

System Training

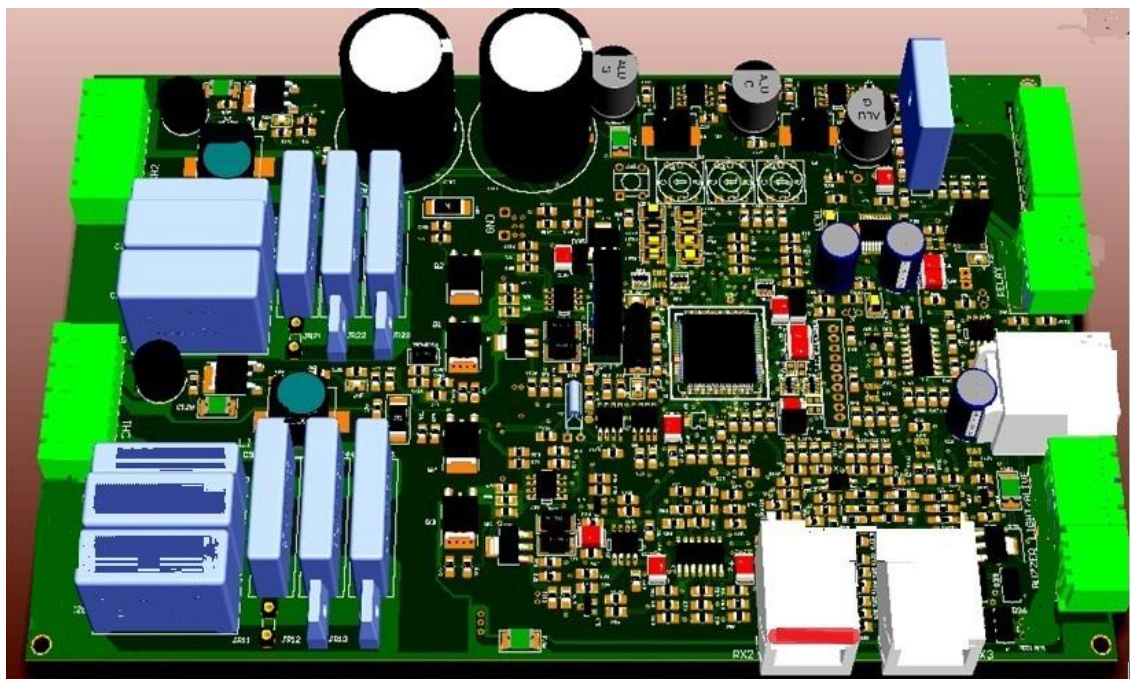
(Professional Edition)



AS9006



AS9002

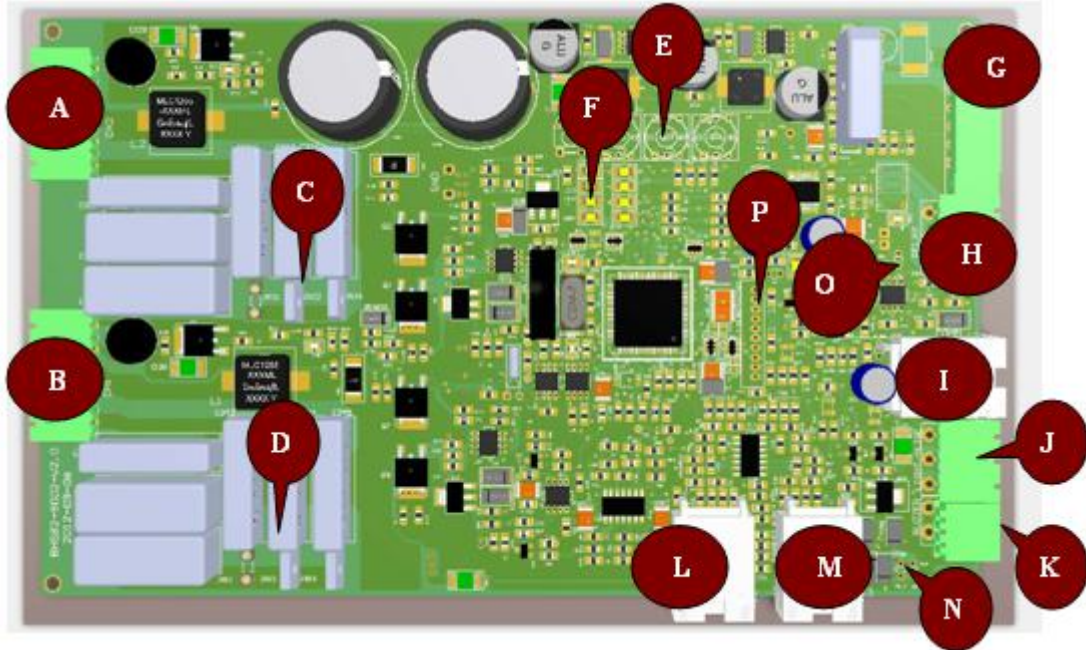


Component of AM antenna

AM system consists of receiver (RX), transceiver (TXRX) and power supply with several configurations.

