CREATOR®

CREATOR CORPORATION

Digital IR Language Distribution System
User Manual

V1.0

GUANGZHOU CREATOR CORPORATION

Meanings of Signs

■ Safety Precautions

There are signs in both the user manual and the equipments to indicate the hidden risk to your and others' personal safety and property. These signs are used to help you to operate the equipments safely and correctly, whose meanings are illustrated as bellow. Please be sure that you understand all of them before you start to operate the equipments.

 Warning	This is to remind the user that all the operation should be done following the instructions mentioned in the manual, or, death and body injure may happen due to wrong operation.
 Caution	This is to remind the user that the dangerous internal voltage that has not been grounded may cause electricity shock.
	Warning: in order to avoid electrical shock, please do not open the chassis, nor put unnecessary parts inside the chassis. Please contact the qualified personnel for after service.
	CE Certification: means this product has already met the designated standards by the EU, and the user can use it safely.
	SGS Certification: this means this products has passed the test of the general quality test by the biggest surveyor in Swiss.
	This product has been certified by ISO9001 International Quality Organization (German Rhine TUV）

■ **General Information Indication**

	This is to list some content which may cause unsuccessful operation or setting and some information that should be noticed.
	This is to indicate the page where related theme or material can be found.

Important Precautions

Warning

To ensure the proper function of the equipment and the safety of the user, please following the under mentioned instructions during installation, use and maintenance:

Installation Instructions

◆ Please do not use the equipment in the following environment: shaking, dusty, oily, smoky, conducting dusty, filled of corrosive gas and flammable gas. Also, please don't expose the equipment to high temperature, condensing, wind, rain. Electrical shocking, fire and wrong operation can also damage the product.

◆ When screwing and cabling, please don't drop the sweepings and wire leads into the controller's vent hole, or, fire, malfunction and wrong operation may be caused.

◆ After the installation, please be sure that the vent hole is not been blocked, or, the heat will not be yielded properly and fire, malfunction and wrong operation may be caused.

◆ Please don't wire or plug/unplug the cable while it's still live, or, electrical shock and circuit damage may happen.

◆ The installation and wiring should be stable, and the poor contact may cause wrong operation.

◆ In the place where sever interference exists, shielded cable should be used as the I/O cable for the high frequency signal to improve the transmitting quality.

Wiring Instruction

◆ Before the installation and wiring, please cut all the power supply, or electrical shock or damage to the equipment can be caused.

◆ This product should be well grounded before using.

◆ After the installation and wiring, all the sundries should be cleaned up, and the covers and panels should be put back and fixed well in order to avoid electrical shock.

Operation and maintenance instruction

◆ Please don't touch the connectors when they are electrified, or electrical shock or wrong operation may happen.

◆ Please cut the power first before cleaning the cleaning and winding up the connectors. Operation when they are electrified can cause electrical shock.

◆ Please cut the power first before wiring or disconnecting the communication signal cable, extension modules or control units, or damage can be caused to the equipments.

◆ Please do not dismantle the equipment to avoid damages to the internal components.

◆ Please read this manual carefully, and ensure that all your operations are safe before changing the program, debugging the program, turning on the system and stopping the operation.

◆ The button cell can only be replaced when the equipment is not electrified. If the replacement has to be done with the electricity is on, it should be operated by professional person with insulating gloves on.

Product Disposal instruction

When disposing the product, please take the following instructions:

◆ The explosion of the electrolytic capacitor: the electrolytic capacitor on the PCB can explode in burning.

◆ Please collect and sort them out by class, and they cannot be disposed into home scrap.

◆ Please dispose them as industrial waste, or according to the local environment protection policies.

Preface

‘‘Digital IR language distribution system user manual’’ mainly introduces the way of operation, main specifications and the frequently seen malfunction elimination methods for CR-IR3000 (digital IR language distribution system controller), CR-IR3001 (digital IR radiating panel), and CR-IR3002-8/16 (digital IR receiver).

This manual is provided with the intent to provide operation instructions, not for maintenance. Changes and updates may be applied to this manual after it was issued, please check with the manufacturer or your distributor for the latest version.

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Menu

Chapter One Overview 1

1.1 About 1

1.2 Equipments 1

1.3 System Advantages 1

1.4 Factors that affect the IR radiation 2

1.4.1 the directivity of receiving and emitting 2

1.4.2 The relation between the radiating panel and the seats arrangement 3

1.4.3 The surface of the walls, ceiling, floor and curtain 4

1.4.4 The coverage of the radiating panel 4

1.4.5 Floor area of overlapping and multi-path effects 5

Chapter two System Controller 6

2.1 Overview 6

2.2 Features 6

2.3 Installation 6

2.4 CR-IR 3000 panels illustration 7

2.5 Connection 8

2.5.1 Connected to CR-M5101 8

2.6 Control and indication 8

2.7 Interconnection 8

2.8 Physical features 8

2.9 Electrical features 9

Chapter Three IR Radiating Panel 10

3.1 Overall description 10

3.2 Features of Radiator 10

3.3 CR-IR 3001 Front Panel 11

3.4 How to allocation the system 11

3.4.1 The installation of the radiating panel 11

3.4.2 Wiring of the radiating panel 12

3.4.3 Rectangle Coverage 13

3.5 Installation steps of radiating panels 13

3.6 Delay switch Settings 13

3.6.1 How to calculate the delay 14

3.7 Installation of the radiating panel 14

3.8 Connection between the radiating panel and the controller 15
3.9 Control and indication 15
3.10 Interconnection 15
3.11 Physical features 15
3.12 Electrical features 15
Chapter Four Digital IR Receiver 16
4.1 Overall description 16
4.2 CR-IR 3002-8/16 Front panel 16
4.3 CR-IR 3002-8/16 features 16
4.4 Operations of the IR receiver 17
4.5 Controllers and Indicator 17
4.6 Interconnection 17
4.7 Physical Characteristics 17
4.8 Electrical and optical properties 17
Chapter Five Accessories 18
5.1 Charging Box 18
5.2 Receiver Charger 18
5.3 Earphone 18
Chapter Six Frequently seen malfunction and maintenance 19

Chapter One Overview

1.1 About

CREATOR independently developed this system, which applies full-digital modulating technology. With this system, the translator simultaneously interpreting the language according to the speaker's original voice and the translated languages are transmitted to the whole meeting hall via modulated IR and can be received by the delegated with the earphone and the IR receiver with preferred channel on the language they understand.

Digital IR language distribution system is a system using IR to transmit voice. Because light travels in straight lines, there is no signal outside of an enclosed room, thus, it has very good confidentiality. Within the room, due to the scattering and diffusion of the IR light on the surface of the wall, floor, ceiling, the IR signal will form a compact light net. As long as it is within the range where the IR light can cover, the receiver can be allocated randomly.

This system can also be used for other applications, such as music distribution. It has high precision working frequency, stability, high confidentiality, and is interference and eaves-dropping proof. This system can be applied in international meetings halls from small to large scale, or in multi-language education organizations.

