

GONSIN

TC-RF04/08/12/16

DSSS Simultaneous Interpretation System

*The world's first digital RF system for multi-channel language distribution
using advanced DSSS technology and unlicensed 2.4GHz band*



Gonsin Digital Conference Equipment Co., Ltd.

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TC-RF04/08/12/16

DSSS Simultaneous Interpretation System



GONSIN TC-RF04/08/12/16 DSSS simultaneous interpretation system utilizes the worldwide license-free 2.4GHz ISM frequency band and incorporates the state-of-the-art Direct Sequence Spread Spectrum (DSSS) technology to deliver CD quality sound, provide excellent immunity from both noise and interference, and insure high security against unauthorized listening.

The system is designed to offer distortion-free wireless communication for simultaneous interpretation and language distribution in 4/8/12/16 different channels, with operating range of 50 to 200 meters, ideally suited for use in business and government conferences, international conventions and other multilingual applications indoor and outdoor.

Typical Applications

- | | | |
|----------------------|-----------------------|---------------------|
| ★ Convention centres | ★ Parliament chambers | ★ Courtrooms |
| ★ Boardrooms | ★ Council chambers | ★ Classrooms |
| ★ Auditoriums | ★ Theatres | ★ Houses of Worship |

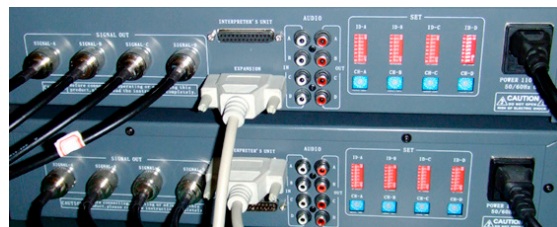
TC-RFZ04

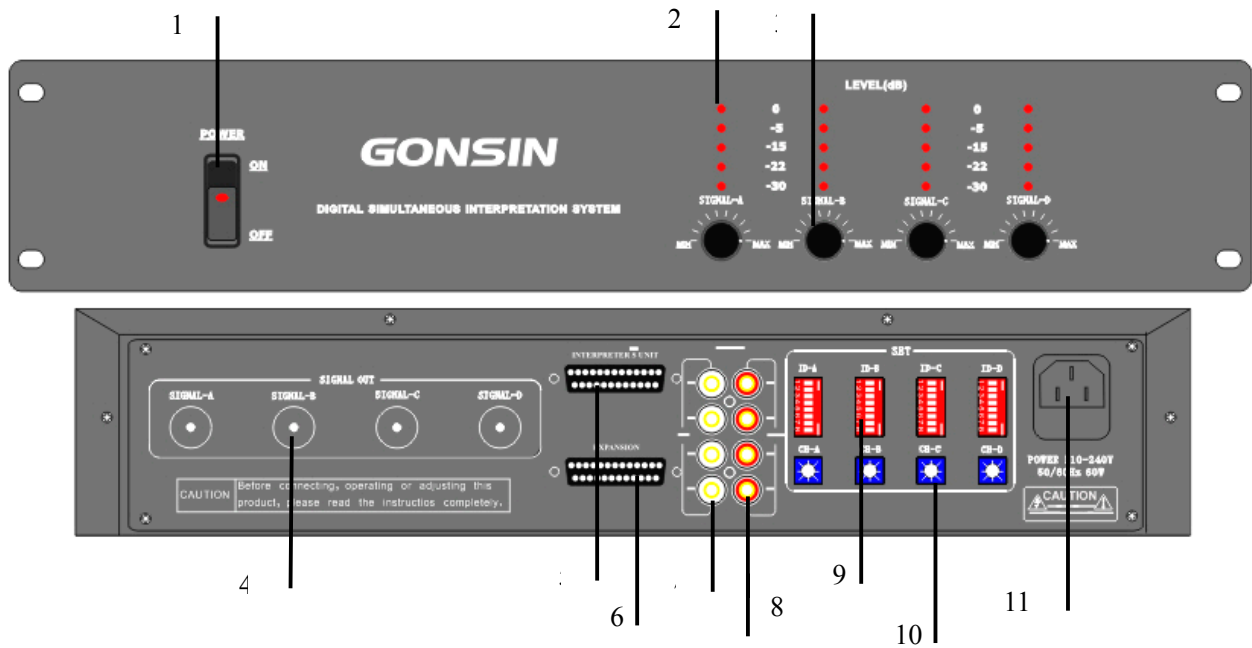
Control Unit



The microprocessor based TC-RFZ04 digital control unit is able to transmit 4 audio channels, featuring independent channel level control, channel output level indicators, and channel signal outputs for sound recording. Via a DB25 cable, multiple interpreter consoles can be connected to the control unit in a daisy-chain. Four control units can be cascaded together to form a 16-channel system.

- RF modulation: DSSS technology
- Frequency range: 2400 MHz – 2500 MHz
- Frequency response: 20Hz-20kHz
