STONEX

STONEX SC600+

CORS RECEIVER

User Manual

March 2023 – Ver. 1 – Firmware update-20220530

Contents

Statement

Please read carefully:

The final interpretation of this user manual belongs to STONEX.

Thank you very much for your purchase. For directions on how to use the product, please be sure to read the user manual.

This user manual is only for your receiver. If your receiver does not match the scenario shown in the user manual, the actual situation of the receiver shall prevail. Information in this document is subject to change without notice; STONEX reserves the right to change or improve its products and to make changes in the content without obligation to notify any person or organization of such changes or improvements. If you have any questions, please contact customer service center, or contact our authorized dealers.

Customer safety is important. Please carefully read the notes and instructions in User Manual. To avoid unexpected damage, you should only use original supplied parts. If you do not use the system with the correct procedure or connect incompatible accessories, cause the equipment damage, and may even endanger other person and your safety. In this regard, the company does not assume any responsibility.

1. Product Overview

SC600+ is a multipurpose CORS receiver for engineering, monitoring and other applications. The product is suitable for project applications such as vehicle monitoring, engineering inspection and automated data collection.

This chapter provides basic information to help you get familiar with your CORS receiver.

Key Features:

- 1408 channels
- Heading functionality
- GPS/Galileo/GLONASS/BeiDou/QZSS
- Position rate 20Hz
- Internal memory 8GB, external memory 32GB
- 4G LTE/Bluetooth/Wi-Fi/Ethernet/Radio UHF
- Easy configuration from Web UI and remote server
- NTRIP Caster/Server/Client
- Double GNSS antenna
- Waterproof/Dustproof IP67

1.1 Top view

	Item	Led Color	Description
	Power indicator	Red	On: Power supplied Off: Power off
	Satellite indicator	Yellow	Always on: Float solution/Fixed solution Flash each 1s: Single solution Off: Invalid solution
	Bluetooth indicator	Blue	Always-on: Bluetooth connected Flash: data transmission via Bluetooth Off: Bluetooth disconnected
	Wi-Fi indicator	Green	Always-on: client mode opens Flash: data transmission in client mode Off: AP in normal open status
	Network indicator	Green	Always on: network connected Flash: data transmission via network Off: network disconnected
	Radio indicator	Green	Flash (at frequency of data transmission/reception): data transmission/reception Off: default
	Heading indicator	Green	Always-on: heading output Off: no heading output

1.2 Front view

Num.	Item	Description
1	GNSS2	TNC, external GNSS slave antenna connector
2	PWR	2-pin LEMO connector, power supply
3	D-SUB 26	Two RS485 serial ports One RS232 serial port One USB2.0 interface (supports OTG) One 1PPS output interface One EVENT interface One CAN interface One 100M Ethernet port
4	GNSS1	TNC, external GNSS master antenna connector
5	LTE	SMA, 4G antenna interface
6	UHF	External UHF antenna

1.3 Right-side view

Num.	Item	Description
1	TF card slot	MicroSD card slot
2	SIM card slot	Nano-SIM card interface

1.4 Left-side view

1.5 Bottom view

2. Technical Specification

2.1 GNSS

Board: Unicorecomm UM982

Channels：1408

Satellite signals tracked

Satellite	Signals
GPS	L1C/A, L2P, L2C, L5
GLONASS	L1, L2
BDS	B1, B2, B3
Galileo	E1, E5a, E5b
QZSS	L1, L2, L5

Update Rate: 20Hz Standard

Position Accuracy

Positioning mode	Horizontal	Vertical
Static	3 mm + 0.1 ppm RMS	5 mm + 0.4 ppm RMS
RTK	8 mm + 1 ppm RMS	15 mm + 1 ppm RMS

Initialization time: < 10 s

Initialization reliability: > 99.9%

2.2 Physical specification

Weight: 550 g

Dimensions: 150mm x 105mm x 34mm

2.3 Environmental

Operating Temp	-30°C to 65°C (-22°F to 149°F)
Storage Temp	-40°C to 80°C (-40°F to 176°F)
Humidity	100% non-condensing
Dust and Water Protection	IP67
Drop	Designed to endure to a 1.5 m free drop on concrete floor with no damage
Vibration	Vibration resistant

2.4 Connection Ports

I/O Connectors	Power port, Lemo connector D-BUB 26 interfaces: · 2 RS485 serial port · RS232 serial port · USB 2.0 interface · Ethernet port 100 Mbit · 1PPS output interface · Event interface 2 GNSS antenna, TNC female Radio UHF antenna, SMA female LTE antenna, SMA female
Bluetooth	2.1 + EDR, V5.0
Wi-Fi	802.11 a/ac/b/g/n

2.5 Electrical

Supply voltage	12 to 28 VDC external power input

2.6 Data Recording

Internal Memory	8G Multi storage sessions
Data types	Binary, RINEX, BINEX
Data rates	2S, 5S, 10S, 15S, 30S, 60S 1Hz, 2Hz, 10Hz, 20Hz

2.7 Data Streaming

Number of streams	1 NTRIP server stream,1 NTRIP Client stream, 5 Socket (TCP / UDP) streams
Streaming ports	Wi-Fi, Wireless, UHF, Ethernet, COM1
Navigation outputs	NMEA 0183
Reference outputs	Raw data, RTCM 2.x, RTCM 3.x, CMR

2.8 User Interface and system configuration

LEDs	Power, Satellite, Bluetooth, Wi-fi, Network, Radio, Heading state
Operating system	Linux

2.9 Networking Services

NTRIP	Client/Server/Caster
Remote Management	Remote config by STONEX Software
FTP server	For data download
Email alerts	For low storage and other warning messages
NTP server	Support
Others	DDNS, VPN, SNMPD, Firewall

3. Operation

3.1 Power ON/OFF

SC600+ will turn on automatically after connecting the 2-pin power cable and receiving power.

After switching on, the indicators will show the status of the device. For example, the power indicator will turn green.

SC600+ shuts down if not connected to power.

3.2 Connect External accessories

To receive GNSS signal the SC600+ needs to be connected connect to the external antenna, you can connect the external antenna to the GNSS port.

4. Web User Interface

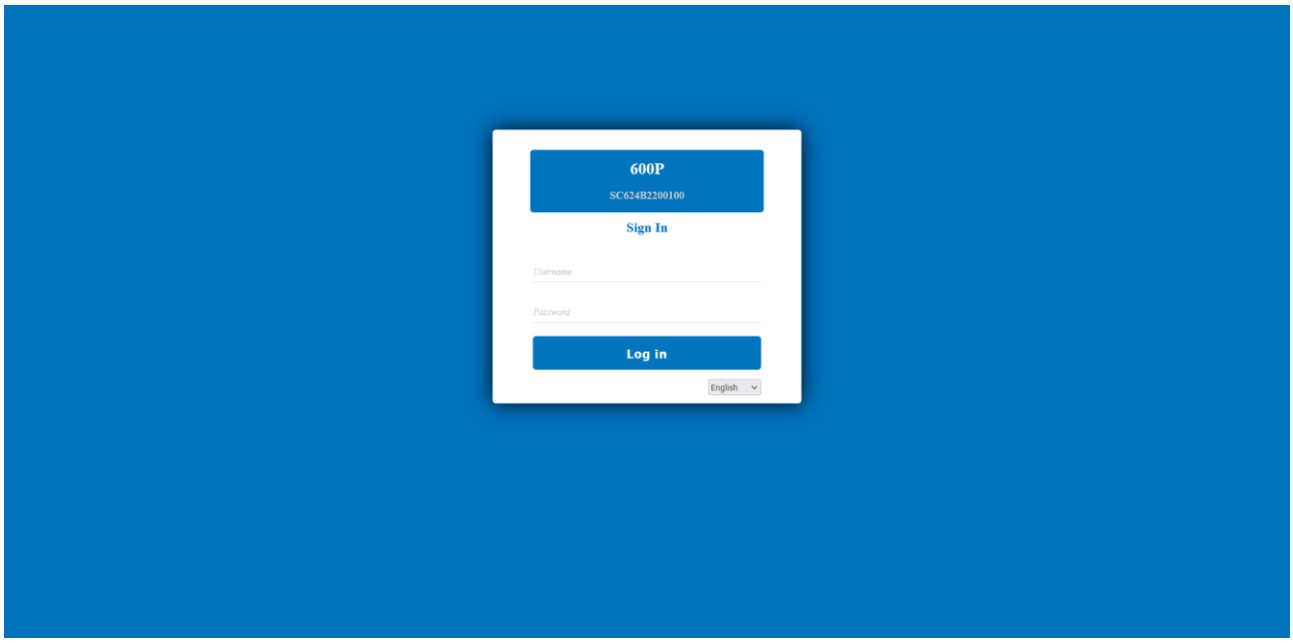
SC600⁺ has the WEB interface function, you can connect to the SC600+'s Wi-Fi, enter the WEB User Interface and view device information, and set up it. The Wi-Fi hotspot name is the serial number of the receiver.

In the browser window enter the IP address: **192.168.10.1**. This address will open the user login page (shown below), in which you need to fill in the username and password. The default credentials are:

Username: admin

Password: password

You will be able to change the password after your first login.



After authentication, it will be possible to see the name of the instrument and the list of available commands (below picture). The commands are shown and analyzed in the following paragraphs.

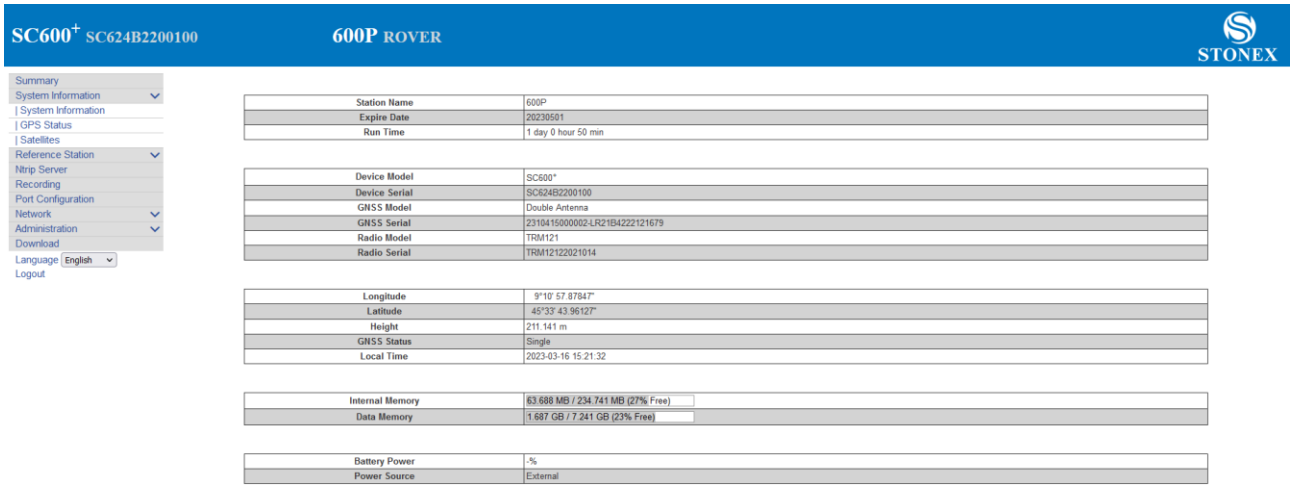
4.1 Summary and System Information

Summary section does not have submenus. The System Information section has 4 pages: System Information, GPS Status, Satellites and Spectrum Analyzer, which will be explained below.

