Sanlien Technology Corp.

Adot4

Analog Datalogger

User Manual

Model: AD-4001

Be the frontier of environmental monitoring

www.sanlien.com

Contents

I. Introduction

Adot4 is an analog datalogger with both LTE-M and NB-IoT wireless transmission technologies, which is designed to meet the needs of geotechnical engineering applications. This datalogger can be used to measure analog instrument signals such as voltage, current, resistance and various thermometers.

Adot4 has a sturdy waterproof outer case and low power consumption design to ensure accurate and continuous data collection even in harsh environments. It is equipped with a built-in 32GB Micro SD card, providing sufficient storage capacity for over one million data records. Common applications, include: automated safety monitoring in civil engineering, water conservancy, construction and other fields.

Applications:

- Tilt monitoring: MEMS Tiltmeter
- Water level monitoring: 4-20 mA Transducers
- Load monitoring: Full Wheatstone Bridge Load Cells
- Displacement monitoring: Potentiometers
- Cracks monitoring: Potentiometers
- Temperature monitoring: RTD /PT100/3K Thermistor

II. Specification

Description	Note
Measurement Type	Analog sensor
ADC	24-Bit Resolution
Differential Voltage Measurement	± 10 V
Single-Ended Voltage Measurement	0-5 V
Current Loop Measurement	4-20 mA
Wheatstone Bridge Measurement	Full Wheatstone Bridge
Temperature Measurement	RTD / PT100 / 3K Thermistor
Power Output	5 V / 130 mA or 12 V / 130 mA
Channel	4
LPWAN	NB-IoT / LTE-M (CAT M1)
Network Protocol	MQTT
Storage	32 GB Micro SD Card
Power Supply	18650 Li-Ion Battery x4 (Provides 5-18 Vdc battery recharging function, can be connected to solar panel or external power supply)

III. Accessory

Adot4 standard package includes:

(1) Adot4 main unit (x1) + antenna (x1)

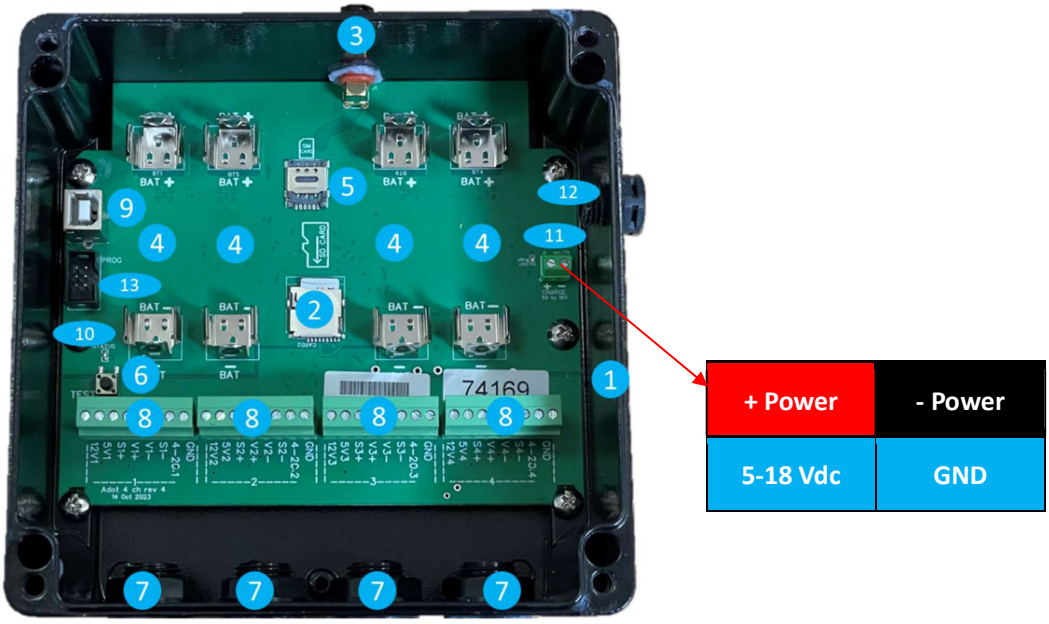
(2) 32 GB micro-SD card (x1)

(3) NB-IoT / LTE-M SIM card (customer to purchase separately)

(4) 18650 rechargeable lithium batteries (x4, excluded)

(5) Sanlien dot cloud platform license key

#	Description
1	Enclosure
2	SD Card Slot
3	Antenna Port
4	Battery Holder (x4)
5	SIM Card Slot
6	Test Button
7	Cable Gland
8	Signal Terminal Socket
9	Com Port
10	LED Indicator Light
11	5-18 Vdc External Power Charging Terminal
12	Vent Valve or Charging Cable Gland
13	Programming Socket



IV. SD Card Setup

The SD card utilizes a storage space of 32 GB and needs to be formatted to FAT32 with a unit size of 64 KB. The SD card can be configured and data downloaded via computer access. It contains three files:

(1) A4_setup.txt: This file is for configuring parameters related to VWdot4 measurement and data transmission. Customers need to set it up themselves.

(2) A4_DATA.txt: This file serves as a backup for measurement reading data. When the system operates normally, it automatically generates the A4_DATA.txt file. In case of unsuccessful data upload due to communication or MQTT server interruption, this file provides backup for measurement reading data and 20 data supplements.

(3) A4_ERROR.txt: This file records system execution error messages. When errors occur during system operation, the system automatically generates the A4_ERROR.txt file to record the error messages for user inspection and debugging purposes.

(4) SETUP2.txt: This file is generated automatically by the cloud software using the Device Setting feature to modify the measurement frequency. SETUP2.txt has a higher execution priority than A4_setup.txt. Therefore, when modifying the configuration file via the SD card, SETUP2.txt must be deleted if necessary.

V. A4_setup Configuration

Write “A4_setup.txt” file commands with the symbol "#" as the parameter's end, and information after the symbol "$" as comments. The contents and instructions are as follows:

intervalh=0#$ **Unit: hours. Minimum must be 1. Maximum is 1000.**

Remark: Recording frequency, measured in hours. Minimum is 1 hour; maximum is 1000 hours.

intervalm=5#$ **Unit: minutes. Minimum 5. Maximum 59.**

Remark: Recording frequency, measured in minutes. Input multiples of 5: 5, 10, 15, 20, 30 minutes.

Note: If the recording frequency is less than 1 hour, set intervalh to "0"; if it is more than 1 hour, set intervalm to "0".

power_1=5#$ **Must enter “5” or “12”**

Remark: The power output voltage range allows input of either "**5**" or "**12**".

- Inputting "5" sets the power output to 5V/130mA.
- Inputting "12" sets the power output to 12V/130mA.

The values of **power_1 to power_4** correspond to the power output of **channel_1 to channel_4**, and each channel can be set to a different voltage range.

