AM100 EAS System
Application Debugging Manual

Date: September 9th,2025

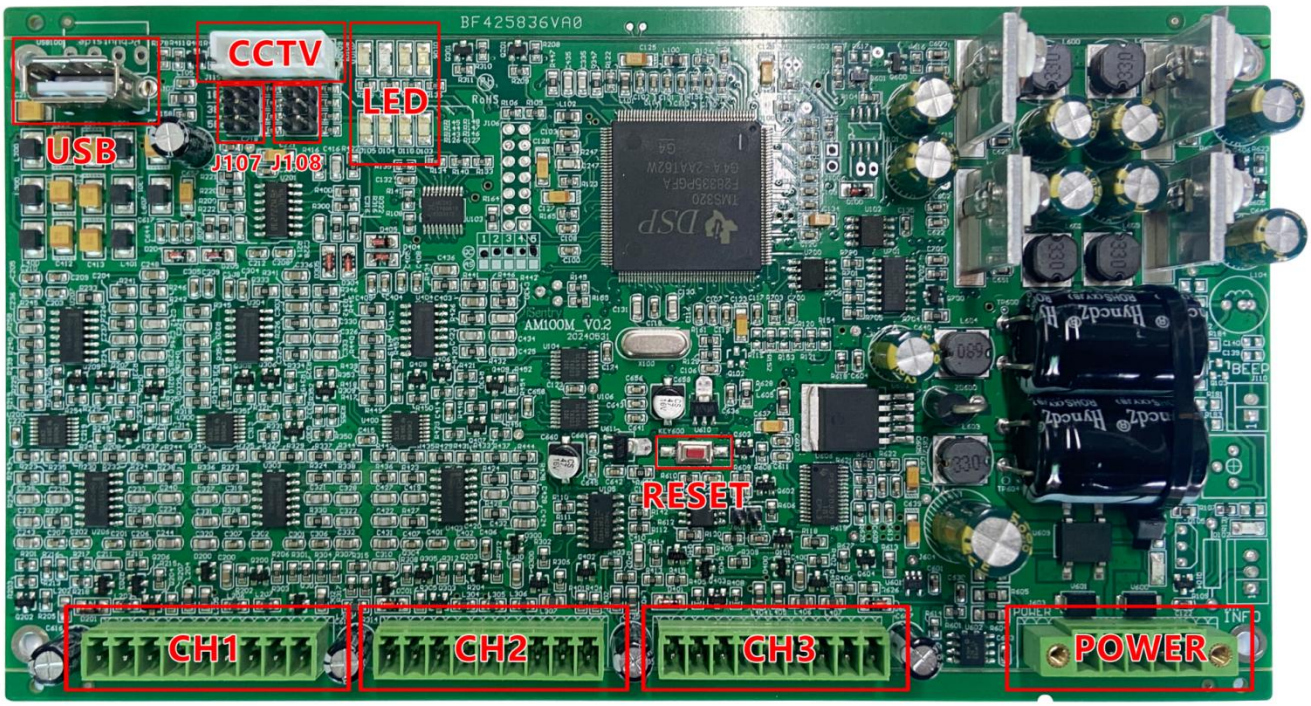
About This Manual

This manual introduces AM100 user instructions, including all the systems AM9600/AM9800/AM9800X/AM3209/AM6008/AM6108/AM6208/AM6808/AM6811/AM7206 /AM8208/AM8089 which work with AM100 main boards.

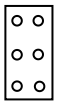
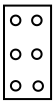
System Instruction

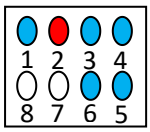
The EAS AM antenna built the AM100 main board has the advantages of high sensitivity, strong anti-interference ability, low false and missed alarm rates, and wide detection distance. A maximum of two transceiver can be connected to the main of an AM antenna without the need for other controllers. It is suitable for installation and use in various types of retail stores such as supermarkets, shoe stores, clothing stores and cosmetic stores!