- Distortion at 1 kHz: <0.5%
- Channel separation: >70dB
- RF output power level: 700mV
- RF output impedance: 50 ohms
- Input impedance: 18k ohms
- Max. input power level: 3.5V
- Signal-to-noise ratio: >75dB
- Power consumption: 60 watts
- Standby power consumption: 30 watts
- Power requirement: 110/240VAC, 50-60Hz
- RF outputs: 4 N-type connectors
- Audio inputs: 4 x RCA unbalanced
- Audio outputs: 4 x RCA unbalanced
- Interpreter connector: DB25 female
- Expansion port: DB25 connector
- Dimensions: 430×99×325 mm (W×H×D)
- Weight: 7.6 kg





FRONT PANEL		
1	Power	Power ON/OFF switch and indicator
2	Level Indicators	Output level LED indicators for each audio channel
3	Level Control	Independant channel level control
REAR PANEL		
4	Signal Out	RF output N-connectors
5	Interpreter Unit	DB25 port to connect interpreter units in a daisy chain, or connect the language distribution system port on the conference system control unit
6	Expansion	DB25 port to connect the next control unit for system expansion.
7	Audio In	Unbalanced RCA audio input sockets
8	Audio Out	Unbalanced RCA audio output sockets
9	ID Number Selector	ID number can be selected for each channel. The control unit transmits audio signals to the receivers with the same ID number. This function is designed to avoid interference when multiple systems are used at the same venue or building.
10	Channel Selector	Channel number can be selected. Four 4-ch control units can be used for a 16-channel system.
11	Power Input	AC power input socket (110V/240V, 50-60Hz)

TC-RFJ04/08/12/16

RF Receiver

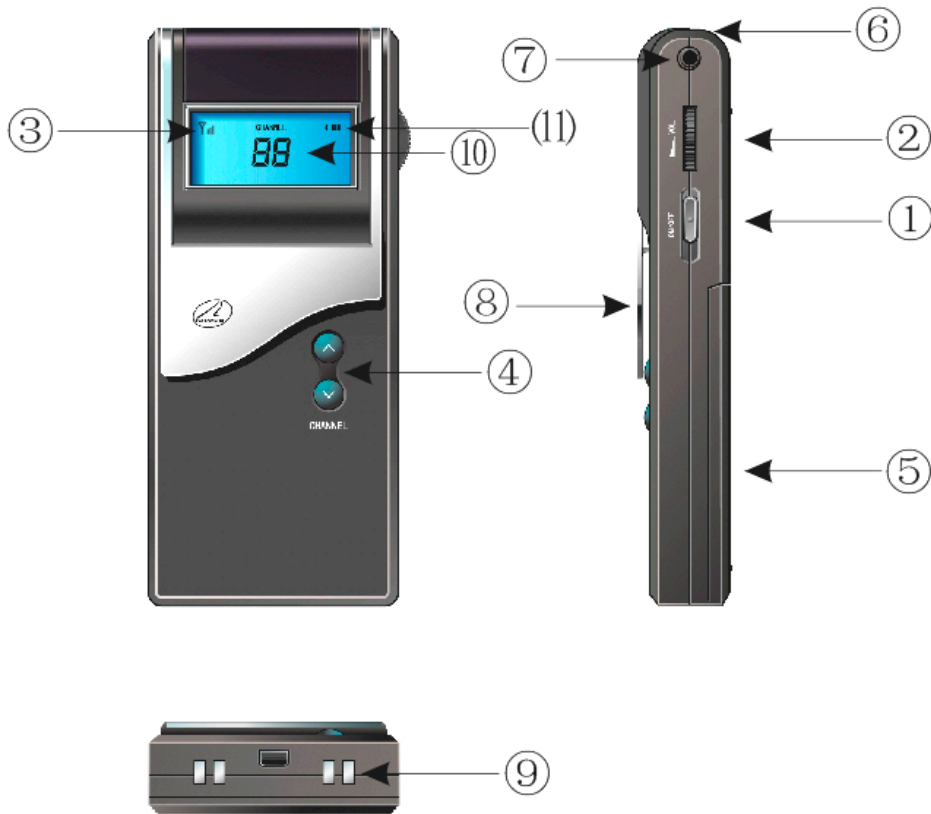
The portable TC-RFJ04/08/12/16 digital RF receiver is designed to support 4/8/12/16 audio channels, and each channel utilizes DSSS with a unique spreading code, offering CD-quality sound. The unit is powered by a rechargeable Lithium-ion battery pack. The selected channel number, battery level and RF signal strength are displayed on LCD screen.

