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# KOMATSU



## Smart Construction Edge



Komatsu SC Edge 2 Guide  
SC-EDGE2-001-v1.0.1

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**This product is a GNSS receiver equipped with post-processing correction software. It supports PPK and RTK methods.**

**When surveying in the RTK method, a contract with a telecommunications carrier in each EU member state is required to use LTE communication. This product require a circumstance which can receive a substantial GNSS satellite signal.**

\*The data processed by SMART CONSTRUCTION Edge 2 will be used by Earthbrain or his cooperator to investigate the problem, or to improve the point cloud quality, without any notice.

Vendor of this product :  
EARTHBRAIN Ltd.

Address : 29F Izumi garden tower, 1-6-1 Roppongi, Mintato-ku, Tokyo 106-6029,  
Japan  
TEL :

Importer :

AUS:

Komatsu Australia Pty. Ltd.

Address : 50-60 Fairfield Street, Fairfield East NSW 2165, Australia

Phone : +61-2-9795-8222



These symbols on the main unit and battery indicate that used electrical and electronic products and batteries should not be disposed of as general waste.



To properly handle, recover and recycle used products and batteries, take them to the applicable collection points in accordance with local regulations.

Correct disposal saves valuable resources and prevents negative consequences for the environment and human health.

# Revision History

No.	Date	Description	Reviewed	Appr'd
1	30/01/2024	First Release (Komatsu_SC_Edge2_001_V1.0)	JM	JM
2	10/05/2024	New Features added	JM	JM

## Examples of Signal word

 <b>WARNING</b>	Indicates content that, if mishandled, could result in death or serious injury to a person.
 <b>CAUTION</b>	Indicates content that, if mishandled, could result in minor or moderate injury to a person.
<b>NOTICE</b>	Indicates content that may result in product failure or property damage (including data corruption) if handled incorrectly.

 **WARNING**

DO NOT replace the battery outdoors. Should water or foreign objects enter through the insertion slot, it could lead to a short circuit, potentially causing ignition or injury.

 **WARNING**

DO NOT leave the product in hot environments such as near fire, heaters, or inside vehicles with hot temperatures while the battery is inserted. This could lead to battery damage and potential ignition or electrical issues.

 **WARNING**

DO NOT charge the product in wet conditions near water or any liquid, such as rain. If the electrodes become wet, it could lead to a short circuit, potentially resulting in ignition or other hazards.

 **WARNING**

When using the product in rain, please make sure that all doors including the covers of ports, battery lid, water-proof USB cap is securely installed & closed.  
If any rain comes inside, it may cause a short circuit and resulting an ignition or an injury.

 **WARNING**

DO NOT connect to an external radio with USB-Serial conversion cable.  
It may cause a short circuit and resulting an ignition or an electrical shock.

 **WARNING**

DO NOT put any foreign objects to the SD card slot, the SIM card slot, the USB slot or the ethernet port.

It may cause a short circuit and resulting an ignition or an electrical shock.

 **WARNING**

Individuals with pacemakers or defibrillators should avoid proximity to the product. The electromagnetic waves it emits could potentially interfere with their operation.

 **CAUTION**

Position the primary unit on a stable, level surface. Placing it on an unstable surface may lead to accidental drops and potential damage or breakage.

**NOTICE**

If the product is used outdoors in intense sunlight for an extended period, it may become hot, and the power supply might automatically shut off. This is a result of the high-temperature abnormal processing function, not a malfunction. If the power is automatically cut off, wait a few minutes, then press the power button again.

**NOTICE**

Avoid covering the main unit with a plastic bag during rainy weather. Doing so may cause the device's temperature to increase, activating the overtemperature abnormality handling function and resulting in a power cutoff.

**NOTICE**

Avoid covering the main unit while charging. Heat could build up inside the main unit, leading to malfunctions or damage.

**NOTICE**

If the main unit causes interference with radio or TV reception, switch it off and relocate it away from the radio or TV.

## About batteries

### WARNING

DO NOT leave the battery in hot environments, such as near fire, heaters, or inside vehicles with high temperatures, while it is still inside the product. Exposing the batteries to excessive heat could lead to damage, potentially resulting in ignition or electric shock hazards.

### WARNING

DO NOT dispose of the battery by throwing it into a fire or heating it. Doing so may cause it to burst, posing significant danger. Heating the battery could result in liquid leakage, explosion, or ignition.

### WARNING

DO NOT disassemble or modify the battery.

Doing so may cause chemical burns from the contents or cause it to burst and catch fire. In addition, modification may impair the function of preventing danger, causing a heat generation, an explosion, or an ignition.

### WARNING

DO NOT expose the battery to moisture. Contact with liquids like water, seawater, or juice could damage the protection circuit, leading to heat generation, explosion, or ignition.

### WARNING

If the battery leaks, keep it away from fire.

If the leaked electrolyte ignites, it may burst or ignite.

### WARNING

DO NOT apply strong impact to the battery or pierce the nail.

If it damages the protective function, it may cause an overheating, an explosion, or an ignition.

### WARNING

Charge the battery as described in this manual. Using the supplied charging equipment.

Charging in any other way may cause a heat generation, an explosion, an ignition, etc.

### WARNING

Do not allow conductive foreign objects (such as metal) or liquids to meet the battery terminals.

It may cause a short circuit and resulting a heat generation, an explosion, or an ignition.

### NOTICE

When not in use for a long time, remove the battery from the main unit.

Leaving the battery in may result in over-discharge and shorten battery life.

## About the AC adopter

### WARNING

Attached AC adapter is only for this product. It cannot be used for other product.  
Also, no other power cable than the attached can be used for this product.  
It might generate heat and resulting an ignition or an electric shock.

 **WARNING**

Do not use the AC adapter outdoors.  
If a foreign object or liquid gets on the terminals, it may short-circuit and cause an ignition or an electrical shock.

 **WARNING**

Do not use the AC adapter cord improperly, such as pulling, tying, bending, or stretching. In particular, when winding the cord around the AC adapter, wind it loosely rather than tightly wrapping it.  
It may cause an electrical shock or an ignition.

 **WARNING**

Do not use the AC adapter cord if it is damaged.  
It may cause an electrical shock or an ignition.

 **WARNING**

When unplugging the power plug from the outlet, hold the power plug without holding the cord.  
It may damage the cord and cause an electrical shock or an ignition.

 **CAUTION**

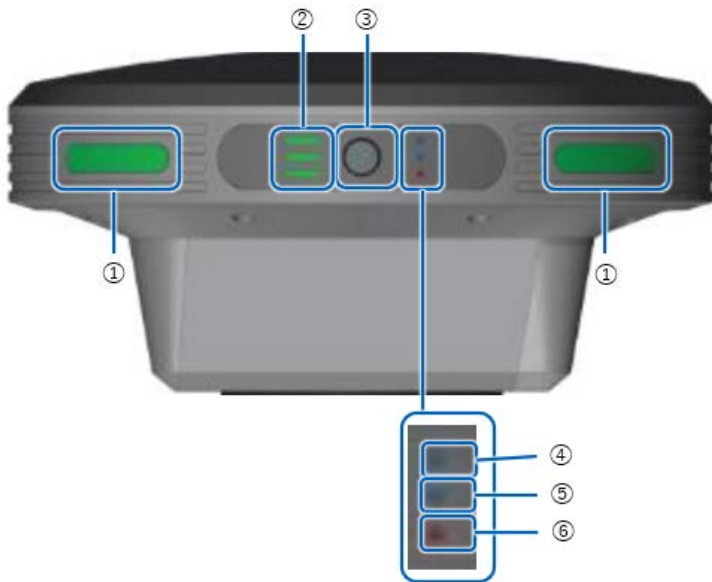
Make sure the SD card is oriented and insert it straight.  
If you force it, it may damage the SD card or this product. Also, if you accidentally insert it and cannot take it out, please contact your Komatsu distributor. If you insert tweezers and try to forcibly remove them, there is a risk of a short circuit.

## Before USING

### Name of each part

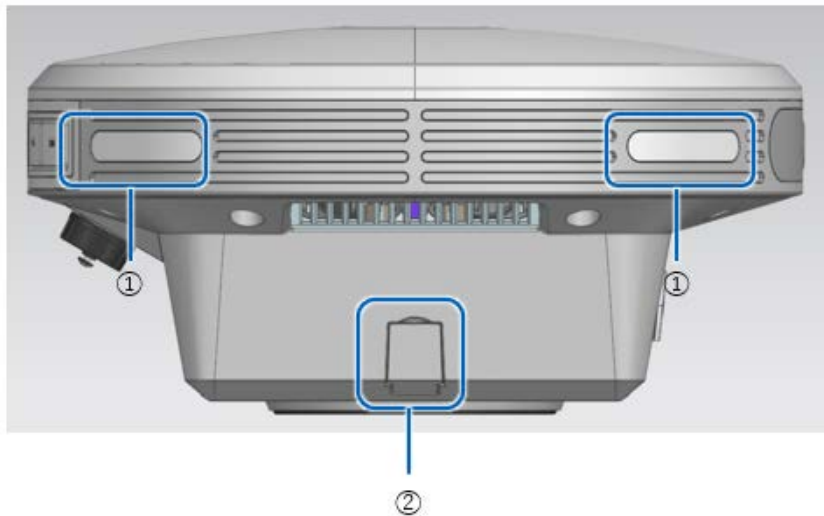
#### (a) Edge Body Part Name

Front of the body



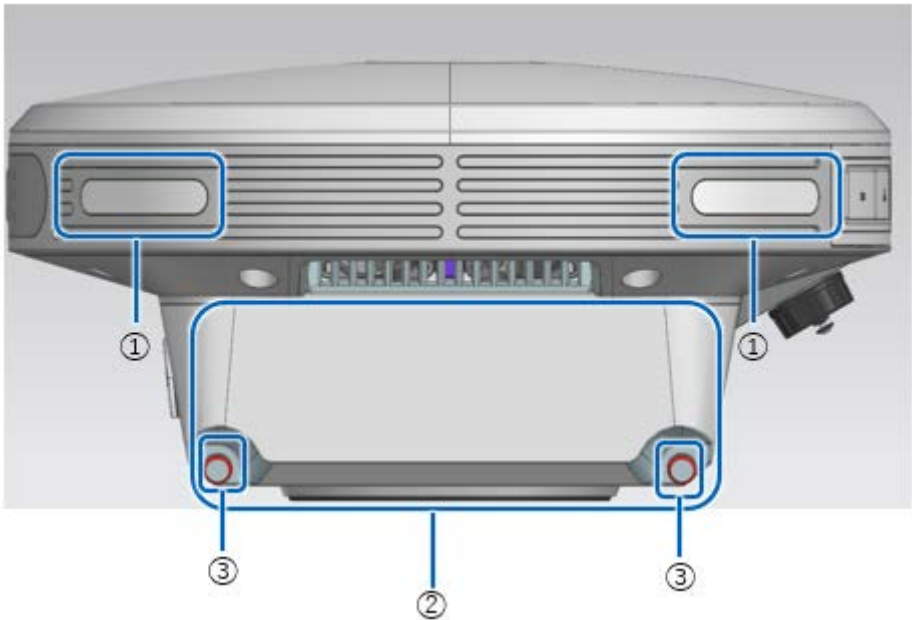
- ① Status LED
- ② battery indicator
- ③ power button
- ④ GNSS Receive Status LED
- ⑤ PPK Logging Status LED
- ⑥ Error/Sub-microcomputer Update LED

**Body Right Side**



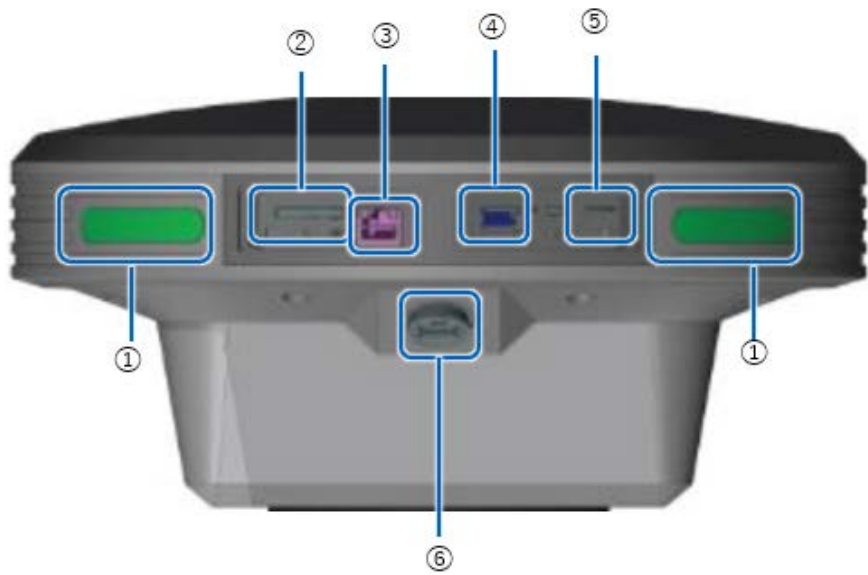
- ① Status LED
- ② AC Adapter Inlet

**Body Left Side**



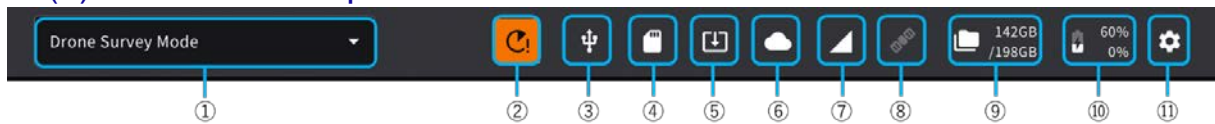
- ① Status LED
- ② Battery Inlet (Inside Lid)
- ③ battery lid screw

back of the body



- ① Status LED
- ② SD card slot
- ③ Ether Cable Terminal
- ④ USB Slot (USB3.0)
- ⑤ SIM CARD SLOT
- ⑥ Waterproof USB Slot (USB2.0)

## (b) Name of each part of the status bar



- ① mode switching  
Tap to switch between drone survey mode and base station mode.
- ② Running job icon  
Tap to list the jobs running in the background.
- ③ USB Memory Icon  
Displays whether USB memory is recognised. Tap this icon when removing USB memory.
- ④ SD card icon.  
Displays whether SD card is recognised. Tap this icon when removing SD card.
- ⑤ Exported data list Icon  
Shows the exporting status to USB memory.
- ⑥ Upload List Icon  
Shows the uploading status to the SMART CONSTRUCTION dashboard.
- ⑦ LTE icon  
Displays the status of the LTE.
- ⑧ GNSS icon  
Displays the status of GNSS reception. Tap to view the Acquired Satellite list.
- ⑨ Storage  
Displays the amount of storage remaining on the unit.
- ⑩ Battery icon  
Shows the amount of battery life for each of the two batteries.
- ⑪ Settings icon  
Tap to open the Settings dialog.

### Tips

Please confirm all ②Running job ⑤Exporting data and ⑥Uploading data before you turn off the unit. Those jobs could cancel if it turned off before finishes.

System Configuration:

Main unit:



Tablet:



Batteries (pair):



AC adapter and Power cable:



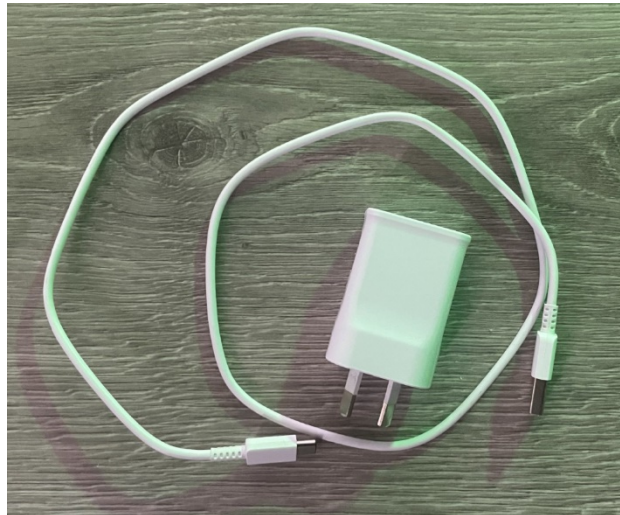
Water-proof USB-Serial conversion cable:



SD card adaptor:



Tablet Charger:



USB Extender:



## Preparation in advance

### Charge batteries

Make sure to charge the batteries fully before using SMART CONSTRUCTION Edge. The batteries can be charged while installed in the Edge.

1. If you would like to remove the batteries first remove 2 screws and open the lid to install the batteries.



2. Slide the batteries into the slot.



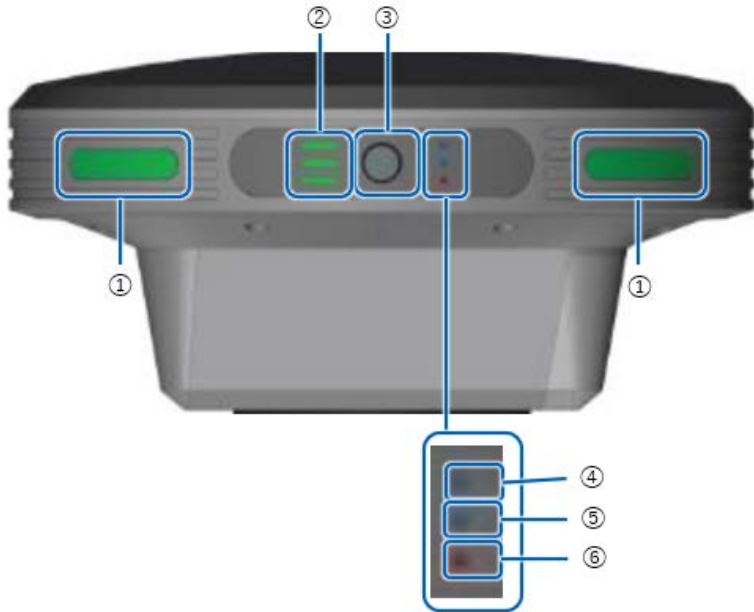
Charge fully until Status LED turns all solid. (Orange – Charging, Green – discharging)



## Turn on EdgeBox

1. Press and hold the power button on the EdgeBox for about 4 seconds.

The Status LED on the unit will flash in green while the main unit is running, and the Status LED will turn green when the starting process has completed.

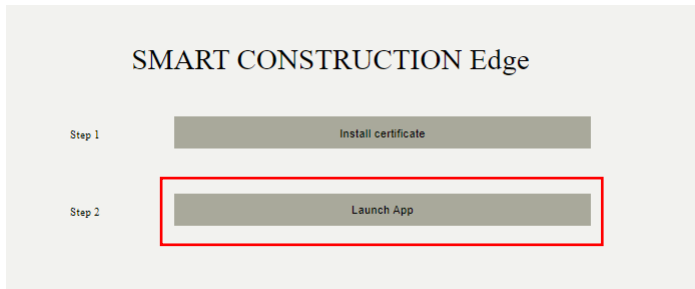


- ① Status LED
- ② Battery Indicator
- ③ Power Button
- ④ GNSS reception status LED
- ⑤ PPK logging status LED
- ⑥ Error / Update status LED

## Connect EdgeBox to a Tablet or Laptop

Verify that the Status LED turns green and connect the tablet (iPad as a default option) to the EdgeBox via Wi-Fi.

1. Tap “Wi-Fi” and select the EdgeBox SSID (Serial Number) from the available access point list; Example:ED2A\*\*\*\*\*
2. Enter your EdgeBox password (default : edge2-ap) in the password field.
3. Use MS Edge or Chrome to access SC Edge User Interface with the following URL:  
<https://scedge.local>
4. For Android you may have to allow access to the application by going to “Advance Setting” then “Allow”.
5. Press Launch App



# Start/Stop Using

## Install EdgeBox on the tripod or permanent rigid 5/8 pole

1. Prepare tripod with 5/8 in. screw on the top. Top of the tripod must be flat.



2. Fix the screw firmly to the bottom screw of EdgeBox.  
Use a Tribrach if needed to position over the control mark.

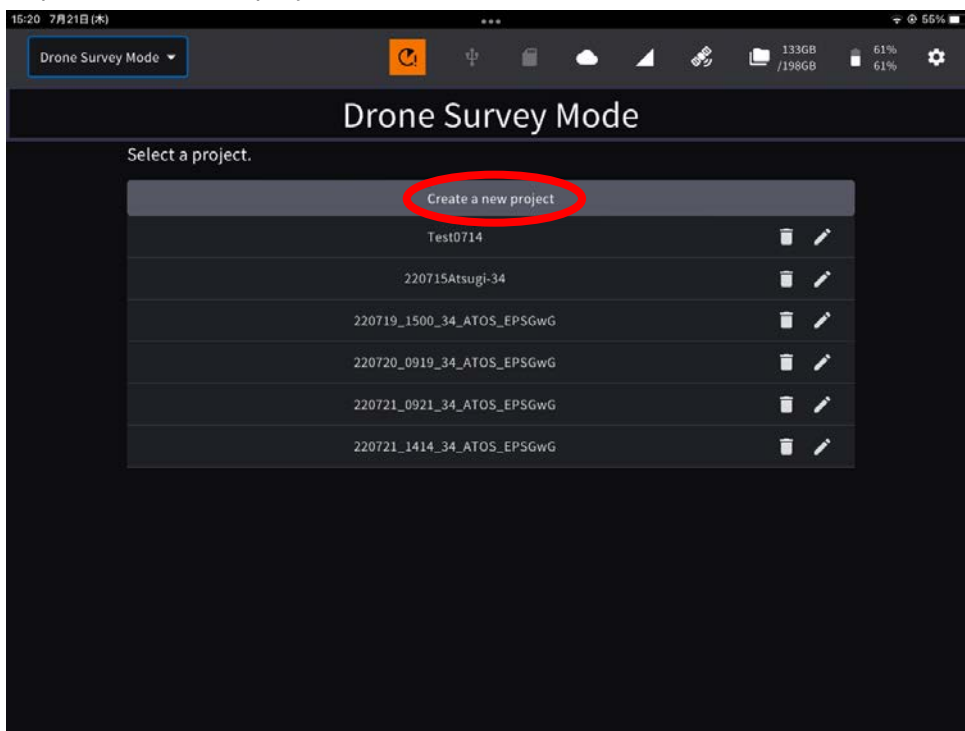


## Create a project

(c) Create in a public coordinate system (using ESPG code)

Use <https://epsg.org/search/map> to search EPSG codes.

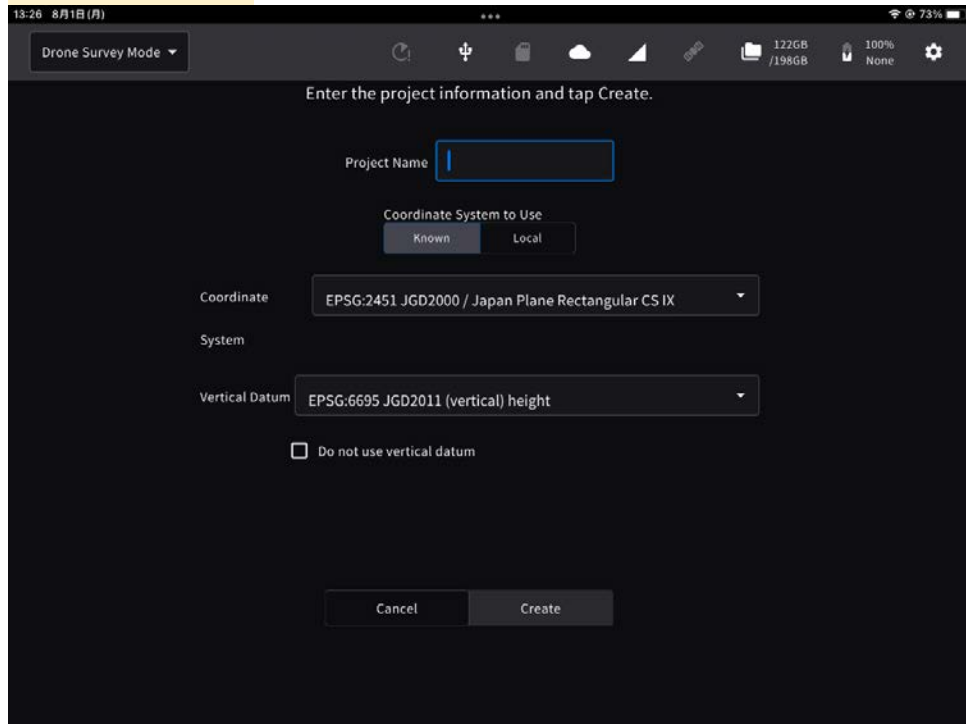
1. Tap “Create a new project”



Make sure “Known” is selected in “Coordinate system to use” and enter the ESPG code & Geoid.



For Example: For MGA2020 Zone56 Ausgeoid 2020 you will choose EPSG = 7856 GDA2020 / MGA zone 56 & 5711 AHD height

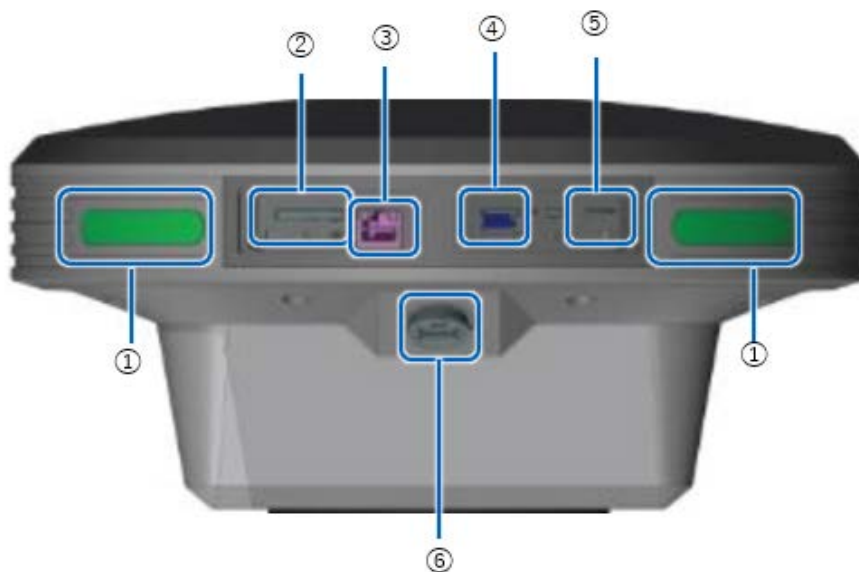


2. If you enter a part of EPSG code, then will show the candidates.  
If you are not going to use Geoid Hight,
3. Tap "Create".

#### (d) Create in local coordinate system (using localisation file)

If you have a localisation file from a rover, you can also create a project using the localization file. Localization file should be in CSV format and saved in the root directly of the USB memory.

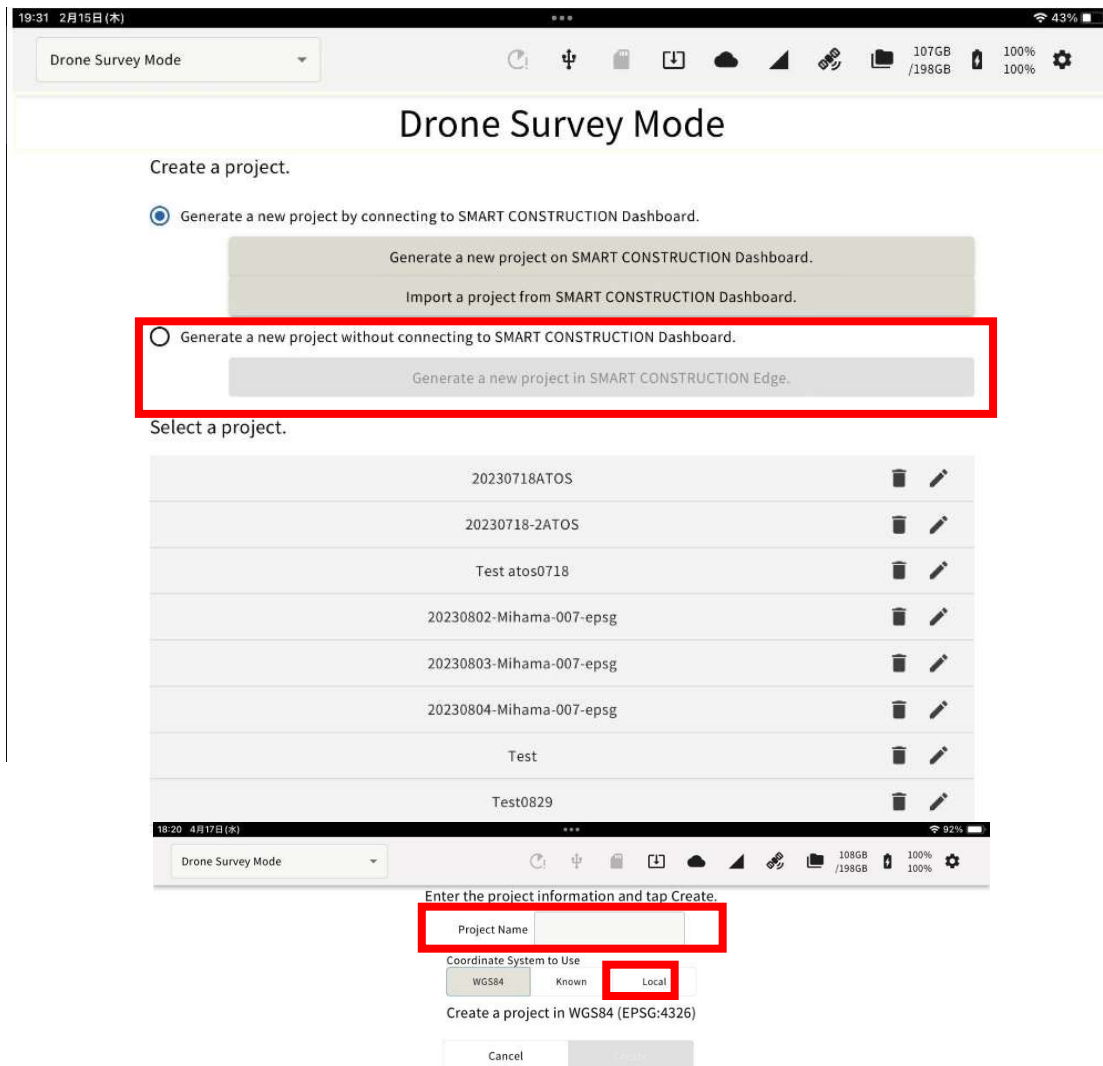
1. Insert the USB memory into the USB slot (inside the waterproof lid) of the EdgeBox



- ① Status LED
- ② SD card slot
- ③ Ether cable port

- ④ USB slot (USB3.0)
- ⑤ SIM card slot
- ⑥ Water-proof USB slot (USB2.0) : cannot use this slot for USB memory

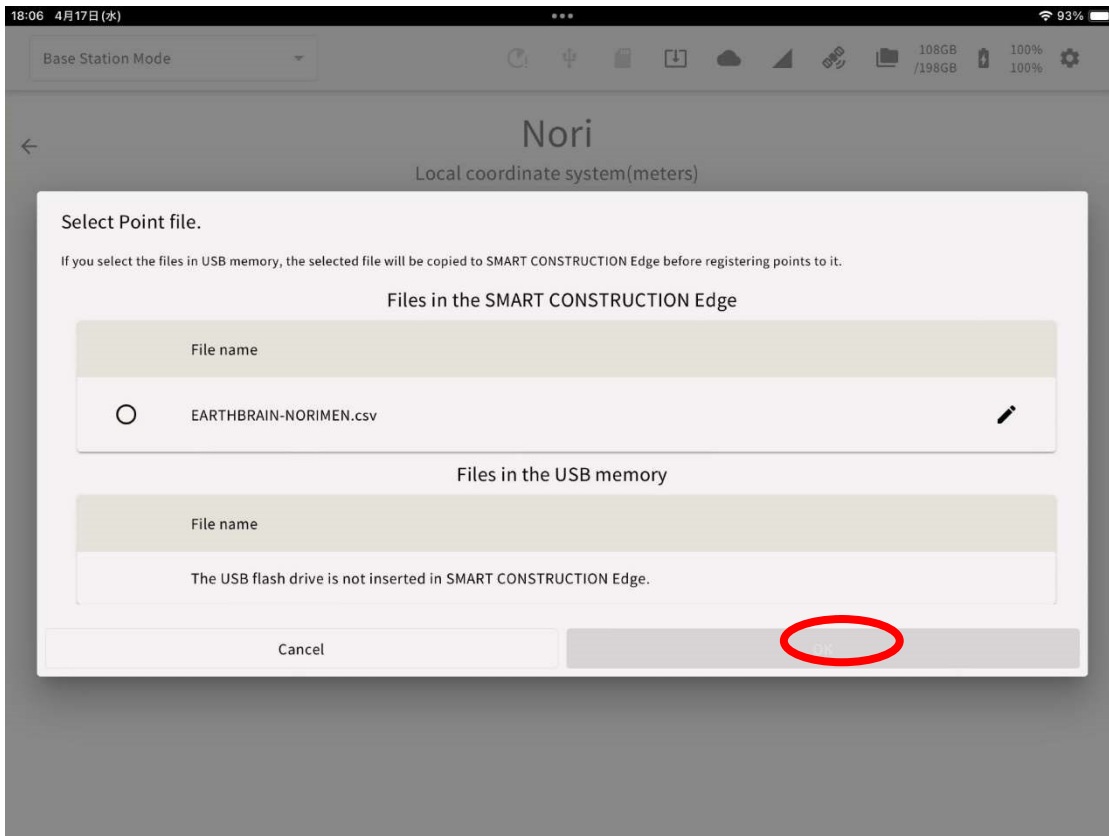
2. Tap “Create a new project”



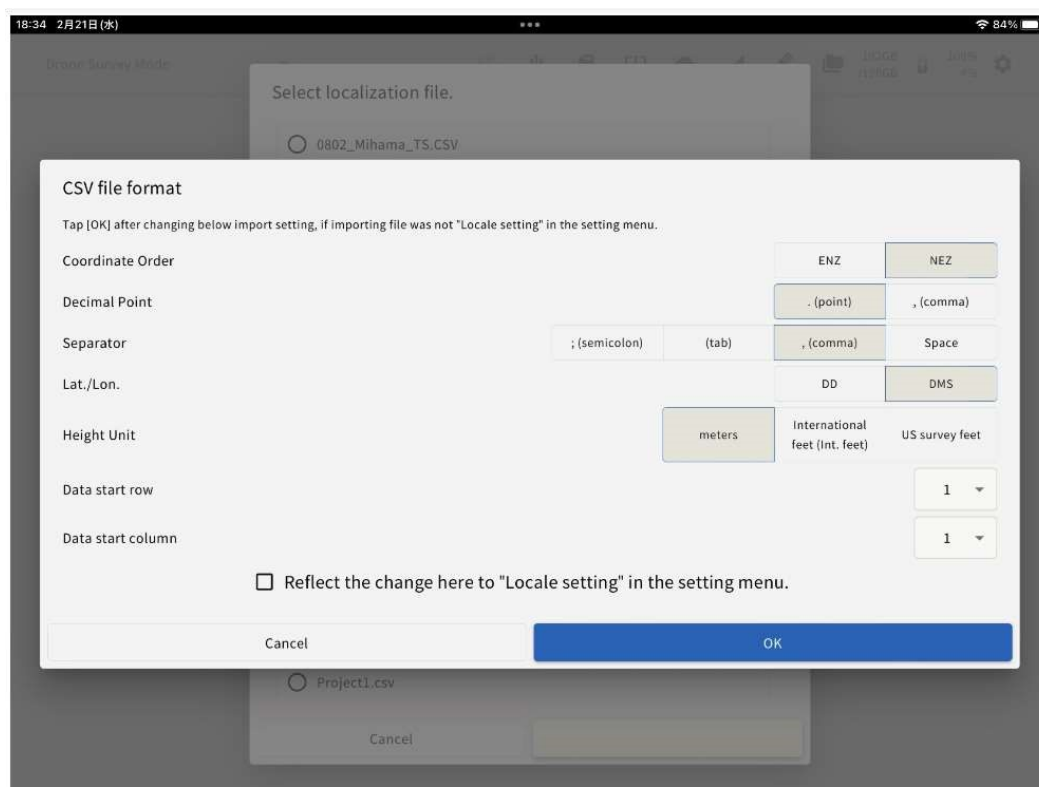
3.

- 4. Tap “Import Localisation File” to specify the file for localization.
- 5. Files are saved once loaded to the edge and  
Files can be selected from USB or from within the Edge's memory.

Tap “OK” after selecting a file.



- Please prepare the localization file in advance. Set the file format parameter according to the file and tap “OK”.



Pay attention to WGS Lat./Lon. Format DD for Decimal Degrees & DMS for Degrees Minutes Seconds.

Example of the format above

Order of XYZ : ENZ

Point name	X(E)	Y(N)	Z(Alt.)	Lat.	Lon.	Elipsoidal height
C	-44040.093	22842.649	3.26	35.36100055	140.0507608	38.11
D	-44164.2	22697.367	3.904	35.36059902	140.0501823	38.715
E	-44071.288	22619.448	3.906	35.36090117	140.0458736	38.741
F	-43920.312	22743.991	3.548	35.36139004	140.0503701	38.402

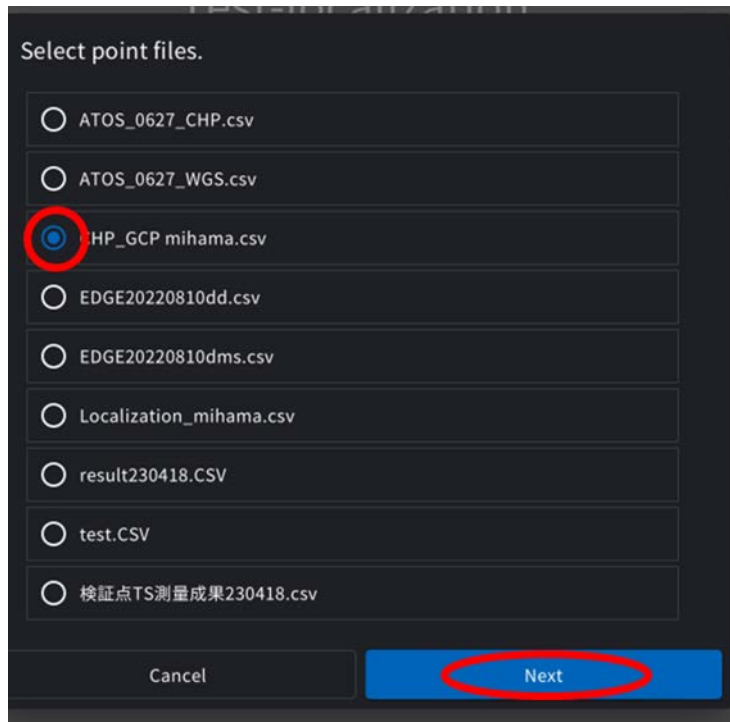
Data starts from 1<sup>st</sup> raw. (Without any header)

Data starts from 1<sup>st</sup> Column

Lat./Lon in DD format. (Decimal)

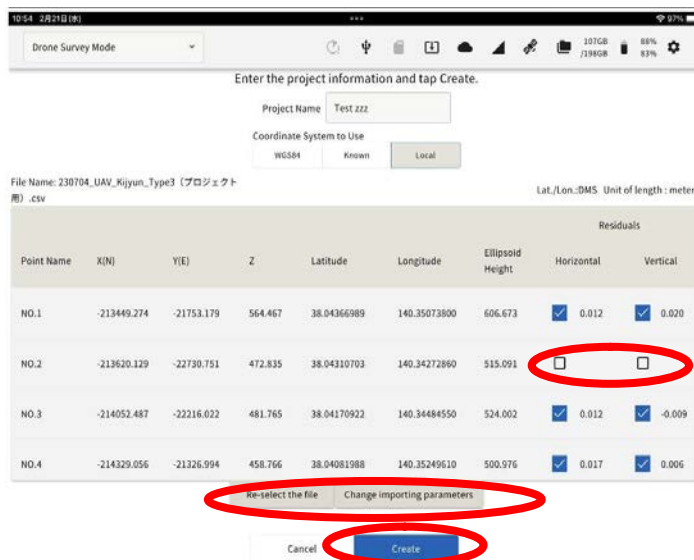
Unit of XYZ and Elipsoidal height are in feet.

