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# Cube-connector Field Software User Manual

*Stonex Software Cube-connector – User Manual Vers. 4.0*



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## Introduction

This is an Android App to connect/configure the Android devices to Stonex GNSS receivers.

In order to be connected to the GNSS receiver, the Android tablet/handheld must be paired with the GNSS receiver by Bluetooth.

Since the Bluetooth connection has been established, Cube-connector will replace the GPS readings from the internal device with the ones coming from the Stonex GNSS receiver.

In this way the customer can use his preferred software for GIS/Survey.

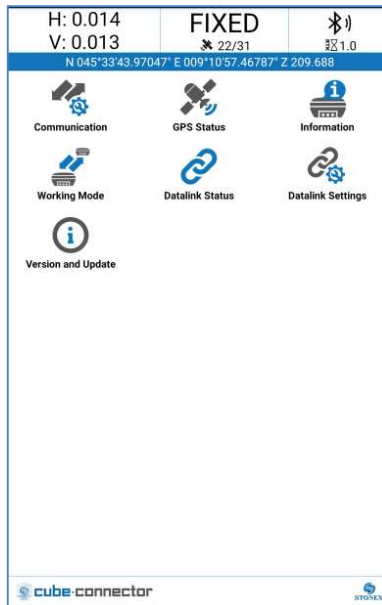


## 1. Interface

The Stonex Cube-connector is very userfriendly. The application has only 1 interface where the user can manage his device.

Inside the main menu there are all the necessary commands:

- **Communication**
- **GPS Status**
- **Information**
- **Working mode**
- **Datalink Status**
- **Datalink Settings**
- **Version and Update**



## 2. Communication

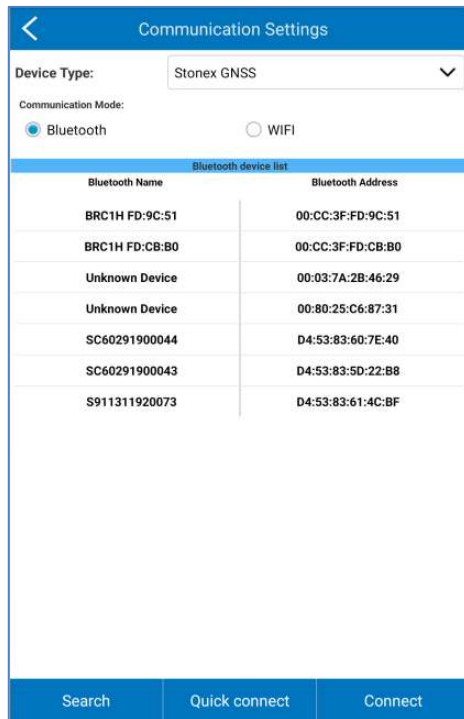
You have two way to connect. One way is Bluetooth, the other way is WIFI.

As the device type, the Stonex Cube-connector supports:

<b>Device Type</b>	<b>Models</b>
Stonex GNSS	<ul style="list-style-type: none"> <li>- S9i</li> <li>- S10</li> <li>- S10A</li> <li>- S800</li> <li>- S800A</li> <li>- S900</li> <li>- S900A</li> <li>- S700A</li> <li>- S850A</li> <li>- S900 v2</li> <li>- S900A v2</li> <li>- S990A</li> <li>- S980</li> </ul>
Stonex S5	S5
Stonex S500	S500
Stonex S70G	S70G

## 2.1. Bluetooth Connection

As far as the Bluetooth connection between PDA and device is concerned, there are two types. Fast connection, through which the handheld connects to the nearest free device and the normal Bluetooth connection through the search for devices.



