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1. AD-SAM006 SYSTEM OVERVIEW

1.1. DESCRIPTION

AD-SAM006 AM systems can detect any 58 kHz resonant circuit or any acousto magnetic tag passing through the detection area.

The system includes Digital Processing System (DPS) in order to achieve great detection range, filtering noise and avoiding possible false alarms.

The tuning is done easily via powerful software. The system can be accessed via laptop and optionally via Internet, Analog MODEM, GSM MODEM, etc.…

AD-SAM006 58 kHz systems can have several configurations:

Mono-antenna: 1 Transceiver pedestal
Dual System: 2 pedestals (TX-RX)
Split System: 3 pedestals (RX-TX-RX)
Any number of TX-RX in line: n pedestals (RX-TX-RX-TX-RX-TX…)
Any number of Mono-antennas in line: n pedestals (TX-TX-TX-TX….)

1.2. SPECIFICATIONS

1.2.1. TRANSCEIVE

ELECTRICAL	
Operating Frequency	58 kHz
Transmit Burst Duration	1.5ms
Transmit Burst Repetition Rates	
50Hz 75 or 50 pulses/second (TX burst 1.5ms)	
60Hz 90 or 60 pulses/second (TX burst 1.5ms)	

1.2.2. RECEIVER

ELECTRICAL	
Operating Frequency	58 kHz
Inputs	2

1.2.3. POWER SUPPLY

ELECTRICAL		ENVIROMENTAL	
Primary Input	230Vac / 110Vac	**R. Humidity**	0 to 85% non condensing
Output #1	12 VAC		
Output #2	20 VAC	**Operating Temperature**	0º to 50º C
Fuse	500mA Slow / 250V	**Noise level**	30dBm

1.3. TABLE: SYSTEM / DETECTION / NOISE

The system will perform as follows:

DR Label, Gain X5, Threshold 40 (SOLARIS SYSTEM)

LEDS BLINKING	MONO (*)	DUAL
0/1	**110 cm**	**220 cm**
1/2	**100 cm**	**200 cm**
2/3	**85 cm**	**170 cm**

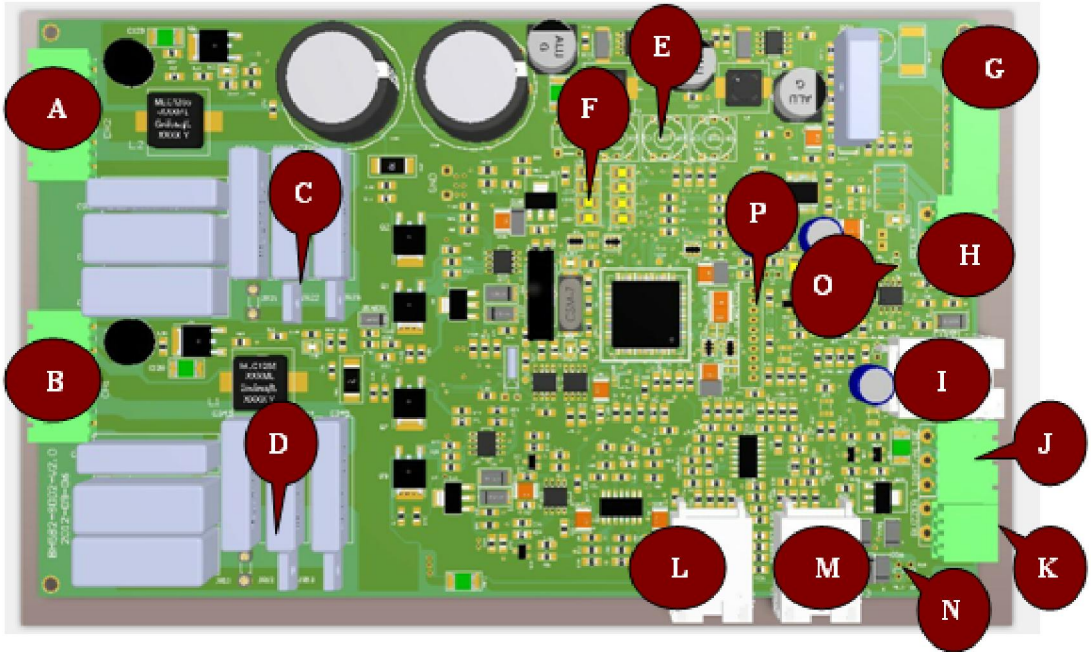
Super pencil ferrite tag, Gain X5, Threshold 40

LEDS BLINKING	MONO (*)	DUAL
0/1	**160 cm**	**350 cm**
1/2	**150 cm**	**330 cm**
2/3	**140 cm**	**320 cm**

For Mono distances are on each side.

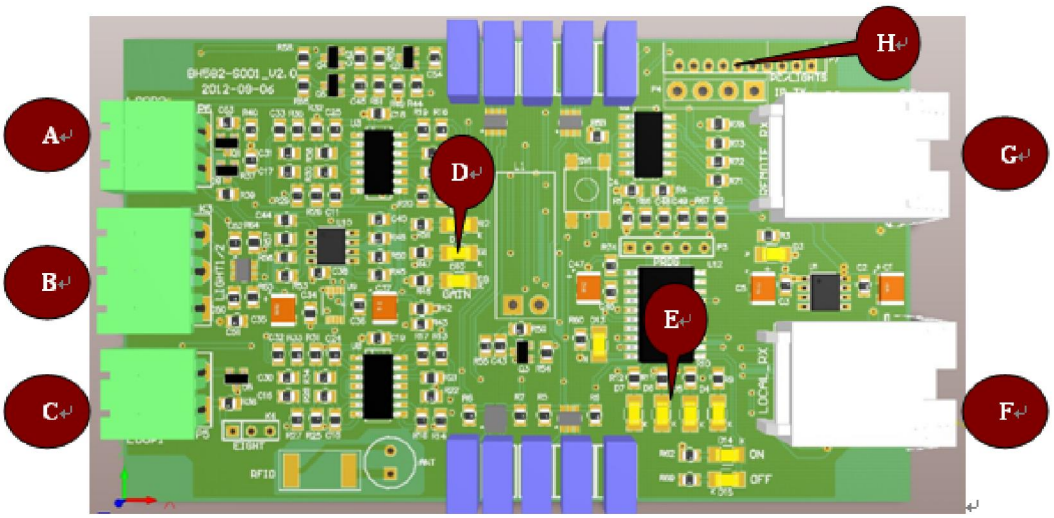
2 HARDWARE

2.1. TRANSCEIVER BOARD



A: TRANSCEIVER UPPER LOOP
B: TRANSCEIVER LOWER LOOP
C: RESONANCE ADJUSTMENT TRANSCEIVER UPPER LOOP
D: RESONANCE ADJUSTMENT TRANSCEIVER LOWER LOOP
E: MANUAL TUNING/ADJUSTMENT
F: VU METER (LED SIGNAL BAR)
G: POWER CONNECTOR
H: RELAY
I: COMMUNICATION
J: ALARM (LIGHT)
K: ALARM (BUZZER)
L: CONNECTION TO THE GREY CONNECTOR ON A RECEIVER BOARD. ALSO RS 485 IN/OUT
M: CONNECTION TO THE RED/MARKED CONNECTOR ON A RECEIVER BOARD. ALSO RS 485 IN/OUT
N: SOUND ALARM LEVEL SELECTORS
O: 485 JUMPER
P: PEOPLE COUNTER CONNECTOR(**TDB.**)

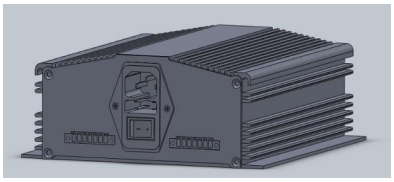
2.2. RX BOARD

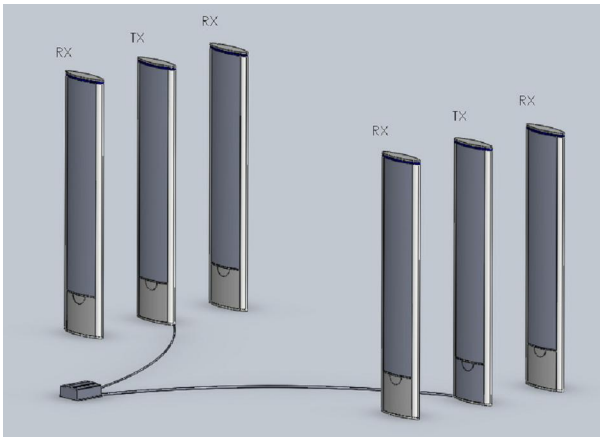


A: RECEIVER UPPER LOOP
B: ALARM (LIGHT)
C: RECEIVER LOWER LOOP
D: GAIN LEVEL
E: RESONANCE LEVEL
F: CONNECTION TO THE GREY CONNECTOR ON A TRANSCEIVER BOARD. ALSO RS 485 IN/OUT
G: CONNECTION TO THE RED/MARKED CONNECTOR ON A TRANSCEIVER BOARD. ALSO RS 485 IN/OUT
H: CONNECTION TO PEOPLE COUNTER (**TDB**.)

2.3. POWER SUPPLY

Other Power Supplies on demand to support more than 4 Transceiver Antennas
All power supply cabling is done with 10 ways flat cable and POLARIZED CONNECTORS.





3. QUICK TUNING

3.1. QUICK INSTALLATION

3.1.1. PREVIOUS

Always connect the system to clean power lines (No other electrical devices connected)
Always turn on systems ONE by ONE. Once you have tuned the first one, THEN connect the second one, THEN the third, etc….
In order to avoid damaging the electronics, do not place any TURNED OFF antenna near a TURNED ON Transceiver antenna. Please keep the minimum distance, not less than 50cm
Do not fix the system to the floor before testing its performance FIRST!
Do not place Receiver and Power line (220Vac/110Vac) cables along the same route.
Please Read this manual BEFORE installing systems!

3.1.2. SYSTEM INSTALLATION

Check cabling / connection needs according to the kind of installation. (See Section 4. CONFIGURATION).
Check all the material is ready.
Place the system in the installation area. (DO NOT fix the system to the floor).
Turn the system ON, and connect to the system (Follow Section 5. SOFTWARE)
Check Electrical Noise, Synchro, TX Status, etc…. check everything is normal.
Stabilize external electrical noise to the minimum.
Check Section 1.3. TABLE: SYSTEM / DETECTION / NOISE to define the maximum detection distance.
If any modifications, save parameters.
Disconnect your laptop and observe the system during some time making several detection tests (buzzer can be disabled to not cause disturbance).
If OK, fix the system to the floor if OK, if not OK, see Section 3.2. TROUBLESHOOTING

You are done!

3.2. TROUBLESHOOTING

3.2.1. NO DETECTION

Try with other tag
Rise Gain (Up to 2-3 LEDS)
Lower Threshold
See Section 3.4. NOISE PROBLEM
See Section 3.3. SYNCHRONIZATION PROBLEM
See Section 3.5. DEAD TRANSMITTER
See Section 3.6. DEAD RECEIVER

3.2.2. TOO MUCH DETECTION

Lower Gain
Rise Threshold

3.2.3. FALSE ALARM

Look for TAGS near the antennas
See Section 3.7. FALSE ALARM (OR UNKNOWN ALARM)

3.2.4. MAKES OTHER SYSTEMS FALSE ALARM

See Section 3.3. SYNCHRONIZATION PROBLEM

3.3. SYNCHRONIZATION PROBLEM

How can I recognize a synchro problem?

Externally: When you turn on your system:

- It makes other 58 kHz systems near alarm
- Your system is showing a high amount of noise in the LED bar (See Section 2. HARDWARE).
- There is no detection or it is very poor.

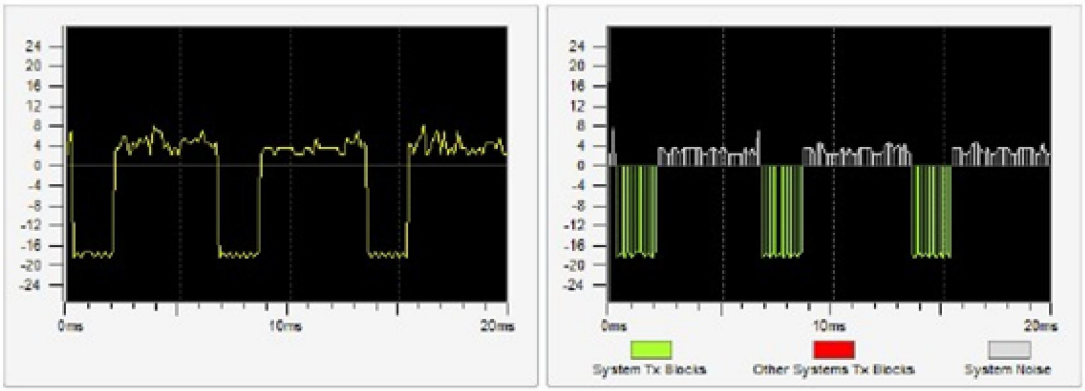
Laptop:

- Check Section 5.7.5. DISCOVERY TOOL

How can I know the synchro problem has been solved?

Externally all systems around will be working fine as well as yours.

Laptop: The situation in the discovery mode will be similar to this:



You are done!

3.4. NOISE PROBLEM

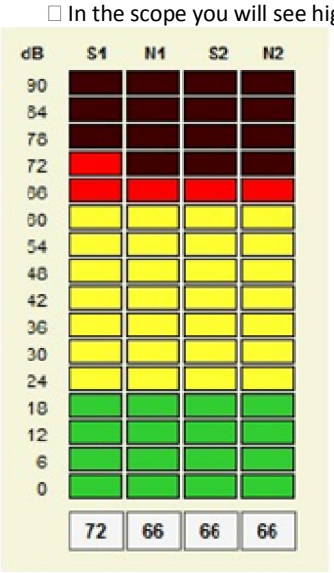
How can I recognize a noise problem?

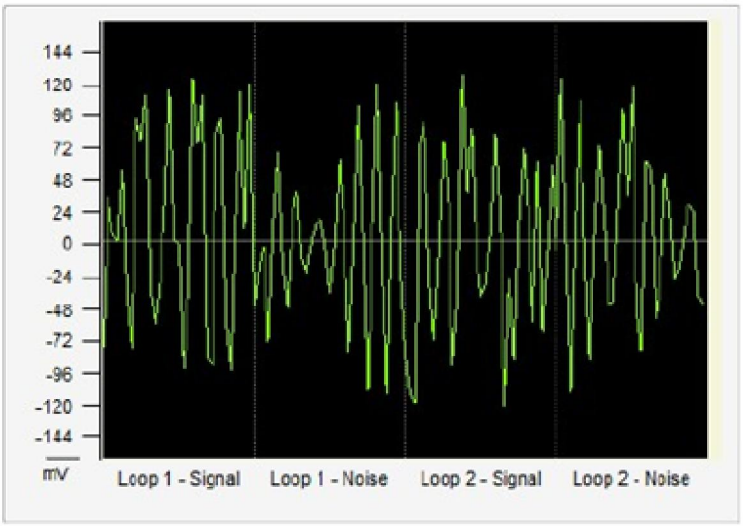
Externally: When you turn on your system:

- The system shows a high amount of noise in the LED bar.
- The detection might be poor.

Laptop:

- In the scope you will see high amount of noise, in the 4 buffers.





How can I solve a noise problem?

Try to locate the source of noise:

- Turn off all electrical equipment in the area. If the noise disappears, start turning all the electrical equipment ONE BY ONE till you get noise again.
- Other way to locate the source of noise is moving the Receiver antenna while at the same time you are looking to the LED bar or the software. See how the orientation of the Receiver antenna affects the amount of noise and you will finally find the source

.

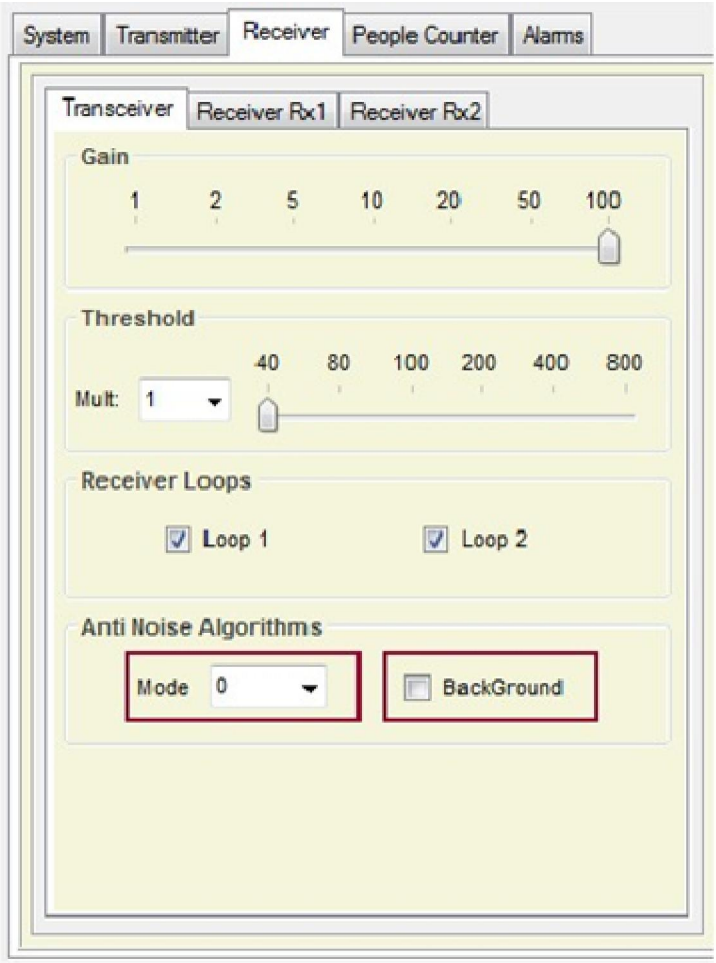
Then you have to neutralize the source of noise. (It might be related with bad synchro, please check procedure in Section 5.7.5. DISCOVERY TOOL) Other techniques are:

- Swap Transceiver antenna by Receiver antenna position.
- Ground the noisy device correctly or try to put it as far as possible from the Receiver antenna.
- Use advanced noise techniques 'New Noise fighting algorithms'

New Noise fighting algorithms

Depending on the level of electrical noise, it is recommended to select different positions in the noise selector. Each antenna is independent.

