

Boulevard Mono System

Installation Manual

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Transceiver MONO system Installation Manual**Document revision information**

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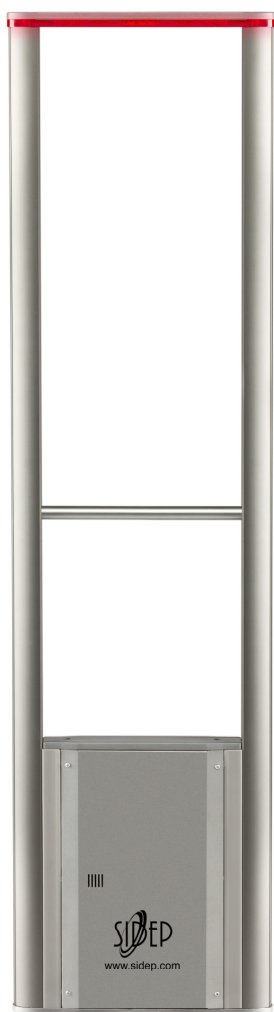
1.GENERAL INFORMATION

1.1 ANTENNA TYPES.

The installation manual is applied in boulevard antenna. The TX loop of antenna is O-loop and the RX loop of antenna is 2-loop.

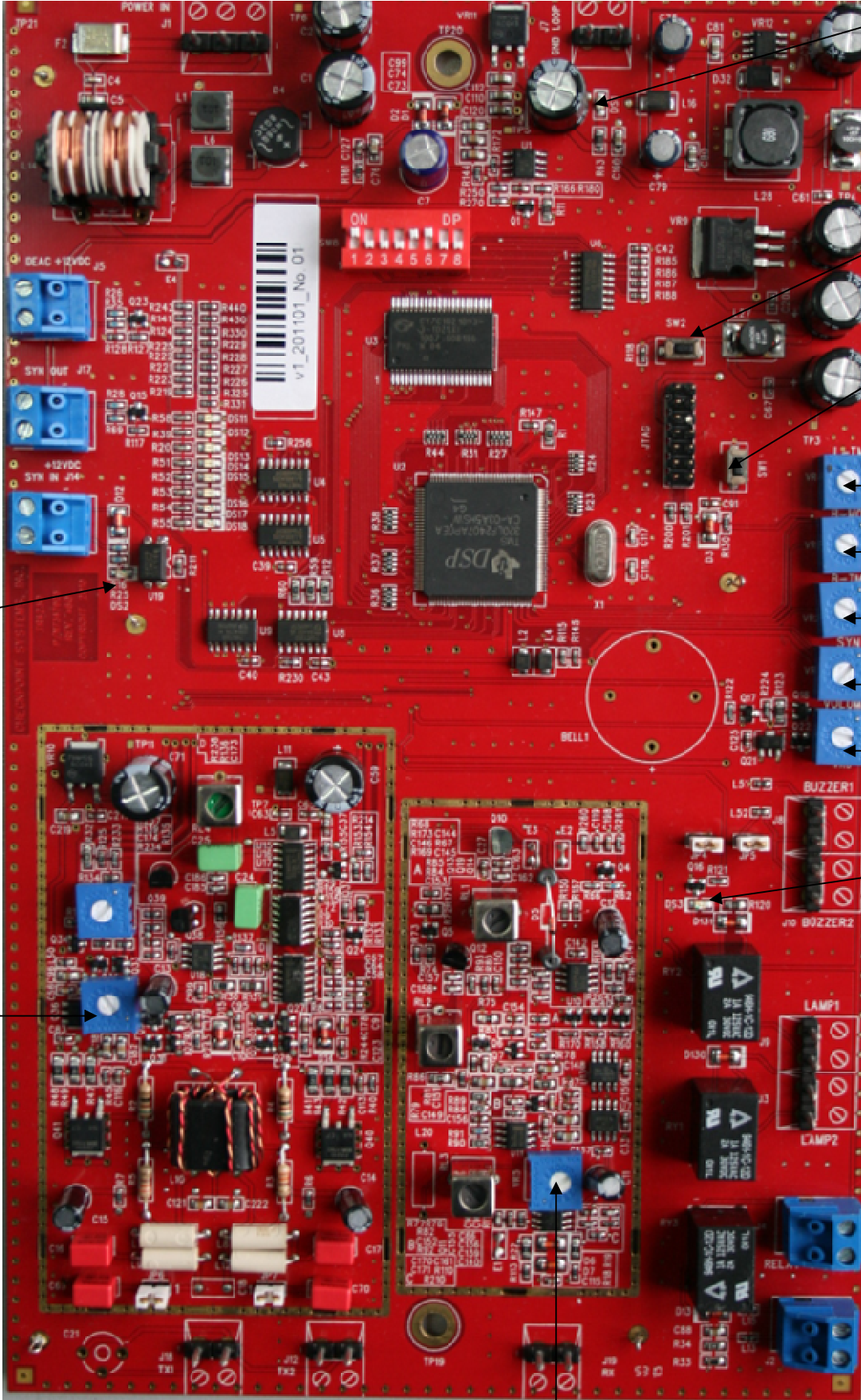
Figure 1.1

Boulevard Antenna



1.2 BOARD INTRODUCTION.

Figure 1.2



DS2

DS1

SW2

SW1

VR4

VR3

VR2

VR1

VR6

DS3

TX power

VR5

SYN Trim:VR1	Synchronization
B-TMP Trim:VR2	Alarm sound time: long time in clockwise direction
B-MOD Trim: VR3	Buzzer frequency: low frequency in clockwise direction
L-TMP Trim:VR4	Alarm light time: long time in clockwise direction
RX GAIN Trim:VR5	Sensitivity: high sensitivity in clockwise direction
VOLUME Trim:VR6	Buzzer volume: low volume in clockwise direction
SW1	Reset system
SW2	Test function
DS1	Work display
DS2	Synchronization display
DS3	Alarm display
Firmware version : AMBER_FW_1.0	

1.3 POWER SUPPLY

The basic system incorporates a transceiver Antenna, power supply adapter (PSA). Both 230VAC 50Hz and 120VAC 60Hz main power can be used.

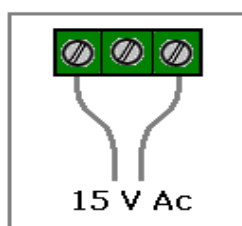
For 230VAC 50Hz main line, input power should be 150mA, and for 120VAC 60Hz main line, input power should be 250mA.

Make sure your anti theft system is connected to an electrical system complying with the national regulations in force.

Recommended input power of MONO system is 15 VAC 800mA.

Only 1 antenna can be connected to the PSA provided.

Figure 1.3



Cabling shall always be running on the floor inside embedded ducts or in a groove under the rugs, under floating flooring, in tiling joints or under a sill nosing, as required.

Cabling acts as an antenna. Under no circumstances shall the cable be allowed to run through the ceiling or along antennas.