1.2 Equipments

CREATOR language distribution system include：

Digital IR radiating controller

CR-IR3000 controller

Digital IR radiating panel

CR-IR3001 IR radiating panel

Digital IR receiver

CR-IR3002-8 8 channels uni-channel audio receiver

CR-IR3002-16 16 channels uni-channel audio receiver

Earphone

CR-P2 Headphone

Charging Box

CR-40C Charging box

The system can be composed of one or more of the above mentioned equipments.

1.3 System Advantages

Digital IR language distribution system includes controller, radiating panel, IR receiver and charging box. The controller encoding the audio signal, compresses, modulate it to many carrying waves and then transmit it to the radiating panel. The radiating panel emits the carrier signal via IR light. The IR receiver receives, modulates and converts the signal into audio output or other data. They have the following advantages:

- **Apply simultaneous interpretation**

  It is vital important to allow every delegates hear clearly in a multi-language conference system, thus, a simultaneous interpretation system is a necessity. The translators translate the original language, then the translated language is distributed all over the whole meeting hall and the receiver select the language they need and can hear it with the earphone.

◆ **Using IR to transmit**

IR is part of the electromagnetic radiation spectrum, which includes visible light, radio wave and other radiation wave. The wave length of IR is longer than the visible light, thus, IR cannot penetrate the walls and ceiling. In this way, the confidentiality of the meeting can be ensured, tapping and interference can be avoided. CREATOR's IR language distribution system uses the IR modulated by DQPSK to transmit the signal. At the same time, this system also needs radio frequency permission.

◆ **Advanced digital technology**

Full-digital DQPSK modulation technology has been used to gain high frequency usage and strong anti-interference ability.

The system applies full-digital audio processing technology to ensure the high audio quality, eliminate overhearing between channels and noise etc.

◆ **Free from the interference of fluorescent light**

The traditional IR language distribution system is easily interfered by the fluorescent light. CREATOR has applied unique technology and has solved this problem thoroughly. It works on 2-6MHZ frequency, and avoided the interference from various kinds of lighting sources.

◆ **Flexible channel selection**

CREATOR has left huge flexibility to the users while designing the channels, and has provided 16 general quality audio channels. (15 different translation channel + 1 original voice). The general quality channels take smaller bandwidth and can be used to transmit audio signals.

◆ **Flexible and convenient using methods**

Using the IR system gives the delegates the freedom of going around the whole meeting room., because the signal transmit in the air, and the system has no physical connection, thus the activities can only be limited by the walls of the meeting room. The IR receiver is light and delicate, which can be put in the pocket of the user's T-Shirt or coat.

◆ **Simple Installation and maintenance**

The system is easy to install (the time it takes depends on the allocation and correction of the radiating panels). The only job to be done is connect the equipments together, and maintenance is just charging.

Once the installation is finished, the system can be expanded any time. If the meeting scale enlarges, what have to be done is just add more IR receivers in to the system, and the basic structure doesn't have to be changed.

1.4 Factors that affect the IR radiation

1.4.1 the directivity of receiving and emitting

CREATOR digital IR distribution system has wide receiving angle, which can allow the receiver to get perfect sound quality no matter how they are placed. Please check Fig.1-1.

CREATOR radiating panel's cover area is a ellipse, which means as the distance gets larger, the dimension of the radiation area gets larger till a certain limit is reached. Please check the Fig.1-2 "radiating panel coordinate illustration.

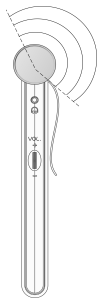


Fig1-1 IR receiver 's best receiving range

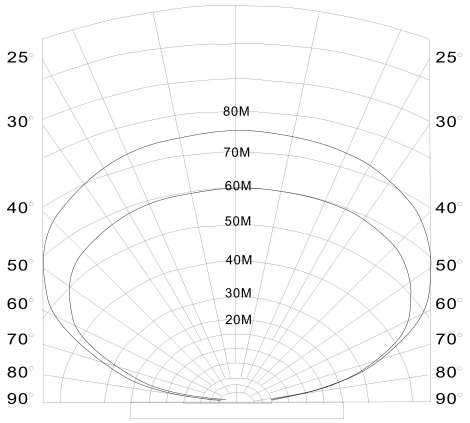


Fig.1-2 radiating panel coordinate illustration

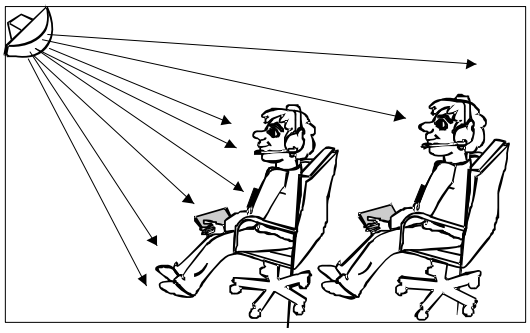
1.4.2 The relation between the radiating panel and the seats arrangement

If the receiver is accurately directed to the radiating panel, the receiver can get the best effect signal. If the radiating panel or the receiver gets off the light axe, the received energy will descend. But within, as long as there is no direct screen between the receiver and the radiating panel (for example screened by the delegate's body or other objects), the energy can still be sufficient.

To ensure the best signal transmission, the allocation of the radiating panels has to be suited to the seats' positions. The ideal way is to have the radiating panel emit directly onto the seats. This is one way of designing the installation solution.

Obviously, we should prefer the way of installation shown in Fig.1-4. But in actual installation, the way shown in Fig.1-4 can hardly be achieved, and then, we need employ the help of reflection to achieve the full cover of the signal.

In Fig. 1-5, this delegate's receiver can not only receive the direct emit from the radiating panel but also the reflected signal from all directions. In this situation, the reflected signal can strengthen the signal. In Fig.1-6, this delegate receives only reflected signals, and the signal he gets in this situation is relatively weaker, but sufficient enough. In order to avoid people's screening of the IR signal, the installation height of the radiating panel should be higher than 2.5m.



