Main Board Tuning Manual

MONO Transceiver Main Board

upper antenna

power supply

computer tuning line

LED alarm

under antenna

Jumpers for matching transmitting voltage

buzzer
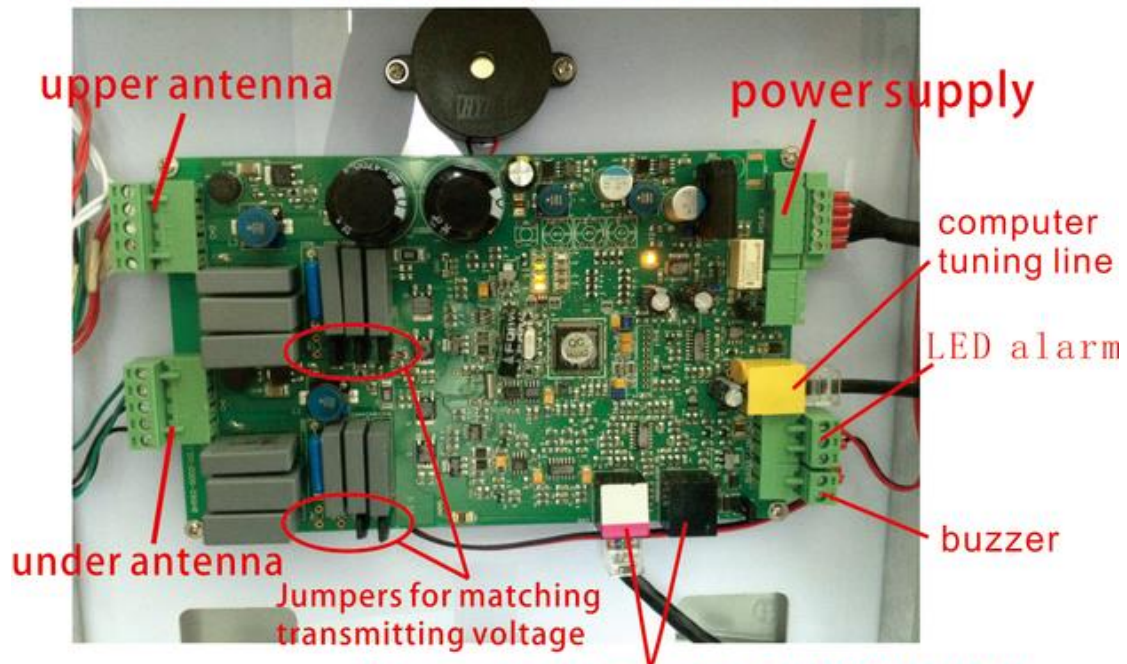
Connect to other pedestals(10 PIN Port). This transceiver can be connected to both slaves and MONOs.

upper antenna

LED alarm
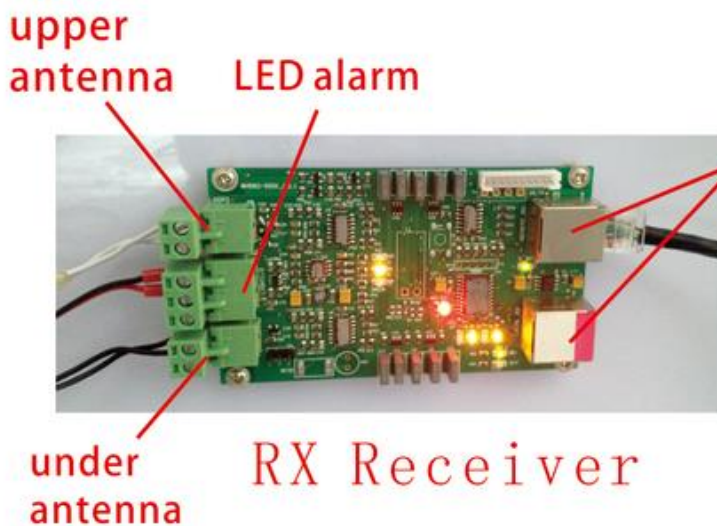
Both transceiver and receiver have two ports, one is with red mark, the other is not. Connection line from one port with red mark on transceiver board should be linked to a port without red mark on receiver board. Same connection method should be follow between MONOs.

under antenna

RX Receiver

3/4

1. Configuration

1.1 MONO-RX. Besides the distance range between them, another side of MONO can also be detected. (Detection range: DR label, 1.4m-1.6m; hard tag, above 2.0m)

MOMO   RX
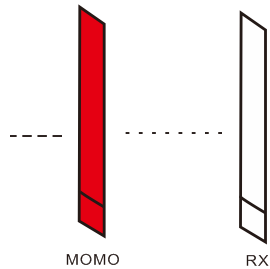
1.2 RX-MONO-RX. This configuration is lower cost. (Detection range of each aisle remind the same as Configuration 1)

