



NET20 PLUS

2021.03.30 by eSurvey GNSS

NET20 PLUS

SUMMARY

- Overview
- Key Features
- Web User Interface
- Specifications
- Configurations
- Software



Overview

- 222 * 164 * 79 mm
- 2.0 Kg
- Internal 4G
- Ethernet
- Bluetooth
- WIFI
- 1PPS
- Event
- Build-in Battery



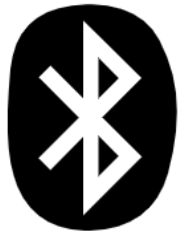
Key Features

- All GNSS Signals: 800 channels



Key Features

- Communication



Bluetooth



WIFI



4G Network



Ethernet

Key Features

- Used as a Reference station

NTRIP Caster

NTRIP Server

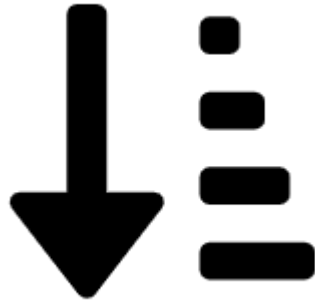
NTRIP Client

Key Features

- Additional Features



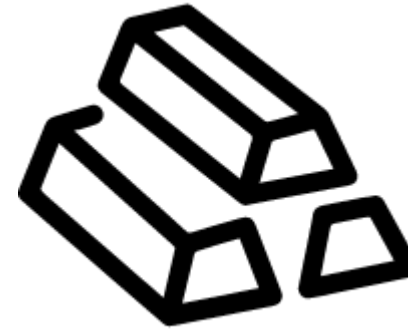
IP67



1.2m Drop



-40°C ~ +65°C



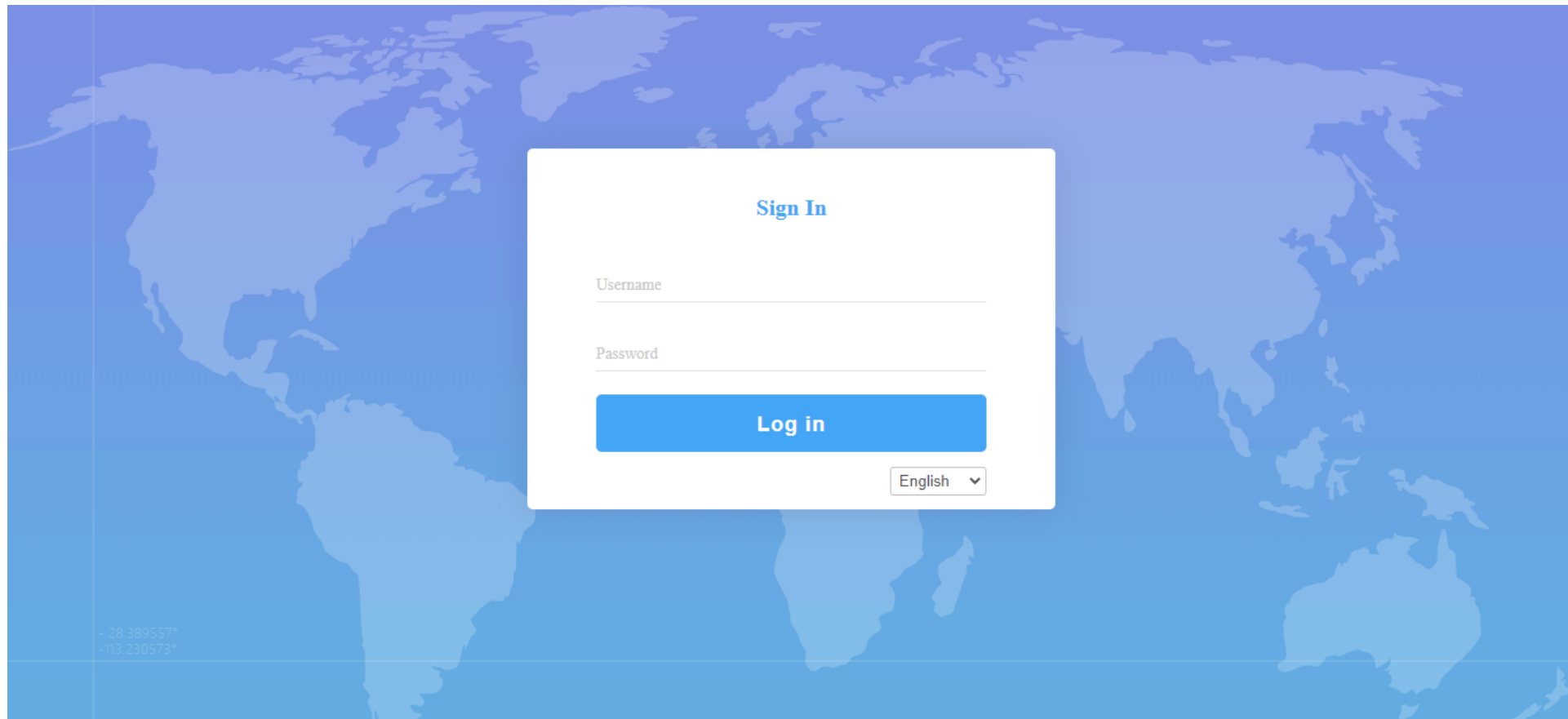
Magnesium Alloy



13600mAh

Web User Interface

- User can connect device hotspot and access WebUI from 192.168.10.1.
- Username: admin, Password: password



Web User Interface

- System Information: View device and satellite information.

NET20 PLUS Reference Station

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Language | English

Station Name	Test
Expire Date	20210929
Time Zone	GMT+08:00

Device Model	NET20 PLUS
Device Serial	NET20D906100
IMEI	8667580448040
Hardware Version	NSC200II-V1.1
BOOT Version	1.11
OS Version	4.1.6-1.13(1810
APP Version	2.12(190708)
Web Version	2.12

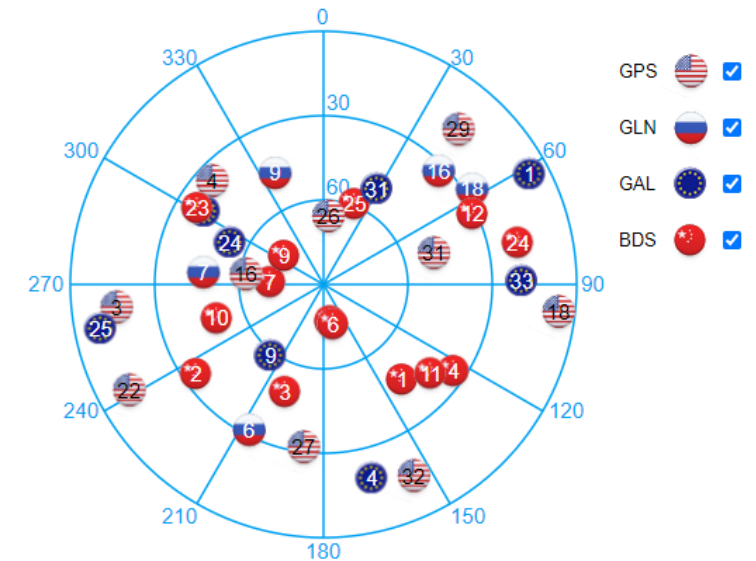
GNSS Model	BD990
GNSS Serial	5850C00078
GNSS Hardware Version	2.7
