOCAL	+SET LOCATION »
	+MODEM PORT	→+MANAGEMENT
	3. Touch arrow keys to move cursor	to MANAGEMENT menu and touch OK key to enter it.
Select process type	SELE	CT PROCESS TYPE
	BAC	KUP USER DATA 🛛 🐙
	4. Touch UP and DOWN arrow keys Touch OK key to set the parameter a	to SELECT PROCESS TYPE * nd the processing message will be displayed.
	SELECT PROCESS TYPE*	
	BACKUP USER DATA: To backup the	antenna settings set by user to the ACU.
	RESTORE USER DATA: To restore the	antenna by using the backup user data stored from the ACU.
	DEFAULT ACU-REMOTE P/W: to defa	ault ID and Password of the Web Server.
	UPGRADE FROM USB: to upgrade the in the USB flash drive.	e system by using the firmware files from a specified folder
	COPY LOG TO USB: to copy the anter	na log data from the system to the USB flash drive.
	BACKUP TO USB: To backup the ante	nna settings to a specified folder in the USB flash drive.
	RESTORE FROM USB: To restore the folder in the USB flash drive.	antenna by using the backup user data from a specified
	UPGRADE ACU-REMOTE: To upgrade folder in a USB flash drive.	e the system using firmware files (FWP) from a specified
	FROM USB and UPGRADE ACU-F	PPY LOG TO USB, BACKUP TO USB, RESTORE REMOTE options are displayed only if the USB flash located in the front panel of the ACU.

Key Lock

Setup mode	SE	TUP MODE ?
	→ YES	NO
	1. Touch LEFT arrow key to move curs	sor to YES and touch OK key to enter SETUP mode.
System menu	+ANTENNA	+SATELLITE
	÷+SYSTEM	+INSTALLATION
	2. Touch DOWN arrow key to move cu	irsor to SYSTEM menu and touch OK key to enter it.
Key lock menu	∮ →+KEY LOCK	+INTELLIAN DEVICE +
	3. Touch arrow keys to move cursor to	KEY LOCK menu and touch OK key to enter it.
	NOTE: INTELLIAN DEVICE menu is r	not operated in this ACU.
et key lock and		
password	KEY LOCK	UNLOCK P/W
	. ON w	1590
		to choose whether or not to use key pad lock whe e satellite information. Setup the password for enterin s 1590.
Check key lock	4 TRACKING 138.08	TELST 18 SIG: 501#VL)

С activation

•		T	R	A	С	: <	1	N	IG		1	3	8		Ø	Е		T	E	!	S	T		1	8		S	Ι	C	::	5	Ø	1		V	L		ŀ	•
H	E,	A	Ζ	:: ::	2	: 9	2	: . =	7	¢		2	Ø	2		7)		E	I	:: ::		4	8		3		S	K	: :			7	2		Ø	F	ľ	1

When KEY LOCK function is activated, the " $\underline{\ast}$ "mark is displayed.

Aptus[®]

Introduction to Aptus®

Requirements

Software Installation

PC to ACU Communication Setup

Starting Aptus[®] Establishing a data communication

Toolbar Menus

System Property Status Dashboard

Work View Tabs

Antenna - Basic Info. Antenna - Advanced Info. Satellite Graph View Monitor Diagnostic/Modem GUI Work View Functions

Introduction to Aptus®

Intellian's new VSAT Antenna PC Controller Software, Aptus[®] is a next-generation graphically based antenna remote control software. The Aptus[®] allows users to easily and conveniently set up the antenna by using a personal computer.

The minimum PC hardware and software requirements to install and run Aptus[®] are as below.

Requirements Hardware

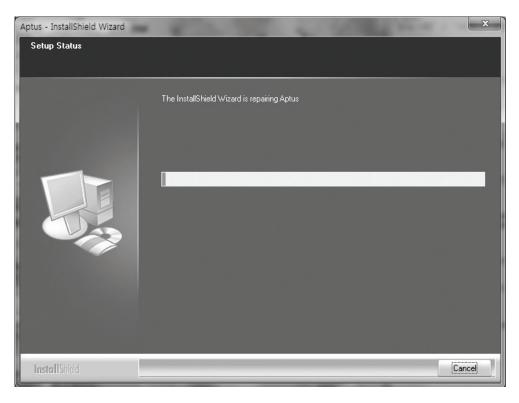
Hardware	Requirements
CPU	Intel® Pentium® 4 or higher
Memory	512MB or higher
	DirectX9.0 or higher supported
Video Card	H/W acceleration supported
	Video Memory 128MB or higher
HDD	1GB or higher

Operating System and Software

Software	Requirements
Operating System	Windows XP SP or higher
Framework	Microsoft.Net Framework 3.5 Service Pack 1 or higher

Software Installation

Double click the 'Aptus Setup.exe' icon Aptus to install Aptus[®] directly onto your computer/ laptop. The InstallShield Wizard will guide you through the program setup process. The installation routine provides an icon on the desktop.





Click the icon to start the software. In addition, Intellian also provides patch files for software upgrade.

PC to ACU Communication Setup

Starting Aptus®

Double-click the Aptus[®] desktop icon, then Communication Window appears to establish the data communication between your PC and the ACU. Select options of connection method to access your ACU either through the Serial Port Communication or the Network Communication (TCP/IP).

[<i>P</i> !N]	Port : 4002	
N	etwork 🔹	Connect Disconnect
Serial Con	nmunication ————	Network Communication
Port :	COM1 -	IP: 10.10.1.1
BPS :	Auto 👻	Port : 4002
		Name : USER 🔹
		Network List Setting

Establish a data communication

Access ACU through Serial Communication

- 1. Connect a 9 pin Serial cable between the PC INTERFACE connector on the ACU and the 9 pin Serial port on the PC. (Or you can use a USB cable to setup Serial connection between a PC and the USB port on the ACU.)
- 2. Select Serial at communication type combo-box.
- 3. The baud rate of the ACU is 57600.
- 4. Select a COM port which is not occupied by other devices.
- 5. Click the Connect button.

Access ACU through Network Communication (TCP/IP)

- 1. Turn off the wireless connection while using this method.
- 2. Connect your PC to the Management Port. (See 'PC to ACU Communication Setup' section for other network connection methods.)
- 3. Select Network at communication type combo-box.
- 4. Enter in the ACU's IP address (Factory default : 192.168.2.1)
- 5. Enter in the ACU's port number (Factory default : 4002)
- 6. Click the Connect button then the Authentication window will appear.
- 7. Login by using the username and password below:
 - Username: intellian (Factory default)
 - Password: 12345678 (Factory default)

📽 NetworkAuth	Window 💷 🗵
ID :	intellian
PASSWORD :	•••••
	OK Cancel

NOTE: If the remote access PC is located in the same network group with the ACU, the ACU can be accessed through the internal IP address. But, if the remote access PC is located outside of the network group, the ACU's IP address should be changed to the IP address assigned by the network service provider.



WARNING:

- Do not plug a USB to the ACU while TCP/IP communication is in use. Doing so will disable current PC Software Control because the USB connection has higher priority than TCP/IP connection.
- The amount of data will increase rapidly if Network Communication is in use. Intellian recommends using Aptus Web.

AutoUpdate

Intellian Aptus[®] checks and notifies the latest version when it is started to maintain up to date software version by AutoUpdate function.

AutoUpdate Ver 1.0	
Software update is available. Current S/W Version : New S/W Version : 0.0.0	
Progress :	
Start Close	

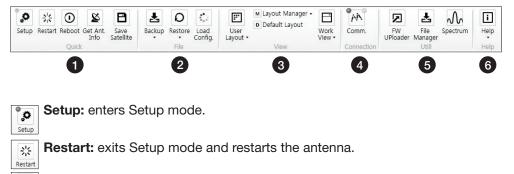
- 1. When Aptus[®] is started, it automatically checks the latest software version from the server and runs AutoUpdate if new version is available.
- 2. Current software version information is displayed.
- 3. It notifies new software version information.
- 4. When you click the "start" button, "File downloading..." message is displayed while downloading files from the server.

Progress :	
File downloading	

- 5. When file downloading is finished, "installing..." message is displayed and Aptus patch runs and the installation starts by InstallShield.
- 6.Click the "Finish" button when InstallShield installation is finished, then "Run the Aptus" message is displayed and Aptus runs and AutoUpdate is automatically finished.

Toolbar Menus

The toolbar menus at the top of the screen display command buttons of the most commonly used functions of the Aptus[®]. The toolbar menus consists of 4 main menus; Quick (for quick launch of functions), File (for file backup, restoring and loading), View and Connection.



Reboot: reboots the antenna.

Get Ant. Info: obtains the information stored in the antenna

B Save Satellite: saves the current bow offset only if the antenna is tracking onto the satellite. The satellite acquisition time can be reduced significantly after the antenna is restarted.

2 File

(1) Quick



Ø

iet Ant Info

Backup: backups the antenna information to ACU or PC.

- Select 'To ACU' to backup the antenna information to ACU. The backup file (file format: *.ibf) will be stored on the ACU.
- Select 'To PC' to backup the antenna information to a PC. The backup files (file format: *.rpt and *.ibf) will be generated on the PC.

NOTE: Both *.rpt and *.ibf files contain antenna information. However, while *.ibf file can be used for restoring antenna information, *.rpt file is stored as plain-text for viewing purpose only. Users can open the *.rpt using text editors such as notepad software.



Restore: restores the antenna by using the stored information in ACU or PC.

- Select 'From ACU' to restore the antenna by using the stored information in ACU.
 - Select 'From PC' to restore the antenna by using the stored information in PC (file format: *.ibf).



Load Config. : loads the antenna configuration file (file format: *.cfg). The configuration file includes the antenna control parameters which are pre-loaded at the factory and should only be changed by an authorized service technician. Improper setting of these parameters will cause your system to perform improperly.

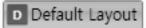
3 View



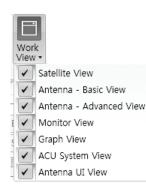
• User Layout: displays the layout list that the user has previously stored by using Layout Manager. If you select a layout in this list, the selected layout will be constructed in Work View screen. The 'Basic layout' is provided by default.

мΒ	ayout Manager 🗸
$\overline{\mathbb{R}}_{2}$	Add current layout
\overline{c}	Save current layout
$\overline{\cdot}$	Delete layout

- Layout Manager: provides the user with add, delete, and save functionalities in order to manage the user's layouts.
- Selecting 'Add current layout' opens a pop up window. Type in a desired name of current layout and click Add, then the new name of the current layout will be saved to the list under User Layout menu.
- When changes are made to the current layout, select 'Save current layout' option. The current layout will be saved with changes.
- To remove a layout, select 'Delete layout' option. Select a desired layout to remove on the pop up window, then click 'Delete'. Close the window by clicking on 'Close'. The selected layout is removed from the User Layout list.



• Default Layout: returns the current layout to the default layout.



 Work View: displays a list of seven pre-constructed Work View Tabs (Satellite View, Antenna Basic View, Antenna Advanced View, Monitor View, Graph View, Diagnostic/Modem View and GUI View) and also provides the Activate / Close functionalities for each view tab. Activate the work view tab by ticking the checkbox next to it.



• **Communication:** At any time, data communication channel can be reestablished between Serial and Network connection. Selecting Comm. Button will display Communication Window to connect to the ACU via Serial or Network communication.

(5) Utill



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File Manager

M

- Firmware Uploader: provides the user with the latest firmware version and updates firmware by simple steps.
- File Manager: display the latest firmware and library file available on Aptus Server. Select a desired firmware and download to the local PC.
- **Spectrum:** displays current spectrum graph and allows to set spectrum data view options.



Manager

• ACU Log Manager: displays the antenna log data in calendar view which is downloadable directly to a desired path.

6 Help



• **Report:** provides e-mail contact to Intellian technical support team to let the user report problems at any time.



• Information: displays the information of current Aptus[®] software version.

System Property Status Dashboard

The property status dashboard on the left pane of the screen provides the antenna status, the availability of TX transmission, signal level, GPS and heading status, software information, product information and error status to be monitored quickly.

 Enable Mode Blockage Pointing Modem Lock LNB Rotate Signal Level DVB 349 SNR 349 SNR 0 GPS 127.05 E 37.07 N Heading 0.00 Voltage Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band 	Antenna Status: Tracking
 Enable Mode Blockage Pointing Modem Lock LNB Rotate Signal Level DVB 349 SNR 349 SNR 0 GPS 127.05 E 37.07 N Heading 0.00 Voltage Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band 	Initialize → Search → Tracking
 Pointing Modem Lock LNB Rotate Signal Level DVB 349 349 SNR 0 GPS 127.05 E 37.07 N Heading 0.00 Voltage Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band 	2 TX Mute 🌑
 ► LNB Rotate Signal Level DVB 349 SNR GPS 127.05 E 37.07 N Heading 0.00 Voltage Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band 	Enable Mode Blockage
Signal Level DVB 349 SNR 0 GPS 127.05 E 37.07 N Heading 0.00 Voltage Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3:11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	Pointing Modem Lock
349 SNR 0 GPS 127.05 E 37.07 N Heading 0.00 Voltage 0.00 Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : Ant. PCU : V 1.15 Ant. Stabilizer : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-118-PJW Ant. Serial : ACU Name : ACU Name : VP-T537 ACU Serial : System Pol : System Band: Ku Band	LNB Rotate
349 SNR 0 GPS 127.05 E 37.07 N Heading 0.00 Voltage 0.00 Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : Ant. PCU : V 1.15 Ant. Stabilizer : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : ACU Name : VP-T537 ACU Serial : System Pol : System Band: Ku Band	Signal Level DVB 349
GPS 127.05 E 37.07 N Heading 0.00 Voltage Antenna : 24.1V BUC : 23.9V Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : ACU Serial : System Pol : System Band: Ku Band	
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Software Information Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : VP-T537 ACU Serial : System Pol : System Band: Ku Band	Antenna : 24.1V
Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	BUC : 23.9V
Ant. PCU : V 1.15 Ant. Stabilizer : V 1.11 ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	Software Information
ACU Main : V 1.16 Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	Ant. PCU : V 1.15
Lib Version : V 0.00 Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	Ant. Stabilizer : V 1.11
Product Information System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	ACU Main : V 1.16
System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	
System Model : V100 Ant. Name : V3-11B-PJW Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	Product Information
Ant. Serial : ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	
ACU Name : VP-T537 ACU Serial : System Pol : Co⨯ System Band: Ku Band	Ant. Name : V3-11B-PJW
ACU Serial : System Pol : Co⨯ System Band: Ku Band	Ant. Serial :
System Pol : Co⨯ System Band: Ku Band	ACU Name : VP-T537
System Band: Ku Band	
<u> </u>	System Pol : Co⨯
Diagnostic Error Report	System Band: Ku Band
	Diagnostic Error Report

- (1) Antenna Status: Displays the status of the current mode of the antenna.
 - Search 1: A Search 1 pattern will automatically be initiated when the ship's heading input does not exist or if it fails. The search cycle will repeat until the antenna receives the lock signal from the modem or until the DVB transponder of the target satellite is decoded by the antenna.
 - Search 2: Search 2 is reserved for future use.
 - Search 3: Search 3 pattern will automatically be initiated when AGC(DVB mode is in use) or SIG/dB (NBD mode is in use) falls below the current tracking level threshold value. Once the desired signal is found and above the predefined tracking threshold, the ACU will enter to tracking mode.

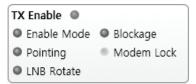
- Tracking: Antenna is tracking the target satellite.
- Initialize: Antenna or ACU is initializing.
- Setup: Antenna is in SETUP mode.
- 2 TX Enable

Displays the status of TX transmit. If the circle next to the TX Enable shows "Blue", it means the antenna TX function is enabled. If the circle shows "Red", it means the antenna TX function is disabled. The TX function will be enabled only if all five factors (Enable Mode, Blockage, Pointing, Modem Lock, and LNB Rotate) listed below show a "Blue" circle. However, if the "Use TX Mute" function in the 'ACU System' Work Tab is disabled, the TX function will be enabled regardless the above factors.