RX   MOMO   RX
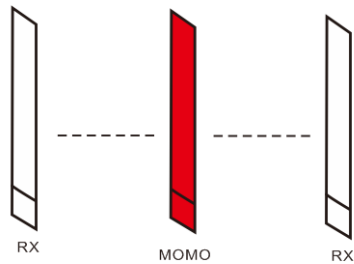
1.3 RX-MONO-RX-MONO.... This configuration matches multi-channel environment. (Detection range of each aisle remind the same as Configuration 1)

RX   MOMO   RX   MOMO   RX   MOMO
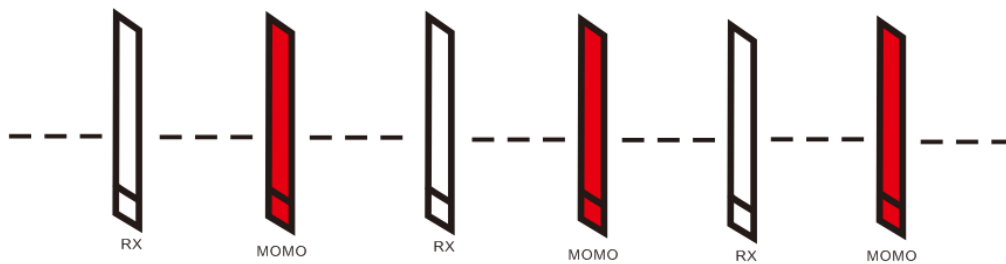
1.4 MONO-MONO-MONO-MONO...This configuration is suitable for one aisle or multi channels, and wider detection range is necessary. (Detection range: DR label, 1.6m-1.8m; hard tag, above 2.4m)

MONO   MOMO   MONO   MOMO   MONO   MOMO
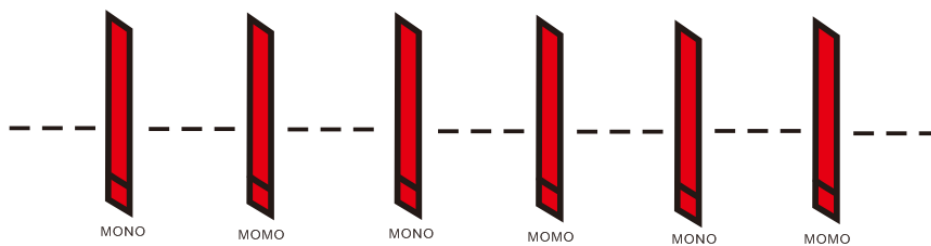
2. Installation & Tuning

2.1 Connect 10PIN net lines between pedestals. MONO should be connected to power supply while RX just need to connect to MONO. One power supply can provide electric power for two MONOs at the same time.

Notice: No matter the connection is between MONO and RX, or MONO-MONO connection, the only correct connection method of 10PIN net line is one side linked to port with red mark, the other side linked to port without red mark.

2.2 Open power supply. Check whether the signal light is on, generally noise light also twinkles, and with slight pulse sound. Check if RX board light is on.

2.3 Connect to computer for tuning. One side of debugging line is 8PIN cable head, another side is serial port. 8PIN cable head is inserted to MONO main board, then link serial port to computer.