1. Main board Instructions

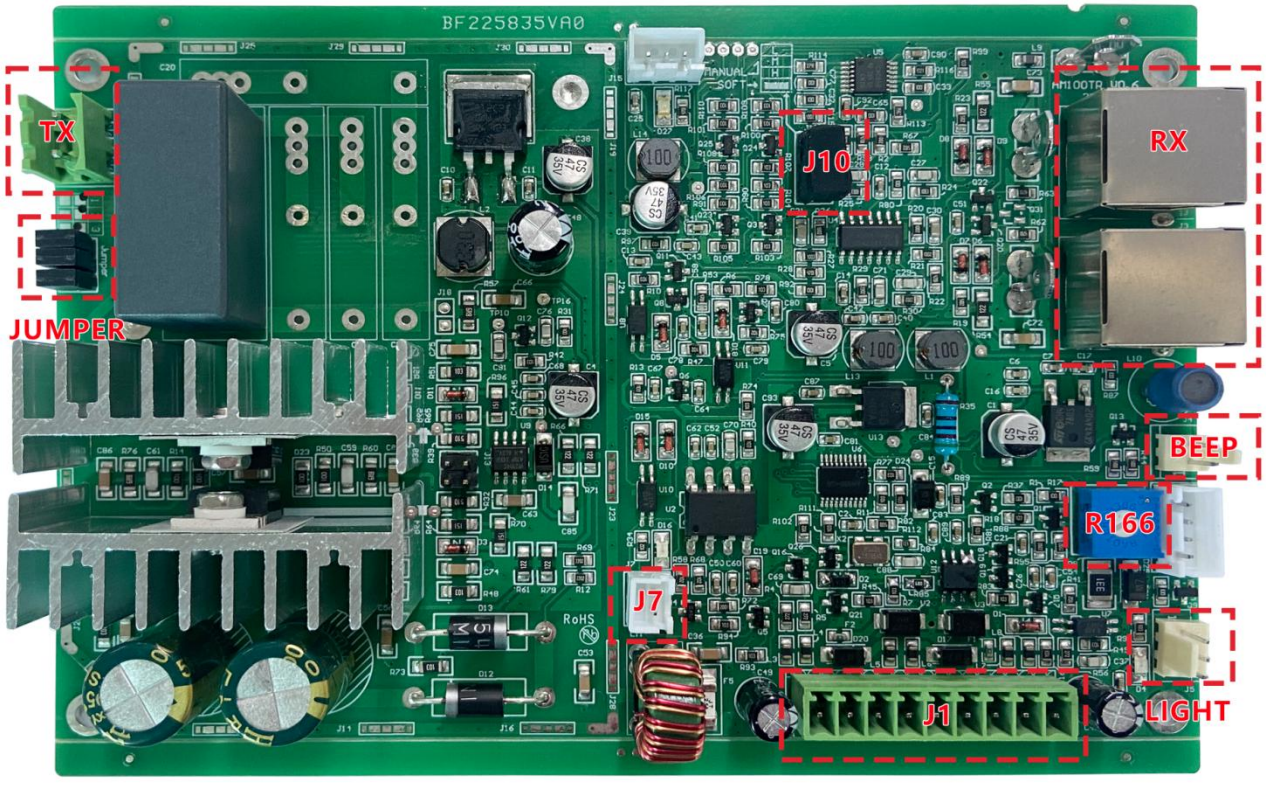


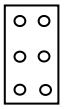
Items	Function	Settings
CH1/CH2/CH3	9-Pin port: Used for the connection between the master and slave antenna. At the factory, CH1 is already connected to the sub-board behind the master antenna. The 9-Pin line can be selectively connected to CH2 or CH3 and the 9-Pin port of the sub-board of the slave antenna as required.	
POWER	Power input interface. One end of the 5-pin power cord is connected to this interface, and the other end is connected to the power supply.	
USB	Software Debugging Interface, with the following purposes: ① Computer Debugging: Use a dedicated debugging cable. Connect the module end to the computer and the other end to this USB port. ② Local Debugging: Connect the local debugging module to this USB port.	
CCTV	The CCTV port can be connected to commercial electrical devices such as surveillance cameras, access control systems, and fire alarm systems. If you	Optional

	need to use this function, an additional circuit board needs to be added to the main board.	
RESET	System reset button	Reset button: Restore the last saved data. Restore factory settings: When the fault indicator light turns red, you can restore the factory settings by following the steps below: 1. Place the jumper cap on J108 3&4 2. Press the recovery key and wait for the fault light on the main board to flash. 3. Unplug the jumper 4. Press the Reset button again 5. When the system reset is successful, there will be an alarm sound.
J107  1&2=L 3&4=M 5&6=H	J107 represents the alarm threshold:low, medium and high from top to bottom；the higher the threshold, the stronger the anti-interference ability and the lower the false alarm rate, but the sensitivity will also decrease accordingly.	Set the alarm threshold for any gear, and the alarm thresholds of all devices controlled by this master board will be uniformly updated.
J108  1&2=Turn off TX 3&4=Factory reset 5&6=Lock channel	1&2：Turn off the TX system, and choose to turn off the system when synchronizing with the surrounding devices. After synchronization, the jumper cap must be removed. 3&4：Reset to factory settings 5&6：Plug the jumper cap into this position and the LED indicator will no longer switch to display the indicator of each channel. This will lock the channel to be displayed LED channel indicator:When Light 4 is on, it represents Channel 1. When Light 3 is on, it represents Channel 2. When both Light 3 and Light 4 are on, it represents Channel 3.	Restore factory settings: When the fault indicator light turns red, you can restore the factory settings by following the steps below: 1. Place the jumper cap on J108 3&4 2. Press the recovery key and wait for the fault light on the master board to flash. 3. Unplug the jumper 4. Press the Reset button again 5. When the system reset is successful, there will be an alarm sound.

LED  1=Working Mode 2=Fault Operation 3=CH2 4=CH1 5~8=Signal Interference Intensity (The intensity increases from left to right.)	Channel indicator observation: 1) Normal operation: a.  b.  c.  a. The first one from the left in the first row is the working indicator light, which flashes under normal working conditions. b. The right two in the first row are channel indicator lights (Light 3 and Light 4). When Light 4 is on, it represents Channel 1. When Light 3 is on, it represents Channel 2. When both Light 3 and Light 4 are on meanwhile, it represents Channel 3. c. Channel noise and environmental interference signals will be displayed on the lower 5 to 8 indicators during normal operation. 1 to 2 lights on indicate normal, while 3 or more lights on indicate significant interference. 2) Abnormal operation: a.  b.  a. The light in the second position from the left in the upper row is an abnormality indicator. When this red light is on, it means that the main board is currently working abnormally (when this state occurs, please try to restore the factory settings). b. When all 4 lights below are on, it indicates excessive interference or interference from nearby tags. In this case, it is necessary to check the on-site environment and synchronization phase.

2. Sub-board Instructions



Items	Function
J1	The 9Pin connector port is connected to the CH1/CH2/CH3 of the main board. The plugging and unplugging of this interface must be carried out with the power turned off. The hot plugging (under power on) may burn out the board.
J10  L= Level 1 M= Level 2 H= Level 3 SOFT= Level 4	Antenna receive sensitivity setting. Adjust according to the situation on site,it is divided into High, Middle, Low and SOFT which means software of tuning.The jumper cap defaults to the SOFT position is factory setting. Manual debugging is adjusted by H/M/L, when the cap is on H, M or L， then software tuning is not available at this timing.
RX	Receiving coil interface of the antenna
TX	Transmitter coil interface of the antenna
LIGHT	Alarm indicator light interface of the antenna
J7	Power indicator light interface of the antenna
JUMPER	Spare jumper cap
BEEP	Buzzer interface of the antenna
R166	Adjust the volume. Turn counterclockwise to turn down the volume and turn clockwise to turn up the volume.

