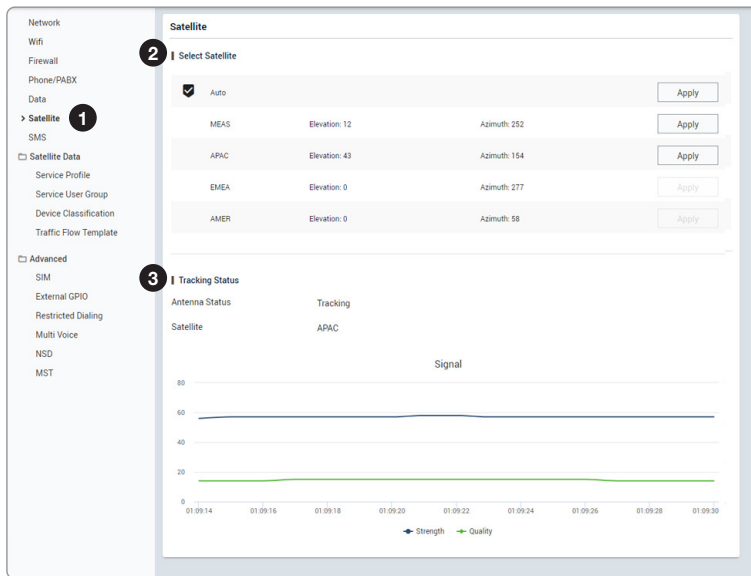


8.7.5 Data

The screenshot shows the 'Data' configuration page in Aptus LX. The left sidebar has a tree view with 'Data' selected and numbered 1. The main area has two sections: 'Routing Config' (numbered 2) and 'Port/Protocol Forwarding' (numbered 3). A red box highlights a plus icon in the bottom right of the main area. A pop-up window titled 'Aptus LX' is shown on the right, containing fields for Enable, Internal IP, Link, Specifier, Protocol, Internal Port, and External Port, with 'Update' and 'Cancel' buttons.

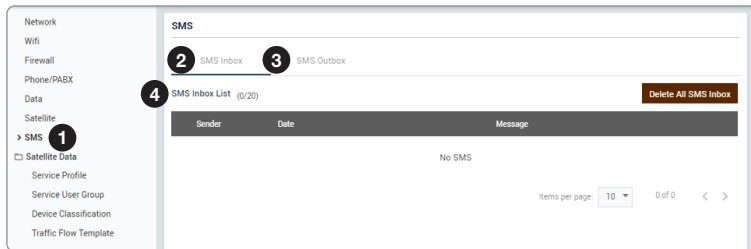
No.	Item	Description
①	Data	Sets the data settings.
②	Routing Config	Selects the data route type (None, Satellite Only, WAN Only). Click the Apply button to apply the settings to the system.
③	Port/Protocol Forwarding	Displays the port/protocol forwarding list. - Plus icon: To create new ports, click the plus icon. Then the pop-up window is opened. Enter the details, then click the Update button. The created ports are displayed on the list. - Enable: Select the check box. - Internal IP: Enter the internal IP. - Link: Select the link from the drop-down list. - Specifier: Select the specifier from the drop-down list. - Protocol: Select the protocol from the drop-down list. - Internal Port: Enter the internal port. - External Port: Enter the external port.

8.7.6 Satellite



No.	Item	Description
①	Satellite	By default, the terminal is set up to automatically find the most appropriate satellite to connect to ("Auto" mode). However, if you are located in an area with more than one BGAN satellite available, you can select the satellite you prefer to use when registering on the BGAN network.
②	Select Satellite	Select the satellite you prefer to use. If you select Auto (the default setting) the Aptus LX System automatically uses the most appropriate satellite. If you have selected a satellite your Aptus LX system will only try to establish a connection to the selected satellite. This means that if the antenna is outside the coverage area for that satellite, the Aptus LX system will not be able to register with the BGAN network. Click the Apply button to apply the settings to the system. The AptusLX terminates all ongoing connections and deregisters from the current satellite before it registers on the new satellite (or If you have any ongoing calls or data sessions, they will be terminated when you click the Apply button.)
③	Tracking Status	When a satellite is selected, the antenna status is changed from Seeking Status to Tracking Status. Seeking Status: The antenna is searching for the BGAN signal. Tracking Status: The antenna has found and locked to the BGAN signal. The antenna is now tracking the BGAN signal. The blue line shows Signal Strength (dBHz) and the green line shows Signal Quality Scores.