The first two pages of the Summary and System Information command give information about the device and its operation. The other pages are dedicated to configuration. Each configuration page has the Submit and Reload buttons at the bottom: no change is effective until the Submit button is pressed. Reload is used to reload the page with the last saved values.

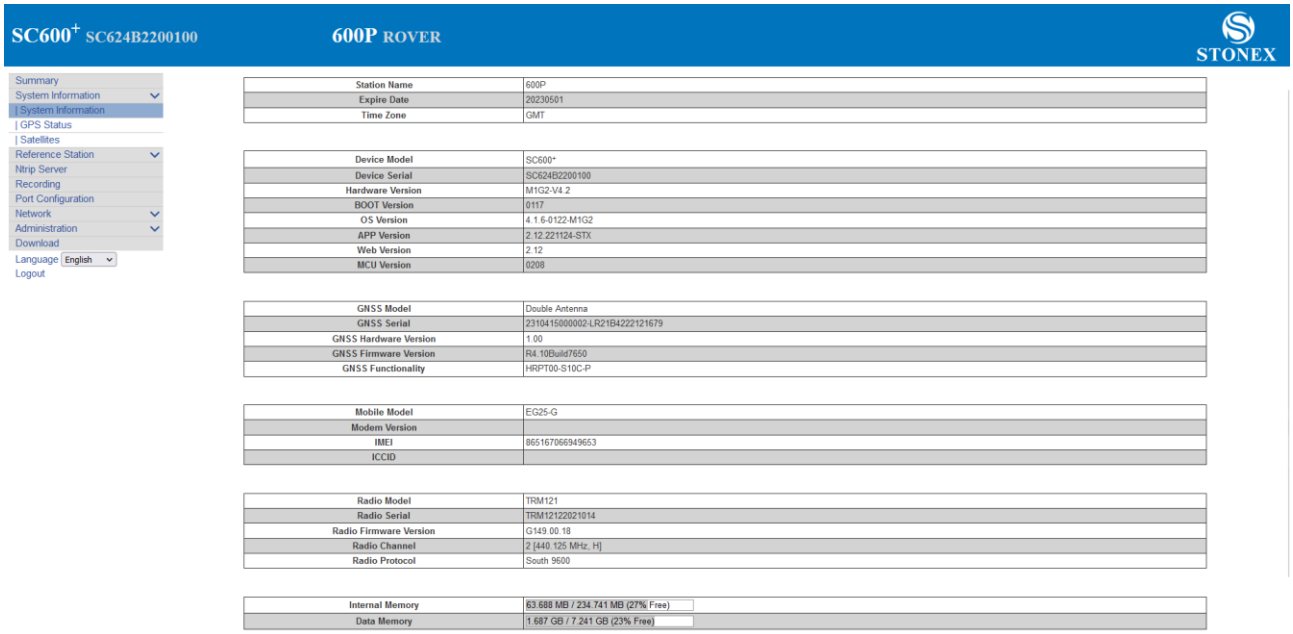
4.1.1 Summary

The Summary reports basic information about the Station that can be found in the WebUI.
Starting from the top we find the name of the station, expiration date and the time passed from the last accension. The second block contain the hardware details, the third one the position information. Internal memory refers to the RAM memory and Data memory to the space dedicated to archive recordings.



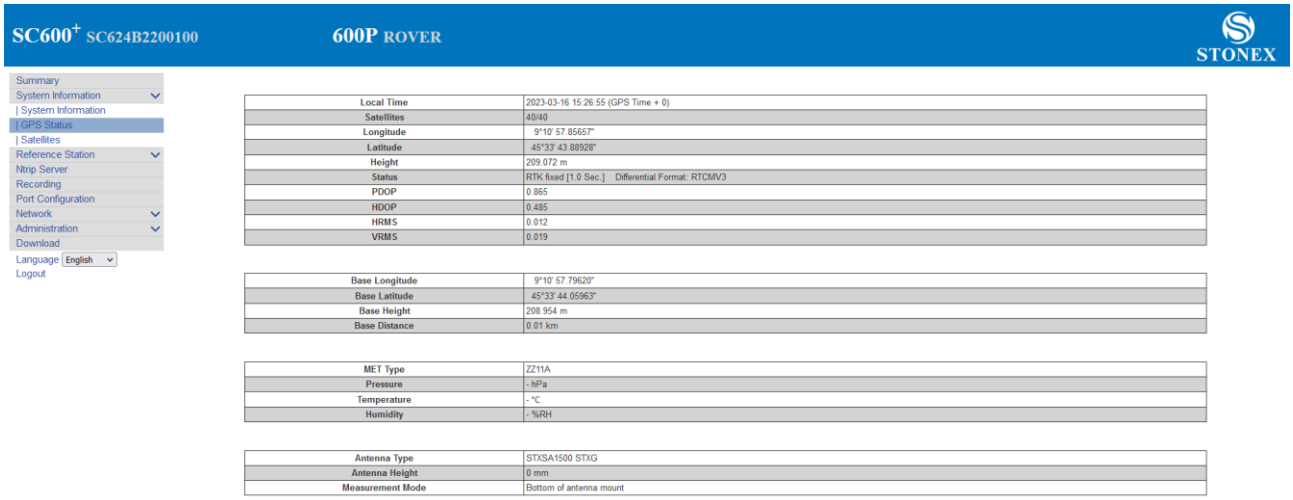
4.1.2 System Information

System information page contain more details about the device, such as the hardware and firmware versions of mainboard, GNSS board, GSM modem and radio module. It also shows the internal and data memory usage.



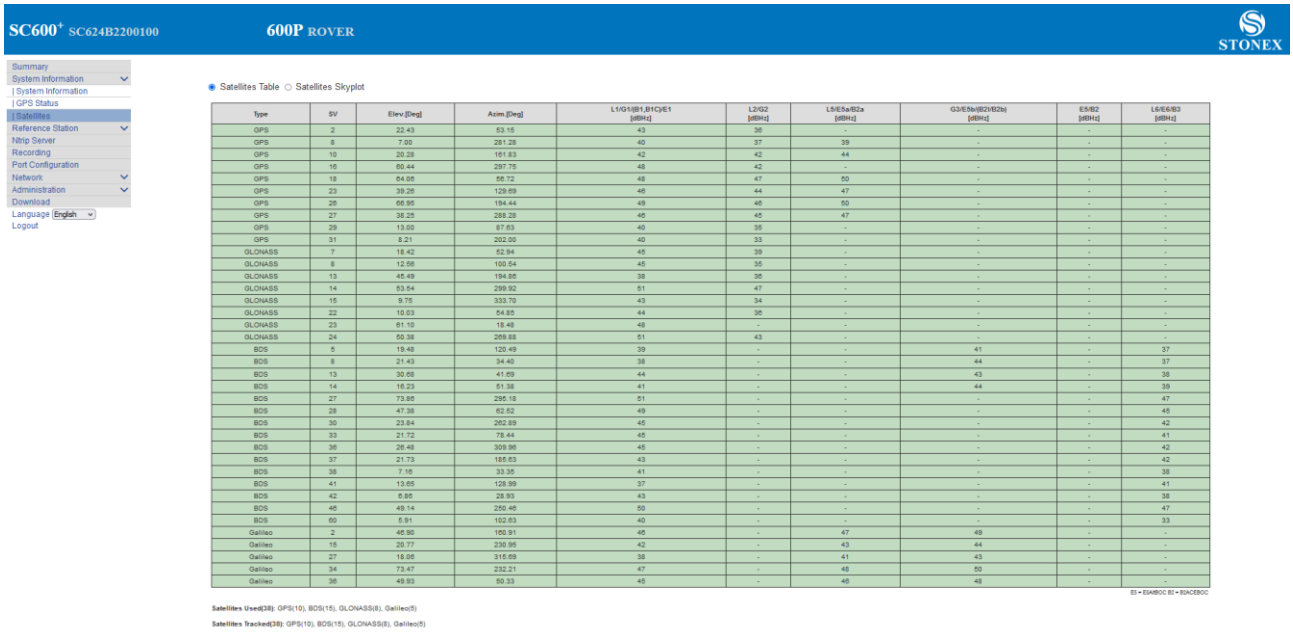
4.1.3 GPS Status

In this page you can check the positioning status in real time, together with the information of antenna and meteorological sensor (if installed).



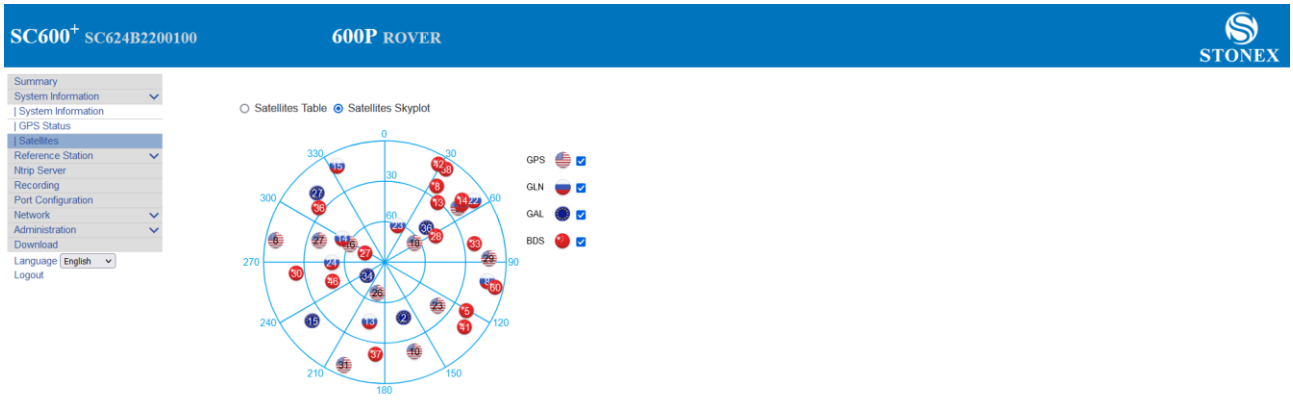
4.1.4 Satellites

By selecting the option at the top, the satellite information can be displayed in a table or using the sky plot. In the satellites table the different colors show used satellites (green) and tracked (white), in the sky plot you can select which constellation are visualized (both screens in the figures below).



