



# STONEX SC2200 GNSS Receiver **User Manual**



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## Statement

Please read carefully:

The final interpretation of this user manual belong 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 case in 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. In order 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

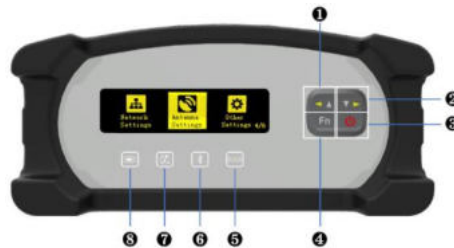
SC2200 is a high-performance CORS reference station receiver. Linux system as its development platform and supports for secondary development. It has powerful and stable function and can be used in many fields.



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

### Key Features

- Rugged housing
- 555 channels with Multi-constellation GNSS support.
- Superior carrier phase observations of less than 1mm accuracy.
- Internal battery for more than 20 hours operation.
- 4G LTE and Bluetooth / WLAN datalink support.
- Easy configuration from Web UI and remote server.
- NTRIP server/caster support.
- IP67

## 1.1 Front view



<b>1) Left/Up</b>	Short Press: Move the cursor left and up Long Press: Return to previous menu
<b>2) Right/Down</b>	Short Press: Move the cursor right and down
<b>3) Power key</b>	Short press: confirm Long press: Power on/off
<b>4) Fn key</b>	Long Press: return to main menu Short Press: switch  key to  key
<b>5) Differential transmission indicator</b>	When the differential data output, the differential indicator blinks evenly at 1-second interval.
<b>6) Bluetooth indicator</b>	It will be light blue when SC2200 is connected via Bluetooth.
<b>7) Static recording indicator</b>	When start static recording, static recording indicator blinks evenly at 1-second interval.
<b>8) Power indicator</b>	After switching on SC2200 mainframe, the power light is normal on.

## 1.2 Back view



1) <b>PWR</b>	Receiver power supply interface, input voltage DC 9V-28V
2) <b>USB</b>	USB interface
3) <b>LTE</b>	GPRS antenna interface
4) <b>SIM/TF</b>	Standard size SIM card interface/ TF card slot
5) <b>GNSS</b>	GNSS External receiver antenna connector
6) <b>OSC</b>	OSC External receiver antenna connector
7) <b>RJ45</b>	Wired Ethernet port
8) <b>1PPS</b>	1 Pulse Per Second output
9) <b>EVENT</b>	EVENT input
10) <b>COM2</b>	RS232 serial port (Optional RS485 serial port)
11) <b>COM3</b>	DB9 serial port
12) <b>COM1</b>	RS232 serial port
13) <b>Air hole</b>	Maintain internal and external pressure balance

### 1.3 Left/Right-side view



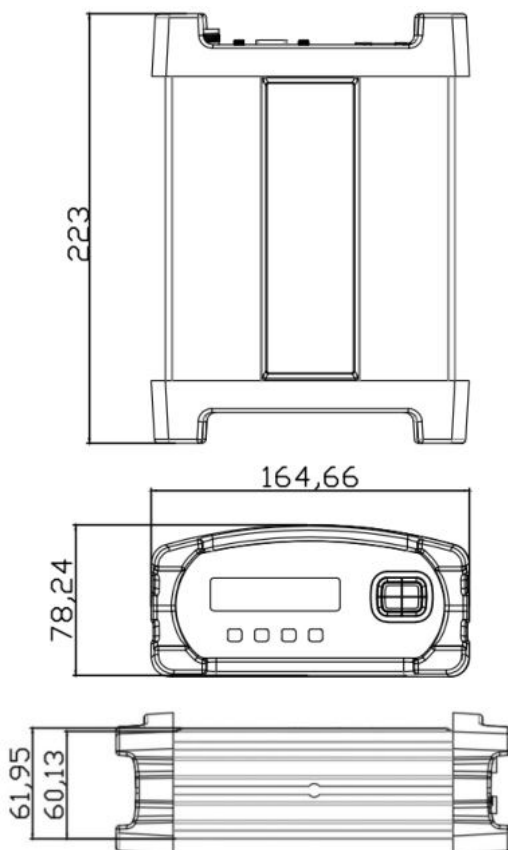
### 1.4 Top view



### 1.5 Bottom view



## 1.6 Structural Drawings / mounting dimensions



Unit = mm

## 2. Technical Specification

### 2.1 GNSS

- Channels: 555
- Tracking signals

Satellite	Signals
<b>GPS</b>	L1 C/A, L1C, L2C, L2P, L5
<b>GLONASS</b>	L1 C/A, L2C, L2P, L3, L5
<b>14) BDS</b>	B1I, B1C, B2I, B2a, B3I
<b>GALILEO</b>	E1, E5 AltBOC, E5a, E5b, E6
<b>IRNSS</b>	L5
<b>SBAS</b>	L1, L5
<b>QZSS</b>	L1 C/A, L1C, L2C, L5, L6
<b>NAVIC (IRNSS)</b>	L5
<b>L-Band</b>	up to 5 channels

- Position Accuracy

<b>Positioning Mode</b>	<b>Horizontal</b>	<b>Vertical</b>
<b>Static</b>	3mm+0.1ppm	3.5mm+1ppm
<b>RTK</b>	8mm+1 ppm	15mm+1 ppm

- Initialization time: < 10s
- Initialization reliability: > 99.9%

## 2.2 Physical

- Weight = 2 kg
- Dimensions = 222 mm \* 164 mm \* 79 mm

## 2.3 Environmental

<b>Operating Temp</b>	-40°C~+65°C
<b>Storage Temp</b>	-40°C~+80°C
<b>Humidity</b>	0%~100% none condensing
<b>Dust and Water Protection</b>	IP67
<b>Drop</b>	Designed to endure to a 2 m pole drop and 1.2 m free drop on concrete floor with no damage