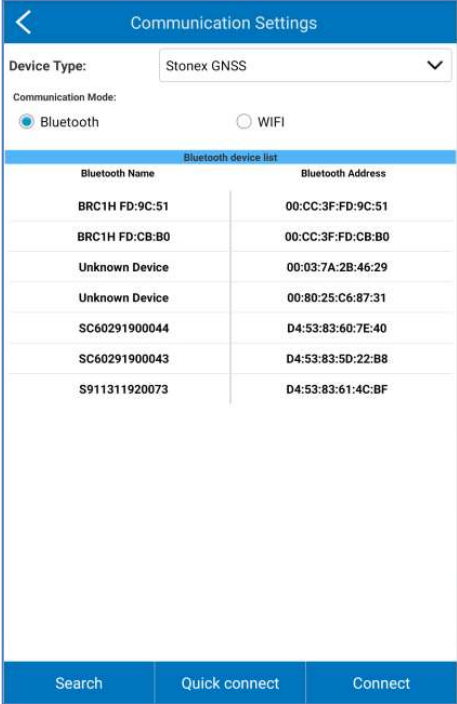
**Search**

Click on the button **Search**, the program will automatically search for the current Bluetooth device nearby. When the search is complete, the list of Bluetooth devices will be displayed in the main interface.

Choose what you want to connect Bluetooth device, and click on the button

Connect

, so you have finish Bluetooth connection.



Communication Settings

Device Type: Stonex GNSS

Communication Mode:


Bluetooth  WIFI

Bluetooth device list	
Bluetooth Name	Bluetooth Address
BRC1H FD:9C:51	00:CC:3F:FD:9C:51
BRC1H FD:CB:B0	00:CC:3F:FD:CB:B0
Unknown Device	00:03:7A:2B:46:29
Unknown Device	00:80:25:C6:87:31
SC60291900044	D4:53:83:60:7E:40
SC60291900043	D4:53:83:5D:22:B8
S911311920073	D4:53:83:61:4C:BF

Search Quick connect Connect

## 2.2. WIFI Connection


The other opportunity to pair the receiver with the handheld with the receiver is through WIFI.

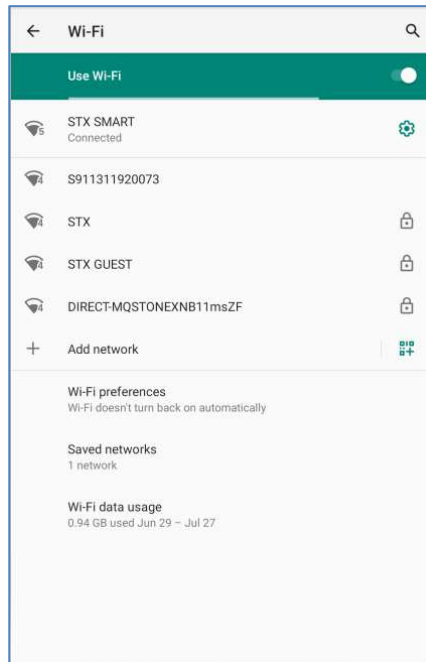



The screenshot displays the 'Communication Settings' screen. At the top, there is a blue header with a back arrow and the title 'Communication Settings'. Below the header, the 'Device Type' is set to 'Stonex GNSS'. Under 'Communication Mode', the 'WIFI' option is selected with a blue radio button, while 'Bluetooth' is unselected. A section titled 'Connect device with current WIFI' contains a table with two columns: 'SSID WIFI' and 'MAC address'. The table lists 'STX SMART' as the SSID and '02:00:00:00:00:00' as the MAC address. At the bottom of the screen, there are three blue buttons: 'Settings', 'Quick connect', and 'Connect'.

