JUE-60KA

Mobile Earth Station

Instruction Manual

7ZPSC0634

JRC Japan Radio Co., Ltd.

PREFACE

Thank you for purchase of the JRC Mobile Earth Station, JUE-60KA.

The JUE-60KA is Telenor satellite communication terminal with high speed communication.

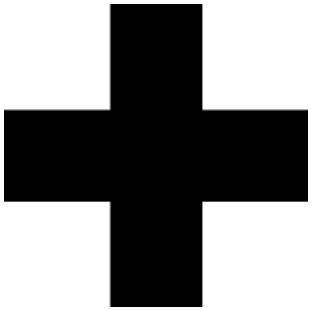
The JUE-60KA is packaged and shipped under strict quality control with inspection criteria to deliver the equipment with highest quality, performance, and reliability needed to meet our customer's requirements and satisfaction.

JRC believes that you will use this equipment satisfactorily for a long time.

- Please read this manual carefully and carry out proper operation.
  This Manual describes a function and specification based on BDE-Version 0100.
- Please do not lose this useful manual, as you will have to refer to it from time to time.
- Network service is managed by Inmarsat co. or other network service providers. Network service may be changed or terminated without prior notice due to the circumstances of the network service providers.

JUE-60KA is manufactured in consideration of effects on environment.

● Safety Cautions ●



Cautions for High Voltage

High voltages, ranging from several hundreds to tens of thousands of volts, are used in electronic apparatus, such as radio and radar instruments. These voltages are totally harmless in most operations. However, touching a component inside the unit is very dangerous. (Any person other than authorized service engineers should not maintain, inspect, or adjust the unit.)

High voltages on the order of tens of thousand volts are most likely to cause instant deaths from electrical shocks. At times, even voltages on the order of several hundred volts could lead to electrocution. To defend against electrical shock hazards, don't put your hand into the inside of apparatus.

When you put in a hand unavoidably in case of urgent, it is strongly suggested to turn off the power switch and allow the capacitors, etc. to discharge with a wire having its one end positively grounded to remove residual charges. Before you put your hand into the inside of apparatus, make sure that internal parts are no longer charged. Extra protection is ensured by wearing dry cotton gloves at this time. Another important precaution to observe is to keep one hand in your pocket at a time, instead of using both hands at the same time. It is also important to select a secure footing to work on, as the secondary effects of electrical shock hazards can be more serious. In the event of electrical shocks, disinfect the burnt site completely and obtain medical care immediately.

Precautions for Rescue of Victim of Electric Shock

When a victim of electric shock is found, turn off the power source and ground the circuit immediately. If this is impossible, move the victim away from the unit as quick as possible without touching him or her with bare hands. He or she can safely be moved if an insulating material such as dry wood plate or cloth is used.

It is necessary to perform first aid immediately.

Breathing may stop if current flows through the respiration center of brain due to electric shock. If the electric shock is not large, breathing can be restored by artificial respiration. A victim of electric shock looks pale and his or her pulse may become very weak or stop, resulting in unconsciousness and rigidity at worst.

Method of First-Aid Treatment

☆Precautions for First-Aid Treatments

Apply artificial respiration to the person who collapsed, minimizing moving as much as possible avoiding risks. Once started, artificial respiration should be continued rhythmically.

(1) Refrain from touching the patient carelessly as a resultof the accident; the first-aider could suffer from electrical shocks by himself or herself.

(2) Turn off the power calmly and certainly, and move the patient apart from the cable gently.

(3) Call or send for a physician or ambulance immediately, or ask someone to call doctor.

(4) Lay the patient on the back, loosening the necktie, clothes, belts and so on.

(5) (a) Feel the patient's pulse.
(b) Check the heartbeat by bringing your ear close to the patient's heart.
(c) Check for respiration by bringing your face or the back of your hand to the patient's face.
(d) Check the size of patient's pupils.

(6) Opening the patient's mouth, remove artificial teeth, cigarettes, chewing gum, etc. if any. With the patient's mouth open, stretch the tongue and insert a towel or the like into the mouth to prevent the tongue from being withdrawn into the throat. (If the patient clenches the teeth so tight that the mouth won't open, use a screwdriver or the like to force the mouth open and then insert a towel or the like into the mouth.)

(7) Wipe off the mouth to prevent foaming mucus and saliva from accumulating.

First Aid Method
Flow of Cardiopulmonary Resuscitation (CPR)

A person is collapsing.
- Secure the safety of the surrounding area.
- Prevent secondary disasters.

↓

Check for response.
- Call while tapping the shoulder.

→ Responding → Listen to the appeal of the injured or ill person and give the necessary first-aid

↓ Not responding or indeterminate state

Ask for help.
- Make an emergency call.
- Ask to bring an AED.

If you call an ambulance, you can get instructions regarding how to judge cardiac arrest and how to do cardiopulmonary resuscitation (CPR).

↓

Check for breathing and judge cardiac arrest.
- Check for breathing.

→ Breathing → Recovery position
- Lay the injured or ill person on his/her side and wait for the arrival of the emergency services.

↓ Not breathing or indeterminate state

Chest compressions
- With each compression, depress the chest wall to a depth of approximately 5 cm.
- Perform compressions at the rate of 100 - 120 times per minute.

Combination of chest compressions and rescue breaths Note(1)
- If the first-aider is not trained in rescue breaths, he/she should perform only chest compressions. See Note(1) for the details.

Note(1) Combination of chest compressions and rescue breaths
- If the first-aider is not trained in rescue breaths, he/she should perform only chest compressions.
- If the first-aider is trained in rescue breath, and has the skill and will to do it, he/she should perform the combination of chest compressions and rescue breaths at the ratio of 30:2. If there is a fear of infection, he/she should use a personal protective equipment (mouthpiece for rescue breathing).

↓

Arrival of an AED
- Turn on the power.
- Use the AED by following its voice prompts. Fitting of the electrode pads, etc.

↓

Automatic electrocardiogram analysis
- Do not touch the injured or ill person.

→ Electric shock is not needed.

↓ Electric shock is needed.

Delivery of electric shock

↓

Resume CPR from chest compressions by following the voice prompts of the AED.

The AED automatically analyzes the heart rhythm every 2 min.

→ When to stop CPR → When the injured or ill person has been handed over to the emergency services or has started moaning or breathing normally, lay him/her on his/her side in a recovery position and wait for the arrival of emergency services.

Specific Procedures for Cardiopulmonary Resuscitation (CPR)

1. Check the scene for safety to prevent secondary disasters

a) Do not touch the injured or ill person in panic when an accident has occurred. (Doing so may cause electric shock to the first-aiders.)

b) Do not panic and be sure to turn off the power. Then, gently move the injured or ill person to a safe place away from the electrical circuit.

2. Check for responsiveness

a) Tap the shoulder of the injured or ill and shout in the ear saying, "Are you OK?"

b) If the person opens his/her eyes or there is some response or gesture, determine it as "responding." But, if there is no response or gesture, determine it as "not responding."

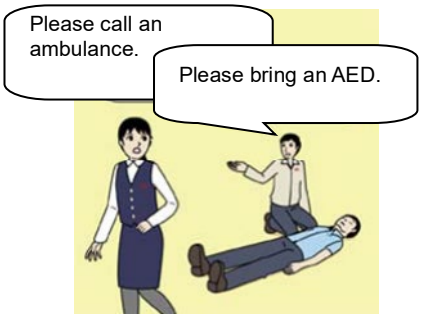
3. If responding

a) Give first-aid treatment.

4. If not responding

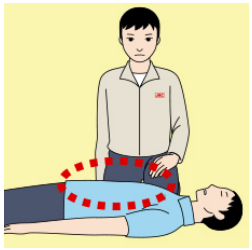
a) Ask for help loudly. Ask somebody to make an emergency call and bring an AED.

- Somebody has collapsed. Please help.
- Please call an ambulance.
- Please bring an **AED**.
- If there is nobody to help, call an ambulance yourself.



5. Check for breathing

a) Look to see if the chest and abdomen of the injured or ill person are rising and falling.



b) If the injured or ill person is breathing, place him/her in the recovery position and wait for the arrival of the emergency services.

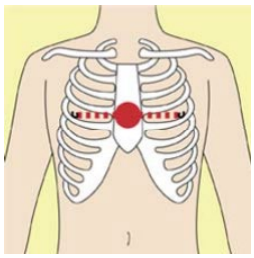
• Position the injured or ill person on his/her side.

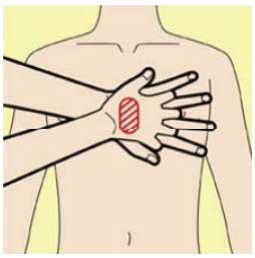
6. Cardiopulmonary resuscitation (CPR) (combination of chest compressions and rescue breaths)

a) Chest compressions

1) Position of chest compressions

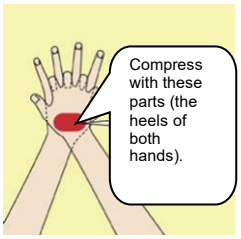
• Position the heel of one hand in the center of the chest, approximately between the nipples, and place your other hand on top of the one that is in position.





2) Perform chest compressions

Perform uninterrupted chest compressions of 30 at the rate of about 100 - 120 times per minute, while locking your elbows positioning yourself vertically above your hands.



• With each compression, depress the chest wall to a depth of approximately 5 cm.

b) Combination of 30 chest compressions and 2 rescue breaths

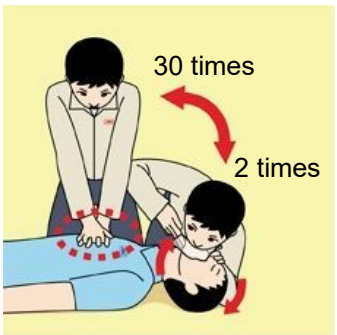
1) If the first-aider is not trained in rescue breaths, he/she should perform only chest compressions.

2) If the first-aider is trained in rescue breath, and has the skill and will to do it, he/she should perform 30 chest compressions, then give 2 rescue breaths.

3) If there is a fear of infection, he/she should use a personal protective equipment (mouthpiece for rescue breathing).

4) Continuously perform the combination of 30 chest compressions and 2 rescue breaths without interruption.

5) If there are two or more first-aiders, alternate with each other approximately every two minutes (five cycles) without interruption.



7. When to stop cardiopulmonary resuscitation (CPR)

a) When the injured or ill person has been handed over to the emergency services

b) When the injured or ill person has started moaning or breathing normally, lay him/her on his/her side in a recovery position and wait for the arrival of emergency services.

8. Arrival and preparation of an AED

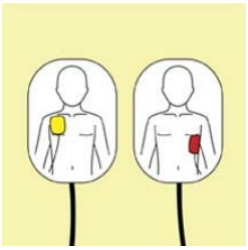
Turn on the power.

a) Place the AED at an easy-to-use position. If there are multiple first-aiders, continue CPR until the AED becomes ready.

b) Turn on the power to the AED unit. Depending on the model of the AED, you may have to push the power on button, or the AED automatically turns on when you open the cover.

c) Follow the voice prompts of the AED.

9. Attach the electrode pads to the injured or ill person's bare chest



a) Remove all clothing from the chest, abdomen, and arms.

b) Open the package of electrode pads, peel the pads off and securely place them on the chest of the injured or ill person, with the adhesive side facing the chest. If the pads are not securely attached to the chest, the AED may not function. Paste the pads exactly at the positions indicated on the pads, If the chest is wet with water, wipe dry with a dry towel and the like, and then paste the pads. If there is a pacemaker or implantable cardioverter defibrillator (ICD), paste the pads at least 3 cm away from them. If a medical patch or plaster is present, peel it off and then paste the pads. If the injured or ill person's chest hair is thick, paste the pads on the chest hair once, peel them off to remove the chest hair, and then paste new pads.

c) Some AED models require to connect a connector by following voice prompts.

d) The electrode pads for small children should not be used for children over the age of 8 and for adults.

10. Electrocardiogram analysis

a) The AED automatically analyzes electrocardiograms. Follow the voice prompts of the AED and ensure that nobody is touching the injured or ill person while you are operating the AED.

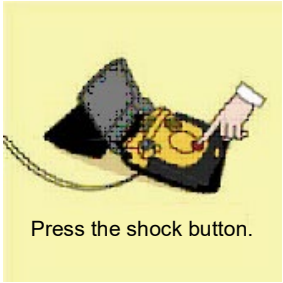
b) On some AED models, you may need to push a button to analyze the heart rhythm.

11. Electric shock (defibrillation)

a) If the AED determines that electric shock is needed, the voice prompt saying, "Shock is needed" is issued and charging starts automatically.

b) When charging is completed, the voice prompt saying, "Press the shock button" is issued and the shock button flashes.

c) The first-aider must get away from the injured or ill person, make sure that no one is touching him/her, and then press the shock button.



Press the shock button.

d) When electric shock is delivered, the body of the injured or ill person may jerk.

12. Resurgence of cardiopulmonary resuscitation (CPR)

a) Resume chest compressions by following the voice prompts of the AED.

- With each compression, depress the chest wall to a depth of approximately 5 cm.
- Perform compressions at the rate of 100 - 120 times per minute.

13. Automatic electrocardiogram analysis

a) When 2 minutes have elapsed since you resumed cardiopulmonary resuscitation (CPR), the AED automatically analyzes the electrocardiogram.

b) If you suspended CPR by following voice prompts and AED voice prompt informs you that shock is needed, give electric shock again by following the voice prompts.
If AED voice prompt informs you that no shock is needed, immediately resume CPR.

14. When to stop CPR (Keep the electrode pads on.)

a) When the injured or ill person has been handed over to the emergency services

b) When the injured or ill person has started moaning or breathing normally, lay him/her on his/her side in a recovery position and wait for the arrival of emergency services.

● BEFORE USING ●

JRC is indemnified for any damages from incorrect operation, malfunction, and other troubles except as outlined in the product warranty and by limitation of law.

Some functions of JUE-60KA may not work correctly owing to the hardware and software version of equipment connected to JUE-60KA. Please confirm that whether your equipment is connectable or not to the dealer or agent.

Your communication data are transmitted via the Inmarsat systems, therefore, there is a possibility that some errors may occur.
We strongly recommend important data be backed up to ensure safety and protection from loss.
Usually, digital scrambling of the Inmarsat system protects your communication data privacy.
However we caution you to understand that your communication data might be intercepted by special technology and unauthorized access to the communication theory.

Specifications of the JUE-60KA and its accessories may change without notice, for improvement.

Some functions may not be supported by a product version.

Please contact JRC for more information.

● Pictorial Indication ●

This Installation Manual

Before starting to use this device, read this instruction manual carefully to use it correctly.

This instruction manual also helps to solve problems.

Meanings of Pictorial Indication

Various pictorial indications are included in this manual and are shown on this equipment so that you can operate them safely and correctly and prevent any danger to you and / or to other persons and any damage to your property during operation. Such indications and their meanings are as follows.
Please understand them before you read this manual:

⚠	**DANGER**	This indication is shown where incorrect equipment operation due to negligence may cause death or serious injuries.
⚠	**WARNING**	This indication is shown where any person is supposed to be in danger of being killed or seriously injured if this indication is neglected and this equipment is not operated correctly.
⚠	**CAUTION**	This indication is shown where any person is supposed to be injured or any property damage is supposed to occur if this indication is neglected and this equipment is not operated correctly.

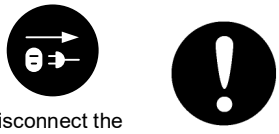
Examples of Pictorial Indication

Electric Shock

The △ mark represents CAUTION (including DANGER and WARNING).
Detailed contents of CAUTION ("Electric Shock" in the example on the left) is shown in the mark.

Disassembling Prohibited

The ⃠ mark represents prohibition.
Detailed contents of the prohibited action ("Disassembling Prohibited" in the example on the left) is shown in the mark.



Disconnect the power plug

The ● mark represents instruction.
Detailed contents of the instruction ("Disconnect the power plug" in the example on the left) is shown in the mark.

Concerning Warning Label

Warning labels are put on the JUE-60KA.
Do not take off, destroy, or modify these labels.

* Windows Internet Explorer is the registered trademark of Microsoft Corporation.
Firefox is the registered trademark of Mozilla Foundation.

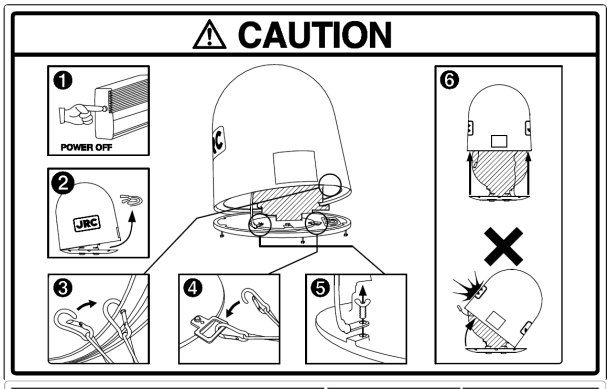
● Concerning warning label ●

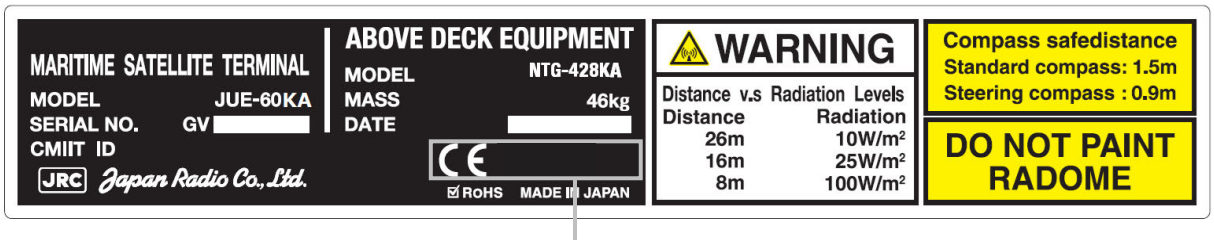
Warning labels are put on the JUE-60KA ADE and BDE.

Do not take off, destroy, or modify these labels.

Warning Label of JUE-60KA ADE

(The illustration of upper part shows the safety Procedure for removing Radome from ADE.)

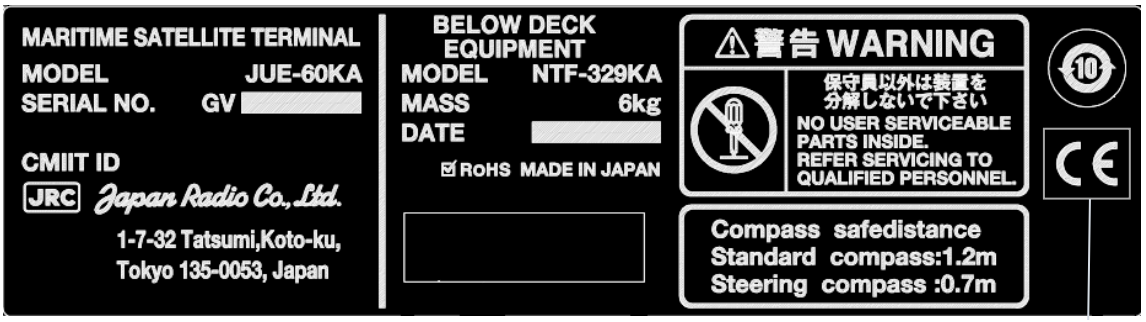




*1

*1: This mark means the attestation number which means safe, high-quality product and suits EU directive (Free circulation was permitted in the EU signatory).

Warning Label of JUE-60KA BDE



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*1: This mark means the attestation number which means safe, high-quality product and suits EU directive (Free circulation was permitted in the EU signatory).

● DURING OPERATION ●

⚠ DANGER

Do not touch any internal parts with your hands or tools.
It may cause fire, electrical shock or malfunction.

⚠WARNING

Do not bring the power supply code close to the heat apparatus.
The coating of the code may relieved, and it causes a fire and the electric shock.

Keep out of the area within a radius of described below from your ADE respectively, while transmitting. It transmits microwave and strong microwave may cause injury.

JUE-60KA

Radiation Level	Distance
10 W/m^2	26 m
25 W/m^2	16 m
100 W/m^2	8 m

In case of approach within a radius of 26 meters by necessity, turn off the JUE-60KA and stop transmitting.

If an external matter, such as metal fragments, water, liquid, etc., infringe into your JUE-60KA, turn off the power and contact the dealer or agent you purchased.
Continuous operation may cause fire, electrical shock or malfunction.

Install JUE-60KA correctly in accordance with this manual.
Inappropriate installation may cause incorrect operation; fire, electrical shock, or malfunction.

Install ADE-BDE coaxial cable correctly in accordance with the Installation manual. Especially waterproof should be treated correctly in accordance with the installation manual. Inappropriate installation may cause incorrect operation, fire, electric shock or malfunction.

⚠WARNING

	Use the specified power supply voltage only (90 VAC to + 264 VAC), otherwise trouble, fire, or electric shock or malfunction may occur.
	Do not troubleshoot or repair the internal equipment of the JUE-60KA by yourself. Any electrical work by any person other than our trained maintenance staff may cause fire or abnormal operation of this equipment or electrical shock for you. This equipment meets the technical standard of the Ministry of Internal affairs and Communications.
	Do not adjust the internal circuit without a calibrated measuring instrument or exchange the parts because the internal circuit has been adjusted finely to specifications. If the equipment works abnormally, please contact the purchasing dealer.
	Do not remove, destroy, or modify warning labels. It may cause poor hazard prevention.
	Do not insert a finger or foreign material into interspaces of fan. It may cause fire, electrical shock or malfunction.

⚠ CAUTION

Before using, read this instruction manual.
Incorrect operation may cause improper working operation or malfunction.

When a fault has been detected, refer to the “Appendix E”. If it is not improved, turn OFF and ON the power switch of main unit to reboot. Still it persists, stop operation and contact the dealer you purchased from.

ADE（Above Deck Equipment）

Do not deliver mechanical shock and/or force, because each unit of your ADE is a precision instrument. Unwanted shock and force may cause malfunction.

Do not paint the radome.
Painting of the radome may cause a decrease of the communication quality.

BDE（Below Deck Equipment）

Do not set/remove the ADE-BDE cable during power switch is turned on.
It may cause malfunction.

Do not remove the power supply cable before the power source disconnecting process is completed. It may cause malfunction.

Coaxial Cable and the other cables

Take care not to damage the connectors and the corrosion resistant sheath of cable. Otherwise, a trouble may occur.

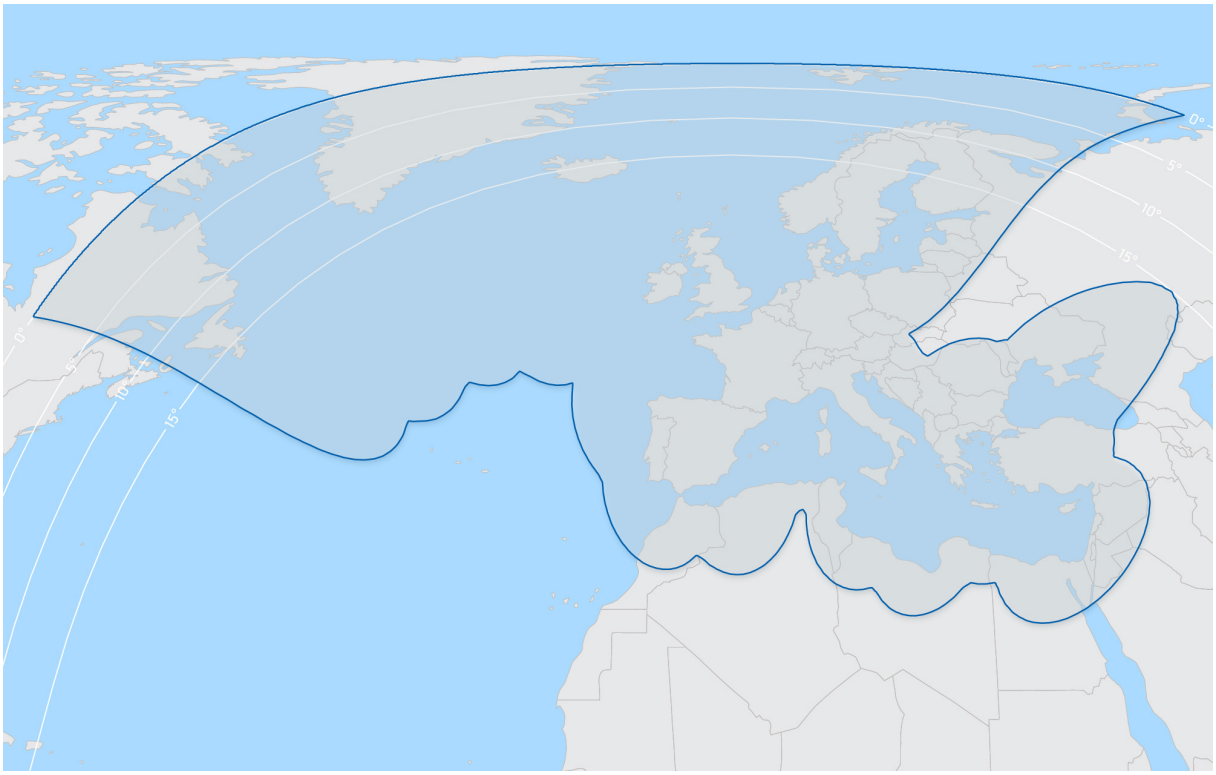
Do not pull the cable by gripping connector plug only.
Otherwise, a trouble may occur.

Contents

Section 1 Telenor Thor7 systems

1.1 Outline

1.1.1 Coverage area of Telenor THOR7 satellite



Note

A geosynchronous satellite might be added or deployed to other position in the future.

1.1.2 Telenor THOR7 system

The THOR 7 satellite provides regional coverage with a favourable look angle over the Pan European maritime routes and utilises focused high-powered spot beams, enabling unprecedented performance for mobility applications. Supported by the iDirect next generation Velocity© platform, Telenor Satellite is able to offer automatic and seamless spot-beam handover, assuring continuous connectivity across the entire satellite footprint.

1.2 Telenor Thor7 Services

The Telenor THOR7 system provides the following services.

BENEFITS

Optimal high-powered coverage allows the delivery of many more Mbps. Lower cost solution for always on connectivity. Smaller antenna solutions offering a wide range of broadband services up to 20/3 Mbps on 60cm antennas. A wide choice of fixed service packages to suit specific requirements from 512/128 Kbps up to 24/6 Mbps.

FEATURES

Large Pan-European mobility footprint. Offering a wide range of bandwidth profiles. Seamless spot beam handover.
One Touch Commissioning (OTC) which allows automation of 1dB compression test, eliminating time consuming manual operations.
New web based monitoring tool (iDirect PULSE), offering full control of your VSAT connection on any device.

Rain fade mitigation techniques assures a 99.5% link availability via physical antenna diversity, Adaptive coding and modulation and inbound adaptivity.

1.3 Important reminder for using JUE-60KA

Note

- The Telenor Thor7 services are operated by Telenor and some other network service providers. The Telenor Thor7 services may be changed or terminated without prior notice due to the circumstance of the service providers.

Section 2 Introduction of the JUE-60KA

2.1 Outline

JUE-60KA is Telenor Thor7 satellite communications system that supplies high-speed IP network service, Internet, e-mail, and IP phone, etc.

The JUE-60KA Mobile Earth Station (MES) is composed of Above Deck Equipment (ADE) and Below Deck Equipment (BDE).
ADE comprises an antenna equipment, an antenna interface module (AIM), Block up Converter(BUC), Low Noise Block（LNB）, and a radome, and BDE comprises a broadband interface module (BIM) and a external modem unit (X7).
Depending on the configuration of the X7 modem, a VLAN switching hub may be required.

2.2 Features

Full support for technical requirements of the latest Telenor Thor7

JUE-60KA is specifically suitable for the Telenor Thor7 technical requirements in the latest Telenor Thor7 requirements. JUE-60KA is a suitable solution for Mobile Earth Station for any type of vessel, navigating the oceans.

High-quality communication

JUE-60KA can use the following services that are provided by Telenor.

- High-speed data communications using Internet Protocol techniques.

Note
The service available to you is depending on the contract.