GNSS Firmware Version	5.37
GNSS Functionality	50Hz

DHCP	Off
MAC address	2C:6B:7D:1C:4
IP	192.168.28.244
Mask	255.255.255.0
Gateway	192.168.28.253

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○ Satellites Table ● Satellites Skyplot



Web User Interface

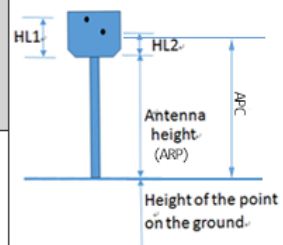
- Reference Station: Set base station coordinate.

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Antenna Type	UA-35	Download	Choose File	No file chosen	Upload
Antenna Serial	esurveyantenna				
R(mm)	76				
H(mm)	46				
HL1(mm)	47.5				
HL2(mm)	42.5				

Coordinate System	Geodetic Coordinates (B,L,H)				Load Current Position Cancel Base Position
Base Longitude	121	31	49	3719996	
Base Latitude	31	5	3	8929992	
Base Height(m)	61.76				
Height of the point on the ground(m)	61.76				
Antenna Height(mm)	0				
Measurement Mode	Antenna Phase Center				



The diagram illustrates the measurement of antenna height. It shows a vertical antenna mounted on a base. The height from the ground to the center of the antenna is labeled 'Antenna height (APC)'. The height from the ground to the top of the antenna is labeled 'Height of the point on the ground'. The height from the center of the antenna to the top of the antenna is labeled 'HL1'. The height from the center of the antenna to the base of the antenna is labeled 'HL2'.

Web User Interface

- GNSS Configuration: Enable/Disable GNSS constellations.