3. Software Introduction and Signal Debugging

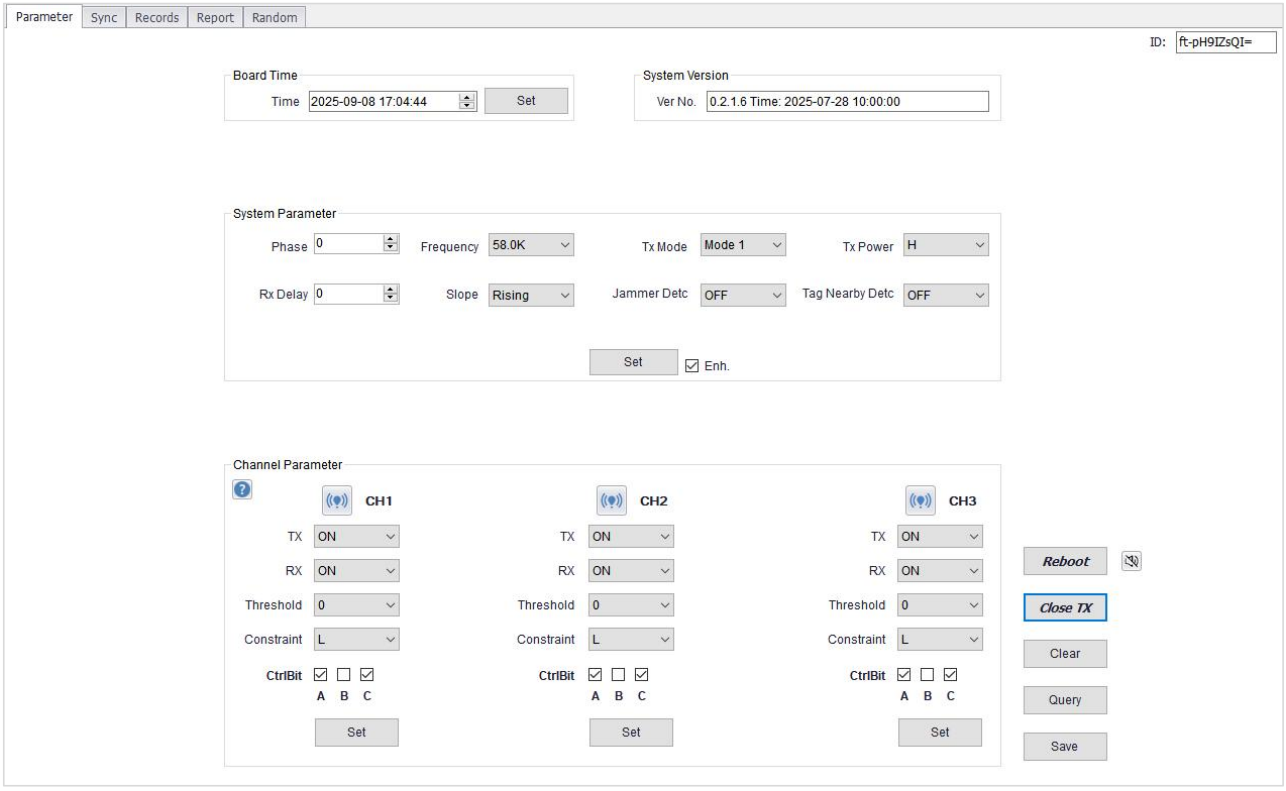
3.1 Software installation and Introduction

The anti-theft device using AM100 main board can be debugged by Lifangmei software. There are four debugging methods: PC remote debugging, mobile phone remote debugging, PC local debugging and mobile phone local debugging. Customers can choose the debugging method according to their own needs.

3.2 Software Debugging

Below is a detailed explanation of the software debugging process, using the PC's remote debugging interface as an example.

3.2.1 Parameter Setting



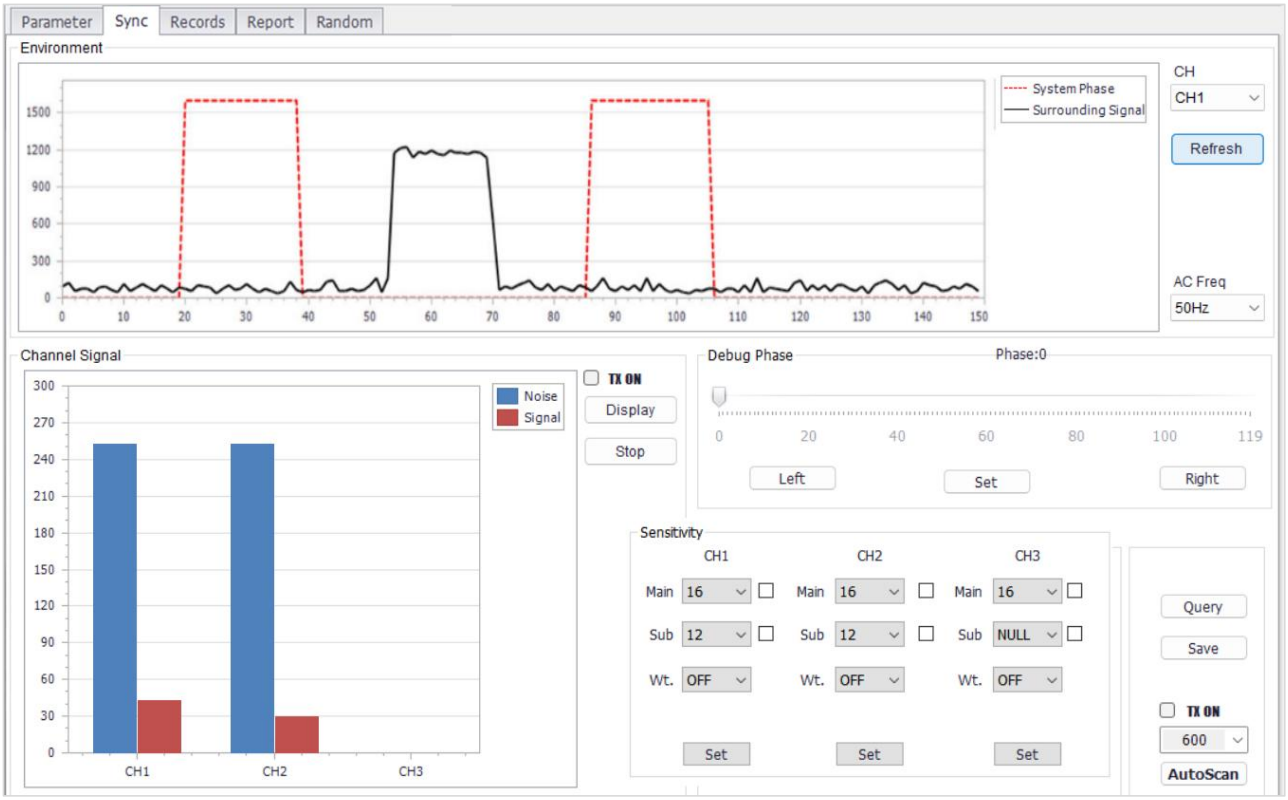
Items	Default Parameters	Parameter Range	Setting
Phase	0	0~119	Setting the phase
Frequency	58K	57.8K/ 58K/ 58.2K/ 58.4K/ 58.6K	When the soft tag frequency deviates, select the corresponding frequency for matching.
TX Mode	Mode1	Mode1/ Mode2/ Mode3/ Mode4/ Mode5	Five modes are different software algorithms. Can be switched when the surrounding environment is poor. Currently, only Mode 1 to Mode 3 are available, as to Mode 4 and Mode 5,they are reserved for future use.
TX Power	H	H/M/L	No setup needed
Rx Delay	0	0~100	No setup needed
Slope	Rising	Rising/ Falling	If the position of the live line and the neutral line are opposite, you can switch through the software, no need to manually switch. (the normal one is the left neutral line and the right live line.)
Jammer Detc.	OFF	OFF/ON	It can check whether there are irregular interference signals around. When an irregular signal is detected, the antenna indicator light will "flash 4 times-pause-flash 4 times". To ensure good use, the interference source should be eliminated.
Tag Nearby Detc	OFF	OFF/ S/ M/ L S：Small tag； M: Medium tag；	Detecting whether there is 58KHz labels or tags around the antenna that affects the antenna work: Select the tag size corresponding to the store (S/M/L). If a tag is detected around, the

