



# **DRAGON GUARD**

## **Product Manual**

### **RF Mono System**

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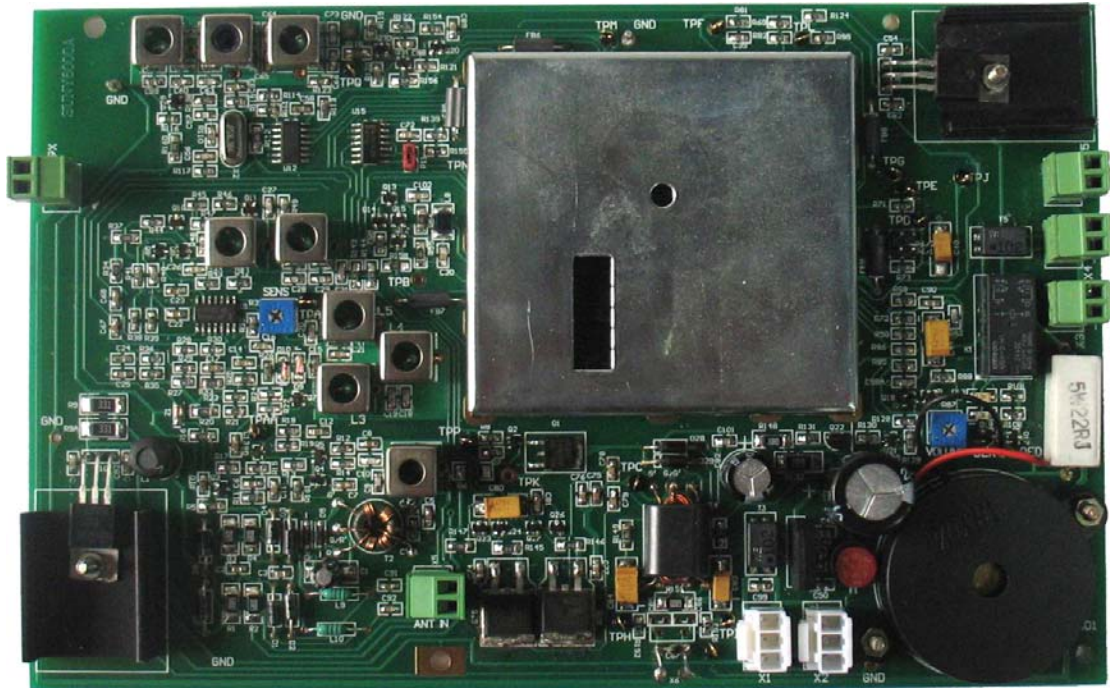
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# 1. Technical Specification

- System working principle: Wireless RFID
- Working frequency: 8.2MHz
- Working voltage: 18V/AC
- Working temperature: (5~40)°C
- Power consumption: Less than 30W (single antenna)
- Power supply: 110~240V, 50~60Hz/AC, reliably connected to GND

