iRGS232

Intelligent GPS splitter

RoHS

- Automatic or Manual Antennas Switching Capability;
- Gain : 0～30dB step adjustable , 1dB step（Optional）;
- Antenna status monitoring and warning;
- Send alarm mail;
- Output Ports status monitoring and alarm function (Optional);
- Show information of GPS/Beidou in time;
- 48V DC ,12V DC dual power support;
- In large indoor coverage in GPS application;
- High Isolations >30dB.

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Description

The iRGS232 GPS Splitter is a dual-input, thirty two-output GPS device. The dual input ports connect two GPS receive antennas. The outputs ports grant up to 32 GPS receives signal access at one time.

When entering the GNSS signal system management terminal to set the IP, the software can display the power of each port, the number of GPS visible satellites and the value of C / No, the number of Beidou visible satellites and the value of C / No.

This product typically finds application where an input from an active GPS roof antenna is split evenly between thirty two receiving GPS units. Usually the iRGS232 is configured with an 12V input (-48V telecom power input also available). In this scenario, the iRGS232 can be configured to pass DC from an RF output to the antenna input port in order to power an active GPS antenna on that port. Output ports(J2-J32) would feature a 200 Ohm DC load to simulate an antenna DC current draw for any receiver connected to those ports.

Redundancy is acquired through the use of a primary antenna and a backup antenna. The ability of the iRGS232 to switch antennas allows all connected GPS devices to remain fully functional in the event of an antenna failure. The iRGS232 can manually or automatically switch the antenna port. Faults are indicated on the front panel LED and status via a DB9 interface.

Within the iRGS232 is an antenna health sensor and an embedded antenna switch. The sensor monitors the health of the primary antenna connected to the splitter. Based on the information provided by the sensor, the splitter will automatically switch to the secondary antenna in the event of a failure with the primary antenna.

If the failure in the primary antenna is resolved, the splitter will automatically switch back to the primary. The embedded switch has been designed so it can be controlled externally via a DB9 port or an external toggle switch that can override the internal automatic switch mechanism .

Specifications

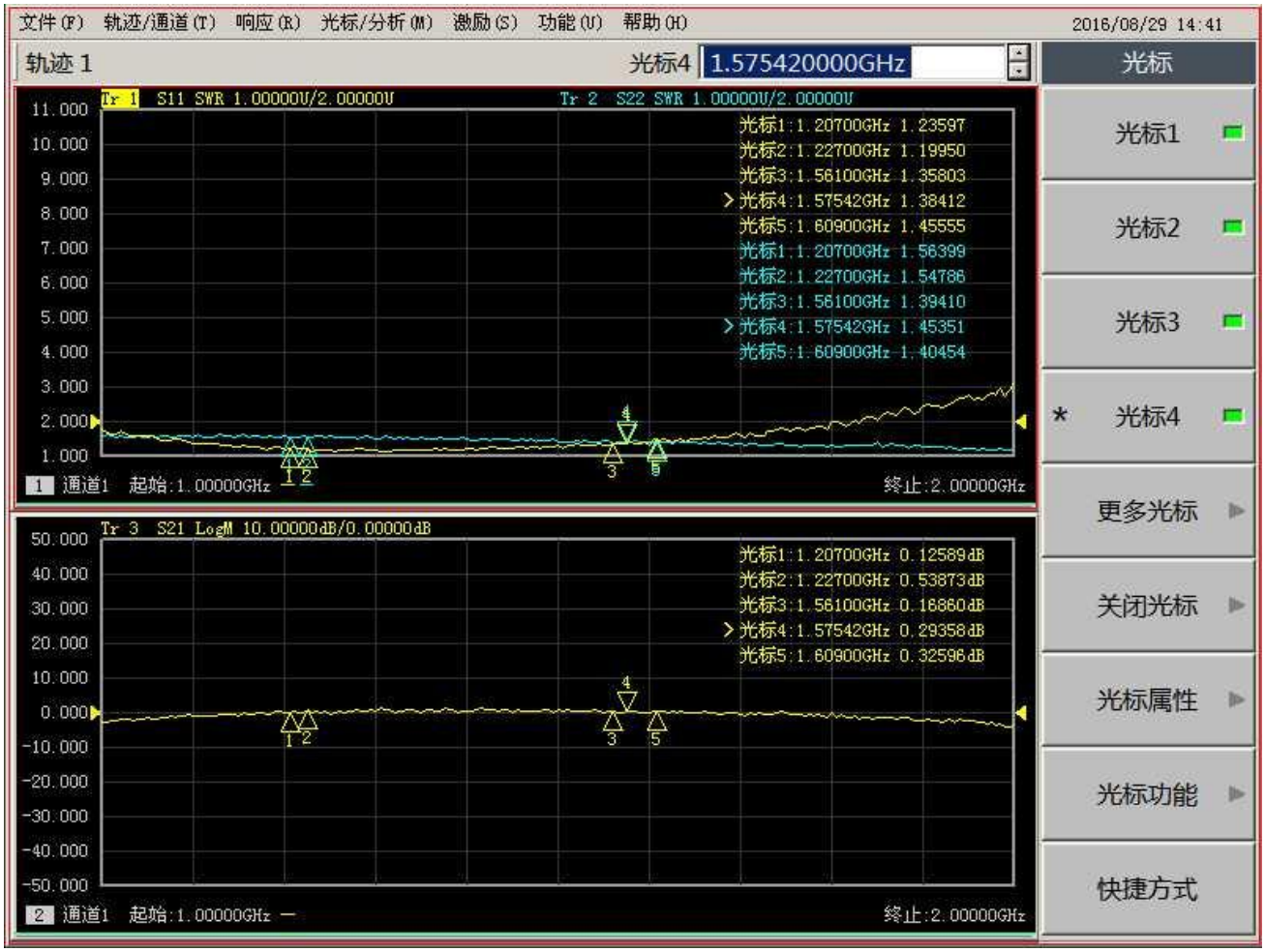
Electrical Specifications, Operating Temperature -20 to 65℃； Storage Temperature -30 to 80℃.