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GNSS Configuration

Cutoff Angle	<input type="text" value="5"/>
1PPS	<input type="radio"/> Enable <input checked="" 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 type="radio"/> Enable <input checked="" type="radio"/> Disable
SBAS	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Event	<input type="radio"/> Enable <input checked="" type="radio"/> Disable

Submit

Reload

Web User Interface

- Network: Configure Ethernet, WIFI and 4G network.

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The Running Network

Priority Network	<input checked="" type="radio"/> Wired Net <input type="radio"/> Wireless Net <input type="radio"/> Mobile Net
Current Network	WAN
Default Gateway	192.168.28.253
DNS	114.114.114.114 8.8.8.8
PING	Timeout : <input type="text"/> (s) Counts : <input type="text"/>

Device Network Settings

Wired Net	<input checked="" type="radio"/> WAN
DHCP	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
IP	192.168.28.244
Mask	255.255.255.0
Gateway	192.168.28.253
MAC address	2C:6B:7D:1C:45:3C
Link Status	Link connected
Status	Internet access

Wireless Net	<input type="radio"/> Client <input checked="" type="radio"/> Hotspot <input type="radio"/> Disable
MAC address	2C:6B:7D:1C:45:3C

Web User Interface

- NTRIP Server: Setup NET20 PLUS as base station. Maximum 4 streams are supported.

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Ntrip Server

Ntrip Server 1

Name	CMR
Caster Address	119.45.59.192
Caster Port	2101
Version	V1.0
Password	...
Mountpoint	SH_5th-CMR
Data Type	<input type="radio"/> RTCM3.0 <input type="radio"/> RTCM2.3 <input checked="" type="radio"/> CMR <input type="radio"/> CMR+ <input type="radio"/> RTCM3.2 <input type="radio"/> RTCM3.2(10s) <input type="radio"/> DGPS <input type="radio"/> RAW
Auto Connect	<input checked="" type="radio"/> Enable <input type="radio"/> Disable

Web User Interface

- Recording: Record raw data, maximum 8 sessions are supported.

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Compress(Global) : Off

Recording - UNSH

Schedule Name	UNSH
Path Type	Session/Date/HH
File Name	ssssdddf.yyt
Interval	5S
Duration Tme	4 hours
Pool	Off
Auto	<input checked="" type="radio"/> Enable <input 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	

Convert

Enable Disable

Web User Interface

- Port Configuration: Configure Bluetooth, 3 x COM, NTRIP Client, NTRIP Caster and 5 x TCP Sockets.

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I/O Configuration

Bluetooth	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
COM1	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
COM2	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
COM3	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Ntrip Client	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
IP:Port	119.45.59.192:2101
Version	V1.0
Mountpoint	E300 <input type="button" value="Get Mountpoint"/>
Upload GGA	1S
User	user002
Password

Web User Interface

- Alerts: Device will alert user through Email or SMS when some conditions happens.

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Alerts

E-Mail Alerts	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
---------------	---

SMS Alerts	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
------------	---

<input checked="" type="checkbox"/> External power loss	<input checked="" type="checkbox"/> Low battery (under 15%)	<input checked="" type="checkbox"/> GNSS satellites drop below an amount <input type="text" value="5"/>
<input checked="" type="checkbox"/> Temperature is above a limit <input type="text" value="70"/> °C	<input checked="" type="checkbox"/> Disk space is close to be full	<input checked="" type="checkbox"/> Priority network is not available

Submit

Reload

Web User Interface

- System Management: Update device firmware.