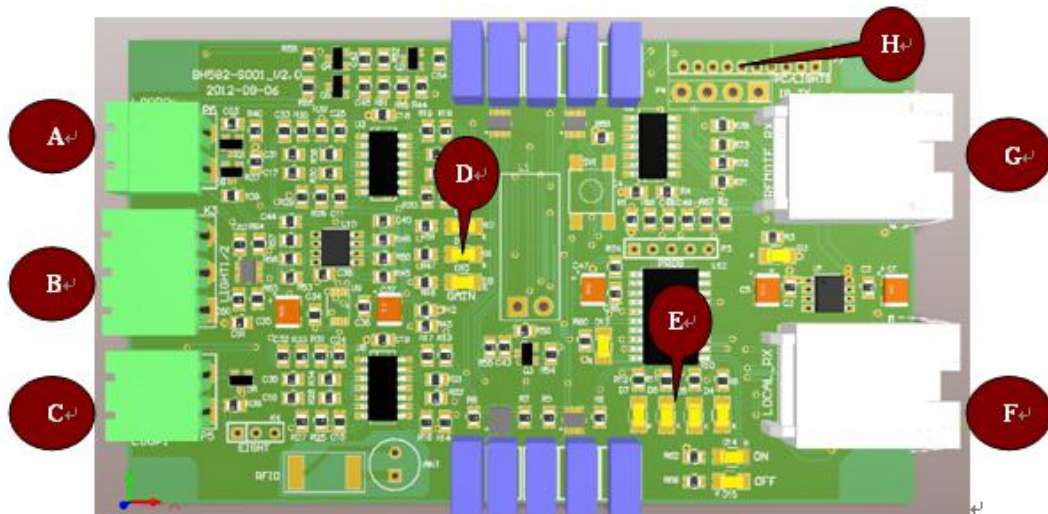
1.1 Main board structure

Transceiver board introduction



- A: Connect to top antenna
- B: Connect to under antenna
- C: Jumper for top antenna's resonance
- D: Jumper for under antenna's resonance
- E : Manual tuning
- F: Signal strip
- G: Power supply port
- H: Alarm port
- I: Communication debugging port
- J: Connect to alarm light
- K: Connect to buzzer
- L: Connect to receiver
- M: Connect to receiver
- N: Alarm volume
- O: 485 jumper
- P: People counter(Without)

Receiver board introduction



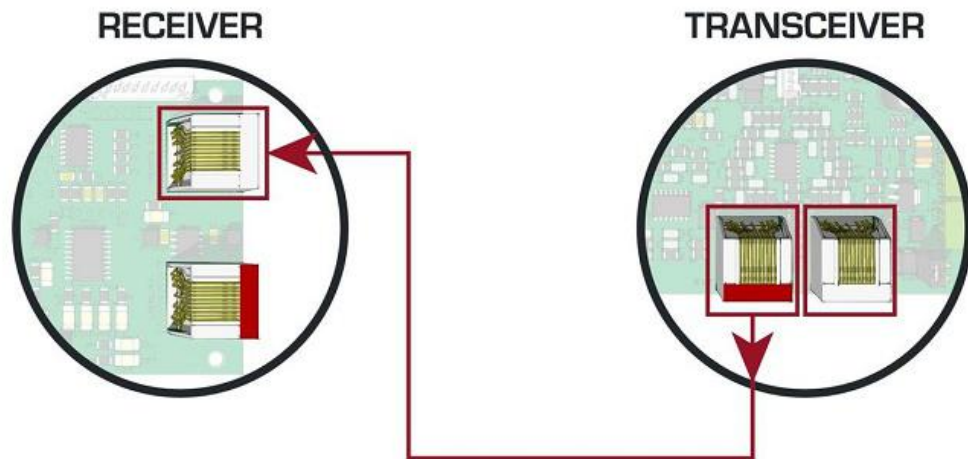
- A: Connect to top antenna
- B: Connect to alarm light
- C: Connect to under antenna
- D: Gain display
- E: Resonance display
- F: Connect to transmitter
- G: Connect to transmitter
- H: People counter(Without)

2. Configuration

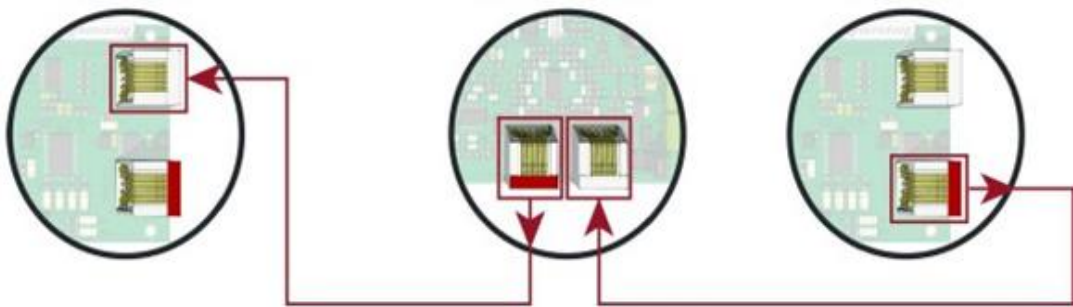
This 58kHz systems have following FIVE configurations for installation.

