

Intellian[®]

v240C

Installation and Operation Manual

Serial number of the product

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

Intellian[®]

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INTRODUCTION

Introduction to Intellian v240C

Features of Intellian v240C

Basic System Configurations

Introduction to Intellian v240C

The Intellian v240C is a 2.4 meter C-band marine VSAT communication antenna system. With its 3-axis stabilized platform and enhanced vibration and shock damping design, the v240C can perform extremely well on all types of ships that require “always on” and “high speed” broadband communications no matter how rough the weather and sea conditions are.

The v240C requires minimal involvement to commission . It is easy to operate and also simple to upgrade and manage. Each unit comes preloaded with a ready-to-use, client-customized library that can be conveniently tailored further via PC software (also included with the unit), and firmware updates can be done entirely through the Wi-Fi ACU. Wi-Fi router enables easy connection and control of ACU, allowing operators to check the status of the VSAT.

The all new Antenna Control Unit (ACU) supports Wi-Fi connectivity for a simple remote PC connection. If the ACU is installed at a great distance from the antenna, then the built-in Bluetooth connection module can enable a PC connection right alongside the dome.

Robust and versatile, the v240C marks an new era for VSAT connectivity on the open water for deep sea vessels that require global coverage.

Features of Intellian v240C

Automatic Polarization Switching

Intellian v240C antenna automatically changes between linear and circular polarization while it does not require manual or physical change. When a polarization is selected from ACU or PC Control Program, the Feed Horn is automatically adjusted accordingly, which is patented technology developed by Intellian.

DVB/DVB-S2 and NBD detection capability

Intellian v240C is capable of detecting DVB-S/DVB-S2 signal, SCPC, and Narrow-Band signal. Thanks to its integrated digital tuner and the narrow band detector (NBD).

Wireless communication with the ACU

The ACU of the Intellian v240C offers upgraded functions. The built-in Wi-Fi wireless network card enables the ACU to be wirelessly connected, and it can be either turned on and off by a switch. After connecting with Wi-Fi wireless network or setting up a network with ACU, it will be easy to monitor, control, and change the settings of Intellian antenna system wirelessly using laptops, smartphones, or any kind of wireless devices.

Antenna log data and firmware upgrade through USB

The ACU of v240C now automatically stores all action data of Intellian antennas onto a built-in memory, and all existing logs are available to be transferred onto USB drivers. Also just by plugging in the USB with firmware update files stored, the firmware can be automatically updated and upgraded onto the ACU.

Bluetooth module support

When the Intellian supplied Bluetooth module is equipped on a main control unit of Intellian antenna, users can access and control the antenna with a laptop that has Bluetooth capability. This will lead to easier and more effective ways to setup and maintain the system.

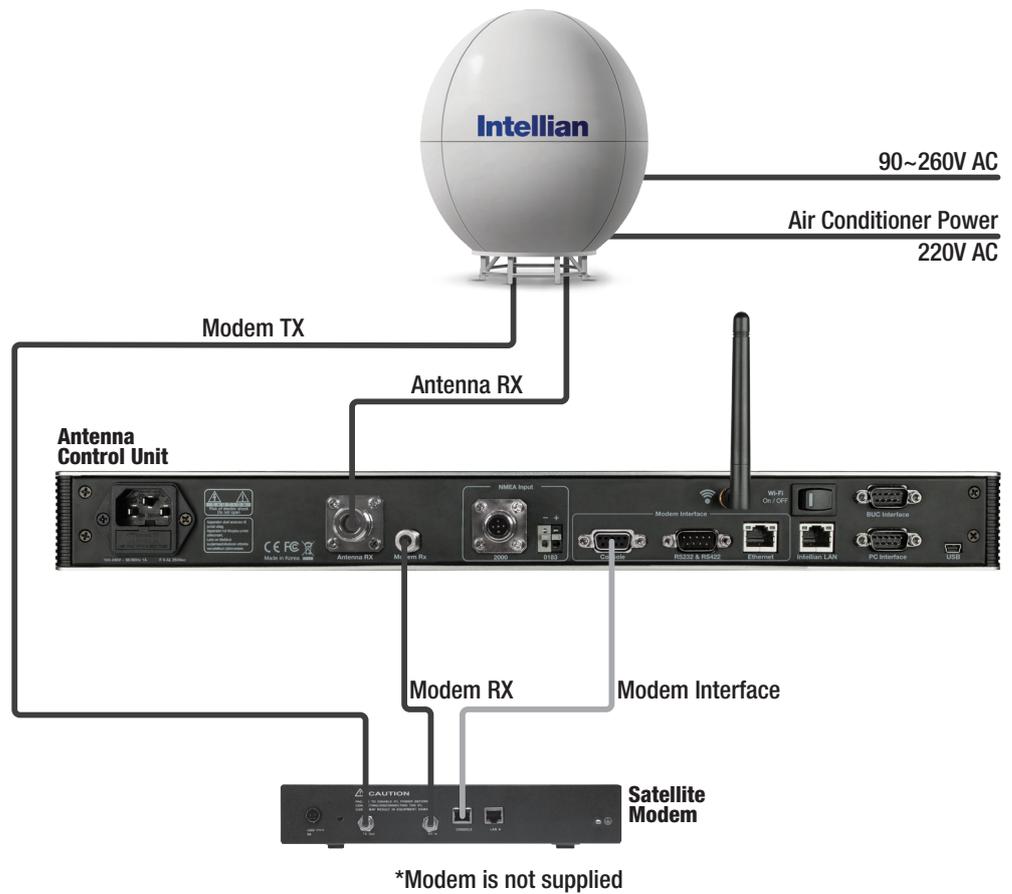
Maximized RF performance

The main reflector, Feed-horn and other RF parts are newly designed to maximize the antenna performance for maritime application. Not only the gain and Maximum Allowed EIRP Density are the highest level amongst the similar-sized VSAT antenna, Intellian v240C conforms to various ESV (Earth-Station-on Vessels) standards and FCC requirements.

Basic System Configurations

For your satellite VSAT system to work properly, the system will have to be connected with all of the provided components properly as shown in the figure below (Refer to next chapter 'Installation' in this manual for more detailed connection instructions).

Basic System Configuration



INSTALLATION

System Components

Antenna Unit

ACU (Antenna Control Unit)

Installation Kit

Planning the Installation

Selection of Antenna Installation Site

Configure Radiation Hazard/Blockage Zones

System Cables

Power Requirement

Tools Required for Installation

Antenna Installation

Unpacking the Wooden Crate

Antenna Dimensions

Antenna Mounting Templates

Position the Radome

Open the Radome Hatch

Mount the Radome

RF Cable Connections

Secure the RF Cables

System Components

Antenna Unit

The antenna of Intellian v240C is composed with the following components for the optimum search and reception of satellite signal.

- Mechanical Unit – manipulates the antenna to receive the optimal satellite signal regardless of the movement of the vessel.
- Control Unit – controls mechanical operation of the antenna.
- RF Unit – transmits the optimum satellite signal to the receiver.
- Radome – protects the antenna from the severe marine environment.

Antenna unit



ACU (Antenna Control Unit)

The Antenna Control Unit (ACU) provides the power to the antenna and controls the various settings of the antenna.

Antenna Control Unit



The functions of the ACU are as follows:

- Monitor the antenna status
- Change the target satellite
- Set up the user environment
- Set the current GPS information
- Set satellite information
- Move antenna manually
- Built-in real-time diagnostics function and event log recorder
- Set up the interface with a PC
- Supports Wi-Fi operation
- Log data and firmware upgrade through USB
- Built-in web-based remote control management

Installation Kit

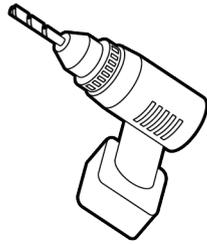
Contains the items required for securing the antenna unit and ACU to the vessel.

ACU box components			
Description	Q'ty	Size	Remarks
Antenna Control Unit (ACU)	1	43.1 x 38 x 4.4cm	Antenna Control Unit
Wi-Fi Antenna	1		
ACU Side Bracket (Rack)	2		ACU to 19inch Rack
ACU Side Bracket (Table)	2		ACU to Table
USB Cable (A-A)	1	1.8m	ACU to PC
D-Sub 9 pin Male Connector	2		ACU
N to F Adaptor	1		N(Male) to F(Female) Adaptor
USB Flash Drive	1		
User Manual	1		
RF Hazard Sticker	1		Radiation Safety Distance Label
Self-Tapping Screw	5	M4 x 16L	Bolt Kit for Table Mount Bracket
Sems Bolt	5	M3 x 12L	
Flat Head Screw	10	M4 x 12L	Bolt Kit for Rack Mount Bracket

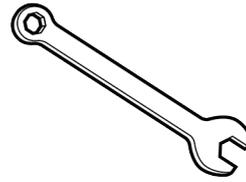
Cable kit components			
Description	Q'ty	Size	Remarks
RG6 Cable	1	3m	ACU to Modem
AC Power Cable	1	1.5m	ACU Power (220V)
AC Power Cable (110V Plug)	1	1.5m	ACU Power (110V)
PC Serial Cable	1	1.8m	ACU to PC
iDirect Interface Cable	1	1.5m	ACU to Modem
Modem Cable Pin Connection Manual	1		

Bolt Kit for Installation Box			
Description	Q'ty	Size	Remarks
Hex Bolt	4	M16x40L	Bolt Kit for Stable Mount
Flat Washer	4	M16	
Spring Washer	4	M16	
Hex Bolt (BUMAX)	9	M12x60L	Bolt Kit for Post
Lock Washer	17	M12	
Nut (BUMAX)	9	M12	
Hex Bolt	235	M6x35L	Bolt for Radome Assembly
Hex Bolt	55	M6x35L	Bolt for Radome Base Assembly
Flat Washer	580	M6(Ø18)	Washer & Nut for Radome & Radome Base Assembly
Spring Washer	290	M6	
Hex Bolt	10	M6x35L	Bolt Kit for Upper Radome Lift Bracket
Flat Washer	20	M6(Ø18)	
Spring Washer	10	M6	
Hex Bolt (BUMAX)	9	M12x60L	Bolt Kit for Antenna Mounting
Lock Washer	17	M12	
Nut (BUMAX)	9	M12	
Stable Mount Jig	1		
Silicon	4		
Silicon Gun	1		
Loctite 263	1		

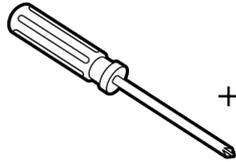
Tools required for Installation



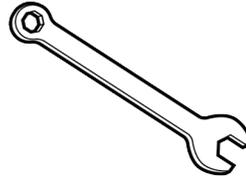
Power Drill



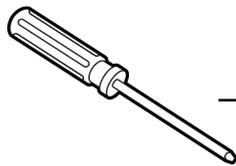
10 mm Spanner



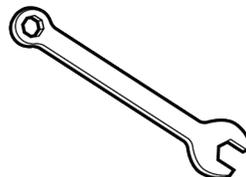
Phillips Head
Screwdriver



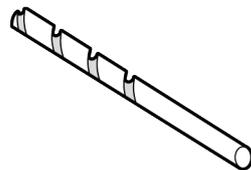
19 mm Spanner



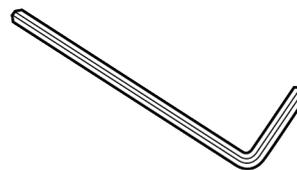
Flat Head
Screwdriver



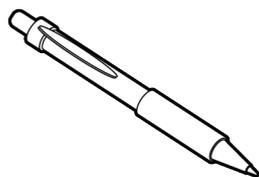
24 mm Spanner



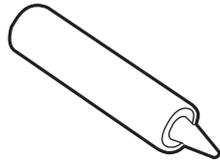
14 mm Drill Bit



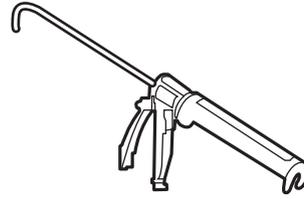
6 mm Allen/Hex key



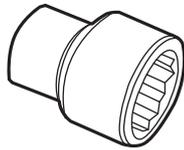
Pencil



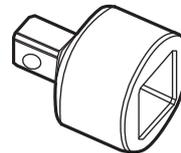
Silicon



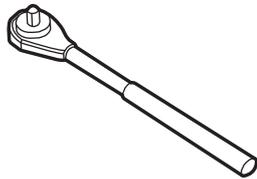
Silicon Gun



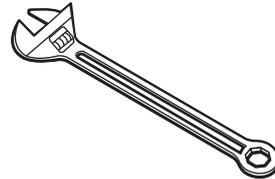
10/19/24mm Box Socket



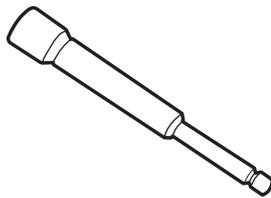
Box Adaptor



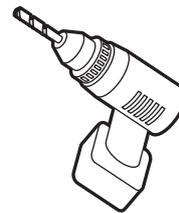
Ratchet Handle



Monkey Wrench



Long Socket



Impact Drill

Planning the Installation

Selection of Antenna Installation Site

The installation of v240C requires extreme precaution and safety measures given its size and weight. Failure to follow the correct installation process may lead to injury to the installer and/or cause damage to the system.

In order to maximize the performance of the system, a thorough review of this installation guide is strongly recommended, as well as executing the installation process as it is noted on this manual.

The system should be placed where there would be no blockage that would interfere the signals. A safe mounting place should be selected for given its heavy weight and size.

• 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. Remember to observe the minimum bend radius of the selected cable.
3. Where a cable passes through an exposed bulkhead or deck-head, a watertight gland or swan neck tube should be used.

• Power Requirements

You need to follow the power requirements to avoid damage the system. Intellian v240C is designed to work on a power supply between 90-260V AC.

• Extending the Cables

The cables that have been supplied with your Intellian system should be of adequate length to complete the installation on most boats.

• Power Cable

This cable supplied at a length of 10m.

• RF Cable

This cable is supplied at a length of 30m as an optional item. If a longer length is required you should replace this cable with an extended RF cable supplied by Intellian Technologies.

NOTE: Exceeding the indicted cable lengths will result in reduced performance of your system.

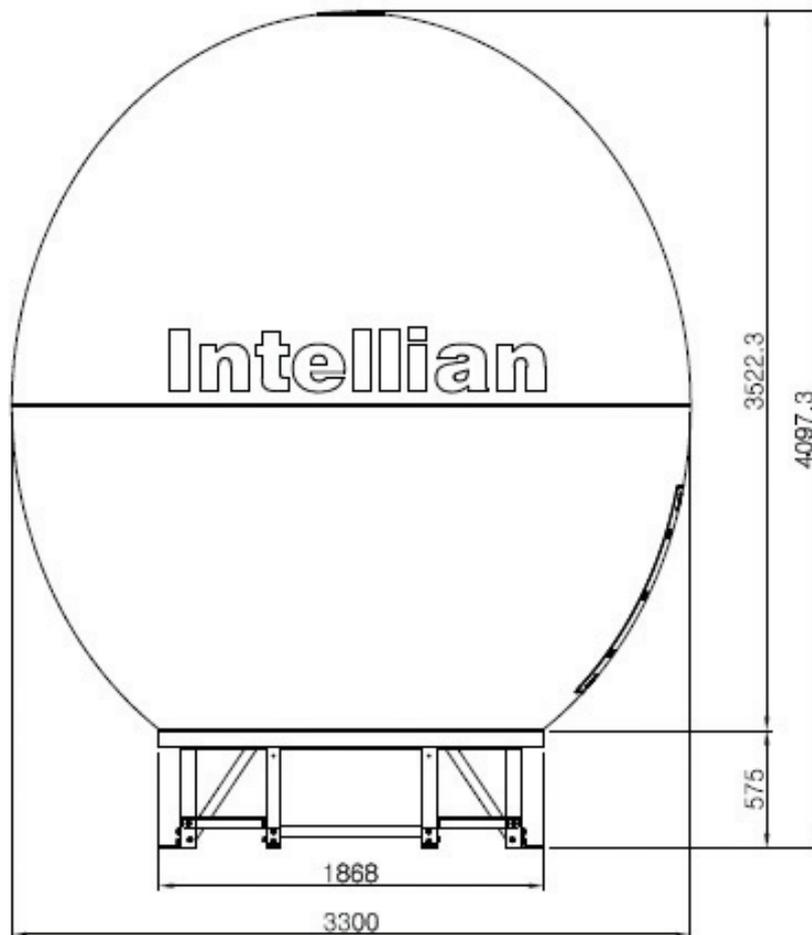
Installation and mounting of antenna

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.

Confirmation of size prior to installation

- Confirm the height and diameter of the bottom surface of the antenna before installing it.
- The space must be sufficient for installing the antenna unit considering the height and diameter of the antenna.
- The height and the diameter of the bottom surface of the antenna are as shown in the following drawing. It is strongly suggested that the installation is conducted using a crane.

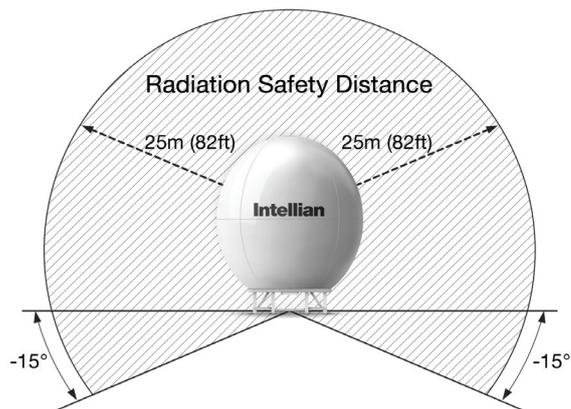
Antenna
Dimensions



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 25m, based on a radiation level of 5mW/cm² that applies under occupational/controlled environment. No hazard exists >15° below the antenna's mounting plane.



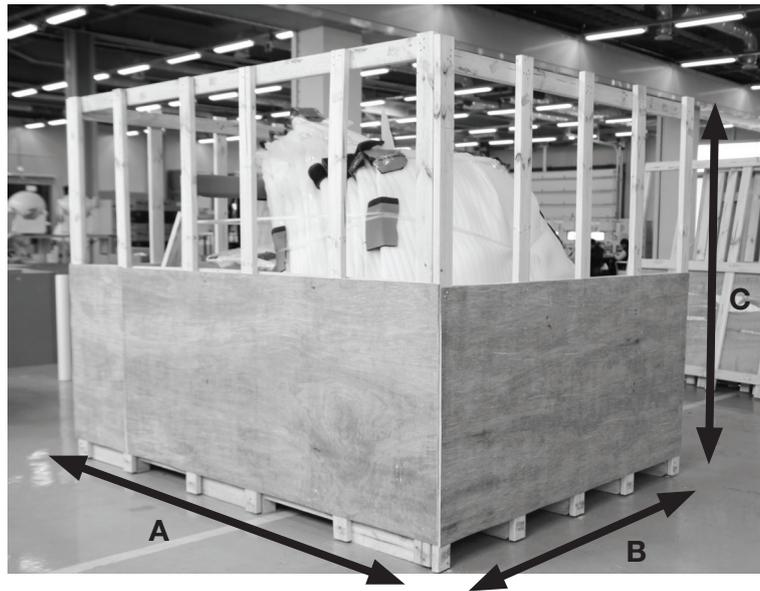
Safe access from radiation hazard

Antenna Installation

Dismantling the antenna packaging (Packing is subject to change)

Upon the arrival of the antenna package, the following instruction needs to be followed in order to execute the proper removal of the system from its original packaging.

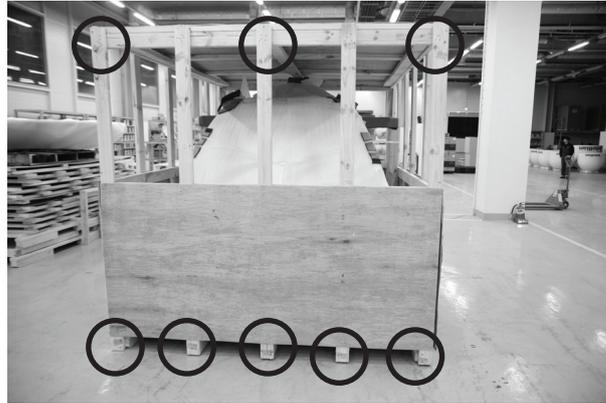
1. Secure enough space for un-packaging procedures



To secure the safe installation process, please make sure to have enough space (10m x 10m x 10m) around the unit

A: 2300mm, B:2220mm, C:2700mm, D:3000mm, E:2220mm, F: 2300mm

2. Dismantling the Radome Package



A. On the picture shown on left, boxed-side of wooden assembly needs to be dismantled. There are nails on the circled parts of the packaging.



B. The packaing will be taken apart using an Impact Drill.



C. The packaing will be taken apart using an Impact Drill.



D. Remove the wall as shown left.

3. Dismantling The Radome panels



A. Cut all the ties around the radome panels.



B. Carefully remove the radome panels.



c. After complete removal of radome panels, packaging should be as shown right.

4. Removal of Radome Panel Supports and Base Frame



A. Remove the wooden bar that supported radome panels using an Impact Drill.

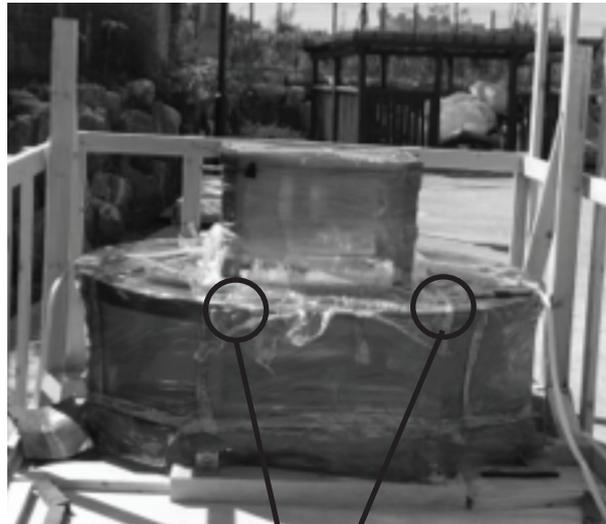


B. After complete removal of the wooden bar in section A directly above, the packaging should be seen as shown left.

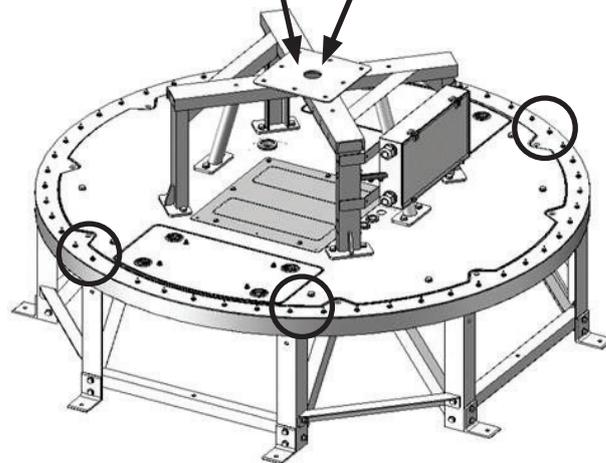


C. Now prepare to remove the Base frame by removing bolts from wooden crate floor and base frame legs.

5. Attach buckles to the Base Frame



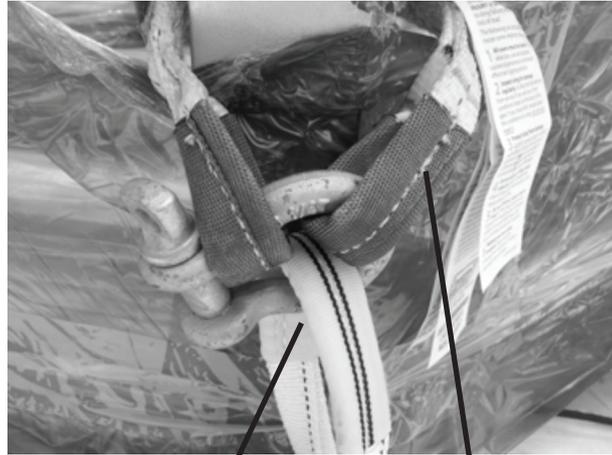
A. Now prepare to attach buckles to base frame in order to lift the base frame from wooden crate.



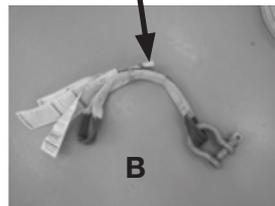
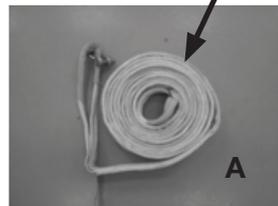
B. As shown left, all buckle ropes should be applied to all 4 joints of base frame.