2.4 Tuning.exe
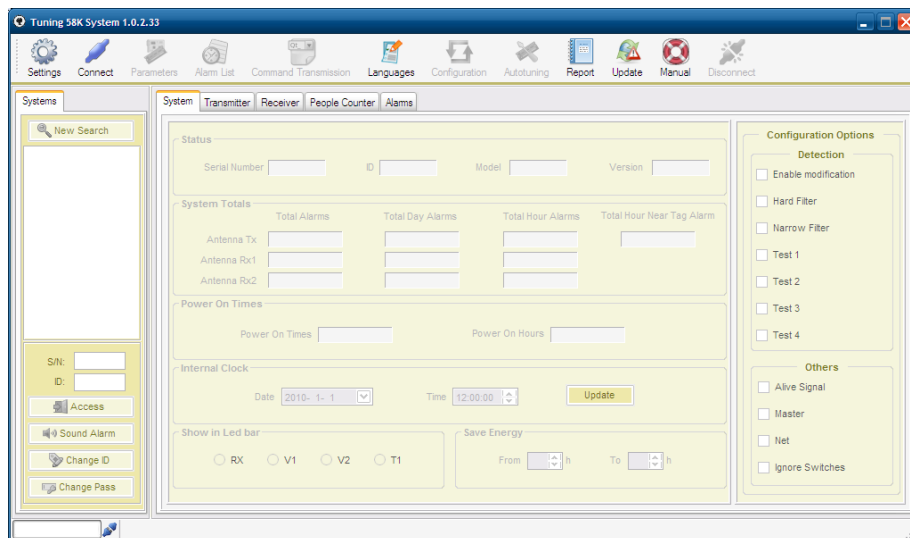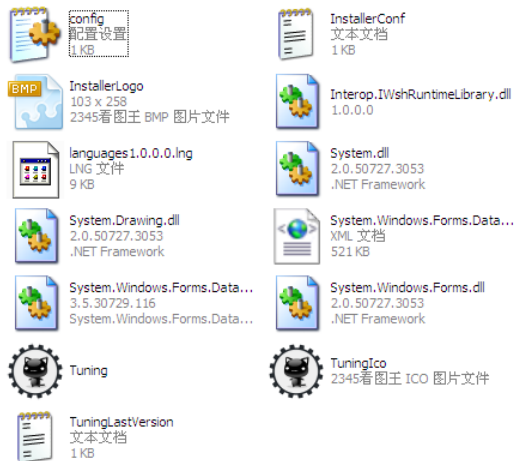
2.5 First, choose port location. Click SET button at the top left, then choose the COM NO. of serial port. COM No. can be found by right clicking "My Computer"-"Device Manager"-
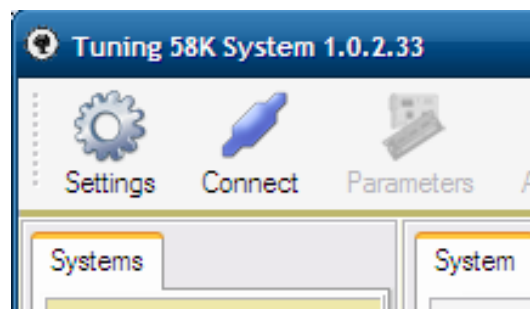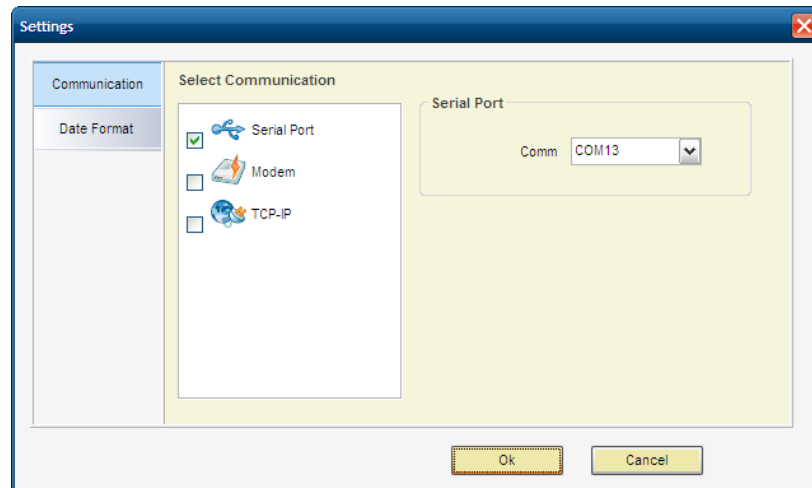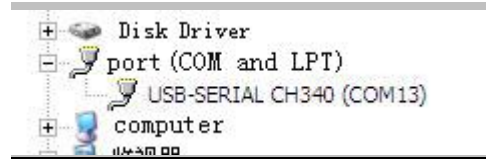
2.6 Click "Yes", go back to main interface, then click "CONNECT" botton at top left. When connection is built, ID No. of detection systems will appear on left side. If there are several MONO detection systems, more SN No. Can be found.
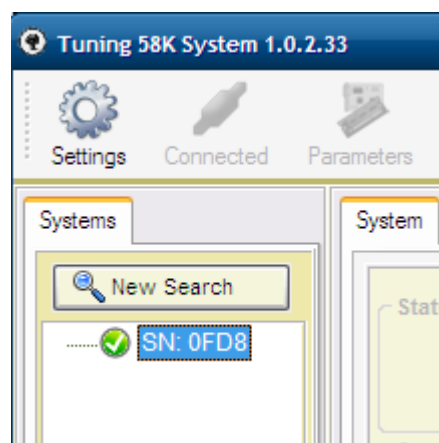