8.7.7 SMS



No.	Item	Description
①	SMS	The BGAN system provides a Short Messaging Service (SMS) for sending and receiving SMS messages (Standard 3G, up to 160 characters per SMS) to and from the terminal.
②	SMS Inbox	All received SMS messages are stored in the inbox. Unread messages are marked with a New icon. Click Delete ALL SMS Inbox to delete all messages in the Inbox.
③	SMS Outbox	All sent messages are stored in the outbox. If sending is successful, it is displayed as Success, and if it is unsuccessful, it is displayed as Fail. You can click the recipient number to re-send the message. Click Delete ALL SMS Outbox to delete all messages in the Inbox.
④	SMS Inbox/ Outbox List	Click the number in the Inbox / Outbox list, a pop-up window will appear for sending SMS. Also, you can send SMS by clicking the letter icon at the bottom right of the dashboard page.

8.7.8 Service Profile

Service Profile

1 Profile List

Name	Traffic Class	Max Bitrate Downlink	Max Bitrate Uplink	Guaranteed Bitrate Downlink	Guaranteed Bitrate Uplink	Limit Data	
Default	Background	256	256	0	0	0	
Strm8	Streaming	8	8	8	8	0	
Strm16	Streaming	16	16	16	16	0	
Strm32	Streaming	32	32	32	32	0	
Strm64	Streaming	64	64	64	64	0	
Strm128	Streaming	128	128	128	128	0	
User_1	Background	0	0	0	0	0	
User_2	Background	0	0	0	0	0	
User_3	Background	0	0	0	0	0	

Aptus LX

Name: Default

Traffic Class: Background

Max Bitrate Downlink: 256

Max Bitrate Uplink: 256

Guaranteed Bitrate Downlink: 0

Guaranteed Bitrate Uplink: 0

Limit Data: 0

Use Usim Default APN: ☒ Enable ☐ Disable

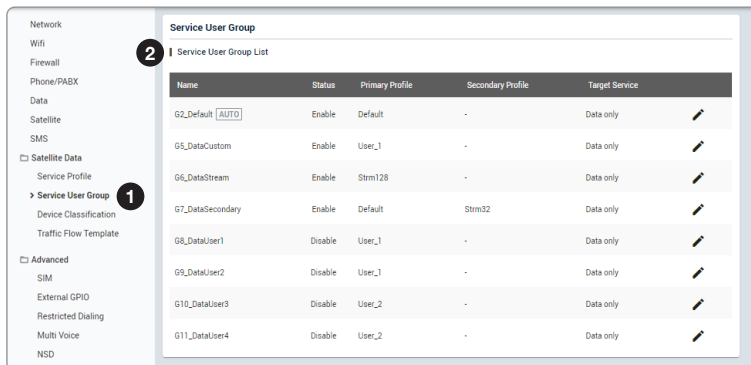
User Defined APN:

Buttons: Cancel, Update

No.	Item	Description
①	Service Profile	A profile is a collection of Quality of Service (QoS) settings and other settings defining the mode in which data is transmitted on an interface. For example, a profile is used to define whether a connection should be a Standard or Streaming connection. You can select between a number of predefined profiles or define your own profiles for your data transmission.
②	Profile List	Displays service profile list and information. When you set up a network user group, you select the profiles to use for that network user group. You select a Primary profile and optionally one Secondary profile. - Edit button: to edit the profile, click the edit button. Then the pop-up window is opened. Enter the details, then click the Update button. - Name: displays the name of profile. - Traffic Class: Select the Traffic class from the drop-down list. NOTE: For best performance, choose the right traffic class for your application. In general, Standard IP (Background) is best suited for TCP/IP applications, and Streaming IP is best suited for UDP traffic, e.g. live video or audio. - Subscribed: this function is not available. - Conversational: this function is not available. - Streaming: is real-time one-way communication. It is primarily used for video and audio. - Interactive: this function is not available. - Background: is used for data which is not delay-sensitive, such as Email SMS, download of databases and reception of measurement records. - Max Bitrate Downlink: Select the maximum download bit rate allowed for this profile from the drop-down list. - Max Bitrate Uplink: Select the maximum upload bit rate allowed for this profile from the drop-down list. - Guaranteed Bitrate Downlink: Select the guaranteed download bit rate needed for this profile from the drop-down list. - Guaranteed Bitrate Uplink: Select guaranteed upload bit rate needed for this profile from the drop-down list. - Limit Data: Enter the maximum usage that can be used within the connected data session. In background: 1~1000000 Mbytes (0: unlimited) In streaming: 1 ~ 43200 minutes (0: unlimited)

No.	Item	Description
②	Profile List	- Use Usim Default APN: Set whether to use the default APN value of USIM or not (Enable/Disable). The APN is taken from the SIM card. This is the recommended option, unless you have special requirements. - Use Defined APN: When you want to use a user-defined APN value, enter the APN value. APNs are provided from the Airtime Provider.