Type	SV	Elev.[Deg]	Azim.[Deg]	L1/G1/B1,B1C)/E1 [dBHz]	L2/G2 [dBHz]	L5/E5a/B2a [dBHz]	G3/E5b/(B2I/B2b) [dBHz]	E5/B2 [dBHz]	L6/E6/B3 [dBHz]
GPS	2	22.43	53.15	43	36	-	-	-	-
GPS	8	7.66	281.28	40	37	39	-	-	-
GPS	10	20.28	161.83	42	42	44	-	-	-
GPS	16	60.44	297.75	48	42	-	-	-	-
GPS	18	64.06	56.72	48	47	50	-	-	-
GPS	23	39.26	129.69	46	44	47	-	-	-
GPS	26	66.95	194.44	49	46	50	-	-	-
GPS	27	38.25	288.28	46	45	47	-	-	-
GPS	29	13.00	87.63	40	35	-	-	-	-
GPS	31	8.21	202.60	40	33	-	-	-	-
GLONASS	7	18.42	52.94	45	39	-	-	-	-
GLONASS	8	12.56	100.54	45	36	-	-	-	-
GLONASS	13	45.49	194.86	38	36	-	-	-	-
GLONASS	14	53.54	299.92	51	47	-	-	-	-
GLONASS	15	9.75	333.70	43	34	-	-	-	-
GLONASS	22	10.03	54.85	44	36	-	-	-	-
GLONASS	23	61.10	18.48	48	-	-	-	-	-
GLONASS	24	50.38	269.88	51	43	-	-	-	-
BDS	5	19.48	120.49	39	-	-	41	-	37
BDS	8	21.43	34.49	38	-	-	44	-	37
BDS	13	30.68	41.69	44	-	-	43	-	38
BDS	14	16.23	51.38	41	-	-	44	-	39
BDS	27	73.86	296.18	51	-	-	-	-	47
BDS	28	47.38	62.52	49	-	-	-	-	46
BDS	30	23.84	262.89	45	-	-	-	-	42
BDS	33	21.72	78.44	45	-	-	-	-	41
BDS	36	26.48	309.96	45	-	-	-	-	42
BDS	37	21.73	185.83	43	-	-	-	-	42
BDS	38	7.16	33.35	41	-	-	-	-	38
BDS	41	13.65	128.99	37	-	-	-	-	41
BDS	42	6.86	28.93	43	-	-	-	-	38
BDS	46	49.14	250.46	50	-	-	-	-	47
BDS	60	5.91	102.63	40	-	-	-	-	33
Galileo	2	46.90	160.91	46	-	47	49	-	-
Galileo	15	20.77	230.95	42	-	43	44	-	-
Galileo	27	18.06	315.69	38	-	41	43	-	-
Galileo	34	73.47	232.21	47	-	48	50	-	-
Galileo	36	49.93	50.33	45	-	46	48	-	-

E5 = E5A(BOC 5) B2 = B2A(BOC



4.2 Reference Station

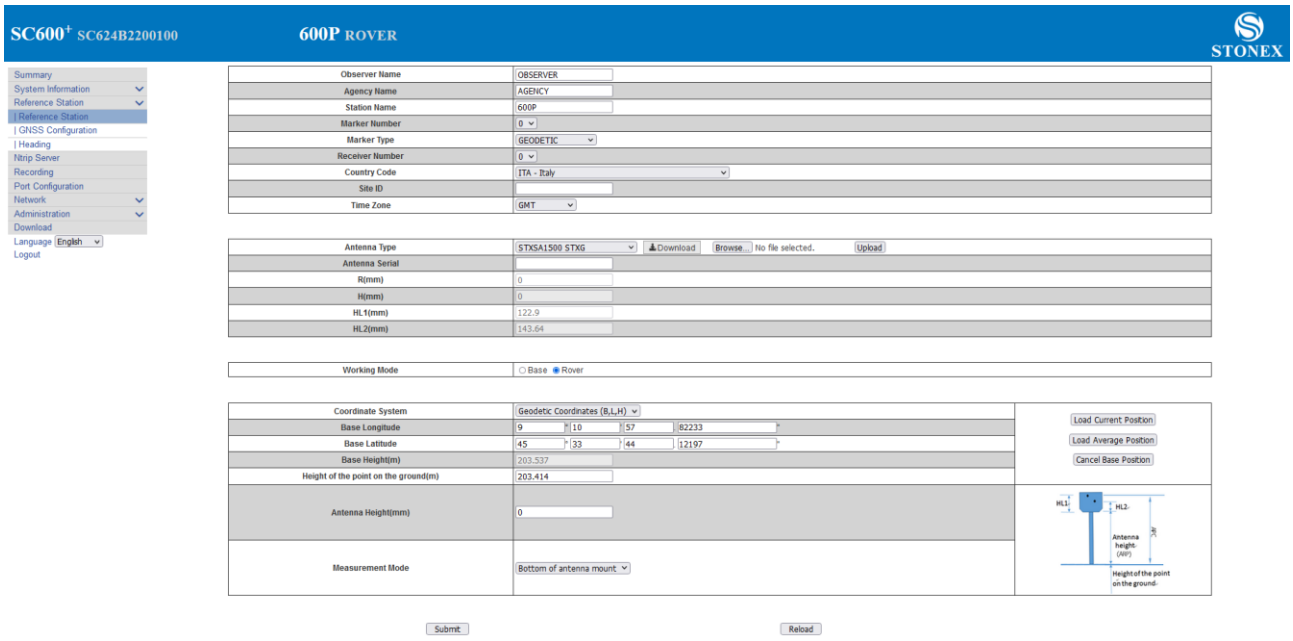
This section is for the GNSS station and satellite reception configuration and consists of site information, antenna and coordinates. It is made up of 4 pages: Reference Station, GNSS Configuration, Tracking Satellites and Heading.

4.2.1 Reference Station

This is a very important page if the device is used as base. If, on the other hand, it is used as rover, it is enough to set the type of antenna.

Here you can enter information about the station, and you can enter settings about the time zone and country. The second block of information refers to the antenna. You can select the antenna from those available (or upload new ones). You can set the antenna's serial number, and the values related to the chosen antenna. Lastly, you can find the block of information about the station coordinates. The coordinates can be entered manually (as geodetic coordinates or Cartesian coordinates), or if there are no known coordinates, the current position of the instrument can be loaded using the button to the right. It is possible to enter the height of the point on the ground, the antenna height, and its measurement mode.

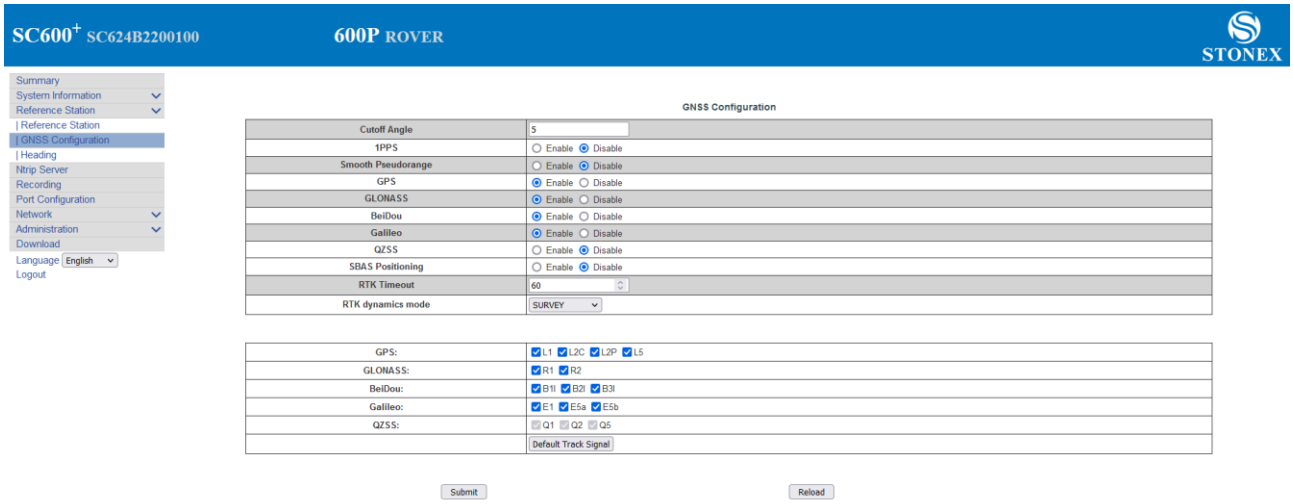
Measurement mode indicates whether the coordinates are referred to the phase center or to the ground. If they refer to the ground, any height from the ground can be indicated in the antenna height field. These settings are reflected in the recorded files (see Recording menu) and in the coordinates transmitted by the base (See NTRIP server menu).



4.2.2 GNSS Configuration

On this page you can set the main parameters regarding satellites tracking: cut-off angle, constellations and signals used. The option SBAS Positioning enables/disables the use of SBAS information for positioning.

The RTK mode allows to configure the RTK computation. For static applications the SURVEY mode is recommended, while for kinematic applications (e.g., machine control or precision farming) the AUTOMOTIVE mode is recommended.

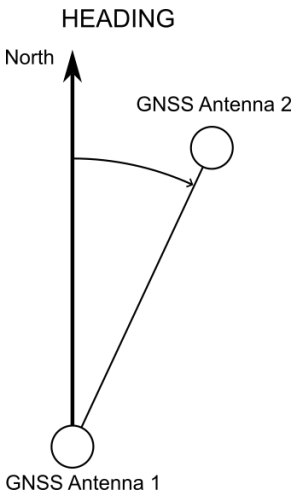


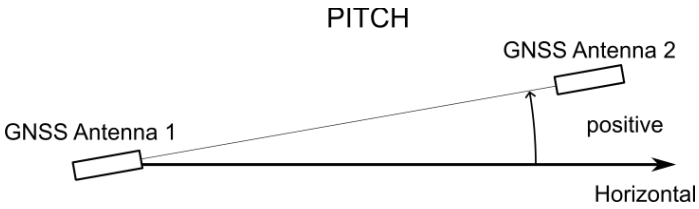
4.2.3 Heading

The heading page can be used if two GNSS antenna are connected to the SC600+.

Heading: show the azimuth angle between the North and the vector starting from GNSS antenna 1 and GNSS antenna 2. Positive clockwise.

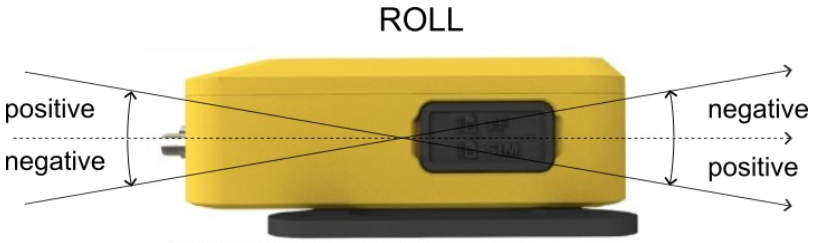
Pitch: show the elevation angle between the Horizontal and the vector starting from GNSS antenna 1 and GNSS antenna 2.

