

# pALERT S303

## **Quick Start Guide**



http://www.sanlien.com



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# 1 Hardware Requirement

## **1.1 Sensor and Accessories**

Sensor



Ethernet Cable & Connector



Power Cable &

**GPS** Antenna Sets







Server & Hub







## **Sensor Outlook**

- 1. LCD Monitor : Live status presentation.
- 2. Button Function : Delay time in seconds for function.
- 3. Ethernet Port : Connecting Ethernet.
- 4. Power Port : DC Power connector.
- 5. AUX Port : Auxiliary port for digital output and GPS antenna.
- 6. Sensor Port : Additional port for external velocity sensor.
- 7. GPS Antenna Port : Connector for GPS antenna.



![](_page_5_Picture_1.jpeg)

## **1.2 Delay Time Functions from Button**

1 Second	IP Showing		
2 Seconds	NTP restart		
3 Seconds	Exercise cancel function		
4 Seconds	Hardware part reloading parameters		
5 Seconds	Firmware version showing		
6 Seconds	Reloading parameters without IP check (for saving time)		
7 Seconds	Firmware upgrading via internet		
8 Seconds	1. Global recoding mode		
	2. Confirm this mode by following 2 seconds pressing		
3. Stop this mode by following 3 seconds pressing			
9 Seconds	Test mode		
	■ Following 4 seconds : EEW Exercise in 30 seconds		
	■ Following 3 seconds : Warning cancel		
	■ Following 9 seconds : Back to normal mode		
	■ Following 10seconds : Relay self-test		
12 Seconds Power off			
Factory Reset : Time delay in seconds from sensor button following the			
sequence $1 \rightarrow 5 \rightarrow 1 \rightarrow 6 \rightarrow 2 \rightarrow 6 \rightarrow 1 \rightarrow 2$			
Default IP			

Address : 192.168.255.1

Netmask : 255.255.255.0

Gateway: 192.168.255.254

Note : See the figures below

![](_page_6_Picture_1.jpeg)

#### 1.2.1 The IP Showing

Press 1 second from button, LCD shows sensor IP.

![](_page_6_Picture_4.jpeg)

#### **1.2.2 The Power Off**

Press 12 seconds from button, LCD shows sensor "**Power off**" - >"**System is off**". After that removing power connector, LCD will disappear message.

![](_page_6_Picture_7.jpeg)

![](_page_7_Picture_1.jpeg)

![](_page_7_Picture_2.jpeg)

## **1.3 LCD Showing Description**

### 1.3.1 Main Status Description

![](_page_7_Picture_5.jpeg)

#### **1.3.2 Booting Sequence**

After the powering is on, the LCD will show "Booting" and "Offsetting", if it keeps showing "Offsetting", please put sensor to the more stable platform(ground) to avoid the background noise.

![](_page_7_Picture_8.jpeg)

# **2** Installation

## **2.1 Installation Sequence**

![](_page_8_Picture_4.jpeg)

Step 1 : Drilling a hole with sleeve anchor diameter and depth on the wall or platform(ground), diameter and depth around 0.5 and 1.58 inches.

Step 2 : Taps the sleeve in hole with hammer.

Step 3 : Drive the anchor into sleeve part and keep a sufficient distance (around 0.31 inch).

Step 4 : Hook sensor on anchor.

![](_page_8_Picture_9.jpeg)

![](_page_9_Picture_1.jpeg)

Step 5 : Tight these 3 hex screws on the wall or platform(ground). Level the bubble on the center (horizontal requirement).

![](_page_9_Picture_3.jpeg)

Step 6 : GPS Antenna should be encapsulated with glue as below.

- #. Put the GPS connector cover.
- #. Inject the glue.
- #. Cover the cap after injected.

![](_page_9_Picture_8.jpeg)

![](_page_10_Picture_1.jpeg)

# **2.2 Mount Direction Description**

### **2.2.1 Components Definition**

![](_page_10_Figure_4.jpeg)

#### 2.2.2 Mount Mode

"WALL" and "EASTWARD" mount: Output positive value is in upward, northward and westward direction (negative is on the contrary).

"NORTHWARD" mount: Output positive is in upward, northward and eastward direction (negative is on the contrary). The 3 modes can be set in software.

NOTICE: The definition of wave polarization is reverse between WALL & NORTHWORD mounting mode from EAST/WEST directions, please contact manufactory when having the wall mounting requirement.

![](_page_10_Figure_9.jpeg)

![](_page_11_Picture_1.jpeg)

# **3** Software Description

## **3.1 Computer IP setting**

To connected with sensor, computer(laptop) should be the same IP domain with it, here under is the description.

Step 1:

Right click WIFI (Fan symbol) and select "Network and Internet".

2		
<mark>Networl</mark>	and Interne	t san an a
(î.	<i>в</i> }-	«կ»
sanlien_IA	飛行時式	行動熱點
R	~ 🔄 🔬	S 上午 10:52 2019/11/26 □

#### Step 2:

Select change adaptor settings

![](_page_11_Figure_10.jpeg)

![](_page_12_Picture_1.jpeg)

Step 3:

#### Right click and select properties.

![](_page_12_Picture_4.jpeg)

Step 4:

Click IP-V4 and set the same IP with sensor IP domain, for example, default sensor IP is 192.168.255.1, you can only change the 4<sup>th</sup> number with 192.168.255.xxx (the number below 254) in it.

📱 乙太網路 7 內容	×	
網路功能 共用 連線方式:		
Realtek USB FE Family Controller #3	網際網路通訊協定第 4 版 (TCP/IPv4) - 內容	×
這個連線使用下列項目(O): ☑ 聾 Client for Microsoft Networks ☑ 號 VMware Bridge Protocol	一般 如果您的網路支援這項功能,您可以取得自動指派的 IP 設定。否 詢問網路系統管理員正確的 IP 設定。	則,您必須
<ul> <li>✓ File and Printer Sharing for Microsoft Network</li> <li>✓ Popcap Packet Driver (NPCAP)</li> <li>✓ Popcap Packet Driver (NPCAP)<td><ul> <li>● 自動取得 IP 位址(O)</li> <li>● 使用下列的 IP 位址(S):</li> <li>IP 位址(I):</li> <li>子網路遮罩(U):</li> <li>255.255.255.1</li> </ul></td><td>00</td></li></ul>	<ul> <li>● 自動取得 IP 位址(O)</li> <li>● 使用下列的 IP 位址(S):</li> <li>IP 位址(I):</li> <li>子網路遮罩(U):</li> <li>255.255.255.1</li> </ul>	00
<b>安裝(N)</b> 解除安裝(U)	預設閘道(D):	

![](_page_13_Picture_1.jpeg)

## 3.2 Web Service

### 3.2.1 Web Login

After changing computert IP, open web browzer(**DO NOT** use IE) with sensor IP at address bar(If there's no connection with any ethernt cable, the defaut IP will be "192.168.255.1"). Before clicking "**SEND**", insert "**admin**" as username, "**p@ssw0rd**" as password, clicking "SEND" to enter the main page.

![](_page_13_Picture_5.jpeg)

Main properties list on the left side window of main page.

≡	SANLIEN WEB VER		
Hi, a vibra Firm	A N L ↑ E N dmin tion@sanlien.com ware Version 4.52		
\$	Waveform & Recording	\$	Config File
\$	Waveform Report	\$	Run Log
\$	Record	\$	SOH information
\$	Parameter Settings	0-7	Password
\$	Network Setting	¢	Web Renew
\$	DNS Setting	€	Sign Out
\$	NTP Setting	Sanl	ien Technology Corp
ń	Station Info.	Priva	acy & Terms

![](_page_14_Picture_1.jpeg)

#### **3.2.2** Parameter settings

Click **"Parameter Settings"**, and it appears configuration parameters on the right-side window, click **"SAVE"** and **"Reload"** after setting changed.

<ul> <li></li></ul>							
$\equiv$ sanlien web version:	≡ SANLIEN WEB VERSION: 3.01						
OANL↑EN Hi, admin vibration@sanlien.com Firmware Version 4.52							
🗘 Waveform & Recording	[GPS] USB_PORT 0 BAUD 9600 PPS_PIN 29						
Waveform Report     Record	######################################						
Parameter Settings	AUTO_RECORD] AUTO_START YES						
Network Setting	[PALERT_LOCAL_MODE]						
DNS Setting	SERVER_IP 192.168.255.5:1505 #SERVER_IP 10.0.17:502	RELOAD		S	AVE		
TYP Setting #SERVER_IP 10.0.0104:502     STATION_NET TW     STATION_NAME TEST							

#### 3.2.3 Waveform & Recording

Web service provides real time waveform, when click "**Waveform & Recording**" on the main property, a new streaming wabpage will pop up, clicking "**Start streaming**" can see real time waveform, It also provides a simulation, an square plus with 100 gal generates during 0.8 second after clicking "**Calibration**". The "**Offset**" button serves the manully offsetting in anytime.

=	SANLIEN WEB VERS	Manual Recording stopped Timezone:Asia/Taipei IStart recording al Start streaming IStart streaming IStart streaming IStart streaming
0	ANLIEN	Channel A Divertual or 2-4400
Hi, admin vibration@sanlien.com Firmware Version 4.52		
\$	Waveform & Recording	Y na an (Internet in the Internet in Y and ) Claused (C (Transame in Y and )
\$	Waveform Report	
۵	Record	Tarana Tarana Jana Jawa Jawa Jawa Jawa Jawa Jawa J
۵	Parameter Settings	100 - 100 Ibn Ibn 200 an ion an efe a Ion an ele an Ion an ele an Ion an ele an Ion Ion Ion Ion Ion Ion Ion Ion Ion Io
۵	Network Setting	20 Obuveril a Reduct or 5. (1) 10 10 10 10 10 10 10 10 10 10
۵	DNS Setting	
\$	NTP Setting	200 Construct (Denominal or Tabl) 200 200 200 200 200 200 200 200 200 20

全部顯示

![](_page_15_Picture_1.jpeg)

### 3.2.4 Waveform Report

Click "Waveform Report" to check the recorded event file, then click the file name to see the event waveform report as below.

← → C ∆	本安全   192.168.255.22/index.php?item=record	☆	۶	
	B VERSION: 3.01			
<b>D</b> anl † e	N RECORD FILES			
Hi, admin vibration@sanlien.con Firmware Version 4.52	Display Se 100 ~	arch		
🌣 Waveform & Re	Pile Name     Oute - Time       Ordage     Date - Time   No data available in table	↓ Size		
Waveform Repo	t Showing 0 to 0 of 0 entries		<	
<ul> <li>Record</li> <li>Parameter Setting</li> <li>Network Setting</li> </ul>	ngs			
<ul> <li>DNS Setting</li> <li>NTP Setting</li> </ul>				
= SANI JEN W			*	
	N Graphic Chart Report of 2019-11-04 10:20:06 Record PRINT			
Firmware Version 4.5	200 Change			
🔅 Waveform & Re	Record Report (Acceleration(mm/s)/Time(second	s)) :		
<ul> <li>Record</li> <li>Parameter Sett</li> </ul>	ngs 150 100 50 50			
Network Setting	Time:82.06;Y-axis Acceleration:0.084			
NTP Setting				
Station Info.				