1.1 MONO (Transceiver)

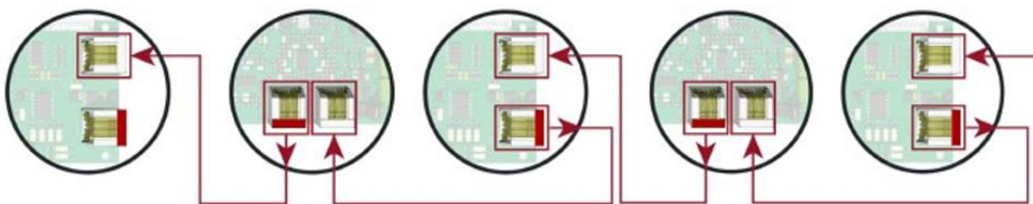
1.2 Dual systems (Transceiver & receiver, RX-TX)



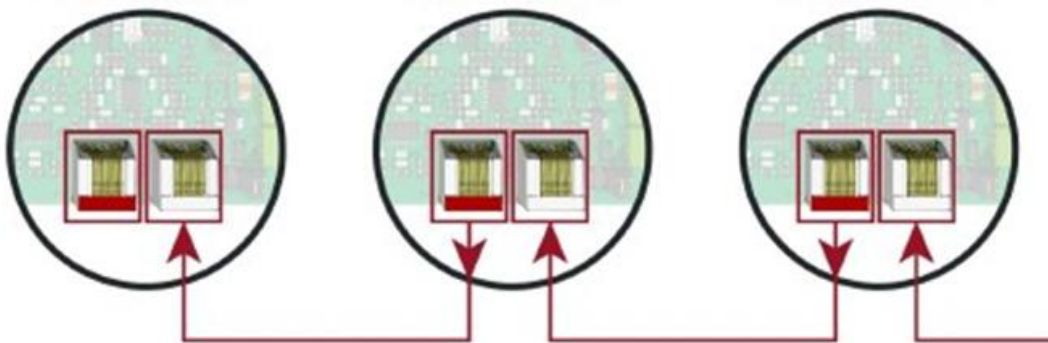
1.3. Triple systems (RX-TX-RX)



1.4 Multiple systems (RX-TX-RX-TX-RX-TX...)



1.5. Multiple transceivers (TX-TX-TX-TX....)



3. Multiple systems setting

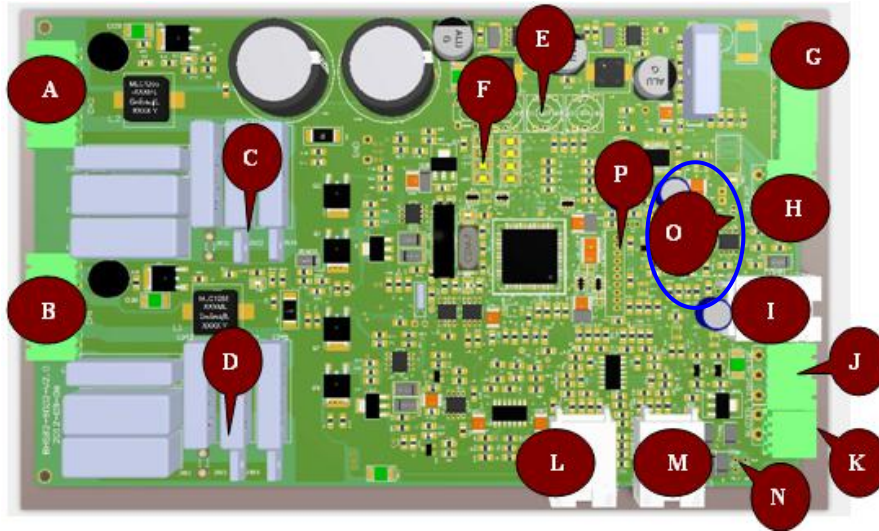
This configuration is used for synchronization and tuning for multiple transceivers and receivers systems.

3.1. Hardware setting and recognition

3.1.1 RS485 jumper connection

In multiple configuration, communication power match jumper should be connected.

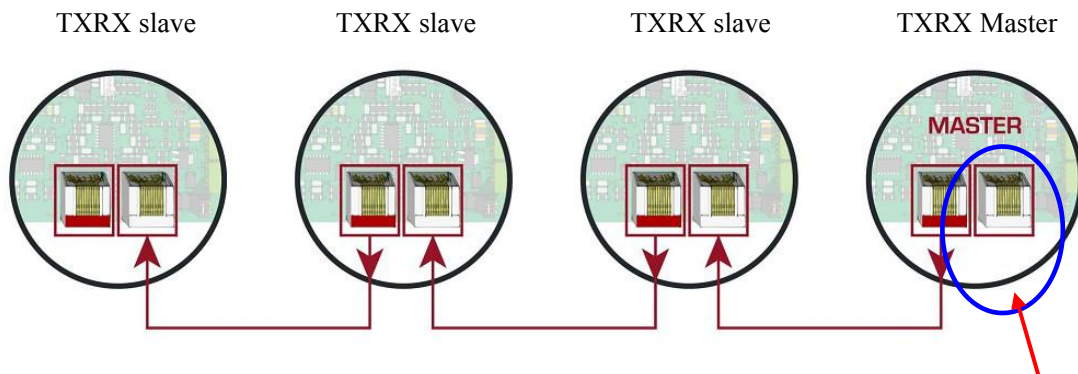
Position O on transceiver board is the jumper, of which both the first and last transceivers should be linked.