- Enable Mode: displays whether or not the antenna is in transmitting.
- **Blockage:** displays whether or not the antenna is pointing in a predefined block zone(s). If the antenna is pointing in the block zone, the circle next to the Blockage will show "Gray". If the antenna pointed outside the block zone, the circle next to the Blockage will show "Blue".
- **Pointing:** displays whether or not the antenna is pointing to the target satellite. If the antenna is mis-pointing to the target satellite, the circle next to the Pointing will show "Gray". If the antenna is pointing to the target satellite, the circle next to the Pointing will show "Blue".
- **Modem Lock:** displays whether or not the modem is locked by receiving a confirmation signal from the satellite modem. If the modem is not locked, the circle next to the Modem Lock will show "Gray". If the modem is locked, the circle next to the Modem Lock will show "Blue".

NOTE: If the Modem Lock shows "Gray", check the cable connection between the antenna system and the satellite modem as well as settings on the modem.

- LNB Rotate: displays whether or not the LNB is rotating. If the LNB is rotating, the circle next to the LNB Rotate will show "Gray". If the LNB is not rotating, the circle next to the LNB Rotate will show "Blue".



3 Signal Level

Shows "DVB" when DVB mode of tracking signal is in use and "NBD" when NBD mode of tracking signal is in use. The "Red" line indicates the signal "Detect Level Threshold" and the "Orange" line indicates the signal "Tracking Level Threshold". If the signal level is higher than the tracking level threshold, the signal level bar will display "Blue" color. If the signal level is lower than the tracking level threshold, the signal level bar will display "Orange" color and the antenna will stay in searching mode.

NOTE: If the signal level is not higher than the tracking threshold, decrease the detect and tracking level.

④ GPS and Heading

Displays the current GPS location from the Antenna and Ship's heading information. The status light flashes green if the system receives a correct input of the GPS and Ship's heading.

GPS	127.05 E	37.07 N
Heading	0.00	

5 Voltage: Displays the antenna and the ACU voltage information.

Voltage		
Antenna :	25.8V	
ACU :	28.4V	

 Software Information: Displays the antenna and the ACU firmware versions, and the library version.

Software Informa	ation
Ant. PCU :	V 0.90
Ant. Stabilizer :	V 0.90
ACU Main :	V 9.00
Lib Version :	V 1.01

Product Information: Displays the antenna and ACU serial numbers, antenna model and ACU model.

(8) Diagnostic Error Report

The square button next to the Diagnostic Error Report turns red when the system receives an error. Click the button to see a Diagnostic Report.



Work View Tabs

Aptus[®] provides seven Work View Tabs (Satellite View, Antenna Basic View, Antenna Advanced View, Monitor View, Graph View, Diagnostic/Modem and GUI to manage the Antenna and the Satellite configuration.

How to modify the settings on Work View;



1. Enter the Setup mode by clicking Setup icon.



2. Tick the checkbox next to the "Set" button to modify the settings.

3. Enter the desired value then press the Set button to save the settings.

1. Antenna – Basic Info.

This view tab provides information on the Antenna's Current GPS location, Heading Device, Bow Information, Skew Information, and the Antenna's Angle. This view tab uses the Antenna's AZ and EL information as well as the Ship's Heading information in order to provide a dynamic graphic user interface (UI).

Antenna - Basic Info. GPS	Antenna - Ad	vanced Info.	Satellite		nitor	🐺 🛛 Fit		;)
Longitude :	127.05 °E	127.05 °	East	Azimuth Elevation			0.00° 29°	
Latitude :	37.07 ° N	37.07 °	North	Pol Angle	: 9.70°	Head Nort		
			Set Set					
Heading		0.00 °	_			N		
Heading :	0.00 °	0.00	Set					
Heading Device: GRC	UND TEST 👻		Set					
Bow Information							E	
Current Bow Offset :	29 °	0 °	Set					
Skew Satellite Skew Offset : Mechanical Skew Offset :			sor Calibration hanical Skew C			s		
Consolidated Skew Offse	:: 0.00 °				192.40			
Antenna Angle AZ Relative : 191.53 °						EL: 46.44		
AZ Absolute : 191.53 °	/ 192.49 °		4 5			A		
EL: 46.45 °	/ 46.44 °		v 5			/ •		
POL: 9.70 °	/ 10.46°		- 1	+	/			
					/			
				•	ć			
					EL : 46.45			

- GPS: displays and sets current antenna's GPS.
- Heading: displays and sets current ship's heading information.
 - Heading Device: None / NMEA/ NMEA 2000/Ground Test.
 The baud rate (4800/ 9600/ 19200/ 38400) must be set if NMEA is selected.
- Bow Information: displays and sets current antenna's bow.
- Skew: displays current antenna's skew and skew offset.
 - · Pol Sensor Calibration: calibrates the sensor (potentiometer).
 - Reset Mechanical Skew Offset: the mechanical skew offset is preset in the factory with a default value (0, 1, or 2) depending on the assembly status. Resetting of the mechanical skew offset may be required when the satellite skew offset is unknown (Consolidated Skew Offset = satellite skew offset + mechanical skew offset). Due to each satellite has its own skew offset, Intellian recommends you check with your service provider or satellite operator to get the satellite skew offset value and input it in Satellite Work Tab rather than resetting the mechanical skew offset directly.
- Antenna Angle: displays and sets current antenna's absolute and relative AZ (azimuth) position, EL (elevation) position and LNB Pol angle. You can move antenna azimuth and elevation position and LNB Pol angle by using the arrows or inputting a value to find the desired satellite manually.

2. Antenna – Advanced Info.

This view provides information on the Tilt Sensor Bias, Conical Range, EL Adjust, Rate Sensor, Search Parameter and Block Zone.

Antenna - Basic Info. Antenna - Adv	anced Info. Satellite	Graph Monit	or / Diagnost	ic/Modem	
Tilt Sensor Bias Ready EL • - 1.00 + EL : -0.5 ° CL : 1.0 ° Rate Sensor Bias AZ : -4	Search Parameter Type1 Ty AZ : 400 ° EL : 8 ° Wait Time : Search Step :	pe2 Type3 6 3 4 5 (s) 0.50	Azimuth : Elevation : Pol Angle :		Heading : 0.00 ° Bow Offset : 94 ° Heading Up North Up
Idle Mode Bias Check EL : -171 CL : 84		Set			
Conical Range	Threshold Setting —				
AZ : 70	DVB Detect Level :	40	w	-	E
EL : 80	DVB Tracking Level :	20		F	
Set	NBD Detect Level :	40			
EL Adjust	NBD Tracking Level :	20		T	
EL Adjust : 0.00 ° Set	TX Enable :	50		S	
		Set		198.05	
Blockage					- EL: 45.61
No AZ Start AZ End EL	AZ Start :	•			
1 0 0 90	AZ End :	•			<u> </u>
2 0 0 90	EL :	•		/	-
3 0 0 90	Ville Drot, 18			/	
4 0 0 90		Set		/	
5 0 0 90	1997 - 2017 - 2017 - 2017 - 2017		- N		
			2	EL : 44.30	

- -Tilt Sensor Bias: This maintains the elevation and the cross level axes in order to keep the pedestal parallel to the horizon. Adjust the two solidstate tilt sensors to provide absolute cross-level tilt of the antenna and el evation feedback to eliminate long-term pointing drift (error). Tilt bias must be adjusted when the antenna control board or sensor box is replaced. If the bubble on the button level located on the sensor box is not centered, follow the following steps to adjust the tilt sensor bias.
 - Step 1. Enter Setup mode and press the "Ready" button to bring the elevation and cross-level to 0.
 - Step 2. Select "EL" from the drop down list and press Up and Down arrow keys to adjust the bubble until it is located in the center ring of the button level.
 - Step 3. Select "CL" from the drop down list and press Up and Down arrow keys to adjust the bubble until it is located in the center ring of the button level.



· Step 4. Press the "Restart" icon to restart the antenna.

- **Rate Sensor:** is used to calibrate the DC voltage output from the three rate sensors (azimuth, elevation, and cross-level). These are used to sense antenna motion that corresponds to the ship's motion (roll, pitch, and yaw) for stabilizing the pedestal. The DC voltage output from each of the rate sensors may vary by an amount which is directly proportional to the direction and rate of motion induced on it.

Before calibrating the rate sensors located in the Sensor box, make sure that the antenna is placed on a rigid and flat platform. During the calibration process, any motion of the antenna should be avoided as it can affect the antenna's performance. Proceed with the following steps to perform the calibration.

- · Step 1. Enter Setup mode
- Step 2. Press the "Idle Mode" button to release the elevation and cross level motor brakes while the antenna is in Setup mode.
- Step 3. Check whether or not the bubble is located at the center of the button level. If not, move it to the center by following the previous instruction of Tilt Sensor Bias adjus™ent.
- Step 4. Press the "Bias Check" button to calibrate the rate sensor. A blue circle will be displayed next to the Bias Check button if the calibration is completed. A red circle will be displayed if calibration failed. A green circle will be displayed during the calibration process.

- **Conical Range:** The relative force of the motors controlling azimuth and elevation. Set the conical range while the antenna is in tracking mode.

- EL Adjust: The elevation adjus[™]ent is to offset the angle difference between the mechanical elevation angle and actual elevation angle. If this value is not properly adjusted, the antenna may take longer time for satellite search or tracking.

- Search Parameter:

• Wait time: set the time-out for automatic initiation of a search after the signal level drops below the pre-defined threshold value.

- · Search Step: set increment step size.
- Type 1 & Type 3 (Search 1 & 3) Range: set Search 1 & 3 search range. Search 3 is conducted in a two-axis pattern consisting of alternate movements in azimuth and elevation as it forms an expanding square.
- · Type 2 (Search 2) Range: is reserved for future use.

- Block Zone

Displays current block zones by azimuth and elevation sectors. Up to 5 block zones can be programmed. Once the block zone is created, a blue shading area will be displayed in the Antenna UI view on the right.

- Threshold Settings

- DVB Detect Level: displays and sets signal detection threshold level when DVB tracking mode is in use.
- DVB Tracking Level: displays and sets signal tracking threshold level when DVB tracking mode is in use.
- NBD Detect Level: displays and sets signal detection threshold level when NBD tracking mode is in use.
- NBD Tracking Level: displays and sets signal tracking threshold level when NBD tracking mode is in use.
- \cdot TX Enable Threshold: displays and sets TX enable threshold.

3. Satellite

				2	KOREA5V	113.00	E	202.66	44.67
Edit Satellite	1.6			3	KOREA5H	113.00		202.66	44.67
	on Information			4	THAICOM4	119.50	E	192.49	46.44
Satellite :	SAT_119E	and a second		5	ADD_SAT1	116.10	Е	197.90	45.64
119.50	East 👻	Skew Offset :							
Local Freq. :	10600 MH:	LNB Power :	18V + 0kHz						
RX POL :	Vertical 🔻	Tracking :	O DVB						
TX POL :	Horizontal 🔻		O NBD						
DVB		NBD	,						
	GC Only +								
		IF Freq(kHz) :	1190000						
Freq. MHz :	12228 27490	BW(kHz) :	1000						
Symbol. kSps :		Base Local :	10600 MHz						
NID: 0	x 00AD		20000 10012						
		Edit Sate	lite Information						
LNB Local Free	uency.								
LIND LOCAL Free	dericy.		1						
Another -	-	Set Los	oal Freq.(MHz)						
	13V+22kHz	Set Loc 18V+0kHz	al Freq.(MHz)						
Another	•			C-+ D-	the form a cuil (I and Casellin			
Another 13V+0kHz 10000	13V+22kHz 10750	12V+0kHz 10600	18V+22kHz 9750	Get Da	ta From ACU	Load Satellite	•		
Another 13V+0kHz 10000	13V+22kHz 10750	18V+0kHz	18V+22kHz	Get Lib	prary From PC	Load Satellite Upload To AC		Save T	o PC
Another 13V+0kHz 10000	13V+22kHz 10750	12V+0kHz 10600	18V+22kHz 9750	Get Lib				Save T	o PC
Another 13V+0kHz 10000	13V+22kHz 10750	12V+0kHz 10600	18V+22kHz 9750	Get Lib	prary From PC			Save T	o PC

This view provides information on the Satellite's Information, Tracking Common Information, DVB and NBD Tracking Transponder, LNB Local Frequency, and Satellite Library. This view shows a graphic UI of the current satellite that the antenna is pointing at and the satellites that are located at a 180° arc on the horizon with reference to the current position.

NOTE: Based on the satellite EIRP footprint and the size of the antenna, you may not be able to track all the satellites visible in 180° arc.

- **Tracking Information of Current Satellite:** displays the current satellite's name, longitude position, and satellite skew of the satellite in the library.

- Tracking Common Information: displays the current LNB local oscillator frequency that is in use and the corresponding voltage supplied. Selects the tracking mode (DVB / NBD) to be used and sets polarization (Horizontal / Vertical) for the RX pol and the TX pol. - DVB / NBD: sets tracking transponder

information for either DVB tracking mode (Verification Type, Frequency, Symbol rate, and NID) or NBD tracking mode (Frequency and bandwidth).

NOTE: DVB and NBD parameter settings should only be changed by an authorized service technician. Improper setting of these parameters will render your system inoperable. Consult Intellian for changing antenna parameters.

- LNB Local Frequency: Displays or sets LNB local frequency and its corresponding LNB voltage supplied. You may select pre-programmed LNB LO settings from the drop down list. This procedure is same for both the Intellian Global VSAT PLL LNB and any other LNB.

- **Tracking Information of Library:** Selecting this option enables "Add Satellite", "Edit Satellite" and "Delete Satellite" buttons.

- **Eutelsat:** Select 'ON' when the antenna is tracking an Eutelsat satellite. With this option enabled, a defined skew angle for each Eutelsat satellite is automatically applied without allowing a manual modification to the skew offset value.
- Get Library From PC : opens the satellite library file (File format:*.ilf) from the PC.
- Get Data From ACU: obtains the satellite information from the ACU.
- · Load Satellite: uploads the satellite information to the ACU.
- Upload to ACU: uploads the satellite library to ACU.
- Edit Satellite: edits the satellite information of the selected satellite. When Eutelsat satellite is selected, enable Eutelsat option. This applies defined skew angles for each Eutelsat satellite automatically and doesn't require manual modification.
- Add Satellite: adds the satellite information as defined in the current settings.
- Delete Satellite: deletes the selected satellite from the library.
- Save to PC: saves the current library settings to PC.

NOTE: It is required to click the "Save to PC" button after "Edit Satellite", "Add Satellite", or "Delete Satellite" button is clicked.

4. Graph View

This view provides information on Signal, Elevation (EL), Absolute AZ (Azimuth), Relative AZ, Heading, AZ and EL in Single or Multi graph formats.

Antenna - Basic Info. Antenna - Advanced Info. Satellite Graph Monitor 🐺 100% 🔻 🖛	×
Select Graph Item	*
Image: Step: Clear All Image: Step: S	
	ш
Signal	
Pos.: 0 Set Pos. Current Pos. Span: Max Clear	
600	
400	
200_	
EL	
Pos.: 0 Set Pos. Current Pos. Span: Max Clear	
120_	
90	
60	
30	
	*

- Select Graph Item: shows the graphs of only the checked item(s) in a Single or Multi Graph View.
- **Single Graph View:** shows Graph Views per each single Graph Item selected in 'Select Graph Item'.
- Multi Graph View: shows one large integrated Graph View of multiple Graph Items selected in 'Select Graph Item'.
- Start/Stop Save: the chosen item is saved within the data log. The data log which stores the information displayed in the graphs can be later used for a service technician to find out a cause of any possible problem to the antenna.
- Clear All: clears everything drawn on the Graph View window.
- Set Pos.: sets the current position as center value of each Graph Item.
- Current Pos.: moves to the location according to values of each Graph Item.
- Span: sets the Display Range(s) of each corresponding Graph Item.
- Period: displays and sets the signal sampling rate.
- Graph Column Count: makes all Graph Views show in either one or two-column format.

5. Monitor

This view provides a UI which can monitor all data that has been received from the ACU.