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System Management

Configuration Set

Language English

Logout

Online Upgrade

1. Upload File No file chosen

Remote Debug

Enable Disable

View Logs

1. APP Log

2. OS Log

3. Kernel Log









4. Audit Log



Security

Specifications

GNSS		Ethernet	Support
Satellites Tracking	GPS: L1CA/L1P/L1C/L2P/L2C/L5 BDS: B1/B2/B3/B1C/B2a/B2b/ ACEBOC GLONASS: G1/G2/G3, P1/P2 GALILEO: E1/E5a/E5b/E6/ALTBOC QZSS: L1CA/L1C/L2C/L5/LEX IRNSS: L5 SBAS ¹ : L1/L5 L-Band: Atlas H10/H30/Basic	Port	1 x Lemo-0, 2-pin, DC in 1 x Lemo-0, 7-pin, USB OTG, host/client 1 x Lemo-0, 5-pin, RS232 1 x Lemo-0, 5-pin, RS232/RS485 1 x DB9 female, RS232 1 x LTE, SMA female 1 x 1PPS, SMA female 1 x Event, SMA female 1 x Nano SIM 1 x TF card 1 x RJ45 ethernet 1 x GNSS TNC female 1 x OSC, MMCX, 50Ω, 5/10 MHz
Channels	800	Baud Rate	9600 ~ 115200 bps
Signal Reacquisition	< 1 sec	Web UI	Support
Cold Start	< 60 sec	NMEA Output	NMEA0183, NMEA2000, Binary
Warm Start	< 30 sec	Correction Data	RTCM2.X, RTCM3.X, CMR, CMR+, DGPS, BINEX, RAW
Hot Start	< 10 sec	Data Recording	Support 8 recording simultaneously
Initialization Reliability	> 99.9%	Recording Format	Binary, RINEX, BINEX
Update Rate	10 Hz standard, up to 50 Hz	Recording Interval ²	2s, 5s, 10s, 15s, 30s, 60s 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz, 50 Hz
Operation System	Linux	Data Stream	1 x Bluetooth 3 x Serial port 4 x NTRIP server streams 1 x NTRIP client streams 5 x Socket (TCP/UDP) streams
Internal Memory	32 GB	Smart Alert	Email and SMS alert
External Memory	TF card	FTP Function	FTP server FTP client (FTP push)
Performance		NTP Server	Support
High Precision Static	H: 2 mm + 0.1 ppm V: 3 mm + 0.4 ppm	Others	DDNS, SNMPD, Firewall, VPN
Static/Fast Static	H: 2.5 mm + 0.1 ppm V: 3.5 mm + 0.4 ppm	Physical	
RTK	H: 8 mm + 1 ppm V: 15 mm + 1 ppm	Dimension	222 x 164 x 79 mm
Code Differential	H: 0.3 m V: 0.6 m	Weight	2 Kg
SBAS	H: 0.3 m V: 0.6 m	Screen	2.75", 64 x 256 pix, yellow font
L-Band	Atlas H10: 4 cm RMS Atlas H30: 15 cm RMS Atlas Basic: 30 cm RMS	Operating Temperature	-40°C ~ +65°C
1PPS	10 ns	Storage Temperature	-45°C ~ +80°C
Internet Modem		Water/Dust Proof	IP67
Support Band	GSM/WCDMA/LTE	Shock and Vibration	Survive a 1.2 m drop on concrete floor
Power Supply		Humidity	Up to 100%
Battery	7.2 V, 13600mAh	Indicators	Battery, recording, Bluetooth, datalink
Working Time	Up to 12 hours with internal battery	Button	1 x Power/confirm button 1 x Function button 2 x Selection button
Voltage	9~28 VDC, 2A with over-voltage protection	Certificate	CE
Communication			
Bluetooth	V2.1 + EDR/V4.1 dual model		
WIFI	802.11 b/g/n, hotspot/client mode		

Configurations

Net20 Plus					
NO.	Items	Quantity	Model	Description	Picture
1	Carton Box	1	---	---	
2	Net20 Plus	1	---	---	
3	Charger & Plug	1	PSAA30R-150	2-pin Lemo power cable Input: 100~240V~0.8A 50-60Hz Output: 15v, 2A	
4	5-Pin Cable	1	TC-183	For serial data output	
5	7-Pin Cable	1	TC.GK428.ABL	For internal storage access only	
6	Serial Cable	1	---	Female to female, cross serial cable	
7	Ethernet Cable	1	---	RJ45 Ethernet cable	
8	4G Antenna	1	---	External 4G network antenna	

Optional					
1	Antenna	1	UA91	Choke Ring Antenna, Multi-frequency	
2	Antenna	1	UA35	GNSS Antenna	
3	Cable	1	TNC-TNC	5m, 15m, 30m	---
4	Software	1	NTRIPcaster	Single base station	---
5	Software	1	GNSS.Net	VRS network	---

NTRIPCaster Software

- To manage user account easily with NTRIPCaster.

The screenshot shows the Ntrip Caster software interface. The title bar reads "Ntrip Caster - [Listen Port: 2101]". The interface includes a toolbar with various icons, a left-hand tree view for "Reference Station", a main data table, and a bottom log window.

