OHemisphere®

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SiteMetrix[™] Survey Data Collection Software

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Chapter 1: About Software

1.1 Introduction

SiteMetrix Survey is a GNSS surveying and mapping software. It is designed based on years of accumulated market experiences, combining them with the international mainstream of surveying and mapping data acquisition function of the software, integrating RTK control, GIS data collection and road design and layout into one place. The software has outstanding graphic interaction, powerful functions and is able to humanize operation process. This manual introduces all the menu functions and the field operation procedures in the SiteMetrix Survey software.

Figure 1-1: Start Page Figure 1-2: About Page

1.2 **Key Features**

- Collect data and perform stake-out efficiently •
- Support most local coordinates system •
- Share coordinate system with QR code •
- Graphical stakeout interface •
- Import map in SHP/DXF/DWG/XML formats •
- Export in DXF/KML/CSV/Customs file formats •
- Powerful CAD function •
- Online Google street and satellite maps •
- Support feature codes •
- Quick connect with simple click



1.3 Software Activation

\leftarrow Software activation	÷	Offlir	ne activ	ation	
Activation information Activation ID 866584030009785 cop	Enter re	egistratio	on code		
Expiration date 2019-2-17	1	2	3	A	В
Activation options	4	5	6	С	D
Enter the authorization code	7	8	9	Е	F
		0		backsp	ace
Cancel OK					
Offline activation					
Register code transfer					
			Activate	9	

In this page, user can check software expiration date or active the software.

Figure 1-3: Software Activation

• Authorization code activation

Authorization code is not bound with device ID, user will need to input the code and activate software. Each code is valid for one device only. Network connection is required.

• Online activation

The code is generated based on device ID. When user provides ID, an activation code will be created and be available on our server. By clicking "online activation", the software will be activated. Network connection is required.

• Offline activation

The Software will be active for 7 days from the day the code is generated. This is for user who does not have network connection and need to use software for urgent purpose.

• Register code transfer

Transfer the activation code to another controller.

Note: Not all the activation codes can be transferred. Please contact the dealer.

1.4 Software Update

Go to page "About Software", click "Check Latest Version". If there is any update, user can download and install on the device.

1.5 Feedback



For any bug or suggestion, go to page "About Software", click "Feedback" to feedback to R&D.



Chapter 2: Main Interface



Figure 1-4: Grid and List view

2.1 Quick View Bar



2.2 Main interface

Click to customize interface style and survey functions. User can hide some survey functions that are not used to make a terse interface.

• Interface style

Interface style	
List	\bigcirc
Grid	0



Chapter 3: Project

In this page, user can manage project & file, set coordinate system, view point library, export data, check software activation and update software.

0	Project Manag	jer		>
	File Manager			>
ø	Coordinate Sy	stem		>
٢	Calibrate Poin	t		>
	Coordinate po	int Libr	ary	>
0	File Export			>
	Scan			>
0	Cloud Settings	5		>
6	Software Setti	ngs		>
0	Software Abou	ut		>

Figure 3-1: Project Page

3.1 Project Manager

• Create new project

Click "New", then input project name, set coordinate system type and other project properties. By default, the project path is "Internal storage/SurPad/Project/", with extension name*.GSW.

÷	Project Manager	÷	- Cre	ate Project	÷	с	reate Project		
Project Path	Internal Storag	Project Pro	oject Name	2019042	22 😳 🏾 Pro	oject Name		20190	422 🕄
SD card space	23.67	GB/120 GB Co	oordinate systems irameters type	Parameters of the last proj	ject Co	ordinate systems ameters type	Parameters of th	ie last pi	roject >
Project List		Ор	perator		Op	erator			
┢ Demo		De	evice		De	vice			
		No	otes		No	Coordinate s	ystems parameters		
		Dat	te Created	2019-04-22 17:	13:37 Dat	Parameters	of the last project	0	13:37
		Dis	sk Info	23.67 GB/12	20 GB Dis	k II Local param	neters	0	20 GB
						RTCM1021-	-1027 parameters	0	
						CORS encry	pt parameters	0	
New	Import Export	Details		ок			ок		

Figure 3-2: Create New Project



Coordinate System Type	Description
Parameter of last project	Use last project coordinate system
Local parameter	Pop out window to select predefined coordinate system
RTCM1021~1027 parameter	Coordinate system is transmitted through RTCM data
CORS encrypt parameter	Some CORS provide coordinate system through network

• Open existing project

Select project name then click "Open".

• Delete project

Long press on project name then click "Delete".

Currently used project cannot be deleted. The operation is irreversible once a project is deleted.

• Import/Export project

Select project name and click Import/Export project file from/to internal storage.

3.2 File Manager

\leftarrow Project data	file manager	← Project data	a file manager	← Import	t Backup File
Current Data File	Demo.PD	Current Data File	Demo.PD	Open Backup File(.RTK)	
Project data file list		Project data file list		File Path	>
				Please Input Data File Nam	e.
				File Name	Demo_1 💿 .PD
		Create project f	ile Demo_1 3 Cancel OK		
New Import	Delete Open	New Import	Delete Open		ок

Figure 3-3: File Manager

User can split data to different files in the same project. Points will be stored in "current data file".

The default path is: Internal storage/SurPad/Project/Project Name/Data/*.PD

- Click "New" to create a new data file
- Click "Import" to import data file *.RTK from receiver backup storage



3.3 Coordinate System

\leftarrow Coordinate systems parameters	\leftarrow Coordinate systems parameters	\leftarrow Coordinate systems parameters
Coordinate System Default 🛞	Coordinate System Default 🛇	Coordinate System Default 🛇
O Ellipsoid Parameter	O Ellipsoid Parameter	O Ellipsoid Parameter
O Projections Parameter	O Projections Parameter	O Projections Parameter
O ITRF Parameter	Ø ITRF Parameter	O ITRF Parameter
Seven-Parameter	Seven-Parameter	Seven-Parameter
O Four-Parameter/Horizontal Adjustment	O Use existing	O Export
O Vertical Control Parameter	O Local Disk ○ >	C Local Disk
O Vertical Adjustment Parameter	QR code	O QR code O
O Grid File	Cloud Server	O Cloud Server
Geoid File	Predefined Projections >	Geoid File
Local Offsets	Local Offsets >	O Local Offsets
Export Use existing OK	Export Use existing OK	Export Use existing OK

Figure 3-4: Coordinate System

Ellipsoid Parameter

Ellipsoid model of the earth can be defined by two parameters: semimajor axis and 1/f.