## 2.4 Electrical

<b>Supply voltage</b>	9-28V DC
<b>Battery</b>	7.2V, 13600mAH, 97.92Wh

## 2.5 Connector Ports

<b>PWR</b>	1x Lemo-0 female, 2 pin, power input
<b>USB</b>	1x Lemo-0 female, 7 pin, USB2.0 OTG, host / client
<b>COM1</b>	1x Lemo-0 female, 5 pin, RS232
<b>COM2</b>	1x Lemo-0 female, 5 pin, RS232/RS485
<b>COM3</b>	1x Lemo-0 female, 9 pin, DB9
<b>LTE</b>	SMA female
<b>1PPS</b>	SMA female
<b>EVENT</b>	SMA female
<b>SIM</b>	Nano SIM Card, push-pop type
<b>TF card</b>	TF card
<b>RJ45</b>	1x RJ45 waterproof, 100/1000 Mbit POE
<b>GNSS</b>	1x TNC female
<b>OSC</b>	MMCX female, 50Ω, 5/10 MHz

## 2.6 Data recording

- Storage

Device	Description
<b>Internal Memory</b>	32G
<b>External</b>	TF card / USB Flash Drive / SSD (Unlimited Bytes)

<b>Logging channels</b>	8
<b>Data types</b>	Binary, RINEX, BINEX
<b>Data rates</b>	2S, 5S, 10S, 15S, 30S, 60S 1Hz, 2Hz, 5Hz, (10Hz, 20Hz, 50Hz optional)

## 2.7 Data streaming

<b>Number of streams</b>	4 NTRIP server streams, 1 NTRIP Client streams, 5 Socket (TCP / UDP) streams
<b>Streaming ports</b>	WiFi, Wireless, Ethernet, COM1, COM2
<b>Navigation outputs</b>	GGA, ZDA, GSA, GSV, GST, VTG, RMC, GLL
<b>Reference outputs</b>	RTCM 2.3, 3.0, 3.2, CMR, CMR+, DGPS, BINEX, RAW
<b>Multi clients</b>	Up to 10 simultaneously web client connections

## 2.8 User Interface

<b>Buttons</b>	4 keys, function keys, power key
<b>LEDs</b>	4 LEDs, which show the Bluetooth, differential transmission, static record, and power state respectively
<b>OLED display</b>	64 *256 pixels, mono color display

## 2.9 System Configuration

<b>Operating system</b>	Linux
<b>Bluetooth</b>	Bluetooth 2.1+EDR, V4.0
<b>WIFI</b>	802.11b,g,n Hotspot / client mode
<b>Ethernet</b>	100M / 1000M adjustable

- Network

<b>System</b>	<b>Band</b>
<b>LTE FDD</b>	B1/B3/B5/B7/B8/B20
<b>LTE TDD</b>	B38/B40/B41
<b>WCDMA</b>	B1/B5/B8
<b>GSM</b>	B3/B8

## 2.10      Networking services

<b>NTRIP</b>	Caster/Server/Client
<b>Remote Management</b>	Remote config by STONEX Cube-net/ Caster
<b>FTP server</b>	For data download
<b>Email alerts</b>	For low storage and other warning messages

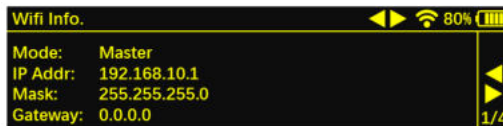
### 3. Web UI

There are two ways to login the WEB interface, which are Ethernet port login and WIFI login.

**Ethernet port login:** Connect the RJ45 network port with the computer host, and enter the IP on the SC2200 display in the browser for SC2200 access. Enter the user name and password in the pop-up dialog box.

- User name: admin
- Password: password.

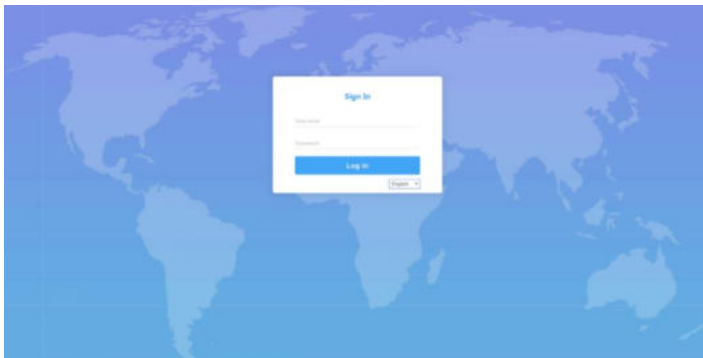
**WIFI login:** first open receiver turns to the page WIFI Info. Mode choose "Master"



The WIFI hotspot name is the serial number of the receiver.

Enter the IP address: **192.168.10.1**. A window will pop up when the user log in, which need to fill in the account and password.

- User name: admin
- Password: password



### 3.1 Summary

After authentication information to log into the web interface of SC2200. Home page contents Station Name、Expire Data、Run Time、Device Model、Device Serial、GNSS Model、GNSS Serial and receiver's positional information. It is shown as below:

## SC2200 Reference Station

### Summary

#### System Information

##### | System Information

##### | GPS Status

##### | Satellites

##### | Data Transmission

##### | Data Recording

#### Configuration

##### | Reference Station

##### | GNSS Configuration

##### | Tracking Satellites

##### | Network

##### | Dynamic DNS

##### | Ntrip Server

##### | Recording

##### | Port Configuration

##### | Alerts

##### | SNMPD

##### | Firewall

##### | VPN Client

##### | Registration

#### Download

#### System Management

#### Configuration Set

#### Language **English** ▼

#### Logout

Station Name	Test
Expire Date	20190424
Run Time	6 min

Device Model	SC2200
Device Serial	SC22A9023004E
GNSS Model	OEM729
GNSS Serial	BMGX18320631P

Longitude	0° 0' 0.00000"
Latitude	0° 0' 0.00000"
Height	0.000 m
GNSS Status	
Local Time	1980-01-06 08:05:18

Internal Memory	40.779 MB / 223.866 MB (18%)
Data Memory	28.582 GB / 28.582 GB (99%)

Battery Power	17%
Power Source	BATTERY

## 3.2 System Information

In the system information screen will display the station name, device model, body number, system version, application version information, built-in OEM board models, network parameter information.