- Select the file and tap “Next”.



8. The contents of the imported localization file are displayed on the screen. Confirm the values are correct and aligned correctly, then tap “Create”.
9. You can choose to use or not use horizontal and vertical localization at any point.

## CREATE A NEW PROJECT BY CONNECTING TO SMART

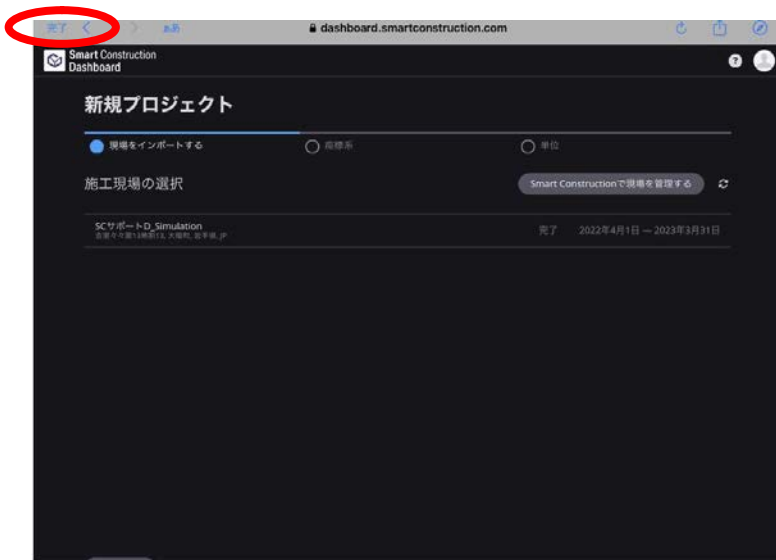
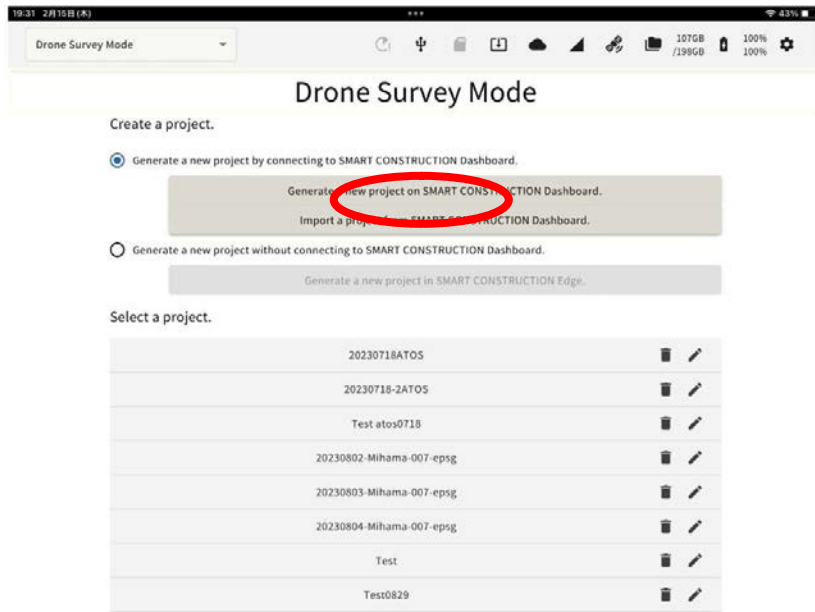


## CONSTRUCTION

1. Generate a new project by connecting to SMART CONSTRUCTION Dashboard) Tap to go to the Dashboard screen and can create new site it from the EDGE2 app.

After creating the site, tap the completion icon in the upper left.

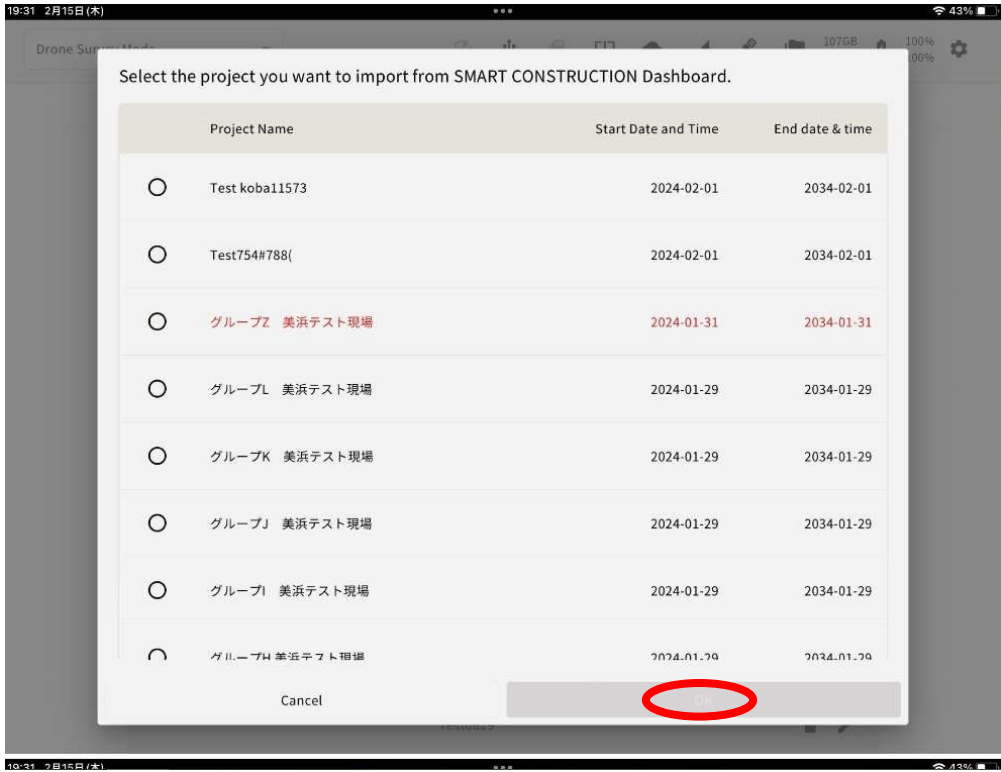
\*Localization files for GC3 and TP3 should be placed directly under the Tablet folder.



## 2. (Import a project from SMART CONSTRUCTION Dashboard)

If you tap and are logged in to your account, the Dashboard site will be displayed.

By tapping any site and pressing OK, you can create a project using the same coordinate code as Dashboard.




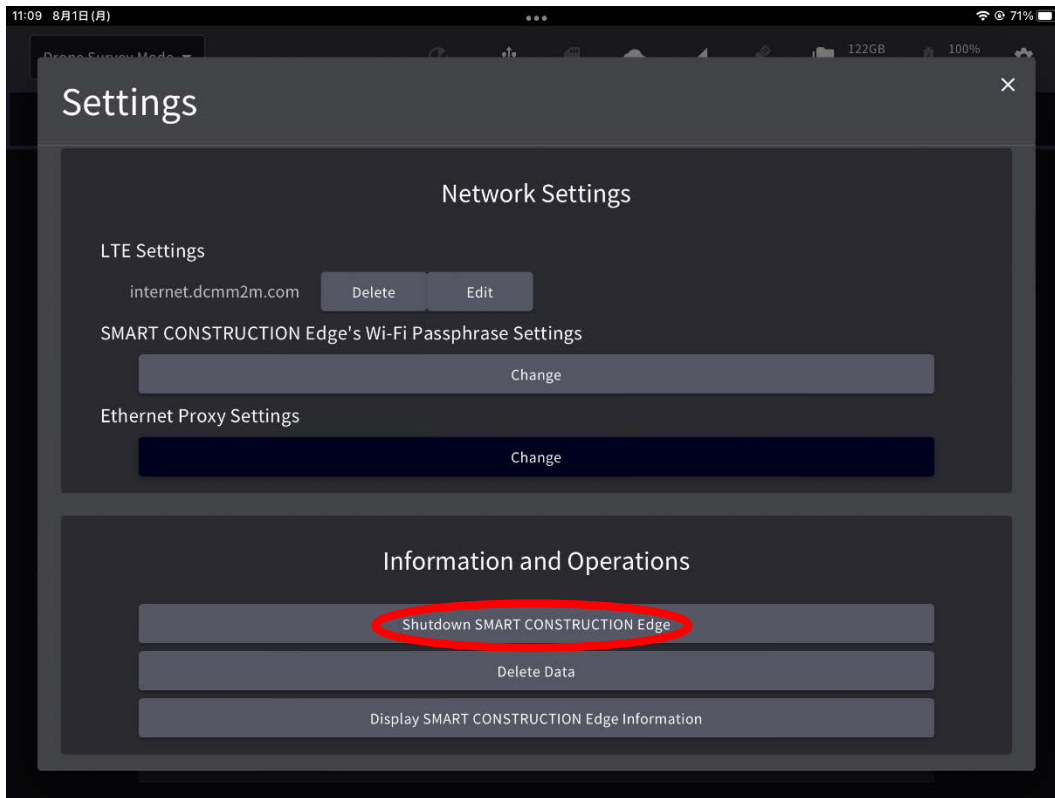
## Turn Power Off

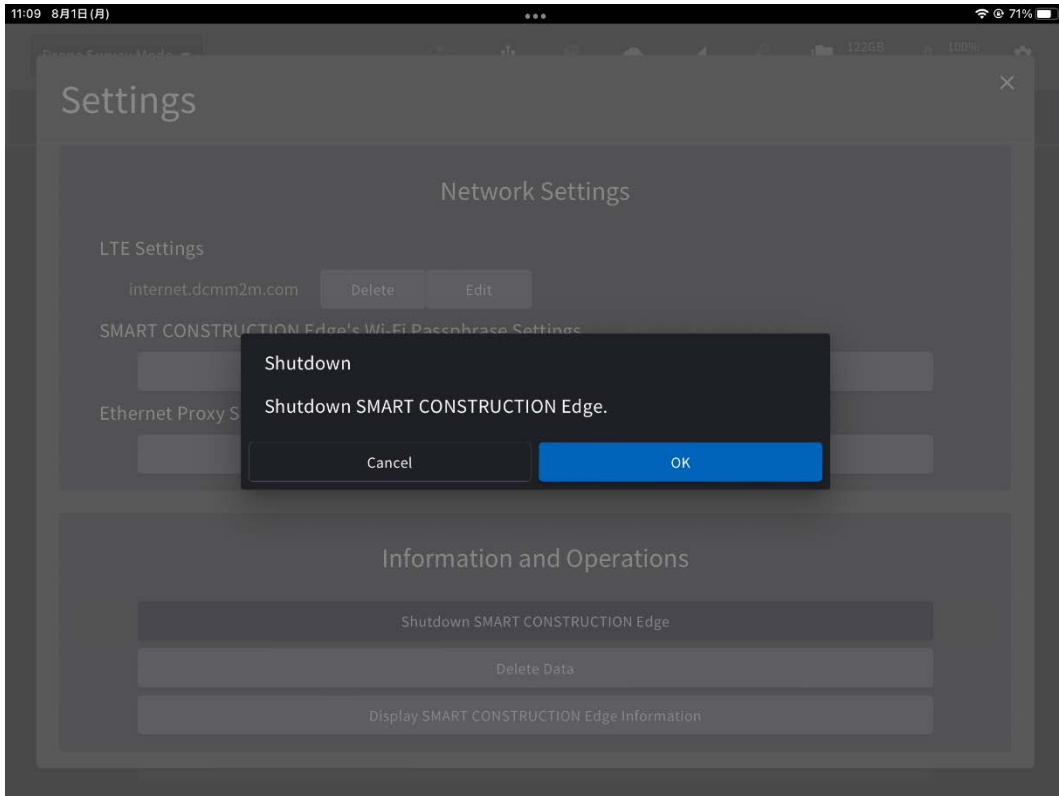
### **⚠ CAUTION**

Always follow this procedure when turning off the power. Follow this procedure to turn off EdgeBox before removing the battery or AC adapter.

It may cause a short circuit and resulting an ignition or an electrical shock.

1. Tap Settings icon  on the upper-right portion of the tablet app.
2. Scroll down to tap “Shut Down SMART CONSTRUCTION Edge” in “Information and Operations” section of the Settings screen.





3. You can also turn off the power by pressing and holding the power button on the main body for about 4 seconds.

The Status LED on the main body will flash green during the termination process. The Status LED will go off when the exit process is complete.

**NOTICE**

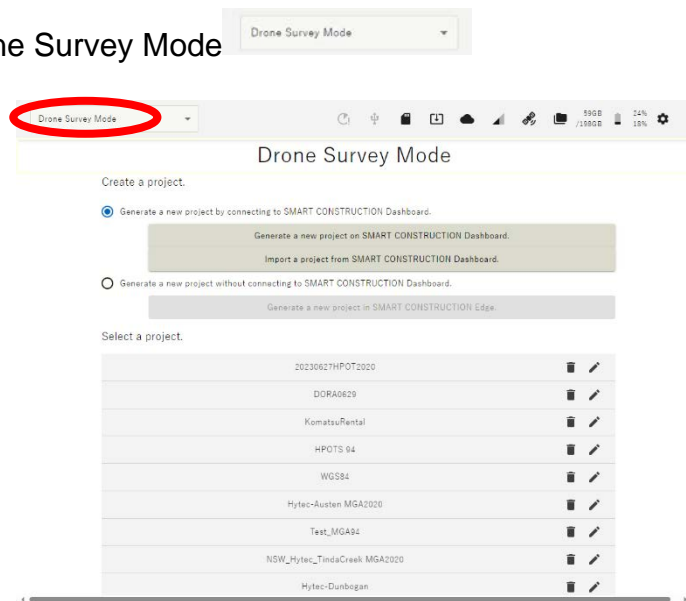
Shut off EdgeBox while doing the following can lead to data corruption or system unavailability. Please turn off the power AFTER these processes are completed.

- Point cloud creation
- PPK logging
- Data Transmission
- Exporting data

# Drone survey function

## (e) Using Network RTK to Self-Position

Set Edge to Drone Survey Mode



Before setting the EdgeBox location using Network RTK, you must configure APN settings and Network RTK account settings. For details, please refer below.

### Tips


To use Network RTK, an LTE contract and a Network RTK Service contract were required.

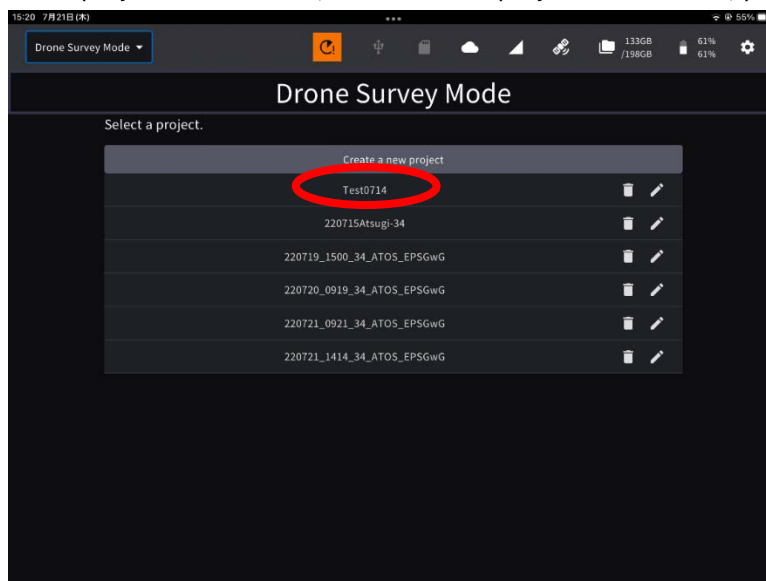
1. Place EdgeBox on site on a tripod or 5/8 thread bolt with a clear view of the sky.

### ⚠ CAUTION

The main unit should be fixed securely.

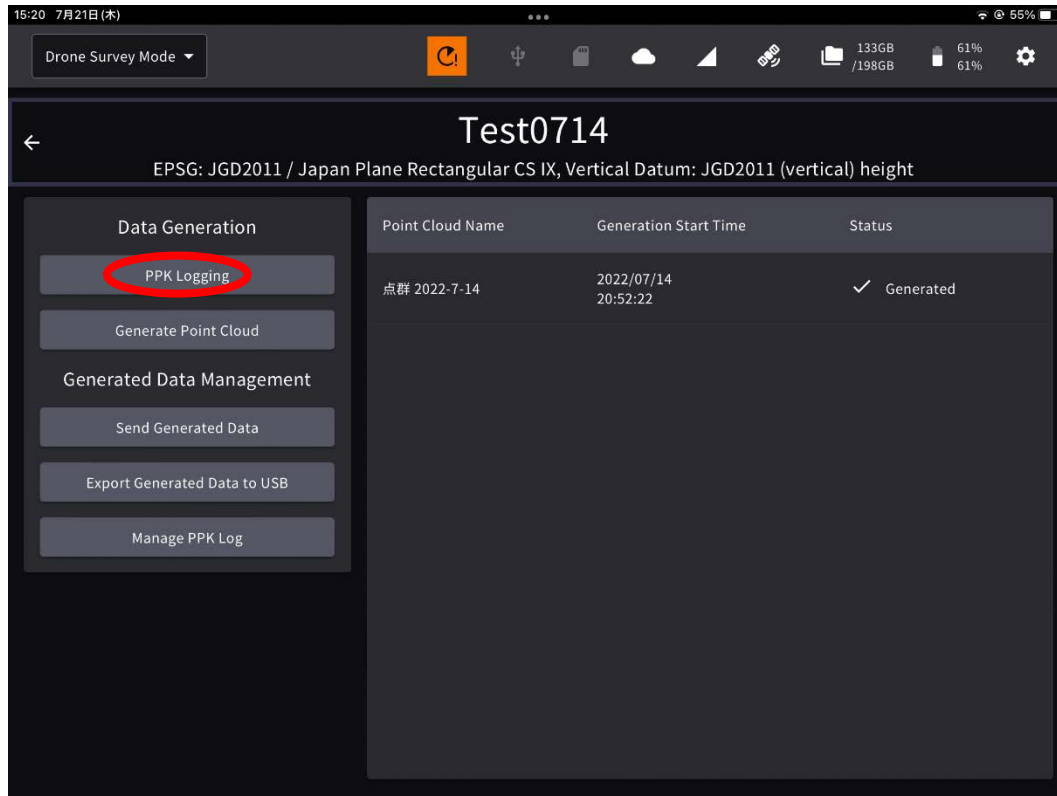
Unsecure installation may incur data inaccuracy, error or failure and damage to the Edge.

2. Launch the tablet app  and select a project of the work site to survey. If the project is not listed, create a new project. For details, please see from P.18.



## Tap “PPK Loggin”

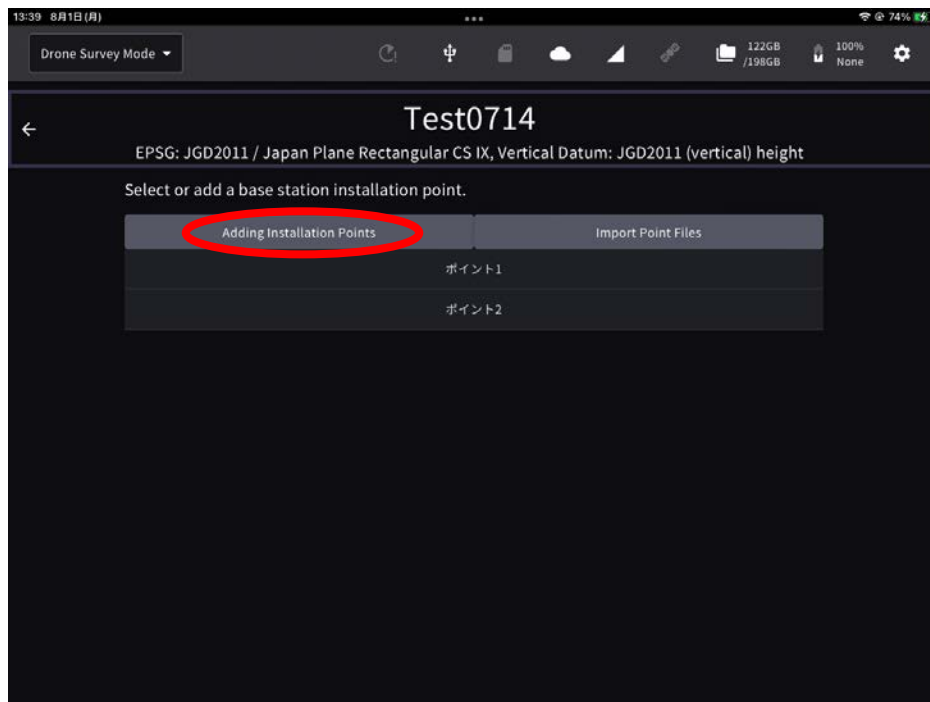
The points you have previously set up or have used for localization will appear as a point list.



### Tips

If you have set the EdgeBox on one of these points, you can just tap it to select it. (If not, go to 4.)

3. Tap “Adding Installation Points” to Self-Position OR you can import with a CSV file (Go to next chapter.)



4. Enter a point name and tap “Using network RTK” check box

5. Select the network RTK service from the drop-down list and tap the “Execute Positioning” button.

You can set the number of Epoch to measure. See basic settings.

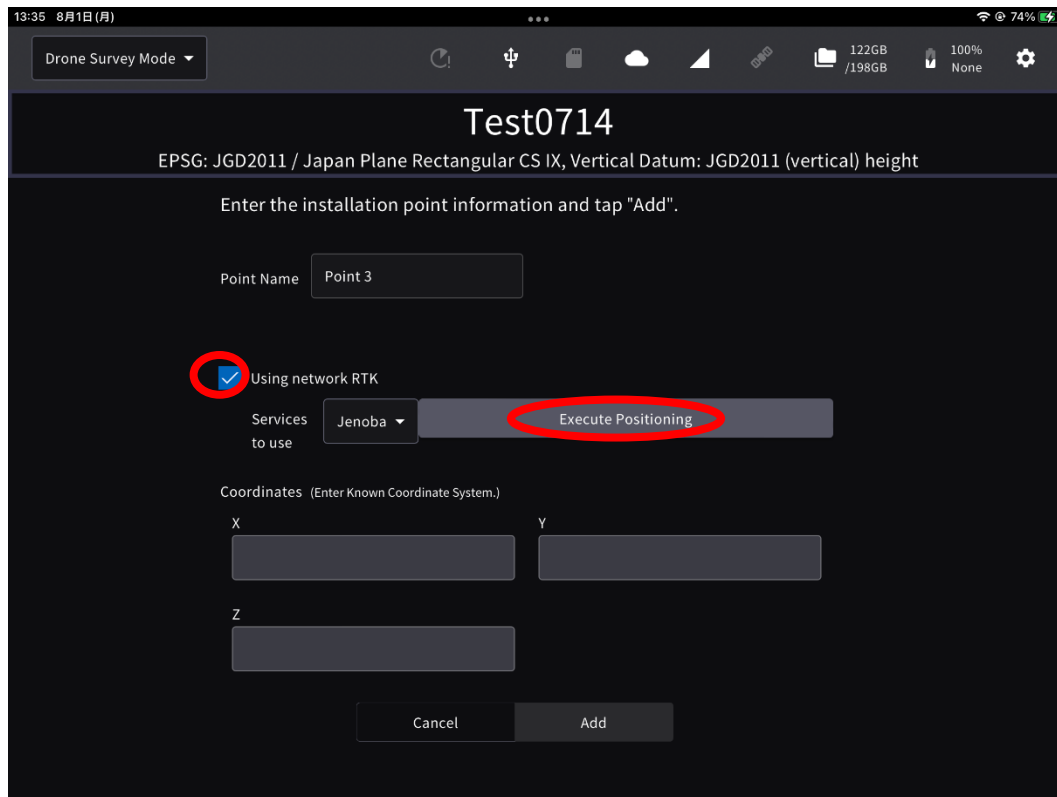
Recommend 60 Epoch

Epoch numbers when we do self-positioning

Current setting : 60 times

Change

When the positioning is done, a surveyed coordinates are automatically entered in the coordinates field.



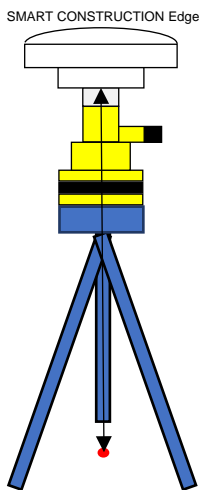
6. Confirm that coordinates are entered in the coordinates field, then tap "Add"


## (f) Import from a CSV file

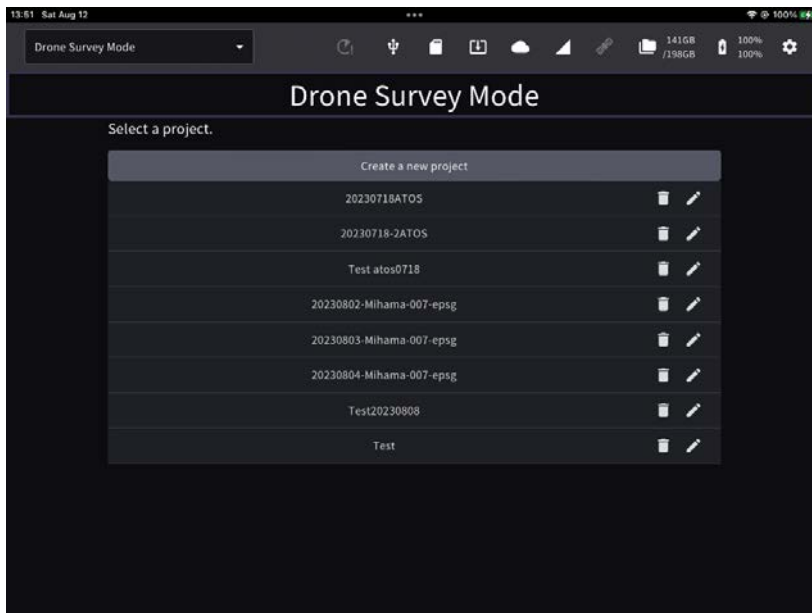
1. Align the Edge Box horizontally above the surveyed control point using a Tribrach & tripod.



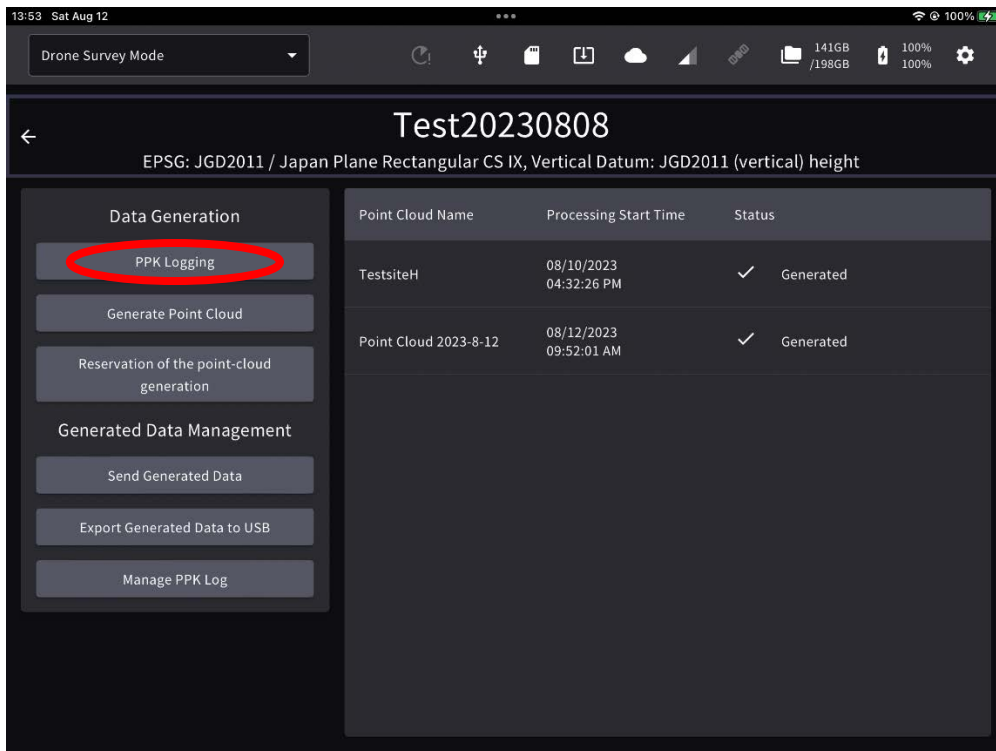
2. Measure the height from the base point to the bottom of the EdgeBox
3. Enter this height as the “pole height”



4. Launch the tablet app  and select a project of the work site to survey.  
[If the project is not listed, create a new project.](#)

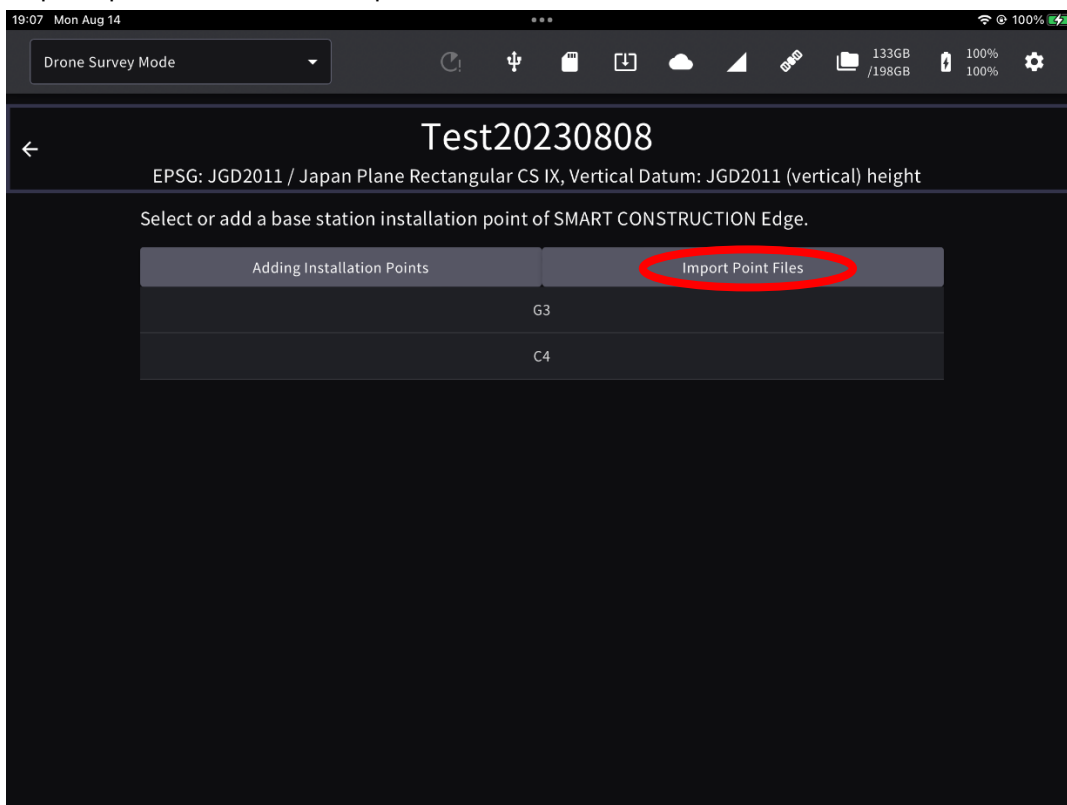


5. Tap "PPK Logging"



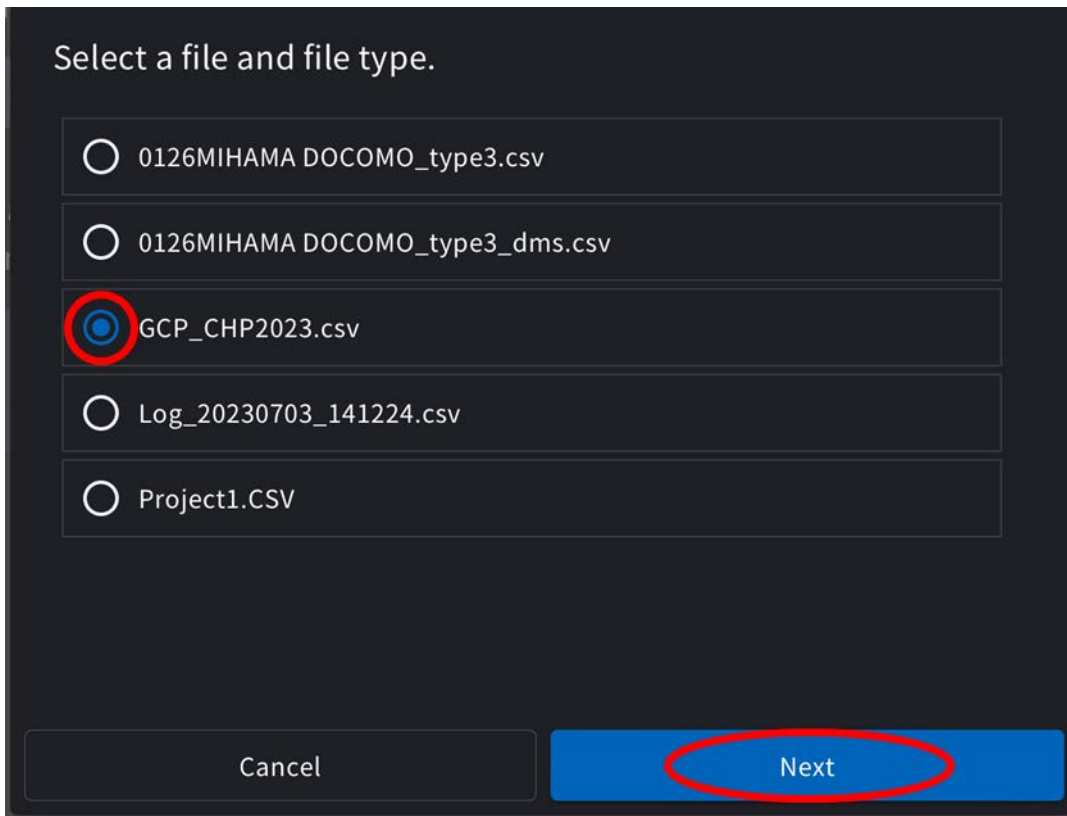
The points you have previously set up or have used for localization will appear as a point list.

6. Tap "Import Point Files" to open the file.

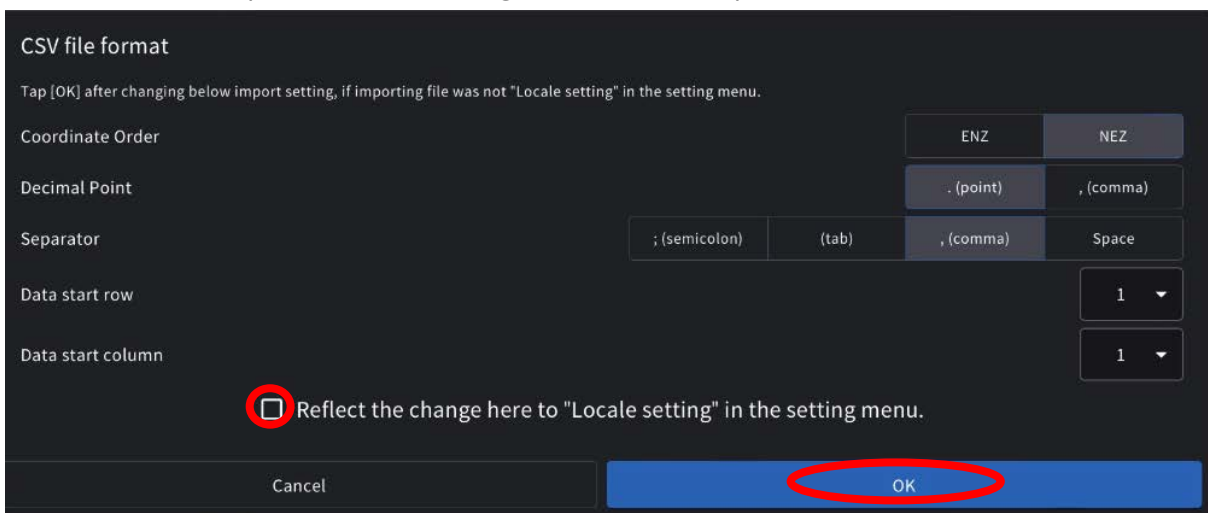


Please prepare the point file in advance.

Select the control point file

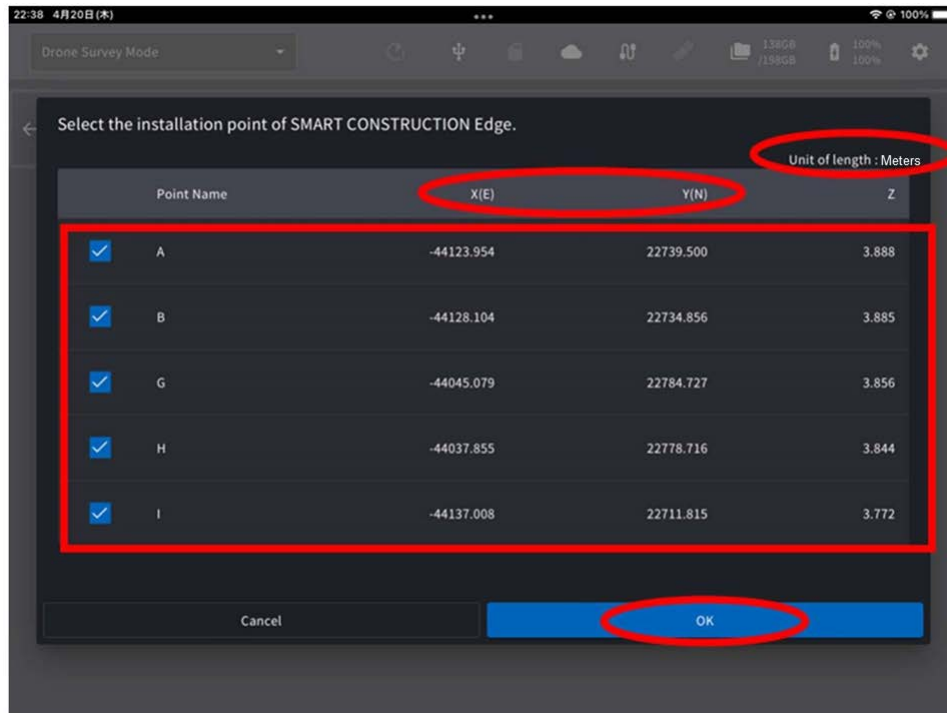


Set the file format parameter according to the file and tap “OK”.