Projections Parameter

Parameters used to calculate Latitude, Longitude, Altitude to Northing, Easting, Elevation.

Press 💿 to get central meridian automatically.

ITRF Parameter

The function is used to convert coordinate between different coordinate frame.

Seven-Parameter

Used to convert standard ellipsoid mode to local ellipsoid.

Four Parameter/Horizontal Adjustment

Used to convert standard coordinate to local coordinate.

- Vertical Control Parameter
- Vertical Adjustment Parameter
- > Grid File

Support Filed Genius *.GSB grid North & East shift file.

➤ Geoid Files

Use Geoid file to convert elevation.

Formats	Description
*.GGF	Trimble defined format
*.SGF	South defined format
*.UGF	Unistrong defined format

➢ Local Offsets

Used to add local offset to all the collected points.



• Set coordinate system

There are four ways to set coordinate system:

- Input parameter one by one
- Use predefined coordinate system
- Use QR code shared coordinate system
- Use local stored coordinate system file *.SP

• Export coordinate system

There are two ways to share coordinate system:

- Store as *.SP file, default path is: Internal storage/SurPad/Coordinate/
- Save as QR picture *.JPG which can be scanned by other devices

3.4 Calibrate Point

Usually this function is used when base is started as current coordinate (random coordinate), or base is rebooted, moved.

Note: Point calibration will not affect the point collected previously.

3.5 Coordinate Point Library

This function is used to view/manage/import/recovery/share points.

3.6 File Export

Export data to DXF, KML, CSV, GPX, HTML... formats. Format can be customizable if the required is not included.



Figure 3-5: File Export



3.7 Scan

There are three functions:

- Scan coordinate system QR code
 Save method: "Project"-> "Coordinate system"-> "Export"-> "QR code"
- Scan working mode setting QR code
 Save method: "Device"-> "Configurations", select configuration, click "Details"-> "QR code"
- Scan shared single point

Save method: "Coordinate point Library", select one point, click three dots->"Share"

3.8 Software Settings

← Software Se	ettings
General Settings	
shortcuts Settings	>
Record Settings	
Topo Point Settings	>
Control Point settings	>
Quick Point Settings	>
Auto Point Settings	>
Corner Point Settings	>
Stop & Go Point Settings	>
Tilt Point Settings	>
System Settings	
Distance Unit	Meter >
Angle Format	dd (Decimal) >
Station Format	0.000 >
Language	English $>$
Text encoding	GB18030 >
Voice broadcast	•
TTS setting	Google Text-to-speech Engine
Display Settings	
CAD Background color	White >
Display Content	Point Name >
Display Type	Last (0 to 100) Points $ ightarrow$
Last (0 to 100) Points	100
Screen orientation	Vertical screen $>$
Full screen display	•••
Display Maps	Google Map >

Figure 3-6: Software Setting



General Settings

Shortcuts Settings: Set shortcuts for certain function

Record Settings

Set recording limits for different point types

System Settings

	Distance Unit	Meter, US Survey Feet, International Feet
	Angle Format	dd.mmssss, dd:mm:ss.ssss, dd°mm'ss.ssss", dd, Radian
۶	Station Format	K0+000.000, DK0+000.000, 0.000, 0+00.000, 0+000.000
≻	Language	Set software language
\triangleright	Text Encoding	ANSI, GB18030, UNICODE, EUC_KR, UTF-8, BIG5
	Voice broadcast	Enable/Disable software voice broadcast

TTS Setting
Select voice broadcast source

Display Settings

\triangleright	CAD Background Color	Black or white
۶	Display content	Display point name/code/elevation
۶	Display Type	Filter points to be displayed
۶	Screen Orientation	Auto, Vertical, Horizontal
	Full screen display	Display full screen
۶	Google Map Display	Enable/disable Google Map

3.9 Software About

See <u>here</u> for more details.



Chapter 4: Device

In this page, user can connect receiver; configure working mode; view current working mode status; create/save/edit/fast apply working mode; calibrate e-bubble/tile sensor; configure receiver basic setting e.g. enable/disable sensor, smart voice, WIFI.

	Communie	ration	30	5
0	commun	Junon		
9	Rover			>
R	Base			>
	Static			>
æ	Work Mod	e Status		>
0	Configura	tions		>
6	Informatio	ons		>
9	Calibrate S	Sensor		>
B	Device Se	tting		>
8	Re_Positio	on		>
(Device Re	gister		>

Figure 4-1: Device Page

4.1 Communication

In this page, user can connect receiver. Hemisphere receiver supports S321 and S321+. User can also connect to controller internal GPS. For Bluetooth connection mode, only one controller can be connected to the receiver while multiple controllers can be connected via WIFI mode.

← Communication			÷						
Devic	е Туре		8321 >	Device Type		S321 >	Device Type		S321 >
Comn	nunication Mo	de	Bluetooth >	Communicatio	on Mode	Bluetooth $>$	Communication	Mode	Bluetooth 🗦
Bluetoo	th Device List		8	Bluetooth Device	List	8	Bluetooth Device L	ist	[]
D1806	-02837-05-020	50:33:8B	:DA:32:AA	D1806-02837-0	5-020 50:33:8	:DA:32:AA	D1806-02837-05	-020 50:33:8B	:DA:32:AA
S9021	31800111	50:33:8B	:F0:BC:B6	S90213180011	1 50:33:8	:F0:BC:B6	\$902131800111	50:33:8B	:F0:BC:B6
\$9013	51800060	50:33:8B	E0:E6:B6	\$90135180006	0 50:33:81	:F0:F6:B6	\$901351800060	50:33:8B	:F0:F6:B6
atlaslir	Device Type		_	atlaslir	unication Mode		atlaslink	00:23:A7	:4C:19:6F
	S321		0	Divet					
	M Series		0	Biueto	ootn	V			
	Internal GP	8	0	WIFI		0			
	internal of		0	Demo		0			
	Total Static	n	0	-					
Se	earch F	ast connection	Connect	Search	Fast connection	Connect	Search	Fast connection	Connect

Figure 4-2 Communication Page



4.1.1 Bluetooth Connection

- > For first time connection, pairing of Bluetooth is required. Accept "Pair" to connect device
- Select device type "S321"
- Communication mode choose "Bluetooth"
- Click "Search" to detect device serial number
- Select the device to connect and click "Connect"

4.1.2 WIFI Connection

- Go to controller system setting to connect device WIFI
- Select device type "S321"
- Communication type choose "WIFI"
- > Click "Connect" and wait for the software to request information