- Transceiver antenna:
  - There are 2 active modes in noise fighting for Transceiver antenna.
  - Position 0 turns off noise fighting algorithms in Transceiver antenna.
  - Back Ground suppression
- Receiver Antennas:
  - There are 2 active modes in noise fighting for Receiver antennas.
  - Position 0 turns off noise fighting algorithms in Receiver antenna.
  - Back Ground suppression



How can I know the noise problem has been solved?

Detection will improve. The signs of noise in the LED bar and in the scope will disappear.

You are done!

3.5. DEAD TRANSMITTER

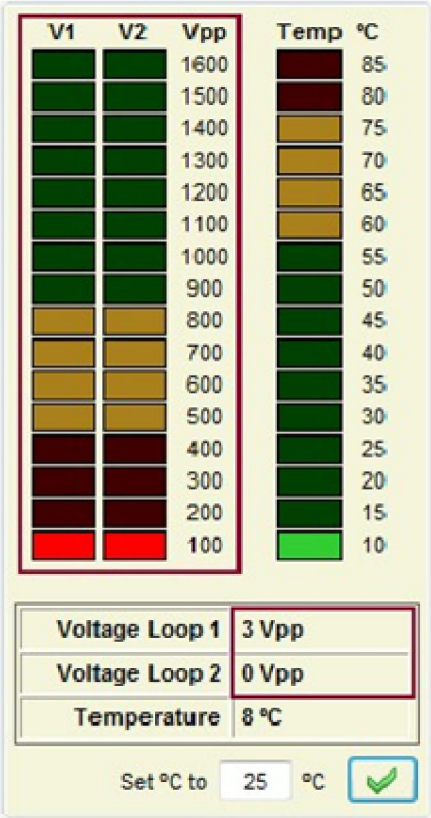
How can I recognize a dead transmitter problem?

Externally: When you turn on your system:

- The system does not detect.

Laptop:

- Voltage near to 0Vpp



How can I solve a dead transmitter problem?

If the Transceiver Board is not working, change it by a new one.

Please check the connection cable between the Power Supply and the Transceiver Board.

If the synchro pulse from the POWER supply is not OK, the system will stop the transmission.

If the problem persists, it can be caused by a blown fuse in the Power supply. Change the power supply by a new one.

Check the power line frequency to be 50Hz+/- 1Hz or 60Hz +/- 1Hz.

How can I know the dead transmitter problem has been solved?

The system is working normally.

You are done!

3.6. DEAD RECEIVER

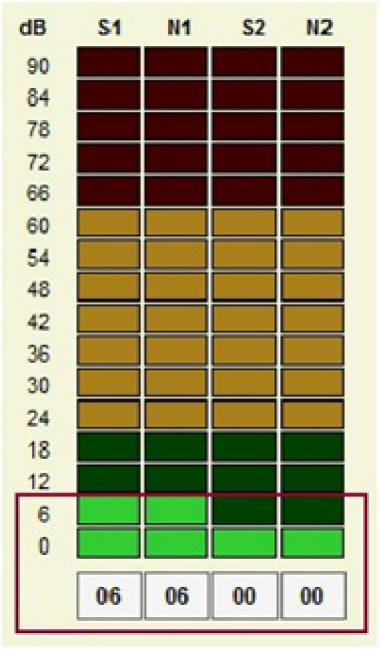
How can I recognize a dead receiver problem?

Externally: When you turn on your system:

- The system does not detect. (Remember that there are 6 independent receivers one for every loop).
- You can try if a dual system to change the receiver cable to red/marked connector or grey connector

Laptop:

- The signal is near 6 dB or less in all receiver buffers.



How can I solve a dead receiver problem?

The problem may come from the Transceiver-Receiver connection cable. It may be broken during the installation.

The problem may come from the Receiver Board. It might be damaged. Try another Receiver Board

The problem may come from the Transceiver Board. It may have one Receiver channel damaged. Try another Transceiver Board or test with the other Receiver channel.

How can I know the dead receiver problem has been solved?

The system is working normally.

You are done!

3.7. FALSE ALARM (OR UNKNOWN ALARM)

How can I recognize a false alarms (or unknown alarm) problem?

The system is alarming when not expected to alarm. AD-SAM006 58 kHz systems are very false alarm restrictive.

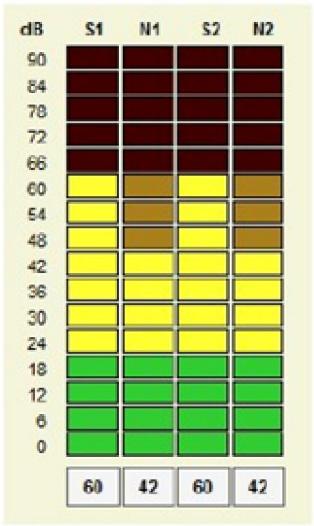
It is almost impossible that a AD-SAM006 58kHz system is alarming except when:

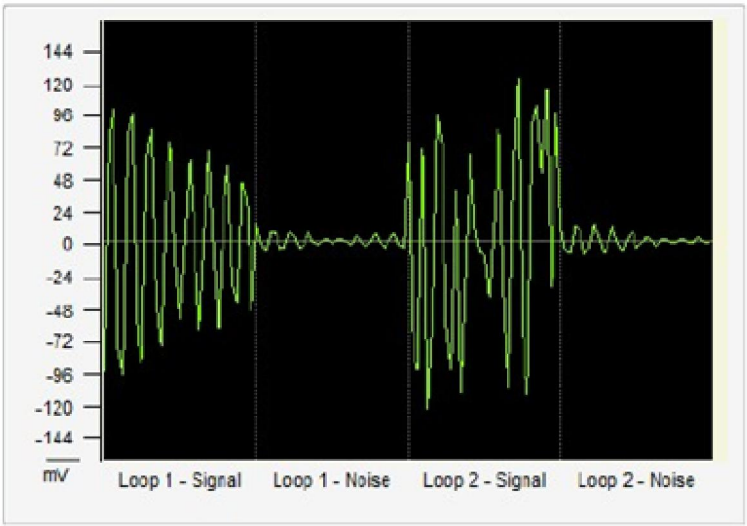
There is a tag in the detection area

There is another 58 kHz system not in synchro.

How can I solve a false alarms (or unknown alarm) problem?

Look for tags near the system. Look in the scope in the software. If you see something similar to this:





Please Stop the TX system. If the alarm disappears, there are at least some LABEL/TAG near.

If not, there might be another 58 kHz system out of synchro affecting our system. Follow procedure in Section 5.7.5. DISCOVERY TOOL

How can I know the false alarms (or unknown alarm) problem has been solved?

The system is working normally, no unexpected alarms.

You are done!

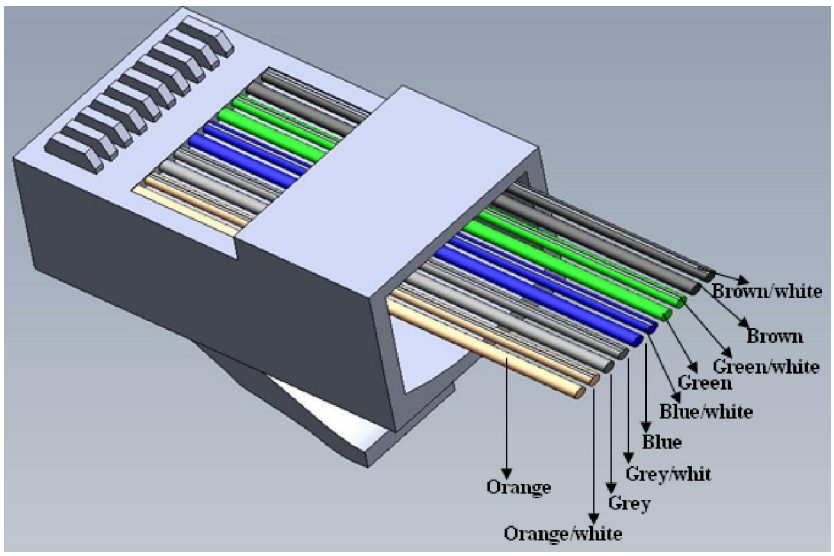
4. CONFIGURATION

4.1. CONNECTION METHOD

AD-SAM006 58 kHz systems have been designed to fit into every installation needs. They can be configured in multiple ways.
Connection between Transceivers or between Transceivers and Receivers is done through 10 ways telephonic cable
which allows easy adaptation to the installation place needs.

4.1.1. ANTENNA CABLES AND CONNECTION

Each Transceiver antenna can be connected to 2 independent Receiver antennas by a 10 ways cable with NOT polarized connectors. Please follow the instructions carefully in order to manufacture the cable correctly.

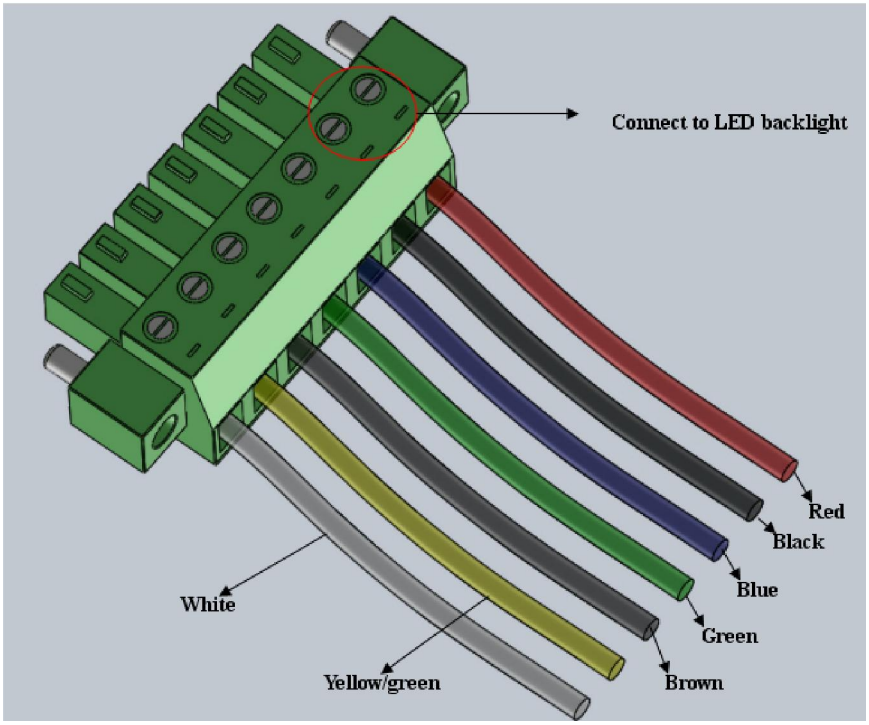


Connect the cable between Antennas following Section 4.2. CONFIGURATION EXAMPLES
Test the cable with a system to check that it is working correctly.

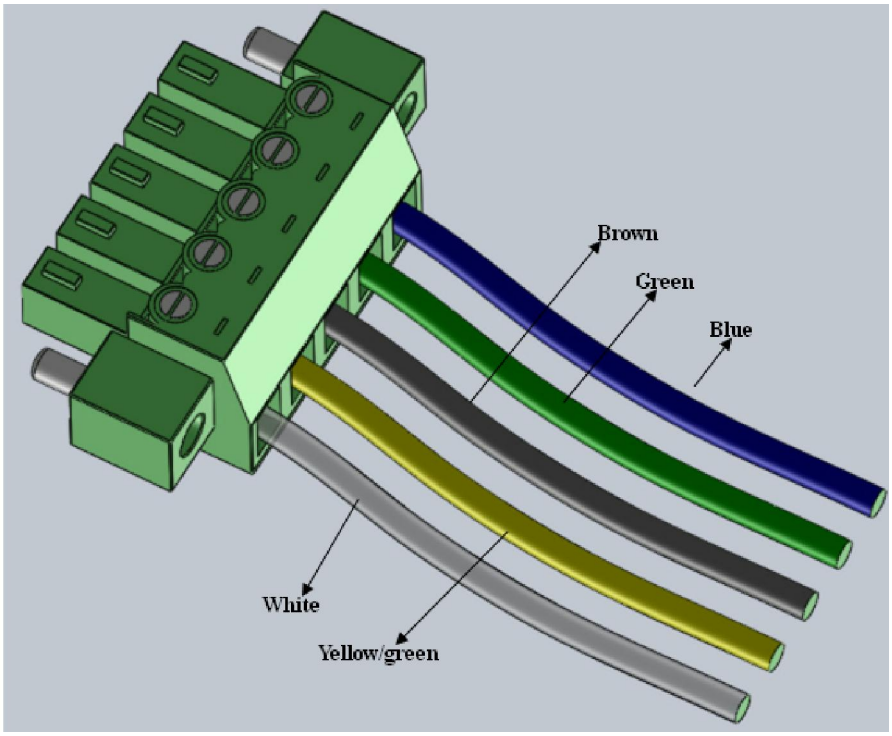
You are done!

4.1.2. POWER SUPPLY CABLE AND CONNECTION

Each Transceiver antenna must be supplied by a 7 ways cable with Polarized connector.



Connect to POWER SUPPLY

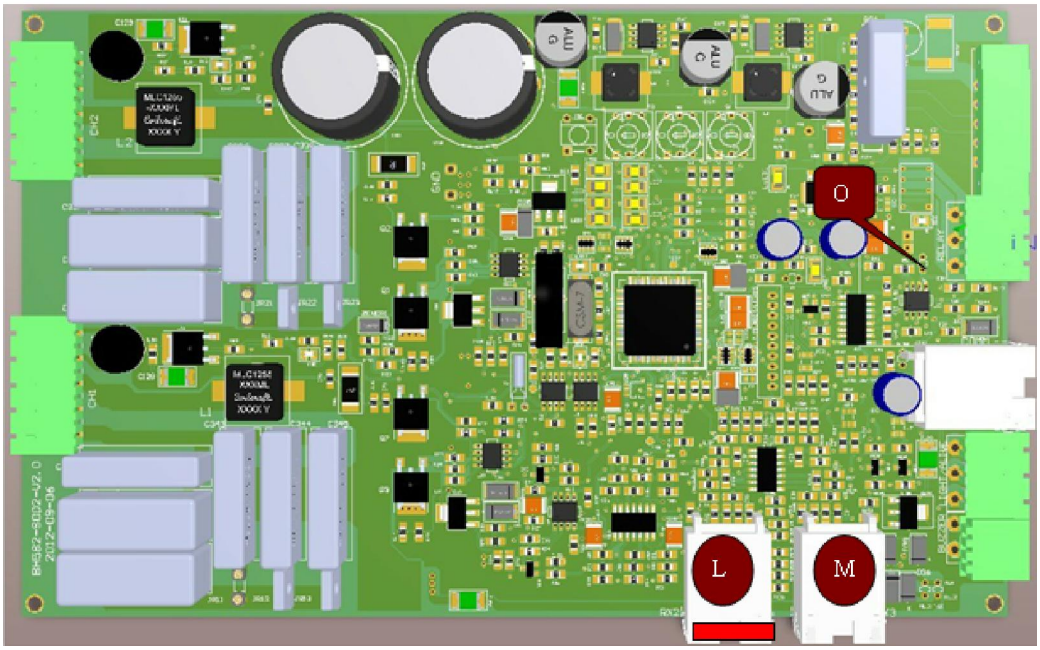


Connect to RX&TX main board

4.2. CONFIGURATION EXAMPLES

4.2.1. TRANSCEIVER BOARDS

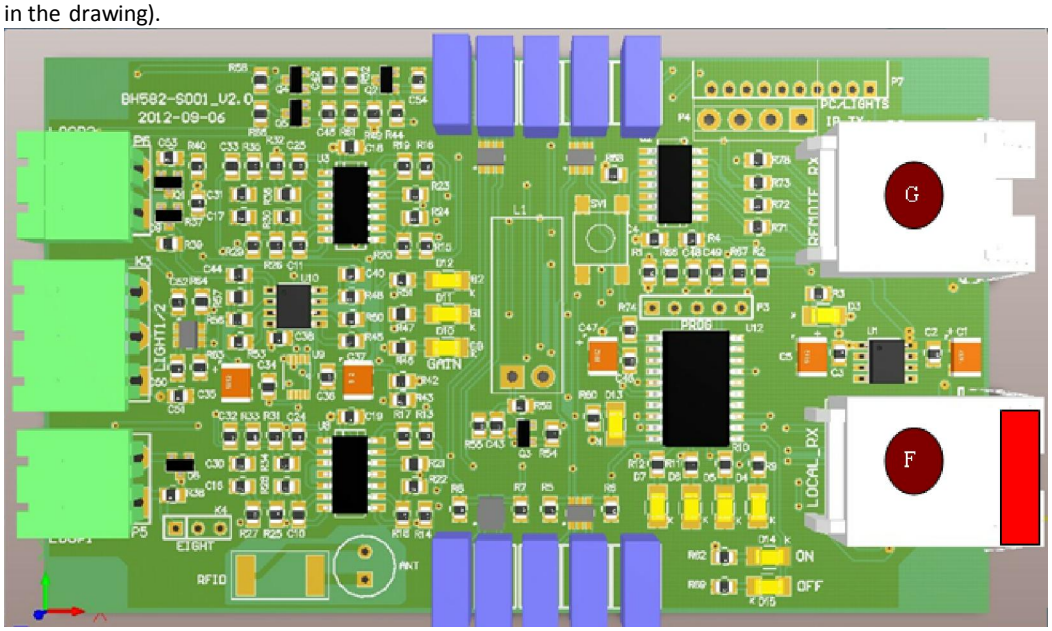
The connectors from Transceiver Boards which connect to other antennas are red/marked connector (L in the drawing) and BLACK connector (M in the drawing). Apart from the RX signal, they also take communication between Transceiver and the 2 local Receiver Boards and communication with further Transceiver Boards in the net, if any. 485 JUMPER (O in the drawing) **must be ON** in the first and last Transceiver Board in the net.