	Basic Info. Antenna - Advanced Info.	Satellite Graph	Monitor	Diagnost	ic/Mode	m G	UI 🔋	Fit •	•
15:20:51	[S] Tilt[2] [24] -17 (3 300)	16	191.53	191.53	46.49	0	127.05	E 37.07 N	_
15:20:51	[S] Bias Correction 1	16	191.53	191.53	46.49	0	127.05	E 37.07 N	
15:20:51	[P] Result[P1 2] [S1 3]	16	191.53	191.53	46.49	0	127.05	E 37.07 N	(I
15:20:54	[S] EL/CL 9 / 1(13)	16			46.51	0		E 37.07 N	
15:20:59	[S] EL/CL 3 / -2(13)	16			46.44	0		E 37.07 N	
15:21:04	[P] AZ: 19153, EL: 4641, POL: 970	17			46.41	0		E 37.07 N	
15:21:04	[S] EL/CL 3 / 2(13)	18			46.5	0		E 37.07 N	
15:21:08	[P] RMC : 14-2-17	17	191.5		46.42	0		E 37.07 N	
15:21:09	[P] Signal: 17(256)	17		191.53		0		E 37.07 N	
15:21:10	[S] EL/CL 7 / -5(13)	17	191.53		46.51	0		E 37.07 N	
15:21:15	[S] EL/CL 12 / -4(13)	17	191.53		46.48	0		E 37.07 N	
15:21:20	[S] EL/CL 14 / 3(13)	17	191.53		46.45	0		E 37.07 N	
15:21:25	[S] EL/CL 9 / 4(13)	16		191.53		0		E 37.07 N	
15:21:30	[S] EL/CL 11 / -5(13)	17		191.53		0		E 37.07 N	
15:21:35	[S] EL/CL 17 / -2(13)	17			46.44	0		E 37.07 N	
15:21:35	[P] AZ: 19153, EL: 4644, POL: 970	17			46.44	0		E 37.07 N	
15:21:40	[S] EL/CL 14 / -11(13)	16	191.5		46.47	0		E 37.07 N	
15:21:41 15:21:45	[P] Signal: 16(256) [S] EL/CL 4 / 0(13)	15 18		191.53 191.53		0		E 37.07 N E 37.07 N	
15.21.45	[5] EPCE 47 0(13)	10	191.33	191.55	40.44	0	127.051	E 37.07 IN	
Tracking -	ر Rate Sensor Bias	Tilt Sensor B	ias						
				Show Pa	ram	Save		Class	
@ ON	AZ EL CL	EL Tilt Bias :	ias 0.0°	Show Pa		Save	Stop	Clear	
	AZ EL CL	EL Tilt Bias : Set	0.0°	Show Pa			Stop DEBUG		
@ ON	AZ EL CL -49 11 40 S	EL Tilt Bias : CL Tilt Bias :		Check N	JID	Debug			
ON OFF NBD Versi	AZ EL CL -49 11 40 S On Check Save	EL Tilt Bias : CL Tilt Bias :	0.0°	Check N		Debug			
ON OFF NBD Versi	AZ EL CL -49 11 40 S	EL Tilt Bias : CL Tilt Bias :	0.0°	Check N	JID	Debug			

- **Tracking:** turns on or off the dish scan function. If the dish scan function is disabled, the antenna will stop adjusting the antenna pointing angle in order to optimize the receive signal level.
- Rate Sensor Bias: is used to calibrate the DC voltage output from the three rate sensors (azimuth, elevation, and cross-level). These are used to sense antenna motion that corresponds to the ship's motion (roll, pitch, and yaw) for stabilizing the pedestal. You can find the same function in Antenna-Advanced View Tab.
- Show Param: shows the current antenna parameters.
- Check NID: verifies the NID (network ID) of the current tracking tran sponder. Press the NID button to obtain the NID only if the antenna is locked onto the desired satellite .
- **Debug (Start):** starts the debug log of the antenna. The debug message will be displayed once the debug button is pressed.
- Stop Debug: stops debug logging of the antenna.
- Save Log (Start/Stop): starts or stops the logs of the antenna. This button will be enabled while viewing the debug log. The log message will be stopped or be saved into a *.txt file once the log button is pressed. (V_Date.txt.)
- Save Debug (Start/Stop): starts or stops saving the debug log. This button is enabled once the Start Debug button is pressed.
- Clear View: clears the debug message or log data in monitoring window.

6. Diagnostic / Modem

This view provides Antenna Diagnostic Testing and also provides functions to set up the interface between the ACU and the Intellian VSAT Mediator or the satellite modem.

gnostic —		- Modem	14		
Test Start	Save Result	Use Mediator :	NO		•
Select All	ALL Clear	Select Modem :	USER SET	ΠNG	•
Select All	ALL Clear	Modem Port :	Ethernet		•
		Modem Protocol :	Open AM	[P	•
Start	End	GPS Out Protocol :	GPGLL		•
•		Use TX Mute :	Yes	O No	
Serial Comm.	Home Sensor	Use Modem Lock :	Yes	© No	
•		TX Mute :	O Low	🔘 High	
Motor AZ	ACU Power	Modem Lock :	Low	🔘 High	
•				Set Mode	em
Motor EL	Antenna Power				
•					
Motor CL	SKEW				집 모님 것이 귀나 같이
•					
Encoder AZ	LNB/NBD				
•					
Encoder CL	Sensor Box Limit				
•					
Rate Sensor	Tilt Sensor				

- **Diagnostic :** select to run a full diagnostic test or single diagnostic test. "Green" indicator is displayed for the test under progress. "Blue" indi cates the test result as Pass while "Red" indicates the result as Fail. "Yellow" indicates the test has been skipped.
 - Serial Comm.: tests the data communication between the antenna and the ACU.
 - Motor AZ: tests the azimuth motor.
 - · Motor EL: tests the elevation motor.
 - Motor CL: tests the cross-level motor.
 - Encoder AZ: tests the azimuth encoder.
 - Encoder CL: tests the cross-level encoder.
 - Rate sensor: tests the rate sensor.
 - Tilt Sensor: tests the tilt sensor.
 - Home sensor: tests the home sensor.
 - **ACU power:** tests the ACU power to see whether or not it is within the nominal operating range.

- **Antenna power:** tests the antenna power to see whether or not it is within the nominal operating range.
- Skew: tests the LNB skew motor.
- · LNB/ NBD: tests the LNB and NBD (narrow band detector).
- Sensor Box Limit: tests the sensor box motor .
- **Modem:** sets the interface between the ACU and the Intellian Dual VSAT Mediator or the satellite modem.

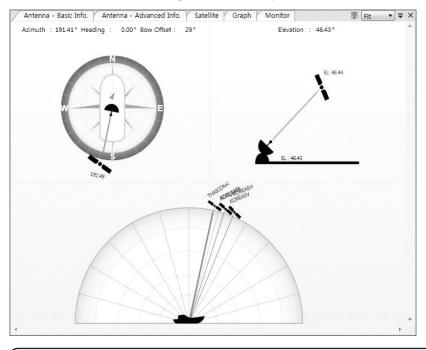
NOTE: Before setting this function, make sure connection of a RJ45 cable from the Ethernet connector on the ACU to the modem or conect a 9 pin serial cable from the RS232/422 connector on the ACU to the modem.

- **Use Mediator:** enables use of the Intellian Dual VSAT Mediator. Use Mediator must be set to "NO" if there is no MEDIATOR connected to the ACU. Improper setting of this parameter will cause your ACU's modem interface to work incorrectly.
- Select Modem: selects your modem type for loading pre-configuration settings. If the ABS (auto beam switching) function is in use, select either IDIRECT-AMIP or COMTECH-ROSS depending on which type of modem is used.
- **Modem Port:** selects a proper data communications port (RS232/ 422/ Ethernet) to interface with the modem.
- Modem Protocol: selects a proper communications protocol on the ACU to interface with the modem (I/O Console/ Open AMIP/ Serial GPS/ ROSS/ VCAP/ ELEKTRIKOM AMIP/ GILAT-SE-II).
- **GPS Out Sentence:** selects GPS out sentence type (GPGLL/ GP GGA/ Simple GPGGA).
- Use TX Mute: selects whether or not to use the "TX Mute" function from the satellite modem. A transmit inhibit output from the ACU will disable/ mute the modem transmit via a voltage change whenever the antenna is blocked, searching, or is mispointed 0.5 degrees from the peak satellite position.

- Use Modem Lock: selects whether or not to use external lock signal from the modem. "Use Modem Lock" will only be activated when the modem protocol is set as I/O Console.
- **TX Mute:** TX Mute is a transmit inhibit output from the ACU to dis able /mute the modem transmit through a 5 V (HIGH) or 0 V (LOW) current whenever the antenna is blocked, searching, or is mispointed 0.5 degrees from peak satellite position. TX Mute will only be activated when modem protocol is set as I/O console.
- **Modem Lock:** is the modem lock output from the modem. It provides a logic input through a 5V (HIGH) or 0 V (LOW) current to the ACU to identify when the system is on the correct satellite. "Modem Lock" will only be activated when modem protocol is set as I/O Console.

7. GUI

This view shows a graphical representation of the current antenna position which allows you to easily identify whether or not the antenna is aligned properly to the target satellite or is in a block zone. In addition, this view shows the current satellite that the antenna is pointed towards and the satellites that are located at a 180° arc on the horizon, according to the current position.



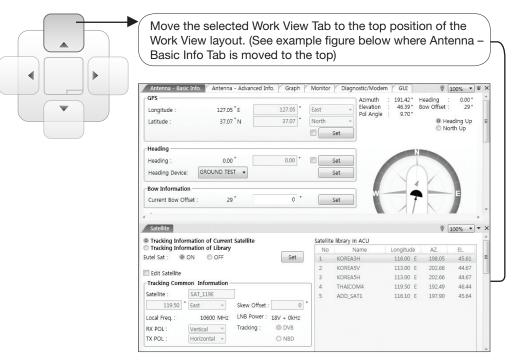
NOTE: Based on the satellite EIRP footprint and the size of the antenna, you may not be able to track all the satellites visible in 180° arc.

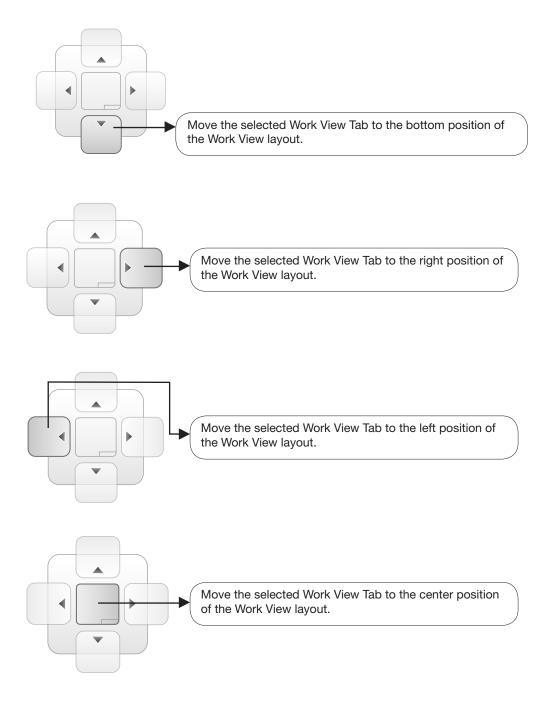
8. Work View Functions

The seven Work View Tabs displayed in the Work View can be arranged in customized layouts.

- Layout Formatting

 Each of the Work View Tab can be separated from the rest Tabs. Click and hold the left mouse button on the Work View Tab's header and then drag a desired Tab out. When a Work View Tab is separated from the rest of your Work View Tabs, again click and hold the left mouse button on the Work View Tab's header to display a cross-shaped Navigator icon. While holding the mouse button, bring the selected Work View Tab closer to the Navigator icon and release the mouse button at your desired position (top, left, right or bottom arrow). This time, the selected Tab will be moved to the desired position.





You can also drag multiple Work View Tabs into a customized layout in the same manner. Click and hold left mouse button on each Work View Tab's header and drag it onto a desired arrow on the Navigator icon. Then each Work View Tab can be placed to the desired positions as shown in the figure below.

GPS	Diagnostic —		Modem			
Longitude : 127.05 ° E	Test Start	Save Result	Use Mediator :	NO		•
Latitude : 37.07 °N ≡			Select Modem :	IDIRECT	-AMIP	•
	Select All	ALL Clear	Modem Port :	Ethernet		*
Heading			Modem Protocol :	Open Al	MIP	*
Heading : 0.00 °			GPS Out Protocol :	GPGLL		*
Heading Device: GROUND TEST -	Start	End	Use TX Mute :	© Yes	O No	
Bow Information	Serial	Home	Use Modem Lock :		O No	
Current Bow Offset : 29 °	Comm.	Sensor	TX Mute :	© Low	() Hig	h
					^	
Satellite					1	100% -
Tracking Information of Current Satellite		Satellite libra				
		No	Name Long	itude	AZ.	EL.
	Set	No 1 KO	Name Long REA3H 116	.00 E	198.05	45.61
Eutel Sat : ON OFF 	Set	No 1 KOI 2 KOI	Name Long REA3H 116 REA5V 113	.00 E .00 E	198.05 202.66	45.61 44.67
Eutel Sat : ON OFF Edit Satellite	Set	No 1 KOI 2 KOI 3 KOI	Name Long REA3H 116 REA5V 113 REA5H 113	.00 E .00 E .00 E	198.05 202.66 202.66	45.61 44.67 44.67
Eutel Sat : ON OFF Edit Satellite Tracking Common Information	Set	No 1 KO 2 KO 3 KO 4 THA	Name Long REA3H 116 REA5V 113 REA5H 113	.00 E .00 E	198.05 202.66	45.61 44.67 44.67 46.44
Eutel Sat : ON OFF Edit Satellite Tracking Common Information Satellite : SAT_119E		No 1 KO 2 KO 3 KO 4 TH	Name Long REA3H 116 REA5V 113 REA5H 113 AICOM4 119	.00 E .00 E .00 E	198.05 202.66 202.66	45.61 44.67 44.67
Eutel Sat : ON OFF Edit Satellite Tracking Common Information		No 1 KO 2 KO 3 KO 4 TH	Name Long REA3H 116 REA5V 113 REA5H 113 AICOM4 119	.00 E .00 E .00 E .50 E	198.05 202.66 202.66 192.49	45.61 44.67 44.67 46.44
Eutel Sat : ON OFF Edit Satellite - Tracking Common Information Satellite : SAT_119E 119.50 * East Skew Offset		No 1 KO 2 KO 3 KO 4 TH	Name Long REA3H 116 REA5V 113 REA5H 113 AICOM4 119	.00 E .00 E .00 E .50 E	198.05 202.66 202.66 192.49	45.61 44.67 44.67 46.44
Edit Satellite Tracking Common Information Satellite : SAT_119E 119.50 * East * Skew Offsi Local Freq. : 10600 MHz LNB Powe	et : 0 °	No 1 KO 2 KO 3 KO 4 TH	Name Long REA3H 116 REA5V 113 REA5H 113 AICOM4 119	.00 E .00 E .00 E .50 E	198.05 202.66 202.66 192.49	45.61 44.67 44.67 46.44
Eutel Sate : ON OFF Edit Satellite Tracking Common Information Satellite : SAT_119E 119.50 * East * Skew Offs Local Freq. : 10600 MHz LNB Powe	et : 0 °	No 1 KO 2 KO 3 KO 4 TH	Name Long REA3H 116 REA5V 113 REA5H 113 AICOM4 119	.00 E .00 E .00 E .50 E	198.05 202.66 202.66 192.49	45.61 44.67 44.67 46.44

The Navigator will appear in each area your mouse pointer is located. To return to the default layout, select the Default Layout toolbar menu.

- Horizontal or Vertical Tab Group

The Work View Tabs can be also aligned horizontally or vertically. Without dragging them out, right-click the mouse button on a desired Tab header and select 'New Horizontal Tab Group' or 'New Vertical Tab Group' option. Selecting 'New Horizontal Tab Group' will separate a selected Tab from the rest of other Tabs then arrange it in a horizontal format. Likewise, selecting 'New Vertical Tab Group' will separate a selected Tab from the rest of other Tabs then arrange it in a vertical format.

- Closing the Work View Tab

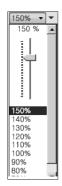
To close the Work View Tab, right-click the mouse button on a desired Tab header and select 'Close' option in the drop down list. To close all Work View Tabs except the selected Tab, select 'Close All But This' option in the drop down list.