		L：Large tag；	antenna will normally alarm for about 90s, and then loop "beep 2 times pause-beep2 times pause", and the warning light will also flash with beep until the tag is removed.
Enh.	ON		To improves tag detection rates. When activated, the system will preprocess collected data and adjusts the valid data range. If poor distance stability or large deviation in repeated measurements occurs during on-site testing, you can try disabling this function for troubleshooting; if there is no improvement, please restore the default enabled state.
Threshold	0	0~5	The higher the value,the higher the alarm threshold. When the field is prone to intermittent false alarms, you can choose to increase the threshold, (When set threshold in software, make sure J107 port of the main board is disconnected, otherwise it will affect the software settings.
Constraint.	L	H/M/L/OFF	Constraint H/M/L/OFF four states. Higher grades result in greater system stability but reduced detection sensitivity.
Ctrl Bit	A=☑ B=☐ C=☑	A/B/C ☑: ON ☐: OFF	Ctrl Bit A, B, C two states: ON and OFF. When set to ON, the system achieves greater stability and generates fewer false alarms, but with reduced detection sensitivity. * On-site optimization suggestions: When the detection effect is not good, you can try to turn off A or C and observe the changes. If it is invalid, keep the default open; In case of false alarms, try to enable position B to enhance constraints.
TX	ON	ON/ OFF	Turn on or off the transmit
RX	ON	ON/ OFF	Turn on or off the receiver
Function key:			
			Click the left button of CH1/CH2/CH3 to quickly find the corresponding antenna through the alarm sound and light.
			System reset and restart.(with prompt sound and without prompt sound)
Close TX			 After click"Close TX", the button will turn orange and display "Open TX" and the system will enter the Close TX state.
Set			Set any settings when parameters or functions

	changed.
Clear	Clear the settings
Query	Query the parameters from system
Save	Save the settings

3.2.2 Synchronization Interface:

The synchronization interface of the system displays the surrounding environment and channel signals of the antenna, which is convenient for the installer to test the phase and reduce the interference of the surrounding environment to the equipment. To clarify the surrounding environment and surrounding phase data for each channel, select the corresponding channel to view.

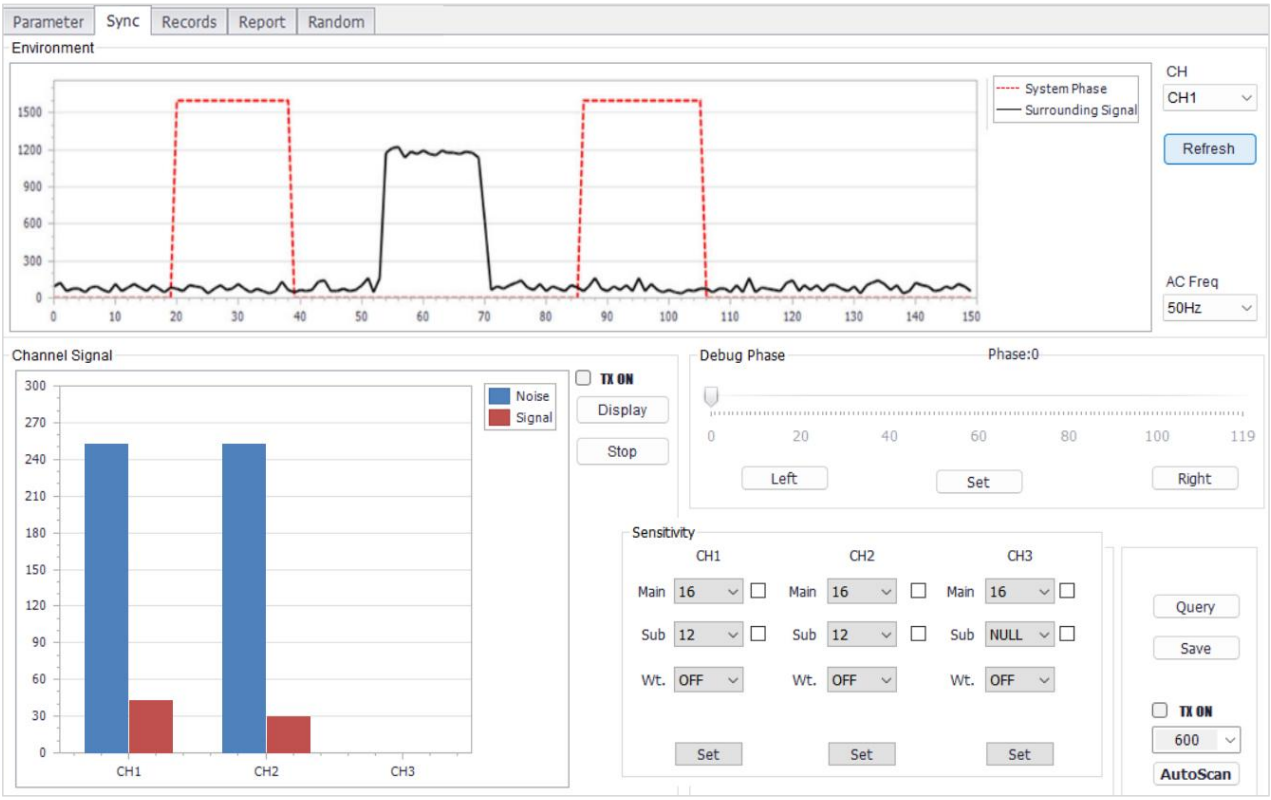


Environment	
System Phase	The red dashed box indicates the signal transmitted by this antenna.
Surrounding Signal	Black block indicates environmental signal. Click the right edge line of the red box first, then click the right edge line of the gray box, the phase difference between this antenna and the external environment can be calculated.
CH	Channel selection
Refresh	Select the corresponding phase channel and click “Refresh”. The antenna will collect the surrounding environment data and upload it onto system synchronization. For the convenience of system synchronization, please select the channel with the best signal for tuning. If the channel signal interference is very severe, you can select one antenna, reduce its sensitivity, then check the phase. Restore it to its initial state after synchronization is completed again.