If you tap "Reflect the change here it "Locale setting" in the setting menu." these setting will be reflected to your next settings.

7. The contents of the imported localisation file are displayed on the screen. Confirm the values are correct and aligned correctly, then tap “OK”.



## (g) INPUT manually

1. Align the Edge Box horizontally above the surveyed base point using the levelling device on the top of the tripod.

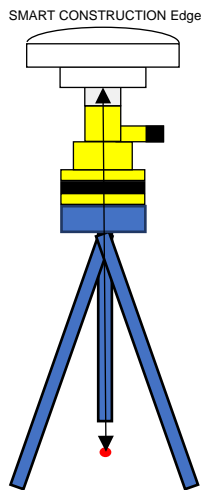



### **WARNING**

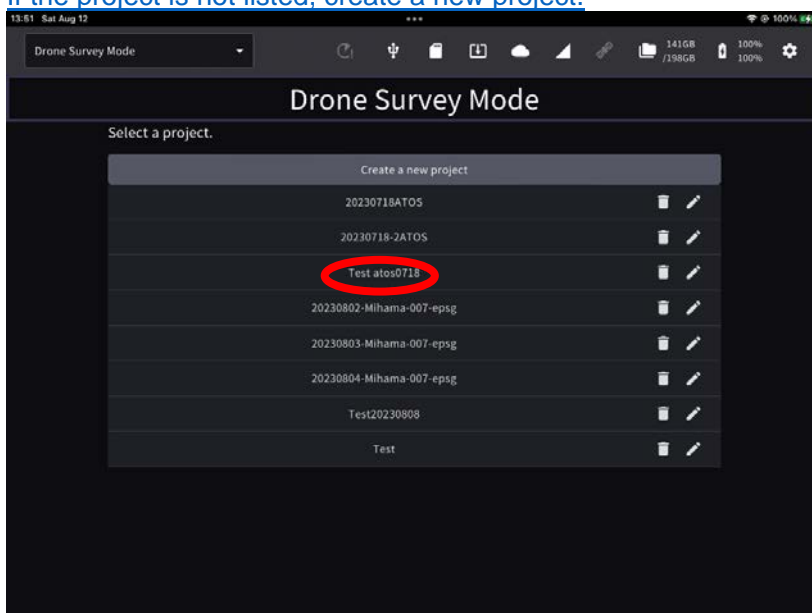
Always wear a hard hat during the work.

If you dropped the product from the top of the tripod by mistake and hit to your head, it may cause an injury.

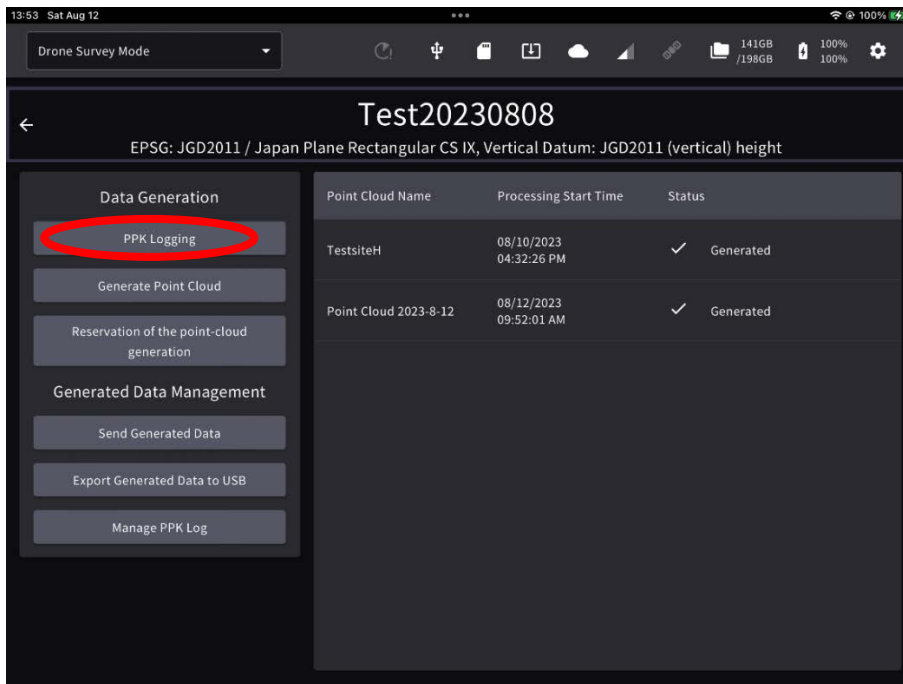
2. Measure the height from the base point to the bottom of the EdgeBox
3. Enter this height as the “pole height”



4. Launch the tablet app  and select a project of the work site to survey. [If the project is not listed, create a new project.](#)



5. Tap “PPK Logging”

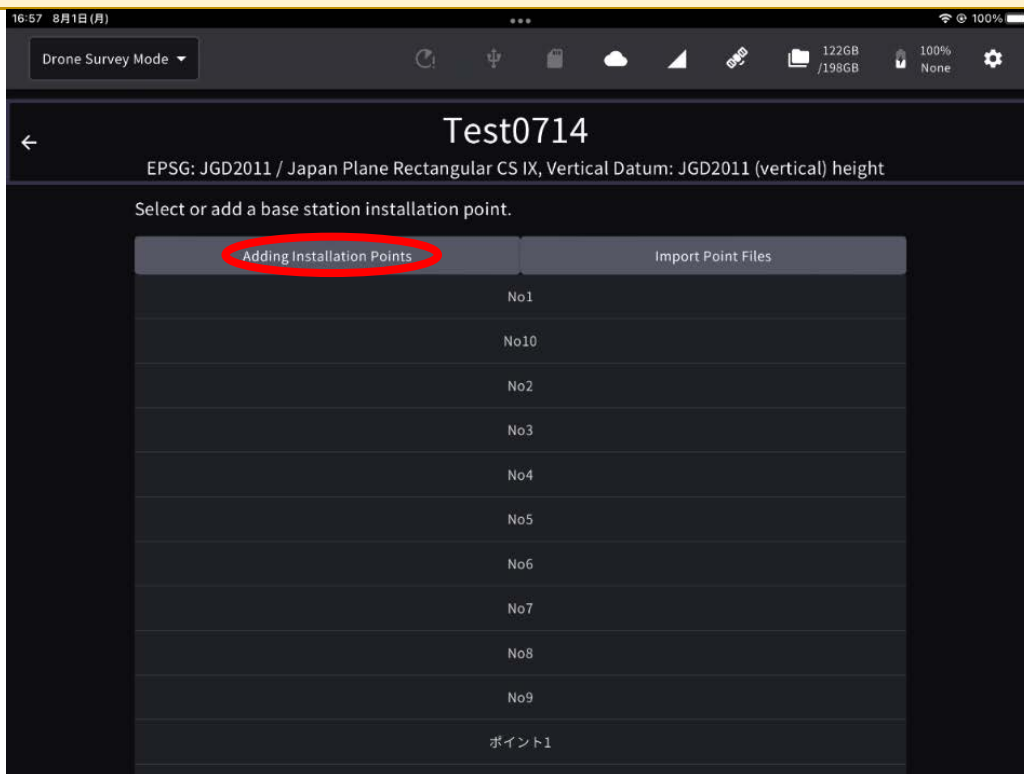


6. Tap “Adding Installation Points”.

The points you have previously set up or have used for localization will appear as a point list.

Tips

If you have selected one of the point in the list, you may just select it instead of typing in the coordinates.



7.

8. Enter the point name and coordinates of the EdgeBox location and tap “Add”.

Drone Survey Mode

Sea-MGA2020

EPSG: GDA2020 / MGA zone 56, Vertical Datum: AHD height

Enter the installation point information of SMART CONSTRUCTION Edge and tap "Add".

Point Name Example

Gnss Positioning

Network RTK Service ADRTK2020

Execute Positioning

Enter Base Station point Coordinates(Local Coordinate)

Coordinates (Enter Known Coordinate System.)

X(E) 286080.123 Y(N) 65327950.123

Z 123.321

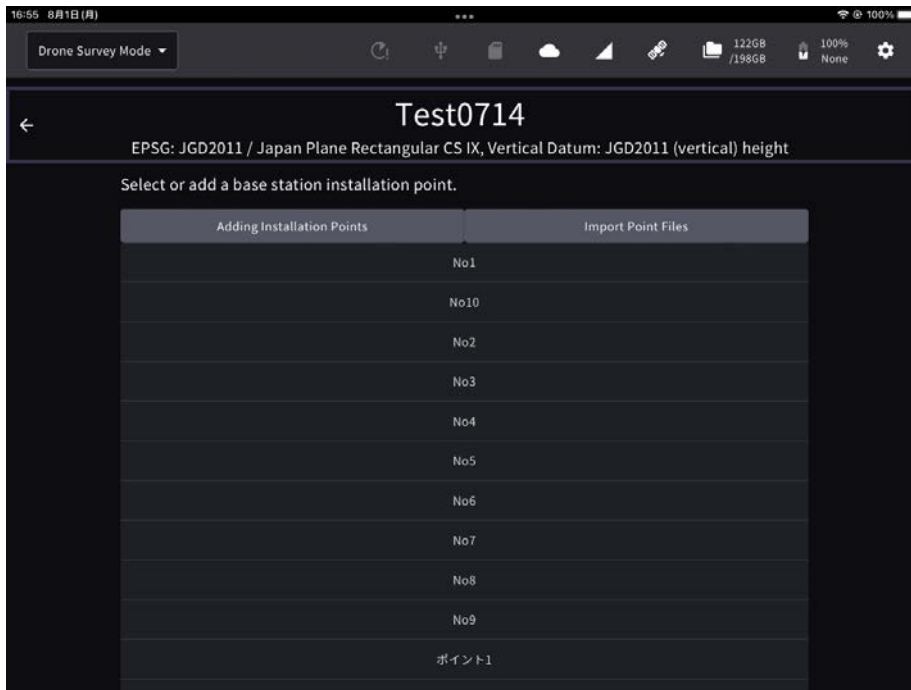
Cancel Add

**Tips**

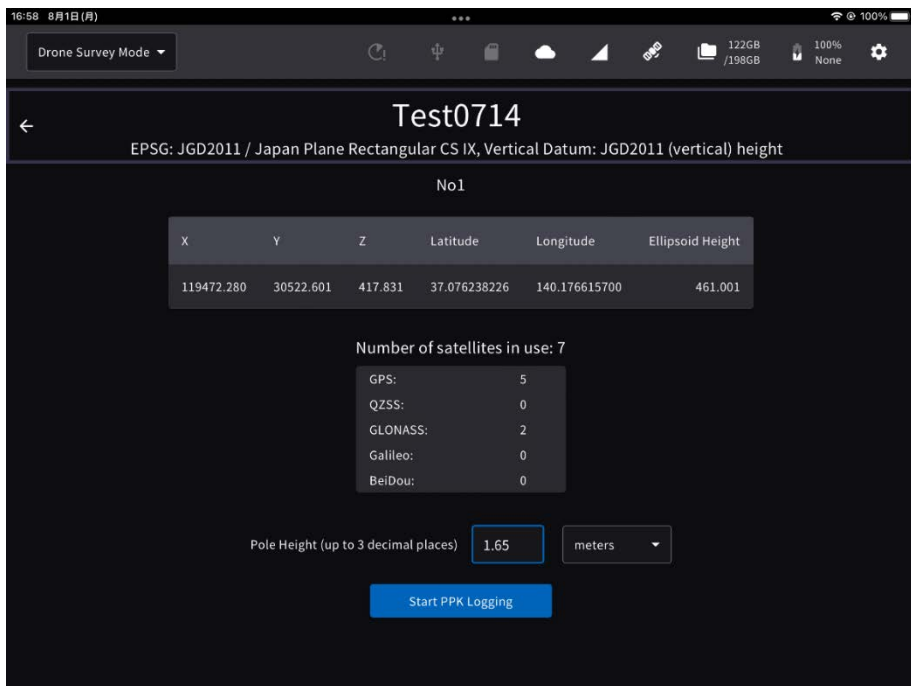
The coordinates you enter must be in the same coordinate system you created the project.

# Start PPK logging

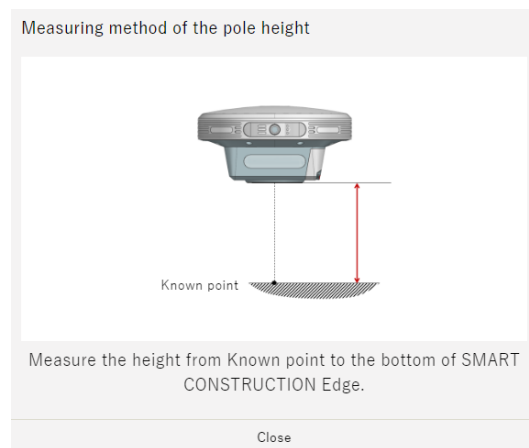
1. Select the point of EdgeBox from the point list.



2. Check the point data and the number of satellites used and tap the "Start PPK Logging" button.



If you have set points manually or imported from a localization file, you need to enter a pole height in advance.



#### Tips

Make sure that the PPK logging has started before you start flying the drone.

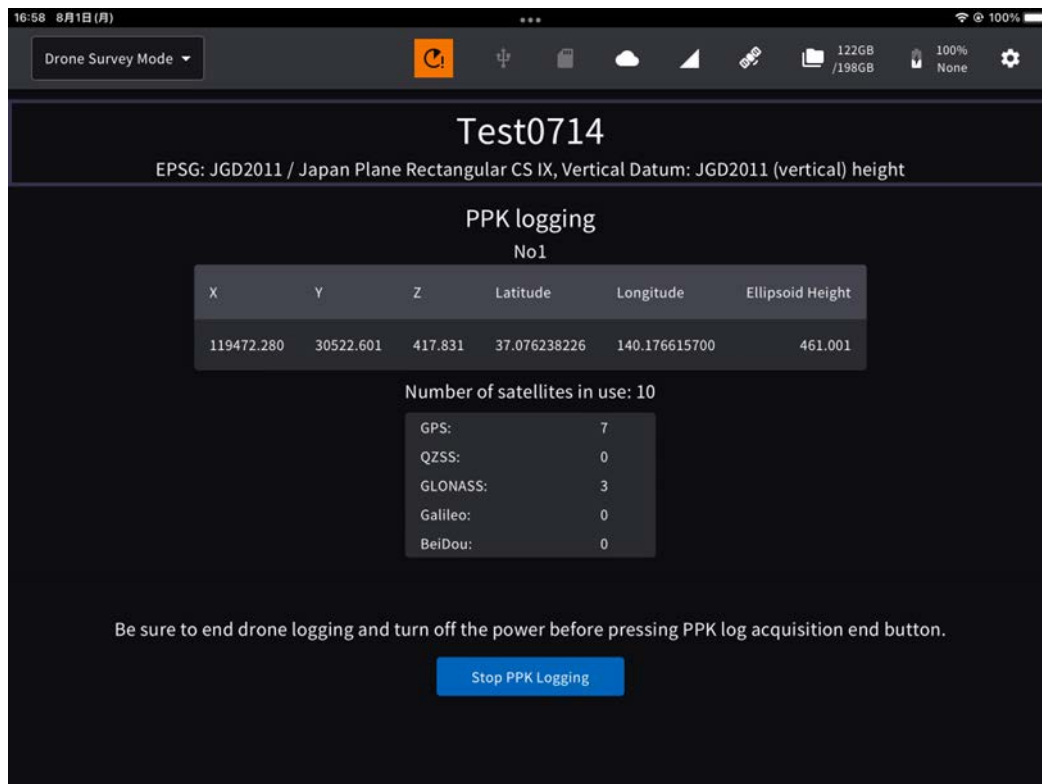
Wait 3 min. to stabilize GNSS reception after starting PPK logging and then, 2 min. after turning on the drone.

## End PPK logging

Important!

Make sure that your drone has completed its flight and that the drone and controller are powered off before you end PPK logging. This may adversely affect the accuracy of the PPK.

1. Tap the "PPK Logging Complete" button.

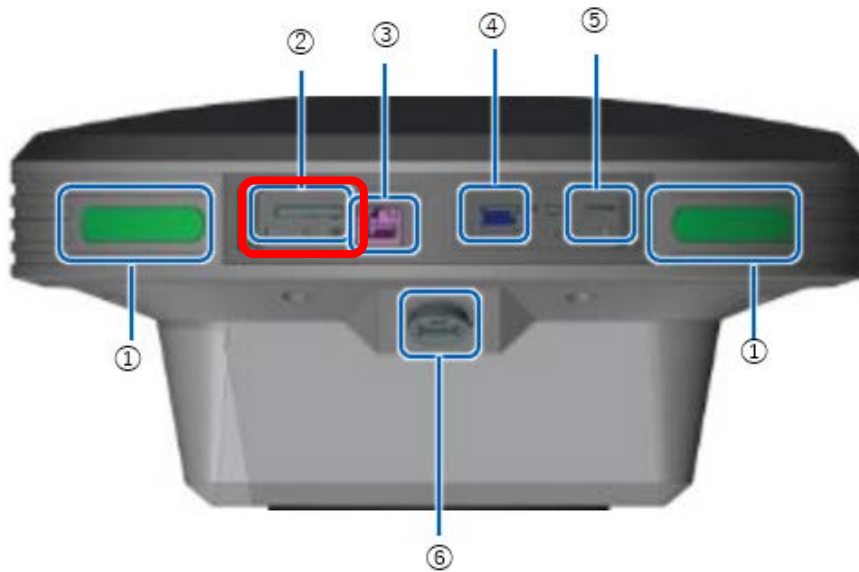


2. If GNSS reception deteriorates during the logging period, an error message may be displayed.

Please note that this may affect the accuracy of the PPK.

## Generating Point Clouds

1. After flying the drone, insert the SD card containing photo data from the drone into the SD card slot of the EdgeBox.



- ⑦ Status LED
- ⑧ SD card slot
- ⑨ Ether cable port
- ⑩ USB slot (USB3.0)
- ⑪ SIM card slot
- ⑫ Water-proof USB slot (USB2.0)

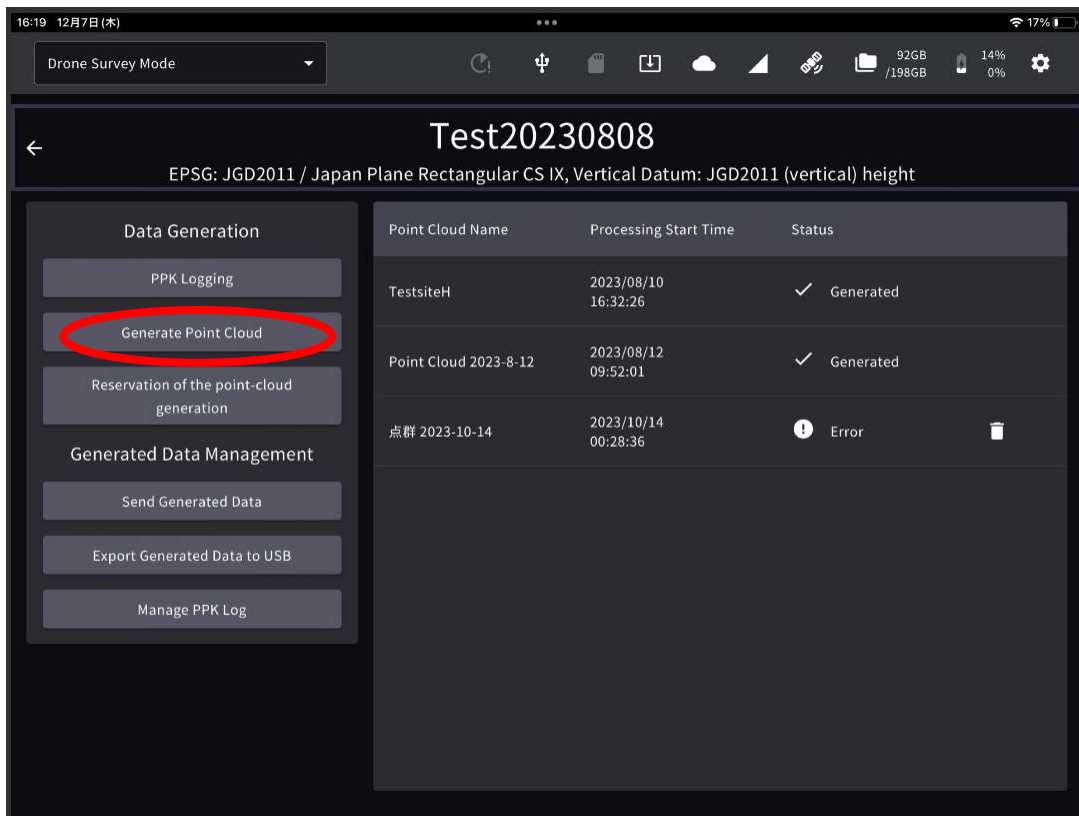
### NOTICE

Before inserting the SD card, please check the direction and insert straightly. If you force to insert, may damage SD card or this product.

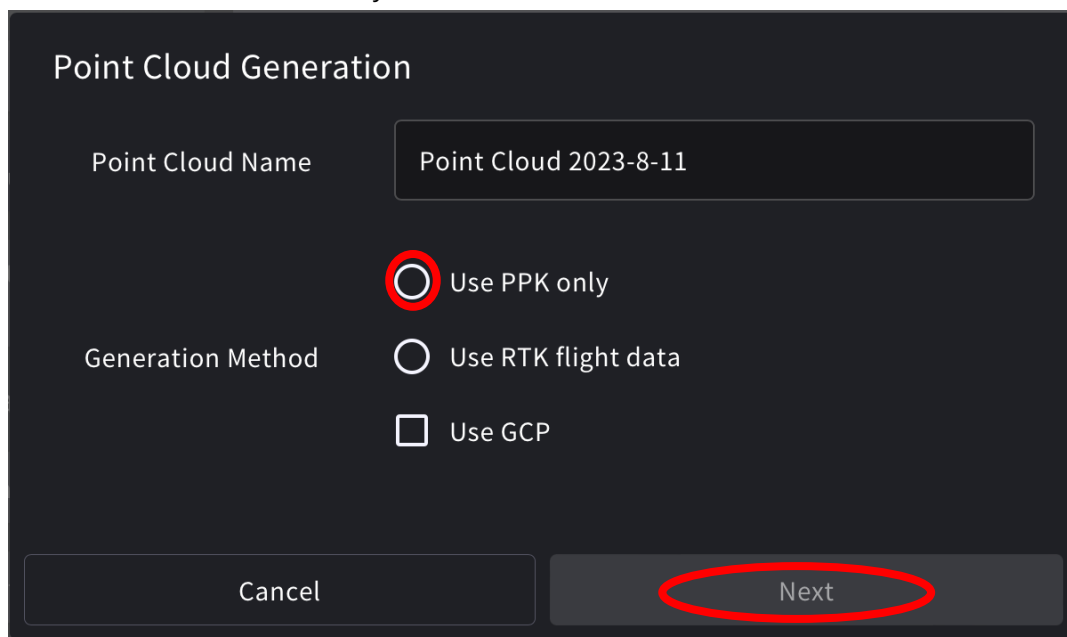
If insert wrongly and cannot take out the SD card, please contact Smart Construction Helpdesk.

Please do not take out the SD card by inserting tweezers and so on, you may damage the product by short circuit.

3. Tap the “Point Cloud Generation” button on the top screen of the project.

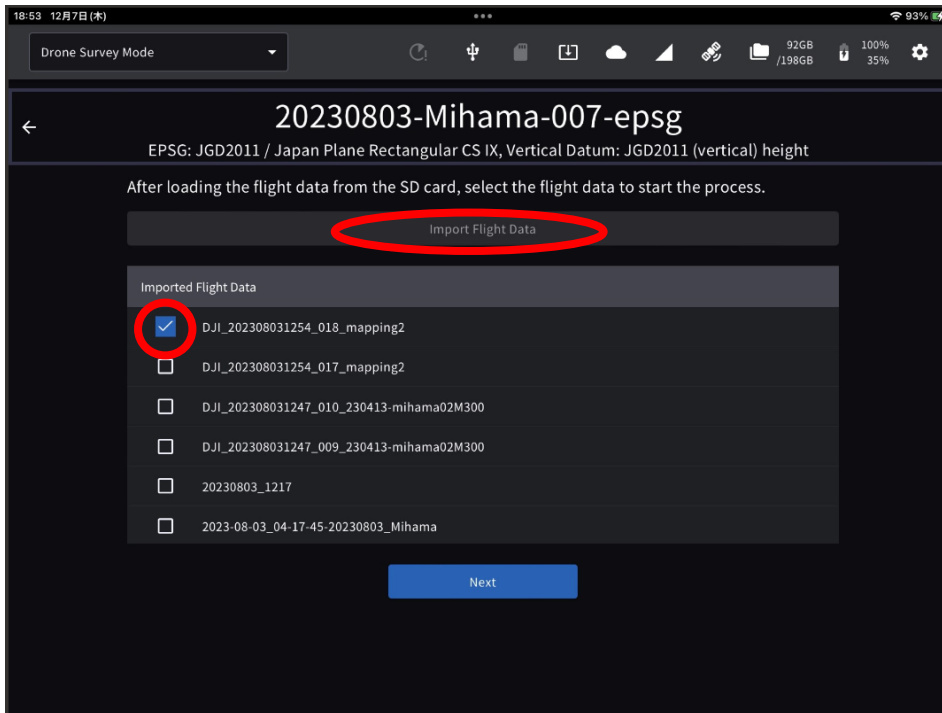


4. Enter the point cloud name and press OK.  
Make sure that “Use PPK Only” is selected.



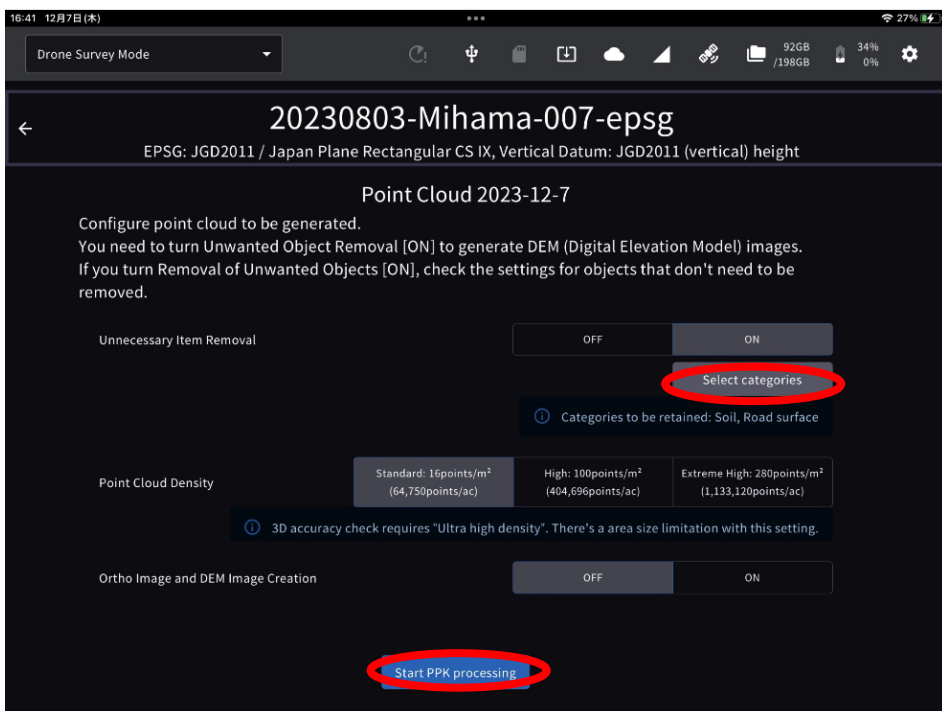
You can also improve the point cloud accuracy by using GCPs.  
Using RTK flight data will be the same except the PPK data processing process.

5. Tap the "Import Flight Data" button and select the drone data to upload to the EdgeBox from the displayed dialog.



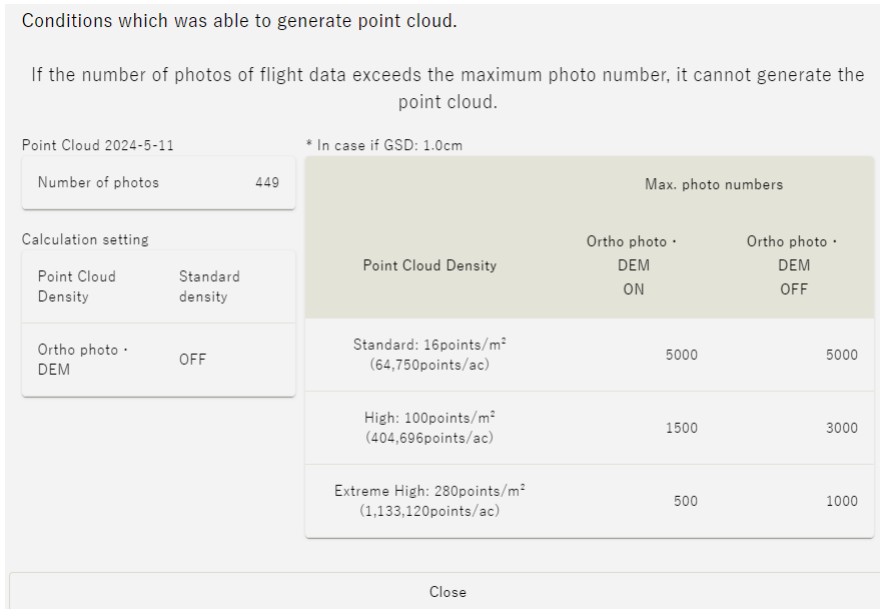
The imported data will be listed. You can also select and import multiple data.

6. Check the flight data to generate point cloud from the imported data list and tap "Start PPK processing" button.



We will show the details of the setting items from next page.

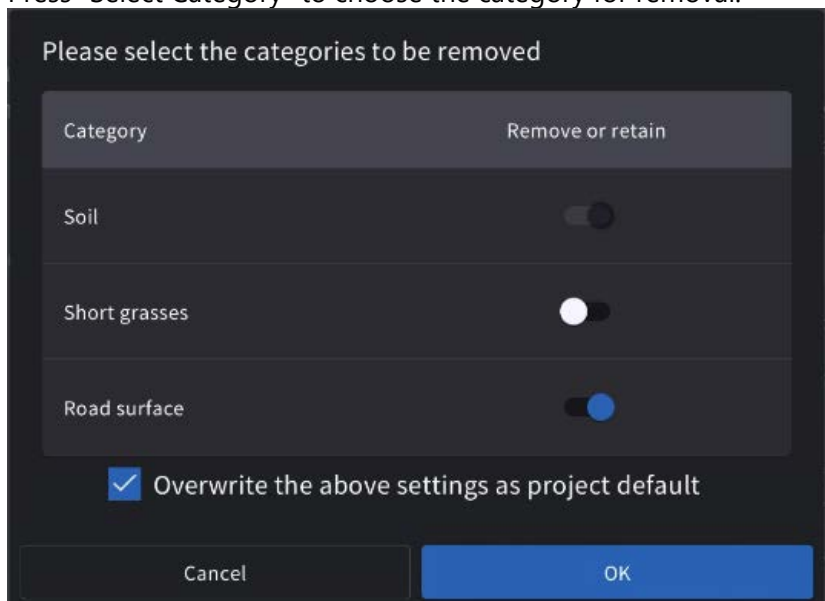
※If you tap "Conditions which was able to generate point cloud" The number of photos loaded and the maximum number of photos processed at each density can be checked.



### Unnecessary object Removal:

When you toggle ON, it removes unnecessary objects, such as buildings and vehicles, that are not needed for soil volume calculations.

Press "Select Category" to choose the category for removal.



"Short grasses" can remove/retain all vegetation (distinguish Short grasses from v4), and "Road Surface" can remove/retain road surfaces, including concrete.

Point Cloud Density : Adjusts the density of the point cloud

#### Tips

3D accuracy check requires Ultra high density. There's area size limitation with this setting.

level	density	Maximum processing area
-------	---------	-------------------------

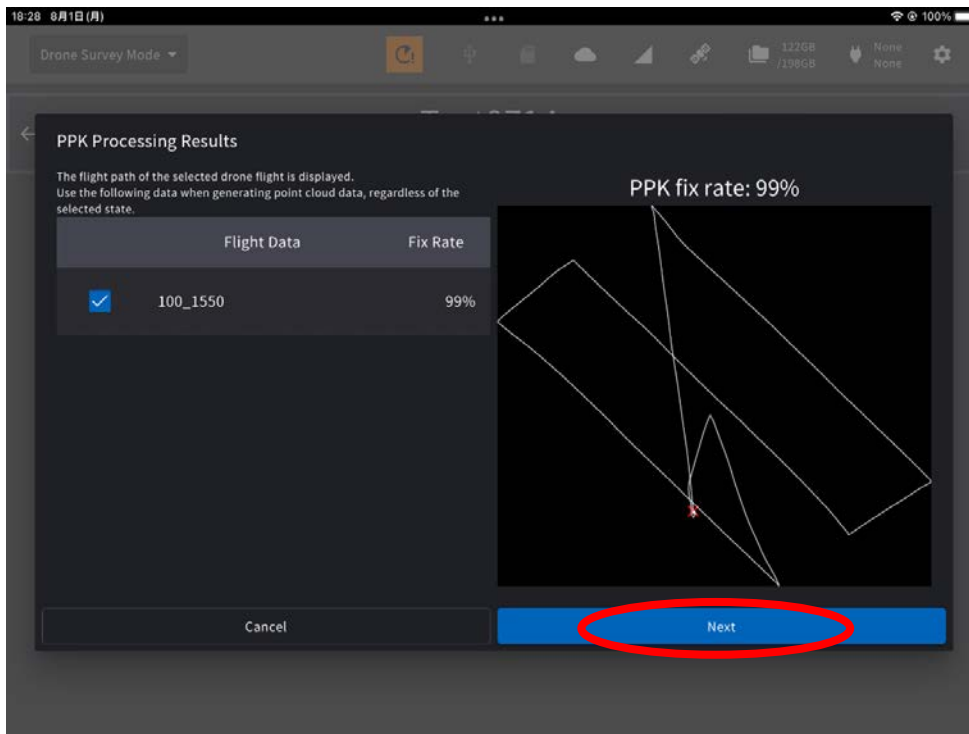
		Point cloud + ortho + Unnecessary object Removal point cloud	Point Cloud + Ortho	Point cloud+ Unnecessary object Removal point cloud	Point clouds only
Ultra-high density	280p/m2	5 ha	5 ha	10 ha	10 ha
High-density	100p/m2	15 ha	15 ha	30 ha	30 ha
Standard density	16p/m2	50 ha	50 ha	50 ha	50 ha

Ortho and DEM image generation:

Generate ortho (sky photo) and DEM (Digital Elevation Model).

**Tips**  
 If you do not turn on ortho generation, you will not be able to output an image showing the verification point positions on the ortho, which is the 3D accuracy check report material.

7. A dialog showing the PPK Fix rate will appear, check the rate and press "Next".



**Tips**  
 A low PPK Fix rate may affect the accuracy of the resulting point cloud. At the point where the red × mark on the drone flight route has a worse acquisition of the drone location. Please confirm and fly again if necessary.

8. The point cloud viewer screen shows up and the point cloud generation process starts. During this process, it is possible to switch to another window and perform the other work. You can check the generated point cloud by selecting it from the list on the project top screen.

**Tips**

To generate a Digital Elevation Model (DEM), both the Unwanted Object Analysis and Ortho Image Generation settings must be both ON.

**WARNING**

If you turn off SMART CONSTRUCTION Edge during the processes below, the data could be corrupted, or the system doesn't work properly any more.

Please turn off after these processes are done.

- Point cloud generation
- PPK logging
- Point cloud uploading
- Data exporting

### (h) When we use GCPs to improve the accuracy

You can create more accurate point clouds using GCP in conjunction with PPK. Please prepare the drone image with GCPs and coordinate information of GCP.

