RIVER ACOUSTICS

CM-500

Digital Wireless Conference System

User Manual





⚠ Precautions ⚠

1. When installing, dismantling and wiring this machine, be sure to cut off power supply. Otherwise there is a risk of electric shock.
2. Please do not disassemble machine. Otherwise, malfunction may occur.
3. Please use machine within specified usage conditions (temperature, humidity, vibration, installation direction, environment, etc.). Otherwise, there is a risk of fire or malfunction.
4. Do not block ventilation holes of machine. Otherwise, there is a risk of fire or malfunction.
5. Please wire correctly according to machine's wiring standards, specified power supply and construction methods. Otherwise, there is a risk of electric shock, fire, or malfunction.
6. Do not let broken threads, iron powder, water, etc. enter the chassis. Otherwise, there is a risk of fire or malfunction.
7. When discarding machine, please dispose it appropriately as industrial waste according to local laws and regulations.



CM-500 Conference System

User Manual

CM-500 receiver | CM-50C chairman unit | CM-50D delegate unit

Thank you for choosing RIVER ACOUSTICS. This manual covers installation, receiver controls, microphone operation and technical specifications. Read it before connecting or operating the system.



Function overview

System capacity	Maximum
Microphone units connected to one receiver	100 in total
Microphones speaking simultaneously	4
Chairman units connected to one receiver	2

Chairman units are included in the 100-unit system capacity. The maximum number of microphones speaking at the same time is 4 across the system.

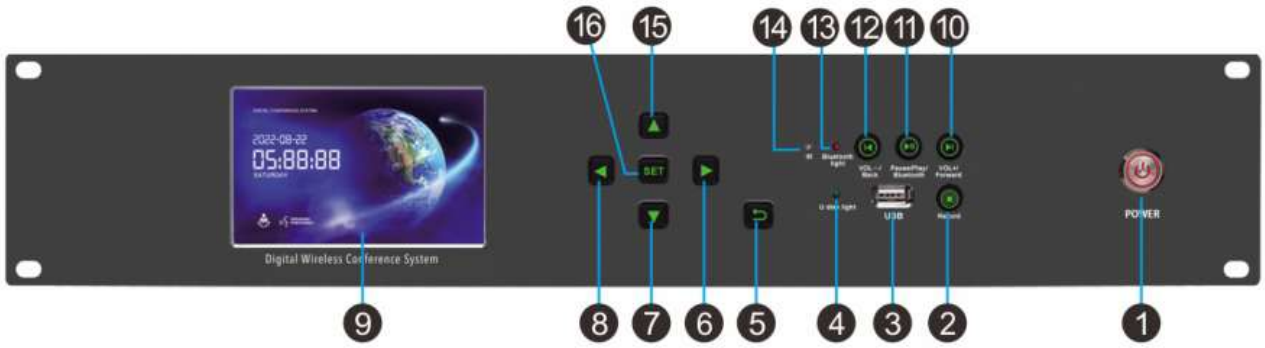
- Conference modes: first-in-first-out (FIFO), chairman, restricted and application mode.
- Central control from the master unit; each microphone unit can switch its own microphone signal on or off.
- Receiver-managed unit ID addressing allows units to be added or removed without manually entering each ID address.
- One-button shutdown of all conference units from the receiver.
- Conference recording and video control functions. Typical working distance: 60-100 m, depending on the environment.

Installation summary

1. With the power disconnected, fit the supplied antennas to the matching rear-panel connectors. Match the control/data antenna and audio antennas to their labels.
2. Connect the 6.35 mm unbalanced audio output or XLR balanced audio output to the external audio system.
3. Place the receiver more than 1 m above the floor. Keep transmitters more than 2 m from the receiver and keep the equipment more than 1 m away from walls.
4. Keep antennas away from computers, digital equipment, karaoke equipment, power supplies and large metal objects.
5. For cabinet installations, use a suitable extension antenna for the control link. Audio reception may use a suitable extension antenna or antenna amplifier.
6. Power on the receiver and conference units, assign unit IDs, then select the conference mode and set SPEAKERS from 1 to 4.

Receiver front panel

Use the numbered illustration to identify the controls on the CM-500 receiver.