Channel Signal	
Noise	Surrounding noise.
Signal	Intensity of interference with the signal from surrounding noise.
TX ON	Used to detect tag signals: Determine whether there are tags around the antenna. After click TX ON, if you see the red column suddenly rise,it means there are tags around.
Display	Click the "Display" button, the antenna will automatically upload the channel signal and surrounding noise. Note that label cannot be detected at this time.
Stop	Turn off the signal and surrounding noise of the antenna upload channel.
Phase Sync	
Left--Right	Click "Left" and "Right" buttons to move the phase of this antenna (red box). When the red box covers the black box, click the "set" button to complete the phase synchronization. Before using this function, you must click the "display" button of the channel signal, otherwise it cannot be operated.
Set	If there is a new phase value, you need to click the "Set" button to save it
Sensitivity	
For the content of sensitivity, please refer to 3.4 Adaptive Sensitivity Adjustment of the AM System as below	

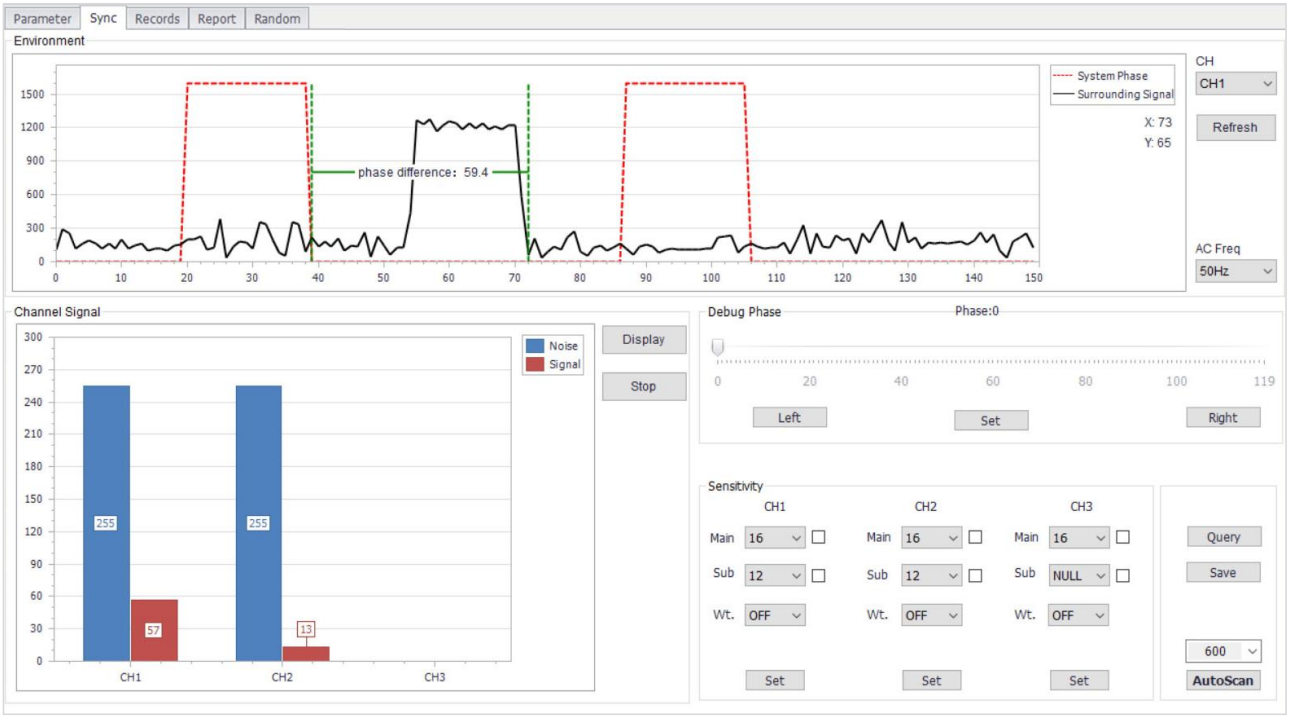
➢ System synchronization step:

① Select the corresponding phase channel, click "Refresh", and the master antenna will collect data from the surrounding environment and upload it for display. To facilitate system synchronization, please select the channel with the best signal and the least interference for debugging.