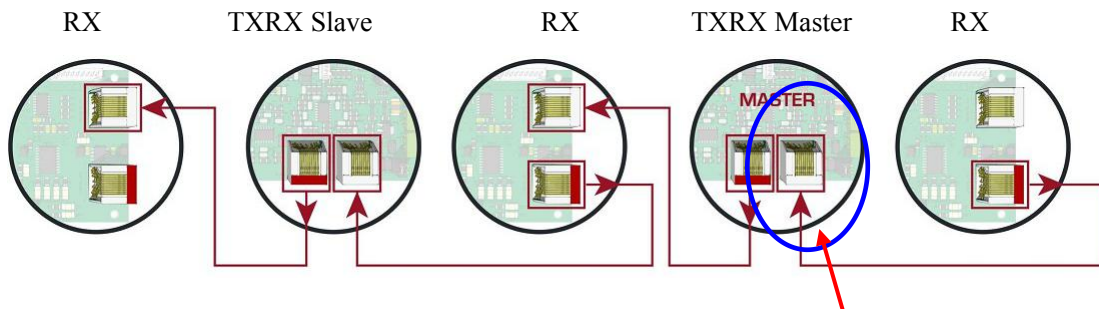
3.1.2 Master and slave recognition

It depends on the connection methods of mark port.

TX-TX-TX-TX systems: Master is default to connect to non-marked port transceiver(TX). / Detection door connected to non-marked port is default to master, others are slaves.



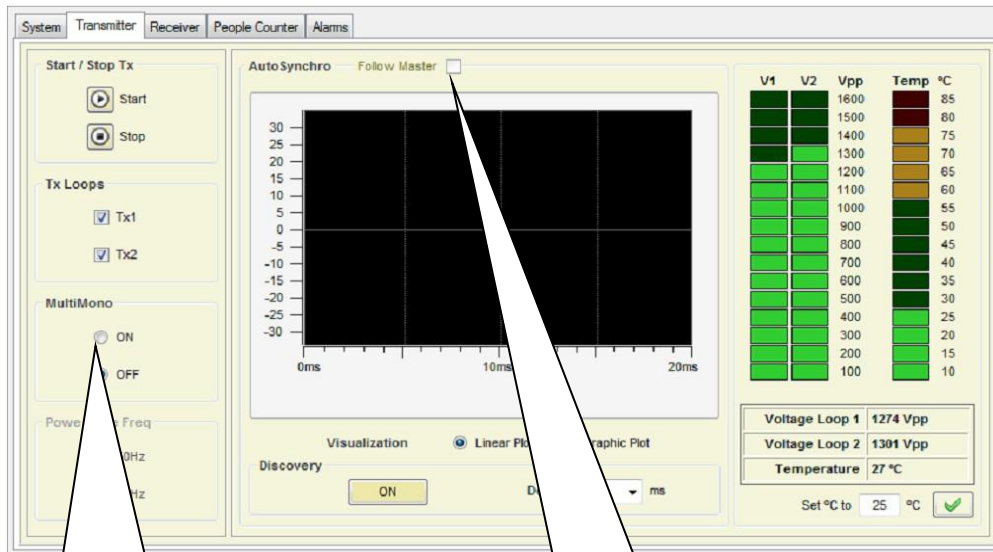
RX-TX-RX-TX-RX systems: Detection door does not connected to non-marked port is default to master.



Mark

3.2 Software setting

Choose master. It should be set in software for synchronization.



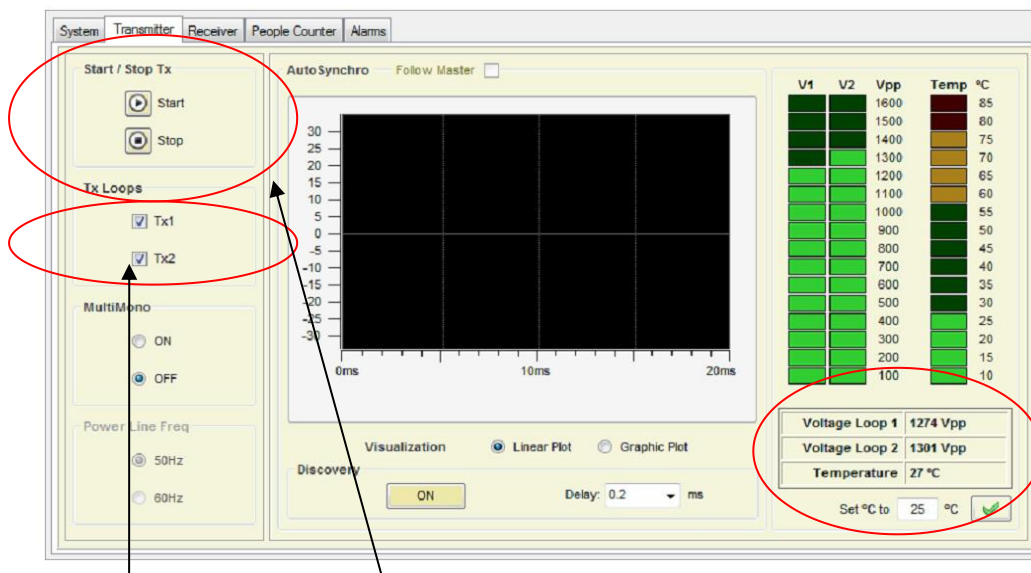
“Multimono” option should be ON for multiple systems.