- Zoom Tool

Using the Zoom tool, you can easily select the magnification you want by using Zoom In and Zoom Out bar, and Fit in Work View button.



Fit Work View Button: fits the current view to the Work View window size. The button toggles between the fit view and the previous view.



Zoom In and Zoom Out Bar: zooms in and out to expand and reduce the View to the desired size. (The zoom changes in 10% increments.)

	2
Ę	r

View Switch Button: displays a list of the current views in a list. Choosing one of these views will display the selected view in the Work View window.



View Name Button: displays the current Work View name.



Close View Button: closes the current view.

Aptus® WEB

Introduction

Main Page

Page Login Top menus Dash Board & Information

Antenna Settings

Ship setting Antenna Position & Parameters Tracking setting Modem Setting Diagnostic Library Setting

Firmware & Configuration

Antenna Firmware Upgrade Antenna Log Antenna Backup & Restore

Administration

Network Setting SNMP Setting User Management iARM Upgrade iARM Save & Reboot Antenna Event Log Intellian Network Devices

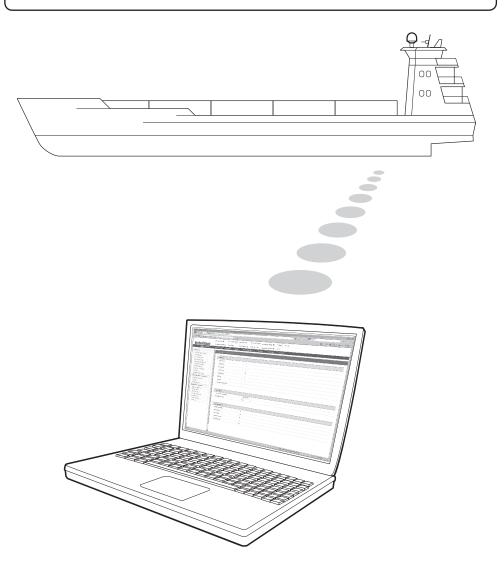
Introduction

With embedded Remote Access (Aptus Web) function, the v-Series can be monitored, controlled, and diagnosed remotely from anywhere, anytime through the TCP/IP protocol. This not only can save time but also save the cost generated from the hundreds of routine maintenance activities such as operating firmware upgrades, tracking parameters resets, and system diagnostic.

How to access Aptus Web:

 Connect an Ethernet Cable between your PC and the Management Ethernet Port.
 Enter the ACU's IP address (192.168.2.1) into your web browser's address bar to login into the ACU's internal HTML page, if this system has not been changed from the ACU's factory default.

NOTE: Aptus Web can be displayed in Internet Explorer 7 or later and is also compatible with Firefox and Chrome web browser.



Main Page

Page Login

- 1. Choose either to Control & Monitor the ACU (Control & Monitoring) or Only Monitor the ACU (Monitoring Only).
- 2. Log into the ACU by typing in User Name and Password information. If this system has not been changed from the factory default:
 - User Name: intellian
 - Password: 12345678

	ptus
Aptı v100	v1.00
● ○ Username Password	Control & Monitoring Mornitoring Only
Login	Cancel



WARNING: The Control & Monitoring Mode will be switched to the Monitoring Only Mode in the following cases;

- If Aptus is connected using TCP/IP Communication while Aptus Web Control is in use.
- If Control & Monitoring Mode is accessed while PC Software is running via TCP/IP Communication. In this case, the web page will display a pop-up message asking if you want to disconnect the PC Software network connection. If you select 'No', the Control & Monitoring Mode will be switched to the Monitoring Only Mode.

Top Menus

Once you log in, the following information and menus are displayed.

s	ignal Level 240 Setup	Initial Search Track				
	0	2 3 4 5 6 7 8 9				
No.	Item	Description				
1	Signal Level	Display current signal level.				
2	Antenna status	 Setup: Displays whether or not the antenna is in SETUP mode. The indicator shows "Blue" in the SETUP mode. Initial: Antenna or ACU is initialized. Search: Antenna is searching a target satellite. Track: Antenna is tracking the target satellite. 				
3	TX Enable/ TX Disable	Displays whether or not the antenna is able to transmit the data				
4	Restart	Restart the antenna system.				
5	Setup	Enter SETUP mode.				
6	Save Sat.	Save current satellite settings. Bow offset will be adjusted and saved automatically.				
7	Ant. Info	Obtain current antenna information.				
8	Account	Shortcut to User Management menu. Change login ID and Password.				
9	Logout	Logout the ACU's internal HTML page.				

Dash Board & Information

4

On the left side of the page, Dash Board and Information menus are displayed as below to provide quick monitoring of the antenna status and settings. Other menus are displayed only in the Control & Monitoring mode and their functions will be described in the next sections.

Dash Boa	ellian®	— Signal Level 15	Setup Initial	Search Track	TX Disable Restart Setup	Save Ant. Info Account Logout	
> Ship Setti	2	Dash Board					
					-		
> Antenna S		Current Antenna Posit		a Position	Azimuth Animation		
> Tracking		Relative Azimuth(°)	191.56		-		
> Modern S		Absolute Azimuth(°)	191.56 / 192				
> Diagnosti		Elevation(°)	46.95 / 46.44	4		N	
> Library Se		LNB Pol Angle(°)	9.70 / 9.90				
	&Configuration	3 GPS					
Antenna Fir Antenna Lo	mware Upgrade	Longitude(°)	127.05	E 🛒 🔘		<u> </u>	
	ig ackup & Restore	Latitude(°)	37.07	N 👻	W	T E	
Administr		•		housed			
Network Se	etting	4 Heading Device					
SNMP Setti		Current Device					
User Mana iARM Upgra	and the second	GROUND TEST 🚽				5	
iARM Save		Heading(°)	0.00	0			
Antenna Ev		5 BOW Offset					
	work Devices	Current Bow Offset(°)	29		TX Enable	0	
					Enable Mode	•	
	175.195.19.5 175.195.19.5	6 DVB Information			Blockage	•	
Refresh Ra	te • 1 (sec)	Frequency(MHz)	12228		Pointing	•	
Refresh Dis	sable 6:08 n Timeout 17:09	Symbol(kSps)	27490		Modem Lock	•	
Wifi •		NID	0x 00AD		LNB Rotate	•	
		Verify Type	AGC Only	T			
		7 NBD Information			12 Tracking Satellite		
		IF Frequency(kHz)	1190000		Satellite Name	SAT_119E	
		Bandwidth(kHz)	1000		Longitude(°)	119.5 E 🛒	
		Base Local	10600 Mhz		Skew Offset(°)	0.00	
			a (MUz)		Tracking Method	DVB NBD	
		8 Local Frequency Settin 13V + 0kHz	10000	0	RX Polarization	Vertical	
		13V + 0kHz 13V + 22kHz	10000	0	TX Polarization	Horizontal	
		13V + 22RHZ 18V + 0kHz	10/50	0		······································	
		18V + 22kHz	9750	0	13 Antenna Information		
		INT TELEVILE			Antenna Size	130 cm / 51 inch	
		9 Software Information -			Voltage	25.8V / 28.4V	
		Antenna Stabilizer Version	V 5.81		Antenna Product	V1-110-047	
		Antenna PCU Version	V 5.81		ACU Product	VP-T526	
		ACU Main Version	V 2.54		Antenna Serial Number	V1110050022	
		Library Version	V 5.00		ACU Serial Number	V41113120001	
		10000510 (CONSIST	0.00000		System Polarization	CROSS-POL	
					System Band	KU_BAND]
No.	Item	D	escripti	ion			
ന	Dach P.	oard Di	enlave	ourrent o	ntenna status to	be quickly monito	ared
1	Dash B					be quickly monito	ored.
Current Antenna Position /			Relative Absolute	Azimuth Azimut	h: displays anter	na relative AZ angl na absolute AZ ar	
<u> </u>	Target A Positior	n - I	LNB Pol	Angle: c	ys antenna eleva displays LNB pol s ship's heading	angle.	
③ GPS				de (East /			

00,
IMEA

5	BOW Offset	Display current bow offset
6	DVB Information	Displays DVB tracking mode's current tracking information. - Frequency: displays tracking frequency. - Symbol rate: displays symbol rate. - NID: displays network ID. - Verify type: displays verification typ (AGC, DVB, DVB Decode)
7	NBD Information	Displays NBD tracking mode's current tracking information. - Frequency: displays tracking IF frequency. - Bandwidth: displays detection bandwidth.
8	Local Frequency Setting (MHz)	Displays current LNB's local frequency and voltage
9	Satellite Information	Displays current Antenna and ACU firmware versions and Satellite Library version installed in the system. - Antenna POL Version (It will display "v" if there is no Pol Control Board installed.) - Antenna Stabilizer Version - Antenna PCU Version - ACU Main Version - Library Version
10	Azimuth Animation	Shows a graphical representation of the current antenna position to identify whether or not the antenna is aligned properly to the target satellite or is in a block zone.
1	TX Enable	Displays whether or not the antenna is able to transmit the data. The TX function will only be enabled (shows BLUE dot) only if all of the factors listed below shows "BLUE" dot. Exception: If "Use TX Mute" is set as "NO", the TX function will be enabled regardless of which factor listed below shows "gray" dot or "red" dot. - Enable Mode: antenna is not in SETUP mode. - Blockage: antenna is not facing the predefined block zone(s) Pointing: antenna is pointing to the target satellite. - Modem Lock: satellite modem is sending a logic input to the ACU to identify when the antenna tracks on the correct satellite. - LNB Rotate: LNB is not rotating.
12	Tracking Satellite	Displays current tracking mode. - Satellite: displays satellite name. - Longitude: displays satellite orbit position. - Skew Offset: displays Skew offset. - Tracking Method: displays current tracking mode (DVB/ NBD). - RX Polarization: displays current RX polarization. - TX Polarization displays current TX polarization.
13	Antenna Information	Displays the product information
1	Information	 Control IP: Displays current IP that controls the ACU. Current IP: Displays current IP address. Refresh Rate: Displays screen refresh rate (default: 1 sec.) Refresh Disable: Displays time out. The screen will not refresh once the time-out shows 0:00. Exception: If the Refresh Disable Time is set to "OFF" in the Network Setting page, then the clock will show ":" and system will keep monitoring all activities regardless of timeout. Wi-Fi : Displays Wifi on/off switch

Antenna Settings

Ship Setting

Antenna Setting	2 GPS 🖉			5 - Blockage 🗹	
> Tracking Setting	Longitude(°)	r		5 Blockage M	BL1DBL2DBL3DBL4DB
Modem Setting	-		127.05 E 💌		
Diagnostic	Latitude(°)		37.07 N 💌	AZ Start(°)	0 0 0 0 0
	Set GPS			AZ End(°)	0 0 0 0 0
Library Setting				EL(°)	90 90 90 90 90
Firmware&Configuration	3 BOW Offset 🗹			Set Block Zone	
Antenna Firmware Upgrade	Current Bow Offset(°)		29		
Antenna Log	Set Bow				
Antenna Backup & Restore	Offset				
Administration					
Network Setting	4 Heading Device 🗹 —				
SNMP Setting	Current Device				
User Management	GROUND TEST		Set Device		
iARM Upgrade iARM Save & Reboot	Heading(°)		0.00		
Antenna Event Log	Set				
Intellian Network Devices	Heading				
Information					
Control IP • 175.195.19.5					
Current IP 175.195.19.5					
Refresh Rate * 1 (sec)					
Refresh Rate * 1 (sec) Refresh Disable 8:48 Idle Session Timeout 19:49					

No.	Item	Description
1	Ship Setting	Set the ship information and block zone.
2	GPS	Set GPS information. - Longitude (East/West) - Latitude (North/South)
3	Bow Offset	Set Bow Offset if needed.
4	Heading Device	Set ship's heading device (NONE, NMEA, NMEA2000, Ground Test) and ship's heading information
5	Blockage	Set the antenna's block zones up to 5 by azimuth and eleva- tion sectors. AZ. START is where the relative azimuth starts and AZ. END is where the relative azimuth ends (Range: 0 - 360°). EL. Limit is where the elevation starts (Range 0 - 90°).



WARNING: Enter the SETUP mode for configuration. Tick the checkbox before modifying the settings. After configuration, click 'Set ...' button to submit the settings.

> Ship Setting Antenna Setting Antenna Setting 2 Current Antenna Position / Target Antenna Positio 9 - Search & Tracking Parameter Setting 🗐 -> Tracking Setting > Modem Setting Relative Azimuth(°) 321.51 DVB Detect Level Threshold 40 Absolute Azimuth(°) 201.51/202.59 DVB Tracking Level Threshold 20 > Diagnostic Elevation(°) 45.91/44.82 NBD Detect Level Threshold 40 > Library Setting LNB Pol Angle(°) -94.70 / 17.80 NBD Tracking Level Threshold 20 > Firmware&Configuration Tx Enable Threshold Heading(°) 240.00 40 Antenna Firmware Upgrade Wait Time(s) 5 Antenna Log 3 Manual Movement Search Step(°) 0.50 Antenna Backup & Restore Azimuth Angle(°) ◀ 5.00 ► Azimuth Elevation Search 1 Range(°) 400 > Administration Elevation Angle(°) ▼ 5.00 ▲ Network Setting Search 2 Range(°) Azimuth Elevation LNB Pol Angle(°) ▼ 5.00 ▲ SNMP Setting User Management Search 3 Range(°) Azimuth Elevation 4 LNB Pol Sensor Calibration 🗷iARM Upgrade iARM Save & Reboot Sat Skew Offset(°) 0.0 Antenna Event Log Mechanical Offest(°) 1.0 • 10-Tilt Sensor Bias 🗷-Intellian Network Devices Pol Sensor Calibration Tilt Sensor Ready > Information Mechanical Skew Offset Reset Elevation Cross Level Control IP • 175.195.19.5 Current IP 175.195.19.5 5 Elevation Adjust Step(°) ▼ 1.00 ▲ Refresh Rate * 1 (sec) EL Adjust(°) -1.0 Refresh Disable 7:48 Set EL Adjust 11-Rate Sensor Adjust Idle Session Timeout 18:49 Wifi • -41 Azimuth 6 Conical Range 🗹 Elevation 23 Azimuth 110 Cross-level 69 Elevation 110 Set Rate Sensor Bias Set Range Rate Sensor Calibration . 7 Idle Mode 🗵 Idle Mode 8 Reboot 🗹 -Reboot No Item Description

Antenna Position & Parameters

No.	Item	Description
1	Antenna Setting	Set current antenna position and Search and Tracking parameters. These parameters should only be changed by an authorized service technician. Improper setting of these parameters will render your system inoperable.
2	Current Antenna Position/ Target Antenna Position	Display current antenna position. - Relative Azimuth: display antenna relative AZ angle. - Absolute Azimuth: display antenna absolute AZ angle. - Elevation: display antenna elevation angle. - LNB Pol Angle: display LNB pol angle. - Heading: display ship's heading information.
3	Manual Movement	Move antenna azimuth and elevation angles and LNB pol angle to find the desired satellite manually. LNB Pol Angel can be adjusted at any time either in SETUP Mode or Tracking Mode.
4	LNB Pol Sensor Calibration	Calibrate the LNB pol angle when the control board, po- tentiometer or belt is replaced.
5	Elevation Adjust	Adjust the elevation to offset the angle difference between the mechanical elevation angle and actual elevation angle.
6	Conical Range	The relative force of the motors controlling azimuth and elevation. Set the conical range while the antenna is in tracking mode.