15

![](_page_16_Picture_1.jpeg)

#### 3.2.5 Password

Password can be changed by "admin" user, clicking "Password". Click "CHANGE" after double comfirmed the password.

	SANLIEN WEB VERSIO	N: 3.01
¢	Record	
۵	Parameter Settings	PASSWORD
۵	Network Setting	insert password
۵	DNS Setting	insert password
۵	NTP Setting	insert password again
۵	Station Info.	nsert password again
۵	Config File	CHANGE
\$	Run Log	CHANGE
\$	SOH information	
07	Password	
¢	Web Renew	
∋	Sign Out	
	*	

#### 3.2.6 NTP (Network Time Protocal) Setting

Sensor provides the NTP time synchronization service, please enable **port 123** to open this function. NTP can be inserted domain name or IP addresss. Click "**NTP Setting**" at left main poroperty page and then clicking "**NETWORK RESTART**" after modifing "**UPDATE**" and "**ADD ON**".

=	SANLIEN WEB VERSION: 3.01			
\$	Waveform & Recording	NTP SERVER LIST		
۵	Waveform Report			
۵	Record	102 160 255 5		
ф	Parameter Settings	192.108.233.3		
۵	Network Setting	127.127.28.2		
۵	DNS Setting			
۵	NTP Setting	127.127.28.1		
۵	Station Info.			
\$	Config File	ADD ON	UPDATE	NETWORK RESTART
۵	Run Log			
۵	SOH information			
07	Password			

![](_page_17_Picture_1.jpeg)

#### 3.2.7 Self-IP Setting

If there is no any internet(intranet) connected with sensor its default IP will be as "192.168.255.1" even in DHCP (Dynamic Host Configuration Protocal) mode. DHCP mode means that if sensor connected with hub or switch, it automatically gets an IP address. sensor can be in the static IP mode as well. The setting sequence description as below.

- 0. Click "Networking Setting"
- 1. Click to "DHCP OFF"
- 2. Insert IP-V4
- 3. Insert subnet mask
- 4. Insert gateway
- 5. Click "UPDATE" and "NETWORK RESTART"
- 6. Power cycle sensor physically

$\equiv$ SANLIEN WEB VERSION: 3.01					
ANL↑EN Hi, admin vibration@sanlien.com Firmware Version 4.53 €	NETWORK SETTING DHCP OFF DHCP ON Static IP Address 192.168.255.1				
<ul> <li>Waveform &amp; Recording</li> <li>Waveform Report</li> <li>Record</li> <li>Parameter Settings</li> </ul>	Subnet Mask 255.255.255.0 Gateway 192.168.255.254				
<ul><li>Network Setting</li><li>DNS Setting</li></ul>	UPDATE NETWORK RESTART				

3.2.8 DNS Setting

![](_page_18_Picture_1.jpeg)

If sensor connects via internet, the DNS (Domain Name System) needs to be enabled. The DNS can be enabled as google public IP by 8.8.8.8(or 8.8.4.4). Besides that, it can be defined as privacy DNS in individual area as well. Click **"DNS Setting**" then Click **"UPDATE**" after setting up at right side window.

$\equiv$ SANLIEN WEB VERSION: 3	.01
► DANLAEN Hi, admin vibration@sanlien.com Firmware Version 4.53 Example 1	DNS SETTING dns server 1 dns server 1 dns server 2
🔅 Waveform & Recording	dns server 2
🅸 Waveform Report	dns server 2 dns server 2
🗱 Record	
🏟 Parameter Settings	UPDATE
Network Setting	
DNS Setting	
NTP Setting	

#### 3.2.9 Record Download & SOH

Click "Record" then all the files can be downloaded from "Download" word.

≡ s/	ANLIEN WEB VERSION:	3.01						
DAN Hi, admin vibration@ Firmware V	NL † E N Issanlien.com Version 4.53	Display 10 ~ select all	Date	DELET	FE ALL FILES DELETE ALL SELECTED	Sea ♦ File Size	reh Ö C	0
🗘 Wav	veform & Recording	0	2021-02-24 01:48:53		20210228175639_12[Z].mseed	11566.336 KB	Download	
تې: Wav	veform Report	O	2021-02-24 01:48:53		20210228175639_12[N].mseed	15267.328 KB	Download	
10 Rec	cord		2021-02-24 01:48:53		20210228175639_12[E].mseed	13730.048 KB	Download	
🗘 Para	ameter Settings	O	2021-02-24 01:48:53		20210228175639_12[4].mseed	5992.448 KB	Download	
🗘 Neti	work Setting	O	2021-02-24 01:51:50		20210302163941_12[Z].mseed	49.408 KB	Download	
άμι DNS	P Setting	D	2021-02-24 01:51:50		20210302163941_12[N].mseed	54.016 KB	Download	
🗘 Stat	tion Info.	O	2021-02-24 01:51:50		20210302163941_12[E].mseed	54.272 KB	Download	
🗘 Con	nfig File	0	2021-02-24 01:51:50		20210302163941_12[4].mseed	18.432 KB	Download	
🕸 Run	Log	0	2021-02-24 07:58:12		20210224015556_12[Z].mseed	5105.664 KB	Download	
SOF	H information	0	2021-02-24 07:58:12		20210224015556_12[N].mseed	6368 KB	Download	

Click "**SOH Information**", status of health shows the basic health condition, the items see below. If GNSS connected stable, the GNSS shows "**sync.**", LCD always appears a heart -beat cycling dot on the right top of location between the number of firmware version.

**Notice**: If sensor repeat showing "**no heartbeat**" on LCD, short pin1 & pin9 with a dupont line from sensor port after power off it, and then power on again, the status becomes normal.

$\leftarrow$	→ C △ ▲ 不安	全  192.168. <mark>2</mark> 55.22/in	dex.php?item=soh_infc	
	SANLIEN WEB VERSION: 3.(	01		2:02/25 11:27:34
\$	Waveform & Recording			
\$	Waveform Report	sensor status	CH0: OK CH1: OK CH2: OK	
\$	Record		0112. 01	
φ	Parameter Settings	CPU temperature	32.98 °C	SRIent 220 04,53
\$	Network Setting	external voltage	12.21 V	ho heartbeat
\$	DNS Setting	internal voltage	4.24 V	
\$	NTP Setting	RTC battery	3.26 V	50
\$	Station Info.	,		
\$	Config File	NTP status	sync.	
¢	Run Log	GNSS status	sync.	
\$	SOH information	SD rec directory	ок	
07	Password	GPS LOCK	True	
¢	Web Renew	CPS OTV	10	
€	Sign Out	013011	10	
		GPS Latitude	24° 58.2344' N	
Sanli Corp	ien Technology ©	GPS Longitude	121° 32.5234' E	
102 16	0 JEE 22/indox php2itom-loc			

![](_page_20_Picture_1.jpeg)

## 3.3 WinSCP Operation

#### 3.3.1 WinSCP Login

- (1) Insert sensor IP (Default: 192.168.255.1)
- (2) User name: pi

Password: 1111

(3) Click Login

New Site	^	Session Eile protocol:		
	1	Host name: 192.168.255.1		Po <u>r</u> t number:
	2	User name:	2assword:	
		Save 🔽		Advanced
<	~	3		

### 3.3.2 WinSCP Interface

Drag new firmware to upgrade

Left Side: Local side (your computer)

Right Side: Sensor

	Your computer			Sen	sor		
2019.10.01(Palert+) -	pi@192.168.255.1 - WinSCP						- 0
🕀 🚰 👼 Synchronize	🔲 🧈 👔 🥘 Queue 🗸 Transfer Settings Defaul	lt	<i>m</i> -				
□ pi@1921682551	New Session		1.0				
The documents			I This 🤗 🐨 Land - Land	Mark Elles Comm	ande Session Ontions F	amata Hala	
in wy documents			DI - Cocal	Mark Files Comm	ands session options P	eniote neip	
🛯 🎆 Upload 👻 🖉 Edit	• 🗙 📝 🦙 Properties 📑 🔓 🛨 🖃 🛛		📲 Download 🔹 🎽 Edit 🔹 🗶 🎵 🛛	Properties 💾			
C:\\高雄三聯辦公室新震	度階測試(2019.09.26)\新震度階測試(2019.09.26)\Palert+\2019.	10.01(Palert+)	/home/pi/Desktop/vAlert/bin				
Name	Upgrade Size Type	Changed	Name	Size	Changed	Rights	Owner
	Parent directory	2019/10/8	© now 7 way	166 KB	2014/2/24 下午 02:45:02	rw-rr	pi
paint.exe				188 KB	2014/4/28 下午 03:28:28	rw-rr	pi
			a now_9.wav	200 KB	2014/4/20下十 05.29.44	IW-II	pi
			now_10.wav	220 KB	2014/4/28 下午 03:42:18	rw-rr	pi
			in now 12 way	233 KB	2015/5/7 下午 06:30:49	rw-rr	pi
	D 1		ntpd.sh	1 KB	2016/10/20 上午 10:14:05	rwxr-xr-x	pi
	Backup		oldFiles1.txt	1 KB	2018/7/6 上午 12:00:00	rw-rr	pi
	1		one.way	52 KB	2013/12/27 上午 10:01:28	rw-rr	pi
			paint.exe	925 KB	2019/10/30 上午 10:15:27	rwxr-xr-x	root
			paint.sh	1 KB	2017/11/21 上午 10:37:57	rwxr-xr-x	pi
	•		paintBak.exe	925 KB	2019/11/21 下午 05:22:55	rwxr-xr-x	pi
N I			alertIntdownloadList.txt	2 KB	2019/10/30 上午 10:15:15	rwxr-xr-x	root
N N			PIntensity 0 way	402 KR	2014/4/29 上午 08:40:20	rw-rr	ni

![](_page_21_Picture_1.jpeg)

#### 3.3.3 WinSCP Retrieves Parameter File

Click into /home/pi/Desktop/vAlert/bin and retrieving "vAlert8.cfg" and dragging to your computer, open this configuration file to edit, and then upgrade back to sensor after it is modified.

![](_page_21_Figure_4.jpeg)

Below shows the basic "Event mode" parameters setting and "Continuous mode" for example. Event mode has the trigger thresholds, which are "PD", "PGA" and "STA\_LTA". For this case, modify the "PD" and "STAL\_LTA" from "ON" to "YES", and then saving and dragging back to sensor side by WinSCP. Sensor will be enabled all of these trigger function after reloading parameters. Mounting mode default is "NORTHWARD", which means north side forward north direction in ground mounting. Currently, LPF provides 10 secs.