Slave antennas should tick “Follow master”

4. Resonant debugging between antennas and capacitors

4.1. Transmitting debugging

When 58K detection system works, transmitting signal will sweep frequency centering on 58KHz. If antennas and resonant capacitors can match to 58KHz, then antennas will gain excellent performance in transmitting and receiving 58K signal, as well as good anti-interference ability.



Choose transceiver

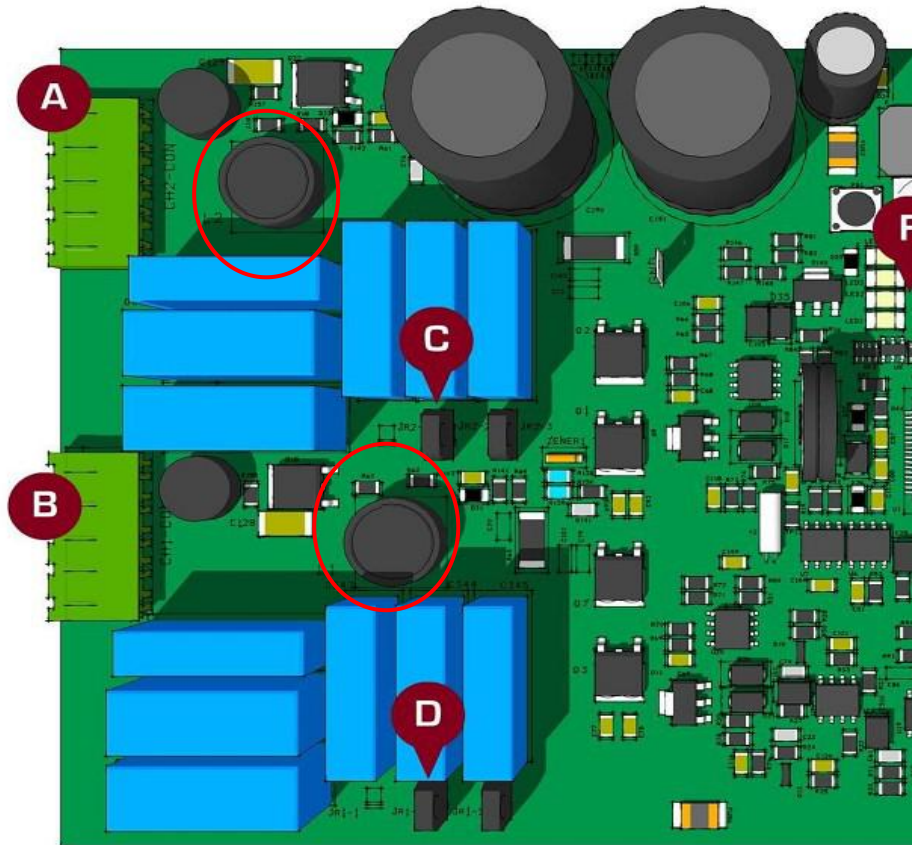
Main switch

Debugging method

- (1) To avoid electric shock, cancel transmitting before connecting jumpers, then click transmitting. Check antenna voltage to ensure suitable transmitting frequency.
- (2) Because top antenna and under antenna share one power supply, they sometimes interfere mutually. If one antenna donot tuned well, you can debug another antenna to gain balance. In a

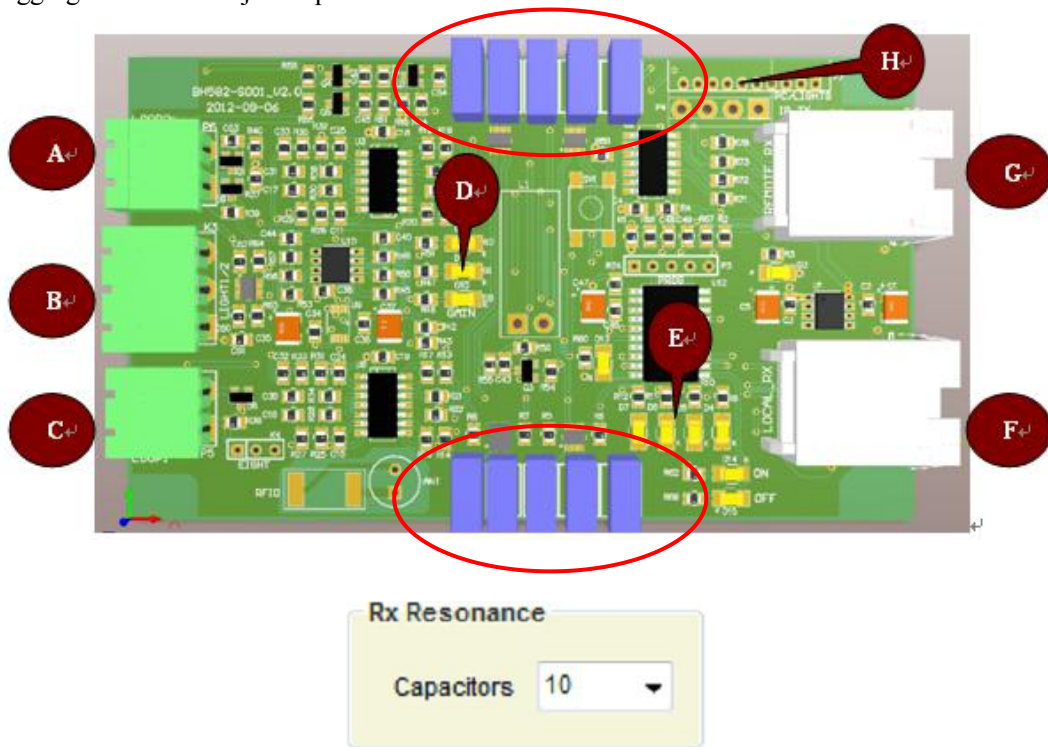
dual system, top and under antennas voltage should be balanced to avoid big difference, especially in the case of one antenna beyond peak value, which will do harm to product stability.