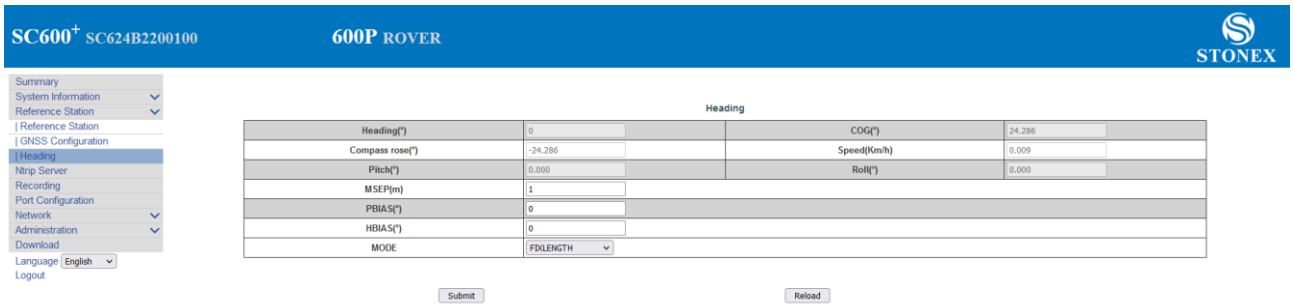




Roll: show the inclination measured by the internal sensor.

Every time Submit is pressed the Roll value is set to 0.





MSEP [m] is the horizontal distance between primary and secondary antennas.

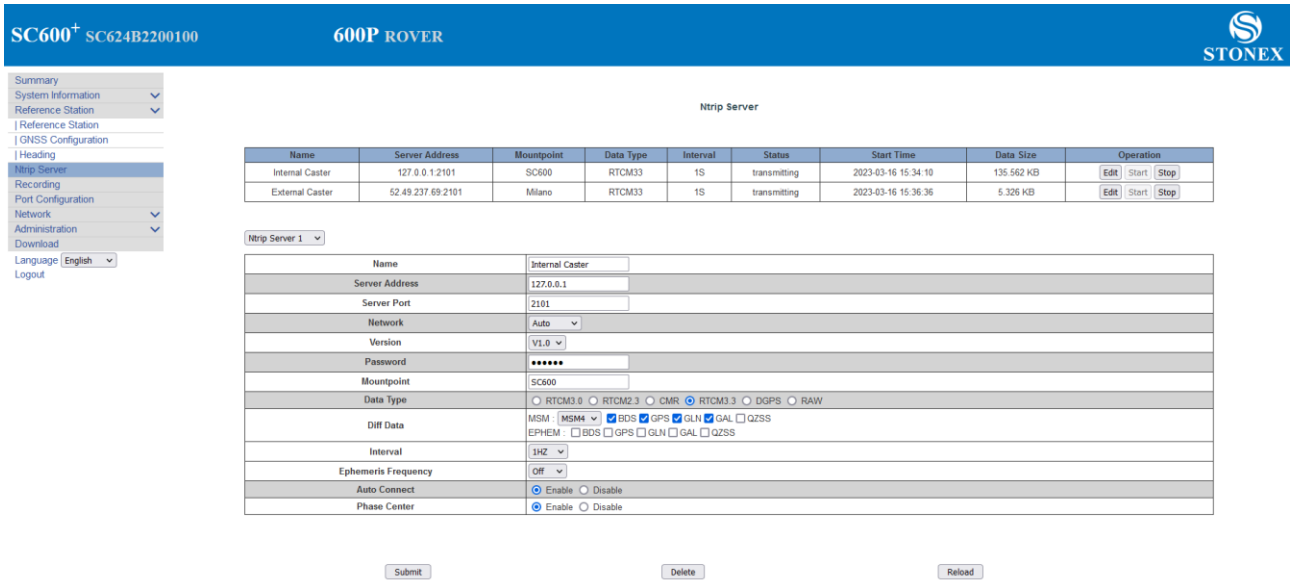
PBIAS and HBIAS [°] are optional offsets that can be added to pitch and heading output, respectively.

4.3 NTRIP Server

On the only page available in this section, you can check the status and edit the current transmission as well as set new ones.
For every data stream is possible to set the server address, port and password, the type of network used for the transmission, the mountpoint name used and the RTK data type contained in the transmission.
Attention! Even if not needed the password field can't be left empty.
When [Auto Connect] is enabled, after the network is connected, the data transmission will be started automatically, otherwise the transmission will have to be started manually.
If [Phase center] is enabled, the transmitted coordinates are correct for the offset of the phase center. Otherwise, the coordinates defined on the Reference Station page are transmitted.

Before setting the transmission, go back to the reference station page and make sure the base station coordinates are correct. If you need to start with known coordinates, enter the known coordinates. After starting the transmission in the status column, you can see the status of the data transfer displayed.

If the data must be transmitted to an external caster: address, port and password are those of the external caster.
If SC600+ is to act as a caster: NTRIP caster function must be enabled (see Port Configuration page), server address is 127.0.0.1, port must be the same as the one indicated on the NTRIP caster function (see Port Configuration page).



4.4 Recording

On the only page available in this section, you can check the status and edit the current registrations schedules as well as set new ones.

For every registration schedule is possible to set the path and file type. If you want to convert the binary file to RINEX and obtain a RINEX file name that meets the RINEX standards (usually one-hour or one-day long), you must use the [File Name] RINEX211.dat (for RINEX 2.x name) or RINEX302.dat (for RINEX 3.x name). In case you want to get a nonstandard RINEX, for example in the case of a static acquisition of a few hours, the [File Name] ssssdddx.yyt is recommended.

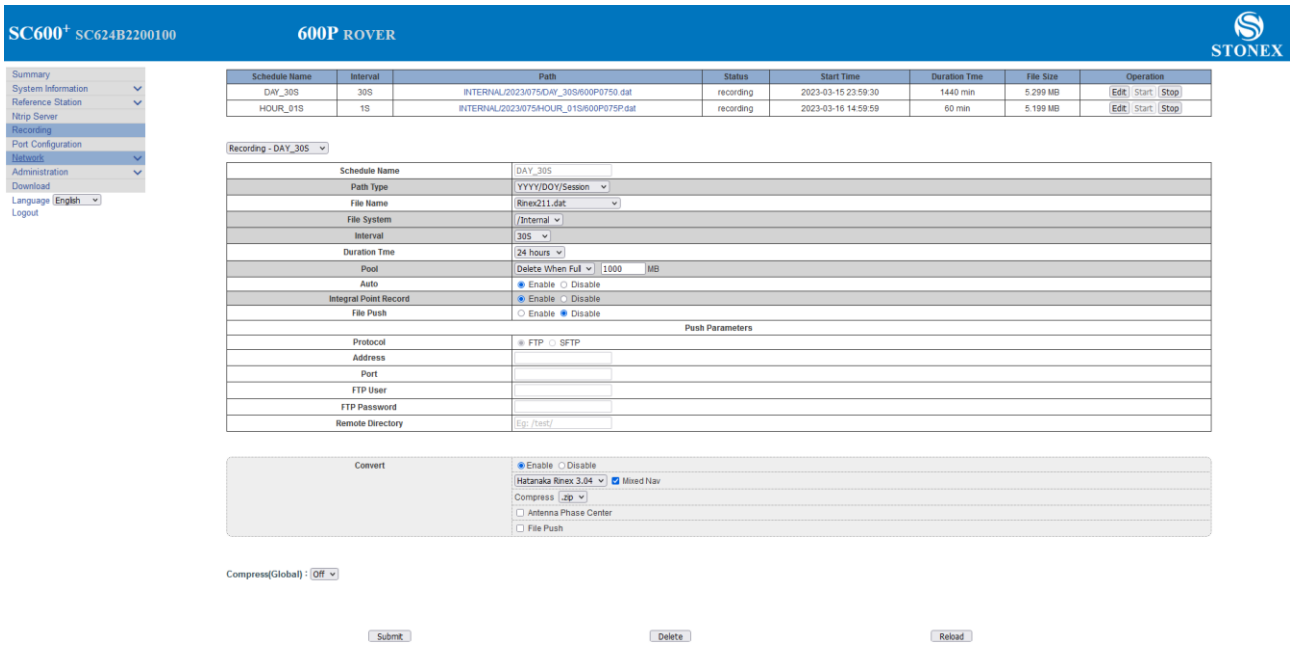
The [Pool] option enables the management of ring buffer disk space. If enabled, it allows defining an amount of disk space in MB and the action to be taken when this limit is reached: stop the recording (Stop When Full) or the deletion of the oldest files (Delete When Full).

When [Auto] is enabled, it records continuously, otherwise when the first file is finished it stops. It is recommended to always enable [Pool] if the [Auto] option is enabled.

The size of the single file change based on the tracked satellites, the interval between the registration epoch and the duration of the file, the last two options can be set in this page.

If [Integral Point record] is enabled, it sets the start time of the files as a multiple of the set duration, otherwise the start time depends on the first start. It is recommended to enable this option.

SC600+ also support the File push function that allow you to automatically transmit the completed recording file to an FTP Server.



[Path type] defines the folder structure where files are saved.

[File Name] defines the name of the files.

They both use variables:

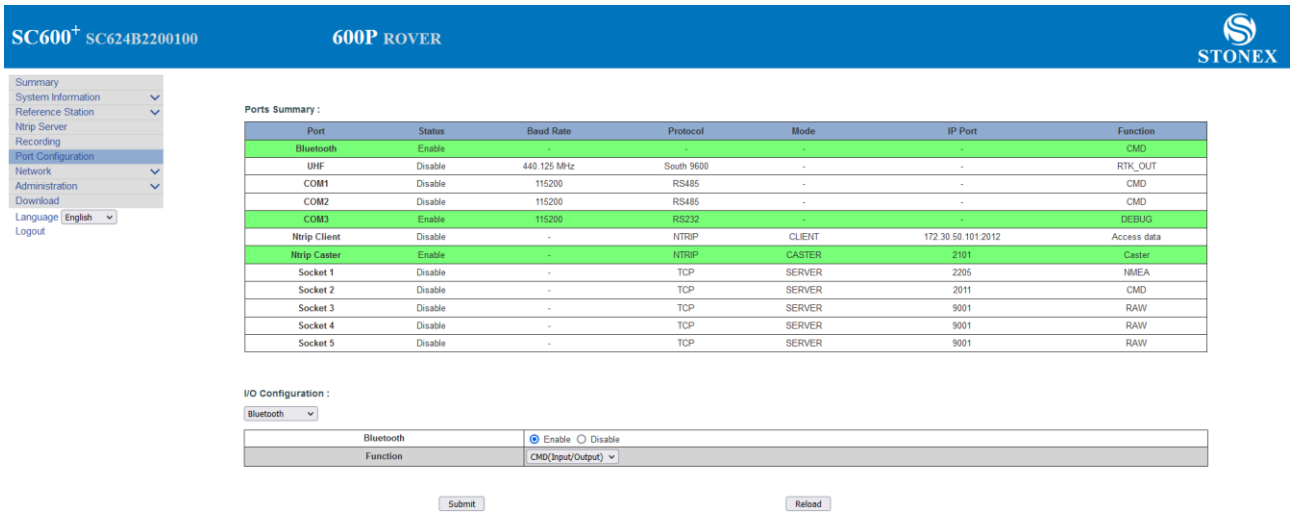
YYYY	year
MM	month
DD	day of the month
DOY	day of the year
Session	Schedule name

If you enable [Convert] you can choose between various RINEX and Hatanaka RINEX versions. If [Phase center antenna] is enabled, the header coordinates are referred to the phase center. The conversion will be done when the file is completed.