2.7 Double click SN No., click "CHOOSE"-"MAINTENANCE", input passport: 12345678, click "Enter". It will take several seconds to read the information of device.
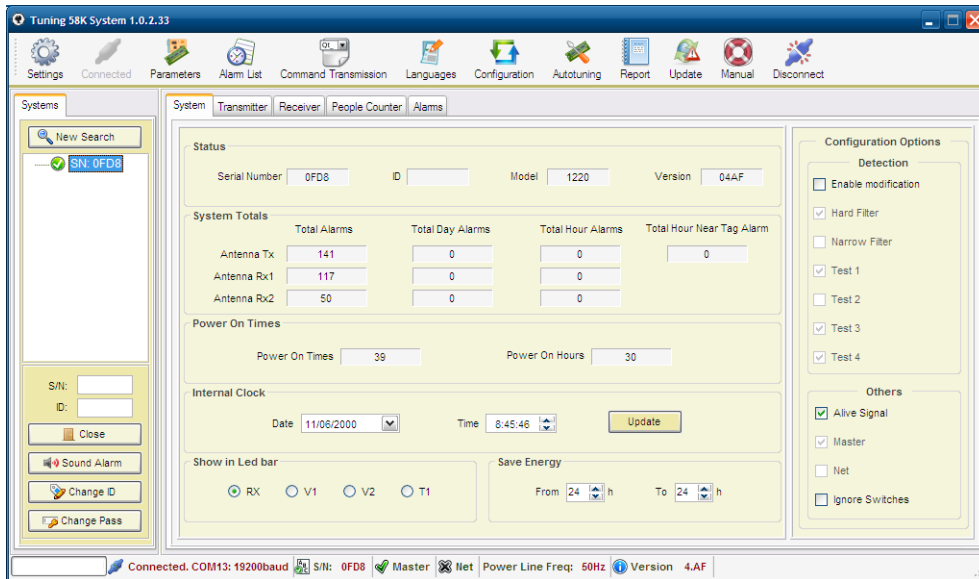
2.8 Click "TRANSMITTER" button, then comes transceiver interface. This interface is mainly used for tuning transmitting voltage and synchronization.
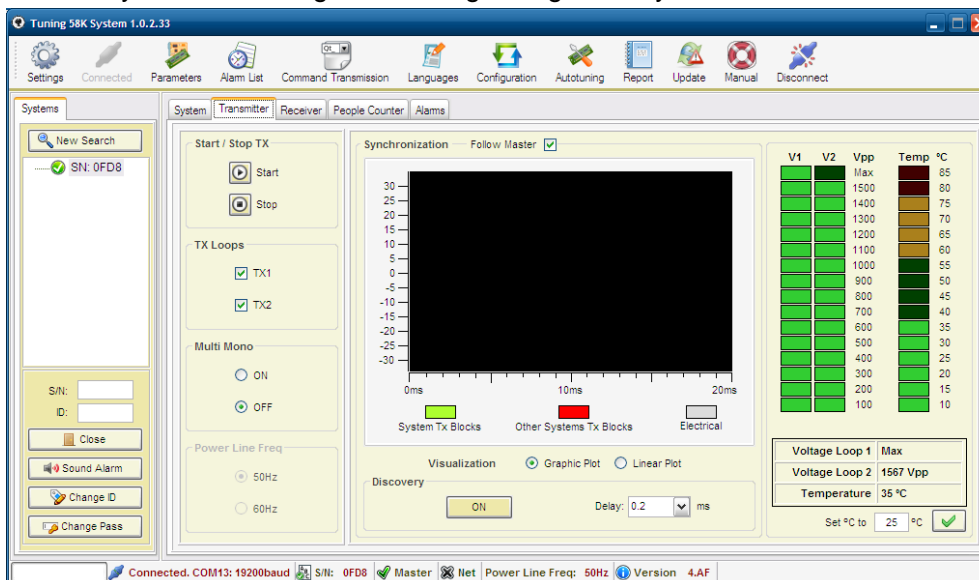
Two green strips on right side (V1, V2) shows transmitting voltage of upper antenna and under antenna. Transmitting voltage should exceed to 1000V to guarantee good performance. If electric voltage is much too low or nearly no voltage, it means main boards do not match antennas. It should be tuned by jumpers on MONO boards.