Parameter		Conditions	Min	Typ	Max	Units
Freq. Range		Ant – Any Port	1.1		1.7	GHz
In &Out Imped.		In, all output ports		50		Ω
Gain	0dB	In- Output ports, Unused Ports - 50Ω terminations	-1	0	1	dB
	10dB		9	10	11	
Input SWR		All Ports- 50Ω reference			2.0:1	-
Output SWR		All Ports- 50Ω reference			2.0:1	-
Nois Figure (Amplified)		Ant- Any Port, Unused Ports-50Ω terminations			3	dB
Gain Flatness (Amplified)		L1-L2,Ant- Any Port, Unused Ports-50 terminations			3	dB
Amplitude Balance		Ant- Any Port, Unused Ports-50Ω terminations			0.5	dB
Phase Balance		Ant- Any Port, Unused Ports-50Ω terminations			1.0	deg
Group Delay Flatness					1	ns
Isolation	Amplified	Adjacent Ports: In - 50Ω terminations	30			dB
		Opposite Ports: In – 50Ω terminations	34			
	Gain:10dB	Adjacent Ports: In - 50Ω terminations	30			
		Opposite Ports: In - 50Ω terminations	34			
AC IN		Wall Mount transformer		230		VAC
DC IN		DC Block, All ports with a 200Ω Load			14	VDC
		PASS DC, Amplified	3		16	
		PASS DC, Passive			16	
		Powered, （12V）	11.5	12	14	
		Powered, （48V）	43	48	58	Optional
Device Current					80	mA
Current		12V DC IN, PASS DC inputs ， Block DC Outputs			500	mA
		12V DC IN, PASS DC inputs ， PASS DC Outputs			2000	mA
		48V DC IN, PASS DC inputs ， Block DC Outputs			120	mA
		48V DC IN, PASS DC inputs ， PASS DC Outputs			500	mA
Max RF Input (Amplified)		Max RF input without damage			0	dBm

The adjacent port and the opposite port refer to:

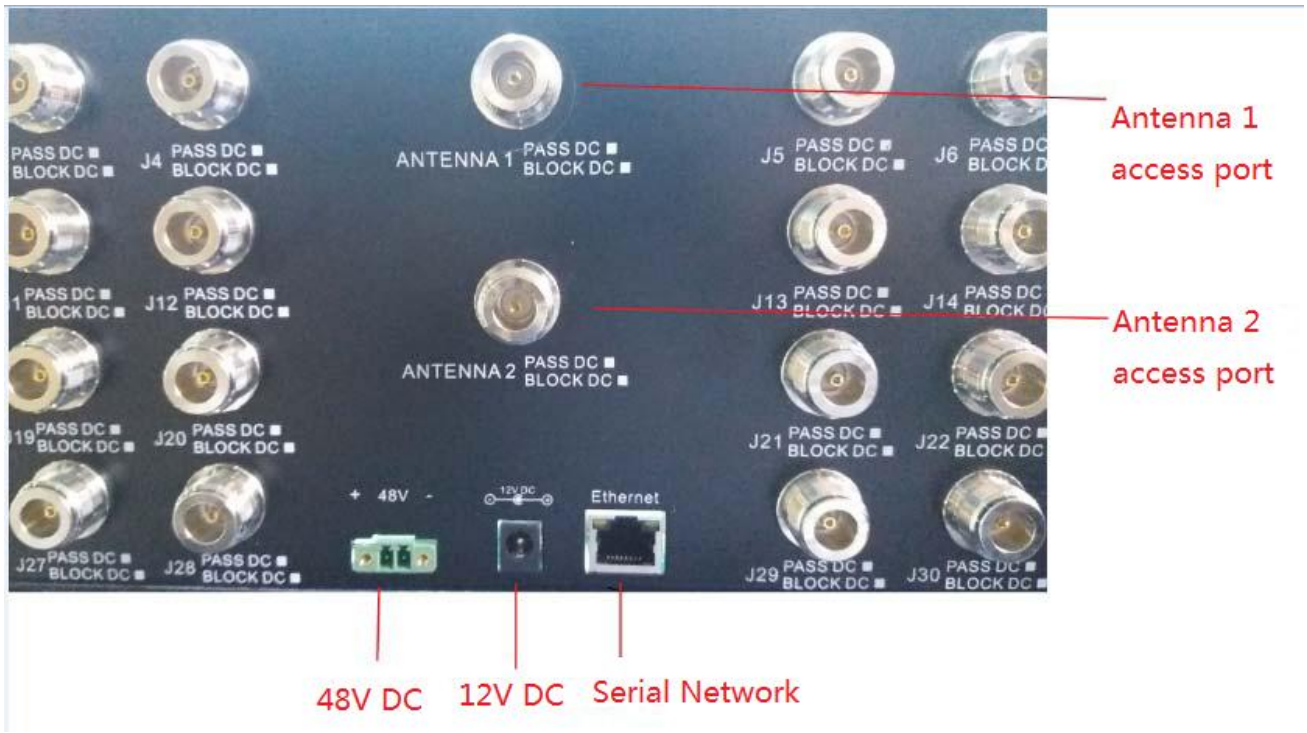
Type(Depending on the placement of the internal power divider)	Port
Adjacent Port	J1、J9、J3、J11
	J2、J4、J10、J12
	J17、J25、J19、J27
	J18、J26、J20、J28
	J5、J13、J7、J15
	J6、J14、J8、J16
	J21、J29、J23、J31
	J22、J30、J24、J32
Opposite Port	Which is not adjacent to the port is the opposite port

Performance Index

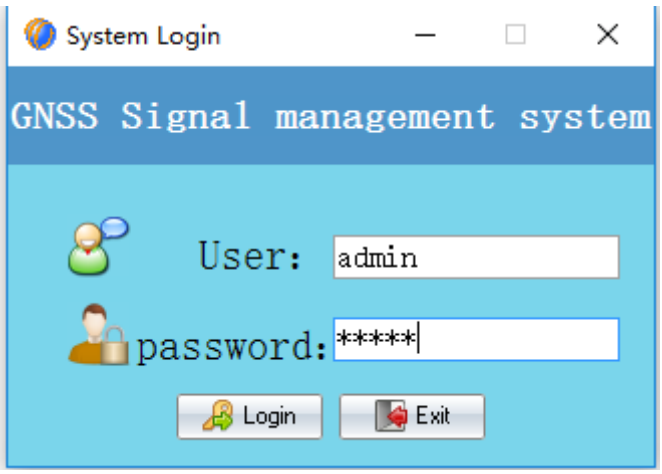


Operation instructions

Open the power to access ANT2, ANT1 port antenna, connect the network serial port to the PC port.