No.	Control	Function
1	Power	Switches the receiver on or off.
2	Recording	Starts or stops recording.
3	USB port	Connects a USB flash drive.
4	USB indicator	Shows USB flash-drive activity.
5	Return	Returns to the previous menu.
6	Right	Moves right in the menu.
7	Down	Moves down in the menu.
8	Left	Moves left in the menu.
9	LCD display	Displays receiver settings and transmitter status.
10	Next / volume up	Next track; long press to increase MP3 playback volume.
11	Play / pause / Bluetooth	Plays or pauses playback; long press to enable Bluetooth.
12	Previous / volume down	Previous track; long press to decrease MP3 playback volume.
13	Bluetooth indicator	Shows Bluetooth operating status.
14	Infrared indicator	Shows infrared frequency synchronization status.
15	Up	Moves up in the menu.
16	SET / confirm	Enters a menu or confirms a selection.

Receiver rear panel

Connect accessories and cables to the labelled rear-panel sockets with the power disconnected.



No.	Connection	Function
1	DC power input	Connect the supplied adapter. Follow the input rating on the receiver label.
2	USB computer control	Connects a computer for compatible camera control.
3	Camera control terminal	Supports RS-232 and RS-485 camera interfaces.
4	Camera connector	Camera connection in RS-232 mode.
5	RJ45	Network conference-unit interface.
6	RS-232	Central control interface.
7	Data antenna	Control/data antenna connection.
8	ANT C+D	Audio receiving antenna connection for C and D.
9	6.35 mm output	Unbalanced audio output.
10	XLR output	Balanced audio output.
11	ANT A+B	Audio receiving antenna connection for A and B.
12	Video switcher interface	Connection for a compatible video switcher.

Audio connections

The receiver supports up to four microphones speaking simultaneously. Connect the audio output to the mixer, amplifier or other audio equipment and adjust the receiver volume as required.

Conference operation

Conference modes and controls



Select the required operating mode on the receiver. Available modes include FIFO, chairman, restricted and application mode. Limited speaking time can also be configured.

Menu item	Operation
MODE	Select the conference operating mode.
SPEAKERS	Set the number of simultaneous speakers from 1 to 4. The system maximum is 4 microphones.
CHANNEL	Select the appropriate frequency preset. The receiver provides 20 preset channel sets. If interference occurs, select another suitable preset within the specified operating bands.
VOLUME	Adjust the overall receiver volume from 0 to 28.
SHUT OFF UNIT	Use this receiver function to shut down all conference units with one command.

Unit ID addressing

The receiver creates and manages unit ID addresses. Units can be added or removed without manually entering individual address numbers.

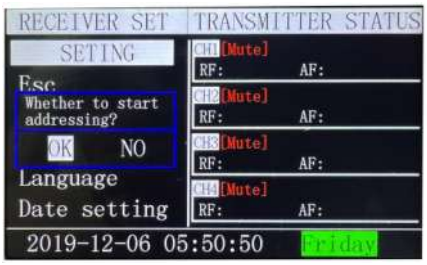
1. Keep all conference units to be registered powered on.
2. Open System Set on the receiver and select Unit ID Set to start addressing.
3. When the units enter the addressing interface, press the microphone on/off button on each unit in sequence.
4. After all required units have been selected, confirm the addressing operation on the receiver to save the IDs.

Register no more than 100 microphone units per receiver, including no more than 2 CM-50C chairman units. Each unit can switch its microphone signal on or off, subject to the selected conference mode and the simultaneous-speaker limit.

System and auxiliary settings

System Set

Unit ID Set starts receiver-managed addressing. Limited Time adjusts speaking time in limited-speaking mode. Language selects Chinese or English.



Date and clock

Use Date setting and Clock setting to adjust the date and time. The clock display can be enabled or disabled from the receiver settings.

Channel DIS

Enable or disable individual channels. If a channel does not operate correctly or is affected by interference, it can be disabled.





Video setup

Clear existing preset positions before use, then select the protocol that matches the connected camera equipment. Unit number 00 is the panoramic position. When using more than two dome cameras, check and configure each camera address again.