1. Select "Use PPK and GCP" in step 4 (p.38) of "Generating Point Clouds".

Point Cloud Generation

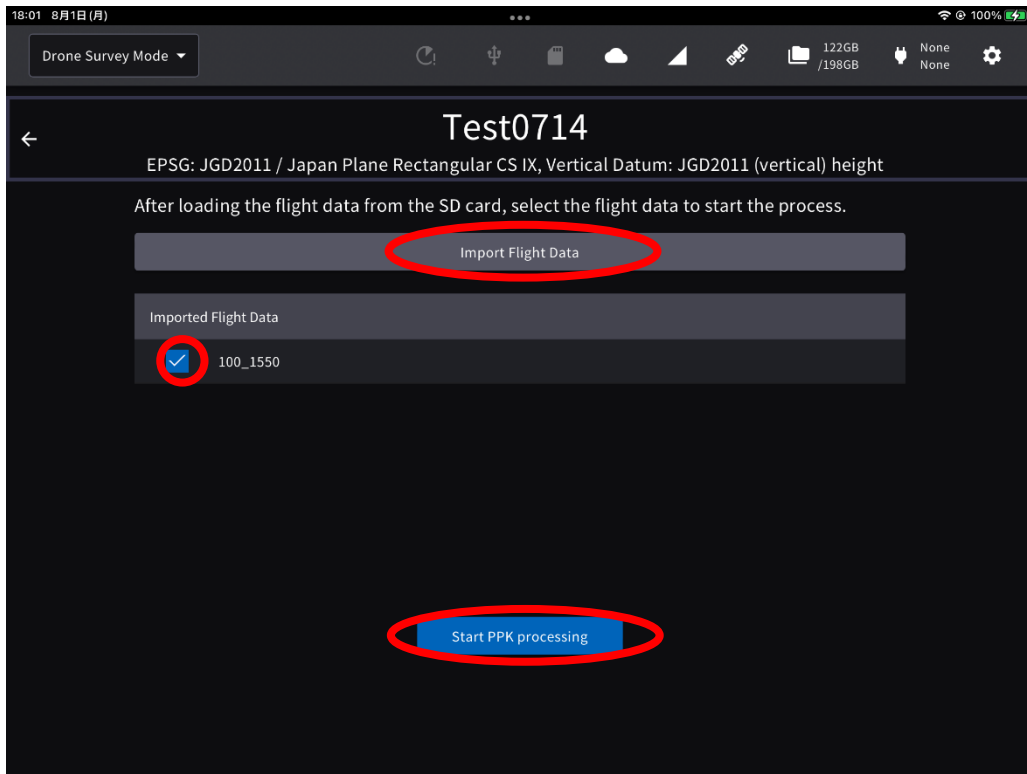
Point Cloud Name: Point Cloud 2023-8-11

Generation Method:

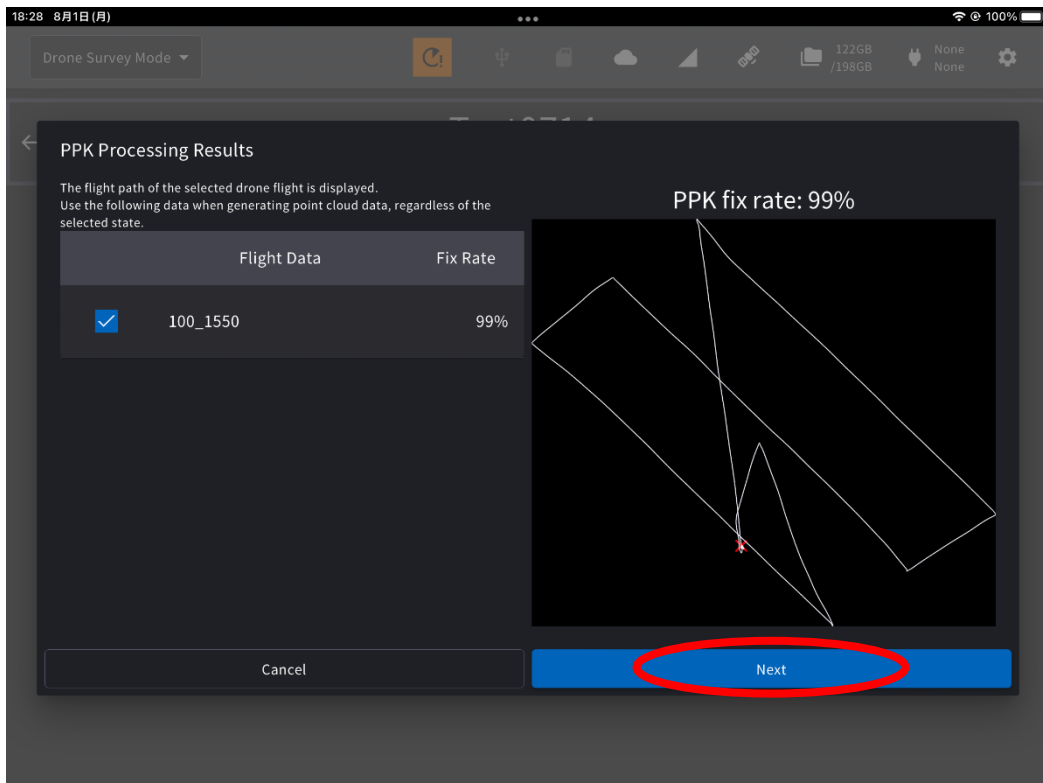
- Use PPK only
- Use RTK flight data
- Use GCP

Buttons: Cancel, Next

2. Tap the "Import Flight Data" button and select the drone data to upload to the EdgeBox from the displayed dialog.



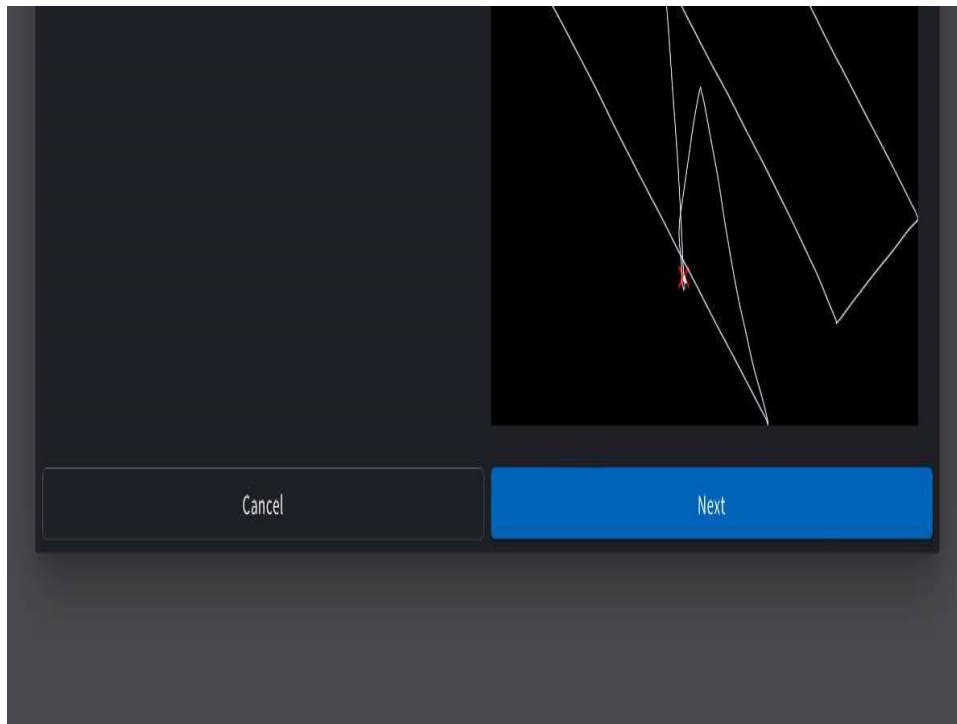
3. The imported data will be listed. You can also select and multiple imported data.
4. Check the flight data to generate point cloud from the imported data list and tap "PPK processing start" button.
5. A dialog showing the PPK Fix rate will appear, check the rate and press "Next"



Tips

A low PPK Fix rate may affect the accuracy of the resulting point cloud. At the point where the red × mark on the drone flight route has a worse acquisition of the drone location. Please confirm and fly again if necessary.

6. Check the flight data to generate point cloud from the imported data list and tap " Start PPK processing" button.



We will show the details of the setting items from next page.

7. ※If you tap "Conditions which was able to generate point cloud" The number of photos loaded and the maximum number of photos processed at each density can be checked.

Conditions which was able to generate point cloud.

If the number of photos of flight data exceeds the maximum photo number, it cannot generate the point cloud.

Point Cloud 2024-5-11 \* In case if GSD: 1.0cm

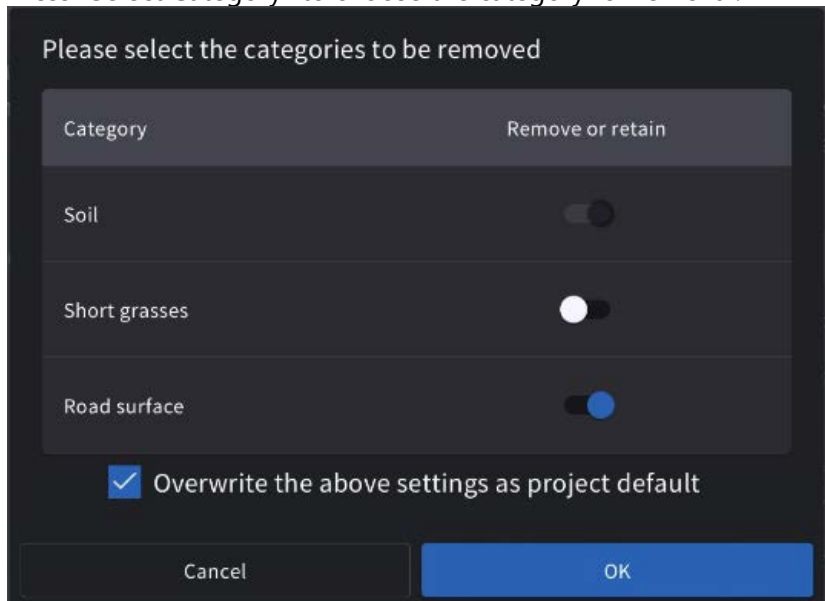
Number of photos		Max. photo numbers		
449		Point Cloud Density	Ortho photo · DEM ON	Ortho photo · DEM OFF
Calculation setting	Standard density	Standard: 16points/m <sup>2</sup> (64,750points/ac)	5000	5000
Ortho photo · DEM	OFF	High: 100points/m <sup>2</sup> (404,696points/ac)	1500	3000
		Extreme High: 280points/m <sup>2</sup> (1,133,120points/ac)	500	1000

Close

**Unnecessary object removal:**

When you toggle ON, it removes unnecessary objects, such as buildings and vehicles, that are not needed for soil volume calculations.

Press "Select Category" to choose the category for removal.



"Short grasses" can remove/retain all vegetation (distinguish short grasses from v4), and "Road Surface" can remove/retain road surfaces, including concrete.

**Point Cloud Density : Adjusts the density of the point cloud.**

**Tips**  
3 D accuracy check requires Ultra high density. There' s area size limitation with this setting.

level	density	Maximum processing area			
		Point cloud + ortho +Unnecessary object Removal point cloud	Point Cloud + Ortho	Point cloud+ Unnecessary object Removal point cloud	Point clouds only
Ultra-high density	280p/m2	5 ha	5 ha	10 ha	10 ha
High-density	100p/m2	15 ha	15 ha	30 ha	30 ha
Standard density	16p/m2	50 ha	50 ha	50 ha	50 ha

**Ortho and DEM image generation:**

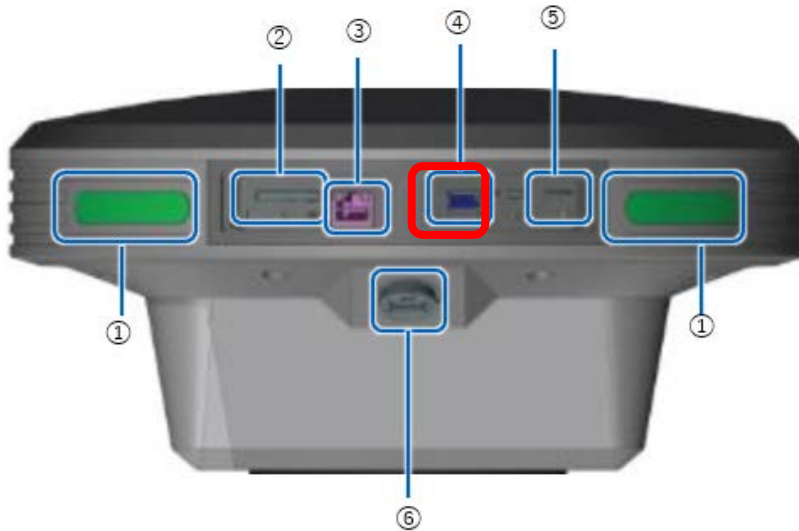
Generate Orthophoto & DEM (Digital Elevation Models).

#### Tips

If you do not turn on ortho generation, you will not be able to output an image showing the verification point positions on the ortho, which is the 3D accuracy check report material.

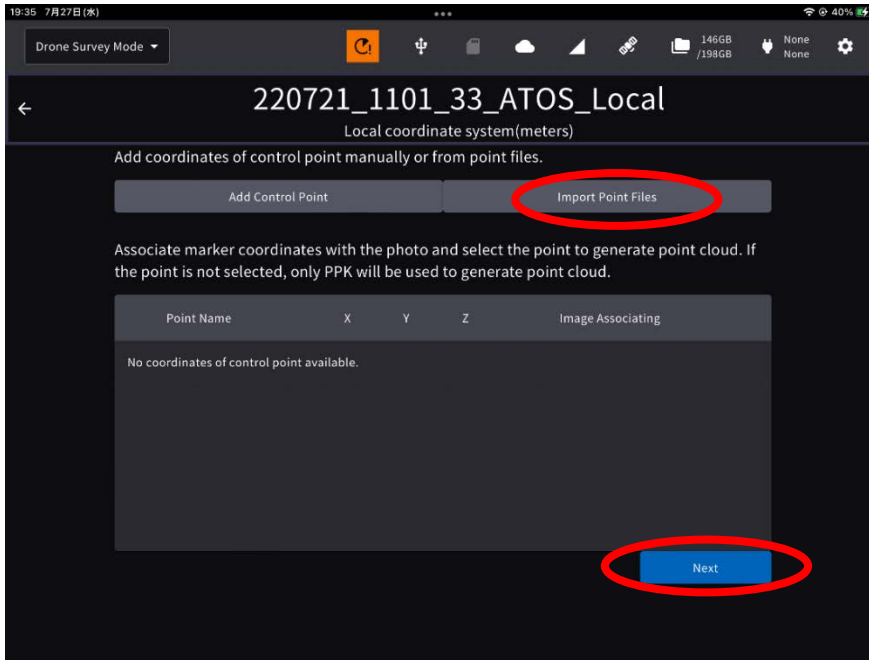
8. Insert the USB memory with GCP coordinates file (.csv) in the USB slot of SMART CONSTRUCTION Edge. Please refer the file format.

Insert the USB memory into the USB slot (inside the waterproof lid) ④ of the EdgeBox




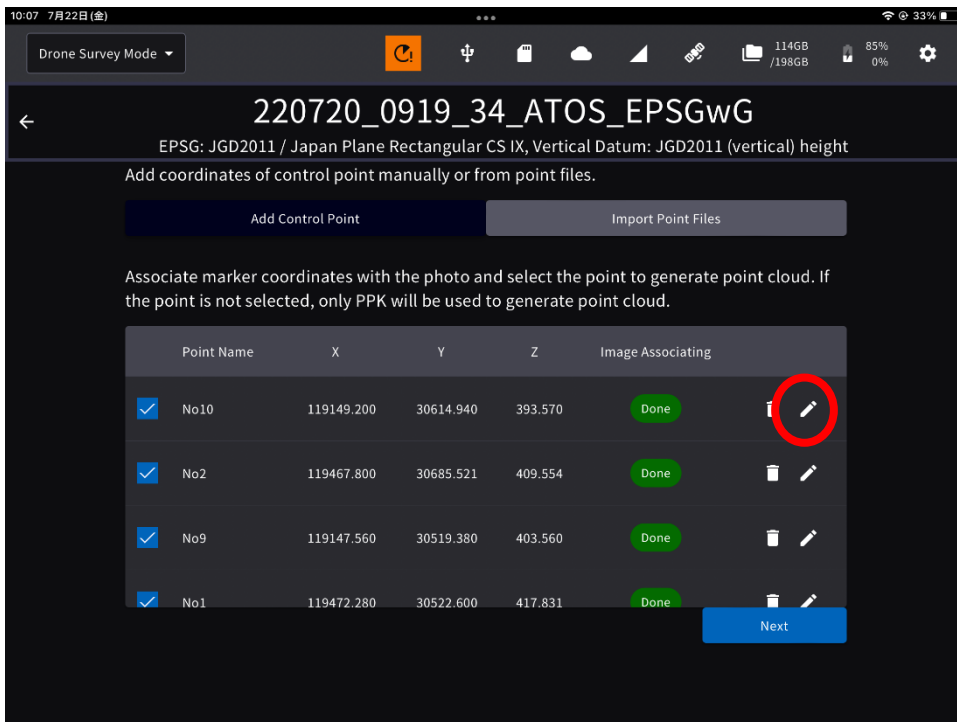
- ⑬ Status LED
- ⑭ SD card slot
- ⑮ Ether cable port
- ⑯ USB slot (USB3.0)
- ⑰ SIM card slot
- ⑱ Water-proof USB slot (USB2.0) : cannot use this slot for USB memory

9. Tap the "Import Point File" button and specify a CSV file from displayed dialog, which containing coordinates of GCP. You may select "Add Control Point" if you manually add a control point.

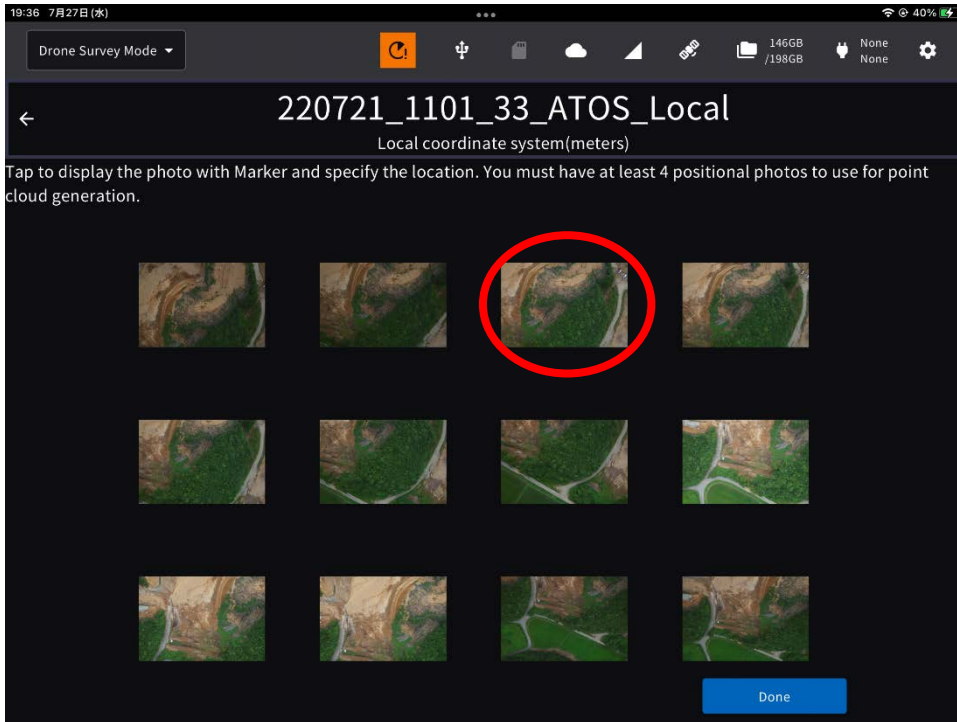


10. Set the file format parameter according to the file and tap “OK”.

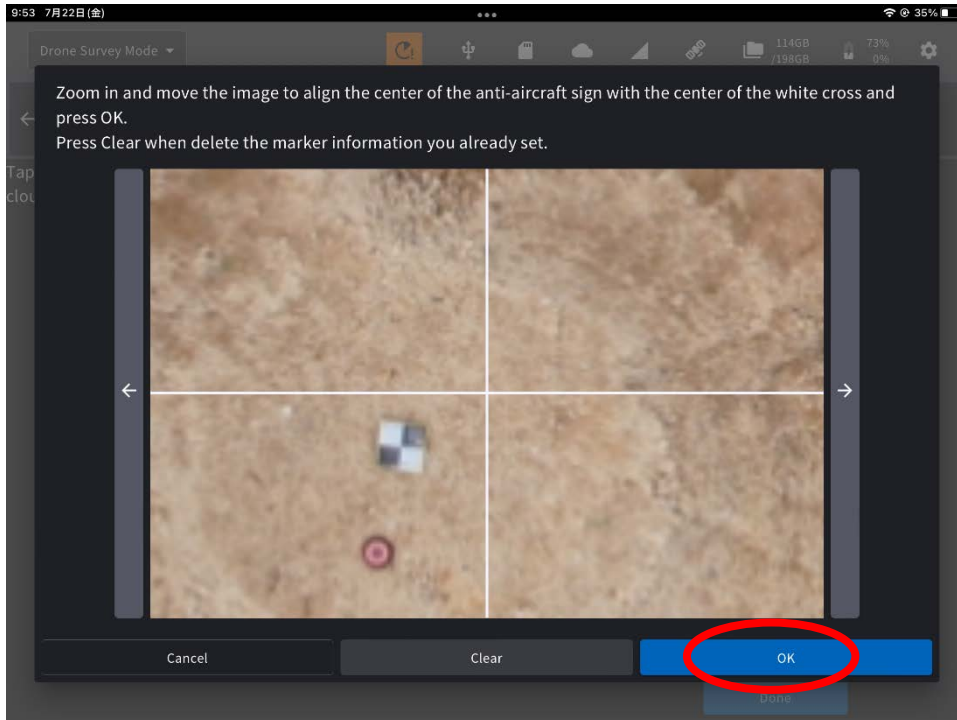
11. Tap edit button  of each GCP to display a thumbnail of the image that may have the selected GCP in the image.



12. Tap the thumbnail of the image, align the center of the cross mark to the center of GCP in the image, and tap "OK"



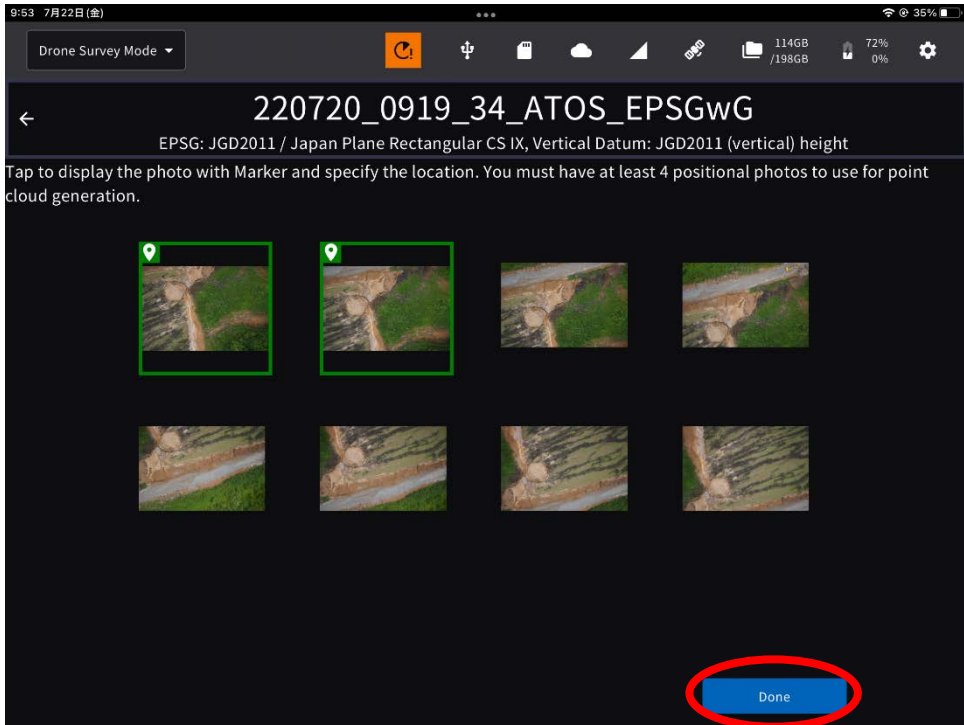
You can zoom in and out by pinching in and out, move the displayed portion by swiping.



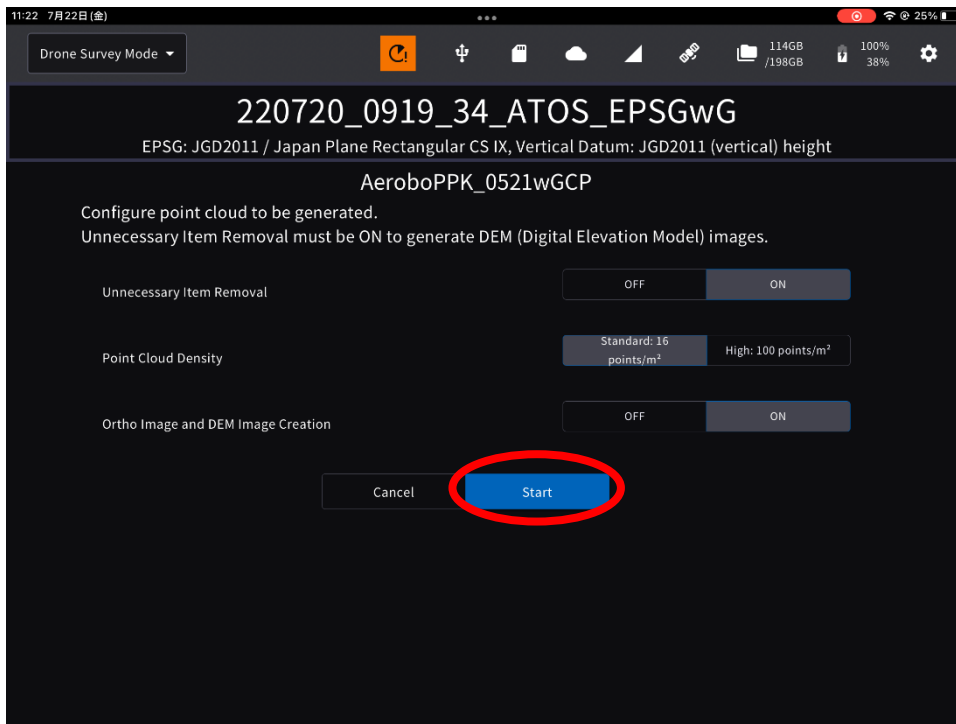
More than four images are required to align a GCP.

At least more than 1 GCP must be selected and aligned like this. If you proceed without selecting a GCP, point cloud is generated only with PPK.

- When you finish matching the coordinates of the GCP (at least 4 of them) with the image center, tap the "Done" button.



14. Set the parameters of point cloud generation and tap the “Start” button.



15. The point cloud viewer screen shows up and the point cloud generation process starts. During this process, it is possible to switch to another window and perform the other work. You can check the generated point cloud by selecting it from the list on the project top screen.

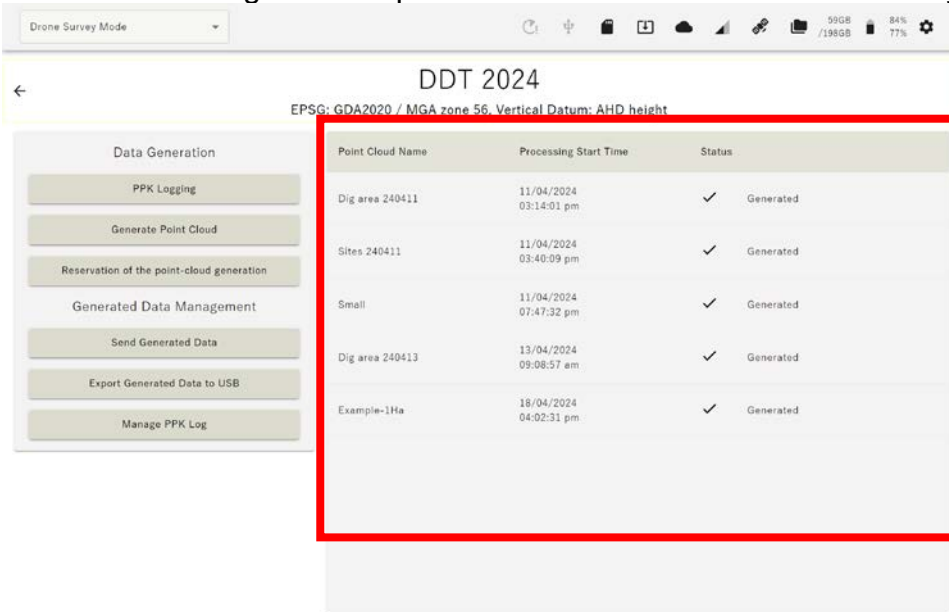
#### Tips

To generate a Digital Elevation Model (DEM), both the Unwanted Object Analysis and Ortho Image Generation settings must be both ON.

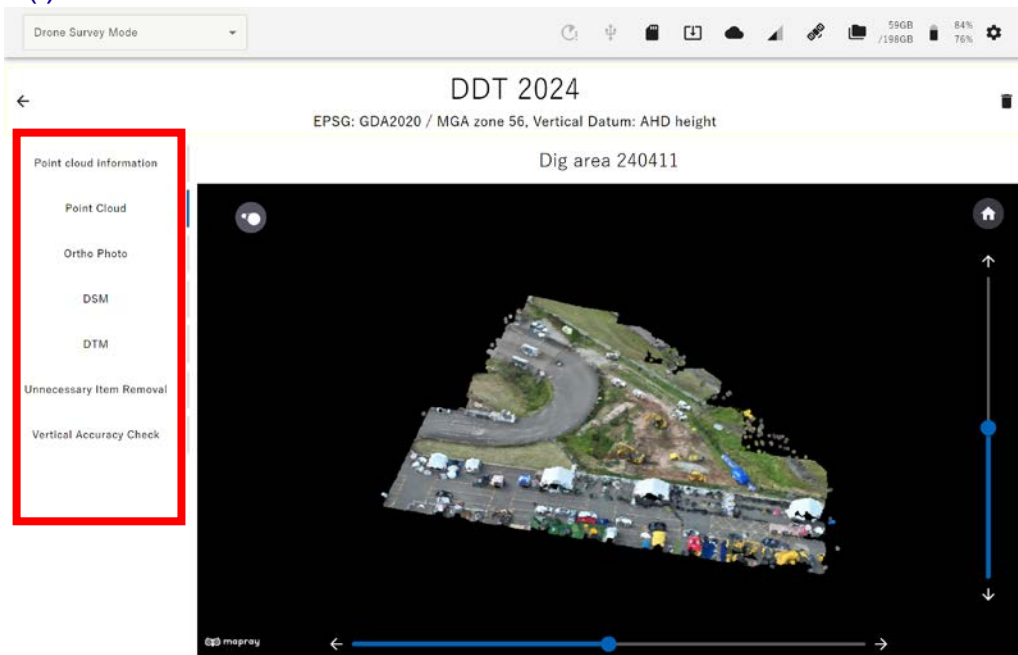
## View the generated point cloud

The right pane of the project top screen displays a list of point clouds and detailed information.

You can see the generated point cloud in the Point Cloud Viewer by tapping the list.



### (i) Point Cloud Viewer Screen Part Names




Point Cloud information: Information about the point cloud

Point LCloud: Displays the generated point cloud

Ortho Image: Displayed only when the Ortho image option and DEM image option was "ON" upon the point group generation. Select to display the ortho image.

DSM/DTM: Displayed only when the Ortho image option, DEM image option and Unwanted Object analysis was "ON" upon the point group generation.

Vertical Accuracy Check: Enables you to verify the accuracy of the generated point cloud.

Unwanted Object Removal: Only displayed when Unwanted Object Removal was "ON" upon point cloud generation. If this was selected, displays a point cloud with the Unwanted Object Removal filter applied. You can also change the strength of the filter by tapping the icon .


The point cloud displayed in the Viewer area can be

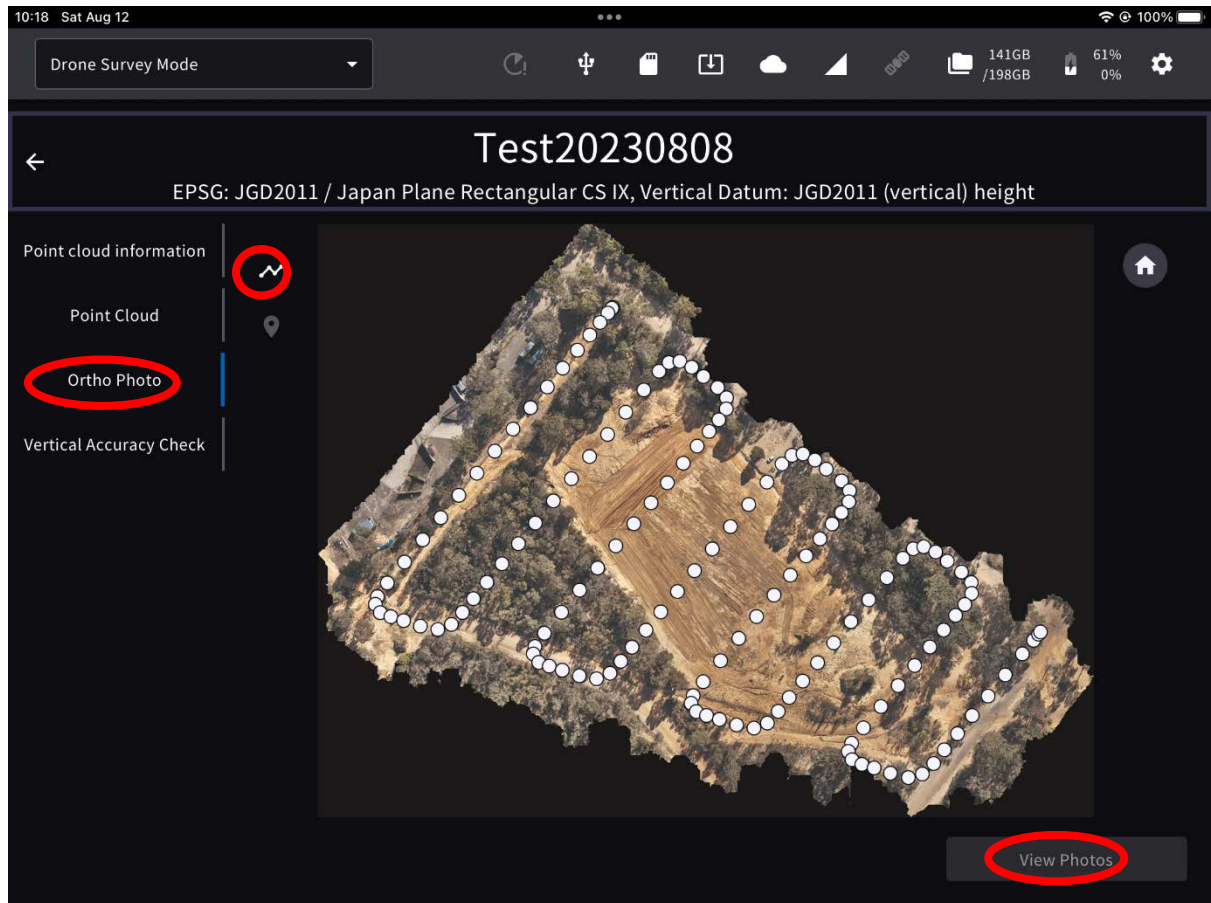
- Shrink/Enlarge: Pinch in/out


Vertical/Horizontal Rotation: The slider in the Viewer Area is displayed vertically and horizontally. You can also use the arrow buttons to fine-tune.

- Reset: Tap the icon  to reset the Viewer Area operation to the initial conditions

### (j) Drone Flight Path Display (only when ortho image was generated)

1. Tap "Ortho Image" in the Point Cloud Viewer screen
2. Tap the icon  in the upper left corner of the viewer.




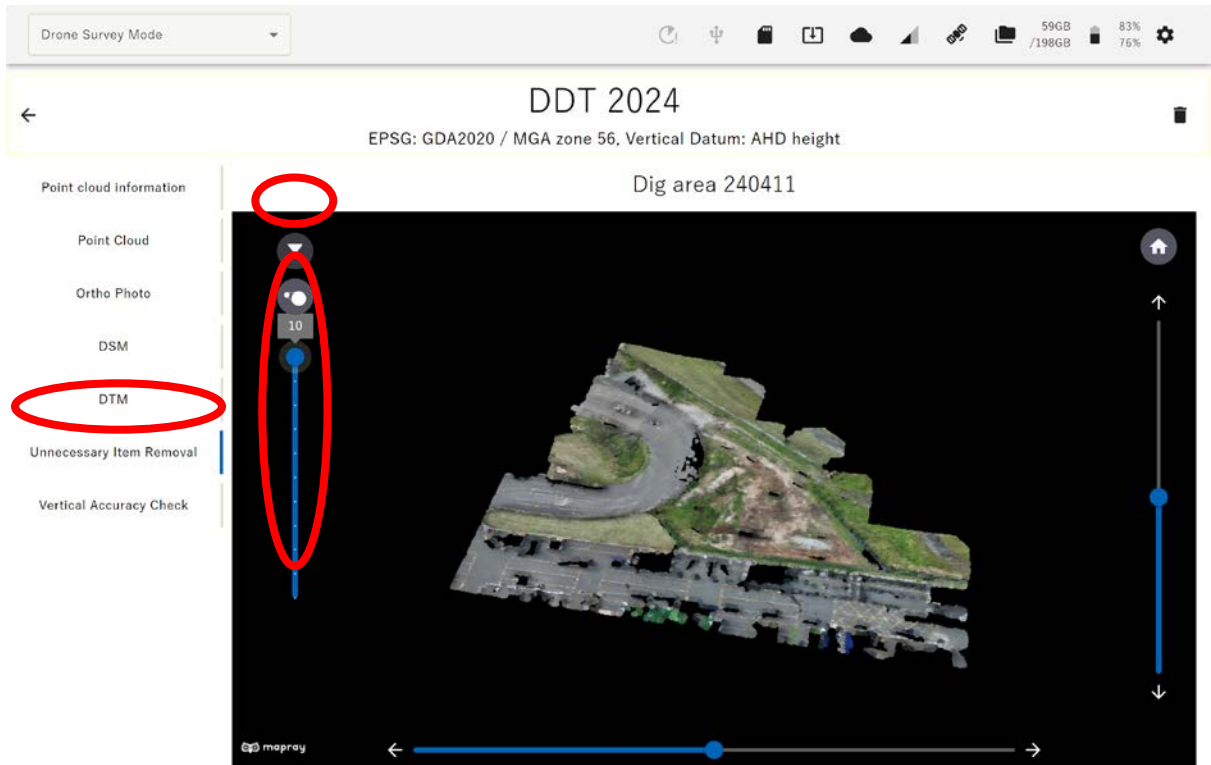
Displays the flight path of the drone. Tap , then tap the "View Photo" button to show the image taken at that point.

### (k) UNWANTED Object REMOVAL from the Point Cloud

EdgeBox's Unwanted Object Removal feature uses a proprietary algorithm to calculate the "Unwanted Object Likelihood" score, and you can change the filtering strength.

(i) To change the strength of point cloud junk removal

1. Tap “Unnecessary object Removal” in the Point Cloud Viewer screen.
2. Tap the icon  in the upper left corner of the viewer and use the slider to adjust the strength of the unwanted object removal. 1 – 10, 10 being the strongest. Pay attention to how much is removed, you may have to use <10 .



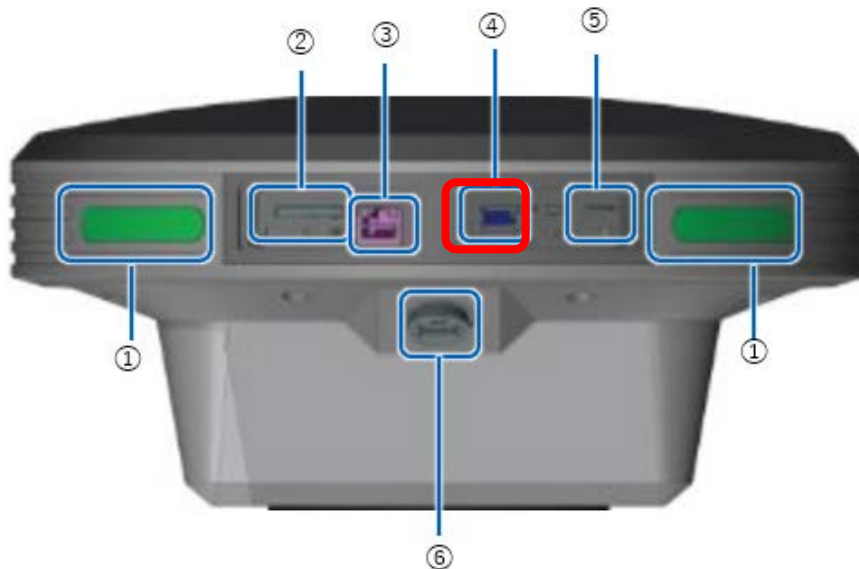
## (I) Point Cloud Accuracy Validation

To verify the accuracy of a point cloud, you need coordinates of the points you want to verify.

Place the CSV file which contains coordinates of check points included in the measurement area directly under the root folder of the USB memory in advance. Please refer to CSV format.