Compact design

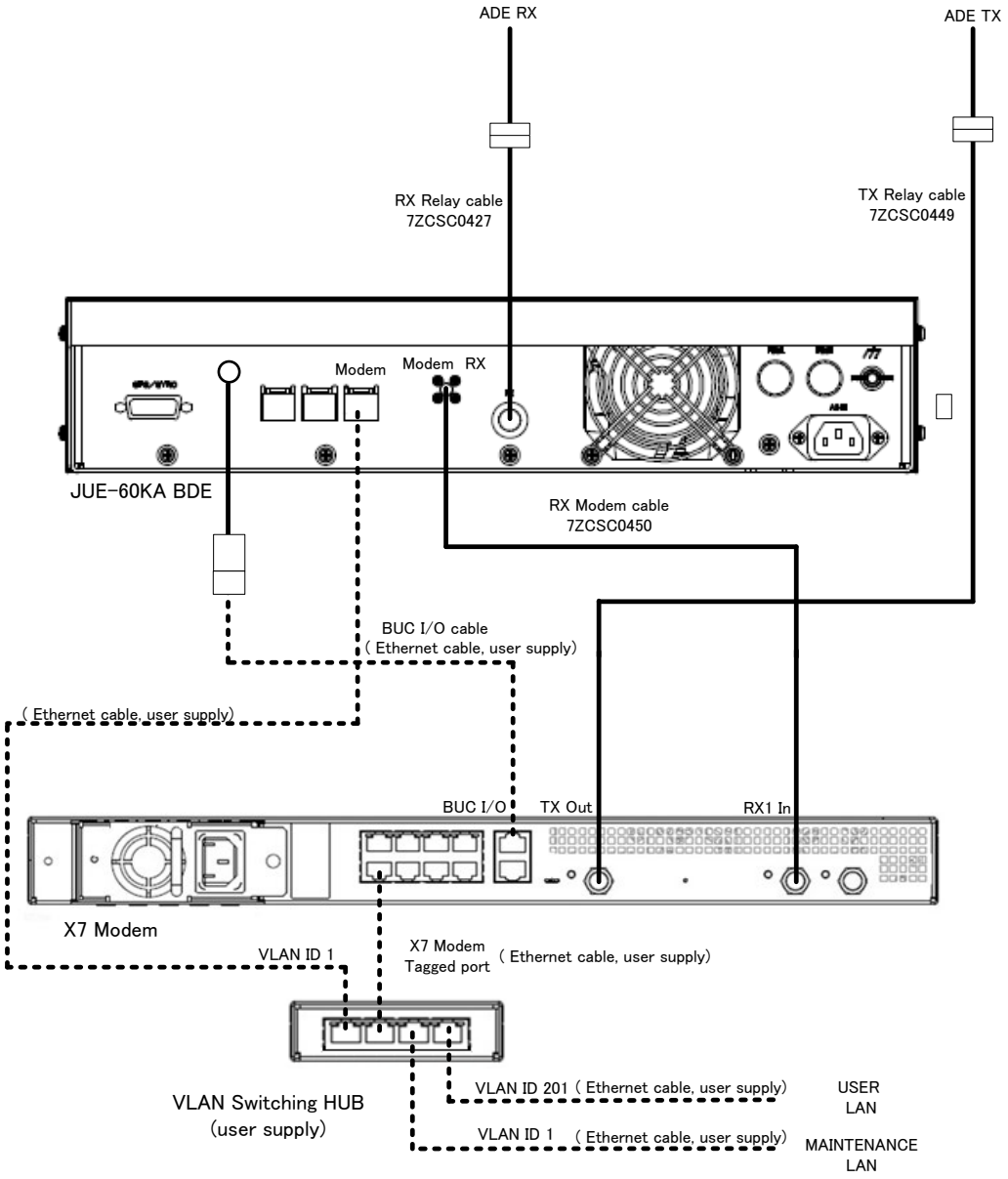
The JUE-60KA can be installed on vessels of all sizes due to the compact and lightweight design of the ADE. The adoption of an active and Gyro-less antenna structure makes this unit a perfect fit for small vessels.
Since only two coaxial cables are used for the ADE-BDE connection, JUE-60KA can be installed easily.
The Rewindless antenna achieves uninterrupted communication during circling.

Self-diagnosis system

The built-in self-diagnosis system continually monitors the status of the JUE-60KA and indicates the warnings if any errors are detected.

2.3 Interconnection diagram and components List

2.3.1 Interconnection diagram



The modem port of JUE-60KA connect to VLAN ID 1 of X7 Modem network. The VLAN ID 1 of X7 Modem can be assigned to the built-in network port in the X7 Modem setting or connected by separating the VLAN ID 1 network with an external VLAN switching hub via the tagged port of X7 Modem. A maintenance PC for software update or configuration is also connected to this network.

The user LAN for communication is similarly connected to VLAN ID 201 of the X7 Modem network. The IP address is assigned from X7 Modem by DHCP.

2.3.2 Components list

	Name of equipment	Type	Q'ty
Standard Components	ADE	NTG-428KA	1
	BDE	NTF-329KA	1
	Instruction Manual	7ZPSC0634	1
	Installation Manual	7ZPSC0633	1
	Supplied parts for ADE installation	MPXP35369	1
	Supplied parts for BDE installation	7ZXSC6003* （※）	1
Option	Coaxial cable (between ADE and BDE)	CFQ-3922A35 (35 m)	2

（※）"*"means revision, such as A,B and so on

Coaxial cable

CFQ-3922A series (5D) and CFQ-3923A series (10D, maximum 60 m) coaxial cables are available.

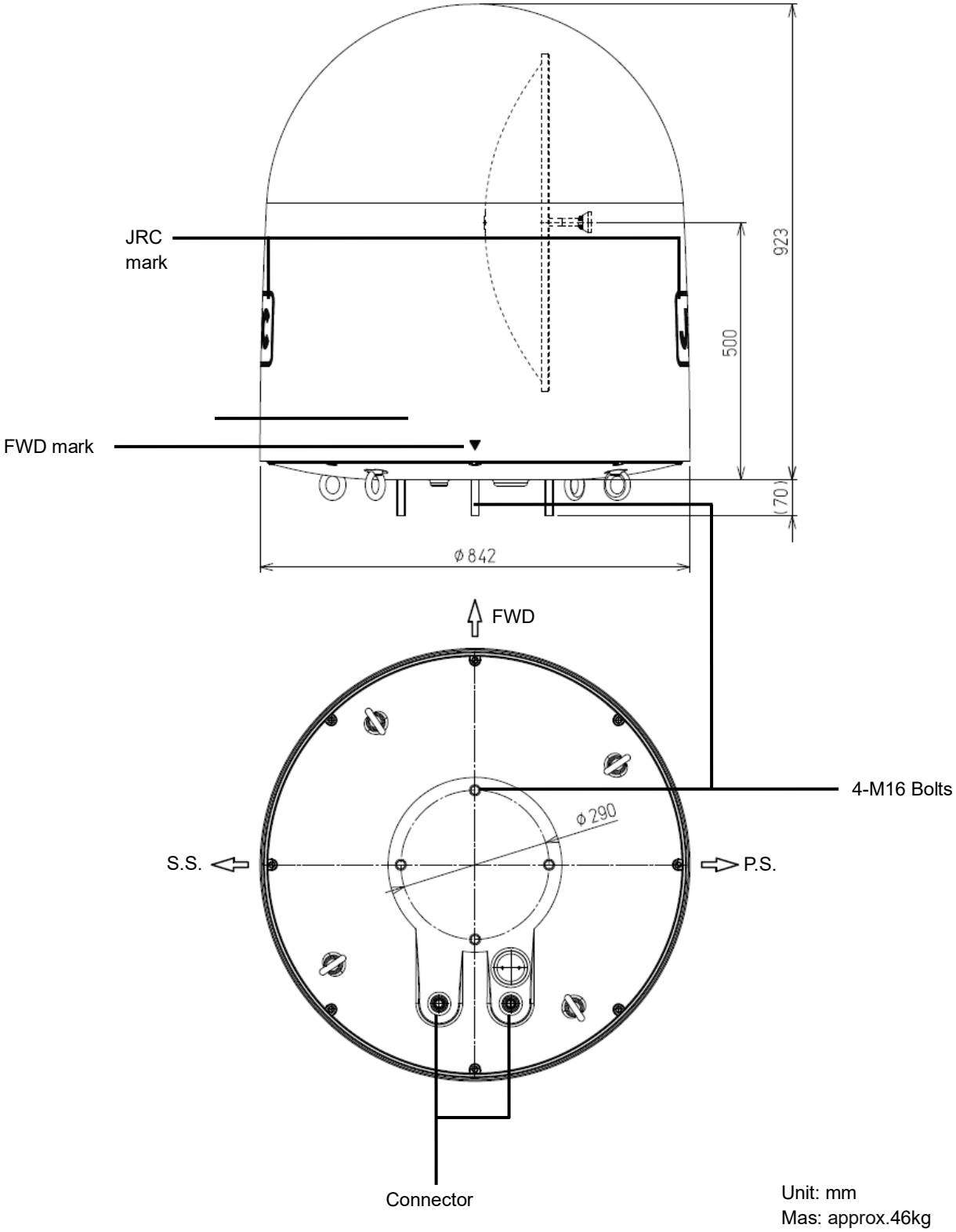
Coaxial cable length (m)	Type	
	TX	RX
30	CFQ-3922A3	CFQ-3922A3
35	CFQ-3922A35（standard）	CFQ-3922A35（standard）
40	CFQ-3922A4 or CFQ-3923A4	CFQ-3923A4
50	CFQ-3922A5 or CFQ-3923A5	CFQ-3923A5
60	CFQ-3922A6 or CFQ-3923A6	CFQ-3923A6

If the cables are supplied by customer, refer the installation guide "3.1 Connecting cables". The following table lists the recommended cable type and maximum RX coaxial cable length.

Type	Maximum cable length
CNT-600-FR	100m
LMR-600-FR	100m
CNT-400-FR	70m
LMR-400-FR	70m
RG-214/U	35m
RG-223	18m

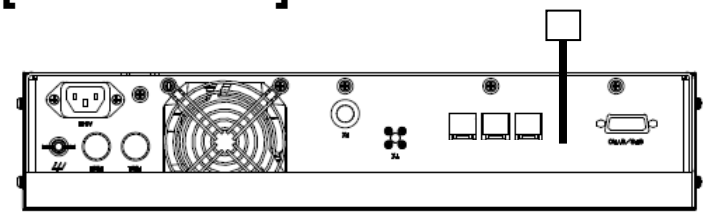
2.4 Dimensional drawing (JUE-60KA standard components)

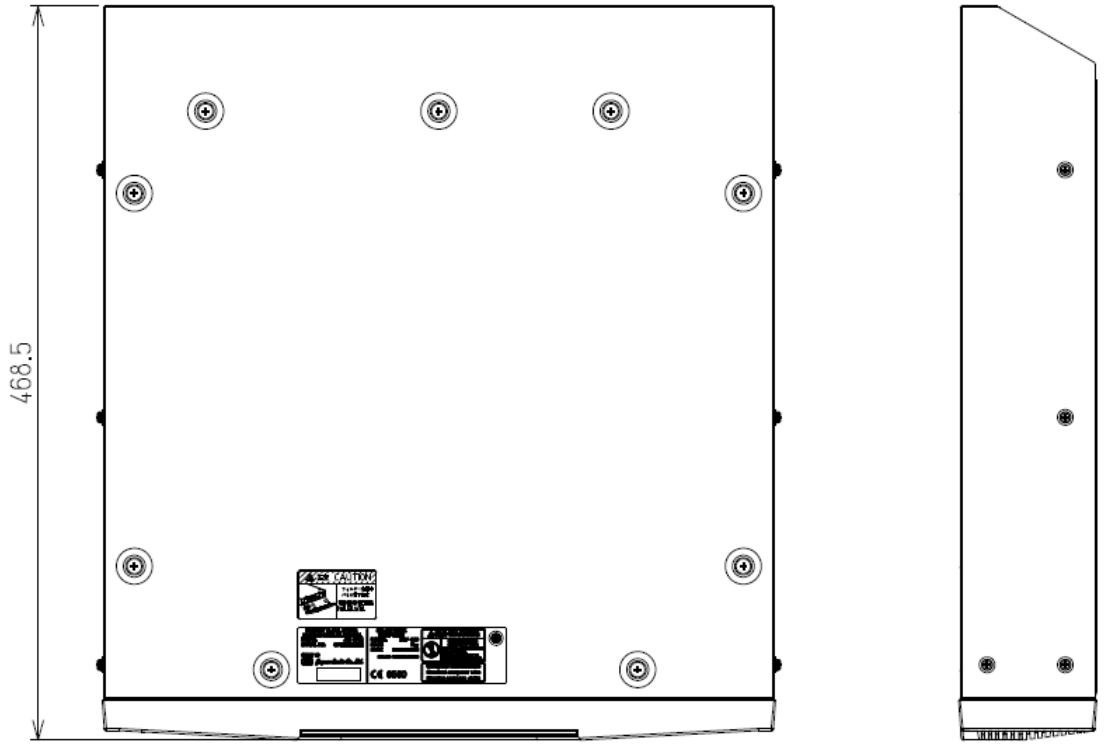
2.4.1 ADE (Above Deck Equipment) JUE-60KA [NTG-428KA]

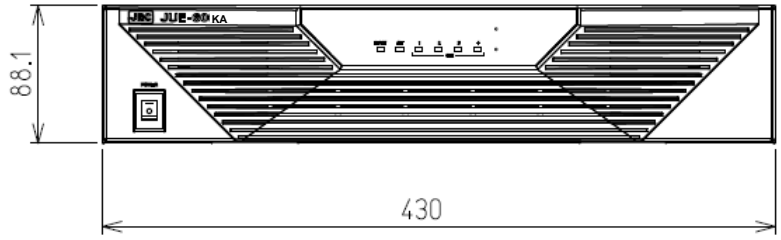


Unit: mm
Mas: approx.46kg

2.4.2 BDE (Below Deck Equipment) JUE-60KA [NTF-329KA]



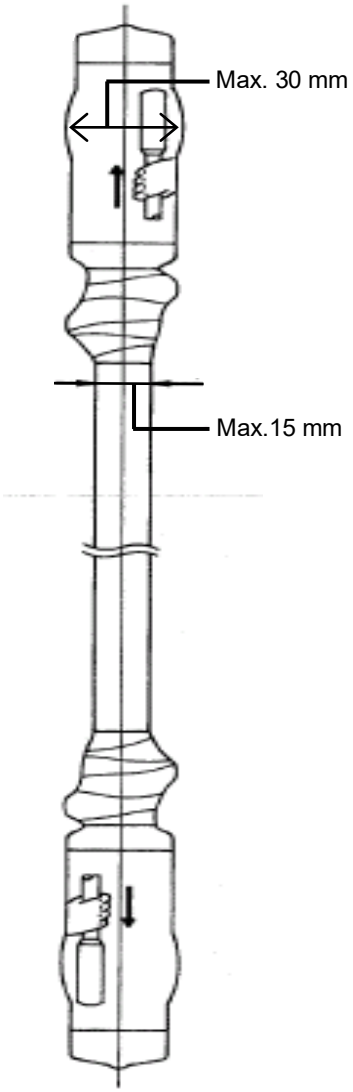




Unit: mm
Mass: approx .6.5 kg

2.5 Dimensional Drawing (Option)

2.5.1 Coaxial cable [CFQ-3922A35]



Type	Length	Connector Dia.	Cable Dia.	Mass	Minimum bending radius	Remarks
CFQ-3922A35	35 m±0.5 m	30 mm	15 mm	8.8 kg	100 mm	N connector

Concerning cable length option, please refer to 2.3.2.

Section 3 Components

This section describes the configuration of JUE-60KA and connected equipment.

3.1 Above Deck Equipment (ADE)

The radome covers the antenna equipment, which is composed of:

- Above deck unit with built in Antenna Interface Module (AIM)
- Antenna pedestal
- Block UP Converter (BUC)
- GPS antenna
- Low Noise Block (LNB)
- Rotary joint

The above deck equipment (ADE) is connected to the below deck equipment (BDE) with two coaxial cables. Control signals and power to the above deck equipment (ADE) are transmitted through the coaxial cable on the RX side.

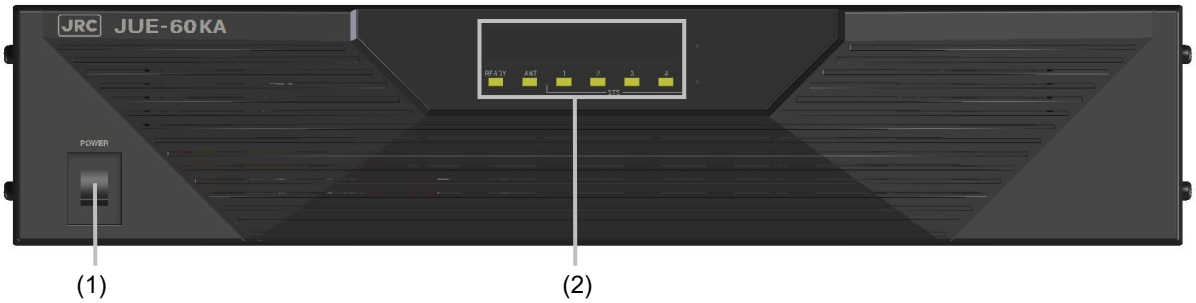
3.2 Below Deck Equipment (BDE)

3.2.1 Appearance

3.2.1.1 Front view

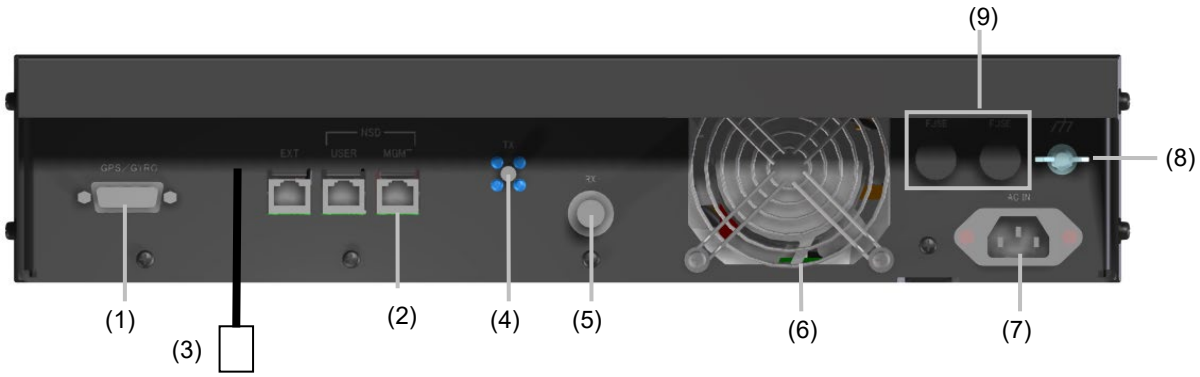
3.2.1.2 Rear view

3.2.2 Front view



No.	Name	Function outline
(1)	Power switch	Turns power on and off.
(2)	LED	Indicates the equipment status. The meanings and sequence of the LEDs are described in [Appendix G].

3.2.3 Rear view



No.	Name	Function outline	Supplement
(1)	GPS/GYRO connector	Connects GPS and GYRO	Maximum cable length: 1 km (complies with NMEA) Conversion cable for serial communication and power control is attached.
(2)	Modem connector	Connects VLAN Switching Hub.	Connector shape: RJ-45 Maximum cable length:100 m LAN Standard: 100Base-T
(3)	BUC I/O Connector	Connects X7 Modem BUC connecter	

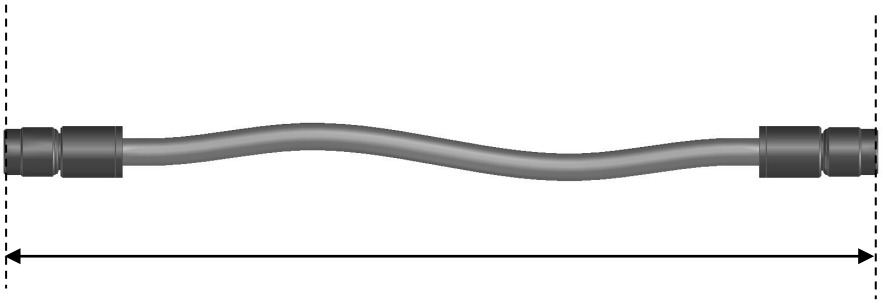
No.	Name	Function outline	Supplement
(4)	RX Modem connector	Used for the connection of a RX coaxial cable of X7 modem.	Connector shape: SMA connector Coaxial conversion cable is attached to connect with coaxial cable.
(5)	ADE- BDE (RX) connector	Used for the connection of a RX coaxial cable of ADE.	Connector shape: TNC connector (ADE: N connector) Coaxial conversion cable is attached to connect with coaxial cable.
(6)	Fan	Cools BDE.	The fan rotational speed fluctuates according to the temperature inside of the equipment.
(7)	AC power connector	Connects the cable that supplies power to BDE.	AC inlet 3P
(8)	Earth terminal screw	Used for grounding. The following effects are available. • Reduction of impact of lightning damage • Prevention of electrostatic discharge • Suppression of noise generated externally	
(9)	Fuse	Melts down when overcurrent is detected and shuts out the circuit. Replacement procedure: Loosen the folder head in the anti-clockwise direction by 90 degrees with a slotted screwdriver. When the folder is ejected, remove the folder. Replace the fuse to a new one and set it in the folder. Insert the folder and tighten it in the clockwise direction.	Rated current: 6 A Quantity: 2

3.3 ADE - BDE connection cable

This cable is used for connecting ADE and BDE.

Memo

This coaxial cable can be connected in either direction.



Notes

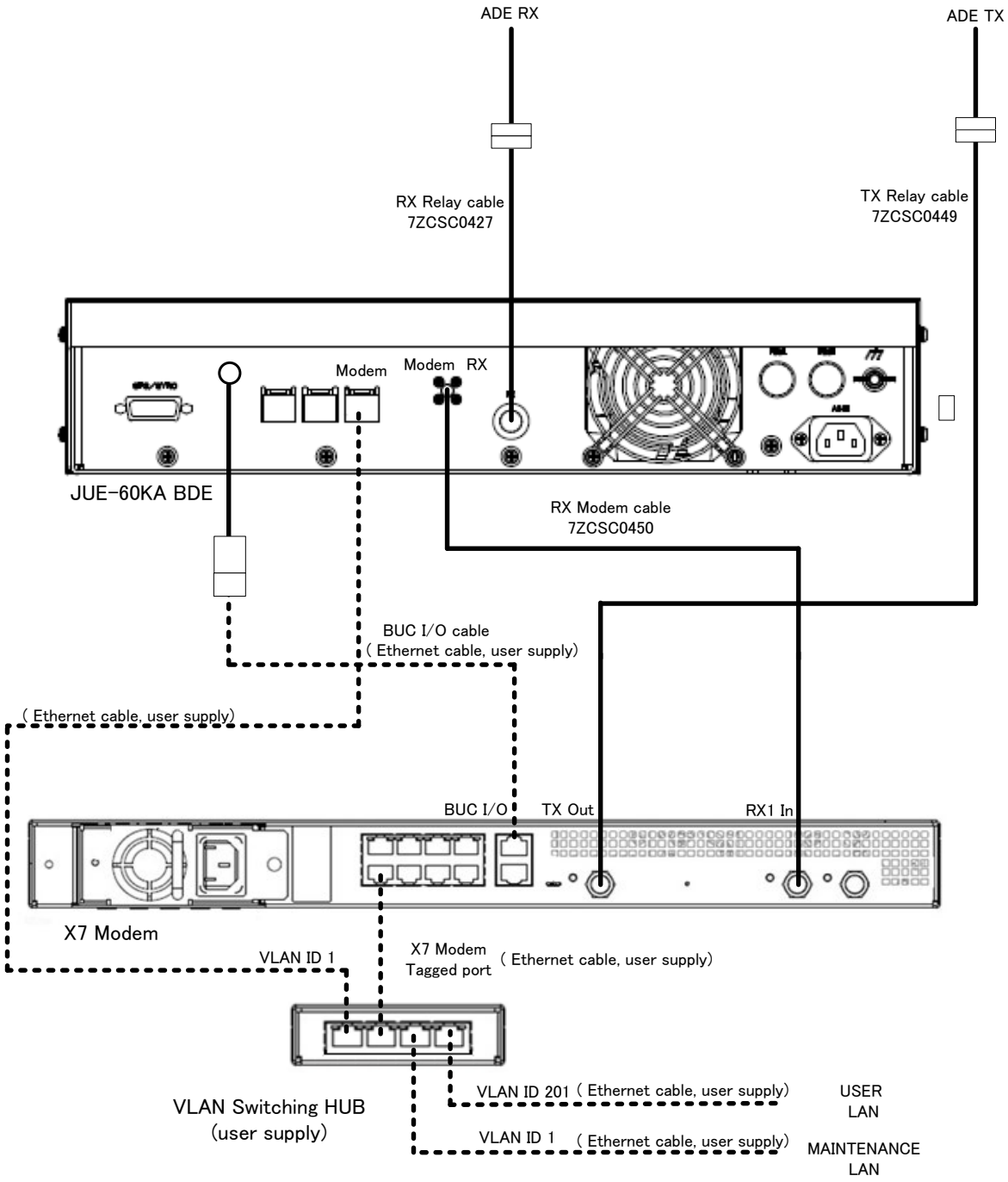
Two coaxial cables are used, one for transmitting and one for receiving.

The following optional cables are made available.

- CFQ-3922A3 (30 m)
- CFQ-3922A35 (35 m)
- CFQ-3923A4 (40 m)
- CFQ-3923A5 (50 m)
- CFQ-3923A6 (60 m)

3.4 Communication devices

3.4.1 Device connection example



The modem port of JUE-60KA connect to VLAN ID 1 of X7 Modem network. The VLAN ID 1 of X7 Modem can be assigned to the built-in network port in the X7 Modem setting or connected by separating the VLAN ID 1 network with an external VLAN switching hub via the tagged port of X7 Modem. A maintenance PC for software update or configuration is also connected to this network.

The user LAN for communication is similarly connected to VLAN ID 201 of the X7 Modem network. The IP address is assigned from X7 Modem by DHCP.

3.4.2 Operating environment

PC	OS	Microsoft Windows XP/Vista/7/8/10
	Interface	Ethernet

Section 4 Setup

This section describes the procedure for connecting peripheral devices and BDE, BOW correction value adjustments, and external input settings of GYRO and GPS.

4.1 Connecting devices and power on

4.1.1 Connecting devices and BDE

Connect the setup PC and Modem LAN with Ethernet cable.

> **Note**
> If Switching hub is connected to the Modem LAN, temporarily disconnect the connection.

JUE-60KA BDE Rear view

Setup PC

Set the IP address of the PC. Under the factory default settings, JUE-60KA is set as follows.

BDE IP address	192.168.1.2
ADE IP address	192.168.1.3
ADE/BDE subnet mask	255.255.255.0

Here, as an example, the IP address of PC is set as follows.

IP address	192.168.1.100
Subnet mask	255.255.255.0

4.1.2 BDE power on/off

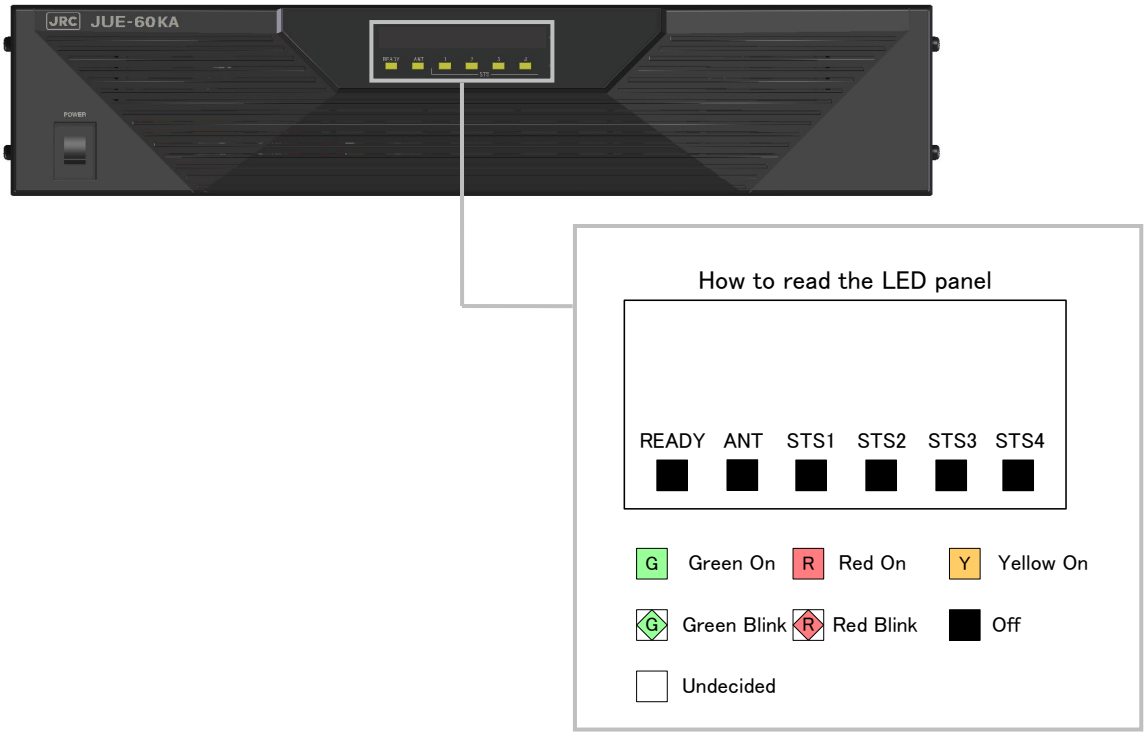
4.1.2.1 Power on

1 **Check the following items before turning on the power.**

- There are no obstructions between the antenna and the satellite.
- The power breaker is set to on.
- The coaxial cable from ADE is properly connected to the BDE.