4.1.3 Demo Mode

> Demo mode is using artificial GPS position for user to view software features

4.1.4 Fast Connection

- > Controller WIFI and location function should be enabled
- Select device type "RTK"
- Communication type choose "Bluetooth"
- > Click "Fast connection", the software will detect the nearest receiver and connect

Note: When device is connected, the button will change to

4.2 Rover

← Rover mod	de settings	← Rover mod	e settings	\leftarrow Advanced	settings
Cut angle	10 >	Cut angle	10 >	GPS	
Record raw data	$\bigcirc \bigcirc$	Record raw data		GLONASS	
enable aRTK		enable aRTK		BEIDOU	•
aRtk Delay Limit	300 >	aRtk Delay Limit	300 >	Galileo	
Data Link	Internal Radio 🗦	Data Link	odio >	SBAS	0
Channel	1 >	None Chanr	0 1>		
Frequency	431	RTK Network	431		
Protocol	TrimTalk 450S(T) 🗦	Internal Radio Proto	S(T) >		
		External Radio	0		
		Bluetooth Data Link	0		
		L-band	0		
advanced	Apply	advanced	Apply	0	¢

Figure 4-3: Rover Mode Setting

Cut angle

Satellite near skyline is in bad quality, set cut angle to filter poor signal. Usually set to 5~15°.

Record raw data:



It is enabled only when collecting stop and go points and do post process.

Enable aRTK

L-band capable receiver will connect to L-band satellite automatically which will keep CM level accuracy for a while when RTK corrections is lost.

> aRTK Delay Limit

Set aRTK running time after receiver lose corrections.

Data Link

Set rover datalink to get corrections from base. See details here.

Advanced

Enable/Disable constellations. It is better to disable SBAS when operating under non-SBAS service region.

Note: When rover mod is active, the button will change to

4.3 Base

← Base moo	de settings	←	Base mo	de settings			<i>с</i> а	dvanced settings	
Base ID	111 🛇	Base I	D		1	111 😳	Cut angle		10 >
Start Up Mode	Use Current Coordinates >	Start l	lp Mode	Use Current	Coordi	inates >	PDOP limit		5.0 >
Diff Mode	RTCM3.2	Diff M	ode		RTC	мз.2 >	Delay Start(s)		60 >
Base startup		Base s	tartup				GPS		
Record raw data		Record	i raw data				GLONASS		
Data Link	Internal Radio 🗦	Data L	Data Link			adio >	BEIDOU		
Channel	1 >	Chanr	None		0	1 >	Galileo		
Frequency	431	Frequ	RTK Network		0	431	0010		
Protocol	TrimTalk 450S(T) 🗦	Proto	Internal Radio		0	s(T) >	SBAS		
Power	1000 >	Power	External Radio		0	000 >	L-band		$\bigcirc \circ$
Note: When Base station power RTK range will be reduced!	is set to Low or 500mW & below, R	lote: Wf	en Base station powe e will be reduced!	r is set to Low or !	500mW	& below,			
advanced	Apply		advanced	A	oply			ок	

Figure 4-4: Base Setting

Base ID

Identification number for base station, ID range:

RTCM23: 0~1023, RTCM3: 0~4095, RTCM32: 0~4095, CMR: 0~31

- Start Up Mode
 - Use current Coordinates: Use current random coordinates
 - Input Base Coordinates: Input local or geodetic coordinates
 - BaseLink: Base station will use LBand signal and automatically start to transmit data



when target accuracy is achieved.



← Base mode settings	\leftarrow Base Coordinates Settings	← Base mode settings
Base ID 111	Input Base Coordinates	Base ID 111 😒
Start Up Mode Use Current Coordinates	Coordinates Type Geodetic Coordinate >	Start Up Mode ${\sf BaseLink}$ >
Diff Mode RTCM3.2	Latitude 0	Diff Mode RTCM3.2 >
Base startup	Longitude 0	Base startup
Record raw data	Altitude	Record raw data
Data I adio	Antenna Parameters 0m,Height to phase center >	Target Accuracy 0.5 >
Chanr Use Current Coordinates	>	Data Link Internal Radio 🗦
Frequ Input Base Coordinates	r -	Channel 1 >
Proto BaseLink O	>	Frequency 431
Power 1000	>	Protocol TrimTalk 450S(T) >
Note: When Base station power is set to Low or 500mW & bel RTK range will be reduced!	м,	Power 1000 >
		Note: When Base station power is set to Low or 500mW & below, RTK range will be reduced!
advanced Stop	ок	advanced Stop

Figure 4-5: Base Start Up Mode

> Diff Mode

Data type of corrections, ROX is Hemisphere format. RTCM32 is suggested.

Base startup

Base will start automatically next time power on receiver.

Record raw data

Record raw data for base station. The data can be used for post process.

Data Link

Set base datalink to transmit corrections. See details here.

- Advanced
 - Cut angle: Filter poor signal, usually set to 5~15°.
 - PDOP limit: PDOP (Position dilution of precision) indicates the quality of satellites position, the lower the better. Usually set as 3~7.
 - Delay Start: Wait for the time to start base after applying the setting.





4.4 Static

← Static mod	de settings	÷	Static mode	e settings		← Advance	ed settings
Options Settings		Options	Settings			GPS	•
Point name	P001	Point r	name		P001 😳	GLONASS	•
PDOP limit	5.0 >	PDOP	limit		5.0 >	PEROL	
Cut angle	5 >	Cut an	igle		5 >	BEIDOU	
Collection Interval	1НZ 🗦	Collec	tion Interval		1HZ >	Galileo	•••
Auto Record Static Data		Auto F	Antenna Measuremer	nt Type	1	SBAS	
Antenna Parameters		Antenna	Height from Phase C	enter			
Antenna Measured Height	2.025	Anten	Slant height from me	easuring line	2.025		
Antenna Measurement Type	Slant height from measuring line	Anten Type	Upright height from r	measuring line	ring >		
Antenna Height	2.051	Anten	Slant height from Alt	imetry piece	2.051		
			Upright height from a	device bottom	0		
advanced	Apply		advanced	App	у	i i	ок

Figure 4-6: Static Setting

Point Name

Set station point name, four letters follow RINEX standard.

> PDOP Limit and Cut Angle

Set PDOP and cut-off angle limitation.

Collection Interval

Set data interval, the highest interval depends on receiver subscription information.

Auto Record Static Data

Receiver will start to record raw data automatically at the next power cycle.

