
***TELIKOU* Intercom System**

MS-800 Main Station

Instruction Manual

While **TELIKOU** makes every attempt to maintain the accuracy of the information contained in its product manuals, the information is subject to change without notice.

I. Introduction

Thank you for choosing TELIKOU intercom product. The MS-800 eight-channel main station is a powerful, yet user friendly unit that serves as a heart of a TELIKOU intercom system. We recommend you reading through this manual to better understand the function of MS-800. If you have any question that does not addressed on this manual, please contact your dealer or call us. We are standing by to assist you.

Description

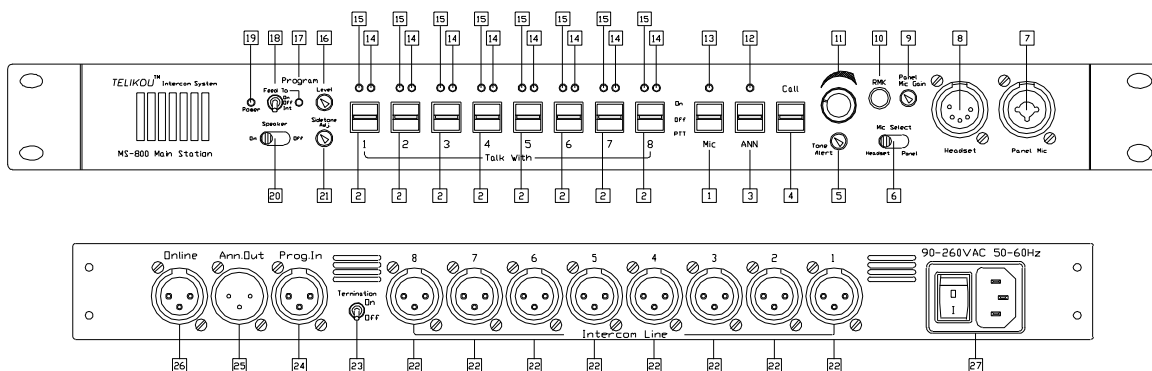
The MS-800 is a eight-channel, one rack space main station suitable for TV station, communication command center, outside broadcast vehicle, theater, project test field, and other applications which communication is required.

This system adopts wired connection, and has following features, free of external emission interference, stable and reliable performance, flexible configuration, full-duplex communication, clear and loud communication sound, easy operation, and strong noise resistance.

II. Characteristics

- All operations can be finished on panel easily.
- Announcer can send signal from microphone of host to external device.
- The program input will interrupt during talk.
- Remote Microphone kill Switch (RMK).
- The level of speaker will lower when talk button is activated.
- XLR-3 and 1/4 inch compatible microphone jack.
- Automatic circuit short protection and indication.
- Sidetone Null adjustment.

III. Basic operations



Front Panel

1. Mic Switch (Mic)

Turn up or down the Mic switch handle will send microphone signal intercom line after amplification. When the switch is turned to ON or PTT, the LED (13) above will light. The settings are as follows:

ON: The selected microphone is activated, the switch is self-locked.

OFF: The selected microphone is off.

PTT: The selected microphone is activated, release and reset.

When the front panel speaker is turned on, pressing Mic button will reduce the speaker output level about 6dB and helps minimize feedback, so, after each speaking, please turn off the Mic button.

2. Talk Switches (Talk With)

Switches 1~8 correspond to 1~8 channels. Turn the talk switch handle up or down can talk to the corresponding channel. When the switch is turned to ON or PTT, the LED (14) above will light (GREEN). The settings are as follows:

ON: The corresponding channel is activated, the switch is self-locked.

OFF: The corresponding channel is off.

PTT: The corresponding channel is activated, release and reset.

3. Announce Switch (ANN)

Send the audio from selected microphone to the ANN. OUT rear back. When the switch is turned to ON or PTT, the LED (11) above will light. The settings are as

follows:

ON: Send the audio from selected microphone to the ANN. OUT rear back, the switch is self-locked.

OFF: Break the connection between selected microphone and ANN.OUT rear back.

PTT: Send the audio from selected microphone to the ANN. OUT rear back, release and reset.

4. Call Switch

Send call signal from host to the selected channel which talk switch (2) is ON. Turn up or down the handle of call switch, the LED (15) above selected channel will light (RED). This switch is without self-locking function, release and reset.

5. Tone Alert Level Control

When MS-800 receives a call signal from belt-pack or other stations, an internal buzzer will send a hum to panel speaker and earphone. This knob adjusts the hum level.

6. Mic Select Switch

Set the Mic select switch to select whether the panel microphone or the headset microphone is active.

7. Panel Mic Connector

This is a double-purpose connector, supports both of microphone with XLR plug and 1/4inch plug.

The wiring of 3-pin XLR microphone is as follows:

- Pin 1 -- Mic common
- Pin 2 -- Mic hot
- Pin 3 -- Null

8. Headset connector

4-pin XLR Male or 5-pin XLR female connector

EARPHONE: Dynamic 50-2000 ohm

MICROPHONE: Dynamic 100-600 ohm

The wiring of headset is as follows:

- Pin 1--Mic common

- Pin 2--Mic hot
- Pin 3--headphone common
- Pin 4--headphone hot
- Pin 5—Null

9. Panel Mic Gain

It is used to increase or decrease the gain for panel microphone to achieve proper microphone output level. It has no effect on the sensitivity of the headset microphone.