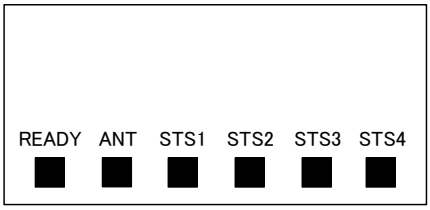
2 **Set the BDE power switch to on.**

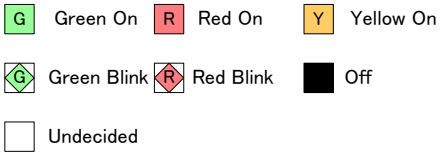
The LED indicators on the front side lights in the following sequence.



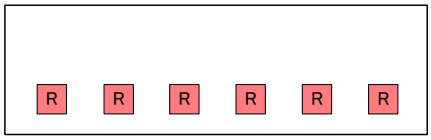
The shapes and precise colors of LED are different from the actual shapes and colors.

How to read the LED panel

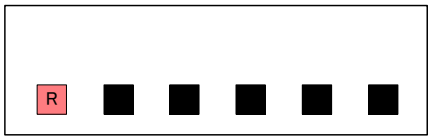




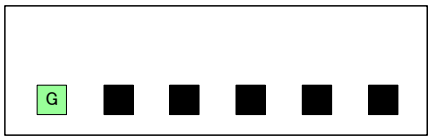
BDE power switch on



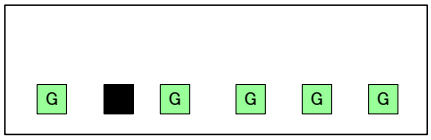
Starting boot loader



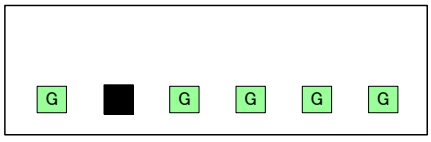
Starting OS



Completed OS start, starting core module (CM)



Completed CM start



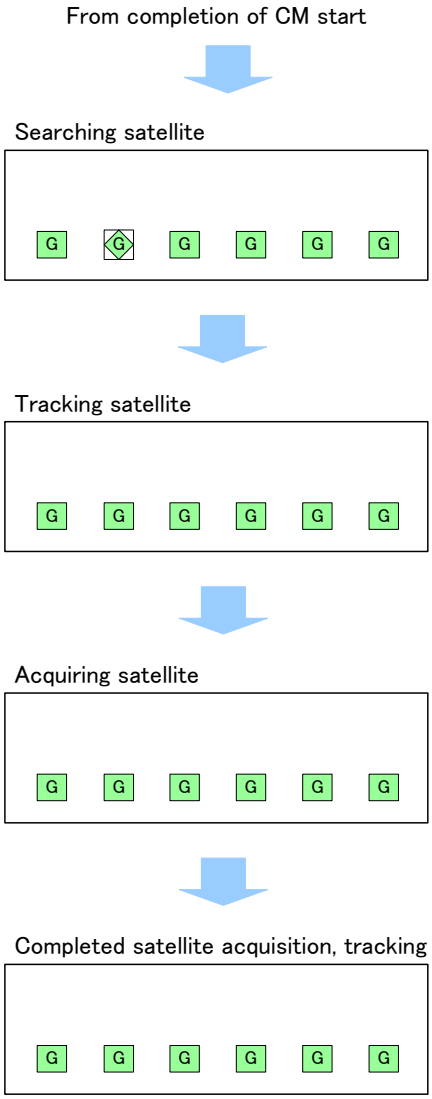
To searching satellite

Notes

- When the LED indication is different from any of the above, an error is assumed. For error indications and the meanings, refer to “Appendix F.1” and for error handling procedures, refer to “Appendix E”.
- Even if a large sound is emitted from ADE at power on, this does not mean a fault.

3 The automatic satellite search (acquisition) function operates.

- JUE-60KA calculates the satellite position from the current position information that was measured by GPS, automatically directs the antenna to the satellite direction, and acquires the satellite.
- After acquisition, the antenna direction angle is automatically controlled so that the received signal strength becomes the maximum.
- The LED indication at the front switches in the following sequence.

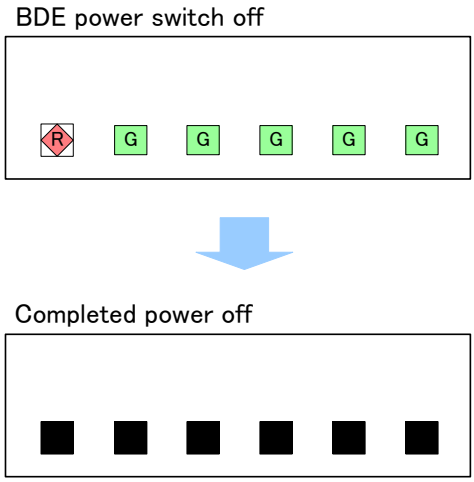


Notes

- When the LED indication is different from any of the above, an error is assumed. For error indications and the meanings, refer to “F.1” and for error handling procedures, refer to “Appendix E”.
- NET LED may not be lit in green for 10 minutes after power is turned on. This is due to initialization, satellite search, and nework registration and does not mean a fault. It may take 20 to 30 minutes until NET LED is lit in green depending on the status of the wave propagation quality.
  When the statellite search function fails, please consult with your distributor or JRC sales office.

4.1.2.2 Power off

Turn off the power switch.
READY LED starts blinking in red and power disconnection processing is executed during this time. At completion of power disconnection processing, all the LED indicators go off and the power is turned off.



⚠CAUTION
Do not unplug the power cable while power disconnection is in progress.

4.2 Setting external input of BOW correction value, GYRO, and GPS

This section describes the external input setting procedures of BOW correction value, GYRO, and GPS.

The BOW correction can offset the angle error from the bow. The FWD mark on the ADE should be in the range of ±1.5° to ship's forward. If the ADE must be installed at an angle beyond this range, "FWD from bow" must be set.

Carry out this setting by selecting [Settings] – [Antenna] menu of the Web interface.

For the Web interface use procedure, refer to “5.3”.

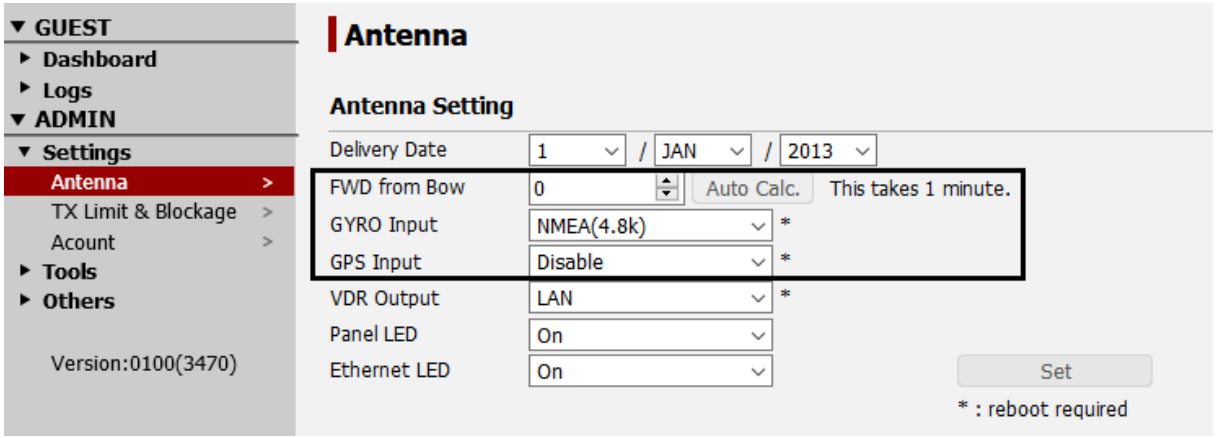
Notes

These settings are enabled by logging into the system under the ADMIN user.

The ADMIN user name under the factory default is “**ADMIN**” and the password is “**000001**”.

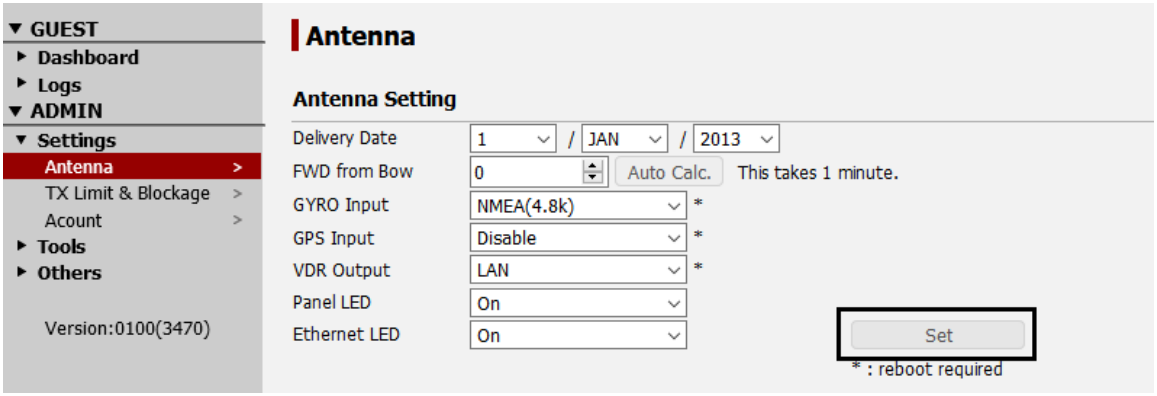
1 **Select [Settings] - [Antenna] menu.**

2 **Set the following items.**



Item	Contents
FWD from Bow	Set a BOW correction value within the range of -180.0 to +180.0. The FWD mark on the ADE should be in the range of ±1.5° to ship's forward. If the ADE must be installed at an angle beyond this range, it can be installed at any angle by setting this angle. First, enter the approximate offset angle and click "set" and power off the Antenna and power on. Next, when the ADE can track the satellite stably, the [Auto Calc.] button is clicked on, the highly accurate BOW correction value is calculated automatically and renews an accurate value. **Note** To apply the value that is calculated automatically, it is also necessary to click on the [Set] button. **Memo** It takes about 1 minute for automatic calculation.
GYRO Input	Select the external GYRO input from the drop-down list. Disable: Not used. NMEA(4.8 kbps): Use serial (4.8 kbps) input. NMEA(38.4 kbps): Use serial (38.4 kbps) input. LAN: Use LAN input. **Note** Supported NMEA sentences: ・VHW (Water speed and Heading) ・HDT (Heading True) ・THS (True Heading and Status) To reflect the setting change, the equipment must be restarted.
GPS Input	Select the external GPS input to be used from thedrop-down list. Disable: Not used. NMEA(4.8 kbps): Use serial (4.8 kbps) input. NMEA(38.4 kbps): Use serial (38.4 kbps)input. LAN: Use LAN input.

3 Save/apply the settings by clicking on [Set] button after the settings.



4 Restart the equipment to reflect the setting change.

Section 5 Web Interface

This section describes the procedure to connect PC and JUE-60KA, login to JUE-60KA from the Web browser, change setting and check status.
The following items are mainly described.

Item	Outline
5.1 Connection between PC and JUE-60KA	Describes the network setting of PC and cable connection between PC and JUE-60KA ports.
5.2 JUE-60KA login and logout	Describes the procedure for accessing JUE-60KA through the Web browser.
5.3 Overview of the Web interface	Describes the overview of the Web interface.
5.4 Menus available to all the users	Describes the following menus that are available to all the users (GUEST and ADMIN). • 5.4.1 Checking the JUE-60KA status ([Dashboard] - [Status] menu) • 5.4.2 Checking and saving an Alarmpack ([Logs] - [Alarmpack]) • 5.4.3 Checking and saving event logs ([Logs] - [Event Log]) • 5.4.4 Checking and saving statistics logs of the antenna control section ([Logs] - [AC Monitor]) • 5.4.5 Checking and saving system logs ([Logs] - [Syslog])
5.5 Menus available to ADMIN users	Describes the following menus that are available to ADMIN users only. • 5.5.1 Setting JUE-60KA basic data ([Settings] - [Antenna]) • 5.5.2 Setting transmission forbidden area and blocking area ([Settings] - [Tx Limit & Blockage]) • 5.5.3 Changing an ADMIN user password ([Settings] - [Acount]) • 5.5.4 Upgrading the JUE-60KA software ([Tools] - [Software Upgrade]) • 5.5.5 Exporting/importing settings ([Tools] - [Export / Import]) • 5.5.6 Using the diagnostic function ([Tools] - [Diagnostic]) • 5.5.7 Rebooting the system（[Tools]－[Reboot]） • 5.5.8 Deleting alarmpacks/resetting to the factory default state ([Others] - [Factory Default]) • 5.5.9 Setting JRC LAN ([Others] - [JRC LAN])

Note

A required screen may not be able to be displayed depending on the JUE-60KA utilization status. In this case, click on the item again.

5.1 Connection between PC and JUE-60KA

5.1.1 Setting the PC network

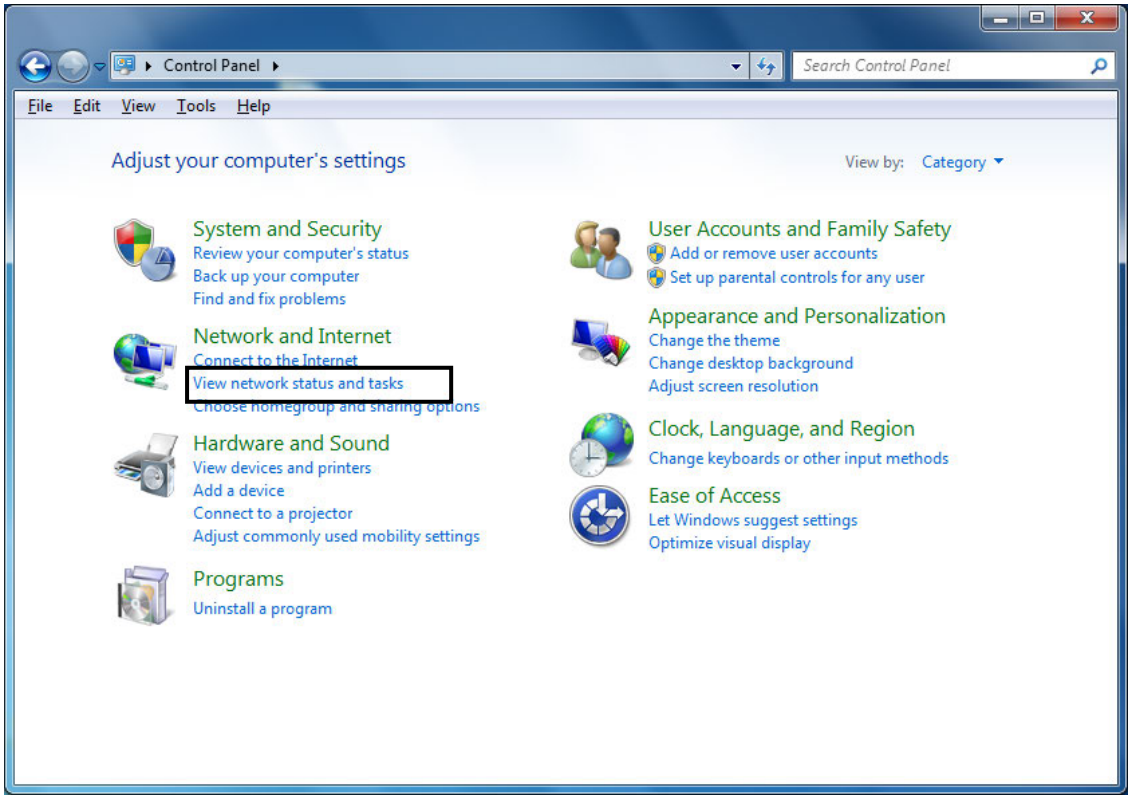
Set the network in PC to connect PC with JUE-60KA.
In this section, it is assumed that Microsoft Windows 7 is used and JUE-60KA is started with the initial settings.

Note

The setting screen may vary depending on the operating environment.

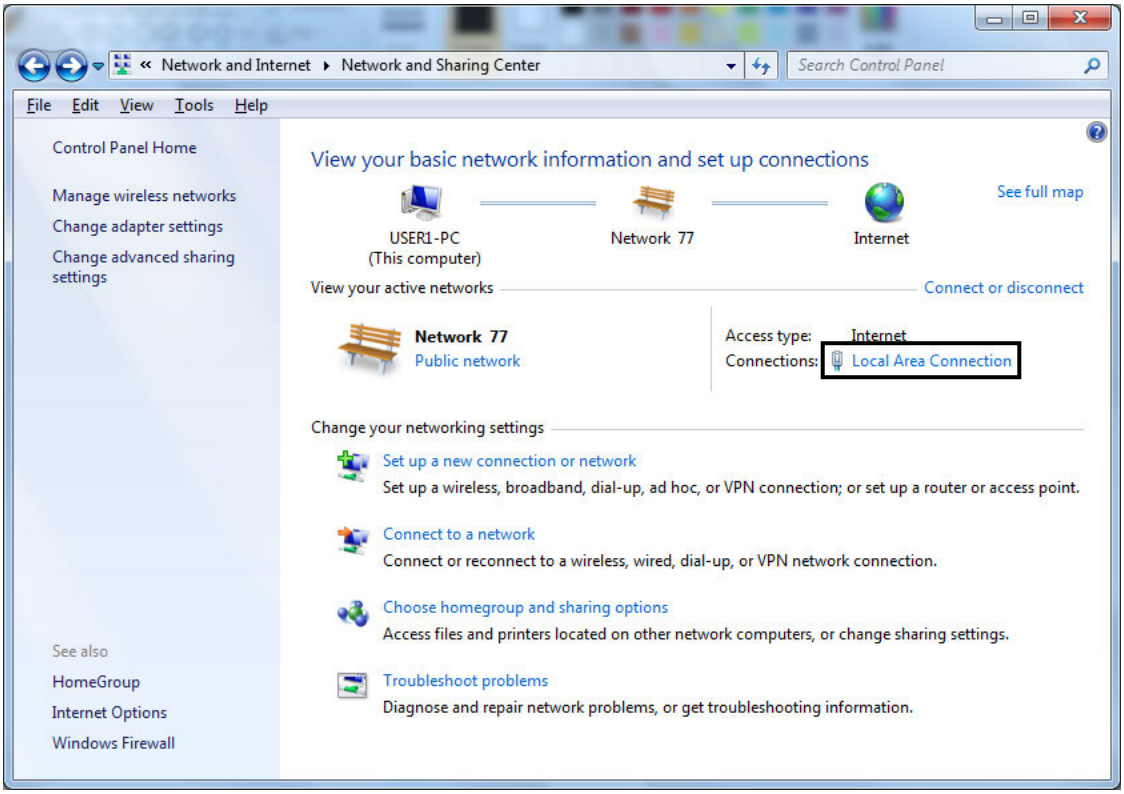
1 **Open the [Start] menu on the desktop and click on the [Control Panel].**
The “Control Panel” window is displayed.

2 **Click on [View network status and tasks].**



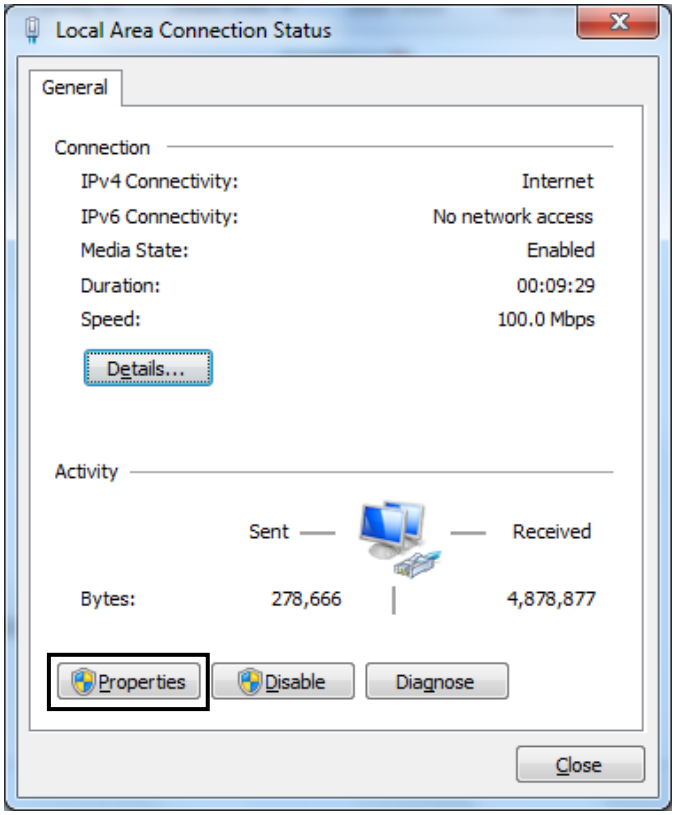
The “Network and Shared Center” window is displayed.

3 **Click on [Local Area Connection].**



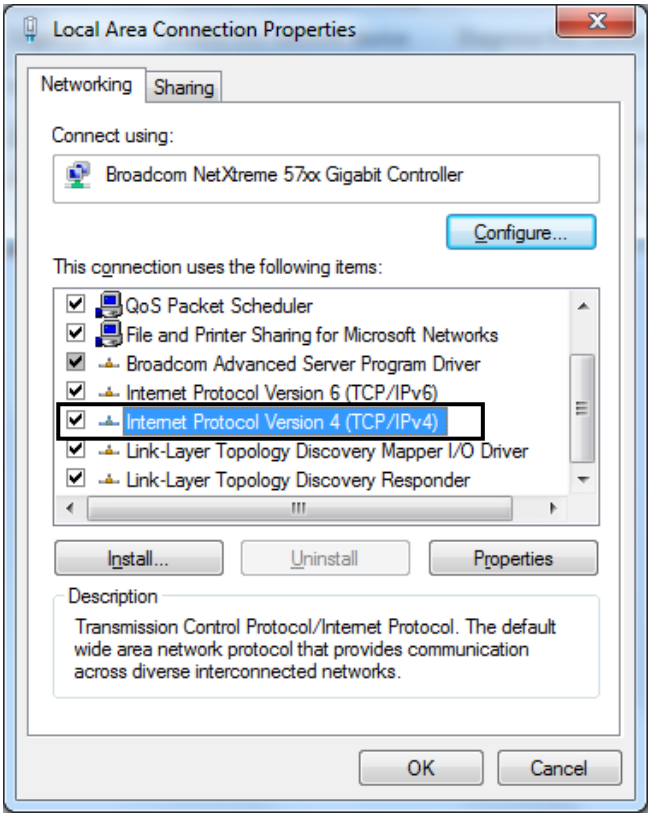
The “Local area connection status” dialog box is displayed.

4 **Click on the [Properties] button.**



The “Properties of local area connection” dialog box is displayed.

5 **Select [Internet Protocol Version 4 (TCP/IPv4)] of the [Networking] tab and click on the [Properties] button.**



The [Properties of Internet protocol (TCP/IP)] dialog box is displayed.

6 **Select [Use next IP address] to set the IP address manually.**

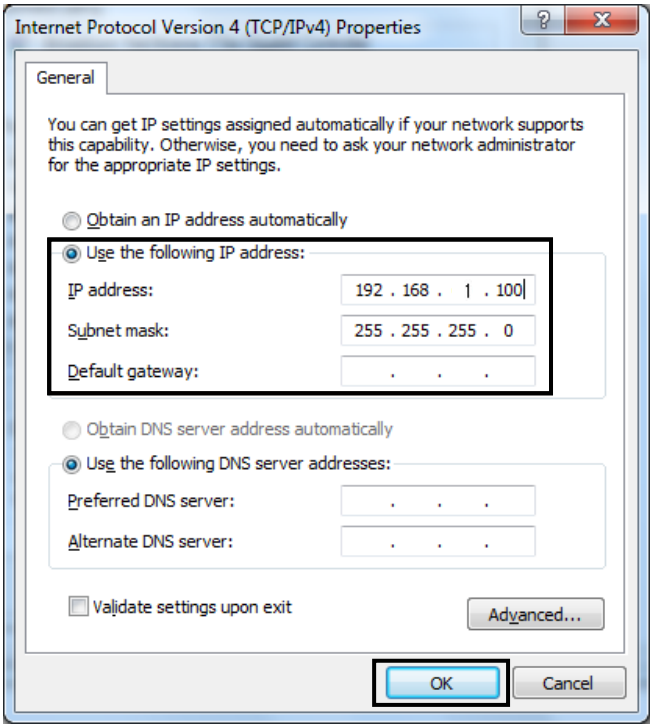
7 **Set the IP address of PC. Under the factory default settings, JUE-60KA is set as follows.**

BDE IP address	192.168.1.2
ADE IP address	192.168.1.3
ADE/BDE subnet mask	255.255.255.0

Here, as an example, the IP address of PC is set as follows.

IP address	192.168.1.100
Subnet mask	255.255.255.0

8 **Click on the [OK] button.**



Note

In this description, the factory default settings are used.

The [Properties of local area connection] dialog box is displayed.

9 **Click on the [Close] button.**

5.1.2 Connection between PC and BDE

Note

If Swithing hub is connected to the Modem LAN, temporarily disconnect the connection.

Setup PC

Memo

JUE-60KA automatically recognizes the Ethernet cable type (cross or straight).

5.2 JUE-60KA login and logout

5.2.1 Accessing JUE-60KA with the Web browser

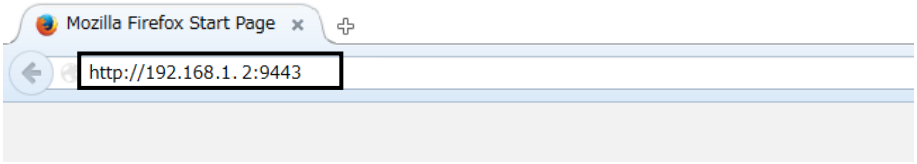
Display the Web interface with the Web browser of PC and access JUE-60KA.

Notes

- JUE-60KA formally supports Mozilla Firefox 23 and Google Chrome browser. Firefox upper-level versions and compatible browsers are also supported.
- Cookie must be enabled with the Web browser.

1 **Star the Web browser.**

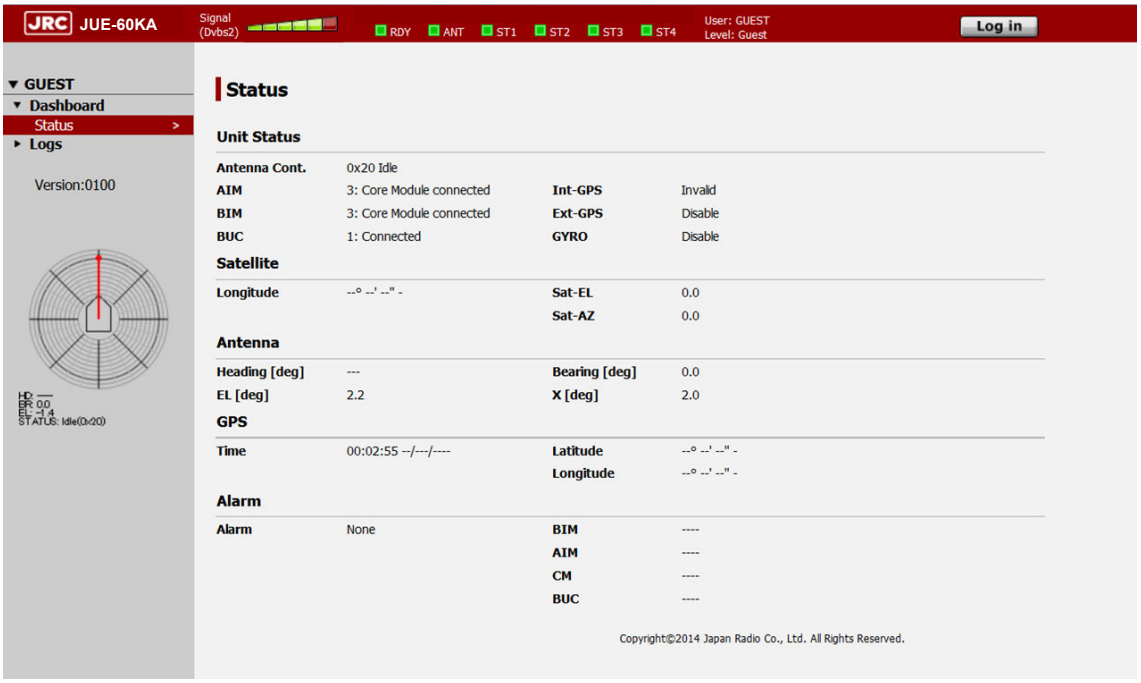
2 **Enter http://192.168.1.2:9443/ in the URL box and press the [Enter] key on the keyboard.**



Note

PC must be in the same network as BDE. Make sure that the preparation described in “5.1.1” has been performed in advance.