Equipped with an individual RF receiver, a participant can listen to any selected language channel on a personal earphone, monitor the battery status, check whether or not the unit is receiving the signal properly, and adjust volume level for comfortable listening. The floor language is heard when the interpreter turns off the microphone.

Any number of receivers can be used within the effective working range.



- RF modulation: DSSS technology
- Encryption/decryption method: AES
- Frequency range: 2400 MHz – 2500 MHz
- Frequency response: 20Hz-20kHz
- Distortion at 1 kHz: < 1.0%
- RF output power level: 700mV
- RF output impedance: 50 ohms
- Input impedance: 18k ohms
- Signal-to-noise ratio: >55dB
- Power consumption: 0.2W, standby 50mW
- Rechargeable Li-Ion battery: 3.7V 1600mAh
- Fully charged battery lasts up to 20 hours
- 3.5mm phone output jack
- LCD screen: 33 x17mm
- Dimensions: 133×57×23 mm (H*W*D)
- Weight: 0.15 kg



1	Power on/off switch
2	Thumbwheel switch for volume control
3	LCD display of RF signal strength
4	Language channel selector
5	Battery compartment cover for Li-ion battery pack
6	Lanyard hole
7	3.5mm headphone jack
8	Pocket clip for easy-wearing
9	Battery charging contact with charging cabinet
10	LCD display of channel number
11	LCD display of dynamic battery level