8.7.9 Service User Group



AptusLX

Name:

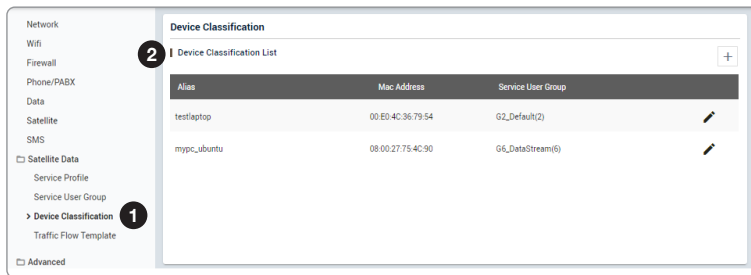
Auto Activation: ☒ Enable ☐ Disable

Primary Profile:

Secondary Profile:

No.	Item	Description
①	Service User Group	The system can be organized in service user groups with different setup and different access rights. Each service user group has a service profile that determines how the users connect to the Inmarsat BGAN network. The network user groups can allow or restrict certain services for different users. NOTE: For F4-A250-S, the maximum Streaming bit rate is 128 kbps.
②	Service User Group List	Displays service user group list and information. - Edit button: to edit the profile, click the edit button. Then the pop-up window is opened. Enter the details, then click the Update button. - Name: Enter the name of service user group. - Auto Activation: Set whether to use this group automatically or not (Enable/Disable). - Primary Profile: Select the target primary profile from the drop-down list. This profile is used by this service user group as a first choice, when possible. - Secondary Profile: Select the target secondary profile from the drop-down list.

8.7.10 Device Classification



Aptus LX

Alias

Mac Address

Service User Group

Delete **Cancel** **Update**

No.	Item	Description
①	Device Classification	Register the MAC address of the device for using the data service, and assign a service user group to the device.
②	Device Classification List	Displays device classification list and information. • Edit button: to edit the profile, click the edit button. Then the pop-up window is opened. Enter the details, then click the Update button. Click Delete button to delete it in the list. - Alias: Enter the device name for the data service. - Mac Address: Enter the mac address. - Service User Group: Select the service user group from the drop-down list.

8.7.11 Traffic Flow Template (TFT)

Network

Wifi

Firewall

Phone/PABX

Data

Satellite

SMS

☐ Satellite Data

Service Profile

Service User Group

Device Classification

> Traffic Flow Template **1**

☐ Advanced

SIM

External GPIO

Restricted Dialing

Multi Voice

NSD

MST

2 Traffic Flow Template

1 Uplink TFT List

Packet Filter Identifier	Target Route Service Profile	Remote Address	Subnet	Protocol Number	Source port Range	Destination Port Range	Type of Service	Type of Service Mask
1	None			255	0~0	0~0		
2	None			255	0~0	0~0		
3	None			255	0~0	0~0		
4	None			255	0~0	0~0		

Download TFT List

Packet Filter Identifier	Target Route Service Profile	Remote Address	Subnet	Protocol Number	Source port Range	Destination Port Range	Type of Service	Type of Service Mask
1	None			255	0~0	0~0		
2	None			255	0~0	0~0		
3	None			255	0~0	0~0		
4	None			255	0~0	0~0		
5	None			255	0~0	0~0		
6	None			255	0~0	0~0		
7	None			255	0~0	0~0		
8	None			255	0~0	0~0		

Aptus LX

Packet Filter Identifier: 1

Target Route Service Profile:

Remote Address:

Subnet Mask:

Protocol Number: 255

Source Port Range: 0

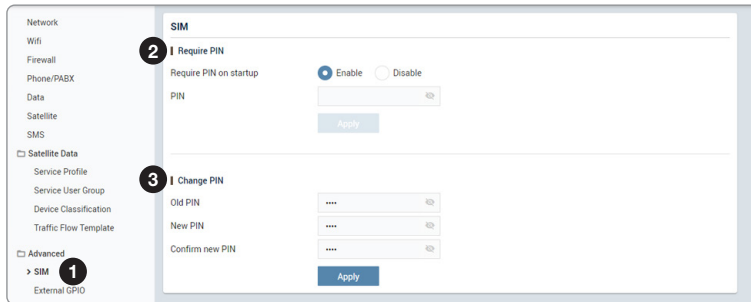
Destination Port Range: 0

Type of Service:

Type of Service Mask:

No.	Item	Description
①	Traffic Flow Template	Traffic Flow Template (TFT) is to assign different priorities to different types of traffic in order to optimize performance. When more than one type of traffic is needed, you must use both a primary and a secondary profile. For the BGAN core network and the terminal to classify packets received from the external network into the proper profile, you need a traffic flow filter. When using a secondary profile, assign that the system transmits/receives by filtering traffic for specific addresses, protocols, and ports.
②	Uplink/Downlink TFT List	Displays Uplink/Downlink TFT list and information. - Edit button: to edit the profile, click the edit button. Then the pop-up window is opened. Enter the details, then click the Update button. - Packet Filter Identifier: Displays the filter ID. - Target Route Service Profile: Select the target route service profile from the drop-down list. - Remote Address: Enter the remote address. (for Downlink TFT: source address, for Uplink TFT: target address) - Subnet Mask: This is an IPv4 IP address and subnet mask. - Protocol Number: This number is uniquely assigned for the protocol being used. TCP is set to 6, and UDP is set to 17. The protocol number determines which protocol is used by the traffic flow filter. - Source Port Range: Enter from and to. - Destination Port Range: Enter from and to. - Type of Service /Type of Service Mask: Set this value to a number between 0 and 255. Type of Service (TOS) is an 8-bit field in a packet header, with associated mask, that is used to define Quality of Service.