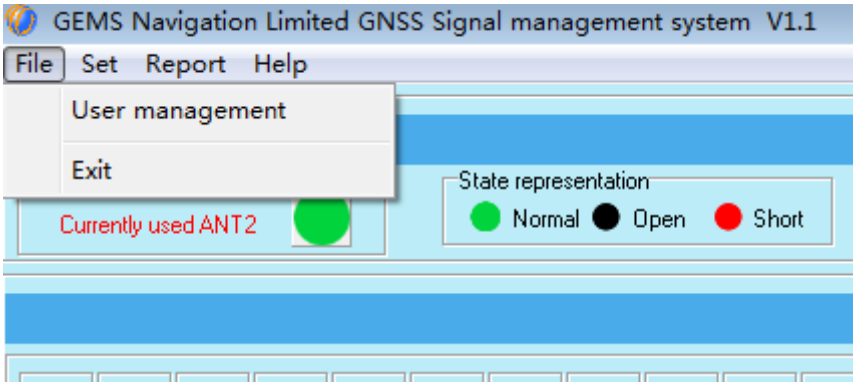
Install and open “GNSS signal system management terminal” software, login.
User：admin
Password：admin

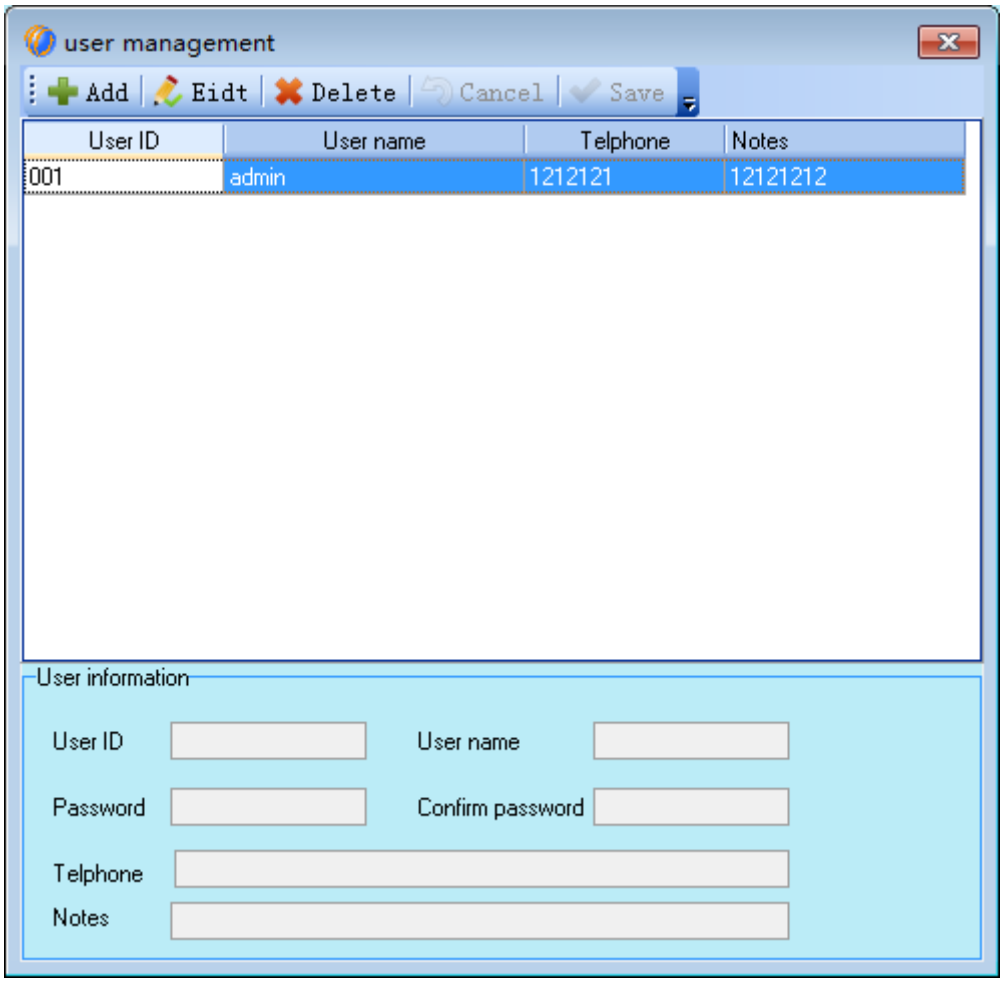


Click on the "Login" sign on; "Exit" exit.