(3)When antennas match well, excitation inductance sounds louder.

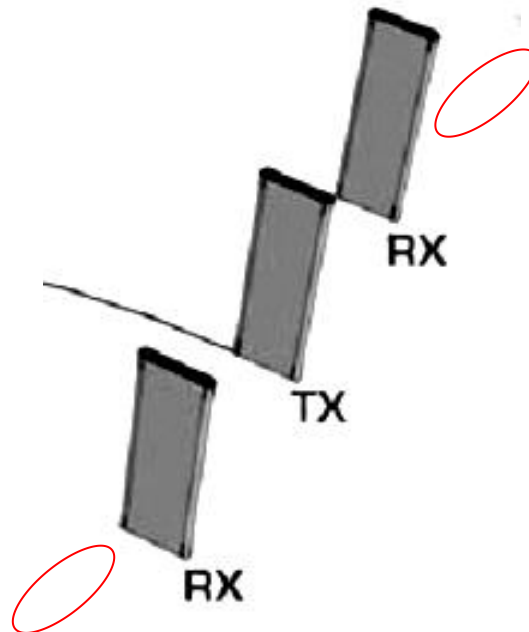


4.2.Receiver debugging

In installation environment, there are metal doors will reduce inductance value of receiver antennas then systems will deflect actual resonant frequent center. AM antenna software provide debugging function to adjust capacitors on boards.



To check whether antennas match capacitors, you can use a tag/label to go through the border of a receiver. They match best when getting the longest detection distance.



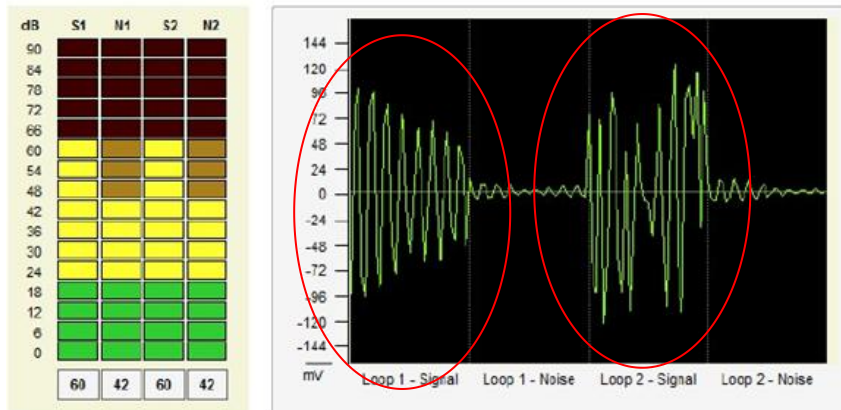
5 Noise Analysis

5.1. Analyse false alarm caused by labels

In actual environment, there are some false alarms caused by nearby labels.

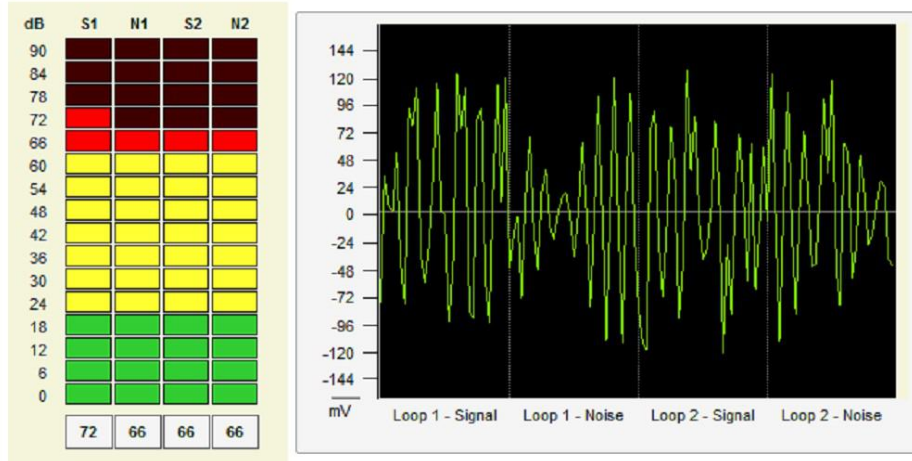
Methods:

- (1) Cancel transmitting, check alert or not.
- (2) Observe software wave. If it is caused by labels, then it will appear obvious periodic 58K resonance signal. If not, there is consistency wave.