## 2. Parameter Setting

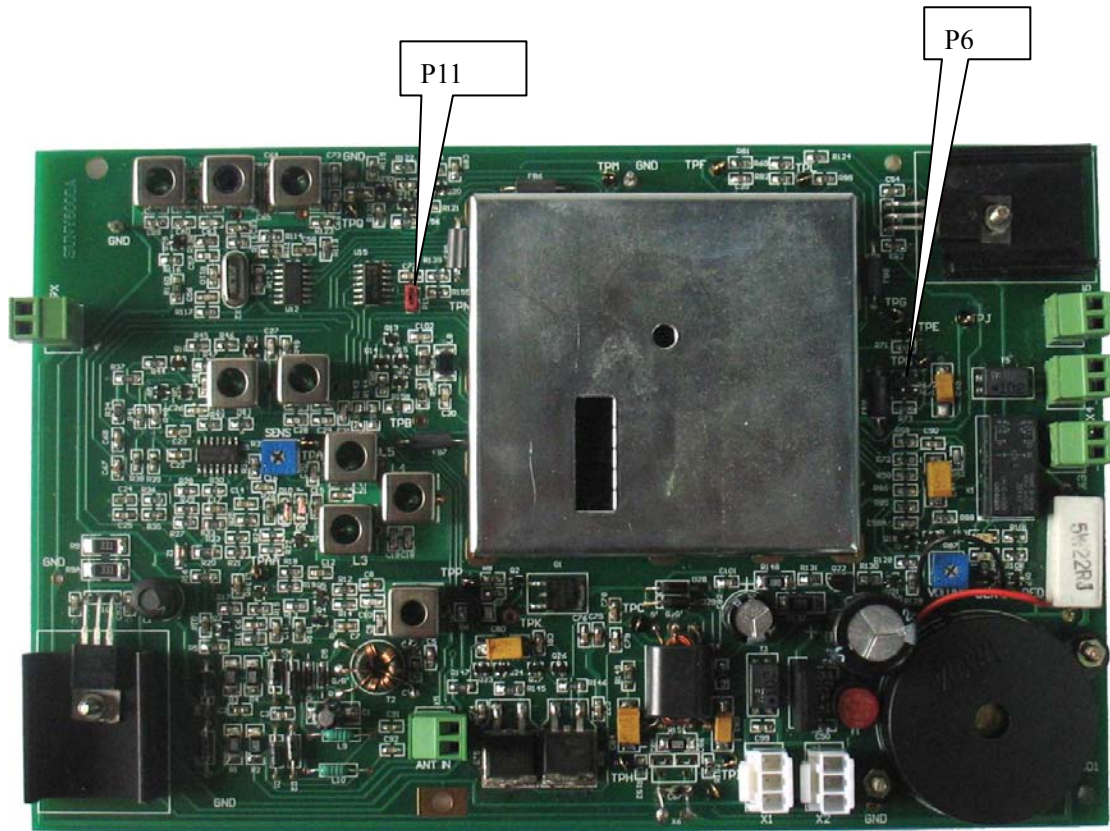
### 2.1 Circuit Board Description





**Circuit Board Figure**

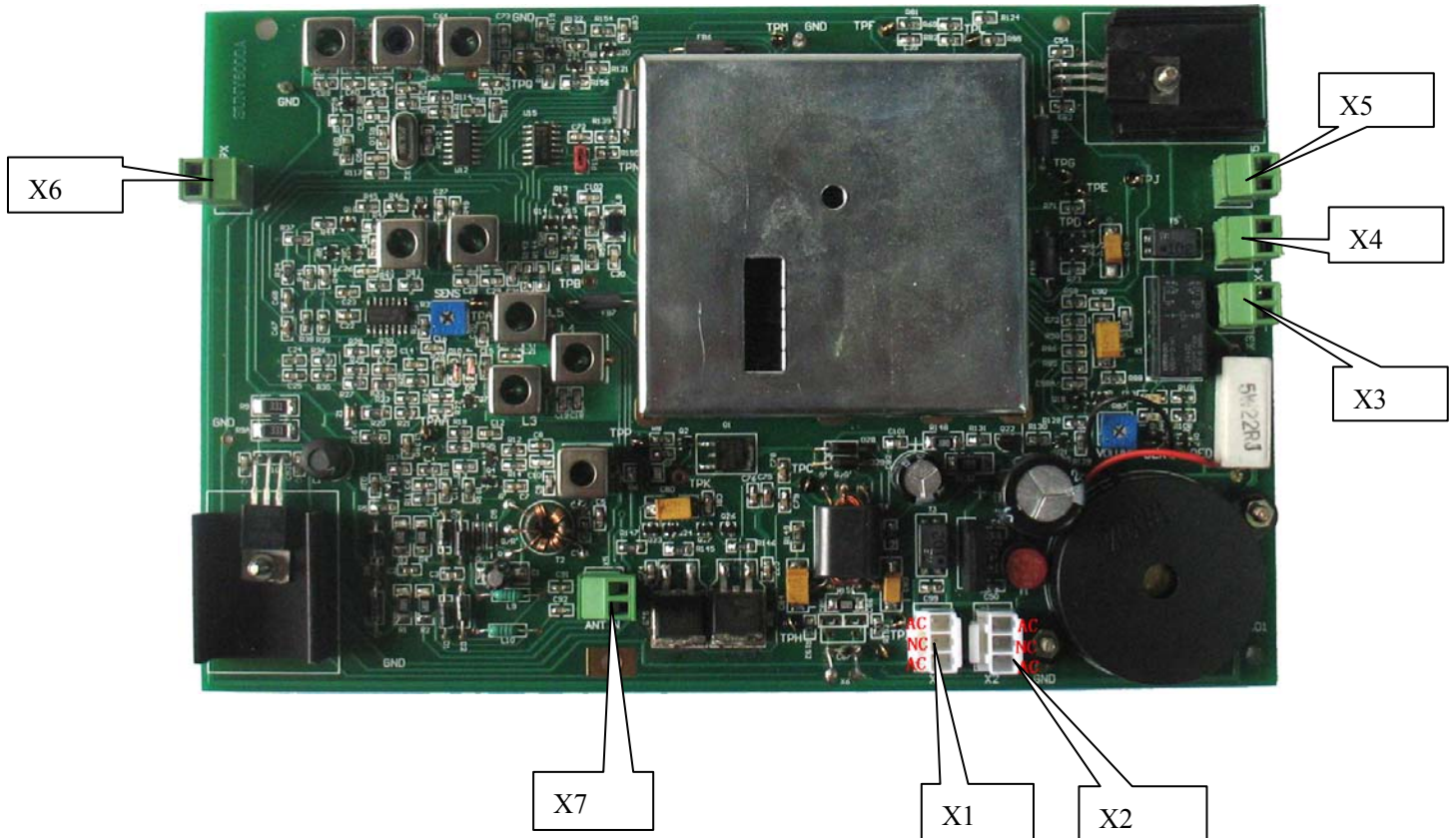
As the figure shows, there are only two adjustable resistors on this circuit board. One is controlling the antenna's sensitivity, and the other is to control the alarm speak's volume. There are seven connectors on it. X1 is power