Note:
If users want to continuously output power to a single channel (e.g., using power_1 for all of channel_1 to channel_4), simply remove the power_2 to power_4 commands. In this case, power_1 will remain active until the measurement for channel_4 is completed.

input_1=PT100#$ **Must enter “PT100” or “NTC” or “DIFF5” or “DIFF10” or “SEP” or “420” or “WB”**

Remark: Sensor signals connection

- Input "PT100": Measures a PT100-type thermometer, output unit is Ohm.
- Input "NTC": Measures an RTD or 3K Thermistor-type thermometer, output unit

is Ohm.

- Input "DIFF5": Measures a ±5 V differential voltage sensor, output unit is mV.
- Input "DIFF10": Measures a ±10 V differential voltage sensor, output unit is mV.
- Input "SEP": Measures a 0-5 V single-ended voltage sensor, output unit is mV.
- Input "420": Measures a 4-20 mA current-type sensor, output unit is mA.
- Input "WB": Measures a Wheatstone bridge full-bridge resistance sensor, output unit is μs.

The values of **input_1 to input_4** correspond to **channel_1 to channel_4**, and each channel can be set to a different sensor signal type.

date_time=network#$ **Must enter "network" or "date_time=23/01/30/10/00/00"**

Remark: Time synchronization method. Type "network" for network synchronization. If network synchronization is unavailable, manually enter the time in the format "yy/mm/dd/hh/mm/ss". Time must be manually set each time the power is restarted.

GMT_offset=+0#$ **Local Offset +/- in minutes from GMT**

Remark: For network time synchronization, the Adot4 will connect to the corresponding time zone. Therefore, please enter "0."

disable_NBIOT=no#$ **Must enter "yes" or "no"**

Remark: Whether to disable the NB-IoT/LTE-M real-time data transmission function. To enable NB-IoT/LTE-M, enter "no". To disable NB-IoT/LTE-M, enter "yes" and configure the date_time setting.

catm_band=3#$ **LTE-M band for Wireless service**

nbiot_band=8#$ **NB IoT band for Wireless service**

Remark: The nbiot_band and catm_band commands are used to set the wireless service frequency band. If users want to use NB-IoT communication, the relevant settings for nbiot_band should be used. If users want to use LTE-M communication, the catm_band command should be used. Please inquire with the telecommunications service company for these parameters.

APN=internet.iot #$ **Access Point Name for Wireless service**

Remark: NB-IoT/LTEM wireless service access point name. Please inquire the NB-IoT telecommunications service company for this parameter.

server_IP=SANLIEN#$ MQTT Server Name or IP address

Remark: IP address of the MQTT server for data upload. If using the Sanlien dot web service, set it to "SANLIEN". For a self-built MQTT server, additional settings are required:

server_port=????#$

user_name=????#$

password=????#$

data_path=????#$ (MQTT subscription topic, example: data_path=VWdot4/test#$)

wakeup_LED=yes#$ Must enter "yes" or "no"

Remark: Setting whether to or not to enable the LED indicator function according to the set measurement frequency. Type "yes" to turn on the LED indicator light. Type "no" to turn off the LED indicator light during the measurement. This setting does not affect the operation of the LED indicator light during initial boot and when using the TEST button.

encryption=yes#$ Must enter "yes" or "no"

Remark: Specify whether the cloud (remote) modified settings service should be encrypted. Input "yes" if using the Sanlien dot web service.

new_key=no#$ Must enter "yes" or "no"

Remark: Encryption password setting. Input "no" if using the Sanlien dot web service. If using a self-built MQTT server, set according to encryption requirements. When set to "yes", create a key.txt file on the SD card.

sub_path=sanLienmq/Adot4/01234#$

Remark: Publish new subscription topics from the web to VWdot4 via the MQTT Server. Total limit of 35 characters. If using the Sanlien dot web service, set sub_path to sanLienmq/Adot4/01234, where 01234 is the Adot4 serial number; ensure the serial number is correct.

conf_path=sanLienconf/Adot/01234#$

Remark: After Adot4 receives new subscription topics from the web, reply via the MQTT Server. Total limit of 35 characters. If using the Sanlien dot web service, set conf_path to sanLienconf/Adot4/01234, where 01234 is the Adot4 serial number; ensure the serial number is correct.

"A4_setup.txt" Example

```
intervalh=0#$
intervalm=5#$
power_1=12#$
input_1=DIFF5#$
power_2=5#$
input_2=SEP#$
power_3=5#$
input_3=WB#$
power_4=12#$
input_4=420#$
date_time=network#$
GMT_offset=0#$
disable_NBIOT=no#$
catm_band=#$
nbiot_band=8#$
APN=iot.1nce.net#$
server_IP=SANLIEN#$
wakeup_LED=yes#$
encryption=yes#$
new_key=no#$
sub_path=sanLienmq/Adot4/74182#$
conf_path=sanLienconf/Adot4/74182#$
```

VI. A4_DATA Content Descriptions

The data values in A4_DATA are separated by commas, and their meanings in sequence are as follows:

- Adot4 Serial Number
- Date
- Time
- S1 (Channel 1), Measurement Value
- S2 (Channel 2), Measurement Value
- S3 (Channel 3), Measurement Value
- S4 (Channel 4), Measurement Value
- Device Temperature (°C)
- Battery Level (%)
- RSSI Signal Strength

For example:

74164, 28/12/2023, 17:25:00, S1, 4994.269, S2A, 297.164, S3W, 294.178, S4R, 298.614, 17.9, 99,26, !REG

Measurement Unit Codes and Additional Notation:

- If the measurement setting is **DIFF5, DIFF10, or SEP**, S1–S4 output unit is **mV**, with only **S1 displayed**.
- If the measurement setting is **420**, S1–S4 output unit is **mA**, and **"A" is appended to S2A**.
- If the measurement setting is **WB**, S1–S4 output unit is **µs**, and **"W" is appended to S3W**.
- If the measurement setting is **PT100 or NTC**, S1–S4 output unit is **ohm**, and **"R" is appended to S4R**.

Summary of Output Unit Codes:

- **Sx** → mV (x = 1,2,3,4)
- **SxA** → mA (x = 1,2,3,4)
- **SxW** → μs (x = 1,2,3,4)
- **SxR** → ohm (x = 1,2,3,4)

```
74164,18/12/2024,17:00:00,S1,4994.269,S2,297.164,S3,294.178,S4,298.614,17.9,99,26,!REG
74164,18/12/2024,17:05:00,S1,4994.265,S2,297.161,S3,294.178,S4,298.614,17.3,99,25
74164,18/12/2024,17:10:00,S1,4994.259,S2,297.169,S3,294.178,S4,298.614,17.8,99,26
74164,18/12/2024,17:15:00,S1,4994.263,S2,297.160,S3,294.178,S4,298.614,17.9,99,26
74164,18/12/2024,17:20:00,S1,4994.268,S2,297.152,S3,294.178,S4,298.614,17.5,99,24
74164,18/12/2024,17:25:00,S1,4994.252,S2,297.144,S3,294.178,S4,298.614,17.9,99,26
74164,18/12/2024,17:30:00,S1,4994.238,S2,297.163,S3,294.178,S4,298.614,17.7,99,26
74164,18/12/2024,17:35:00,S1,4994.269,S2,297.161,S3,294.178,S4,298.614,17.9,99,23
74164,18/12/2024,17:40:00,S1,4994.268,S2,297.173,S3,294.178,S4,298.614,17.9,99,26
74164,18/12/2024,17:45:00,S1,4994.272,S2,297.128,S3,294.178,S4,298.614,17.4,99,27
74164,18/12/2024,17:50:00,S1,4994.269,S2,297.160,S3,294.178,S4,298.614,17.9,99,26
74164,18/12/2024,17:55:00,S1,4994.269,S2,297.164,S3,294.178,S4,298.614,17.9,99,26
```

VII. A4_Error Content Descriptions

The remarks in the A4_DATA file are also recorded in the A4_ERROR event log, with the following codes representing their meanings:

(a) !PWRx: NB-IoT / LTE-M module power supply problem.