C. After applying buckle ropes to all 4 corners, attach lifting strap to buckle ropes.



D. Attachment of buckle ropes and lifting ropes should look as shown left.



E. A = 4000mm Lifting strap, B = Buckle Rope



F. Base Frame ready to be lifted up should be seen as shown left.

6. Dismantle Radome Base Frame



A. Now prepare to attach buckles to base frame in order to lift the base frame from wooden crate.



B. Secure the strap tightly as shown left for a safe removal.



C. Make sure that the center of Base Frame is located right below of hook of Crane to create a good center of gravity and perform safe removal of base frame.

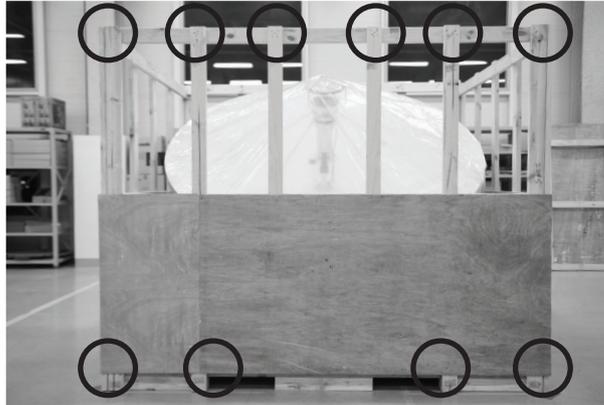


D. Very slowly lift up the base frame and watch as the base frame lifts up to prevent big interference with wooden crate.



E. Lower the base frame onto the floor and remove the lifting assembly.

7. Dismantle the Antenna Package and Free the CL Arm



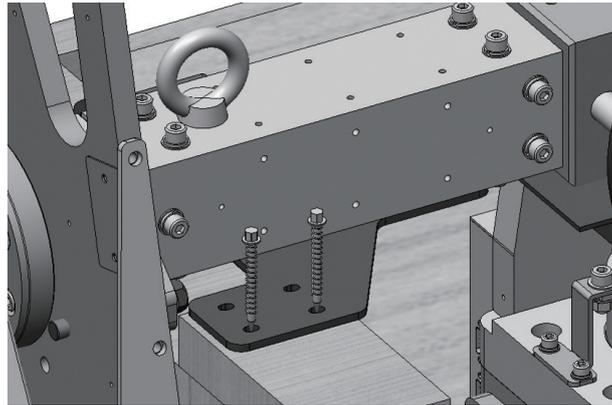
A. Dismantle the wooden assembly of the antenna package using an impact drill.



B. Remove the vinyl layer from the antenna.

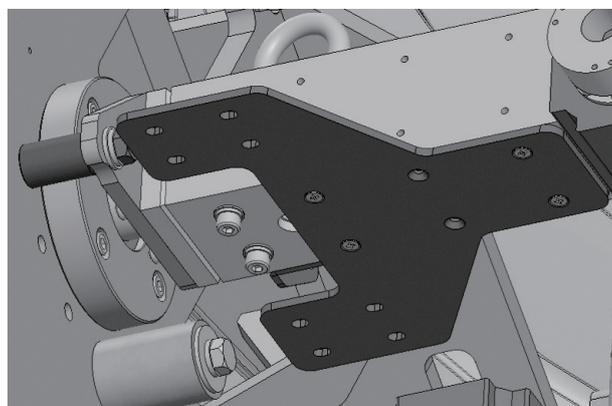
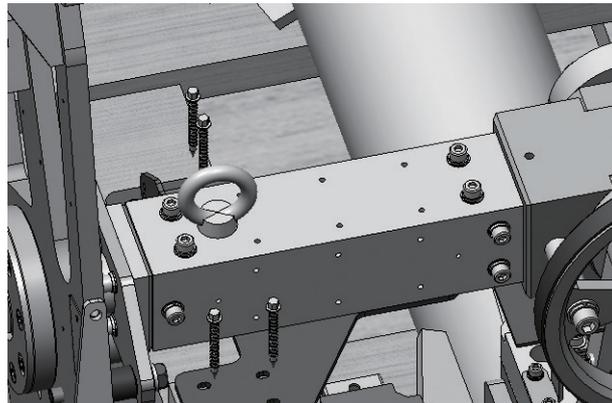


C. Under the wooden support, there is a post laying. Remove the post by sliding it out, then cut the ties or tapes around the post.



D. Locate the 2 brackets on the rear of the CL Arm.

E. Take out 8mm pieces (8EA) securing the brackets to the wooden support bar.

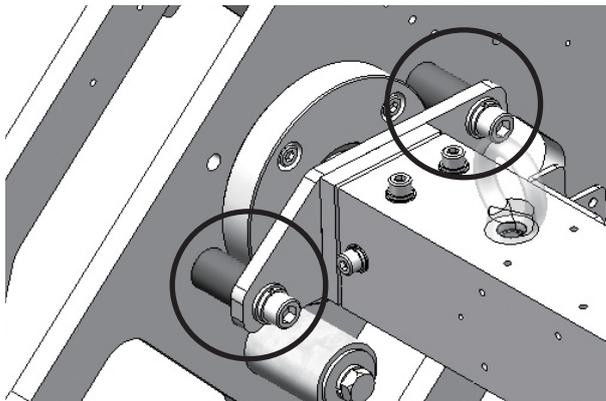
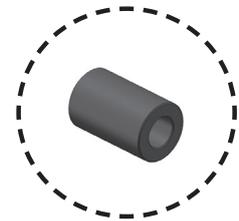


F. Take out all brackets on the rear of the CL ARM by removing M5 flat head bolt (8EA) using an impact drill.

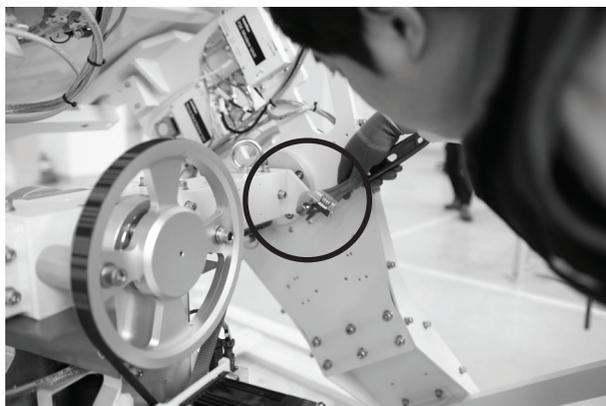
8. Remove Bolts on EL Arm



A. Locate the M12 Hex Bolts (4EA) on both sides of the EL Arm.



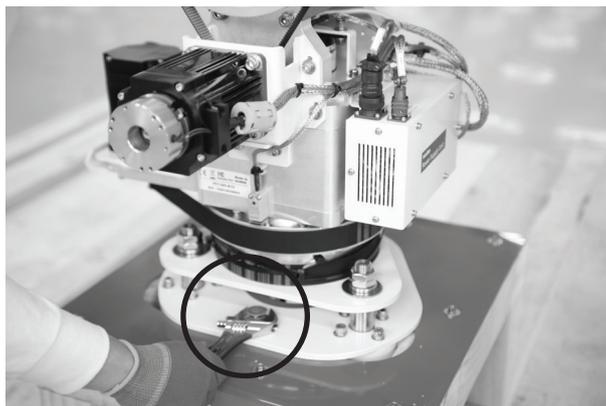
B. Remove the total 4 M12 Hex Bolts securing each side of the EL Arm.



9. Free the Upper Antenna



A. Locate the M16 bolts that secure the pedestal assembly to the crate.



B. Remove the M16 Hex Bolts and Nuts using a wrench as shown left.

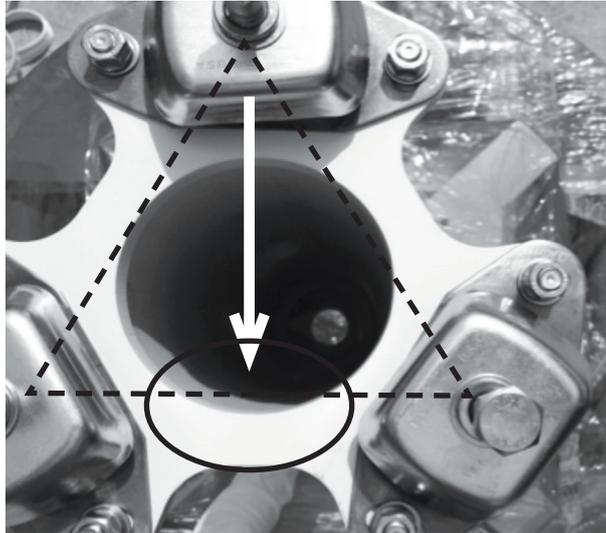
10. Assembly of Base Frame and Post



With the direction of the bow in mind, place the post on the top of the base frame.



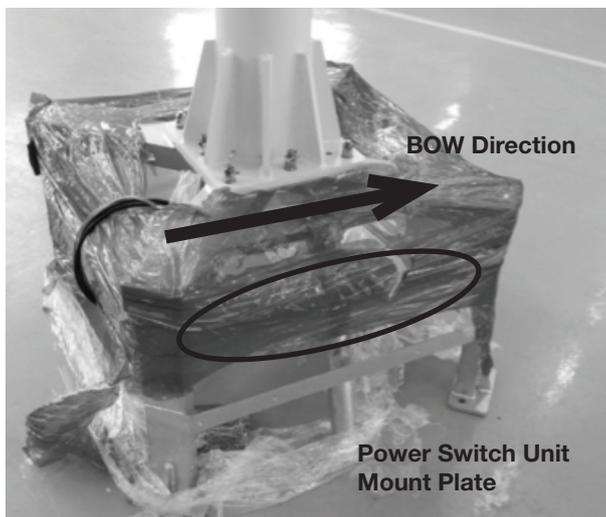
Check to confirm the orientation of the pedestal support with regards to the bow.



C. Please note the bow direction as shown left.



D. Secure the lower pedestal to the base frame with the 8 M12 x 60 bolts supplied. Lock the bolts by installing double nuts onto the bolts. Make sure to apply Loctite 262 to the bolts to securely tighten the assembly.

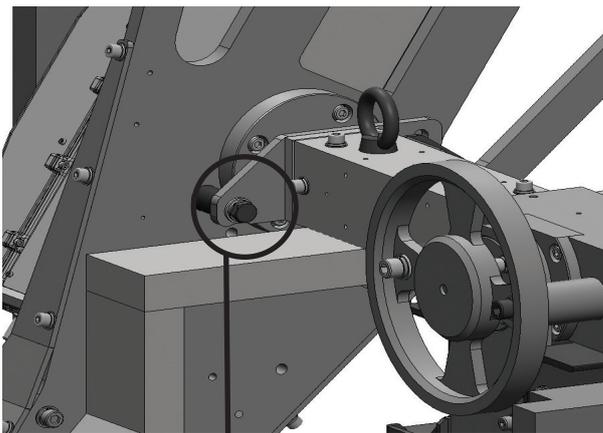


E. Now for the final time, please make sure that the post is attached in accordance with correct bow direction. Power switch unit mount plate should be on the right side when looking from stern to bow of the base assembly.

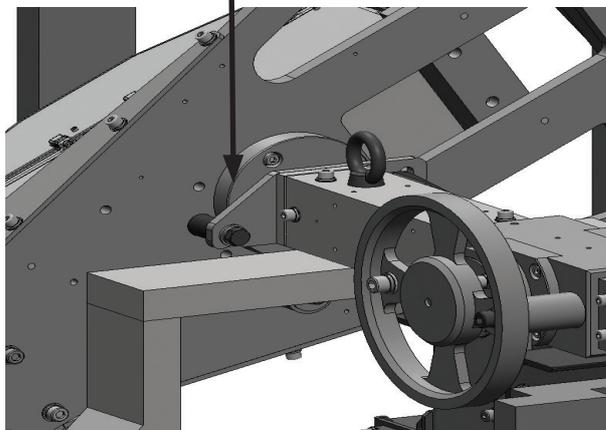
11. Detachment of the Upper Antenna



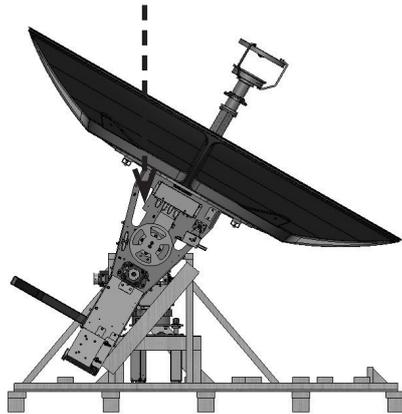
A. In order to attach lifting straps, the following steps must be performed.



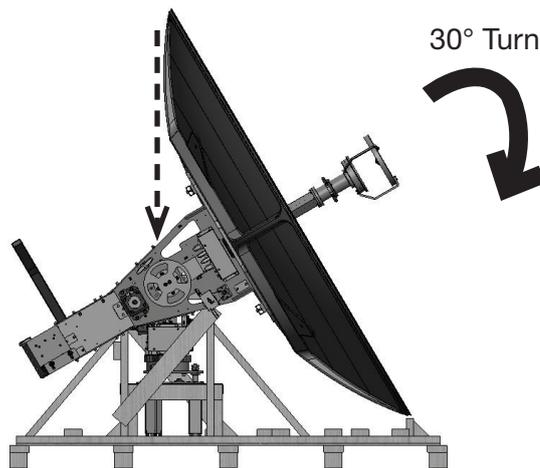
B. This is the initial position of the EL Arm fixture bolt.



C. The initial position should be moved to the middle tap as indicated on left.



D. In a different view, this is the original position (as is in section B). Lifting straps cannot be attached the CL arm in this position.



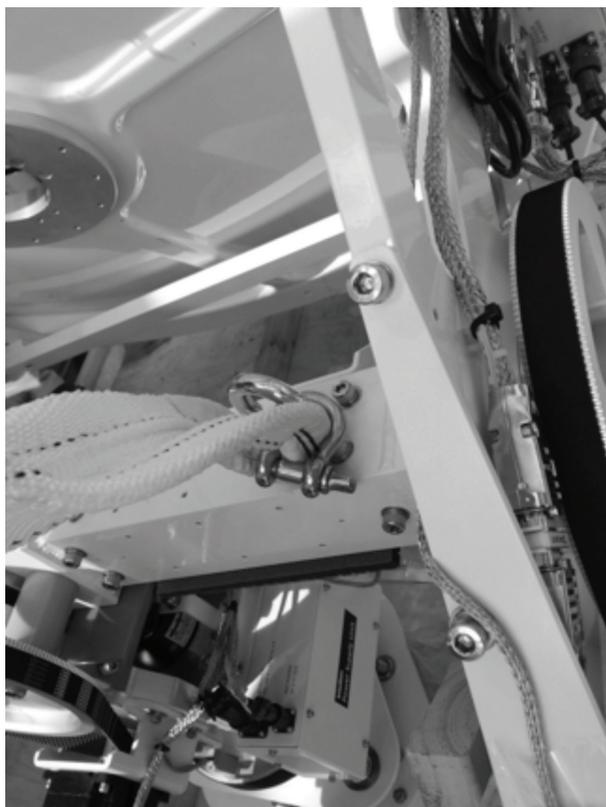
E. As shown in Section C, when the tap is moved, lifting strap can be attached to the CL arm.



F. 4000mm Lifting straps should be hooked onto the I-bolts as shown left. There should be 2 hooks located on CL arm.



G. Securely hook the lifting straps as shown. (On the both side of the CL arm)



H. Securely hook the lifting straps as shown. (On the both side of the CL arm)



- I. Hook the straps to the crane as slowly lift up the system as shown.

Do not place the antenna onto the post just yet. Follow the next steps in section 12, securing Cables.

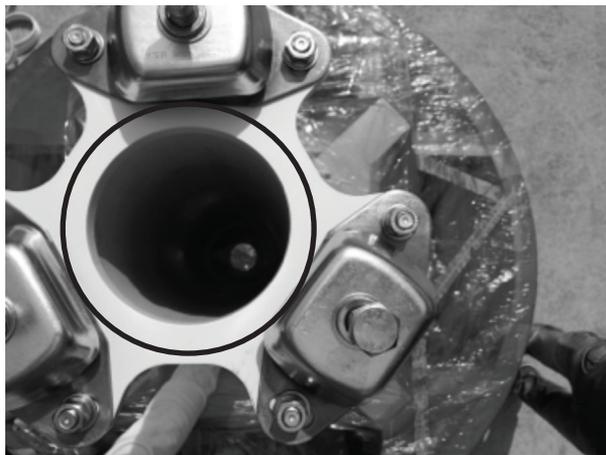
12. Securing Cables



A. Locate the power and RF cables as shown.



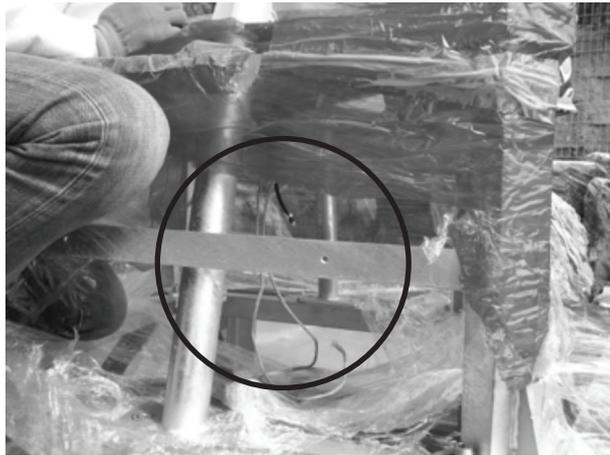
B. Pull the cables through the center of the pedestal middle plate as shown on left.



C. The cables need to be inserted through the center of the pedestal support as indicated



D. Place the cables through the center hole of the Post as shown in C.



E. Cables should come out of the bottom of the post as shown left.

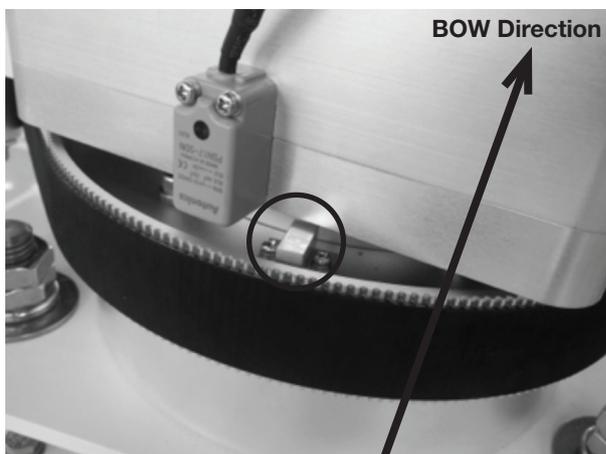
13. Assembly of Upper Antenna and Post



A. Locate the power and RF cables as shown.

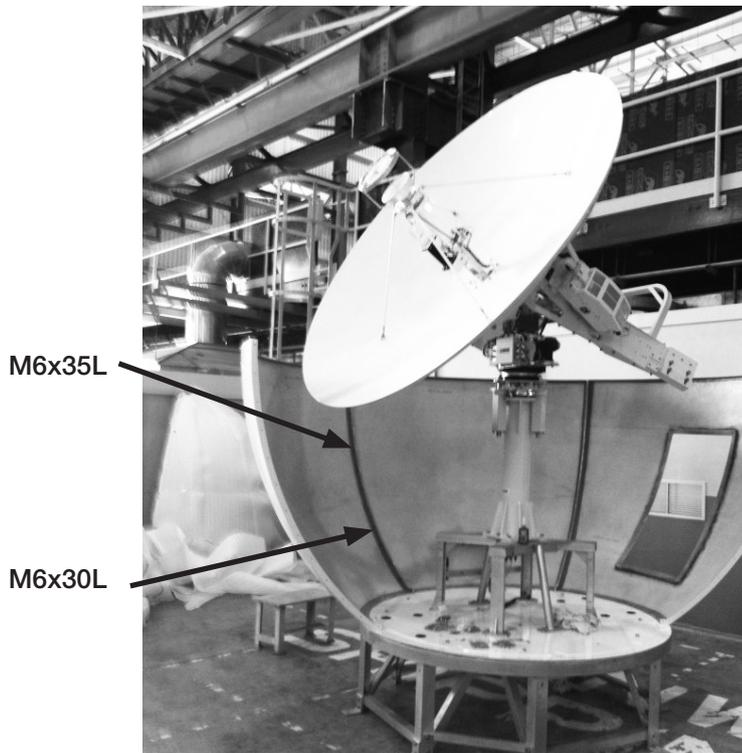


B. Insert the 3 M16 x 40 bolts to secure the antenna assembly to the pedestal. Make sure to apply Loctite 262 to securely tighten the assembly.



C. The system should be mounted so the AZ sensor is on the stern position of the base assembly.

14. Assembly Lower Radome panels and Base Frame



A. Now assemble the lower radome panels. M6x35L bolts are used for the connection between panels, and M6x30L bolts are used for connection between panels and base frame.

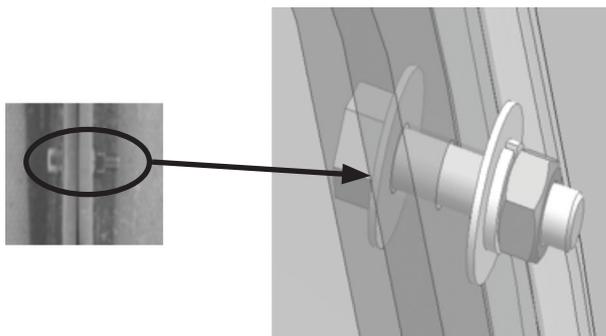
B. NOTE: Bow Direction should be the opposite of Hatch.



C. Apply silicon (Sikaflex-291) to side of radome panels before applying bolts.



D. Apply the bolts as shown right with corresponding sizes



E. Make sure to apply bolt and nut as shown. It is recommended that the max torque be 15Nm.

15. Assembly of Lower Radome



A. Assemble 5 radome panels as indicated in previous section.

B. Make sure to tighten all the joints before proceeding to next step. plus, make sure to clean out the silicon mess to give a smooth finish.



C. Direction of the hatch should be the exactly opposite of Bow direction.

16. Applying Silicon to Lower Radome Panels



A. Apply the silicon between the radome panels from the outside.



B. Make sure to clean out the silicon for smooth finish

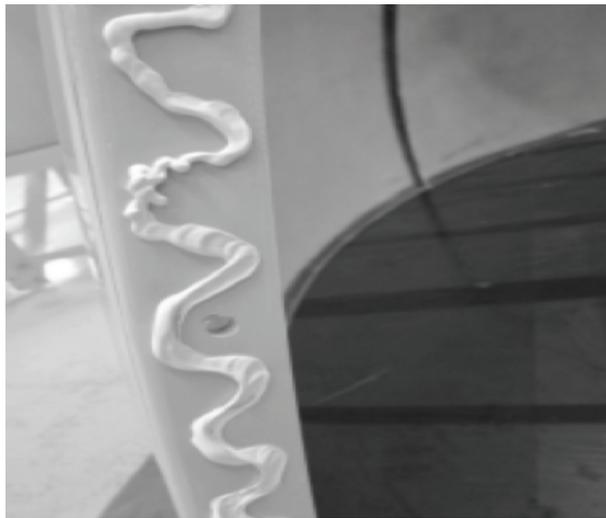


C. Finished lower radome should look as shown.

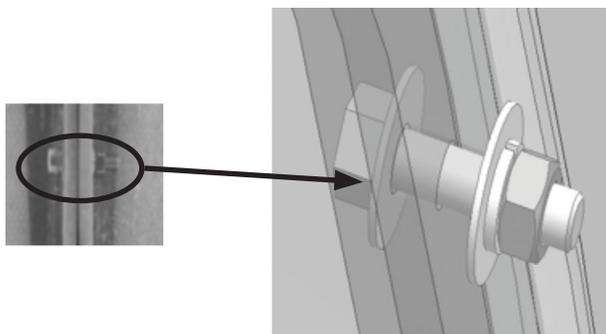
17. Assembly of Upper Radome Panels



A. The assembly of the upper radome panels should now be completed, using the M6 x 35 bolts supplied.



B. Apply silicon (Sikaflex-291) to side of radome panels before fastening bolts.



C. Make sure to apply bolt and nut as shown. It is recommended that the max torque be 15Nm.

18. Assembly of Upper Radome Cap and Finishing



A. Assemble 4 upper radome panels as shown left.



B. You are now ready to install the radome cap.



C. Fix the cap in place with a layer of silicon and loosely fasten the M6 bolts but do not tighten them at this time.

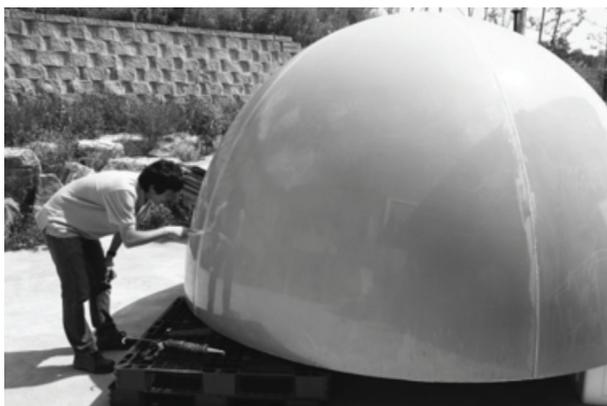


D. After the attachment of the cap, the last panel of the radome should be installed to finish the assembly. The final section is completed with a person inside the radome so a provision needs to be made so they can be released by lifting the completed dome. At this point all bolts should be tightened. Any excess silicon should be removed to give a clean finish.