supply " IN ", while X2 is its " OUT ". X4 is called as "RELAY ", and X3 should be linked to alarm. X5 and X6 should be connected to the transmit antenna(ANT OUT1&ANT OUT2). X7 should be connected to the receive antenna(ANT IN) .

## 2.2 Position of the Jumpers on the Circuit Board



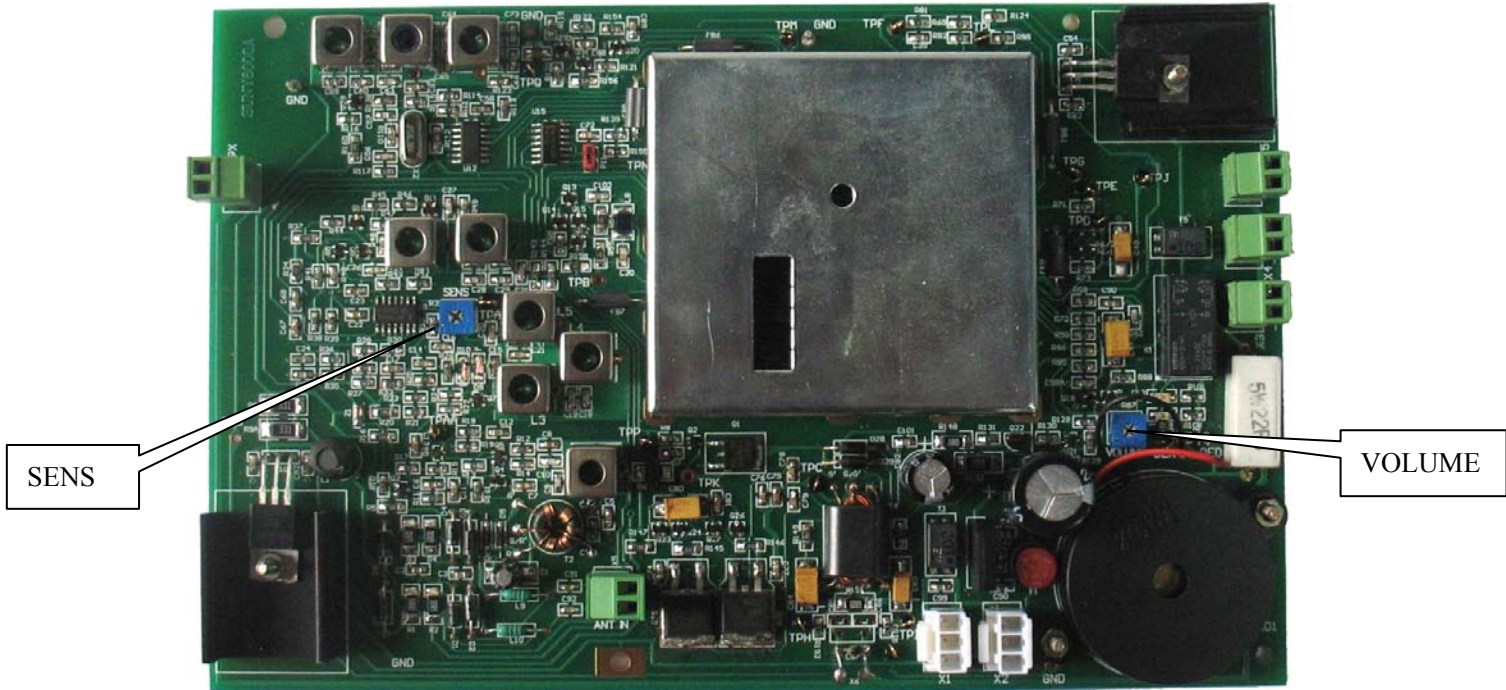
Position of the Jumpers on the Circuit Board	
P11	8.2MHz 
P6	Master 