F.1-3. Installation with obstacles

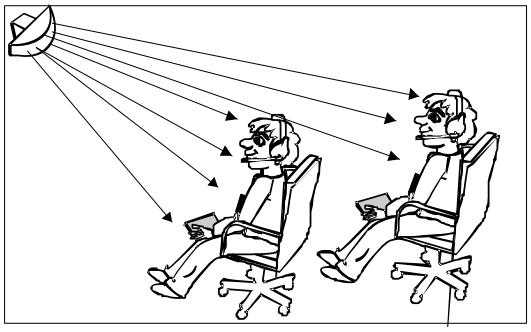


Fig.1-4 installation without obstacles

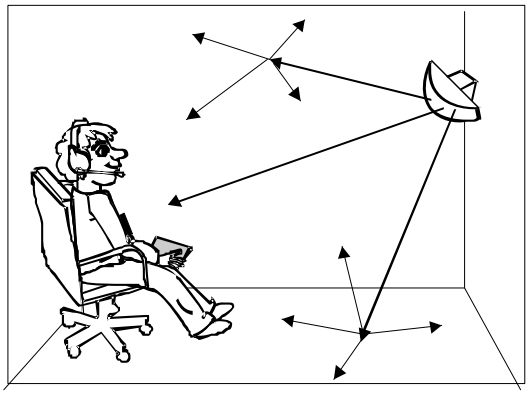


Fig.1-5. Direct emission and reflect

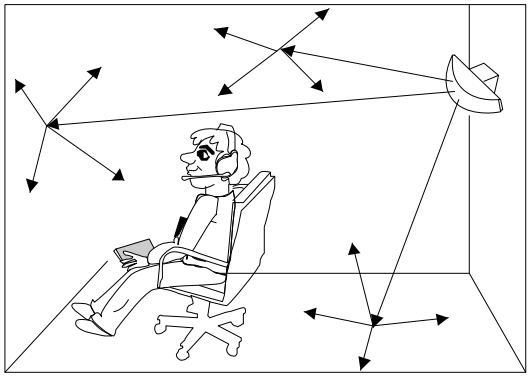


Fig. 1-6 Reflect

1.4.3 The surface of the walls, ceiling, floor and curtain

IR is just like visible light, and can be reflected by shining, smooth surface and absorbed by dark, rough surface. The reflected light generally can help by transmitting signals, and won't cause any damaging interference. In a room with shining, smooth surfaces, the required power of the radiating panel is lower than the room with dark, rough surfaces, as curtain and carpet.

Otherwise, the reflecting effect can be very different when the texture of the floor is different: the shadow of the walls and furniture can interfere the IR transmitting. But if we use enough radiating panels and allocate them properly, this problem can be solved. At the same time, it should be noticed that the radiating panels cannot positioned to face the windows without curtains, which can reduce the radiating effect. As shown in Fig. 1-7, there is difference in the reflection effects for floors of different texture.

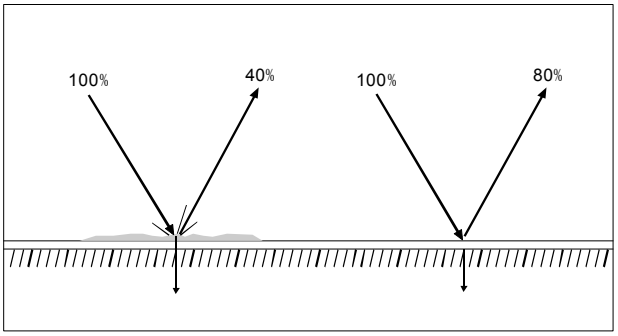
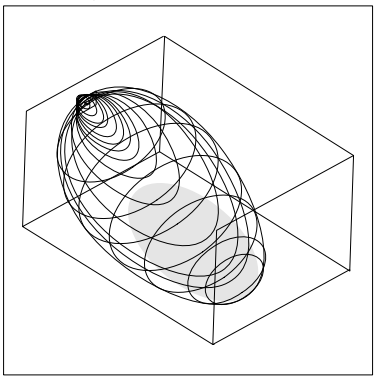


Fig. 1-7 there is difference in the reflection effects for floors of different texture.

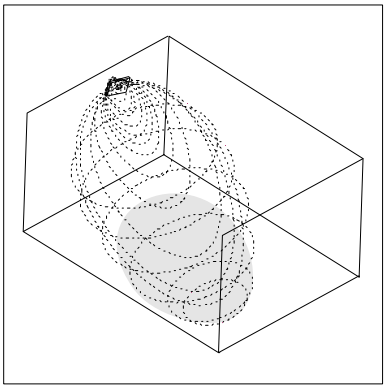
1.4.4 The coverage of the radiating panel

In the system, the coverage is decided by radiating controller's carrier wave and the radiating panel's output power, and the coverage will be enlarged when there are more radiating panels. The radiating panels' total radiant intensity is allocated in the controller according to the amount of the carrier wave, and when the used carrier wave increase, the coverage's percentage will decrease accordingly.

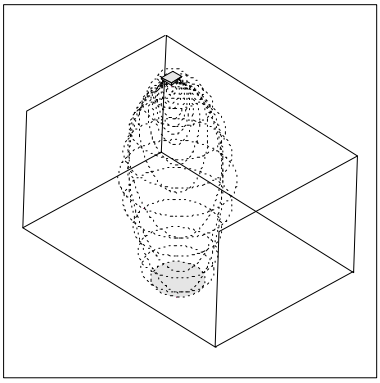
As shown in the following figure (the white part),the crossing area of the radiation allocation area and the receiving area of the people's receiver is the coverage. Within the coverage area, if the radiating signal can reach the receiver directly, the intensity of the direct signal can be enough to be received. Here the following are some illustration figures for installation for your reference:



15°installation figure



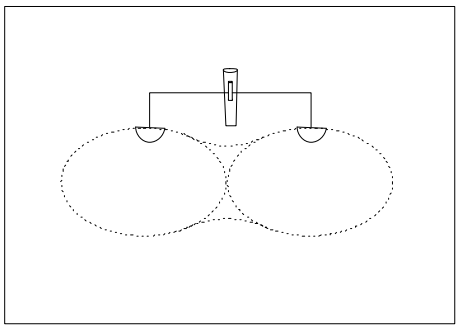
45°installation figure



90°installation figure

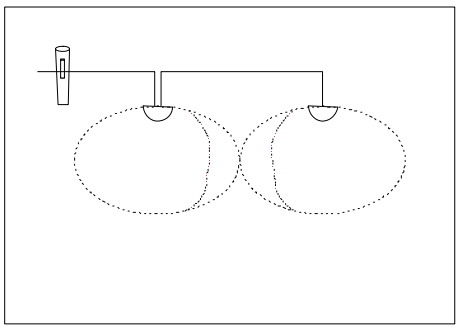
1.4.5 Floor area of overlapping and multi-path effects

The installed radiation board in meeting room, if was overlapping, the overall coverage may be greater than the radiation of two separate panels. Radiation intensity is greater than the area needed.(As shown in the Figure)



The added area increases the coverage

The receiver machine receive signal from many radiation boards. It may be offset by delay, or can't receive signal at all. Signal delay can be compensated by radiating panel switch delay compensation.



The signal delay reduces the coverage area

Chapter two System Controller

2.1 Overview

CR-IR3000 IR radiation host is the main part of the digital IR distribution system. To transfer the simulation audio, compress code, full digital DQPSK transfer. The system can send 16 kinds of languages. IR radiation host can be installed on 19-inch standard rack, the easy storage and safekeeping.

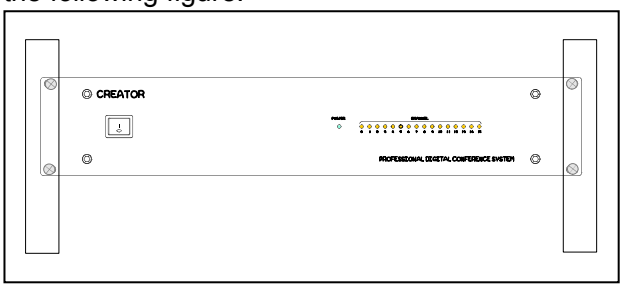
2.2 Features

1. basic on IEC61603-7 and IEC60914
2. use digital DQPSK technology
3. High-speed DSP processing.
4. The higher transmission frequency (2-6MHz, IEC61603 BAND IV), Interference from high frequency driver source.
5. With input level indicator, the host front panel of LED lights to display the corresponding channel input state.
6. With 16 external audio input.
7. With 16 audion output,can be used to connect monitoring or recording.
8. With 4 signal output to connect radiations.
9. Power input AC 100V-240V ,50-60Hz, the factory have been high voltage (3500V) test, to ensure compliance with safety standards.
10. Host shell material, circuit and enclosure are to strengthen the connection with the ground to ensure that have the ability to be anti-static 8000V.