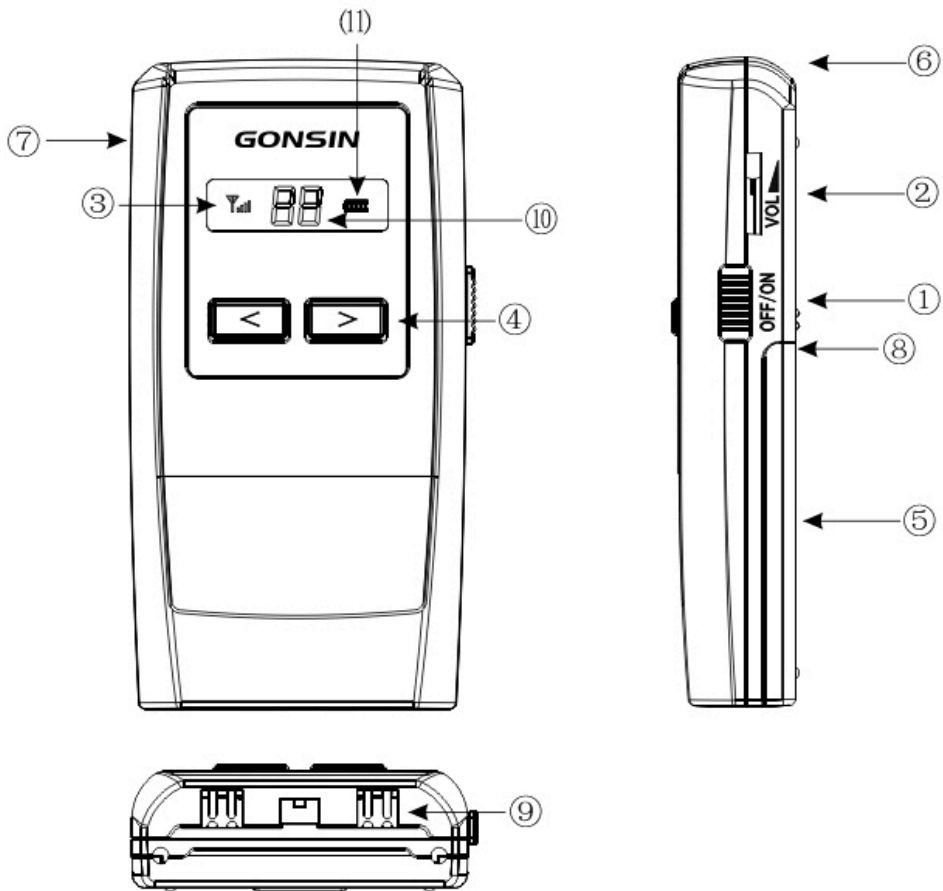
TC-RFJ04F/08F/12F/16F RF Receiver

The portable TC-RFJ04F/08F/12F/16F digital RF receiver is designed to support 4/8/12/16 audio channels, and each channel utilizes DSSS with a unique spreading code, offering CD-quality sound. The unit is powered by a rechargeable Lithium-ion battery pack. The selected channel number, battery level and RF signal strength are displayed on LCD screen. Equipped with an individual RF receiver, a participant can listen to any selected language channel on a personal earphone, monitor the battery status, check whether or not the unit is receiving the signal properly, and adjust volume level for comfortable listening. The floor language is heard when the interpreter turns off the microphone. Any number of receivers can be used within the effective working range.



This receiver unit comes with built-in channel ID number selectors, which can be preset to avoid interference when multiple GONSIN DSSS systems are used at the same venue or building.

- RF modulation: DSSS technology
- Encryption/decryption method: AES
- Frequency range: 2400 MHz – 2500 MHz
- Frequency response: 20Hz-20kHz
- Distortion at 1 kHz: < 1.0%
- RF output power level: 700mV
- RF output impedance: 50 ohms
- Input impedance: 18k ohms
- Signal-to-noise ratio: >55dB
- Power consumption: 0.2W, standby 50mW
- Rechargeable Li-Ion battery: 3.7V 1050mAh
- Fully charged battery lasts at least 15 hours
- 3.5mm phone output jack
- LCD screen: 33 x17mm
- Dimensions: 100×52×18 mm (H*W*D)
- Weight: 0.1 kg



1	Power on/off switch
2	Thumbwheel switch for volume control
3	LCD display of RF signal strength
4	Language channel selector
5	Battery compartment cover for Li-ion battery pack
6	Lanyard hole
7	3.5mm headphone jack
8	Channel ID number selector (inside the case)
9	Battery charging contact with charging cabinet
10	LCD display of channel number
11	LCD display of dynamic battery level

TC-RFF02

RF Antenna Unit

TC-RFF02 high-gain directional antenna unit is designed for 2 operating channels, suitable for both indoor and outdoor applications. Equipped with channel selection and channel locking function, the unit is powered by the control unit via a coaxial feed cable. The antenna unit can be mounted on wall or tripod stand.