Station Name	Test
Expire Date	20190424
Time Zone	GMT+08:00
Device Model	SC2200
Device Serial	SC22A9023004E
IMEI	866758041223161
Hardware Version	NSC200II-V1 0-RS485
BOOT Version	1.10
OS Version	4.1.6-1.13(181031)
APP Version	2.12(190326)(foreign)
Web Version	2.12
GNSS Model	OEM729
GNSS Serial	BMGX18320631P
GNSS Hardware Version	OEM729-2.01
GNSS Firmware Version	OM7MR0500RN0000
GNSS Functionality	FFNRNN5BN (GPS+Glonass+Galileo+BeiDou,5Hz)
DHCP	On
MAC address	0C:AE:7D:D9:B5:D7
IP	192.168.3.129
Mask	-
Gateway	-
Internal Memory	42.129 MB / 223.866 MB (18% Free)
Data Memory	28.582 GB / 28.582 GB (99% Free)
Battery Power	75%
Power Source	BATTERY

### 3.2.1 GPS Status

Status page displays the current SC2200 positioned state, the base station coordinates and antenna type usage.

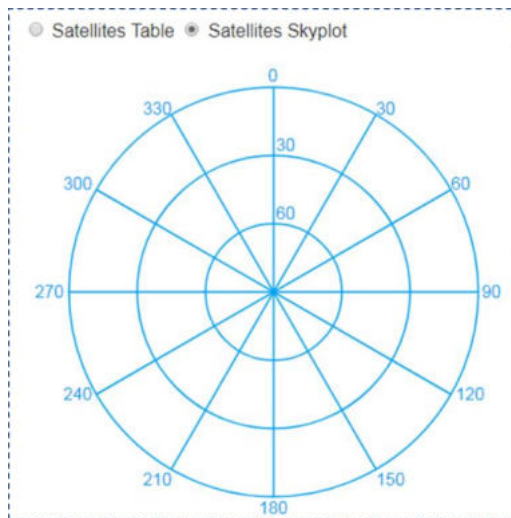
Local Time	1980-01-06 11:04:12
Satellites	0
Longitude	0° 0' 0.00000"
Latitude	0° 0' 0.00000"
Height	0.000 m
Status	Idle
PDOP	9999.000
HDOP	9999.000
HRMS	0.000
VRMS	0.000
Station Number	0111
Base Longitude	113°21' 59.82440"
Base Latitude	23° 7' 35.67690"
Base Height	30.000 m
MET Type	ZZ11A
Pressure	- hPa
Temperature	- °C
Humidity	- %RH
Antenna Type	HX-GG486A
Antenna Height	0 mm
Measurement Mode	

### 3.2.2 Satellite

in this page, you can view satellite Sky plot and satellite lists.

☒ Satellites Table
 ☐ Satellites Skyplot

Type	SV	Elev.[Deg]	Azim.[Deg]	L1/B1/E1[dBHz]	L2/B2/E5A[dBHz]
Satellites Used(0):					
Satellites Tracked(0):					



### 3.2.3 Data Transmission

This page shows the current data transmission status, click [Edit] to set the transmission parameters.

Name	Caster Address	Mountpoint	Data Type	Interval	Status	Start Time	Data Size	Operation		
01	183.60.177.84:2012	TEST1	RTCM3	1S	idle		0 B	<a href="#">Edit</a>	<a href="#">Start</a>	<a href="#">Stop</a>

[New Transmission](#)

When you click **【New Transmission】**, it will pop up to this new page **【Add Connection】**

Add Connection ▾

Name	
Caster Address	
Caster Port	
Version	V1.0 ▾
Password	
Mountpoint	
Data Type	<input checked="" type="radio"/> RTCM3.0 <input type="radio"/> RTCM2.3 <input type="radio"/> CMR <input type="radio"/> CMR+ <input type="radio"/> RTCM3.2 <input type="radio"/> DGPS <input type="radio"/> RAW
Interval	1HZ ▾
Auto Connect	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

[Submit](#)
[Reload](#)
[Cancel](#)

Also you can also choose this **【Ntrip Server 1】**

Ntrip Server 1 ▾

Name	01
Caster Address	183.60.177.84
Caster Port	2012
Version	V1.0 ▾
Password	***
Mountpoint	TEST1
Data Type	<input checked="" type="radio"/> RTCM3.0 <input type="radio"/> RTCM2.3 <input type="radio"/> CMR <input type="radio"/> CMR+ <input type="radio"/> RTCM3.2 <input type="radio"/> DGPS <input type="radio"/> RAW
Interval	1HZ ▾
Auto Connect	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

[Submit](#)
[Delete](#)
[Reload](#)
[Cancel](#)

### 3.2.4 Data Recording

Data recording is used to store static data as data analysis, static solutions, and other post-processing. In this page the user could view the current data recording status, click [Edit] to set the recording parameters.

Schedule Name	Interval	Path	Status	Start Time	Duration Time	File Size	Operation
<input type="button" value="New Session"/>							

Compress(Global) :

Data Type :

Add Recording

Schedule Name	
Path Type	Session/Date <input type="button" value="v"/>
File Name	ssssdddf.yyt <input type="button" value="v"/>
Interval	1HZ <input type="button" value="v"/>
Duration Time	1 hour <input type="button" value="v"/>
Pool	Off <input type="button" value="v"/>
Auto	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Integral Point Record	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
File Push	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Push Parameters	
Protocol	<input checked="" type="radio"/> FTP <input type="radio"/> GEO <input type="radio"/> RADIO
FTP Server Address	
FTP Server Port	
FTP User	
FTP Password	
Remote Directory	

Push Parameters	
Protocol	<input type="radio"/> FTP <input checked="" type="radio"/> GEO <input type="radio"/> RADIO
Mode	TCPClient <input type="button" value="v"/>
Target IP : Port	<input type="text"/> : <input type="text"/>

Push Parameters	
Protocol	<input type="radio"/> FTP <input type="radio"/> GEO <input checked="" type="radio"/> RADIO

Convert
☒ Enable ☐ Disable
  
Rinex 3.02 
  
Compress .zip 
  
☐ Antenna Phase Center
  
☐ File Push

## 3.3 Configuration

### 3.3.1 Reference Station

This page mainly sets the station name, Marker Number, Receiver Number, time zone and so on.