19. Applying Silicon to Upper Radome Panels

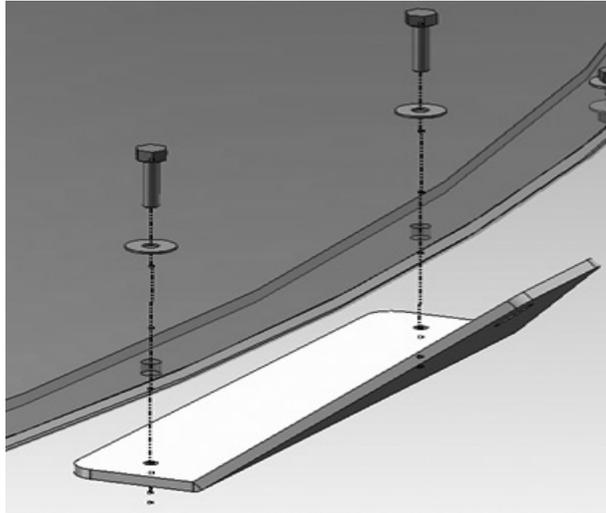


A. Apply the silicon from the outside between the radome panels.



B. Remove excess sealant and smooth to complete the radome top section.

20. Final Assembly of Radome



A. There are 4 sets of M6x35 Hex Bolts and Nuts that should be applied to 4 locations of the upper radome. The assembly shown on right should be constructed on each of 4 locations.



B. Connect the lifting strap to the radome.



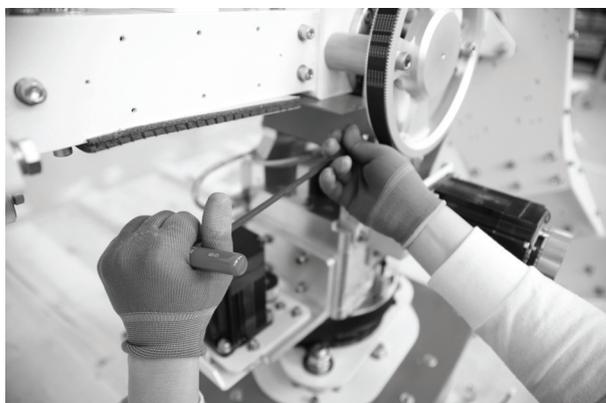
C. Radome should be lifted up slowly as shown by a crane.



D. Apply silicon to the top lip of the lower section of the radome then slowly place the upper radome on to the lower radome half. Slowly place the upper radome on top of the lower radome assembly.



E. Once placed onto the lower half fasten with the supplied nuts and bolts. Then clean off any excess silicon.



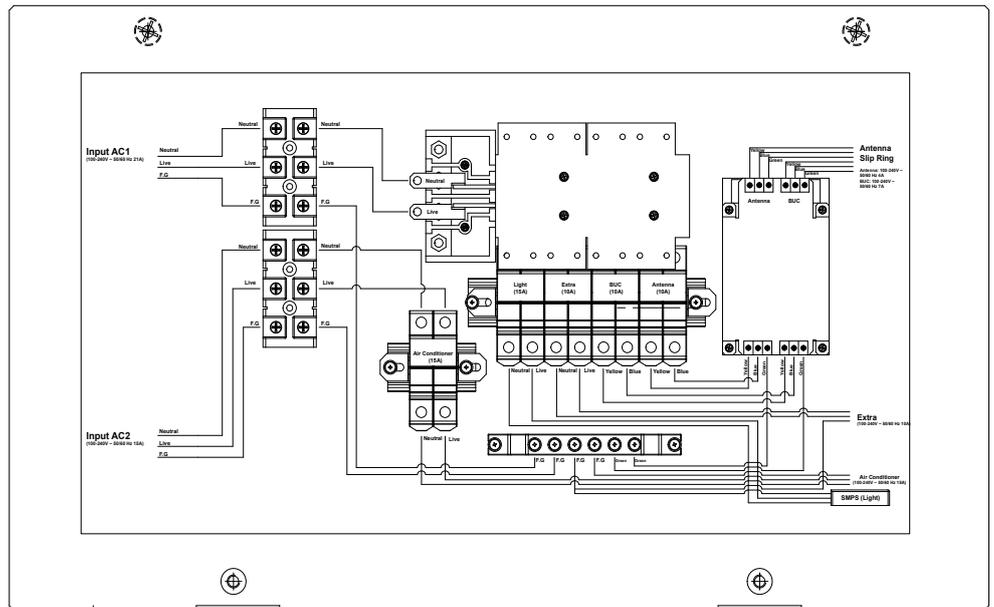
F. Enter the radome hatch and take out 2 brackets under the CL Arm. Remove the M6 Hex bolts to free the CL Arm.



WARNING: Never operate the antenna before installation is complete. Doing so may damage the antenna system including motor control.

21. Power Box Connection

Connect the power cable to the power box and connect the other end into a power supply rated at 100-240V.



INSTALLING THE ACU

Mounting the ACU

19" Rack Mount Type

Table Mount Type

ACU Dimensions

Selection of ACU Installation Site

Ship Gyro Connection

Connecting the System with a Ship's Gyro

Connecting the System without a Ship's Gyro

WiFi & Bluetooth Connection

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 your 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

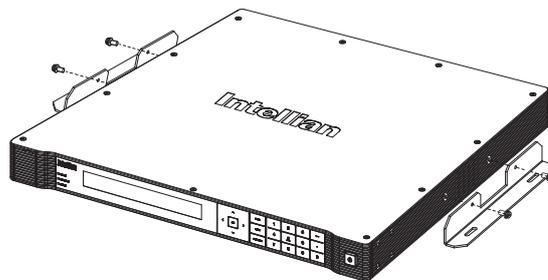


Table Mount Type

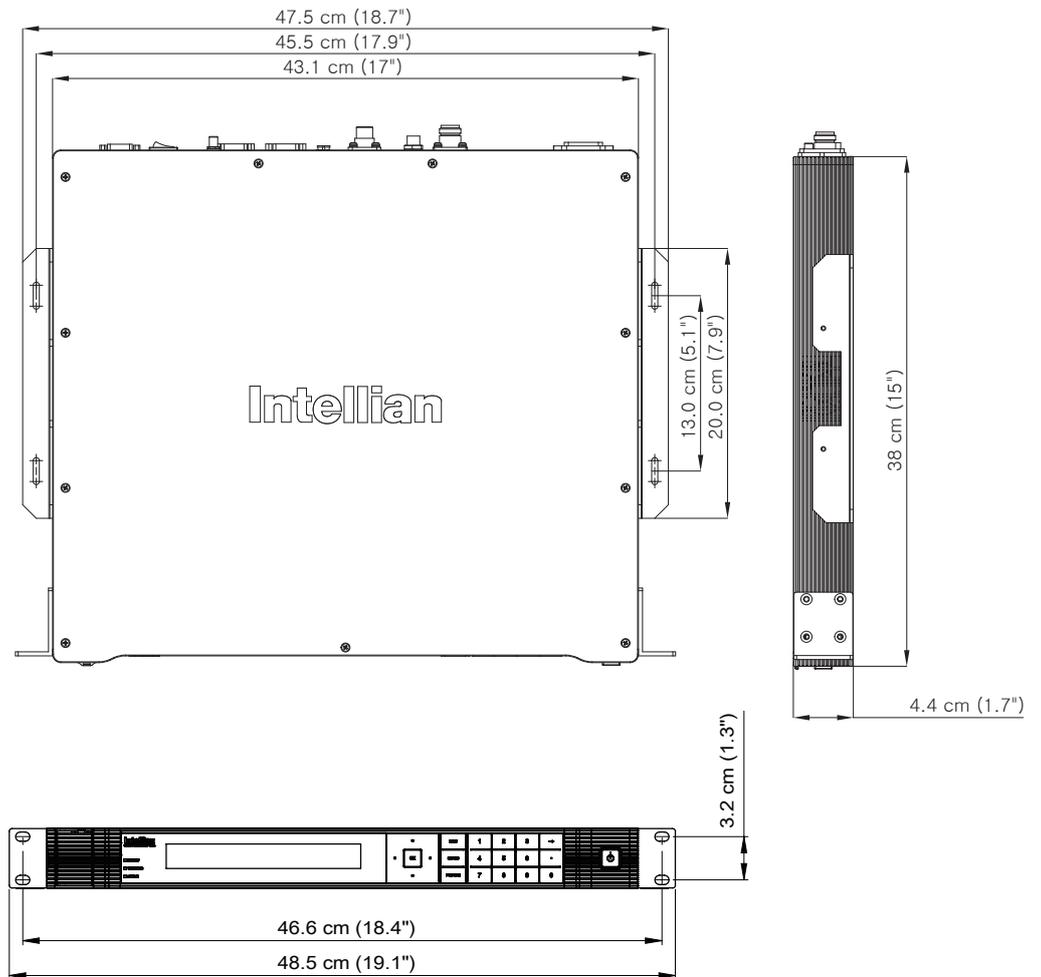
- The ACU should be installed using the two supplied Table Mounting Brackets which allow for a top or bottom mounting configuration.
- Using the Sems Bolt supplied, attach the mounting brackets to the sides of the ACU.
- Place the ACU in the location where it is going to be installed.
- Using a pencil to mark the 4 hole positions (2 on 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.

ACU Dimensions

Dimension of ACU



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 easily accessible to the user.

Ship Gyro Connection

Connecting the System with a Ship's Gyrocompass

For satellite tracking, you must connect a ship's Gyro to the antenna system through the gyro interface on the rear of the ACU. Intellian's ACU supports NMEA 0183 and NMEA 2000 gyro types. If the ship's gyrocompass output uses something different than a NMEA 0183 or NMEA 2000, a separate purchase of a gyro converter is required.

- NMEA 0183 Gyro Compass Interface Cable (Customer Supplied)
- Type: 2 conductors for NMEA 0183
- 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)



Strip the cable for 5 mm (0.2")
Do not solder the cable

Connecting the System without a Ship’s Gyrocompass

For a vessel where the ship’s gyrocompass is not installed or is difficult to connect, 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 a CCW(Counter Clockwise) direction until the antenna receives a lock signal from the Modem or until 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.

Existence of Heading Data	Setting of Heading Device		
	No Device	NMEA / NMEA 2000	Ground Test
w/ Heading Data	Search 1	Search 3	Search 3
w/out Heading Data	Search 1	Search 1	Search 3

Quick Setup Procedure

- Set the satellite having 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 a CCW direction and lock onto the satellite signal until the antenna receives a lock signal from the Modem or until the DVB transponder of the target satellite is decoded.
- Set the heading device as NMEA
 - Enter the “Manual search” menu and press the “Function” key to save the current settings. Intellian's ACU will automatically calculate and save the BOW offset.
 - Upload the real TARGET satellite pre-configured from the library.

Wi-Fi and Bluetooth Connection

You can connect to the ACU via Wi-Fi and to the antenna via Bluetooth for complete control and monitoring whenever you are on a vessel. For Bluetooth connection, see **Appendix A: Setup Bluetooth Connection**.

Set Up Wi-Fi Connection

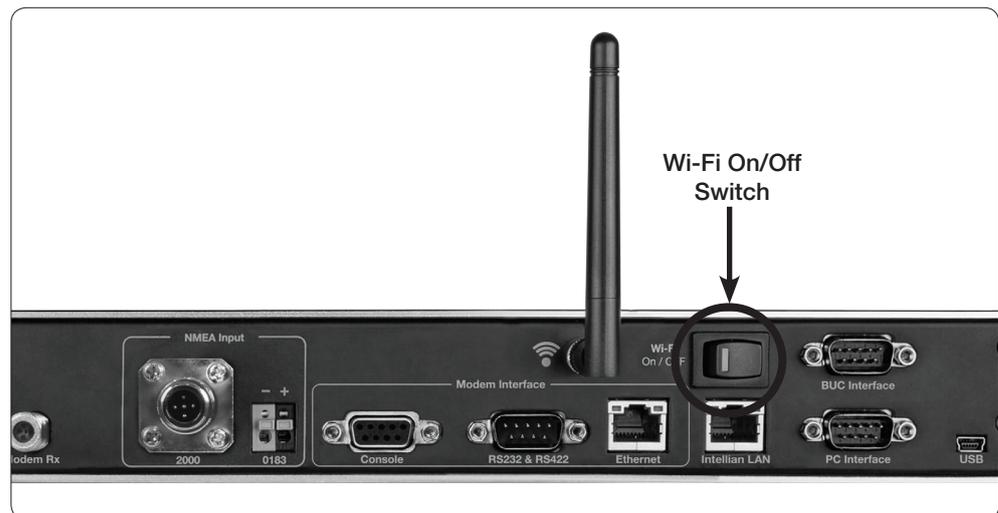
Setting up the ACU to access Wi-Fi.

Setting up the PC (AP MENU) to access Wi-Fi.

Aptus Web Confirmation

Set Up the ACU to access Wi-Fi

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.



Set Up the PC 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, then select "Obtain an IP address automatically".



- ② Manually change the network settings, click on “Use the following IP address” and use 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

Connect Wi-Fi in AP MENU.

- ③ After clicking on the Windows Wireless Connection icon, click on Intellian-VSAT (Default).

Enter the Network Security Key.

- ④ Key: intellian1234 (Default)



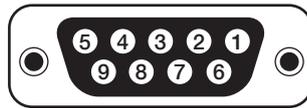
- ⑤ You can confirm the logo and version data by accessing <http://192.168.1.223>.
Login by entering the ID/ Password listed below.
Username: intellian (Default)
Password: 12345678 (Default)



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

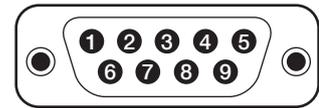
ACU Connector Guide

• 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 +

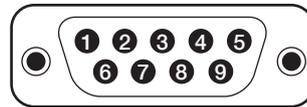


D-Sub 9 pin Male connector
Supplied Component

Pin	Signal
6	GPS OUT -
7	Modem_SIGNAL_IN
8	Modem_CTRL2
9	GPS IN -

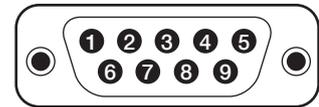
NOTE: NMEA GPS IN/OUT Sentence: GPGLL (4800 Baud, 8, N, 1)

• RS232/422 Connector (Modem & BUC Interface)



D-Sub 9 pin RS232
Connector

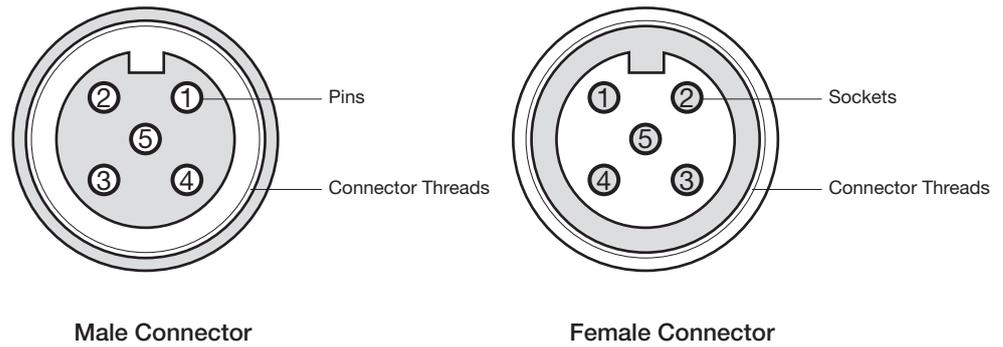
Pin	Signal	Pin	Signal
1	-	6	-
2	RXD	7	-
3	TXD	8	-
4	-	9	-
5	GND		



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



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

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

OPERATING THE ACU

Introduction

Normal Menu

Setup Menu

Installation Settings

Antenna Settings

Manual Search

Setup Antenna LNB pol Angle

Search Parameters

Setting Antenna Parameters

Setup Block Zone

Diagnosis Procedures

Satellite Settings

Load Satellite

Edit Satellite Information

Add Satellite Information

Check NID

System Settings

Setting Local

Setting Location

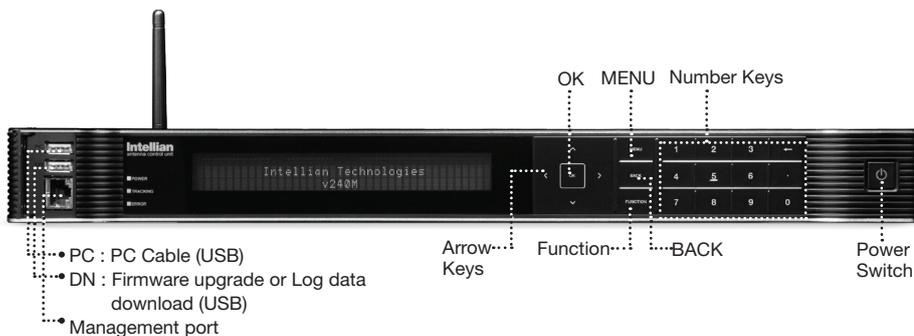
Setting Modem Port

System Management

Key Lock

Introduction

ACU Soft Keys



INITIALIZE – ANTENNA INFO
INTELLIAN v240

Soft Key Functions

Touch key	Function
OK KEY	Enter next step, or menu.
MENU	Enter SETUP MENU
BACK	In SETUP MENU, returns to previous menu or option, or saves the adjusted settings. In NORMAL MENU, returns to the first page of antenna current status.
ARROW KEYS	Moves cursor to an alternative option to select, or increase and decrease the selected character to a desired value.
FUNCTION	Saves the adjusted settings.
NUMBER KEYS	Inputs numbers.

Normal Menu

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 v240
```

2. The ACU receives antenna information.

Initialize elevation &
cross level angle

```
INITIALIZE - EL POSITION
INTELLIAN v240
```

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

Initialize azimuth angle

```
INITIALIZE - AZIMUTH POSITION
INTELLIAN v240
```

4. The azimuth angle is initialized.

Initialize target satellite
position

```
INITIALIZE - SAT POSITION
INTELLIAN v240
```

5. The antenna returns to the target satellite position.

Search status

```
# SEARCH1 125.0E ASIA6AH SIG: 101 #
AZ: 150.7 ( 150.7 ) EL: 45.3 SK: 02.0
```

6. The antenna is searching for the target satellite.

Tracking status

```
# TRACKING 125.0E ASIA6H SIG: 201# #
AZ: 181.7 ( 181.7 ) EL: 47.3 SK: 02.0 Fn
```

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

```
SEARCH1 125.0E ASIA6AH SIG: 101
AZ: 150.7 ( 150.7 ) EL: 45.3 SK: 02.0
```

1. The antenna is searching for the target satellite.

Current tracking status

```
TRACKING 125.0E ASIA6H SIG: 201
AZ: 181.7 ( 181.7 ) EL: 47.3 SK: 02.0 Fn
```

2. The antenna has locked onto the target satellite.

Current IF signal level (SIG/ AGC) is displayed. SIG 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.

True azimuth [181.7] position of the antenna is the sum of ships heading 000.0 [HDG] and antenna relative [181.7].

Save current satellite info

```

                SAVE CURRENT SAT INFO ?
                ↪ YES                               NO
    
```

3. Press FUNCTION key to save current BOW OFFSET information or abort and return to the main display. "Fn" will be displayed only if the antenna is in tracking menu.

Current tracking status

```

    ↪ TRACKING 125.0E ASIA6H   SIG: 201#   ↩
      AZ: 181.7 ( 181.7) EL: 47.3  SK: 02.0 Fn
    
```

4. Press RIGHT arrow key to display NBD, GPS and ship's heading information.

Tracking & Heading information

```

    ↪ NBD    F: 1070000  BW: 1000    SIG: 201#   ↩
      004.53E  52.22N  HDG: 000.0  L: 5150 Fn
    
```

5. NBD, GPS and ship's heading information are shown.

NBD (Narrow Band Detection) IF tracking frequency : 1070000 KHz
 Detected Band Width : 1000KHz
 SIG (Signal Level) : 201
 W (West) / E (East) Longitude: 4.53 ° E
 N (North) / S (South) Latitude: 52.22° N
 HDG (Ship's Heading) : 000.0 degree
 LNB local oscillator(LO) frequency: 5150 MHz

Antenna & ACU versions

```

    ↪ VC1-241-P01 ANT. SERIAL 6.00/6.00   ↩
      VP-T537      ACU SERIAL 3.00/1.00
    
```

6. Press RIGHT arrow key to display the below information.

Antenna part number, Antenna serial number and PCU / Stabilizer firmware version.
 ACU part number, ACU serial number, ACU / Pol. Controller firmware version.
 Press BACK Key to return to the first page of the antenna current status.

Select USB functions

```

    ↪ [USB FUNCTION]  SELECT USB FUNCTION   ↩
                          ⬆  UPGRADE FIRMWARE  ⬇
    
```

7. Press RIGHT arrow key to display the USB FUNCTION.

When USB Memory is connected to USB port, the above screen will be displayed
 With stored FWP file in USB Memory folder, ACU can be upgraded
 UPGRADE FIRMWARE: ACU is upgraded with a FWP file in designated folder of USB Memory

COPY LOG DATA: Copies data logs to USB Memory

Upgrade
the
system

```
                                UPGRADE ?
                                ↵ YES                                NO
```

8. Press 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

```
⌘ [DIAGNOSTIC]                SENSOR BOX                ⌘
                                CODE109                ⌘ RESULTS : FAILED ⌘FN
```

9. Press 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

```
                                ERASE DIAGNOSTIC ERROR LOG ?
                                ↵ YES                                NO
```

10. Press FUNCTION key to erase diagnostic error message.

Setup Mode

Enter the SETUP Mode simply follow the instructions below.

Searching / Tracking Menu

```

* TRACKING 125.0E ASIA6AH SIG: 201# *
AZ: 183.7 ( 183.7 ) EL: 47.3 SK: 02.0 Fn
  
```

1. While the antenna is in SEARCHING / TRACKING MENU, press 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 press MENU key or when "Fn" Menu is activated press FUNCTION key the ENTER PASSWORD Menu will be displayed.

Enter password

```

ENTER PASSWORD
- - - -
  
```

2. If the key pad lock function is on, enter the password before accessing SETUP Menu. If the key pad lock function is off, access SETUP Menu directly by following Step 3.

Setup Menu

```

SETUP MODE ?
+ YES NO
  
```

3. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Menu or press RIGHT arrow key to move cursor to NO and press OK key to abort and return to the main display.

Exit setup Menu

```

EXIT SETUP MODE ?
+ YES NO
  
```

4. While the antenna is in SETUP Menu, press FUNCTION key as a shortcut key to exit SETUP Menu.

Installation Settings

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

Setup Mode

```

                SETUP MODE ?
            ↪  YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Installation Menu

```

    +ANTENNA                +SATELLITE
    +SYSTEM                  ↪+INSTALLATION
    
```

2. Press arrow keys to move cursor to INSTALLATION menu and press OK key to enter it.

Select satellite

```

                SELECT SATELLITE
            ▲      [1] ASIA6AH  125.00E      ▼
    
```

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

Latitude & Longitude

```

                LATITUDE                LONGITUDE
            ▲      37.00N      ▼                126.53E
    
```

4. Set the current LATITUDE and LONGITUDE
 Press LEFT and RIGHT arrow keys until the desired character is underscored (selected).
 Press UP and DOWN arrow keys to increase or decrease the value. Or press NUMBER keys to set the desired value directly. Press OK key to set the parameter.

Gyro type

```

                GYRO TYPE                BOW OFFSET
            ▲      NMEA      ▼                000
    
```

5. Set the ship's GYRO TYPE* and BOW OFFSET.
 A search pattern 1 or 3 will be initiated according to which Gyro Type is selected and the existence of the gyro input. Ensure that the supported Gyro Type is set correctly.

For v240, if the ship's gyrocompass output is Step-by-Step (SBS) or Synchro, separate purchase of a gyro converter is required.

NOTE: A search pattern 1 will be initiated automatically if the gyro input does not exist and the gyro type is selected other 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°)

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

Existence of Heading Data	Setting of Heading Device		
	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* (V240)

- NO DEVICE
- NMEA
- NMEA 2000
- GROUND TEST

Set Modem type and LNB local frequency

```

MODEM TYPE          LOCAL FREQ.
┌ IDIRECT-I/O ─┐   05150MHz
    
```

6. Set **MODEM TYPE** * and LNB LOCAL.

MODEM TYPE is to select a proper data communication port on the ACU to interface with the satellite Modem.