[File Push] enables automatic transfer of RINEX files via FTP when the file is converted. This option is effective only if raw file push is enabled. The FTP server and the access parameters are those indicated in the Push Parameters section.

4.5 Port Configuration

On the only page available in this section, you can view the list of I/O ports and you can access their configuration. You can click on the cell containing the port's name to view the possible configuration at the bottom. The ports enabled are highlighted in green.



The available functions are:

CMD (Input / Output): allows you to send commands and receive responses;

NMEA (Output): send NMEA messages;

RTK (Input): receives differential data. Use only if work mode is rover;

RTK (Output): Transmits differential data. Use only if work mode is Base;

RAW (Output): Transmits raw data;

BINEX (Output): Transmits raw data in BINEX format;

GPS (Input / Output): reserved for development purposes;

UHF (Input / Output): reserved for development purposes;

MET(ZZ11A) (Input): Receive information (format ZZ11A) about Temperature, Pressure and Humidity from an external weather station. Can also be saved in the raw data recordings;

MET/TILT (Input): Receive information about Temperature, Pressure and Humidity from an external Vaisala weather station. Can also be saved in the raw data recordings;

DEBUG: reserved for development purposes. We suggest to not change the COM3 function.

NtripDouble (Output): output first NTRIP data stream configured in NTRIP Server page.

The table below show the functions available for each port.

	Bluetooth	UHF	COM1	COM2	COM3	Sockets
CMD (Input / Output)	✓		✓	✓	✓	✓
NMEA (Output)	✓	✓	✓	✓	✓	✓
RTK (Input)	✓	✓	✓	✓	✓	✓
RTK (Output)	✓	✓	✓	✓	✓	✓
RAW (Output)	✓	✓	✓	✓	✓	✓
BINEX (Output)	✓	✓	✓	✓	✓	✓
GPS (Input / Output)			✓			
UHF (Input / Output)			✓			
MET(ZZ11A) (Input)				✓		
MET/TILT (Input)				✓		
DEBUG					✓	
NtripDouble (Output)					✓	

NTRIP Client allows you to connect the SC600+ to a caster using the NTRIP protocol. Use only if work mode is rover.

NTRIP Caster: if enabled, activates the Caster service. Allows you to set the transmission port and account for the NTRIP client. The account is unique but allows multiple simultaneous connections.

Warning: to use this function, at least one NTRIP Server must be active on address 127.0.0.1 and the same port set in the Caster (See NTRIP Server).

4.6 Network

This is the section for the Internet connection configuration and related services, including DDNS, FTP, VPN. Let's see its pages and subcommands below.

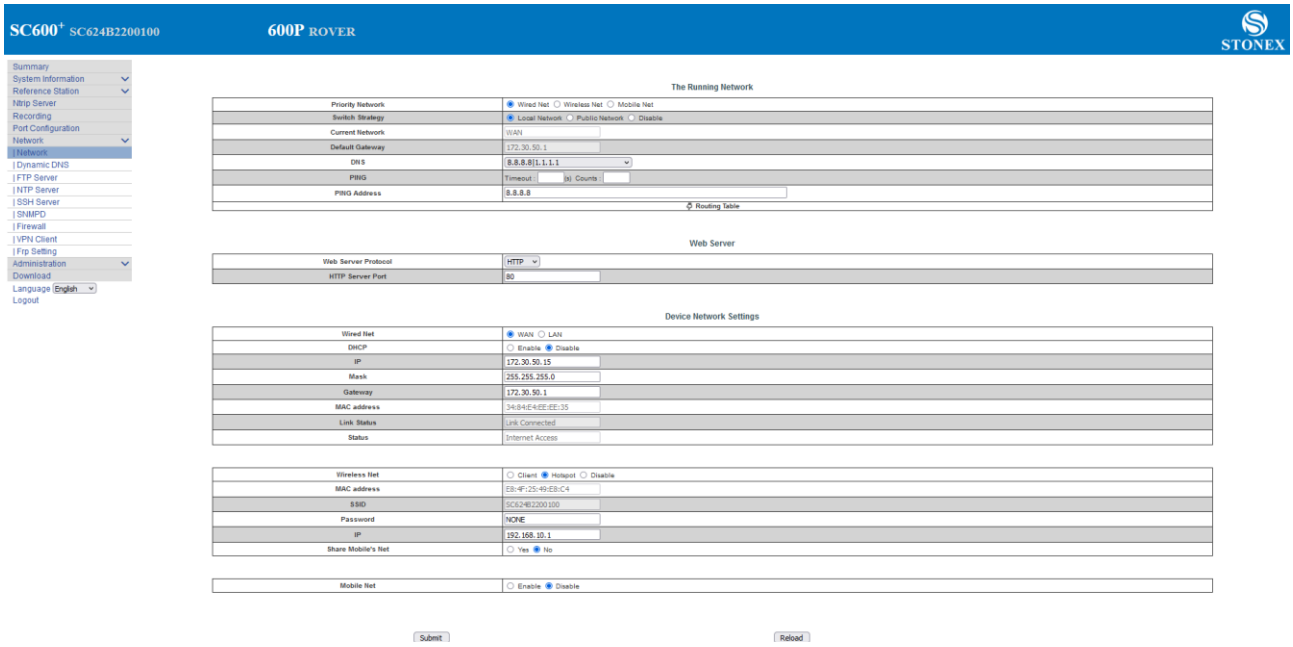
4.6.1 Network

This page is mainly set for the data link method used by SC600+, including the web server protocol and HTTP server port.

It's possible to configure all 3 types of network: wired, wireless and mobile. Only one network type is used at a time, this is the primary network, if active, or one of the other networks if enabled.

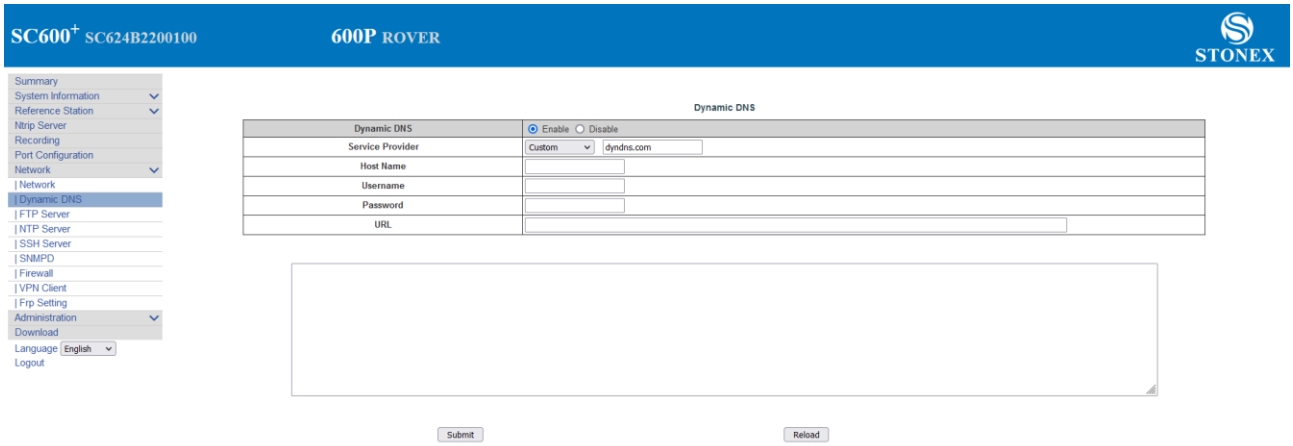
We suggest leaving the Wireless net set as hotspot to ease the connection to the WebUI.

Mobile network needs an LTE antenna connected to the respective connector.



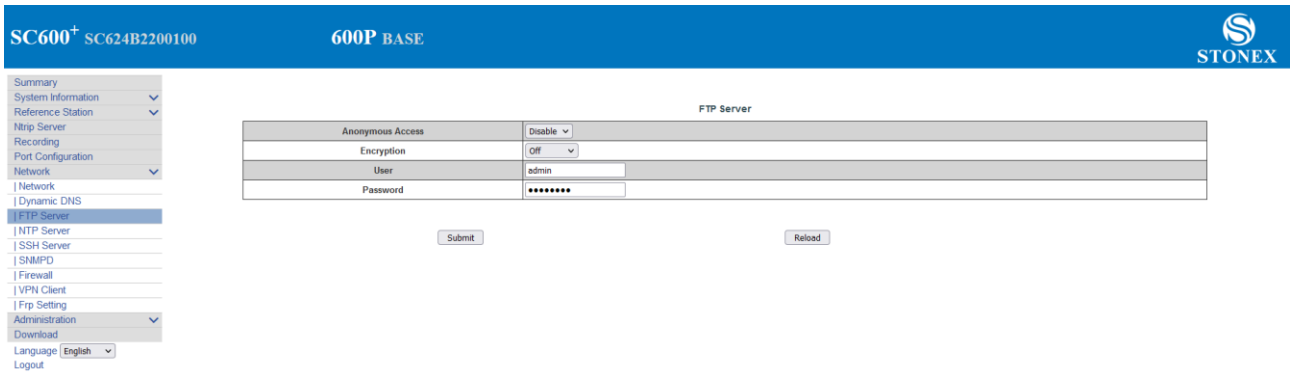
4.6.2 Dynamic DNS

This is the page where it is possible to unable/disable the Dynamic DNS. By choosing the enable key it will be possible to enter the service provider, host name, username, and password.



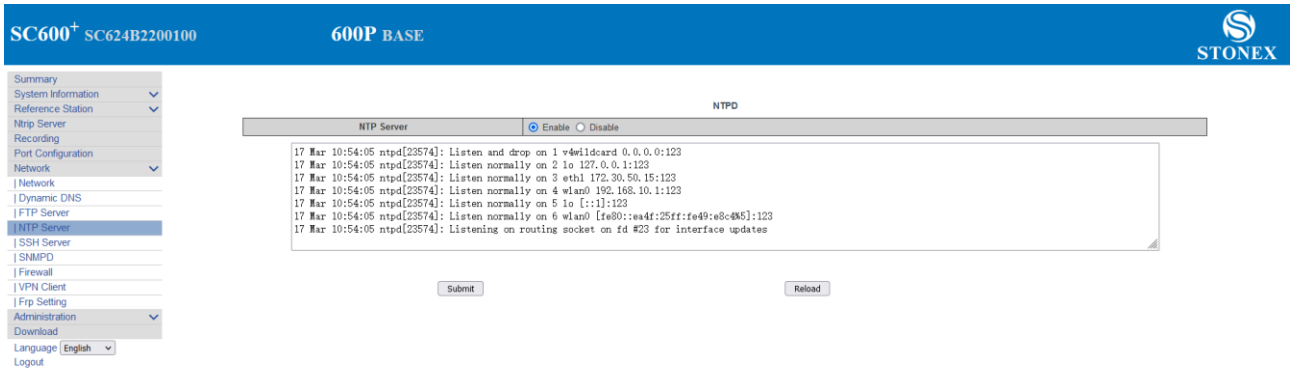
4.6.3 FTP Server

The FTP server feature allows the user to use the SC600+ as an FTP server. User can download and upload data through it. The anonymous access is enabled by default: we recommend disabling it if the receiver is accessible from the Internet. The Encryption enable the SSL / TLS explicit encryption. The default port for SC600+ FTP server is 21.