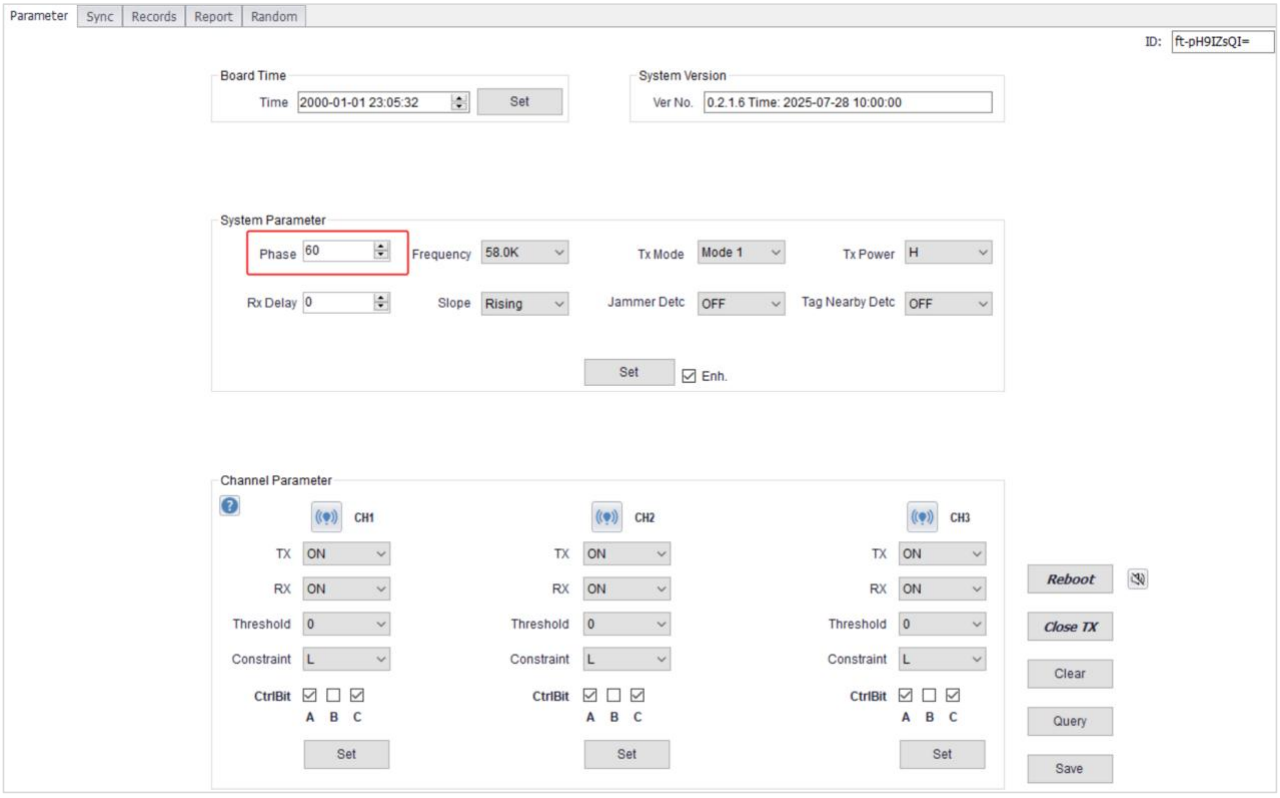


② Calculate the phase difference between the phase of the antenna and the phase of the surrounding equipment:Left-click the phase of the antenna (the far right edge of the red box)

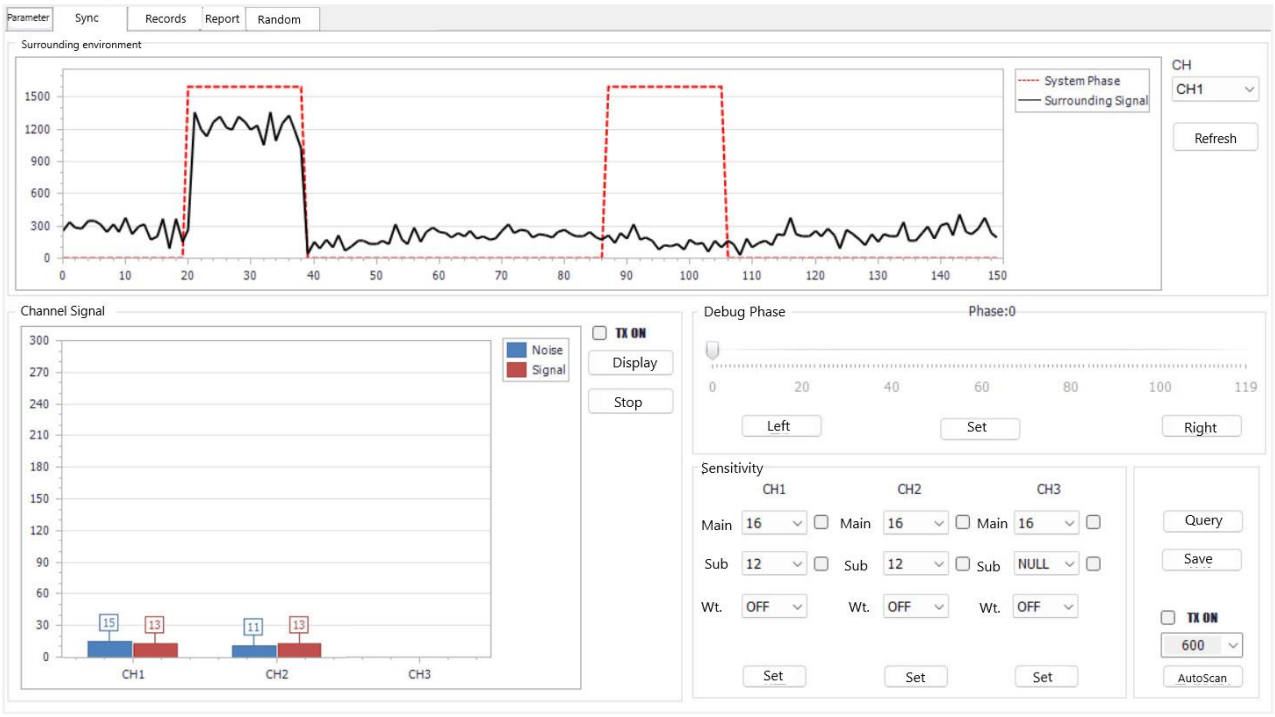
as the starting point,move the mouse to the phase of the surrounding environment equipment (the far right edge of the black box)as the endpoint. The phase difference will be automatically calculated,as shown in the figure below:the calculated phase difference is 59.4.



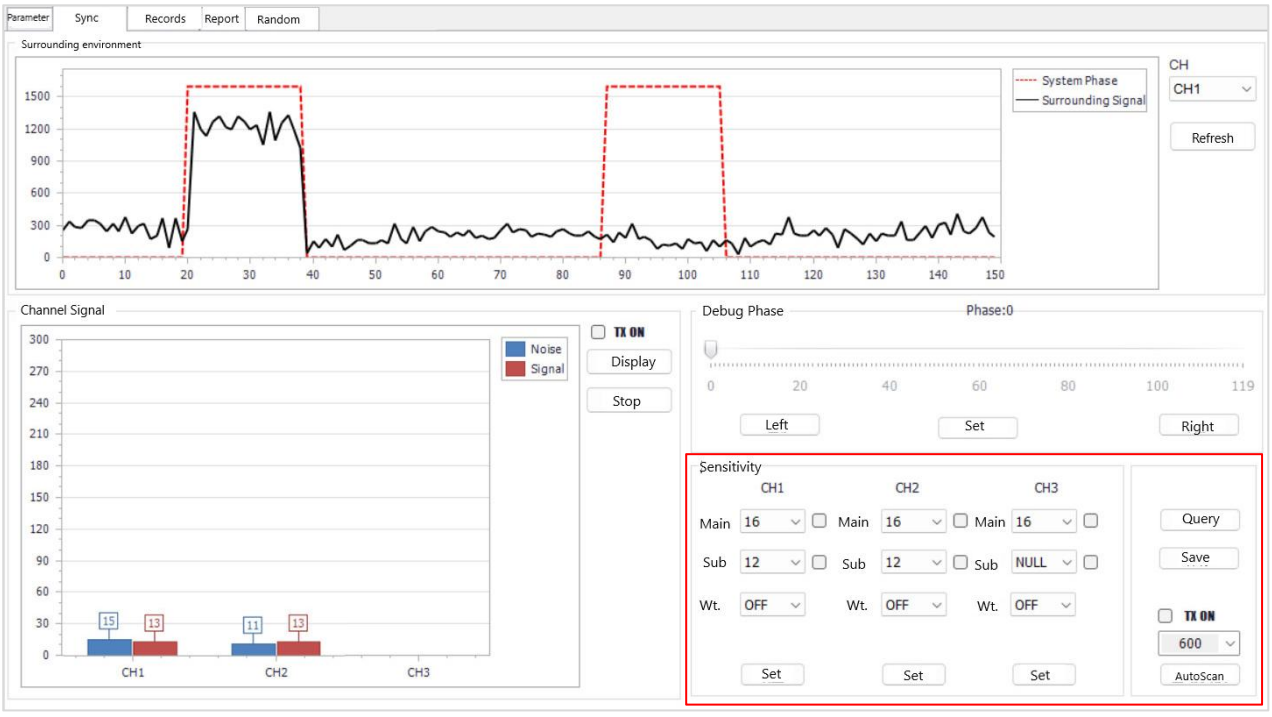
③ Enter the acquired phase difference value into the "Phase" field in "Parameter Settings", and then click the "Set" and "Save" buttons. Note: When the phase difference we acquired is 59.4, then, we can simply take the integer of portion to input 60.