The camera-control interface supports RS-232 and RS-485. Select the corresponding switching protocol. More than two dome cameras require a video switcher.

Infrared synchronization

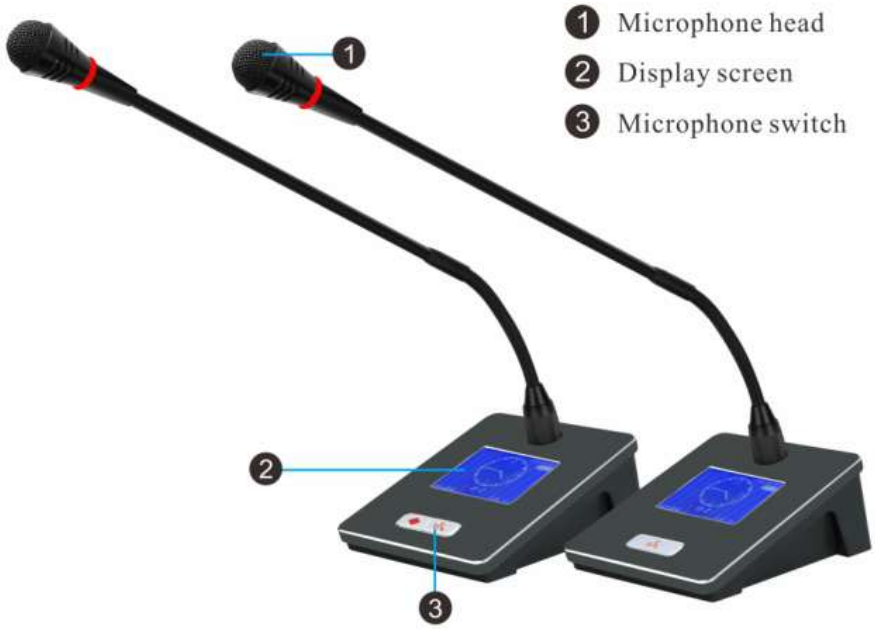
In IR Setting, select the required channel for infrared frequency synchronization.





Conference microphone units

CM-50C is the chairman unit. CM-50D is the delegate unit. Both connect to the CM-500 receiver as part of the same conference system.



No.	Component
1	Microphone head
2	Display screen
3	Microphone switch

Display information

- Battery level
- Receiver connection and channel in use
- Communication channel
- Connection status between the conference unit and receiver
- Unit ID address
- Speaking status
- Clock

Microphone operation

Use the microphone switch to turn the microphone signal on or off. The selected conference mode determines how speaking access is controlled. No more than 4 microphones can speak simultaneously across the system.

A receiver can connect up to 100 microphone units in total, including up to 2 chairman units. Use the receiver's SHUT OFF UNIT function to power off all connected conference units with one command.

Technical specifications

CM-500 receiver

Parameter	Specification
Brand	RIVER ACOUSTICS
Model / type	CM-500 / wireless microphone receiver
Receiving frequency bands	694.5-702.7 MHz; 748.3-757.7 MHz
NBTC registration number	A55056-26
Connected microphone units	Up to 100 in total, including up to 2 chairman units
Simultaneous active microphones	Up to 4
Modulation	FM
Frequency response	50 Hz-15 kHz
Receiver sensitivity	-104 dBm
Audio output level	6.35 mm mixed output: 460 mV; XLR balanced output: 400 mV
Distortion	< 1%
Signal-to-noise ratio	90 dB
Power supply	DC 12V-14V
Operating current	360-460 mA

CM-50C and CM-50D microphone units

Parameter	Specification
Models / types	CM-50C chairman transmitter; CM-50D delegate transmitter
Transmitting frequency bands	694.5-702.7 MHz; 748.3-757.7 MHz
Maximum transmit power	2 mW (e.i.r.p.)
NBTC registration numbers	CM-50C: A55057-26; CM-50D: A55058-26
Frequency response	50 Hz-15 kHz
Frequency accuracy	±10 kHz
Operating voltage	DC 3 V
Operating current	150 mA
Gooseneck	400 mm

Typical system working distance: 60-100 m, depending on the installation and operating environment.