## 2.3 Connector's Definition on the Circuit Board



Connectors	Definition
X1	Power 18V/AC IN
X2	Power 18V/AC OUT
X3	Alarm
X4	Relay
X5	Antenna Out2
X6	Antenna Out1
X7	Antenna In

## 2.4 Adjustable Resistors on the Circuit Board



Adjustable Resistors	Function
SENS	Sensitivity Control
VOLUME	Volume Control

## **3. Preparation for Installation**

### **3.1 Assurance before Installation**

1. Ascertain the reasonable project to carry out (including the project assembly drawing and quantity of equipment).

2. Check whether the equipment has the malfunction (including the antenna and the power).

3. Check the sparer and the auxiliary parts needed in the assembling.

4. Make sure the power supply is AC 110~240V/50~60Hz, which can not provide the power supply to any other equipment in any way. The cable between distributing box and the antenna can not cross with any other cable. It must be connected to the ground reliably.

### **3.2 Tools, Apparatus and Material needed in Installation**

#### **3.2.1 Main Tools**

- (1) Cutter
- (2) Strike drill,  $\Phi$  16 aiguille
- (3) Electric drill
- (4) Machine of attrition
- (5) Electric breaker

**Notice:** 3.2.1, 3.2.2 and 3.2.3 three items are necessary.

### **3.2.2 Installing Stuffs**

- (1)  $\Phi 12$  expanding bolt
- (2) PVC pipes and metal slots
- (3) Concrete
- (4)  $50\Omega$  Shielded signal cable
- (5) Shielded power cable of three cores

**Notice:** According ground of construction to select decoration stuffs.

### **3.2.3 Main Apparatus**

- (1) Cymometer
- (2) Multimeter

## 4. Installation Illustration



**Antenna**

MS series of antenna can work solely. It combines the transmitter antenna with the receiver antenna. Its valid detective area is about 80cm to its left and right.

**Notice:** When you intend to install two or more antennas, it is better to supply an antenna with only one power supply.

## **5. Installation of System**

### **5.1 First-phase Preparation**

1. Particularly understand contract, include installation place, installation equipment type, amount, special request or not.