485 JUMPER (O in the drawing) must be OFF in the middle Transceiver Boards in the net.

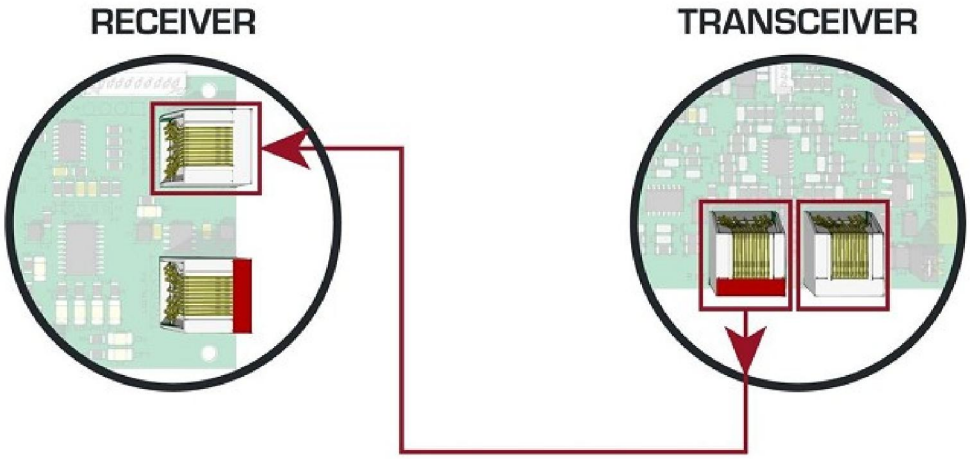
4.2.2. RECEIVER BOARDS

The connectors in the Receiver Board are red/marked connector (F in the drawing) and black connector (G in the drawing).

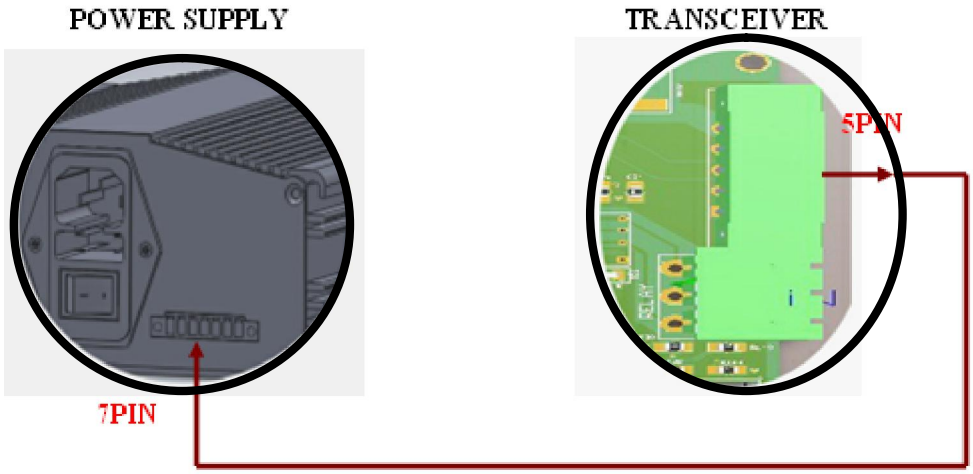


4.2.3. DUAL SYSTEM CONFIGURATION (RX-TX)

For Power Supply Connection, always use a CAB-FL-10-B cable with CON-10-TEL-POL (POLARIZED)

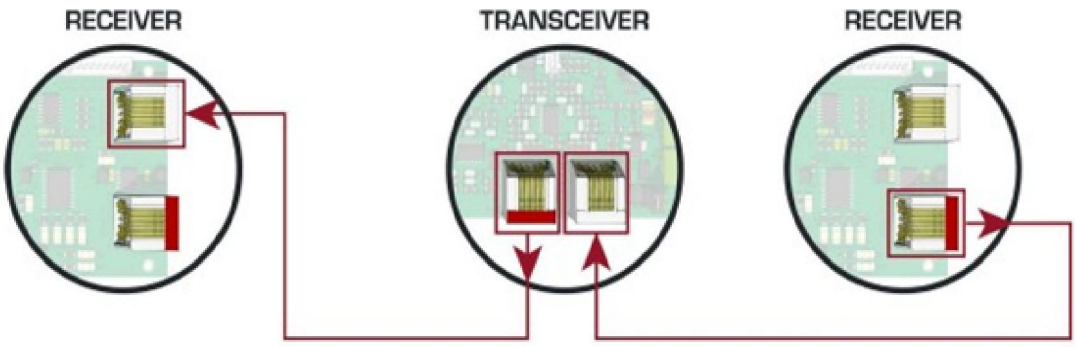


For Power Supply Connection, always use a 7-5 cable with CON-7-5-POL (POLARIZED)

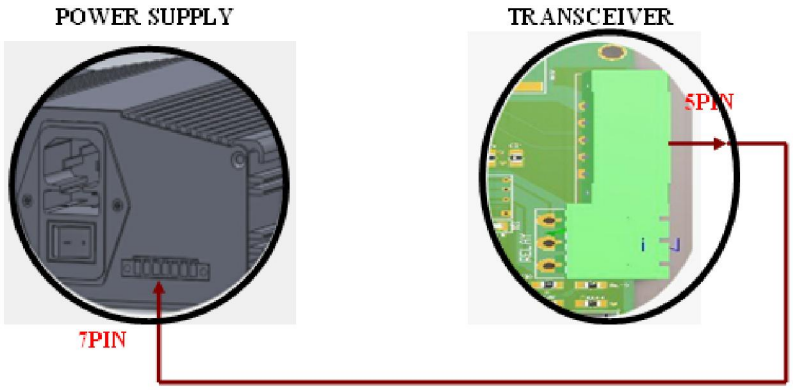


4.2.4. SPLIT SYSTEM CONFIGURATION (RX-TX-RX)

Always connect a CAB-FL-10-I cable with CON-10-TEL-NOPOL (NOT POLARIZED) from RED/MARKED connector of one board to the GREY connector of another board.



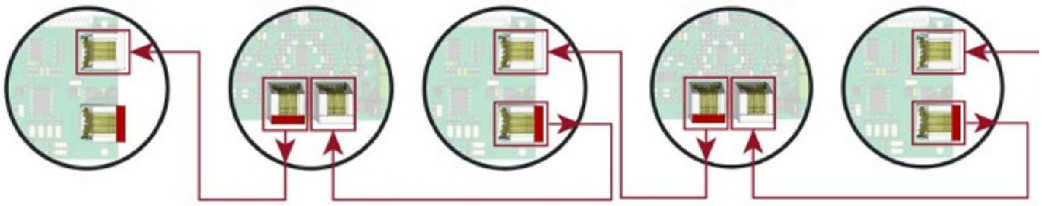
For Power Supply Connection, always use a 7-5 cable with CON-7-5-POL (POLARIZED)



4.2.5. SEVERAL TRANSCEIVER AND RECEIVER ANTENNAS (RX-TX-RX-TX-RX)

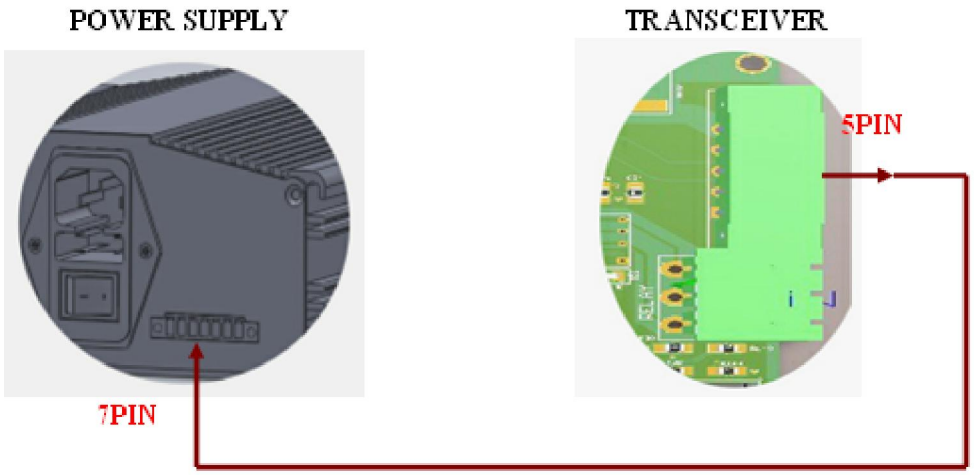
Always connect a CAB-FL-10-I cable with CON-10-TEL-NOPOL (NOT POLARIZED) from RED/MARKED Connector of one board to the connector of another board.

485 JUMPER must be ON in the first and last Transceiver Board in the net.



Note: each board must debug by software, and then connect with CON-10-TEL-NOPOL cable

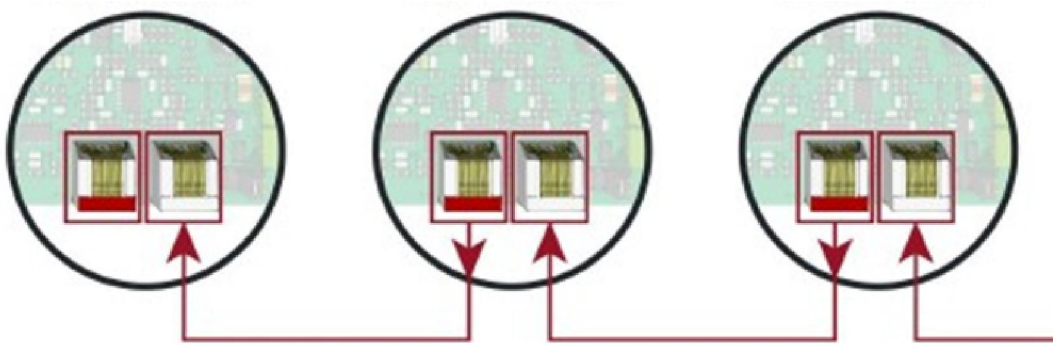
For Power Supply Connection, always use a 7-5 cable with CON-7-5-POL (POLARIZED)



4.2.6 TRANSCEIVER TO TRANSCEIVER (TX-TX-TX-TX…)

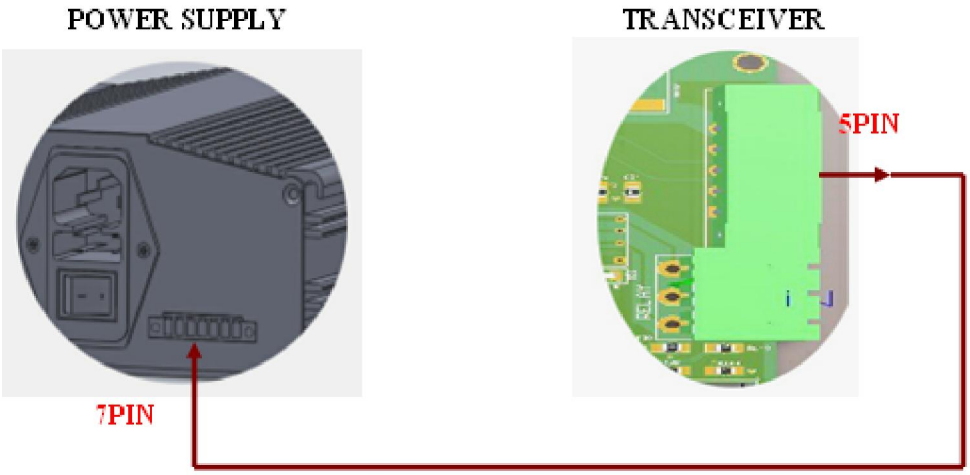
Always connect a CAB-FL-10-I cable with CON-10-TEL-NOPOL (NOT POLARIZED) from RED/MARKED connector of one board to the black connector of another board.

485 JUMPER must be ON in the first and last Transceiver Board in the net.



Note: each board must debug by software, and then connect with CON-10-TEL-NOPOL cable

For Power Supply Connection, always use a 7-5 cable with CON-7-5-POL (POLARIZED)



5. SOFTWARE

The interface of Remote Tuning Software for 58 kHz systems has been designed to allow an easy understanding of all features. Icons are highly intuitive permitting a quick assimilation of concepts.

5.1. INSTALLATION PROCEDURE

Before installation verify that you have Windows98se or higher.
Close all the executing programs.
Run the installer
Select the folder to install the software and click on Install button

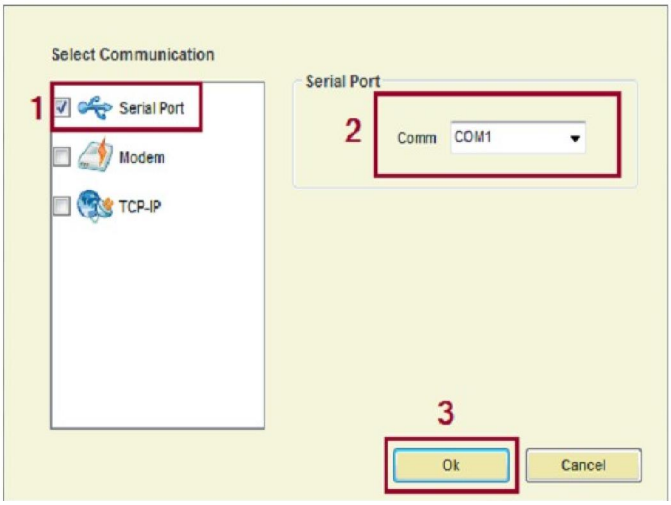
5.2. CONNECT

5.2.1. RS232 PORT

Use an USB to Rs232 adaptor if the computer which will be used to connect to the system does not have a RS232 port.
Connect the communication cable provided to the USB adaptor or directly to the system if the computer has RS232 port.

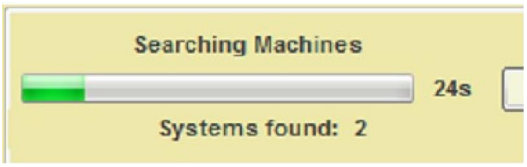
Run the software and press 'SETTINGS'

1. Select Serial Port Communication.
2. Select Serial Port Comm.
3. Press OK



Press Connect

The software will search for all the systems connected and load them into the System window

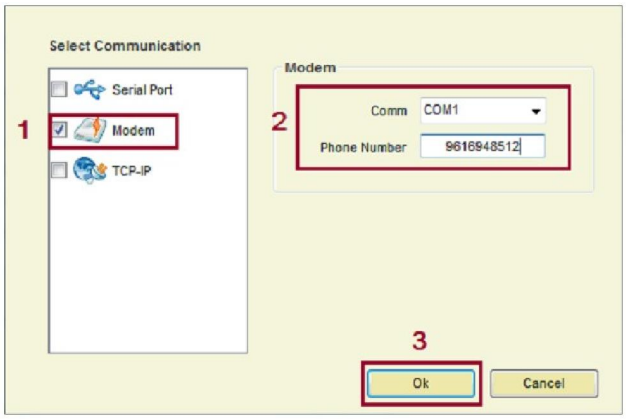


5.2.2. ANALOG MODEM

Parts needed: Analog Modem MDM58
Connect the communication cable provided from the analog MODEM to the system.
Connect the analog line to the analog MODEM.
Test the MODEM sequence

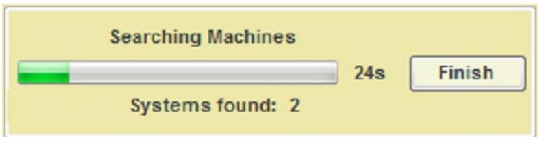
Run the software and press 'SETTINGS'

1. Select Modem Communication.
2. Select Serial Port Comm.
3. Press OK



Press Connect

The software will search for all the systems connected and load them into the System window

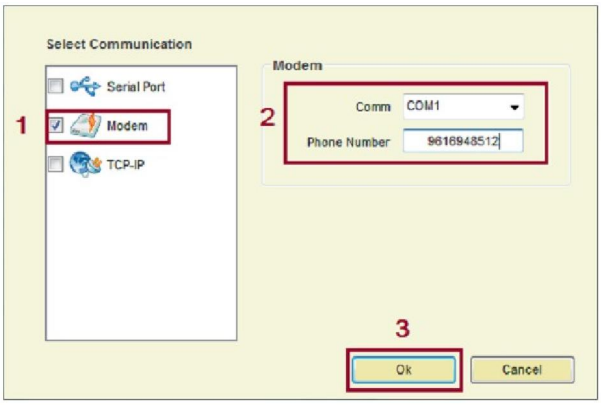


5.2.3. GSM MODEM

Parts needed: GSM MODEM.
Input the SIM CARD into the GSM MODEM.
Access the system using Rs232 connection
Using the command PNxxxx, input the PIN number into the system.
SAVE the parameters
Connect the communication cable from the GSM MODEM to the system
At power on, the system will detect that it has a PIN number and will activate the GSM MODEM. Then it will be on hold waiting for the communication to come through.