5.2 Read & analyse environment noise

Cancel transmitting. Observe noise signal in oscilloscope, then check electric equipment or debug installation situation.

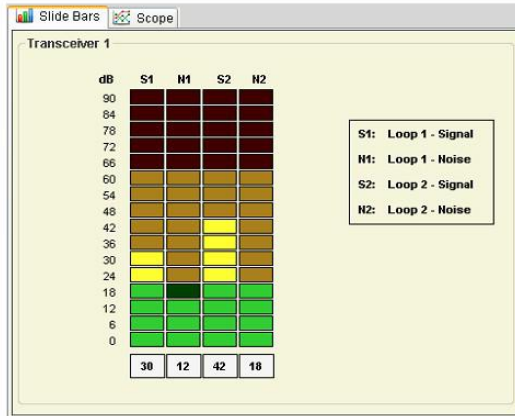


5.3 Analyse noise caused by power supply

Cancel antenna input, observe noise signal in oscilloscope.

5.4 Analyse PCB problems

When there is occasional bad performance, check if there are abnormal channels of top and under antennas by observing oscilloscope.

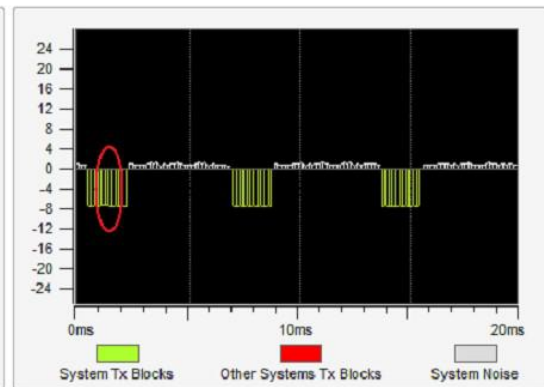
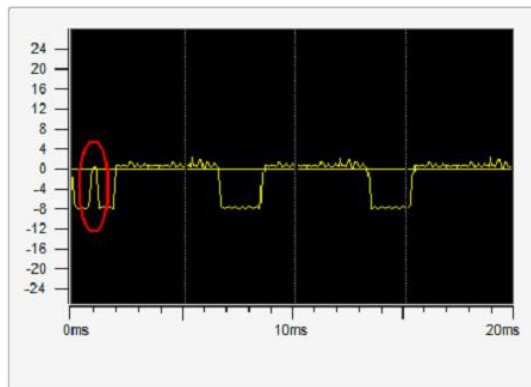


6. Synchronization

There are three quadrants in a standardized 58K system. **When synchronizing, choose 6.667ms in 50HZ power supply; 5.556mS in 60HZ supply.**

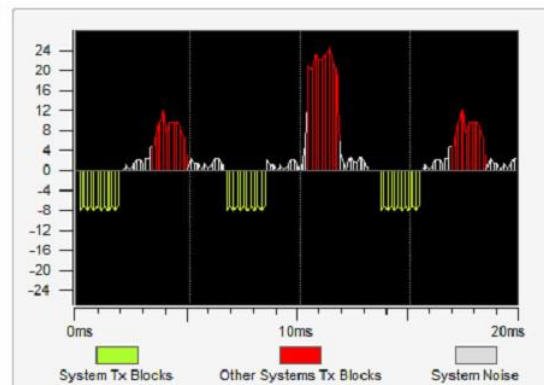
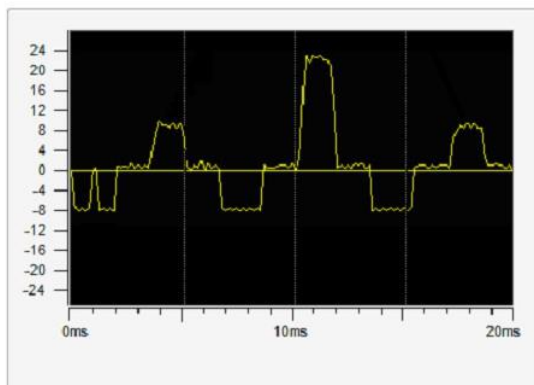
6.1 No synchronization needed.

In this circumstance, only upper signal is visible. Check the first signal part (red circled), it shows that another system is synchronizing and operating with this system.