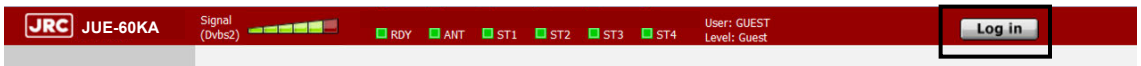
The Web interface screen is displayed.



5.2.2 Login

After accessing the Web interface, the screen displays the functions that are available to GUEST users.
GUEST users are only allowed to check the antenna status.
ADMIN users are allowed to set antenna settings in addition to the authorization available to GUEST users.
This section describes the procedure for logging into JUE-60KA from the Web interface screen as an ADMIN user.

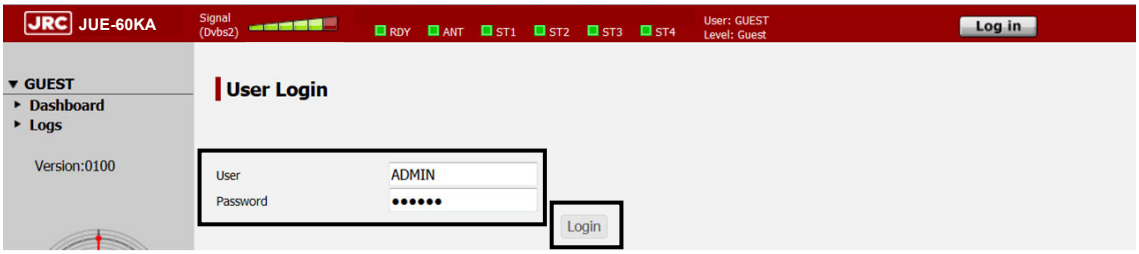
1 Click on the [Log in] button at the top right corner of the screen.



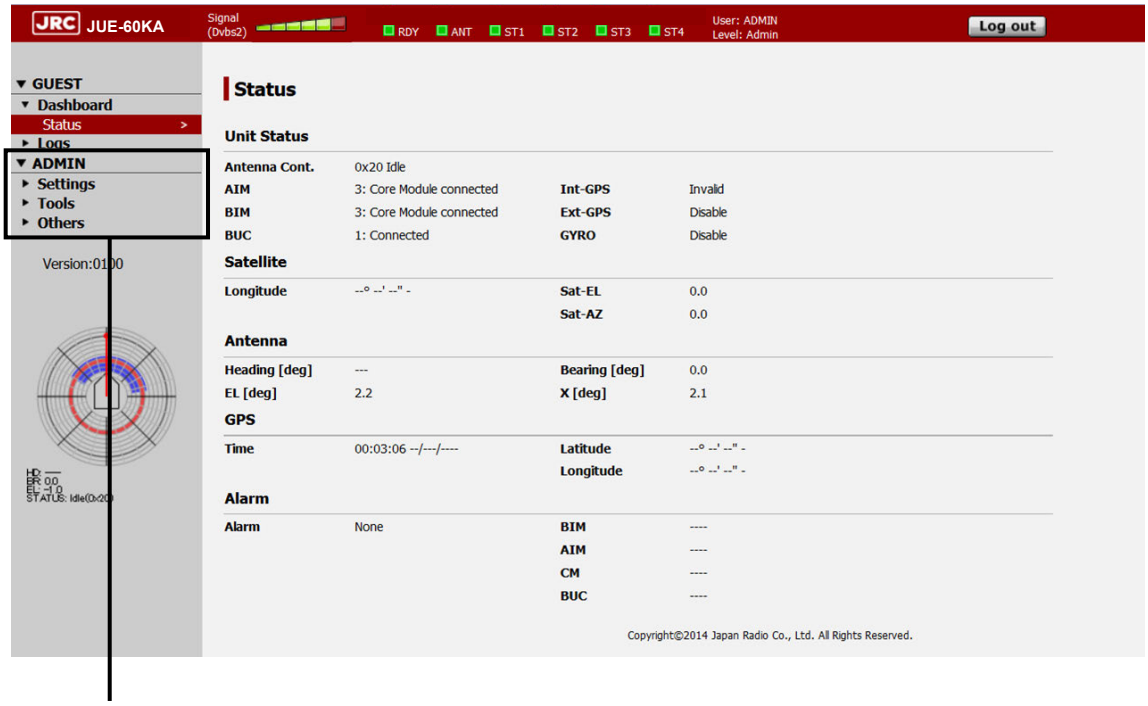
The “User Login” screen is displayed.

2 Enter an ADMIN user name and a password and click on the [Log in] button.

Under the factory default setting, “ADMIN” is set as the ADMIN user name and “000001” as the password.

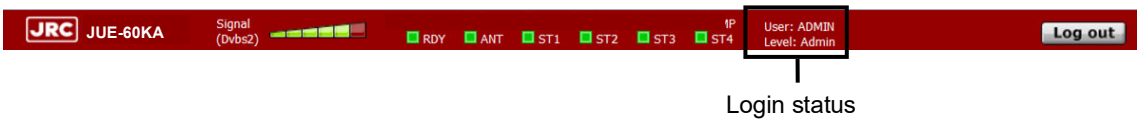


The ADMIN user screen is displayed.



ADMIN user dedicated menu

The login status is displayed on the right side of the top area.



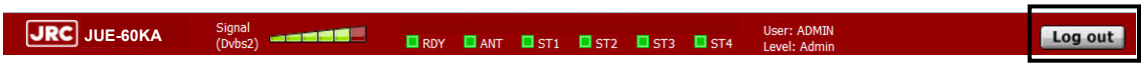
Login status

Memo

While the system is logged in under the ADMIN user, the [Login] button is changed to the [Log out] button.

5.2.3 Logout

Click on the [Log out] button at the top right corner of the screen.



5.3 Overview of the Web interface

5.3.1 Screen structure of the Web interface

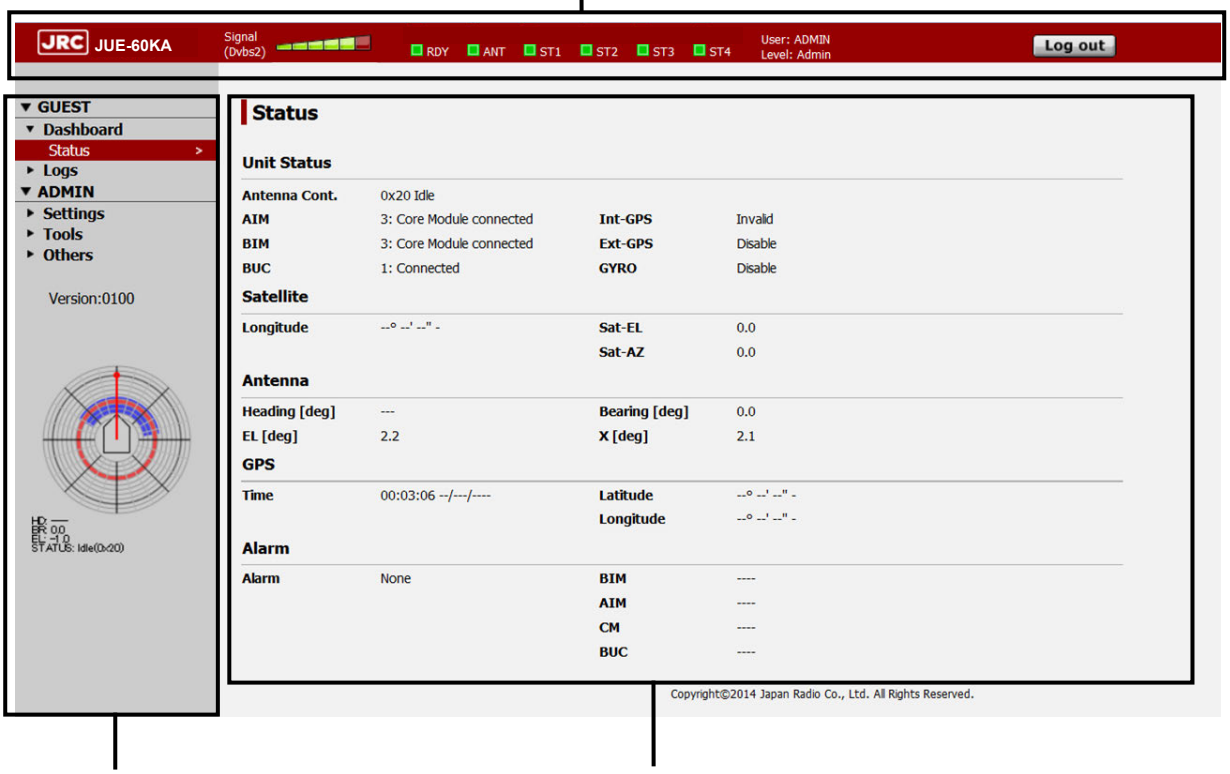
This section describes the screen structure of the Web interface.

Memo

For the subsequent explanation, the ADMIN user screen is used.

Top area

Refer to “5.3.1.1”.



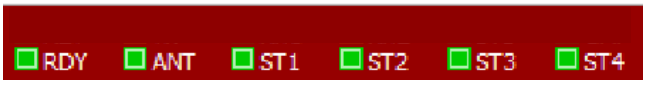
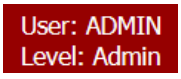
Naviation area

Refer to “5.3.1.2”.

Operation area

Refer to “5.3.1.3”.

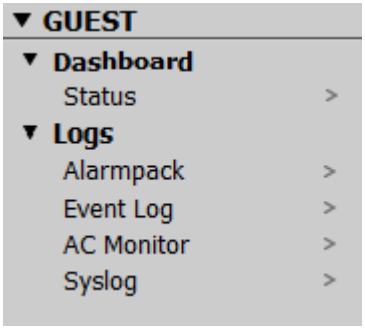
5.3.1.1 Top area

Item	Description
	Reception level indicator The reception levels are displayed on the 6-level bar. Green normal state, white means the transmission inhibition state. For blocking, refer to “5.5.2”. The signal type is displayed on the left side of the bar. (Dvbs2): Receiving spot beam (None): Indeterminate
	BDE LED display Displays communication and equipment statuses. For the details, refer to “Appendix G”.
	Displays login user information. The current login user name is displayed in the upper level and the user authorization level is displayed in the lower level.
	[Log in] button Click on this button when logging into the Antenna as an ADMIN user. For the details, refer to “5.2.2”.
	[Log out] button Click on this button when logging out from the ADMIN user. For the details, refer to “5.2.3”.

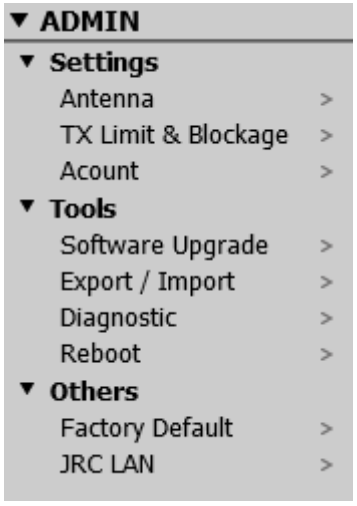
5.3.1.2 Navigation area

The functions that can be executed by users are displayed in menu format.

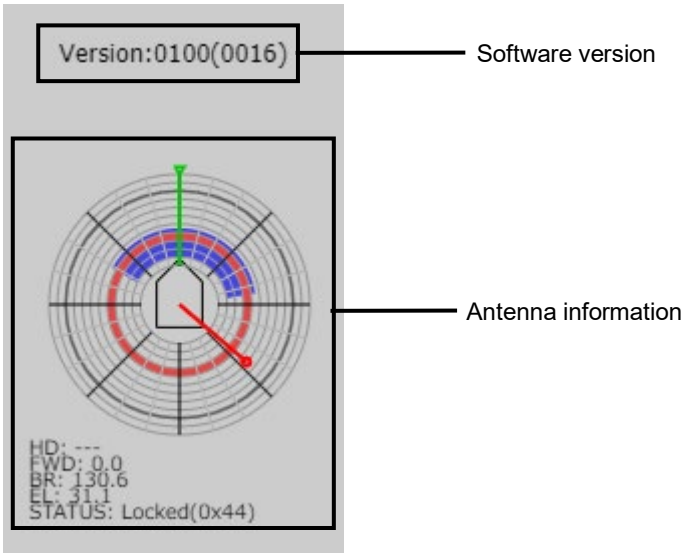
Menu that can be executed by all the users (GUEST/ADMIN)



Menu that can be executed by ADMIN users only



When a menu is selected, the equipment information and setting items related to the menu are displayed in the operation area.
The version number of the Web interface and antenna information (including blocking information) are displayed below the menu.



Memo
The menu that is displayed in the navigation area varies depending on the login status.

5.3.1.3 Operation area

The equipment information and setting items of the menu that was selected in the navigation area are displayed.

5.3.2 Saving logs (common operation)

Logs can be saved in a file under the Web interface.
Logs include alarmpack log, event log, antenna control section log, and system log, and all the logs are saved in a same file.
Logs can be saved from the following menus.

Menu	Related section
[Logs] - [Alarmpack]	5.4.2.1
[Logs] - [Event Log]	5.4.3
[Logs] - [AC Monitor]	5.4.4
[Logs] - [Syslog]	5.4.5

For logs, click on the [File] button of the operation area in the menu that is shown above. Logs can be saved on these menus by the common procedure. In this section, [Logs] - [Alarmpack] is used as the example.

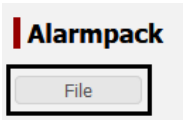
Notes

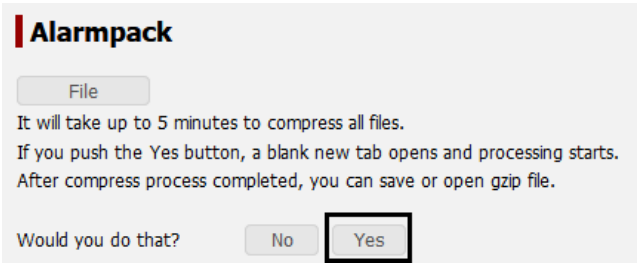
- It takes about 1 minute to save a log file.
- For logs of the antenna control section, while up to 100 items can be displayed on the screen, up to 7,200 events can be saved.

Memo

For system logs only, the log to be saved can be selected. Refer to “5.4.5.2” for the system log saving pocedure.

1 Click on the [File] and [Yes] button.





Example: Alarmpack log

A file processing dialog is displayed.

2 Specify a file save destination and click on the [OK] button.

The file is saved.

5.4 Menus available to all the users

5.4.1 Checking the JUE-60KA status ([Dashboard] - [Status] menu)

Display procedure

Select [Dashboard] - [Status] in the navigation area.

Function outline

This function checks the statuses of JUE-60KA, satellite, antenna, GPS, and alarm.

Screen example

Unit Status

Displays the status of JUE-60KA.

No.	Item	Description
(1)	Antenna Cont.	Status of the antenna control section 0x00 Power ON: Checking the hardware 0x01 Boot Idle: Checking the program 0x1* Initializing: Initializing 0x2* Idle: Waiting for GPS signals 0x3* Searching: Searching satellite 0x4* Locked/Tracking: Satellite acquisition/tracking state 0x6* Miss-point: Detection of deterioration of reception level 0xa* Offbeam: Calibrating the cable 0x99 Error: Error status (* = an alphanumeric character)
(2)	AIM	ADE status 0:Under initialization: Initializing 1:AIM-BIM connected: Completed the connection of AIM and BIM. 2:Antenna control connected: Completed the connection of AIM and antenna control section. 3:Core Module connected: Completed the connection with the core module. 4:Processing: Processing (or power reduction mode) Disconnected: Not connected
(3)	BIM	Displays the BDE status 0:Under initialization: Initializing 1:AIM-BIM connected: Completed the connection of AIM and BIM. 2:Antenna control connected: Completed the connection of BIM and the antenna control section. 3:Core Module connected: Completed the connection with the core module. 4:Processing: Processing (or power reduction mode) Disconnected: Not connected
(4)	BUC	BUC status 0:Initializing: Not connected 1:Connected: Connected 2:Disconnected: Disconnected
(5)	Int-GPS	Displays the status of the built-in GPS. Disconnected: Not connected Invalid: Not received Valid (GGA) : Received GGA (Global Positioning System Fixed Data). Valid (GGA, ZDA) : Received GGA and ZDA (Time & Date). Valid (GGA, RMC) : Received GGA and RMC (Recommended Minimum Specific GNSS Data). Valid (GGA, ZDA, RMC): Received GGA, ZDA, and RMC.

No.	Item	Description
(6)	Ext-GPS	Displays the status of the external GPS Disable: Disabled by antenna setting Disconnected: Not connected Invalid: Not received Valid (GGA) : Received GGA (Global Positioning System Fixed Data). Valid (GGA, ZDA) : Received GGA and ZDA (Time & Date). Valid (GGA, RMC) : Received GGA and RMC (Recommended Minimum Specific GNSS Data). Valid (GGA, ZDA, RMC): Received GGA, ZDA, and RMC.
(7)	GYRO	Displays the status of the external GYRO. Disable: Disabled by antenna setting Disconnected: Not received Received heading: Received heading information.

Satellite

Displays the satellite information.

No.	Item	Description
(8)	Longitude	Displays the satellite longitude within the range from -180.0 to 180.0. At non-acquisition, “0.0” is displayed.
(9)	Sat-EL	Displays the angle of elevation of the satellite within the range from 0.0 to 90.0. At non-acquisition, “0.0” is displayed.
(10)	Sat-AZ	Displays the satellite azimuth within the range from 0.0 to 359.9. At non-acquisition, “0.0” is displayed.

Antenna

Displays the information relating to the antenna orientation.

No.	Item	Description
(11)	Heading [deg]	Displays the heading angle within the range from 0.0 to 359.9. At non-acquisition, “---“ is displayed.
(12)	EL [deg]	Displays the angle of elevation of the antenna within the range from -20.0 to 120.0.
(13)	Bearing [deg]	Displays the bearing angle within the range from 0.0 to 359.9.
(14)	X [deg]	Displays the X axial angle within the range from -30.0 to 30.0.

GPS

Displays GPS information.

No.	Item	Description
(15)	Time	Displays the GPS time. At non acquisition, the elapsed time since the startup of the equipment is displayed.
(16)	Latitude	Displays the latitude of GPS with “degrees/minutes/seconds + NS”. At non acquisition, ---° ---‘—“ –“ is displayed.
(17)	Longitude	Displays the longitude of GPS with “degrees/minutes/seconds + NS”. At non acquisition, ---° ---‘—“ –“ is displayed.

Alarm

Displays the alarm detection status.

For the alarm details, refer to the alarm table of “Appendix E4”.

No.	Item	Description
(18)	Alarm	Displays the unit name that alarm is currently being issued. Unit name: [AIM], [BIM], [CM], and [BUC] When no alarm is issued, None is displayed.
(19)	BIM	Displays the details of the BIM alarm that is currently being issued. When no alarm is issued, “---“ is displayed.
(20)	AIM	Displays the details of the AIM alarm that is currently being issued. When no alarm is issued, “---“ is displayed.
(21)	CM	Displays the details of the CM alarm that is currently being issued. When no alarm is issued, “---“ is displayed.
(22)	BUC	Displays the details of the BUC alarm that is currently being issued. When no alarm is issued, “---“ is displayed.

5.4.2 Checking and saving an Alarmpack ([Logs] - [Alarmpack])

Display procedure

Select [Logs] - [Alarmpack] in the navigation area.

Function outline

This function enables the checking of equipment-specific information, current equipment status (Current), past equipment startup status, and alarm fluctuation history (up to 50 items).
Alarm information can be saved in a file (refer to “5.3.2”.)

Notes

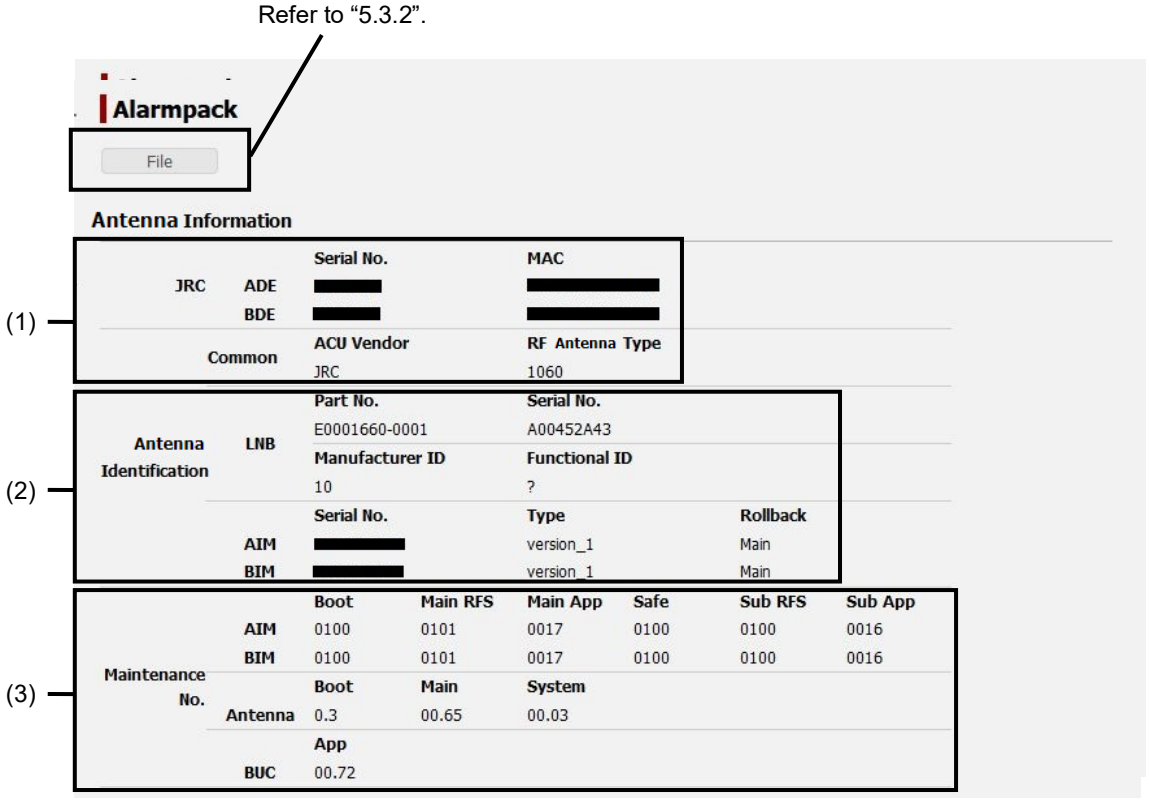
The specification for recording logs in the alarmpack of JUE-60KA is different from other models in the following points.

1. Records logs without alarm in the alarmpack since the equipment status is recorded immediately after the startup of the equipment.
2. Records the alarmpack even if alarms are cleared since changes of alarm occurrence and clearance are recorded.

Screen example

Antenna Information

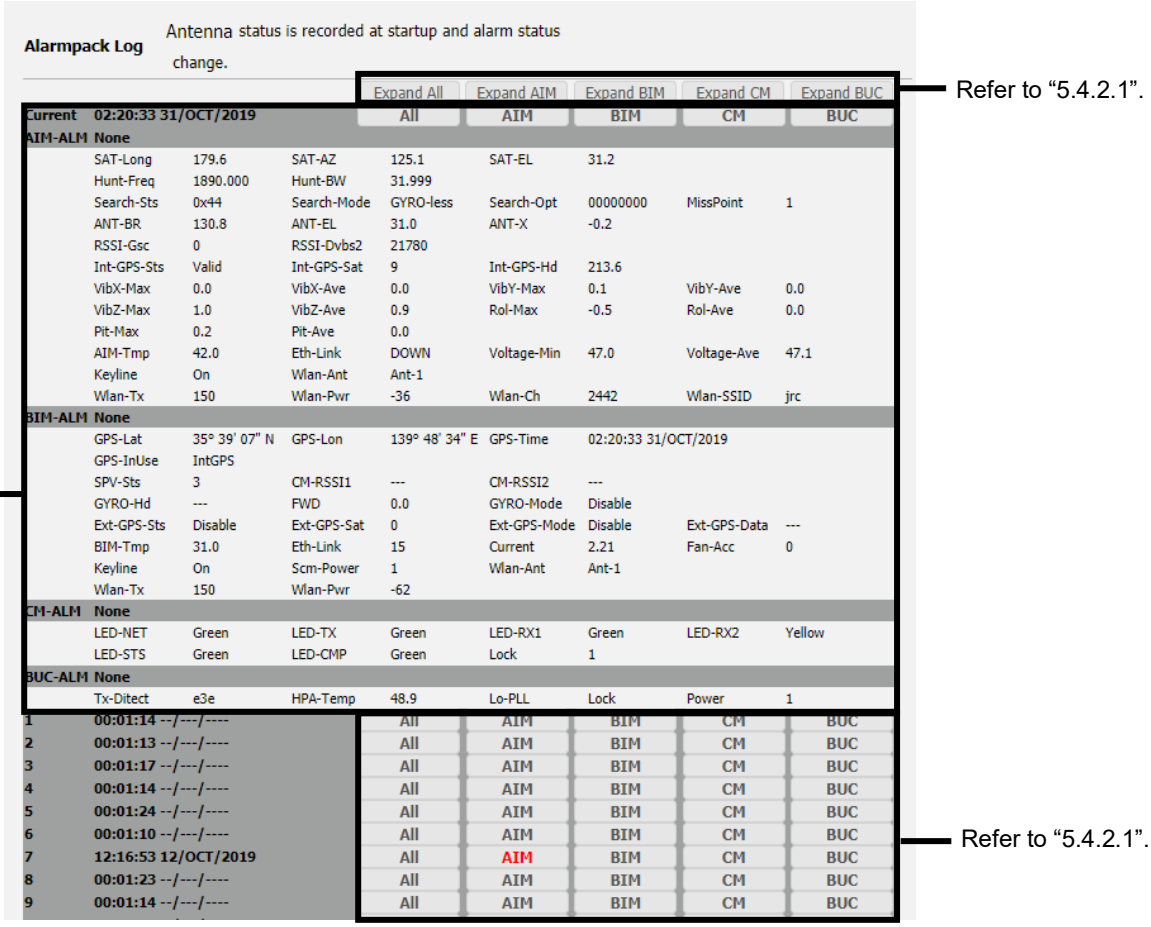
Equipment-specific information is displayed.



No.	Item	Description
(1)	JRC	Displays the JRC manufacturing number (7 digits) and the MAC address of each of ADE and BDE.
(2)	Antenna Identification	Displays the hardware specific information of LNB, AIM, and BIM.
(3)	Maintenance No.	AIM/BIM: Displays the following information for each of AIM and BIM. Boot: Boot maintenance number Main RFS: Main RFS number Main App: Main application number Safe: Safe mode maintenance number Sub RFS: Sub RFS number Sub App: Sub application number Antenna: Displays the following antenna information. Boot: Boot maintenance number Main: Main antenna number System: System number BUC: Displays the following BUC information. App: Application number

Alarmpack Log section

This section displays the history at equipment startup and alarm occurrence/clearance. The top of the list indicates the current equipment status (Current) and the history of up to the past 50 items is displayed. Alarms are classified by unit (AIM, BIM, CM, and BUC). The unit name from which an alarm is issued is displayed in red. The unit name from which no alarm is issued is displayed in black. The history under which all the units are displayed in black indicates that the equipment has started or all alarms have been resolved.



No.	Item	Description
(4)	Alarm list	Current: Displays the current time and alarm information by unit (AIM, BIM, CM, and BUC). 1 to 50 (maximum): Displays the information on past alarms. For the details of the alarm information by unit, refer to the following table.