MODEM TYPE*

- USER SETTING
- IDIRECT-I/O
- IDIRECT-AMIP
- COMTECH-I/O
- COMTECH-ROSS
- HUGHES
- SATLINK-SERIAL
- SATLINK-VACP
- ELEKTRIKOM-AMIP
- GILAT-SERIAL
- IPSTAR-SOTM

Load

```

LOAD ?
┌ YES ─┐ NO
    
```

7. Press BACK key to load the current setting or abort and return to the main display.

Loading settings

```

LOADING ...
DO NOT TURN OFF ! #####
    
```

8. 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 data is being uploaded.

Tracking status

```

┌ TRACKING 125.0E ASIAGAH SIG: 201# ─┐
AZ: 183.7 ( 183.7) EL: 47.3 SK: 03.0 Fr
    
```

9. Antenna has locked onto the target satellite.

Antenna Settings

Manual Search

Search the desired satellite manually.

Setup Mode

```

                SETUP MODE ?
          ↵ YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Antenna Menu

```

    ↵+ANTENNA                                +SATELLITE
      +SYSTEM                                +INSTALLATION
    
```

2. Press OK key to enter ANTENNA Menu.

Manual search Menu

```

    ⏪ ↵ +MANUAL SEARCH                       +SET POL ANGLE ⏩
      +SEARCH PARAM                          +SET PARAMETERS
    
```

3. Press OK key to enter MANUAL SEARCH Menu.

Antenna movement

```

STEP SIZE  AZIMUTH  ELEVATION  AGC
# 00.2 #  ⏪ 231.7 ⏩  ⏴ 48.3 ⏵  301 Fn
    
```

4. Current IF tracking signal level (AGC) / (SIG) is displayed to assist you in manually peaking AZIMUTH (0°-360°) and ELEVATION (0°-90°) angle for best signal level.

Press NUMBER key to change the STEP SIZE (Range: 0.1~99.9). Press LEFT and RIGHT arrow keys to increase or decrease the azimuth angles. Press UP and DOWN arrow keys to increase or decrease the elevation angles.

Press FUNCTION key to save current settings or abort and return to the main display.

Save

```

                SAVE CURRENT SAT INFO?
          ↵ YES                               NO
    
```

5. If the current settings are able to locate the satellite, press FUNCTION key to save “current satellite information”. This will help to reduce the satellite acquisition time after restarting the system. Press LEFT arrow key to move cursor to YES and press the OK key to save the settings.

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

Setup Antenna LNB pol Angle

Setup Mode

```

                SETUP MODE ?
            ↗ YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Antenna Menu

```

    ↗+ANTENNA                               +SATELLITE
      +SYSTEM                               +INSTALLATION
    
```

2. Press OK key to enter ANTENNA Menu.

Set pol angle Menu

```

    ↖ +MANUAL SEARCH   ↗ +SET POL ANGLE   ↘
      +SEARCH PARAM     +SET PARAMETERS
    
```

3. Press RIGHT arrow key to move cursor to SET POL ANGLE Menu and press OK key to enter it.

LNB pol angle Signal

```

                SELECT LNB POL. ANGLE MENU
            ⬆                               ⬇
                CALIBRATION
    
```

4. Press UP and DOWN arrow keys to select the LNB pol angle Menu and press OK key to run the selected operation ' CALIBRATION ' or ' MANUAL ADJUST'. Select MANUAL ADJUST to control LNB pol angle manually. If the control board, skew potentiometer or belt is replaced, select CALIBRATION to calibrate LNB pol angle.

```

    LNB POL ANGLE   POLARITY   SIGNAL: 180
    ⬆               ⬇         ↖ ↘
                20           ↖ ↘ LINEAR
    
```

5. Press 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. If antenna has a circular & linear polarization, POLARITY option will appear. Then with LEFT/RIGHT keys, Linear/RHCP/LHCP can be selected.

Press BACK key to return to the main display.

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

Search Parameters

Setup Mode

```

                SETUP MODE ?
          ↗ YES                NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Antenna Menu

```

    ↗+ANTENNA                +SATELLITE
      +SYSTEM                +INSTALLATION
    
```

2. Press OK key to enter ANTENNA Menu.

Manual search Menu

```

    ↖  +MANUAL SEARCH        +SET POL ANGLE  ↗
      ↗+SEARCH PARAM        +SET PARAMETERS
    
```

3. Press DOWN arrow keys to move cursor to SEARCH PARAM and press OK key to it.

Search param

```

    SEARCH WAIT TIME      INCREMENT STEP
    ⬆      030          ⬇      0.50
    
```

4. Set SEARCH WAIT TIME and INCREMENT STEP

Set the time-out for automatic initiation of a search after the signal level drops below the predefined threshold value (Range : 1 - 120 sec) and set increment step size (Range : 0.01 - 5.00 sec).

Search 1 range

```

    SEARCH1 AZ                SEARCH1 EL
    ⬆      400          ⬇      06
    
```

Search 3 range

```

    SEARCH3 AZ                SEARCH3 EL
    ⬆      003          ⬇      04
    
```

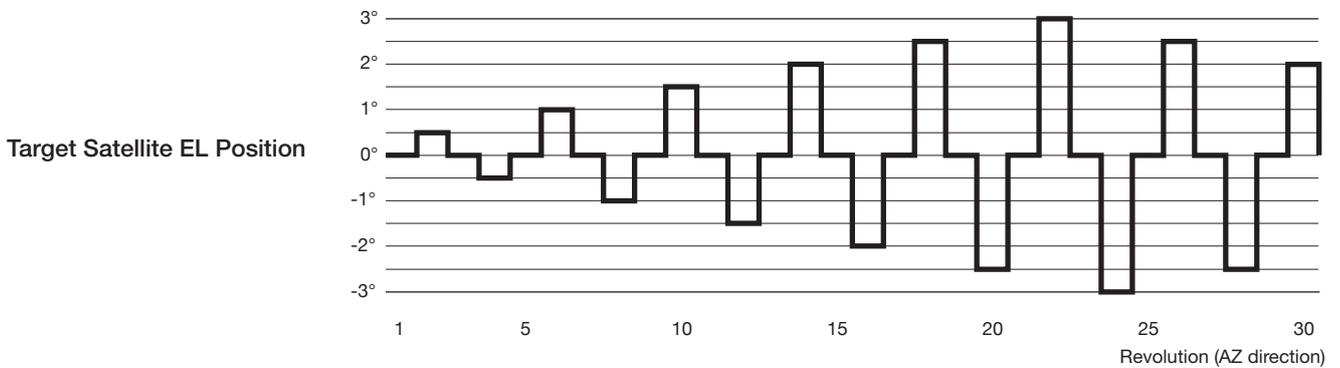
5. Set SEARCH 1 and 3 AZ (Azimuth) range and EL (Elevation) range. SEARCH 2 is reserved for future use.

REMARKS:

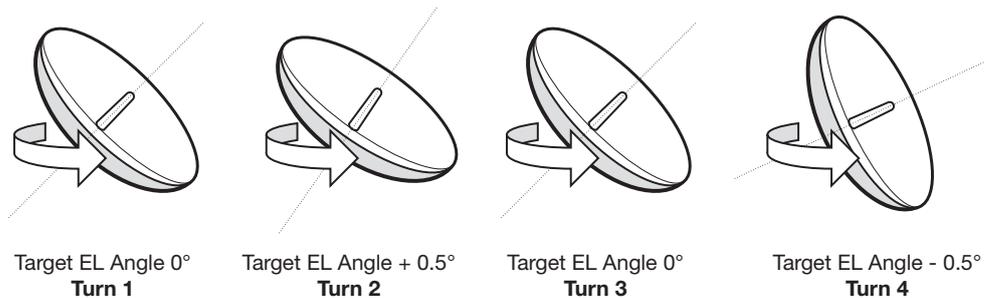
A search pattern 1 or 3 will be initiated according to which GYRO TYPE is selected and the existence of the gyro input.

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° & down -0.5° with a total of 6°(±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, if the desired signal is above the predefined tracking threshold level, the antenna will not initiate a Search 3 pattern but will go into TRACKING menu immediately. 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 (Gyro Free) Search Pattern

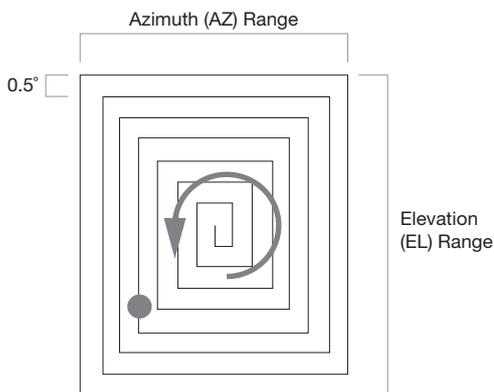


Search 1 antenna motion



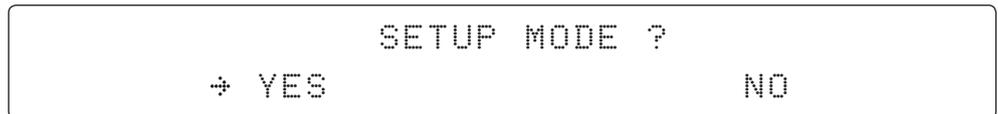
Search 3: a search 3 pattern will automatically be initiated when AGC / SIG falls below the current tracking level threshold value. If the desired signal is found and above the predefined tracking level, the ACU will terminate Search 3 and go into TRACKING Menu. A search pattern will automatically be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

Search 3 pattern



Setting Search Parameters

Setup Mode



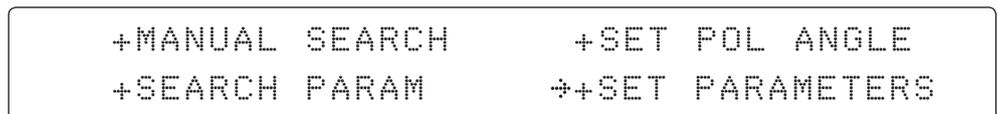
1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Antenna Menu



2. Press OK key to enter ANTENNA MENU.

Set parameters Menu



3. Press arrow keys to move cursor to SET PARAMETERS Menu and press OK key to enter it.

Password



4. Press 4 digit password to enter SET PARAMETERS MENU (1590).

Setup parameters is only required after installation or repairs of your antenna system.

These parameters should only be changed by an authorized service technician.

Improper setting of these parameters will render your system inoperable.

Set detect & tracking DVB



5. Set DETECT DVB and TRACKING DVB when DVB Menu of TRACKING SIGNAL is chosen to be used (Range: 1-200).

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

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

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

Set detect & tracking NBD

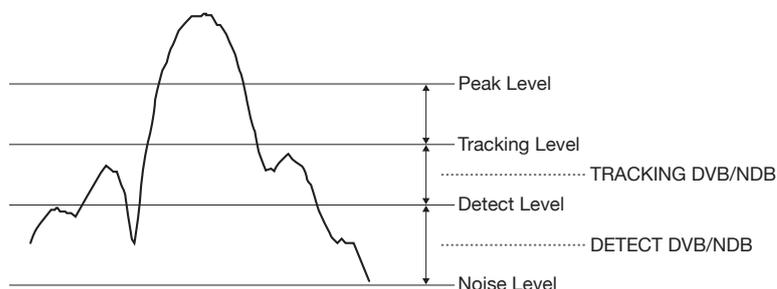


6. Set DETECT NBD and TRACKING NBD when NBD (Narrow band detection) MENU of TRACKING SIGNAL is chosen to be used (Range: 1-200).

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

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

Detect & tracking level



BOW & EL adjust



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°) and EL. ADJUST is to offset the angle difference between the mechanical elevation angle and actual elevation angle (Range: ± 5°).

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

Select operation
process



8. Set OPERATION

Press UP and DOWN arrow keys to select **OPERATION*** items.

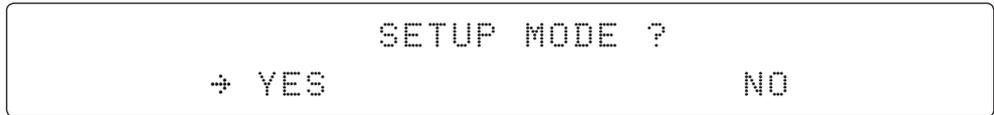
OPERATION*

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



1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Antenna Menu



2. Press OK key to enter ANTENNA Menu.

Block zone Menut

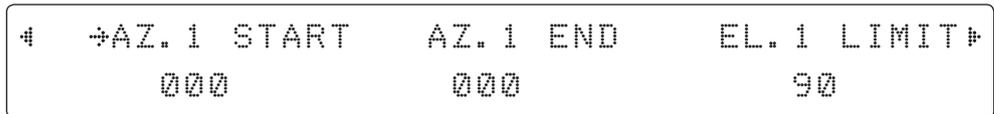


3. Press RIGHT arrow key to move cursor to BLOCK ZONE menu and press OK key to enter it. Up to 5 block zones are allowed to be programmed.

Block zone 1



Block zone range



4. Set ZONE 1 BLOCK

Press UP and DOWN arrow keys to select “ON” to setup the block zone for ZONE 1.

Press OK key to use ZONE 1 BLOCK and set the zone 1 block range.

Press BACK key to select the parameter you wish to edit and press the 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°).

Press LEFT and RIGHT arrow keys until the desired character is underscored (selected).

Press UP and DOWN arrow keys to increase and decrease the selected character.

Or Press NUMBER keys to set the desired value directly. Press OK key to set the parameter.

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

Block zone 2

```
ZONE 2 BLOCK
  ▲   OFF   ▼
```

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

Save

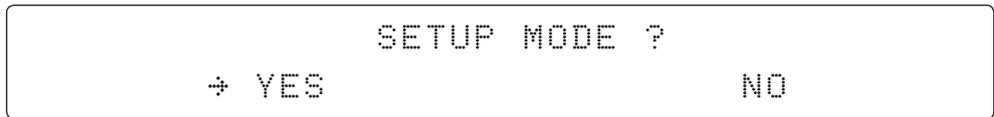
```
SAVE ?
  + YES          NO
```

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

Diagnosis Procedures

Refer to the diagnostic codes for the test results.

Setup Mode



1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP mode.

Antenna Menu



2. Press OK key to enter ANTENNA menu.

Diagnostic Menu



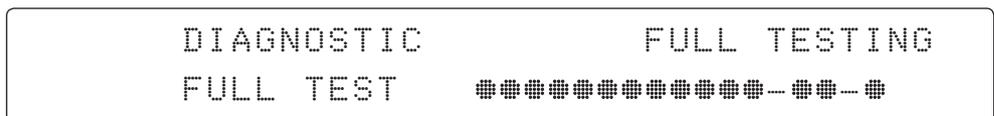
3. Press arrow keys to move cursor to DIAGNOSTIC menu and press OK key to enter it.



4. Press UP and DOWN arrow keys to select a full diagnostic test or single diagnostic test and press OK key to execute the selected diagnostic test.

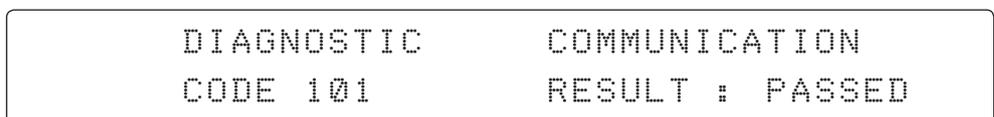
Menus for diagnostic are FULL TEST and CODE 101 ~ CODE 116.

Full diagnostic test result



5. A full diagnostic is successfully completed.

Single diagnostic test result



6. A single diagnostic test is successfully completed.

Satellite Settings

Load Satellite

Setup Mode

```
                SETUP MODE ?
          ↗ YES                NO
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

Satellite Menu

```
    +ANTENNA                ↗+SATELLITE
    +SYSTEM                  +INSTALLATION
```

2. Press RIGHT arrow key to move cursor to SATELLITE and press OK key to enter it.

Load sat Menu

```
    ↗+LOAD SAT.                +EDIT SAT.
    +ADD SAT.                  +CHECK NID
```

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

Load satellite

```
                LOAD SATELLITE
    ▲  [1] C    ASIAGAH    125.0E  ▼
```

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

Load

```
                LOAD ?
          ↗ YES                NO
```

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

Edit Satellite Information

Setup Mode

```

                SETUP MODE ?
          ↗ YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP mode.

Satellite Menu

```

+ANTENNA                ↗+SATELLITE
+SYSTEM                  +INSTALLATION
    
```

2. Press RIGHT arrow key to move cursor to SATELLITE and press OK key to enter it.

Edit sat Menu

```

+LOAD SAT.                ↗+EDIT SAT.
+ADD SAT.                  +CHECK NID
    
```

3. Press RIGHT arrow key and OK key to enter EDIT SAT. menu.

Edit satellite

```

                EDIT SATELLITE
          ▲ [1] C      ASIAGAH      125.0E ▼
    
```

4. Press UP and DOWN arrow keys to select the satellite that you wish to edit and press OK key to edit the selected satellite.

Edit longitude & name

```

LONGITUDE                EDIT NAME
          ▲ 125.00E ▼      ASIAGAH
    
```

5. Edit satellite orbit position, LONGITUDE and satellite NAME.

DVB verify method



6. Edit satellite **DVB VERIFY*** method and SKEW OFFSET. DVB VERIFY will be only activated and applied when DVB mode of TRACKING SIGNAL is chosen to be used. Press UP and DOWN arrow keys to select DVB VERIFY and press OK key to set the parameter.

- DVB VERIFY***
- AGC – use signal level for satellite tracking.
 - DVB Lock – use DVB Lock for satellite tracking.
 - DVB Decode – use DVB Decode for satellite tracking.
 - DSS Decode – use DSS Decode for satellite tracking.

Set LNB local frequency



7. Set **SELECT LOCAL*** frequency and **TRACKING SIGNAL***. Press LEFT and RIGHT arrow keys until the desired character is underscored (selected). Press UP and DOWN arrow keys to select the LNB local frequency from the installed LNB.

- TRACKING SIGNAL***
- NBD
 - DVB

Set polarity



8. Set RX POL and TX POL. To select the polarity for both RX (receive) and TX (transmit). Press UP and DOWN arrow keys to select VERTICAL, HORIZONTAL, RHCP, or LHCP. Press OK key to set the parameter.

Addition of Satellite Information

Setup Mode

```

                SETUP MODE ?
            ↵ YES                                NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP mode.

Satellite Menu

```

    +ANTENNA                                ↵+SATELLITE
    +SYSTEM                                  +INSTALLATION
    
```

2. Press RIGHT arrow key to move cursor to SATELLITE and press OK key to enter it.

Add sat Menu

```

    +LOAD SAT.                                +EDIT SAT.
    ↵+ADD SAT.                                +CHECK NID
    
```

3. Press DOWN arrow key and OK key to enter ADD SAT. menu.

Set longitude & name

```

    ↵      LONGITUDE                                EDIT NAME      ↵
    ↵      000.00E      ↵                            SAT.00
    
```

4. Set satellite LONGITUDE and satellite NAME.

DVB verify method

```

    DVB VERIFY                                SKEW OFFSET
    ↵ DVB DECODE      ↵                            +00.0
    
```

5. Edit the satellite **DVB VERIFY*** and **SKEW OFFSET**.

DVB VERIFY will be only activated and applied when DVB mode of TRACKING SIGNAL is chosen to be used. Press UP and DOWN arrow keys to select DVB VERIFY and press OK key to set the parameter.

DVB VERIFY*

- AGC – use signal level for satellite tracking.
- DVB Lock – use DVB Lock for satellite tracking.
- DVB Decode – use DVB Decode for satellite tracking.
- DSS Decode – use DSS Decode for satellite tracking.

Set LNB local frequency

SELECT LOCAL	TRACK SIGNAL
▲05150MHz▼	NBD

6. **SELECT LOCAL*** to set LNB local oscillator frequency and **TRACKING SIGNAL***. The selectable LNB frequencies are depended on the installed LNB type. Press LEFT and RIGHT arrow keys until the desired character is underscored (selected). Press UP and DOWN arrow keys to increase or decrease the value. Press OK key to set the parameter.

TRACKING SIGNAL*

- NBD
- DVB

Set polarity

RX POL	TX POL
▲ VERT. ▼	HORI.

7. Set RX POL and TX POL
To select the polarity for both RX (receive) and TX (transmit) pol. Press UP and DOWN arrow keys to select VERTICAL or HORIZONTAL. Press OK key to set the parameter.

Set DVB tracking frequency

DVB FREQ.	SYMBOL	NID
▲00000MHz▼	00000KSp s	0X0000

8. Set DVB FREQUENCY, SYMBOL RATE and NID when DVB MENU 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). Press LEFT and RIGHT arrow keys until the desired character is underscored (selected). Press UP and DOWN arrow keys to increase or decrease the value. Or press NUMBER keys to set the desired value directly. Press OK key to set the parameter.

Sat NBD tracking frequency

NBD FREQ.	BANDWIDTH
▲ 0000.000MHz▼	00000KHz

9. Set NBD IF FREQUENCY and detection BANDWIDTH when NBD (Narrow band detection) MENU of TRACKING SIGNAL is chosen to be used.

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

Save

```

                SAVE ?
    → YES                                NO
    
```

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

Check NID

Setup Mode

```

                SETUP MODE ?
    → YES                                NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP mode.

Satellite Menu

```

+ANTENNA                                ++SATELLITE
+SYSTEM                                  +INSTALLATION
    
```

2. Press RIGHT arrow key to move cursor to SATELLITE Menu and press OK key to enter it.

Check NID Menu

```

+LOAD SAT.                                +EDIT SAT.
+ADD SAT.                                  ++CHECK NID
    
```

3. Press DOWN arrow key and OK key to enter CHECK NID Menu.

NID verification

```

[CHECK NID]  F: 4080  S: 27500  0X0888
PRESS OK    RECEIVED  NID [0X0000]
    
```

4. CHECK NID is to verify the NID (Network ID) of the current tracking transponder. Press 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

Setting local

Setup Mode

```

          SETUP MODE ?
        ↵ YES                NO
  
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP mode.

System Menu

```

    +ANTENNA                +SATELLITE
    ↵+SYSTEM                +INSTALLATION
  
```

2. Press DOWN arrow key to move cursor to SYSTEM and press OK key to enter it.

Set local frequency MENU

```

⌂  ↵+SET LOCAL            +SET LOCATION  ⌂
    +MODEM PORT            +MANAGEMENT
  
```

3. Press OK key to enter SET LOCAL menu to set the LNB local frequency.

LNB info

```

    LOCAL FREQ.
    ▲ 05150MHz ▼
  
```

4. Set LNB local oscillator frequency .

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

Save

```

          SAVE ?
        ↵ YES                NO
  
```

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

Setting Location

Setup Mode

```

                SETUP MODE ?
          ↪ YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP mode.

System Menu

```

      +ANTENNA                               +SATELLITE
    ↪+SYSTEM                               +INSTALLATION
    
```

2. Press DOWN arrow key to move cursor to SYSTEM menu and press OK key to enter it.

Set location Menu

```

    #  +SET LOCAL                               ↪+SET LOCATION  #
      +MODEM PORT                               +MANAGEMENT
    
```

3. Press RIGHT arrow key to move cursor to SET LOCATION and press OK key to enter it.

Gyro type and Baud rate

```

      GYRO TYPE                               BAUD RATE
      NMEA                                     ↕ 4800 ↕
    
```

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

A search pattern 1 or 3 will be initiated according to which GYRO TYPE is selected and the existence of the gyro 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 gyro input does not exist and the gyro 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

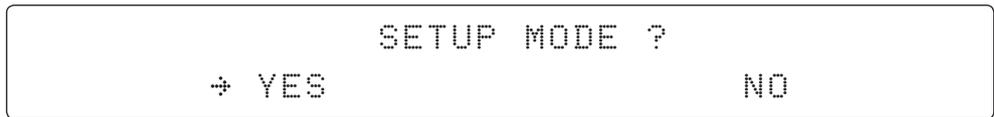
Existence of Heading Data	Setting of Heading Device		
	No Device	NMEA NMEA 2000	Ground Test
With Heading Data	Search 1	Search 3	Search 3
Without Heading Data	Search 1	Search 1	Search 3

GYRO TYPE*

- NO DEVICE
- NMEA
- NMEA 2000
- GROUND TEST

Setting Modem Port

Setup MENU



1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP MENU.

System MENU



2. Press DOWN arrow key to move cursor to SYSTEM MENU and press OK key to enter it.

Modem port Menu



3. Press DOWN arrow keys to move cursor to COM. PORT Menu and press OK key to enter it.

Set Mediator & Modem type



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 to work 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.

<p>USE MEDIATOR*</p> <ul style="list-style-type: none"> • NO • MEDIATOR-ANT • MEDIATOR-MODEM • MEDIATOR-ALL 	<p>Modem TYPE*</p> <ul style="list-style-type: none"> • USER SETTING • IDIRECT-I/O • IDIRECT-AMIP • COMTECH-I/O • COMTECH-ROSS • SATLINK-SERIAL • SATLINK-VACP • ELEKTRIKOM-AMIP • GILAT-SERIAL • 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: 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 SENTENCE      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 the 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 an 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 referring that the Modem lock output from the Modem is providing 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

```

TX MUTE ACTIVE
┌──────────┬──────────┐
│ 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

```

                               SAVE ?
┌──────────┬──────────┬──────────┐
│          │ YES      │          │
└──────────┴──────────┴──────────┘
    
```

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

System Management

Setup Mode

```

                SETUP MODE ?
            → YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

System Menu

```

    +ANTENNA                                +SATELLITE
    ++SYSTEM                                 +INSTALLATION
    
```

2. Press DOWN arrow key to move cursor to SYSTEM menu and press OK key to enter it.

Management Menu

```

#    +SET LOCAL                                +SET LOCATION    #
    +MODEM PORT                                ++MANAGEMENT
    
```

3. Press arrow keys to move cursor to Management menu and press OK key to enter it.

Select process type

```

                SELECT PROCESS TYPE
            .#                                #.
                BACKUP USER DATA
    
```

4. Press UP and DOWN arrow keys to **SELECT PROCESS TYPE***
Press OK key to set the parameter and the processing message will be displayed.

SELECT PROCESS TYPE*

BACKUP USER DATA : To backup the antenna settings set by user.

RESTORE USER DATA: To restore the antenna by using the backup user data.

UPGRADE FROM USB : Upgrade the antenna by using FPW file stored at the USB.

COPY LOG TO USB : Copy log data from the antenna to the USB.

BACKUP TO USB : To backup the antenna settings set by user to USB.

RESTORE FROM USB : To restore the antenna by using the backup user data From USB.

UPGRADE ACU-REMOTE : Upgrade iARM by using TGZ file stored at the USB.

**UPGRADE FROM USB / COPY LOG TO USB / BACKUP TO USB / RESTORE FROM USB /
UPGRADE ACU-REMOTE :** These items are shown only when the USB memory stick is connected at the ACU.