- Signal Type: DSSS
- Frequency range: 2400 MHz -2500 MHz
- Frequency channel spacing: 5 MHz
- Impedance: 50 ohms
- Gain: 14 dBi
- Polarization: vertical or horizontal
- Feed cable: SYV 50-7 coaxial
- Cable connector: N-type socket
- Max. cable length: 20 meters
- Range: more than 100 meters
- Dimensions: 450 × 211 × 82 mm (W*H*D)
- Weight: 3.8 kg

TC-RFF04S

RF Antenna Unit

TC-RFF04S antenna unit, designed to be used for 4 operating channels, is suitable for the indoor use. Equipped with channel selection and channel locking function, the unit is powered by the control unit via a coaxial feed cable. The antenna unit can be installed on wall or tripod stand.



- Signal Type: DSSS
- Frequency range: 2400 MHz -2500 MHz
- Frequency channel spacing: 5 MHz
- Impedance: 50 ohms
- Gain: 3 dBi
- Polarization: vertical or horizontal
- Feed cable: SYV 50-3 coaxial
- Cable connector: SMA socket
- Max. cable length: 5 metres
- Range: up to 50 metres
- Dimensions: 390×130×50mm (W×H×D)
- Weight: 0.6 kg

TC-F16

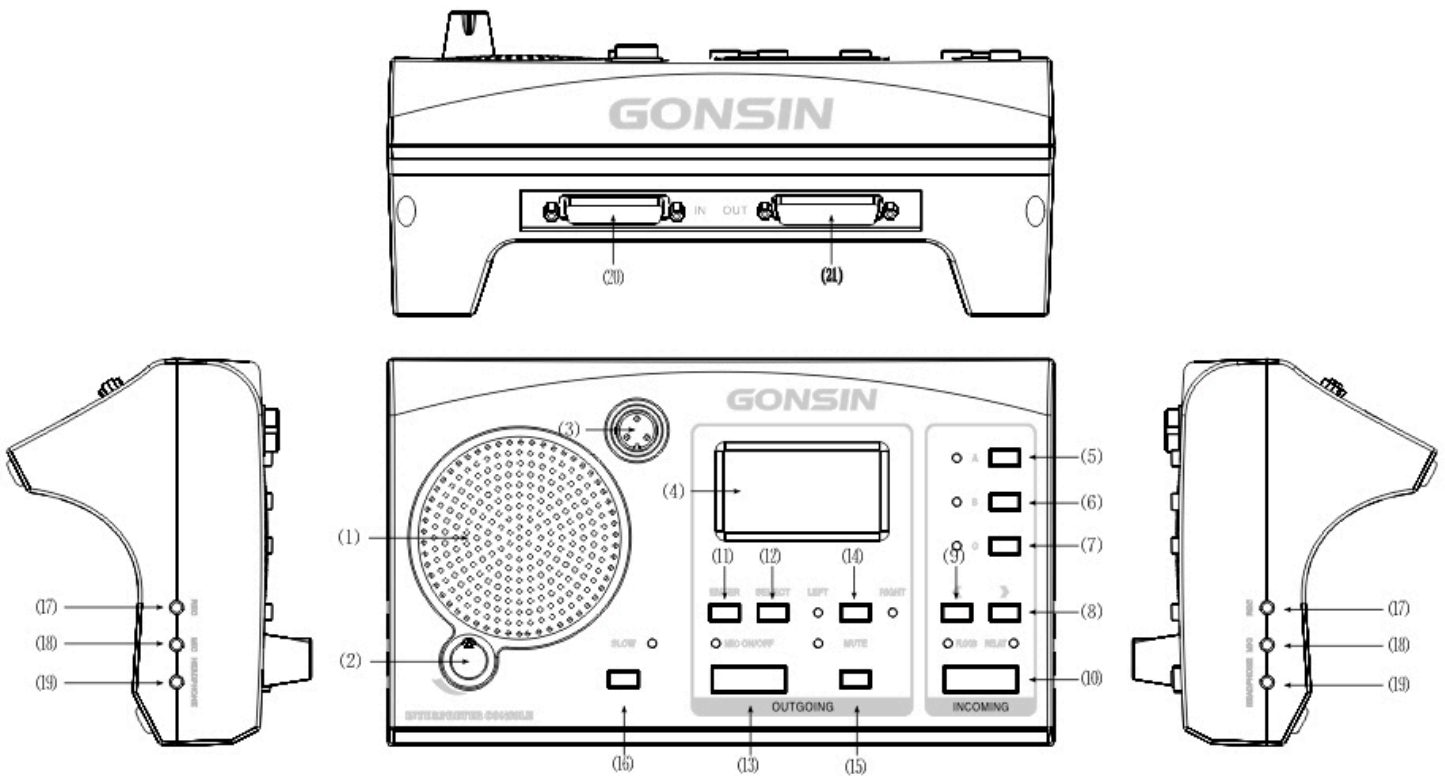
Interpreter Console

- Digitally-controlled workstation for one or two interpreters
- Designed to be used for 6-channel simultaneous interpretation system
- LCD screen to display the following information:
 - 1) Channel selection and confirmation
 - 2) Incoming/outgoing language channel number
 - 3) All the occupied language channels
 - 4) channel number of the present unit
 - 5) Interpretation time for the last and present operation
- Two different types of microphone are available:
 - 1) High quality gooseneck microphone
 - 2) Headset microphone
- Built-in loudspeaker with volume level control. Loudspeaker is automatically switched off when the microphone is turned on
- 3 pre-selected incoming channels are available
- Automatic channel interlocking function prevents the interpreters from using the same outgoing channel