AIM

SAT-Long Longitude of the satellite	SAT-AZ Azimuth of the satellite	SAT-EL Angle of elevation of the satellite	
Hunt-Freq Hunt frequency	Hunt-BW Hunt bandwidth		
Search-Sts Antenna control status	Search-Mode Satellite search mode	Search-Opt Search options	MissPoint Miss point information
ANT-BR Antenna bearing	ANT-EL Angle of elevation of the antenna	ANT-X Antenna axial angle	
RSSI-Gsc RSSI of GSC	RSSI-Dvbs2 RSSI of DVBS2		
Int-GPS-Sts Internal GPS reception status	Int-GPS-Sat GPS observation mode	Int-GPS-Hd GPS heading	
VibX-Max Maximum vibration value of X axis	VibX-Ave Average vibration value of X axis	VibY-Max Maximum vibration value of Y axis	VibY-Ave Average vibration value of Y axis
VibZ-Max Maximum vibration value of Z axis	VibZ-Ave Average vibration value of Z axis	Rol-Max Maximum pitch in the rolling direction	Rol-Ave Average pitch in the rolling direction
Pit-Max Maximum pitch in the pitching direction	Pit-Ave Average pitch in the pitching direction		
AIM-Tmp AIM substrate temperature	Eth-Link Ethernet port status	Voltage-Min Minimum voltage of AIM	Voltage-Ave Average voltage of AIM
Keyline Keyline information	Wlan-Ant No. of wireless LAN antennas		
Wlan-Tx Wireless LAN TX	Wlan-Pwr Wireless LAN transmission power	Wlan-Ch Wireless LAN communication channel	Wlan-SSID Wireless LAN SSID

BIM

GPS-Lat Latitude of own ship	GPS-Lon Longitude of own ship	GPS-Time UTC time	
GPS-InUse GPS in use			
SPV-Sts SPV status	CM-RSSI1 RSS1 of receiver 2	CM-RSSI2 RSS2 of receiver 2	
GYRO-Hd Ship's heading	BOW BOW correction value	GYRO-Mode GYRO input setting	
Ext-GPS-Sts External GPS reception status	Ext-GPS-Sat No. of satellites that receive by external GPS	Ext-GPS-Mode External GPS input setting	Ext-GPS-Data External GPS reception sentence
BIM-Tmp BIM substrate temperature	Eth-Link Ethernet port status	Current Current value	Fan-Acc Accumulated FAN operation time
Keyline Keyline information	Scm-Power Power supply to SCM	Wlan-Ant No. of wireless LAN antennas	
Wlan-Tx Wireless LAN TX	Wlan-Pwr Wireless LAN transmission power		

CM

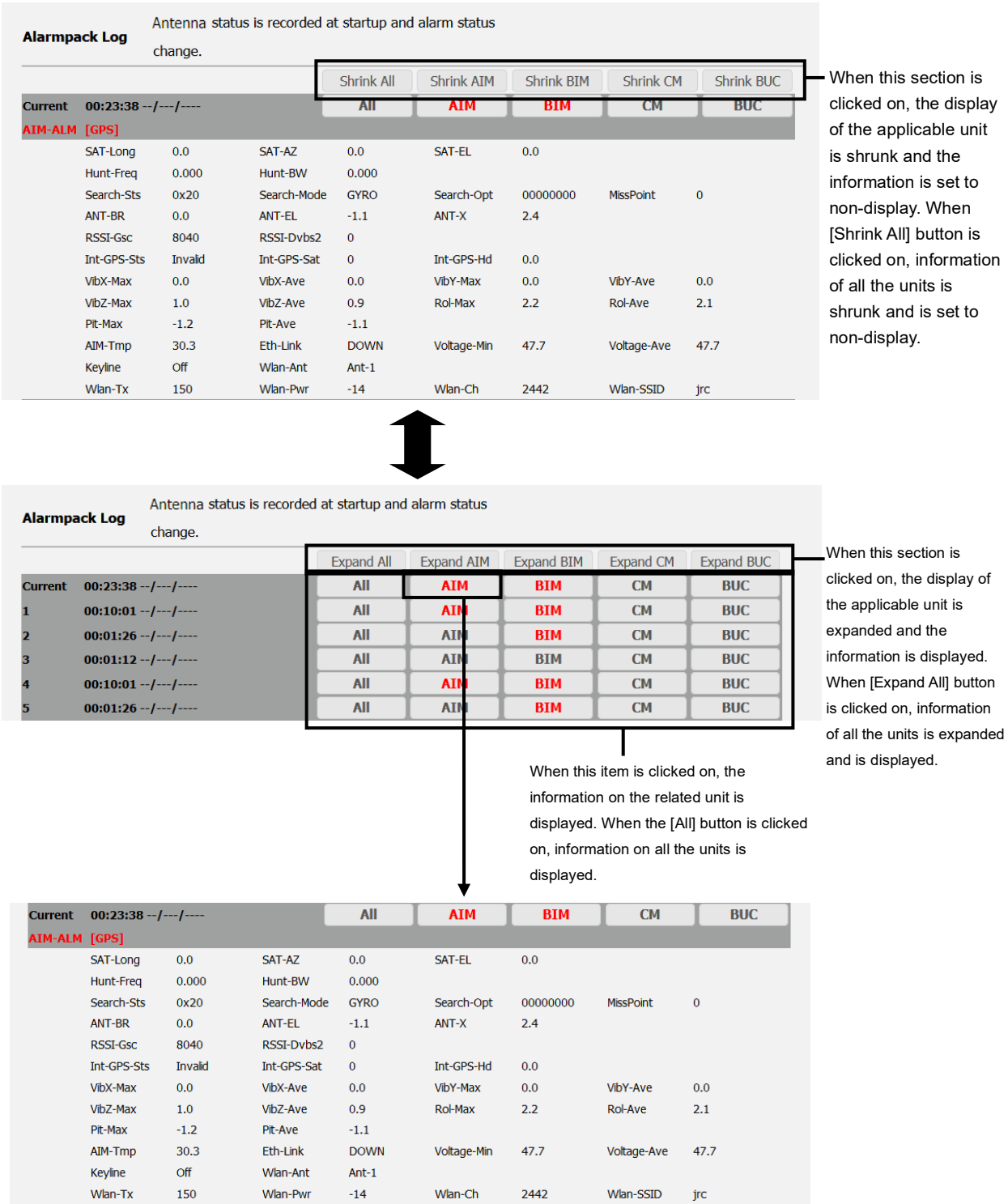
LED-NET NET LED status	LED-TX TX LED status	LED-RX1 RX1 LED status	LED-RX2 RX2 LED status
LED-STS STATUS LED status	LED-CMP CM POWER LED status	Lock CM locking status 0:Unlock 1:Lock	

BUC

Tx-Ditect Transmission power	HPA-Temp BUC temperature	Lo-PLL PLL unlocking information	Power Power supply to BUC 0 :Keyline : PA On :OpenBMIP : enabled or unspecified 1 :Keyline : PA On :OpenBMIP : disabled 2 :Keyline : PA Standby :OpenBMIP : enabled 3 :Keyline : PA Standby :OpenBMIP : disabled

5.4.2.1 Expanding/shrinking the Alarmpack Log section

Display of the Alarmpack Log section can be expanded or shrunk.



5.4.3 Checking and saving event logs ([Logs] - [Event Log])

Display procedure

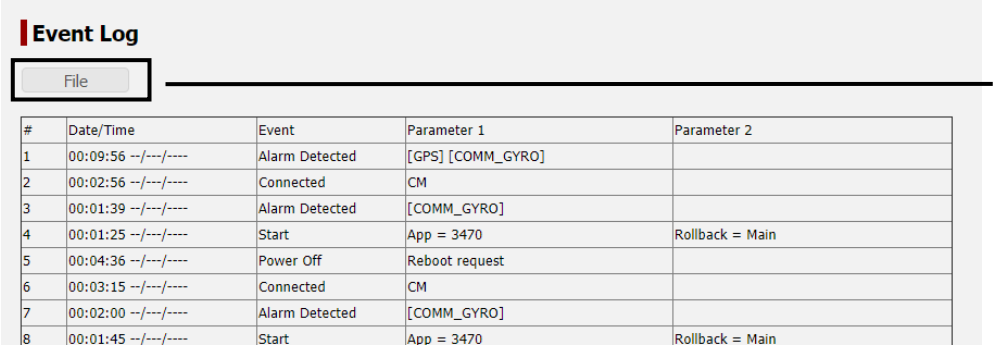
Select [Logs] - [Event Log] in the navigation area.

Function outline

This function enables the checking of up to 1,000 events that occurred in AIM and BIM.

Event logs can be saved in a file also (refer to “5.3.2”).

Screen example



See below for the meaning of log.

Item	Description
Date/Time	Displays the logging time in the format of “00:00:00 DD/MMM/YYYY (UTC)”.
Event	Event For the details, refer to “Details of events and parameters”.
Parameter 1	Parameter For the details, refer to “Details of events and parameters”.
Parameter 2	Parameter For the details, refer to “Details of events and parameters”.

Details of events and parameters

Display name	Outline	Details	
		Parameter 1	Parameter 2
Start	Start of equipment	Software version at starting	"Rollback = Main" or "Rollback = Sub"
Power Off	Turning off power of equipment	Reason for power off Success: 0 = "Power switch"; Failure: 1 = "Sequence time out (T16)"; 2 = "Sequence time out (T8)"; 3 = "AIM-BIM disconnect"; 4 = "Antenna control disconnect"; 5 = "Antenna control status"; 6 = “Web reboot”;	-
GPS Fixed	GPS signal reception	Latitude Web :"<degrees>° <minutes>' <seconds>" <N or S>"	Longitude Web :"<degrees>° <minutes>' <seconds>" <E or W>"
Searching Start	Start of satellite search	Transition of Search-Sts “Search-Sts : <Before Search-Sts> to <After Search-Sts>”	Satellite longitude , Hunt frequency “SAT-Long : <longitude> Hunt-Freq : <frequency>”
Satellite Found	Satellite detection	Transition of Search-Sts “Search-Sts : <Before Search-Sts> to <After Search-Sts>”	Satellite longitude , Hunt frequency “SAT-Long : <longitude> Hunt-Freq : <frequency>”
Satellite Locked	Satellite locking and tracking	Transition of Search-Sts “Search-Sts : <Before Search-Sts> to <After Search-Sts>”	Satellite longitude , Hunt frequency “SAT-Long : <longitude> Hunt-Freq : <frequency>”
In Network	Service availability status	-	-
Alarm	Alarm detection	The list of all alarms that are currently being issued.	-
Alarm Cleared	Recovery from alarm	The list of all alarms that are currently being issued.	-
OTC Started	One Touch Commissioning Started	-	-

5.4.4 Checking and saving statistics logs of the antenna control section ([Logs] - [AC Monitor])

Display procedure

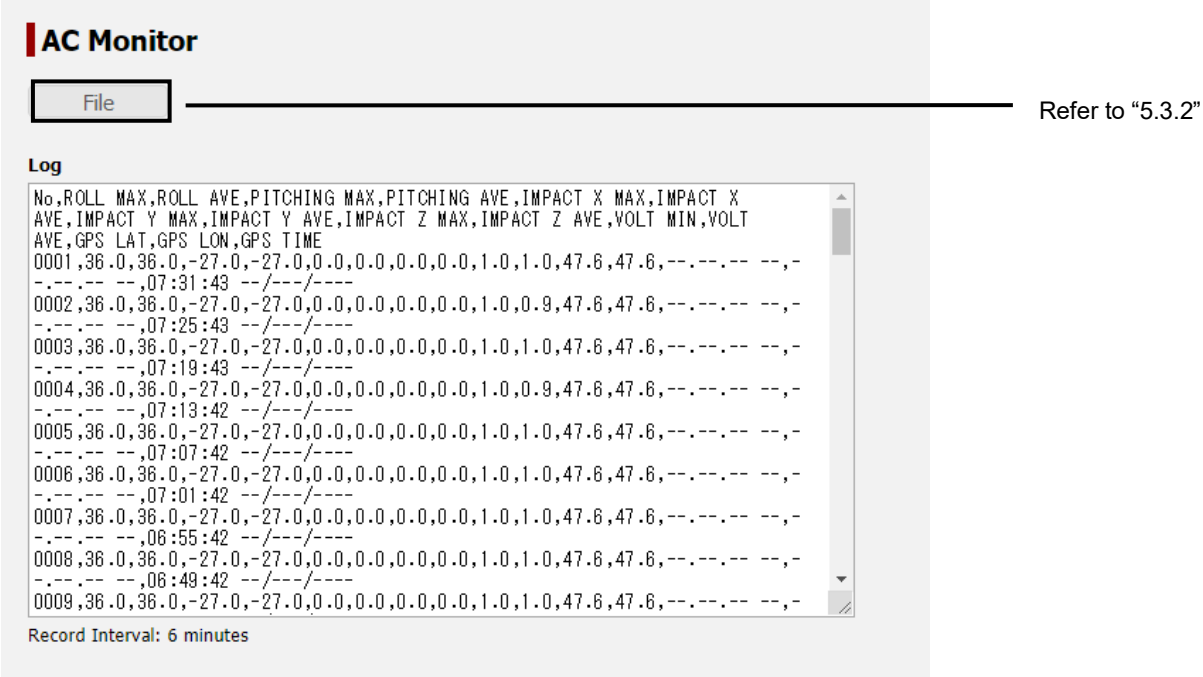
Select [Logs] - [AC Monitor] in the navigation area.

Function outline

Up to 100 items of event log of the antenna section can be checked.

Event logs can be saved in a file (refer to “5.3.2”).

Screen example



See below for the meanings of the log.

Item	Description
No.	Record number
ROLL MAX	Maximum roll angle(deg.)
ROLL AVE	Average roll angle(deg.)
PITCHING MAX	Maximum pitch angle(deg.)
PITCHING AVE	Average pitch angle(deg.)
IMPACT X MAX	Maximum vibration acceleration in the X-axis direction
IMPACT X AVE	Average vibration acceleration in the X-axis direction
IMPACT Y MAX	Maximum vibration acceleration in the Y-axis direction
IMPACT Y AVE	Average vibration acceleration in the Y-axis direction
IMPACT Z MAX	Maximum vibration acceleration in the Z-axis direction
IMPACT Z AVE	Average vibration acceleration in the Z-axis direction
VOLT MIN	Minimum voltage (V)
VOLT AVE	Average voltage (V)
GPS LAT	GPS latitude (indicates degrees/minutes/seconds)
GPS LON	GPS longitude (indicates degrees/minutes/seconds)
GPS TIME	GPS time (hh:mm:ss)

Notes

- The maximum values, minimum values, and average values are the statistics of the past 6 minutes.
- The latest values (values at the time of recording) are displayed as GPS values.

5.4.5 Checking and saving system logs ([Logs] - [Syslog])

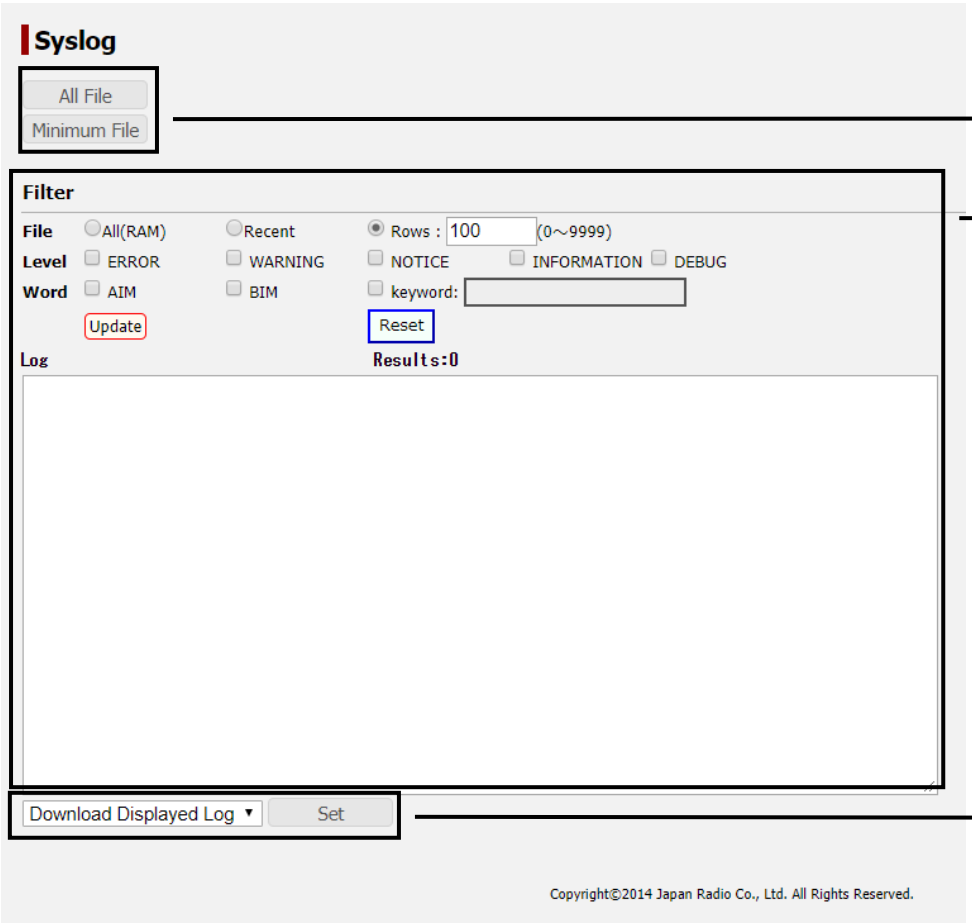
Display procedure

Select [Logs] - [Syslog] in the navigation area.

Function outline

System logs of JUE-60KA can be checked. The system log to be displayed can be selected by the filter function. System logs can be saved in a file.

Screen example

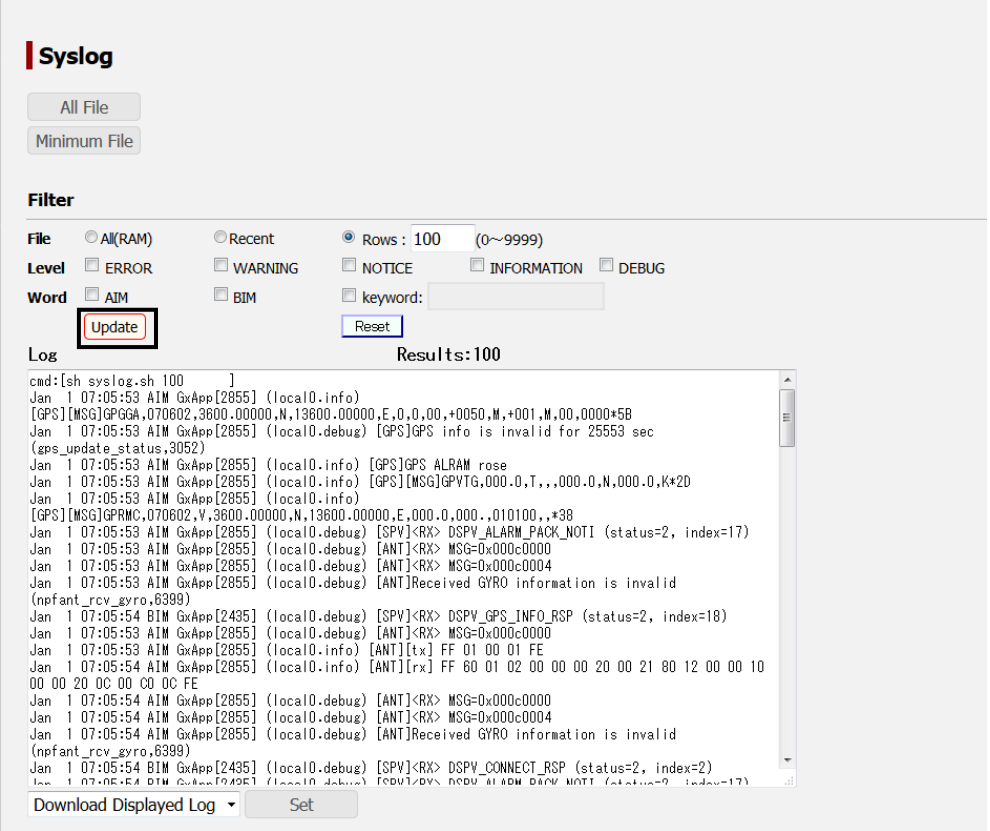


5.4.5.1 Displaying and filtering system logs

Logs are not displayed immediately after logging into the Web interface. Logs can be displayed in the following procedure.

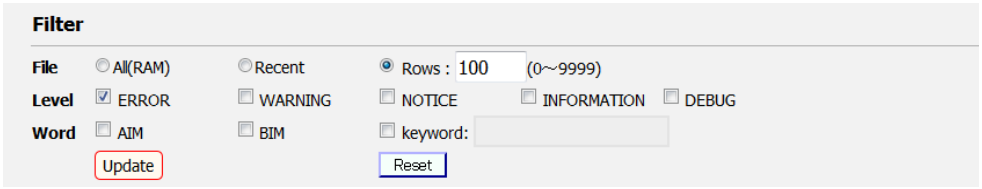
1 Click on the [Update] button.

System logs are displayed in [Log].



Filtering a system log to be displayed

1 **Set a selection flitering from [File], [Level], and [Word].**

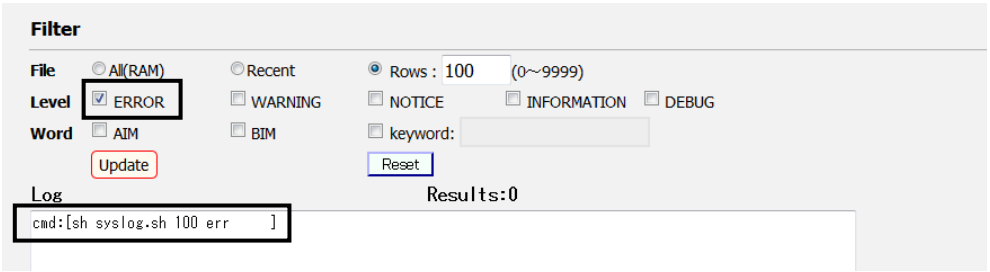


Filtering condition	Description
File	A log is filtered based on the file. Search is performed based on the file. All (RAM): Searches all the syslog files in RAM. Recent: Searches only the latest syslog file in RAM. Rows: Searches until the number of rows that are displayed reaches the specified number from all the syslog files in RAM.
Level	A log is filtered based on the log level (multiple levels can be selected). ERROR: Error log WARNING: Warning log NOTICE: Notice log INFORMATION: Information log DEBUG: Debugging log
Word	A log is filtered based on the character string. AIM: Log containing AIM BIM: Log containing BIM Word: Log containing the character string that is input in the text box that is displayed on the right side when this item is selected

2 **Click on the [Update] button.**

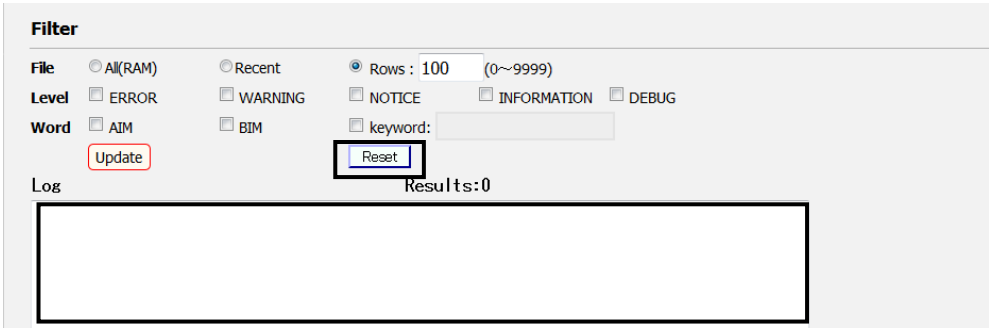
The selected system log is displayed in [Log].

Filtering example:



Clearing display of system log

Click on the [Reset] button.

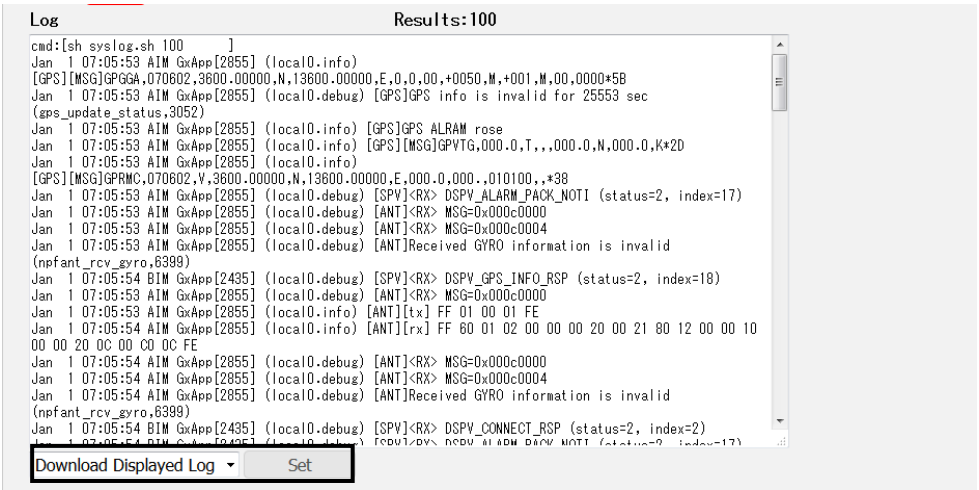


The filter setting is cleared.

5.4.5.2 Saving system logs

System logs can be saved by setting the logs to be saved.

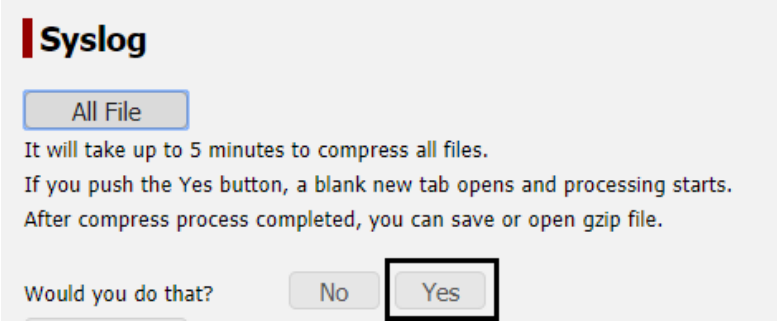
1 Select a file to be saved and click on the [Set] button.



Item	Description
Download Displayed Log	Targets the system log that is currently displayed for saving.
Download syslog in RAM	Targets the system logs that are stored in RAM for saving.
Download syslog in ROM	Targets system logs that are stored in ROM for saving.
Clear syslog in RAM	Deletes system logs that have been stored in RAM.

2 **To save all the logs, click on the [File] button of [All].**

To save logs excluding the system logs in ROM, click on the [All File] or [Minimum File] button.



A file processing dialog is displayed.

3 **Specify file save and click on the [OK] button.**

The file is saved.

5.5 Menus available to ADMIN users

5.5.1 Setting JUE-60KA basic data ([Settings] - [Antenna])

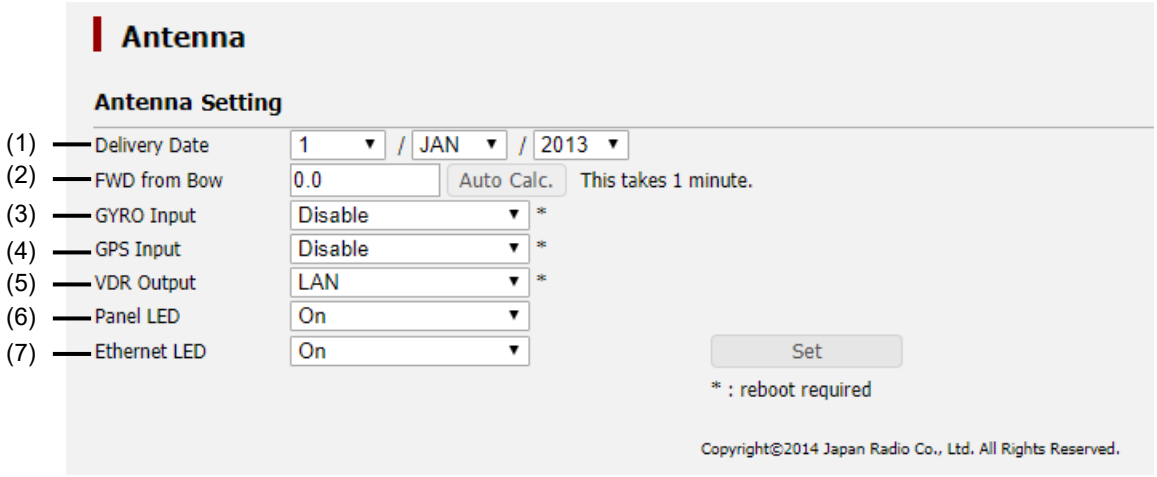
Display procedure

Select [Settings] - [Antenna] of the navigation area.

Function outline

The JUE-60KA basic data is set.

Screen example



The setting procedure is as follows.

1 Set the following items.

No.	Item	Description
(1)	Delivery Date	Set the JUE-60KA operation starting date. The operation starting date not only indicates the communication starting date after installation of JUE-60KA but also is useful for judging the guarantee period. Set a correct date.
(2)	FWD from Bow	Set a BOW correction value within the range of -180.0 to +180.0. When the [Auto Calc.] button is clicked on, the BOW correction value is calculated automatically. (refer to “4.2”) **Note** To set the value that is calculated automatically, click on the [Set] button. **Memo** It takes about 1 minute for automatic calculation.

No.	Item	Description
(3)	GYRO Input	Select the external GYRO input from the combo box. Disable: Not used. NMEA(4.8 kbps): Use serial (4.8 kbps) input. NMEA(38.4 kbps): Use serial (38.4 kbps) input. LAN: Use LAN input. **Note** Supported NMEA sentences: ・VHW (Water speed and Heading) ・HDT (Heading True) ・THS (True Heading and Status) To reflect the setting change, the equipment must be restarted.
(4)	GPS Input	Select the external GPS input to be used from the combo box. Disable: Not used. NMEA(4.8 kbps): Use serial (4.8 kbps) input. NMEA(38.4 kbps): Use serial (38.4 kbps) input. LAN: Use LAN input. **Note** To reflect the setting change, the equipment must be restarted.
(5)	VDR Output	Set whether remote maintenance data is output to VDR. Disable: Not output LAN: Output with LAN **Note** To reflect the setting change, the equipment must be restarted.
(6)	Panel LED	Set whether the LED panel of BDE is set to OFF forcibly. When OFF is set, the LED panel goes off regardless of the equipment status. On: Not set to OFF forcibly (normally blinks). Off: Set to OFF forcibly (LED goes off).
(7)	Ethernet LED	Set whether Ethernet LED set to OFF forcibly. When OFF is set, the Ethernet LED goes off regardless of whether the antenna is connected to the LAN port. On: Not set to OFF forcibly (normally blinks). Off: Set to OFF forcibly (LED goes off).