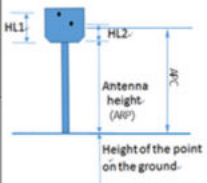
Station Name	Test
Marker Number	0 ▼
Receiver Number	0 ▼
Country Code	CHN - China ▼
Site ID	
Time Zone	GMT+08:00 ▼
HTTP Server Port	80

**Antenna parameters:** chose the corresponding antenna type, and then input the actual antenna height of the station.

Antenna Type	Custom ▼	HX-GG486A	Download
	选择文件 未选择任何文件	Upload	
Antenna Serial			
R(mm)	0		
H(mm)	0		
HL1(mm)	11.6		
HL2(mm)	14.2		

**Reference station coordinates:** If you do not need a known coordinate to start reference station, then click the "Load Current Position" as a reference station coordinate. However, if you need a known coordinate to start reference station, please input the known point coordinates in accordance with the appropriate format.

Coordinate System	Geodetic Coordinates (B.L.H) ▼			
Base Longitude	113	21	59	8244004
Base Latitude	23	7	35	6769012
Base Height(m)	30			
Height of the point on the ground(m)	0.000			
Antenna Height(mm)	0			
Measurement Mode	Antenna Phase Center ▼			



### 3.3.2 GNSS configuration

In this page, you can set information of satellite systems and the cutoff angle.

GNSS Configuration	
Cutoff Angle	10
1PPS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
BDS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
GPS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
GLONASS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Galileo	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
QZSS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SBAS	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

### 3.3.3 Satellites tracked

In this page, you can select the satellites you want.

Tracking Satellites							
GPS	Don't track	Glonass	Don't track	BeiDou	Don't track	Galileo	Don't track
G1	<input type="checkbox"/>	R1	<input type="checkbox"/>	C1	<input type="checkbox"/>	E1	<input type="checkbox"/>
G2	<input type="checkbox"/>	R2	<input type="checkbox"/>	C2	<input type="checkbox"/>	E2	<input type="checkbox"/>
G3	<input type="checkbox"/>	R3	<input type="checkbox"/>	C3	<input type="checkbox"/>	E3	<input type="checkbox"/>
G4	<input type="checkbox"/>	R4	<input type="checkbox"/>	C4	<input type="checkbox"/>	E4	<input type="checkbox"/>
G5	<input type="checkbox"/>	R5	<input type="checkbox"/>	C5	<input type="checkbox"/>	E5	<input type="checkbox"/>
G6	<input type="checkbox"/>	R6	<input type="checkbox"/>	C6	<input type="checkbox"/>	E6	<input type="checkbox"/>
G7	<input type="checkbox"/>	R7	<input type="checkbox"/>	C7	<input type="checkbox"/>	E7	<input type="checkbox"/>
G8	<input type="checkbox"/>	R8	<input type="checkbox"/>	C8	<input type="checkbox"/>	E8	<input type="checkbox"/>
G9	<input type="checkbox"/>	R9	<input type="checkbox"/>	C9	<input type="checkbox"/>	E9	<input type="checkbox"/>
G10	<input type="checkbox"/>	R10	<input type="checkbox"/>	C10	<input type="checkbox"/>	E10	<input type="checkbox"/>
G11	<input type="checkbox"/>	R11	<input type="checkbox"/>	C11	<input type="checkbox"/>	E11	<input type="checkbox"/>
G12	<input type="checkbox"/>	R12	<input type="checkbox"/>	C12	<input type="checkbox"/>	E12	<input type="checkbox"/>
G13	<input type="checkbox"/>	R13	<input type="checkbox"/>	C13	<input type="checkbox"/>	E13	<input type="checkbox"/>
G14	<input type="checkbox"/>	R14	<input type="checkbox"/>	C14	<input type="checkbox"/>	E14	<input type="checkbox"/>
G15	<input type="checkbox"/>	R15	<input type="checkbox"/>	C15	<input type="checkbox"/>	E15	<input type="checkbox"/>
G16	<input type="checkbox"/>	R16	<input type="checkbox"/>	C16	<input type="checkbox"/>	E16	<input type="checkbox"/>
G17	<input type="checkbox"/>	R17	<input type="checkbox"/>	C17	<input type="checkbox"/>	E17	<input type="checkbox"/>
G18	<input type="checkbox"/>	R18	<input type="checkbox"/>	C18	<input type="checkbox"/>	E18	<input type="checkbox"/>
G19	<input type="checkbox"/>	R19	<input type="checkbox"/>	C19	<input type="checkbox"/>	E19	<input type="checkbox"/>
G20	<input type="checkbox"/>	R20	<input type="checkbox"/>	C20	<input type="checkbox"/>	E20	<input type="checkbox"/>
G21	<input type="checkbox"/>	R21	<input type="checkbox"/>	C21	<input type="checkbox"/>	E21	<input type="checkbox"/>
G22	<input type="checkbox"/>	R22	<input type="checkbox"/>	C22	<input type="checkbox"/>	E22	<input type="checkbox"/>
G23	<input type="checkbox"/>	R23	<input type="checkbox"/>	C23	<input type="checkbox"/>	E23	<input type="checkbox"/>
G24	<input type="checkbox"/>	R24	<input type="checkbox"/>	C24	<input type="checkbox"/>	E24	<input type="checkbox"/>
G25	<input type="checkbox"/>			C25	<input type="checkbox"/>	E25	<input type="checkbox"/>
G26	<input type="checkbox"/>			C26	<input type="checkbox"/>	E26	<input type="checkbox"/>
G27	<input type="checkbox"/>			C27	<input type="checkbox"/>	E27	<input type="checkbox"/>
G28	<input type="checkbox"/>			C28	<input type="checkbox"/>	E28	<input type="checkbox"/>

### 3.3.4 Network

This page is mainly set for the data link method used by SC2200.