1. User management

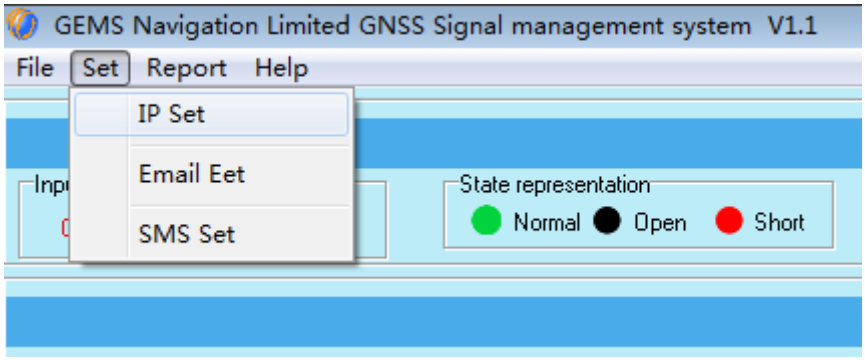
File—> User Management

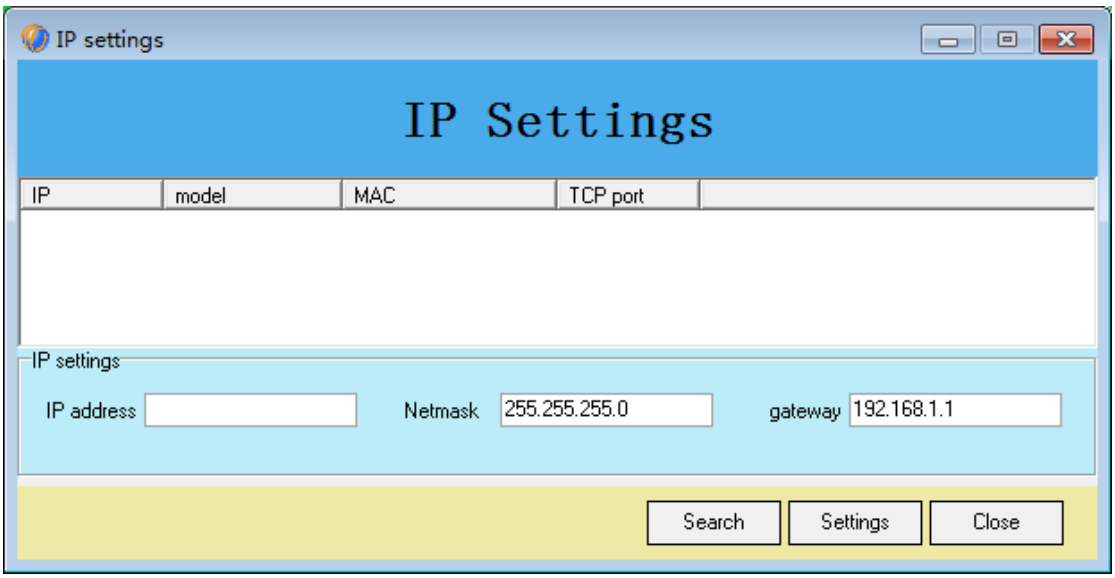




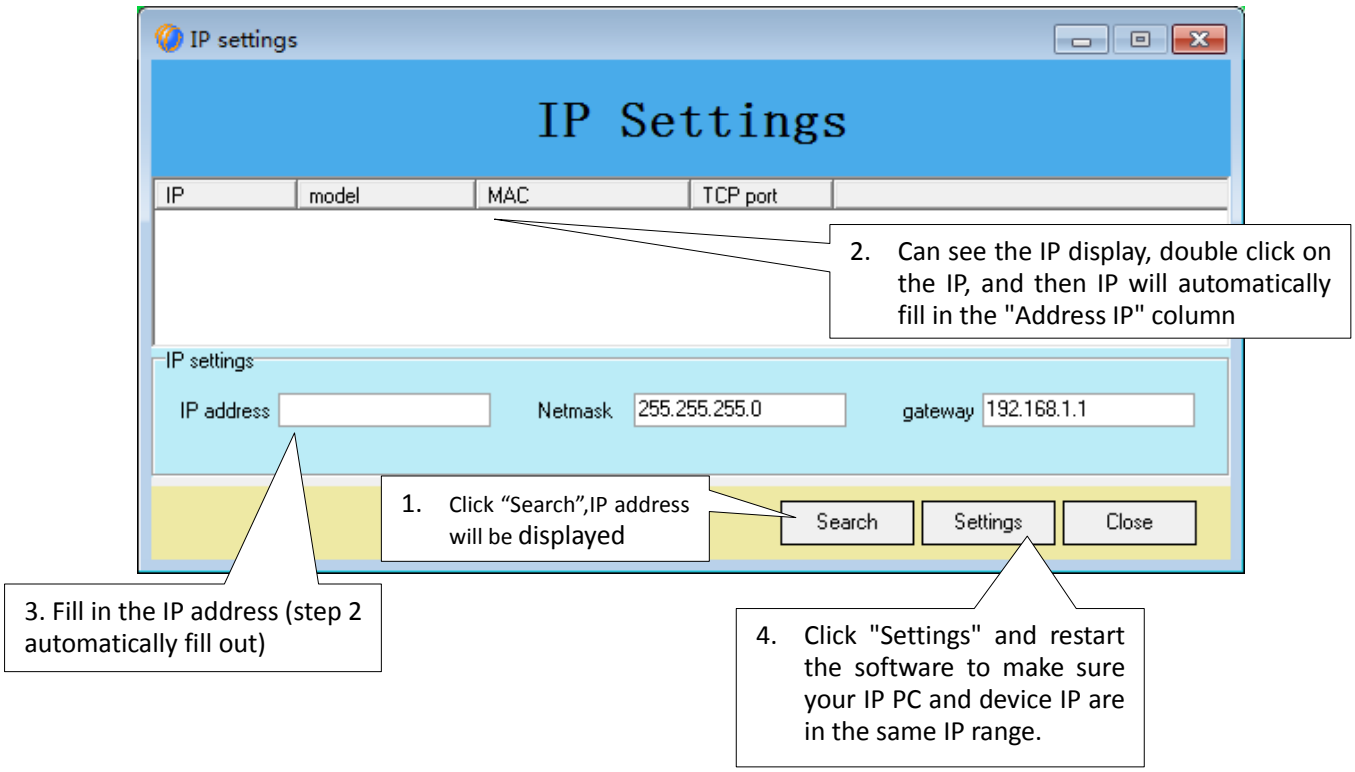
2. Set IP

Set—>IP Set





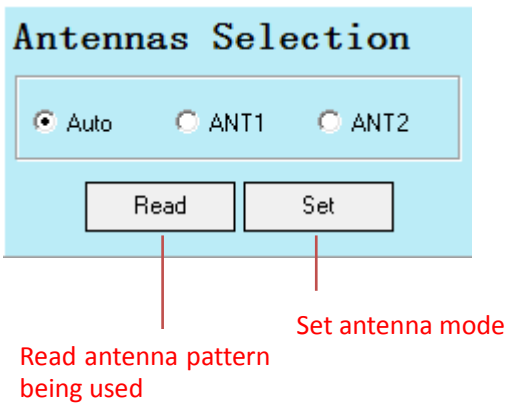
Setting steps



IP set successfully, the network serial port can be used normally.