SSID WIFI	MAC address
"STX SMART"	02:00:00:00:00:00



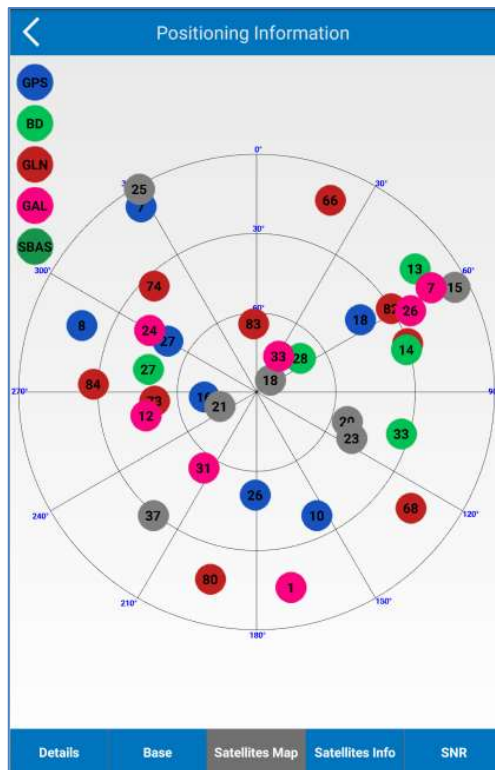
Click on the button  , the interface will turn to the WIFI connection and finish WIFI connection.



After setting up the WIFI connected to the communication port, click on the button  to complete the WIFI communications.

### 3. GPS Status

At the end of the communication, the software is able to interpret the GPS data received in real time from the GNSS devices. The user in the GPS Status menu can view all the information processed by the receiver in real time.



In the figure, in the specific is showed the skyplot.

Inside GNSS status there are all the necessary information about the status of the device.

The first info available is DETAILS.

In detail the user can see the position calculated in real time by the device. It also shows the current status of the position, the PDOP, HDOP and VDOP values. There is also the distance in meters from the base, if the device is correct by a reference.

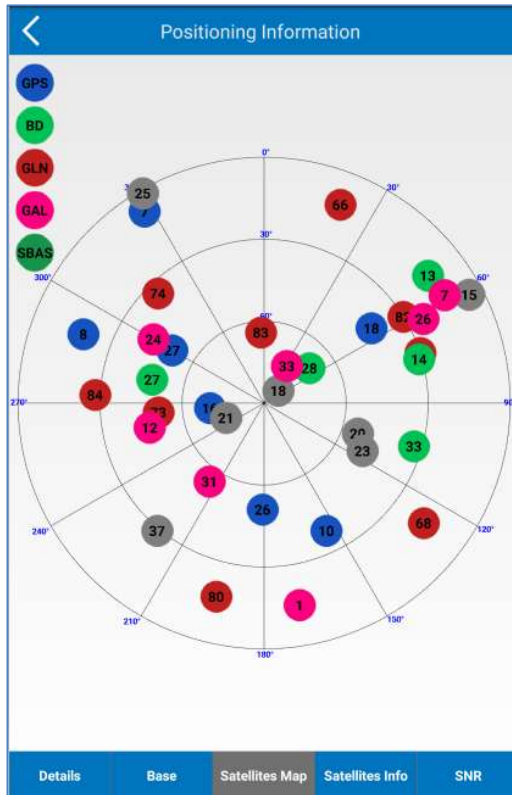
Positioning Information	
Latitude	045°33'44.059176"
Longitude	009°10'57.795168"
Altitude	209.1080
Speed	0.09
Heading	0.00
Solution	FIXED
HRMS	0.018
VRMS	0.018
Satellite	G8+R6+C6+E7/37
Diff Mode	AUTO
Diff.Corr. Age	1.0
PDOP	0.88
HDOP	0.47
VDOP	0.75
UTC Time	2020-07-27 12:22:42
Local Time	2020-07-27 14:22:42
Distance to Ref	7185.661

Details	Base	Satellites Map	Satellites Info	SNR
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The second menu available is Base, where there are all the info of the base, if the device is connected to a reference.

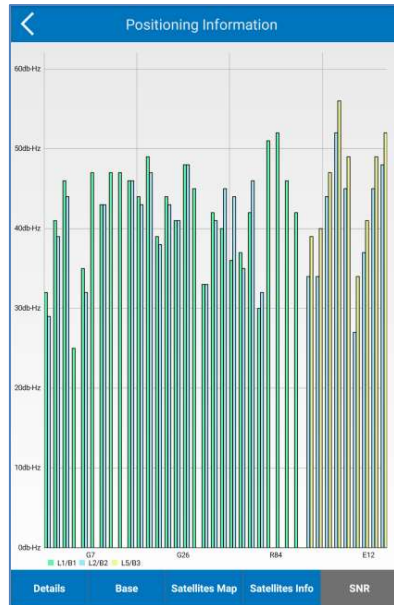
In satellite map is showed the sky plot.