The Running Network	
Priority Network	<input type="radio"/> Wired Net <input checked="" type="radio"/> Wireless Net <input type="radio"/> Mobile Net
Current Network	WAN
Default Gateway	192.168.3.1
DNS	114.114.114.114 8.8.8.8
PING	<input checked="" type="radio"/> Enable <input type="radio"/> Disable Timeout: <input type="text"/>
	(s) Counts: <input type="text"/>
Device Network Settings	
Wired Net	<input checked="" type="radio"/> WAN
DHCP	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IP	192.168.3.129
Mask	255.255.255.0
Gateway	192.168.3.1
MAC address	0C:AE:7D:D9:B5:D7
Link Status	Link disconnected
Status	Route disconnected
Wireless Net	<input type="radio"/> Client <input checked="" type="radio"/> Hotspot <input type="radio"/> Disable
MAC address	0C:AE:7D:D9:B5:D8
SSID	SC22A9023004E
Password	NONE
IP	192.168.10.1
Mobile Net	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
APN	3gnet
User	
Password	
IP	0.0.0.0
Mask	0.0.0.0
Gateway	0.0.0.0
Signal Level	0%
Mobile Isp	Unknown
Monet Link Status	PowerOFF
Monet Status	No internet access
FTP Server Settings	
Anonymous Access	Enable
User	1
Password	*
NTP	
NTP Server	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
<input type="button" value="Submit"/> <input type="button" value="Reload"/>	

Wireless Net	<input checked="" type="radio"/> Client <input type="radio"/> Hotspot <input type="radio"/> Disable
DHCP	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SSID	PG
	PG Scan SSID
Password	22228888
IP	0.0.0.0
Mask	0.0.0.0
Gateway	0.0.0.0
MAC address	0C:AE:7D:D9:B5:D8
Bit Rate	0 Mb/s
Signal Level	0 dbm
Channel	0
Wifi Link Status	PowerOFF
WIFI Status	No internet access
Virtual AP	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
SSID	SC22A9023004E
Password	NONE
IP	192.168.10.1

### 3.3.5 Dynamic DNS

This page is mainly set for dynamic DNS, service provider, host name, user name, password.

**Dynamic DNS**

<b>Dynamic DNS</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
<b>Service Provider</b>	oray.com ▼	
<b>Host Name</b>	<input style="width: 100%;" type="text"/>	
<b>Username</b>	<input style="width: 100%;" type="text"/>	
<b>Password</b>	<input style="width: 100%;" type="text"/>	

### 3.3.6 NTRIP Server

In this page, you can set the transmission content and the server for the SC2200 reference station.

Ntrip Server 1 ▼

Name	01	
Caster Address	183.60.177.84	
Caster Port	2012	
Version	V1.0 ▼	
Password	***	
Mountpoint	TEST1	
Data Type	<input checked="" type="radio"/> RTCM3.0 <input type="radio"/> RTCM2.3 <input type="radio"/> CMR <input type="radio"/> CMR+ <input type="radio"/> RTCM3.2 <input type="radio"/> DGPS <input type="radio"/> RAW	
Interval	1HZ ▼	
Auto Connect	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	

Submit
Delete
Reload
Cancel

Add Connection ▼

Name		
Caster Address		
Caster Port		
Version	V1.0 ▼	
Password		
Mountpoint		
Data Type	<input checked="" type="radio"/> RTCM3.0 <input type="radio"/> RTCM2.3 <input type="radio"/> CMR <input type="radio"/> CMR+ <input type="radio"/> RTCM3.2 <input type="radio"/> DGPS <input type="radio"/> RAW	
Interval	1HZ ▼	
Auto Connect	<input type="radio"/> Enable <input checked="" type="radio"/> Disable	

Submit
Reload
Cancel

Note:

- The password in this page can be entered arbitrarily, but can not be empty.
- When the [Auto Connect] is chose, after the network is disconnected, the data transmission will be automatically connected, otherwise the transmission will need to be initiated artificially.

- Before setting parameters, please back to the page of reference station and make sure the base station coordinate is correct or not. If you need to start with known coordinates, please input the known coordinate.
- After parameters setting, click "Submit" and the data transmission is turned on. In the status bar, you can see the data transfer status displayed as "transmitting". The differential transmission indicator in the front panel of the mainframe starts to blink. The above process is the establishment of a base station transmission.

### 3.3.7 Recording

In this page you can set Schedule Name, Push Parameters, Convert.

Compress(Global) :

Data Type :

Schedule Name	
Path Type	Session/Date
File Name	ssssdddf yyt
Interval	1HZ
Duration Tme	1 hour
Pool	Off
Auto	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Integral Point Record	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
File Push	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

Push Parameters

Protocol	<input checked="" type="radio"/> FTP <input checked="" type="radio"/> GEO <input type="radio"/> RADIO
Mode	TCPClient
Target IP : Port	

Push Parameters

Protocol	<input type="radio"/> FTP <input type="radio"/> GEO <input checked="" type="radio"/> RADIO
----------	--

Convert

☒ Enable ☐ Disable

Rinex 3.02

Compress zip

☐ Antenna Phase Center

☐ File Push

### 3.3.8 Port Configuration

This page is mainly set for Bluetooth, COM1, COM2, COM3, Ntrip Client, Ntrip Caster, Socket 1, Socket .

I/O Configuration	
Bluetooth	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Function	NMEA(Output) ▼
NMEA	GGA: 1HZ ▼ GSA: Off ▼ GSV: Off ▼
	ZDA: Off ▼
	RMC: Off ▼ VTG: Off ▼ GST: Off ▼
	GLL: Off ▼
COM1	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Baud Rate	115200 ▼
Function	CMD(Input/Output) ▼
COM2	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Baud Rate	115200 ▼
Function	CMD(Input/Output) ▼
COM3	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Baud Rate	115200 ▼
Function	CMD(Input/Output) ▼
Ntrip Client	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IP:Port	183.60.177.84.2012
Version	V1.0 ▼
Mountpoint	TEST
	Get Mountpoint
Upload GGA	10S ▼
User	user
Password	****
Ntrip Caster	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Port	6070
Socket 1	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Type	TCP ▼
Mode	Server ▼
Port	6060
Function	RAW(Output) ▼
Interval	1HZ ▼ RANGE ▼
Ephemeris Frequency	Off ▼
Socket 3	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Type	TCP ▼
Mode	Server ▼
Port	9001
Function	RAW(Output) ▼
Interval	1HZ ▼ RANGE ▼
Ephemeris Frequency	Off ▼
<input type="button" value="Submit"/> <input type="button" value="Reload"/>	

### 3.3.9 Alters

This page is mainly set for E-Mail alerts, SMS alerts, phone number.