2 After setting, save/apply the setting by clicking on the [Set] button.

5.5.2 Setting transmission forbidden area and blocking area ([Settings] - [Tx Limit & Blockage])

Display procedure

Select [Settings] - [TX Limit & Blockage] in the navigation area.

Function outline

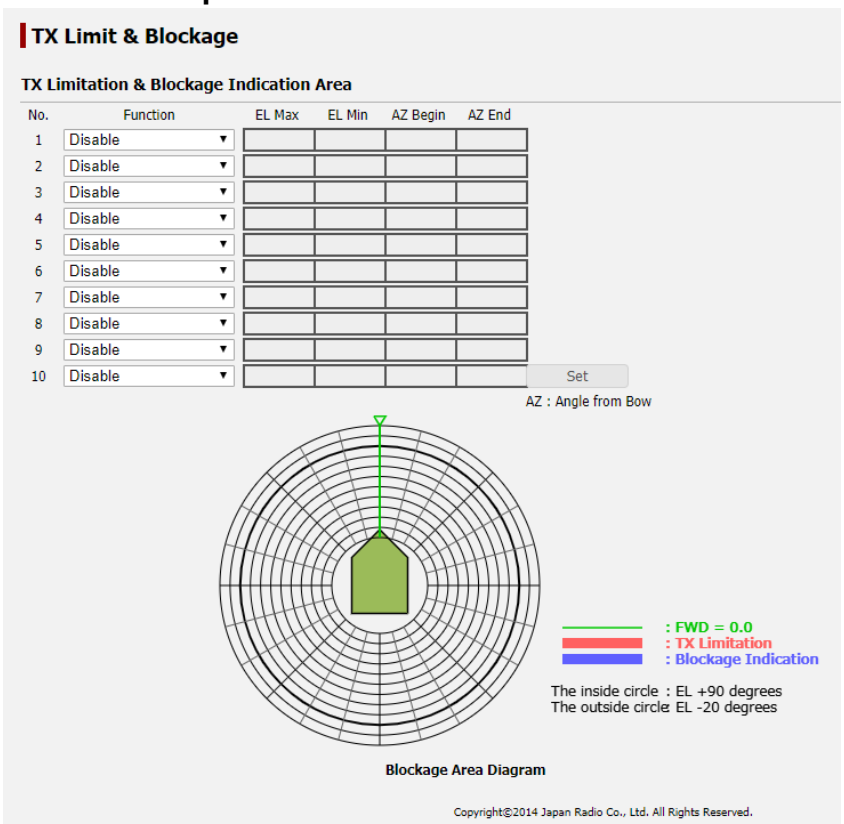
This function enables the setting of a transmission prohibition area and a blocking area.

For a transmission prohibition area, set in which people may enter under the radio wave transmission active state within the area of 26 m from the antenna. Since radio wave transmission is suspended when the antenna indicates the transmission prohibition area, safe equipment operation can be supported by setting a transmission prohibition area even if operation with a sufficient safe distance secured is difficult.

For a blocking area, set an area within which communication with a satellite is difficult due to obstacles such as mast or funnel of the ship. Registered transmission prohibited areas and blocking areas are displayed in the navigation area.

A total of up to 10 transmission prohibition areas and blocking areas can be set.

Screen example

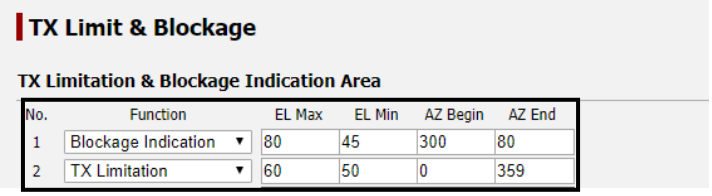


The area setting procedure is as follows.

1 **When the area is set as a transmission prohibition area, select [TX Limitation] from the [Function] combo box of desired No..**

2 **When the area is set as a blocking area, select [Blockage Indication] from the [Function] combo box of desired No..**

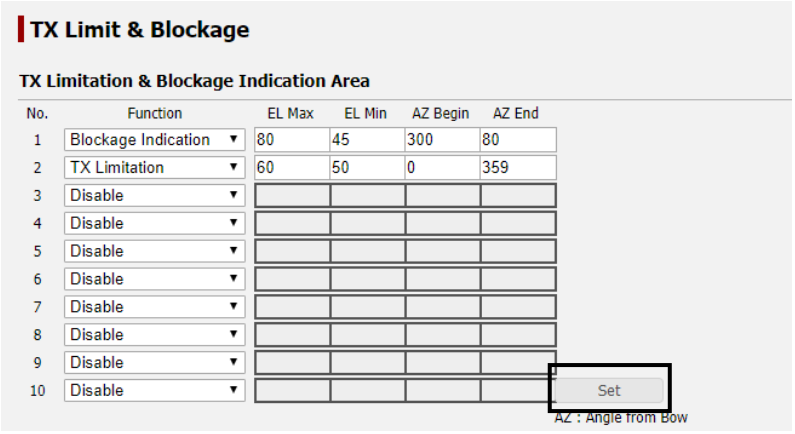
3 **Set a range.**



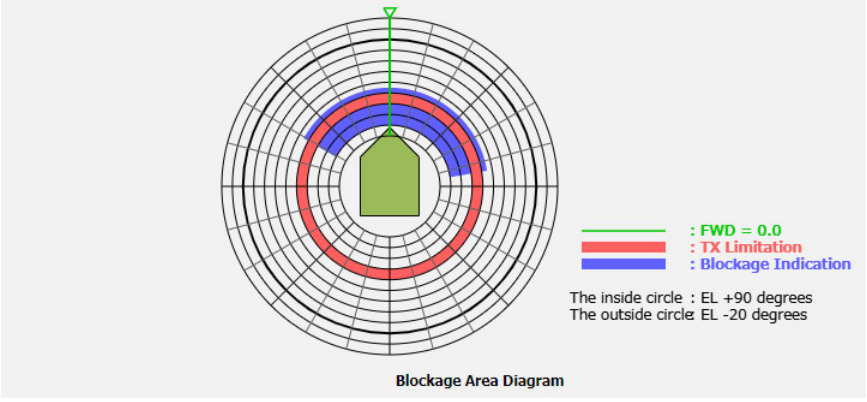
EL Max	EL Min	AZ Begin	AZ End
Input an upper limit angle of EL within the range from -20 to 90.	Input a lower limit angle of EL within the range from -20 to 90.	Input a starting angle of BR within the range from 0 to 359.	Input an ending angle of BR within the range from 0 to 359.

4 **Repeat steps 1 to 3 as required.**

5 **Save/apply the setting by clicking on the [Set] button after setting.**



The setting result is displayed in the Blockage Area Diagram.



A blocking area is displayed in blue.

A transmission prohibition area is displayed in red.

A Blockage Area Diagram is displayed in the navigation area other than [Settings] - [TX Limit & Blockage] screen.

5.5.3 Changing an ADMIN user password ([Settings] - [Acount])

Display procedure

Select [Settings] - [Acount] in the navigation area.

Function outline

Set an ADMIN user password.

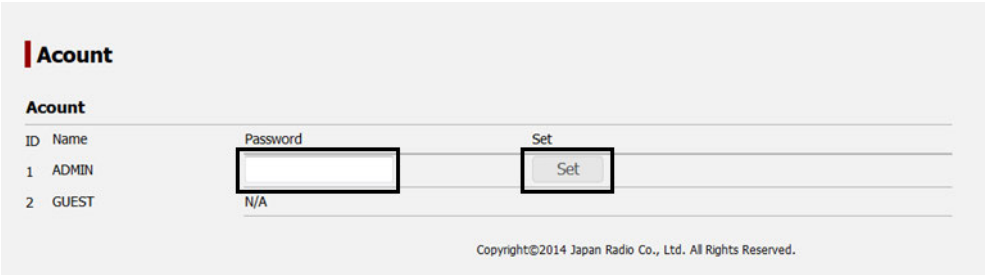
Screen example

The ADMIN user password change method is as follows.

1 **Click on the [Password] input field of [ADMIN].**
The input field becomes blank space.

2 **Enter a password using 6 to 12 one byte alphanumeric characters.**

3 **Save/apply the setting by clicking on the [Set] button after setting.**



5.5.4 Upgrading the JUE-60KA software ([Tools] - [Software Upgrade])

Display procedure

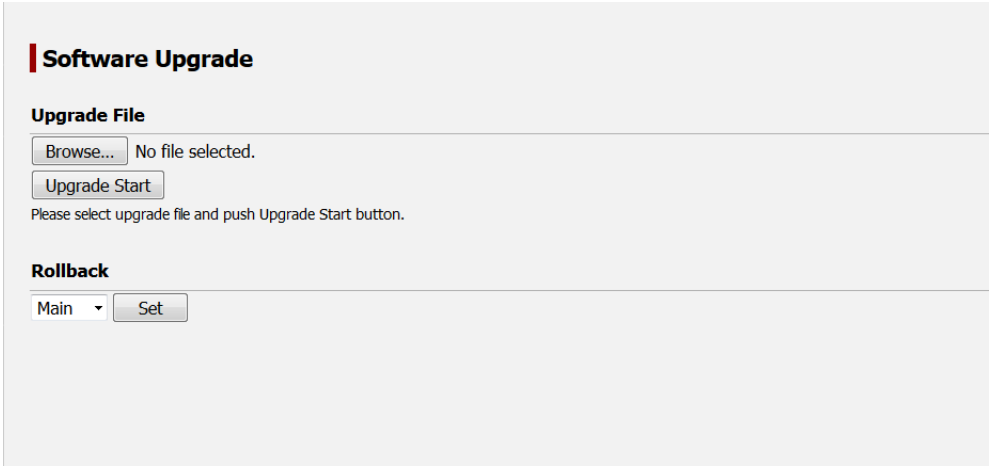
Select [Tools] - [Software Upgrade] in the navigation area.

Function outline

Upgrade software.

For the details, refer to “Appendix B”.

Screen example



5.5.5 Exporting/importing settings ([Tools] - [Export / Import])

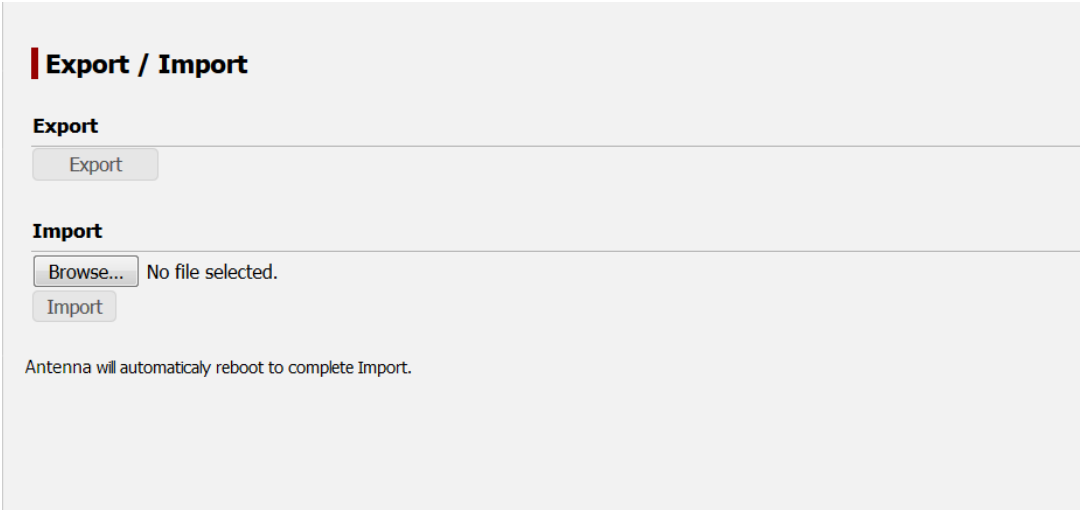
Display procedure

Select [Tools] - [Export / Import] in the navigation area.

Function outline

By exporting setting data of the equipment to PC, the setting data can be backed up. Setting data that has been saved can also be imported to the equipment.

Screen example



5.5.5.1 Exporting setting data

1 Click on the [Export] button.

A file processing dialog is displayed.

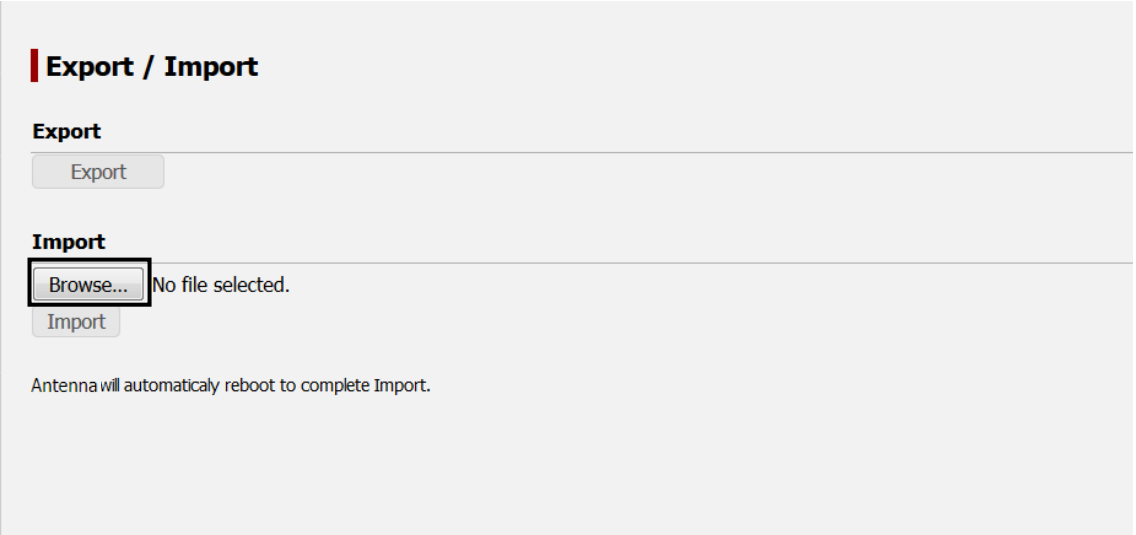
2 Specify an export destination of the setting data and click on the [OK] button.

The setting data is exported.

5.5.5.2 Importing setting data

Note
When setting data is imported, the original setting data cannot be restored.

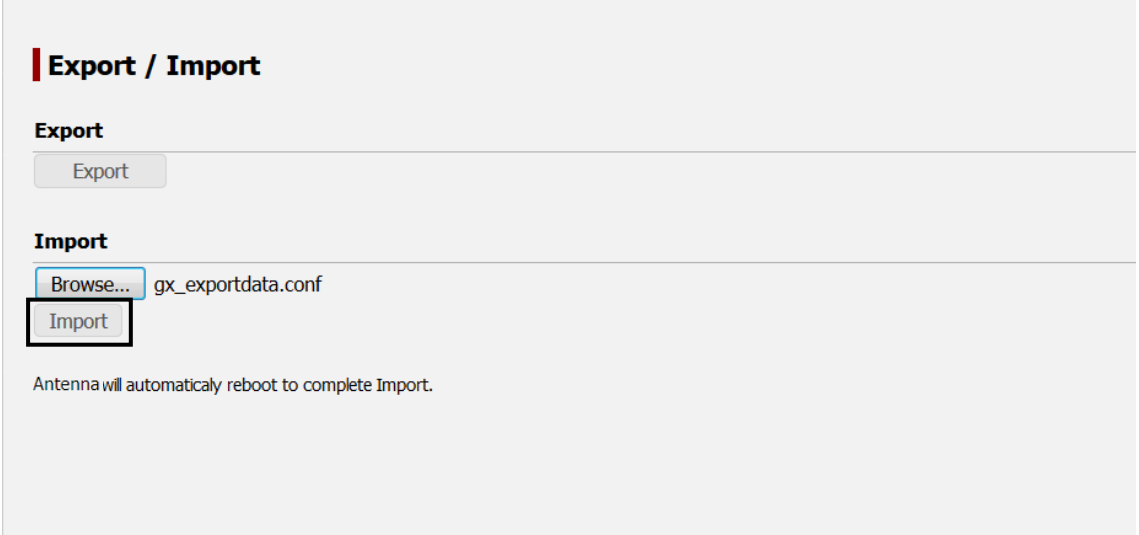
1 Click on the [Browse…] button.



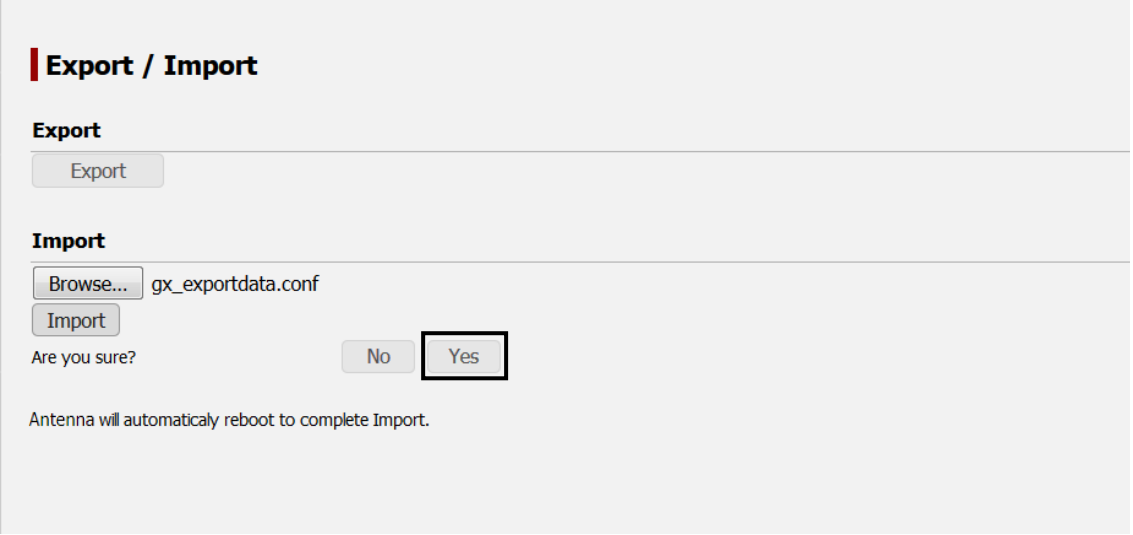
A file selection dialog is displayed.

2 Select setting data to be imported.

3 Click on the [Import] button.

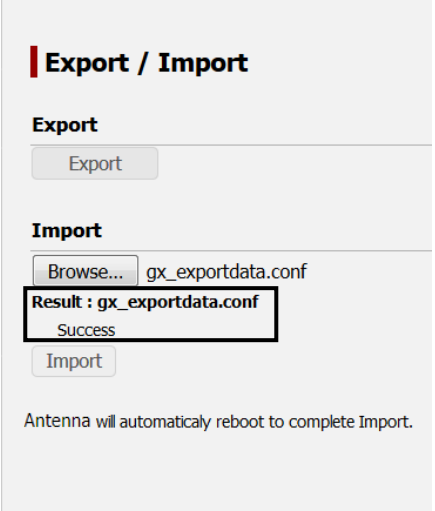


4 **Click on the [Yes] button.**



Import starts.

When import is completed normally, the following message is displayed.



5 **Automatic reboot of the system is done.**

Automatic reboot is performed , to enable the imported configuration file.

5.5.6 Using the diagnostic function ([Tools] - [Diagnostic])

Display procedure

Select [Tools] - [Diagnostic] in the navigation area.

Function outline

This function performs a diagnostic test of JUE-60KA.

In [Setting Transmission Syslog], the Syslog messages that are recorded by JUE-60KA can be transferred to the user-specified server. For the setting procedure, refer to “5.5.6.1”.

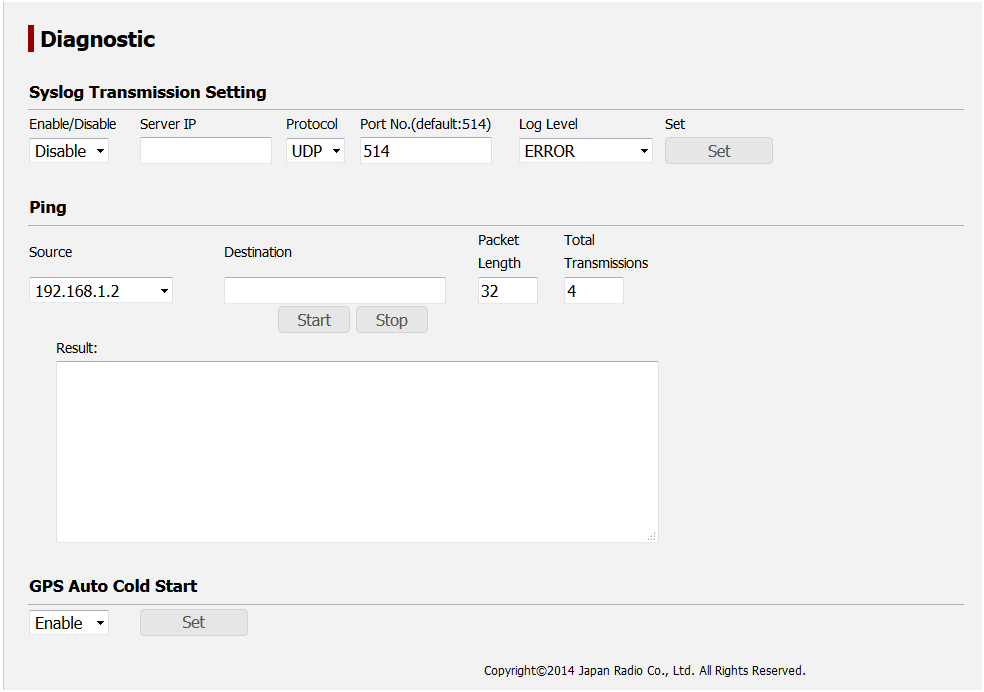
In [Ping], the connection between JUE-60KA and a device can be checked by transmitting a ping packet to the specific host from the IP address of the selected unit. For the procedure, refer to “5.5.6.2”.

In [GPS Auto Cold Start], to set the self-diagnosis function of the built-in GPS.

Note

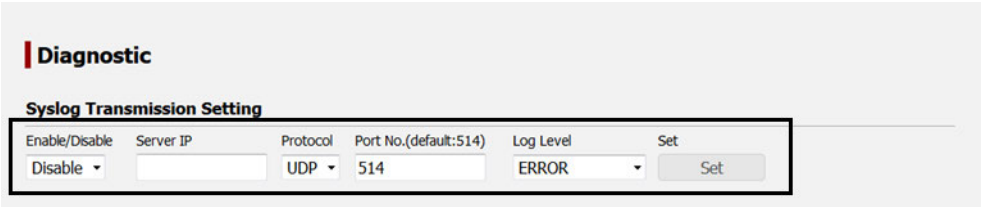
JRC shall not be liable for the communication charge problems that arise while this function is being used except when such a condition is included in the product guarantee or is applicable to the provision of the law.

Screen example



5.5.6.1 Setting Syslog transfer

To receive transferred syslog, the syslog server must be operating under the specified server IP address. The level of the syslog to be transferred is to be defined by the user. Syslog messages at the user-defined level and higher levels are transferred.

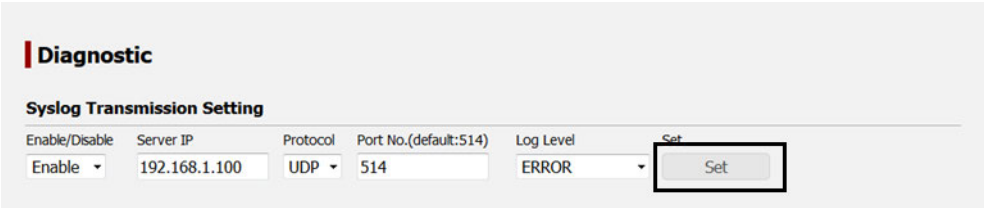


1. **Select [Enable] from [Enable/Disable].**
2. **Enter the IP address of the external syslog server.**
3. **Select the protocol used for the syslog server to receive syslog.**
4. **Select the port number used for the syslog server to receive syslog.**

5 **Select a level of the log to be transferred in [Log Level].**

Log level	Description
EMERGENCY	State that may cause system failure
ALERT	Error to be handled urgently
CRITICAL	Fatal error
ERROR	General error
WARNING	Warning
NOTICE	Notice
INFORMATION	Information
DEBUG	Debugging information

6 **Click on the [Set] button.**

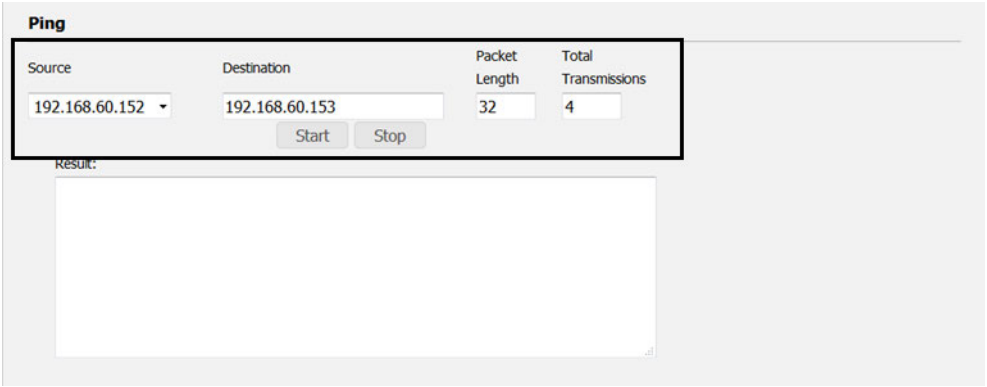


5.5.6.2 Checking the connection status by Ping

Specify an IP address or a specific domain for a destination of ping packet.

Notes

- Do not display any other page or shut down the Web broswer while the ping result is displayed in the page.
- An unexpected communication charge may occur for packet transmission/reception.



1 Enter the IP address of the transmission source in [Source].

Item	Description
Internal IP address of BIM	For checking the connection between internal units Fixed value: 192.168.1.2
External IP address of BIM (IP address of JRC LAN BIM)	For checking the connection with JRC LAN connection equipment Setting at the factory delivery: 192.18.60.152

2 Enter an IP address of the transmission destination in [Destination].

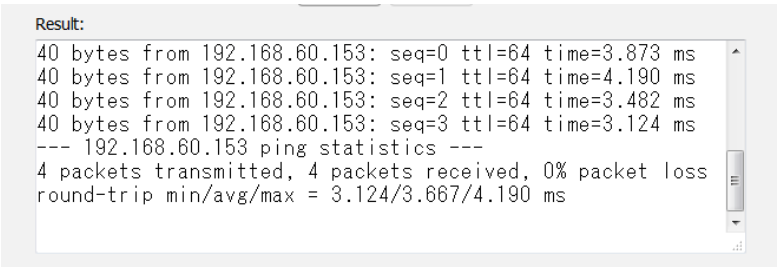
3 Enter a packet length (1-1472) in [Packet Length].

4 Enter the number of transmissions (1-50) in [Total Transmissions].

5 Click on the [Start] button.

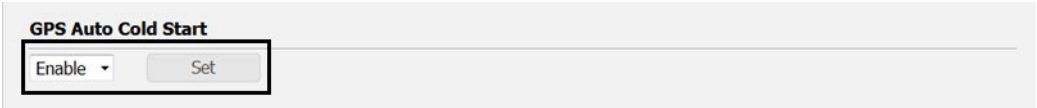
> **Hint**
> To cancel ping transmission, click on the [Stop] button.

The communication result is displayed in [Result].



5.5.6.3 Setting GPS Auto Cold Start

Set to perform the restoration and self-diagnosis of the built-in GPS.



1 Select [Enable] from the combo box.

2 Click on the [Set] button to save/apply the settings.

5.5.7 Rebooting the system（［Tools］－［Reboot］）

Display procedure

Select [Tools] - [Reboot] in the navigation area.

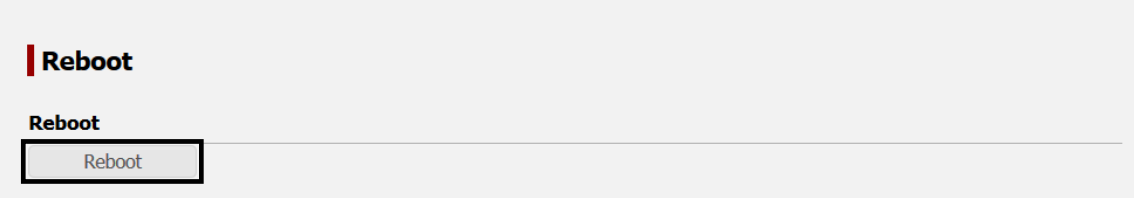
Function outline

Reboot JUE-60KA system.