```

    BACK UP ANT INFO
    DO NOT TURN OFF! #####
    
```

Key Lock

Setup Mode

```

                SETUP MODE ?
          ↵ YES                               NO
    
```

1. Press LEFT arrow key to move cursor to YES and press OK key to enter SETUP Mode.

System Menu

```

      +ANTENNA                               +SATELLITE
    ↵+SYSTEM                               +INSTALLATION
    
```

2. Press DOWN arrow key to move cursor to SYSTEM Menu and press OK key to enter it.

Key lock Menu

```

# ↵+KEY LOCK                               + INTELLIAN DEVICE #
    
```

3. Press arrow keys to move cursor to KEY LOCK menu and press OK key to enter it.

NOTE: INTELLIAN DEVICE menu is not operated in this ACU.

Set key lock and password

```

      KEY LOCK                               UNLOCK P/W
    ▲      ON      ▼                               1590
    
```

4. Press UP and DOWN arrow keys to choose whether or not to use key pad lock when entering the SETUP MENU or saving the satellite information. Setup the password for entering the key pad lock. The factory default is 1590.

Check key lock activation

```

# TRACKING 125.0E ASIA6H   SIG: 201# #
#AZ: 181.7( 181.7) EL: 47.3  SK: 02.0 Fn
    
```

When KEY LOCK function is activated, the " # " mark is displayed.



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

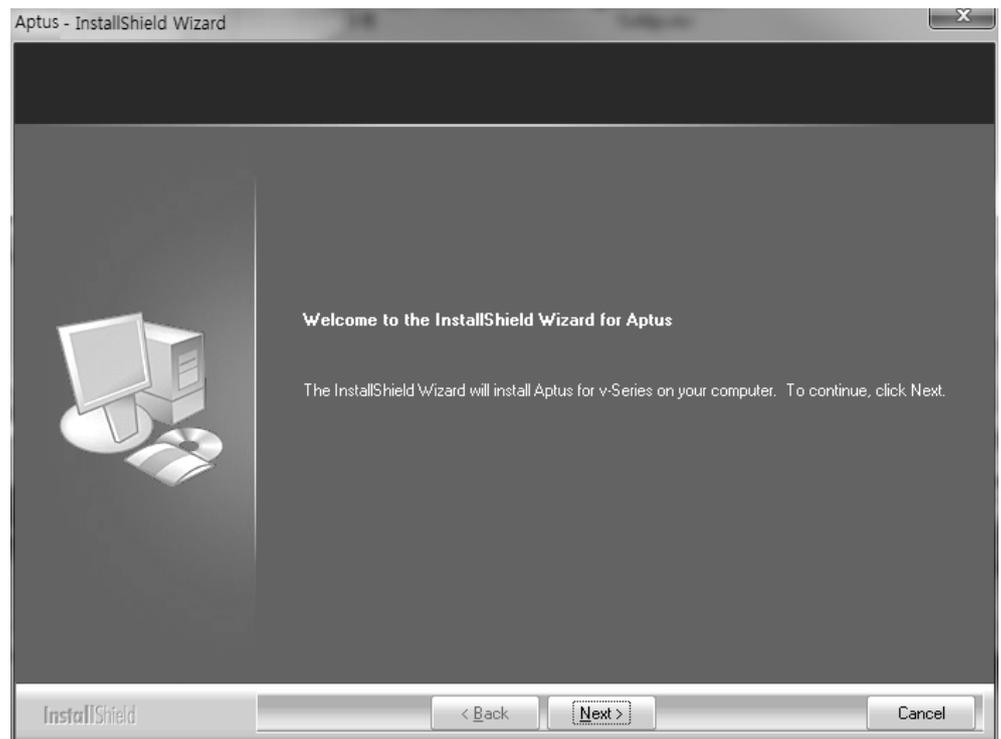
Hardware	Requirements
CPU	Intel® Pentium® 4 or higher
Memory	512MB or higher
Video Card	DirectX9.0 or higher supported
	H/W acceleration supported
	Video Memory 128MB or higher
HDD	1GB or higher

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  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.

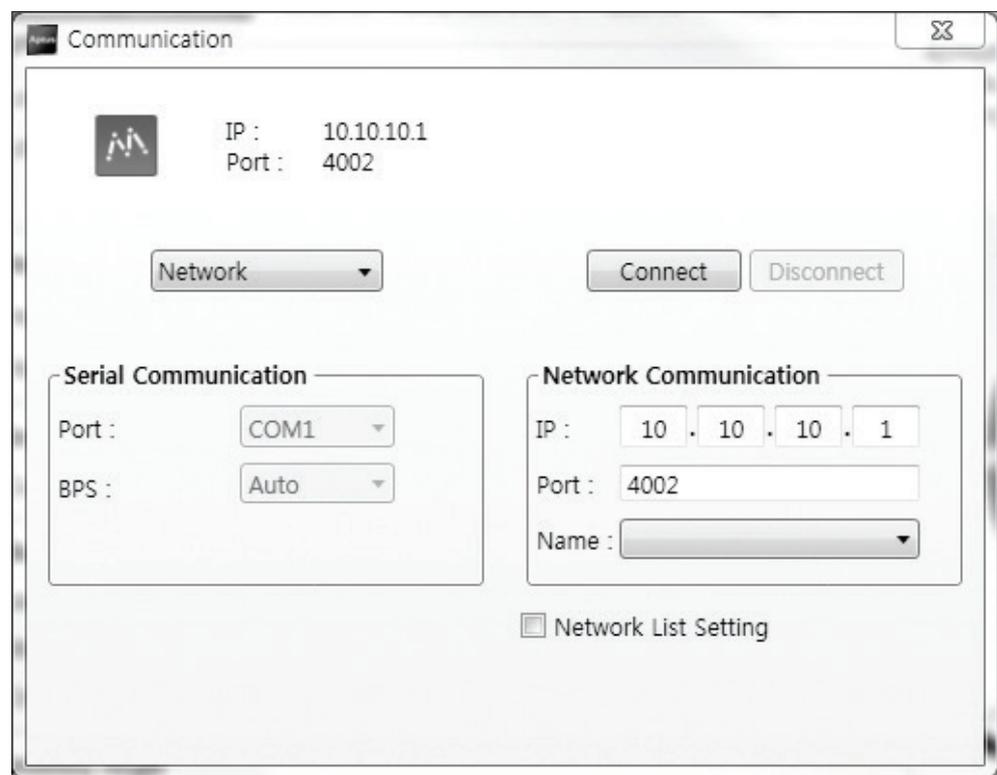


Click the icon to start the software. In addition, Intellian also provides patch files for software upgrade.

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).



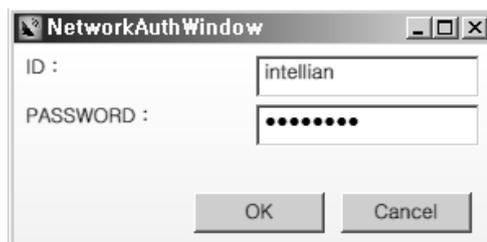
Establish a data communication

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.
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)



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.

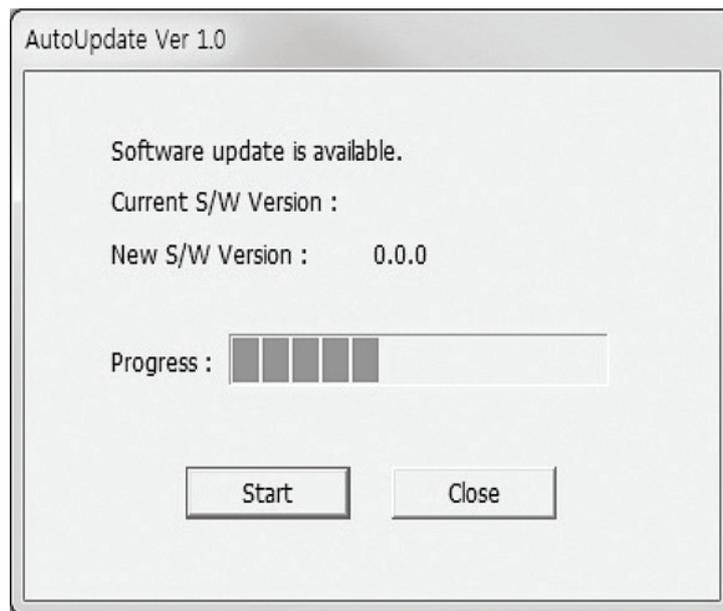


WARNING:

- 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.



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.



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 menu consists of 4 main menus; Quick (for quick launch of functions), File (for file backup, restoring and loading), View and Connection.



① Quick

-  **Setup:** enters Setup MENU.
-  **Restart:** exits Setup MENU and restarts the antenna.
-  **Reboot:** reboots the antenna.
-  **Get Ant. Info:** obtains the information stored in the antenna
-  **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

-  **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).

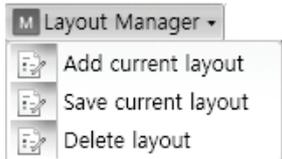


Load Config. : loads the antenna configuration file (file format: *.cfg). The configuration file includes the antenna control parameters which are pre-loaded at the factory and should only be changed by an authorized service technician. Improper setting of these parameters will cause your system to perform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

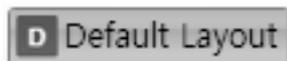
③ View



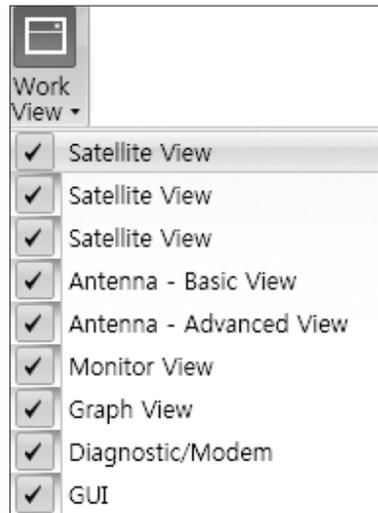
- **User Layout:** displays the layout list that the user has previously stored by using Layout Manager. If you select a layout in this list, the selected layout will be constructed in Work View screen. The 'Basic layout' is provided by default.



- **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.

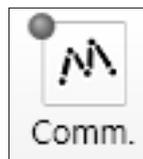


- **Default Layout:** returns the current layout to the default layout.



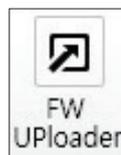
- **Work View:** displays a list of seven pre-constructed Work View Tabs (Satellite View, Antenna Basic View, Antenna Advanced View, Monitor View, Graph View, Diagnostic/Modem View and GUI View) and also provides the Activate / Close functionalities for each view tab. Activate the work view tab by ticking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

④ Connection

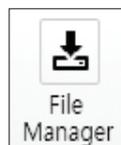


At any time, data communication channel can be re-established between Serial and Network connection. Selecting Comm. Button will display Communication Window to connect to the ACU via Serial or Network communication.

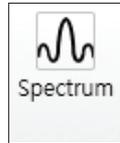
⑤ Util



- **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.

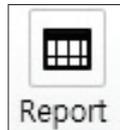


- **Spectrum:** displays current spectrum graph and allows to set spectrum data view options.



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

⑥ Setting & Help



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



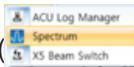
- **Information:** displays the information of current Aptus® software version.

How to set up Spectrum Analyzer

1. Spectrum Analyzer Function

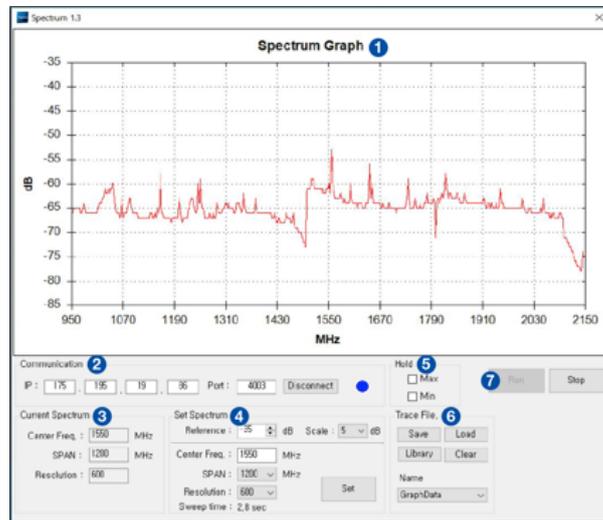
- Display that a spectrum analyzer measures an input Rx signal frequency within the full frequency range and sets spectrum data view.
- The disconnect fault can be checked and solved through spectrum analyzer results.

2. Access Spectrum Analyzer

On the Aptus PC, select “Utility () → Spectrum ()” on the toolbar menus to display current spectrum graph and allow to set spectrum data view options.

3. Spectrum Graph / Data View

After clicking the Spectrum menu button, the spectrum analyzer will be popped up. To perform the Spectrum Analyzer function, check the following information.



Spectrum Analyzer Main Menu

1) Graph

Displays measurement results. The display of a spectrum analyzer has the frequency on the horizontal axis and the amplitude displayed on the vertical axis.

2) Communication

Access the Spectrum Analyzer entering the ACU’s IP address and Port number. Then click the Connect button. When Aptus has connected Ethernet, Spectrum Analyzer will connect automatically.

The connection status is displayed on the right LEDs. The blue is in connection status and the gray is disconnection status.

3) Current Spectrum

Display the current Spectrum settings.

4) Set Spectrum

- **Reference/Scale:** Set Amplitude Reference Level and Scale. Press the Reference Level submenu key and use the arrow keys, or the keypad to change the reference level (2000 to -2000). Select the Scale number (1, 2, 5, or 10 dB) in the drop down list to enter the desired scale.
- **Center Freq.:** Enter the desired center frequency using the keypad then click the Set button to apply the adjusted value. The adjusted value is shown at the Current Spectrum part.
- **Span:** To quickly move the span value up or down, select the span number (6, 60, 300, or 1200 MHz) in drop down list. These numbers facilitate a zoom-in, zoom-out feature. Then click the Set button to apply the adjusted value. The adjusted value is shown at the Current Spectrum part.
- **Resolution:** To quickly adjust the resolution value up or down, select the resolution number (100, 200, 300, or 600) in drop down list. These numbers facilitate a zoom-in, zoom-out feature. Then click the Set button to apply the adjusted value. The adjusted value is shown at the Current Spectrum part.
- **Sweep Time:** Display the elapsed time all data received during the start to stop testing interval.

5) Hold

- **Max:** Set the desired maximum display range value by clicking the check button. Then click the Set button to change the max level.
- **Min:** Set the desired minimum display range value by clicking the check button. Then click the Set button to change the min level.

6) Trace File

- **Save:** Save current Spectrum setting values and data.
- **Load:** Load the Trace file and display the data on the spectrum graph.
- **Library:** Create the new Trace file. After saving the file, it will show in the Name list.
- **Clear:** Remove the spectrum data displayed on the graph.
- **Name:** Show the Trace file which it was created at Library in the drop down list.

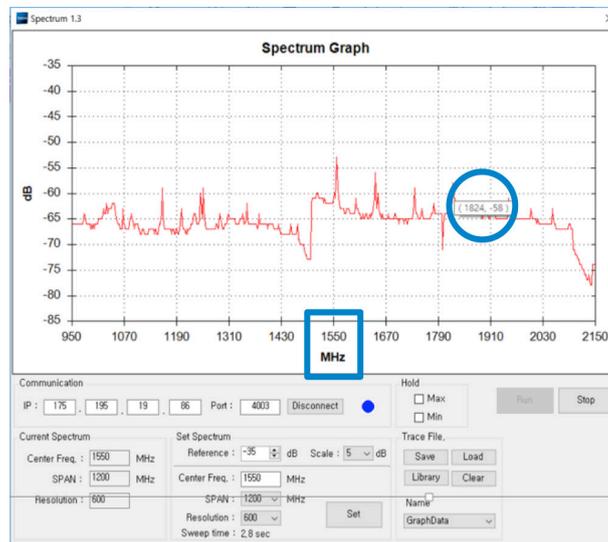
7) Run/Stop

- **Run:** Request the spectrum data to antenna continuously and update graph data in real time.
- **Stop:** Stop requesting the spectrum data. (The graph cannot be updated.)

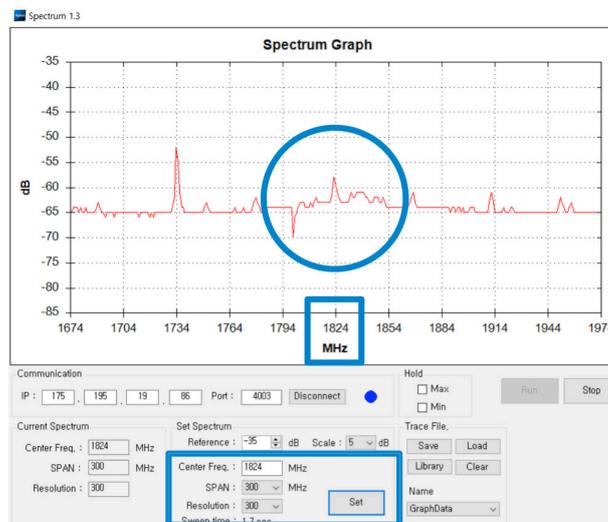
4. Change Zoom in Spectrum Graph (Example)

For example, **1550 MHz** is the default frequency in the spectrum graph. If you wish to base the spectrum graph on **1824 MHz**, follow these steps:

1. Adjust **Center Freq.** to the desired value. (e.g. 1824 MHz)
2. Adjust **Span value** to the desired value. (e.g. 300 MHz)
3. Adjust **Resolution** to the desired value. (e.g. 300)
4. Click the **Set** button to apply the adjusted values. Verify the spectrum graph is now displayed using the desired values.



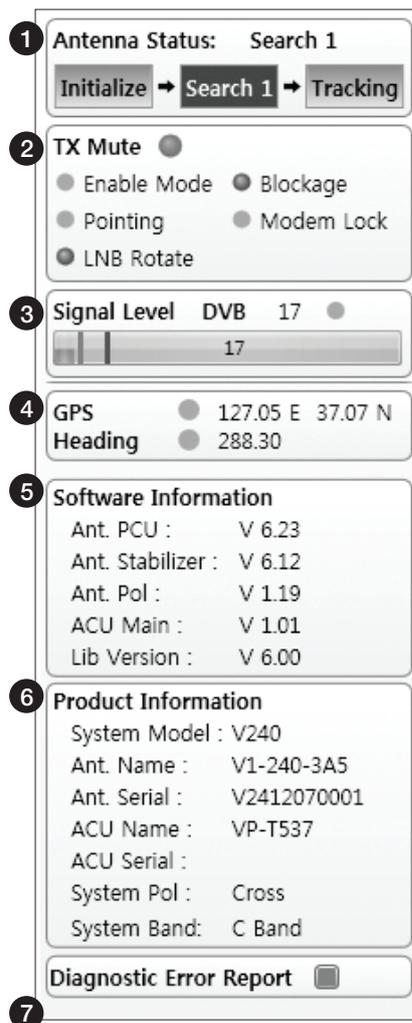
Spectrum Analyzer Graph using defaults



Zoom in Spectrum Analyzer Graph

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.



- ① Antenna Status: Displays the status of the current MENU 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(NBD menu is in use) or SIG(DVB menu 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 menu.

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

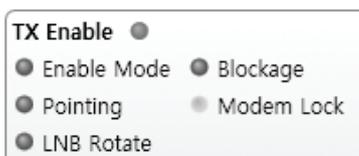
② TX Enable

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 transmitting.
- **Blockage:** displays whether or not the antenna is pointing in a predefined blockage zone(s). If the antenna is pointing in the blockage zone, the circle next to the Blockage will show “Gray”. If the antenna pointed outside the blockage 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 MENU 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	●	288.30

⑤ Software Information: Displays the antenna and the ACU firmware versions, and the library version.

Software Information

Ant. PCU :	V 6.11
Ant. Stabilizer :	V 6.06
Ant. Pol :	V 1.14
ACU Main :	V 3.09

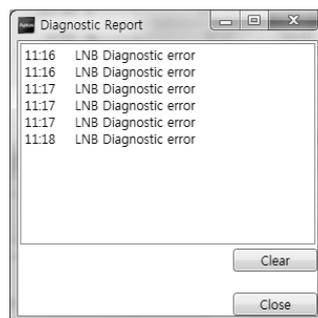
⑥ Product Information: Displays the antenna and ACU serial numbers, antenna MENU and ACU model.

Product Information

System Model :	V240
Ant. Name :	V1-240-3A5
Ant. Serial :	V2412070001
ACU Name :	VP-T537
ACU Serial :	
System Pol :	Cross
System Band:	C Band

⑦ 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.



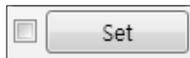
Work View Tabs

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 MENU 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.

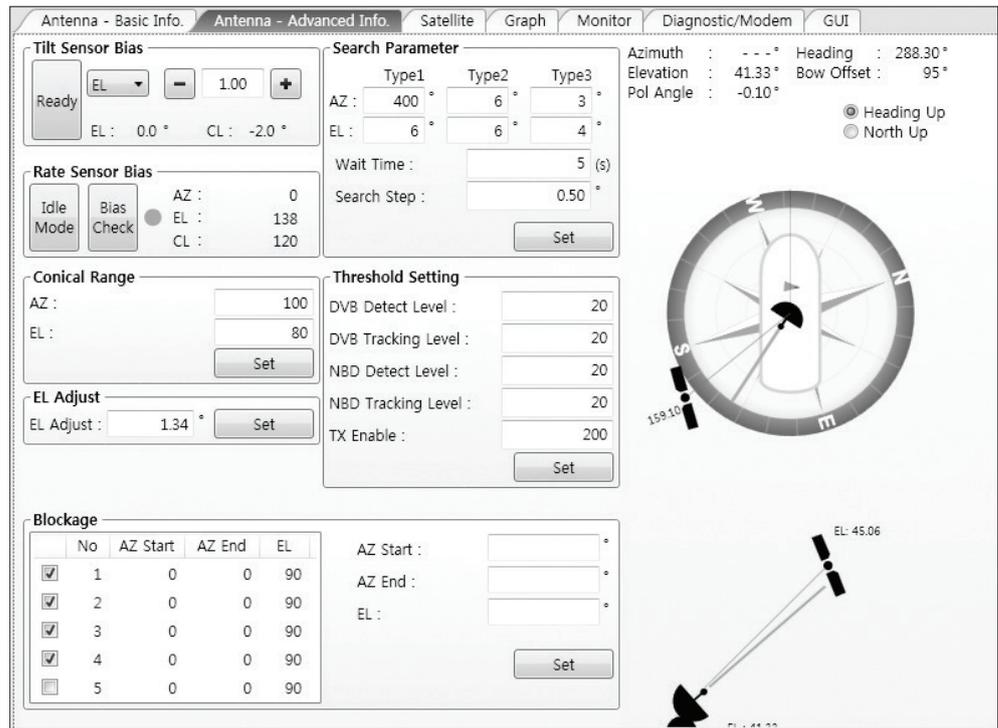
1. Antenna – Basic Info.

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).

-
- **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.
 - **Use Bluetooth:** The data communication between the ACU and the antenna will be terminated once the Bluetooth function is activated. The built-in Bluetooth connection module inside of the antenna dome can enable a PC connection right alongside the dome.
 - Modem Lock: turns on/off the Modem lock signal sent from your PC/ laptop to the antenna while Bluetooth is in use.
 - Heading Connect: turns on/off the heading signal sent from your PC/ laptop to the antenna while Bluetooth is in use.

2. Antenna – Advanced Info.

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



-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 solid-state tilt sensors to provide absolute cross-level tilt of the antenna and el elevation 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 MENU 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 MENU
- Step 2. Press the “Idle MENU” button to release the elevation and cross level motor brakes while the antenna is in Setup MENU.
- 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 adjustment.
- 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 MENU.

- **EL Adjust:** The elevation adjustment 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.

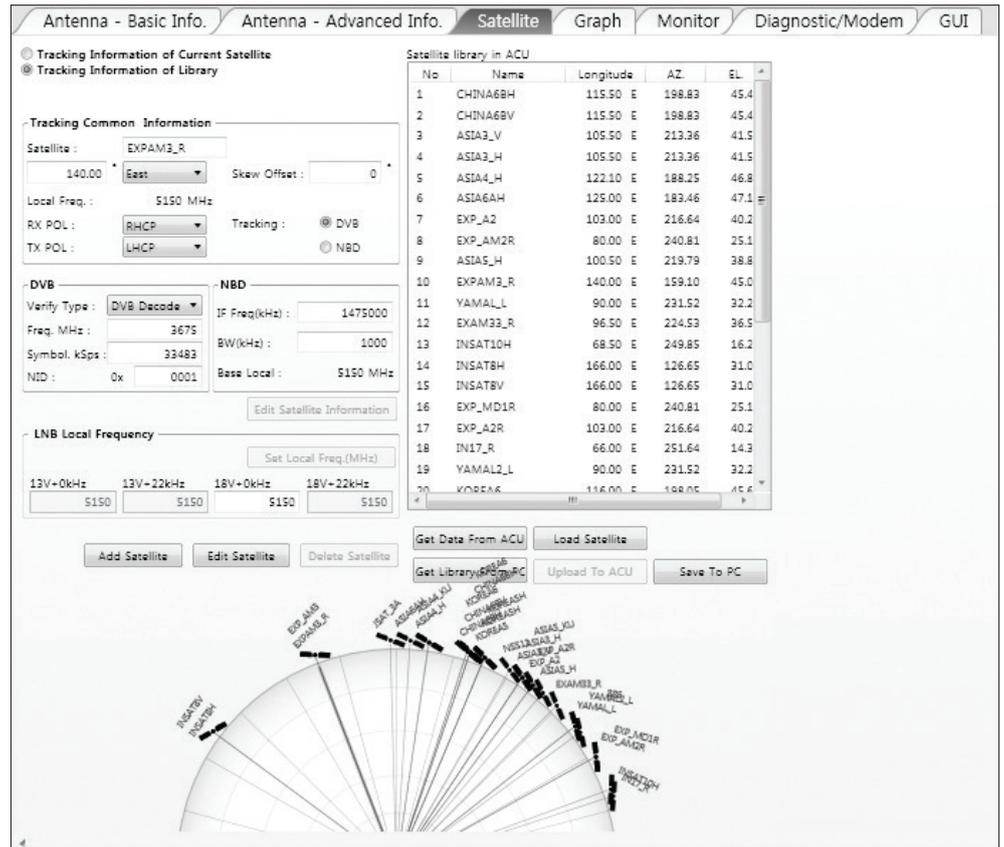
- Blockage Zone

Displays current blockage zones by azimuth and elevation sectors. Up to 5 blockage zones can be programmed. Once the blockage 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 MENU is in use.
- DVB Tracking Level: displays and sets signal tracking threshold level when DVB tracking MENU is in use.
- NBD Detect Level: displays and sets signal detection threshold level when NBD tracking MENU is in use.