- MUTE key to enable a brief muting of the microphone for cough cut
- The floor audio automatically goes to the outgoing channel when the microphone is turned off.
- Multiple interpreter consoles can be connected in a daisy-chain



Technical Data:

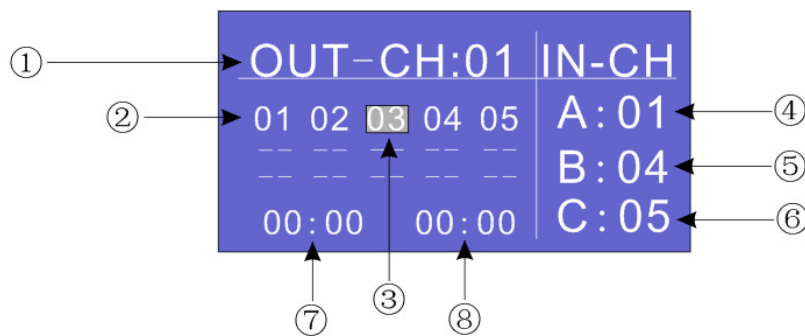
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|----------------------------------|---|
| ● Frequency response: 50-18kHz | ● Operating temperature: 0 °C – 50 °C |
| ● Distortion at 1 kHz: < 0.1% | ● Standard microphone stem length: 425 mm |
| ● Channel separation: > 85 dB | ● 128x64 backlit LCD screen |
| ● Signal-to-noise ratio: > 90 dB | ● 3/5/10m cable with DB25 connectors |
| ● Max. input power level: 7.5V | ● 3.5mm jacks for microphone, recorder, headphone |
| ● Operating voltage: 24V | ● ABS base dimensions: 247X145X95mm (WDH) |
| ● Power consumption: 2.5W | ● Weight: 1.2 kg |



- 1) Built-in loudspeaker 8Ω/2W
- 2) Rotary switch for loudspeaker volume level control
- 3) Connector for pluggable microphone
- 4) LCD screen for channel information display
- 5) Key A for the first pre-selected incoming channel
- 6) Key B for the second pre-selected incoming channel
- 7) Key C for the third pre-selected incoming channel
- 8) Rightward key to pre-select an incoming channel number
- 9) Leftward key to pre-select an incoming channel number
- 10) FLOOR key. When the FLOOR indicator lights up, the incoming channel is the floor/original audio; when the RELAY indicator is on, the incoming channel is the relay channel. The default incoming audio is the floor audio.
- 11) ENTER key to confirm (lock) an outgoing language channel. The MIC can be activated when the outgoing channel is locked. The MIC must be switched off when the outgoing channel number needs to be changed.
- 12) SELECT key to choose an outgoing channel number.