3. Antenna selection and status display

In the below and to the right of the antennas selection bar for active antenna selection and state, read the "auto" selected automatically signal the better antenna access, Ant1 is specified using the wire 1 access, ant2 "for the specified using antenna 2 access, click the" read "read antenna can be seen when using the antenna pattern.



Active antenna mode select: Select "AUTO" or other antenna patterns Click "Set" prompt setup is successful, while the unit's front panel LCD displays the antenna pattern used in this case, if you select "AUTO" mode the unit's front panel "ANT1" bright blue light, select "ANT1" mode is "ANT1" lights up in blue, select "ANT2" mode "ANT2" lights up in blue, the active antenna selection mode can also be operated in the front panel buttons, press the button "Ant Switch", can rotate choose from three antenna mode, synchronous display mode antenna device used in this case on the LCD screen.

Front Pannel:

"AUTO" mode: automatic selection mode for the antenna when switching to this mode will automatically turn access antennas 1 and 2 compare the signal strength and then select a better signal antenna access. In this mode the device automatically switches the antenna will be delayed.

Display screen:

Ant: Auto, Antenna automatic switching mode; ANT1 or ANT2 specified antenna access mode

COM: OK, Network serial port connected to normal; NG, Network serial connection abnormal

GPS and BEIDOU information interface

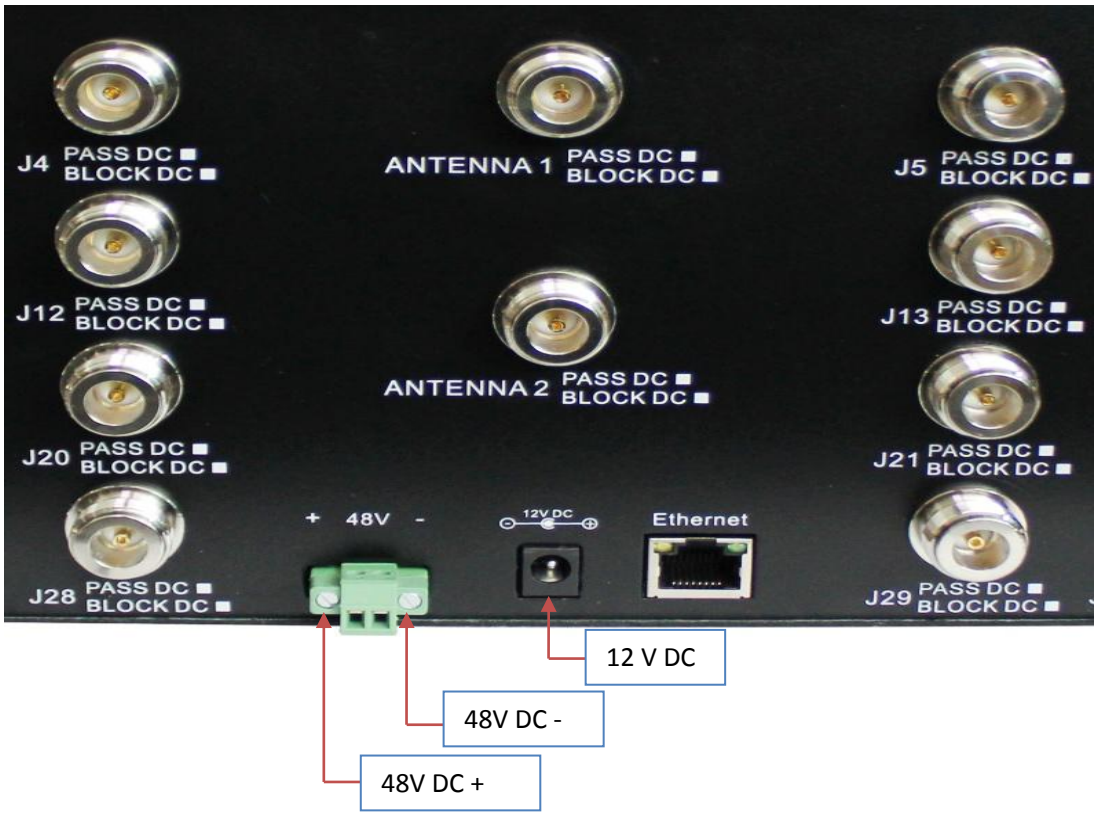
Back pannel:

Console VIA ethernet

ANT2: Connect to the second GPS/GNSS antenna

ANTI: Connect to the first GPS/GNSS antenna

Power:
Dual power supply design, power supply 48V DC and 12V DC power supply support, to choose from, such as access to work when the 48V power supply, the 12V power supply is not access; while 48V and 12V power supply has reverse polarity protection, namely when the power is negative reversed, the device will not burn, it has a protective function.