Reference Station Tree View:

- Single Reference Station
 - SH_5th-CMR
 - SH_5th-floor
 - UIOA
 - NET20P
 - RRRR
 - RRRR[1508]
 - eSurvey
- Network Reference Station

Main Data Table:

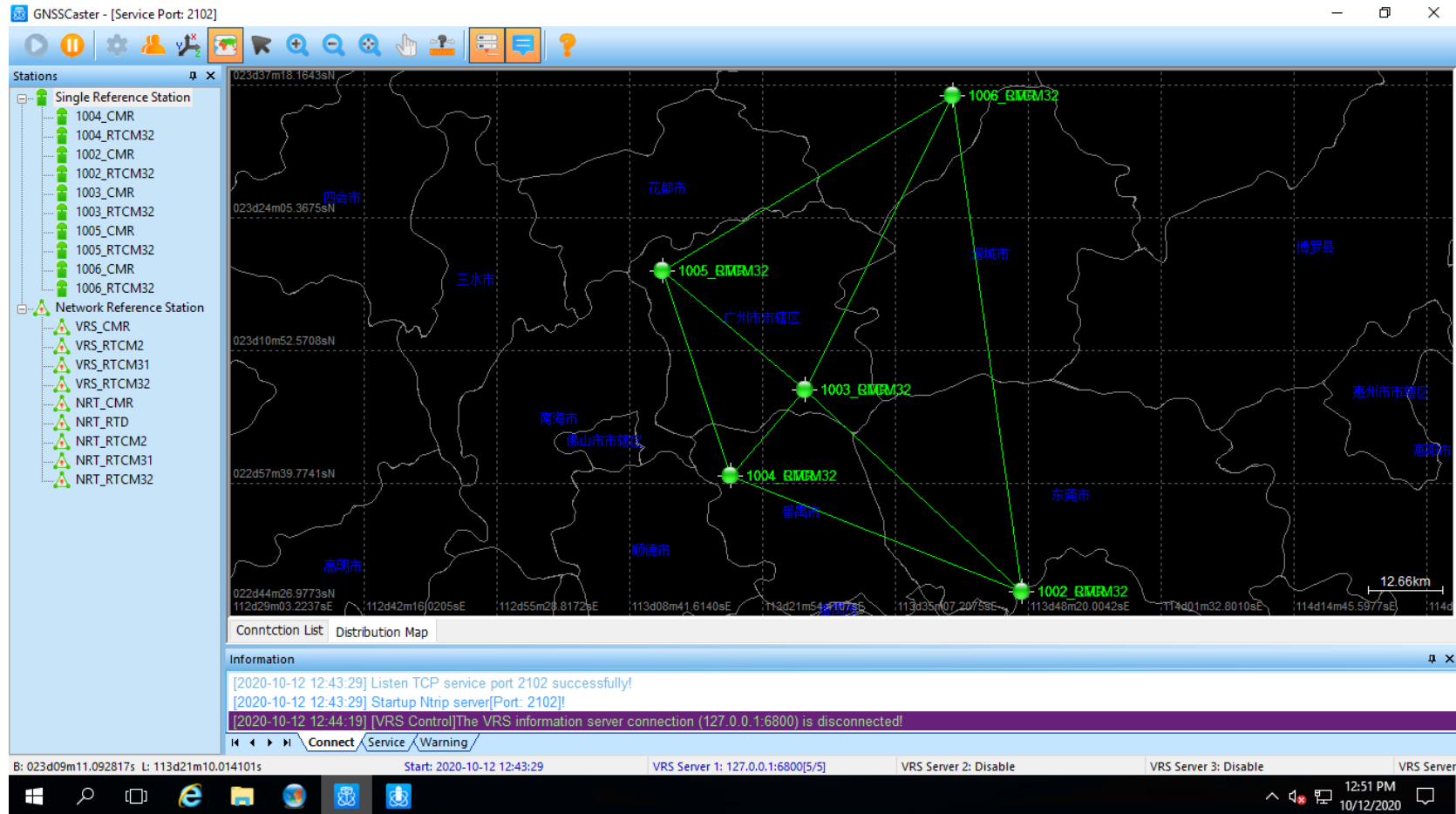
ID	Mountpoint	User Name	Data Type	Data Delay	Send Data
724	SH_5th-CMR	[724]		0	32
712	SH_5th-floor	[712]		0	32
1820	UIOA	[1820]		0	32
1784	NET20P	[1784]		0	32
1412	RRRR	[1412]		0	32
1508	RRRR	RRRR[1508]		5	10309576
1456	eSurvey	eSurvey[1456]		0	266

Log Window:

- 2020-12-04 12:39:55 The mount point eSurvey already exists, the base station connection will be disconnected.
- 2020-12-04 12:40:14 The mount point eSurvey already exists, the base station connection will be disconnected.
- 2020-12-04 12:40:40 [23]The base station eSurvey is no data, the connection is disconnected
- 2020-12-04 12:40:41 New base station(eSurvey)

GNSS.NET Software

- To connect multiple reference station and provide VRS service.



THANK YOU

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