7	Idle Mode	Release the elevation and cross level motor brakes while the antenna is in SETUP mode. The antenna can be moved manually during the mode.
8	Reboot	Reboot the system.
		 DVB Detect and Tracking Level Threshold: display / set current detect level threshold and tracking level threshold when DVB tracking mode is chosen to be used. NBD Detect and Tracking Level Threshold: display / set current detect level threshold and tracking level threshold when NBD tracking mode is chosen to be used.
9	Search & Tracking Parameter Setting	 TX Enable Threshold: display / set TX enable threshold. Wait time: set the time-out for automatic initiation of a search after the signal level drops below the pre-defined threshold value.
		- Search Step: set increment step size.
		 Search 1 & 3 Range: set Search 1 & 3 search range. Search is conducted in a two-axis pattern consisting of alternate movements in azimuth and elevation as forming expanding square.
		- Search 2 Range: is reserved for future use.
10	Tilt Sensor Bias	Adjust the two solid-state tilt sensors used to provide absolute cross-level tilt of the antenna and elevation feed- back to eliminate long-term pointing drift (error). Tilt bias is required to be adjusted when the antenna control board or sensor box is replaced. Check to see whether or not the bubble is located at the center of the level vial.
1	Rate Sensor Adjust	Calibrate DC voltage output from the three rate sen- sors used to sense antenna motion in azimuth, elevation and cross-level axes. During the calibration process, the antenna should avoid any motion as it can affect the antenna's performance.



WARNING: Tick the checkbox before modifying the settings. After configuration, click 'set...' button to submit the settings.

Tracking Setting

> Ship S	etting	Tracking Setting			
> Antenn	a Setting				- 17
Tracking	ng Setting	2 Local Frequency Setti 13V + 0kHz		Gurrent Satellite Setting A Tracking Satellite	g 🗸
> Moden	n Setting	13V + 0KHZ	10000	Satellite Name	SAT_119E
> Diagno	estic	18V + 0kHz	10750	Longitude(°)	119.5 E
> Library		18V + 22kHz	10600 O	Skew Offset(°)	0.00
Firmware&Configuration Antenna Firmware Upgrade		5736	Tracking Method	© DVB	
				NBD	
Antenna				RX Polarization	Vertical
Antenna	a Backup & Restore			TX Polarization	Horizontal
> Admini	istration			5_DVB Information	
Networl SNMP S	-			Frequency(MHz)	12228
	anagement			Symbol(kSps)	27490
iARM Up				NID	0x 00AD
	ave & Reboot a Event Log			Verify Type 6NBD Information	AGC Only
	Network Devices			IF Frequency(kHz)	1190000
> Inform	ation			Bandwidth(kHz)	1190000
Control	IP • 175.195.19.5			Base Local	10600 Mhz
	IP 175.195.19.5 Rate • 1 (sec)				10000 mm2
Defreek	Disable 9:24			Set Tracking Info	
No.	Item		Descriptio	n	
1	Tracking	Setting	frequency c	et current tracking n f the target satellite.	
2	Local Frec (MHz)	luency Setting		set LNB's local freq local frequency wh	
3	Current Sa	atellite Setting	Display and	set current satellite	setting.
4	Tracking S	atellite	 Satellite: c Longitude Skew Offs Tracking M mode (D) RX Polariz polarizati 	ation: display and so on. ation display and se	lite name. ellite orbit position Skew offset. set current tracking et current RX
5	DVB Inforr	nation	information - Frequency - Symbol ra - NID: displ - Verify type	set DVB tracking m : display and set tra te: display and set s ay and set network I display and set ver 3 Decode)	cking frequency. symbol rate. D.
6	NBD Infor	mation	information	set NBD tracking m /: display and set tra	-



WARNING: Tick the checkbox before modifying the settings. After configuration, click 'set...' button to submit the settings.

Modem Setting

Ship Setting	Modem Setting						
Antenna Setting Tracking Setting	2 Modem						
	Use Mediator	NO					
Modem Setting	Select Modem	IDIRECT-I/0	Use TX Mute	۲	YES	0	NO
Diagnostic	Modem Port	Ethernet	Use Modern Lock	0	YES	۲	NO
Library Setting	Modem Protocol		TX Mute	۲	LOW	0	HIGH
Firmware&Configuration	Modem Protocol	ELEKTRIKOM-AMIP	Modem Lock	۲	LOW	0	HIGH
Antenna Firmware Upgrade	GPS Out Sentence	GPGLL 🗸					
Antenna Log Antenna Backup & Restore							

Description

Set the modem interface.

Modem Setting

Item

No.

(2)

Modem

- Use Mediator: enable the usage of Mediator if the antenna is
connected to the Intellian Dual VSAT Mediator. Use Mediator
must be set to "NO" if there is no MEDIATOR connected to the
ACU. Improper setting of this parameter will cause your ACU's
modem interface to work incorrectly.

- Select Modem: is to select a proper data communication port and protocol on the ACU to interface with the satellite modem. The settings related to the modem interface will be set automatically once the modem type is selected (USER SETTING, IDIRECT-I/O, IDREICT-AMIP, COMTECH-I/O, COMTECH-ROSS, HUGHES, SATLINK-SERIAL, SATLINK-VACP, ELEK-TRIKOM-AMIP, GILAT-SE-II, IPSTAR-SOTM. However, it is required to set the related settings separately if USER SETTING is selected.
- Modem Port: is to select a proper data communication port on the ACU to interface with the satellite modem (RS232/422/ Ethernet).
- Modem Protocol: is to select a proper communication protocol on the ACU to interface with the modem (I/O Console, OpenAMIP, Serial GPS, ROSS, VACP, ELEKTRIKOM AMIP, GILAT).
- GPS Out Sentence: is to select the GPS out sentence type (GPGLL/GPGGA/SIMPLE GPGGA)
- USE TX Mute: is to select whether or not to use TX mute function from the satellite modem.
- USE Modem Lock: is to select whether or not to use external lock signal from the satellite modem.
- TX Mute: is a transmit inhibit output from the ACU to disable/ mute the modem transmit through a 5V (High) or 0V(LOW) current whenever the antenna is blocked, searching, or is mispointed 0.5° from peak satellite position.
- Modem Lock: is the modem lock output from the modem which provides a logic input through a 5V (High) or 0V(LOW) current to the ACU to identify when it is on the correct satellite.

Note: TX Mute and Modem Lock items will only be activated when the modem protocol is set as I/O Console.



WARNING: Ensure to tick the checkbox before modifying the settings. Select 'Set Modem Configuration' to confirm the modem settings configured.

Diagnostic

Ship Setting	Diagnostic & Debug			
> Antenna Setting	2 Diagnostic 🗹		Graph	
> Tracking Setting > Modem Setting	🔘 🍨 Serial Comm.	INB / NBD	A Month	
[,] Diagnostic	Motor AZ	🔘 🍵 SKEW	View Graph	
> Library Setting	🔘 🍝 Motor EL	🔘 🍵 Antenna Power	4 Spectrum	
> Firmware&Configuration Antenna Firmware Upgrade	Motor CL	ACU Power Second S	5 iDirect Modern Monitor	
Antenna Log Antenna Backup & Restore	Incoder AZ	Home Sensor	_Connection	Status
> Administration	Incoder CL		Port : 23	
Network Setting SNMP Setting	Rate Sensor		ID :	Connect :
User Management iARM Upgrade	🔘 🍵 Tilt Sensor		Password:	RX SNR :
iARM Save & Reboot Antenna Event Log	🔘 🍵 Sensor Box Limit	Test ALL		
Intellian Network Devices	Diagnosis Diagnosis Clea	ar		

No.	Item	Description
1	Diagnostic	Execute antenna diagnostic test.
2	Diagnostic	 Select to run a full diagnostic test or single diagnostic test. Serial Comm.: test the data communication between the antenna and the ACU. Motor AZ: test the azimuth motor. Motor CL: test the elevation motor. Motor CL: test the elevation motor. Encoder AZ: test the azimuth encoder. Encoder CL: test the cross-level encoder. Rate Senor: test the rate sensor. Tilt Sensor: test the tilt sensor. Sensor Box Limit: test the sensor box motor. LNB/NBD: test the LNB. SKEW: test the LNB pol motor. Antenna Power: test the antenna power. ACU Power: test the home sensor Test ALL: test all devices.
3	Graph	 Select to view a graph of AZ Absolute, AZ Relative, EL and Heading data of the antenna. A Month: display all data within a month A Week: display all data within a week A Day: display all data in a day Real-time: display data in real time. Press F5 button to refresh. Data Num: set the maximum number of graph data set to be displayed. View Graph: select to view the data graph.



		neckbox before modifying the settings. Click Diagnosis button to . To clear previous diagnosis result, click Diagnosis Clear button.
4	Spectrum	Select to view a current spectrum graph and to set the spectrum display options.
		Displays iDirect Modem status and control connection. This menu appears only when IDIRECT-AMIP protocol is selected at Modem Setting page.
		- Connection: control modem connection.
		- Modem IP: iDirect modem IP
		- Port: Connection ID for telnet
		- Password: Connection password for telnet
		- Start(Stop): Connect to telnet or disconnect
	iDirect Modem Monitor	 Auto Connect: Enabling Auto Connect and rebooting the ACU will save connection data and will auto connect once ACU is powered on next time.
5	(OpenAMIP only)	- Status: Displays iDirect modem status
		- Last Update Date: Displays last updated data and time of the iDirect modem data
		 Connect:Displays connection status (INACTIVE, CONNECT ING, LOGGEDIN, Black data indicates being INACTIVE)
		- RX SNR: Displays RX SNR data.
		- View Detail Information: Select to view detail information
		- Status: Displays last update date and connection status.
		 Information : Displays rx snr, tx power, tx power min, rx power tx power max, tx power, ref, latlong.
		 Option File Information: Displays information about VERSION MOBILE, LOCAL and ACU PORT

Library Setting

> Antenna	a Setting		_			
> Tracking	g Setting	2 Library-		4 Selected Satellite Settin		
> Modem	Setting	· ·	r From ACU	5 Tracking Satellite	9	
> Diagnos	tic	Open Libra		Satellite		
Library	Setting		찾아보기	Longitude(°)	0.00 E 🔻	
> Firmwar	re&Configuration	Upload Lib	rary to ACU	Skew Offset(°)	0.0	
Antenna	Firmware Upgrade		brary to PC	Tracking Method	C DVB C NBD	
Antenna	Log Backup & Restore			RX Polarization	Vertical	
		3 Load Sat	ellite 🗆 —	TX Polarization	Vertical	
> Adminis			Load Satellite	6 DVB Information		
SNMP Se				Frequency(MHz)	0	
User Man				Symbol(kSps)	0	
iARM Upg iARM Sav	yrade ve & Reboot			NID	0x 0000	
	Event Log			Verify Type	AGC Only	
	letwork Devices			7 NBD Information —		
> Informa				Frequency(kHz_IF)	0	
	• 175.195.19.5 9 175.195.19.5			Bandwidth(kHz)	0 Mhz	
	Rate • 1 (sec)			Base Local B Local Frequency Settin		
	Disable 7:46 ion Timeout 18:47			13V + 0kHz	11300	
Wifi •				13V + 22kHz	11300 C	
				18V + 0kHz	11300 C	
				18V + 22kHz	11300 C	
No.	Item		Description			
1	Library S	etting	Display and set the satellite	library informat	tion.	
2	Library		 Open Library from PC: open supplied Intellian CD or from (File format: *.ilf) Upload Library to ACU: uplo Save as Library to PC: save 	the external har ad the satellite li	rd drive/PC. ibrary file to ACU.	
3	Load Sat	ellite	Select the satellite that you wish to track and press Load Satellit button to load the selected satellite.			
4	Selected Satellite		Displays selected satellite info	ormation.		
6	Tracking Satellite		 Satellite: displays satellite na Longitude: displays satellite Skew offset: displays Skew Tracking method: displays c 	orbit position. offset.		
5	Catolinto		 RX polarization: displays cur TX polarization: displays cur 	rent RX polariza	tion.	
6	DVB Info	rmation	- RX polarization: displays cur	rrent RX polariza rent TX polarizat s's tracking infor frequency. pl rate.	tion. tion. mation.	
			 RX polarization: displays cur TX polarization: displays cur Displays DVB tracking mode Frequency: displays tracking Symbol rate: displays symbol NID: displays network ID. Verify type: displays verification 	rent RX polarizat rent TX polarizat s's tracking infor g frequency. ol rate. ation type (AGC s tracking inform g frequency.	tion. mation. only, DVB lock, DV	

Firmware & Configuration

Antenna Firmware Upgrade

> Antenna Setting > Tracking Setting > Diagnostic > Library Setting > Library Setting > Hinnas Etimeware Upparde Method > Library Setting > Hinnas Etimeware Upparde > Administration Antenna Backs & Restore > Administration Current Running Version Antenna Event Log Upparde Wersion Attenna Event Log Attenna Event Log Attenna Event Log Order IP - 10.1103.106 Current Running Version Antenna Event Log Attenna Event Log <th>> Dash Be</th> <th></th> <th>Antenna Fi</th> <th>rmware Upd</th> <th>late</th>	> Dash Be		Antenna Fi	rmware Upd	late	
 Inchains Fittmaker Version Incomation Order Devices Information Order Devices Description Antenna STABIL/ZERV6.22 Antenna STABIL/ZERV6.23 Activity Problem Package Version Antenna STABIL/ZERV6.24 Antenna PCU v6.33 Activity Problem Package Version Antenna STABIL/ZERV6.24 Activity Problem Package Version Antenna STABIL/ZERV6.24 Activity Problem Package Version Antenna PCU v6.33 Activity Problem Package Version Antenna PCU v6.34 Activity Problem Package Version Antenna PCU v6.35 Activity	> Antenna	a Setting		- 5		
Modem Setting > Library Setting > Library Setting > Library Setting > Firmware Konfiguration Antenna Firmware Konfiguration Antenna Firmware Konfiguration Antenna Firmware Konfiguration Antenna Backup & Restore Administration Version Setting SNMP Setting Outreast Firmware Konfiguration Antenna Firmware Konfiguration Antenna Firmware Konfiguration Outreast Firmware Version Antenna StrabilizerVersion Antenna StrabilizerVersion Antenna Firmware Version Antenna StrabilizerVersion Antenna Strabili Version An	> Trackin	g Setting		-	Manual Hagrada	
 Diagnostic Diagnostic Diagnostic Diagnostic Diagnostic Dispary Setting Firmware Konfiguration Admini Earbay & Restor Admini Earbay & Restor Current Running Version Current Firmware Version Antenna STABIL/ZERv6.23 ACU Main V3.33 ACU Main V3.35 ACU Main V3.36 ACU Main V3.36 ACU Main V3.	> Modem	Setting				
Firmware&Configuration 201921 Antenna Backup & Restore 3 Administration 3 User Management. Antenna STABIL/ZERV6.23 Artenna Backup & Restore Antenna STABIL/ZERV6.23 Antenna Backup & Restore Antenna STABIL/ZERV6.23 New K Setting User Management. URAN Save & Rebot Antenna STABIL/ZERV6.22 Antenna Event Log Current Firmware Version Infelian Alevon Devices Antenna STABIL/ZERV6.23 Infelian Alevon Devices Previous Package Version Antenna STABIL/ZERV6.23 Rollback Previous Package Version Antenna STABIL/ZERV6.23 Actu Main V4.33 Upgrade Upgrade antenna and ACU firmware version. Select Upgrade Method between Manual Upgrade or Au Upgrade. With Manual Upgrade option selected, browsee select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmware available from the server. ③ Current Running Display current firmware version (Antenna STABIL/ZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback	> Diagnos	stic	The upload tin	ne may vary due to a	a variety of factors such as the speeds of your network.	
Arterna Firmware Utgrade Arterna Backap & Restore Image: Status and the status a	> Library	Setting	Browse and se	elect the firmware fil	le to upload.	
Antenna Backup & Restore Administration Network Setting SMM Setting User Kanagement LARM Upgrade Variation Antenna STABILIZERv6.22 Antenna PCU V40069 Der Kanagement LARM Upgrade Variation Corrent Firmware Version Antenna STABILIZERv6.22 Antenna STABILIZERv6.22 No. Item Description Control IP 10.1103.106 Current IP 10.1103.106 Refers Rate - 1 (sec) No. Item Description Image: Current Running Version Antenna PCU Vide039 Antenna Firmware Upgrade Upgrade Upgrade Upgrade Vide030 Antenna Firmware Upgrade With Manual Upgrade option selected, browsee select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server.	> Firmwa	re&Configuration			찾아보기	
Administration Network Setting SMM Setting User Management VAMM Uggrade Antenna Event Log Values Reboot Antenna Firmware Upgrade Values	Antenna	Log Rackup & Restore				
VARM Upgrade VARM Save & Reboot Antenna Event Log Intellian Network Devices Information Control IP + 01.103.106 Corrent IP 10.1.103.106 Corrent IP 10.1.103.106 Antenna STABIL/ZERv6.22 ACU Main V3.35 Rollback No. Item Description Notantenna FVALUZERv6.21 ACU Main V2.35 Rollback Morent IP 10.1.103.106 Corrent IP 10.1.103.106 Upgrade Upgrade antenna and ACU firmware version. Rollback Image: State Stat	Network SNMP S	Setting etting			Antenna PCU v6.31 ACU Main v3.36	
Antenna Event Log Intellian Network Devices Previous Package Version v140609 Antenna STABLIZERV6.22 Antenna STABLIZERV6.23 ActU Main Rollback Control IP 10 1.103.106 Current IP 10.1.103.106 Refresh Rate + 1 (sec) Description Rollback Image: Antenna STABLIZERV6.21 Antenna STABLIZERV6.23 Antenna STABLIZERV6.21 ActU Main Rollback Image: Antenna Firmware Upgrade Upgrade antenna and ACU firmware version. Select Upgrade Method between Manual Upgrade or Au Upgrade. With Manual Upgrade option selected, browse select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server. Image: Current Running Version Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback			4 Cold Rollba	ck		
Control IP - 10.1.103.106 Current IP 10.1.103.106 Refresh Rate - 1 (sec) V140523 Antenna PCU ACU Main V6.31 V2.35 No. Item Description ① Antenna Firmware Upgrade Upgrade antenna and ACU firmware version. ② New Antenna Firmware Select Upgrade Method between Manual Upgrade or Au Upgrade. With Manual Upgrade option selected, browse select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server. ③ Current Running Version Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback	Antenna	Event Log		kage Version	Antenna PCU v6.31	
Referent Rate · 1 (sec) No. Item Description ① Antenna Firmware Upgrade Upgrade antenna and ACU firmware version. ② New Antenna Firmware Select Upgrade Method between Manual Upgrade or Au Upgrade. With Manual Upgrade option selected, browse select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server. ③ Current Running Version Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback	Control II	P • 10.1.103.106		ge Version	Antenna PCU v6.31	
① Antenna Firmware Upgrade Upgrade antenna and ACU firmware version. ② New Antenna Firmware Select Upgrade Method between Manual Upgrade or Au Upgrade. With Manual Upgrade option selected, browse select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server. ③ Current Running Version Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback	100000000000000000000000000000000000000					
(1) Upgrade Upgrade antenna and ACU firmware version. (2) New Antenna Firmware Select Upgrade Method between Manual Upgrade or Au Upgrade. With Manual Upgrade option selected, browse select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server. (3) Current Running Version Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback	No.	Item		Descrip	ption	
 New Antenna Firmware Wew Antenna Firmware Wew Antenna Upload button. With Auto Upgrade option selected, browse select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmw available from the server. Current Running Version Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback 	1		rmware	Upgrade	e antenna and ACU firmware version.	
Version Antenna PCU, ACU main, Library) Display Previous/Latest Package version and rollback	0	U New Antenna se Firmware U Cl			e. With Manual Upgrade option selected, browse and he firmware package file to upload and click Start button. With Auto Upgrade option selected, click button to check automatically if there is new firmware	
	3		nning			
cannot be operated while rollback is in progress.	4	Cold Rollba	ack	firmware	e to Previous or Latest version. Other functions	