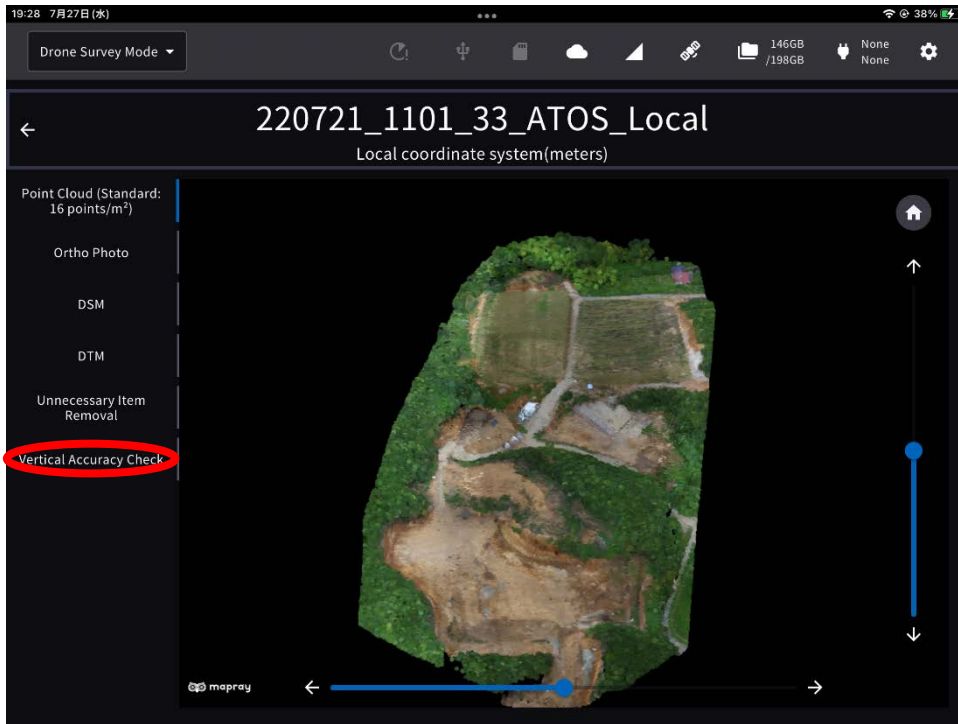
### 1. Insert USB memory into USB slot ④ on EdgeBox

Insert the USB memory into the USB3.0 port in the waterproof lid. The USB2.0 port outside the waterproof cover is for communication with the radio and cannot use for USB memory.

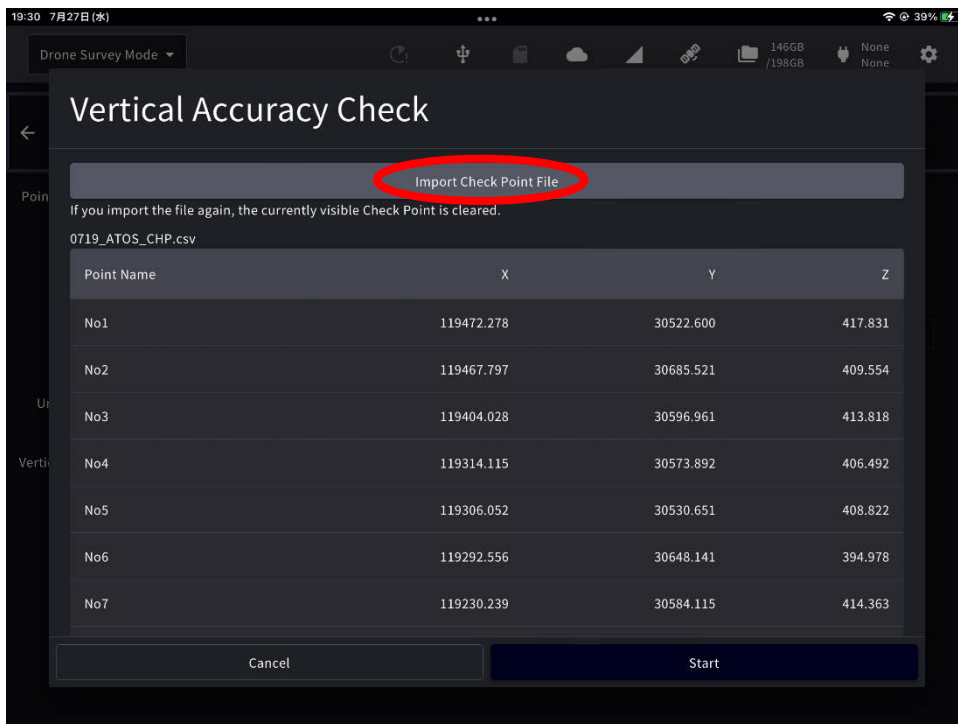


- ① Status LED
- ② SD card slot
- ③ Ether cable port
- ④ USB slot (USB3.0)
- ⑤ SIM card slot
- ⑥ Water-proof USB slot (USB2.0) : cannot use this slot for USB memory.

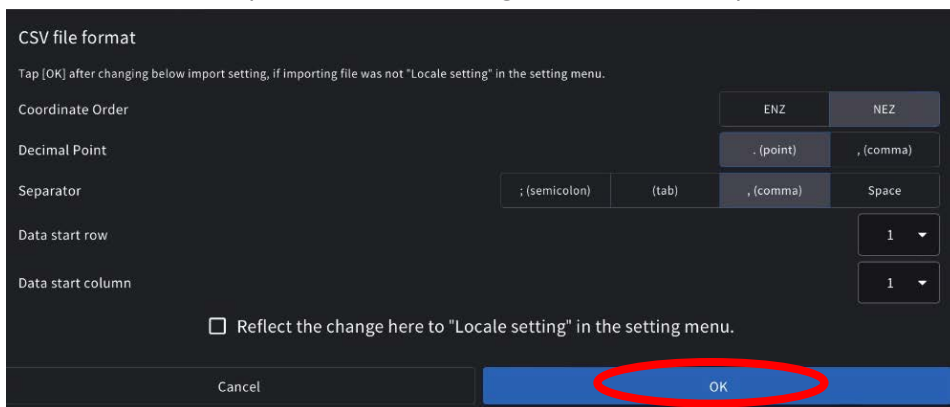
2. Tap “Vertical Accuracy Check” in the Point Cloud Viewer screen.



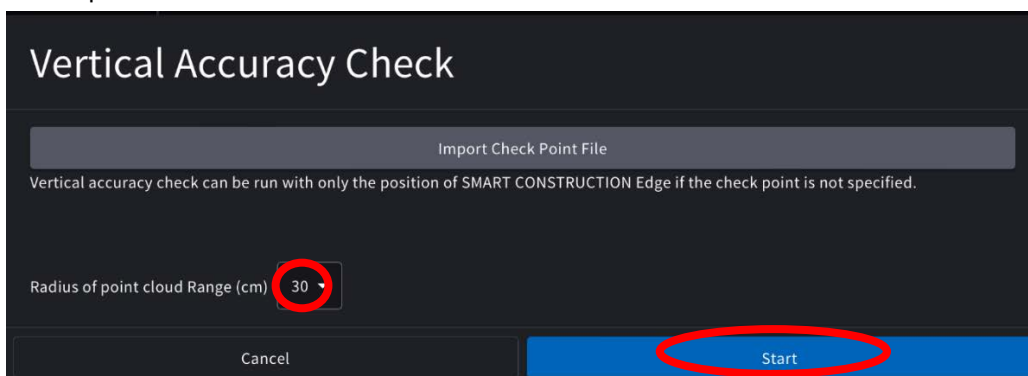
3. Tap the “Import check point file” button and select the check point coordinate file to use for validation in the dialog that appears.



- Set the file format parameter according to the file and tap “OK”.

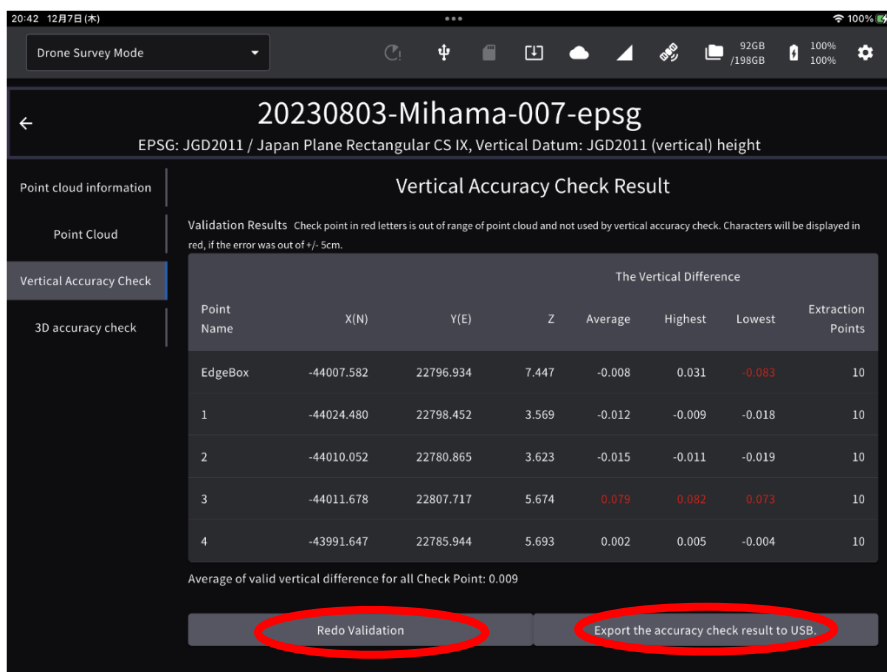


- Specify a range of point cloud around the check points to use for vertical accuracy check and tap “Start”.



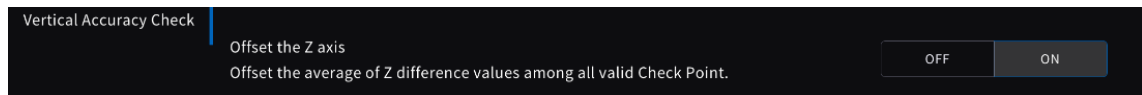
The results shown in the screen.

Red character shows the out of tolerance. (+/-5cm)



You can redo or export the result to USB.

6. You can also correct (offset) the error in the Z axis. To offset the Z axis, turn on Error Correction in Z Axis.



Offset settings are applied when the generated point cloud is exported to the outside.

7. Additionally you can manually set a vertical offset to be applied by using the “Vertical offset by any value” function.

Average of valid vertical difference for all Check Point: 0.000  
Offset (meters): 0.000



#### Important!


Validation cannot be performed if all check points are outside the point cloud range. Also, the error correction function in the Z-axis direction is not available when the validation is not performed.

#### Tips

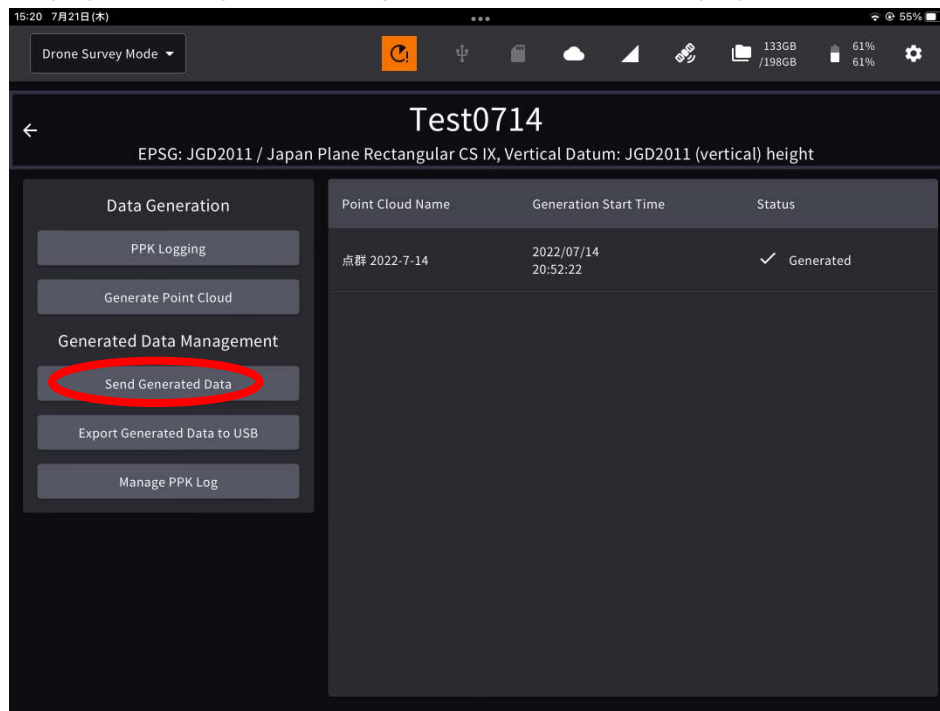
Once you have verified it, you can reload it by reading the CSV again. When you revalidate, the validation results and the Z offset value are updated based on the most recent results.

# Sending Point Clouds to a SMART CONSTRUCTION Dashboard

Before sending to the SMART CONSTRUCTION Dashboard, set the destination from the settings screen.


1. Launch the tablet app  and select the project which contains the point cloud you want to send to the SMART CONSTRUCTION dashboard.
2. Tap “Upload Generated Data”.

Displays a list of point clouds generated in the selected project.



3. Tap the check box of the point cloud to send.  
You can also select multiple point clouds.
4. Select the destination and tap “Send”.  
The SMART CONSTRUCTION dashboard work site list appears.  
If you can't find the right destination, check your account logging in.

### Tips

You can check the status of your message after it has been sent by tapping the  icon on the status bar. You can also check the progress and cancel the submission on this screen.

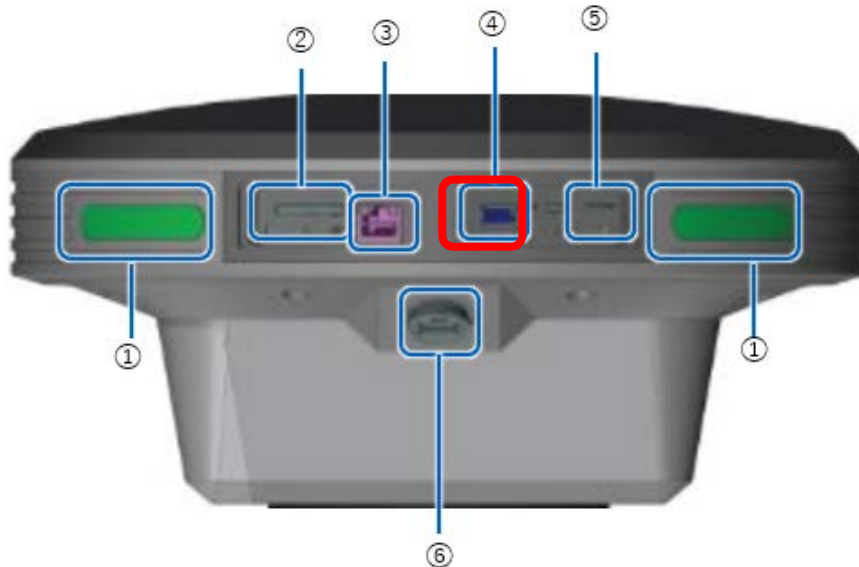
## Exporting Data

### (m)EXPORT GNSS logs to USB memory

To perform PPK on other systems, etc., you will need to export the GNSS log from EdgeBox.

#### 1. Insert USB memory into EdgeBox

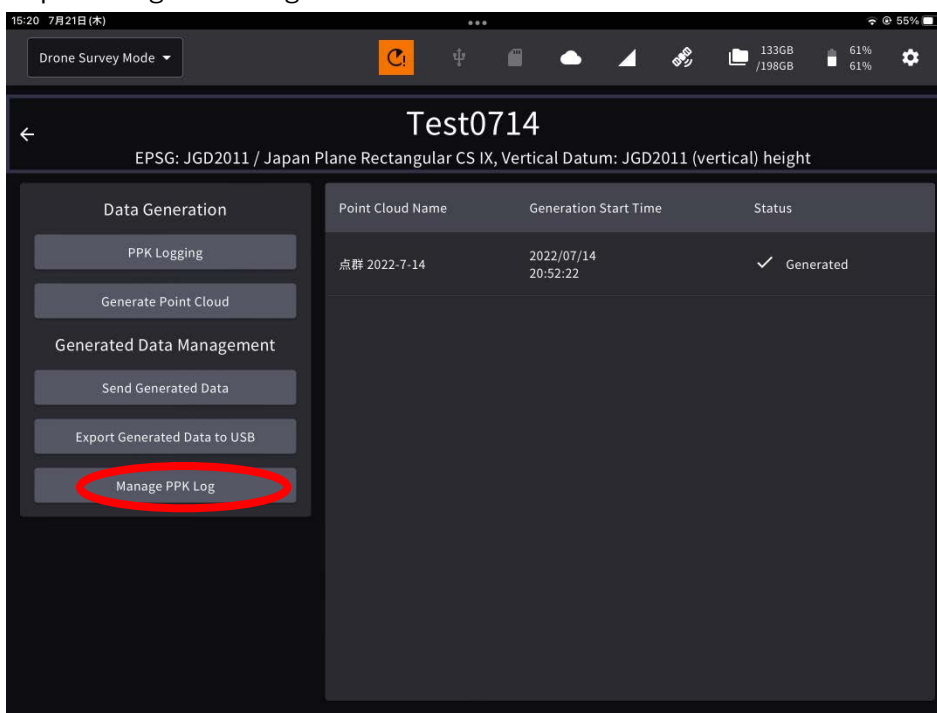
Insert the USB memory into the USB3.0 port in the waterproof lid. The USB2.0 port outside the waterproof cover is for communication with the radio and cannot use for USB memory.



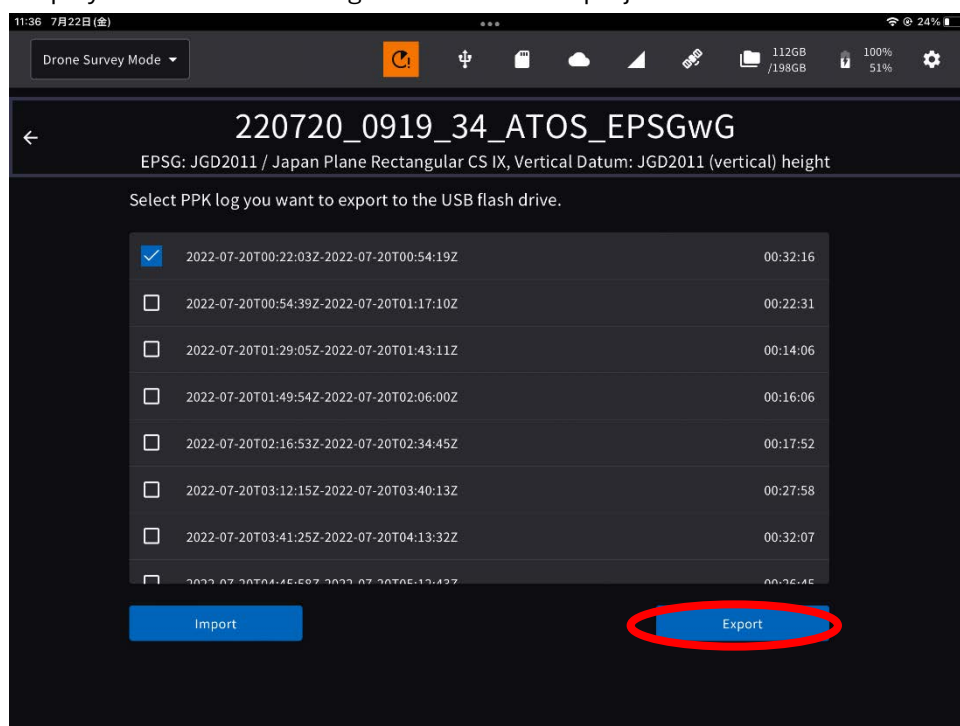
- ⑦ Status LED
- ⑧ SD card slot
- ⑨ Ether cable port
- ⑩ USB slot (USB3.0)
- ⑪ SIM card slot
- ⑫ Water-proof USB slot (USB2.0) : cannot use this slot for USB memory

#### 2. Launch the tablet app and select the project from which you want to export GNSS logs to USB memory

3. Tap “Manage PPK Log”



4. Displays the list of GNSS logs for the selected project.




5. To export to USB memory, tap the check box of the GNSS log to check it, and then tap Export

You can also select multiple logs.

A dialog appears when the export is complete.

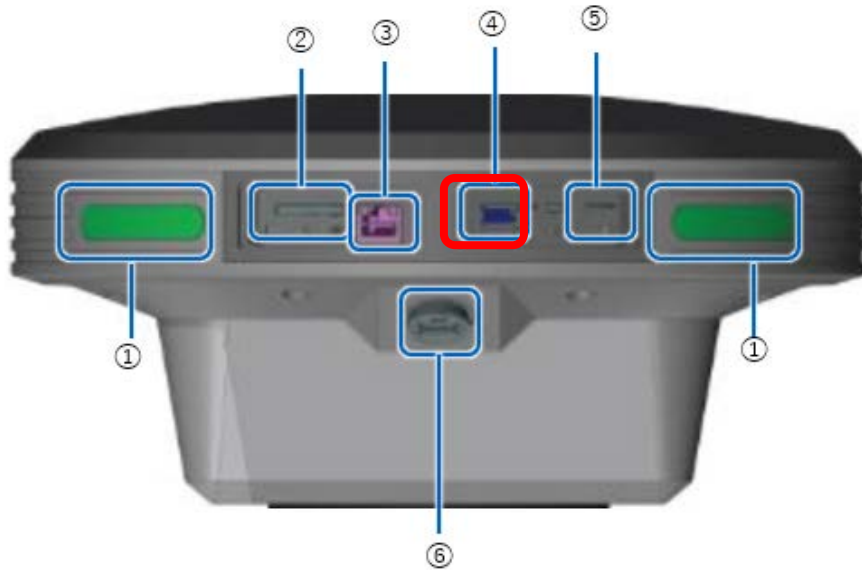
6. Remove the USB memory

Tap the USB icon  on the status bar to see the message that the USB memory can be safely removed, and then unplug the USB memory.


### (n) Exporting Point Cloud Data to USB Memory

1. Insert USB memory into EdgeBox

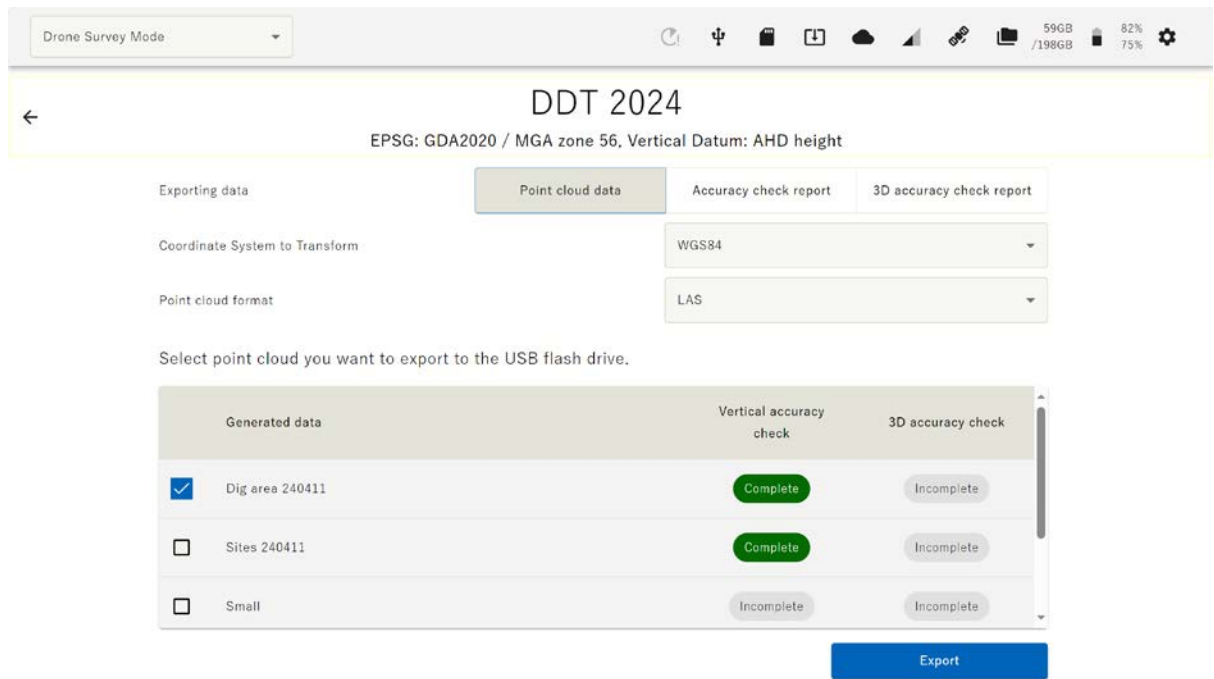
Insert the USB memory into the USB3.0 port in the waterproof lid. The USB2.0 port outside the waterproof cover is for communication with the radio and cannot use for USB memory.



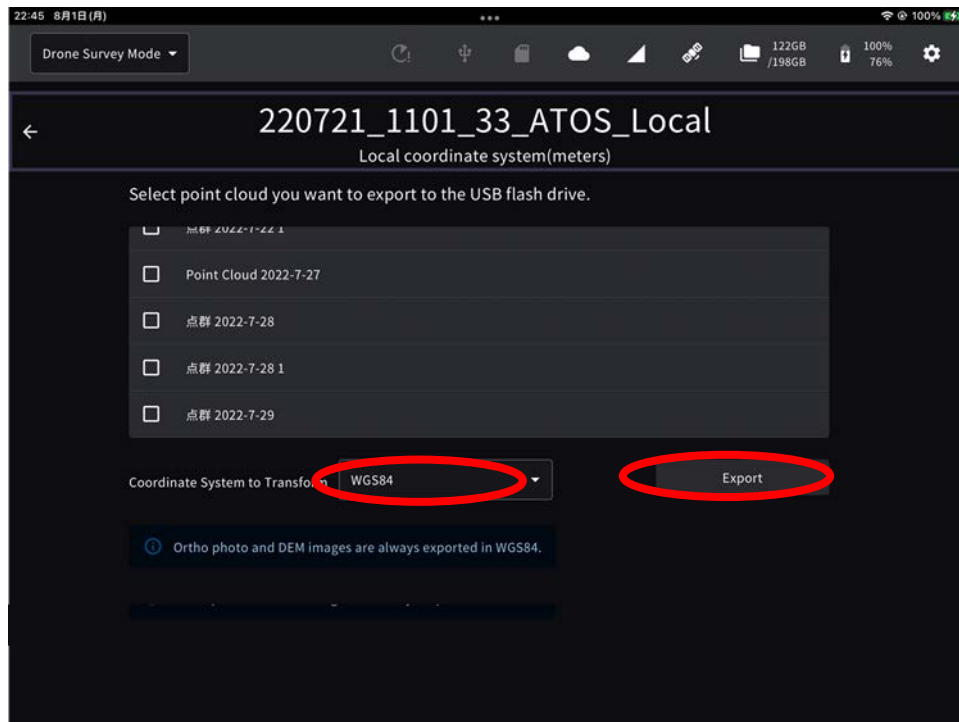
- ① Status LED
- ② SD card slot
- ③ Ether cable port
- ④ USB slot (USB3.0)
- ⑤ SIM card slot
- ⑥ Water-proof USB slot (USB2.0) : Cannot use this slot for USB memory

2. Launch the tablet app  and select the project that contains the point cloud data to export to USB memory
3. Tap “Export Generated Data to USB”

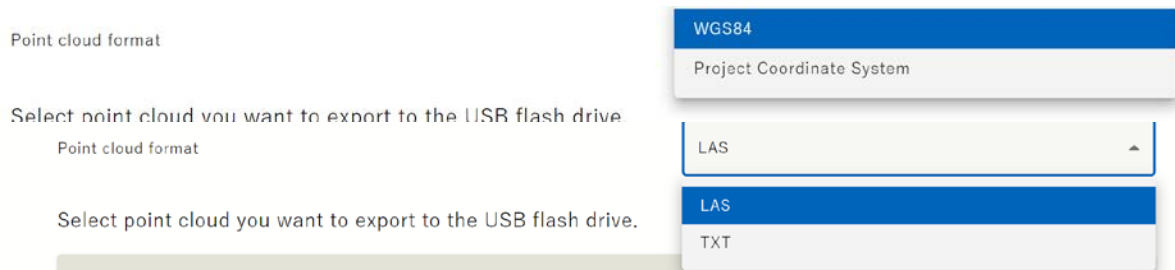
Displays a list of point clouds generated in the selected project.



4. Tap the check box of the point cloud to export to USB memory. You can also select multiple point clouds.




5. Select a point cloud coordinate system and tap “Export”. You can select local coordinate system which you have selected when you created the project, or WGS84 coordinate system. And file type “.Las or .txt”



A dialog appears when the export to the USB memory completed.

6. Remove the USB memory

Tap the USB icon  on the status bar to see the message that the USB memory can be safely removed, and then unplug the USB memory.

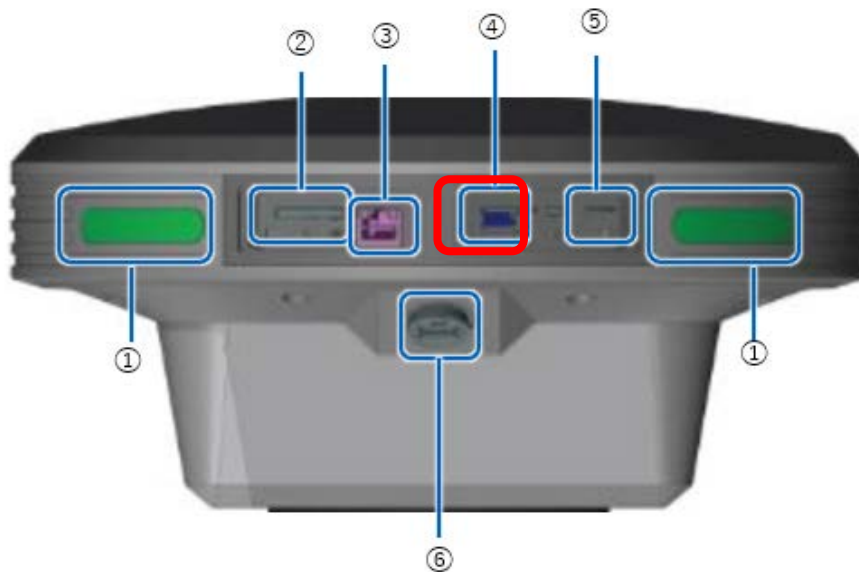
Tip: Always press the eject icon to eject the USB properly. Failure to do so may result in corrupt data or the USB becoming unusable.

## Load GNSS logs

1. You can load GNSS logs from one EdgeBox to another.

2. Insert a USB memory containing data from a EdgeBox

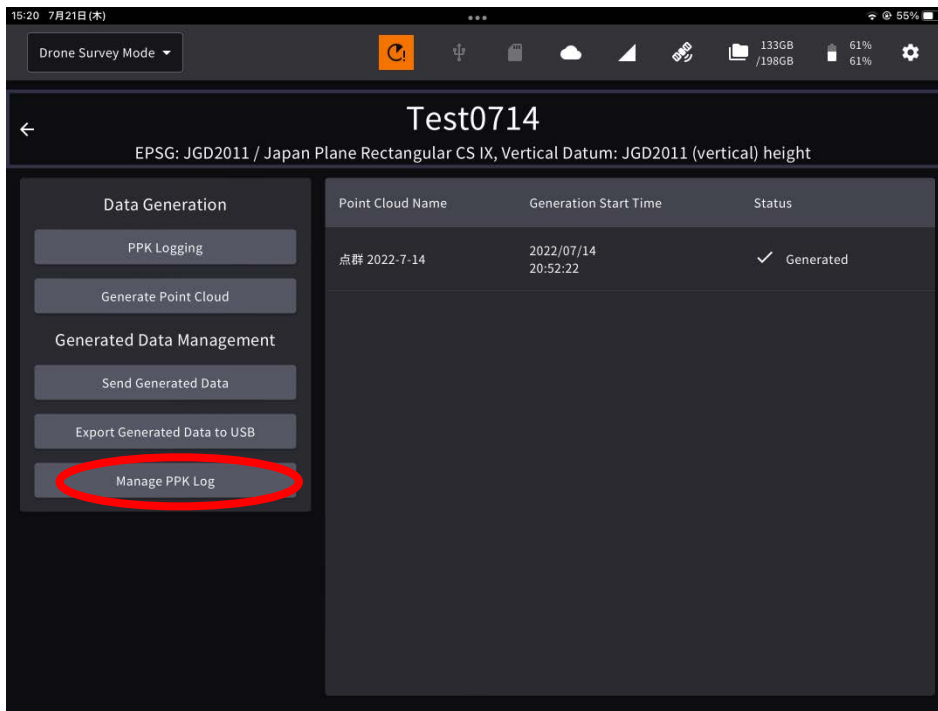
Insert the USB memory into the USB3.0 port in the waterproof lid. The USB2.0 port outside the waterproof cover is for communication with the radio and cannot use for USB memory.



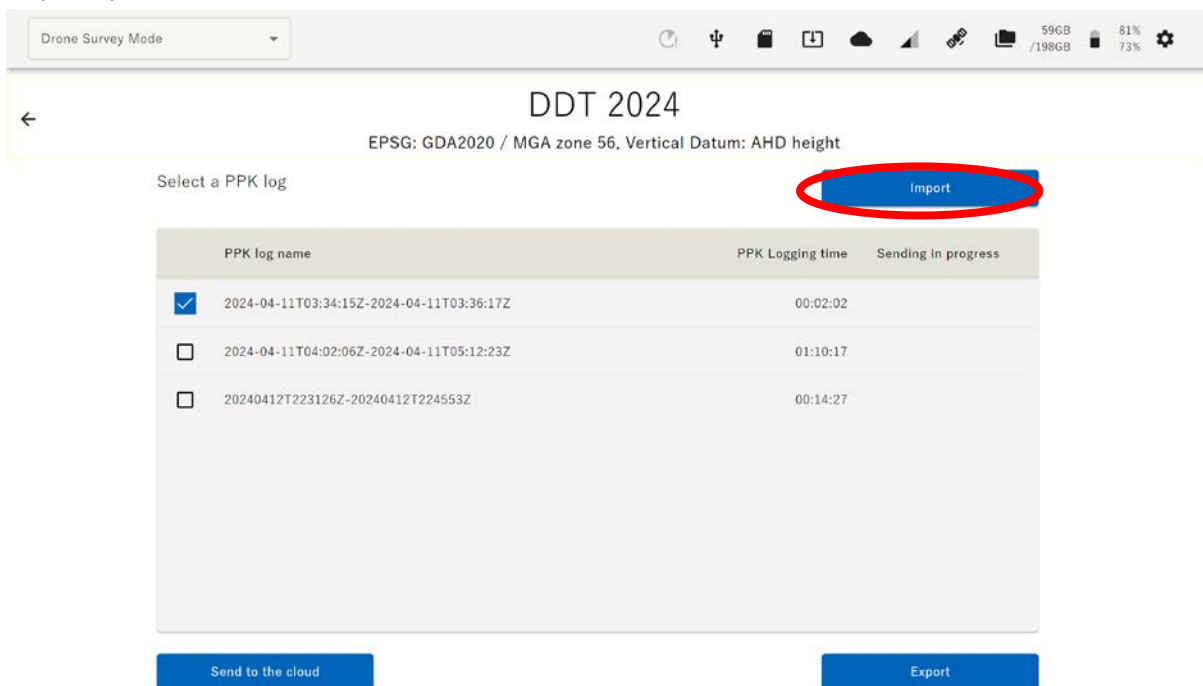
- ① Status LED
- ② SD card slot
- ③ Ether cable port
- ④ USB slot (USB3.0)
- ⑤ SIM card slot
- ⑥ Water-proof USB slot (USB2.0) : cannot use this for USB memory

3. Select a project to import logs from.

4. Tap “Manage PPK Log”

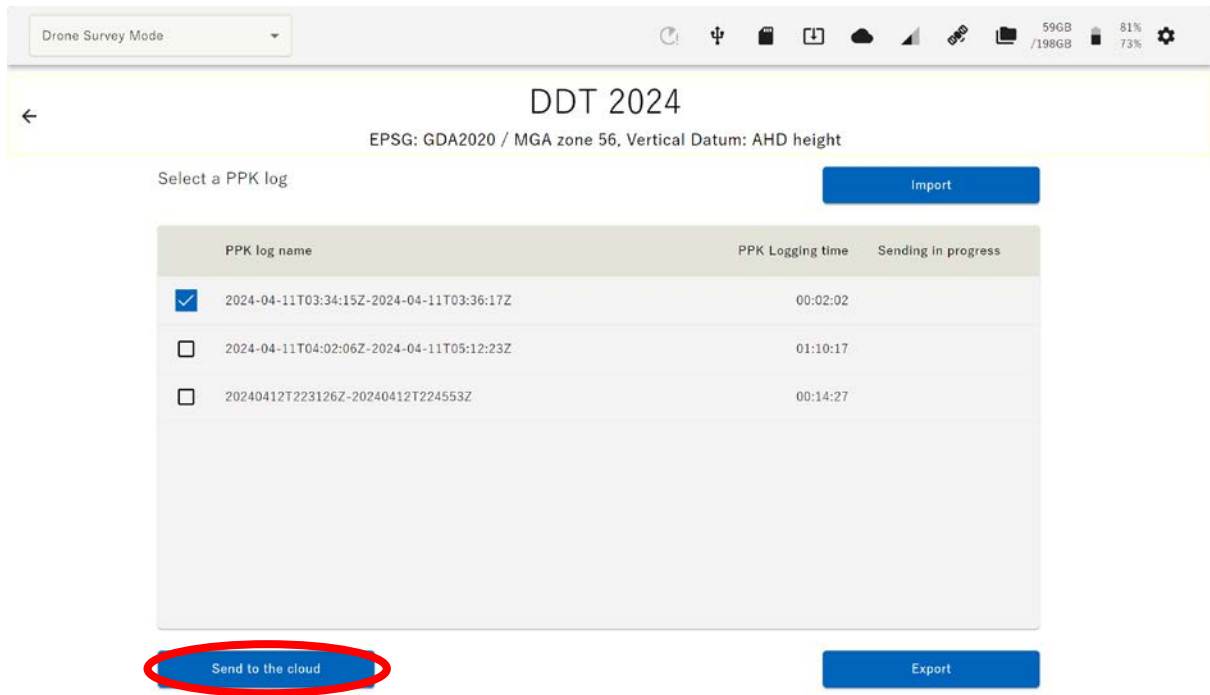


5.  
6. Tap “Import”.