8	
******	*****
# Continuous mode	# Event mode
*****	*****
[AUTO RECORD]	#[PALERT_LOCAL_MODE]
AUTO START YES	#SERVER_IP 10.0.0.102:502
	#SERVER_IP 10.0.0.103:502
EDAL EDT LOCAL MODEL	#SERVER_IP 10.0.0.104:502
[PALERI_LOCAL_MODE]	#STATION_NET TW
SERVER_IP 192.168.255.5:1505	#STATION_NAME PP01
#SERVER_IP 10.0.0.17:502	#STATION_CH_NAME HL
#SERVER IP 10.0.0.104:502	#STATION_LOCATION 00
STATION NET TW	#SAMPLING_RATE 1000
STATION NAME TEST	
STATION CH NAME III	HANTO DEESET VES
STATION_CH_NAME HL	#AUTO_OFFSET TES #DD_TPTG_ENABLE_VES
STATION_LOCATION 00	#PD WATCH THRESHOLD 0 2
SAMPLING RATE 100	#PD_WARNING_THRESHOLD_0.35
LPF 10	#PGA TRIG ENABLE YES
HPF 0 100 1NS NS+	#PGA WATCH THRESHOLD 8
	#PGA_WARNING_THRESHOLD 25
	#PGA_ACTION_THRESHOLD 80
PD_TRIG_ENABLE NO WALL NORTHW EASIWA RD	#STA_LTA_TRIG_ENABLE YES
PGA_TRIG_ENABLE NO	#STA_WIDTH 2
STA_LTA_TRIG_ENABLE NO	#LTA_WIDTH 40
INSTALLATION_ANGLE 0	#STA_LTA_THRESHOLD 3.5
MOUNT MODE NORTHWARD	#STA_LTA_EVENT_TIME 15
	#STA_LTA_RELAY1 2.4
[EVENT ETLE FORMAT]	#SIA_LIA_RELAY2 8.1
meand	#SIA_LIA_KELAY3 24.9
liseeu	HINSTALLATION_ANGLE 0
	#MOUNT MODE EASTWARD

![](_page_22_Picture_1.jpeg)

Default "[SAMPLING\_RATE]" is "100" in sampling per second, it optional provides "200", "500" and "1000". Default output format is miniseed, it can be changed to CSV format by adding the hashtag symbol ("#") in front of 2 command lines from "[EVENT\_FILE\_FORMAT]" command. "[RECORD\_INTENSITY]" criteria can be changed at second line by the number of MMI scale. Following this principle, command can be enabled by removing the hashtag in front any of these commands. The "hardware.cfg" at the same folder has the priority than vAlert8.cfg to execute. DO NOT change "hardware.cfg" before contacting manufactory.