In satellite info and SNR are showed all the info/parameters of the satellites received and used by the device.

There is also the SNR graph for each satellite received.

Positioning Information					
Satellite Number	L1/B1	L2/B2	L5/B3	Azimuth	Elevation Angle
G07	31.0	29.0	N/A	323.0	8.0
G08	42.0	41.0	N/A	294.0	24.0
G10	46.0	46.0	N/A	150.0	44.0
G11	26.0	17.0	N/A	262.0	3.0
G15	35.0	33.0	N/A	56.0	7.0
G16	47.0	N/A	N/A	245.0	70.0
G18	43.0	45.0	N/A	56.0	37.0
G20	47.0	N/A	N/A	97.0	55.0
G21	47.0	22.0	N/A	268.0	81.0
G23	46.0	48.0	N/A	107.0	53.0
G26	44.0	45.0	N/A	180.0	44.0
G27	48.0	50.0	N/A	305.0	57.0
R66	40.0	40.0	N/A	16.0	8.0
R67	45.0	45.0	N/A	64.0	31.0
R68	42.0	43.0	N/A	122.0	24.0
R73	49.0	51.0	N/A	253.0	47.0
R74	47.0	N/A	N/A	308.0	35.0



## 4. Information

In Information, the user can check and see all the info about the components inside the device.

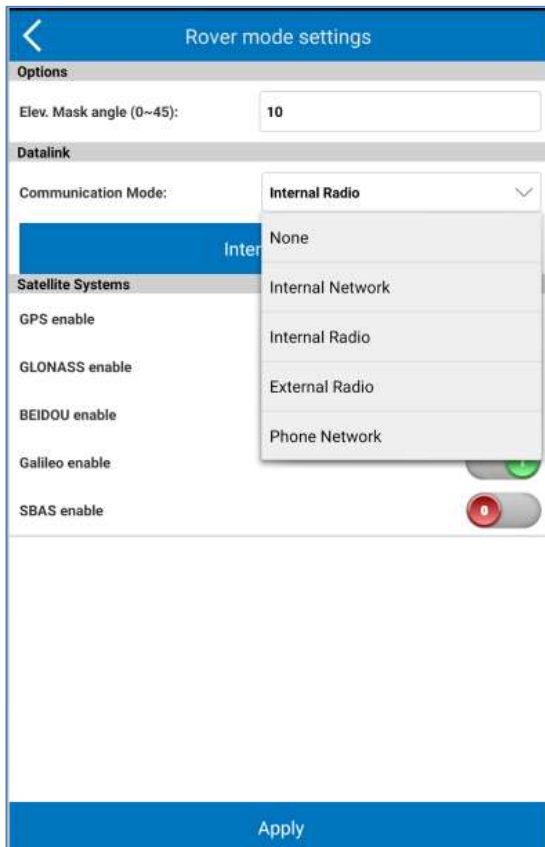
The user can check the fw version component per component.

Device Information	
Serial	S911311920073
Model	S900A
Hardware Version	S9II-V2.02
BIOS Version	1.08
Firmware Version	0.22.200107
GNSS Firmware Version	6.0Aa02
GNSS Serial	21000138
OS Version	1.14
MCU Version	1.40
Sensor Version	1.1.5
Working Mode	BASE
Current Datalink	UHF
RTK State	Waiting to start base station.
Power Source	BATTERY
Battery Power	89 10
Battery Serial	0
<div style="display: flex; justify-content: space-between; border-top: 1px solid black; padding-top: 5px;"> <span>Device information</span> <span>Network info</span> <span>Radio info</span> <span>Other</span> </div>	

## 5. Working mode

To configure the working mode of the device, go inside Working mode menu.