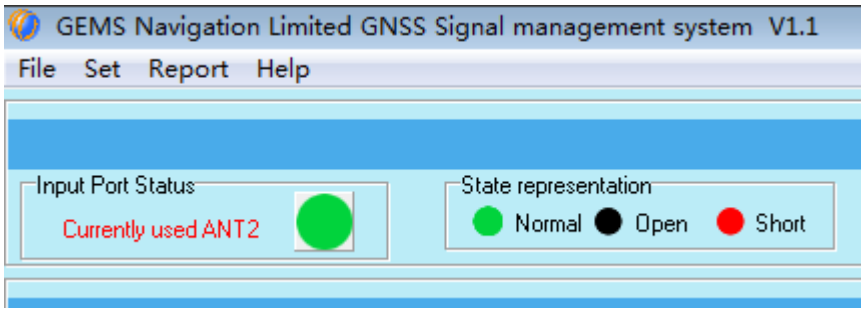
Power Connecting:

- -48V DC:
  - -48v connect to -;
  - GND connect to +;
- +48V DC:
  - +48V connect to +;
  - GND connect to -;
- 12V DC

Warning: Do not connect to the power supplies (48V and 12V) at the same time.

4. Antenna operation status display

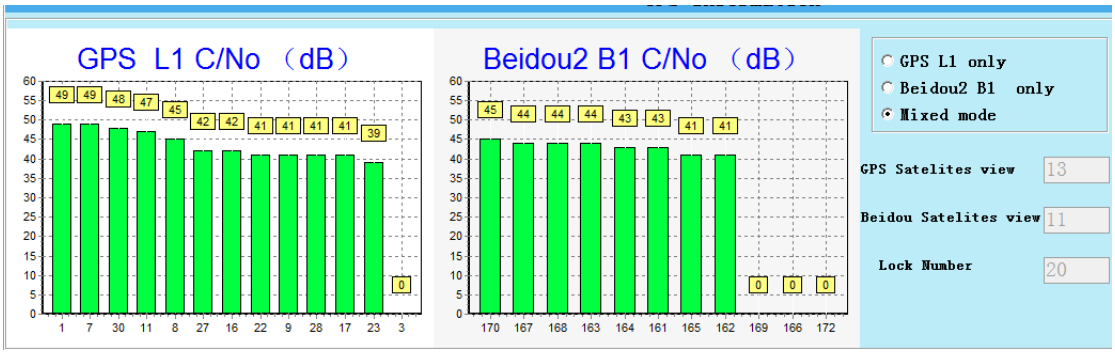
At the top left of the interface of the software, input port status bar for the antenna operating status, real-time displaying the access for which antenna and access antenna operation and state representation bar sketch for antenna operating status, Green said normally, red represents a short circuiting, Black said the road.



If the antenna open or short circuit, the front panel of the machine GPS Locked green light is off, Alarm red light flashes to indicate alarm, PC-side reading antenna operating state shorted or opened.

5. GPS Information

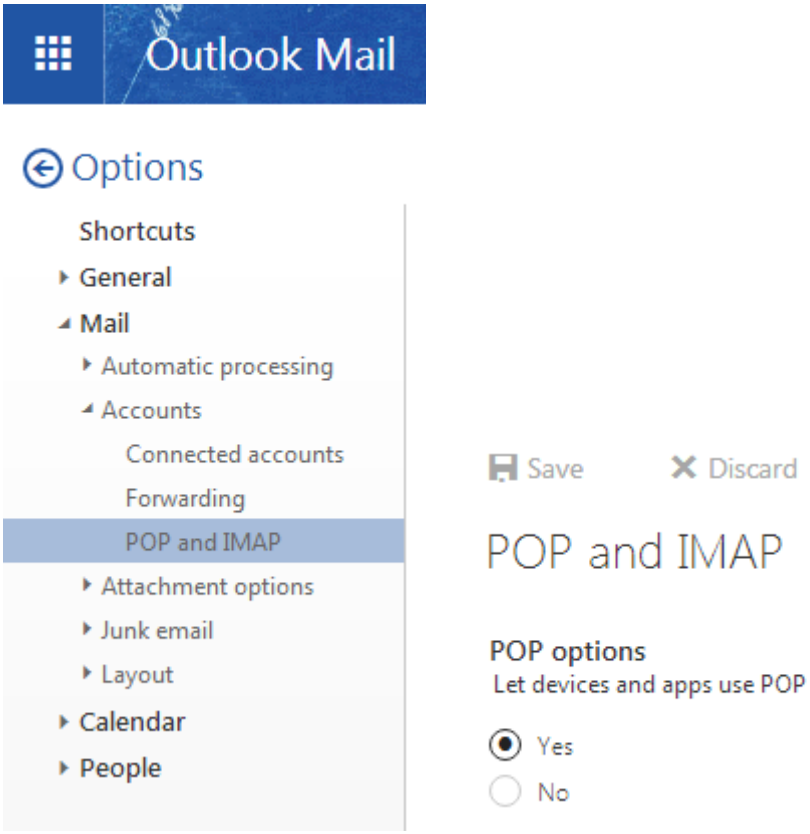
GPS information bar graph for the received satellite signal real-time display and the right edge of the chart three options "GPS L1 only" to show only the GPS L1 satellite signal chart, "Beidou2 B1 only" to show only the compass B1 satellite signal chart, "mixed mode" for the two charts show. (The abscissa represents the satellite signal, and the ordinate represents the intensity of the received satellite signal).