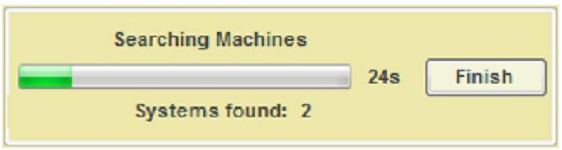
Run the software and press 'SETTINGS

1. Select Modem Communication.
2. Select Serial Port Comm.
3. Press OK



Press Connect

The software will search for all the systems connected and load them into the System window

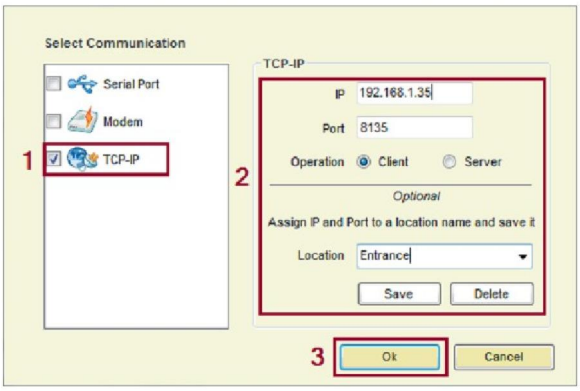


5.2.4. INTERNET MODULE

Parts needed: Internet Module ACC-TCP/IP
Connect the cable provided to the INTERNET MODULE and to the system.
Connect the ETHERNET/ADSL cable line to the INTERNET MODULE.

Run the software and press 'SETTINGS'

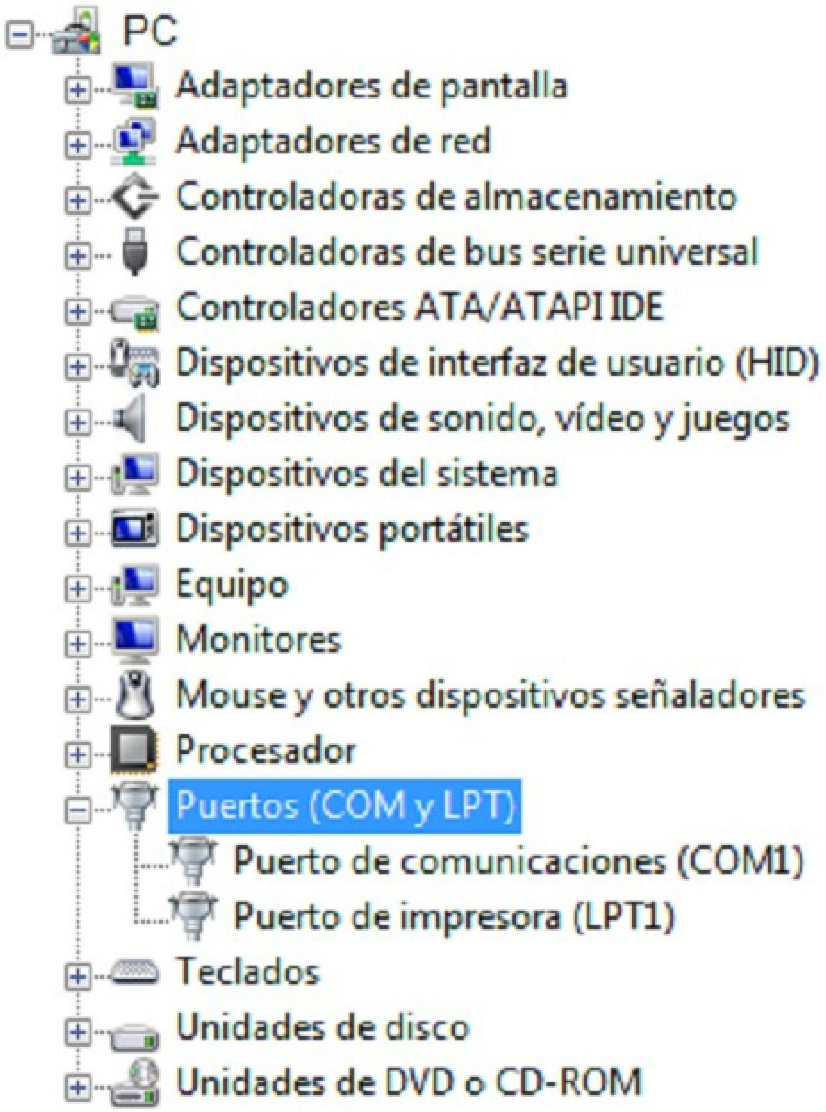
1. Select TCP-IP Communication.
2. Select Client or Server operation.
   For more information See TCP-IP Modules Manual.
   It is possible to save, load or delete the IP/PORT information
3. Press OK



5.2.5. HOW TO KNOW THE COM PORT

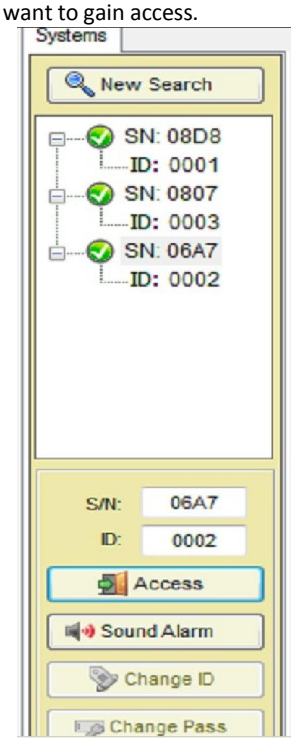
If you are using a USB to RS232 adapter, check which virtual port is assigned by the adapter. To do this, follow the steps:

- 1. Click on **Start** and then **Control Panel.**
- 2. Click on the Performance and Maintenance link.
- 3. **Note:** If you're viewing the *Classic View* of Control Panel, you won't see this link. Simple double-click on the **System** icon and proceed to Step 4.
- 4. In the *System Properties* window, click on the **Hardware** tab.
- 5. With the *Hardware* tab selected, click on the **Device Manager** button.
- 6. Select Ports (COM & LTP) and check port name used for the adapter.

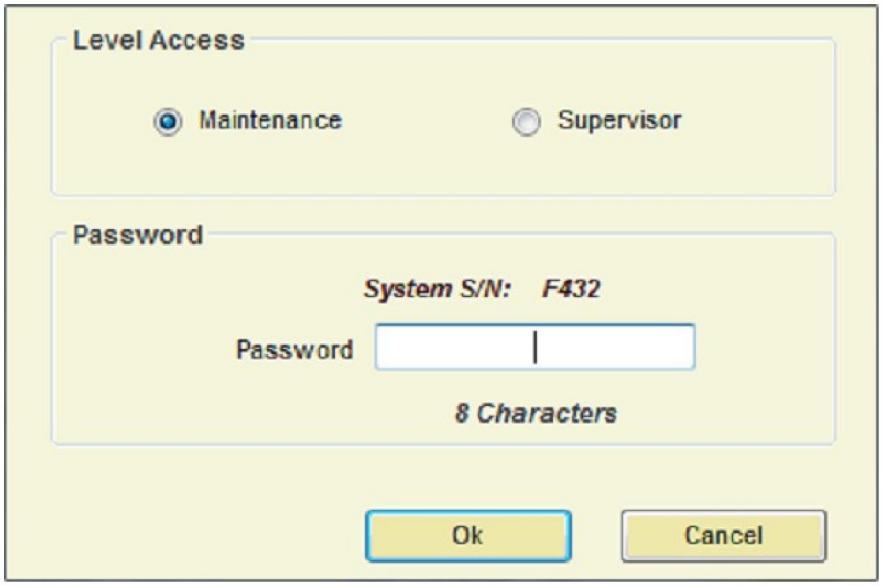


5.3. ACCESS

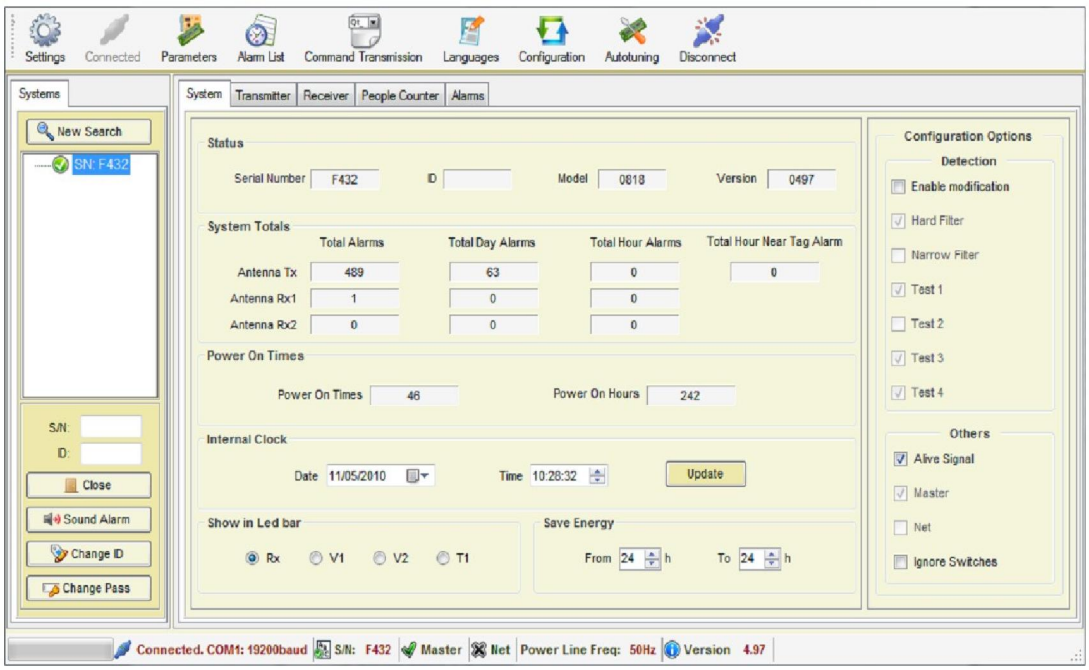
Double click the SN of the system you want to gain access.



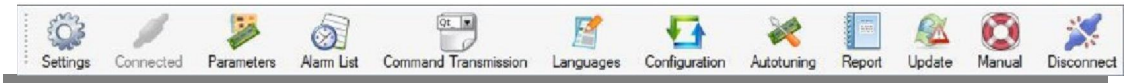
Select Maintenance / Supervisor access
Input PASSWORD (Factory 12345678 for Maintenance)
Press OK



The selected system is accessed



5.4. MAIN MENU



5.4.1. SETTINGS

Gain access to the connection settings menu

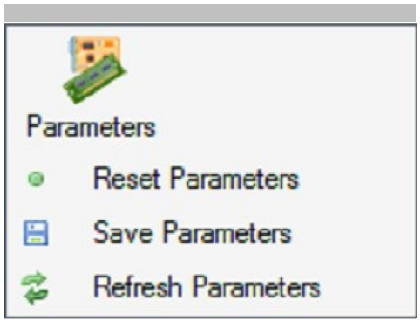
5.4.2. CONNECT /CONNECTED

Connect to the system(s)
If the connection is active, then it is shown as 'Connected'

5.4.3. DISCONNECT

Disconnect from the accessed system

5.4.4. PARAMETERS



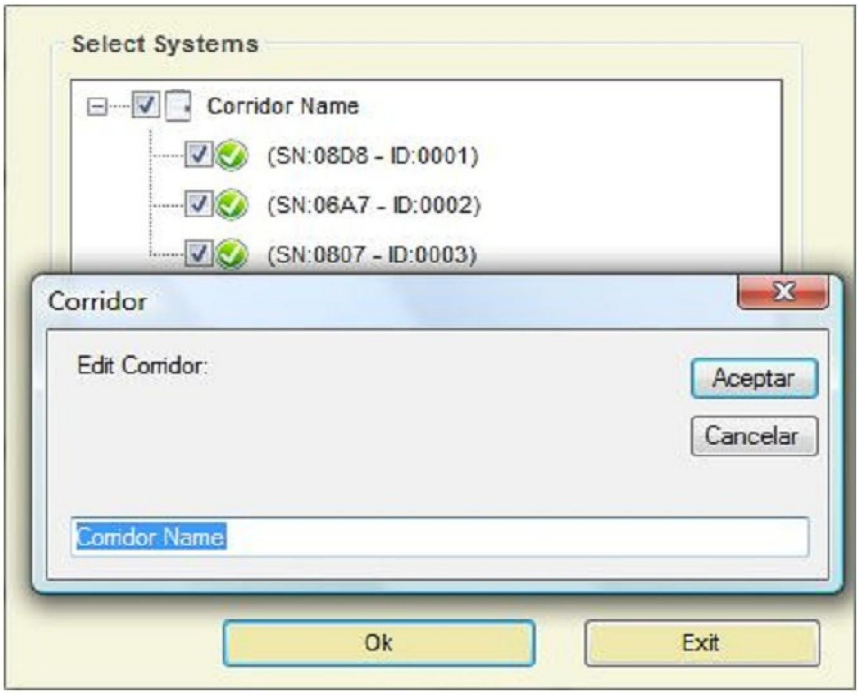
Reset all parameters in the system to factory values
Save all parameters
Refresh all parameters in the software from the system memory

5.4.5. ALARM LIST

Displays available alarm list

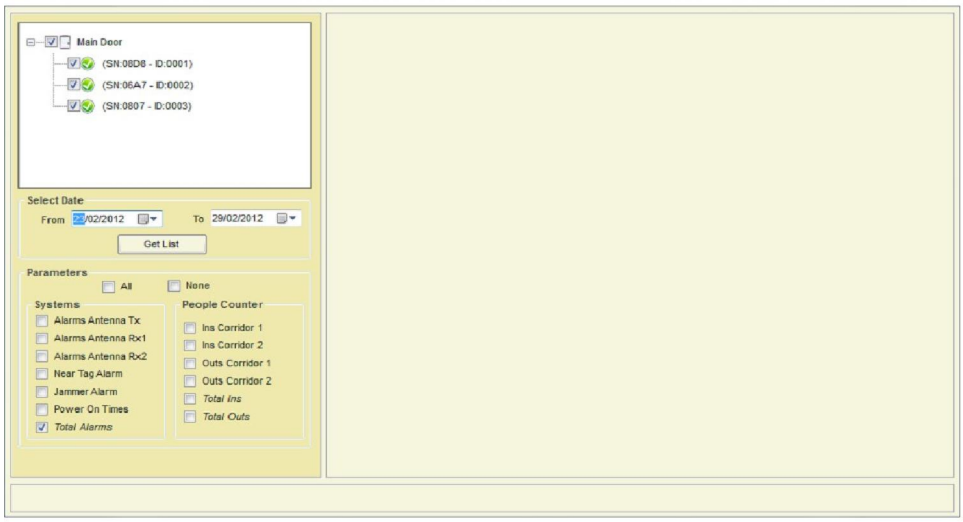
It is possible to get the data from all the systems on the net by selecting the systems which are required to get historical data from. (Data is refreshed into memory every hour)

In this window, it is possible to customize the passages and systems

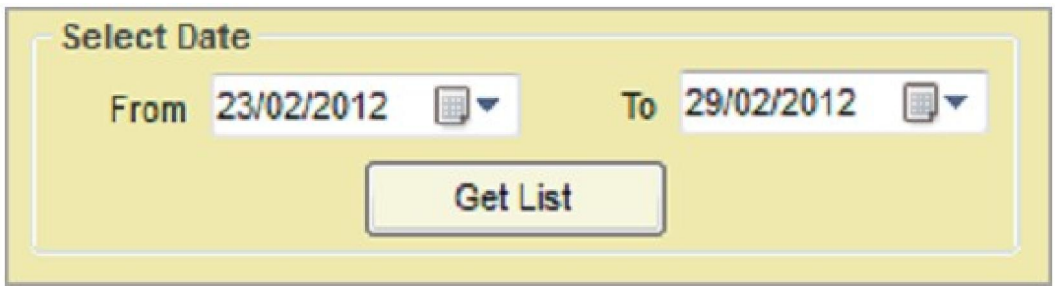


.