If you want to send text messages, you need to use a mobile network.

**Alerts**

<b>E-Mail Alerts</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
<b>SMTP Server</b>	<input style="width: 100%;" type="text"/>	<div style="border: 1px solid gray; padding: 5px; width: 50px; margin: 0 auto;">Test</div>
	: <input style="width: 50px;" type="text"/> <input type="checkbox"/> SSL Encryption	
<b>From E-Mail Address</b>	<input style="width: 100%;" type="text"/>	
<b>E-Mail Login Name</b>	<input style="width: 100%;" type="text"/>	
<b>E-Mail Login Password</b>	<input style="width: 100%;" type="password"/>	
<b>To E-Mail Address</b>	<input style="width: 100%;" type="text"/>	

<b>SMS Alerts</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
<b>Phone Number</b>	<input style="width: 100%;" type="text" value="13798191635"/>	<div style="border: 1px solid gray; padding: 5px; width: 50px; margin: 0 auto;">Test</div>

Submit

Reload

### 3.3.10 SNMPD

When you come to SNMPD, you can see **【Trap IP】** and **【Allow Access IP】** .

**【Trap IP】** :Receivers can specify some IPS and then automatically send information to those IPS

**【Allow Access IP】** :Receivers can allow some devices to proactively obtain information about receivers through IP addresses.

**SNMPD**

<b>SNMPD</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
<b>Trap IP</b>		(Please separate by ',')
<b>Allow Access IP</b>		

Submit
Reload

### 3.3.11 Firewall

On this page, you can choose whether to turn on the firewall.

**Firewall**

<b>Network Services Filter</b>	<input checked="" type="radio"/> Enable <input type="radio"/> Disable	
<b>Filter Table Type</b>	<div style="border: 1px solid gray; padding: 2px;">           Black List ▼            White List            Black List         </div>	

Source IP	Operation
	Delete

Add

Submit
Reload

### 3.3.12 Registration

You can know registration information of receiver in this page.

Device Serial	SC22A9023004E
Old AuthCode	6FA7DEDF5B9FBF47BC457C115C876671
Expire Date	20190424
Register Status	CHECKING
AuthCode	<input type="text"/>

### 3.4 Download

On this page, you can download observation file and ephemeris.

Select	Name	Size	Creation Time	Modification Time	Operation
<input type="button" value="Select All"/> <input type="button" value="Package"/> <input type="button" value="Delete Selected"/>					

## 3.5 System Management

In this page you can set upgrade file, remote debug, security.

**Online Upgrade**
  
1. Upload File  未选择任何文件

---

**Remote Debug**
  
☒ Enable ☐ Disable
  
IP : Port

---

**View Logs**
  
1. APP Log  
  
2. OS Log  
  
3. Kernel Log

---

**Security**
  
☒ Enable Login Authentication
  
Current User : admin
  
Old Password : 
  
New Password :  
  
 Verify New Password
  
☒ Enable Guest
  
New Guest Password :  
  
 Password

---

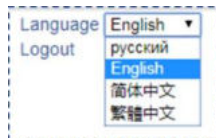
## 3.6 Configuration Set

In this page you can set config files.

Config Files	Save config	Restore config		
System config	Download	选择文件	未选择任何文件	Upload
Service config	Download	选择文件	未选择任何文件	Upload
User config	Download	选择文件	未选择任何文件	Upload

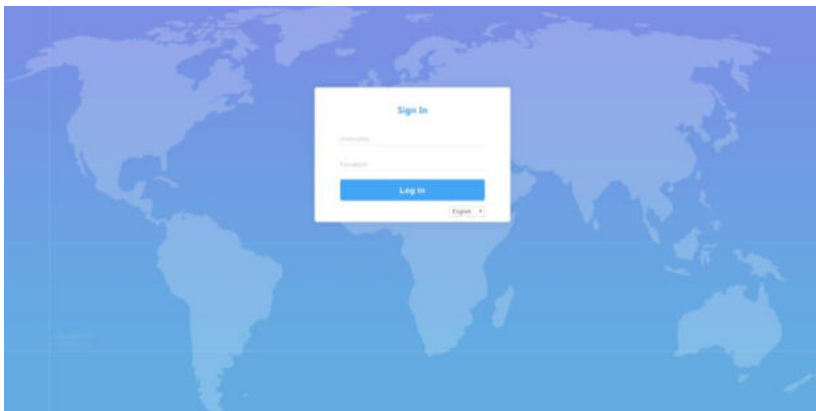
### 3.6.1 Language

As you can see, SC2200 has 4 languages to set up. They are Russian, English, Simplified Chinese, Traditional Chinese.



### 3.6.2 Logout

When you click "Logout".



## 4. Operation

### 4.1 Power On

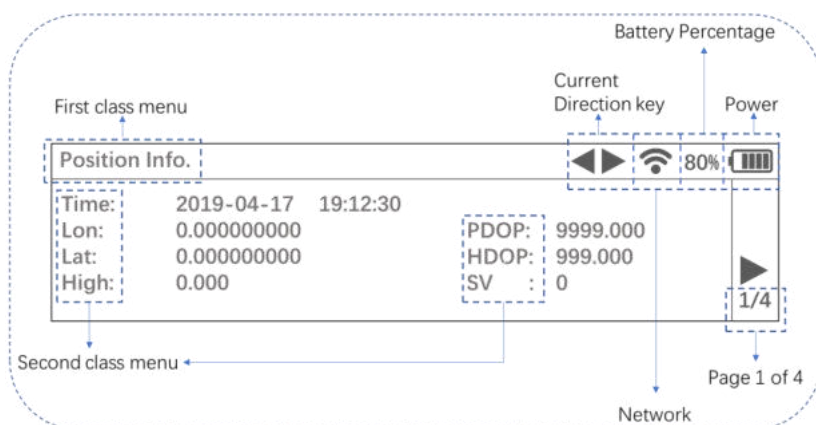
Long press the red power key on the panel, and until the initialization is completed.



You'll see four information pages about this receiver.