Jumpers for matching transmitting voltage

There are eight positions can be used to adjust voltage. There are no basic rules in tuning jumpers. It is suggested to add jumpers and meanwhile observe voltage change on software interface until you get a high voltage. (Generally speaking, higher antennas inductance needs less jumpers.)

2.9 Adjusting transmitting voltage is of great importance. Without good transmitting voltage, antennas' detection performance can be terrible. Especially for those distributors who purchase main boards and make antennas separately should pay more attention. If there are several MONOs, you need to adjust each MONO's transmitting voltage separately.

3. **Configuration**

Multiple system configurations mainly aims to realize synchronization and easy tuning for multiply transceivers and receivers.

3.1 Jumper connection

In multiple systems, jumpers for matching communication power on the first and the last main boards should be connected.

Following is the connection method: Find position O (the jumper has mentioned above) on the first and the last MONO main boards, then connect the second and third feet of the jumper.
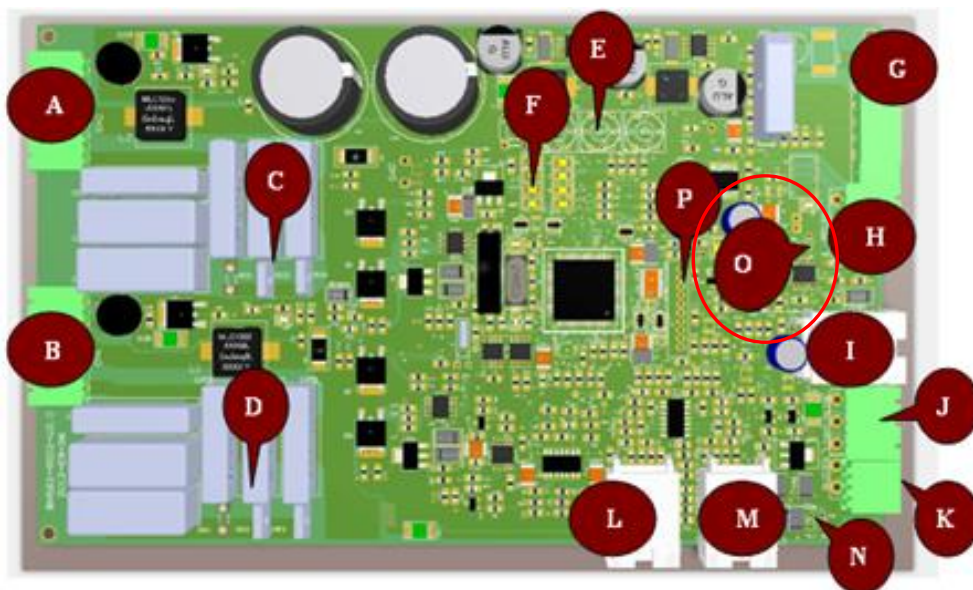

3.2 Master and slave recognition

It depends on the connection methods of mark port.

3.2.1 MONO-MONO-MONO-MONO 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.
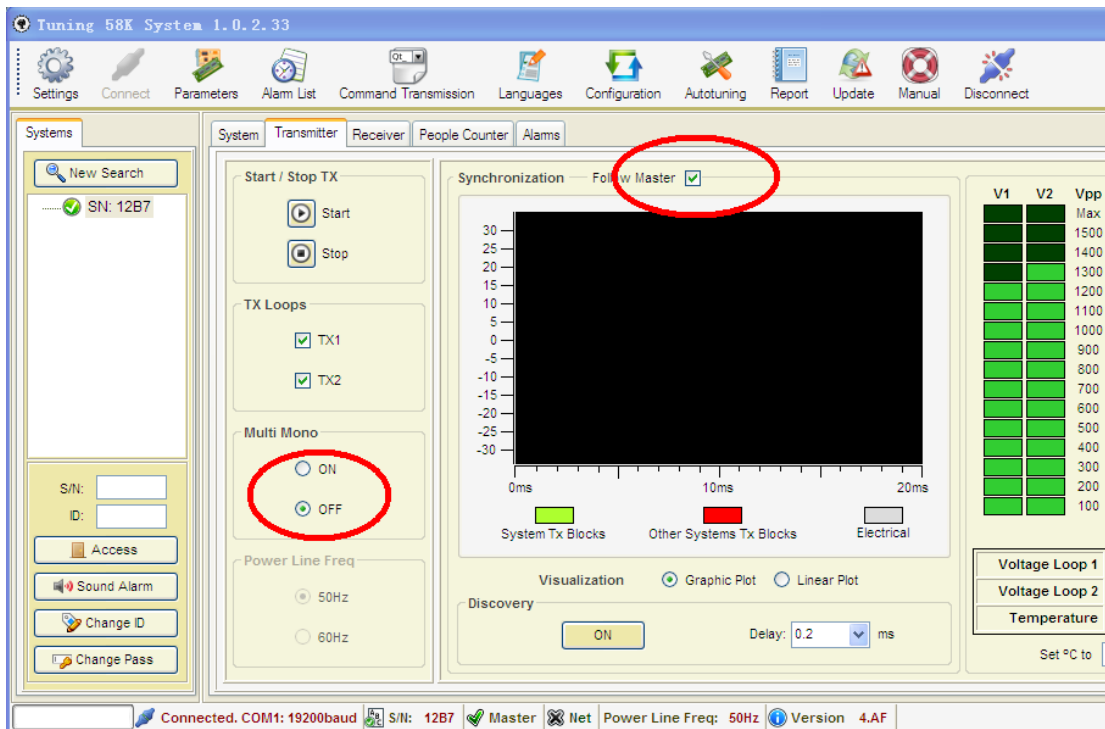
MONO Slave   MONO Slave   MONO Slave   MONO Master
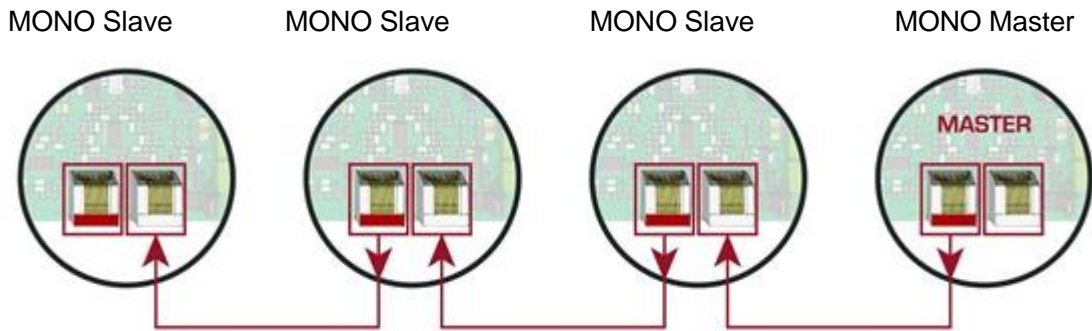
3.2.2 RX-MONO-RXMONO-RX systems: Detection door does not connected to non-marked port is default to master.
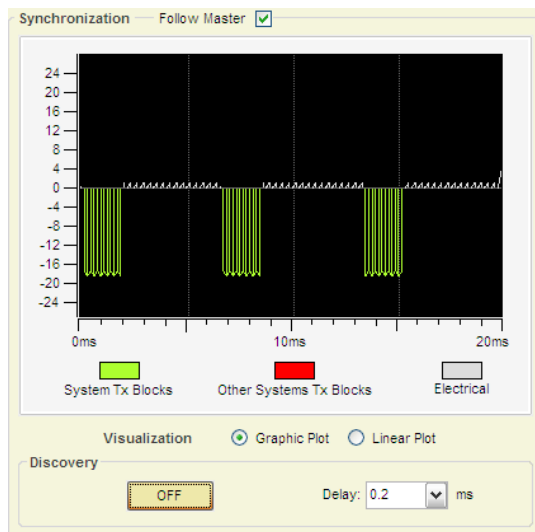