4.6.4 NTP Server

NTP (Network Time Protocol) Server allows you to synchronize the computer clock with the time of the receiver.

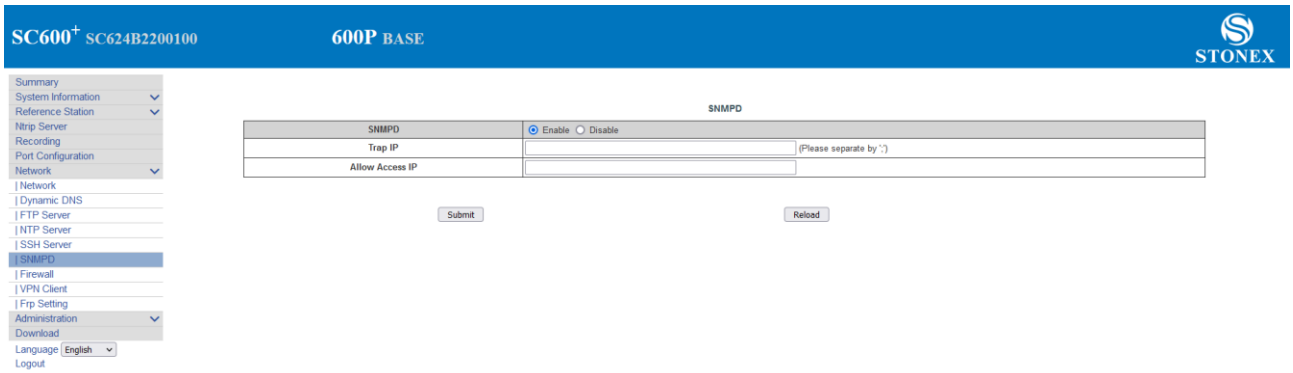


4.6.5 SNMPD

SC600+ supports SNMP (Simple Network Management Protocol) version 2c. If [SNMPD] is enabled, you can see a page as the picture below, where you can enter the Trap IP and the Allow Access IP.

Trap IP: the receiver will automatically send information to the IPs set here.

Allow Access IP: allow devices from the specified IPs to obtain information about the receiver.



Currently there are two branches: one for real-time information and the other for non-real-time information. The following tables describe the MIB for the two branches.

Real-time branch: 1.3.6.1.4.1.13526.12.10.15.1.1

MIB variable	Name	Note
1	Site number	
2	Run time	[s]
3	# satellites tracked	All constellations
4	Available storage	Internal disk [MB]
5	Power source	0: Internal battery 1: External power
6	[reserved]	
7	[reserved]	
8	[reserved]	
9	Site name	
10	Expiration date	
11	Solution type	Base|Single|DGNSS|Float| Fixed

Non-real-time branch: 1.3.6.1.4.1.13526.12.10.15.1.2

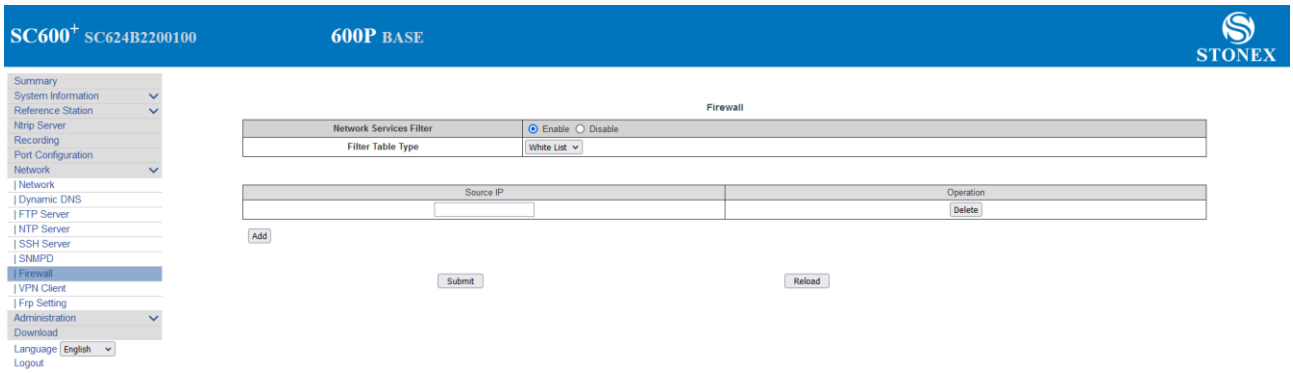
MIB variable	Name	Note
1	Receiver Model	
2	Receiver SN	
3	Receiver FW	
4	GNSS board Model	
5	GNSS board FW	
6	Antenna	
7	Latitude	Degrees
8	Longitude	Degrees
9	Height	Ellipsoid height [m]

4.6.6 Firewall

On this page, you can choose whether to turn on the firewall. The firewall feature allows you to protect access to the web interface. Although this function is very useful in ensuring the security of the device, it is recommended to use it with extreme care. Improper configuration of the firewall could prevent access to the device.

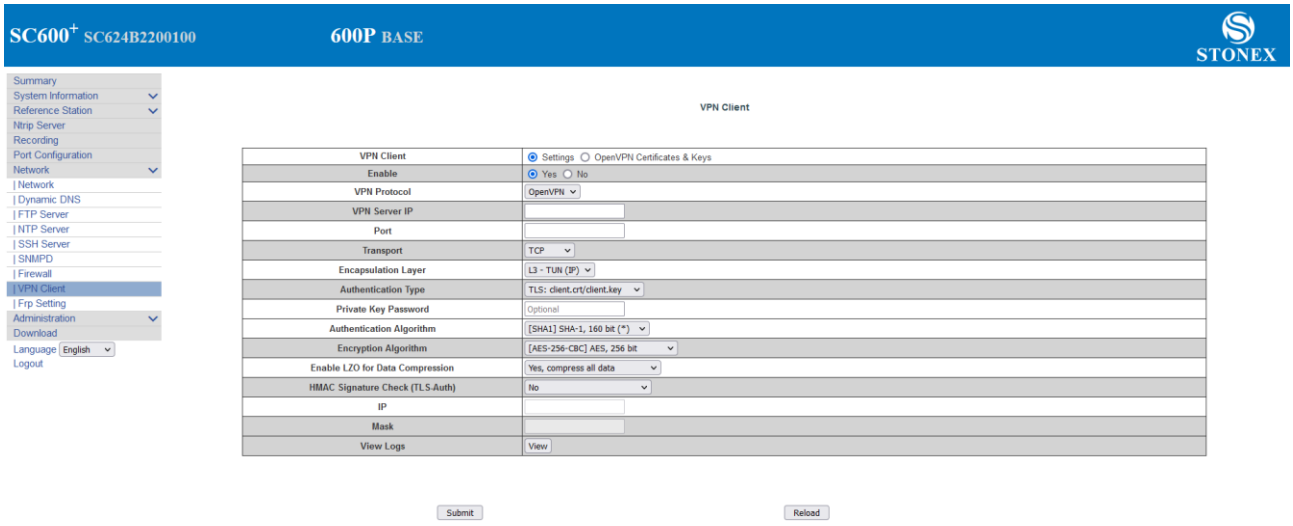
There are two protection mechanisms, referred to as Filter table type: whitelist and blacklist. The whitelist allows you to define the only IPs from which you can access the web interface, any other IP is blocked.

Blacklist works the opposite way: it allows to define the only IPs that cannot access the web interface while any other IP can access.



4.6.7 VPN Client

This function enables the VPN client. SC600+ supports OpenVPN and PPTP protocols. However, we discourage the use of PPTP protocol because it's obsolete. Therefore, the information provided in this paragraph regards OpenVPN only.

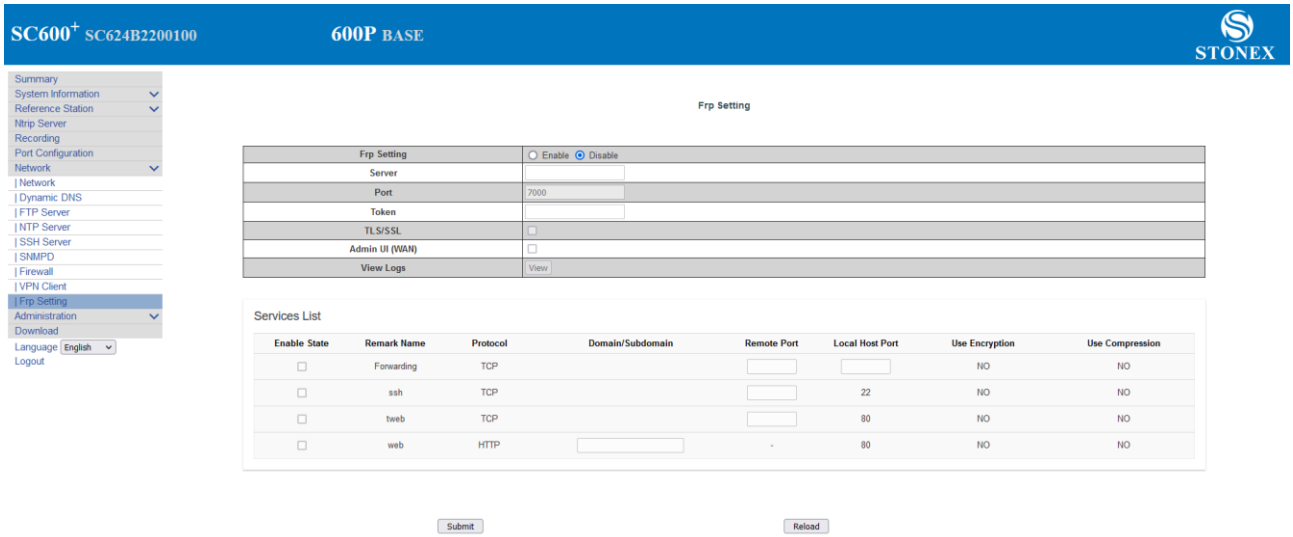


The configuration of the parameters depends on the settings of the VPN Server. The following table describes the commonly used parameters. The certificates must be inserted in the page OpenVPN Certificates & Keys.