8.7.12 SIM



No.	Item	Description
①	SIM	Sets the use of a PIN to access the terminal.
②	Require PIN	Select Enable or Disable to use a PIN. • Enable: You must enter a PIN before you can change settings or make calls or data sessions. • Disable: You can access and use the terminal without entering a PIN. Click the Apply button to apply the settings to the system. The new PIN settings will take effect at next power on.
③	Change PIN	Changes the PIN used to access the terminal. • Old PIN: Type in the Old PIN. • New PIN: Type in the New PIN and retype. • Confirm New PIN: Retype in the New PIN. Click the Apply button to apply the settings to the system. The new PIN settings will take effect at next power on.

8.7.13 External GPIO

No.	Item	Description
①	External GPIO	Select the external General Purpose Inputs/Outputs (GPIO) settings from the drop-down list.
②	Inputs	Select the input settings from the drop-down list.
③	Outputs	Select the outputs settings from the drop-down list.

8.7.14 Restricted Dialing

No.	Item	Description								
①	Restricted Dialing	Set up the terminal for restricted dialing.								
②	Restricted Dialing	Set whether to use restricted dialing or not (Enable/Disable). Click the Apply button to apply the settings to the system.								
③	Restricted Dialing List	Displays the restricted dialing list. Plus icon: To create a new restricted dialing rule, click the plus icon. Then the pop-up window is opened. Enter the allowed numbers or masks in the entry box. The numbers or masks must be max. 32 digits. The masks may start or end with + that positions the first or last part of a phone number, and it covers all numbers. No other special characters are allowed. See the example below. <table><thead><tr><th>Mask (+)</th><th>Numbers Accepted</th></tr></thead><tbody><tr><td>+123456789</td><td>Any number ending with 123456789 ex) 00123456789</td></tr><tr><td>123456789+</td><td>Any number starting with 123456789 ex) 12345678900</td></tr><tr><td>+123456789+</td><td>Any number including 123456789 in the middle ex) 0012345678900</td></tr></tbody></table> Click the Update button. The created dialing rule is displayed on the list.	Mask (+)	Numbers Accepted	+123456789	Any number ending with 123456789 ex) 00123456789	123456789+	Any number starting with 123456789 ex) 12345678900	+123456789+	Any number including 123456789 in the middle ex) 0012345678900
Mask (+)	Numbers Accepted									
+123456789	Any number ending with 123456789 ex) 00123456789									
123456789+	Any number starting with 123456789 ex) 12345678900									
+123456789+	Any number including 123456789 in the middle ex) 0012345678900									
④	Extension Status	Set whether outgoing calls of each extension should be limited to the numbers or not (Enable/Disable).								

8.7.15 Multi Voice

The screenshot shows the 'Multi Voice' configuration page. On the left, a sidebar menu has 'Multi Voice' highlighted with a circled '1'. The main content area has a title 'Multi Voice' and a section '1 Multi Voice' containing an 'Enable' toggle switch (currently turned on) and an 'APN' text field with the value 'bgan.inmarsat.com'. Below this is a section '3 Line 2' with an 'Add Line' button. At the bottom of the main area is an 'Apply' button.

No.	Item	Description
①	Multi Voice	Normally, the BGAN system only supports one call at a time per FB system. If you wish to have more simultaneous voice calls, you can add multi-voice to your airtime subscription.
②	Multi Voice	Sets the multi-voice service function. • Activate: Sets the multi-voice service by toggling the activation button (Enable/Disable). • APN: The VoIP APN used for Multi-voice automatically appears in the APN field. You can type in another APN if necessary. You find the Multi-voice APN name in your subscription documentation.
③	Line	Add voice service line by clicking Add Line button. When you subscribe to the optional Multivoice service and enable it in your system, you can have up to 9 concurrent calls.

8.7.16 NSD

The screenshot shows the NSD configuration interface. On the left, a sidebar lists various network settings, with 'NSD' highlighted and marked with a circled '1'. The main content area is titled 'NSD' and contains a section for 'Network Service Device'. Within this section, there is a 'Terminal Type' dropdown menu and an 'Apply' button, both of which are marked with a circled '2'.

No.	Item	Description
①	NSD	A Network Service Device (NSD) is an Ethernet hardware device, identified by its unique MAC address. When a network device with dynamic IP address is connected to the terminal, it is automatically listed in the Terminal Type list.
②	Network Service Device	Select the terminal type from the drop-down list. Click the Apply button to apply the settings to the system.