RX   MONO Slave   RX   MONO Master   RX
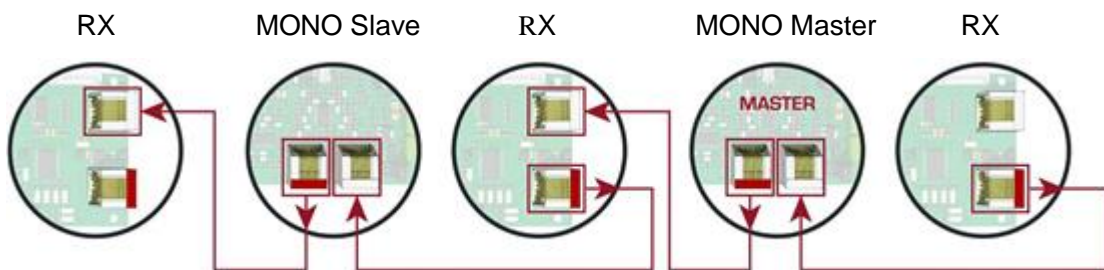
4. Synchronization

If there are several MONOs, set one MONO as master, others as slaves. When synchronize, tick "REFER TO MASTER", done.

Click "OPEN", synchronization wave will display on black screen, then MONO stop

transmitting.

This image shows a very good condition of synchronization. If there are other 58KHz systems or electrical installations, synchronization can be done when moving phase by choosing "DELAY" time.

When synchronization between several MONOs is done, then these systems will synchronize automatically.

5. Receiver adjustment

5.1 Click "RECEIVER", then appear several tuning menus for receiving antennas. Firstly, adjust receiving part of MONO (same as transceiver). "GAIN' represents sensitivity. "THRESHOLD" represents threshold level of alarm. Lower threshold means easier to alert. Similarly, high gain and low threshold help increase false alarm rates.

5.2 Adjust the system to a balance situation by tuning gain and threshold. Keep inspecting the right scrollbar. The yellow scrollbar should not be too high, not beyond THREE lines.