- 13) MIC on/off button. The MIC can be switched on when the outgoing channel is selected, confirmed or locked. When MIC is on,
- 14) Left/Right selection key for headset microphone. This key can be used when MIC is ON. When the left LED indicator is on, the left headset microphone can be used; when the right LED indicator is on, the right headset microphone can be used.
- 15) MUTE key: hold down the key to enable a brief muting of the microphone which will be active again when the key is released.
- 16) SLOW key to alert the current speaking delegate to speak slowly. When the key is pressed, the active delegate microphone's LED ring luminant will flash or a short message will be sent to the delegate. This function can only be used with GONSIN digital conference system.
- 17) REC output jack (3.5mm) on both sides for audio recording.
- 18) Headset microphone input jack (3.5mm)
- 19) Headphone output jack (3.5mm)
- 20) INPUT connector. The first interpreter unit connects the control unit or transmitter, and the second unit links the output connector on the previous interpreter unit.
- 21) OUTPUT connector links the next interpreter unit.

LCD Screen for Interpreter Unit



- 1) The outgoing channel number
- 2) Outgoing channel – unoccupied (unlocked) channel number.
- 3) Outgoing channel - occupied (locked) channel number.
- 4) The first pre-selected incoming channel
- 5) The second pre-selected incoming channel
- 6) The third pre-selected incoming channel
- 7) The current interpretation time: 00:00 (hour:minute)
- 8) The previous interpretation time: 00:00 (hour:minute)

TC-D2 Interpreter Headset

- Closed-ear stereo headset with mic and vol control
- Connectors: 3.5mm stereo plugs
- Impedance: $60\Omega \pm 15\%$
- Frequency response: 20Hz to 20KHz
- Sensitivity (1 kHz): $-58 \pm 2\text{dB}$
- Microphone type: Omni-directional dynamic
- Microphone sensitivity (1 kHz): $-58 \pm 2\text{dB}$
- Cord length: 2 meters



TC-D1 Clip-on Earphone

- Type: dynamic 40mm
- 360° swivel clip-on hanger
- Full range enhance system
- Super bass frequency technology
- Frequency response: 7Hz to 24KHz
- Sensitivity: $102\text{dB} \pm 3\text{dB}$
- Impedance: $40\Omega \pm 10\%$
- 120cm cord with 3.5mm plug



TC-D3 Stereo Headphone

- Frequency response: 20 Hz - 20 kHz
- Impedance: $32\ \text{Ohms} \pm 10\%$
- Sensitivity: 115dB SPL/1mW
- Adjustable headband & swivel earcups
- 30mm drivers for dynamic stereo sound
- 12cm single entry cord with 3.5mm plug



GX-20 Charging/Storage Case



- Microprocessor-based unit w/ smart charging circuit
- Accommodates up to 20 receiver units with Li-ion battery
- DC 5V low voltage charging power
- LED indicator for charging status
- About 10 hours needed to fully recharge 20 receivers
- Receivers can be left in the case after the charge is complete
- AC/DC adaptor w/ power cord
- Power input AC100-240V 50/60Hz, output DC5V 8A
- Dimensions: 59x30x18 cm (WxDxH)

GX-48 Storage/Carrying case



- Handy locking aluminium/plastic suitcase
- Designed for carrying/storage of receiver units
- 48 positions with pre-cut foam
- Dimensions: 50 × 33 × 20cm (WxDxH)

RY-123 Receiver Lanyard

- Designed for easy wearing of receiver unit
- Length: 40 cm



UA-203 Antenna Bracket

- Swivel bracket for wall/ceiling mounting
- Adjustable angle



GX-315 Antenna Tripod

- Type: floor standing, foldable 3-way pan tripod
- Adjustable height: 60cm to 150cm



25PS-03/05/10 Interpreter Cable

- DB-25 double shielded cable
- Moulded male/female connector, long screws
- Length: 3m/5m/10m