Position Info.	<div> <div>Position Info.</div> <div> <div>Time: 2019-04-17 19:12:30</div> <div>Lon: 0.000000000</div> <div>Lat: 0.000000000</div> <div>High: 0.000</div> </div> <div> <div>PDOP:9999.000</div> <div>HDOP:999.000</div> <div>SV :0</div> </div> <div>1/4</div> </div>
Ethernet Info.	<div> <div>Ethernet Info. Web Port:80</div> <div> <div>DHCP: ON</div> <div>IP Addr: 0.0.0.0</div> <div>Mask: 0.0.0.0</div> <div>Gateway: 0.0.0.0</div> </div> <div>2/4</div> </div>
WIFI Info.	<div> <div>Wifi Info.</div> <div> <div>Mode: Master</div> <div>IP Addr: 192.168.10.1</div> <div>Mask: 255.255.255.0</div> <div>Gateway: 0.0.0.0</div> </div> <div>3/4</div> </div>
GPRS Info.	<div> <div>GPRS Info.</div> <div> <div>Power: Off</div> <div>IP Addr: 0.0.0.0</div> <div>Mask: 0.0.0.0</div> <div>Gateway: 0.0.0.0</div> </div> <div>4/4</div> </div>

You can learn this information from every page.



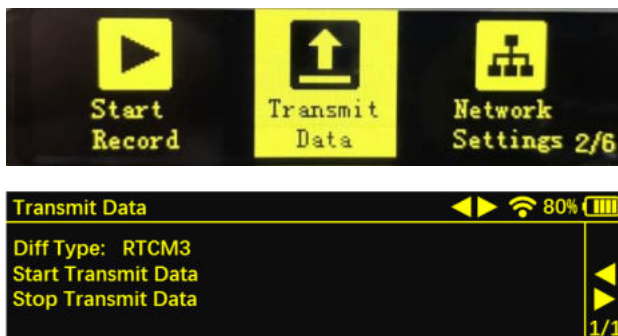
## 4.2 Start Record

You can see the main menu display on OLED screen.



## 4.3 Trasmit Data

When you transmit data by the panel, first you need to set the transmission parameters in the Web UI page, then you can operate the panel. There doesn't have the transmission parameters setup on the panel.



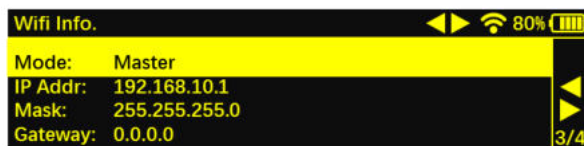
## 4.4 Network Settings

This page has three settings. They are Ethernet Setting, Wifi Setting, GPRS Setting.

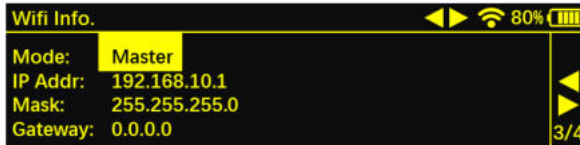



### How to change the WIFI Setting Mode?

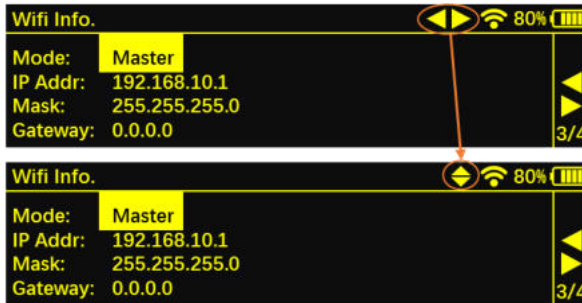
First, you need to move the cursor to the "Mode" column.



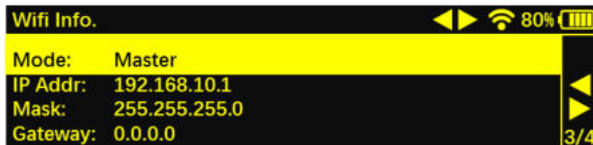
Second, short press the power key to Choose what you want to change. "Master" has been selected.



Third, you need to check the direction key on the top. You can only enter the selection interface when the direction key is . You can choose Master, Managed, off.

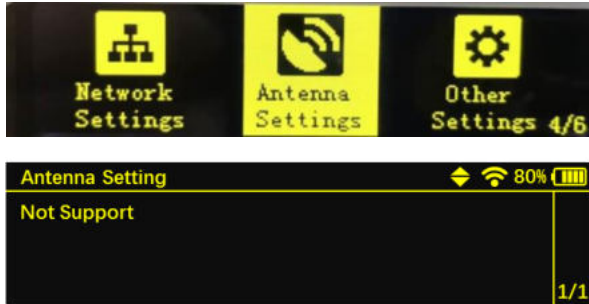


Fourth, after determining the options you want, short press the power button to confirm. Then you can see yellow cursor become long. This means that the setup was successful.



## 4.5 Antenna Settings

Not support for the moment.



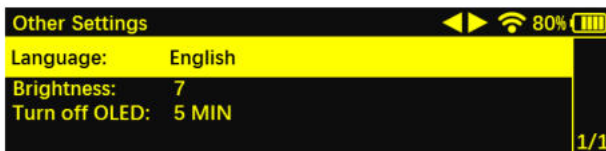
## 4.6 Other Settings

In this page you can set the language, OLED brightness, OLED screensaver time.

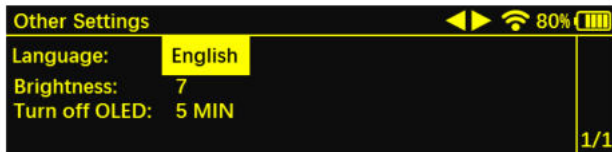



### How to switch languages?

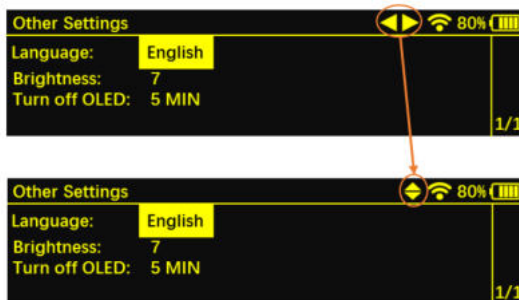
First, you need to move the cursor to the language column.