2. Stock products from storeroom 2 days in advance, according contract promised installation time.

3. Confirm builder according construction amount.

4. Check tools and material preparation which is needed in installation.

5. Check type and amount of products according contract.

6. Communicate with consumer to confirm installation date.

### **5.2 Communication with Consumer**

1. Know the practical installation situation in field before installation, remove disturb source which might cause EAS equipment alarming. Confirm the best installation place. Negotiate with consumer as possible that slot decode board hole when order cashier.

2. Carefully communicate with consumer superintendent, explain the serviceable range, performance of chosen equipment.

3. Particularly introduce that install equipment must use

independent power supply and related request for consumer.

4. In the service process, communicate with consumer in time and sufficiently, make sure agree with consumer.

5. Persist in principles; don't casually change installation door distance follow consumer, avoid decreasing equipment performance.

6. When equipment is carried to installation field, ask consumer to arrange relative person to check and accept equipment, and sign on the receiving note.

7. Wear working card in installation field.

### **5.3 Installation Place Choice**

There are not building walls, chunk of metal goods or coiling metal wires within 0.5 meter of installation place. Point of Sells (POS), decoder, other electrical equipment and connections (data wire) should use outside range of 2 meters of installation place far from detector, electrical equipment with strong electromagnetic radiation, such as: electric welder, EMD machine, high-voltage electrical apparatus, and so on should avoid using near the detector installation place.

### **5.4 Power Supply Wire Requirement**

1. The detector power supply wire must alone draw from the

distributing box which is nearest from the installation place.

2. Forbid to install, use other electrical equipment on the power supply wire. And also should be far from other high-voltage electrical power supply wire.

3. Power supply wire should choose power supply wire which is more than 2.5 mm.

4. Power supply wire receptacle should choose AC 220V/10A triplex wires independent receptacle, choose high quality receptacle, avoid bringing high frequency electro spark when poor contact plug, causing detector working instability.

5. Power supply ground wire must ground well, ground-resistance is small than or equal to 4 Ohm.

6. Power supply wire receptacle emplace:

If the power supply wire draws from ground, receptacle installation place should be outside 1 meter of supposed installation equipment.

If the power supply wire comes from ceiling, the power supply wire and receptacle should be installed outside 2 meters of supposed installation equipment.

## 5.5 Test before Installation

After antenna equipment arriving at field, first debug the machine according to designed plan, if there are disturbs in debugging field environment, find out disturb source, make sure solving plans and install, fixture. When confirm the installation place and distance of detector, take the detector out, put at certain position, open the detector cover, connect wire between equipment according following process, then field debug:

1. The connection between antenna and power supply box. The black wire of power supply box AC output power supply wire connects with circuit board X1 line bank "18V/AC IN" input port.

2. Turn on the power and debug

When complete the equipment connections, should callback according previous process, affirm inerrability, and then insert power supply box three cores flat plug into triplex wires independent receptacle. Debug as following steps:

- (1) The indicating light of circuit board is green.

- (2) Test with 8.2M label, the detector make sound and flash alarm.

If the rare or no alarm, self-chirps, testing sensitivity low and other phenomenon, check according examining process, and then install equipment after removing disturbs.

## **5.6 Installation in Field**

When field testing process complete, turn off the power supply, draw the power supply box plug, and install system equipment according to predefined installation place and following process.

### **5.6.1 Power Supply Box Installation**

Power supply box should install vertically or horizontally, fix on walls or other fixed objects; the distance from ground is longer than 30cm.

### **5.6.2 Wiring Requirement**

The AC power supply wire and connector wire drawn from power supply box should wiring buried wire as possible, exposed wire must be fixed by holding latch; Notch (or embedded spool) on the ground between Antenna support and Power supply, so that bury power supply wire, geosyncline's surface need be covered with stainless steel bead.