2.3 Installation

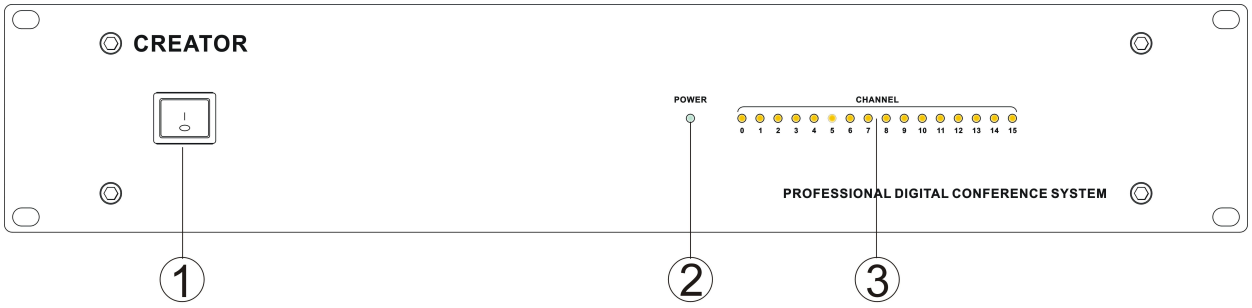
The system controllers are made of metal and work with many other equipments.

Furthermore, the system controller can also be installed on standard 19'' cabinet, as shown in the following figure.

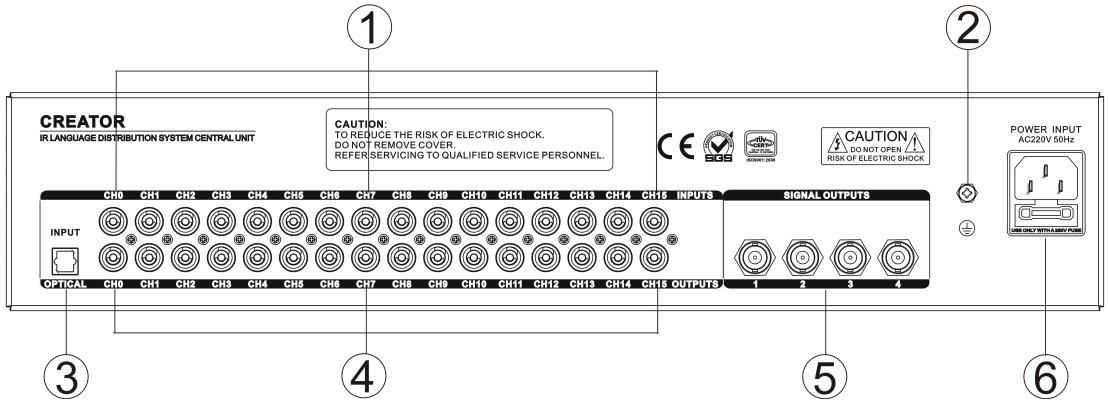


2.4 CR-IR 3000 panels illustration

Front panel



Back Panel



Front panel

① On/Off

② POWER
System Power Indicator

③ CHANNEL
Chanel Signal Indicator. There will be 16 signal indicators based on the different models. The indicator will be light when the corresponding channel is transmitting voice.

Back Panel Illustration:

① INPUTS
Audio channel input, to provide 16 channels of audio input to be connect to the outer audio signal.

② Ground Line

③ OPTICAL
Optical audio input interface for extension.

④ OUTPUTS
Audio output interface, providing 16 audio Signal output to recording and PA system etc.

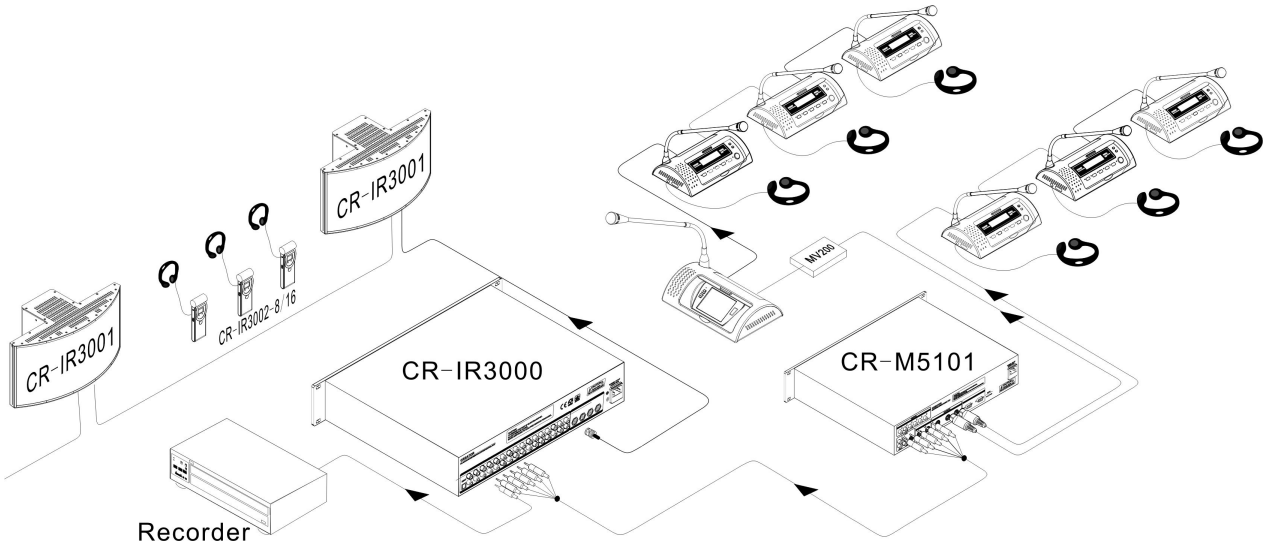
⑤ SINGAL OUTPUTS
IR radiating panel interface, adopting BNC socket, providing 4 groups of interfaces to be connected to IR radiating panel.

⑥ POWER INPUT
System Power input interface, support AC100V-240V 50Hz/60Hz, self-adaptive.

2.5 Connection

2.5.1 Connected to CR-M5101

The IR digital language distribution system's connection is similar to the CREATOR intelligent conference system, here we take CR-M5101 as the sample, and the connection is as follows:



1、After connected to CR-M5101, the system control unit can host maximally 128 units system units, and with extension system control units, one conference system can host maximally 4096 units.