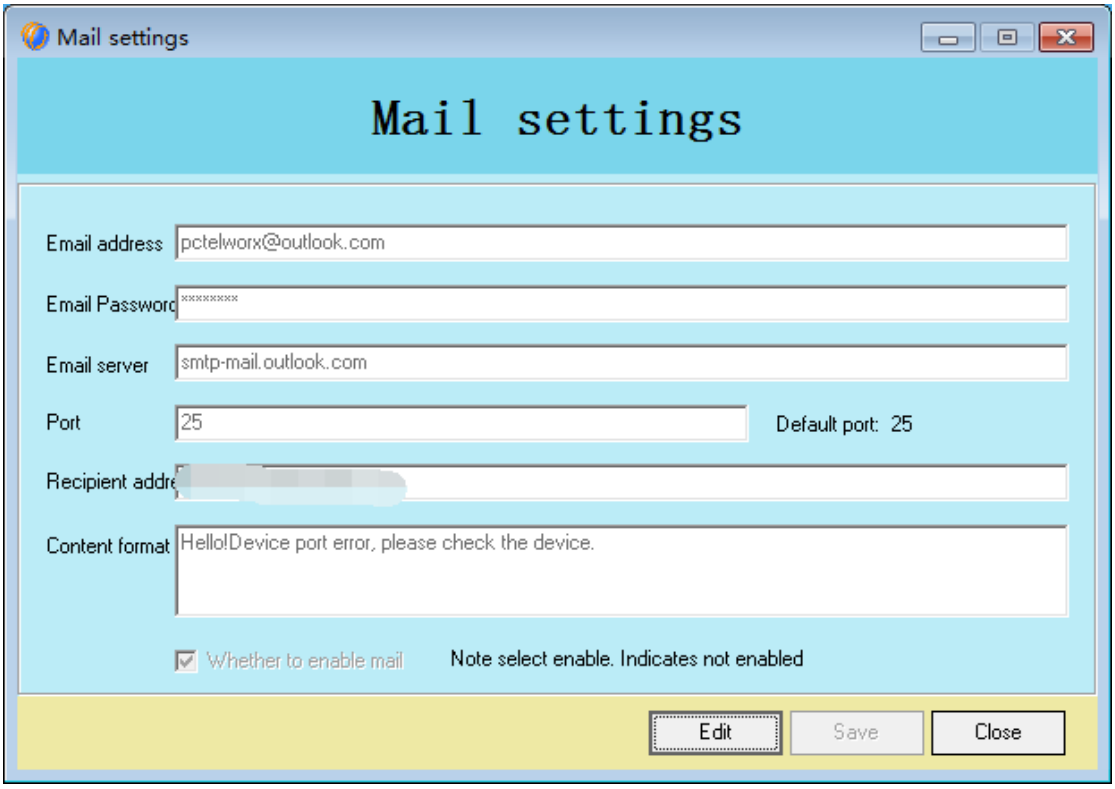
6. Send alarm mail

(1) E-mail settings

Use Outlook as a sending mailbox, you need to allow the device and application to use the "POP" function, set the mailbox "POP" function, check "yes" and save the settings.



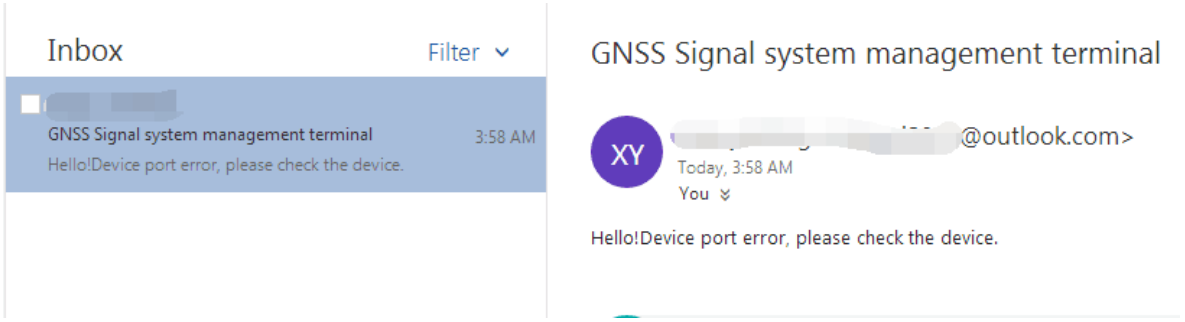
(2) Client mail settings
Go to "Mail Settings" Click "Edit"



E-mail address: Send the email address of the message;
Mailbox password: Mailbox login password;
Mail server: smtp-mail.outlook.com;
Port: 25;
Recipient address: The email address of the incoming mail;
Content format: Can edit the contents of the message;
Whether to enable mail click check, click "Save" mail settings are complete.

(3) Functional demonstration

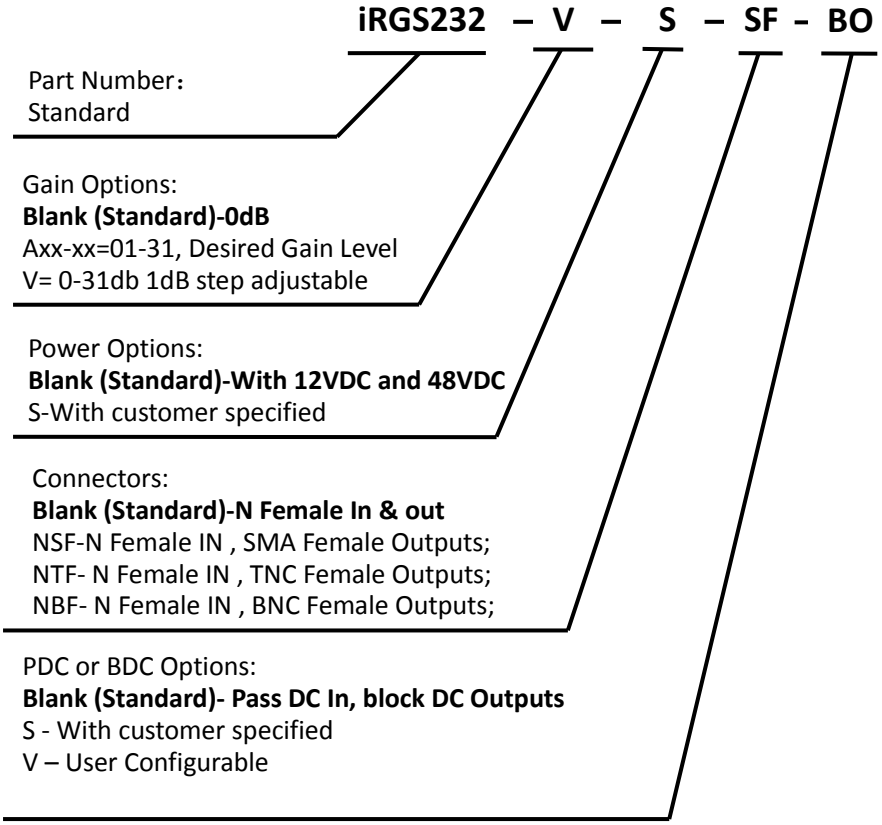
After the setup is complete, the client will automatically send the mail to the receiving mailbox when the device port is faulty, such as when the current input antenna is open, shorted or output is powered on and shorted.