#PD_TRIG_ENABLE YES#PD_WATCH_THRESHOLD 0.2#PD_WATCH_THRESHOLD 0.35#PGA_RNING_THRESHOLD 0.35#PGA_MARNING_THRESHOLD 8#PGA_WARNING_THRESHOLD 25#PGA_ACTION_THRESHOLD 80#STA_LTA_TRIG_ENABLE YES#STA_MIDTH 2#STA_MIDTH 40#STA_LTA_TRESHOLD 3.5#STA_LTA_TRESHOLD 3.5#STA_LTA_TRESHOLD 3.5#STA_LTA_RELAY1 2.4#STA_LTA_RELAY2 8.1#MOUNT_MODE EASTWARD#IRECORD_INTENSITY]2#IRECORD_PGA]#IRECORD_PGA][PRE_EVENT_SECOND]5SUSOR_TYPE PALERT220RTC_SURCE RPICPU_RTC_PPS_ENABLE YES		
#PD_TRIG_ENABLE YES# Padev 10cat mode#PD_WARTCH_THRESHOLD 0.2[PALERT_LOCAL_MODE]#PD_WARNING_THRESHOLD 0.35SP51000 YES#PGA_WATCH_THRESHOLD 8MODE TAIWAN#PGA_WARNING_THRESHOLD 25SERVER_STREAM_MODE_TAIWAN 4#PGA_ACTION_THRESHOLD 80SERVER_STREAM_MODE_TAIWAN 4#STA_LTA_TRIG_ENABLE YESSERVER_STREAM_MODE_TAIWAN 4#STA_UTA_THRESHOLD 3.5STREAM_ING_IN_MSEC 1000#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#MOUNT_MODE EASTWARDSTREATERY_LOW_TH 3.5#[RECORD_INTENSITY]EVENT_MAX_SECONDS 10#RING_FILTERED NO#STALATA_RELAY3 24.9#IPECORD_PGA]RING_CHANKLES 3#SING_FILTERED NO#SAMOE NO#IPECORD_PGA]RING_FILTERED NO\$SAMOE NO#SAMOE NO#IPECORD_PGA]RING_FILTERED NO\$SAMOE NO#IPE_EVENT_SECOND]SENSOR_TYPE PALERT220\$RING_GRUPE PALERT220\$RING_CONCE RPI\$CPU_RTC_PPS_ENABLE YES		######################################
#PD_WATCH_THRESHOLD 0.2#PD_WARNING_THRESHOLD 0.35#PGA_TRIG_ENABLE YES#PGA_WARNING_THRESHOLD 25#PGA_WARNING_THRESHOLD 25#PGA_CTION_THRESHOLD 80#STA_LTA_TRIG_ENABLE YES#STA_LTA_TRIG_ENABLE YES#STA_LTA_TRIG_ENABLE YES#STA_LTA_TRESHOLD 3.5#STA_LTA_TRESHOLD 3.5#STA_LTA_RELAY1 2.4#STA_LTA_RELAY2 8.1#MOUNT_MODE EASTWARD#INSTALLATION_ANGLE 0#INSTALLATION_ANGLE 0#IRECORD_INTENSITY]2#[PECORD_PGA][PEE_EVENT_SECOND]5[PEE_EVENT_SECOND]5[PEE_EVENT_SECOND]55SENSOR_TYPE PALERT220RTC_SOURCE RPICPU_RTC_PPS_ENABLE YES	#PD_TRIG_ENABLE YES	# Palert local mode
#PD_wARNING_THRESHOLD 0.35[PALET_LOUCH_MODE]#PGA_TRIG_ENABLE YESLCD_BACK_LIGHT_SECOND 15#PGA_WARNING_THRESHOLD 8MODE TAIWAN#PGA_WARNING_THRESHOLD 25STREAM_MODE_TAIWAN 4#PGA_ACTION_THRESHOLD 80CEB_MODE NO#STA_LITA_TRIG_ENABLE YESMSEEDFILE_VALID_DAY 90#STA_WIDTH 2CEB_SEND_TIMEOUT_USEC 5000#STA_LTA_THRESHOLD 3.5FILTER_CEB_MODE NO#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TTME 10#STA_LTA_RELAY2 8.1WARNING_TIME 10#MOUNT_MODE EASTWARDINT_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]CVENT_MIN_SECONDS 102RING_SECONDS 10#[PECORD_PGA]RING_CHANNELS 3\$RING_FILTERED NO\$S_SMOE NOMINIMUM_OFFSET_GAL 1960SENSOR_TYPE PALER1220\$RTC_SOURCE RPICPU_RTC_PPS_ENABLE YESCPU_STABLE YES	#PD WATCH THRESHOLD 0.2	
#PGA_TRIG_ENABLE YESLCD_BACK_LIGHT_SECOND 15#PGA_WATCH_THRESHOLD 8MODE TAIWAN#PGA_WARNING_THRESHOLD 25SERVER_STREAM_MODE_TAIWAN 4#PGA_ACTION_THRESHOLD 80SERVER_STREAM_MODE_TAIWAN 4#STA_LTA_TRIG_ENABLE YESSERVER_STREAM_MODE_TAIWAN 4#STA_WIDTH 2CEB_MODE NO#STA_WIDTH 40STREAMING_IN_MSEC 1000#STA_LTA_THRESHOLD 3.5FLTRE_CEB_MODE NO#STA_LTA_EVENT_TIME 15FIR_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0INT_BATTERY_LOW_TH 10#MOUNT_MODE EASTWARDRTC_BATTERY_LOW_TH 2.5CPU_STATUS_DISPLAY_INTERVAL 60EVENT_MIN_SECONDS 10#INS_SECOND_PGA]RING_FILTERED NO%Samode NO[PRE_EVENT_SECOND]SENSOR_TYPE PALERT220SRTC_SOURCE RPICPU_RTC_PPS_ENABLE YESCPU_RTC_PPS_ENABLE YES	#PD WARNING THRESHOLD 0.35	SPS1000 VES
Int off_Int CharacterInt off_Int Character#PGA_WARCH_THRESHOLD 8MODE TATWAN#PGA_WARNING_THRESHOLD 25SERVER_STREAM_MODE_TATWAN 4#PGA_ACTION_THRESHOLD 80SERVER_STREAM_MODE_TATWAN 4#STA_LTA_TRIG_ENABLE YESSERVER_STREAM_MODE_TATWAN 4#STA_WIDTH 2CEB_SEND_TIMEOUT_USEC 5000#STA_LTA_THRESHOLD 3.5MSEEDFILE_VALID_DAY 90#STA_LTA_THRESHOLD 3.5VECTOR_INTENSITY YES#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WATCH_TIME 5#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0INT_BATTERY_LOW_TH 3.5#IRECORD_INTENSITY]EVENT_MAX_SECONDS 102INT_BATTERY_LOW_TH 2.5CPU_STATUS_DISPLAY_INTERVAL 60EVENT_MIN_SECONDS 10#IPECORD_PGA]RING_FILTERED NO8Sa_MODE NO[PRE_EVENT_SECOND]SENSOR_TYPE PALERT2205RTC_SOURCE RPICPU_RTC_PPS_ENABLE YES	#PGA TRIG ENABLE VES	LCD BACK LIGHT SECOND 15
#FGA_WATCH_THRESHOLD 8SERVER_STREAM_MODE_TAIWAN 4#PGA_WARNING_THRESHOLD 25\$SERVER_STREAM_MODE_TAIWAN 4#PGA_ACTION_THRESHOLD 80SERVER_STREAM_TRIG_PACKET NO#STA_LTA_TRIG_ENABLE YESMSEEDFILE_VALID_DAY 90#STA_WIDTH 2CEB_SEND_TIMEOUT_USEC 5000#STA_LTA_THRESHOLD 3.5STREAMING_IN_MSEC 1000#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WARCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0INT_BATTERY_LOW_TH 3.5#IRECORD_INTENSITY]EVENT_MAX_SECONDS 102RING_FILTERD NO#[PECORD_PGA]RING_FILTERD NO8SENSOR_TYPE PALERT220FRE_EVENT_SECOND]SENSOR_TYPE PALERT2205RTC_SOURCE RPICPU_RTC_PPS_ENABLE YESCPU_RTC_PPS_ENABLE YES		MODE TATWAN
#PGA_WARNING_IHRESHOLD 25       STREAM_TRIG_PACKET NO         #PGA_ACTION_THRESHOLD 80       CEB_MODE NO         #STA_LTA_TRIG_ENABLE YES       MSEEDFILE_VALID_DAY 90         #STA_WIDTH 2       CEB_SEND_TIMEOUT_USEC 5000         #LTA_WIDTH 40       STREAMING_IN_MSEC 1000         #STA_LTA_THRESHOLD 3.5       FILTER_CEB_MODE NO         #STA_LTA_RELAY1 2.4       WATCH_TIME 5         #STA_LTA_RELAY1 2.4       WATCH_TIME 5         #STA_LTA_RELAY2 8.1       WARNING_TIME 10         #STA_LTA_RELAY3 24.9       POWEROFF_SECONDS_TO_CPU 10         #INSTALLATION_ANGLE 0       INT_BATTERY_LOW_TH 3.5         #[RECORD_INTENSITY]       EVENT_MIN_SECONDS 600         2       RING_SECONDS 10         #[PECORD_PGA]       RING_CHANNELS 3         8       S3_MODE NO         #INSTMUM_SECOND]       SENSOR_TYPE PALERT220         5       CPU_RTC_PPS_ENABLE YES	#PGA_WATCH_THRESHOLD 8	SERVER STREAM MODE TATWAN 4
#PGA_ACTION_THRESHOLD 80CEB_MODE NO#STA_LTA_TRIG_ENABLE YESMSEEDFILE_VALID_DAY 90#STA_WIDTH 2CEB_SEND_TIMEOUT_USEC 5000#LTA_WIDTH 40STREAMING_IN_MSEC 1000#STA_LTA_THRESHOLD 3.5FILTER_CEB_MODE NO#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0EXT_POWER_LOW_TH 10#MOUNT_MODE EASTWARDRTC_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]EVENT_MAX_SECONDS 6002RING_SECONDS 30#[PECORD_PGA]RING_FILTERED NO8S3_MODE NO[PRE_EVENT_SECOND]SENSOR_TYPE PALERT2205RTC_SOURCE RPICPU_RTC_PPS_ENABLE YESCPU_RTC_PPS_ENABLE YES	#PGA_WARNING_THRESHOLD 25	STREAM TRIG PACKET NO
#STA_LTA_TRIG_ENABLE YESMSEEDFILE_VALID_DAY 90#STA_WIDTH 2CEB_SEND_TIMEOUT_USEC 5000#LTA_WIDTH 40STREAMING_IN_MSEC 1000#STA_LTA_THRESHOLD 3.5FILTER_CEB_MODE NO#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0INT_BATTERY_LOW_TH 10#MOUNT_MODE EASTWARDINT_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]EVENT_MAX_SECONDS 6002RING_CHANNELS 3#[PECORD_PGA]RING_FILTERED NO8S3_MODE NOMINIMUM_OFFSET_GAL 1960SENSOR_TYPE PALERT2205CPU_RTC_PPS_ENABLE YES	#PGA_ACTION_THRESHOLD 80	CEB MODE NO
#STA_WIDTH 2CEB_SEND_TIMEOUT_USEC 5000#LTA_WIDTH 40STREAMING_IN_MSEC 1000#STA_LTA_THRESHOLD 3.5STREAMING_IN_MSEC 1000#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0INT_BATTERY_LOW_TH 3.5#MOUNT_MODE EASTWARDRTC_BATTERY_LOW_TH 2.5CPU_STATUS_DISPLAY_INTERVAL 60EVENT_MIN_SECONDS 10#[RECORD_INTENSITY]EVENT_MIN_SECONDS 302RING_CHANNELS 3#[PECORD_PGA]RING_CHANNELS 38S3_MODE NO5SENSOR_TYPE PALERT220FRE_EVENT_SECOND]SENSOR_TYPE PALERT2205RTC_SOURCE RPICPU_RTC_PPS_ENABLE YES	#STA_LTA_TRIG_ENABLE YES	MSEEDFILE VALID DAY 90
#LTA_WIDTH 40STREAMING_IN_MSEC 1000#STA_LTA_THRESHOLD 3.5VECTOR_INTENSITY YES#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0EXT_POWER_LOW_TH 1.0#MOUNT_MODE EASTWARDINT_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]CPU_STATUS_DISPLAY_INTERVAL 60#[PECORD_PGA]RING_SECONDS 30#[PECORD_PGA]RING_FILTERED NO\$S3_MODE NOMINIMUM_OFFSET_GAL 1960SENSOR_TYPE PALERT220Stource RPICPU_RTC_PPS_ENABLE YES	#STA WIDTH 2	CEB_SEND_TIMEOUT_USEC 5000
#STA_LTA_THRESHOLD 3.5VECTOR_INTENSITY YES#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0EXT_POWER_LOW_TH 1.0#MOUNT_MODE EASTWARDINT_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]CPU_STATUS_DISPLAY_INTERVAL 60EVENT_MAX_SECONDS 10RING_SECONDS 30#[PECORD_PGA]RING_FILTERED NO8S3_MODE NO[PRE_EVENT_SECOND]SENSOR_TYPE PALERT2205CPU_RTC_PPS_ENABLE YES	#LTA WIDTH 40	STREAMING_IN_MSEC 1000
#STA_LTA_EVENT_TIME 15FILTER_CEB_MODE NO#STA_LTA_EVENT_TIME 15FIR_MODE NO#STA_LTA_RELAY1 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0EXT_POWER_LOW_TH 1.0#MOUNT_MODE EASTWARDINT_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]CPU_STATUS_DISPLAY_INTERVAL 602EVENT_MAX_SECONDS 10#[PECORD_PGA]RING_FILTERED NO8S3_MODE NO[PRE_EVENT_SECOND]SENSOR_TYPE PALERT2205RTC_SOURCE RPICPU_RTC_PPS_ENABLE YESCPU_RTC_PPS_ENABLE YES	#STALITA THRESHOLD 3 5	VECTOR_INTENSITY YES
#STA_LTA_EVENT_TIME 15#STA_LTA_RELAY1 2.4#STA_LTA_RELAY2 8.1#STA_LTA_RELAY3 24.9#INSTALLATION_ANGLE 0#MOUNT_MODE EASTWARD#[RECORD_INTENSITY]2#[PECORD_PGA]8[PRE_EVENT_SECOND]5	#STA_LTA_INICESISED 5.5	FILTER_CEB_MODE NO
#STA_LTA_RELAYI 2.4WATCH_TIME 5#STA_LTA_RELAY2 8.1WARNING_TIME 10#STA_LTA_RELAY3 24.9POWEROFF_SECONDS_TO_CPU 10#INSTALLATION_ANGLE 0INT_BATTERY_LOW_TH 3.5#MOUNT_MODE EASTWARDINT_BATTERY_LOW_TH 3.5#[RECORD_INTENSITY]EVENT_MAX_SECONDS 6002EVENT_MAX_SECONDS 10#[PECORD_PGA]RING_CHANNELS 38S3_MODE NO[PRE_EVENT_SECOND]SENSOR_TYPE PALERT2205RTC_SOURCE RPICPU_RTC_PPS_ENABLE YESCPU_RTC_PPS_ENABLE YES		FIR_MODE NO
#STA_LTA_RELAY2 8.1       WARNING_TIME 10         #STA_LTA_RELAY3 24.9       POWEROFF_SECONDS_TO_CPU 10         #INSTALLATION_ANGLE 0       EXT_POWER_LOW_TH 10         #MOUNT_MODE EASTWARD       INT_BATTERY_LOW_TH 3.5         #[RECORD_INTENSITY]       CPU_STATUS_DISPLAY_INTERVAL 60         2       EVENT_MAX_SECONDS 10         #[PECORD_PGA]       RING_CHANNELS 3         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       CPU_RTC_PPS_ENABLE YES	#STA_LTA_RELAY1 2.4	WATCH_TIME 5
#STA_LTA_RELAY3 24.9       POWEROFF_SECONDS_T0_CPU 10         #INSTALLATION_ANGLE 0       EXT_POWER_LOW_TH 10         #MOUNT_MODE EASTWARD       INT_BATTERY_LOW_TH 3.5         #[RECORD_INTENSITY]       CPU_STATUS_DISPLAY_INTERVAL 60         2       EVENT_MAX_SECONDS 10         #ING_CHANNELS 3       RING_CHANNELS 3         #IPECORD_PGA]       RING_FILTERED NO         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       CPU_RTC_PPS_ENABLE YES	#STA_LTA_RELAY2 8.1	WARNING_TIME 10
#INSTALLATION_ANGLE 0       EXT_POWER_LOW_TH 10         #MOUNT_MODE EASTWARD       INT_BATTERY_LOW_TH 3.5         #[RECORD_INTENSITY]       CPU_STATUS_DISPLAY_INTERVAL 60         2       EVENT_MAX_SECONDS 600         #[PECORD_PGA]       RING_SECONDS 10         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       CPU_RTC_PPS_ENABLE YES	#STA_LTA_RELAY3 24.9	POWEROFF_SECONDS_TO_CPU 10
#MOUNT_MODE EASTWARD       INT_BATTERY_LOW_TH 3.5         #[RECORD_INTENSITY]       RTC_BATTERY_LOW_TH 2.5         #[RECORD_INTENSITY]       CPU_STATUS_DISPLAY_INTERVAL 60         2       EVENT_MAX_SECONDS 600         #[PECORD_PGA]       RING_SECONDS 30         8       RING_CHANNELS 3         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       CPU_RTC_PPS_ENABLE YES	#INSTALLATION ANGLE 0	EXT_POWER_LOW_TH 10
#TC_BATTERY_LOW_TH 2.5         #[RECORD_INTENSITY]         2         #[PECORD_PGA]         RING_CHANNELS 3         RING_CHANNELS 3         RING_FILTERED NO         S3_MODE NO         MINIMUM_OFFSET_GAL 1960         SENSOR_TYPE PALERT220         RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES	#MOUNT MODE FASTWARD	INT_BATTERY_LOW_TH 3.5
#[RECORD_INTENSITY]       CPU_STATUS_DISPLAY_INTERVAL 60         2       EVENT_MAX_SECONDS 600         #[PECORD_PGA]       RING_SECONDS 30         8       RING_FILTERED NO         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES		RTC_BATTERY_LOW_TH 2.5
#[RECORD_INTENSITY]       EVENT_MAX_SECONDS 600         2       EVENT_MIN_SECONDS 10         RING_SECONDS 30       RING_CHANNELS 3         #[PECORD_PGA]       RING_FILTERED NO         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES	"IPECODD INTENCITY]	CPU_STATUS_DISPLAY_INTERVAL 60
2       EVENT_MIN_SECONDS 10         #[PECORD_PGA]       RING_CHANNELS 3         8       RING_FILTERED NO         5       SENSOR_TYPE PALERT220         7       RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES	#[RECORD_INTENSITY]	EVENT_MAX_SECONDS 600
#[PECORD_PGA]       RING_CHANNELS 3         8       RING_FILTERED NO         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES	2	EVENT_MIN_SECONDS 10
#[PECORD_PGA]       RING_CHANNELS 3         8       RING_FILTERED NO         8       S3_MODE NO         [PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES		RING_SECONDS 30
8     S3_MODE NO       9     S3_MODE NO       9     MINIMUM_OFFSET_GAL 1960       9     SENSOR_TYPE PALERT220       5     RTC_SOURCE RPI       0     CPU_RTC_PPS_ENABLE YES	#[PECORD_PGA]	RING_CHANNELS 3
S3_MODE NO         MINIMUM_OFFSET_GAL 1960         SENSOR_TYPE PALERT220         RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES	8	RING_FILTERED NO
[PRE_EVENT_SECOND]       SENSOR_TYPE PALERT220         5       RTC_SOURCE RPI         CPU_RTC_PPS_ENABLE YES		
5 CPU_RTC_SOURCE RPI CPU_RTC_PPS_ENABLE YES	[DRE EVENT SECOND]	CENCOD TYDE DALEDTOOD
CPU_RTC_PPS_ENABLE YES		DTC SOUDCE DDT
	5	CDIL RTC DDS ENABLE VES

After modifying the requirement setting. physical reload parameters after press the button for 4 seconds.