7. The GNSS log in the USB memory will be loaded.

To Send GNSS logs to Smart Construction Dashboard Cloud SfM



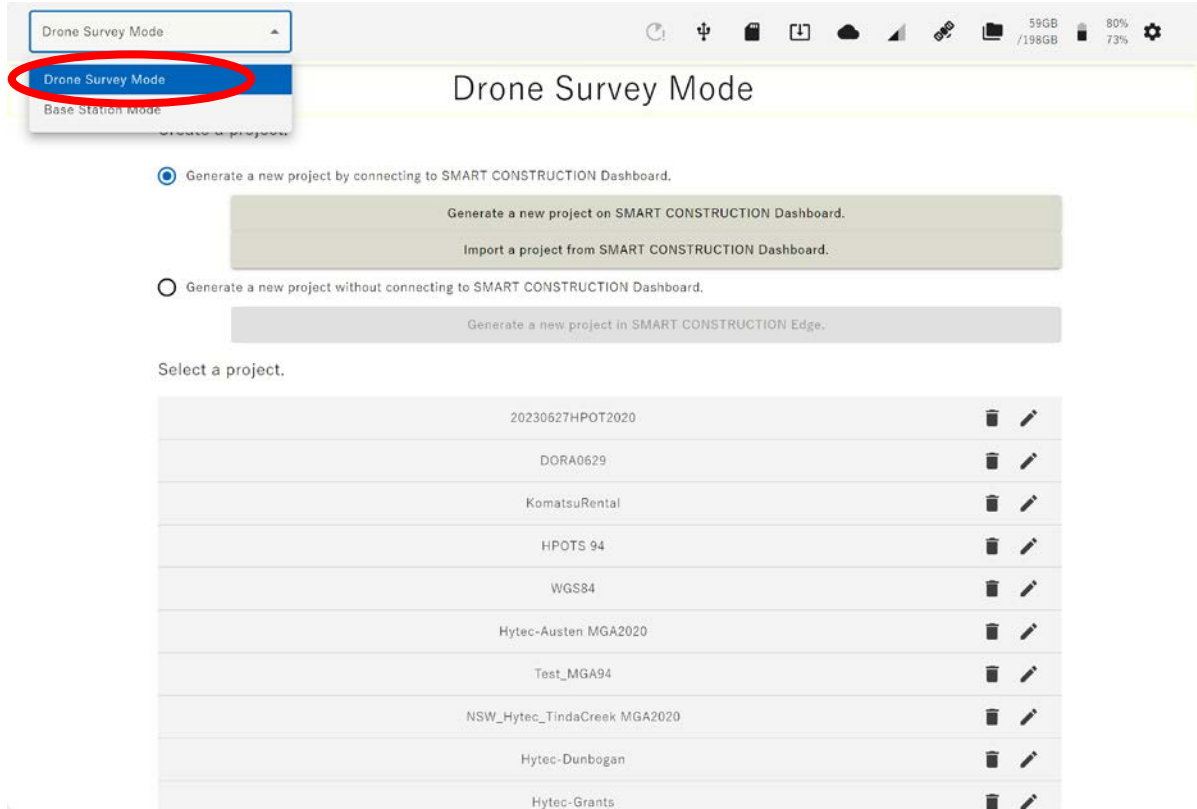
Customers who subscribe to Cloud SFM for SFM processing at large sites can use this function to upload PPK logs.

To process PPK SFM using Cloud SFM, tap the corresponding PPKLOG and then tap (Send to Cloud).

# RTK CORRECTION Data BROADCASTING FUNCTION

To Broadcast RTK compensation information, you need to switch the app to “base station mode”. Only users that has “base station mode” function activated can use this function.

Tap the drop-down list at the top left of the screen and select "RTK Correction Data Distribution".



## Tips

Once you switch the mode, it starts in the same mode even if you restart the app. If you want to change to the drone survey mode, you can switch from the drop-down list at the top left corner of the screen.

## Set the location of EdgeBox

### ⚠️ CAUTION

The main unit should place a stable, flat place.

If it was placed at unstable place, it may be dropped and cause a damage or a breakage.

### (o) Import from a CSV file

1. Align the Edge Box horizontally above the surveyed base point using the levelling device on the top of the tripod.

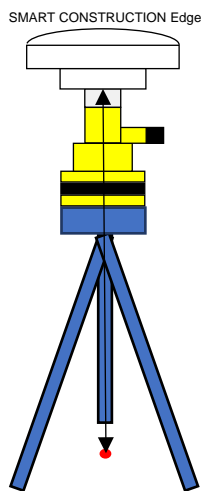



**⚠ WARNING**

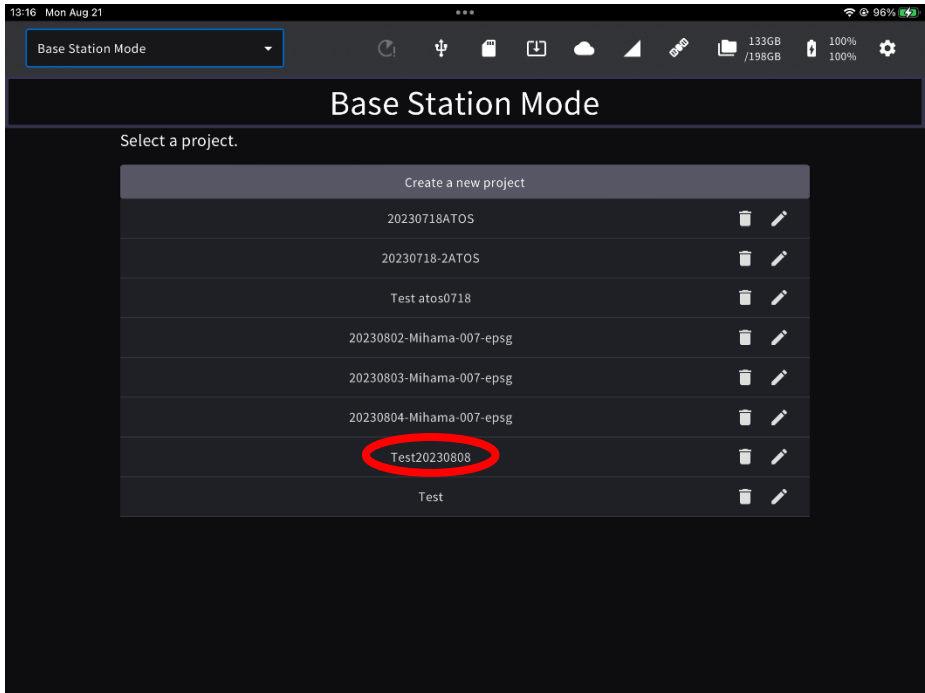
Always wear a hard hat during the work.

If you dropped the product from the top of the tripod by mistake and hit to your head, it may cause an injury.

2. Measure the height from the base point to the bottom of the EdgeBox
3. Enter this height as the “pole height”



4. Launch the tablet app  and select a project of the work site to broadcast.

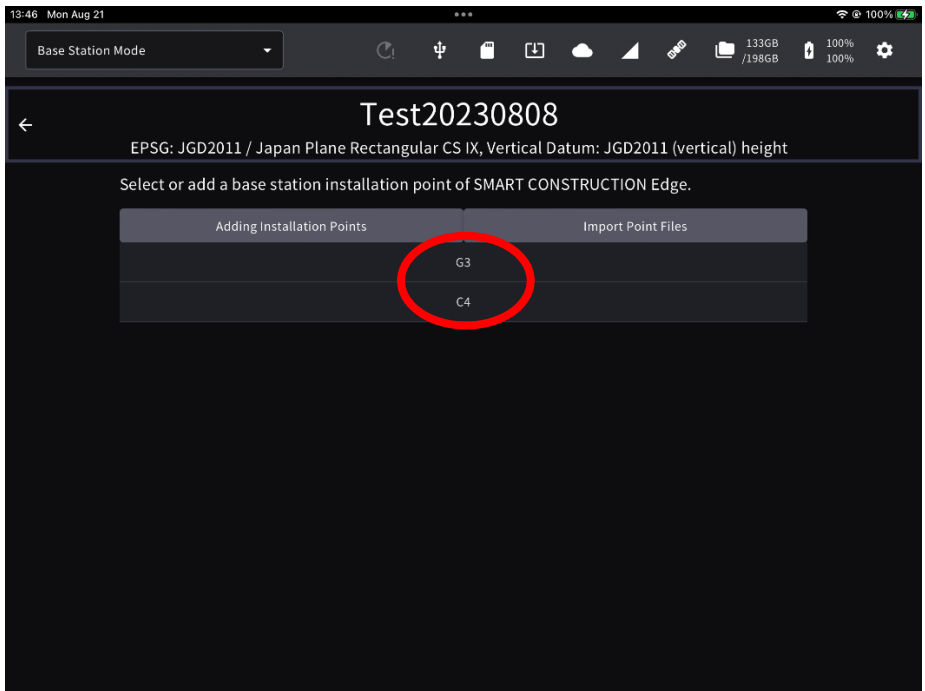


[If the project is not listed, create a new project.](#)

#### Tips

Projects and points added in the drone survey mode are also listed.

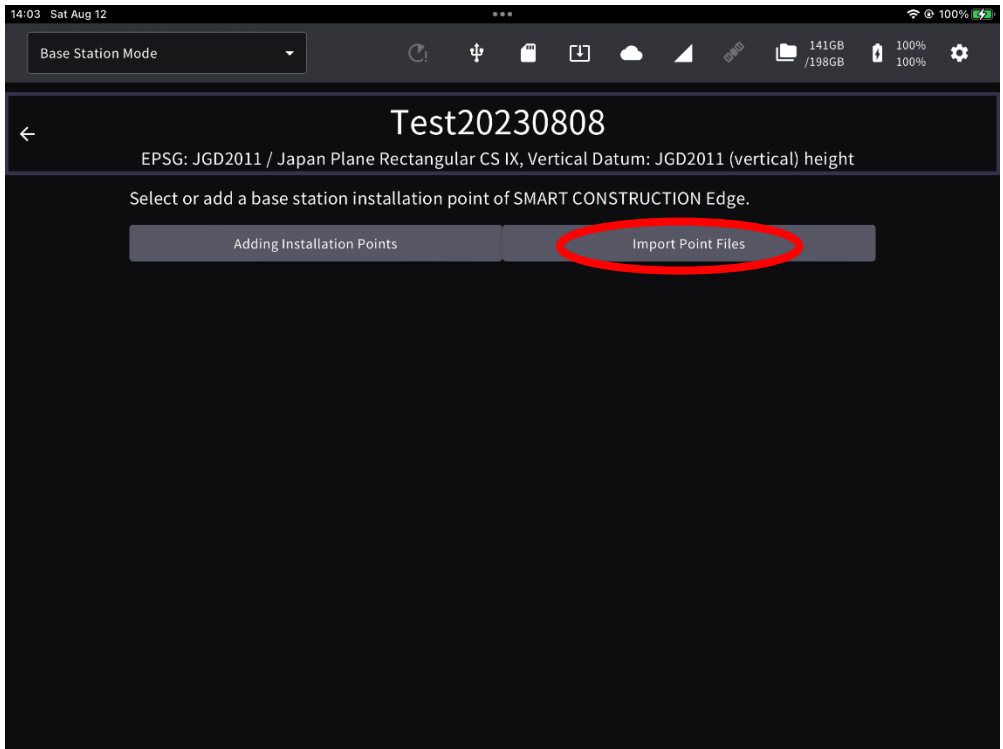
- The points you have previously set up or have used for localization will appear as a point list.



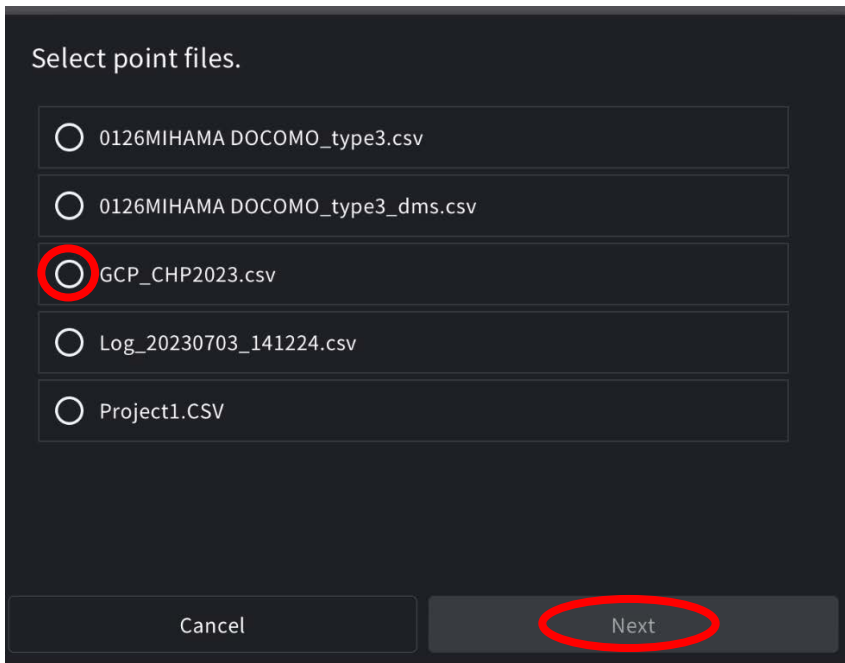
#### Tips

If you set the EdgeBox on one of these points, you can just tap it to select it. (If not, go to 5.)

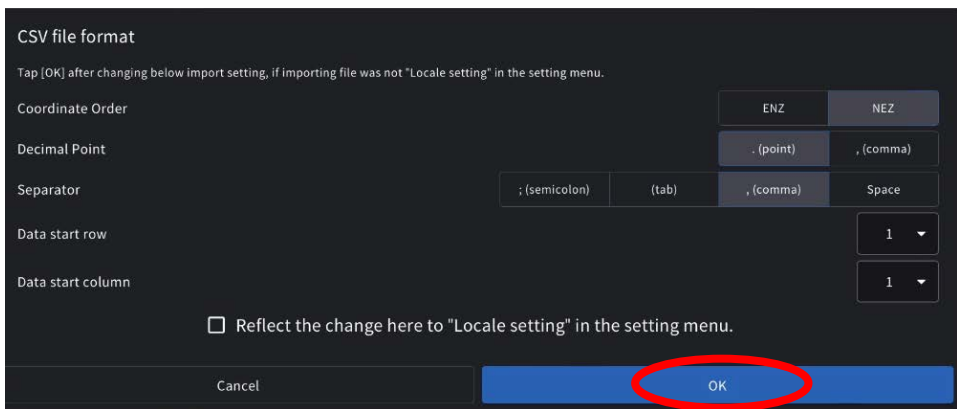
6. Tap "Import Point Files" to open the file.



7. Select the control point file you want to use and tap "Next".



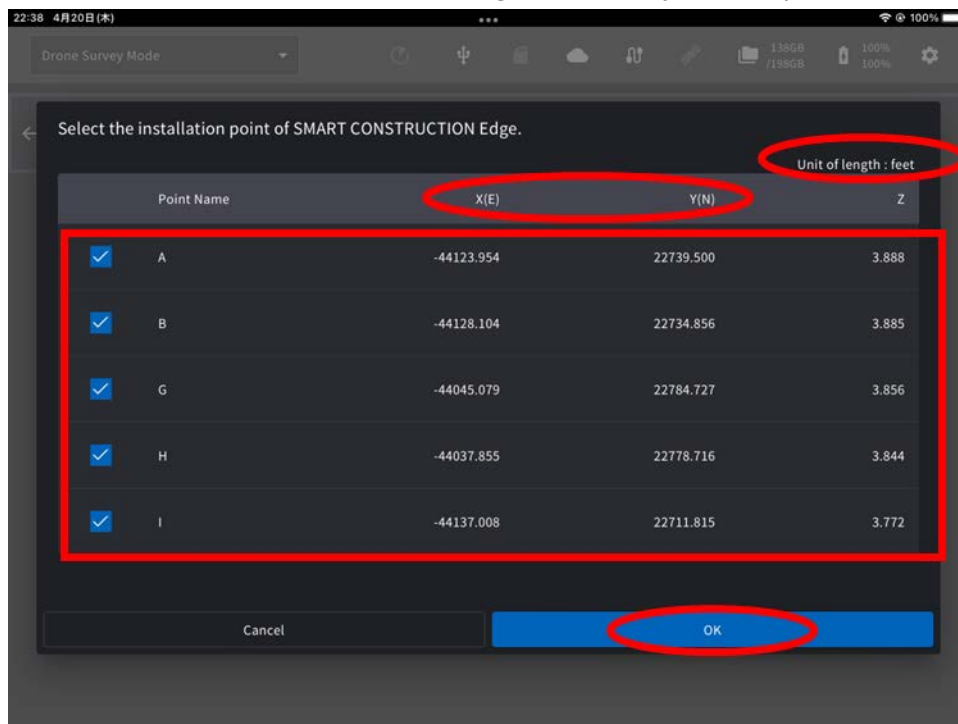
Please select the parameters of your point file.



Please prepare the point file in advance.

Set the file format parameter according to the file and tap “OK”.

8. The contents of the imported localization file are displayed on the screen. Confirm the values are correct and aligned correctly, then tap “OK”.



## (p) Input manually

1. Align the Edge Box horizontally above the surveyed base point using the levelling device on the top of the tripod.

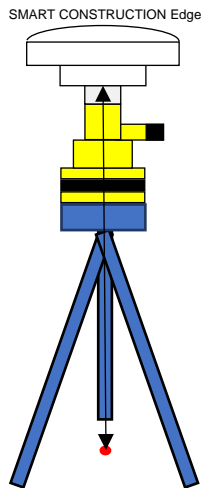



### **⚠ WARNING**

Always wear a hard hat during the work.

If you dropped the product from the top of the tripod by mistake and hit to your head, it may cause an injury.

2. Measure the height from the base point to the bottom of the EdgeBox  
Enter this height as the “pole height” later.

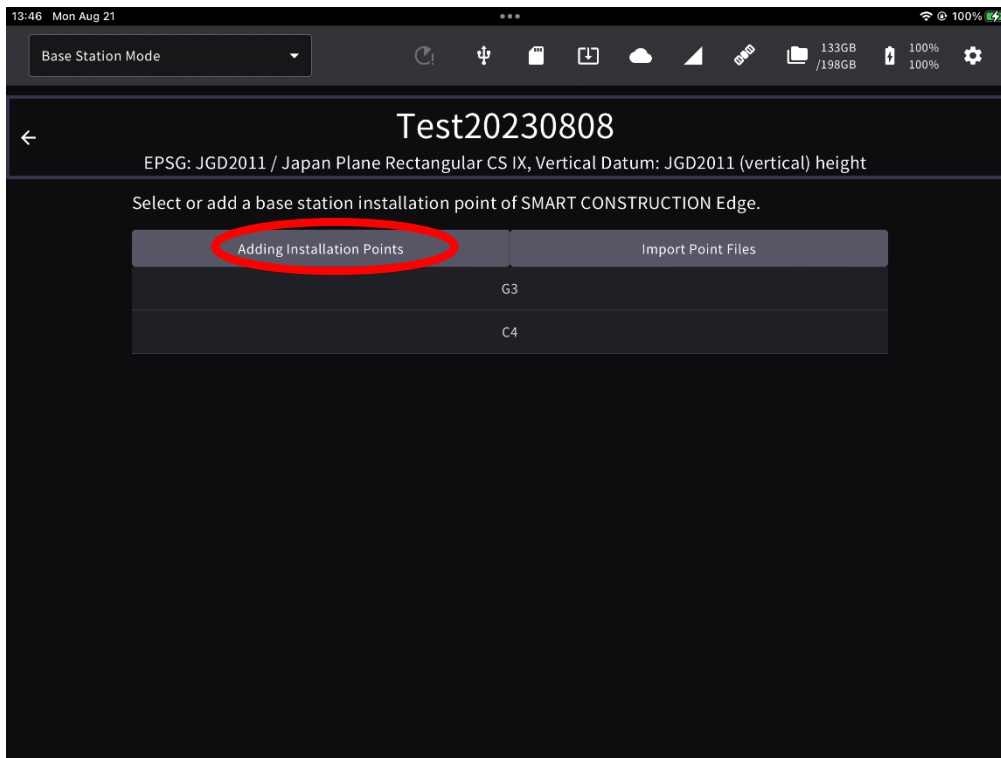


3. Launch the tablet app  and select a project of the work site to Broadcast.  
[If the project was not listed, create a new project.](#)

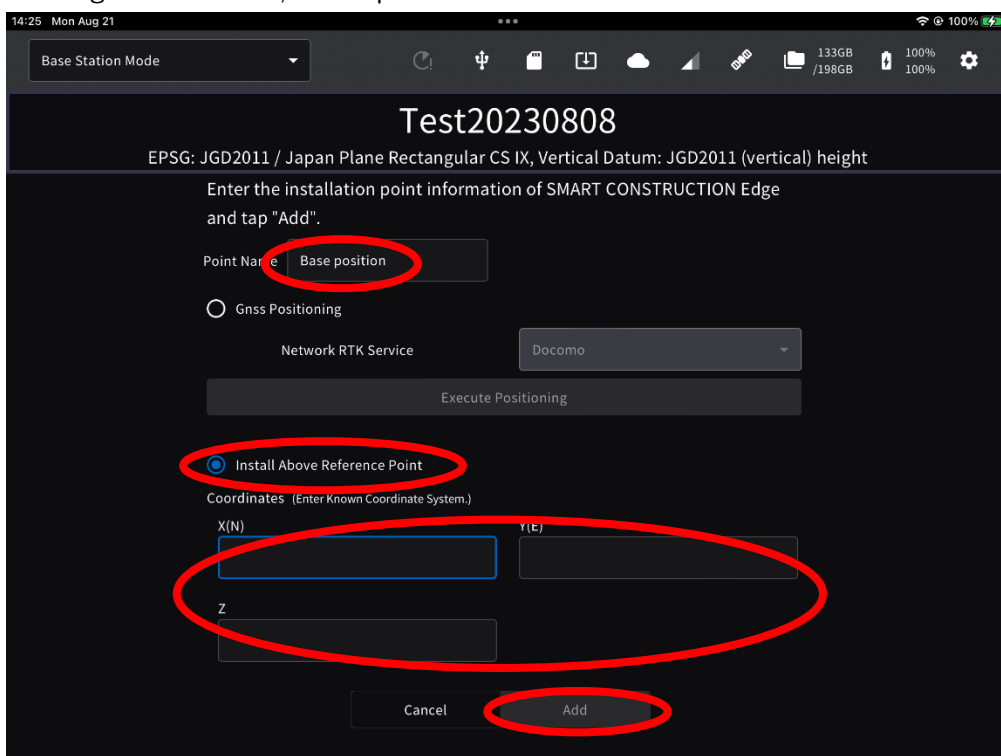
### Tips

Projects and points added in the drone survey mode are also listed.

4. Tap "Adding Installation point" to open the file.



5. Tap "Install above reference point". Enter the point name, pole height, and coordinates of the EdgeBox location, and tap "Add"



#### Tips

The coordinates you enter must be in the same coordinate system when you created the project.

#### (q) INPUT using Network RTK – “Self-Position”

Important!

RTK correction data distribution from points added using Network RTK is not recommended because it is less accurate. GNSS Best practice should be followed when using “Self-Positioning”

#### Tips


To use Network RTK, you require your own CORSnet, Allday-RTK, VRS-now, Smartnet or similar subscription. This is not included with the Edge.

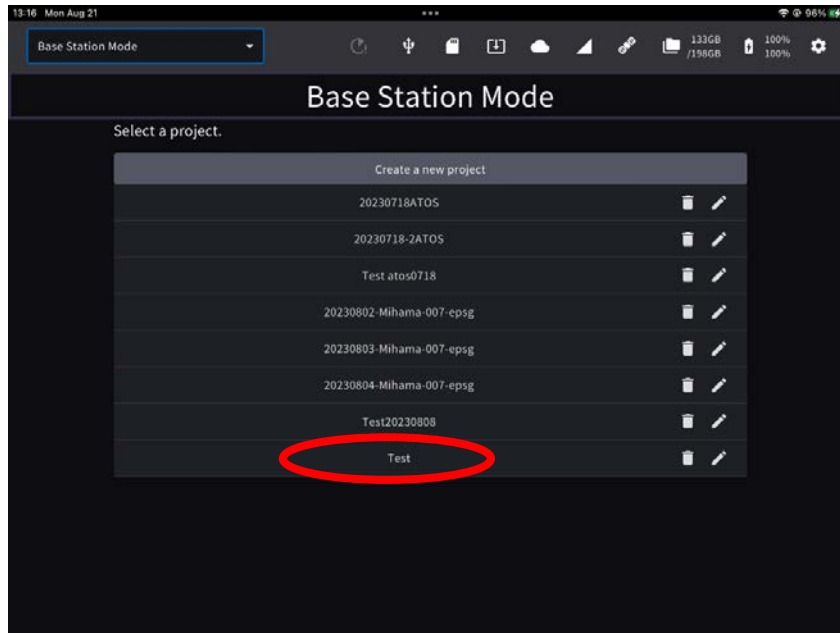
1. Place EdgeBox anywhere in the site with a tripod at a wide, open sky.

#### ⚠ CAUTION

The main unit should place a stable, flat place.

If it was placed at unstable place, it may be dropped and cause a damage or a breakage.

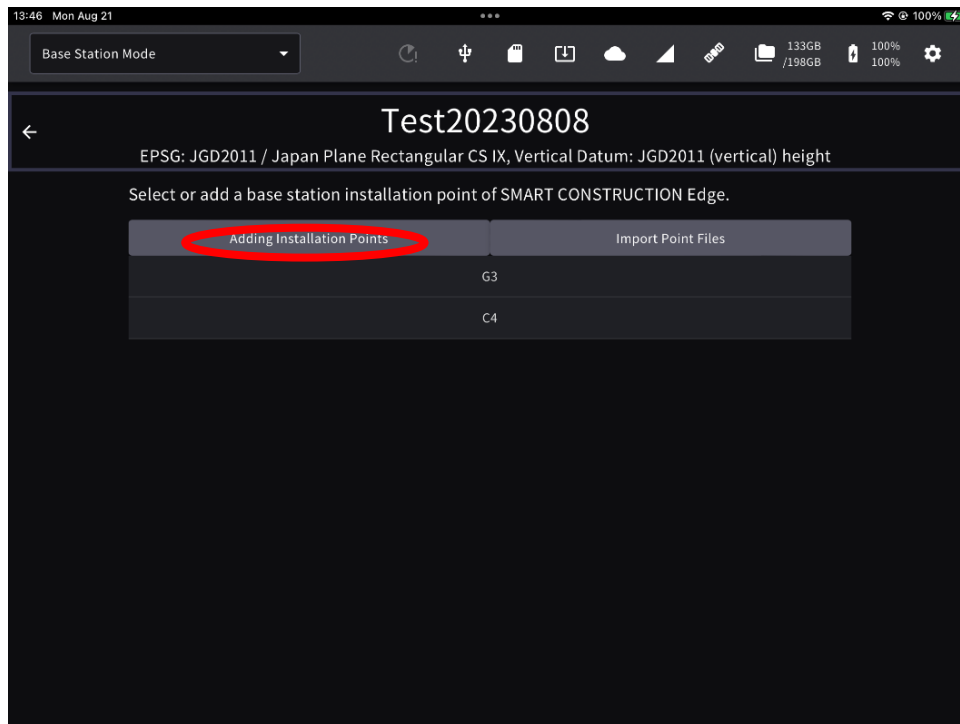
2. Launch the tablet app  and select a project to broadcast.



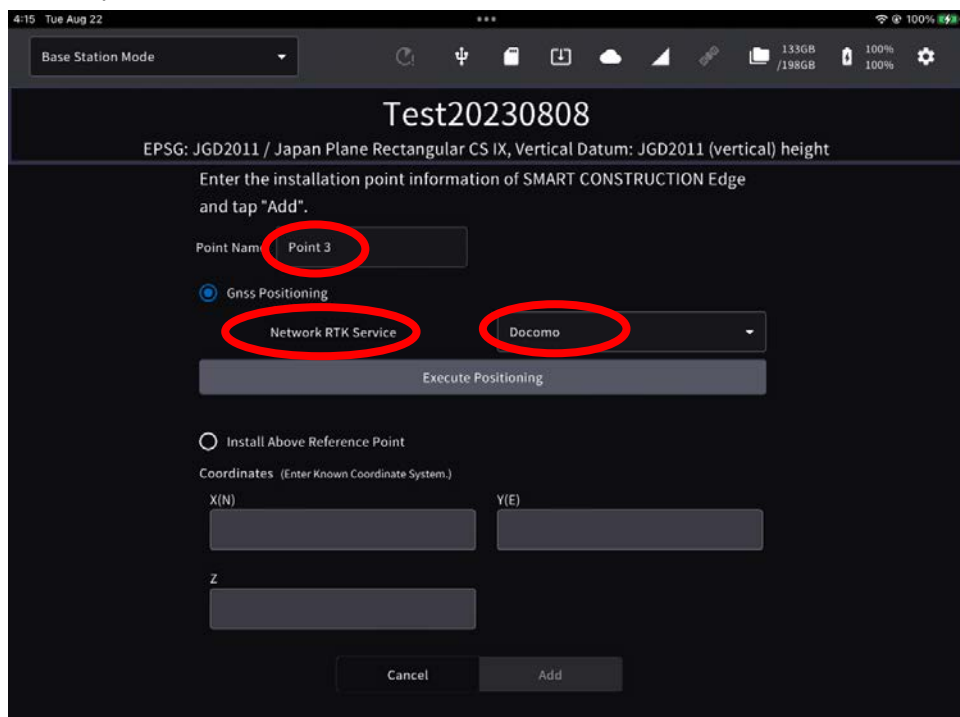
If the project is not listed, create a new project.

3. Tap "Adding Installation point" to open the file.

A list of the points that you have set in the past will displayed.



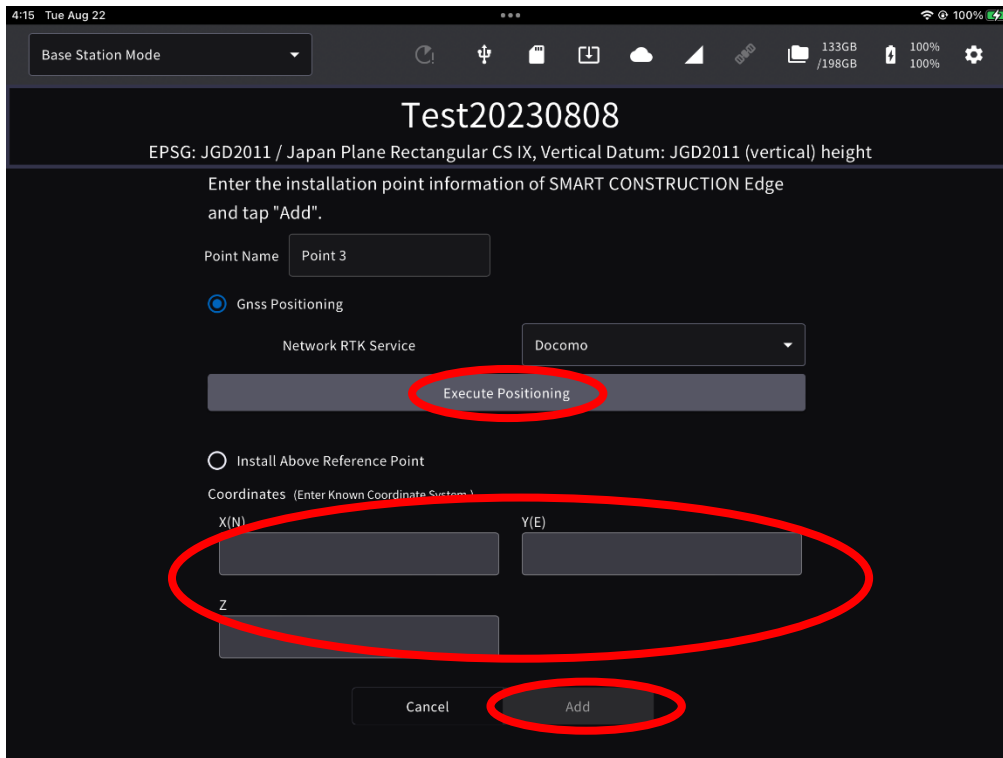
4. Tap "GNSS positioning". Enter the point name and select the "network RTK service" from the drop-down menu.



#### Tips

- Projects and points added in the drone survey mode are also listed.
- If your network RTK service is not listed, please see P,81 to add the service.

5. Tap "Execute positioning" to start network RTK Positioning.



When the positioning was completed, coordinates are automatically entered to the fields.

6. Confirm the coordinates were entered in the fields, and tap "Add"

## Broadcast RTK Correction Data

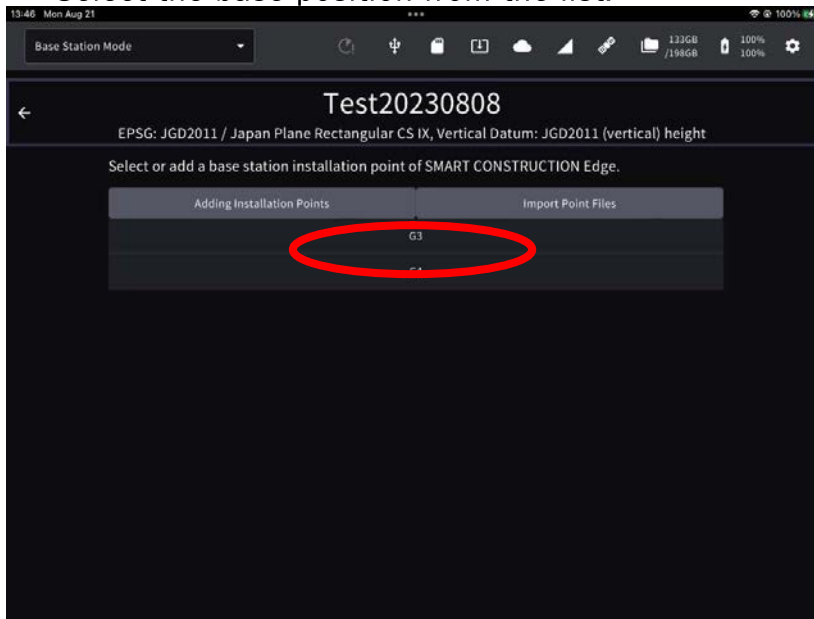
### USING NTRIP SERVER

It is possible to broadcast correction data by connecting ICT construction machines and GNSS rovers which can be connected, and EdgeBox via Ntrip server.

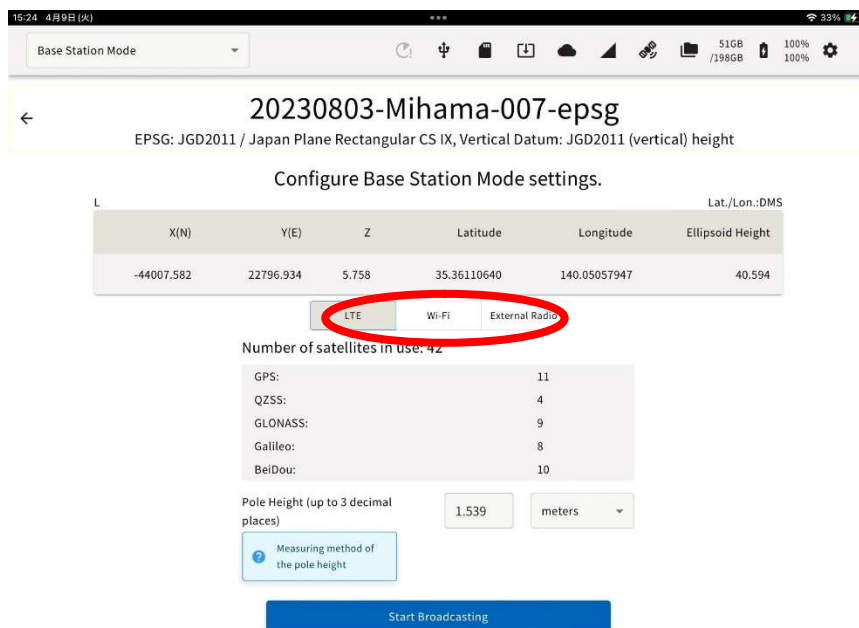
#### Tips

To Broadcast RTK compensation data via Ntrip server, you must have LTE contract and APN setup in advance. Also require the LTE connection in the field.

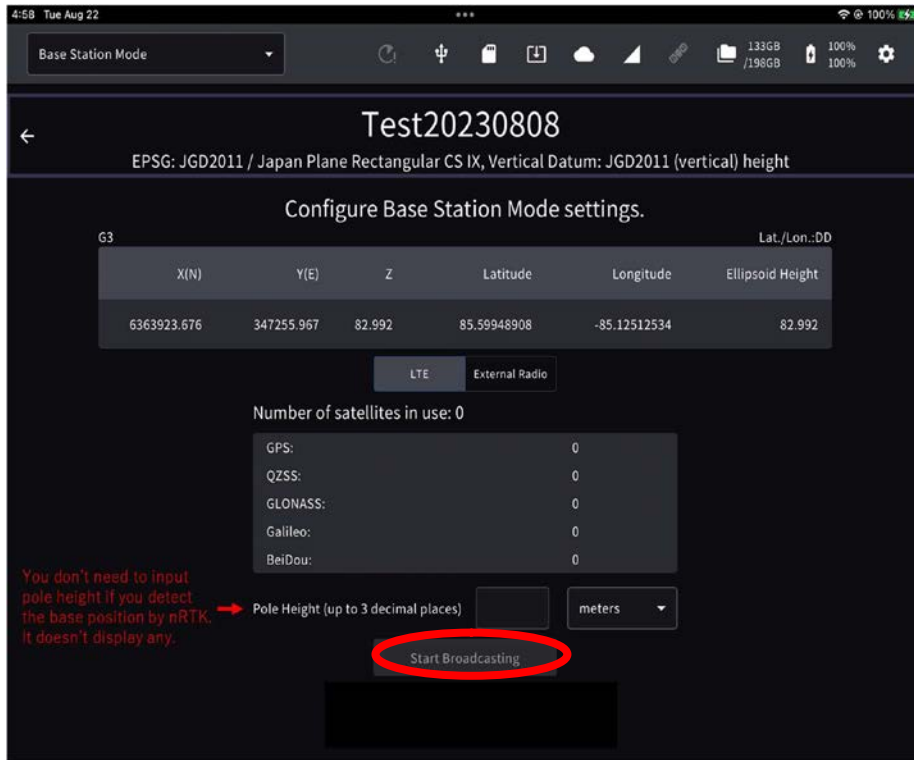
1. Select the base position from the list.



※RTK broadcasts can be simultaneously distributed by setting each method (LTE,WI-FI, External Radio) and starting the distribution.



2. Make sure “LTE” is selected, enter the pole height, and tap “Start Broadcasting”



When you want to stop broadcasting, tap

#### Tips

You don't need to input Pole Height If you selected to use Network RTK positioning, because it directly measure the antenna height.

### 3. Configure the NTRIP setting of receiver (rover) side.

When using LTE to broadcast RTK compensation data, set the following information for the receiver side.

★★

Host: [rtcmv.smartconstruction.com](http://rtcmv.smartconstruction.com)

Port: 2101

(If there was no "Port" input, please make the host URL :

[rtcmv.smartconstruction.com/2101](http://rtcmv.smartconstruction.com/2101))

Mount: (See below Tips)

Username: EdgeBox Serial Number (Example: EB2A100XXXX)

Password: SC21

★★

#### Tips

For [Mount], enter one of the mount points shown below for the satellites used by the receiver.