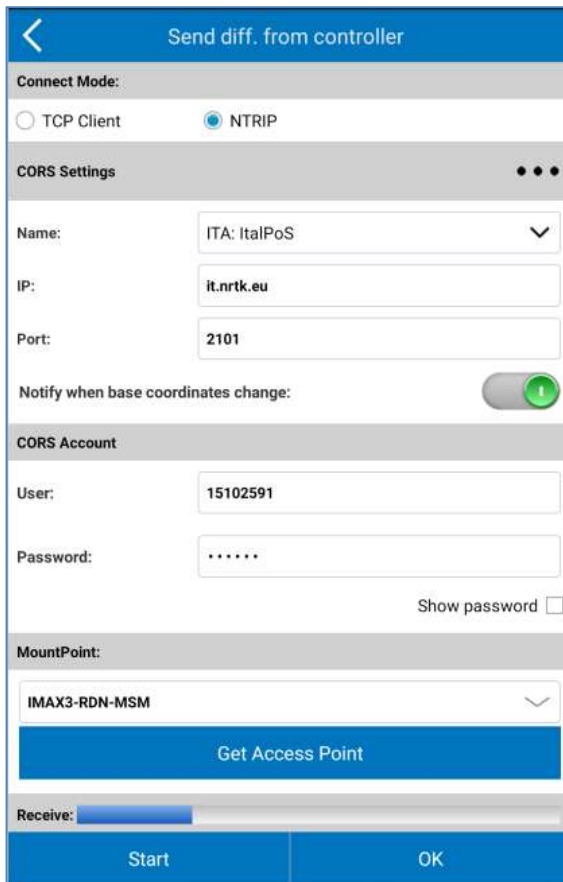
Inside the working mode area, the user can configure his device as rover.



## 6. Datalink Status

The Datalink Status feature allows the user to check the operation and the status of the current datalink active in real time.

In example the user can check the operation of the sim card inserted inside the receiver, he can check the working flow of the radio or also if the connection to a caster service is done with success or not.



Send diff. from controller

Connect Mode:

TCP Client  NTRIP

CORS Settings

Name: ITA: ItalPoS

IP: it.nrtk.eu

Port: 2101

Notify when base coordinates change:

CORS Account

User: 15102591

Password: .....

Show password

MountPoint:

IMAX3-RDN-MSM

Get Access Point

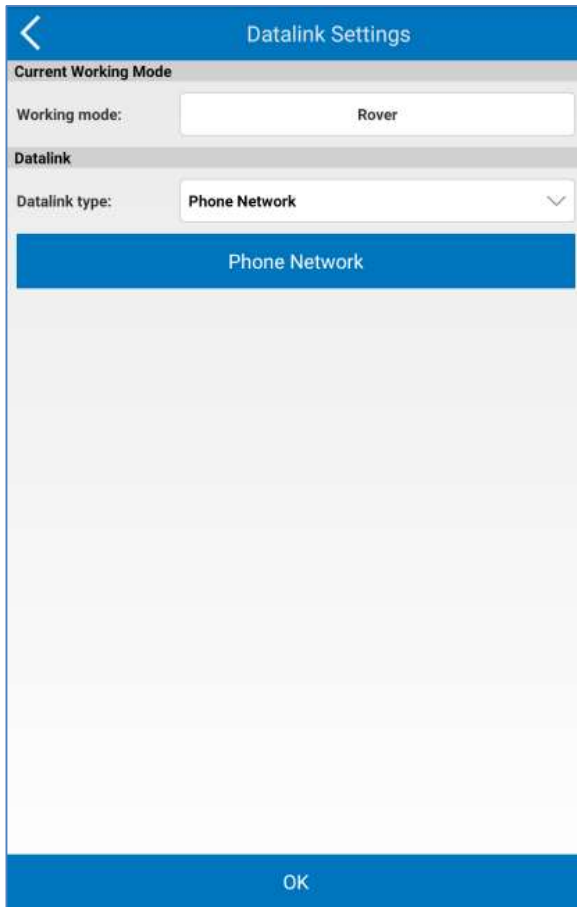
Receive:

Start OK



## 7. Datalink Settings

The Datalink Settings feature allows the user to set the datalink of the rover. It can be considered a shortcut to a datalink settings menu included in the working mode.