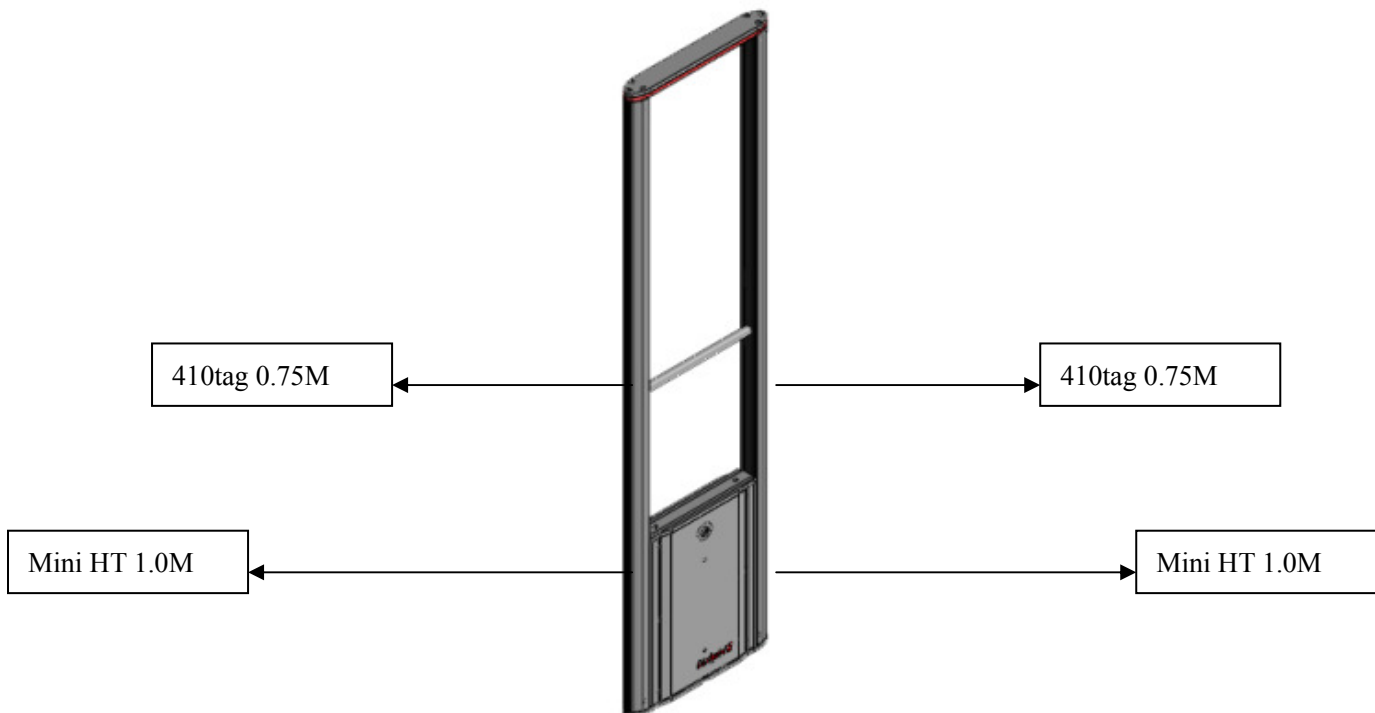
1.4 TEST RANGE

The type of antenna to be selected is a function of size of the tag and antenna spacing. The table provides a reference for tag size versus maximum allowable spacing. However, the spacing values shown on this table will significantly decrease as the operating environment becomes harsher or surrounded with such interfering environment as steel structures, power lines located close to the antennas.

A walkabout on site test (*installation procedures refer*) will testify of the maximum allowable spacing.

Tag Type	MONO
410 tag	0.75 m
Mini Hard tag	1.0 m

Figure 1.4

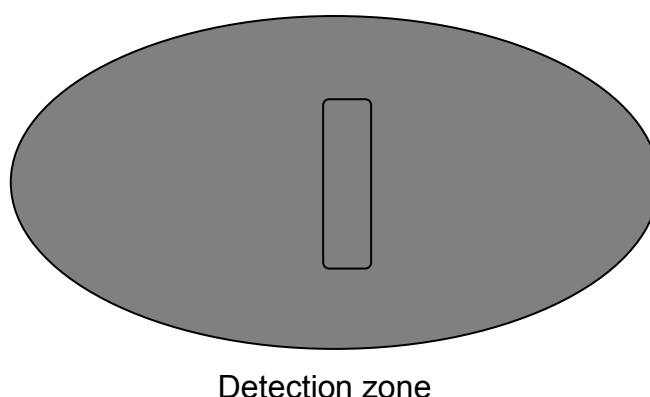


2. GENERAL INSTALLATION

2.1 IMPLEMENTING ANTENNAS.

The Transceiver antenna (MONO) selection of location shall be a function of the stores layout. The rear field is wider on transceiver system therefore removes all furniture and hangers likely to contain anti-theft tags close to the set-up, a minimum distance is recommended between antennas and shelf in retail (1.5 to 1.8m).

Figure 2.1.



IMPORTANT NOTE

Prior to commencing the work (threading of cables, marking of locations, floor drilling for antenna attachments...), perform a walkabout test on site in order to assess the environmental impact. Depending on test outputs, the permanent location of the antennas will be decided upon jointly with the client. Reduce the antenna spacing whenever the operational environment does not provide satisfactory results. Once the cabling is embedded and antennas are anchored to the ground, it becomes a very difficult/costly and even an impossible job to change antenna locations. Hence, this walkabout on site test is of a major importance before commencing any installation work. The walkabout test will make it possible for the fitter/installer to figure out any interference arising from the environment. (subsection *Interference Sources* refers).