Antenna height

Set antenna height information. See <u>here</u> for more details.

Advanced

Enable/Disable constellations.

Note: When base is set, the button will turn blue

4.5 Work Mode Status

View receiver current working mode status.

4.6 Configurations

In this page, user is able to create predefined working mode and apply setting easily.



← Preset C	configuratio	ns	← Deta	ails	\leftarrow De	tails
Name	Туре		Title	Content	Title	Content
Base_External_Radio_38400	Base		Work mode	Rover	Work mode	Rover
Rover_Internal_Radio_8	Rover		Diff Type	RTCM3.2	Diff Type	RTCM3.2
Base_Internal_Radio_8	Base		Cut-off Angle	5	Cut-off Angle	5
			Record raw data	No	Please scan the	ar code
			Data Link	Internal Radio		
			UHF Channel Number	8	· • •	
			Frequency	447.125	7.72	
			Protocol	TrimTalk 450S(T)	36.24	
			Power Mode	Low		
			L-band	No	調査	10.00
			Start aRTK	No	回解器	54-E2
						Cancel Save
New Edit	Details	Apply	QR code	ок	QR code	ок

Figure 4-7: Predefined Configuration

Create New

Click "New" to create a new configuration for base/rover/static;

The extension name is *.set, default path is: Internal storage/SurPad/Config/

Share with QR

Choose a configuration, click "Details", then select "QR code";

Other user can apply the setting by scanning QR code from "Project" - "Scan".

4.7 Informations

\leftarrow Device Information		← Netwo	ork info	← Radi	o info	← Other		
Serial	D1806-02837-05-020	Network Serial		Radio Serial	1805000527	GPS Enable	Yes	
Model	\$321+(Int'I)	Network Model	PLS8-E	Radio Model	SATEL	DeiDou Enable	Yes	
Hardware Version	\$321-V2.1	Hardware Version		Hardware Version		GLONASS Enable	Yes	
BIOS Version	4.03	BIOS Version		BIOS Version		GALILEO Enable	Yes	
Firmware Version	1.44.180123	Firmware Version		Firmware Version	V07.27.2.0.8.6	SBAS Enable	No	
GNSS Firmware Version	16.T8402	Manufacture Date		Manufacture Date		L-band Enable	No	
GNSS Serial	19083032	IMEI	352369080043121	Radio Baud	38400	L-band Frequency	1545855.0	
OS Version	4.17	Status Code	Transmitting data.	Radio Protocol	TrimTalk 450S(T)	L-band Baud Rate	600	
MCU Version	1.11	Error Code	ок	Status Code	Radio OK.	L-band Satellite	143	
Sensor Version	01.12	Network Baud	115200	Spacing	25.000	L-band Type	AUTO	
Work Mode	BASE	Signal Level	60%	Maximum Frequency	473.000	Bluetooth Model	GEBW127XA	
Current DataLink	RTK Network			Minimum Frequency	403.000			
RTK State	Base has started.			Radio Power	Hemisphere_1000	Antenna Type	HEMS321	
Power Source	BATTERY					Radius	0.073	
Battery Power	75%					SHMP Offset	0.105	
Battery Serial	20173560					L1 Offset	0.132	
						L2 Offset	0.139	
Device Information Network info	Radio info Other	Device information Network Info	Radio info Other	Device information Network info	Radio info Other	Device information Network info	Radio info Other	

Figure 4-8: Device Information Page

In this page, user can view the device information:



Device information

Device serial number, firmware version

Network info

Information on device network model

Radio info

Information on device radio model

> Other

Constellations setting, L-band setting, device antenna parameters

4.8 Calibrate Sensor

Calibrate sensor for e-bubble/tilt sensor capable device. Before the calibration, go to "Device" – "Device Setting" to enable sensor.



Figure 4-9: Calibrate Sensor Page



4.9 Device Setting

\leftarrow Device Setting	← Device Setting	← Device Setting	← → FIXED H.0.003 → 35 → 41
Solution Mode Normal Mode >	Solution Mode Normal Mode $>$	Solution Mode Normal Mode $>$	
Tilt Survey Pole Tilt Correction >	Tilt Survey Pole Tilt Correction \geq	Tilt Survey Pole Tilt Correction >	ch Soup Hola Centre 🔍 💈
Enable Voice	Enable Voice	Enable Voice	CES Building
Enable WIFI	Enable WIFI	Enable WIFI	
Base Coordinates Change Prompt	Base Coordinates Change Prompt	Base Coordinates Change Prompt	Prompt
	Solution Mode	Tilt Survey	Base position has changed! Please check! 343 Original base ID:0 Latitude:90
	Normal Mode 🥥	Disable	Altitude:-6356752.5000 Current Base ID:101 ntic.0.0
	SureFix O	E-Bubble	Longitude:103.89832591 Data Attitude:54.3119 Distance:6378178.873m
		Pole Tilt Correction	Distance.0376179.973in
			ок
			Comfort Design Pte
			Cont Awr
			Bankock Trading Coast for 5 (1)
ок	ок	ок	N:34168.224 E:35234.662 Ant. H:1.8m+0.132m Base distance:1.930



Solution Mode

Surefix, developed by Hemisphere, guarantees that the Fixed solution is in good quality especially in bad environment conditions. Disable it when operating in L-Band working mode or fixed solution will not be obtained.

> Tilt Survey

E-Bubble: Enable e-bubble function

Pole Tilt Correction: Enable tilt sensor

Enable Voice

Enable/Disable device voice broadcast

- Enable WIFI
 Enable/Disable device WIFI function. Device WIFI cannot be detected if WIFI is disabled.
- Base Coordinate Change Prompt
 Pop out information will be displayed when the base is changed.

4.10 Re_position

Click "Re_Position" to re-initialize the position. It is useful in some environment where the receiver is not able to get fixed solution for a period of time.