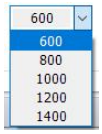


④ After the phase synchronization is completed, the black box in the red box, and both noise and signal are reduced.

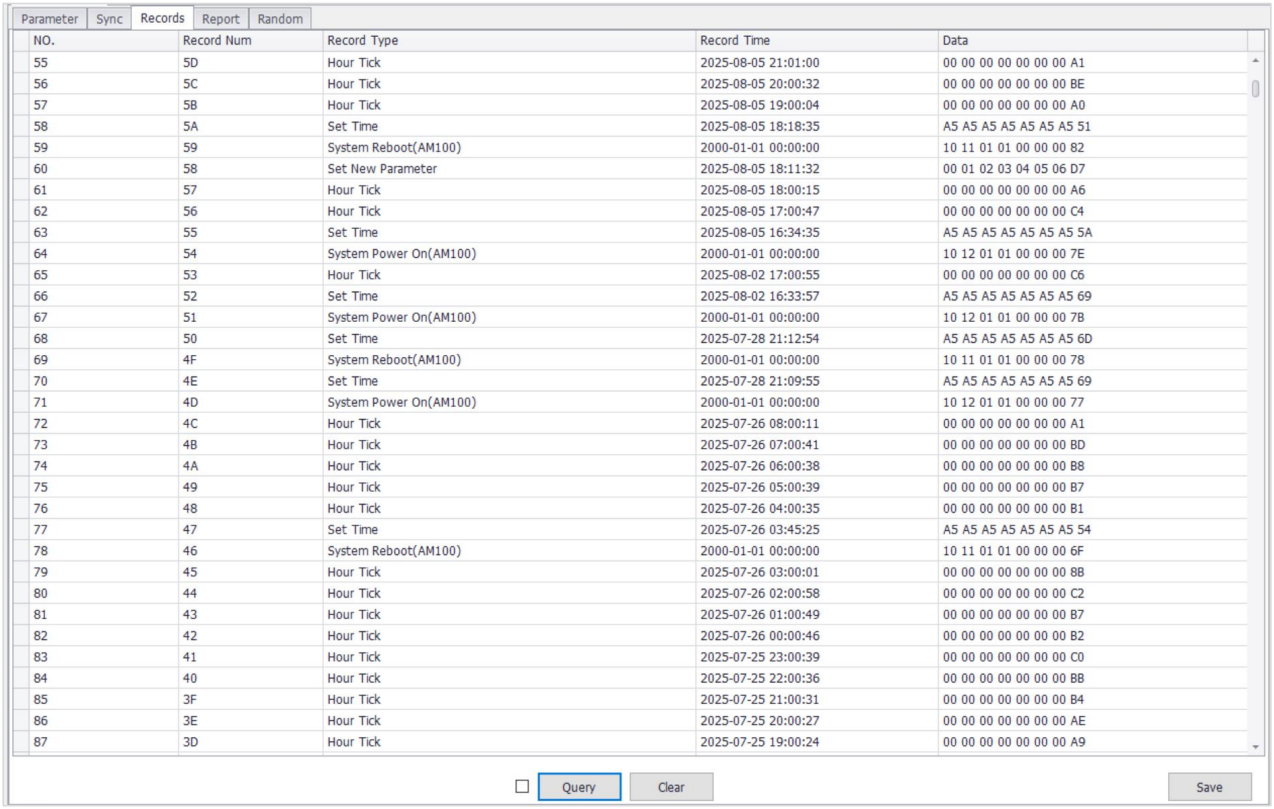


➢ **Adaptive Sensitivity Adjustment:** Part of the content in the red box below



Items	Default parameters	Parameter range	Setting
Main	16	1~16	The sensitivity of each channel is divided into two parts, the main board and the sub board, each adjustable16 levels, the larger the value, the more sensitive the channel.
Sub	12	1~16	
Wt.	OFF	OFF、H、M、L	Wt. is closed by default, which is suitable for situations with large interference to improve the detection effect. After setting, it needs to be observed for several hours to ensure that will not be too many false alarms. The weight is divided into three levels: H, M and L, choose according to the on site interference situation. The greater the interference, the higher the weight setting should be.
Function keys:			
Query	Used to refresh all parameters of the main board.		
Save	Used to save the configured parameters. After successful saving, the main board will reset and add a "Set New Parameter" record in the alarm log.		
Auto Scan	In addition to manually setting channel sensitivity, software can also automatically scan to find the most suitable sensitivity combination. ➢ Synchronization check: Before using auto-scan, ensure that the device is synchronized with surrounding devices, otherwise it will affect the scanning results. If the surrounding noise is high at the current sensitivity, and a straight line appears when refreshing the phase and the surrounding phase cannot be determined, the sensitivity can be manually reduced to detect the environment more clearly and achieve synchronization. ➢ Environmental stability: The premise for auto-scan is that the environment is relatively stable and the interference should not be large or small at a quick changing, otherwise it may lead to inaccurate scanning results ➢ Sensitivity Lock: You can select the sensitivity value by selecting the LOCK at checkbox next to the sensitivity of the master or salve board of the channel. When auto-scan, the sensitivity of the locked part will remain unchanged. ➢ Result: After the auto-scan is completed, the system will display the best matching sensitivity combination. Users can manually adjust according to the actual effect. ➢ Signal level selection: The drop down menu above the scanning interference allows for the selection of channel signal level ,there are five options: 600、800、1000、1200、1400. When searching for the optimal channel sensitivity in the system, the larger selected value,the higher maximum level allowed by the channel, then the resulting channel sensitivity also will increases. If there is significant surrounding interference, it is recommended to increase the value appropriately before scanning. 		