![](_page_22_Picture_5.jpeg)

![](_page_23_Picture_1.jpeg)

#### 3.3.4 Earthquake Event Checking

Sensor can downloads recording event file from the path

#### "/home/pi/Desktop/vAlert/rec" by WinSCP.

C:\Program Files (x86)\Pale	ert\RecCSV				/home/pi/Desktop/vAlert/rec				
Name	Size	Type	Changed		Name	Size	Changed	Rights	Owner
<u>.</u>		Parent directory	2019/11/26 上午 06:49:				2017/11/2 上午 10:39:57	rwxr-xr-x	pi
190611001059_4309	786 KB	Microsoft Excel 逗	2019/6/11 下午 02:49:23		20191029145431_466	231 KB	2019/10/29 下午 02:54:55	rw-rr	not
1907250832481.CSV	915 KB	Microsoft Excel 逗	2019/7/25 上午 08:35:21	1	20191029145459_466	211 KB	2019/10/29 下午 02:55:20	rw-rr	root
1907250836411.CSV	915 KB	Microsoft Excel 逗	2019/7/25 上午 08:38:01		20191029145546_466	211 KB	2019/10/29 下午 02:56:07	rw-rr	root
1907250840201.CSV	915 KB	Microsoft Excel 逗	2019/7/25 上午 08:41:31		20191030094143_466	211 KB	2019/10/30 上午 09:42:03	rw-rr	roo
1907250844571.CSV	915 KB	Microsoft Excel 逗	2019/7/25 上午 08:46:13		20191030095447_466	211 KB	2019/10/30 上午 09:55:08	rw-rr	roo
190805181316_3252	915 KB	Microsoft Excel 逗	2019/8/5 下午 06:15:02		20191030134129_466	487 KB	2019/10/30 下午 01:42:31	rw-rr	roo
191031094109_2072	915 KB	Microsoft Excel 逗	2019/10/31 上午 09:42:		20191030134429_466	217 KB	2019/10/30 下午 01:44:51	rw-rr	roo
20191029180232_364	1,403 KB	Microsoft Excel 逗	2019/10/29 下午 06:04:		20191030135218_466	217 KB	2019/10/30 下午 01:52:40	rw-rr	roo
M0518085510.csv	1 KB	Microsoft Excel 逗	2019/5/18 上午 08:55:13		20191030135510_466	217 KB	2019/10/30 下午 01:55:31	rw-rr	roo
M0606171110.csv	1 KB	Microsoft Excel 逗	2019/6/6 下午 05:11:12		20191031082158_466	318 KB	2019/10/31 上午 08:22:36	rw-rr	roo
					20191031100235_466	204 KB	2019/10/31 上午 10:02:18	rw-rr	roo
					20191031100532_466	258 KB	2019/10/31 上午 10:06:00	rw-rr	roo
					20191031100932_466	217 KB	2019/10/31 上午 10:09:54	rw-rr	roo
					20191031101104_466	211 KB	2019/10/31 上午 10:11:25	rw-rr	roo
					20191031101334_466	211 KB	2019/10/31 上午 10:13:55	rw-rr	roo
					20191031101549_466	211 KB	2019/10/31 上午 10:16:10	rw-rr	roo
					20191031101744_466	217 KB	2019/10/31 上午 10:18:06	rw-rr	roo
					20191031102157_466	217 KB	2019/10/31 上午 10:22:19	rw-rr	roo
					20191031103804_466	217 KB	2019/10/31 上午 10:38:26	rw-rr	roo
					20191031103906_466	817 KB	2019/10/31 上午 10:40:57	rw-rr	root
				_ \	20191031104208_466	251 KB	2019/10/31 上午 10:42:35	rw-rr	root
					20191031105239_466	217 KB	2019/10/31 上午 10:53:01	rw-rr	root

#### File name description:

![](_page_23_Figure_7.jpeg)

\*\*\*\*\*

WinSCP Official Webpage to download:

#### https://winscp.net/eng/download.php

![](_page_24_Picture_1.jpeg)

## **3.4 PuTTY Operation**

### **3.4.1 PuTTY Login**

- (1) Insert sensor IP (Default: 192.168.255.1)
- (2) Click "Open"

Session	Basic options for your P	uTTY session
Logging Terminal - Keyboard - Bell - Features Window - Appearance - Behaviour - Translation - Selection - Colours	Specify the destination you want to Host Name (or IP address) [192.168.255.1 Connection type: Raw Telnet Rlogin Load, save or delete a stored sess Saved Sessions	connect to Port 22 SSH Serial ion
<ul> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Ssind</li> </ul>	Default Settings	Load Save Delete
	Close window on exit: Always Never  O	inly on clean exit

### 3.4.2 PuTTY Login Window

Login in: pi

Password: 1111. Putty is invisible to enter.

🛃 10.0.0.83 - PuTTY		×
B login as: pi		
g, preio.o.o.os s password:		

![](_page_25_Picture_1.jpeg)

The initial command window shows below.

![](_page_25_Picture_3.jpeg)

#### 3.4.3 Modify Sensor IP

Type "sudo nano /etc/network/interfaces" to enter.

![](_page_25_Picture_6.jpeg)

![](_page_26_Picture_1.jpeg)

After entering, Command will open an edit window.

(1) The Cursor should be moved by direction button on your keyboard, for this case, adds a hashtag in front of DHCP to stop the automatically IP given, and setting the new IP on it, finally pressing "Ctrl + O" at the same time on keyboard to write down, "Ctrl + X" to exit this mode.

🛃 pi@raspberrypi: ~		
GNU nano 2.2.6	File: /etc/network/interfac	es
auto lo		
auto eth0		
#auto eth0:0		
iface lo inet loopback		
face eth0 inet dhcp		
iface eth0 inet static		
address 10.10.50.244		
netmask 255.255.255.0		
gateway 10.10.50.200		-
#post-up route add defau	t gw 210.67.131.254 metric	1
#pre-down route del defai	ilt gw 210.67.131.254	
#nidce etho:0 inet statio		
#address 192.100.255.105		
#net up route add defau	t au 10 0 0 254 metric 2	
#post-up route del defau	$1 \pm \alpha w = 10.0 + 0.0254$ metric 2	
*pic-down loude dei deia	10 gw 10.0.0.201	
[ Read	4 lines (Converted from DOS	format) ]
^G Get Help ^0 WriteOut	^R Read File ^Y Prev Page	^K Cut Text ^C Cur Pos
^X Exit ^J Justify	^W Where Is <sup>^V</sup> Next Page	<sup>^</sup> U UnCut Text <sup>^</sup> T To Spell

(2) Press 4 seconds from sensor button or typing "sudo

/etc/init.d/networking restart" on command line to reload the IP.

(PuTTY shows error when reloading, this is normal) •

![](_page_26_Picture_8.jpeg)

![](_page_27_Picture_1.jpeg)

3.4.4 Modify NTP

(1) Type "sudo nano /etc/ntp.conf" to add or setting the NTP address.

![](_page_27_Picture_4.jpeg)

(2) The adding command is "server **IP** iburst", shows below.

🗬 pi@raspberrypi: ~	_		×
GNU nano 2.2.6 File: /etc/ntp.conf		Modified	r i
restrict ::1			
# Clients from this (example!) subnet have unlimited access, bu # cryptographically authenticated. #restrict 192.168.123.0 mask 255.255.255.0 notrust	t only	if	
# If you want to provide time to your local subnet, change the # (Again, the address is an example only.) #broadcast 192.168.123.255	next li	ine.	
# If you want to listen to time broadcasts on your local subnet # next lines. Please do this only if you trust everybody on th #disable auth #broadcastclient	, de-co e netwo	omment th ork!	ne
server 192.168.255.100 iburst			
^G Get Help ^C WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Te	^C Cu ext^T To	ır Pos 5 Spell	~

- (3) Repeat the "Ctrl + O" and "Ctrl + X" and 4 seconds by key.
- (4) Command "ntpq -pn" can check the current NTP status.

pi@raspberrypi:~ \$ ntpq -pn

NTP table is showing a start (\*) when NTP enabling, if start has not

appearing, there is no any NTP connected.

Debian GNU/Linux permitted by appl Last login: Thu F	comes with ABS icable law. eb 13 17:36:45	OLUTE 2020	) :	Y NO W from 1	VARRAN	NTY, to 68.255.	the exte	ent	
remote	refid	st	t	when	poll	reach	delay	offset	jitter
*192.168.255.100 pi@raspberrypi:~	76.79.67.76 \$ <mark>-</mark>	14	u	49	64	17	5.096	49.983	46.799

If system has no NTP can be provided, sensor can be set as self-IP time synchronization. Shows below.