4.11 Device Register

←	GNSS	6 Registr	ation			
Registration	information					
GNSS seri	al number			19083032		
GNSS fund	tionality	474;C60 10Hz;R1 LTI_GNS _10cm	474;C60;04/17/2020;0;OPT=; 10Hz;RTK;RAW_DATA;L2_L5;MU LTI_GNSS;ATLAS_LBAND;ATLAS _10cm			
Enter activati	on code			;=		
1	2	3	Α	в		
4	5	6	С	D		
7	8	9	Е	F		
	0		backspa	ice		
		Activate				

Figure 4-11: Device Register

- > View current registration information
- > Input GNSS registration code to activate function like Atlas



Chapter 5: Survey



Figure 5-1: Survey Page

5.1 Point Survey



Figure 5-2: Point Survey

5.1.1 Quick View Bar







5.1.2 Tools Bar

User can customize tools bar or information bar by clicking





5.1.3 Point Type

It is allowed to select point type by clicking the button at the up-right side	

Point Type	Description
	Setting of collection limits and average point count.
Topo Point Topo Point	A window will pop out to show the position details and user can
	change the point name, feature code, antenna height.
	Setting of collection limits, average point count, average interval
	and repeat count.
Control Point Control Point	A window will pop out to show the point quality. After all the
	points have been collected, there will be a *.html report
	including point detail information.
	It will not pop out any window to show the position information.
Quick Point Quick Point	One point will be stored with one click. By default, it will use the
	same feature code and antenna height as last point.
Auto Point Auto Point	Setting of collection limits.
	Collect point by interval or by distance.
	The point position can be calculated using minimum of 15 points
Corner Point Corner Point	on the same spherical surface by rotating the pole to different
	directions.
	When e-bubble or tilt sensor is enabled, user can collect points
Tilt Point	with tilt angle up to 30°. The software will calculate the final
	result after collecting points in three directions.
	When rover receiver "Record raw data" is enabled, user can
🛞 Stop & Go Stop and Go	collect Stop and Go points. After job completion, the raw data
	can be exported for post processing.

5.1.4 CAD Entity

User can collect CAD entity by clicking button

point	Point	rect	Rectangle by two adjacent corner points and one opposite line point
polyline	Polyline	rect center	Rectangle by center point and two center line points
Spline	Spline	circle 2p	Circle by center point and radius
polygon	Polygon	circle 3p	Circle by three points
square	Square by two diagonal points	arc	Arc by three points
square center	Square by center point and one center line point	Default	Select/create CAD layer



5.1.5 Information Bar

Click to configure information bar. Support at most eight items showing at the same time.

Point name:Pt10	H:54.787
N:146569.242	E:377387.880
Antenna height:0.140	Base distance:0.796

Figure 5-3: Information Bar

5.2 Detail Survey

$\leftarrow = A_{ge1}$	H:0.0028	30 41	← Devie	ce Setting
N: 34168.222	В:	1.32527893	Tilt Survey	Disable >
E: 35234.664	L:	103.89832592		
Z: 52.381	H:	52.381	Solution Limit	FIXED 🤌
Name		Pt5 🕄	HRMS Limit	0.1 >
Code			VRMS Limit	0.2 >
Antenna Measured Heigh	t(m)	1.8	PDOP Limit	3.0 >
Antenna Measurement Type		Vertical height $ ightarrow$	Delay Limit	5 >
		\bigcirc	Permission to repeat the	e name of the survey
		Y	Point Name Increment	1 >
			Default Code	Station assignment code $>$
			Average GPS Count	1 >
Se	ettings		Default Configuration	s OK

Figure 5-4: Detail Survey

In detail survey page, there is no background map. User can set antenna height, feature code and point name.

> Click "Settings" to set collect limit and average point count.

Click floating survey button (2) to collect point.

5.3 CAD

In this page, User can use CAD function: 3D view, DXF/DWG import, DXF export; draw CAD entity, calculate coordinate by using indirect survey function; calculate angle and area.

5.3.1 Buttons

3D	CAD entity 3D view
[0]	Zoom to extent
۲	Center current position





Figure 5-5: CAD Function

5.3.2 Data

In this page, user can to manage CAD layer, import DXF/DWG, export DXF and set point style.



5.3.3 Drawing

CAD entity can be drawn in this page. See <u>here</u> for the CAD entity description.

		1
		To add note to CAD layer, input content first followed by touching the screen
	Note	or selecting the point.
5.3.4	Survey	
	6	Calculate the intersection points between two circles. And select one of the
	Int 2 Dist	points to store. Each circle is made up of center point and one point on circle.
	\times	Create two straight lines to calculate the intersecting point. Each straight
	Int 4 Point	line is made of two points.
	2+	Select two objects and calculate the intersecting points, then select one
	Int Entity	point to store.
	•	Select an object and set the mileage. Then set a distance to draw the offset
	Dist offset	point.
	///	Select an object and set the offset distance. Then select the offset direction
	Dist offset	and parallel object number to draw new object.



<u>~</u>	Select an object and set the object divide number. Set a name for the start
Divide	point and it will be created by the divided number.
<u> </u>	Select an object and set the object divide distance. Set a name for the start
Measure	point and it will be created by the divide distance.
$\stackrel{\rightarrow}{\rightarrow}$	Select an object and exchange the start and end points.
Invert	

5.3.5 Tools

Delete	Select the CAD entity and delete.
	Select center point and another two points to calculate the angle.
Area	Select points to calculate the area of polygon.

5.3.6 CAD Details

Select CAD entity and click "Details" to view detail information like length, area...

5.3.7 CAD Stakeout

Import DXF/DWG/SHP and perform stakeout function.



Figure 5-6: CAD Entity Details

Figure 5-7: CAD Stakeout

5.4 Point Stakeout

Perform point stakeout function by clicking "Point Stakeout".

Buttons	Description
以* >~~ ()	Enable/Disable stakeout sound Show/Hide left side panel "To North/East" Switch between compass or stakeout man
	Stakeout the nearest point



	Stakeout last point
₽	Stakeout next point
	Select point

- Select the point to perform stakeout
- > Follow the instruction to find the target point



Figure 5-8: Point Stakeout

5.5 Line Stakeout

It is allowed to perform straight line stakeout.