3.2.3 Alarm Records

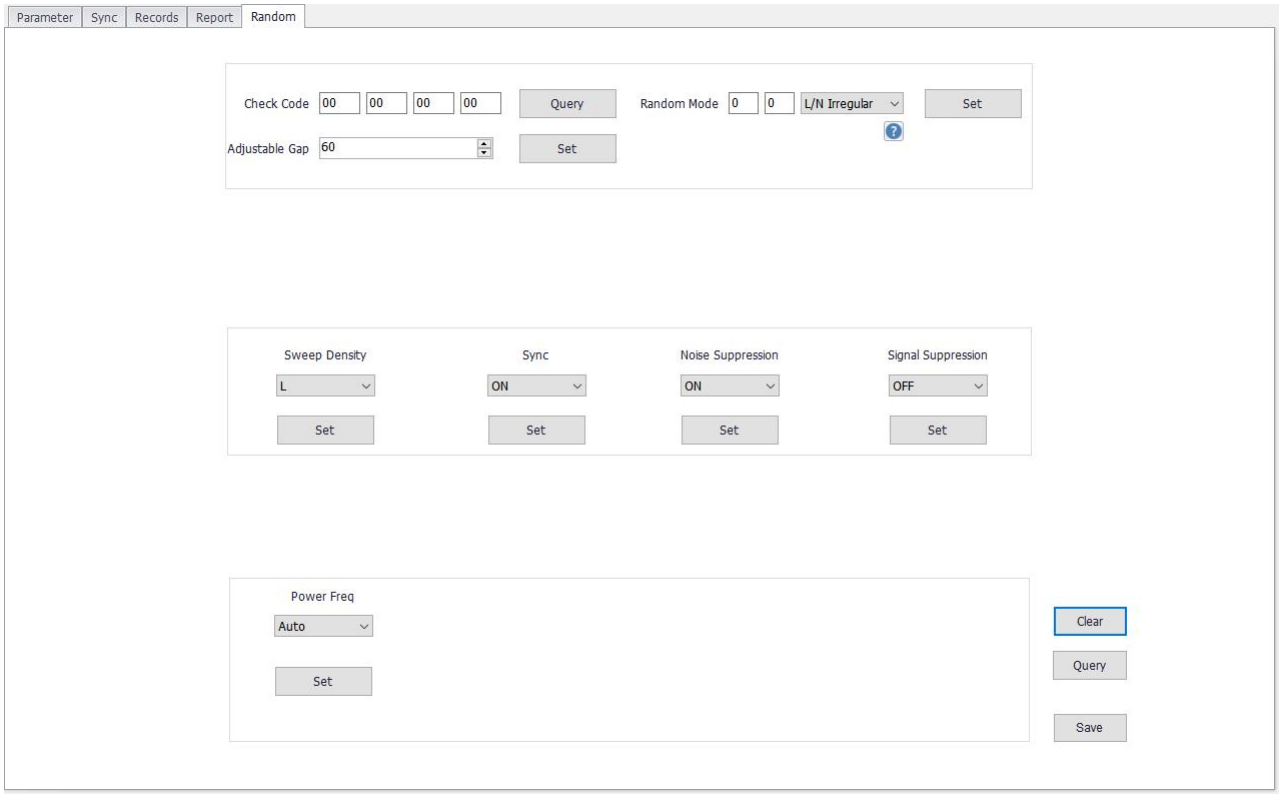


Record Type	**Note**
CH1/CH2/CH3 Alarm	Corresponding signal antenna alarm records.
Hour Tick	When the system is powered on, a record is automatically generated every hour.
System Power On	The system is powered on normally. If this record appears consecutively for multiple times, check whether the power supply is normal.
Cyclus Error	Indicates that the frequency 50HZ and there is jitter, the frequency is unstable, and the power load is large. Power supply by a generator or UPS will probably both lead to this condition.
System Reboot	System reset
Set New Parameter	Changing the relevant parameter settings will automatically generate this record.
Function Key	
Query	Click Query to display the antenna record data and save up to the last 255 records.
Clear	Click "clear" to clear the screen
Save	Click "Save" to save the record to a CSV file.

3.2.4 Report

Parameter items	Note
Start Day	The start day of the alarm to be viewed
End Day	The end day of the alarm to be viewed
Start Time	The start time of the alarm to be viewed
End Time	The end time of the alarm to be viewed
CH1/CH2/CH3 Alarm	Corresponding signal antenna alarm records.
Sys Error	System error data
Chart	View the alarm records in another report format
Refresh	After selecting the time period you want to view, click Refresh to view
Cloud	View records that are automatically saved in the cloud
Save	Select the time period to view the report and save it on local computer（Two file formats: BIN document and PNG image)
Local	Select to open the report data stored locally

3.2.5 Random Mode



Parameter Items	Settings
Check Code	Click "Query" to view the code (this code is no longer valid due to the system version update).
Random Mode	Default:Normal; Optional:Adjustable,YS0, YS1-Adaptive,YS1-Enhanced,YS1-standard, L/N Irregular
Adjustable Gap	Set under the help of Lifangmei Engineer.
Sweep Density	Set under the help of Lifangmei Engineer.
Sync	Set under the help of Lifangmei Engineer.
Noise Suppression	Set under the help of Lifangmei Engineer.
Signal Suppression	Set under the help of Lifangmei Engineer.
Power Freq	Select 50 Hz or 60 Hz according to the local voltage frequency. After selection, the system will not automatically detect the frequency. This function is used when the voltage frequency is unstable and causes system alarms, such as when shops are powered by UPS or generators.(only set for the case where the frequency jitter of electricity is not high. If the jitter is relatively high, normal power supply needs to be used.)
Function Key	
Query	Click "Query" to display the default system data
Clear	Clear the settings
Save	Save the settings

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