### **5.6.3 Antenna Installation**

(1) Transmit Antenna Installation

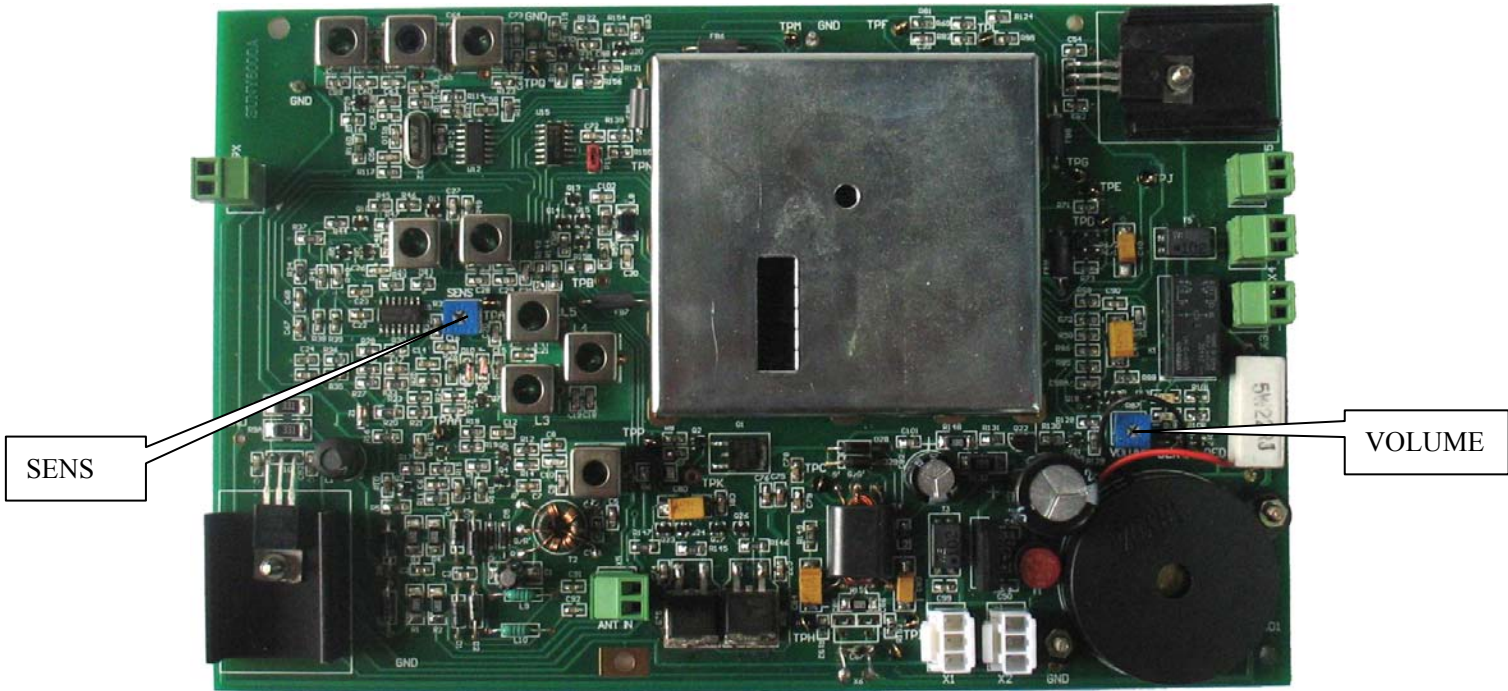
Inset the left side of the transmit antenna into the antenna connectors X6, than Inset the right side of the transmit antenna into the antenna connectors X5.



## (2) Receive Antenna Installation

Inset the receive antenna into the antenna connectors X7.

## 5.7 Equipment Debugging

### 5.7.1 Circuit Board Adjustment



Description	Function	Task
<p>SENS</p> 	Sensibility control	Increase the detection by turning in clockwise direction
<p>VOLUME</p> 	Adjustment of the sound alarm volume control	Increase the detection by turning in clockwise direction

When complete the board adjustment, should equipment debug, affirm inerrability, and then insert power supply box three cores flat plug into ripple wires independent receptacle, set the power supply box switch at "parallel " with special keys.

Debug as following steps:

(1) Power supply box indicating light on means that system power works normally, contrarily, resolve it as " simply malfunction remove " .

(2) Use standard 8.2MHz soft (hard) label, via the valid detective area.

Electronic guard against theft testing system responses quickly, makes sound and flash alarms. Resolve it as "simply malfunction remove" when the equipments not alarm or obtuse alarm. When complete the tests close the equipment cover, clean the field, and give the information and key to specially-assigned person custody, equipments place in operation.