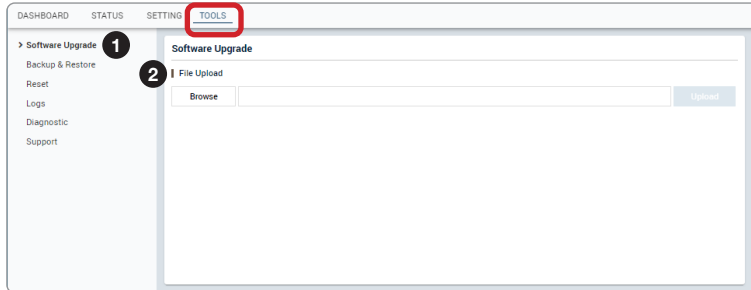
8.7.17 MST

No.	Item	Description
①	MST	Sets the Maritime Service Terminal (MST).
②	Maritime Service Terminal	Sets the maritime service function. • MST Connection: Sets the maritime service by toggling the activation button (Enable/Disable). • Server: Enter the server ID. • Client: Enter the client ID.

8.8 Tools

This menu sets and displays the Software Upgrade, Backup & Restore, Reset, Logs, Diagnostic, and Support function.

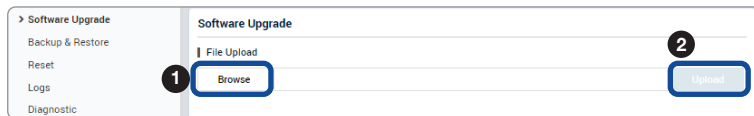
8.8.1 Software Upgrade



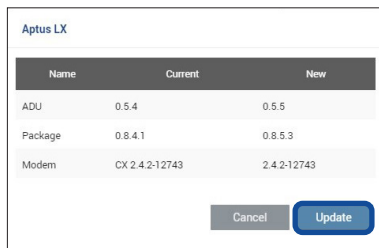
No.	Item	Description
①	Software Upgrade	Upgrades antenna software firmware.
②	Config	Browse and select the package firmware file to upload and click the Upload button. The update may take a few minutes to complete. The upload time may vary due to a variety of factors such as the speeds of your network. Uploading an incorrect firmware file may cause serious damage to your antenna and BDU. Refer to the following "Package Update Procedures" page for more details.

Package Update Procedures:

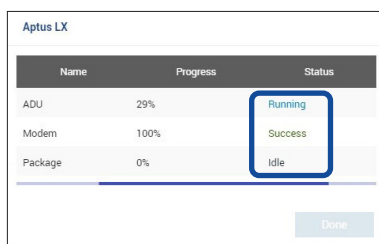
1. Browse and select the upgrade package file to upload. Click on the **Upload** button to transfer the Firmware package file (*.bin) to the BDU module.



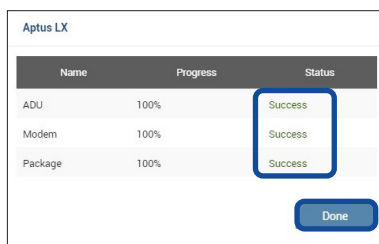
2. The antenna firmware state will appear in the pop-up window. Check the current version and the new version. Click the **Upgrade** button.



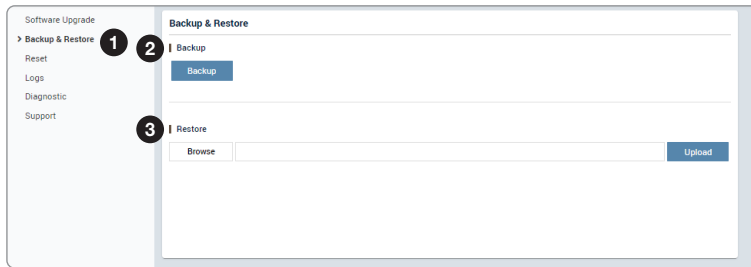
3. During the upgrade process, the window will display process status.



4. If the firmware is successfully upgraded, it will display as **Success**. Click the **Done** button to close the pop-up window.