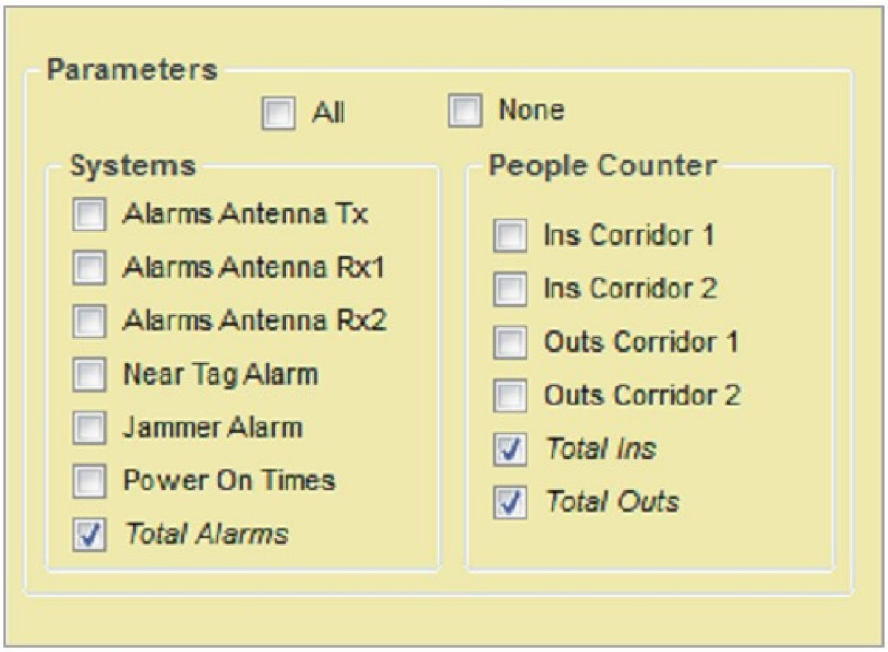
The Data Mining window will show up as follows:



Select Date ranges:



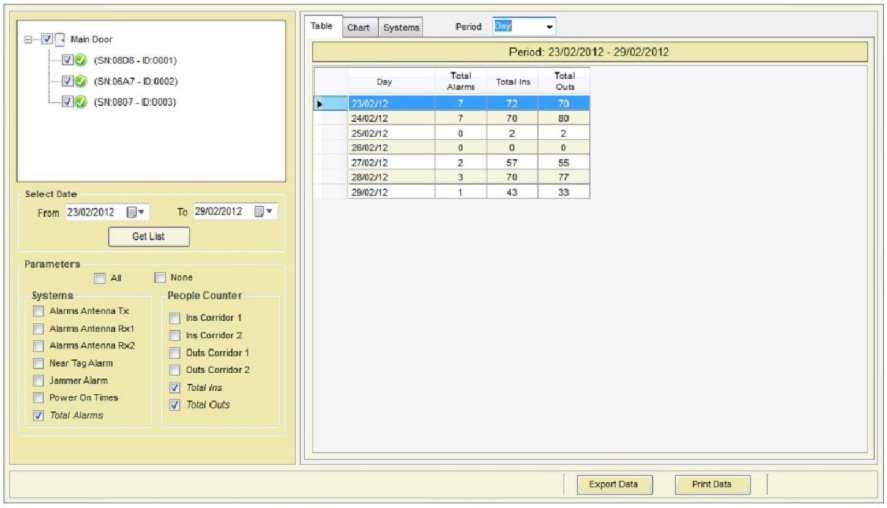
Select Parameters to display:



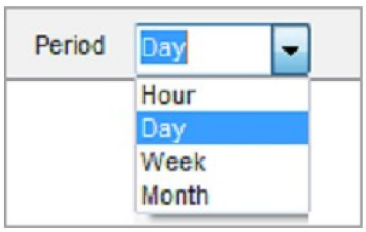
Press 'GET LIST' button to get the historical data from the selected systems:

TABLE DATA

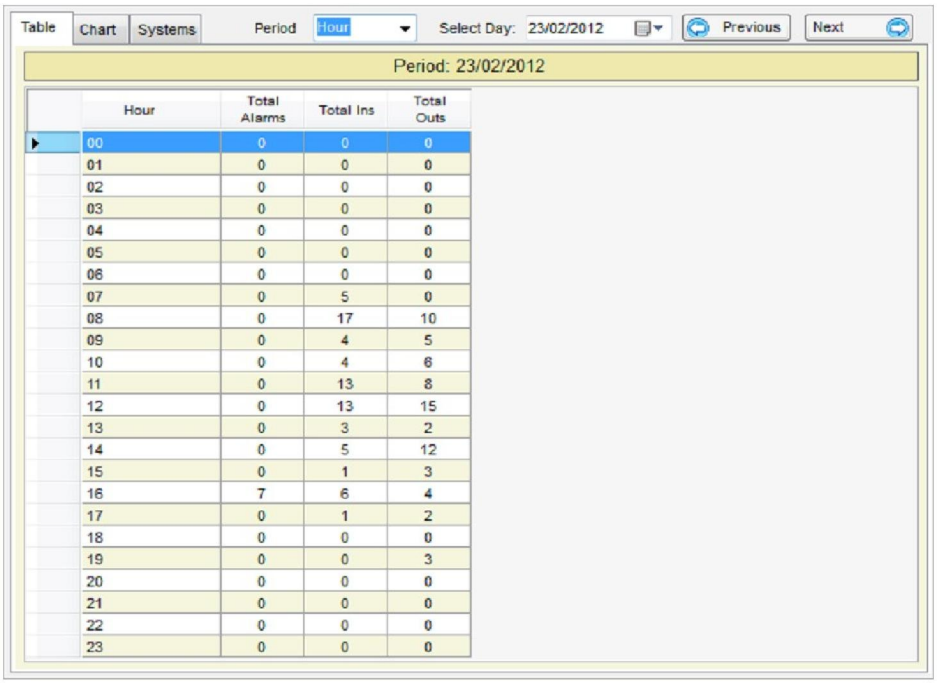
Data is displayed in a Table with columns as follows:



Select Period:



 Only by selecting Hour Period, data displayed belongs to one day with periods of 24 hours.

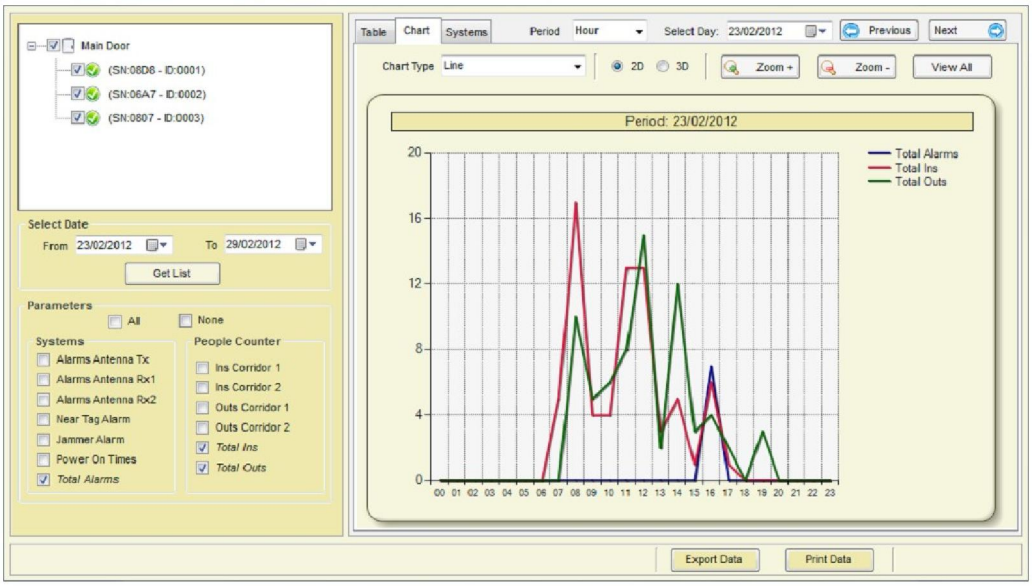


Hour	Total Alarms	Total Ins	Total Outs
00	0	0	0
01	0	0	0
02	0	0	0
03	0	0	0
04	0	0	0
05	0	0	0
06	0	0	0
07	0	5	0
08	0	17	10
09	0	4	5
10	0	4	6
11	0	13	8
12	0	13	15
13	0	3	2
14	0	5	12
15	0	1	3
16	7	6	4
17	0	1	2
18	0	0	0
19	0	0	3
20	0	0	0
21	0	0	0
22	0	0	0
23	0	0	0

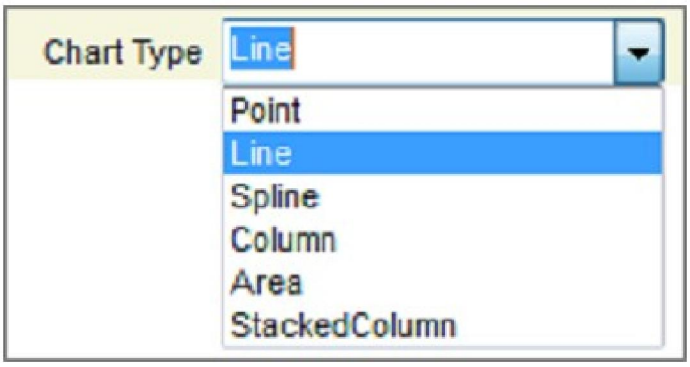
 Select the day from which you want to get the historical data or click on Previous and Next buttons:

CHART DATA

Change to Chart Tab to display the data in graphical style along a horizontal time axis.

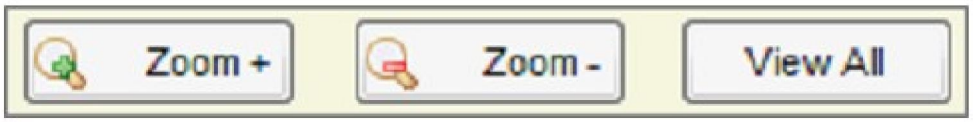


Select the style of the chart:

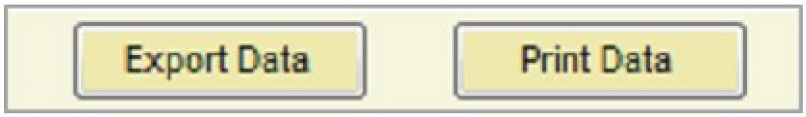


Select perspective

Chart visualization provides for major and minor settings to allow for zooming

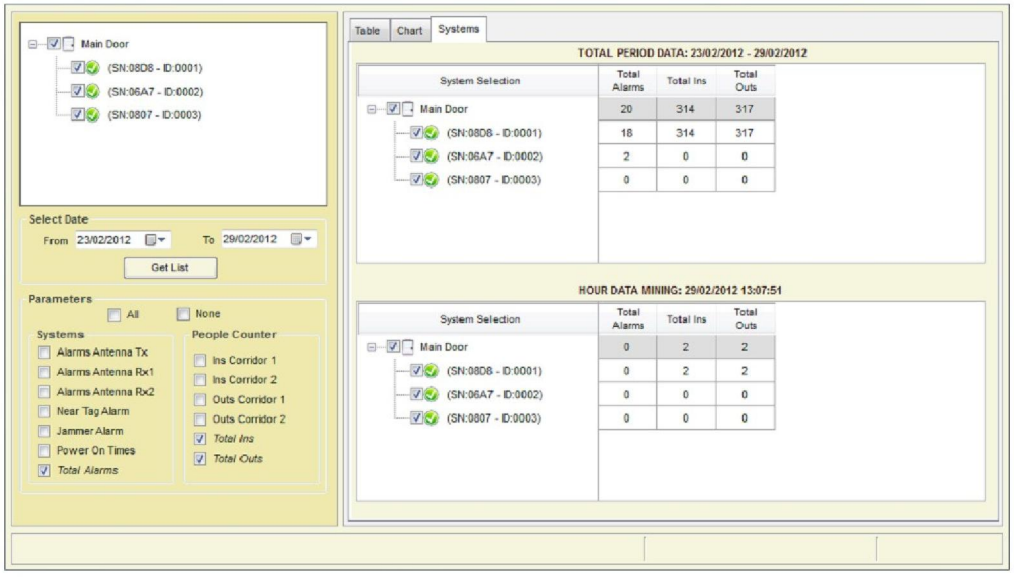


Data can be exported into txt file or printed:



SYSTEMS DATA

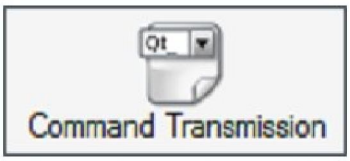
Change to Systems Tab to display the data for each system individually.



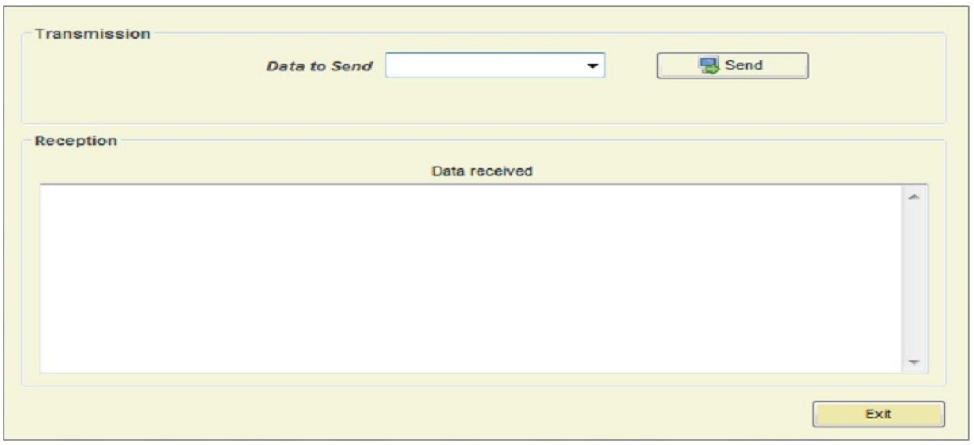
Total Period Data is the sum of all period data for each system separately.

Hour Data Mining is the sum of the actual hour for each system separately and is refreshed every new hour.

5.4.6. COMMAND TRANSMISSION

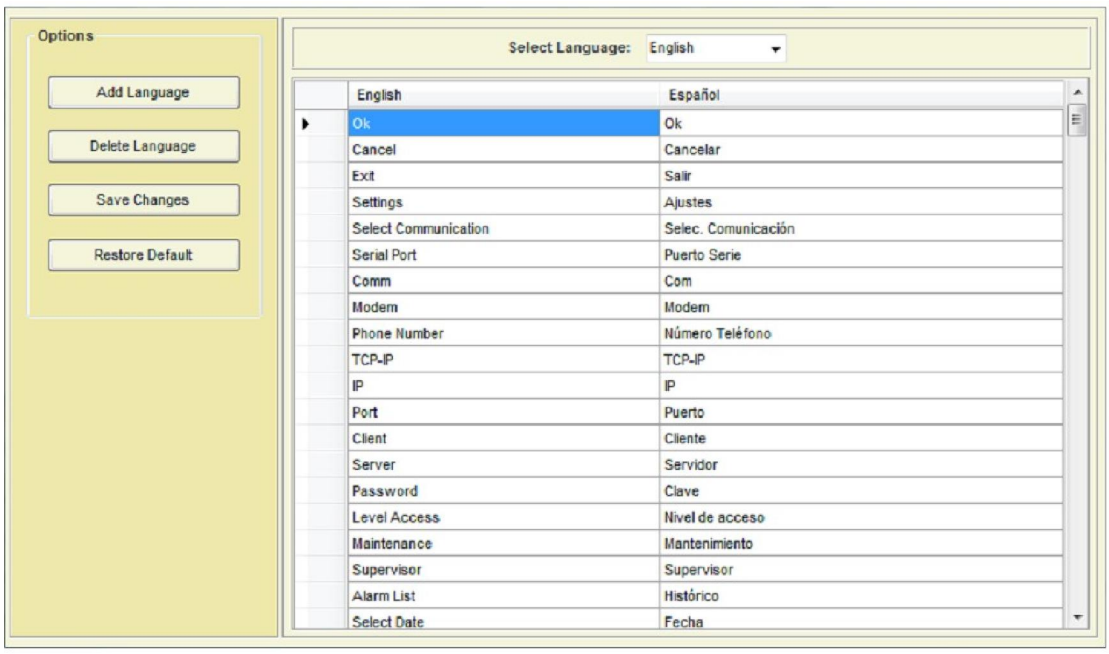


Opens Command Transmission window to input any command directly to the system

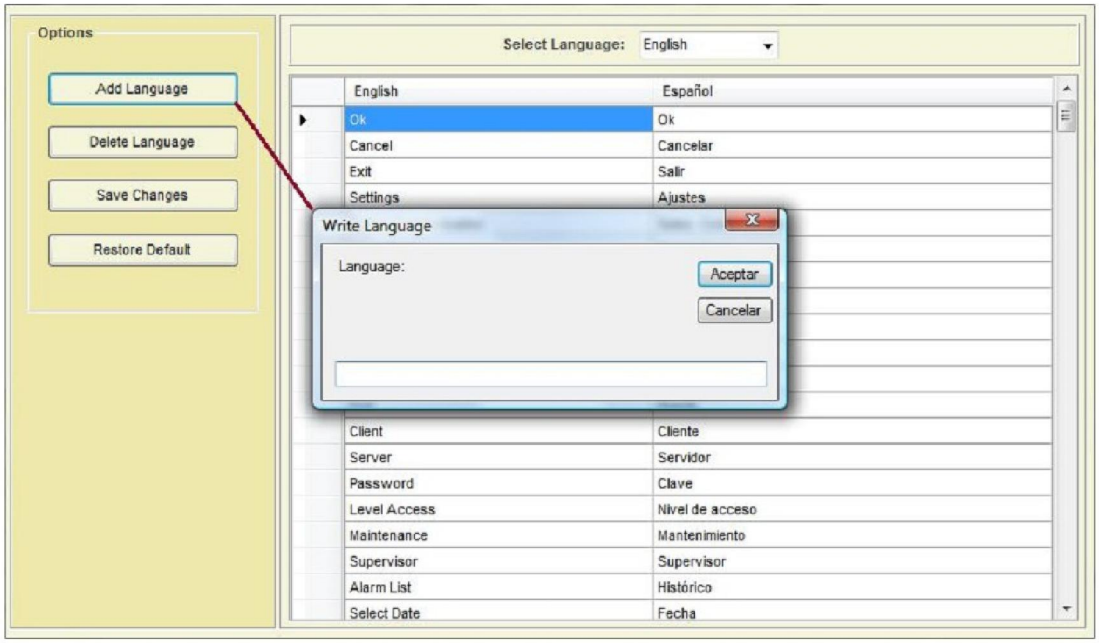


5.4.7. LANGUAGES

All labels are supported in other languages. You can add new language or delete it.