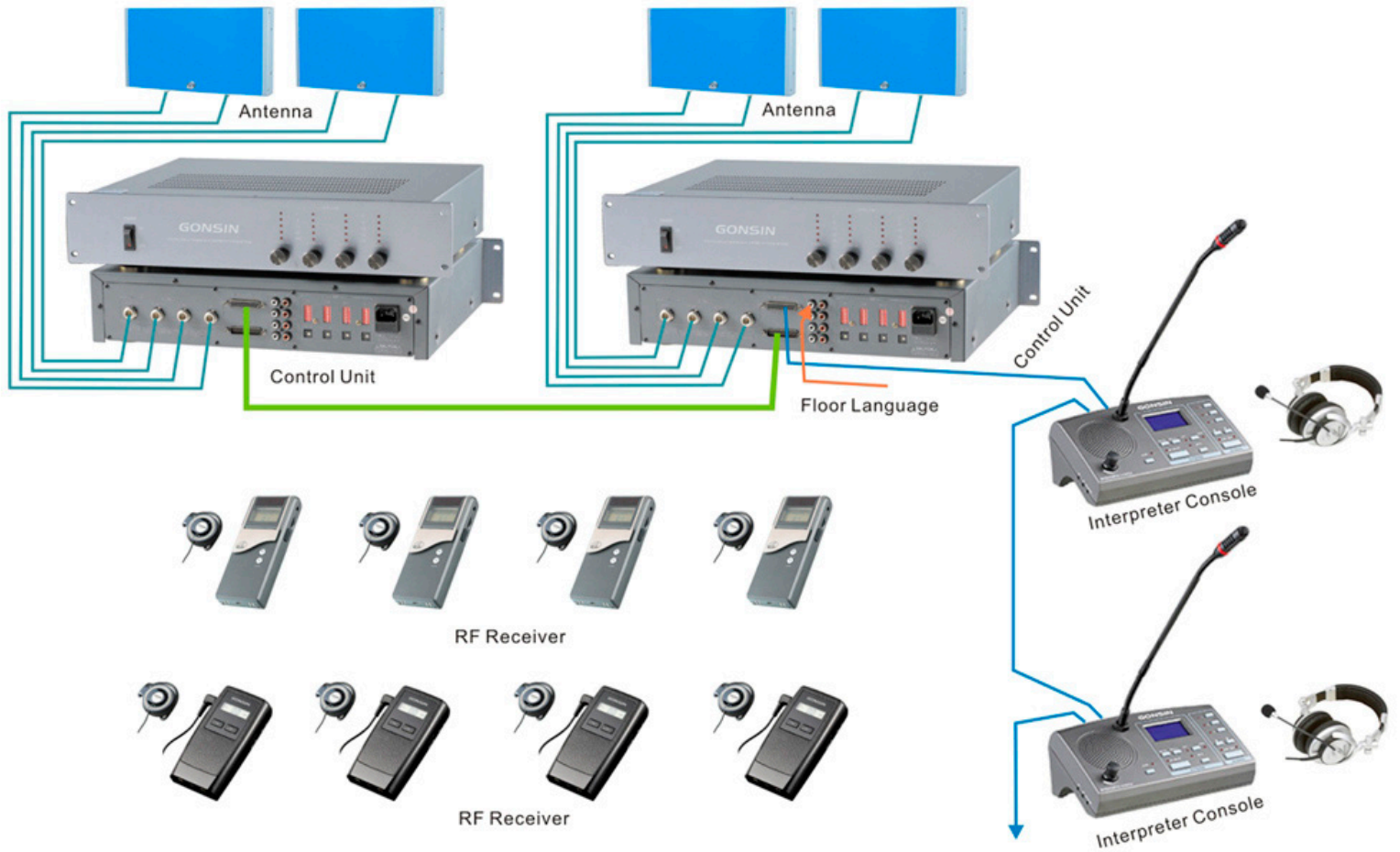


RF-05/10/20 Antenna Cable

- Type: SYV50-3 or SYV50-7 coaxial, 50 ohms
- Connector: N type or SMA type
- Length: 5/10/20 meters



System Configuration Diagram (1)



System Configuration Diagram (2)