¢	Stakeout last line
	Stakeout next line
	Stakeout last point
Q	Stakeout next point
B	Add additional stakeout point
B	Select Line

- Click "Line stakeout" to create a new line
- User can add parallel line at both right/left side
- > Select the line to divide line by distance or number
- Follow the instruction to find the target point



÷	Line parameters	\leftarrow Lines L	ibrary	\leftarrow Stake	out settings		H:0.003
Name	line01 💮	No. Name Start Station Length	n Azimuth	Setting out by pile by c	oordinate		Å
Start Station	0	1 line01 0.000 214.72	4 128.4616128729	Automatic Stakeout La	test Point		35m
Input Type	Start Point+End Point \geq			Station	0		Ŀ
Set Start Point	(2) (3)			Range	0.000 ~ 214.724		
Name	Stakeout01			Colouistian mode	Stalizant by station number	.8talReout01	
Northing	34380.188					,50.00	
Easting	35100.57			intervai	50 /	1	00.00
Elevation	0						150.00
Set End Point	(2) (3)						20000 Stakeout02
Name	Stakeout02						
Northing	34246.632					(B
Easting	35268.704						B
Elevation	0						Ø
Add parallel lin	ne					V	
						Target:line01	H:52.378
	ок	Add Edit (Delete OK		ок	Station:236.838 Station Diff to Start:2 Target Peg:214.72	Offset:(Right)82.568 36.83 Station Diff to End:-22.114 To Less:22.114

Figure 5-9: Line Stakeout

B

Add additional stakeout point by setting offset parameter

- Click "Add Stakeout" button to add additional stakeout point
- Set the mileage "Station"
- Set the offset value: Left side with "-" sign
- Click "Ok" to perform stakeout

~ A	dd Stake	← 📆 FIXED H.0.003 💦 32 Age1 📶 V:0.004 🗞 42
Add Stake Mode	Calculate coordinates by station and offset distance	A asm
Station	100	۲
Offset Distance	-100 🕄	1000 94.1
Note: Allowed stake stati	on range is0.000 ~ 214.724;	
Save this stake point t	o coordinate library	€ 100,000 € 100,000 € 100,000 100,0
		Image: State of the state o
		Station 236.837 Offset (Right)82.572 Station Diff to Start 236 83 Station Diff to End-22 113
	ок	Target Peg:100.000 To Less:236.837

Figure 5-10: Add additional stakeout point

5.6 Layer Settings

User can import DXF/DWG/SHP/XML as background map. User is able to select the background layer entity from "CAD" page to perform stakeout function.



← Layer settings	← Layer settings	← Import File	← 📅 FIXED H:0.003 🗼 ³⁴
CAD LAYER BACKGROUND LAYER	CAD LAYER BACKGROUND LAYER	🛅 Internal Storage/SurPad/Map <	▲ A
🖉 👁 👼 Default		M Go to internal storage root directory	
		🍋 Go to program storage directory	
		🍋 Go to WeChat directory	×A ●
		🍋 Go to TIM directory	
		* Return	
		File Type	
		AutoCAD file(*.dxf,*.dwg)	
		Shape file(*.shp)	
		LandXML(*.xml)	
		O File Name	
		File Type AutoCAD file(*.dxf,*.dwg)	
NEW LAYER	ADD EDIT MOVE UP MOVE DOWN DELETE	ок	Point name:? H:52.382 N:34168.223 E:35234.663 Ant. H:1.8m+0.132m Base distance:1.930

Figure 5-11: Layer Setting

5.7 Survey Range Settings

Add/select points to make a polygon area. Red outline indicates to the surveyor that the points are out of the survey range.

÷	Sur	vey Rang	e Settin	igs		← 🚏	FIXED	H:0.004		27 42
	List	_	Р	review Ma	p					A
Name	Northing	Easting	Elevation	Code						1.04km
Range04	38989.380	33301.914	0.000			.	Range04	*		$\mathbf{\mathbf{v}}$
Range03	30080.903	32736.053	0.000			TA			Ran	je 01
Range02	29522.690	37721.742	0.000							
Range01	38484.693	37431.165	0.000			(12)				
							ange03	Star	2 Re	
Add	Sel	ect	Edit	ок		Point nam N:34168.2		H:52.385 E:35234.	661	

Figure 5-12: Survey Area Setting



Chapter 6: Tools



Figure 6-1: Tools Page

6.1 Localization

This function is called "Site Calibration" in SiteMetrix Survey. Usually it is used when user does not have the exact correct coordinate system. With some known points, 4-Parameters or 7-Parameters can be calculated. It is better that the known points cover the survey area.

- 4-Parameter: Use at least two known points to do plane coordinate adjustment
- 7-Parameter: Use at least three known points to do 3D ellipsoid conversion
- 3-Parameter: Special case of 7-Parameter, use one known point to do 3D ellipsoid conversion

\leftarrow Localization	n Settings	\leftarrow Localization	Settings	\leftarrow Localizat	tion Settings	- Localization	Settings
Convert Method	Horizontal correction + Elev_correction >	Convert Method	Horizontal Adjustment+Vertical > Adjustment	Convert Method	Seven parameter + Horizontal correction + Elev_correction	Convert Method	Seven Parameter >
Horizontal correction Model	Four Parameter >	Horizontal Accuracy Limit	0.1 >	Seven Par Model	Bursa-Wolf >	Seven Par Model	Bursa-Wolf >
Vertical Control	Automatic Decision >	Vertical Accuracy Limit	0.1 >	Horizontal correction Model	Four Parameter 🗦	Horizontal Accuracy Limit	0.1 >
Horizontal Accuracy Limit	0.1 📎			Vertical Control	Automatic Decision >	Vertical Accuracy Limit	0.1 >
Vertical Accuracy Limit	0,1 >			Horizontal Accuracy Limit	0.1 >		
				Vertical Accuracy Limit	0.1 >		
04	(ОК	:		ок	ок	

Figure 6-2: Localization Method



6.2 Coordinates Converter

Use this function to convert between (Latitude, Longitude, Altitude) and (North, East, Elevation). The conversion is based on current project coordinate system.

Alternatively, user can add BLH/xyz point through "Project"->"Coordinate point library"->"Add" by selecting "Coordinates Type" Local/Geodetic.



Figure 6-3: Coordinate Converter

6.3 Angle Converter

Convert angle between different kinds of angle formats. Input the original format and click "calculate" to see the target result.

← Angle Converter				
Format	dd (Decimal) >			
dd (Decimal)	103.501 📀			
Result				
dd.mmssss	103.30036			
dd:mm:ss.ssss	103:30:03.6			
dd°mm'ss.ssss"	103°30'03.6"			
Radian	1.806433229107			
Calc	ulate			

Figure 6-4: Angle Converter



6.4 Perimeter and Area

Create polygon by add/select at least three points, then calculate the 2D perimeter and area. The points can be exported to a dat/txt/csv file.



Figure 6-5: Perimeter and Area

6.5 COGO Calculation

COGO function is used to calculate hidden point based on some known information.

6.6 Calculator

Open build-in software calculator.