2、Support 16 cascading extension system control units

3、Maximally 36 interpretation unit can be hosted by one system control unit

2.6 Control and indication

◆ Power switch

◆ There are power indicator and 16 ways signal indicator

2.7 Interconnection

◆ International standards have been adopted to ensure global compatibility.

◆ 4 BNC socket for outputting signal to 30 radiating panels

◆ 16 ways RCA interfaces for inputting unbalanced audio signal

2.8 Physical features

Installation	To be installed into 19 inch cabin or put on the desktop There are equipment feet which can be dismantled and are easy for using on desktop
Dimension	483L x 344W x 88H （mm）
Weight	About 6KG
Outer decoration	Back

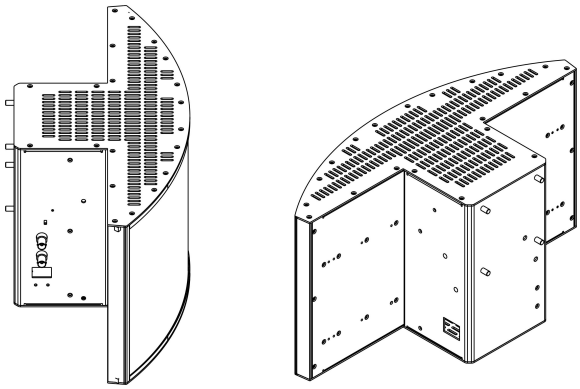
2.9 Electrical features

Power	100-240V
Power consumption	5W
Carrier wave frequency	2M—6MHz （BAND4）
Signal output	2V-VPP
Min audio output	20mV-VPP
Max audio output	4V-VPP

Chapter Three IR Radiating Panel

3.1 Overall description

The IR radiating panel is high power IR radiating equipment used to receive the carrier wave signal from the IR system controller and emit the signal in the form of IR. It support hand-in-hand connection and there can be maximally 30 radiating panels connected together.



3.2 Features of Radiator

◆ Super radiation area,maximum up to 76 meters。

◆ Cable delay compensation.

◆ High efficiency IR radiation, the power consumption is only half of its peer products at the same radiation intensity

◆ Standby function: when there is no signal for the radiating panel or the controller is not outputting signal, the radiating panel will enter standby mode, and the power consumption is only 3W.

◆ Radiating intensity reducing to half value function: reducing the signal power to suite the application in small environment

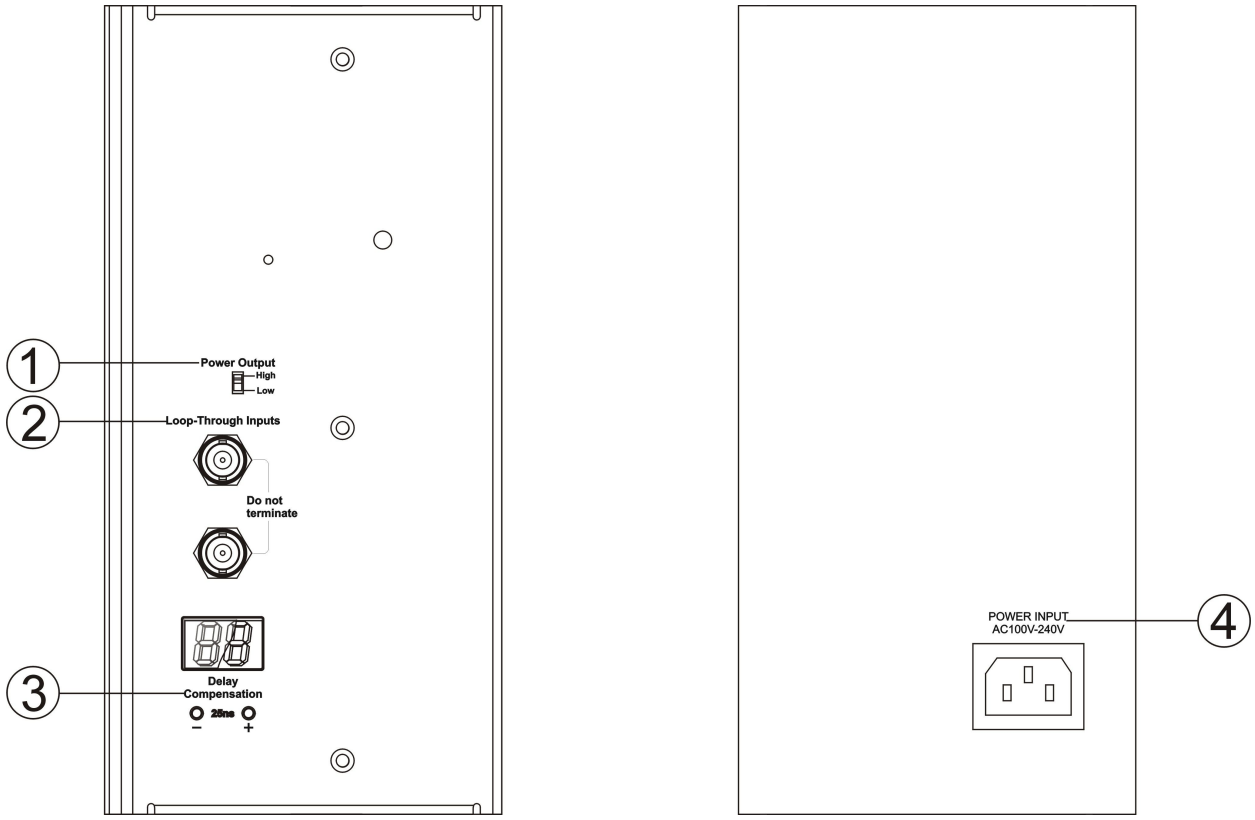
◆ Adopting arch structure to provide a wide angle and cover area

◆ Adopting “hand-in-hand” connection to realize cascading connection of many radiating units

◆ Half-value radiating angle: 25°。

◆ Light-weighted & durable

3.3 CR-IR 3001 Front Panel



① POWER OUTPUT

Switch for the power of the radiated signal.

② LOOP-THROUGH INPUTS

Connected to the system controller's SINGNAL OUTPUTS interface or the former IR radiating panel's output interface.

③ DELAY COMPENSATION*25

Delay composition adjusting button, "+" is to delay increase, "-" is to delay decrease. The value for adjusting will be displayed on the LCD above the button.

Delay composition range: 00~99, that is, from 0（0*25）ns to 2475ns（99*25）

Cable delay coefficient:5.6ns/m，please refer to the cable's specifications for details.

☞ 3.6 "settings of the delay button"

④ Power input interface: AC100V~240V 50Hz/60Hz input

3.4 How to allocation the system

3.4.1 The installation of the radiating panel

The IR can reach the receiver by direct reflection or diffused reflection. In a conference hall, the delegates who sit behind others will not receiver IR signal if it has been screened by the front row of seats, which has to be taken into consideration when allocating the radiating panel. Thus, when the radiating panel should be installed as high as possible, and generally the height should be more than 2.5m and the radiating panels should face the whole conference hall from various directions to make sure their radiating area can cover the whole place.

If the radiating panels are installed highly enough, the signal intensity of the received IR signal will not decreased to zero in the shadow

area, because IR can be reflected (same as the visible light).