Upgrade procedures:

- 1. Select the upgrade package file. In Auto Upgrade mode, check new firmware file automatically by clicking Check button.
- Click on "Start Upload" button to transfer the Firmware package file ("*.fwp") to E2S (Ethernet to serial) module. In Auto Upgrade mode, click "Upgrade" button once new firmware file is detected.
- 3. After the package file is transferred, it'll show "upgrade from vx.xx Version to vx.xx Version". Enable the check box to select the firmware file that you wish to upgrade. To select all firmware files, click Select All Firmwares.
- 4. Click on "Start Upgrade" button.

> Dash Board > Ship Setting	Antenna Firmware Update		
> Antenna Setting	The Firmware Package Update Ready		
> Tracking Setting	Antenna STABILIZER	Update From v5.81 To v5.81	
> Modem Setting		From 0x0109 To 0x0106	
> Diagnostic	Antenna PCU	Update From v5.81 To v5.81	V
> Library Setting		From 0x010A To 0x0107	
> Firmware&Configuration	ACU MAIN	Update From v2.54 To v2.54	V
Antenna Firmware Upgrade		From 0x0102 To 0x0102	
Antenna Log Antenna Backup & Restore	Start Update Select All Firmwares		

Firmware upgrade status page

> Dash Board	Antonno Eirmuusea Unavo	de la						
> Ship Setting	Antenna Firmware Upgrade							
> Antenna Setting	TI 51 D I 4007001		_					
> Tracking Setting	— The Firmware Package v120726		_					
> Diagnostic	Antenna POL	Upgrade From v To v Ready						
> Firmware&Configuration	Antenna STABILIZER	Upgrade From v0.96 To v0.95 Ready						
Antenna Firmware Upgrade	Antenna PCU	Upgrade From v0.95 To v0.95 Ready						
Antenna Log	ACU MAIN	Upgrade From v0.95 To v0.95 Ready						
Antenna Backup & Restore	Back to main page							
> Administration								
Wireless Setting								
Network Setting								

5. It'll display information about the upgrade process status on full screen.

Upgrade process status page

The Firmware Package v120726 Up	grade Status	
Antenna STABILIZER	Upgrade From v0.96 To v0.95 Success	
Antenna PCU	Upgrade From v0.95 To v0.95 20 %	
ACU MAIN	Upgrade From v0.95 To v0.95 Ready	

6. If the firmware is successfully upgraded, it'll display "The firmware update is completed."

7. Click on "Back to main page" to go out of the screen.To verify the upgraded firmware version, go to Dash Board > Software Information.

Upgrade complete page

The Firmware Package v120726 Upgrade Complete

Antenna POL "----" "Skip" Antenna STABILIZER "0.95" "Success" Antenna PCU "0.95" "Success" ACU MAIN "0.95" "Success" ACU MAIN "0.95" "Success" The firmware update is completed. If you receive an fail message, please try again. Please refer to the User Guide if you have trouble connecting to the antenna.

Back to main page

NOTE: To roll back to the previous firmware package version or latest package version, select Rollback Upgrade menu on the Antenna Firmware Upgrade page.

Antenna Log

> Dash Bo > Ship Set		Antenna	Log			in Bo da			
> Antenna	Setting	2 GPS Log	Option						
Tracking	Setting	Enable							
Modem	Setting	Submit C	Submit Cancel						
Diagnos	tic	-							
Library S	Setting	T	.og Download						
Firmwar	e&Configuration		irt Download button to a new pop-up windov						
	irmware Upgrade	4 Start Down	load						
Antenna Antenna F	Log Backup & Restore	A							
Adminis			irmware Log	POL	STAB	PCU	Main		
Network S			(UTC 00:00) n 2007 09:09:42	POL 1.22	5.81	PCU 5.81	Main 2.54		
SNMP Set	-	Tue, Ju Jai	12007 03.03.42	Skip	Fail	Fail	Fail		
User Man iARM Upg		Tue, 30 Ja	1 2007 09:07:01	1.22 Skip	5.81 Skip	5.81 Skip	2.54 Fail		
iARM Sav Antenna E	e & Reboot Event Log	Tue, 30 Jan 2007 09:04:37		1.22 Skip	5.81 Skip	5.81 Skip	2.54 Fail		
Intellian Network Devices		Tue, 30 Jan 2007 07:09:09		1.22 Skip	5.81 Fail	5.81 Fail	2.54 Fail		
	• 175.195.19.5	Tue, 30 Ja	n 2007 07:04:04	1.22 Skip	5.81 Fail	5.81 Fail	2.54 Fail		
No.	Item		Descript	tion					
1	Antenna L	.og	Displays	antenna lo	g data				
2	GPS Log	Option	Disable/E	Enable to s	ave GPS info	ormation in t	he antenna log fil		
3	Antenna Log Download		Download the log file. Select start download button to procee						
4	Start Download Dov		Downloa	Download the antenna log information.					
5	Antenna Firmware Log Display log information of firmware upgrade.					are upgrade			

Log Downloade procedures:

- 1. Select 'Start Download' button.
- 2. To run Java applications you must have Java Runtime Environment JRE) version 6.0 and above installed in your PC/ laptop when you access the antenna log page for first time. Click "Run" button on the popup message "The application's digital signature cannot be verified. Do you want to run the application? "to install the Applet. Refer to Appendix for Java Installation Instructions if the system does not display the popup message.

C Log Download - Windows Internet Explorer	
Antenna Log	
Log Download	
Select range for logs and execute download. The data volume will grow significantly for the network download.	

- 3. Select 'Browse' to browse the target directory of the antenna log file.
- 4. Select log period for file download.
 - Last 3 Months: download the antenna log information for the past three months.
 - Last 1 Month: download the antenna log information for the past one month.
 - Last 1 week: download the antenna log information for the past one week.
 - Last 1 Day: download the antenna log information for the past one day.
- 5. Select 'Download'to download the log file to the target directory according to the selected log period.

🦉 Log Dowr	nload - Windows Internet Explorer	
Anten	na Log	
—Log D	Download	
Downle	oad Folder C:\Users\Untellian\Uperbournents Browse	
Progre	ess Status 🗾 83% 📃// 🛛 Last 1 Day 🚽 Download	
	Downloading: 157422169 Jan 1 00:14 M_TEMPFILE_NODATE,txt	
	range for logs and execute download. ta volume will grow significantly for the network download.	

NOTE: You can choose to Enable or Disable the GPS tracking function. Liability for information that is disclosed when GPS is enabled is solely the operators responsibility and it is up to the operator on whether or not to provide their GPS information to third parties. Any issues regarding safety and privacy when turning on the GPS function is solely up to the user. Intellian is not responsible for information that is disclosed when the GPS function is enabled.

Antenna Firm Antenna Log	Antenna Backup & Rest titing stiting titing ang Configuration ware Upgrade kup & Restore	C ACU © PC actup estore
No.	Item	Description
1	Antenna Backup & Restore	Enter Backup & Restore page. (Setup mode is required)
2	Target	Backup antenna information to ACU/PC or restore antenna by using the saved information from ACU/PC.
3	Backup	Backup antenna information.
4	Restore	Restore antenna information.

Antenna Backup & Restore

Network Setting

> Antenna Setting				A		
> Tracking Setting	2 Network Configuration — Modem Port Configuratio		_	6 Sys Log Configuration –		
				Management Server	Disable	Help
> Modern Setting	IP Address	192.168.1.2	Help	Server IP	192.168.1.1	Help
> Diagnostic	Subnet Mask	255.255.255.0	Help	UDP Port	514	Help
Library Setting	Gateway	192.168.1.1	Help	Message Type	advan	ced
> Firmware&Configuration	DNS	168.126.63.1	Help		0 🗸 Diagnostic	
Antenna Firmware Upgrade	NAT Routing	Enable	Help		1 🗹 Important	
Antenna Log	TCP Modem Porotocl Port	4001	Help		2 Periodic 3 Setting	
Antenna Backup & Restore	UDP Modem Porotocl Port	49184	Help		4 Reserved	
> Administration	3			Syslog Target Level	LOG NOTICE	Help
Network Setting	Management Interface Configuration			Submit Cancel		
SNMP Setting User Management	IP Address	192.168.2.1	Help			
iARM Upgrade	Subnet Mask	255.255.255.0	Help	Browser Configuration _		
iARM Save & Reboot	Lease Start Address	192.168.2.2	Help	Refresh Rate(second)	1	Help
Antenna Event Log	Lease End Addres	192.168.2.30	Help	Refresh Disable	9	Help
Intellian Network Devices	Lease Time	180	min	Time(minute)		
> Information			Help	Set to Current Browser	angel	
Control IP + 175.195.19.5 Current IP 175.195.19.5	4 -WiFi Acccess Point Confi	guration-		Set to Current Browser C.	ancer	
Refresh Rate * 1 (sec)	SSID	intellian-VSAT	Help			
Refresh Disable 8:30 Idle Session Timeout 19:30	Channel	2	Help			
Wifi *	Authentication Type	WPA2	Help			
	Password	intellian1234	Help			
	Max Stations	10	Help			
	5 Network Service Configu	ration				
	Telnet Service	Disable	Help			
	HTTPS Port	443	Help			

No.	Item	Description
1	Network Setting	Enter network setting page.
		Modify ACU's Internal IP address and press Submit button. Go to "Save & Reboot" page and press Save & Reboot button to validate the changes.
		- IP Address : Factory default(Primary:192.168.0.223)/ (Secondary:10.10.1.1).
		- Subnet Mask : Factory default(255.255.255.0).
2	Modem Port Configuration	- Gateway : Factory default(192.168.0.254).
	Configuration	- DNS : Current default DNS Address is assigned to.
		- NAT Routing : Enable/Disable NAT routing.
		- TCP Modem Protocol Port : TCP port number for modem
		protocols using TCP as transport.
		- UDP Modem Protocol Port : UDP port number for modem
		protocols using UDP as transport.
		Modify Management Port's network configuration and press Submit button. Go to "Save & Reboot" page and press Save & Reboot button to validate the changes.
	Management	- IP Address : ACU front network port /Factory
3	Interface	/ default(192.168.2.1).
	Configuration	- Subnet Mask : Factory default(255.255.255.0).
		- Lease Start Address : Lease IP address start range.
		- Lease End Address : Lease IP address end range.
		- Lease Time : Lease IP address update time.

	Wi-Fi Access Point Configuration	- SSID : The SSID is the network name shared among all devices in a wireless network. The SSID must be identical for all devices in the wireless network. It is case-sensitive and must not exceed 32 alpha- numeric characters, which may be any keyboard character. Make sure this setting is the same for all devices in your wireless network.
4		 Channel : Select an appropriate channel from the list provided to correspond with your network settings. All devices in your wireless network must use the same channel in order to function correctly. Try to avoid conflicts with other wireless networks by choosing a channel where the upper and lower three channels are not in use.
		- Authentication Type : Module supports an authentication mode that the 802.11 device uses when it authenticates and associates with an access point or IBSS cell.
		- Password : WiFi access password.
		- Max Stations : Setting max stations.
	Network Service	- Telnet Service : Enable or disable telnet login support.
5	Configuration	- HTTPS Port : HTTPS port number.
	Sys Log Configuration	Set the system log configuration. Antenna sends log messages according to emergency level. Enabling this function sends the message to your management server.
		- Management Server : Sys log function enable/disable
		- Server IP : Management server IP address
(6)		- UDP Port : Management port
		- Message Type : Select message type (Intellian message level) to send to management server (Lower number indicates higher emergency).
		- Sys log Target Level : If you select this target level, the management server receives log message equal to or less than this level.
		Setting refresh rate and refresh disable time.
7	Browser	- Refresh Rate : Set the browser refresh rate (Default 1 seconds. Range 1~99).
	Configuration	- Refresh Disable Time : Set the browser idle time-out (Default:9 minutes. Range 0~9). To use this function, check the check box.

SNMP Setting

> Dash Bo	pard	SNMP Setting					
> Ship Set	tting	Sidial Setung					
> Antenna	a Setting	- SNMP Agent Configuration	n				
> Tracking Setting 2 SNMP V1/V2 Status > Modem Setting 3 V1/V2 Community Name > Diagnostic 4 V3 Authentication Type > Library Setting 5 V3 Authentication Encoding		1 10 100	Read Write 💌 <u>Help</u>				
		X	intellian Help				
		X	Auth Help				
		6 V3 Username					
	Antenna Firmware Upgrade 7 V3 Private Encoding						
Antenna	Log	X	AES v Help				
Antenna Backup & Restore		9 TRAP IP / Port					
> Adminis		10 TRAP Parameter	192.168.1.1 / 162 <u>Help</u>				
Network SNMP Se			-v 2c -c public <u>Help</u>				
	nagement	Submit Cancel					
iARM Upg	grade						
	ve & Reboot						
	Event Log letwork Devices						
> Informa	tion						
Control IP	• 175.195.19.5						
Current IP	P 175 195 19 5						
No.	Item		Description				
1	SNMP Setting		Display and Set SNMP configuration.				
2	SNMP V1/V2 Status		Set SNMP mode(Use Attribution Disable, Read Only or Read Write).				
3	V1/V2 Community Name		Set SNMP V2 community name.				
4	V3 Auther	ntication Type	Set SNMP V3 authentication mode.				
5	V3 Auther Encoding	ntication	Set SNMP V3 authentication encoding.				
6	V3 Userna	ame	Set the V3 username and password of the SNMP Agent. The password is at least 8 character string.				
7	V3 Private Encoding		Set SNMP V3 Private Encoding.				
8	V3 Private	e Password	Set the V3 password of the SNMP Agent. The Password is at least character string.				
9	TRAP IP/I	Port	Set the V3 password of the SNMP Agent. The Password is at least character string.				
10	TRAP Par	ameter	Set the SNMP trap specific parameter.				