MSMx(4,5,7): RTCM3.2 with GPS, GLONASS, Galileo and BeiDou

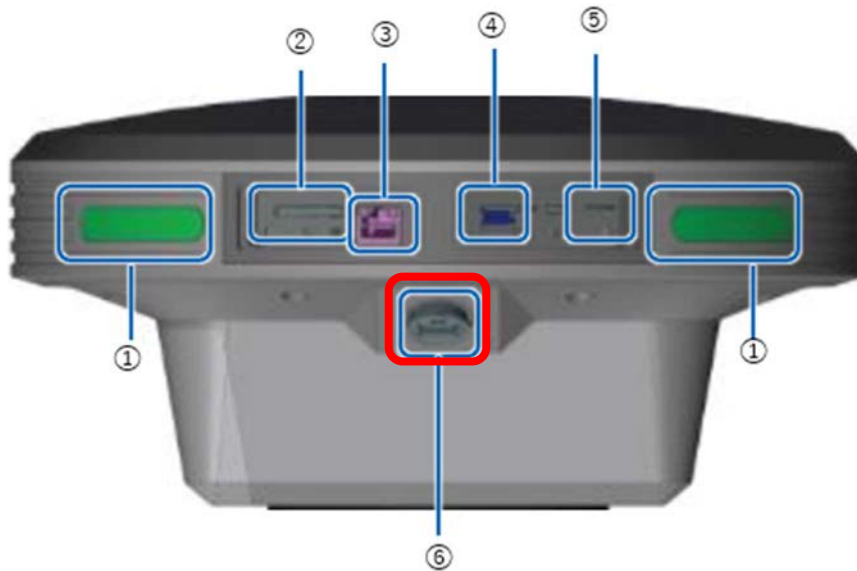
RTCM30: RTCM3.0 with GPS and GLONASS

# USE AN EXTERNAL RADIO

## ⚠ WARNING

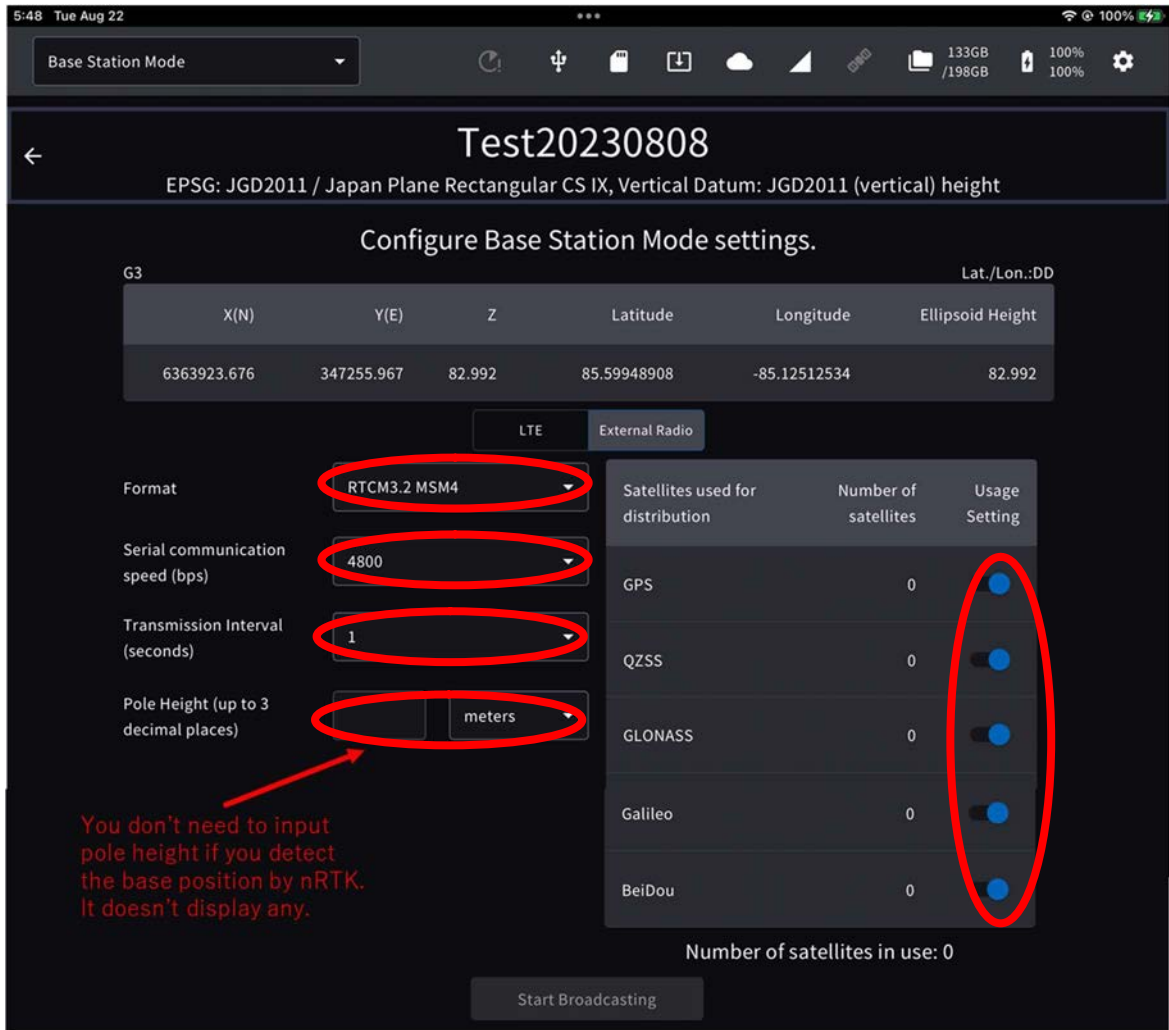
DO NOT connect to an external radio with other USB-Serial conversion cable than the attached. it may cause a short circuit and resulting an ignition or an electrical shock.

1. Connect the external radio to the EdgeBox using the Conversion Cable. (attached USBSerial conversion cable)



- ① Status LED
- ② SD card slot
- ③ Ether Cable Terminal
- ④ USB Slot (USB3.0) : cannot use this slot for RTK correction broadcasting
- ⑤ SIM CARD SLOT
- ⑥ Waterproof USB Slot (USB2.0)

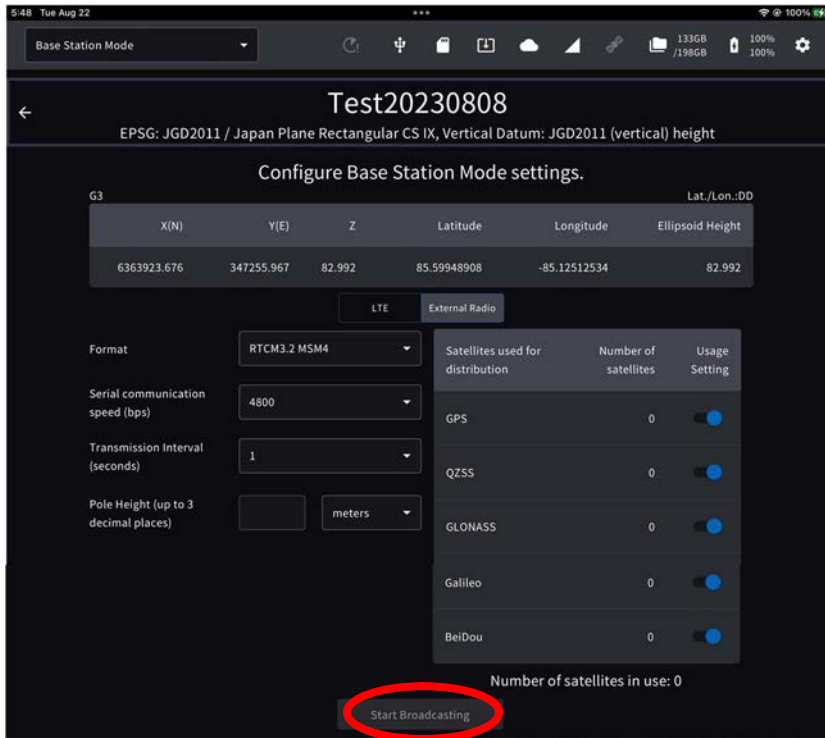
2. Select a point from the list.
3. Input the Format, Serial communication rate, Transmission Interval, Pole Height, and Satellites used for distribution. (Constellations used for broadcast)



#### Tips

The serial communication speed and transmission interval must be set according to the external radio connected. Please refer to the instruction manual of your external radio for the setting values. You can select the constellations to broadcast from the satellites by turning on in the "Active constellations" setting in the settings screen on the upper right of the tablet application. Also, the Active constellations cannot be none.

4. Tap "Start Broadcasting"



When you want to stop broadcasting, tap “Done”

#### Tips

You don't need to input Pole Height If you selected to use Network RTK positioning, because it directly measures the antenna height.

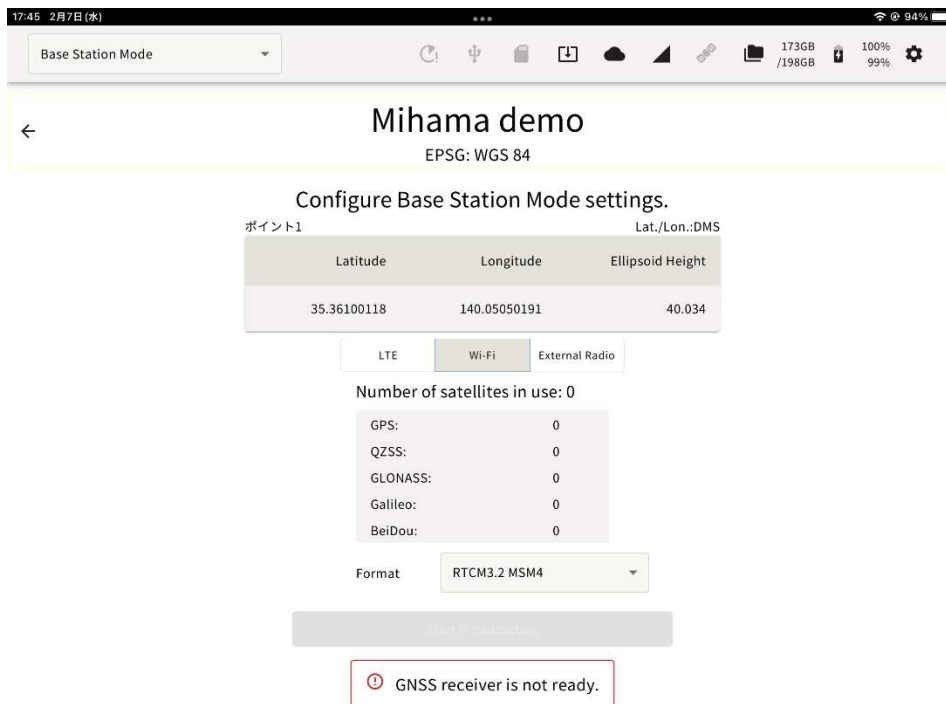
5. Configure the NTRIP setting of receiver (rover) side.

Please follow the instruction of the receiver (rover) manual.

Make sure to set the same channels on both receiver and EdgeBox.



# USE WI-FI BROADCAST



If the mobile station side (construction equipment, drone, GNSS rover) can receive compensation data from WIFI, compensation data via WIFI at the EDGE2 is available. The mobile station side should connect to the EDGE2 SSID (ED2JB000000) pass default (edge2-ap)

Supported formats: CMR, RTCM3.2, MSM7, MSM4, MSM3, RTCM3.0

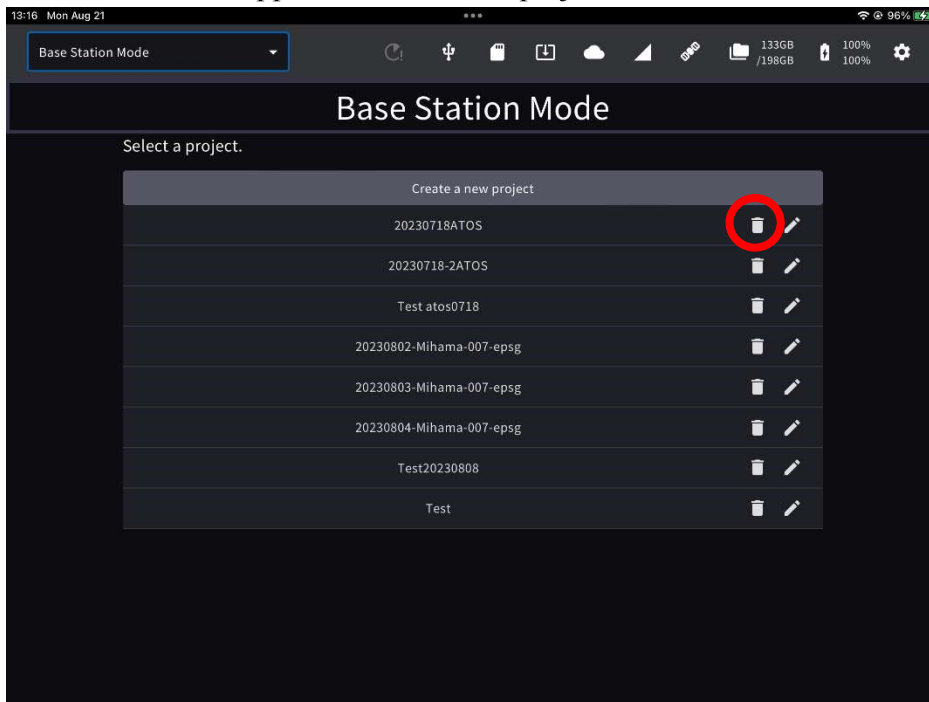
Setting up reference points, broadcast, setting pole heights, etc., are the same as other procedure.

## DELETE DATA

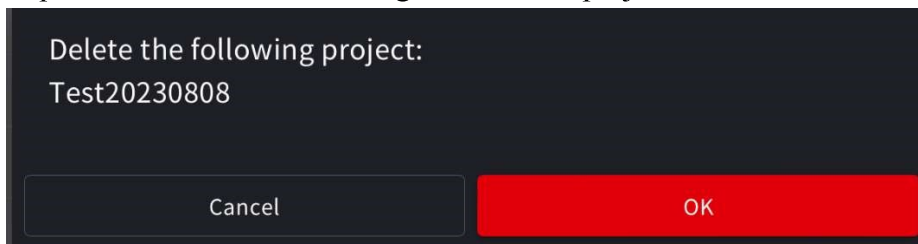
Data in EdgeBox can be deleted in two ways:

Delete a project and its contents together

1. Launch the tablet app  and view the project list.



2. Tap the “Delete” icon at the right end of the project list.




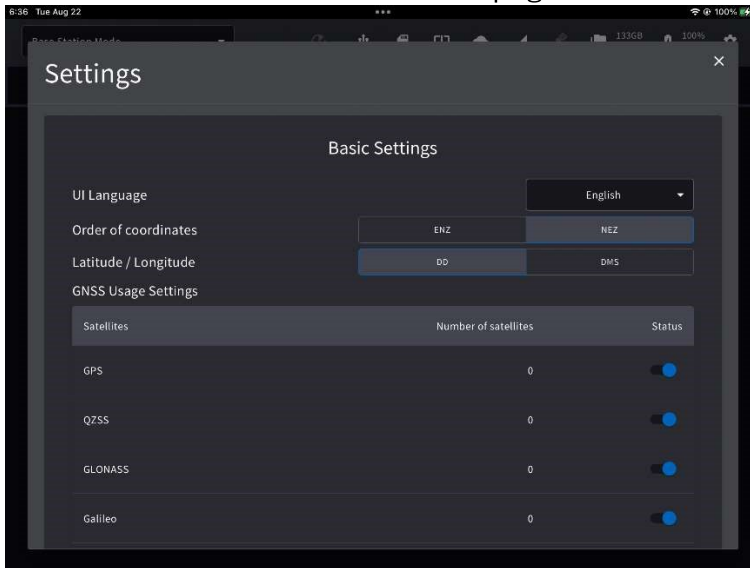
3. Tap "OK" in the confirmation dialog.

**Tips**

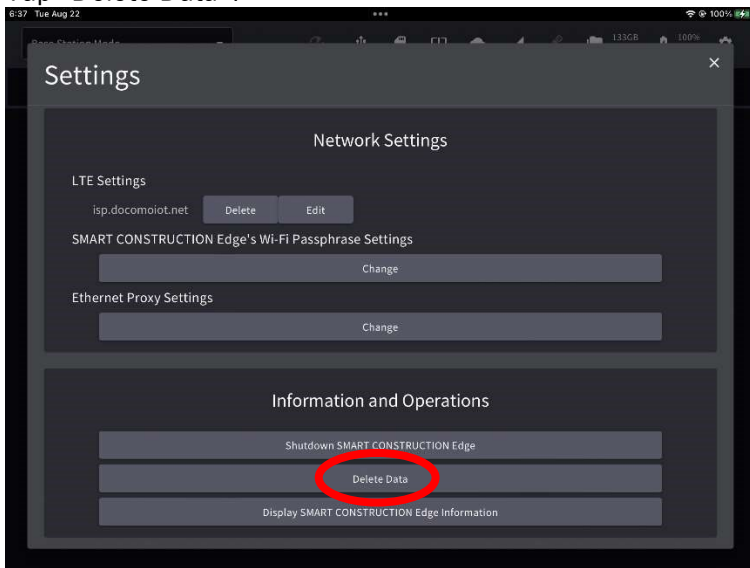
When you delete data in this way, all data associated with the project are deleted.

## Select and delete data

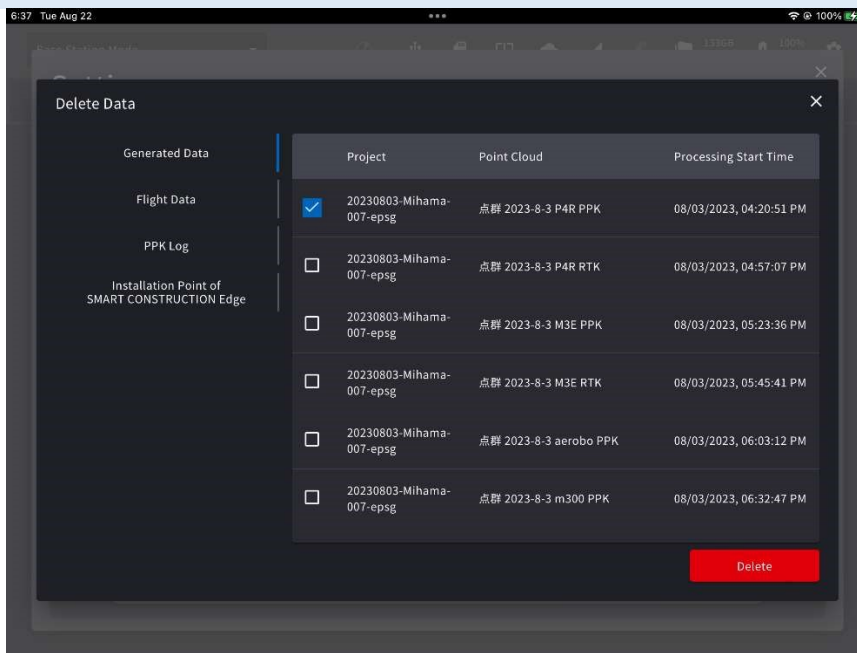
1. Tap the Settings  in the upper-right portion of the tablet app.  
Go down to the bottom of the page.



2. Tap "Delete Data".



3. From the Delete Data dialog, select the data you want to delete and tap the "Delete" button.




#### Tips

You cannot delete the generated data while displaying the point cloud. Please go to a different screen before the deletion

#### Tips

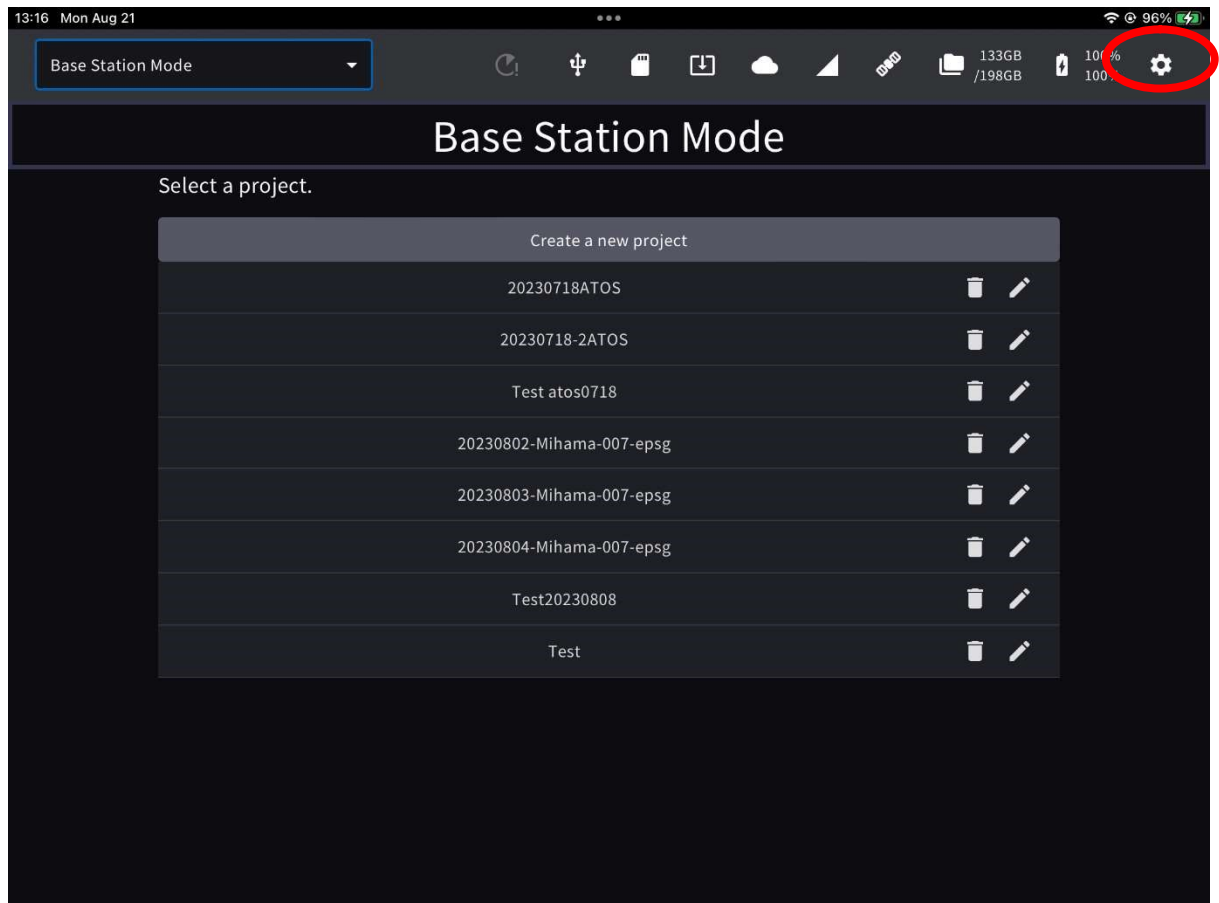
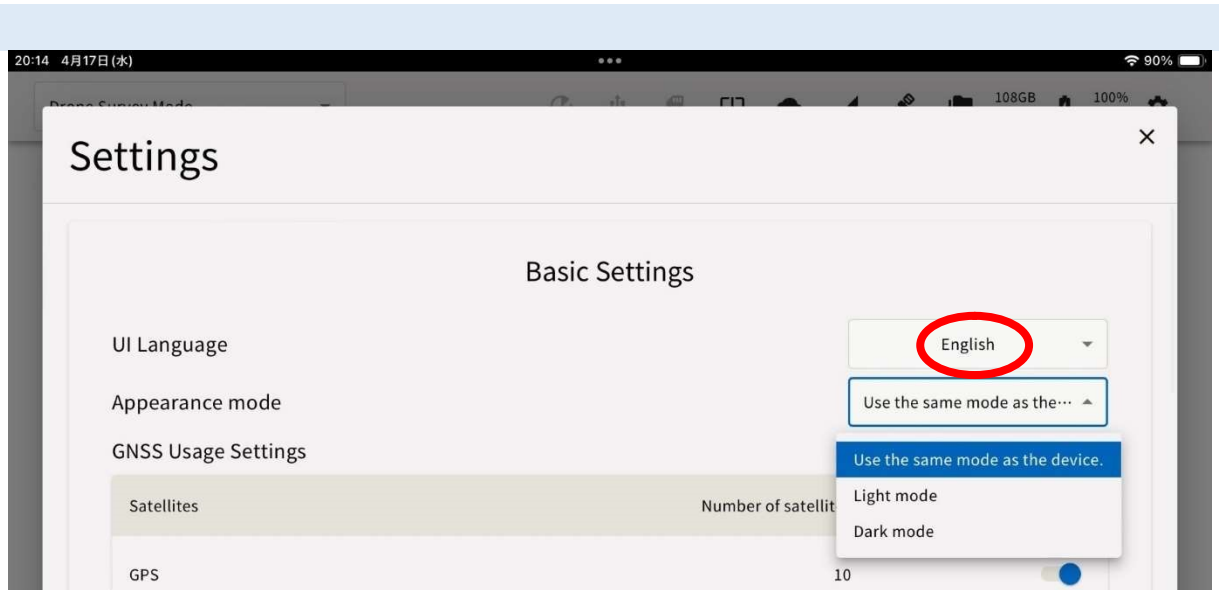
In the left-hand tab, you can select the type of data to delete:

- Generated data
- Imported flight data
- Captured PPK logs
- Base station position data

Tap the “Settings” icon  in the upper-right portion of the tablet app to change your EdgeBox settings or to perform specific EdgeBox actions.

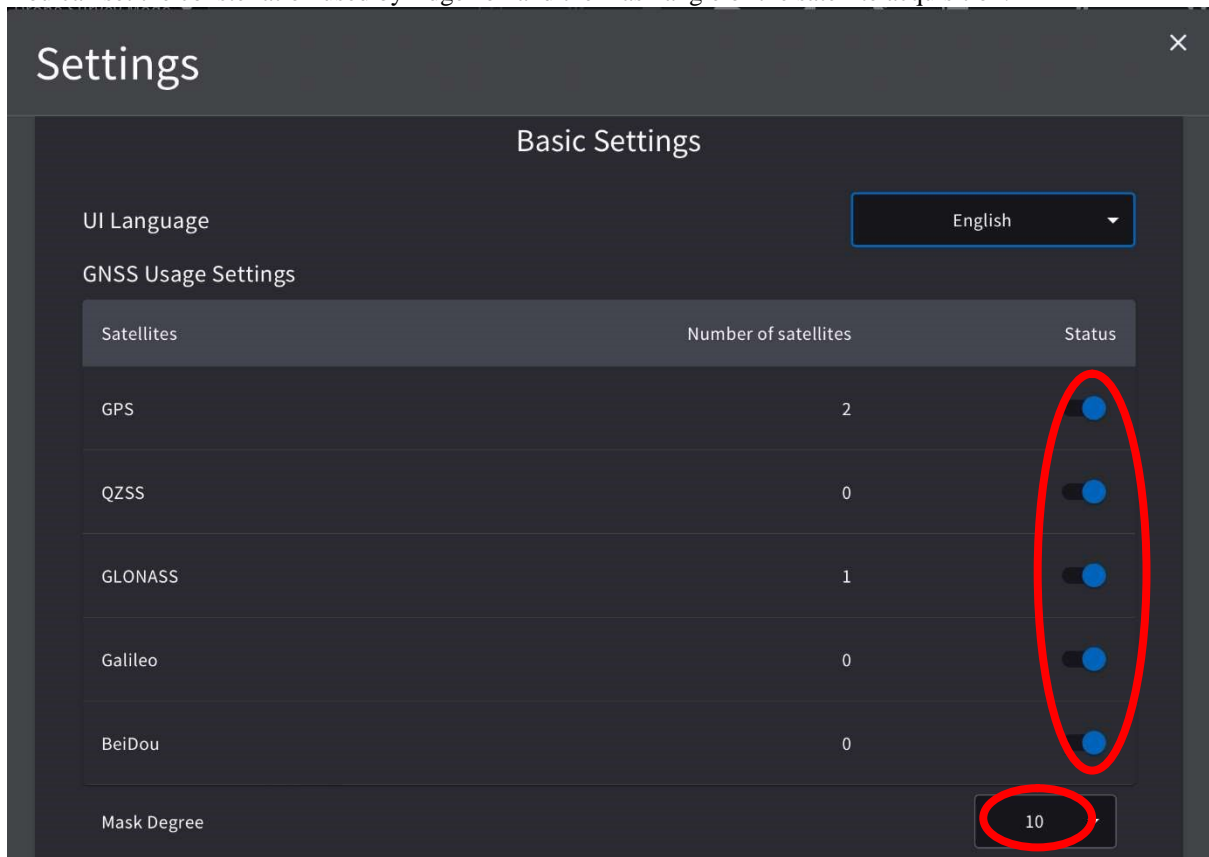
### Language setting

You can switch between languages by selecting from the drop-down list. Language settings are saved for each tablet app. And also possible to change the color of the UI display.



## GNSS Settings

You can set the constellation used by EdgeBox and the mask angle of the satellite acquisition.

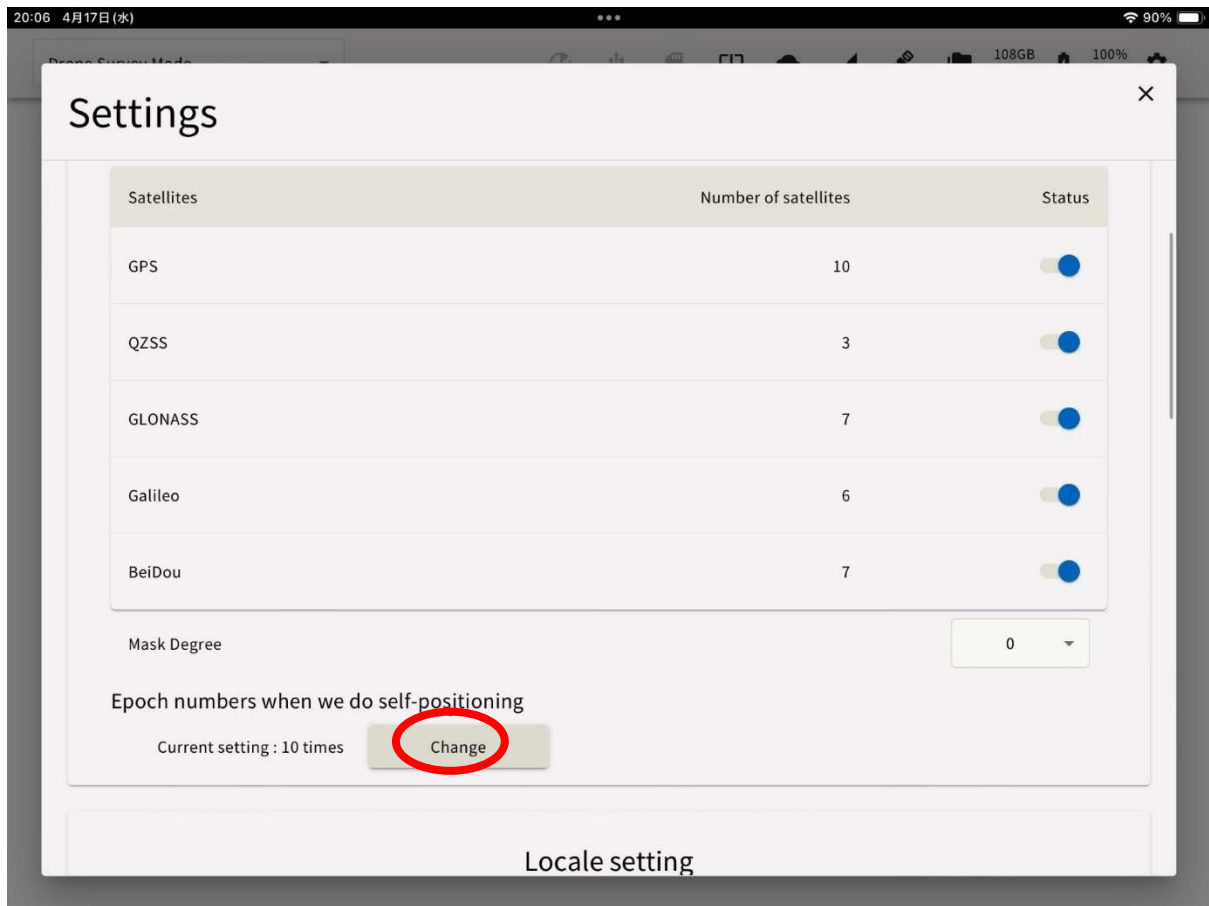


### Tips

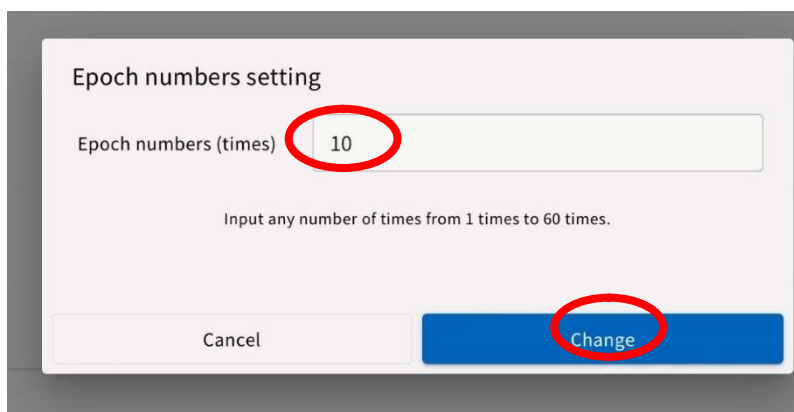
Changing the mask angle changes the position accuracy using the EdgeBox.

## Setting GNSS epoch number

In the setting menu will adjust epoch number here when self-positioning.



Can be set between 1 and 60.

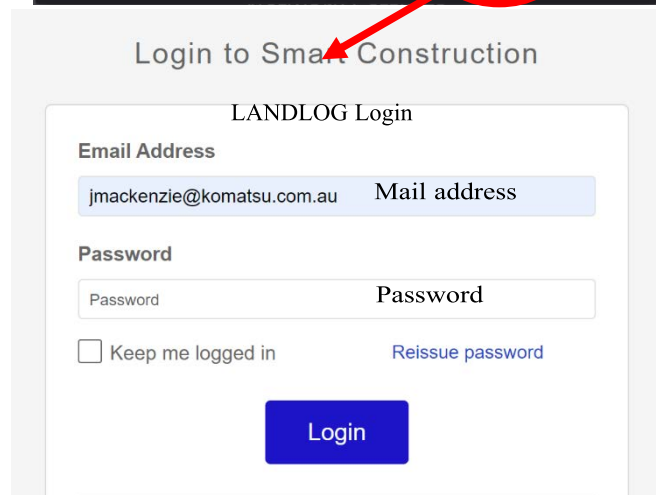
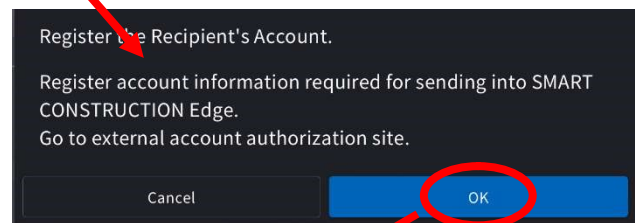
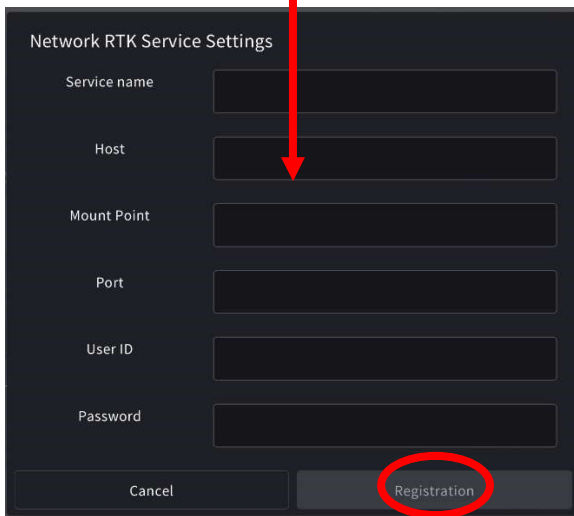
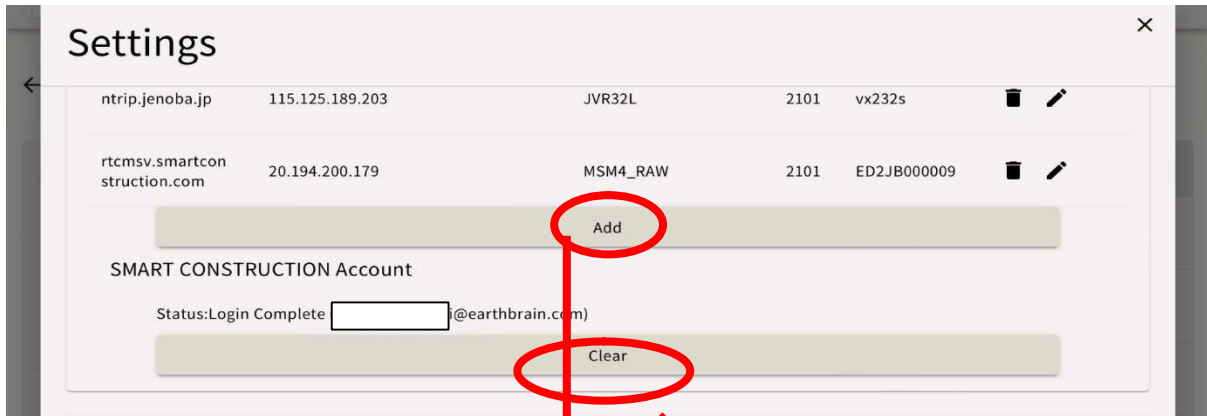


## Interwork (Linked) Service Settings

You can configure network RTK service setting. Normally, Host, Mount Point, Port, User ID and Password. Password will be hidden.

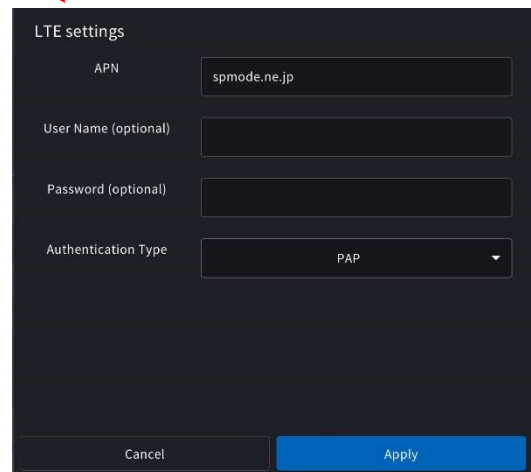
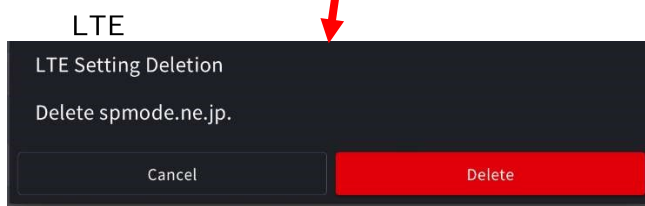
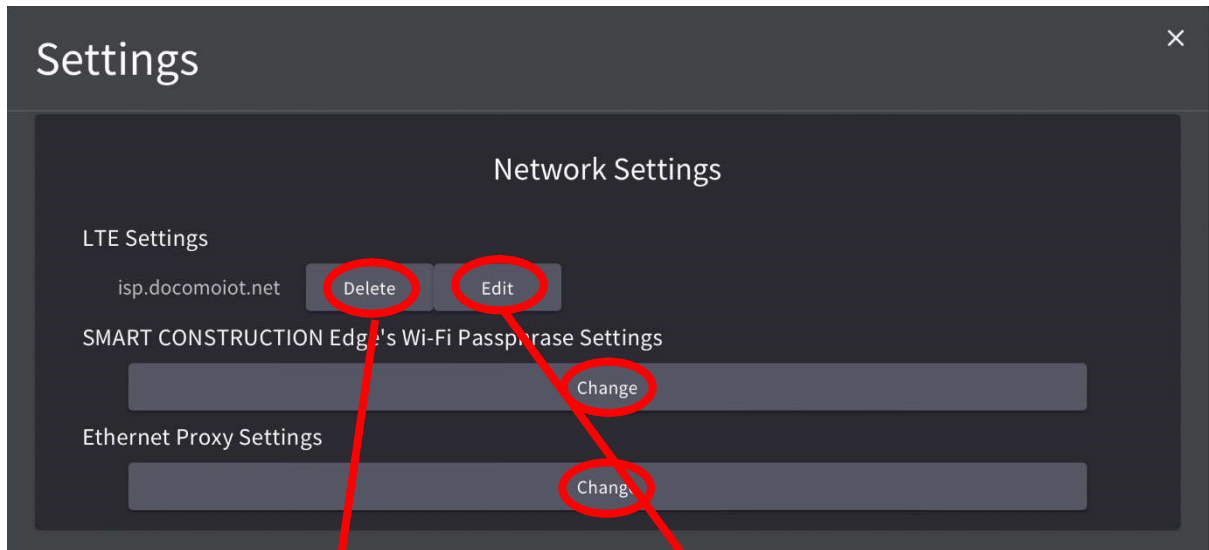
SMART CONSTRUCTION Account Settings are ID and password.