- NBD Tracking Level: displays and sets signal tracking threshold level when NBD tracking MENU is in use.
- TX Enable Threshold: displays and sets TX enable threshold.

3. Satellite



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 MENU (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 MENU (Verification Type, Frequency, Symbol rate, and NID) or NBD tracking MENU (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.

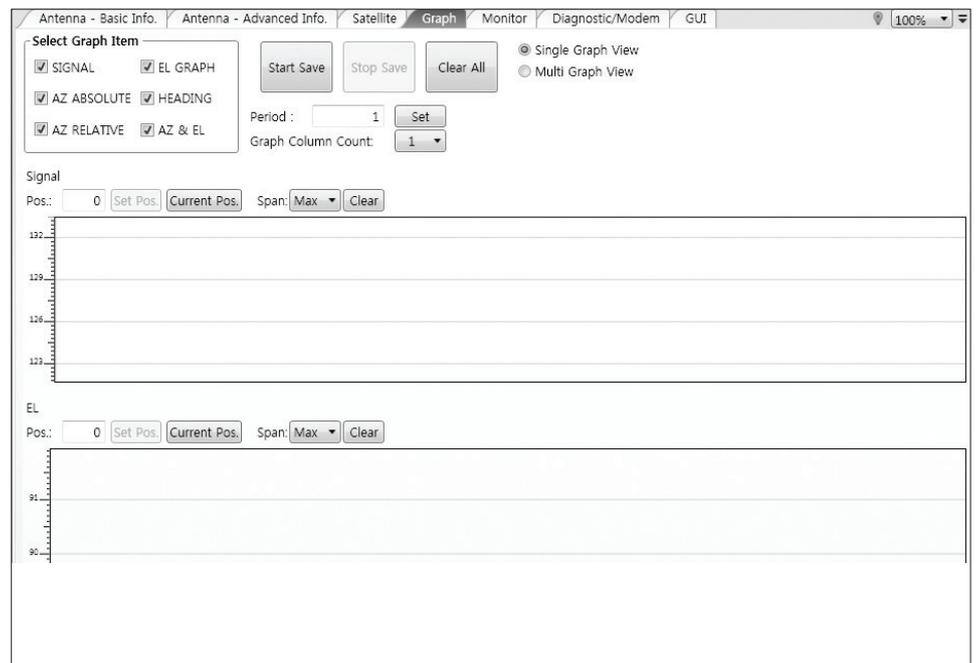
- **Tracking Information of Library:** Selecting this option enables “Add Satellite”, “Edit Satellite” and “Delete Satellite” buttons.

- **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.
- **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

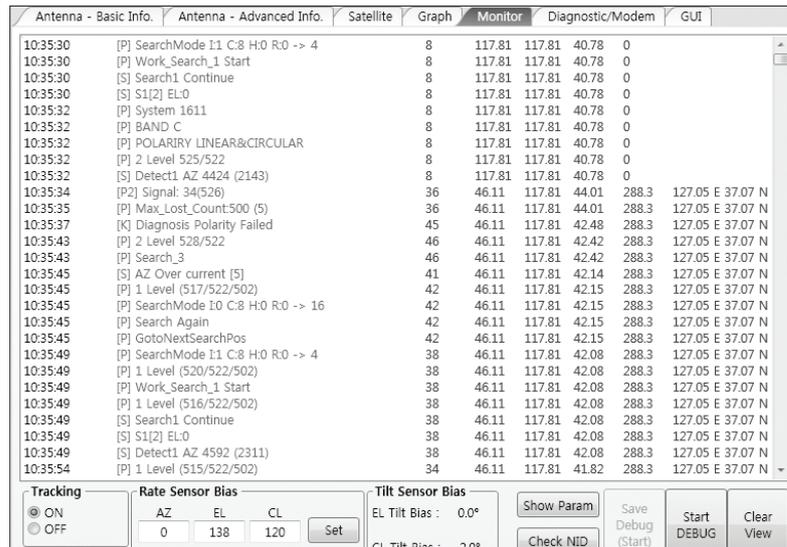
This view provides information on Signal, Elevation (EL), Absolute AZ (Azimuth), Relative AZ, Heading, AZ and EL in Single or Multi graph formats.



- **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

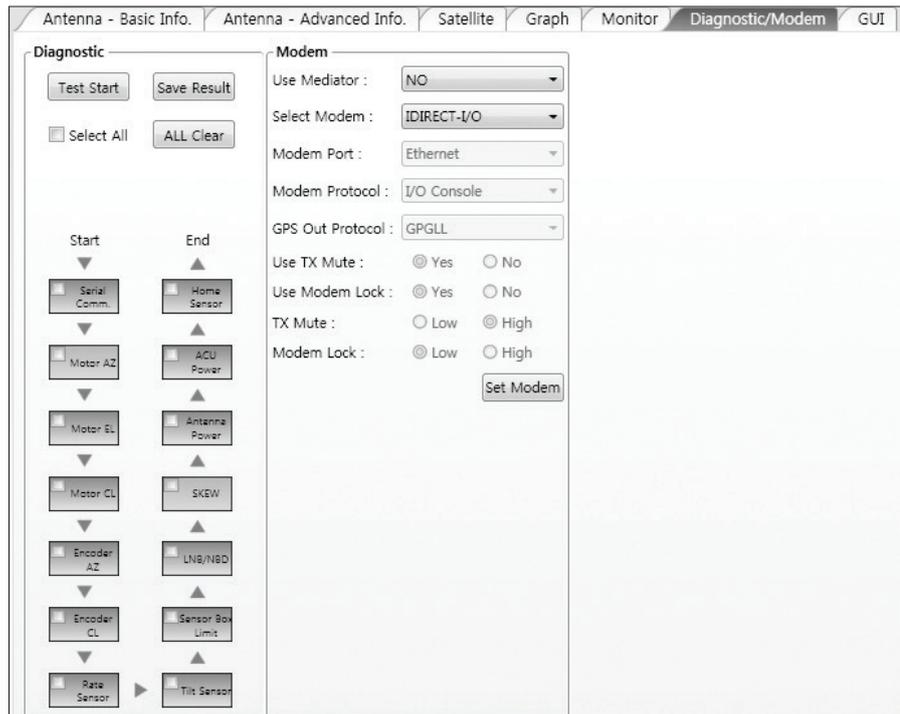
This view provides a UI which can monitor all data that has been received from the ACU.



- **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 transponder. 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 Intellian VSAT Mediator, Intellian Modem Mediator or the satellite Modem.



- **Diagnostic** : select to run a full diagnostic test or single diagnostic test. "Green" indicator is displayed for the test under progress. "Blue" indicates 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 Intellian VSAT Mediator, Intellian Modem 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 connect a 9 pin serial cable from the RS232/422 connector on the ACU to the Modem.

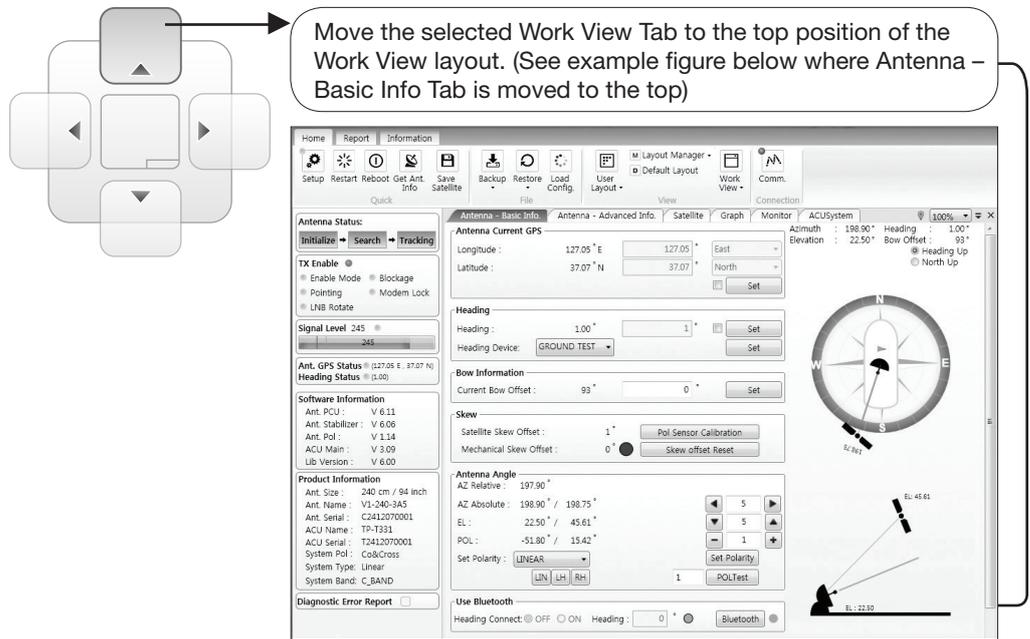
- **Use Mediator:** enables use of the Intellian Dual VSAT Mediator. Use Mediator must be set to “NO” if there is no MEDIATOR connected to the ACU. Improper setting of this parameter will cause your ACU’s Modem interface to work incorrectly.
- **Select Modem:** selects your Modem type for loading pre-configuration 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).
- **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 mis-pointed 0.5 degrees from the peak satellite position.

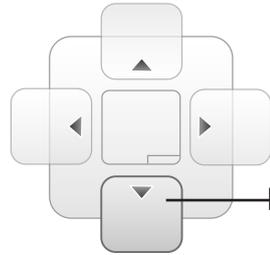
8. Work View Functions

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

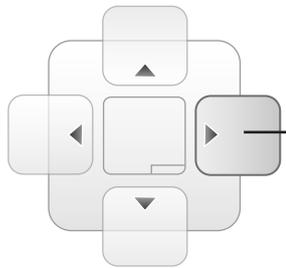
- Layout Formatting

- 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.

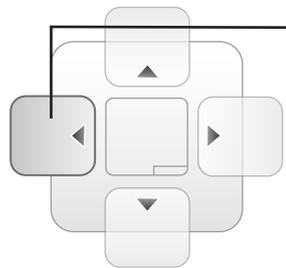




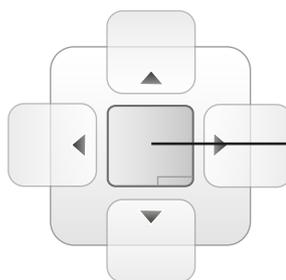
Move the selected Work View Tab to the bottom position of the Work View layout.



Move the selected Work View Tab to the right position of the Work View layout.

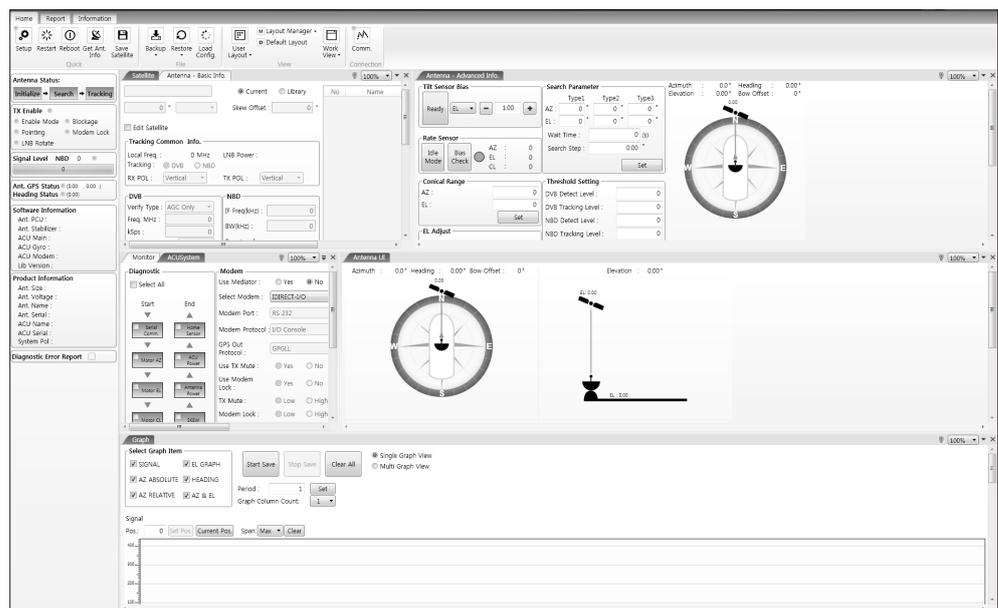


Move the selected Work View Tab to the left position of the Work View layout.



Move the selected Work View Tab to the center position of the Work View layout.

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.



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

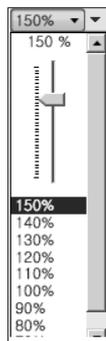
To close the Work View Tab, right-click the mouse button on a desired Tab header and select 'Close' option in the drop down list. To close all Work View Tabs except the selected Tab, select 'Close All But This' option in the drop down list.

- 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.)



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

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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

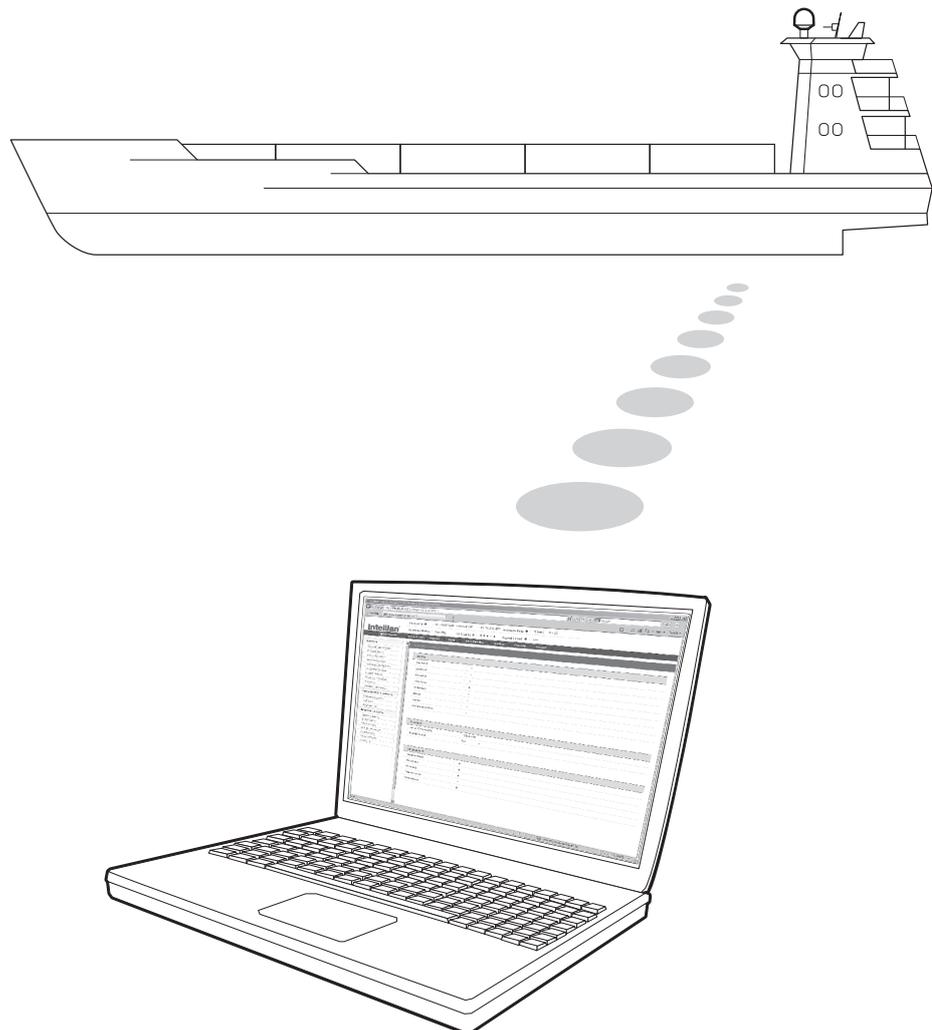
Introduction

With embedded 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 :

1. Connect an Ethernet Cable between your PC and the Management Ethernet Port.
2. 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

Intellian®



Aptus Web
V240 v1.07

Control & Monitoring
 Monitoring Only

Username

Password



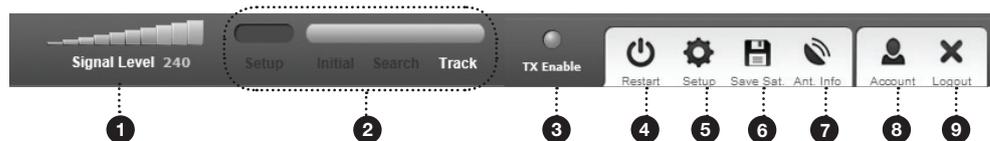
WARNING

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

- If Aptus is connected using TCP/IP Communication while Aptus Web Control is in use.
- If Control & Monitoring menu 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 menu will be switched to the Monitoring Only menu.

Top Menus

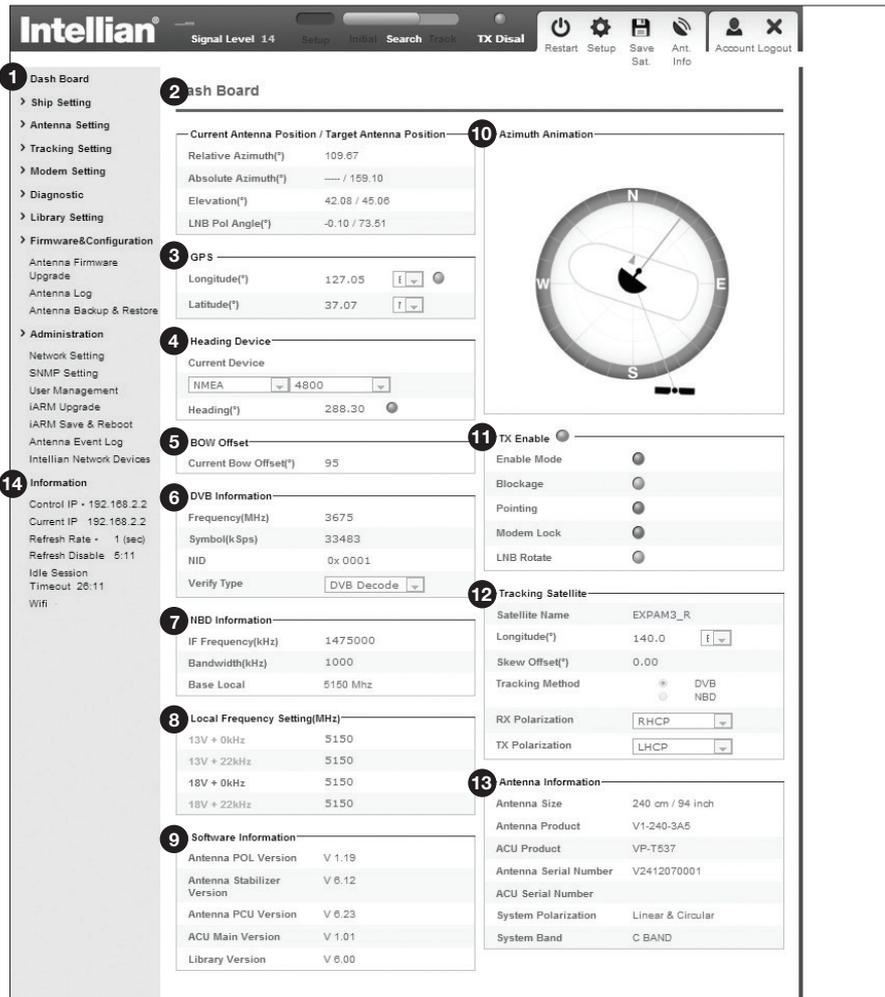
Once you log in, the following information and menus are displayed.



No.	Item	Description
①	Signal Level	Display current signal level.
②	Antenna status	<ul style="list-style-type: none"> - Setup: Displays whether or not the antenna is in SETUP MENU. The indicator shows “Blue” in the SETUP MENU. - 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 MENU.
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

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 MENU and their functions will be described in the next sections.



No.	Item	Description
①	Dash Board	Displays current antenna status to be quickly monitored.
②	Current Antenna Position / Target Antenna Position	Displays current antenna position. - Relative Azimuth: displays antenna relative AZ angle. - Absolute Azimuth: displays antenna absolute AZ angle. - Elevation: displays antenna elevation angle. - LNB Pol Angle: displays LNB pol angle. - Heading: displays ship's heading information
③	GPS	Displays current GPS information. - Longitude (East / West) - Latitude (North / South)
④	Heading Device	Displays current Heading Device: NONE, NMEA, NMEA 2000, Ground test If the ship's gyro input is other than NMEA separate purchase of GYRO Converter is required. - Heading: displays ship's heading information.

⑤	BOW Offset	Display current bow offset
⑥	DVB Information	Displays DVB tracking MENU'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 MENU'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 blockage zone.
⑪	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 MENU: antenna is not in SETUP MENU. - 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 MENU. - Satellite: displays satellite name. - Longitude: displays satellite orbit position. - Skew Offset: displays Skew offset. - Tracking Method: displays current tracking MENU (DVB/ NBD). - RX Polarization: displays current RX polarization. - TX Polarization displays current TX polarization.
⑬	Antenna Information	Displays the product information
⑭	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. - Wifi : Displays Wifi on/off switch

Antenna Settings

Ship Setting

No.	Item	Description
①	Ship Setting	Set the ship information and blockage 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 blockage zones up to 5 by azimuth and elevation 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

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

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 MENU or Tracking MENU.
④	LNB Pol Sensor Calibration	Calibrate the LNB pol angle when the control board, potentiometer 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 MENU.
⑦	Idle MENU	Release the elevation and cross level motor brakes while the antenna is in SETUP MENU. The antenna can be moved manually during the MENU.
⑧	Reboot	Reboot the system.
⑨	Search & Tracking Parameter Setting	<p>DVB Detect and Tracking Level Threshold: display / set current detect level threshold and tracking level threshold when DVB tracking MENU is chosen to be used.</p> <p>- NBD Detect and Tracking Level Threshold: display / set current detect level threshold and tracking level threshold when NBD tracking MENU is chosen to be used.</p> <p>- TX Enable Threshold: display / set TX enable threshold.</p> <p>- Wait time: set the time-out for automatic initiation of a search after the signal level drops below the pre-defined threshold value.</p> <p>- Search Step: set increment step size.</p> <p>- 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.</p> <p>- Search 2 Range: is reserved for future use.</p>
⑩	Tilt Sensor Bias	Adjust the two solid-state tilt sensors used to provide absolute cross-level tilt of the antenna and elevation feedback 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.
⑪	Rate Sensor Adjust	Calibrate DC voltage output from the three rate sensors 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

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

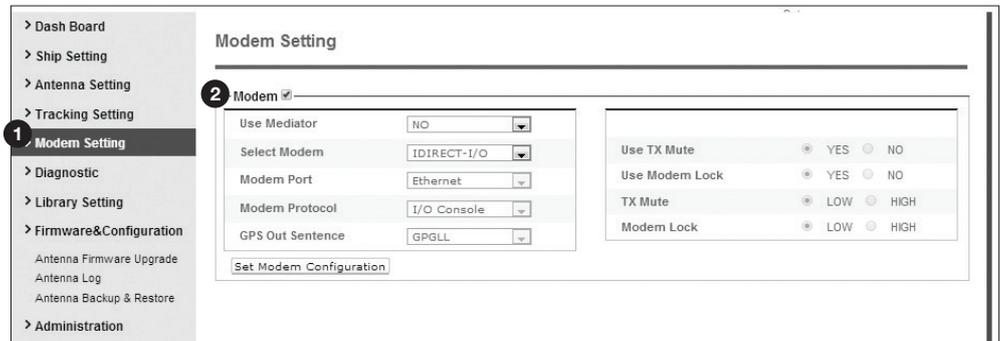
Tracking Setting

No.	Item	Description
①	Tracking Setting	Display or set current tracking MENU and tracking frequency of the target satellite.
②	Local Frequency Setting (MHz)	Display and set LNB’s local frequencies. Display current LNB local frequency which is in use and voltage.
③	Current Satellite Setting	Display and set current satellite setting.
④	Tracking Satellite	Display and set current tracking MENU. - Satellite: display and set satellite name. - Longitude: display and set satellite orbit position. - Skew Offset: display and set Skew offset. - Tracking Method: display and set current tracking MENU (DVB/ NBD). - RX Polarization: display and set current RX polarization. - TX Polarization display and set current TX polarization.
⑤	DVB Information	Display and set DVB tracking MENU's tracking information. - Frequency: display and set tracking frequency. - Symbol rate: display and set symbol rate. - NID: display and set network ID. - Verify type: display and set verification type (AGC, DVB, DVB Decode)
⑥	NBD Information	Display and set NBD tracking MENU’s tracking information. - Frequency: display and set tracking IF frequency. - Bandwidth: display and set detection bandwidth.



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

Modem Setting



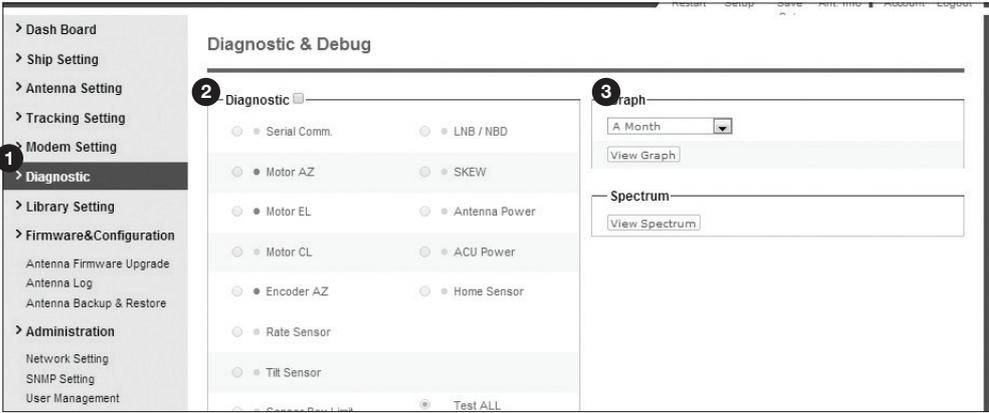
No.	Item	Description
①	Modem Setting	<p>Set the Modem interface.</p> <ul style="list-style-type: none"> - Use Mediator: enable the usage of Mediator if the antenna is connected to the Intellian Dual VSAT Mediator. Use Mediator must be set to “NO” if there is no MEDIATOR connected to the ACU. Improper 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, ELEKTRIKOM-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).
②	Modem	<ul style="list-style-type: none"> - Modem Protocol: is to select a proper communication protocol on the ACU to interface with the Modem (I/O Console, OpenAMIP, Serial GPS, ROSS, VCAP). - 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. <p>Note: TX Mute and Modem Lock items will only be activated when the Modem protocol is set as I/O Console.</p>



WARNING

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

Diagnostic



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 EL: test the elevation motor. - Motor CL: test the cross-level motor. - Encoder AZ: test the azimuth encoder. - Rate Sensor: test the gyro sensor. - Tilt Sensor: test the tilt sensor. - Sensor Box Limit: test the sensor box motor. - Home Sensor: test the home sensor. - LNB/NBD: test the LNB. - SKEW: test the LNB pol motor. - Antenna Power: test the antenna power. - ACU Power: test the ACU power.
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.

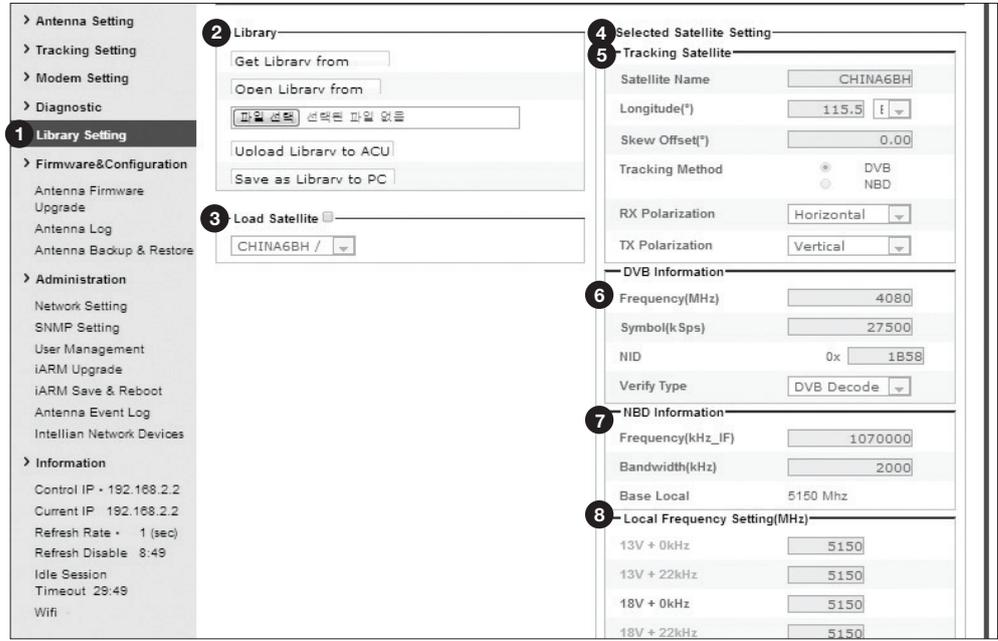


WARNING

WARNING: Tick the checkbox before modifying the settings. Click Diagnosis button to execute diagnostic test. 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.
⑤ iDirect Modem Monitor (OpenAMIP only)	<p>Displays iDirect Modem status and control connection. This menu appears only when IDIRECT-AMIP protocol is selected at Modem Setting page.</p> <ul style="list-style-type: none">- 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- Auto Connect: Enabling Auto Connect and rebooting the ACU will save connection data and will auto connect once ACU is powered on next time.- Status: Displays iDirect modem status- Last Update Date: Displays last updated data and time of the iDirect modem data- Connect: Displays connection status (INACTIVE, CONNECTING, 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



No.	Item	Description
①	Library Setting	Display and set the satellite library information.
②	Library	<ul style="list-style-type: none"> - Get Library from ACU: Obtain satellite information installed in the ACU. - Open Library from PC: open the satellite library file from the supplied Intellian CD or from the external hard drive/PC. (File format: *.lif) - Upload Library to ACU: upload the satellite library file to ACU. - Save as Library to PC: save the current library setting to the PC.
③	Load Satellite	Select the satellite that you wish to track and press Load Satellite button to load the selected satellite.
④	Selected Satellite Setting	Displays selected satellite information.