User Management

Change User Settings

3

> Dash Board	User Management		
> Ship Setting			
> Antenna Setting	2 Change ID & Password		
> Tracking Setting	Change ID		
> Modem Setting	Current ID	intellian	
> Diagnostic	New ID	intellian	
> Library Setting	— Change Password —		
> Firmware&Configuration	Enter Current Password		
Antenna Firmware Upgrade	Enter New Password		
Antenna Log Antenna Backup & Restore	Confirm New Password		
> Administration	Submit Cancel		
Network Setting	3 Change User Settings		
SNMP Setting User Management	Password Expire Timeout		
iARM Upgrade	Timeout in days	0 day	
iARM Save & Reboot	Idle Session Timeout		
Antenna Event Log Intellian Network Devices	for Console login	10 min	
> Information	for Network login	20 min	
Control IP • 175.195.19.5	Submit Cancel		
Current IP 175.195.19.5			
Refresh Rate • 1 (sec) Refresh Disable 8:51			
Idle Session Timeout 19:52			
Wifi •			

	word to access the Aptus Web.
5 ,	urrent login ID (user name) and omit button to validate the changes
- Change Password : Enter	r your current login password and the Submit button to validate the the login password.

Change User Password Expire in days and Idle session time-out.

- Password Expire Time-out : Set password expire in days.
- Idle Session Time-out : Set for Console and for Network time-out.

iARM Upgrade

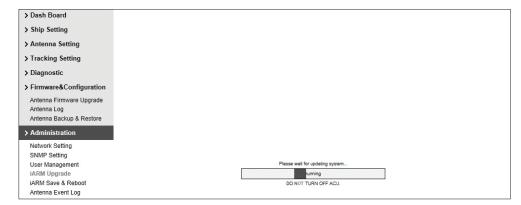
> Dash B	loard	iAPM Upgr	iARM Upgrade				
> Ship Se	etting	iAitin opgi	aue				
> Antenn	a Setting	A New SADME	1				
> Trackir	ng Setting	2 New iARM F					
> Modem	n Setting	Upgrade M	-	Manual Upgrade 🔽			
> Diagno	stic			gs during installation and force the i	nstallation to continu	e	
> Library		Browse and se	elect the firmware	e file to upload.		찾아보기	
	are&Configuration					A DIE Jun	
	Firmware Upgrade	Start Upgrade	Cancel				
Antenna	1	3 Bootstrap/B	ootloader —				
Antenna	Backup & Restore	Bootstrap		Main	v1.00		
> Admini	istration			Factory Default	v1.00		
Network		Bootloader		Main	v1.00		
SNMP S	Setting Inagement			Factory Default	v1.00		
iARM U				Active Bootloader	Main		
	ave & Reboot						
	Network Devices	4 Kernel/File	System				
> Informa		Sys0		Kernel	v1.40	Activate	
	IP • 10.1.103.106	5,55		File System	v3.00		
	IP 10.1.103.106	Sys1		Kernel	v1.40	Activate	
	Rate • 1 (sec)			File System	v1.08		
	Disable 8:56 sion Timeout 29:57	Factory Defa	ult	Kernel	v1.38	Activate	
Wifi				File System	v1.07		
No.	Item		Descr	iption			
	Rom		20001	iption			
1	iARM Upgi	rade	Upgra	de the firmware of	iARM mod	ule.	
 New select iARM Firmware button ton to 			Upgrad select button ton to	de. With Manual Up the firmware file to . With Auto Upgrac	pgrade opt upload an de option s	anual Upgrade or Auto ion selected, browse an d click Start Upgrade elected, click Check but s new firmware available	
3	Bootstrap /Bootloade	er	Displa	ys current bootstra	p and boot	tloader version.	
(4)	Kernel		ACU has 3 storage parts sys0, sys1, Factory Default.				

Kernel JFile System Display kernel and file system version and current activated part Information.

iARM firmware upgrade procedures:

- 1. Click on "Browse" button to select the iARM firmware file (.tgz) that you wish to upgrade. In Auto Upgrade mode, check new firmware file automatically by clicking Check button.
- 2. Click on "Start Update" button to update the iARM firmware. Wait until the page is loaded. In Auto Upgrade mode, click "Upgrade" button once new firmware file is detected.
- 3. It'll inform you that the firmware is being uploaded.

Firmware upload in progress



4. Do not turn off the ACU power if the firmware upgrade page is displayed.

Firmware upgrade in > Dash Board > Ship Setting progress > Antenna Setting > Tracking Setting > Diagnostic Please wait for file transfer... > Firmware&Configuration Antenna Firmware Upgrade Antenna Log Antenna Backup & Restore > Administration Network Setting SNMP Setting User Management iARM Upgrade iARM Save & Reboot Antenna Event Log Intellian Network Devices > Information Control IP • 192.168.3.5

Current IP 192.168.3.5

5. It'll take around 2 minutes to complete the firmware upgrade. Once the upgrade is completed, the system will reboot automatically.

> Dash Board	Sava & Bahaat
> Ship Setting	Save & Reboot
> Antenna Setting	Now the device will reboot with new firmware.
> Tracking Setting	Please refer to the User Guide if you have trouble connecting to the device. This screen will be inaccessible in 10 seconds.
> Modem Setting	
> Diagnostic	
Library Setting	
> Firmware&Configuration	
Antenna Firmware Upgrade Antenna Log Antenna Backup & Restore	
> Administration	
Wireless Setting Network Setting Serial Setting	

iARM Save & Reboot

> Dash Be	>Dash Board iARM Save & Reboot						
> Ship Se		0 1/ED001					
> Antenna	a Setting Save & Rebo	pot					
> Trackin	Tracking Setting All configuration changes made will be saved in the ACU and effective upon reboot.						
> Modem	> Modem Setting Save & Reboot						
> Diagnos							
Library Setting All configuration changes made will be lost upon reboot.							
> Firmwa	re&Configuration						
Antenna	Firmware Upgrade Log Backup & Restore						
iARM Up iARM Sa Antenna	Setting etting nagement						
No.	Item	Description					
1	iARM Save & Reboot	Save settings to the ACU and reboot or reboot the system without saving.					
2	Save & Reboot	Save the modified settings and reboot the system. Click Save & Reboot button.					
3	Reboot without Saving	Reboot the system without saving the modified settings. Click Reboot Only button.					

Antenna Event Log

> Ship Setting				
> Antenna Setting	2 - Query Filter			
> Tracking Setting	6	All	-	Category: All
> Modem Setting	Time Frame:	Last 1 Day		Sording Order: ODescending Ascending
> Diagnostic	Query Event Log			
> Library Setting	3 Event Log			
> Firmware&Configuration	Date/Time(UTC)	Severity	Category	Log Save Event Log
Antenna Firmware Upgrade	2014-02-18 02:10:24	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
Antenna Log	2014-02-18 02:06:07	Normal	Access	Remote Control Login through PC Client from ipv4_tcp:175.195.19.5:49551 using ID intellian
Antenna Backup & Restore	2014-02-18 02:05:52	Normal	Access	Remote Control Login through PC Client from ipv4_tcp:175.195.19.5:49547 using ID intellian
> Administration	2014-02-18 01:57:06	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
Network Setting	2014-02-18 01:47:00	Normal	Access	Remote Monitor Login through WEB from 175.195.19.5 using ID intellian
SNMP Setting User Management	2014-02-18 01:45:24	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
iARM Upgrade	2014-02-18 01:38:42	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
iARM Save & Reboot	2014-02-18 01:24:41	Normal	Access	Remote Control Login through PC Client from ipv4_tcp:175.195.19.5:64355 using ID intellian
Antenna Event Log	2014-02-18 01:18:22	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
Intellian Network Devices	2014-02-18 00:58:57	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
> Information	2014-02-18 00:45:15	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
Control IP • 175.195.19.5	2014-02-18 00:39:12	Normal	Access	Remote Control Login through WEB from 175.195.19.5 using ID intellian
Current IP 175.195.19.5	2014-02-18 00:38:58	Normal	System	BIM successfully booted up in SYS0
Refresh Rate • 1 (sec) Refresh Disable 8:26	2014-02-18 00:38:56	Major	System	Skipped Recoveing /tmp/mmcblk0p2/event_log.db : /tmp/mmcblk0p2 is not mounted
Idle Session Timeout 19:26	2014-02-18 00:28:28	Normal	System	BIM successfully booted up in SYS1
Wifi •	2014-02-18 00:28:25	Major	System	Skipped Recoveing /tmp/mmcblk0p2/event log.db : /tmp/mmcblk0p2 is not mounted

No.	Item	Description	
1	Antenna Event Log	Displays user's log information (Data/Time, Login ID and IP)	
	Query Filter	Set the Log message option.	
		- Severity : Set urgency level.	
2		- Category : Set target that caused the message.	
		- Time Frame : Set time limit that you want to show.	
		 Sorting Order : Sorting based on date (descending or ascending). 	
3	Event Log	Displays log information (Date/Time, Severity, Category, Log).	
		- Save Event Log : Save log message to your PC.	

Intellian Network Devices

> Ship Se > Antenn		ntellian Net	work Devices	
> Antenn				
	na Setting	Network Confi	iguration	
Tracking Setting Tracking Setting		- Eth0 IP Confi		
> Modem	n Setting		Enable 💌	
> Diagno	ostic	IP Address (Eth)	I) 192.168.3.5 Help IP Address (Eth1) 192.168.3.1 Help	
> Library	/ Setting	Subnet Mask (Et	h0) 255.255.255.0 <u>Help</u> Subnet Mask (Eth1) 255.255.255.0 <u>Help</u>	
> Firmware&Configuration Submit Canc		Submit Cano		
Antenna	a Firmware Upgrade	— Intellian Netv	vork Port Status 🖉	
Antenna		Intellian Device		
	a Backup & Restore			
> Administration 3 Add Network Network Setting SNMP Setting IP Address		Add Network	Device Address	
		IP Address H	HTTP HTTPS SSH PC PORTSPECTRUM PORT 0011200122001320014 20015 Add Device Please input port numbers between 20000 and 25000	
	anagement			
iARM Up iARM Sa	ave & Reboot	Network Data		
	a Event Log	Address	HTTP HTTPS SSH PC PORT SPECTRUM PORT Connection	
Intellia	n Network Devices	192.168.3.3	20001 20002 20003 20004 20005 Unknown Delete Device	
> Inform	5	Detailed Inform	nation	
	IP • 175.195.19.5 IP 175.195.19.5	192.168.3.3_		
	Rate * 1 (sec)			
	Disable 8:03			
ldle Ses Wifi •	sion Timeout 19:04			
No.	Item		Description	
NU.	nem		Description	
1	Intellian Netw Devices			
2	Network Configuration		 Eth0 IP Configuration : ACU network Eth0 IP and subnet mask setting. Eth1 IP Configuration : ACU network Eth1 IP and subnet mask setting. 	
			Intellian Network Port Status : not used on t-series.	
	Add Network Device Address		Add Intellian network devices, then you can browse the various information of the device.	
3			• IP Address : IP address of the device to be monitored.	
-			• HTTP, HTTPS, SSH : Set port number(These port numbers will be matched the http, https or SSH port number of each device).	
4	Network Data View		Displays the setting information of the added device (IP address, http, https, SSH port number, current connection). If you click the http/https port number of each device, then you can connect to the device's web page.	
(5)	Detailed Information		If you click Delete Device button, then you can't see its information. Displays the information of each device. (Updated every 3 second).	

Appendix A: Java Download and Install Guide

NOTE: To run Java applications you must have Java Runtime Environment (JRE) version 6.0 and above installed in your PC/laptop.

Eog Download - Windows Internet Explorer	
Antenna Log	
Log Download	
Select range for logs and execute download. The data volume will grow significantly for the network download.	

If JRE has not been installed in your PC/laptop, you'll get the below message box. Click Run button to install it through online or offline download and install methods. After installing JRE, Java Applet will be executed automatically when you access the Antenna Log page.

Java(TM) Platform SE binary - Security Warning						
Do you want to run this software?						
	Name: <u>Java(TM) SE Runtime Environment 6 Update 12</u> Publisher: <u>Sun Microsystems, Inc.</u>					
× Mor	re <u>o</u> ptions <u>D</u> on't Run					
	While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>					

NOTE: The JRE installation guide may vary depending on the operating system installed in your PC/laptop.

Method 1. Online method for downloading and installing

http://www.java.com/en/download/manual.jsp

لا ن Java	Java in Action Downloads	Search 🔍		
Available Operating Systems * <u>Windows</u> * <u>Solarts</u> * <u>Linux</u> * <u>Apple</u>	Java Downloads for All Operating Systems Recommended Version 6 Update 26 Select the file according to your operating system from the list below to get the latest Java for your computer. > <u>Remove Older Versions</u> > <u>What is Java?</u> By downloading Java you acknowledge that you have read and accepted the terms of the <u>end user</u> <u>license agreement</u>			
	💥 Windows 🚯 Which should I	Ichoose?		
	<u>Windows 7. XP Online</u> ritesize. ~ 11 MB <u>Windows 7. XP Offline</u> ritesize: 10.0 MB	Instructions After installing Java, restart your browser and <u>instructions</u> verify Java has been installed correctly.		
	Information about the 64-bit Java plug-In			

Method 2. Offline method for downloading and installing

http://www.java.com/en/download/help/windows_offline_download.xml

This process requires you to download an executable file that includes all the files needed for the complete installation. You do not need to remain connected to the Internet during the installation. The file can also be copied to a computer that is not connected to the Internet.

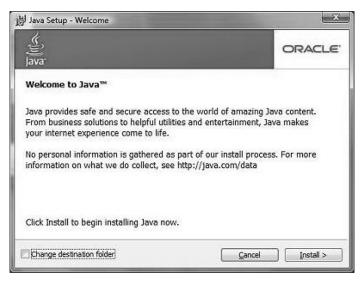
- 1. Go to the Manual download page
- 2. Click on Windows Offline.

3. The File Download dialog box appears prompting you to run or save the download file. Click Save to download the file to your local system.

Tip: Save the file to a known location on your computer, for example, to your desktop.

- 4. Close all applications including the browser.
- 5. Double-click on the saved file to start the installation process.

6. The installation process starts. Click the Install button to accept the license terms and to continue with the installation.



7. Oracle has partnered with companies that offer various products. The installer may present you with option to install these programs when you install Java. After ensuring that the desired programs are selected, click the Next button to continue the installation.



8. A few brief dialogs confirm the last steps of the installation process: click Close button on the last dialog.



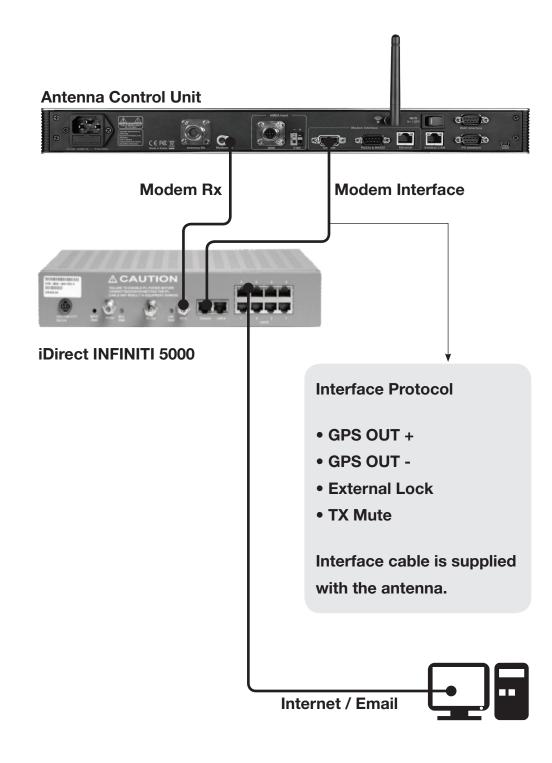
9. This will complete Java installation process.