(b) !CPIN: Issue with the NB-IoT / LTE-M SIM card.

(c) !REG: NB-IoT / LTE-M communication failure or no signal RSSI.

(d) !RSSI: NB-IoT / LTE-M signal RSSI too low or error.

(e) !RST: Problem encountered during NB-IoT / LTE-M module reset.

(f) !QNEW: No response from MQTT server.

(g) !QCON: MQTT server available, but login failed (incorrect username or password).

(h) !QPUB: MQTT server available and login successful, but data upload failed.

(i) !QSUB: Problem encountered when retrieving data from subscribed topics while connecting to MQTT server.

(j) !USUB: Problem encountered when unsubscribing from topics while connecting to MQTT server.

(k) !SDx: SD card installation failed.

(l) !LOWB: Battery voltage is too low, please replace the battery.

(m) !OFFB: Automatically shuts down due to low voltage, until the battery is replaced.

VIII. Adot4 Installation

(1) Connect the antenna, and avoid applying excessive force during installation.

(2) Insert the NB-IoT / LTE-M SIM card, and ensure that the SIM card service has been activated.

(3) Insert the SD card, ensuring that the A4_setup.txt file is correctly configured and stored in the SD card. Note: The system will not verify whether the contents of the A4_setup.txt file are correct.

(4) Connect the instrument signal lines to the Adot4 terminal socket as per the table below, and lock them in place.

Instrument Input Signal	Number of Instrument Signal	Adot4 Terminal Socket							
		12V	5V	S+	V+	V-	S-	4-20 mAh	GND
DIFF	4	Power +			Output+	Output-			Power -
SEP	3		Power +		Output				Power -
420	2	Power						Output	
420	3	Power +						Output	Power -
WB	4		Ex+		Output+	Output-			Ex-
PT100	2			Connect in series to V+	RL1	RL2	Connect in series to V-		
PT100	3			RL1	RL2	RL3	Connect in series to V-		
PT100	4			RL1	RL2	RL3	RL4		
NTC	2			Connect in series to V+	RL1	RL2			Connect in series to V-

(5) Insert the lithium battery, ensuring the correct polarity. Wait for 3 seconds before reinserting the battery if it is removed. If an external power source is needed to charge the 18650 batteries, please replace the vent valve with the charging cable fixed head and provide a 5-18 Vdc power supply, paying attention to the Power (+) and Power (-) positions.

(6) The green LED indicator will remain steady until data is successfully uploaded to the MQTT server. The green LED will then turn off. During the initial use of a new SIM card, the wireless network registration may take approximately 2 to 3 minutes.

(7) If the green LED indicator turns off without flashing before, it indicates successful startup and upload of the device transmission. If the green LED indicator flashes, please refer to Chapter 8 for further instructions.

(8) After successful startup, Adot4 will automatically measure and upload one set

of data to the MQTT service platform. After uploading, the device will enter sleep mode awaiting subsequent measurement and data upload according to the configured frequency.

(9) Check on the Sanlien MQTT service platform to confirm if the data has been correctly uploaded. If confirmed, the installation and setup are complete.

(10) During the sleep mode after successfully uploading one data point, users may press the TEST button. The LED green indicator will light up, and the device will immediately measure and upload one data point to the MQTT service platform before returning to sleep mode. If an error is detected, the LED green indicator will blink.

X. LED Light Indicator

Adot4 reports various errors as follows: (1) Recorded in the remarks column of the A4_Data file and sent to the MQTT server. (2) Recorded in the A4_ERROR file. (3) Displayed through LED green light flashing messages. If the green light starts flashing (approximately 15 seconds) after installing the battery, it indicates operation failure, and the system will shut down automatically. Users can verify the corresponding situation based on the flashing pattern.

(a) If the LED green light remains steady for 2-3 minutes before turning off, it indicates normal operation. Users can check the MQTT service platform to confirm if the data has been successfully transmitted.

(b) If the LED green light flashes at intervals of 0.5 seconds (……), it may indicate an SD card reading issue or incorrect parameters set in the A4_setup.txt file.

(c) If the LED green light flashes continuously twice, followed by two seconds off (‥___‥___‥___‥), it indicates that there is no issue with SD card reading, but there may be a problem with the SIM card or NB-IoT / LTE-M module.

(d) If the LED green light flashes continuously three times, followed by two seconds off (…___…___…___…), it indicates that there are no issues with SD card or SIM card installation, but there may be a problem with network registration. Please check if the RSSI signal strength is greater than 0 and if the SIM card account is activated.

(e) If the LED green light flashes continuously four times, followed by two seconds off (····___····___····___····) , it indicates that there are no issues with SD card or SIM card installation, and successful network registration has been achieved. However, there is a failure to connect to the MQTT Server. Please check for any issues with the MQTT service platform-related user parameters (IP address, network port, password, path) settings.

X. Battery Power

Adot4 requires four 18650 lithium-ion batteries with a working voltage range of 3.5 V to 4.2 V. It is recommended to use PANASONIC NCR18650GA batteries with a capacity of 3450 mAh or higher. The battery power is expressed as a percentage (%), indicating the remaining charge level:

bat_volt > 4.149 bat_%=99

bat_volt <=4.15 bat_%=90

bat_volt <= 4.03 bat_%=80

bat_volt <= 3.88 bat_%=70

bat_volt <= 3.75 bat_%=60

bat_volt <= 3.70 bat_%=50

bat_volt <= 3.68 bat_%=40

bat_volt <= 3.65 bat_%=30

bat_volt <= 3.60 bat_%=20

bat_volt <= 3.56 bat_%=10

bat_volt <= 3.48 bat_%=5 // The message "!LOWB" indicates that the battery voltage is low, prompting the user to replace the batteries.

bat_volt <= 3.35 bat_%=2 // The message "!OFFB" indicates that the system has automatically shut down due to low voltage, and it prompts the user to replace the batteries.