![](_page_28_Picture_1.jpeg)

🛃 pi@raspberrypi: ~			- 🗆	$\times$
GNU nano 2.2.6	File: /etc/ntp.conf		Modified	
If you want to listen to next lines. Please do t disable auth broadcastclient	o time broadcasts on your l chis only if you trust ever	ocal subnet, de- ybody on the net	comment th work!	ie
erver 127.0.0.1				
udge 127.127.1.0 strarum	10			
GGet Help <sup>^O</sup> WriteOut XExit <sup>^J</sup> Justify	^R Read File <mark>^Y</mark> Prev Page ^W Where Is <u>^V</u> Next Page	^K Cut Text ^C ^U UnCut Text^T	Cur Pos To Spell	

Hashtag server x.x.x.x iburst

Add 2 lines of commands:

"server 127.127.1.0"

"fudge 127.127.1.0 stratum 10"

\*\*\*\*\*

PuTTY Official Webpage to download:

https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html

![](_page_29_Picture_1.jpeg)

Appendix: Sensor Port Pin Definition Front side view

![](_page_29_Figure_3.jpeg)

Pin	Description	Pin	Description
1	Ground	7	NC
2	12 VDC output, 0.1 A maximum	8	NC
3	Sensor + input	9	Switch-off internal battery if
			grounded
4	Sensor – input	10	NC
5	NC	11	NC
6	NC	12	Protective earthing conductor

#### AUX Port Pin Definition Front side view

![](_page_29_Picture_6.jpeg)

Pin	Description	Pin	Description
1	Ground	8	NC
2	12 VDC output, 0.1 A maximum	9	NC
3	DO1 output, 0.1 A maximum	10	NC
4	NC	11	NC
5	DO2 output, 0.1 A maximum	12	NC
6	NC	13	NC
7	DO3 output, 0.1 A maximum	14	Protective earthing conductor

![](_page_30_Picture_1.jpeg)

![](_page_30_Figure_2.jpeg)

• Internal Power Source: 12 VDC be Provided in Pin 2 (Total 0.1A Max).

![](_page_30_Figure_4.jpeg)

• External Power Source: 30 VDC(Max) should be Supported.

![](_page_30_Picture_6.jpeg)

![](_page_31_Picture_1.jpeg)

## Modbus Registeration Mapping-pALERT S303

### AO (4xxxx)

	Modbus AO Address (4XXXX)			
Register	R/W	Label	Description	
			Bit 0: NTP SYNC.	
			Bit 1: server0 connection	
			Bit 2: server1 connection	
			Bit 3: server2 connection	
0x0063	R	SYNC_FLAG	Bit 8: admin. server0 connection	
			Bit 9: admin. server1 connection	
			Bit 10: admin. server2 connection	
			Bit 14: GPS sync.	
			Bit 15: time sync. with CWB EEW server	
0x0064	R	A_AXIS	A axis Acceleration in count, 1 gal = 16.718 counts	
0x0065	R	B_AXIS	B axis Acceleration in count, 1 gal = 16.718 counts	
0x0066	R	C_AXIS	C axis Acceleration in count,1 gal = 16.718 counts	
0.0007		VECTOR	Real time vecor acceleration in count , 1 gal = 16.718	
0x0067	K	VECTOR	counts. Vector = $\sqrt{a^2 + b^2 + c^2}$	
0x0068	R	A_OFFSET	A axis zero offset in count	
0x0069	R	B_OFFSET	B axis zero offset in count	
0x006A	R	C_OFFSET	C axis zero offset in count	
			The maximum vector acceleration during earthquake	
0x006B	R	VECTOR_GAL_MAX	occurred. The unit is 0.1 gal. The value will keep in the	
			register until next event occurred in this registration.	
0x006C	R	INTENSITY_NOW	Real time intensity	
0x006D	R	INTENSITY_MAX	The maximum intensity during earthquake event.	
			Bit 1: Pd event	
0x006E	R	EVENT_FLAG	Bit 2: PGA event	
			Bit 3: STA/LTA ebent	
			0: STA/LTA : System is initializing and unabling to detect	
0x006F	R	LTA_FLAG	earthquake.	
			1: STA/LTA : Earthquake is detecting normally.	
			0x0080: Enforce stop program execution	
			0x0180: Reload program	
			0x0181: Enable FTP update program	
0x0070	R/W	WRITE_CONFIG	0x0380: Setting is written down into initSetup.cfg	
			0x0480: Read initSetup.cfg	
			0x0580: Execute rset to zero calcutaion	
			0x10C1: Reload geophone data	

Modbus AO Address (4XXXX)				
Register	R/W	Label	Description	
0x0071			Keep in blank now	
0x0072	R	STA	STA timing. Unit is 0.1 sec	
0x0073	R	LTA	LTA timing. Unit is 0.1 sec	
0x0074	R	STALTA_THRESHOLD	STA/LTA threshold	
0x0075			Blank	
			DO status. The responsing bit will be 1 or 2 when enabling	
			DO.	
0x0076	R	DIO_STATUS	Bit 0: DO1	
			Bit 1: DO2	
			Bit 2: DO3	
0x0077	R	EVENT_TIME	The duration time after detecting STA/LTA event.	
0,0079	Б	PGA_WATCH_THRESHO	PGA value WATCH value (The first threshold). The unit is	
00078		LD	count (1 gal = 16.718 counts).	
0x0079			Keep blank now	
0,0074		STALTA_RELAY0_THRES	DO1 value after trigging STA/LTA threshold. The unit is 0.1	
	ĸ	HOLD	gal.	
0,0070	Б	STALTA_RELAY1_THRES	DO2 value after trigging STA/LTA threshold. The unit is 0.1	
00076		HOLD	gal.	
0,0070	Б		The Maximum real time PGA value per second, the unit is	
0x007C		PGV_13	0.1 mm/sec.	
0x007D			Blank	
0x007E			Blank	
0x007F	R	STALTA_VALUE	STA/LTA value. The unit is 0.01 second.	
			Palert S303 will calculating the maximum acceleration	
0,0000			value in every axis, this is the resgisteration to register A	
00000		EVENI_A_MAX	axis in count during earthquake occured. 1 gal = 16.718	
			counts.	
			Palert S303 will calculating the maximum acceleration	
0,0001	Б		value in every axis, this is the registeration to register B	
			axis in count during earthquake occured. 1 gal = 16.718	
			counts.	
			Palert S303 will calculating the maximum acceleration	
0,0000	D		value in every axis, this is the registeration to register C	
0,0002			axis in count during earthquake occured. 1 gal = 16.718	
			counts.	

![](_page_33_Picture_1.jpeg)

	Modbus AO Address (4XXXX)		
Register	R/W	Label	Description
			Palert S303 will calculating the maximum vector
0v0083	P		acceleration value in every axis, this is the registeration to
0,0003		VENT_VECTOR_A_WAA	register A axis in count during earthquake occured. 1 gal =
			16.718 counts.
			Palert S303 will calculating the maximum vector
0x0084	R	R VENT VECTOR B MAX	acceleration value in every axis, this is the registeration to
			register B axis in count during earthquake occured. 1 gal =
			16.718 counts.
			Palert S303 will calculating the maximum vector
0x0085	R	VENT VECTOR C MAX	acceleration value in every axis, this is the registeration to
			register C axis in count during earthquake occured. 1 gal =
			16.718 counts.
0x0086			Blank
0x0087			Blank
0x0088	R	PD	Palert S303 starts to calculate Pd value after detecting P
			wave. The unit is 0.001 cm.
0x0089	R	тоис	Palert S303 starts to calculate tau-c value after detecting P
			wave. The unit is 0.001 cm.
			Pd Status
			Bit 5 : The determination of Deteting P-Wave or not.
0x008A	R	PD FLAG	Bit 6 : The first threshold of Pd value (The WATCH value).
			Bit 7:The second threshold of Pd value (The WARN value).
			Bit 8 : The upper motion of P-Arrivaling wave.
			Bit 9: The down motion of P-Arrivaling wave.
			PGA vector calculates with every 10 seconds. The unit is
0x008B	R	PGA_10S	count. 1 gal = 16.718 counts. Formula
			$=\sqrt{a^2+b^2+c^2}$
0x008C	R	EVENT_YEAR	The status of earthquake in year.
0x008D	R	EVENT_MONTH	The status of earthquake in month.
0x008E	R	EVENT_DAY	The status of earthquake in day.
0x008F	R	EVENT_HOUR	The status of earthquake in hour.
0x0090	R	EVENT_MINUTE	The status of earthquake in mimutes.
0x0091	R	EVENT_SECOND	The status of earthquake in second.
0x0092	R	SYSTEM_YEAR	The status of system in year.
0x0093	R	SYSTEM_MONTH	The status of system in month.
0x0094	R	SYSTEM_DAY	The status of system in day.
0x0095	R	SYSTEM_HOUR	The status of system in hour.
0x0096	R	SYSTEM_MINUTE	The status of system in minutes.

![](_page_34_Picture_1.jpeg)

Modbus AO Address (4XXXX)			
Register	R/W	Label	Description
0x0097	R	SYSTEM_SECOND	The status of system in second.
0x0098 ~ 0x009D			Blank
0x009E	R	A_DISPLACEMENT	A axis real time displacement in cm. The unit is 0.001cm
			Plank
0x009F			DIGIIK
0x00A0	R		count. 1 gal = 16.718 counts.
0x00A1	R		Pd WARNING value(threshold). The unit is 0.001 cm.
0x00A2	R	TRIG_MODE	Low pass filter and trigger mode status. Bit 1: Enable Pd trigger Bit 2: Enable PGA trigger Bit 3: Enable STA/LTAtrigger Bit 6: Enale LPF in 10 Hz Bit 7: Enale LPF in 20 Hz Bit 7: Enale LPF in 40 Hz Bit 8: Enale LPF in 80 Hz Bit 9: Enale LPF in 80 Hz Bit 6 and Bit 8 trigger at the same time: Enable LPF in 50Hz when Bit 7 and Bit 9 trigger at the same time: Enable LPF in 100Hz when Bit 10: Enable HPF in 0.1 Hz. Bit 11: Enable HPF in 0.3 Hz. Bit 12: Enable HPF in 0.5 Hz. Bit 13: Enable HPF in 1 Hz. Bit 14: Enable HPF in 2 Hz.
0x00A3	R	PD_WATCH_THRESHOL	Pd WATCH value, the unit is 0.001 cm.
0x00A4	R	MEMS_CAL0_A_AXIS	A axis calibrate factor in 0 G (Unit: 0.1 gal). This value has filled before sold out in factory.
0x00A5	R	MEMS_CAL0_B_AXIS	B axis calibrate factor in 0 G (Unit: 0.1 gal). This value has filled before sold out in factory.
0x00A6	R	MEMS_CAL0_C_AXIS	C axis calibrate factor in 0 G (Unit: 0.1 gal). This value has filled before sold out in factory.
0x00A7	R	MEMS_CAL_A_AXIS	A axis calibrate factor in 1 G (Unit: 1 G). This value has filled before sold out in factory.