←	COGO Calculation		÷		Calculator		
	Coordinate inverse calculation	>					
	Point line calculation	>					0
Æ	Vector	>					
Ø	Two Lines Angle	>	4	()	C	DEL
K.	Intersection calculation	>					
K	Resection	>	π	7	8	9	÷
	Forward intersection	>					
D	Coordinate positive calculation	>	tan	4	5	6	*
(sub-	Offset point calculation	>					
Ø	Equal point calculation	>	cos	1	2	3	-
			sin	0		=	+

Figure 6-6: COGO

Figure 6-7: Calculator



6.7 External Radio Configuration

User can configure external radio here. Currently support Geoelectron TRU35 and Harxon radio. For more operation details, please refer to a separated radio configuration manual.

← Radio Mode						
Radio type	Geoelectron >					
Connection mode	Bluetooth >					
Search bluetooth device li	st					
E560-PC	AC:28:6E:57:CF:50					
D1806-02837-05-020	50:33:8B:DA:32:AA					

Figure 6-8: External Radio Configuration

6.8 Volume Calculation

Calculate Area Calculate Area Volume Calculation File Name Poly01.csv File Name Poly01.csv Calculation mode Proview Man List Calculating area Poly01.csv p1 10.000 10.000 10.000 Reference height 100 🕄 100.000 15.000 5.000 p2 Reference polygon 70.000 80.000 20.000 p3 n4 30.000 60.000 50.000 Fill 292333.3333m^{*} Cut 0.0000m Surface area 4844.9129m² Add Select Edit OK Add Select Edit Calculate

Add/import points to create polygon, software will build a 3D surface and calculate the volume.

Figure 6-9: Volume Calculation

6.9 Station Refresh

This function is used to add offset to collected points by selecting the survey time period. It is different



from the coordinate system setting "Local Offsets" which will add offset to all the points.



6.10 FTP Shared Data

This function is used to share the file with PC through ftp protocol which does not need a USB cable.

ala di seconda di	
Target Path	Internal Storage/SurPad
User Name	test
Password	1234
IP	192.168.150.124
Port	2222

Figure 6-10: FTP Shared Data

- Connect controller and PC to same WIFI network
- Select the folder to share
- Set user name and password, then click "Open"
- > Open "MyPC" on computer and input the address: <u>ftp://IP:Port</u>
- > Input the user name and password to open shared folder

192.168.150.124	×		Log	On As			
File Home Share → → ↑ ♥ tpp://19 # Quick access # Dropbox This PC	View 2.168.150.124:2222/ Name	~	Date modified This folder	Could not login FTP server: User name: Password: After you log o	192. 168. 150. 124 192. 168. 150. 124 test •••••	with the user name and passwo s server to your Favorites and r	rd specified.
Network				FTP does not a server. To pro	encrypt or encode p stect the security o nymously	asswords or data before sendi f your passwords and data, use Save password Log On	Ing them to the WebDAV instead.
192.168.150.1	124 × \⊕						
File Home	Share View						~ 0
← → ↑ ↑ 🤮	The Internet > 192.	Calibration		Config	v 0	Search 192,168,150,124	م
😻 Dropbox 💻 This PC		Coordinate	Ì	Debug			
💣 Network		Export		Geoid			

Figure 6-11: PC access shared folder



6.11 Share File

This function is used to share file (single file) with android sharing function. For example, Bluetooth, WhatsApp, email...



Figure 6-12: Share Single File



Chapter 7: Appendix

7.1 Available NTRIP Caster

Note	IP	Port	User Name	Password
Server_SG	cloud.unistrongapac.sg	8012	Fill in user name.	Any but can't be
Server_BJ	219.142.87.73	2101	Table cannot be	empty
Server_GE1	125.88.253.55	6060 or 2012	left blank.	
Server_GE2	122.13.16.137	6060 or 2012		
Server_GD	120.76.161.21	6060 or 2012		

If the user name is already taken, the user will not be able to login. To access the login, simply

change the user name to a different one.



7.2 Antenna Height Measurement

For base/rover/static, it is necessary to set the antenna height in order to get the correct elevation value. Below are the methods to measure the height.

NO.	Measurement Method	Also Called	Mostly used for
01	Slant height from measuring line	Slant height	Base/Static
02	Upright height from measuring line		
03	Slant height from Altimetry piece	Slant height to Altimetry	Base/Static
04	Upright height form device bottom	Vertical height, Pole height	Rover



No.01

No.02

No.03

No.04



7 2	D	D 1	1.1.1.1	C 111
1.3	Kover	Data	LINK	Setting

Internal Radio	1.	Radio antenna is require	ed to be inserted	
	2.	When setting the radio	frequency and pro	tocol, ensure that user uses
		the same as base station	n for a successful c	connection.
		Data Link	Internal Radio $>$	
		Channel	5 >	
		Frequency	435	
		Protocol	TrimTalk 450S(T) >	
	3.	For Hemisphere S321/S	321+, supported p	rotocol as follow
		SATEL	\bigcirc	
		PCC-EOT(4FSK)	\bigcirc	
		PCC-EOT(GMSK)	\bigcirc	
		TrimTalk 450S(T)	0	
	4.	Click "Apply" to apply ro	over setting	
	5.	If the data is transmittir	g successfully, the	e radio indicator will blink
External Radio	1.	Use external radio for ro	over through 5-Pin	port
	2.	Select external radio ba	ud rate	
		Data Link	External Radio >	
		Baud Rate	38400 >	
	3.	Click "Apply" to apply ro	over setting	
	Not	e. It is not advisable to u	ise external radio 1	for rover because receiver
	alre	eady has internal radio a	nd is easier to mov	
RTK Network	1	SIM card is required to I	he inserted into re	ceiver before starting the
		receiver		cerver before starting the
	2.	Network antenna is reg	uired to be inserte	d
	3.	Connection Mode choo	se "NTRIP"	
	4.	For some CORS or NTRI	P service, GGA is re	equired
	5.	Receiver will automatica	ally connect CORS/	NTRIP server with power
		cycle if "Automatically c	onnect to networl	k" is enabled.