※When you log in to your account, you will see your login ID.

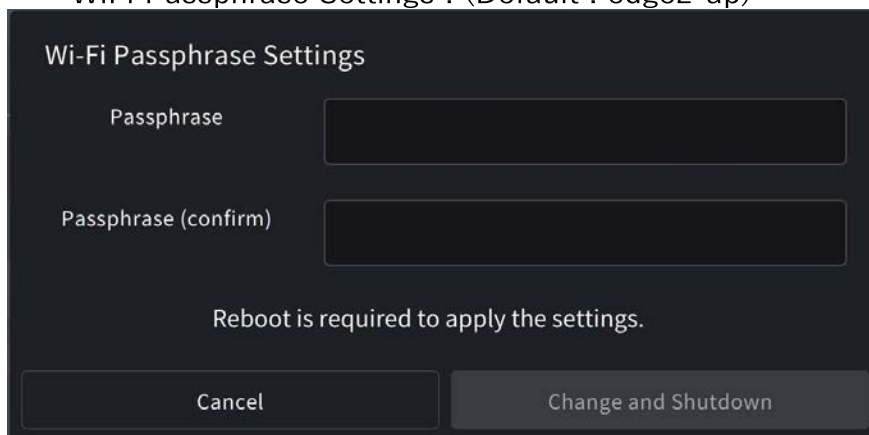


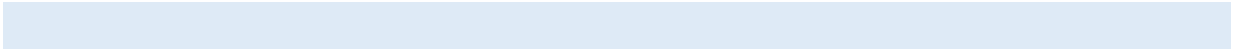
## Network Settings

You can configure APN, change the password when you connect Wi-Fi to EdgeBox, and configure proxy server when you connect to a wired LAN with a proxy server.

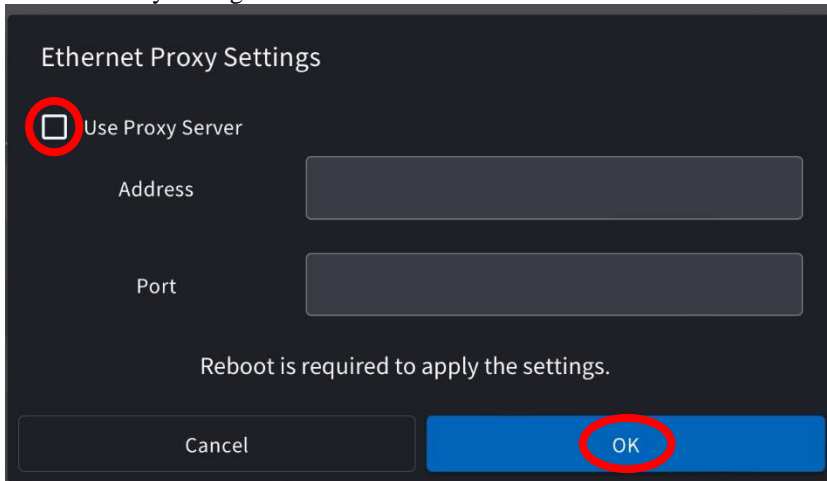


WiFi Passphrase Settings : (Default : edge2-ap)





Ethernet Proxy settings :

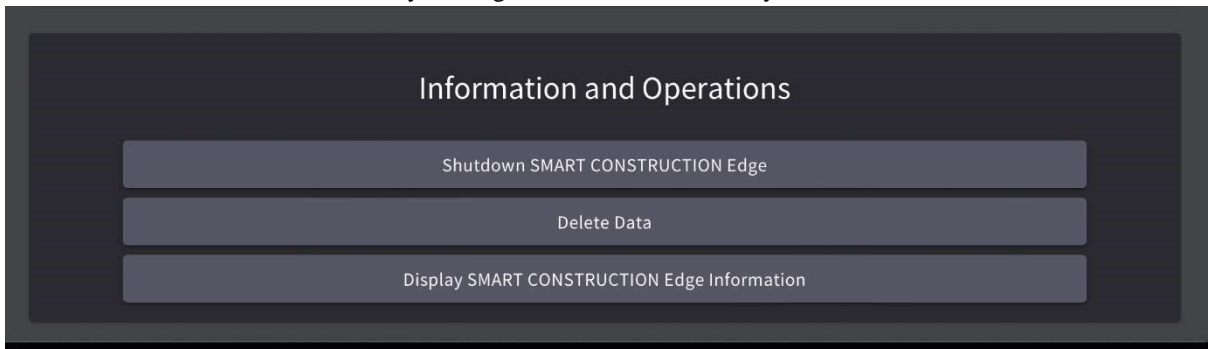


Tips

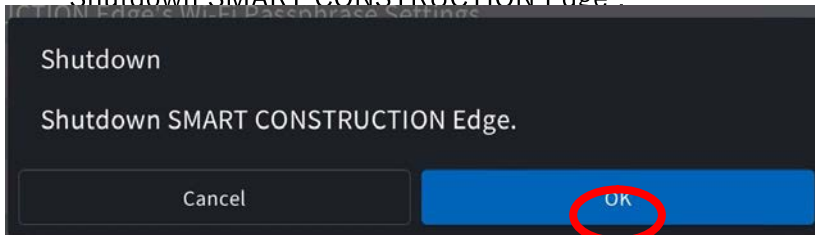
After changing the Wi-Fi password and the Proxy settings, the EdgeBox must be restarted. After shutting down, press and hold the power button for about 4 seconds to start.

EdgeBox Information and Operations

You can check the information about your EdgeBox, delete unnecessary data or shut it down.



Shutdown SMART CONSTRUCTION Edge :

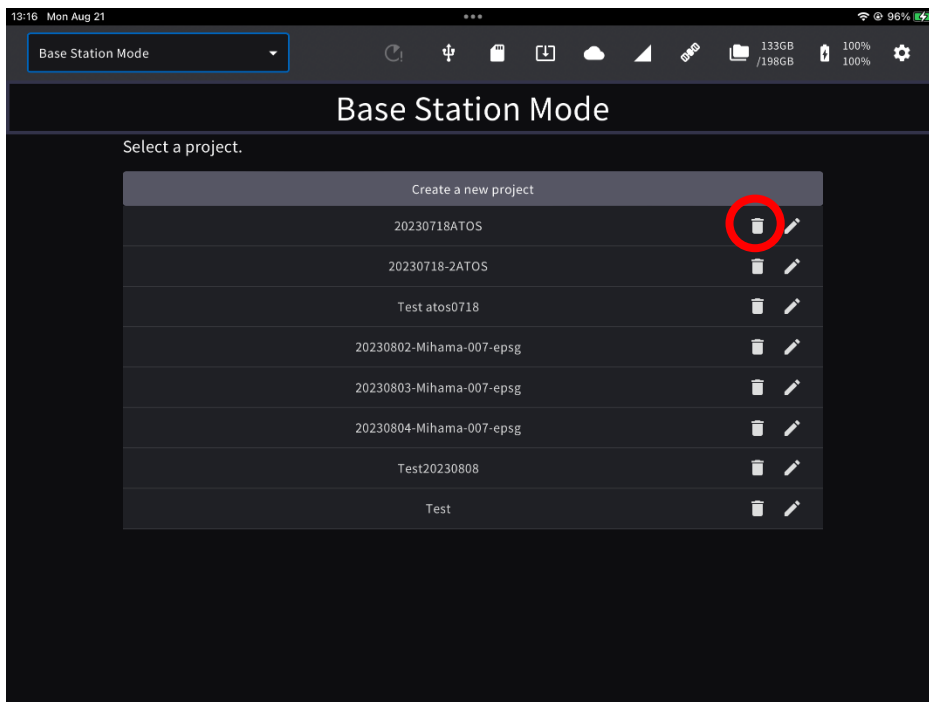


## Delete data

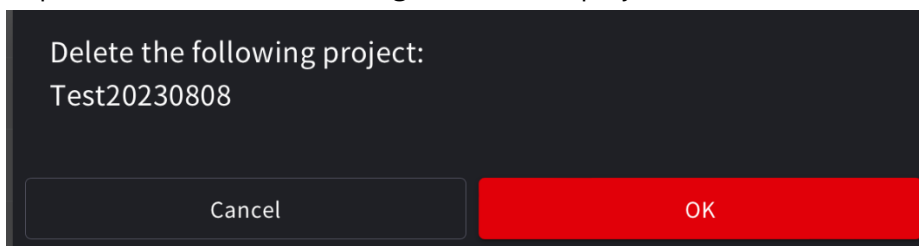
Data in EdgeBox can be deleted in two ways:

### Delete a project and its contents together

1. Launch the tablet app  and view the project list.



2. Tap the “Delete” icon at the right end of the project list.




3. Tap "OK" in the confirmation dialog.

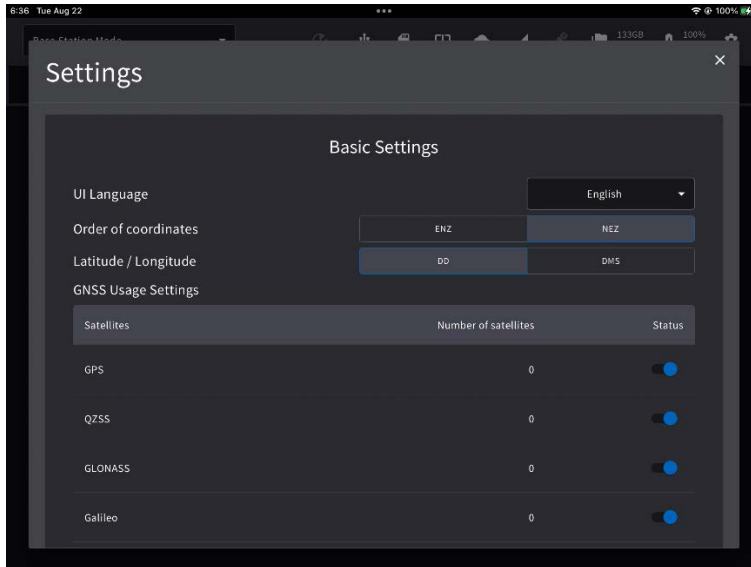
#### Tips

When you delete data in this way, all data associated with the project are deleted.

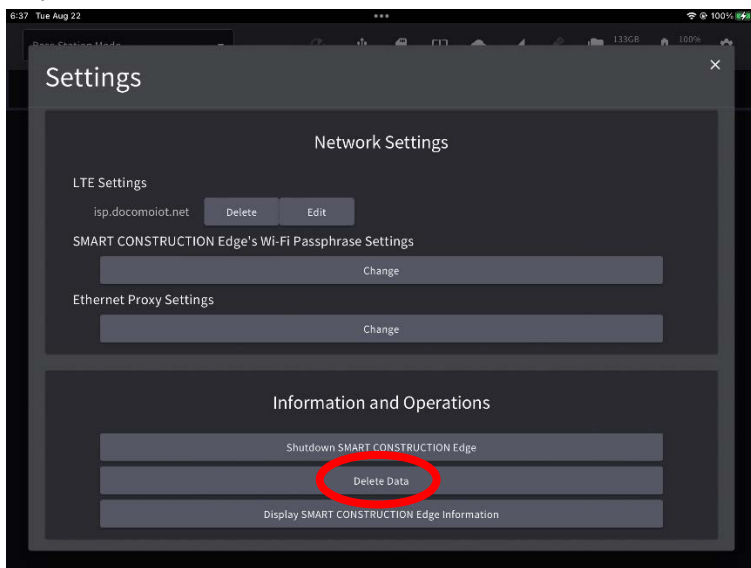
## Select and delete data

1. Tap the Settings icon  in the upper-right portion of the tablet app.

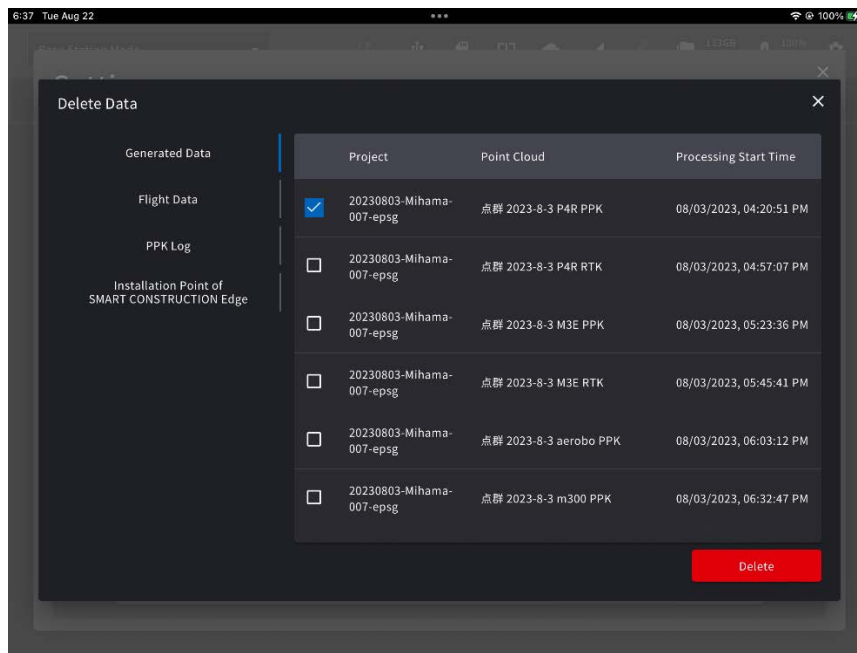
Go down to the bottom of the page.



2. Tap "Delete Data".



- From the Delete Data dialog, select the data you want to delete and tap the “Delete” button.



#### Tips

You cannot delete the generated data while displaying the point cloud. Please go to a different screen before the deletion

#### Tips

In the left-hand tab, you can select the type of data to delete:

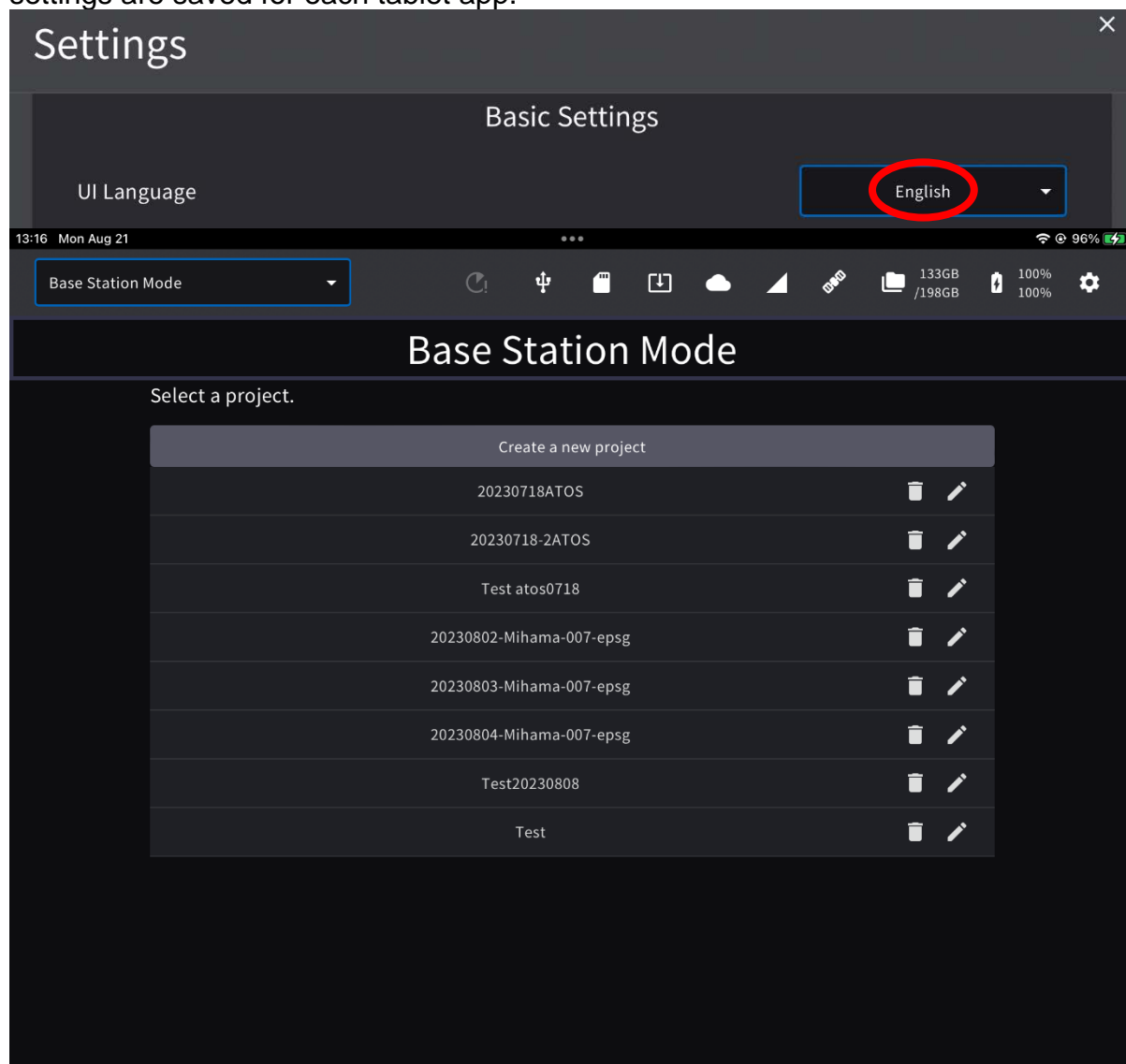
- Generated data
- Imported flight data
- Captured PPK logs
- Base station position data

## Basic setting

Tap the “Settings” icon  in the upper-right portion of the tablet app to change your EdgeBox settings or to perform specific EdgeBox actions.

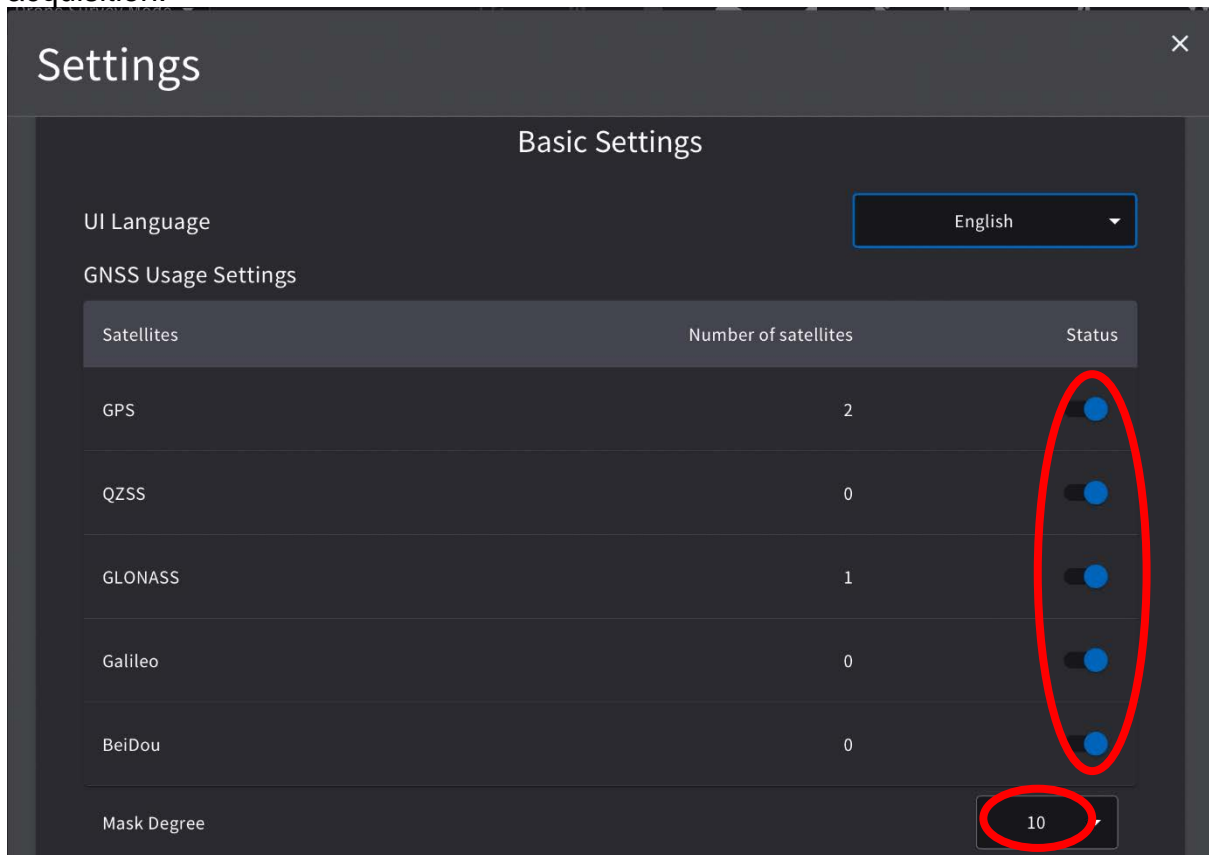
## Language setting

You can switch between languages by selecting from the drop-down list. Language settings are saved for each tablet app.



## GNSS Settings

You can set the constellation used by EdgeBox and the mask angle of the satellite acquisition.



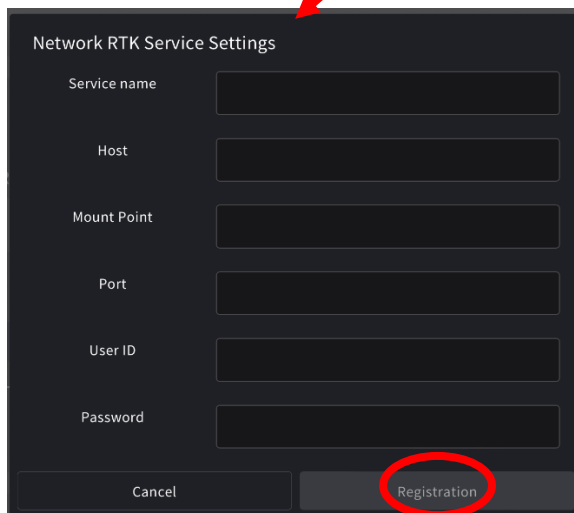
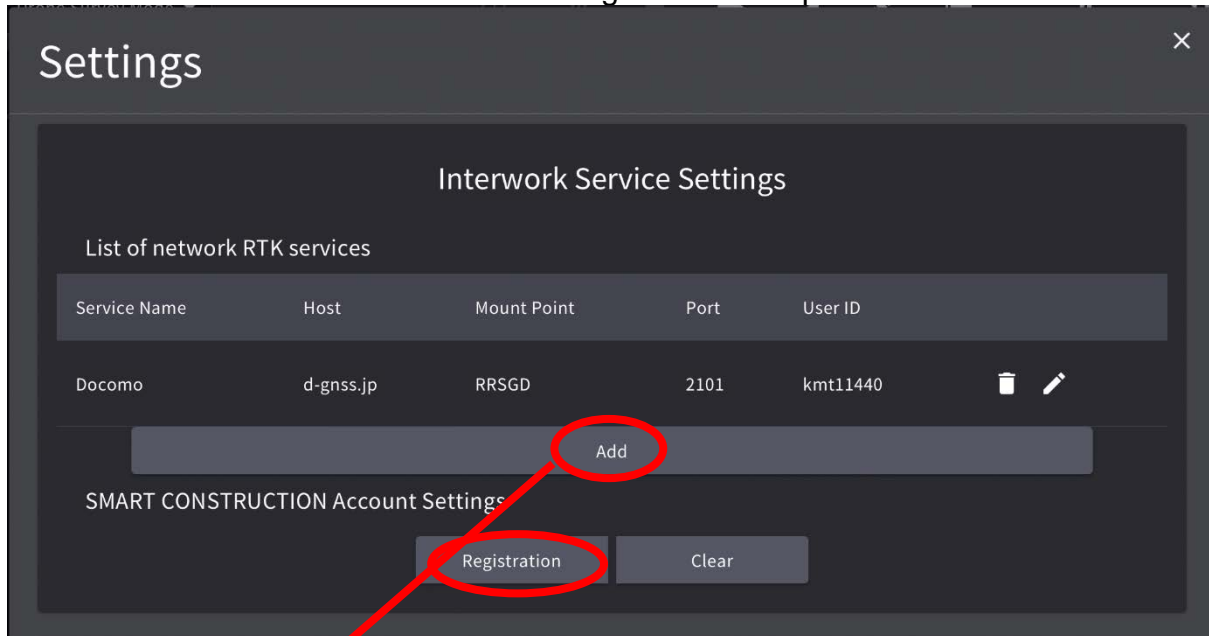
### Tips

Changing the mask angle changes the position accuracy using the EdgeBox.

## Network Service Settings

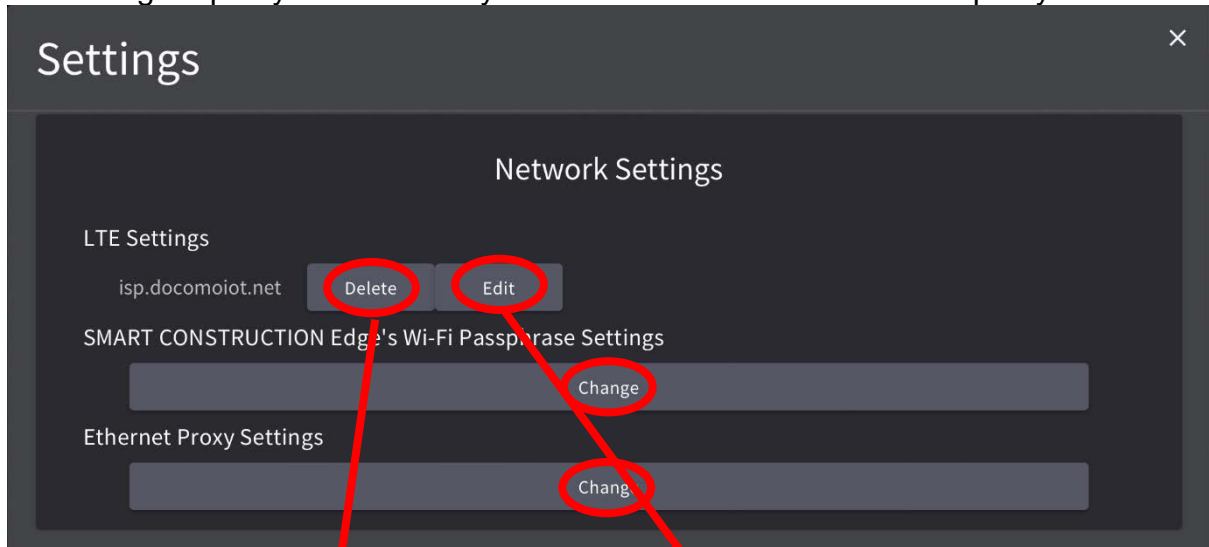
You can configure network RTK service setting. Normally, Host, Mount Point, Port, User ID and Password. Password will be hidden.

SMART CONSTRUCTION Account Settings are ID and password.

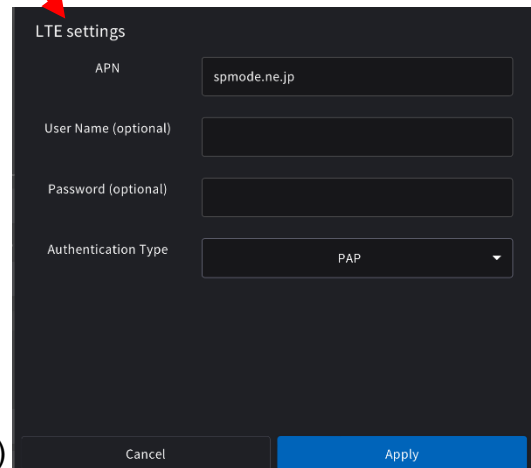
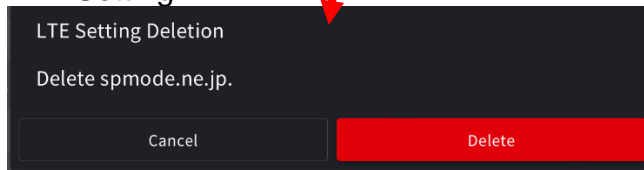


## Network Settings

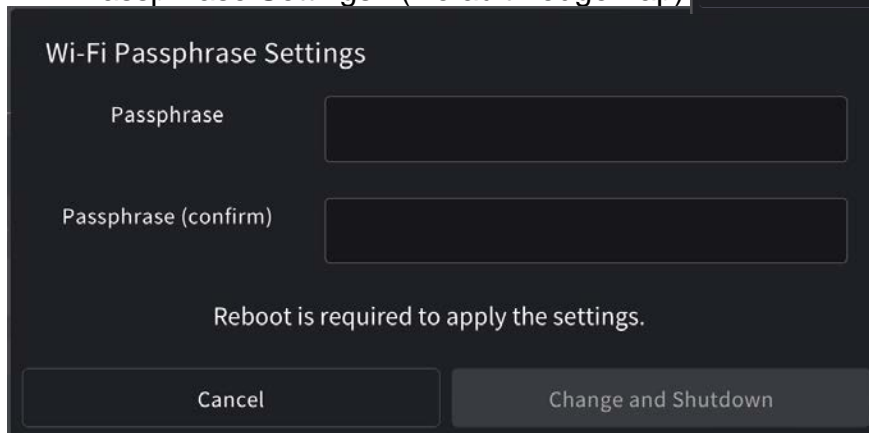
You can configure APN, change the password when you connect Wi-Fi to EdgeBox, and configure proxy server when you connect to a wired LAN with a proxy server.



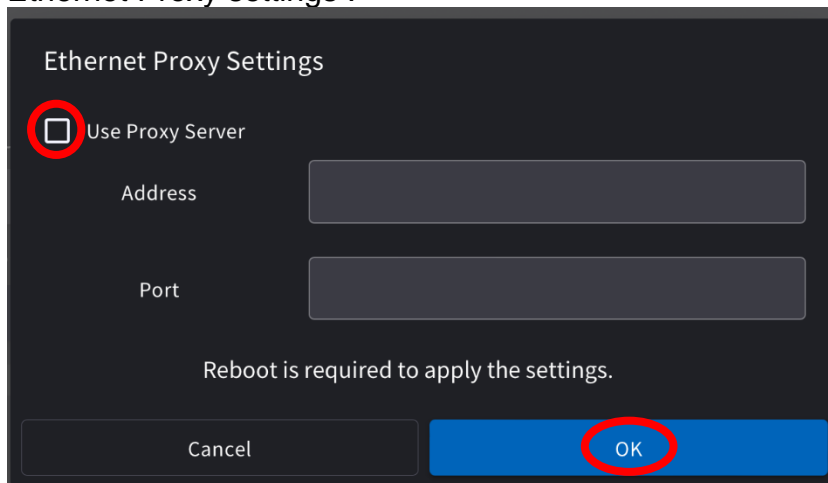
### LTE Setting :



### WiFi Passphrase Settings : (Default : edge2-ap)



### Ethernet Proxy settings :

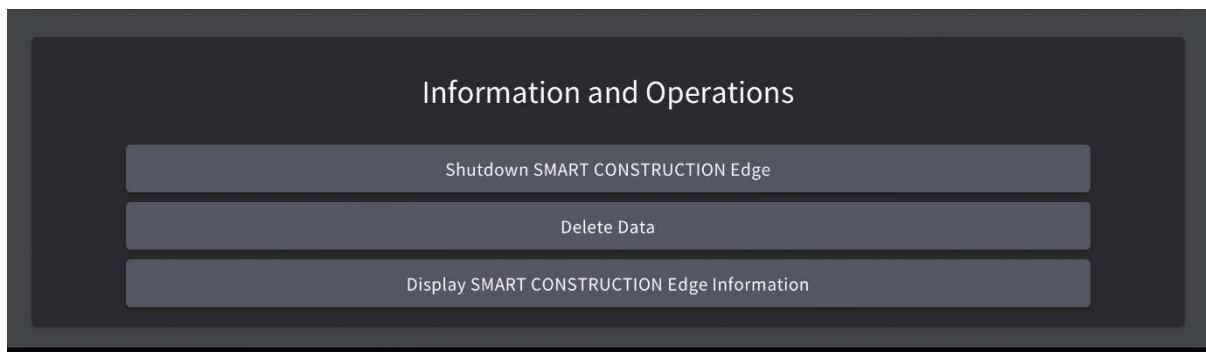


#### Tips

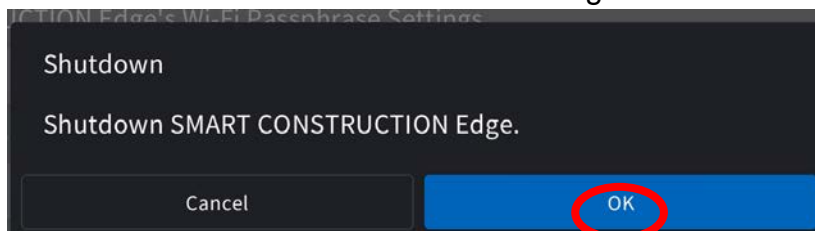
After changing the Wi-Fi password and the Proxy settings, the EdgeBox must be restarted. After shutting down, press and hold the power button for about 4 seconds to start.

## EdgeBox Information and Operations

You can check the information about your EdgeBox, delete unnecessary data or shut it down.



### Shutdown SMART CONSTRUCTION Edge :



## Delete data :

Check the data you want to delete.

Project	Point Cloud	Processing Start Time
<input type="checkbox"/> 2022-09-08_Verify_with_Australia_data	100_0003-100_0007	2022/09/08 14:51:54
<input type="checkbox"/> 220912-1025-33-local304	Point Cloud 2022-9-11	2022/09/12 13:27:38
<input type="checkbox"/> GCPTest	点群 2022-9-8 exp1-1	2022/09/09 11:06:27
<input type="checkbox"/> Georgeandkhim	Point Cloud 2022-11-16	2022/11/16 11:59:42
<input type="checkbox"/> Georgeandkhim	Point Cloud 2022-11-16 1v2	2022/11/16 14:14:14
<input type="checkbox"/> Mihama	Point Cloud 2022-11-2	2022/11/02 16:34:11
<input type="checkbox"/> Mihama220914-VR S	点群 2022-9-13-GCPなし	2022/09/14 11:38:58

## Edge device information :

SMART CONSTRUCTION Edge Device Information

SMART CONSTRUCTION Edge Storage Usage	59 GB/198 GB (29%) Remaining 138 GB
Version	1.15.2 ▼

Close

## Appendix

### Install and configure certificate

1. From the tablet (iPad) home screen, tap the Safari icon and enter the following in the Safari address field

<http://scedge.local>


#### Tips

The following two-dimensional bar codes can be used to access to the URL above.



2. Tap "Install Certificate" on the screen.
3. Follow instructions on the screen to download it.
4. Return to the Home screen and tap "Settings" icon.
5. Tap on the displayed "Profile downloaded" message and follow the on-screen instructions to install
6. Tap General - About - Certificate Trust Settings in the settings screen to enable **##SC EdgeBox CA for Dev##**.

### Add a tablet app to your home screen

1. Start Safari on your iPad and access <http://scedge.local>.
2. Tap "Launch App" .
3. After the top page of the App displayed, tap Share icon in Safari, then tap **"Add to Home Screen"**

An app icon will be added to the home screen, and you can start the app by tapping this icon next time.

## Specification

Items	Specification	Remarks	
Temperature Range	Operating	-20°C ~ 50°C	
	Charging	0°C ~ 45°C	
	Storage	-20°C ~ 50°C	
Input voltage		19.5V DC	
Power consumption	Standard	13.3W	When broadcasting RTK correction data via LTE modem
	Maximum	87.5W	When generating a point cloud while charging the batteries.
Electrostatic resistance		±8kV	
Operating hours		Approx. 12 hours	When broadcasting RTK correction data via LTE modem
Charging hours		Approx. 5 hours	Charging with EdgeBox and attached power cable.
Dust-/Water-proof performance*		IP65 or equivalent	Tested by a third party

### ⚠ CAUTION

\* Smart Construction Edge has a certain dust- / water-proof performance, but was not applicable for full submergence, high-pressure cleaning, some liquid, such as, detergent, seawater, beverages, and so on. And Power cable including AC adapter are not water-proofed.]

## Hardware specification

Items		Specification	Remarks
External dimensions	Width x depth x height	300 x 300 x 150 [mm]	
Body weight	Including battery	Approx 4.0kg	
	Excluding battery	Approx 2.7kg	
Total weight	Including carry case and accessories	Approx 8.3kg	
Housing material	Top cover	AES	
	Main frame	Magnesium die casting	
	Bottom case	Magnesium die casting	
External I/F	USB connector	USB3.1 x1	
		USB2.0 x1	Waterproof connector
	SD card slot	UHS- I SDR104	Standard size
	SIM card slot	Nano SIM	
	LAN port		
SoM	Jetson Xavier NX		
	GPU	384コア NVIDIA Volta, 48 Tensor core	
	CPU	6コア NVIDIA Carmel ARM v8.2 64bit,6MB L2+4MB L3	
	RAM	16GB 128bit LPDDR4x 59.7GB/Sec	
	EMMC	16GB	
Storage	SSD	256GB	
Network	Wired LAN	10/100/1000 BASE-T	
	Wireless LAN	2.4GHz 802.11b/g/n	
	LTE	LTE-FDD : B1/B2/B3/B4/B5/B7/B8/B12/B13/ B18/B19/B20/B25/B26/B28  LTE-TDD : B38/B39/B40/B41  WCDMA : B1/B2/B4/B5/B6/B8/B19  GSM : 850/900/1800/1900	Overseas SIM free

GNSS	GPS	L1C/A, L2C	
	QZSS	L1C/A, L2C	
	GLONASS	L1OF, L20F	
	Galileo	E1B/C, E5b	
	BeiDou	B1I, B2I	