(4) Alarm mail sending mechanism

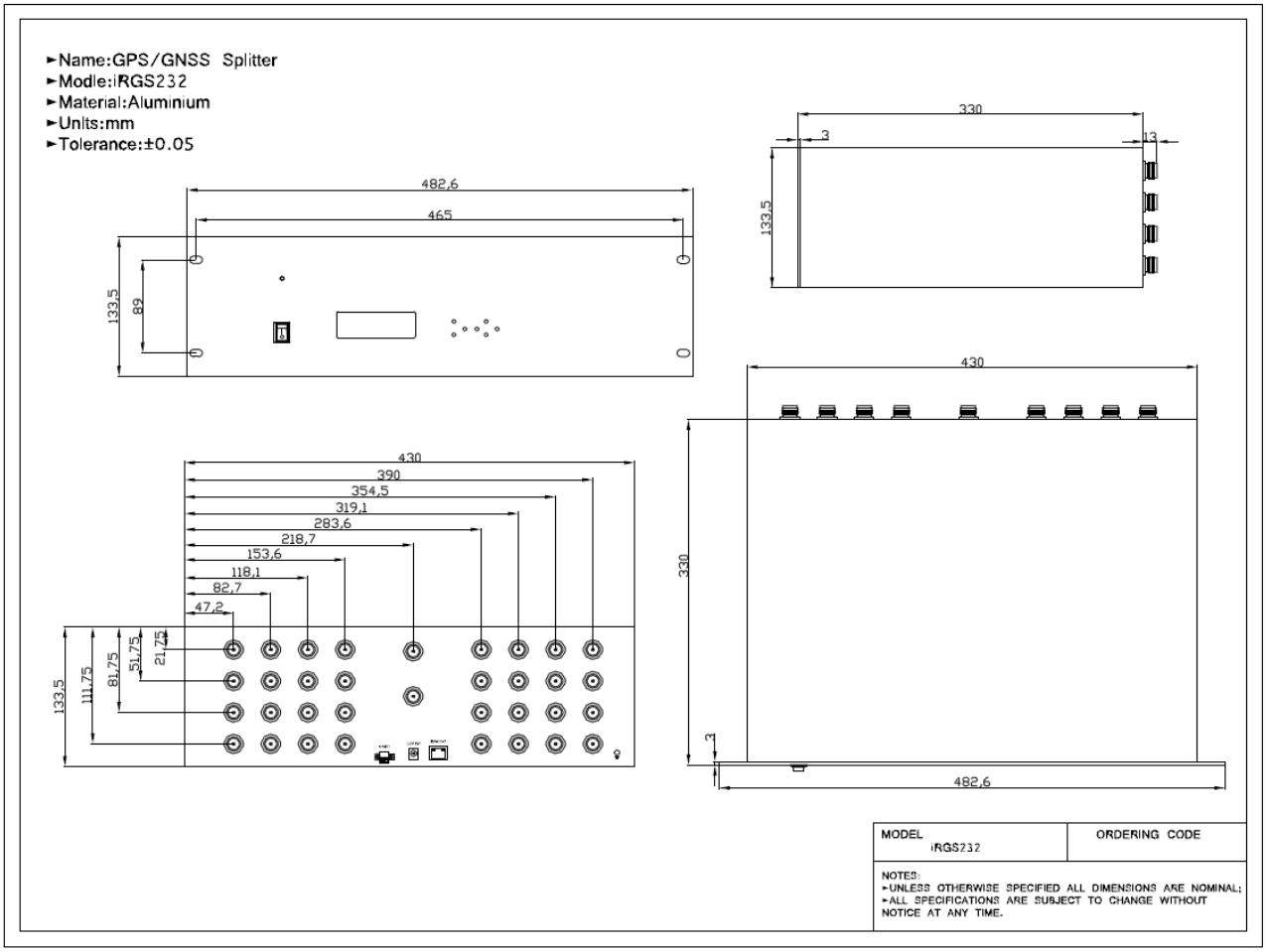
When the device port failure will immediately send a message to the specified mailbox, if the fault is not removed and failure will not send mail again until the troubleshooting, the system will run immediately after the failure will immediately send an e-mail to the designated e-mail; Mailbox sometimes intercepts short messages, please set up a collection of mailboxes white list, in the mailing mailbox to set the mail box to set the mailbox, to prevent the alarm message mistakenly blocked.

Order Informations And Available Options



Please contact us for more configurations and application supports. Email: Sales@gemsnav.com.

Mechanical



Frequency reference table:

Gllobal/Compass Navigation Satellite Systems(GNSS/CNSS)	5						2					6/3				6				1									
Frequency (MHz)	1164	1176	1188	1192	1207	1215	1219	1227	1239	1245	1252	1259	1266	1268	1278	1290	1535	1540	1545	1550	1558	1558	1561	1563	1575	1587	1592	1602	1609	1616	2491
GPS(USA) L1,L2,L2C,L5	L5+/-12						L2/L2C+/-12												L6+/-5					L1+/-12						
Glonass(Russia) G1,G2										G2+/-7																			G1+/-7		
Galileo(Europian) L1,E1,E2,E5(E5a,E5b),E6	E5+/-15 E5a+/-12 E5b+/-12												E6+/-12						L6+/-5			E2		L1+/-17			E1			
Compass (Beidou 2,China)				B2+/-10								B3+/-10										B1+/-2								
Beidou 1 (China,Tx(LHCP)/Rx(RHCP)																														L	S
IRNSS (India)			L5+/-15																					L1+/-12						S+/-15
OmniStar																	O+/-14---->														