⑤	Tracking Satellite	<ul style="list-style-type: none"> - Satellite: displays satellite name. - Longitude: displays satellite orbit position. - Skew offset: displays Skew offset. - Tracking method: displays current tracking MENU (DVB/NBD) - RX polarization: displays current RX polarization. - TX polarization: displays current TX polarization.
⑥	DVB Information	<ul style="list-style-type: none"> - Displays DVB tracking MENU's tracking information. - Frequency: displays tracking frequency. - Symbol rate: displays tracking symbol rate. - NID: displays network ID. - Verify type: displays verification type (AGC only, DVB lock, DVB decode, DSS decode)
⑦	NBD Information	<ul style="list-style-type: none"> - Displays NBD tracking MENU's tracking information. - Frequency: displays tracking frequency. - Bandwidth: displays detection bandwidth.
⑧	Local Frequency Setting (MHz)	Displays LNB local frequency (MHz) and voltage.

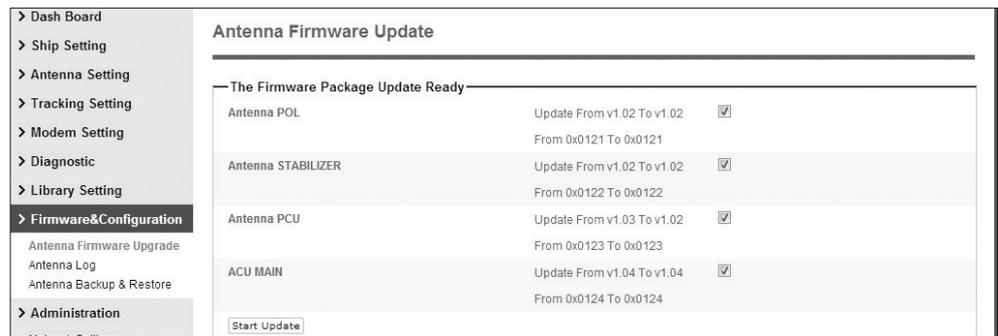
Firmware & Configuration

Antenna Firmware Upgrade

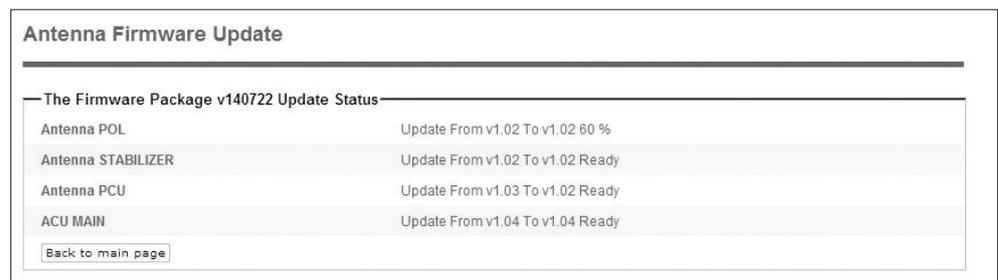
No.	Item	Description
①	Antenna Firmware Upgrade	Upgrade antenna and ACU firmware version.
②	New Antenna Firmware	<p>Select Upgrade Method between Manual Upgrade or Auto Upgrade. With Manual Upgrade option selected, browse and select the firmware package file to upload and click Start Upload button. With Auto Upgrade option selected, click Check button to check automatically if there is new firmware available from the server.</p> <p>Note: Auto Upgrade is available only when the ACU is connected to the Internet.</p>
③	Current Running Version	Display current firmware version (Antenna STABILIZER, Antenna PCU, ACU main, Library)
④	Cold Rollback	Display Previous/Latest Package version and rollback firmware to Previous or Latest version. Other functions cannot be operated while rollback is in progress.

Upgrade procedures:

1. Select the upgrade package file. In Auto Upgrade mode, check new firmware file automatically by clicking Check button.
2. 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.



Firmware upgrade status page



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

Upgrade process status page

Antenna Firmware Update	
The Firmware Package v140722 Update Status	
Antenna POL	Update From v1.02 To v1.02 Success
Antenna STABILIZER	Update From v1.02 To v1.02 Success
Antenna PCU	Update From v1.03 To v1.02 Success
ACU MAIN	Update From v1.04 To v1.04 Success

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 v140722 Upgrade Complete

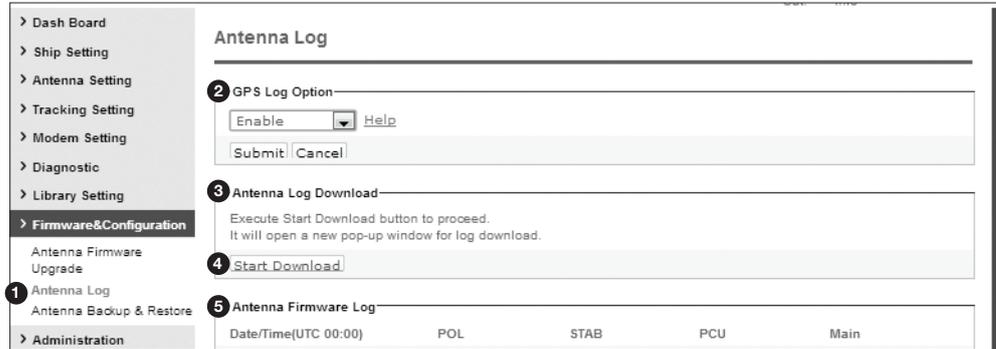
Antenna POL "1.02" "Success"
 Antenna STABILIZER "1.02" "Success"
 Antenna PCU "1.02" "Success"
 ACU MAIN "1.04" "Success"

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.

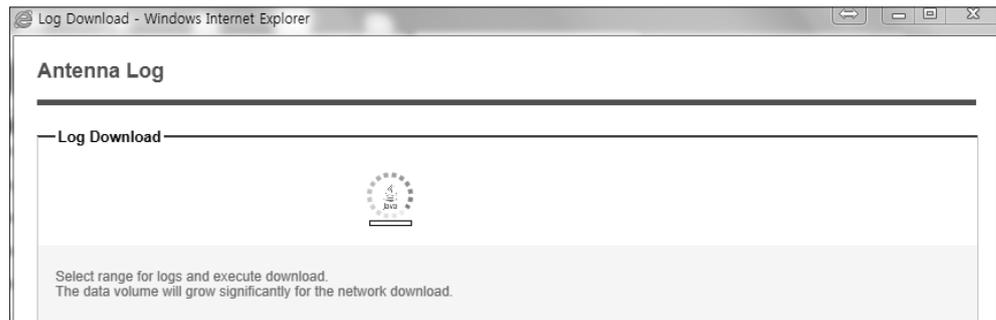
Antenna Log



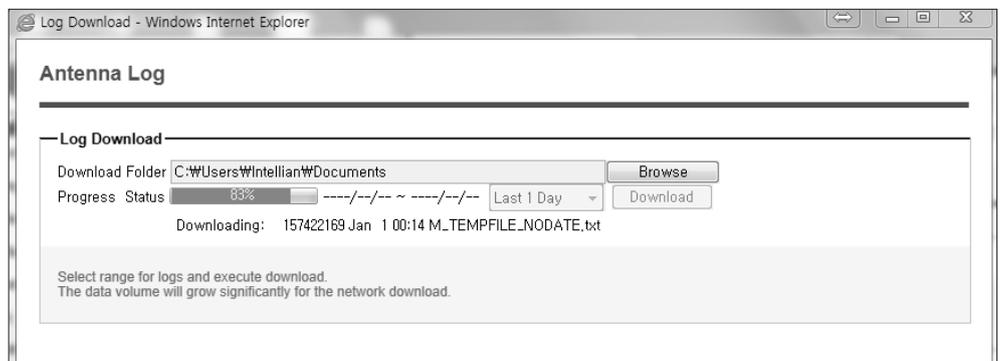
No.	Item	Description
①	Antenna Log	Displays antenna log data
②	GPS Log Option	Disable/Enable to save GPS information in the antenna log file.
③	Antenna Log Download	Download the log file. Select start download button to proceed.
④	Start Download	Download the antenna log information.
⑤	Antenna Firmware Log	Display log information of firmware 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.

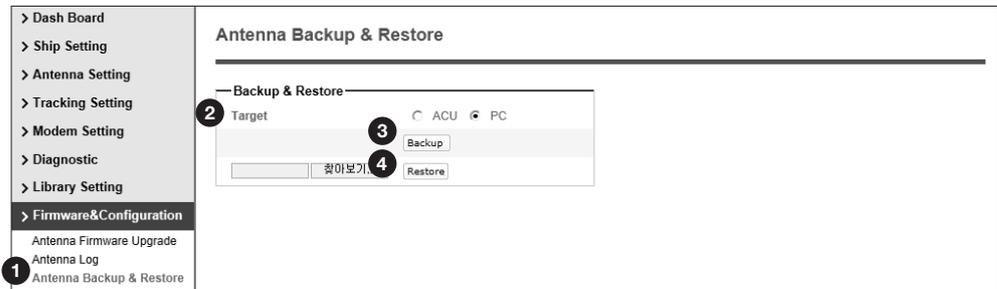


3. Select 'Browse' to browse the target directory of the antenna log file.
4. Select log period for file download.
 - Last 3 Months: download the antenna log information for the past three months.
 - Last 1 Month: download the antenna log information for the past one month.
 - Last 1 week: download the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



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.

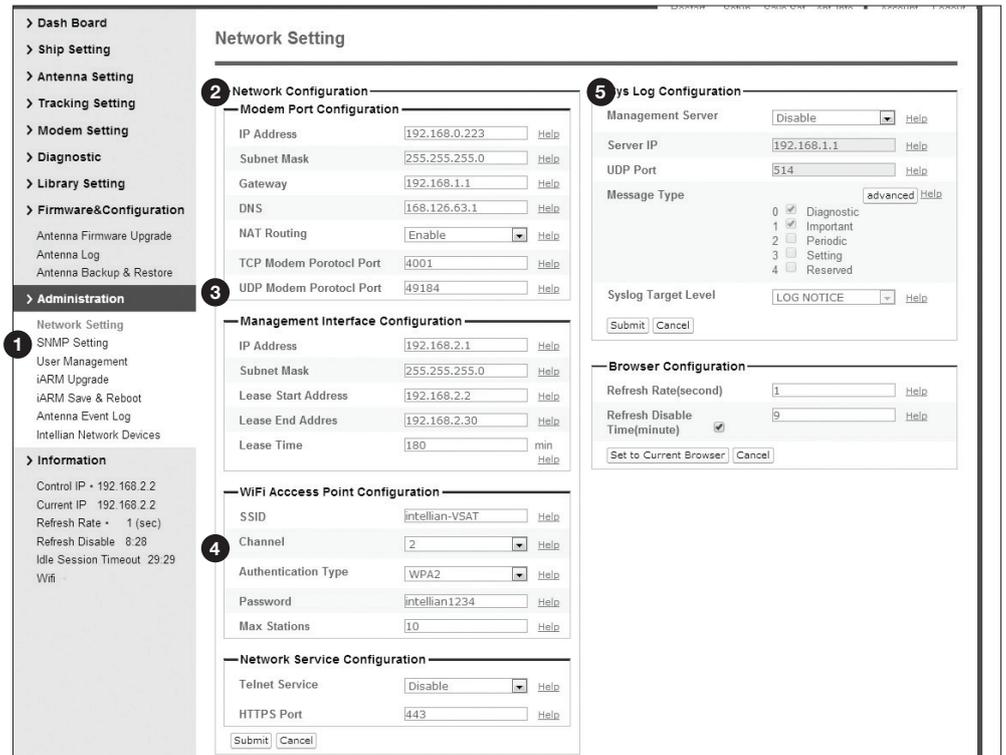
Antenna Backup & Restore



No.	Item	Description
①	Antenna Backup & Restore	Enter backup & Restore page. (Setup MENU 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.

Administration

Network Setting



No.	Item	Description
①	Network Setting	Enter network setting page.
②	Modem Port Configuration	<p>Modify ACU's Internal IP address and press Submit button. Go to "Save & Reboot" page and press Save & Reboot button to validate the changes.</p> <ul style="list-style-type: none"> - IP Address : Factory default(Primary:192.168.0.223)/ (Secondary:10.10.1.1). - Subnet Mask : Factory default(255.255.255.0). - Gateway : Factory default(192.168.0.254). - 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.
③	Management Interface Configuration	<p>Modify Management Port's network configuration and press Submit button. Go to "Save & Reboot" page and press Save & Reboot button to validate the changes.</p> <ul style="list-style-type: none"> - IP Address : ACU front network port /Factory default(192.168.2.1). - 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.

④	Wi-Fi Access Point Configuration	<p>- 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 alphanumeric characters, which may be any keyboard character. Make sure this setting is the same for all devices in your wireless network.</p> <p>- 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.</p> <p>- 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.</p> <p>- Password : WiFi access password.</p> <p>- Max Stations : Setting max stations.</p>
⑤	Network Service Configuration	<p>- Telnet Service : Enable or disable telnet login support.</p> <p>- HTTPS Port : HTTPS port number.</p>
⑥	Sys Log Configuration	<p>Set the system log configuration. Antenna sends log messages according to emergency level. Enabling this function sends the message to your management server.</p> <p>- Management Server : Sys log function enable/disable</p> <p>- Server IP : Management server IP address</p> <p>- UDP Port : Management port</p> <p>- Message Type : Select message type (Intellian message level) to send to management server (Lower number indicates higher emergency).</p> <p>- Sys log Target Level : If you select this target level, the management server receives log message equal to or less than this level.</p>
⑦	Browser Configuration	<p>Setting refresh rate and refresh disable time.</p> <p>- Refresh Rate : Set the browser refresh rate (Default 1 seconds. Range 1~99).</p> <p>- Refresh Disable Time : Set the browser idle time-out (Default:9 minutes. Range 0~9). To use this function, check the check box.</p>

SNMP Setting

No.	Item	Description
①	SNMP Setting	Configure SNMP settings.
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 Authentication Type	Set SNMP V3 authentication mode.
⑤	V3 Authentication Encoding	Set SNMP V3 authentication encoding.
⑥	V3 Username	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 Password	Set the V3 password of the SNMP Agent. The Password is at least character string.
⑨	TRAP IP/Port	Set the V3 password of the SNMP Agent. The Password is at least character string.
⑩	TRAP Parameter	Set the SNMP trap specific parameter.

User Management

No.	Item	Description
①	User Management	Change login ID and Password to access the Aptus Web. This setting can be also accessed by 'Account' icon on the top menu.
②	Change ID & Password	<p>Change your login ID (user name) and password.</p> <ul style="list-style-type: none"> - Change ID : Enter your current login ID (user name) and new login ID. Click the Submit button to validate the changes that are made to the login ID. - Change Password : Enter your current login password and new login password. Click the Submit button to validate the changes that are made to the login password.
③	Change User Settings	<p>Change User Password Expire in days and Idle session time-out.</p> <ul style="list-style-type: none"> - Password Expire Time-out : Set password expire in days. - Idle Session Time-out : Set for Console and for Network time-out.

iARM Upgrade

No.	Item	Description
①	iARM Upgrade	Upgrade the firmware of iARM module.
②	Check New iARM Firmware	Check new iARM firmware available on the server.
③	Bootstrap /Bootloader	Displays current bootstrap and bootloader version.
④	Kernel /File System	ACU has 3 storage parts sys0, sys1, Factory Default. Display kernel and file system version and current activated part Information.

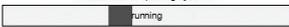
iARM firmware upgrade procedures:

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

> Dash Board
> Ship Setting
> Antenna Setting
> Tracking Setting
> Diagnostic
> 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
Refresh Rate 0 (sec)
Refresh Disable 1:31
Idle Session Timeout 10:31

Please wait for updating system...



DO NOT TURN OFF ACU.

Firmware upgrade in progress

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

> Dash Board
> Ship Setting
> Antenna Setting
> Tracking Setting
> Diagnostic
> 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

Please wait for file transfer...



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

> Dash Board
> Ship Setting
> Antenna Setting
> Tracking Setting
> Modem Setting
> Diagnostic
> Library Setting
> Firmware&Configuration
Antenna Firmware Upgrade
Antenna Log
Antenna Backup & Restore

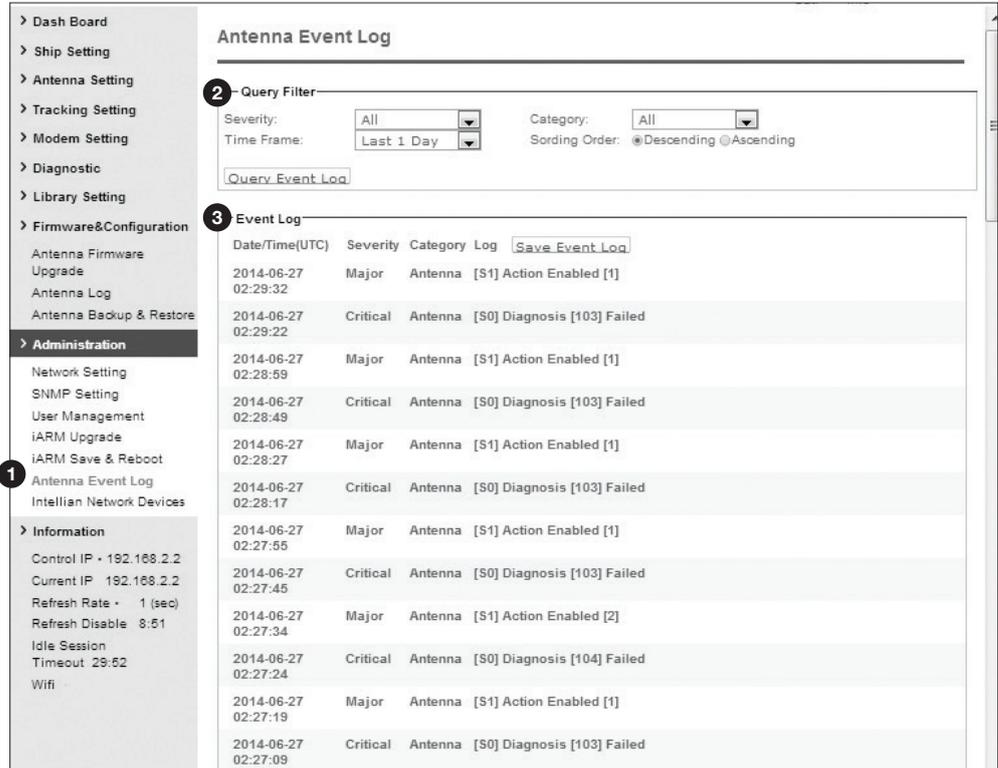
Save & Reboot

Now the device will reboot with new firmware.
Please refer to the User Guide if you have trouble connecting to the device.
This screen will be inaccessible in 10 seconds.

iARM Save & Reboot

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



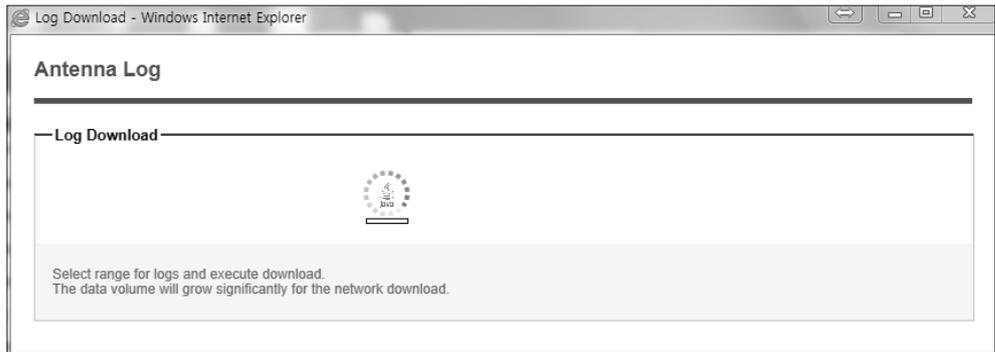
No.	Item	Description
①	Antenna Event Log	Displays user's log information (Data/Time, Login ID and IP) Set the Log message option. - Severity : Set urgency level.
②	Query Filter	- Category : Set target that caused the message. - Time Frame : Set time limit that you want to show. - Sording Order : Sorting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

No.	Item	Description
①	Intellian Network Devices	Add up to 8 network devices and enable to monitor real time information of the connected device.
②	Network Configuration	<ul style="list-style-type: none"> 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.
③	Add Network Device Address	Add Intellian network devices, then you can browse the various information of the device.
④	Network Data View	<ul style="list-style-type: none"> 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).
⑤	Detailed Information	<p>Displays the setting information of the added device (IP address, http, https, SSH port number, current connection).</p> <p>If you click the http/https port number of each device, then you can connect to the device's web page. If you click Delete Device button, then you can't see its information.</p> <p>Displays the information of each device. (Updated every 3 second).</p>

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.



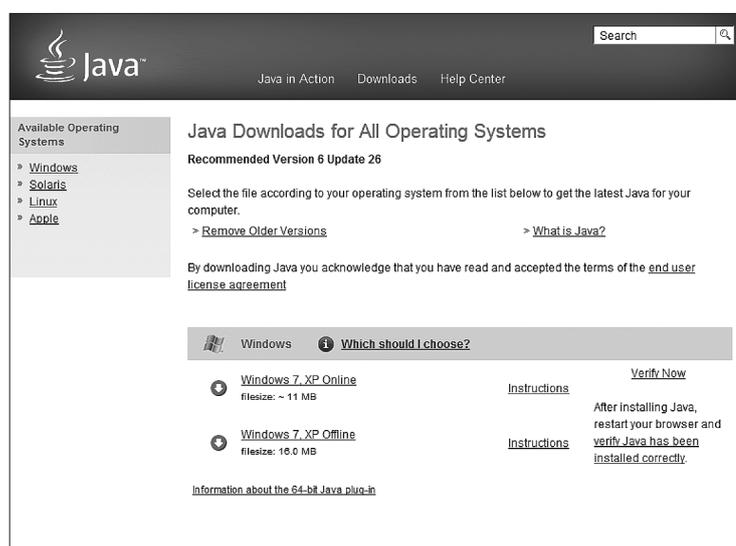
If JRE has not been installed in your PC/laptop, you'll get the below message box. Click Run button to install it through online or offline download and install methods. After installing JRE, Java Applet will be executed automatically when you access the Antenna Log page.



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>



The screenshot shows the Java website's download page. At the top, there is a search bar and navigation links for 'Java in Action', 'Downloads', and 'Help Center'. The main heading is 'Java Downloads for All Operating Systems' with a sub-heading 'Recommended Version 6 Update 26'. Below this, there is a section for 'Available Operating Systems' with a sidebar menu listing 'Windows', 'Solaris', 'Linux', and 'Apple'. The main content area contains instructions to select a file based on the operating system, with links for 'Remove Older Versions' and 'What is Java?'. A disclaimer states that downloading Java implies acceptance of the 'end user license agreement'. A section titled 'Windows' with a sub-heading 'Which should I choose?' lists two options: 'Windows 7, XP Online' (file size: ~ 11 MB) and 'Windows 7, XP Offline' (file size: 16.0 MB). Each option has a corresponding 'Instructions' link. To the right of these options is a 'Verify Now' link. A note states: 'After installing Java, restart your browser and verify Java has been installed correctly.' At the bottom, there is a link for '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.

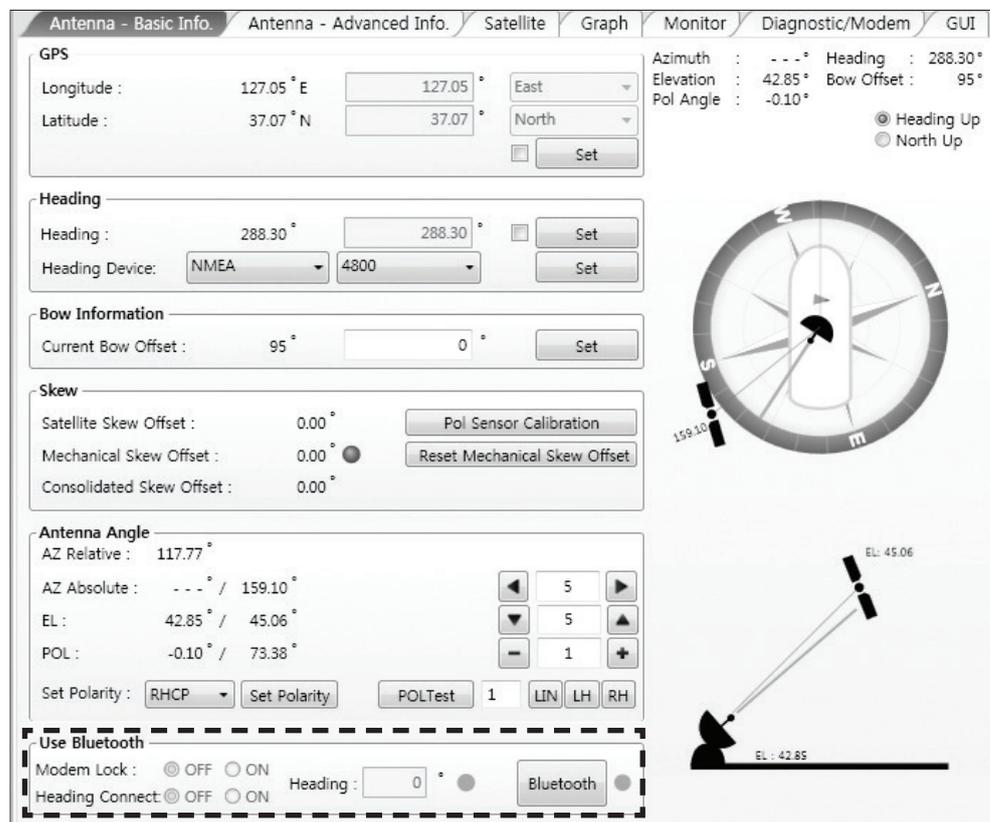
NOTE: You may need to restart (close and re-open) your browser to enable the java installation in your browser.

Appendix B: Setup Bluetooth Connection