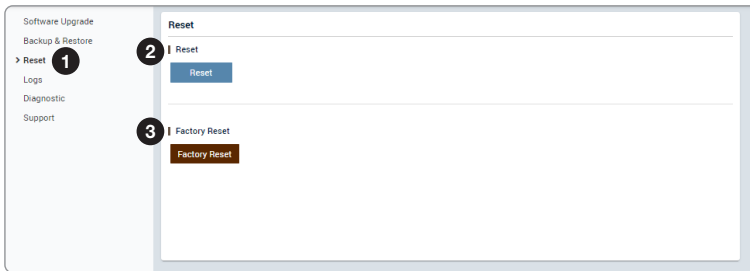


8.8.2 Backup & Restore



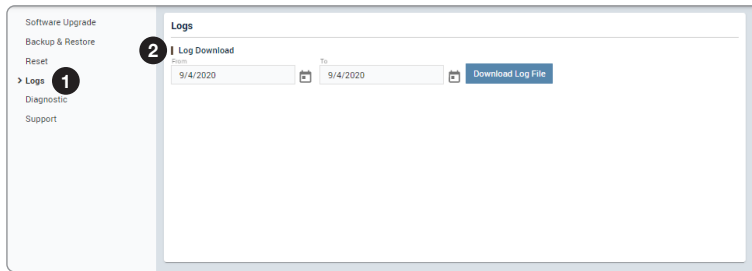
No.	Item	Description
①	Backup & Restore	Backs up user configuration files to PC and Restores the antenna settings.
②	Backup	Saves user configuration files to PC. Click the Backup button to apply the settings to the system.
③	Restore	Restores the antenna setting by using the setting files saved from the PC. Click the Restore button to apply the settings to the system.

8.8.3 Reset



No.	Item	Description
①	Reset	Resets the antenna system and factory reset.
②	Reset	Click the Reset button to reset the antenna system. The user configuration is not reinitialized.
③	Factory Reset	Click the Factory Reset button to initialize the antenna system. The user configuration is initialized.

8.8.4 Logs



No.	Item	Description
①	Logs	Downloads the antenna log data.
②	Logs	Displays the antenna log list. Download Log File: Any log data (.gz) within a month can be downloaded. Click the Download Log File button.

8.8.5 Diagnostic

Diagnostic

1 H/W Test Mode Activate

Operation Mode ☒ Active

2 Self Test

Start

3 Self Test Result

No Test Result

4 ADU Diagnostic

Test	Result	Reason
☒ Comms	idle	-
☒ IMU Sensor	idle	-
☒ AZ Motor	idle	-
☒ EL Motor	idle	-
☒ MPU Temperature	idle	-
☒ FEM Temperature	idle	-
☒ MoCA PHY	idle	-
☒ MPU PHY	idle	-
☒ Modem PHY	idle	-

Start

No.	Item	Description
①	Diagnostic	Executes antenna diagnosis test to check the antenna status.
②	H/W (Hardware) Test Mode Activate	Sets the hardware test function by toggling the activation button (Active/Inactive).
③	Self Test	The activation button must be selected to the "Active" in the previous step. Click the Start button to run the self-test.
④	Self Test Result	Displays the self-test result.
⑤	ADU Diagnostic	Executes the ADU diagnosis test to check each part of ADU status. Select the ADU part to test by toggling the activation button (Enable/Disable). Click the Start button to run the test.

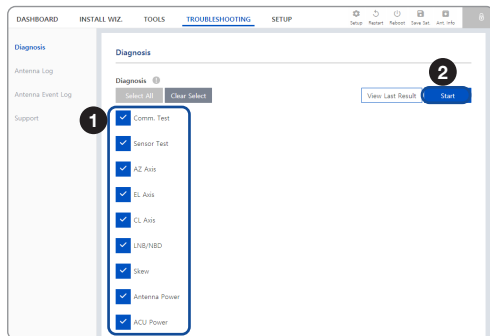


WARNING

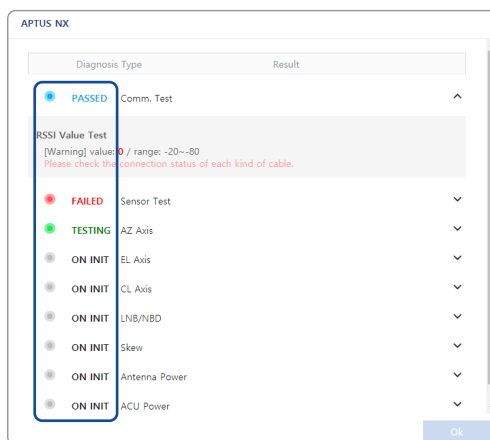
While selecting the **Active** button in the H/W Test Mode Activate menu, the system is in the hardware test mode. Select the **Inactive** button for normal operation.

Diagnosis Procedures:

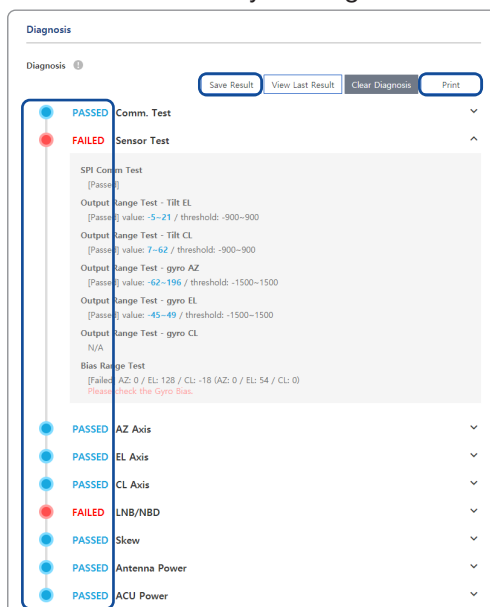
1. Select the checkbox (full diagnosis test or single diagnosis test) before modifying the settings. Click on the **Start** button to run the diagnostic test.