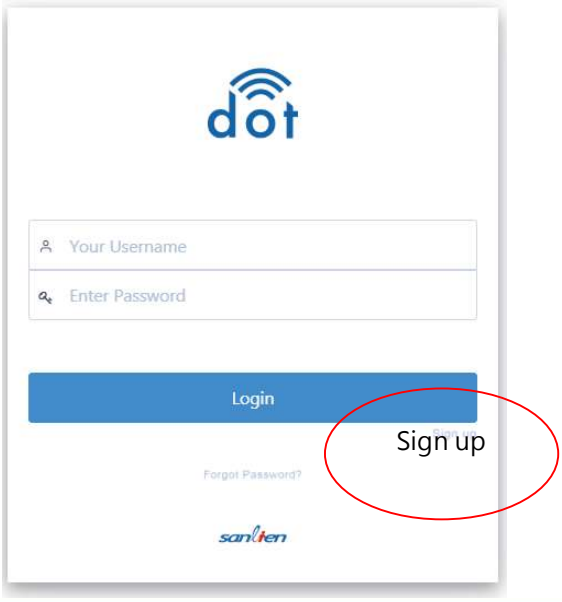
XI. SANLIEN “dot” Web Service

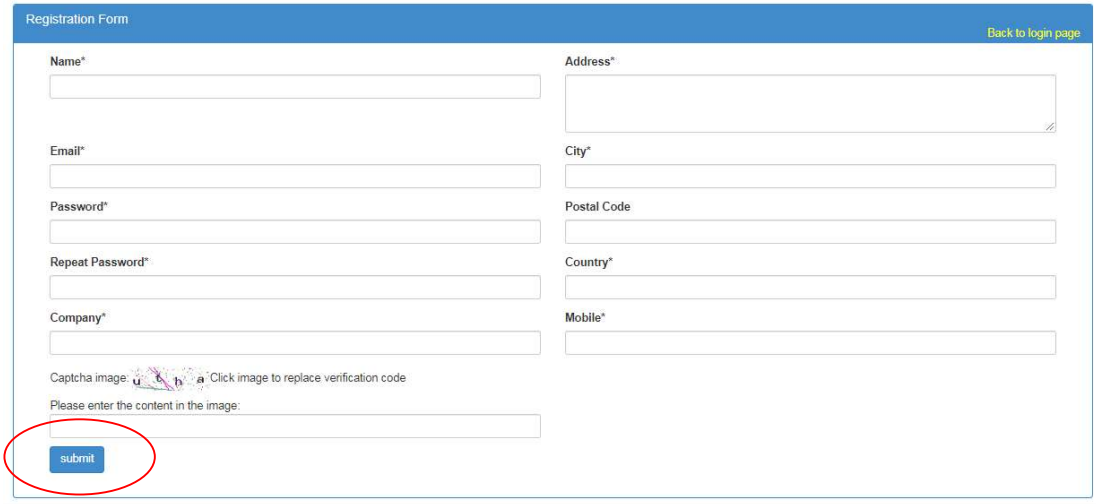
This section is the explanation for using the Sanlien Technology MQTT server dot web service platform. If users wish to set up their own MQTT server platform, please contact Sanlien Technology technical staff.

Sanlien Technology dot web service platform link: http://wms.sanlien.com.tw/dot

(1) For the first login, please sign up to register a new account.

(2) After filling out the information, click on ‘submit’. The system will send an email with the Sanlien Technology dot service platform link to the registered email address. Users need to access the platform through the login link in the email to activate the account.





(3) After creating an account, users can log in to the dot web service platform. Here are the main functions:

(a) Latest Record: Displays the latest data records.

(b) Record Query: Allows for data query and download services.

(c) Chart Query: Provides curve query and download services.

(d) Map: Displays location and measurement-related information on a map.

(e) Company Setting: Configures basic information, including company name and project name.

(f) FTP Setting: Enables automatic data transmission via FTP.

(g) FTP Log: Records errors that occur during FTP transmission.

(h) SMS Setting: Provides SMS notification for values exceeding certain thresholds.

(i) Project User Setting: Allows adding client accounts for remote login.

(j) Device Setting: Allows cloud-based setting modification.

(k) Admin: Configures device information.

(4) When logging in to the dot web service platform for the first time, users need to set up the device information through “Company Setting” and “Admin” to use related services on the platform.

(A) Company Setting

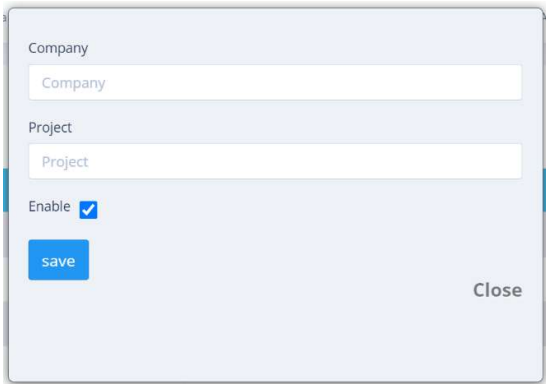
(a) Click on ‘Company Setting’.

(b) Click on ‘Add’ to add new data.

(c) Enter the Company name.

(d) Enter the Project name.

(e) Click on ‘save’ to add the data.



(B) Admin Setting

(a) Click on ‘Admin’.

(b) Click on ‘Add’ to add new data.

(c) Type: Select the type of instrument, choose the option Adot4.

(d) S/N: Enter the device serial number, please input a 5-digit serial number, for example, 01234.

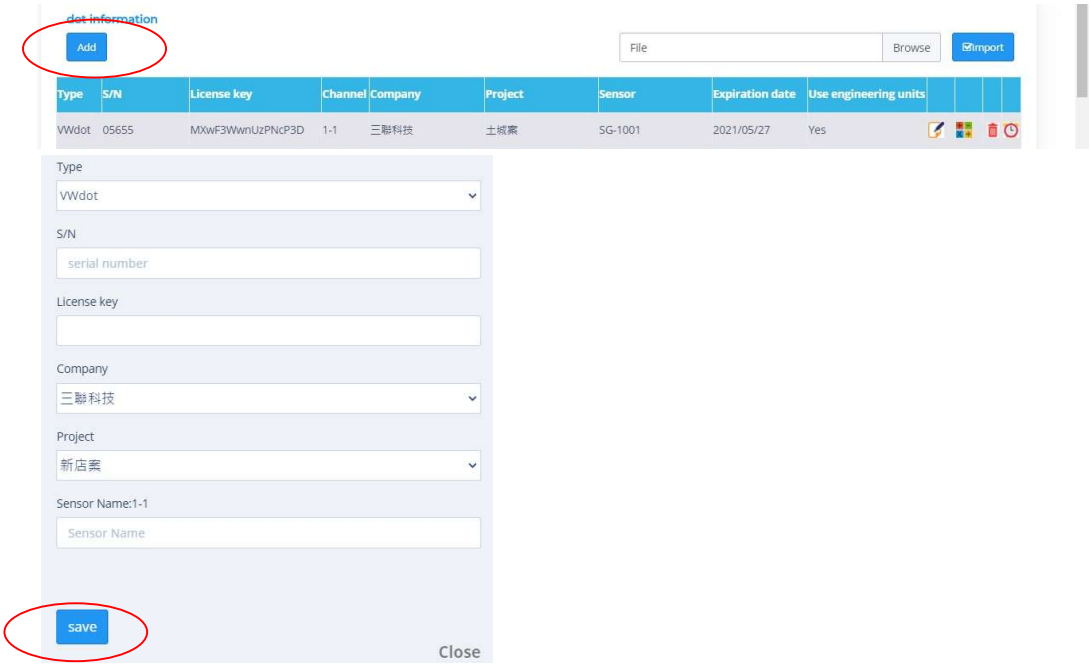
(e) License key: Enter the license key for the service platform provided by Sanlien Technology.