```

# TRACKING 116.0E KOREA3HN AGC: 224# HL #
AZ: 201.4 (201.4) EL: 45.0 SK: -75.4 Fr
    
```

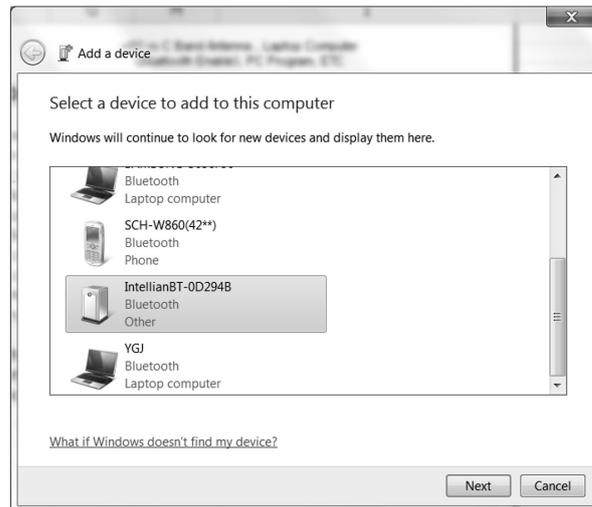
1. After setting up the v240C that contains bluetooth functions and after authorizing the power supply, the antenna will confirm if it is operating normally.
2. In order to utilize the antenna's Bluetooth function, access to Aptus and click "Use Bluetooth" button in the Antenna Basic Info section. The bluetooth module will be enabled.



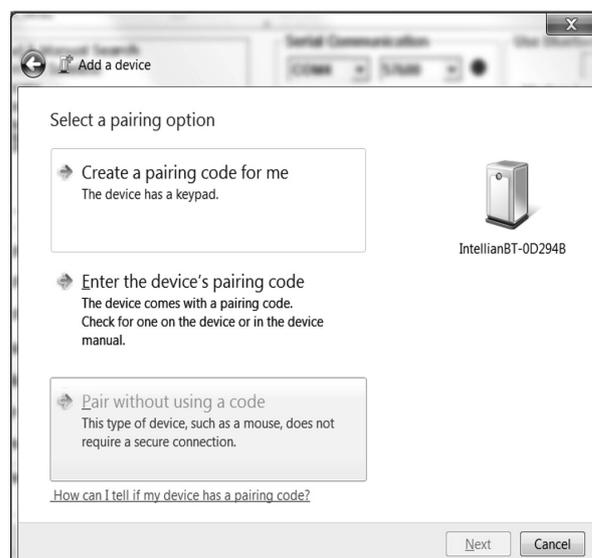


3. Prepare a notebook that has a Bluetooth device included within it. While the Bluetooth device is getting ready to be used you can choose to add a bluetooth device if you right click on the Bluetooth icon.

*Methods of setting up Bluetooth within your notebook can differ by the manufacturers software and Operating System being used within your notebook.

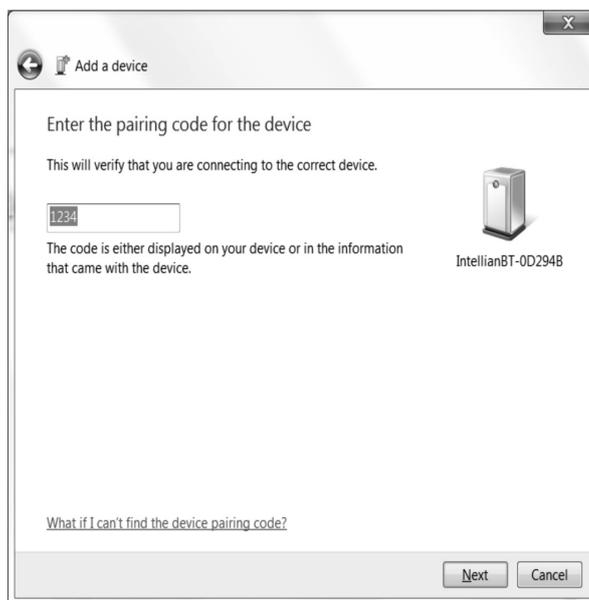


4. On the left is a window in order to run the setup wizard where you can add a Bluetooth device. Find the **IntellianBT-0D294B Bluetooth Device (0D294B may be a different number depending on each user)** and if you click next, then the wizard will search for a Bluetooth device. **The window for adding a bluetooth device may differ by the type of Operating System being used.**



5. Pair the device without using a code. Select "Pair without using a code" and press Next.

NOTE: Some OS systems may not have an option to Pair the bluetooth device without using a code therefore, go to the next step to enter a Pairing Code.



6. The picture shown on the left is a Pairing Connection page. Enter the security code in order to go to the next page. Do this by entering "1234" within the Security Code box.

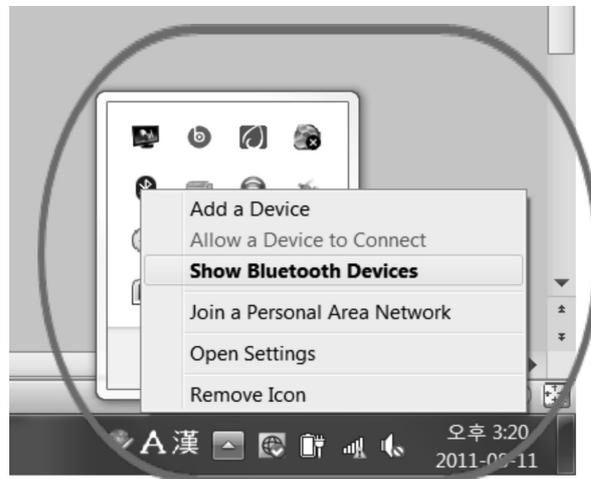
*In a case where the OS or the Bluetooth program has a Skip button available then instead of entering a pairing code, press the Skip button to go onto the next page.

The Pairing Window may differ by different OS systems used. The picture on the left is in Windows 7 format.

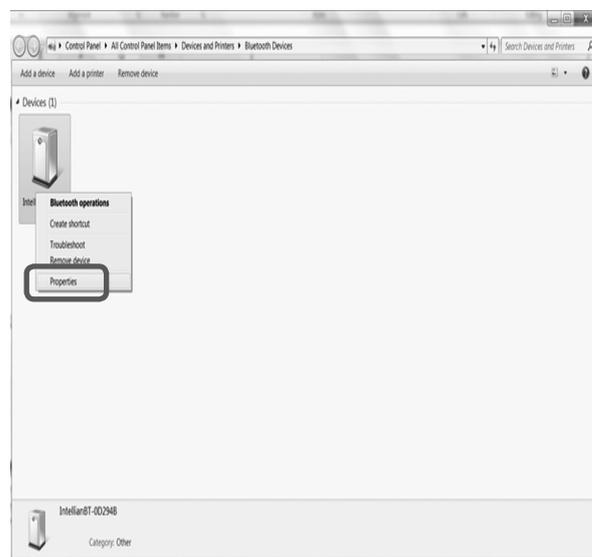


7. Pairing completed, the bluetooth device has been added to the computer. **Generic Serial Setup for OS systems that are different than Windows 7** If instead you go to a Generic Serial Service page (which applies to some OS Systems), select the Generic Serial Service and click Next.

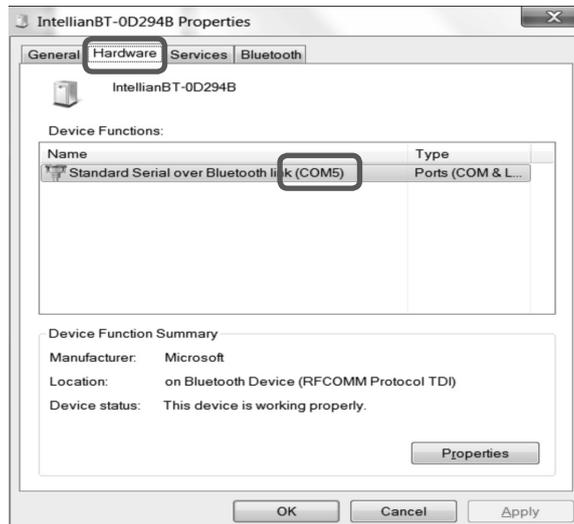
Click Finish to complete Bluetooth setup tasks.



8. Go to your toolbar and right click on your WiFi logo. Click on "Show Bluetooth Devices" as shown in the picture on the left.

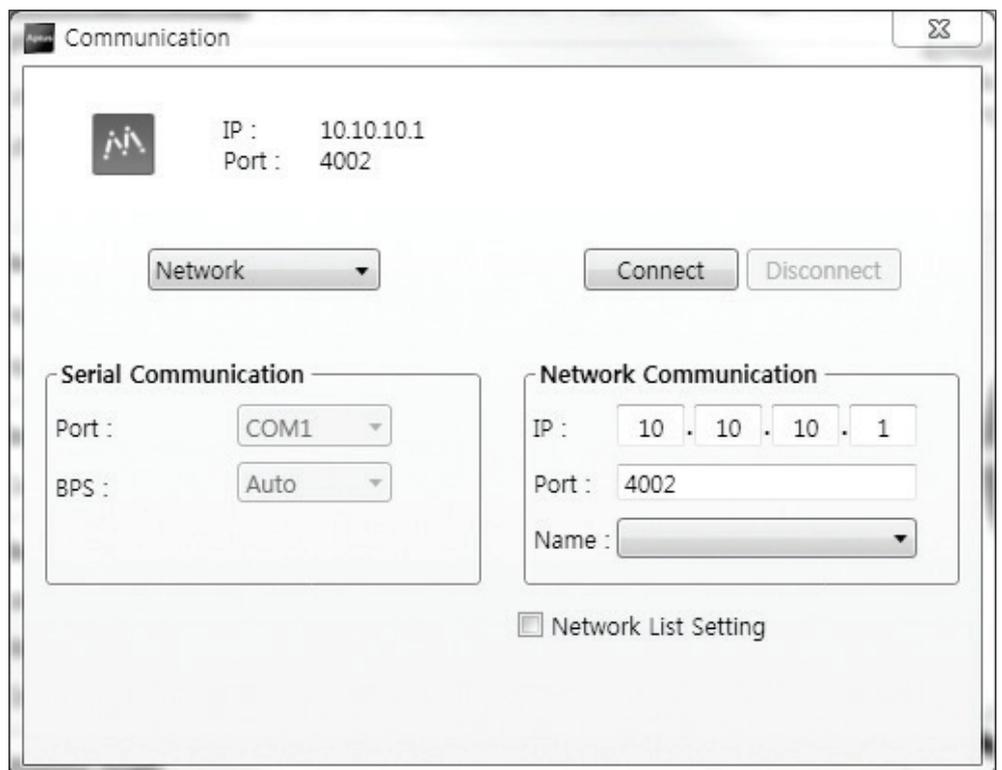


9. Right click on your bluetooth device called "IntellianBT-0D294B" (name may differ by user) and click on "Properties".

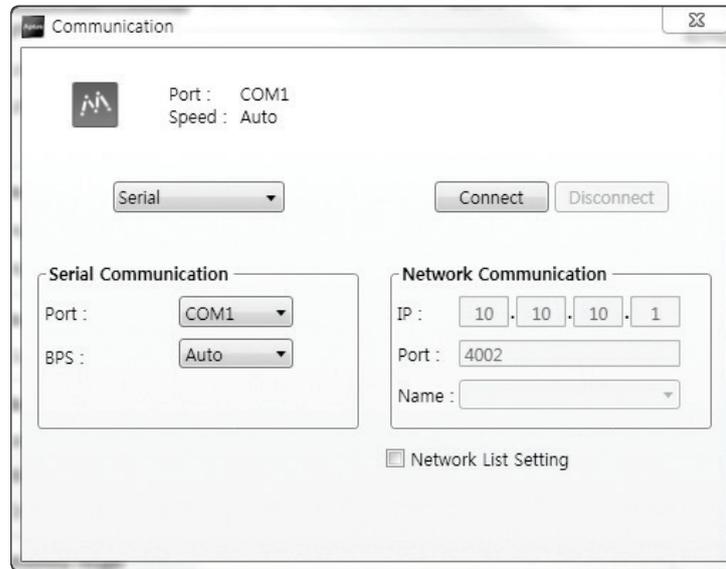


10. Go to the Hardware tab and check your COM Port Number.

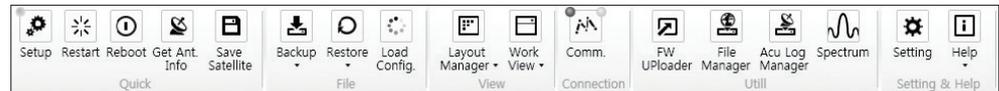
NOTE: Remember the COM Port Number for step 12.



11. Execute the PC Program.



12. Assign the correct COM Port (**step 10**) and check the "Connect" box.



13. Press the "Get Ant. Info" button to confirm if the antenna's data within the PC Program is functioning normally.

End of Bluetooth Setup (**To Disconnect your Bluetooth, click the "Bluetooth" button**).

Technical Specification

Radome & Antenna		Specification
Size	Height	4.1m (161.4") (including base frame)
	Diameter	Ø3.3m (130")
Weight	670kg / 1477 lbs (Radome + Antenna + Base frame)	
Radome		Specification
Radome Material / Method		FRP / Hand Layout
		15EA
No. of Pieces	(Bottom 5, Top 5, Cap 1, Side Hatch 1, Botoom Hatch 2, Base FRP 1)	
Weight	120kg / 265 lbs	
		0.5 dB Max. @ Tx Band
RF Attenaution	2.5 dB Max. @ Rx Band	
		* In Tx band Optimal condition. TBD
Radome Base Frame		Specification
Size	Height	30cm (11.8")
	Diameter	185cm (72.8")
Base Frame Material / Method		Steel / Welding
Weight	245kg / 551 lbs	
Antenna Assembly		Specification
Diameter		2.4m (94.5")
Weight		305kg / 672 lbs
Rx	Frequency	Standard : 3.625 GHz ~ 4.2 GHz
	Gain	37.7 dBi @ 3.91GHz (with Radome)
Tx	Frequency	Standard : 5.85 GHz ~ 6.425 GHz
	Gain	41.7 dBi @ 6.14GHz (with Radome)
Cross-pol isolation		Minimum 35 dB
G / T		20.0 dB/K (Clear Sky, 20° Elevation)
Pedestal Motion Range	Azimuth	Unlimited
	Elevation	-15° to +120°
	Cross-level	±30°
Pointing Stabilization Accuracy		0.2° peak mis-pointing @ max ship motion condition
		CE: conforms to EU Directive 89/336/EEC
Approvals		FCC: verified to CFR47:Part 15
		R&TTE
Power Consumption		100 ~ 240 V AC, 50 ~ 60Hz, 11A

Rack Mount Antenna Control Unit	
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.