2.2 INTERFERENCE SOURCES.

Mains power generates interferences because of numerous parallel connected appliances and devices (motors, spot lights, fluorescent lighting, etc...) and

therefore, a dedicated line shall be provided directly from the switching board. This line shall be installed by an approved installer.

A number of switching power supplies as used e.g., in Electronic Information Systems (EIS) operate at a harmonic frequency similar to that of the EAS SYSTEM and may cause system jamming and therefore, under no circumstances should the power supply unit be connected to a line backed up by an Uninterrupted Power Supply (UPS) (rectified current).

Metallic masses generate interference because of system absorbed and reverberated electromagnetic waves.

Avoid installing antennas close to such metallic masses while keeping to a minimum distance of 60 cm.

In case of implementing problems because of the site configuration, perform testing in order to determine the best location.

Metal frames or guide bars sometimes behave like resonance circuits tuned to the system frequency. Install antennas remotely from these structures or fit bonding braids in order to cancel resonance phenomena.

Steel frames of doors sometimes behave in the same manner. Install antennas remotely from such structures or fit shunts or bonding braids in order to cancel resonance phenomena.

Position the system away from steel frame door(s), then open and close door(s) and check the LED level bar for evidence of distorted signals (tag signal).

Defective fluorescent lighting, e.g. neon type, generates interference because of permanent DC energizing on switching on. Please feel free to have this type of lighting switched off and compare results with the LED level bar. Some transformers used in this type of lighting appliances may be defective and cause similar interference.

All electromagnetic field generating appliances typically incorporate transformers, motors or mobile magnets, including: fluorescent neon tubes, halogen quartz bulbs, cashiers conveyor belts, etc.

Power leads may also be a cause for interference. Prevent antennas from standing too close to electrical leads. Move antennas and perform various tests to assess the best location.

3 Selection of Functioning Modes with DIP Switch:

Switch Number	Description
Switch 1	Cable Synchro Setting ON: Master board OFF: Slave board
Switch2	Power Synchro Mode ON: Power synchronization(up to 4 systems on same power line) OFF: Power synchronization(up to 2 systems on separated power line)
Switch 3	Synchro Increment – 5th systems ON: Over 4 multiple systems synchronized by cable, every 5th system synchronized should have be on OFF: At most 4 systems synchronized
Switch 4	Deactivator Synchro Mode ON: Pulse Deactivator (SPD82) is synchronized by cable Master board when cable synchronization OFF: No deactivator
Switch 5	Tag/Noise Level Mode ON: Normal sensitivity – Low noise environment OFF: Low sensitivity – High noise environment
Switch 6	Sensitivity reduction Mode ON: Standard System Sensitivity OFF: Low Sensitivity
Switch 7	Automatic Level Mode ON: The sensitivity level is automatically regulated according to environment noise variation OFF: The sensitivity is set by VR5
Switch 8	Deactivable Labels Protection Mode ON: The transmission power level will automatically decrease once a label is detected in order to avoid deactivation of the label by the EAS system OFF: Transmission power level Stable (recommended for hard tag only system).

Default setting:

1	2	3	4	5	6	7	8
on	off	off	off	on	on	off	off

4. Basic Adjustment Procedure:

Basic adjustments procedure should be sufficient to set all necessary parameters.

Other advanced adjustments and modification should be performed by experienced technicians.

All other advanced parameters are set at factory and in most case the basic adjustments method below would be enough to optimized the MONO system performance.

4.1 Single System Adjustment

- Set Switch 7 in position OFF (Automatic Level Mode Off).
- Press SW1 to reset system.
- Wait 1 minute for DSP to reboot.
- Find the best position of antenna (lower LED Noise Bar Level).
- Refer to previous instructions to find source of disturbance if the noise level is high.
- If necessary reduce VR5 to have less than 4 LED on (only green Led should be on and 1 orange blinking).
- Put back Switch 7 in Position : On
- Press SW1 to reset system.
- Wait 1 minutes for DSP to reboot.

5. Multiple System Synchronization

There are 3 different ways to synchronized multiple systems. As much as possible try to use the external Synchro cable RG174 to synchronized multiple systems. This method provides the most reliable synchronization. DS2 will be lighted.