## **5.8 Malfunction Removing**

### **5.8.1 Check Power Supply**

(1) Check the power supply indicating light (green) on the transmitter cabinet whether is on, PCB's fuse ( F1 ) is good or not, input power supply voltage is correct or not (+18V/AC), power supply connection whether is open or short.

(2) External power supply is normal or not, power supply receptacle is firm or not input, AC voltage fluctuation is large or not, AC fuses on power supply box burn out or not, and so on.

(3) Only remove all the power supply malfunction, check other malfunctions can continue.

(4) When system testing sensitivity decreasing, not alarm, false alarming frequently malfunction caused by ambience, take some anti-jamming methods to remove the malfunction.

### **5.8.2 Possible Breakdowns after the Installation**

(1) Valuminium doors which the defective structure is caused by the opening of the moulding corners. These mouldings move and the rubbings may provoke the disturbances such as distortion, permanent signal.

**Solution:** Shunt and/or cut off a small part of the defective corners, take the system away from doors.

(2) Metal framing of the ground carpet.

**Solution:** Open one of the angles of the frame (open the resonant circuit)

(3) Metallic display unit (resonance/absorption).

(4) Tags on the 220V cable and tags at proximity the antennas (tag signal).

**Solution:** Collect the tags and store them in a metal box. Move away the articles with a tag near to the system.

(5) Electric cable is in the vicinity and parallel with the antennas (interference/distorsion of the signal).

(6) Video screen (interference/distorsion of the signal).

**Solution:** Imperatively move the system away.

(7) RF system at proximity having the same carrier wave and identical modulation.

**Solution:** Change the modulation frequency.

(8) Wind of rolled up electric cable.

(9) Important metallic mass (absorption).

## **6. Training and Acceptance**

When equipment installation completes, professionals of our company will make particular use training to customer equipment manager, idiographic staff. After training, accept the equipment by the use principal and installation.

### **6.1 Training**

#### **6.1.1 Cashier Training**

(1) Working theory of EAS radio frequency guard against theft system.

(2) Working theory of decoder, how cashiers use decoder system and complete trouble-free decoder system correctly, and the importance of completing the decode working, and the kickback caused by unfinished decode working.

(3) How to use unlocked tools.

### **6.1.2 Label Installation Personnel**

- (1) Working theory of EAS radio frequency guard against theft system.
- (2) The knowledge of soft hard label.
- (3) The correct using methods and notes of soft hard label.

### **6.1.3 Protect Personnel**

- (1) Working theory of EAS radio frequency guard against theft system.
- (2) The using methods of hand detector.

### **6.1.4 Equipment Manager**

- (1) Working theory of EAS radio frequency guard against theft system.
- (2) The normally using and general malfunction removing of equipments.
- (3) Idiographic contents see consumer using specification, consumer relative principal sign on " installing acceptance record " after acceptance testing.
- (4) EAS malfunctions removing.

(5) Simply malfunctions removing.

## **6.2 Acceptance**

When there are malfunctions of system (mainly about self-chirps and not alarming).

### **6.2.1 System Can not Work**

(1) Check the system power is ON or OFF?

(2) Check the indicating light on the system support cover is ON or OFF?

(3) Dose the label paste on the metal merchandise or metal wrapping merchandise?

(4) Are there any construction equipments near the system, such as deep freezer, air-conditioning?

(5) Are there any construction equipments near the system, such as electrical equipments, incision machine?

(6) Please read request of this manual carefully and then remove the malfunction.

(7) The system is still abnormal after finishing all the previous operations, please call us.

## **6.2.2 System Self-chirps**

- (1) Is label within the 1.5 meters range around the equipment?
- (2) Do interphones work near the equipment?
- (3) Are there any large electrical equipments near the system, such as deep freezer, air-conditioning?
- (4) Are there any construction equipments near the system, such as electrical equipments, incision machine?
- (5) Please read request of this manual carefully and then remove the malfunction.
- (6) The system is still abnormal after finishing all the previous operations, please call dealers.