![](_page_35_Picture_1.jpeg)

Modbus AO Address (4XXXX)			
Register	R/W	Label	Description
0.0000			B axis calibrate factor in 1 G (Unit: 1 G). This value has filled
	ĸ		before sold out in factory.
0,00000			C axis calibrate factor in 1 G (Unit: 1 G). This value has filled
UXUUA9	K		before sold out in factory.
0x00AA	R	NTP_IP1	The first value of NTP IP address.
0x00AB	R	NTP_IP2	The second value of NTP IP address.
0x00AC	R	NTP_IP3	The third value of NTP IP address.
0x00AD	R	NTP_IP4	The fourth value of NTP IP address.
0x00AE	R	SYSTEM_WEEKDAY	The system time, the value is week day.
0x00AF	R	SERVER0_IP12	The first and the second IP values of TCP server0.
0x00B0	R	SERVER0_IP34	The third and the fourth IP values of TCP server0.
0x00B1	R	SERVER1_IP12	The first and the second IP values of TCP server1.
0x00B2	R	SERVER1_IP34	The third and the fourth IP values of TCP server1.
0x00B3	R	IP1	The first value of IP address.
0x00B4	R	IP2	The second value IP address.
0x00B5	R	IP3	The third IP value of IP address.
0x00B6	R	IP4	The fourth IP value of IP address.
0x00B7	R	NETMASK1	The first value of submask IP address.
0x00B8	R	NETMASK2	The second value of submask IP address.
0x00B9	R	NETMASK3	The third value of submask IP address.
0x00BA	R	NETMASK4	The fourth value of submask IP address.
0x00BB	R	GATEWAY1	The first value of gateway IP address.
0x00BC	R	GATEWAY2	The second value of gateway IP address.
0x00BD	R	GATEWAY3	The third value of gateway IP address.
0x00BE	R	GATEWAY4	The fourth value of gateway IP address.
0x00BF			Blank
			Streaming packet output control.
			0: No streaming out.
			1: Mode 1 output (16 bit).
0x00C0	R/W	STREAM_CONTROL	2: Header of mode 1 output only.
			4: Mode 4 streaming out (miniSEED).
			8: Mode 8 streaming out (TAF Lab Calibtarion use).
			16: Mode 16 streaming out (24 bit).
0x00C1			Blank
		WATCH WARNING TIM	Duration time of WATCH and WARNING. The unit is
0x00C2	R	R E	second.
			High byte: WATCH time, Low byte: WARNING time

![](_page_36_Picture_0.jpeg)

Modbus AO Address (4XXXX)			
Register	R/W	Label	Description
0x00C3	R	VECTOR_GAL_NOW	Real time vector acceleration. The unit is 0.1 gal.
0x00C4			Blank
0x00C5			Blank
0x00C6	R	VERSION	The software version.
0x00C7	R	SERIAL_NO	Serial number
0x00C8 ~			Diamir
0x00CA			валк
0x00CB	R	SERVER2_IP12	The first and the second IP values of TCP server2.
0x00CC	R	SERVER2_IP34	The third and the fourth IP values of TCP server2.
0x00CD			Blank
0x00CE			Blank
0,0000			Bit 3: The mode of CWB2020 intensity scale calculation.
UXUUCF	ĸ		Taiwan uses only.
0x00D0	R	SD03_A_MAX	The maximum of A axis SD value (0.3 Hz), CEB mode only.
0x00D1	R	SD03_B_MAX	The maximum of B axis SD value (0.3 Hz), CEB mode only.
0x00D2	R	SD03_C_MAX	The maximum of C axis SD value (0.3 Hz), CEB mode only.
0x00D3	R	SV03_A_MAX	The maximum of A axis SV value (0.3 Hz), CEB mode only.
0x00D4	R	SV03_B_MAX	The maximum of B axis SV value (0.3 Hz), CEB mode only.
0x00D5	R	SV03_C_MAX	The maximum of C axis SV value (0.3 Hz), CEB mode only.
0x00D6	R	SA03_A_MAX	The maximum of A axis SA value (0.3 Hz), CEB mode only.
0x00D7	R	SA03_B_MAX	The maximum of B axis SA value (0.3 Hz), CEB mode only.
0x00D8	R	SA03_C_MAX	The maximum of C axis SA value (0.3 Hz), CEB mode only.
0x00D9	R	SD10_A_MAX	The maximum of A axis SD value (1 Hz), CEB mode only.
0x00DA	R	SD10_B_MAX	The maximum of B axis SD value (1 Hz), CEB mode only.
0x00DB	R	SD10_C_MAX	The maximum of C axis SD value (1 Hz), CEB mode only.
0x00DC	R	SV10_A_MAX	The maximum of A axis SV value (1 Hz), CEB mode only.
0x00DD	R	SV10_B_MAX	The maximum of B axis SV value (1 Hz), CEB mode only.
0x00DE	R	SV10_C_MAX	The maximum of C axis SV value (1 Hz), CEB mode only.
0x00DF	R	SA10_A_MAX	The maximum of A axis SA value (1 Hz), CEB mode only.
0x00E0	R	SA10_B_MAX	The maximum of B axis SA value (1 Hz), CEB mode only.
0x00E1	R	SA10_C_MAX	The maximum of C axis SA value (1 Hz), CEB mode only.
0x00E2	R	SD03_A_MAX	The maximum of A axis SD value (3 Hz), CEB mode only.
0x00E3	R	SD03_B_MAX	The maximum of B axis SD value (3 Hz), CEB mode only.
0x00E4	R	SD03_C_MAX	The maximum of C axis SD value (3 Hz), CEB mode only.
0x00E5	R	SV03_A_MAX	The maximum of A axis SV value (3 Hz), CEB mode only.
0x00E6	R	SV03_B_MAX	The maximum of B axis SV value (3 Hz), CEB mode only.
0x00E7	R	SV03_C_MAX	The maximum of C axis SV value (3 Hz), CEB mode only.

![](_page_37_Picture_1.jpeg)

Modbus AO Address (4XXXX)			
Register	R/W	Label	Description
0x00E8	R	SA03_A_MAX	The maximum of A axis SA value (3 Hz), CEB mode only.
0x00E9	R	SA03_B_MAX	The maximum of B axis SA value (3 Hz), CEB mode only.
0x00EA	R	SA03_C_MAX	The maximum of C axis SA value (3 Hz), CEB mode only.
0x00EB	R	RTD_LOOP_CNT	Intern ADC conunter, system using.
0x00EC	R/W	GLOBALEVENT	Contineous recording control, the system reads continuous waveform data when this bit filled as 1.
0x00ED			Blank
0x00EE	R	ADMIN_SERVER0_IP12	Admin. The first and second value of server0 IP.
0x00EF	R	ADMIN_SERVER0_IP34	Admin. The third and fourth value of server0 IP
0x00F0	R	ADMIN_SERVER1_IP12	Admin. The first and second value of server1 IP.
0x00F1	R	ADMIN_SERVER1_IP34	Admin. The third and fourth value of server1 IP
0x00F2 ~ 0x00F8			Blank
0x00F9	R	D_AXIS	The fourth(D) axis (Geophone) real time velocity. The unit is 0.01 mm/sec.
0x00FA	R	D_OFFSET	The fourth(D) axis (Geophone) zero offset.
0x00FB	R	EVENT_D_MAX	The maximum value of D axis (Geophone) during earthquake event. The unit is count.
0x00FC	R	MEMS_CAL0_D_AXIS	D axis calibrate factor in 0 G (Unit: 0.1 gal). This value has filled before sold out in factory.
0x00FD	R	MEMS_CAL_D_AXI	D axis calibrate factor in 1 G (Unit: 1 G). This value has filled before sold out in factory.
0x00FE	R	STALTA_THRESHOLD_ST OP	The STA/LTA event stop threshold, CEB use only. The unit is 0.01.
0x00FF	R	STALTA_RELAY2_THRES	THe DO3 action value when STA/LTA triggering. The unit is 0.1 gal.
0x0100	R	PGA_RELAY2_THRESHO LD	DO3 action threshold when PGA triggering. The unit is count. 1 gal = 16.718 counts
0x0101			Blank
0x0102	R/W	POWER_OFF_BUTTON	Remote control in button time(sec.).
0x0103	R/W	POWER_OFF_CNT	Remote control in accumulation time(sec.).
0x0104	R/W	LOCAL_PORT_STREAMI NG	TCP port real time packet transmittion, 1 is transmit, 0 is stop. Please refer to [LOCAL_STREAM_DEBUG] command in config file.
0x0105	R/W	RECORDING_START_TI ME	Recording start time in unix timestamp.
0x0107	R/W	RECORDING_STOP_TIM E	Recording end time in unix timestamp.

![](_page_38_Picture_1.jpeg)

Modbus AO Address (4XXXX)				
Register	R/W	Label	Description	
0x0109			Blank	
0x010A	R	ERR_CNT	The number of error counting	
0.0100		VECTOR_GAL_EVENT_S	The vector acceleration calculated in every second during	
OXOTOR	K	ECOND	earthquake event. The unit is 0.1 gal.	
0.0100		A_COUNT_EVENT_SEC	The maximum vector acceleration of A axis calculated in	
00100	ĸ	OND	every second during earthquake event. The unit is count.	
0,0100	Б	B_COUNT_EVENT_SECO	The maximum vector acceleration of B axis calculated in	
UXUIUD	ĸ	ND	every second during earthquake event. The unit is count.	
0v010E	Б	C_COUNT_EVENT_SECO	The maximum vector acceleration of C axis calculated in	
UXUIUE		ND	every second during earthquake event. The unit is count.	
0v010E	Б	INTENSITY_NOW_EVEN	The maximum intensity calculated in every second during	
UXUIUF	ĸ	T_SECOND	earthquake event.	
0x0110	R	VECTOR_VELOCITY_MA	The maximum vector velocity. The unit is 0.1 mm/sec.	
		X		
0x0111	R	SAMPLING_RATE	Sample per second. The unit is number of samples in every second.	
0x0112	R	VELOCITY_A	Real time velocity of A axis. The unit is 0.1 mm/sec.	
0x0113	R	VELOCITY_B	Real time velocity of B axis. The unit is 0.1 mm/sec.	
0x0114	R	VELOCITY_C	Real time velocity of C axis. The unit is 0.1 mm/sec. $\circ$	
0,0115	Б		The maximum vector velocity of A axis. The unit is 0.1	
0X0115	ĸ		mm/sec.	
0v0116	D		The maximum vector velocity of B axis. The unit is 0.1	
0X0110			mm/sec.	
0v0117	D		The maximum vector velocity of C axis. The unit is 0.1	
0,0117	n		mm/sec.	
0v0118	P	VECTOR_VELOCITY_EVE	The vector velocity calculated in every second during	
0,0110		NT_SECOND	earthquake event. The unit is 0.1 mm/sec.	
0v0119	R	VELOCITY_A_EVENT_SE	The maximum vector velocity of A axis calculated in every	
0,0115		COND	second during earthquake event. The unit is 0.1 mm/sec.	
0v0114	R	VELOCITY_B_EVENT_SE	The maximum vector velocity of B axis calculated in every	
0,0114		COND	second during earthquake event. The unit is 0.1 mm/sec.	
0x011B	R	VELOCITY_C_EVENT_SE	The maximum vector velocity of C axis calculated in every	
0/0110		COND	second during earthquake event. The unit is 0.1 mm/sec.	
0x011C		νειορίτη α εισάτ σε	The maximum vector velocity of A axis calculated in every	
	R		second during earthquake event. The data is floating point	
UXUTID	Ux011D			format. The unit is mm/sec.