5.1 External Synchronization Mode with cable (up to 25 systems by 230V 50Hz main power or up to 25 systems 120V 60Hz main power) :

The Master system is usually the antenna closest to the 230V 50Hz or 120V 60Hz power plug. Connect The RG174 synchronization cable from Synchronize Out connector (master board) to Synchronize In (Slave board) and to the next Slave system. Switch 1 should be in position ON for master board and OFF for slave board.

When properly connected, the EXT SYNC LED of all the slave antenna boards should be lighting excluding the master system's LED which should be off.



Please ensure the cable is connected properly in polarity. Else the slave systems' Ext Sync LED is not lighting after connection.



If the EXT SYNC LED is twinkling, turn the VR1 of previous board to make the EXT SYNC LED stable. Turn the VR1 to make sure each board has no more than two noise LEDs.



If more than 5 systems are synchronized by cable, at each 5th system, the Switch 3 (Synchronize Increment) should be in position ON.

5.2 Supply Synchronization Mode (up to 4 systems by 230V 50Hz main power or up to 4 systems 120V 60Hz main power) :

Turn VR1 to make sure that its noise level is lowest. This synchronization is up to support 4 systems on same power line or 2 systems on separated power line.

5.3 Deactivator Synchronisation

For Sidep Pulse deactivator **SDP82** the EAS systems should be synchronized:

Trimmer method:

If less than 4 systems/deactivators are installed you may be able to synchronize using only the SYN trimmer on **SDP82** to set each device with a different time pulse.

External Synchro Method:

For more than 4 systems/deactivators using a **RG174** synchro cable is recommended:

- Press SW1 to reset systems.
- The green LED on the deactivator should be ON.
- If green LED on the deactivator is blinking, change the SYN trimmer adjustment on the deactivator.

6. TROUBLE SHOOTING

• False alarms / No detection / Orange/Red LED Noise Bar Level is blinking fast and with regular intervals:

the most likely reason is that another 8.2 MHz EAS system is installed nearby:

- Put Switch 7 in position ON
- Reset System
- Turn SYN trimmer to find the best position

• Sporadic false alarms but with good detection and low LED noise Level:

This problem may be caused by an external electrical disturbance or resonant object nearby (metal/swing door...).

- Turn the SYNC trimmer to find a better position.
- If the problem persists set the Switch 5 in the position OFF
- If the problem persists, set Switch 2 in the position ON and change SYNC trimmer position to reduce random noise burst.

If the problem persists, refer to the pre-installation instruction to find the possible source of disturbance. (Electrical interference, resonant object...)

• False alarm when touching antenna.

- Look for possible resonant object
- Change Antenna adjustment with Antenna Gain Adjustable capacitor.
- If problem persists, set switch DIP 5 in the position OFF.
- Reset system.
- If problem persists switch the system to manual level control mode (switch 7 position OFF)
- Press SW1 to reset system.

- Reduce the system sensitivity with VR5 until this problem stops.
- Then switch the system back to the automatic level control mode (switch 7 position ON)
- Press SW1 to reset system.
- The detection will decrease, but functioning will be more stable and false alarm less frequent.

• **External Synchro Mode is not working** even if cables are properly connected (EXT SYN LED ON except Master System): A slave system must have been powered on before its Master.

- Switch off all systems
- Switch on each system individually and in order starting from the Master system.

• **Labels are deactivated when passing near the MONO system:**

- Set Switch 8 in the position ON.
- Press SW1 to reset system

To protect the label against deactivation due to high transmission Level, the system will automatically decrease the output Transmission Level when a tag is detected

System reaction may be slower and detection performance reduced.