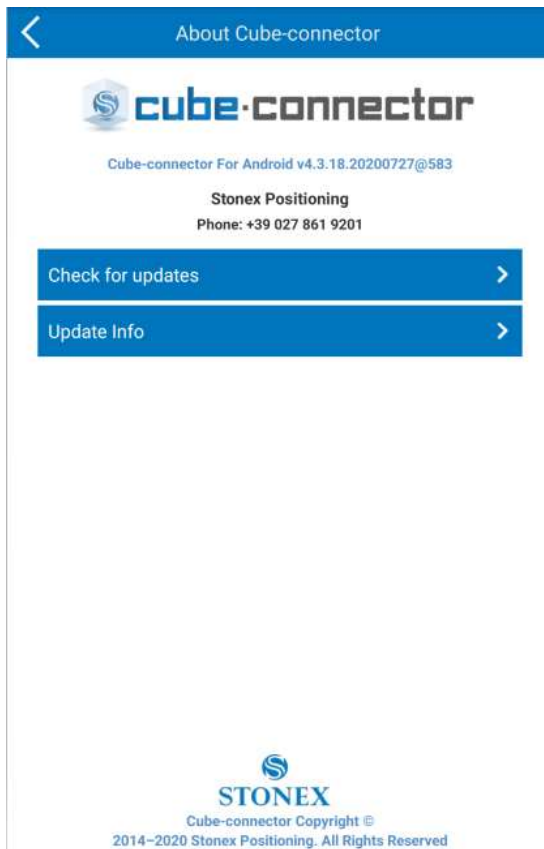


The screenshot shows a mobile application interface for "Datalink Settings". At the top, there is a blue header with a white back arrow on the left and the text "Datalink Settings" in white. Below the header, the screen is divided into sections. The first section is titled "Current Working Mode" and contains a label "Working mode:" followed by a white text box containing the word "Rover". The second section is titled "Datalink" and contains a label "Datalink type:" followed by a white dropdown menu showing "Phone Network" with a downward arrow. Below these sections is a large blue button with the text "Phone Network" in white. At the bottom of the screen is a blue bar with the text "OK" in white.


## 8. Version and updates

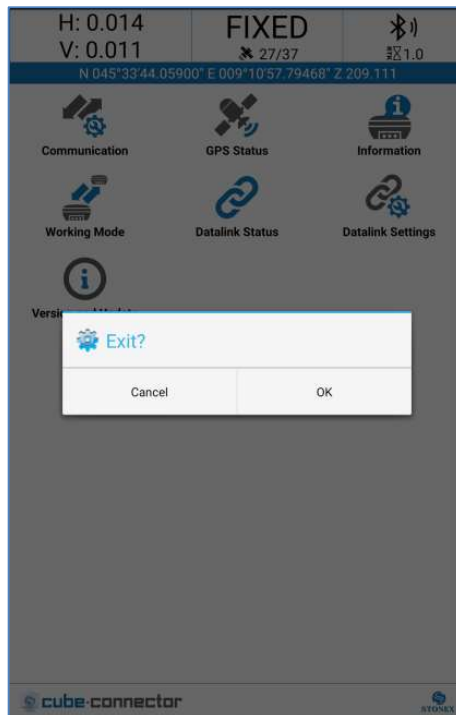
The last icon available is version and updates. Inside it the user can check the version of the Stonex Cube-connector installed. Through that is possible check is there are updates or new version available.

Inside this menu, is possible also check and read the release notes of the updates. Every time that an update is available, the news included inside it are explained and listed inside the release note.



## 9. Exit software

Click on the  button in the communication settings interface. The program will prompt the dialog whether you will exit the program or not. If you select “exit”, the program will turn off. If you select “cancel”, the dialog will close.





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