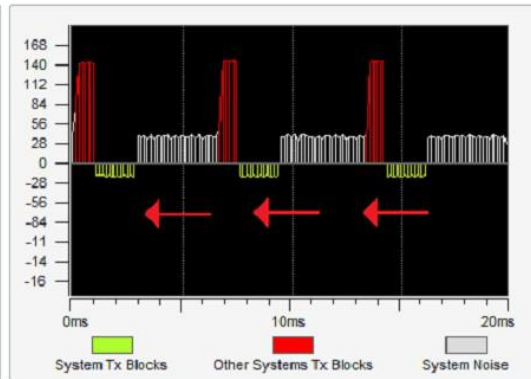
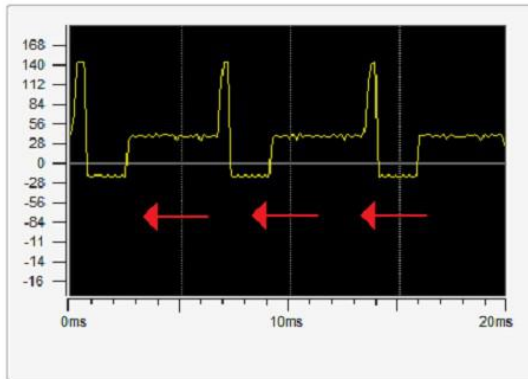
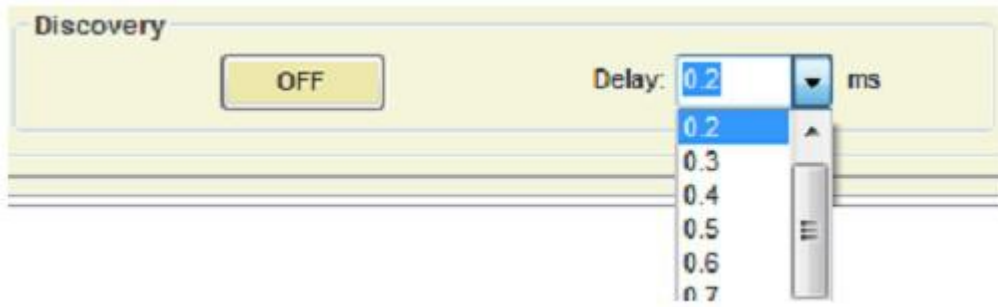


6.2 Adjust non-synchronization to single system

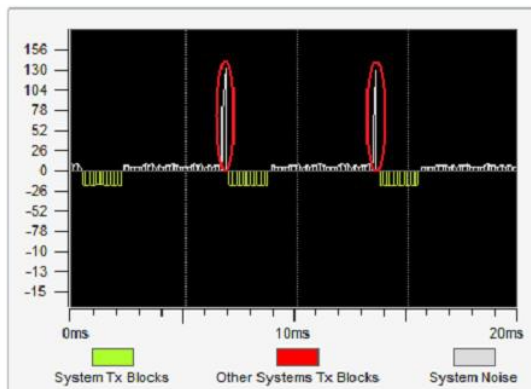
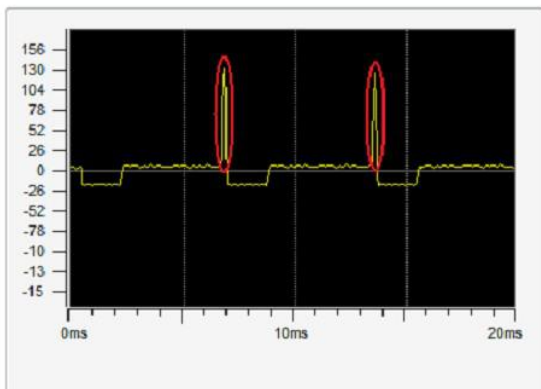
When another 58KHz transmitter donot synchronize, it can be easily seen from diagram (Above yellow line part in left diagram shows this situation).



Manually select delay time to tune out-syn system



Mutual matched signal transport



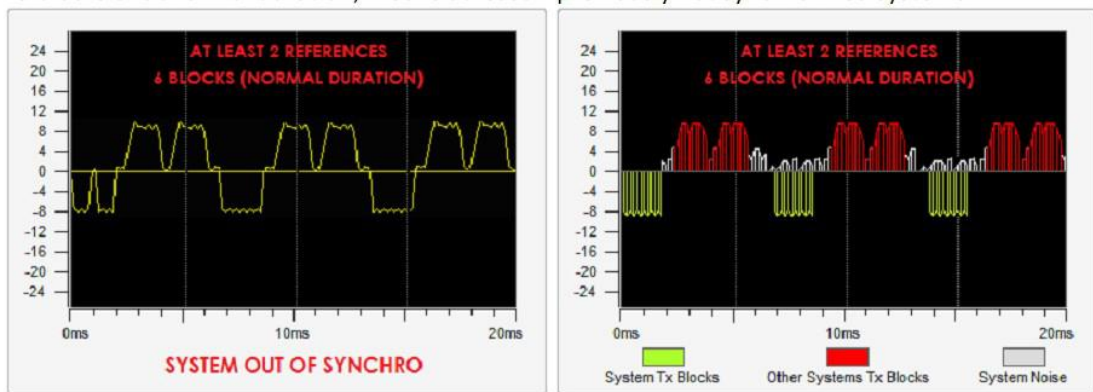
Above diagram shows that it can be traced and verified visually when transmitting signal(below yellow line) moves to another transmitting signal. When systems are too close, it is normal to appear two peaks(red circled).

After good synchronization, click “OFF”to close prospecting model.



If systems do not synchronized, adjust systems.

When there are more than one external systems, it is impossible to synchronize correctly. This situation indicates that there are at least two systems out of synchronization and are probably out of work. To solve this problem, synchronize previous installed systems.



7、 Judge alarm sound

Alert sound can generally be set in software.

System
Transmitter
Receiver
People Counter
Alarms

Detection

- Tag Alarm
- Jammer Alarm
- Near Tag Alarm
- Bad Synchronization

People Counter

- Ins
- Outs
- People Counter locked

Tag Alarm

Sound

Times to Sound

Off Time s

First Beep Time s

Evens Beep Time s

Odds Beep Time s

Time Rele On (on alarm) s

Test Sound

Message to display on Beeper

LCD Line 1: (11 Characters)

LCD Line 2: (11 Characters)

Send