5.3 If installation environment is not good, with high noise, you can reduce noise by "Anti-Noise Algorithm" below. This algorithm model is random, please keep inspecting when tuning. Tick "Low Noise", it is good for reduce noise.
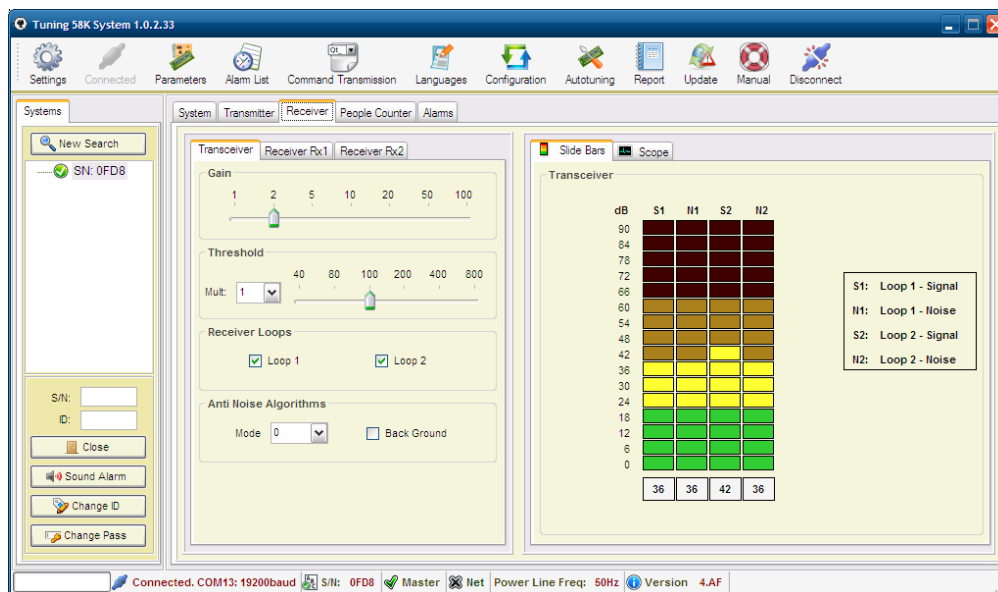
5.4 If there are two RX antennas beside MONO, you should adjust "Receiver RX1' and "Receiver RX2". Similar to tuning receiver part of MONO, but you need to adjust

capacitors of receiver resonant. Choose capacitors at random, keep inspecting when tuning until you get a good anti-noise outcome.
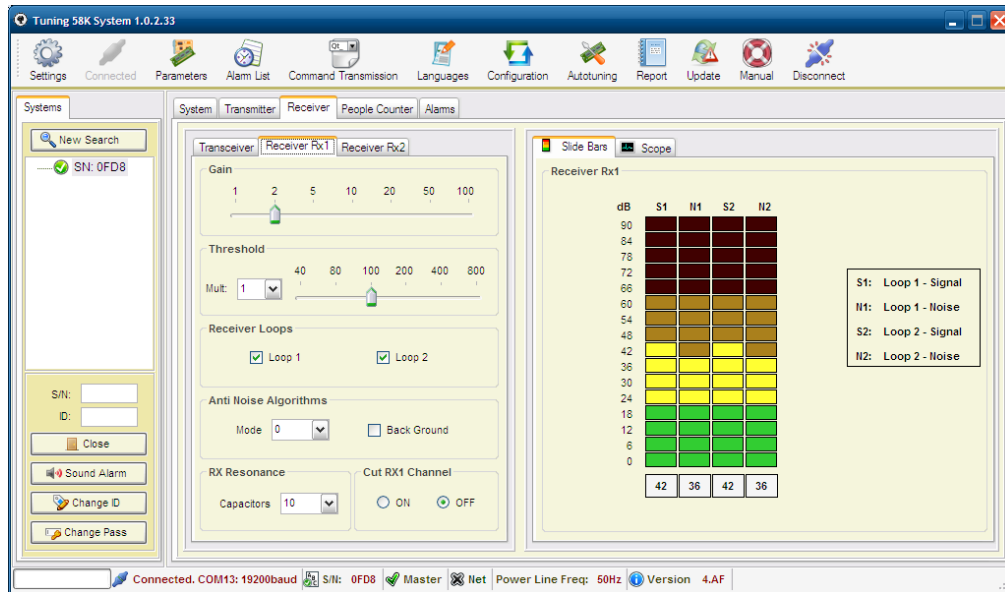

6. Automatic correction

6.1 Automatic correction is very convenient and practical. After adjusting transmitting voltage and manual synchronization, choose tested systems, then click "AUTOMATIC CORRECTION". Software will correct systems' THRESHOLD, GAIN, and NOISE according to installation environment.