Option	Value
Transport	UDP
Encapsulation layer	L3 -TUN
Authentication Type	TLS: client.crt/client.key
Private Key Password	<client-password>
Authentication Algorithm	SHA-256, 256 bit
Encryption Algorithm	AES, 256 bit
Enable LZO	Disable
HMAC Signature Check	tls-crypt

4.6.8 Frp Setting

This function is for internal use. It is recommended not to use this function.



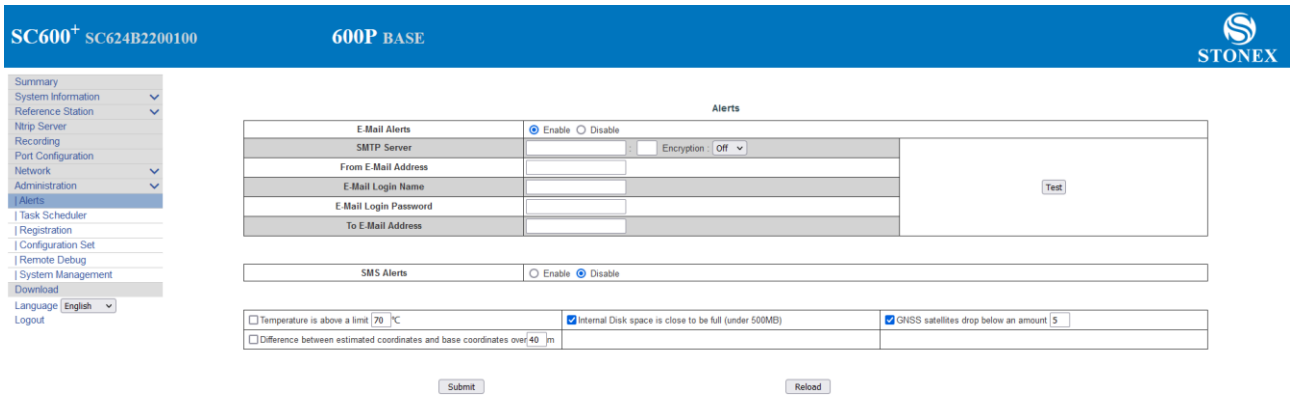
4.7 Administration

This section includes the pages: Alerts, Registration, Configuration Set, Remote debug and System Management.

4.7.1 Alerts

On this page you can set alerts send via e-mail and/or SMS. If you want to send text messages, you need to use a mobile network. Below in the page you can see the topics on which the alarm can be triggered. Some of these arguments allow you to set a reference value.

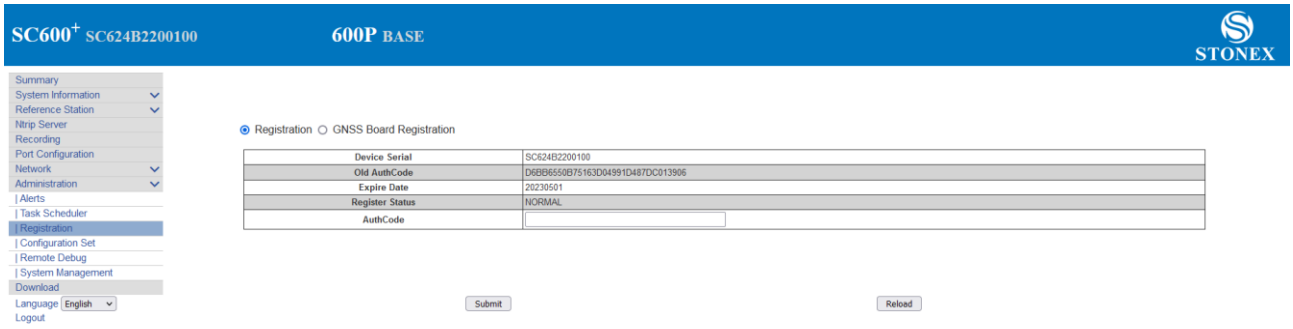
If the receiver works permanently and is connected to a network, it is recommended to use email alerts. In this case, alarms on disk capacity and minimum number of satellites are useful to receive an alert in case of potential malfunctions.



4.7.2 Registration

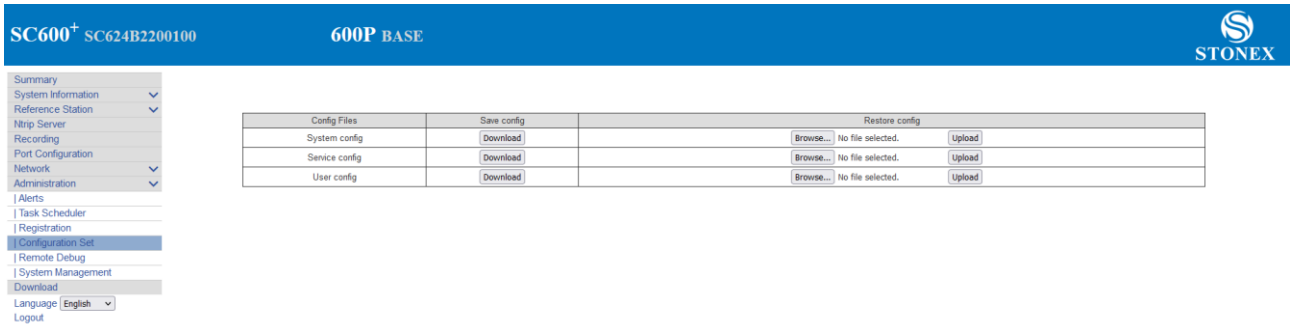
On this page, you can apply and check the registration of the receiver and the GNSS board.

If the receiver registration is expired and the WebUI is no longer accessible, disconnect the receiver from the GNSS antenna and restart it. This should let you connect to the WebUI again.



4.7.3 Configuration Set

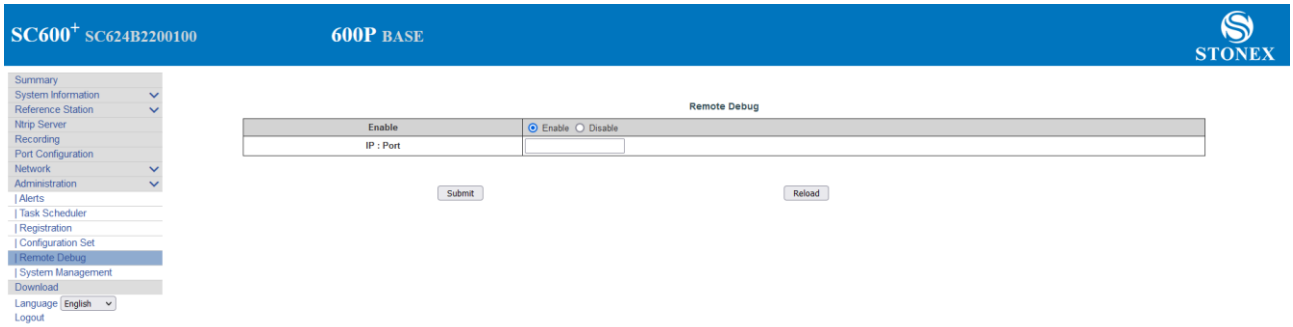
In this page you can download/upload configuration files.



4.7.4 Remote Debug

Remote debug allows to connect SC600+ with the software Cube-cors. If the receiver works permanently and is connected to a network, it is recommended to use Remote Debug.

Simply insert the IP of the server where Cube-cors is running and its ports. Further details on Cube-cors manual.



4.7.5 System Management

On this page you can update the receiver firmware, modify the security settings (WebUI access), view the system logs. At the bottom you can find some controls to start automated tests and to restart and restore factory settings.

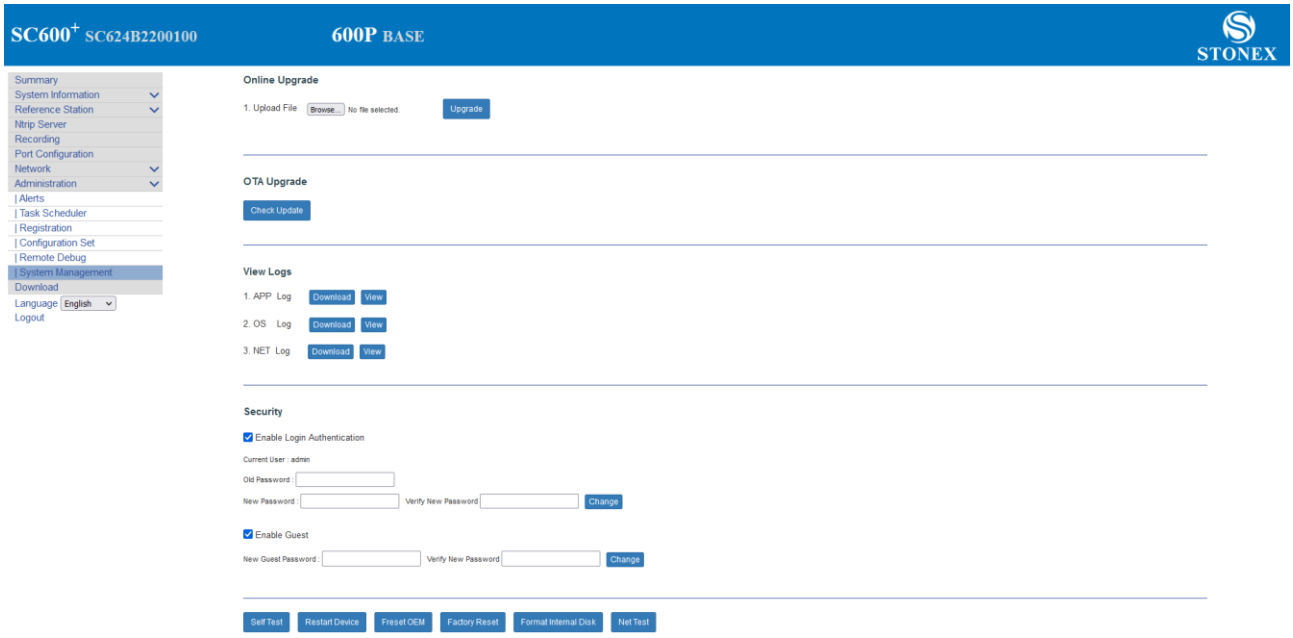
Online upgrade is the command dedicated to update the firmware for mainboard, GNSS board, UHF module and MCU component. Contact your local dealer for information about new firmware updates.

OTA Ugrade is not ready to be used.

View logs allow to view and download log files. These files are useful in case of malfunctioning to detect the reason.

In the Security section, one can change the default Administrator password (see chapter 4). To do that, simply insert the current password in the field *Old Password*, then type the new password both in *New Password* and *Verify New Password* and click Change.

The guest account can only view the Summary and System Information menus. It does not have access to device configuration or stored data.