(f) Company: Select the company name from the dropdown menu.

(g) Project: Select the project name from the dropdown menu.

(h) Sensor Name: Enter the instrument identifier directly, for example, OW-01.

(i) After completing the entries, click ‘save’ to add the new configuration to the data table.



(C) After completing the configuration, users may use the functions on the right side of the table, such as modify, settings, delete, renew, etc.

(a) Modify function: Modify the Company or Project data.

(b) Settings function: Configure measurement physical quantities, threshold values, Email notifications, SMS notifications, etc.

(c) Delete function: Each data provides only one service platform account. If users want to change to another account, the original account needs to delete the configured data first.

(d) Renewal function: Purchase the rental service before the expiration of the platform rental period, and enter the key to extend the platform rental period.

(D) Settings Function:

(a) Physical Quantity Calculation: Check ‘Use engineering units’ to perform physical quantity calculation for measured values. Enter the units in the "Units" field. Enter coefficients A~F for the instrument. Enter the initial reading value (R0), the measured reading (Ri), and the offset value (M).

- Engineering unit (Hi)=A(Ri)5+B(Ri)4+C(Ri)3+D(Ri)2+E(Ri)+F
- Engineering unit Change= Current Engineering unit (Hi) - Initial Engineering unit (H0) +M

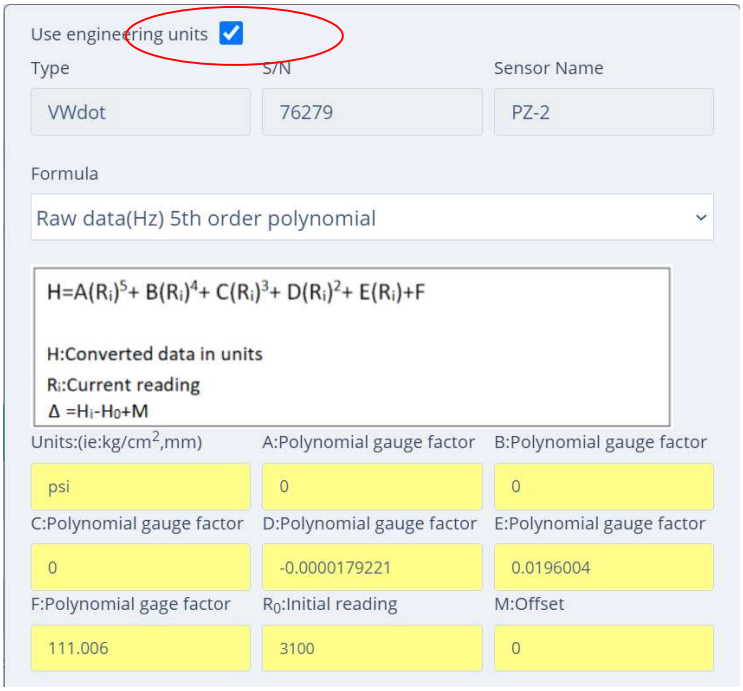
(b) Alert notification configuration: Check the ‘Alert notification’ box to configure management values. The colors of the indicator lights represent the following:

Value < Level 3	Value < Level 2	Value < Level 1	Normal Value	Value > Level 1	Value > Level 2	Value > Level 3

(c) Email notification setup: Check the ‘Mail notification’ box to configure email notification. When the physical change exceeds the set Level 1 to Level 3 thresholds, the system will automatically send notifications to the specified email addresses.

(d) SMS notification setup: This feature requires the purchase of SMS sending services for mobile phones. Before using it, users need to configure various settings in the "SMS Setting" section (details in section 5). Check the ‘SMS notification’ box to configure SMS notification. When the physical change exceeds the set Level 1 to Level 3 thresholds, the system will automatically send notifications to the specified mobile phone numbers.

(e) The "SMS Remaining" field indicates the remaining number of SMS notification service instances, which the system calculates automatically. The "Phone Number" field is where users input the mobile phone number. Phone number settings need to be configured in the "SMS Setting" section.


Use engineering units
Type
S/N
Sensor Name
VWdot
76279
PZ-2
Formula
Raw data(Hz) 5th order polynomial
H=A(Ri)5+ B(Ri)4+ C(Ri)3+ D(Ri)2+ E(Ri)+F
H:Converted data in units
Ri:Current reading
Δ =Hi-H0+M
Units:(ie:kg/cm2,mm)
A:Polynomial gauge factor
B:Polynomial gauge factor
psi
0
0
C:Polynomial gauge factor
D:Polynomial gauge factor
E:Polynomial gauge factor
0
-0.0000179221
0.0196004
F:Polynomial gage factor
R0:Initial reading
M:Offset
111.006
3100
0


Alert notification
Alert level 1(<)
Alert level 1(>=)
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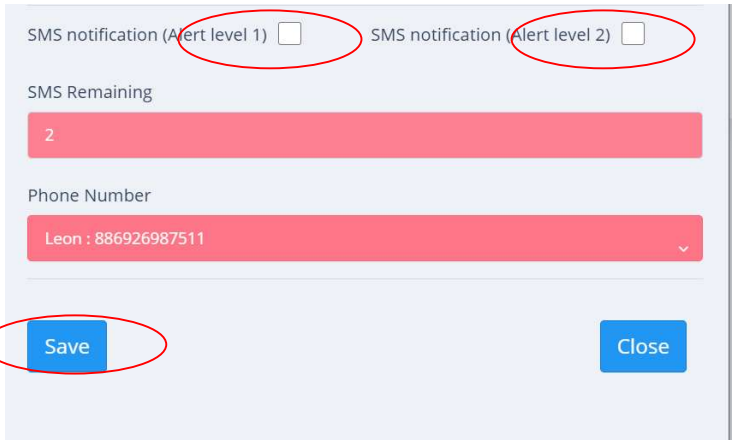
Alert level 2(<)
Alert level 2(>=)
-25
0
Alert level 3(<)
Alert level 3(>=)
-30
0
Mail notification (Alert level 1)
Mail notification (Alert level 2)
Mail notification (Alert level 3)
Notification mail(1)
Notification mail(2)
sanlienbu1cs@gmail.com
Notification mail(3)
Notification mail(4)
Notification mail(5)
SMS notification (Alert level 1)
SMS notification (Alert level 2)
SMS notification (Alert level 3)
SMS Remaining
0