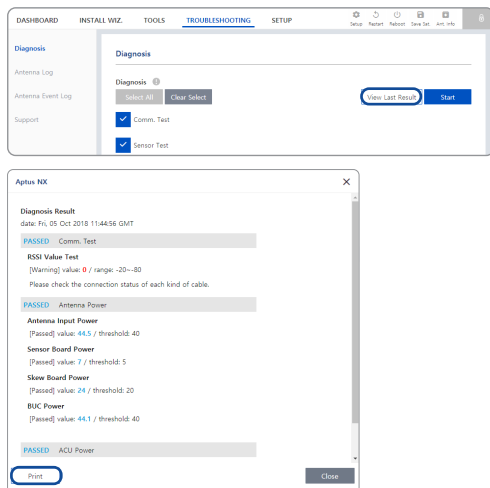
2. Once the diagnosis starts, the page will indicate test status. It should take a few minutes to complete the test.



3. After the diagnosis is completed the system shows the diagnosis results of each item. You can save the results to the BDU by clicking the **Save Report** button and print this page by clicking the **Print** button.



4. When you want to check the recently saved diagnosis results, click the **View Last Report** button. The pop-up page of the diagnosis results, including the save date and time, will appear. You can print this page by clicking the **Print** button.



No.	Item	Description																																		
①	Diagnosis Code	Displays the diagnosis code.																																		
		<table><tr><th>Code</th><th>Test</th></tr><tr><td>101</td><td>The data communication between the antenna and the BDU is tested.</td></tr><tr><td>102</td><td>The azimuth axis is tested.</td></tr><tr><td>103</td><td>The elevation axis is tested.</td></tr><tr><td>104</td><td>The cross-level axis is tested.</td></tr><tr><td>105</td><td>Not Available</td></tr><tr><td>106</td><td>Not Available</td></tr><tr><td>107</td><td>The rate sensor is tested.</td></tr><tr><td>108</td><td>Not Available</td></tr><tr><td>109</td><td>Not Available</td></tr><tr><td>110</td><td>The LNB / NBD is tested.</td></tr><tr><td>111</td><td>The LNB pol motor is tested.</td></tr><tr><td>112</td><td>Not Available</td></tr><tr><td>113</td><td>The antenna power is tested.</td></tr><tr><td>114</td><td>The BDU power is tested.</td></tr><tr><td>115</td><td>Not Available</td></tr><tr><td>116</td><td>The home sensor is tested.</td></tr></table>	Code	Test	101	The data communication between the antenna and the BDU is tested.	102	The azimuth axis is tested.	103	The elevation axis is tested.	104	The cross-level axis is tested.	105	Not Available	106	Not Available	107	The rate sensor is tested.	108	Not Available	109	Not Available	110	The LNB / NBD is tested.	111	The LNB pol motor is tested.	112	Not Available	113	The antenna power is tested.	114	The BDU power is tested.	115	Not Available	116	The home sensor is tested.
		Code	Test																																	
		101	The data communication between the antenna and the BDU is tested.																																	
		102	The azimuth axis is tested.																																	
		103	The elevation axis is tested.																																	
		104	The cross-level axis is tested.																																	
		105	Not Available																																	
		106	Not Available																																	
		107	The rate sensor is tested.																																	
		108	Not Available																																	
		109	Not Available																																	
		110	The LNB / NBD is tested.																																	
		111	The LNB pol motor is tested.																																	
		112	Not Available																																	
		113	The antenna power is tested.																																	
		114	The BDU power is tested.																																	
115	Not Available																																			
116	The home sensor is tested.																																			
②	Diagnosis Result	• An example of diagnosis result: 1 - - - 0 0 7 0 0 10 - 0 13 14 0 0 ← Diagnosis Result of Code 101~110 ← Diagnosis Result of Code 111~116 - ' - ' : The test was passed. Code 102, 103, 104 and 111 were passed. - Last 1 or 2 digits of diagnosis code : The test was failed. Code 101, 107, 110, 113 and 114 were failed. - ' O ' : The test was not performed. Code 105, 106, 108, 109, 112, 115 and 116 were not performed.																																		

8.8.6 Support



No.	Item	Description
①	Support	Downloads the User Guide.
②	Manual	The user guide file (.pdf) can be downloaded. Click the Download button.