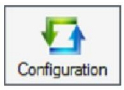
Add language



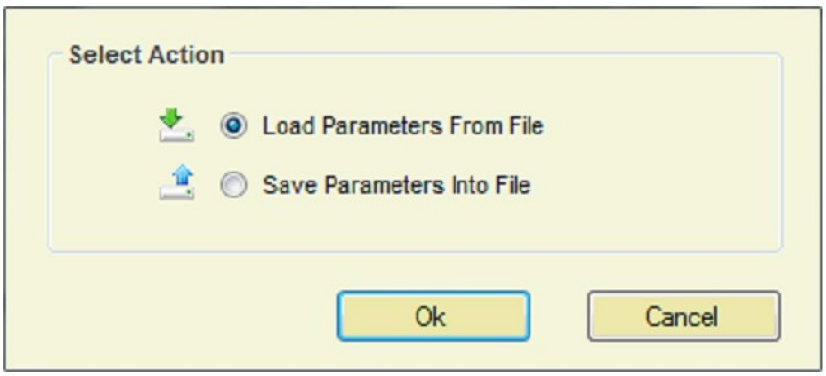
Write all the words you need.

Save the changes and select the language

5.4.8. CONFIGURATION



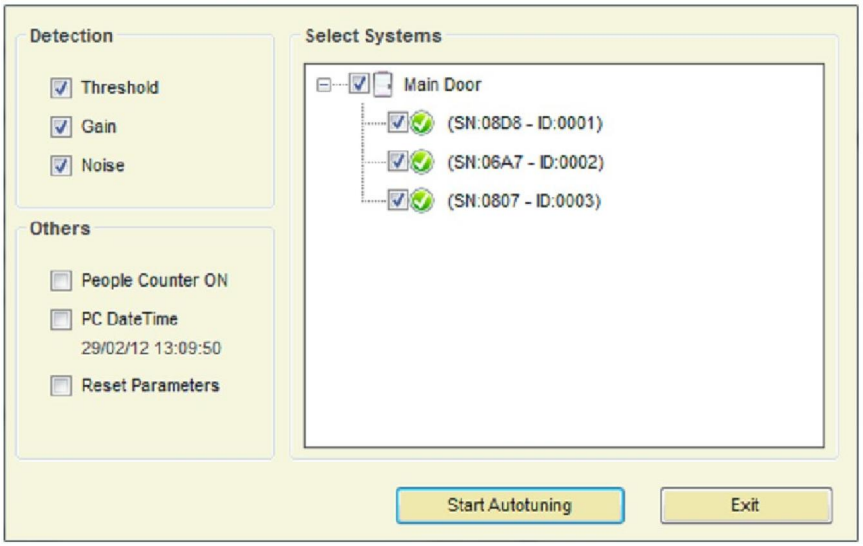
The parameters can be saved into a file and then loaded when necessary



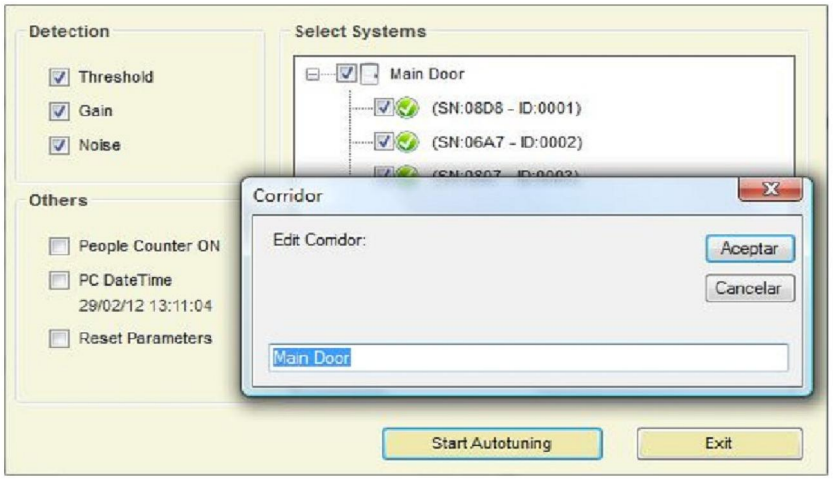
5.4.9. AUTOTUNING

It is possible to auto tune all the systems in the line automatically

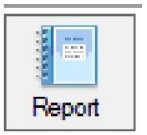
Select the parameters and systems to be tuned and then press “Start Autotuning”



It is possible to name and configure the passages and systems.

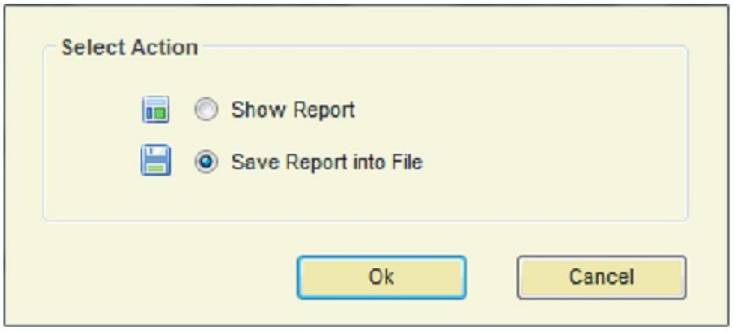


5.4.10. REPORT



Displays all the system measurements and parameters saved on a file at a certain moment.

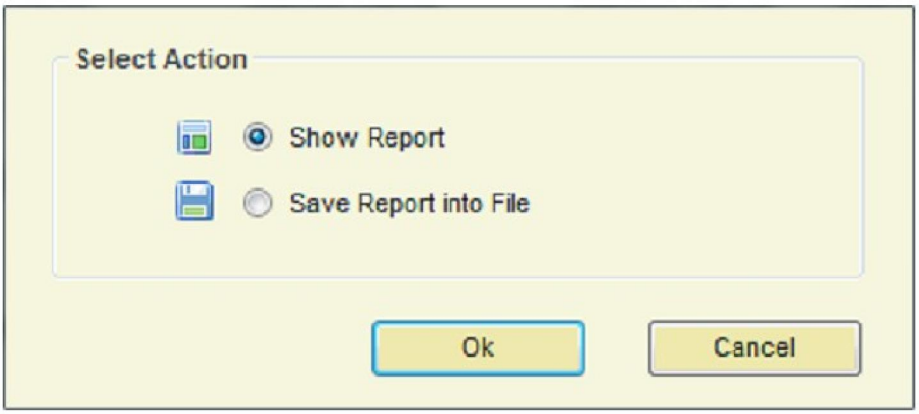
Select Save Report into File in order to save all the parameters and measurements from the system:



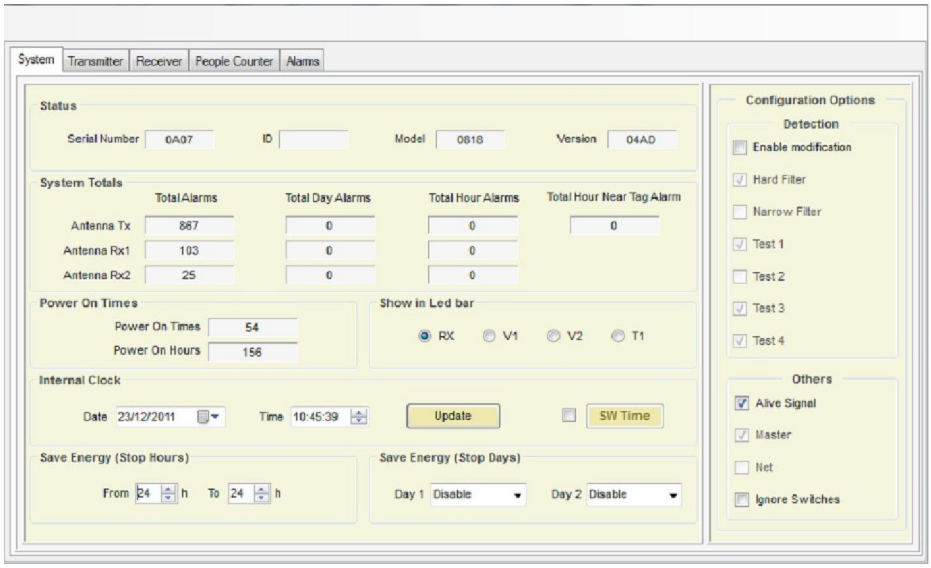
Click Ok.
Optionally, you can set the following information from the store and the system:

Click Ok and give a name for the Report file

To display a report, select Show Report option, click Ok button and select the report file



The Report will show up as follows:

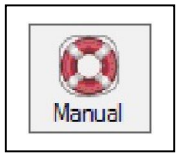


Information of System, Transceiver, Receiver, People Counter and Alarms will be showed up.

5.4.11. UPDATE

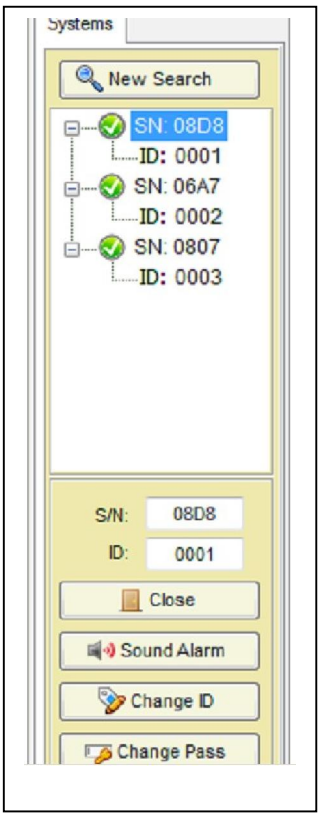
Click on Update Menu to check for new versions available.

5.4.12. MANUAL



Click on Manual Menu to browse this Tuning G10V Manual

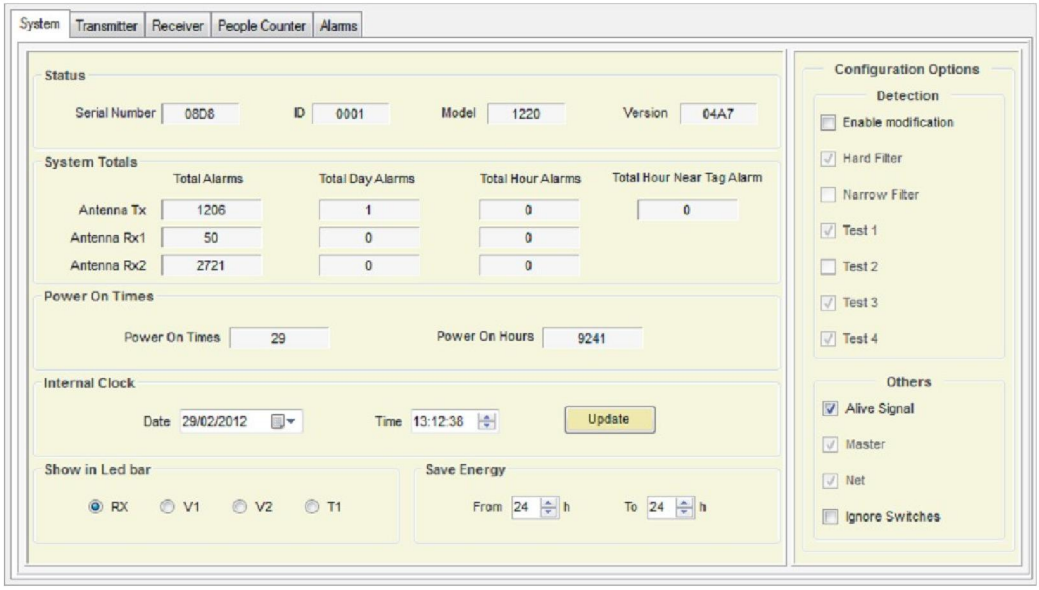
5.5. SYSTEMS



Options for this section:

- Start a new search to load the systems
- Visualization of systems found with their Serial Number and ID
- Close access or get access to selected system
- Sound the alarm of selected system
- Change ID of selected system (once you gain access)
- Change password (once you gain access)

5.6. SYSTEM TAB



5.6.1. STATUS

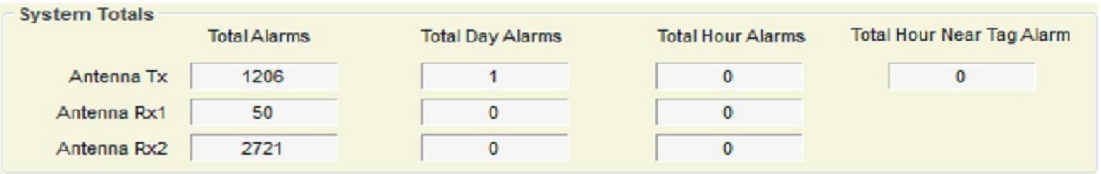
The following information can be found: (Only INFO)

- Serial Number
- Current ID
- Model
- Version

5.6.2. SYSTEM TOTALS

The following information can be found:

- Total Alarms /Total Day Alarms / Total Hour Alarms in Transceiver Antenna
- Total Alarms /Total Day Alarms / Total Hour Alarms in Receiver Antenna RX1
- Antenna RX1: Receiver Board connected on the red/marked connector from the Transceiver Board
- Total Alarms /Total Day Alarms / Total Hour Alarms in Receiver Antenna RX2
- Antenna RX2: Receiver Board connected on the grey connector from the Transceiver Board
- Total Number of Near Tag Alarms



5.6.3. POWER TIMES

The following information can be found:

- Total number of Power ON
- Total Number of Power ON hours (working hours).

5.6.4. CLOCK

Set Date and Time

5.6.5. SAVE ENERGY

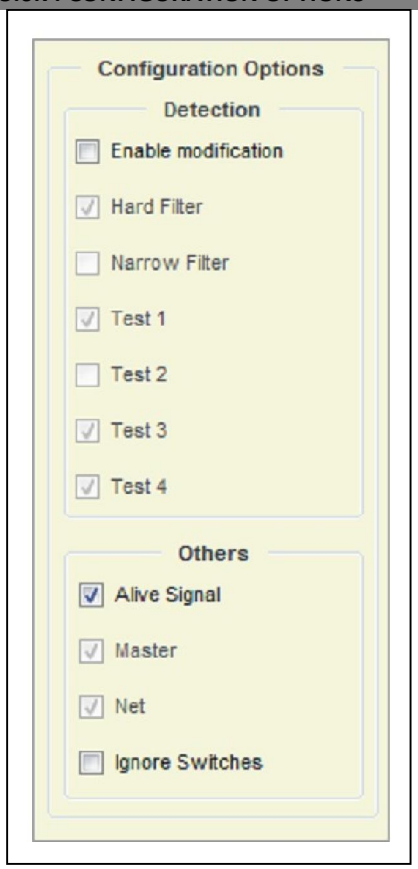
The system is automatically turned off during the period selected. If same hour, no action (Always ON)

5.6.6. LEDS

This selector is used to choose what information to be displayed on the LED bar (See Section 2.HARDWARE)

- RX: The Receiver noise/signal is shown
- V1: The voltage of Transceiver Upper Loop (TX Loop 1) is shown
- V2: The voltage of Transceiver Lower Loop (TX Loop 2) is shown
- T1: Temperature in Transceiver is shown

5.6.7. CONFIGURATION OPTIONS



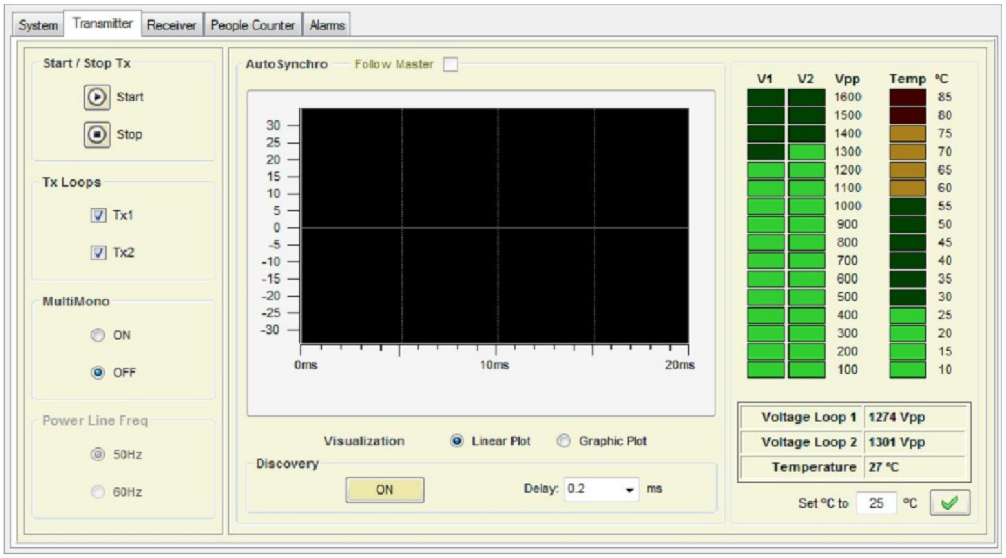
Detection:

- This should be left as from factory settings.