7. Advanced adjustment of system parameters

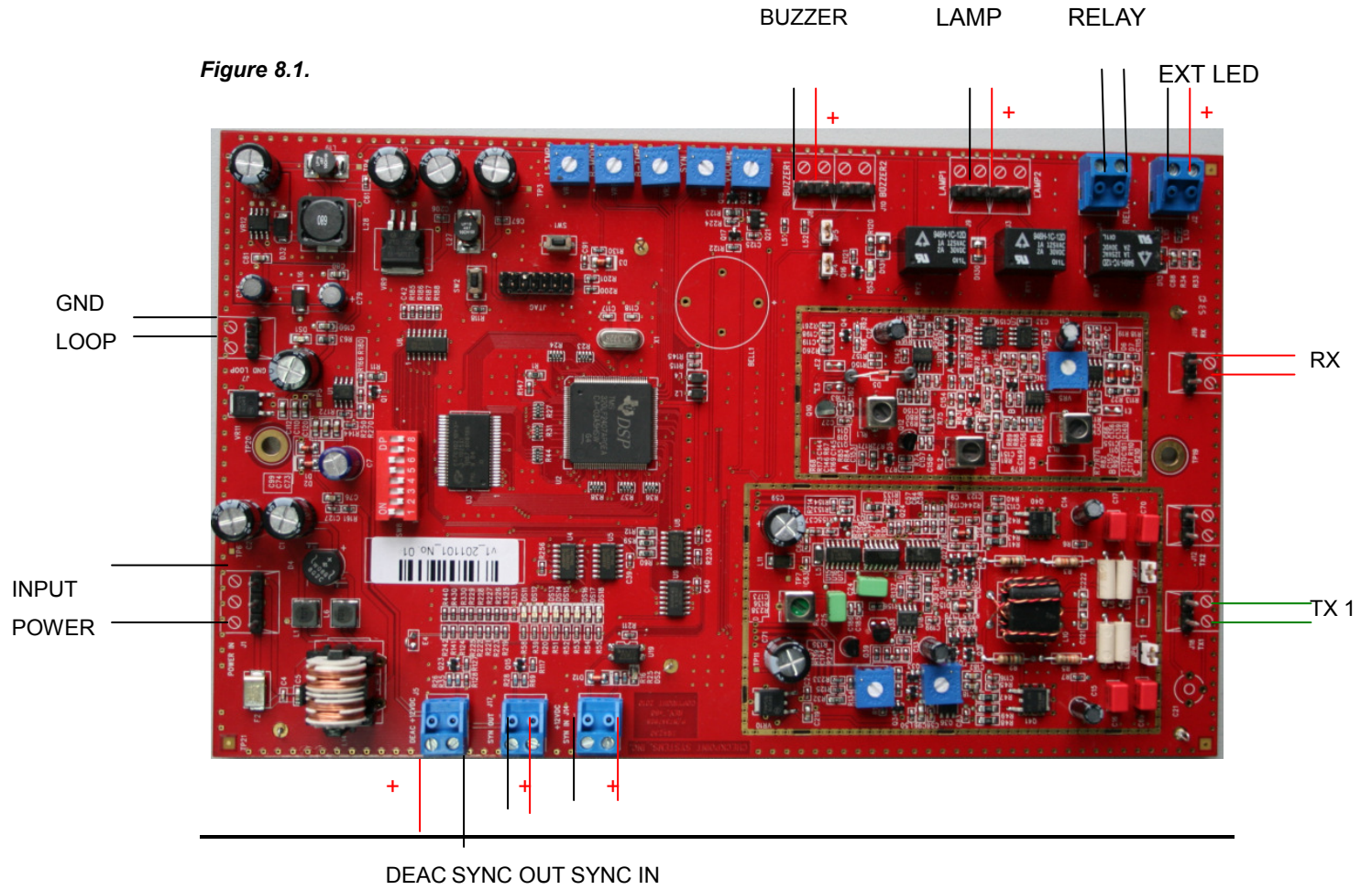
7.1 LEDs DS11-18:

Press the SW2 button while holding it , you can see the signal number corresponding the list below. When you release it you can see the value. Number of LEDs being ON simulates the output of a particular signal .

- input signal (default after powering the system on)
- filtered input signal
- level of resonance caused by tags, metal construction, loops of wire, etc)
- resultant input signal
- signal detection on each frequency (there are 8 frequencies transmitted)
- not yet used
- not yet used
- indication of sensitivity level reduction in automatic regime (DIP 7 ON). (Example: 6 LEDs ON...80% of maximum or reduction by 20%)

8. Connections from MONO board to Antenna

Figure 8.1.