Chapter 9. Specification

9.1 Technical Specification

Above Decks Unit (ADU)		
ADU Height		295 mm (11.61")
ADU Diameter		Ø291 mm (11.45")
ADU Weight		4.5 kg (9.92 lbs) (TBD)
Rx	Frequency	1518.0 ~ 1559.0 MHz L-Band
	Gain	10.8 dB
Tx	Frequency	1626.5 ~ 1675.0 MHz L-Band
	Gain	11.3 dB
RF Output power		34.1 dBm
Polarization		RHCP (Rx and Tx)
G/T		-15.5 dB/K
EIRP		15.1 dBW
Axial Ratio		<4 dB
Antenna Motion		-25 ~ 115°
Ship's Motion	Roll	± 30° / 4 s
	Pitch	± 15° / 3 s
	Yaw	± 10° / 5 s
	Turning Rate	36°/sec and 12°/s²
	Headway	30 knots
GNSS		GPS, GLONASS, Galileo
ADU to BDU Cable (Antenna Cable)		Single RF Cable
Input Power		48 V DC supplied from BDU over RF Cable
Below Decks Unit (BDU)		
BDU Size		315 x 190 x 42 mm (12.4" x 7.48" x 1.655")
BDU Weight		1.5 kg (3.3 lbs) (Stand-alone Type)
LED Indicator		3 LEDs for Power, Tracking, Event
Wi-Fi		802.11 b/g Frequency : 2400 MHz - 2483.5 MHz Output Power : below 30 dBm (10 mW/MHz in Korea, Japan) Max. Antenna gain: 2 dBi
SIM	1 ea, 2FF Push-Push type with locking structure	User Authentication
Ethernet	4 ea, RJ45 Female	TCP/ IP Connection, including 2 Port PoE
RF Interface	1 ea, TNC Female	Sub-System Connection to ADU
Analog	1 ea, RJ14 Female	Analog Phone

GPIO	1 ea, (10 pins)	General Purpose I/O
Wi-Fi	1 ea, SMA Female	External Wi-Fi Antenna
On/Off switch	1 ea, Power Switch	System Power Switch
Reset	1 ea	System Reset
Ground	1 ea	Grounding
BDU Power Input	10.8 ~ 30 V DC, 120 W	

9.2 Environmental Specification

Test	Intellian Standard	
Temperature (ADU)	Operational	IEC-60945 (-25°C to +55°C / Power On)
	Survival	IEC-60945 (-40°C to +80°C / Powered On and a non-functional state)
	Storage	IEC-60945 (-40°C to +85°C / Power off)
Temperature (BDU)	Operational	IEC-60945 (-25°C to +55°C)
	Survival	IEC-60945 (-40°C to +80°C)
	Storage	IEC-60945 (-40°C to +85°C)
Humidity	IEC-60068-2-30 Upper test Temp.: +40°C (-3), Humidity 98% Lower test Temp.: +15°C (+3), Humidity 71% ~ 78%	
Vibration	Operational	IEC-60945 Random 1.05 g RMS
	Survival	IEC-60721-3-6 Class 6M3 Random 1.7 g RMS
Shock (ADU)	Operational	Half sine, 20g / 11ms
Shock (BDU)	Operational	IEC-60068-2-27 10g/11ms, 20g/7ms
	Survival (Transient)	IEC-60721-3-6 Class 6M3 (10g/11ms, 30g/6ms, 50g/3ms)
	Survival (Bump)	IEC-60721-3-6 Class 6M3 (25g/6ms)
Salt Mist	Saline solution: 5% NaCl, PH 6.5 to 7.2 at 20°C ± 2°C Storage period: 7 Days (IEC-60945)	
Wind Load	200 km/hr	
Ingress Rating (ADU)	IP56 (Water Proofing: IEC-60529)	

Chapter 10. Warranty

10.1 Warranty Policy

Intellian systems are warranted against defects in parts and workmanship, these warranties cover THREE (3) YEAR of parts and TWO (2) YEAR of factory repair labor to return the system to its original operational specification.

Warranty periods commence from the date of shipment from Intellian facility, or date of installation which is come sooner. Providing maximum 6 months Warranty additionally if submission of authorized form which is described installation occurs within 6 months from the shipment date.

Intellian Technologies 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. Intellian Technologies, will (at its sole discretion) repair or replace during the warranty period any product which is proven to be defective in materials or workmanship, in accordance with the relevant product warranty policy. All products returned to Intellian Technologies, during the warranty period must be accompanied by a Service Case reference number issued by the dealer/distributor from Intellian Technologies, and (where applicable) a copy of the purchase receipt as a proof of purchase date, prior to shipment. Alternatively, you may bring the product to an authorized Intellian Technologies, dealer/distributor for repair.

Chapter 11. Appendix

11.1 Appendix A. Tightening Torque Specification

The material qualities of screws are standardized. Refer to the tightening torque N-m according to ISO 898/1.

Bolt Size	Tightening Torque (N-m)	
	A2-70 (6.8)	A4-80 (8.8)
M4	1.5	2
M5	3	4
M6	5.1	6.8
M8	12.2	16.6
M10	25.2	33.1
M12	43.9	58.3
M16	114	139