			O Hemisphere [®]
	Connect Options		
	Connect Mode	NTRIP $>$	
	GGA Upload Interval(s)	5 >	
	Automatically connect to network	•	
	Network system	Auto >	
6.	SIM card APN setting		
	APN "Name", "User", "Pas	sword" is easil	y accessible on the website
	based on your internet ser	vice provider	
	APN Settings		
	Operator	Custom $>$	
	Name	internet	
	User		
	Password		
7.	CORS Settings		
7.1	NTRIP/CORS IP, port, user	name and pass	sword are required
7.2	Click on the three dots to s	store the CORS	information and it is readily
	available for application th	ie next time.	· · · · · · · · · · · · ,
7.3	Some free NTRIP services	are provided, s	ee here
	CORS Settings		
	Name	Custom >	
	IP		
	Port		
	User		
	Password		
8.	Mountpoint Setting		
	There are three ways to se	et mountpoint	
8.1	Input the mountpoint nam	ne	
	The name should be accur	ate	
8.2	Get mountpoint list using	controller netw	vork
	Enable "Phone network ac	cess" and click	"Get Mountpoint" for faster
	access to the list		



	MountPoint Settings
	MountPoint D1806-02837-05-020 >
	Phone network access
	Get MountPoint (Mobile Phone Network)
	advanced Apply
	8.3 Get mountpoint list using RTK network
	Users are advised to follow the steps below to get the mount point
	with ease:
	 Input any mountpoint name and directly click "Apply". This step is to
	activate the SIM card network
	Proceed back to the setting page
	 Disable "Phone network access" and click "Get Mountpoint"
	MountPoint Settings
	MountPoint D1806-02837-05-020 >
	Phone network access
	Get MountPoint (RTK network)
	advanced Apply
	9. Choose the mountpoint
	10. Click "Apply" to apply rover setting
	11. From "Device" - "Work Mode Status", User will see network signal
	level. It will show "Transmitting data" if it is successful.
	Working Information Work Mode Status
	Signal Level 48%
	Network Status Transmitting data.
Bluetooth Data Link	1. Phone network can be used for rover station
	2. SIM card is not required for receiver. The corrections data will be
	downloaded to phone and transmitted to receiver through Bluetooth
	3. CORS Setting
	CORS/NTRIP service IP, port, user name, password is required
	4. Click "Get Access Point" to update mountpoint list
	5. Choose the mountpoint



	CORS Settings	$\overline{\cdots}$	
	Name	Custom >	
	IP		
	Port	0	
	User		
	Password		
	MountPoint Settings		
	MountPoint	Test >	
	Get Acces	s Point	
	Receive data		
	Automatically connect to netw	vork	
	Start advanc	ced Apply	
	6. Click "Start", the prog	ress bar will change if it is	s successful
	Receive data		
	Automatically connect to netw	vork	
	Stop advance	ced Apply	
		- Abbit	
	7. Click "Apply" to apply	rover setting	
LBand	1. With Atlas activation,	User can use stand-alone	e receiver without base
	station to get good ac	curacy.	
	\leftarrow Rover mode	settings	
	Cut angle	10 >	
	Record raw data		
	Data Link	1 hand 2	
		L-Dano /	
	2. From "Position Inform	nation" page, pull down t	he page
	2.1 The ideal LBand signal	should be more than 50.	"0" indicates no signal.
	2.2 The ideal LBand error	rate should be lower tha	n 50. "150" is not
	acceptable		



← Positioni	g Informations
Elevation	50.1660
Speed	0.0200
Heading	65.88
Solution State	AtlasFLOAT
HRMS	0.5064
VRMS	1.2530
Satellite	G11+R7+C9+E7/42
Diff Mode	Αυτο
AGE	13
PDOP	0.8
HDOP	0.4
VDOP	0.7
UTC time	2019-04-18 06:59:53.000
Local time	2019-04-18 14:59:53.000
Distance to Ref	6378175.8267
LBand frequency	1545.855MHZ
LBand error rate	0-0
LBand signal	108
Details Base	Sate Map Sate Info Sate SNR
3. Normally, user ne	eds to wait for about
Longer waiting t	me leads to better a



7.4 Base Data Link Setting

Internal Radio	1.	Radio antenna is required to be inserted	
	2.	Set radio frequency, protocol and radio po	wer
		Data Link Internal Radio 🗦	
		Channel 1 >	
		Frequency 431	
		Protocol TrimTalk 450S(T) >	
		Power 1000 >	
		Note: When Base station power is set to Low or 500mW & below, RTK range will be reduced!	
	1.	For Hemisphere S321/S321+, supported pi	rotocol are as follow
		SATEL	
		PCC-EOT(4FSK)	
		PCC-EOT(GMSK)	
		TrimTalk 450S(T)	
	2.	Click "Apply" to apply base setting	
	3.	If the data is transmitting successfully, the	radio indicator will blink
External Radio	1.	Use external radio for base through 5-Ping	port
	2.	Select external radio baud rate	
		Data Link External Radio 🗦	
		Baud Rate 38400 >	
	3.	Click "Apply" to apply base setting	
RTK Network	1.	Insert SIM card into the receiver before sta	arting it
	2.	Required to insert network antenna	
	3.	Connection Mode choose "NTRIP"	
	4.	Receiver will automatically start to transf	er data with power cycle if
		"Automatically connect to network" is ena	bled
		Connect Options	
		Connect Mode NTRIP >	
		Automatically connect to network	
		Network system Auto >	

5. SIM card APN setting APN "Name". "User". "Password" is easy to find on the website base	4
APN "Name", "User", "Password" is easy to find on the website base	a
	u
on user's internet service provider	
APN Settings	
Operator Custom >	
Name internet	
User	
Password	
6. CORS Settings	
6.1 NTRIP/CORS IP, port, password is required	
6.2 The mountpoint name is required. It is device SN by default	
6.3 Click on the three dots to store the CORS information which will be	
readily available for application the next time	
6.4 Some free NTRIP services are provided, see here	
CORS Settings	
Name Custom >	
IP	
Port	
Base access point D1806-02837-05-020	
Password ····	
advanced Apply	
7. Click "Apply" to apply base setting	
8. From "Device" - "Work Mode Status", user will see network signal	
level. It will show "Transmitting data" if it is successful.	
← Rover-RTK Network	
Working Information Work Mode Status	
Signal Level 48%	
Network Status Transmitting data.	
9. Usually, user need to wait about 2~5 minutes before base is ready.	
Click "Refresh" button to view latest status.	



← Base-RTK	Network
Working Information	Work Mode Status
Network Connection Error!	Network not ready.
Network Status	Connect to server failed.
Signal Level	0%
Network Connection Error!	Network not ready.
Network Status	Connect to server failed.
Signal Level	0%
Network Connection Error!	Network not ready.
Network Status	Connect to server failed.
Signal Level	0%
Network Connection Error!	Network not ready.
Network Status	Connect to server failed.
Signal Level	64%
Network Status	Transmitting data.
Signal Level	64%
Network Status	Transmitting data.
Signal Level	64%
Network Status	Transmitting data.
Connect Disconnect	Restart Refresh