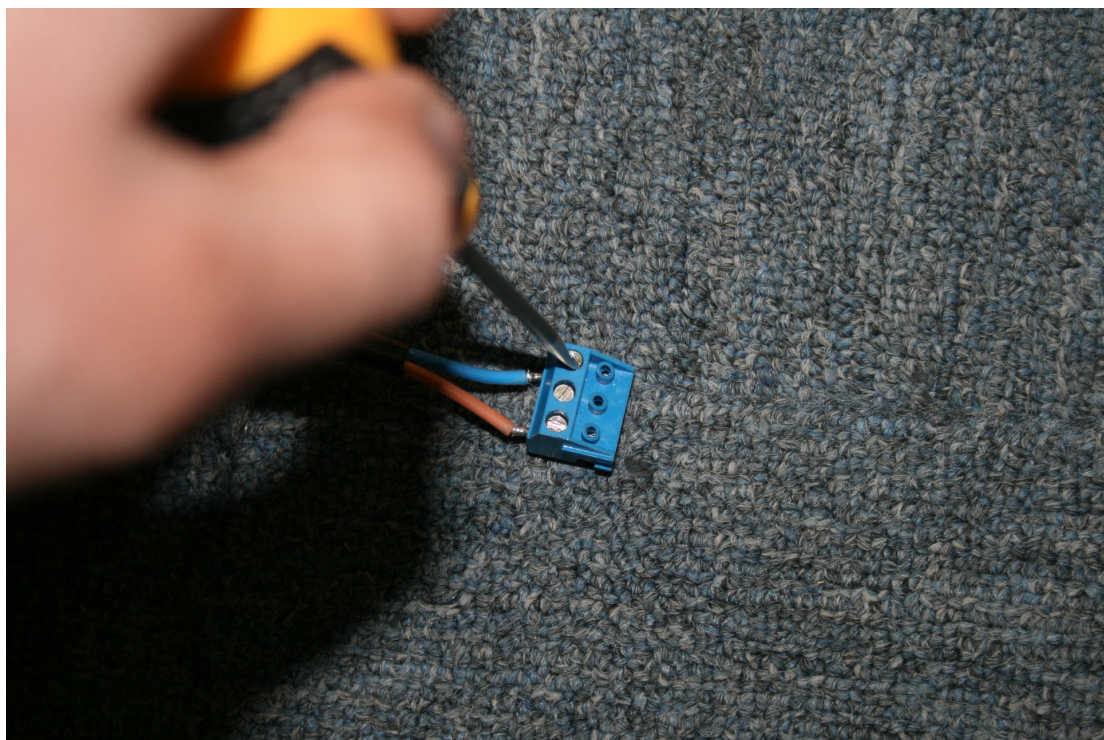


9. *Mechanical installation*

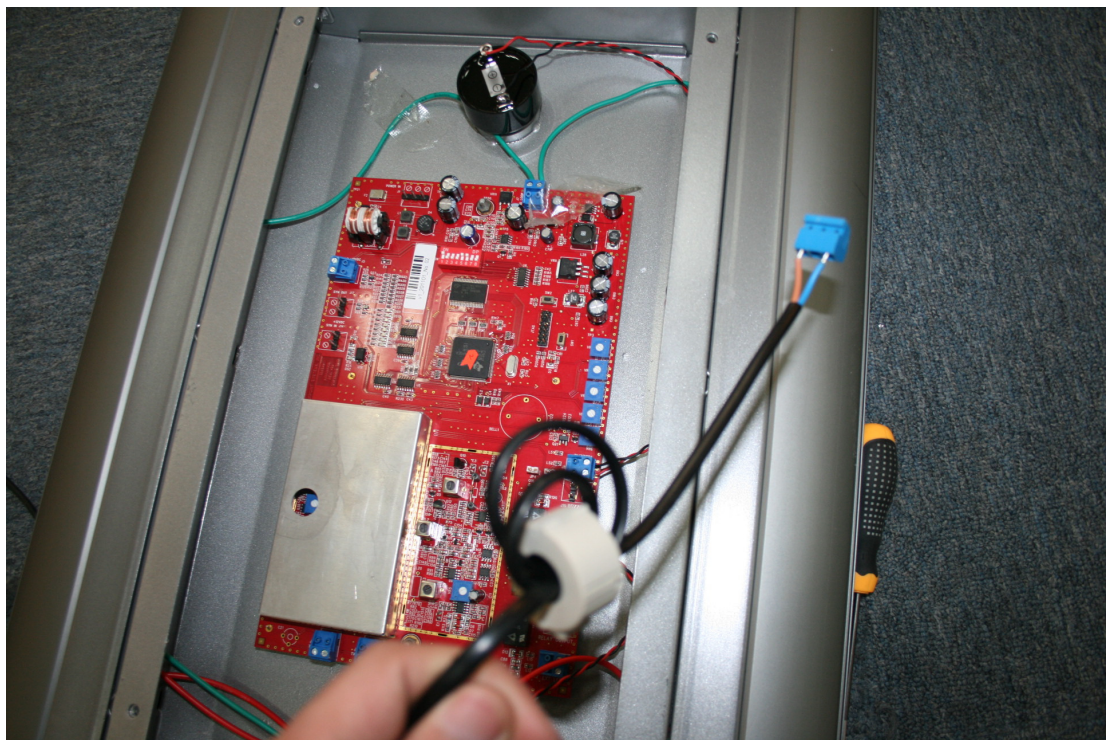
Step1: Unscrew the front cover.