When the radiating panels cannot be installed onto the existing ceiling, walls or bearing structures, they must be installed according to the above mentioned rules to ensure the proper signal transmission.

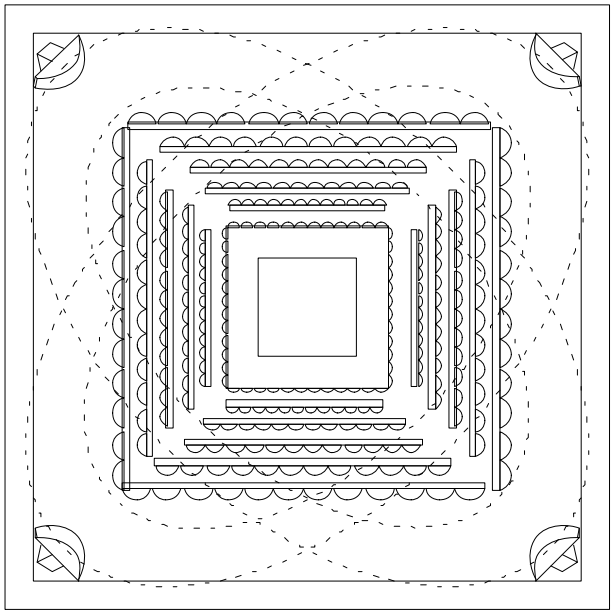


Fig.3-1 Square IR converage

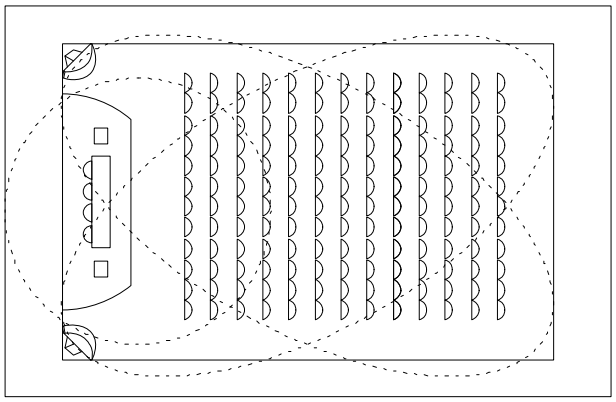


Fig.3-2 Audience seats and chairman seats coverage

If there are IR barricades in the room, extra radiating panels should be added to increase the radiation to ensure the normal transmission of the signal.

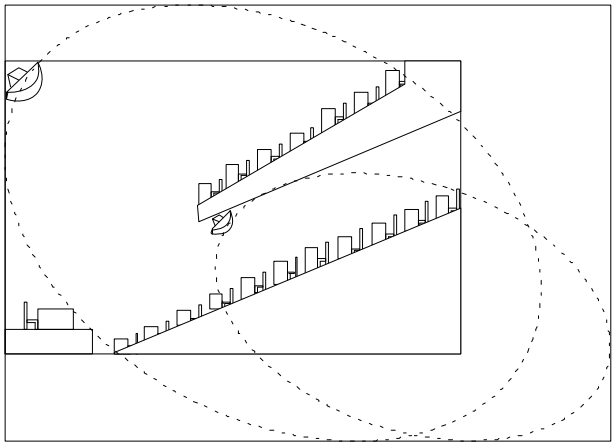


Fig. 3-3 “IR Coverage in “blind Area”

3.4.2 Wiring of the radiating panel

The signal’s delay can be caused by the distance difference between the system controller to the different radiating panels. In order to avoid “blind spot” , please choose the cables that are of same length.

The cable delay can be compensated via the signal compensation button inside of the radiating panel.

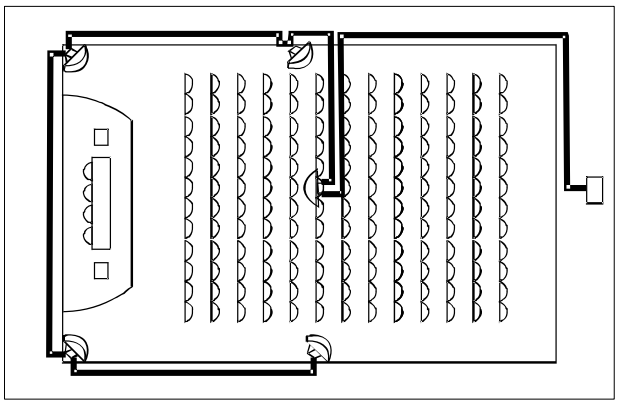


Fig.3-4 Non-symmetrical connection, should be avoided

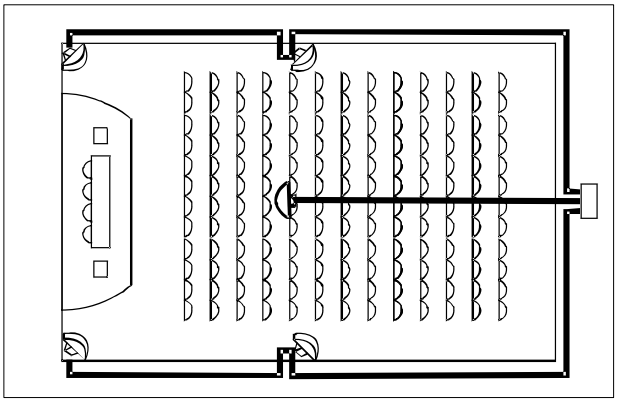


Fig. symmetrical connection (preferred)

3.4.3 Rectangle Coverage

The actual required number of the radiating panels can only be determined by field test, but using “rectangle coverage” can ensure a very close guess.

Fig.3-6 and Fig.3-7 explain what is the “rectangle coverage”, from which we can see that the rectangle coverage is smaller than the total coverage. Notice: in Fig.3-7, “deviation value” X is negative and the rectangle coverage is actually bigger than the actual coverage.

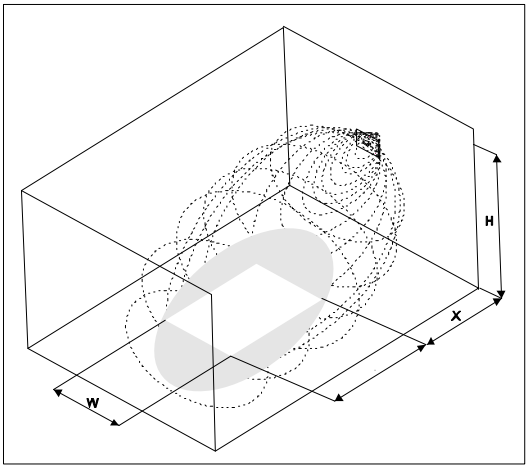


Fig.3-6 15°installation: typical rectangle coverage

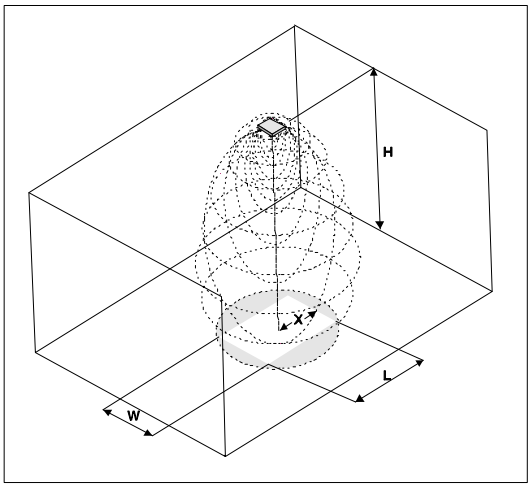


Fig. 3-7 90°installation’s typical rectangle converage

3.5 Installation steps of radiating panels

◆ Take the instructions mentioned in section 1.4 to decide the positions of the IR radiating panels