Others:

- Alive Signal: Activates or deactivates “alive light”, which shows that the system is running correctly and it is not “hung”
- Master & NET (ONLY INFO)
- Ignore switches: With this function selected, the system will ignore any change or parameter introduced from the switches. This is to prevent unauthorized access even from the hardware / switches.

5.7. TRANSMITTER TAB



5.7.1. START / STOP TX

From here the Transmission can be stopped, this can be used to confirm if an alarm is coming from tags / labels.
If the Transmission is stopped and the alarm stops, then the alarm was caused by a tag.

5.7.2. TX LOOPS

Turn ON/OFF any of the 2 independent Transceiver loops in the Transceiver antenna. (Default ON).
TX1: Transceiver Upper Loop
TX2: Transceiver Lower Loop
Tx Loops states can be saved.

5.7.3. MULTIMONO

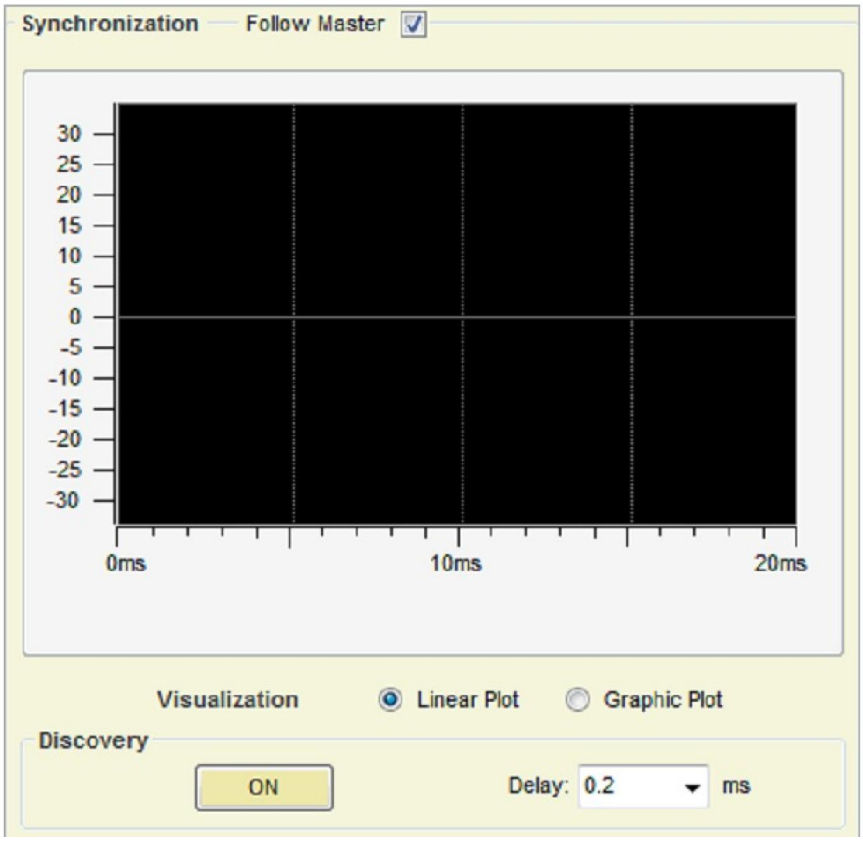
This parameter must be ON when connecting multiple transceiver in the same aisle or in a net (Default OFF)

5.7.4. POWER LINE FREQUENCY

Information about which is the current power line frequency.

5.7.5. DISCOVERY TOOL

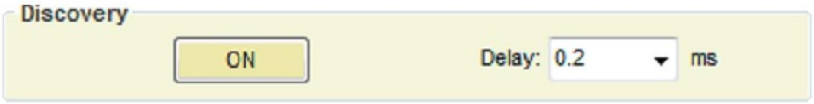
Main tool to synchronize the system.



In 99% of cases this adjustment is not necessary. Anyway, it is always good to take a look at the environmental electric noise throughout the “Discovery Mode” feature.

When Discovery Tool is ON, the transmitter is then turned off, and the system ONLY receives.

Standard Synchro delay value is 0.2ms



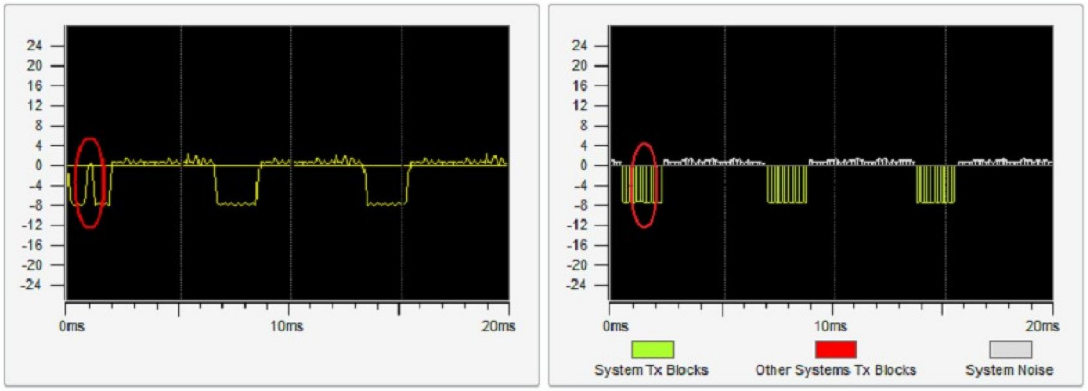
For Slave systems, enable “Follow Master” option in order to have the same synchro than Master. This option is available for systems with version 3.A0 and 4.A0 or higher.

Once the Discovery Tool is ON, electrical noise and other possible systems out of phase are shown on the screen. In the scope is represented the amount of noise in 58 kHz through the 0º phase to the 360º phase in the mains. (From 0 ms to 20 ms in one 50 Hz period).

In the scope, the TX blocks will be represented in the lower side of the yellow line (negative), the TX blocks of other systems out of phase, will be represented in the upper side of the yellow line (positive).

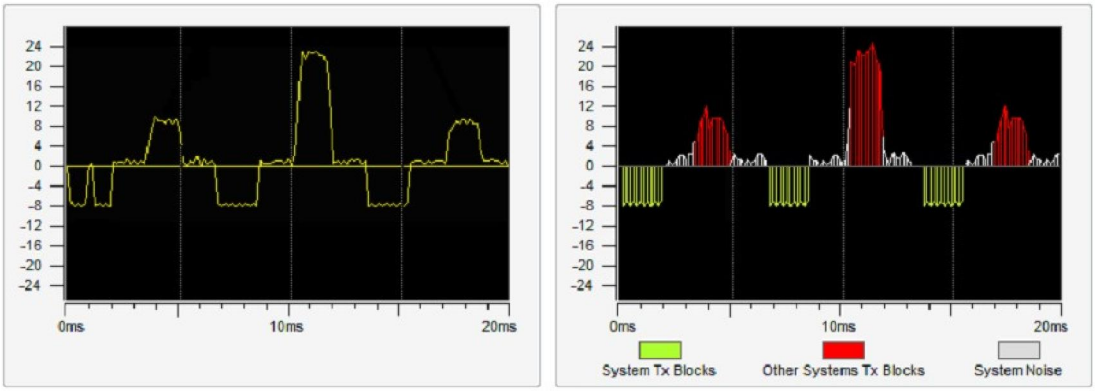
FIELD SITUATIONS

- In these cases, only the blocks in the lower part can be seen. The presence of another system which is correctly synchronized with yours, can be seen in the break of the first block (RED CIRCLE)

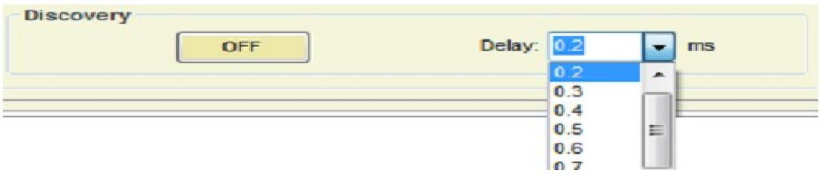


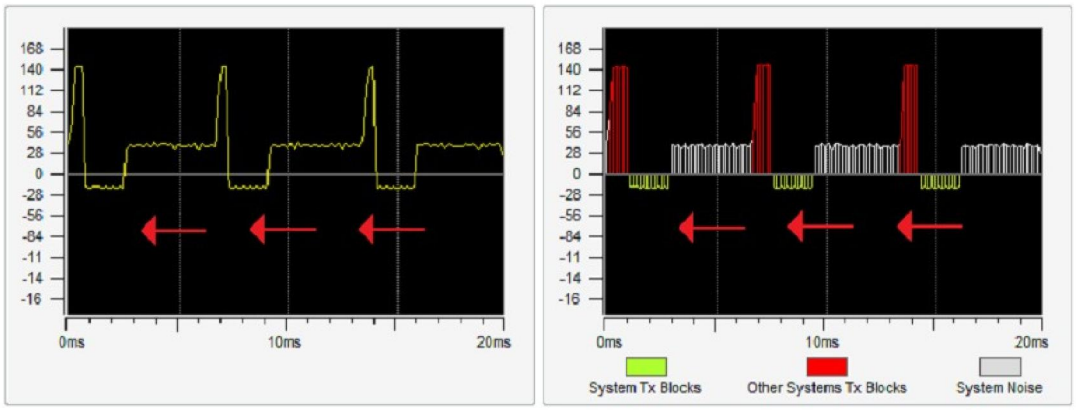
Systems out of synchro, NEED TO SYNCHRONIZE, Only one external reference

- When another 58 kHz transmitter is transmitting out of synchro, it can be easily seen from the scope screen. The area above the yellow line is reserved for these situations. In the next figure, the presence of another 58 kHz transmitter can be easily seen on that area. Only one external reference means that only 3 TX blocks from other system can be seen in the upper side of the screen.

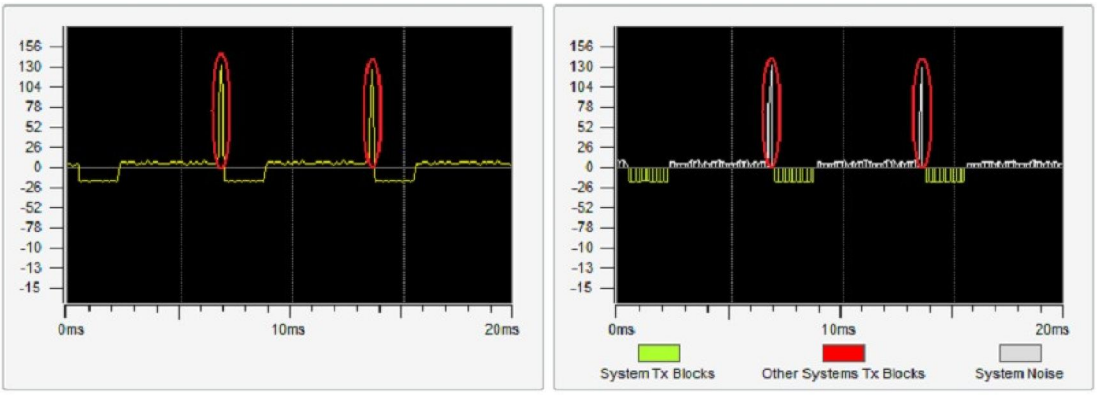


- Change the delay manually to synchronize with the system out of synchro.





 Match the systems transmissions with one each other…



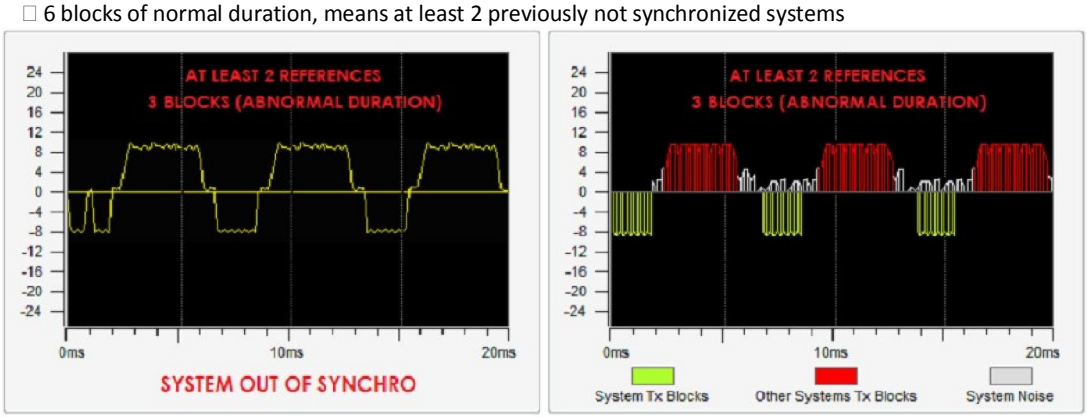
 As it can be seen on the figure above, our TX blocks (below yellow line) have moved until the position of the other system TX blocks. The synchro can be followed and verified visually. The peaks appearing in the 2 last blocks (RED CIRCLE) are normal when the system is too near.

 After a good synchronization process, you must turn Discovery Mode off, to do so press OFF

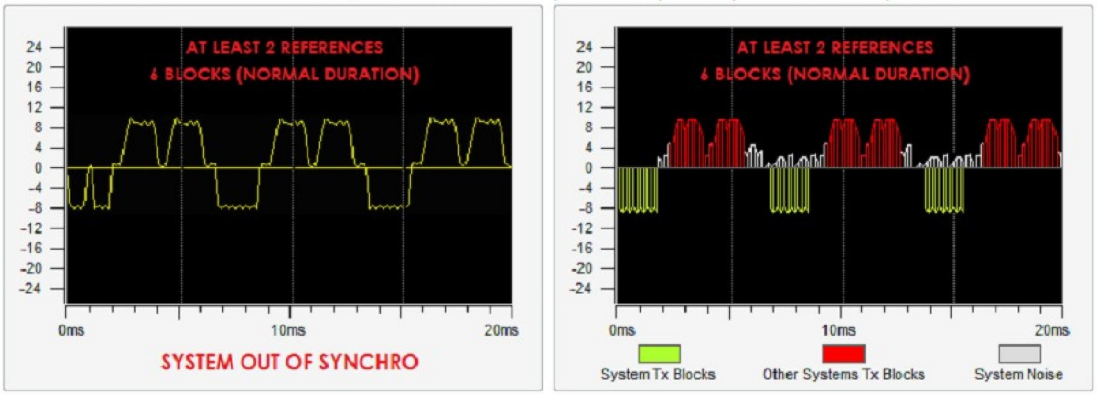
Systems out of synchro, NEED TO SYNCHRONIZE, More than one external reference

 When there is more than one reference to synchro, then a correct synchronization is not possible. This means that previous to the installation, there were already at least 2 systems out of synchro, probably these systems are already not working. In order to fix the problem it is necessary to previously synchronize between them the existing systems.