6.2 After "AUTOMATIC CORRECTION" is finished, check detection range and noise level. If the outcome is not so good, refer to tune manually in Step 11 and Step 12.
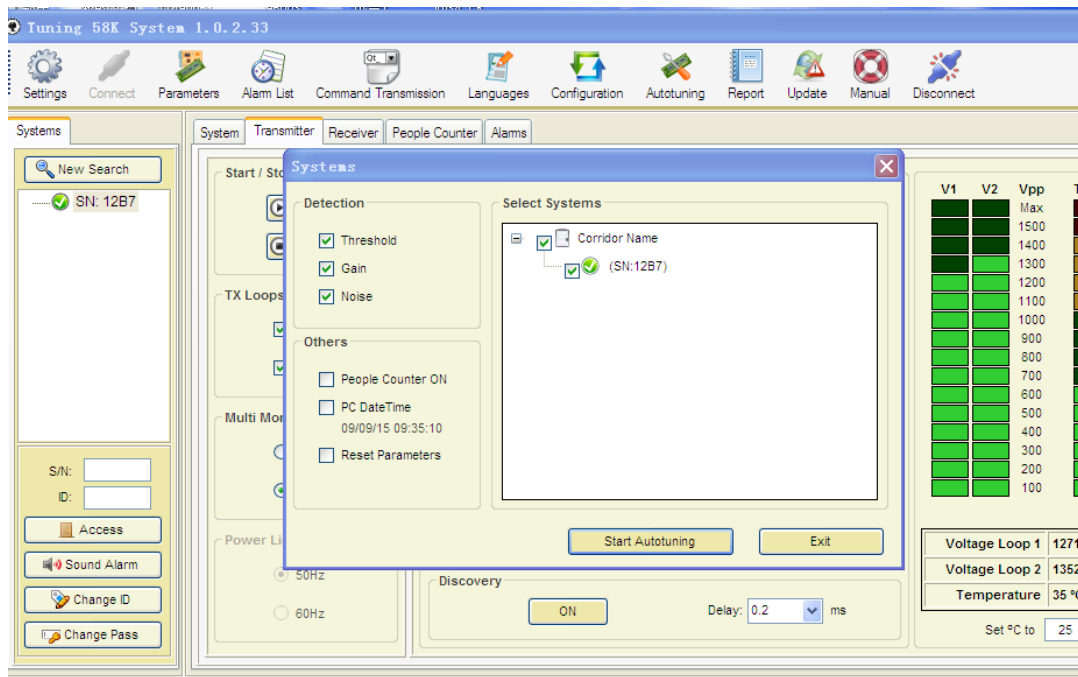
7. Suggest canceling "POWER SYNCHRONIZATION SIGNAL FAULT" function in "ALARM' menu.
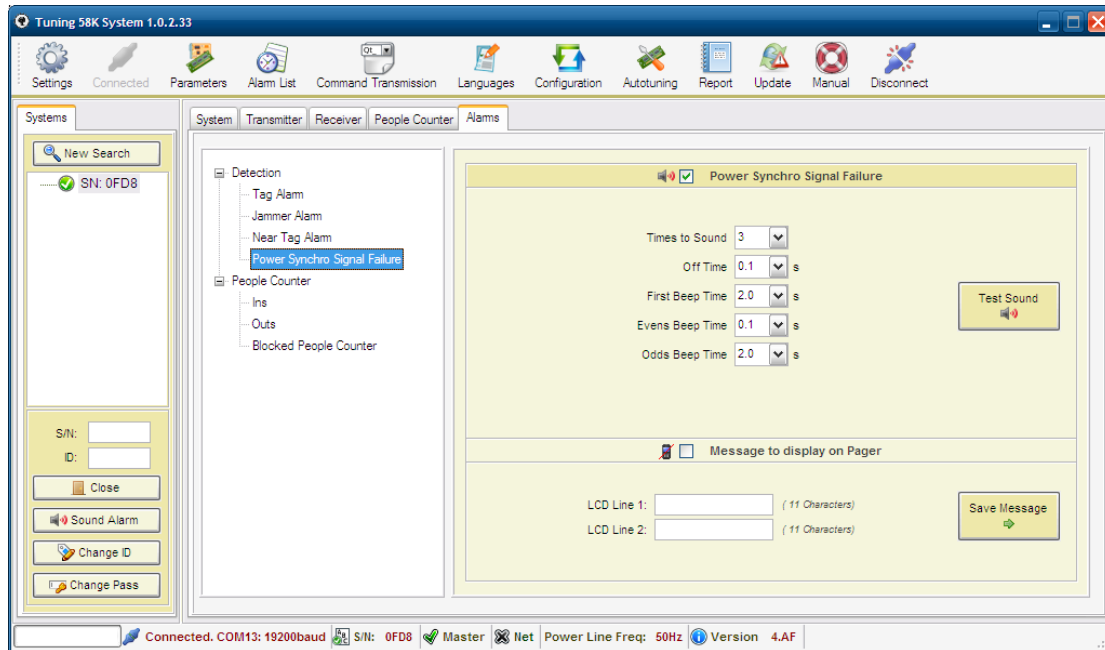
8. Finish tuning, click "PARAMETER"---"SAVE PARAMETER", and unplug tuning lines, done!