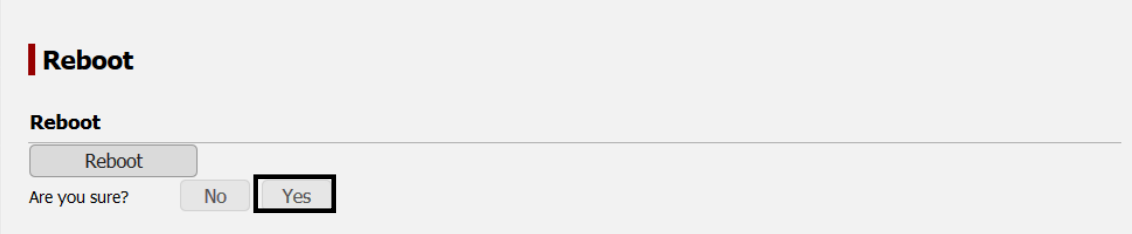
Screen example

5.5.7.1 Rebooting procedure

1 Click on the [Reboot] button.



2 Click on the［Yes］button.



Rebooting JUE-60KA is started.

5.5.8 Deleting alarmpacks/resetting to the factory default state ([Others] - [Factory Default])

Display procedure

Select [Others] - [Factory Default] in the navigation area.

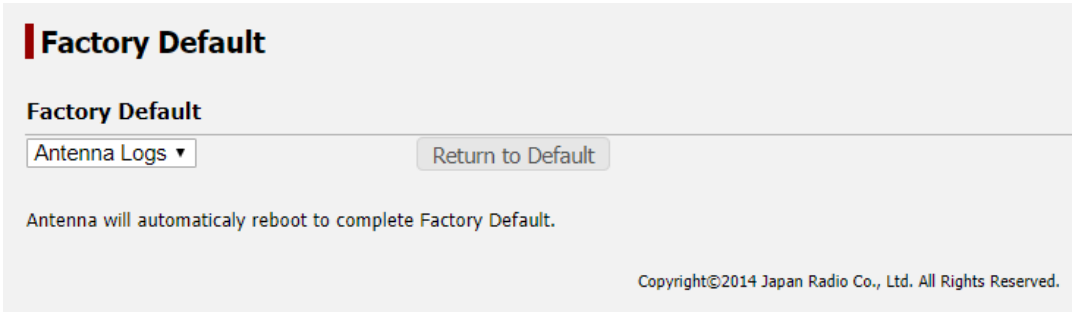
Function outline

Delete all the alarmpacks or reset the equipment to the factory default state.

Note

After deletion/reset execution, the setting data cannot be restored.

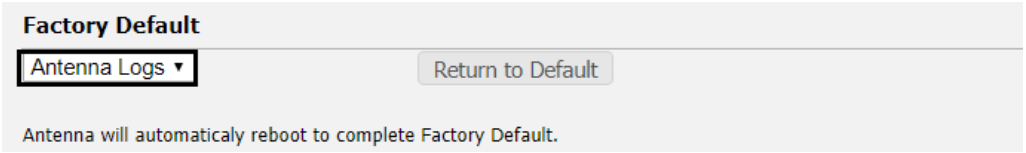
Screen example



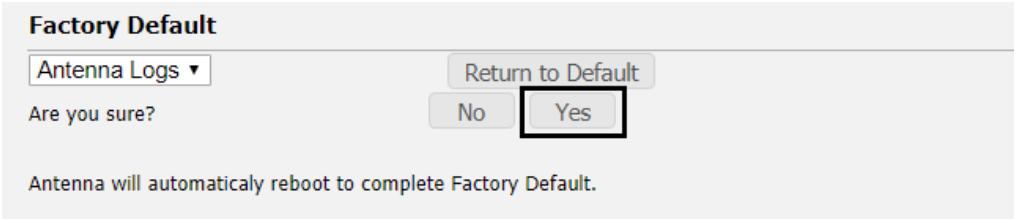
5.5.8.1 Deleting alarmpacks

1 Select [Antenna Logs] from the combo box.

2 Click on the [Return to Default] button.



3 Click on the [Yes] button.



Automatic reboot is performed , all of the alarm pack , event log , AC monitoring logs will be deleted.

5.5.8.2 Resetting to the factory default state

For resetting to the factory default state, refer to “Appendix C”.

5.5.9 Setting JRC LAN ([Others] - [JRC LAN])

Display procedure

Select [Others] - [JRC LAN] in the navigation area.

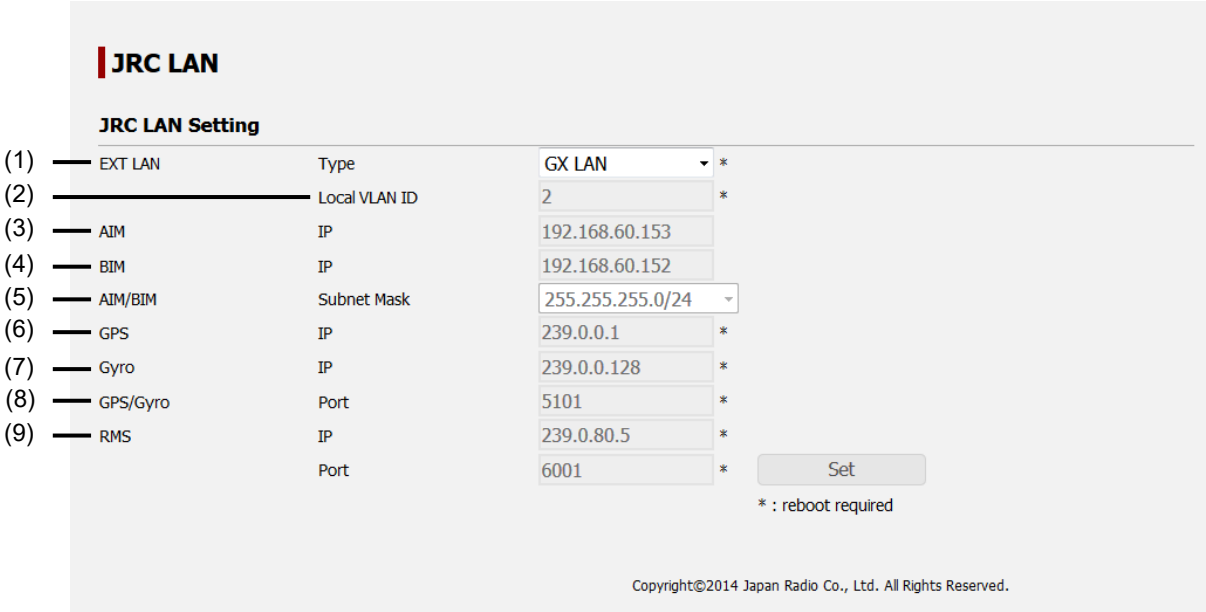
Function outline

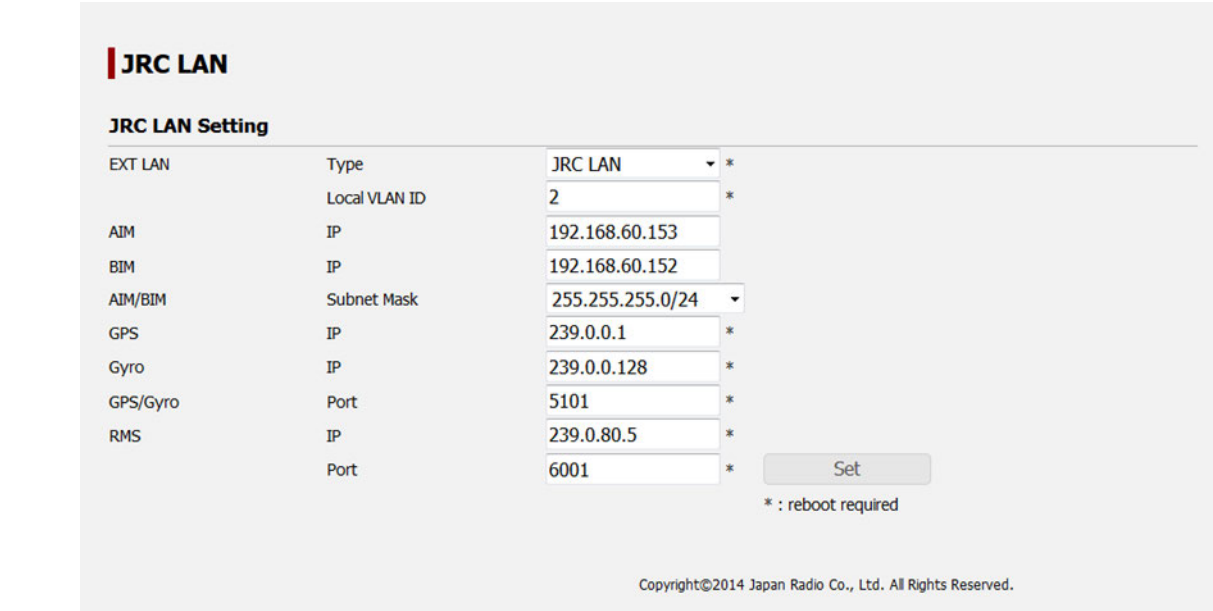
Set the JUE-60KA network.

The EXT LAN Type item at the time of JRC LAN selection, by setting the IP addresses of BIM and AIM in the IP address in JRC LAN, the remote maintenance and status monitor functions that can be provided by VDR and INM-C of JRC become available.

The EXT LAN Type item at the time of GX LAN selection ,it is not used.

Screen example





The setting procedure is as follows.

1 Set the following items.

No.	Item	Description
(1)	EXT LAN Type	JRC LAN connection or , choose whether to perform a second unit of NSD connection . **Note** To reflect the setting change, the equipment must be restarted.
(2)	Local VLAN ID	Set the VLAN ID at the time of JRC LAN connection . **Note** To reflect the setting change, the equipment must be restarted.
(3)	AIM IP	Set the IP address of AIM that can access JRC LAN.
(4)	BIM IP	Set the IP address of BIM that can access JRC LAN.
(5)	AIM/BIM Subnet Mask	Set a subnet mask of AIM/BIM. For the details, refer to “Net mask of AIM/BIM JRC IP”.
(6)	GPS IP	Set a multicast address for receiving signals from external GPS through LAN. **Note** To reflect the setting change, the equipment must be restarted.
(7)	Gyro IP	Set a multicast address for receiving GYRO signals through LAN. **Note** To reflect the setting change, the equipment must be restarted.
(8)	GPS/Gyro Port	Set the port number that waits for external GPS and gyro signals. **Note** To reflect the setting change, the equipment must be restarted.
(9)	RMS IP RMS Port	Set the IP address and port number (0 to 65535) of VDR or INM-C that is used by the remote maintenance system. **Note** To reflect the setting change, the equipment must be restarted.

Net masks of AIM/BIM JRC IP

No.	Item	Description	No.	Item	Description
1	0.0.0.0/0	Prefix 0 bit	18	255.255.128.0/17	Prefix 17 bit
2	128.0.0.0/1	Prefix 1 bit	19	255.255.192.0/18	Prefix 18 bit
3	192.0.0.0/2	Prefix 2 bit	20	255.255.224.0/19	Prefix 19 bit
4	224.0.0.0/3	Prefix 3 bit	21	255.255.240.0/20	Prefix 20 bit
5	240.0.0.0/4	Prefix 4 bit	22	255.255.248.0/21	Prefix 21 bit
6	248.0.0.0/5	Prefix 5 bit	23	255.255.252.0/22	Prefix 22 bit
7	252.0.0.0/6	Prefix 6 bit	24	255.255.254.0/23	Prefix 23 bit
8	254.0.0.0/7	Prefix 7 bit	25	255.255.255.0/24	Prefix 24 bit
9	255.0.0.0/8	Prefix 8 bit	26	255.255.255.128/25	Prefix 25 bit

No.	Item	Description	No.	Item	Description
10	255.128.0.0/9	Prefix 9 bit	27	255.255.255.192/26	Prefix 26 bit
11	255.192.0.0/10	Prefix 10 bit	28	255.255.255.224/27	Prefix 27 bit
12	255.224.0.0/11	Prefix 11 bit	29	255.255.255.240/28	Prefix 28 bit
13	255.240.0.0/12	Prefix 12 bit	30	255.255.255.248/29	Prefix 29 bit
14	255.248.0.0/13	Prefix 13 bit	31	255.255.255.252/30	Prefix 30 bit
15	255.252.0.0/14	Prefix 14 bit	32	255.255.255.254/31	Prefix 31 bit
16	255.254.0.0/15	Prefix 15 bit	33	255.255.255.255/32	Prefix 32 bit
17	255.255.0.0/16	Prefix 16 bit	34	255.255.128.0/17	Prefix 17 bit

2 After setting, save/apply the setting by clicking on the [Set] button.

Section 6 Maintenance

The life of the JUE-60KA depends on how well the equipment is maintained. Check the following items from time to time to ensure the best performance of your JUE-60KA.

1) Keep the input voltage within the specified range (90 VAC to 264 VAC).
2) Record the BIM current, BUC transmit power and AIM receiving level once at the normal condition. During the operation, compare level with the recorded normal values. This deed helps you to remove a fault before it develops into a serious one.

Daily maintenance

The following table shows daily maintenance with general tools.

⚠ WARNING	
	Do not troubleshoot or repair the internal equipment of the JUE-60KA by yourself. Any electrical work by any person other than our trained maintenance staff may cause fire or abnormal operation of this equipment or electrical shock for you. This equipment meets the technical standard of the Ministry of Internal affairs and Communications.
	Do not adjust the internal circuit without a calibrated measuring instrument or exchange the parts because the internal circuit has been adjusted finely to specifications. If the equipment works abnormally, please contact the purchasing dealer.

No.	Item	Maintenance
1	Cleaning	Clean the panel, switch, top cover, and the button cover with a soft cloth.
2	Fastening	Fasten the loose screw, nut, switch, and the connector.
3	Cleaning	Vacuum the dust of panel by cleaner at fixed intervals.

Section 7 After-sales service

When ordering repair

When a fault has been detected, refer to the “Appendix E”. If it is not improved, turn OFF and ON the power switch of the equipment to reboot. Still it persists, stop operation and contact the purchasing dealer.

During the guarantee term;

JRC will repair the equipment or exchange any parts proven to be malfunctioning under normal use. The user is requested to have operated the equipment as instructed in the instruction manual.
In the following cases, guarantee service is not accepted.

- Product Registration to JRC has not been made immediately after the JUE-60KA was commissioned. Product Registration to JRC is made by sending Installation Report (prepared by agency) or Product Registration Sheet (attached on the last page of this manual) to JRC.
- The equipment has been subjected to accident, abuse, or misuse, shipping damage, alternations, incorrect and/or non-authorized service.
- The trouble, failure, malfunctioning and whatever is due to Act of God, fire, flood, explosion, accident, strikes, labor troubles or other industrial disputes, war (declared or undeclared), armed conflict, civil disturbance, embargoes, blockades, legal restrictions, riots, insurrections or any other cause beyond the control of JRC and the purchaser.

Service out of the guarantee term;

If the function is recoverable by a repair, JRC will arrange a charged service on customer’s demand.

To request a guarantee or non-guarantee service, please inform us of;

- Ship’s name, model name, date of manufacture, serial number.
- How trouble arose. Go into details as much as possible.
- Name of the office, organization etc. of the vessel, the contact place and the telephone/fax number.

Recommendation of professional maintenance

The performance of the set may degrade due to the aging of parts and so on, although the rate depends on how the equipment is used.
Maintenance by professional service engineer other than daily check by ship’s crew is recommended.
For this professional maintenance, please contact the purchasing dealer. This is a charged service.

Disposal of the JUE-60KA

Follow the rule of the pertinent local government when you abandon the JUE-60KA (ADE).

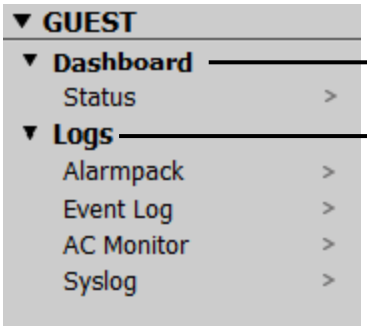
For details, contact the dealer, our service office (Refer to the list of offices at the end of the volume) or a concerned local government.

Section 8 Specification

1. Equipment type		65cm Antenna	
2. Frequency	Transmit	29.0 to 30.0 GHz	
	Receive	19.2 to 20.2 GHz	
3. Maximum E.I.R.P		+49.0 dBW	
4. G/T (reception capability)		15 dBK	
5. Modulation		BPSK, QPSK, 8PSK	
6. Antenna	Size and type	ϕ65 cm Parabolic antenna	
	Polarization	Transmit: Right-hand circular polarization (RHCP) Receive: Left-hand circular polarization (LHCP)	
7. Power supply	Power supply voltage	90 VAC to 264 VAC	
	Power consumption	Up to 300 W	
8. External dimensions	ADE	ϕ842 mm x 923 mm (height)	
	BDE	430 mm x 88 mm x 469 mm (width/height/depth)	
9. Weight	ADE	Approx. 46 kg	
	BDE	Approx. 6.5 kg	
10. Environmental conditions			
1) Operating temperature	ADE	-25˚C to +55˚C	
	BDE	-15˚C to +55˚C	
2) Relative humidity		+40˚C, 93%	
3) Vibration		Conforms to IEC 60945 4th edition.	
4) Ship's motion	Motion	Amplitude	Period
	Roll	+25˚	6 s
	Pitch	+15˚	6 s
	Yaw	+8˚	10 s
	Turning Rate	+10˚/s	
5) Solar Radiation (ADE)		670 watts/m^2	
6) IP rating	ADE	IP56 equivalent	
	BDE	IP22 equivalent	
7) Compass safety distance	ADE	1.5 m	
	BDE	1.2 m	
11. Elevation angle control range		-20 to 115 degrees	
12. Bearing angle control range		360 degrees (rewind-less)	
13. Interface		ETHERNET 1-ports: IEEE802.3 100Mbps GPS/GYRO: NMEA	

Appendix A Web Interface Menu Tree

A.1 Menu for JUE-60KA GUEST users



***** GUEST menu *****

Dashboard menu

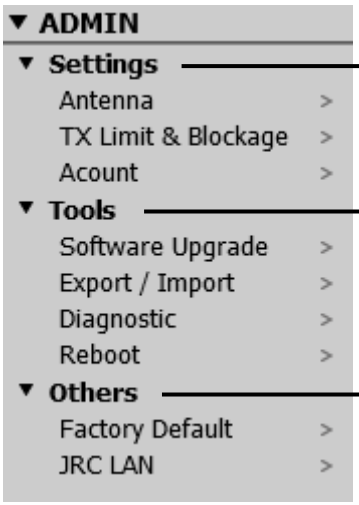
- Checking the JUE-60KA status

Logs menu

- Checking and output of alarmpack
- Checking and output of event log
- Checking and output of ADE status
- Checking and output of Syslog

APP A

A.2 JUE-60KA ADMIN users



***** ADMIN menu *****

Settings menu

- Setting basic data of JUE-60KA
- Setting transmission prohibition areas and blocking area
- Changing an ADMIN user password

Tools menu

- Upgrading JUE-60KA software
- Exporting or importing setting data
- Using the diagnostic function
- Rebooting the system

Others screen

- Resetting the factory delivery default state
- Setting JRC LAN

Appendix B Software Upgrading Procedure

Notes

- Although user settings will not be changed by software upgrading, it is recommended to backup the settings in advance.
- Do not connect a router or any other equipment. Connect PC directly to the Modem LAN port of JUE-60KA.

Upgrade the software of this equipment using the following procedure.

Upgrading the software from the Web interface

Directly connect PC to the Modem port of JUE-60KA with an Ethernet cable, start the Web interface of JUE-60KA, and execute the upgrading.

For the upgrading procedure, refer to “Appendix B.1”.

Checking the software version

Check the software version to verify if the software of this equipment has been upgraded normally.

For the checking procedure, refer to “Appendix B.2”.

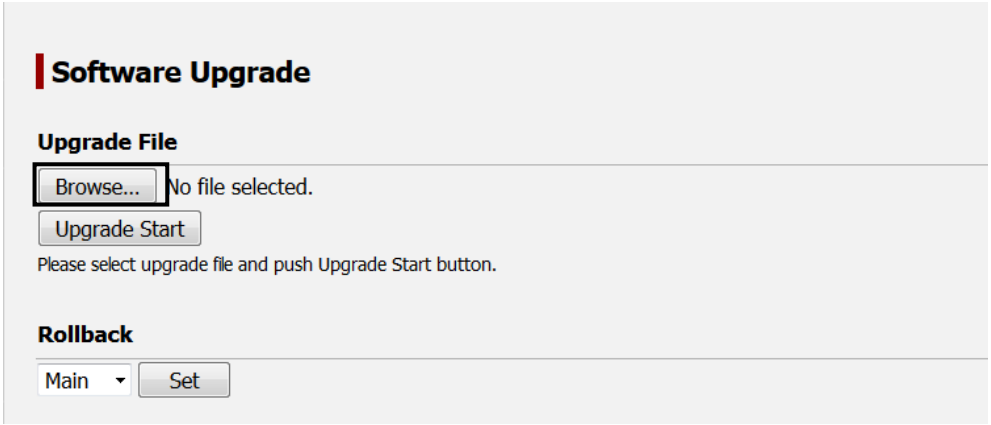
B.1 Upgrading software

Notes

- Do not turn off the power of the PC nor JUE-60KA during software transfer or upgrading.
- It may take 3 minutes or more for transfer or upgrading of application software.

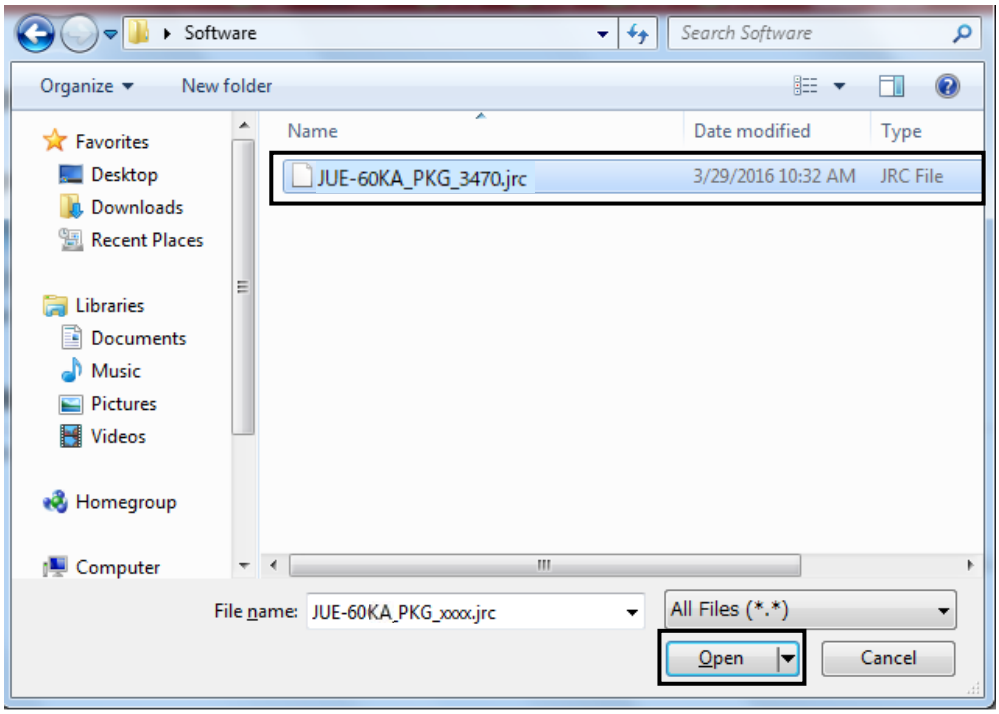
1 Select [Tools] - [Software Upgrade] in the navigation area.

2 Click on the [Browse…] button of [Upgrade File].

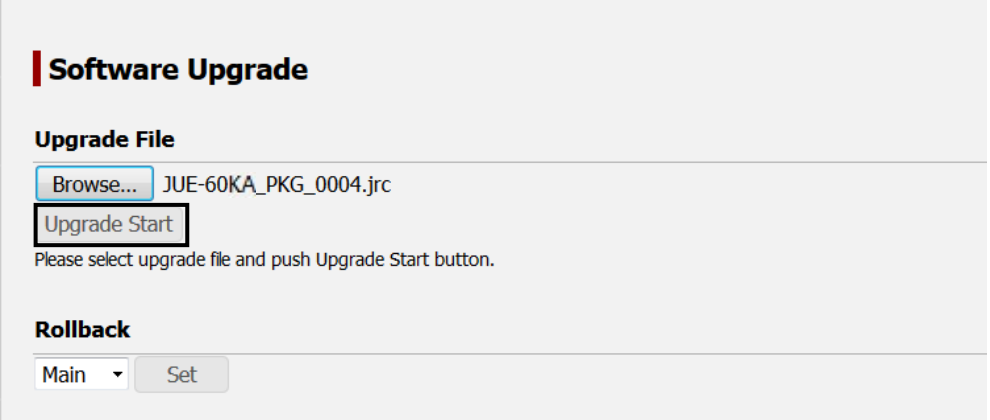


The “Upload file” dialog is displayed.

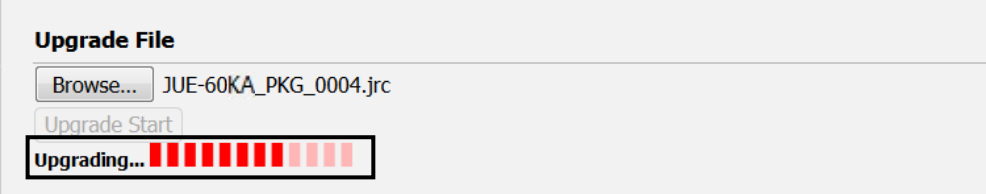
3 Select a file of the upgrade software and click on the [Open] button.



4 **Click on the [Upgrade Start] button.**



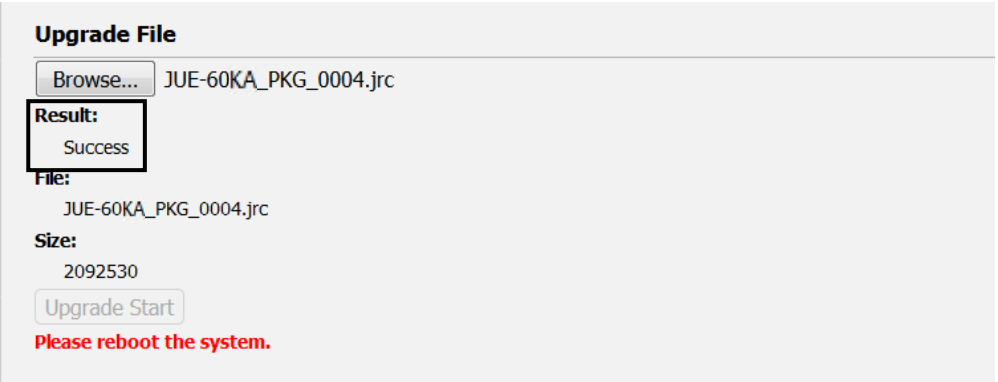
Software upgrading starts.
Wait until software upgrading is completed and the result is displayed.



Notes

- Do not operate the Web interface until the result is displayed on the screen.
- Upgrading may take 3 minutes or more.
- If the result is not displayed even after 12 minutes have elapsed or more, perform the operation again.

When “Success” is displayed as the result on the screen after completion of upgrading, the upgrading has been completed.
If any message other than “Success” is displayed as the result, the upgrading failed. Refer to “Appendix B.1.1”.



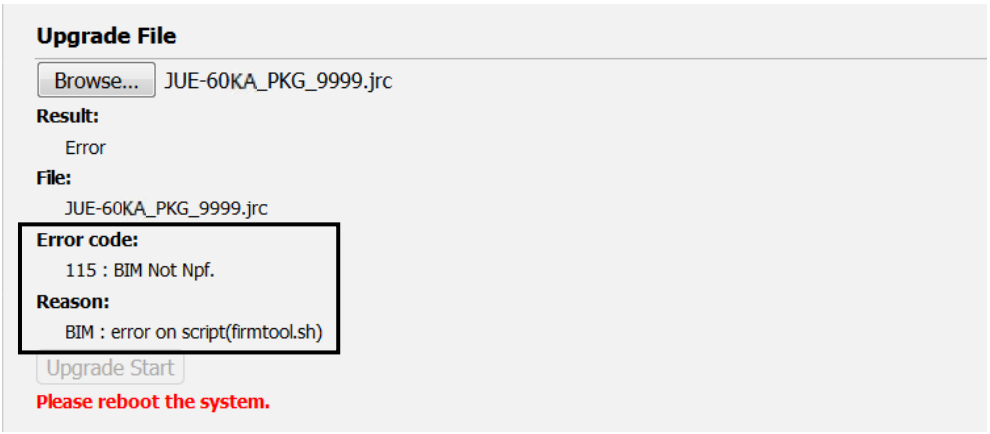
5 **Restart the equipment.**

6 **Check the software version by referencing “Appendix B.3”.**

B.1.1 Failing software upgrading

When software upgrading fails, the error code and reason (cause of the error) are displayed on the screen.
Check the error contents and perform upgrading again.
If software upgrading fails continuously, stop the operation and examine the cause. When the equipment no longer operates normally, switch the equipment setting to the sub mode by referencing “Appendix B.1.2”.