Step2: Screw the power line terminal (no positive and negative).



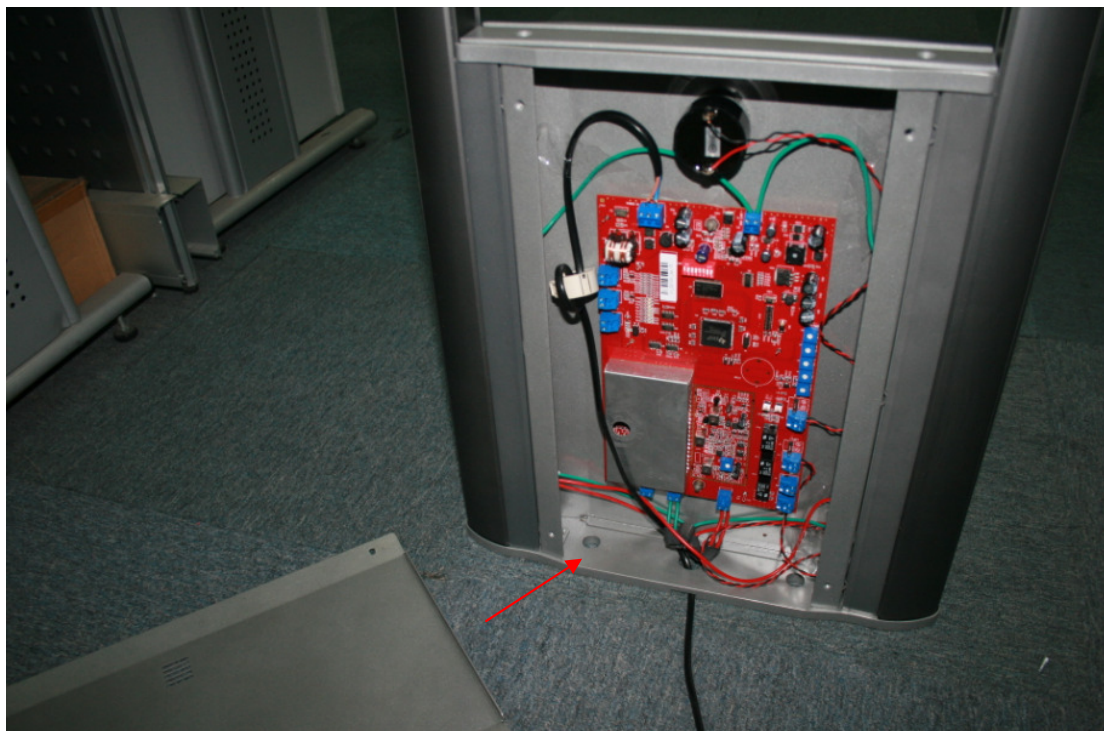
Step3: Drag the power line from the center bottom hole and make core around by 3-loop line at the end of line.



Step4: Make the other core around by 3-loop line at the other end of line.



Step5: Use two nuts to mount the antenna to the floor which has been embedded with two bolts.



Step6: Screw the front cover again.