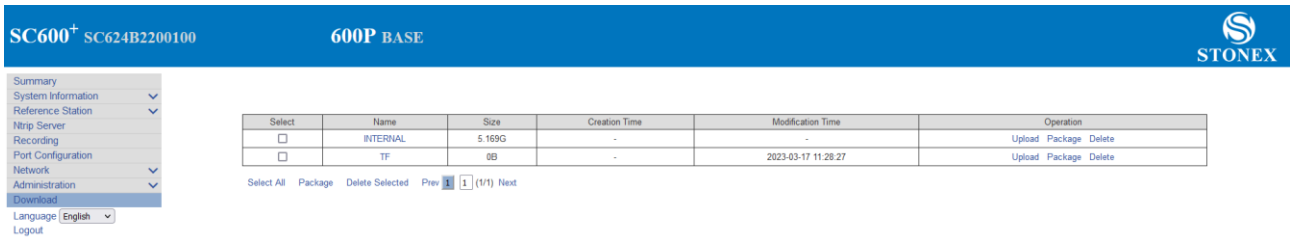
[Restart Device] reboots the system.
[Freset OEM] does a reset of the GNSS board.
[Factory Reset] restores the default configuration of the receiver.

4.8 Download

This section is for the manual download of recorded files, it has no additional pages.

To explore a folder just click on its name. It's possible to download as a package, delete and forward to an FTP server entire folder.

Internal stand for the device memory, TF stand for the memory of the SD card.

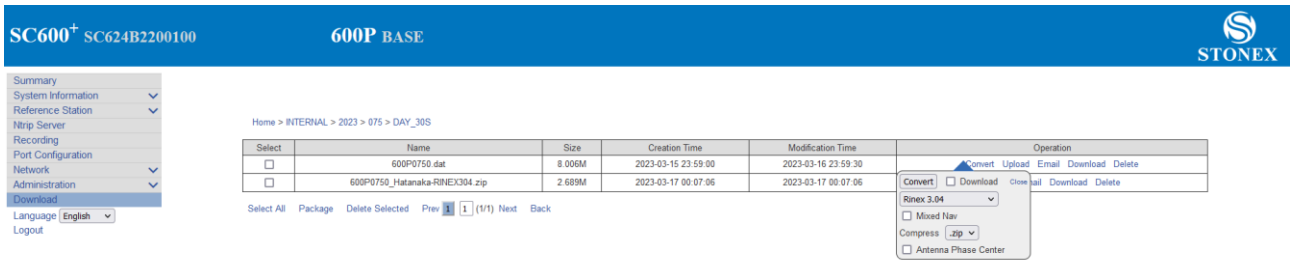


The files registered locally can be downloaded or sent via e-mail or to an FTP server.

Individual files can be converted to RINEX on-the-fly clicking on Convert button. If [Download] is enabled the RINEX files will be downloaded automatically at the end of the conversion as a package. It's possible to select the package compression format.

You can choose between various RINEX and Hatanaka RINEX versions. Mixed navigation file can also be generated.

If [Antenna Phase Center] is enabled, the header coordinates are referred to the phase center.



4.9 Language and Log Out

Language command allows you to select the language. The available languages are English, Russian, traditional Chinese, simplified Chinese.

Logout command if clicked closes the session.

5. Bundles

SC600+ is available in standard version with 20Hz as position rate.

Model and standard accessories:

Product Code	Description
B10-150614	SC600+ GNSS, 1408 Ch, 4G, UHF, WiFi, BT, 20Hz, Heading, Bundle
30-350298	Power Cable 2pin, +/- voltage
30-350317	Y Cable (DB26 - DB9 / Ethernet)
30-350173	QT400, All-direction antenna, Freq.410-470MHz, SMAJ connector
30-350385	GSM Antenna Male SMA connector (AG-010)
n/a	Pen Drive set 8Gb with Manual & Video Tutorial

List of **Optional** accessories:

Product Code	Description
30-357125	DB9 female-DB9 female
30-350315	SC600 - 2 PIN-SAE power cable
30-357112	Cable 10m for antenna GNSS (AC-10M)
30-357126	Cable for Choke Ring antenna (30m)
30-357127	Cable for Choke Ring antenna (40m)
30-350243	SA1800, GNSS 3D Choke Ring antenna
30-357128	SA1500, GNSS 2D Choke Ring antenna
30-357135	SA1200 GNSS 3D Choke Ring Antenna
30-357136	SA1000, GNSS Mini Choke Ring Antenna
30-357120	SA3G+C GNSS Reference Antenna
30-357134	SA65 GNSS Geodetic Antenna

Appendix 1: Copyrights, warranty, and environmental recycling

Copyrights and trademarks

STONEX®, the STONEX® logo, and SC600+ CORS receiver are trademarks of STONEX® Limited.

STONEX® Cube-a, STONEX® Cube-Connector, STONEX® Cube-cors are trademarks of STONEX® Limited.

Release Notice

March 2023 release of the STONEX® SC600+ GNSS new model receiver user guide.

The following limited warranties give you specific legal rights. You may have others, which vary from state/jurisdiction to state/jurisdiction.

Standard Limited Warranty

Version 2021

The terms and conditions of this Limited Warranty constitute the complete and exclusive warranty agreement between The Customer or Dealer and STONEX® for the Product and supersedes any prior agreement or representation made in any STONEX® sales document or advice that may be provided to Customer by any STONEX® representative in connection with Customer's purchase of the Product. No change to the conditions of this Limited Warranty is valid unless it is made in written form and signed by an authorized STONEX® supervisor.

STONEX® warrants that its Products:

Are free from defects in materials or workmanship for generally 1 year.

Accessories or specific parts for which different limited warranty period shall apply.

Have been tested/calibrated in proper working status prior to shipment.

The warranty period starts from date of first sale of the instruments. At its sole discretion, under the warranty period, STONEX® will repair the product or send parts for replacement at its expense. STONEX® agrees to repair or replace the defected instrument within thirty (30) days only if STONEX® Europe recognizes that the defects of the instrument are not caused by human factors or no obvious damage to its surface is visible. STONEX® warrants any new replaced parts or products are warranted to be free from defects in materials and workmanship for thirty (30) days or for the remainder of the Limited Warranty Period of the Product in which they are installed, whichever is longer. Faulty Parts or Products replaced under this Limited Warranty shall become property of STONEX®. All products that have to be repaired have to be returned to our technical representative office location via any delivery company the customer prefers, nevertheless STONEX® is not accountable for the unlikely event that the Products gets lost in transit. Any damage inflicted by the customer or by third party after the products has been delivered to the customer is excluded from the limited warranty as well any damage arising from an improper use, from any action or use not provided for in the enclosed user guides and/or manuals.

Shipping policy

The Customer or the dealer is required to pay for the charges for shipping of fault parts or instruments to STONEX® representative office and STONEX® is providing the shipping for return. Dealers need to follow STONEX® repair/service procedure to achieve a better and prompt service result.

Firmware/Software warranty

Stonex does not warrant that operation of Firmware/Software on any instruments will be uninterrupted or error-free, or that functions contained in Firmware/Software will operate to meet your requirements.

Stonex will forward the Software/Firmware Fix to the dealer or customer. Firmware/software Fix means an error correction or other update created to fix a previous firmware version that substantially doesn't conform to the instrument's specification.

Over Warranty repair(s) policy

Customer shall pay the standard repair fees for any service (whether part replacement or repairs) and performed by STONEX® under request and explicit authorization of the customer itself. In this case the customer is charged for return shipment's fees as well.

Disclaimer and Limitation of Remedy

All other express and implied warranties for this product, including the implied warranties of merchantability and fitness for a particular purpose and/or not infringement of any third party's rights, are hereby disclaimed. Stonex® expressly disclaims all warranties not stated in this limited warranty. Any implied warranties that may be imposed by law are limited in duration to the term of this limited warranty. Some jurisdictions do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to customer. Customer must read and follow all set-up and usage instructions in the applicable user guides and/or manuals enclosed. If customer fails to do so, this product may not function properly and may be damaged. Customer may lose data or sustain personal injuries. Stonex®, its affiliates and suppliers do not warrant that operation of this product will be uninterrupted or error free; as do all electronics at times. If this product fails to work as warranted above, customer's sole and exclusive remedy shall be repair or replacement. In no event will Stonex®, its affiliates or suppliers be liable to customer or any third party for any damage in excess of the purchase price of the product. This limitation applies to damages of any kind whatsoever including (1) damage to, or loss or corruption of, customer's records, programs, data or removable storage media, or (2) any direct or indirect damages, lost profits, lost savings or other special, incidental, exemplary or consequential damages, whether for breach of warranty, contract, tort or otherwise, or whether arising out of the use of or inability to use the product and/or the enclosed user guides and/or manuals, even if Stonex, or an authorized Stonex® representative, authorized service provider or reseller has been advised of the possibility of such damages or of any claim by any other party. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages for some products, so the exclusions or limitations may not apply to customer. This limited warranty gives customer specific legal rights, and customer may also have other rights which vary from country/state/jurisdiction to country/state.

Environmental recycling

The cardboard box, the plastic in the package and the various parts of this product must be recycled and disposed of in accordance with the current legislation of your Country.

For countries in the European Union (EU)

The disposal of electric and electronic device as solid urban waste is strictly prohibited: they must be collected separately.

Contact Local Authorities to obtain practical information about correct handling of the waste, location, and times of waste collection center. When you buy a new device of ours, you can give back to our dealer a used similar device.

The dumping of these devices at unequipped or unauthorized places may have hazardous effects on health and environment.

The crossed dustbin symbol means that the device must be taken to authorize collection centers and must be handled separately from solid urban waste.

For countries outside European Union (EU)

The treatment, recycling, collection, and disposal of electric and electronic devices may vary in accordance with the laws in force in the Country in question.

Appendix 2: Safety Recommendations

Warnings and Cautions

An absence of specific alerts does not mean that there are no safety risks involved in the use of this equipment.

Always follow the instructions that accompany a Warning or Caution, reported in this.

This information is intended to minimize the risk of personal injury and/or damage to propriety.

Observe safety instructions that are presented in the following form:

WARNING - A Warning alerts about risk for health and/or damage to the propriety. A warning identifies the nature of the risk and the extent the possible injury and/or damage. It also describes how to protect yourself and/or the equipment from this risk.

CAUTION - A Caution alerts about a possible risk of damage to the equipment and/or loss of data, but no risk for human safety.

Wireless Module Approval

The receivers use internal wireless modules. Regulations regarding the use of the modem vary greatly from country to country. In some countries, the unit can be used without obtaining an approval license. Other countries require specific approval or auto certification by the set maker.

Before using this instrument, check if authorization to operate the receiver is required in your country. It is the responsibility of the importer to verify if it is necessary a certification or license for the equipment in the country of use.

Instrument Approval

Covers technical features of the equipment relatives to electromagnetic emissions that can cause interference and disturbances to other instruments (note like emc compatibility) or generate not correct functionalities of the instrument itself. Approval is granted by the manufacturer of the equipment. Some countries have unique technical requirements for operation in particular frequency bands. To comply with those requirements, Stonex Srl may modified the equipment to be subjected to grant.

Unauthorized modification of the units voids already got approvals, the warranty time and the operational licenses of the instrument.

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