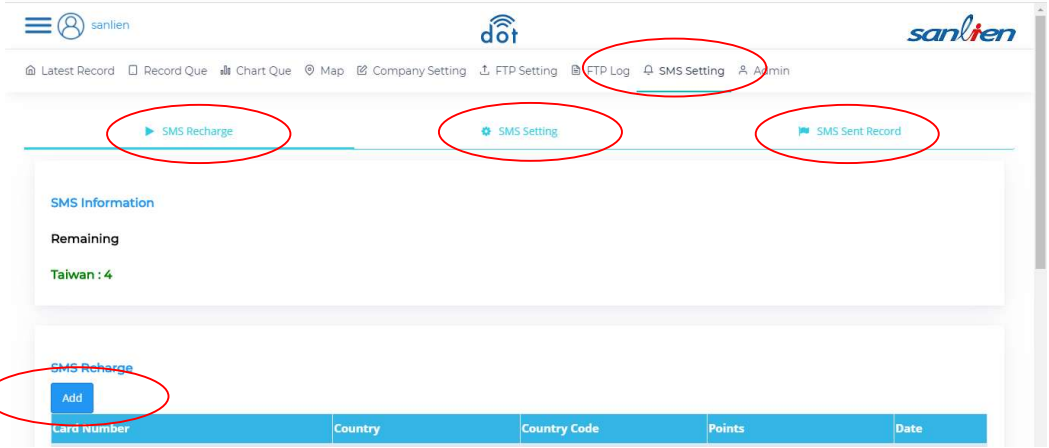


(5) To set up SMS sending phone numbers, click on "SMS Setting."

(a) SMS Recharge: This is an additional SMS service value-added function. Click on ‘Add’ to enable SMS value-added service. "Card Number" and "PIN Code" are the key numbers provided on the purchased SMS card.

(b) SMS Setting: Configure SMS transmission settings. Click on ‘Add’ to enter the phone numbers for SMS transmission. Do not include the first digit "0" in the "Phone Number" field. For example, for the phone number 0912-345678, only enter 912345678.

(c) SMS Sent Record: Records of SMS transmissions.



(6) To set up map display information, click on ‘Map’ to configure the settings.
Map Setting: Configure map settings.

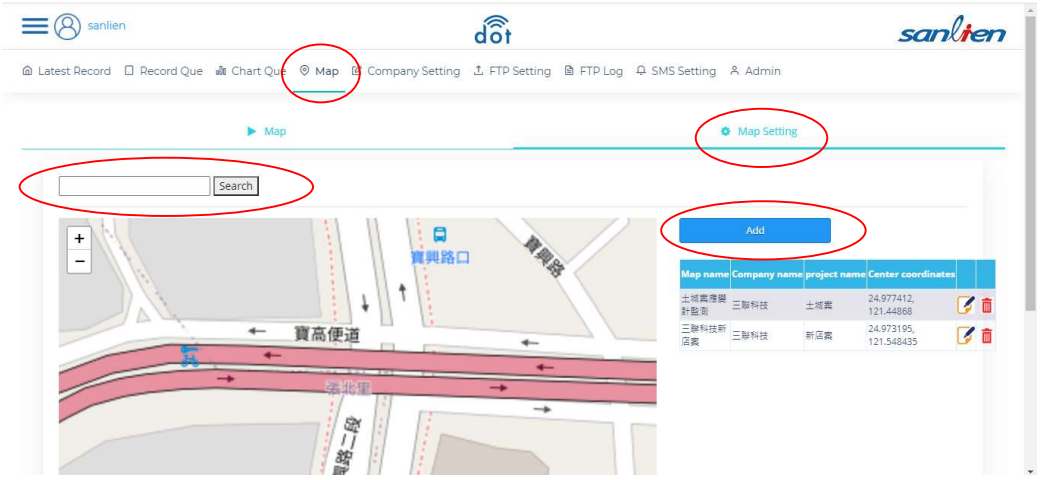
(a) Enter the location name or coordinates in the search field to search for the desired location.

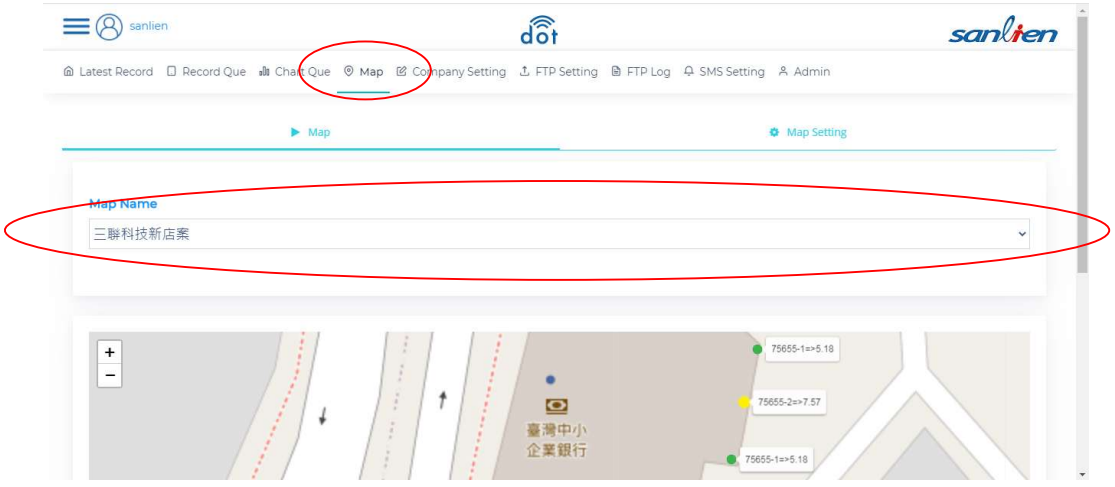
(b) Use the map zoom, pan, and move functions to select the desired map area.

(c) Click on ‘Add’ to set the map name, company name, project name, etc., and then save the map information.

(d) Left-click on the map with the mouse to set the instrument position and number.

(e) Once the settings are completed, users can view the status of the instruments in the “Map” function.





(7) To configure FTP data transmission settings, click on ‘FTP Setting’.

(a) Company: Select the data to be transmitted.

(b) FTP Server: Enter the FTP login IP.

(c) FTP Port: Enter the FTP login port.

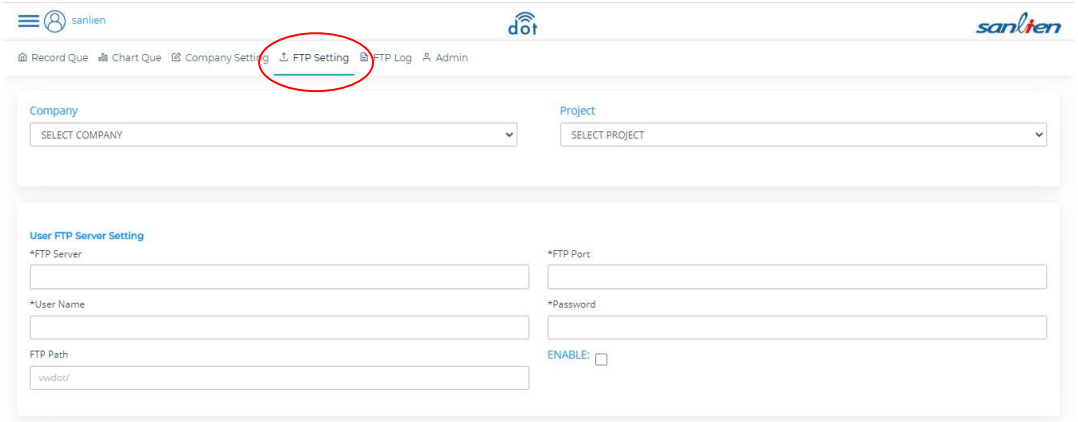
(d) User Name: Enter the FTP login username.