![](_page_39_Picture_1.jpeg)

Modbus AO Address (4XXXX)				
Register	R/W	Label	Description	
0v011E	R	VELOCITY_B_FLOAT_SE COND	The maximum vector velocity of B axis calculated in every	
			second during earthquake event. The data is floating point	
0,0111			format. The unit is mm/sec.	
0v0120		VELOCITY_C_FLOAT_SE COND	The maximum vector velocity of C axis calculated in every	
0x0120	R		second during earthquake event. The data is floating point	
0X0121			format. The unit is mm/sec.	
0x0122 -			Blank	
0x018E				
0x018F	R	PCB_TEMP	PCB mainboard temperature. The unit is $0.01^\circ\!\!\mathrm{C}$ .	
0x0190	R	EXT_VOLT	External power source. The unit is 0.01 voltage.	
0x0191	R	INT_BAT_VOLT	Internal power source. The unit is 0.01 V.	
0x0192	R	RTC_BAT_VOLT	RTC battery power source. The unit is 0.01 V.	
0x0193	R/W	LCD_CONTRAST	LCD contast value. The value adjusts from 0-100.	
			Sensor OK: bit0-bit3 (ch 0-3)	
			Sensor Noise: bit4-bit7 (ch 0-3) 0: OK, 1: Noise	
0x0194	R/W	SENSOR_STATUS	p.s. The result will be updated based on:	
			Program initial: the very first exect 0 second.	
			Interval: every 1440 minutes after initial.	
0x0195	R/W	SD_NG	Booting check result. 1 is error, 0 is normal.	
0,0215	R/W		DO remote control.	
UXUSIE		REIVIOTE_RELAT	Bit0-3: DO1-DO4	
0x0383	р	DISP_A_FLOAT_EVENT_	The maximum displacement of A axis during earthquake	
0x0384	ĸ	МАХ	event. The unit is um.	
0x0385	р	DISP_B_FLOAT_EVENT_	The maximum displacement of B axis during earthquake	
0x0386	n.	MAX	event. The unit is um.	
0x0387	р	DISP_C_FLOAT_EVENT_	The maximum displacement of C axis during earthquake	
0x0388	К	MAX	event. The unit is um.	
0x0389	Р	VECTOR_DISP_FLOAT_E	The vector displacement calculated in every second during	
0x038A	n n	VENT_SECOND	earthquake event. The unit is um.	
0x038B	р	DISP_A_FLOAT_EVENT_	The A axis displacement calculated in every second during	
0x038C	ĸ	SECOND	earthquake event. The unit is um.	
0x038D		DISP_B_FLOAT_EVENT_	The B axis displacement calculated in every second during	
0x038E	R	SECOND	earthquake event. The unit is um.	
0x038F	R	DISP_C_FLOAT_EVENT_	The C axis displacement calculated in every second during	
0x0390		SECOND	earthquake event. The unit is um.	
0x0391	R	DISP_A_FLOAT_SECOND	The A axis displacement calculated in every second. The	
0x0392			unit is um.	

![](_page_40_Picture_1.jpeg)

Modbus AO Address (4XXXX)				
Register	R/W	Label	Description	
0x0393		DISP_B_FLOAT_SECOND	The B axis displacement calculated in every second. The	
0x0394	ĸ		unit is um.	
0x0395	<b>D</b>	DISP_C_FLOAT_SECOND	The C axis displacement calculated in every second. The	
0x0396	К		unit is um.	

### AI (3xxxx)

Modbus AI Address (3XXXX) Read only				
Register	Label	Description		
0x00A8	DORTS_RELAY_REG	DORTS DO output status.		
0x00A9	ISO2631_RELAY_REG	ISO2631 DO output status.		
	INSTRUMENT_CODE	11: pALERT S303 Taiwan mode		
0x00B3		12: pALERT S303 China mode		
		14: Palert220		
0x00C7		LCD marquee words output.		
~ 0x00DB				
0x018F	GPS_LOCK	GPS locked information.		
0x0190	GPS_QTY	Satellite locked number.		
		GPS antenna status.		
0x0191	GPS_ANTENNA	0: NG		
		1: OK		
0x0192	GPS_LAT_DEG	Latitude in degree (+ is North, - is South)		
0x0193	GPS_LAT_MIN	Latitude in minute.		
0x0194	GPS_LAT_SEC	Latitude in 0.01 second.		
0x0195	GPS_LON_DEG	Longiude in degree (+ is East, - is West)		
0x0196	GPS_LON_MIN	Longitude in minute.		
0x0197	GPS_LON_SEC	Longitude in 0.01 second.		
0x0199	NTP_ST	NTP stratum level, 16 is unuseable.		
	NTP_T	NTP server type:		
		u: Unicast or Manycas		
		b: Broadcast or Multicast		
0v010A		I: Local clock		
UXUISA		s: Symmetry joint (Back up use)		
		A: Manycast service.		
		B: Broadcast service.		
		M: Multicast service.		
0x019B	NTP_WHEN	A time of time synchronization from last time to now. The		
		unit is second.		

![](_page_41_Picture_1.jpeg)

Modbus AI Address (3XXXX) Read only			
Register	Label	Description	
0x019C	NTP_POLL	Time synchronization frequency. The unit is second.	
	NTP_REACH	NTP testing value, 337 means time synchronization	
0x019D		stabilized.	
0v010F		NTP time delay value. The value to count the back-and-	
UXUIJL		forth time. The unit is ms. Float format.	
0,0100	NTP_DELAY_INT	NTP time delay value. The value to count the back-and-	
UXUIAU		forth time. The unit is ms. Integer format.	
	NTP_OFFSET	NTP time drift offset value. The more the value closes to	
0x01A1		0, the more the time closes between local machine and	
		NTP server. The unit is ms. Float format.	
		NTP time drift offset value. The more the value closes to	
0x01A3	NTP_OFFSET_INT	0, the more the time closes between local machine and	
		NTP server. The unit is ms. Integer format.	
0v0144		The mean drift value with NTP server. The more the value	
0X01A4		smaller, the more the time accurately. Float format.	
0v0146	NITO UITTED INIT	The mean drift value with NTP server. The more the value	
UXUIAU		smaller, the more the time accurately. Integer format.	
0x01F3	SI_YEAR	Enable SI calculation in time of YEAR.	
0x01F4	SI_MONTH	Enable SI calculation in time of MNTH.	
0x01F5	SI_DAY	Enable SI calculation in time of day.	
0x01F6	SI_HOUS	Enable SI calculation in time of hour.	
0x01F7	SI_MINUTE	Enable SI calculation in time of minute.	
0x01F8	SI_SECOND	Enable SI calculation in time of second.	
0x01F9	SI_PEAK	The maximum value of SI. The unit is 0.01.	
0x01FA	SI_REALTIME	The real time value of SI. The unit is 0.01.	
0x0333	ISO_DATA_COUNTER	ISO2631 data update counter.	
0x0334	ISO_XY_GAL	ISO2631 horizontals vector value. The unit is 0.1 gal.	
0x0335	ISO_Z_GAL	ISO2631 vertical value. The unit is 0.1 gal.	
0x0336	ISO_XY_DB	ISO2631 horizontals vector value. The unit is 0.01 dB.	
0x0337	ISO_Z_DB	ISO2631 vertical value. The unit is 0.01 dB.	
0x0338	ISO_MAX_DB	ISO2631 vertical value. The unit is 0.01 dB.	
0.0220		The maximum of ISO2631 keeping dB value. The unit is	
0x0339		0.01 dB.	
0x033A		Blank	
0x033B		Blank	
0x033C	ISO_RELAY	ISO2631 DO status.	
0x0347	DORTS_DATA_CONUTER	DORTS data update counter.	

![](_page_42_Picture_1.jpeg)

Modbus AI Address (3XXXX) Read only			
Register	Label	Description	
0x0348	DORTS_2HZ_DB	DORTS dB value in 2 Hz. The unit is 0.01 dB.	
0x0349	DORTS_4HZ_DB	DORTS dB value in 4 Hz. The unit is 0.01 dB.	
0x034A	DORTS_8HZ_DB	DORTS dB value in 8 Hz. The unit is 0.01 dB.	
0x034B	DORTS_16HZ_DB	DORTS dB value in 16 Hz. The unit is 0.01 dB.	
0x034C	DORTS_31P5HZ_DB	DORTS dB value in 31.5 Hz. The unit is 0.01 dB.	
0x034D	DORTS_63HZ_DB	DORTS dB value in 63 Hz. The unit is 0.01 dB.	
0x034E	DORTS_MAX_DB	The maximum of DORTS dB value. The unit is 0.01 dB.	
0x034F	DORTS_DB_LATCH	The maximum of DORTS keeping dB value. The unit is 0.01 dB.	
0x0350	DORTS_RELAY	DORTS DO status.	
0x0351		Blank	
0x0352		Blank	
0x2773	RELAY1_PGA	DO1 PGA starting value. The unit is 0.1 gal.	
0x2774	RELAY2_PGA	DO2 PGA starting value. The unit is 0.1 gal.	
0x2775	RELAY3_PGA	DO3 PGA starting value. The unit is 0.1 gal.	
0x2776		Blank	
0x2777	RELAY1_PGV	DO1 PGV starting value. The unit is 0.1 mm/sec.	
0x2778	RELAY2_PGV	DO2 PGV starting value. The unit is 0.1 mm/sec.	
0x2779	RELAY3_PGV	DO3 PGV starting value. The unit is 0.1 mm/sec.	
0x277A		Keep in blank now	
0x277B	RELAY1_INTENSITY	DO1 intensity threshold.	
0x277C	RELAY2_INTENSITY	DO2 intensity threshold.	
0x277D	RELAY3_INTENSITY	DO3 intensity threshold.	
0x277E ~ 0x2782		Blank	
0x2783	SINGLE_RELAY_MODE	<ul><li>0: DO controls by every single relay.</li><li>1: DO controls by sequence of 3 relaies. Relay1 and relay2 off when relay3 on, relay1 off when relay2 on.</li></ul>	
0x2784	RELAY_BLINK_MODE	0: DO output is not interactivey on and off. 1: DO output is interactivey on/off every 0.5 second.	
0x2785	RELAY_CONTROL_BY_ERR	0: DO still keep functioning even error has been detected. 1: DO can be enabled when system has issued.	
0x2786	RELAY_RESET_BY_MANUAL	0: DO reset automatically. 1: DO have to reset by 3 seconds pressing on button.	