NOTE: You may need to restart (close and re-open) your browser to enable the java installation in your browser.

Appendix B: Modem Connection

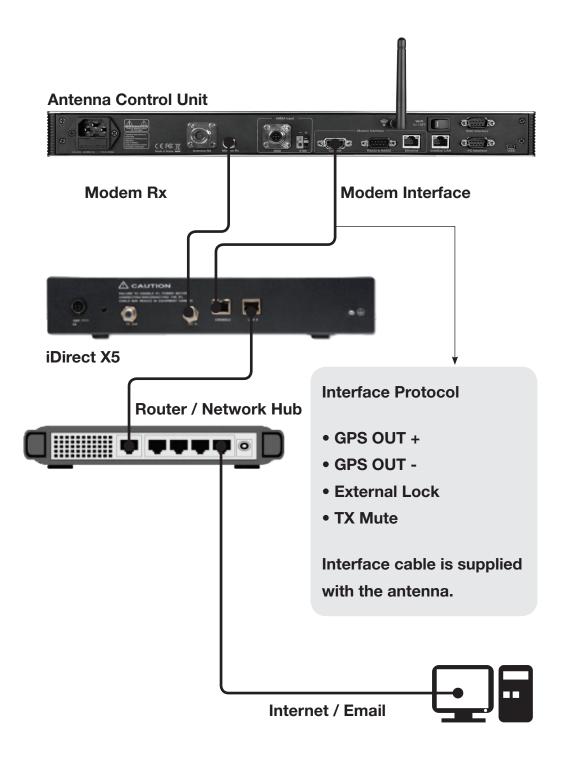
Integrated with iDirect INFINIT5000

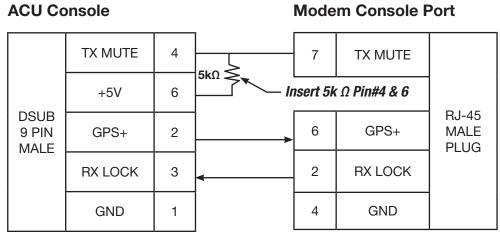
• iDirect Modem interface through the Console Port



Integrated with iDirect X5

• iDirect Modem interface through the Console Port





ACU Console

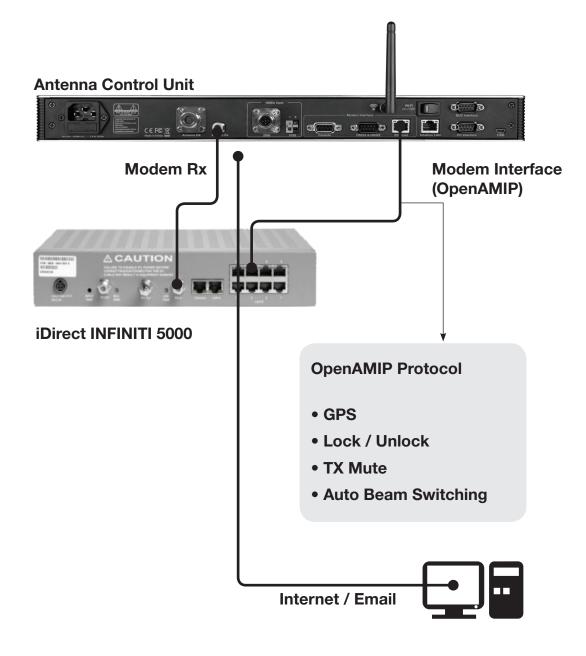
1 8 TOP: FRONT:

NOTE: The TX Mute parameter of iDirect I/O configuration needs to be changed from Low to High. Go to the Modem Setting on a left side bar after opening the Aptus Web, and change the TX Mute parameter as seen in the below.

odem 🗹 ————			
Jse Mediator	🔿 YES 💽 NO		
Select Modem	USER SETTING	Use TX Mute	• YES O NO
Nodem Port	Ethernet 🗸	Use Modem Lock	● YES ○ NO
Nodem Protocol	I/O Console	TX Mute	🔿 LOW 💽 HIGH
GPS Out Sentence		Modem Lock	🖲 LOW 🔾 HIGH

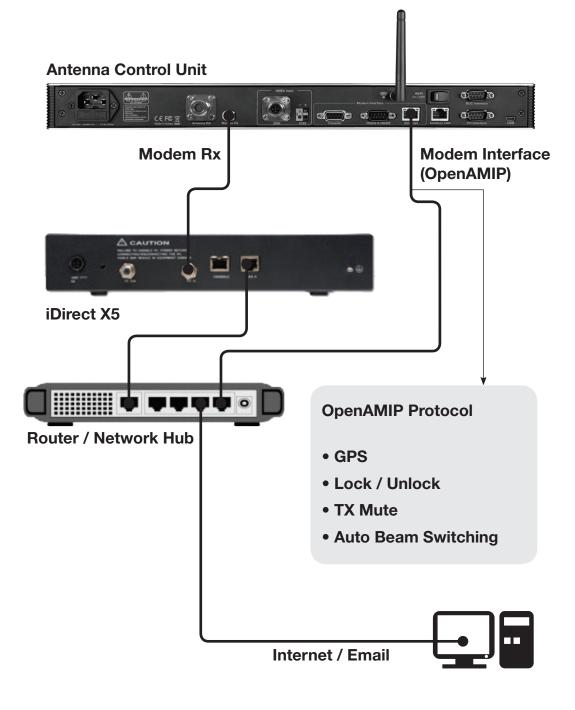
Integrated with iDirect INFINIT5000

• iDirect Modem interface through the OpenAMIP



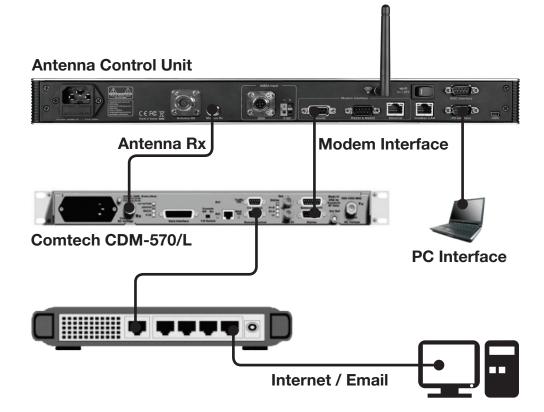
Integrated with iDirect X5

• iDirect Modem interface through OpenAMIP (Ethernet)



Integrated with Comtech

• Comtech Modem interface through the Console Port



ACU Console

Modem Console Port

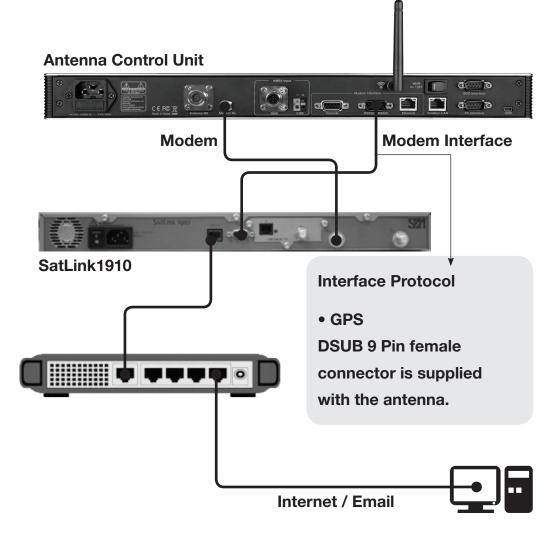
0

	GND	1		. 1	GND	
DSUB 9 PIN MALE				I	GND	
	GPS	6		7	RX Comm	DSUB
	GPS+	2			<u>I</u>	15 PIN FEMALE
	RX LOCK	3		15	Modem	2 rows
	TX MUTE	4		-	LOCK	γĸ
	IX MOTE	-•	 	9	TX MUTE	

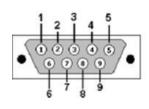
o DA-15

Integrated with SatLink1910

SatLink Modem interface through Console Connector

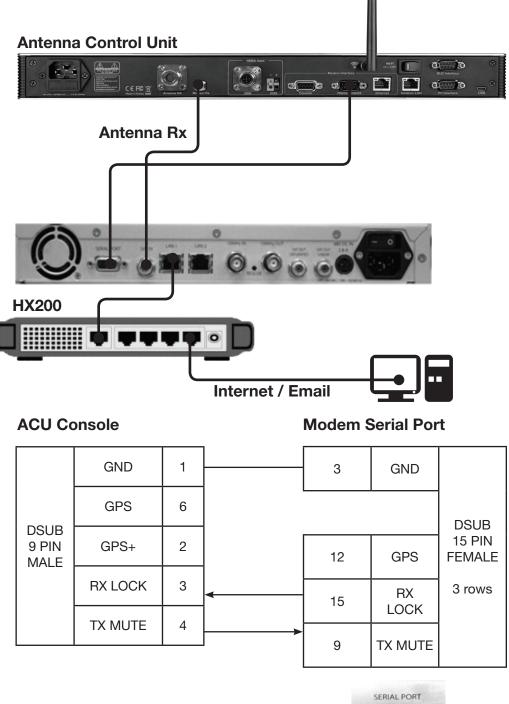


SatLink Serial	D-Sub 9 Pin (MALE)	D-Sub 9 Pin (FEMALE)	ACU Modem RS232/422
GPS IN	7	3	ТХ
GPS GND	5	5	GND



Integrated with Hughes HX200

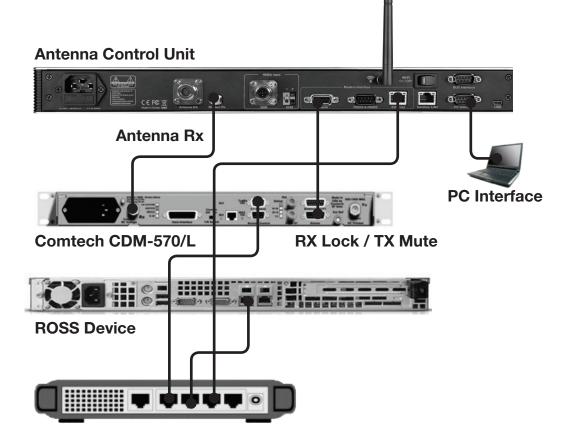
• Hughes Modem interface through the Console Connector





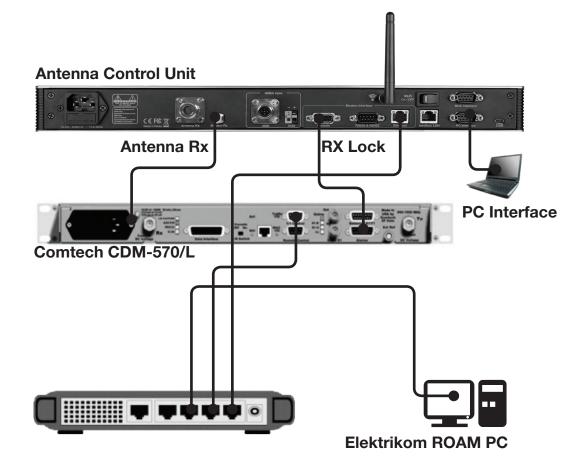
Integrated with ROSS

ROSS interface



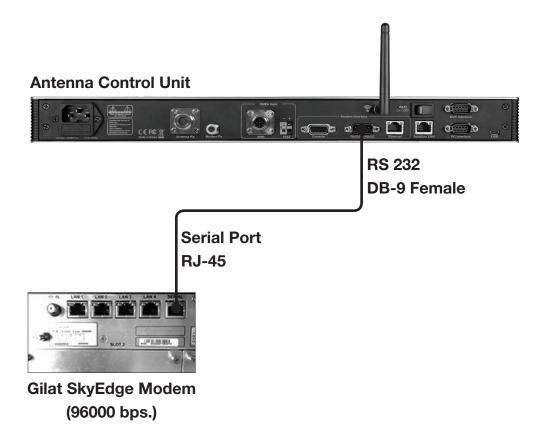
Integrated with Elektrikom

• Elektrikom interface



Integrated with Gilat SkyEdge

• Gilat Modem interface through Serial Port



ACU Serial Port

Gilat SkyEdge

DB 9 PIN FEMALE	RX	ТХ	
	тх	RX	RJ-45
	GND	GND	

Technical Specification

General		
Approvals		
CE – conforms to	EU Directive 89/336/EEC	
FCC – verified to	CFR47: Part 15	
Dimensions		
Satellite antenna unit	138cm x 151.4cm (54.33" x 59.63")	
Antenna dish diameter	103cm (41")	
Antenna control unit	43.1cm x 38cm x 4.4cm (17" x 15" x 1.7")	
Weight		
Satellite antenna unit	Radome: 35.4kg Antenna: 92kg	
Antenna control unit	3.5 kg (7.7 lbs)	
Antenna system perform	ance (V3-11X-XXX)	
Tx Frequency	13.75~ 14.5 GHz Ku-band	
Tx Gain	41.6 dBi @ 14.25 GHz	
Rx Frequency	10.7 ~ 12.75 GHz Ku-band	
Rx Gain	39.4 dBi @ 11.7 GHz	
Polarized Feed	Cross-pol and Co-pol	
Cross-pol Isolation	Minimum 35 dB	
G/T	> 19.6 dB/k (@ 12.5 GHz)	
Azimuth Range	Unlimited	
Elevation Range	-20° ~ +115°	
Cross-level Range	±37°	
Stabilization Accuracy	0.2° peak mis-pointing @ max ship motion condition	
Max Ship's motion	±25°roll, ±15° pitch, ±8°yaw@ 6 sec	
Turning rate	Up to 10°/ sec 2	
BUC	4W, 8W, 16W (optional)	
Power Consumption	100 ~ 240 V AC, 50 ~ 60Hz, 3A	
Rack Mount Antenna Co	ntrol Unit (VP-TXXX)	
Display	2 Line 40 Character Graphic VFD Module	
PC Interface	RS232C (57600 bps 8, N, 1) / USB	
Modem Interface	Ethernet port / RS232C / I/O ports	
RF Interface	Antenna RX: N-Type, Modem RX: F-Type	
Gyrocompass Interface	NMEA 2000 / NMEA 0183	
GPS Interface	NMEA In / NMEA Out	
Remote Access	RJ45, TCP / IP	
Power Consumption	100 ~ 240 V AC, 50 ~ 60Hz, 1A	

Warranty

This product is warranted by Intellian Technologies Inc., to be free from defects in materials and workmanship for a period of THREE (3) YEARS on parts and TWO (2) YEARS on labor performed at Intellian Technologies, Inc. service center from the purchased date of the product.

Intellian Technologies, Inc. warranty does not apply to product that has been damaged and subjected to accident, abuse, misuse, non-authorized modification, incorrect and/ or non-authorized service, or to a product on which the serial number has been altered, mutilated or removed.

It is required to present a copy of the purchase receipt issued by Intellian Technologies, Inc. that indicates the date of purchase for after-sales service under the warranty period. In case of failure to present the purchase receipt, the warranty period will begin 30 days after the manufacturing production date of the product purchased.

Any product which is proven to be defective in materials or workmanship, Intellian Technologies, Inc. will (at its sole option) repair or replace during the warranty period in accordance with this warranty. All products returned to Intellian Technologies, Inc. under the warranty period must be accompanied by a return material authorization (RMA) number issued by the dealer/distributor from Intellian Technologies, Inc. and a copy of the purchase receipt as a proof of purchased date, prior to shipment. Alternatively, you may bring the product to an authorized Intellian Technologies, Inc. dealer/distributor for repair.

Additional Terms and Conditions;

The warranty(THREE (3) YEARS on parts and TWO (2) YEARS on labor) is effective only for products purchased since January 1st, 2017.