(e) Password: Enter the FTP login password.

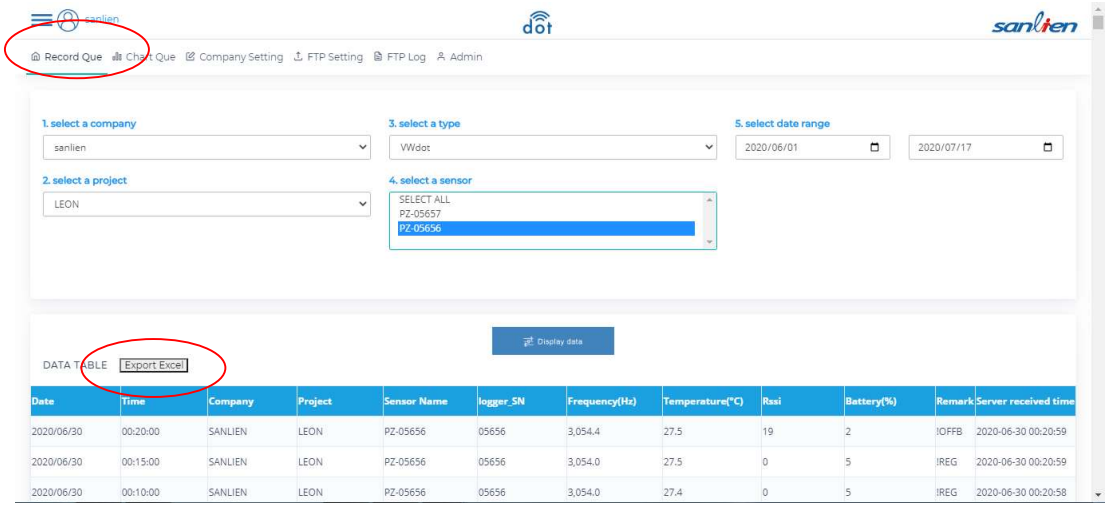
(f) FTP Path: Enter the data storage location. If no subdirectory is set, leave this field blank. If storing in a subdirectory, enter the subdirectory name followed by a slash, for example, "Adot4/".

(g) ENABLE: Check to enable. Leave unchecked to disable.

(h) Once the entries are completed, click ‘save’ to finalize the FTP transmission settings.

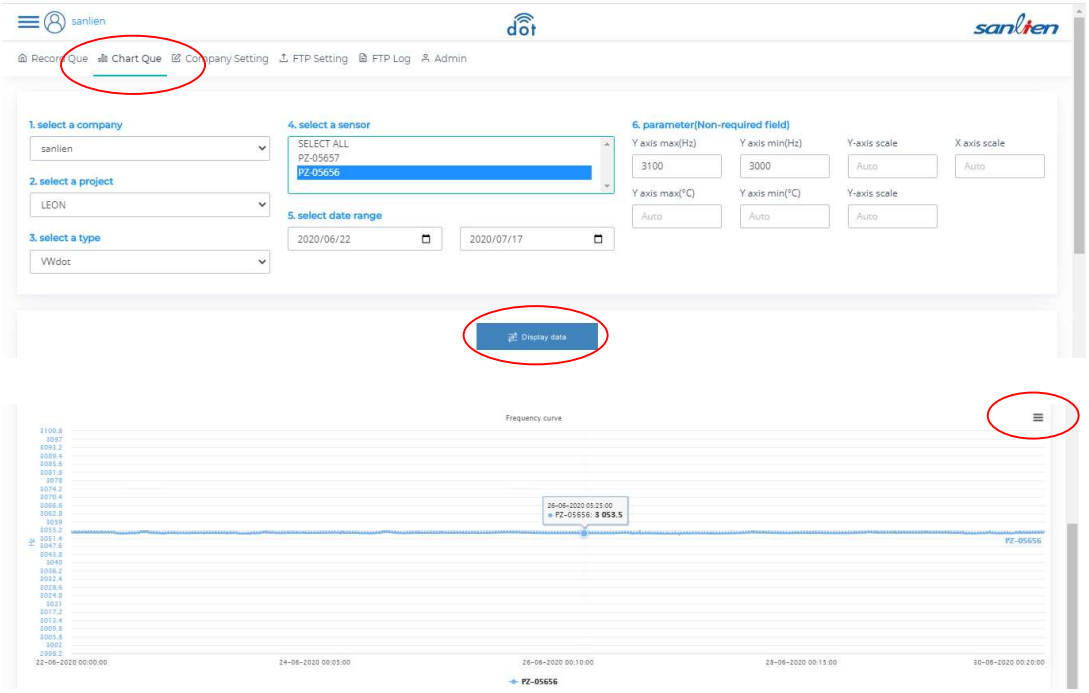


(8) For data query and download, click on the ‘Record Query’ function. Select the company name, project name, instrument name, and query date. Then, click the ‘Display data’ button. The queried data will appear below, and users can export the data using the “Export Excel’ function.



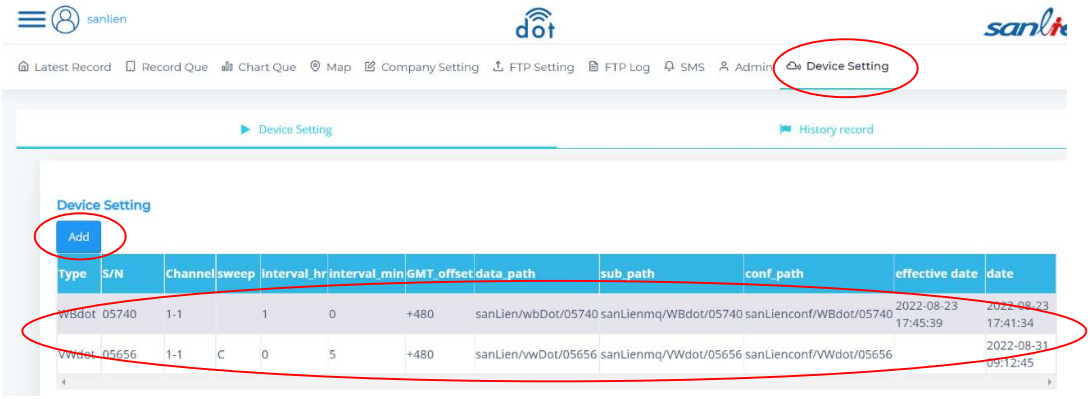
(9) For curve query and download, click on the ‘Chart Query’ function. Select the company name, project name, instrument name, and query date. Then, click the