◆ Draw out the rectangle coverage in the layout draft of the room

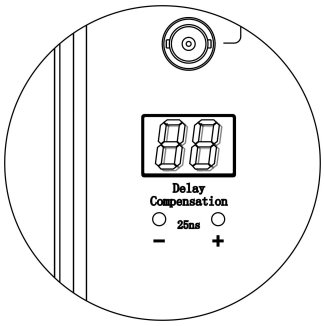
◆ If there are some areas which can receive signal from two neighbor radiating panels, it means that there is eclipsing effects. Draw out the enlarged rectangle coverage in the layout draft.

◆ Check whether the radiating panels have full coverage to certain spots; and if not, extra radiating panels should be added.

3.6 Delay switch Settings

In section 1.4.6, there is “overlapping multi-path effect”: the receiver receive signal from two or more radiating panels, and “blind spots” can be caused due to delay difference.

In order to compensate the delay difference, the delay switch on the side of the radiating panel can be set to increase the corresponding panel’s delay. The LCD can display from 00 to 99, and the digit is timed by 25ns, ie. The delay time can be set is from 25ns to 2475ns (99*25).



3.6.1 How to calculate the delay

When there is only one system controller and all the radiating panels are connected to the controller with the cables that are of same length, there is no delay to be considered. Under this situation, all delay switches on all the radiating panels should be set as 00, and the need of delay signal should be confirmed.

Use the delay of the radiating panel whose distance to the controller is the farthest, and then use "+" and "-" to adjust the delay of the other radiating panels to make sure every radiating panel have the same delay.

Formula：$X=\frac{(L_{MAX}-L)\times 5.6}{25}$

◆ Cable delay coefficient 5.6ns/m；

◆ X：The displayed delay compensation factor

◆ L_{MAX}-L：The max distance (meter) between the controller and the radiating panel;

◆ L：the distance between the radiating panel and the controller(meter);

Follow the steps to measure the length of the cables to determine the settings of the delay switch:

◆ Measuring the cable length from the distribution host to each radiation board L;

◆ Make sure the maximum distance from the distribution host to each radiation board L_{MAX};

◆ Calculate the difference from L to L_{MAX}

◆ Cable length with a calculated by multiplying the cable signal delay difference between the rate of radiation on each panel can be drawn to the cable signal delay difference

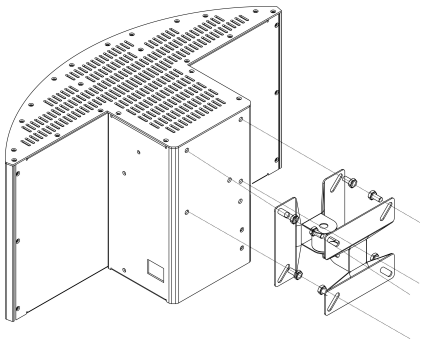
◆ In addition to the signal delay in 25 poor, in addition to be an integer (rounded)
Radiating board delay compensation switches to set parameters.

◆ If necessary, to overlapping coverage areas, away from the overlapping coverage area closer to the delay of radiation panel switch settings parameters do increase, as the radiation signal delay compensation

◆ In accordance with the calculated setting parameters to set the delay switch

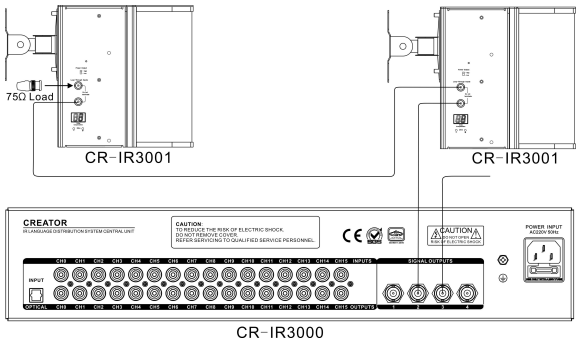
3.7 Installation of the radiating panel

Infrared radiation panel can be installed on walls or ceiling, with the package with a mounting bracket and screws, install as shown below：



In determining the installation location before, need to ensure smooth airflow around the unit of radiation, radiation unit to avoid the phenomenon of high temperature.

3.8 Connection between the radiating panel and the controller



Attention: When cascading the radiating panels, the BNC connector of the last panel in the cascading chain which is left unused should be connected to a load resistance of 75Ω in order to match the impedance to avoid signal reflex.

3.9 Control and indication

◆ 2 delay compensation button on the transmitter to the radiation panel with different cable lengths between the different compensation.

3.10 Interconnection

◆ Output socket (2XBNC), used to connect the transmitter and the next station radiation panel cascading.

3.11 Physical features

Dimension	453(L)X230(W)X208(H)mm
Weight	About 7KG
Exterior	Gray Black

3.12 Electrical features

Power Supply	AC100-240V
Transmit power	36W
RF input	Impedance： 10kΩ， Margin： 00mV－3V
Maximum cover distance	76 meters
Automatically open the switch threshold voltage	100mV RF signal

Chapter Four Digital IR Receiver

4.1 Overall description

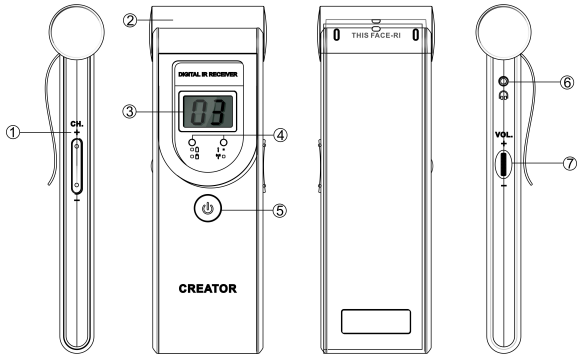
Using the latest electronic technology, the use of specialized chips to ensure the best performance and longest battery life, according to ergonomic design of the infrared receiver to receive IR signals can be very good. With channel selection functions and volume level adjustment function, the power switch control, and battery power, signal indicator, when the receiver receives less than 5 minutes continuous signal or unplug the headphones will automatically shut down after 5 minutes.