Second, you need to short press **【Power key】** . The purpose of this is to select the parameters you want to change. After doing that, you can see the "English" has been selected.



Third, you need to check the direction key on the top. You can only enter the selection interface when the direction key is  . You can choose English, Simplified Chinese, Traditional Chinese, Russian.

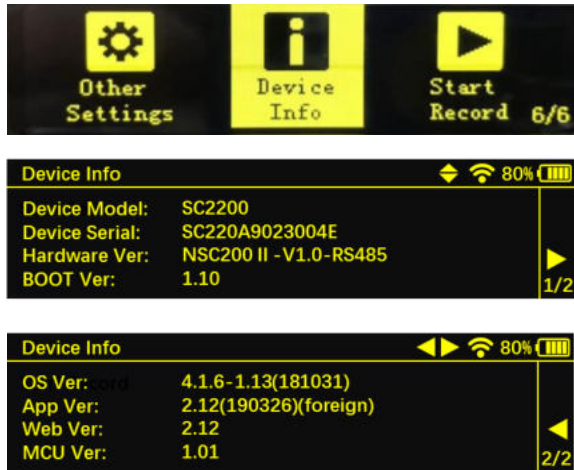


Fourth, after determining the options you want, short press the power button to confirm. Then you can see yellow cursor become long. This means that the setup was successful.



## 4.7 Device Info

In this page, you can get the information of device model, device serial, hardware version and BOOT version. In page 2, you can get the information of OS Ver, App Ver, Web Ver, MCU Ver.



## 4.8 Power OFF

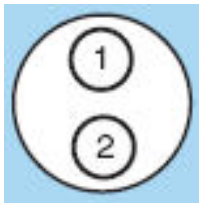
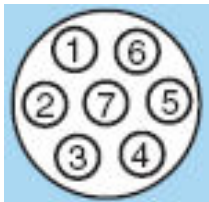
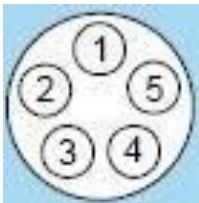
Long press the red power key on the panel, until the screen goes off.

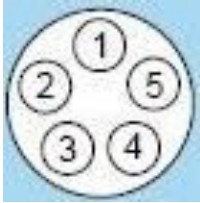
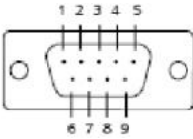


## 5. Accessories

<b>Accessories of SC2200</b>		
<b>Categories</b>	<b>Description</b>	<b>Qty</b>
<b>Standard Accessories</b>		
<b>Adaptor</b>	Power Adaptor with 4 plugs (US, UK, AU and EU), 15V/2A, 2PIN	1
<b>Cable</b>	Network cable 3M	1
<b>Optional Accessories</b>		
<b>Antenna</b>	2D Choke Ring GNSS antenna	1
<b>Antenna</b>	3D Choke Ring GNSS antenna	1
<b>Cable</b>	Cable for choke ring antenna (30m)	1
<b>Cable</b>	Lemo 7 to USB	1
<b>Cable</b>	Lemo 5 to DB-9 serial	1
<b>Cable</b>	DB9 female-DB9 female, to debug and transfer data	1
<b>Antenna</b>	4G LTE Antenna, 90°	1
<b>Antenna</b>	4G LTE Antenna, male SMA connector	1

## Appendix A – Pin Interface Definition

Type	Pictures	Definition
<b>PWR</b>		1 Power positive
		2 Power negative
<b>SUB</b>		1 ID
		2 D-
		3 VBUS
		4 D+
		5 NC
		6 NC
		7 GND
<b>COM1</b>		1 NC
		2 NC
		3 TXD output 232
		4 GND
		5 RXD input 232

<b>COM2</b>		1	NC
		2	485(GND)/232
		3	DATA-/TXD
		4	GND
		5	DATA+/RXD
<b>COM3</b>		1	DCD
		2	RXD
		3	TXD
		4	DTR
		5	GND
		6	DSR
		7	RTS
		8	CTS
		9	--

## Appendix B FAQ

❶ How to change the languages?

Please refer to 【4.6 other settings】 .

❷ How to change the WIFI Setting Mode?

Please refer to 【4.4 Network settings】 .

❸ Could the receiver shut down while charging?

No, it could not. SC2200 is usually used as a base station, and its places are mostly remote unattended environments. If the battery runs out due to a power outage shutdown, it must be able to boot automatically when powering up.

❹ How to connect to Web UI?

Please refer to 【3.Web UI】

## Appendix 1: Copyrights, warranty and environmental recycling

### Copyrights and trademarks

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### Release Notice

This is the July 2019 release of the STONEX® SC2200 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 2019

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.

## Return policy Dead on Arrival instruments

All returned products have to be shipped to STONEX® representative office.

The original Purchaser has a period of seven (7) days starting from date of purchasing to signal the existence of a defect in the instrument for a full refund (less shipping and handling), provided the merchandise is in new, resalable condition and returned in the original, undamaged packaging. Customer has to pay for both the return and the original freight fees, regardless of the original freight paid by the Company. All warranty books, instruction manuals, parts and accessories must be included as well as the original box in which the item was shipped. We recommend placing the original carton inside another box, to avoid any additional damage to the carton itself. In some cases, returns of special items will require a re-stock fee. Acceptance of returned merchandise is final only after inspection by STONEX®.

Above terms and policies shall apply as for hardware. Dealers need to follow STONEX® repair/service procedure to achieve a better and prompt service result.

## Firmware/Software warranty

Stonex doesn't 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 instruments 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.

## Instruments

One (1) year on STONEX® Products:

GNSS receiver: SC2200 GNSS Series.

## Accessories

### Accessories & Specific Parts Warranty

For Accessories provided by Stonex with the instruments SC2200 GNSS the following general warranty time is for reference:

- Battery charger: 7 months.
- Adapters for battery charger, Cables: 1 year.

## Environmental recycling

The cardboard box, the plastic in the package and the various parts of this product have to 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 centre. 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 centres 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 property. In particular, observe safety instructions that are presented in the following form:

**WARNING** - A Warning alerts about risk for health and/or damage to the property. 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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