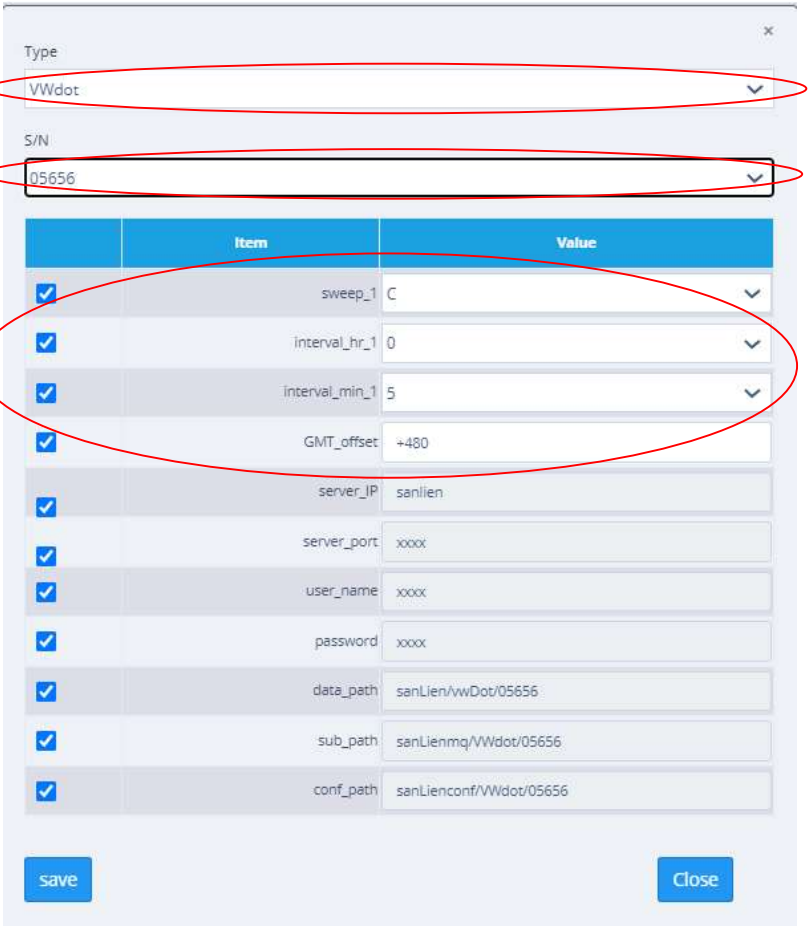
'Display data' button. The queried data will appear below. Users can also use the functionality in the upper right corner of the graph to save it as various image files.



(10) To modify the settings from the cloud, access the "Device Setting" function. Click on 'Add', then select the instrument serial number to be modified. Users can adjust settings such as sweep, interval, and GMT_offset. After entering the details, click 'Save' to complete the process. Users can view the setting information and the effective modification time in the "Device Setting" screen.

Note: All modified settings will take effect after the next measurement by the device.

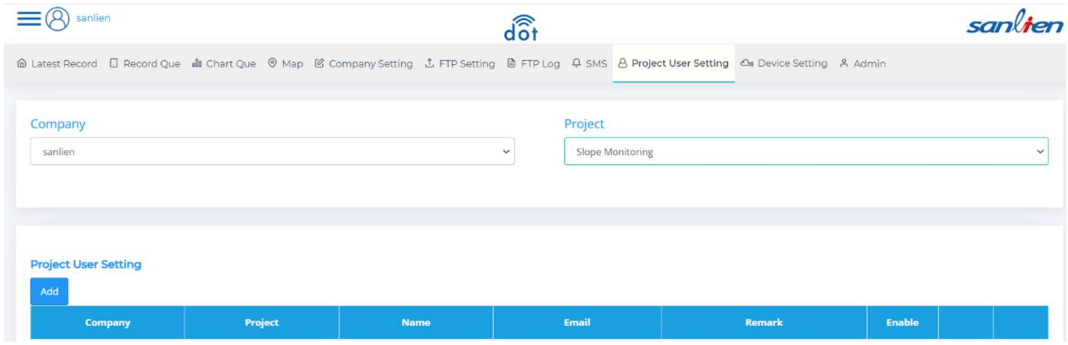


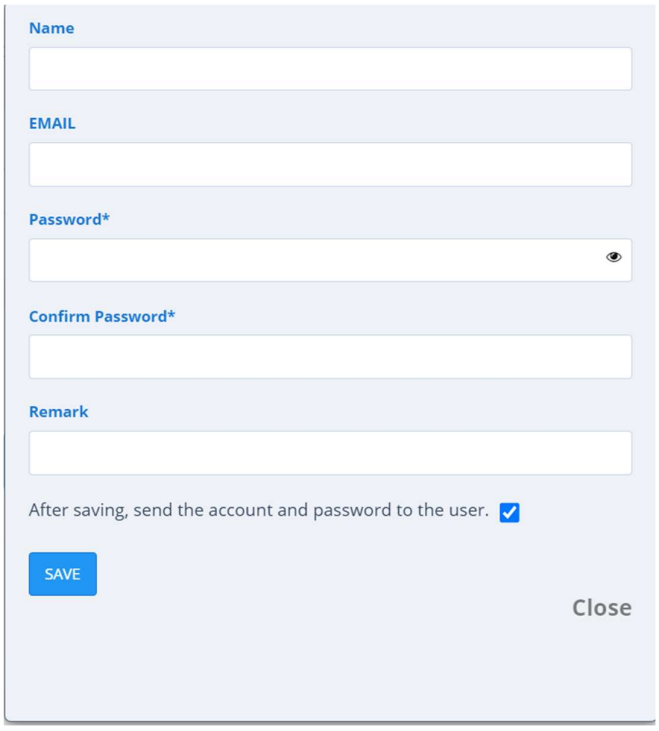


(11) To add a client for remote login, access the "Project User Setting" function. Select the Company and Project wanted to be shared, then click on ‘Add’. Fill in the required information and click ‘SAVE’. The system will send the link to the Sanlien dot client platform to the specified email address. Upon receiving the email, clients can use the provided link.

Note: The remote connection URL is
https://wms.sanlien.com.tw/dot/index.php?item=client

Please be aware that this remote connection URL is different from the original Sanlien dot management web service platform URL.


sanlien
Latest Record
Record Que
Chart Que
Map
Company Setting
FTP Setting
FTP Log
SMS
Project User Setting
Device Setting
Admin
Company
sanlien
Project
Slope Monitoring
Project User Setting
Add
Company
Project
Name
Email
Remark
Enable


Name
EMAIL
Password*
Confirm Password*
Remark
After saving, send the account and password to the user.
SAVE
Close

Sanlien Technology Corp.

3F, No. 190, Sec. 2, Zhongxing Rd.,
Xindian Dist., New Taipei City 231017, Taiwan (R.O.C.)
TEL:02-86659813
FAX:02-86659814

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www.sanlien.com