CREATOR produces two kinds of digital infrared receiver:

CR-IR 3002-8 8 channels IR receiver

CR-IR 3002-16 16 channels IR receiver

4.2 CR-IR 3002-8/16 Front panel



① Language receiver channel selection,

② infrared receiver window for receiving infrared signals,

③ screen display language channel,

④ Power indicator. Power to use more than two hours were green; When the power use of time than 2-hour red; when the speed but no power flashing red state, the final shutdown,

Signal light, when you can not receive the signal light is orange, when to receive the signal when the lamp is off, sometimes I receive, sometimes can not receive, lights flashing,

⑤ Off button. Key press, start; long press the power switch button for 2 seconds, off.

⑥ headphone jack (3.5mm), headphone connection,

⑦ Volume control buttons,

4.3 CR-IR 3002-8/16 features

◆ Comply with IEC 61603-7and IEC 60914.

◆ Full digital DQPSK Digital demodulation.

◆ The higher transmission frequency (2-6MHz, IEC61603 BAND Ⅳ), Interference from high frequency driver source

◆ Push-button channel selection, can receive 8 / 16 audio channels

◆ With large-screen LCD display channel number, battery and signal status indicators

◆ Available to adjust the volume.

◆ No noise, When the signal is too low, automatically mute the signal to ensure that users receive only high-quality signal.

◆ Design sophisticated smooth, wear-resistant, can be the receiver hung on the chest, but also on

◆ the jacket pocket, easy to use and flexible

◆ Not subject to seating capacity restrictions, the meeting on behalf of the signal transmission within the scope of any move

◆ In the effective range of infrared radiation, the receiver unit increase in the number of unrestricted

◆ When the receiver receives less than 5 minutes continuous signal or unplug the headphones will automatically shut down after 5 minutes

4.4 Operations of the IR receiver

IR receiver can be plugged in headphones work, plug your headphones into the receiver's headphone jack, press the power switch button, LCD screen displays channel, using channel selection buttons "+" and "-" to select the desired channel to listen.

In the work, such as signal failure, the receiver will automatically mute on headphone output, not more than five minutes to receive infrared signals, the receiver automatically shut down, not consume electricity.

When the headset and the receiver is disconnected after 5 minutes did not plug headphones straight to receive will automatically shut down.

Receiver using disposable batteries environmentally-friendly rechargeable battery or batteries, the battery is installed, follow the instructions to install the polarity of the battery slot.

4.5 Controllers and Indicator

◆ 2 of the LCD indicator to indicate channel number；

◆ On/Off Button；

◆ Slider-type volume adjuster；

◆ Channel + / - Select button；

◆ The LED power indicator；

◆ Signal status LED indicator

4.6 Interconnection

◆ 3.5mm（0.14 inch）Headphone output jack

◆ AA Alkaline battery joint

◆ Battery jack

4.7 Physical Characteristics

Dimension	163L x 50W x 33.5H (mm)
Weight(include the battery)	250g
Weight(not include the battery)	225g

4.8 Electrical and optical properties

Power Supply	Built-in lithium battery,3.7V/750mA
Receiving Frequency	2M-6MHz
Total harmonic distortion	<1%
Frequency response	20~10KHz
Maximum SNR	> 80dB
Power consumption	80mw

Chapter Five Accessories

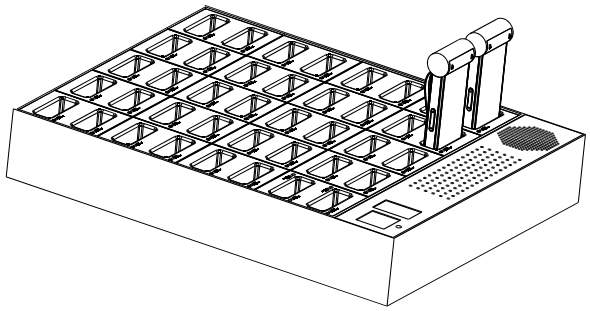
5.1 Charging Box

Digital Infrared Receiver charging me only for charging function, but also can be used to store infrared receiver, using special design, when the receiver stored in the charging box, move, or shake the box the receiver will not be affected.

Will be placed in charge CR-IR3002-8/16 box, if the receiver of the light is red state, on behalf of CR-IR3002-8/16 is charging, the battery indicator light is green you have enough.

Receiver charging indicator light is red (ie more than 8 hours) to check the contacts on the receiver contact with the charger is good contact. Full electric light should be green.

Charging Box



Features：

- Charge for 40 sets of receivers.
- Universal Power Supply
- Function of power input is connected in series
- Fast charge: up to 5 hours charging time.
- In addition to charging box charge, it can also function with stored receiver.

Controllers and indicators

- On/Off
- Charge state in the receiver direction.

Interconnection

- Electric power supply in series Interface: European type, Yang-style socket
- 40 Charge contacts.

Technical Specification

Dimension	494LX395WX112H（mm）
Weight	About 5kg
Power consumption	100W
Power Consumption (standby)	17W(Without receiver charge)

5.2 Receiver Charger

Model：ICR 14500
Weight：30g
Voltage：3.7V
Capacity：750mAh



5.3 Earphone

- Unit can be used to monitor the meeting.
- During the meeting the system can avoid the use of Effects from others.
- Comes with 1.5 m long Connection.
- High-fidelity sound.



Technical parameters

Unit interface	3.5mm Mono plug
Frequency response	30Hz – 16KHz
Sensitivity	90dB
SNR	> 80dB
Distortion	< 0.1dB
Impedance	32 Ω
Dynamic Range	> 85 dB

Chapter Six Frequently seen malfunction and maintenance

1、 Host power indicator does not light

Check the power switch is closed, equipment power input is a good contact.

A: switching power supply there are two key characters, a "O" and "I" word, when the "O" word side of subsidence, "I" word side of the upturned, on behalf of the unit is turned off, and vice versa are turned on.

B: Check whether the connections are secure socket connection, or disconnect the power cord from the new re-plug in to determine the connection properly.

2、 when the plug serial port or connection cable interface, a significant electrostatic

Possible without a good grounding equipment power ground, press the correct way to ground, otherwise easily damage the system, reducing the host life.

A: due to the host using a 100-240V switching power supply, the better to prevent static electricity, attention must use a grounded three-core power cable, do not use the two-core power cable.

B: Check the local power outlet ground terminal is a good grounding.

3、Radiation panel indicator does not light

Please check the power cord is connected properly with the radiation panel.

4、Receiver abnormal working

A: If you use the battery, check battery is sufficient, if installed correctly.

B: If you use rechargeable batteries, check whether the charge to saturation.

C: Check the headset and the receiver is connected properly.

D: Check whether the receiver can receive the infrared signal of sufficient strength.

E: Check the volume is turned on, and opened to the maximum volume.

F: Please avoid direct rays of the receiver with a strong light, such as: not blasting dew in the sunlight.

G: If the receiver with noise or sound is distorted, adjust the receiver and the radiation panel or adjust the distance between the receipt of direction.

5、 When Receiver charging

When the receiver into the charging box CR-IR3002-8/16 when the receiver was red and green lights flashing, please check the contacts on the receiver contact with the charger is good contact, back into the fixed, to be directed flashing red light when the state, the receiver is in charge state.

The same time, charging indicator light does not shine, need to check the receiver inside the battery is installed properly.

Receiver needs to check whether the temperature anomaly.

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