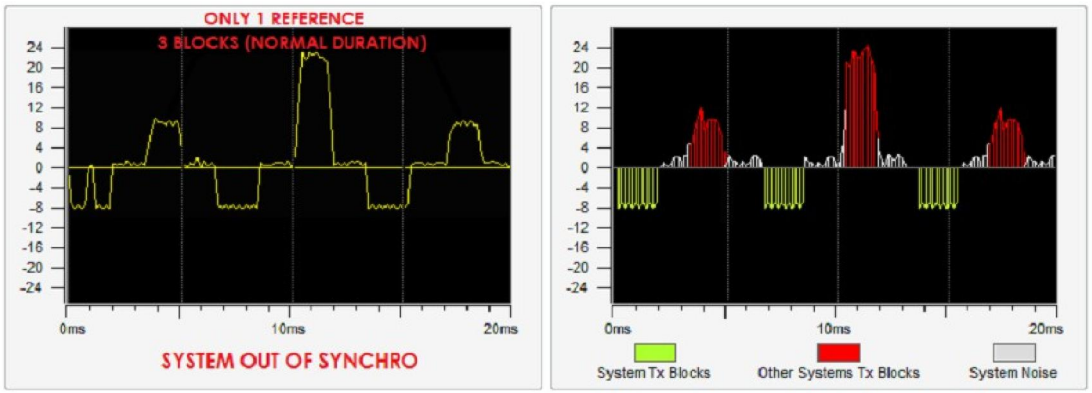
 6 blocks of normal duration, means at least 2 previously not synchronized systems



 3 blocks of abnormal duration, means at least 2 previously not synchronized systems

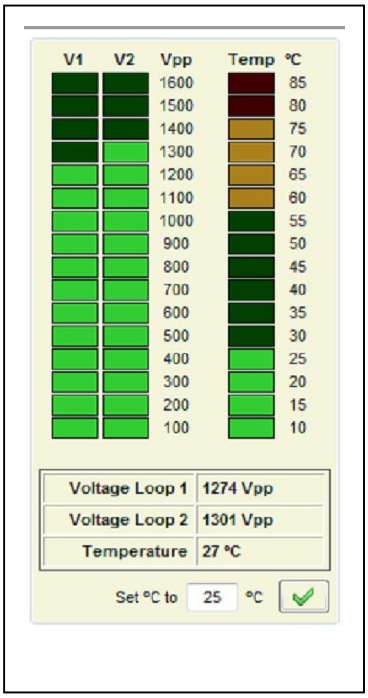


 After synchronizing ALL external systems, the situation will be as follows:



 Then the system can be correctly synchronized using this unique and only external reference.
 Please follow step CASE 2, to synchronize de system in accordance.

5.7.6. TRANSCEIVER STATUS



Transceiver Voltage

 Shows the Voltage in the TX loops. It should be always in the range of 1000 to 1400V (GREEN)
 If it is lower, it might be because a defective transmitter or bad resonance. Then it might be necessary to retune the Transceiver resonance (Hardware).

Transceiver Temperature

 Shows the current Temperature in the Transmitter Board.
 Should be always in the green area (10° to 55°).

5.8. RECEIVER TAB

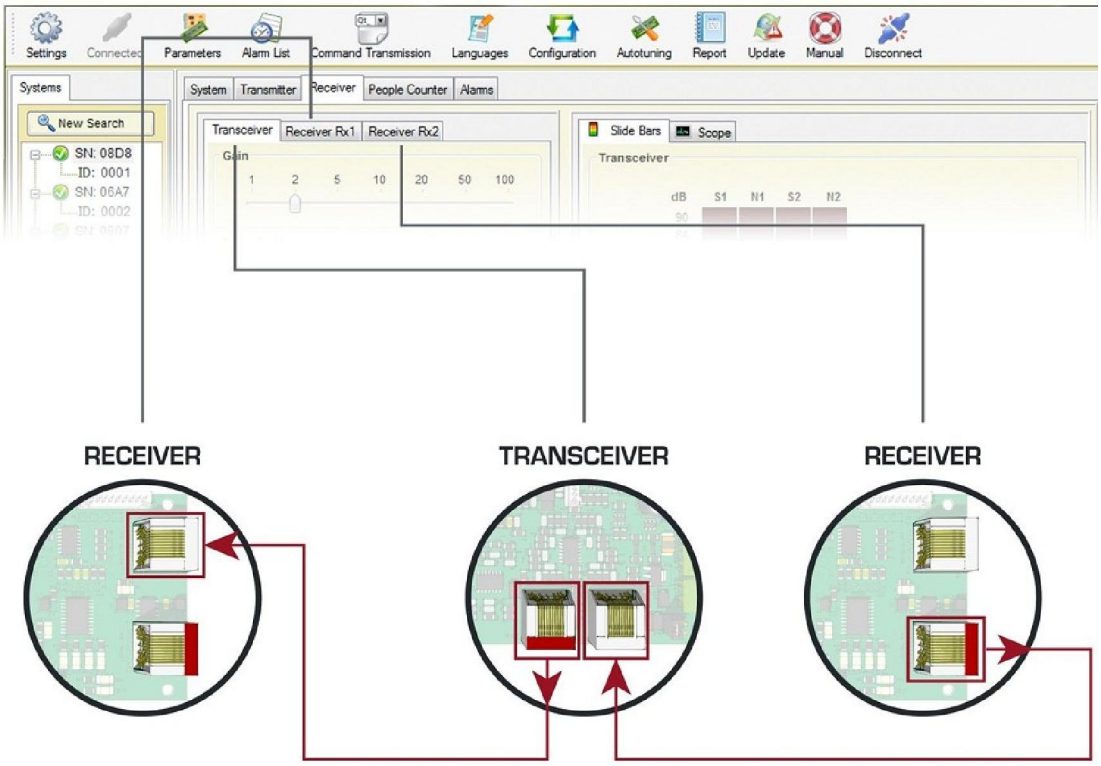
Transceiver antenna is also a Receiver antenna, so it has its own receiver side.

Each Transceiver antenna is able to support 2 Receiver antennas.

Selecting 'Transceiver' allows selecting parameters for receiver side of Transceiver antenna

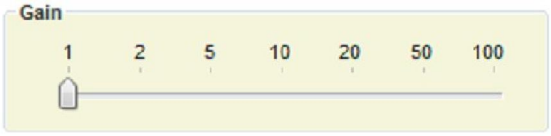
Selecting 'Receiver Rx1' allows selecting parameters for the Receiver Antenna connected on the Transceiver BOARD with red/marked connector.

Selecting 'Receiver Rx2' allows selecting parameters for the Receiver Antenna connected on the Transceiver BOARD with grey connector.



5.8.1. GAIN

Gain feature is used to adjust the receiver sensitivity to get the best reception signal.



In order to adjust Gain, simply select the value until you get the required detection.

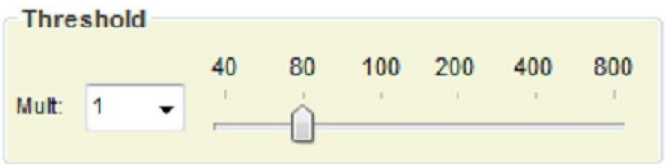
5.8.2. THRESHOLD

Threshold feature is the signal level at which each receiver will trig an alarm.

If you need higher threshold, then increase the Multiplier. A Higher threshold means less sensitive for the system, more quantity of signal will be needed from the tag to trigger an alarm, the detection is reduced.

It is recommended, for maximum sensitivity to keep the Detection Threshold at minimum (40) & Multiplier=1.

In order to adjust Detection Threshold, simply select the value until you get the required detection



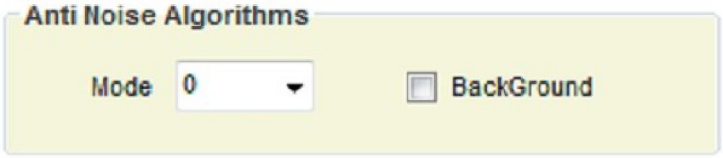
5.8.3. ANTI NOISE ALGORITHMS

Anti Noise algorithms are used to minimize the electrical noise. Depending on the level of electrical noise, it is recommended to select different positions in the noise selector. Each antenna is independent.

There are 2 active modes in noise fighting.

Position 0 turns off noise fighting algorithms in mono-antenna.

Back Ground suppression is also OFF by default.



5.8.4. START/STOP RECEIVER LOOPS

From here, each Receiver loop can be independently turned on and off. If there is a high disturbance in any of them, it can be disabled. Receiver Loops states be saved.

Loop 1 belongs to Upper Loop of the Transceiver Antenna

Loop 2 belongs to Lower Loop of the Transceiver Antenna

5.8.5. ANTENNA RESONANCE

Only Receiver Boards.

The Receiver Board controls the resonance of both Receiver loops in the Receiver antenna. The resonance is controlled by the selection of capacitors in this slide in the software. Receiver Antenna resonance might be affected only when installing the system very near metallic frames or metallic doors.

In these cases, Receiver resonance can be modified from the selector.

The factory default value for Receiver Resonance depends on each system (always around 9)

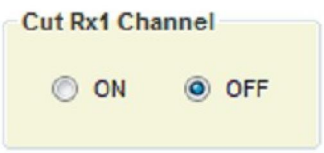
5.8.6. REMOTE RECEIVER

Only for Receiver Boards.

Remote Receiver feature is used to allow or not allow the propagation of RX signal to a remote receiver or transceiver antenna, when the systems are split into several aisles.

If ON, it allows propagation of the RX signal in red/marked connector.

If OFF, it does not allow propagation of the RX in red/marked connector.

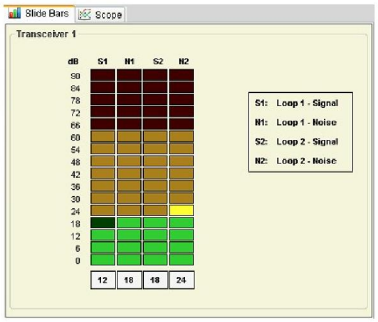


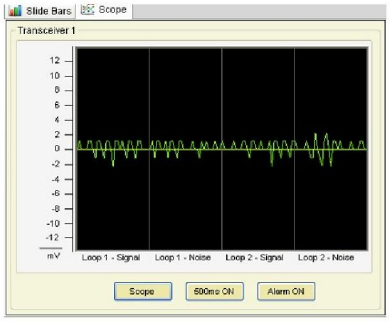
5.8.7. SIGNAL AND NOISE

In the scope area there is a digital oscilloscope display that will help to analyse the noise and signal. Real time electrical noise signals icon will show current electrical signal (Noise and tags if there is any).

There are 4 different reception areas shown on the Signal Bars / Digital Scope: 'Loop 1 Signal' 'Loop 1 Noise', 'Loop 2 Signal' and 'Loop 2 Noise'.

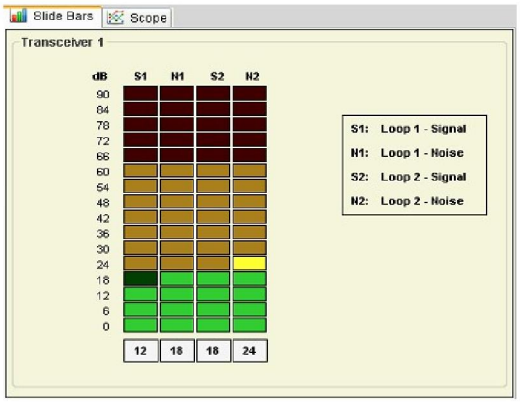
Loop 1 belongs to Upper Loop of the Transceiver / Receiver Antenna
Loop 2 belongs to Lower Loop of the Transceiver / Receiver Antenna

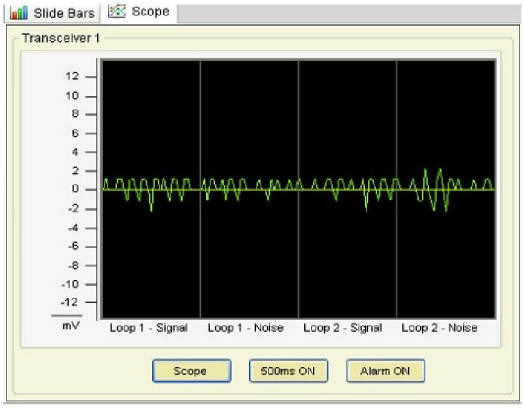




SITUATION 1 (When there is no tag near)

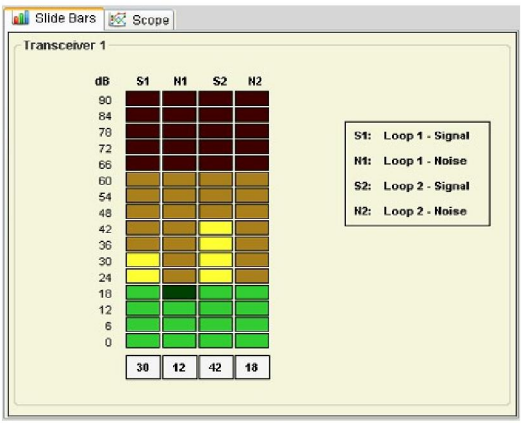
The reception areas shown on the Signal Bars / Digital Scope should look as follows:
In the 4 different reception Bars/Areas, only electrical noise in the environment is shown, as there is no tag near.
All 4 reception Bars/Areas MUST HAVE SIMILAR values.

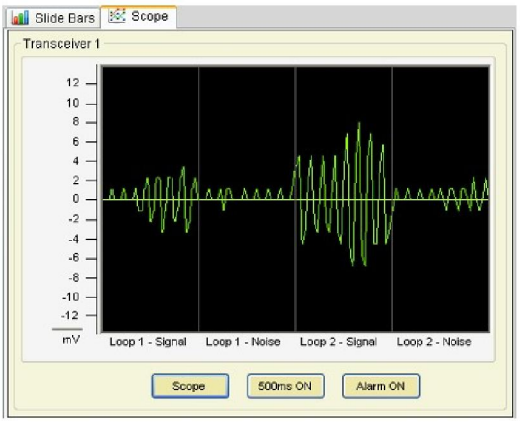




SITUATION 2 (When there is a tag near)

The reception areas shown on the Signal Bars / Digital Scope should look as follows:
In the 4 different reception Bars/Areas, the 2 reception Bars/Areas reserved for noise keep the same as in SITUATION 1 BUT the 2 Bars/Areas reserved for tag signal, show higher values than the ones reserved for noise.
This way, an alarm caused by tags can be easily identified.



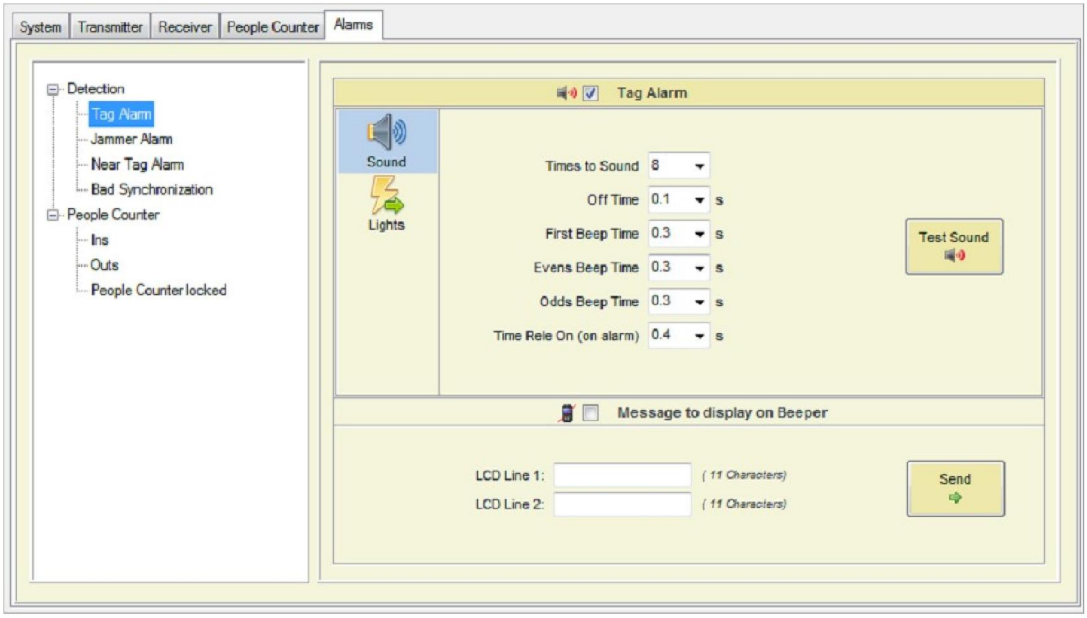


5.9. PEOPLE COUNTER TAB

TBD.

5.10. ALARMS TAB

This section allows you to configure the different alarms patterns in the system.



5.10.1. SOUND OPTIONS

Select number of times to sound and customize beep duration time.

5.10.2. PAGER OPTIONS

Type the messages to display on Pager in order to receive a message when an alarm event occurs.
Click on the icon to enable or disable

5.10.3. ALARM TYPES

Standard alarm for a 58 kHz tag. Click on the icon to enable or disable.

Relay

- When an alarm occurs, the alarm closes a relay and triggers anything connected to it.
- RELAY SPECIFICATIONS: 240V & 250mA.
- Normal Open(NO) & Normal Close(NC) contacts

Light Options

- Select the number of flashes. This feature is available for each antenna.

This alarm occurs when system finds an inhibitor of 58 kHz
Click on the icon to enable or disable.
Select threshold level when activating this alarm (>7 recommended).

This alarm occurs when a 58kHz label/tag is located near the antennas
Disable by default. Click on the icon to enable or disable.

Synchro Signal: It is used to synchronize transmission blocks with zero crossing power line.
The signal comes out from the Power Supply and goes to the Transceiver Board Supply.
Enabled by default. When Power Synchro Signal fails, system would not run properly and alarm event occurs.

This alarm occurs on entrance people detection
Disable by default. Click on the icon to enable or disable.

This alarm occurs on exit people detection
Disable by default. Click on the icon to enable or disable.

This alarm occurs when IR-TX Module has been blocked during 1 minute at least.
Disable by default. Click on the icon to enable or disable.