Error display example



Main error codes

Error code	Assumed factor
40, 41, 50, 51, 102, 302	Duplicate execution of upgrading
115, 116, 117, 315, 316	Upgrade file specification error
206, 406	Falsification of upgrade file name
112, 127, 312, 327	Corruption of upgrade file
122, 322	Execution of the upgrading of the same version as the software that is currently active
123, 323	Execution of upgrade that causes the version of the software in normal mode and the version of the software in rollback mode to become identical.
128, 328	Rollback software upgrading in rollback mode
130-138, 330-338	Upgrading of the version that does not support the hardware
Others	Occurrence of internal error

Main error causes

Reason	Description
Transfer to BIM failed	Failure in transfer of the upgrade file to BIM
Under Upgrading	Duplicate upgrade execution
BIM : error on script (firmtool.sh)	Error occurred in BIM Error section: Script
BIM : error on task (upgrade)	Error occurred in BIM Error section: Upgrading thread
BIM : error on task (spv)	Error occurred in BIM Error section: SPV thread
BIM : error on task (web)	Error occurred in BIM Error section: WEB thread
BIM : error on task (snmp)	Error occurred in BIM Error section: SNMP thread
BIM : error on file copy to AIM	Error occurred in BIM Error section: File transfer to AIM
AIM : error on script (firmtool.sh)	Error occurred in AIM Error section: Script
AIM : error on task (upgrade)	Error occurred in AIM Error section: Upgrade thread
AIM : error on task (spv)	Error occurred in AIM Error section: SPV thread
Undefined	Error occurred due to the cause other than above

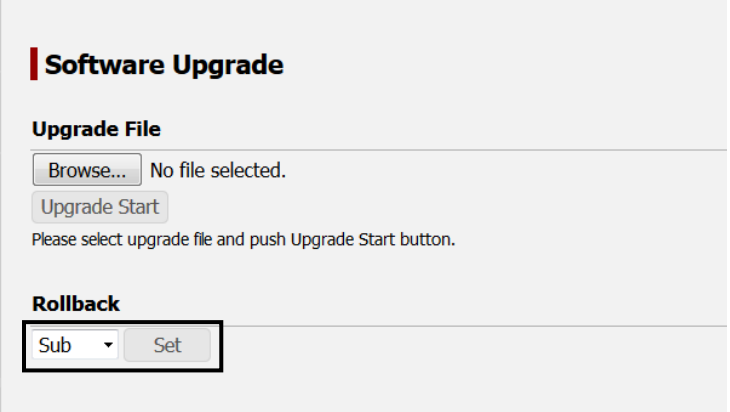
B.1.2 Software rollback function

If the equipment no longer operates normally due to some cause as a result of execution of software upgrading, the equipment can be started with the software under the factory default version by switching the equipment setting to the sub mode.

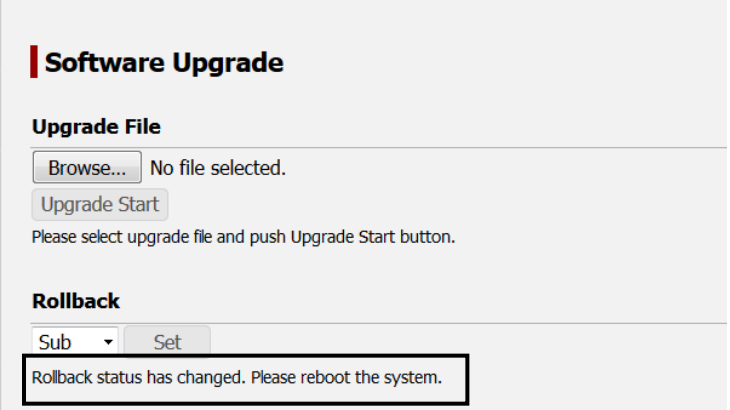
Note
The sub mode is a temporary measure. It is recommended to switch the rollback setting to the normal mode (main mode) after examinging the cause of the upgrade failure.

1 Select [Tools] - [Software Upgrade] in the navigation area.

2 Select [Sub] from [Rollback] and click on the [Set] button.



The software that is used is switched.



3 Restart the equipment.
Subsequently, JUE-60KA operates with the software under the factory default version.

Switching the equipment setting to the normal mode (main mode)

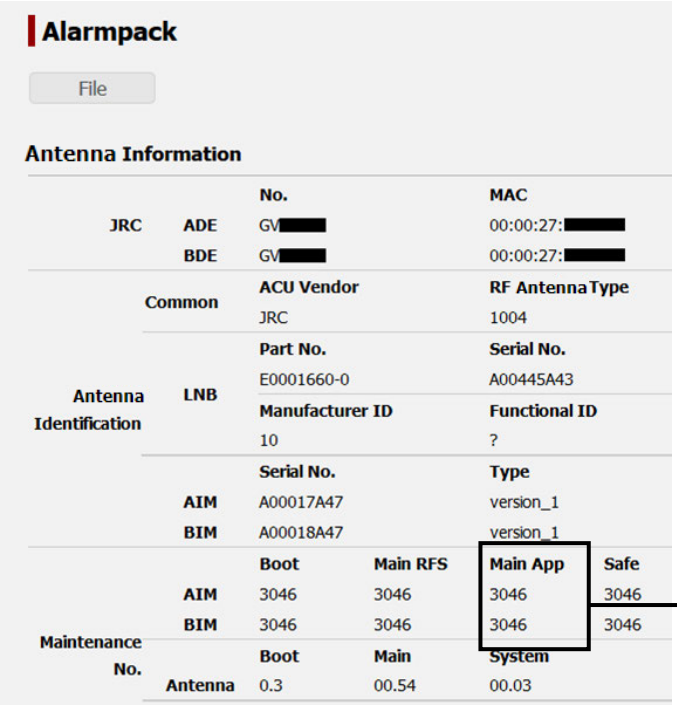
Select [Main] in [Rollback] and restart the equipment.

B.2 Checking the software version

Restart the equipment,check whether the software has been upgraded correctly by using the following procedure.

1 Display the alarmpack by selecting [Logs] - [Alarmpack] in the Web menu system.

2 Check the display of [Main App] of AIM and BIM.



If the same number as “xxxx” of the software file, [JUE-60GX_PKG_xxxx.jrc], is displayed, the software has been upgraded correctly.

Appendix C Initializing the settings to the factory default state

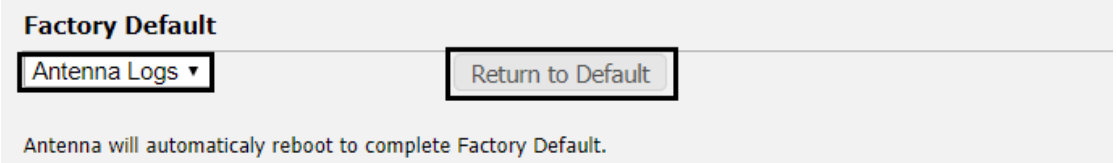
The settings of JUE-60KA can be reset to the factory default state.

The following settings are reset.

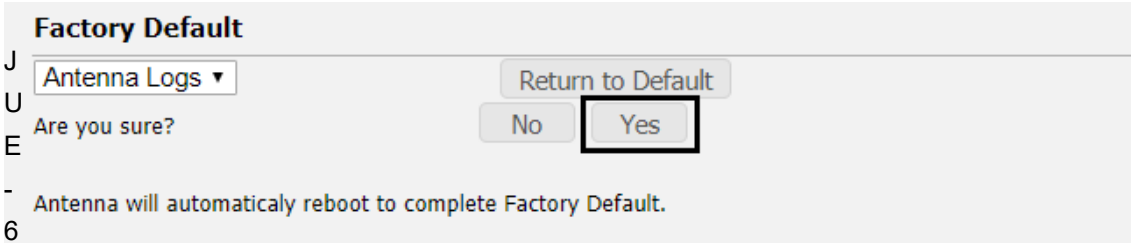
- AIM/BIM setting
- Alarmpack
- Event log
- Antenna monitor log

1 Select [Others] - [Factory Default] in the navigation area.

2 Select [Antenna Logs] and click on the [Return to Default] button.



3 Click on the [Yes] button.



JUE-60KA starts in the factory default setting when the machine is Automatic restarted.

APP C

Appendix D List of Initial Values (Version 0100)

Item	Initial value	Set from the Web menu system	
		Section title/number	Setting name
JUE-60KA operation starting day/month/year	01/JAN/2013	5.5.1	Delivery Date
BOW correction value	0		FWD from Bow
External gyro input	NMEA(4.8k)		GYRO Input
External GPS input	Disable		GPS Input
VDR output	LAN		VDR Output
BDE LED On/Off	ON		Panel LED
BDE Ethernet LED On/Off	ON		Ethernet LED
Transmission prohibition area/blocking area	All Disable	5.5.2	Enable/Disable
Transmission prohibition area application setting	None checked		Tx Forbidden
Maximum elevation of the area	All empty		EL Max
Maximum elevation of the area	All empty		EL Min
Starting azimuth of the area	All empty		AZ Begin
Ending azimuth of the area	All empty		AZ End
Rollback setting	Main	B.2.2	Rollback
Syslog transfer/no transfer	Disable	5.5.6	Enable/Disable
IP address of the log transfer server	No Data (Unregistered)		Server IP
Log transfer protocol	UDP		Protocol
Log transfer port number	514		Port Num.
Log collection level	ERR		Log Level
Extended LAN connection type setting	GX LAN	5.5.9	EXT LAN Type
RMS VLAN ID	2		Local VLAN ID
AIM IP address	192.168.60.153		AIM IP
BIM IP address	192.168.60.152		BIM IP
AIM/BIM subnet mask	255.255.255.0/24		AIM/BIM Subnet Mask
GPS IP address	239.0.0.1		GPS IP
GYRO IP address	239.0.0.128		Gyro IP
GPS/gyro port number	5101		GPS/Gyro Port
RMS message transmission IP address	192.168.60.3		RMS IP
RMS message transmission port number	6001		RMS Port

Appendix E Troubleshooting & FAQ

If a problem occurs, perform operation according to the FAQ items
If the problem cannot be solved, reboot the device.
If an error is still detected, collect device logs, and then stop using the device, and contact your distributor with the collected logs (refer to Section 7).
Even if the device is rebooted, saved data will not be deleted.

E.1 Power on, start and termination

Problem	Probable cause	Confirmation item
The BDE is not powered on. No BDE LED lights.	The power cable is disconnected.	Extract and then insert the power cable.
	The breaker in distribution board is OFF.	Confirm that the breaker in the distribution board is ON.
	The BDE power switch is OFF.	Turn the BDE power switch to OFF again, and then turn it to ON.
	The fuse is blown out.	If the problem cannot be solved according to the above confirmation items, replace the fuse with spare parts.
After power on, sweep takes place when STS1 to STS4 LEDs light in red.	Software is being modified.	Wait about 10 minutes. Since AIM and BIM software versions are different, AIM is upgraded to BIM software version.
When STS1 to STS4 LEDs light in green, sweep takes place.	Automatic update is in process.	Wait about 3 minutes. AIM and BIM are upgraded.
The READY LED continues to light in red.	The device is started in Safe mode.	Turn the BDE power switch to OFF, and then turn it to ON.
READY LED blinks in red.	A hardware error is detected.	Confirm the LED of STS1 to STS4 LEDs lighting in red, and refer to “Appendix E.4. Corrective action when alarm occurs.”
ANT LED lighted in red.	Satellite search failed.	Turn the BDE power switch to OFF, and then turn it to ON.

Problem	Probable cause	Confirmation item
ANT LED blinked in red.	The antenna points to the direction of transmission-prohibited area.	Confirm the antenna pointing direction through the Web interface. If the antenna points to the transmission-prohibited area, wait until the ship moves and the antenna pointing direction is outside the transmission-prohibited area.
	The antenna points to the blocking area direction.	Confirm the antenna pointing direction through the Web interface. If the antenna points to the blocking area, wait until the ship moves and a shield disappears between the antenna and the satellite.
STS1 LED lighted in red.	In BIM, an alarm is detected.	Refer to “Appendix E.4. Corrective action when alarm occurs.”
STS2 LED lighted in red.	In AIM, an alarm is detected.	
STS3 LED lighted in red.	In CM, an alarm is detected.	
STS4 LED lighted in red.	In BUC, an alarm is detected.	
BDE is not powered off. READY LED continues to blink in red.	BDE is in process of termination.	BDE termination process takes about 20 seconds on average. However, BDE is not powered off even after one minute has elapsed, confirm that the BDE power switch is off, and extract and insert the power cable.
	The power was turned on during BDE termination process.	Turn off the power again, and wait for a while. BDE termination process takes about 20 seconds on average to up to one (1) minute.

Note

The motor driving noise from ADE is not trouble. The mechanical trouble of ADE is confirmable by "E.4 Corrective action when alarm occurs".

E.2 Satellite acquisition, tracking, communication

Question description	Probable cause	Confirmation item
The satellite is not acquired. ANT LED does not light in green.	The GPS signal is not received.	Wait until GPS changes from invalid to valid on the Web interface “Status” screen (refer to “5.4.1”).
	Blocking is occurring.	Confirm whether there is a shield between the antenna and the satellite. If there is a shield, wait until the ship moves and the shield disappears between the antenna and the satellite.
	Rain attenuation is occurring.	Confirm the weather around the ship. If rain falls heavily, wait until the weather becomes clear.
	If the problem cannot be solved according to the above items, turn off the power to BDE, and then turn it on to reboot BDE.	
IN_NETWORK state is not entered. NET LED does not light in green.	Blocking is occurring.	Confirm whether there is a shield between the antenna and the satellite. If there is a shield, wait until the ship moves and the shield disappears between the antenna and the satellite.
	Rain attenuation is occurring.	Confirm the weather around the ship. If rain falls heavily, wait until the weather becomes clear.
	The antenna points to the direction of the transmission-prohibited area.	Confirm the antenna pointing direction through the Web interface. If the antenna points to the transmission-prohibited area, wait until the ship moves and the antenna pointing direction is outside the transmission-prohibited area.
	The ship is outside the satellite coverage area.	Confirm whether the ship is within the satellite coverage area. If it is outside the coverage area, use the device after it enters the coverage area.
Even in IN_NETWORK state, communication service cannot be used. Although NET LED lights in green, communication service cannot be used.	Refer to the document about troubleshooting attached to X7.	

Question description	Probable cause	Confirmation item
Reception signal intensity is weak.	Blocking is occurring.	Confirm whether there is a shield between the antenna and the satellite. If there is a shield, wait until the ship moves and the shield disappears between the antenna and the satellite.
	Rain attenuation is occurring.	Confirm the weather around the ship. If rain falls heavily, wait until the weather becomes clear.
Reception signal intensity changes.	Frequency switch occurred.	The reception signal intensity may change due to DVB-S2 frequency switch. This symptom is normal operation.
	Handover occurred.	The reception signal intensity may change due to spot beam hand handover (switch). This symptom is normal operation.
	Blocking is occurring.	Confirm whether there is shield between the antenna and the satellite. If there is a shield, wait until the ship moves and the shield disappears between the antenna and the satellite.
	Rain attenuation is occurring.	Confirm the weather around the ship. If rain falls heavily, wait until the weather becomes clear.

E.3 Web interface

Question description	Probable cause	Confirmation item
The Web interface cannot be displayed.	The Ethernet cable is not connected to JRC LAN.	Confirm that the PC is securely connected to the BDE using the Ethernet cable. If link between the BDE and PC is established, the Ether port Link LED lights.
	TCP/IP is not set.	Confirm that network IP, subnet mask and default gateway set in PC match those set in the BDE.
	URL is not correct.	Confirm whether the IP address entered in the URL box is the IP address and port number of the BDE. Default URL of Web interface: http://192.168.1.2:9443
	PC local area connection is disabled (Windows 2000 or later).	Confirm that local area connection is set to “enable” in the property specification of local area connection.
	PC local area connection is bridge connection.	Use the mouse to right-click on the local area connection icon to delete bridge.
When the button is clicked on the JRC Web interface menu screen, an error message appears.	The Web browser version is not supported.	JUE-60KA supports Mozilla Firefox or Google Chrome browser officially. It can also be used under the higher-order version or compatible system.

E.4 Corrective action when alarm occurs

If an alarm relevant to the items listed in the following table occurs, perform operation according to the confirmation items. If the alarm cannot still be corrected, contact your distributor.

Unit	Alarm name	Outline	Probable cause	Confirmation item
STS1 LED BDE	[COMM_ADE]	ADE communication error	Communication error due to poor contact	Confirm the coaxial cable connection.
			Unit is reset.	If this alarm is frequently displayed, the coaxial cable may be disconnected or the unit may be faulty.
	[COMM_ANT]	Antenna Control connection error	Communication error due to poor contact	Confirm the coaxial cable connection.
	[EXT_GPS]	External GPS signal reception error	External GPS stopped.	Although external GPS signal input is set, position information is not input from external GPS. Confirm that GPS is powered on.
	[COMM_GYRO]	GYRO signal reception error	GYRO stopped.	Although GYRO signal input is set, HEADING information is not input from the GYRO interface. Confirm that GYRO is powered on.
	[UGD_ERR]	Software upgrade error	File specification error	Confirm that the correct file has been selected for software upgrade, and then execute software upgrade again. If software upgrade fails several times, turn off the power to the main unit, and then turn it on to reboot the main unit.
			Unit is reset.	
STS2 LED AIM LED	[GPS]	Internal GPS signal reception error	Blocking occurred.	The built-in GPS cannot determine position information. Confirm whether blocking state is entered. If this alarm is frequently displayed even after blocking is cleared, the unit may be faulty.

Unit	Alarm name	Outline	Probable cause	Confirmation item
ST3 LED CM	[COMM_CM]	CM communication error	Unit reboot due to automatic upgrade	Since CM is rebooted when it is automatically upgraded from SAS, a CM communication error temporarily occurs. If this alarm is displayed frequently or for an extended period of time, the unit may be faulty.
			Unit is reset.	
ST4 LED BUC	[COMM_BUC]	BUC communication error	Unit reboot due to automatic upgrade	Since BUC is rebooted when it is automatically upgraded from SAS, a BUC communication error temporarily occurs. If this alarm is displayed frequently or for an extended period of time, the unit may be faulty.
			Unit is reset.	
			Communication error due to poor contact	Confirm the coaxial cable connection.
	[LOUNLOCK]	Local oscillator unlock	Poor contact of coaxial cable for transmission	Confirm the connection of coaxial cable for transmission.

If the following alarms occur, turn off the power to the BDE, and then turn it on to reboot the main unit.

Unit	Alarm name	Outline
ST1 LED BIM	[CURR]	Current error (GPIO detection error)
	[CUR_THR]	Current value error
	[FAN_TMP]	BIM FAN temperature error
	[FAN_REV]	BIM FAN rotation error
	[UGD_ERR]	Upgrade error
	[COMM_ADE]	ADE communication error
	[EXT_GPS]	External GPS communication error
	[COMM_GYRO]	Gyro communication error
	[BIM_TEMP]	BIM temperature error
ST2 LED AIM	[MTR_U]	U-axis motor protection error
	[MTR_X]	X-axis motor protection error
	[MTR_EL]	EL-axis motor protection error
	[MTR_AZ]	AZ-axis motor protection error
	[AX_U]	U-axis sensor error
	[AX_X]	X-axis sensor error
	[AX_EL]	EL-axis sensor error
	[AX_AZ]	AZ-axis sensor error
	[LVL_X]	X-axis clinometer sensor error
	[LVL_Y]	Y-axis clinometer sensor error
	[RATE_X]	X-axis angular velocity sensor error
	[RATE_Y]	Y-axis angular velocity sensor error
	[RATE_Z]	Z-axis angular velocity sensor error
	[GPS]	Internal GPS reception error
	[TUNER]	TUNER error
	[AGC_VLT]	AGC Voltage error
	[COMM_ANT]	Antenna Control communication error
	[AIM_TEMP]	AIM temperature error
	[VOLT]	AIM voltage value error
ST3 LED CM	[COMM_CM]	CM communication error
ST4 LED BUC	[COMM_BUC]	BUC communication error
	[FAN]	FAN error
	[HIPWR]	High power
	[LOUNLOCK]	Local oscillator unlock
	[OVERTEMP]	BUC high temperature error

E.5 Other problem

Turn off the power to the BDE, and then turn it on to reboot the BDE.

Appendix F LED of BDE

READY LED
Indicates the equipment startup status
Off: Power Off
On in red: Starting boot loader
Blink in green: Starting OS
On in green: Completed OS startup
Blink in red: Terminating

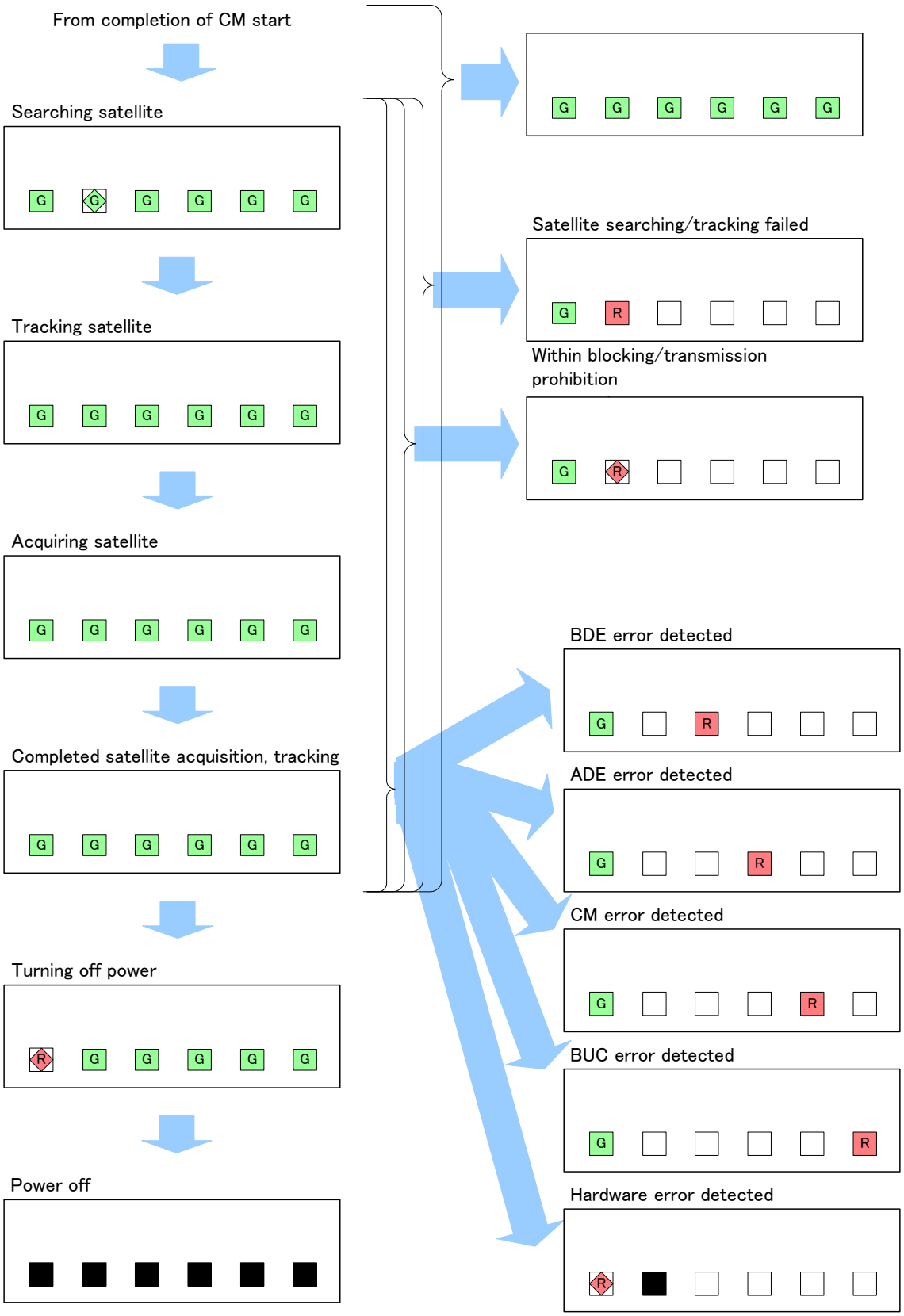
ANT LED
Indicates the antenna status.
Off: Power Off
Blink in green: Searching satellite
On in green: Tracking satellite
Blink in red: Directs blocking area/transmission prohibition area
On in red: Satellite search failed

STS LED
Indicates the status of each internal unit.

Correspondence between LED and internal unit
STS1: BIM
STS2: AIM
STS3: CM
STS4: BUC
Off: Power Off/alarm occurred in another internal unit.
On in red: Alarm occurred.
On in green: Normal
Sweep blink: Upgrading software/Running OTC
All blink: Completed upgrade software

F.1 BDE LED display sequence and display at the occurrence of abnormality

F.1.1 LED display sequence


From completion of CM start
Searching satellite
Tracking satellite
Acquiring satellite
Completed satellite acquisition, tracking
Turning off power
Power off
Satellite searching/tracking failed
Within blocking/transmission prohibition
BDE error detected
ADE error detected
CM error detected
BUC error detected
Hardware error detected

F.1.2 LED display sequence at software upgrading

Appendix G Abbreviations and Glossary

A

ADE (Above Deck Equipment)

AIM (Antenna Interface Module)

* Antenna interface module used in system. One of the substrate compose ADE.

ANT (Antenna)

AOR (Atlantic Ocean Region)

AZ (AZimuth)

B

BDE (Below Deck Equipment)

BIM (Broadband Interface Module)

* Network interface module used in GX system. One of the substrate compose BDE.

BPS (Bit Per Second)

BOW

* The BOW correction is function to correct offset the angle error from the bow.

BR (BeaRing)

BUC (Block Up Converterl)

C

COMM (Communication)

CPU (Central Processing Unit)

CM (Core Module)

* Modem circuit used in X7.

D

DC (Direct Current)

E

EIRP (Effective Isotropically Radiated Power, a measure of transmitted power)

* One of the indexes that indicate transmission performance. Parameter that is determined by converting the strength of radio waves that are radiated in all the directions of the space from the transmission antenna to the isotropic radiation source.

EL (ELevation)

EXT (External)

G

GPS (Global Positioning System)

H

HD (HeaDing)

HPA (High Power Amplifier)

I

INFO (Information)

L

LAN (Local Area Network)

LED (Light Emitting Diode)

LNB (Low Noise Block converter)

M

MAC address (Media Access Control Address)

MES (Mobile Earth Station)

N

NMEA (National Marine Electronics Association)

NOC (Network Operation Center)

O

Ocean region

* Ocean region that is covered by the INMARSAT satellite that allows MES (mobile earth station) to send and receive messages

OBC (Operational Backup Center)

OSC (Oscillator)

P

Packet

* Unit of data for transmitting communication data by dividing data into a certain size by attaching an address. By transmitting data by dividing into packets, the line can be used efficiently.

PC (Personal Computer)

POP (Post Office Protocol)

* Application-layer Internet standard protocol used by local e-mail clients to retrieve e-mail from a remote server over a TCP/IP connection

Protocol

* Set of mutually determined conventions for communication performed by computers via the network

PWR (Power)

R

RAM (Random Access Memory)

* Electronic parts for temporarily saving data. RAM is used by connecting to CPU (Central Processing Unit) and data can be read from and written to RAM. Data is cleared when the power is turned off.

ROM (Read Only Memory)

RMS (Remote Maintenance System)

* JRC's original onboard equipment performance and functionality monitoring system using VDR as a server.

RSSI (Received Signal Strength Indicator)

RX (Receive/Receiver)

S

STS (Status)

T

TCP (Transmission Control Protocol)

TX (Transmit/ Transmitter)

U

UTC (Universal Coordinated Time)

V

VoIP (Voice over Internet Protocol)

VDR (Voyage Data Recorder)

Appendix H JRC Network

If your JUE-60GX has problems in operation, please contact the dealer you purchased it from.
For assistance in finding a Service Center, please access one of the following web sites.

JRC web site

JRC Japan	https://www.jrc.co.jp/eng/
JRC/Alphatron Marine	https://jrc.am/

アスベストは使用しておりません
Not use the asbestos

For further information,contact:

JRC Japan Radio Co., Ltd.

Since 1915

URL Head office : http://www.jrc.co.jp/eng/
Marine Service Department
1-7-32 Tatsumi, Koto-ku, Tokyo 135-0053, Japan
e-mail : tmsc@jrc.co.jp
One-call : +81-50-3786-9201

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