Note: For earlier models, this adjustment button is in cabinet, and you can find this adjustment potentiometer at the right side of front panel after opening the top cover of cabinet. The microphone is set according to the Electret type before delivery. If the type of panel microphone is changed, re-adjustment is required.

10. Remote Mic Kill Switch

The Remote Mic Kill (RMK) switch will turn off the microphone of every beltpack remotely. If the Talk Functions of a large number of beltpacks have inadvertently been left activated, incidental noise and talking can make it difficult or impossible to communicate with the intercom system. The Remote Mic Kill switch can be pressed to quiet the line in this situation.

Notice: If any beltpack microphone within intercom line can be turned off in remote way, each powered working station within this intercom system must be interconnected via online interface on its rear panel.

11. Listen Level Control

Turn this control to set the listen level of received audio signal within communication system. It adjusts listen level of headset and speaker. Turn the control completely counterclockwise to silence the channel.

12. Announcement LED (ANN.LED)

This LED lights when announcement switch (3) turns to ON or PTT.

13. Mic LED

This LED lights when Mic switch (1) turns to ON or PTT.

14. Talk LED

This LED lights when Talk switch (2) turns to ON or PTT

15. Call LED

Each call LED corresponds to one channel. This LED will light under two cases: a) called: when the call signal from communication channel is received; b) call: if you want to call a channel, please turn on switch 2 corresponding to this channel, turn on call switch 4, and then the call LED for this channel will be lit. At the same time, the host will send call signal to this channel directly.

16. Program Level Control

Adjust this control to set the program audio level heard on the intercom by clockwise or counterclockwise direction.

17. Feed To LED

This LED lights when Program Feed To (17) function is enabled.

18. Program Feed To

That turn the switch up or down will send the external input signal to intercom channel. When the Mic switch (1) or Call switch (4) is turned off, the signal feed to channel will be interrupted automatically. When the switch is turned on, the LED (16) at the right side will light.

19. Power LED

This green LED lights on when the MS-800 is receiving AC power and the power switch on the rear panel is turned on.

20. Speaker Switch

The Speaker Switch turns the front panel speaker on or off.

When the front panel speaker is turned on, pressing Mic button will reduce the speaker output level about 6dB and helps minimize feedback.

21. Sidetone zero-adjusting

The MS-800 uses full-duplex audio (the same as a conventional telephone line) in which the talk and listen audio are sent and received on the same line. Thus, when you talk on a channel, you will also hear your own voice back in the speaker or headphones. This is called sidetone. If you are using the MS-800 with a microphone and speaker, sidetone could cause unwanted feedback, since the microphone may pick up your returned voice audio and reamplify it. This could also happen if you are using a headset where the ear cushions do not completely cover the ears, although it is probably much less likely. In either of these cases, you should minimize the amount of sidetone.

Typically, different sidetone null settings are needed depending upon whether you are using the gooseneck panel microphone along with the speaker or not. Use one of the following procedures to correctly set the sidetone level controls.

A) Sidetone Adjustment Procedure for Gooseneck Microphone with Speaker turned on:

- 1 Turn off all the microphones on sub-stations and belt packs.
- 2 Turn on the Mic switch. Set Mic select switch to panel.
- 3 Turn the level control to a comfortable level.
- 4 Speak into the microphone while turning the sidetone null control slowly back and forth. There should be a point where your voice (and any accompanying acoustic feedback) is the lowest. This is the null point.

B) Sidetone Adjustment Procedure for Headset:

- 1 Turn off all the microphones on sub-stations and beltpacks.
- 2 Turn on the Mic switch. Set Mic select switch to headset.
- 3 Turn the level control to a comfortable level by having someone talk to you from another station.
- 4 Speak into the microphone while turning the sidetone null control slowly back and forth. There should be a point where your voice (and any accompanying acoustic feedback) is the lowest. This is the null point.

C) System Sidetone Adjustment

- 1 Turn off all the microphones on sub-stations and beltpacks.
- 2 Followed by A) and B), adjust sidetone on MS-800 main station.

3 Turn on the microphone on sub-station and belt packs one by one, and then adjust the Sidetone to satisfied level.

Rear Panel

22. Intercom Line connector

3-pin XLR female socket, eight interfaces corresponding to eight channels; The pinout of the intercom connectors is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- Power (+24 VDC)

Pin 3 --- Audio

23. Termination switch

This switch provides switchable termination for system. In most systems, termination should be in the ON position. The fundamental concept of Party-Line intercom is that all the channels are terminated in one location, preferably at a main station. For example, the termination switch on main station should be set to the ON position, and termination switches on other sub stations should be set to the OFF position.

When termination switch is set to the ON position, one 220 ohm termination resistor is connected to intercom line. If intercom system is not terminated, the level of intercom line will become high, and the system stability will be influenced. However, only one termination point is allowed within same intercom line. If multiple termination points are used incorrectly, the driving load will be overloaded, and the level of intercom line will become low.

Before using, you should set termination switch to the ON or OFF position according to the actual connection of intercom line.

NOTE: All intercom lines must be terminated only once, whether they are used or not. Never "double-terminate" a line.

24. Program Input

A 3-pin XLR female connector provides balanced input to the station. It activates when Program Feed To switch (17) turned on. The external program signal is sent into intercom line. The program level can be adjusted by the Program Level

Control 14. When Mic Switch 1 is activated, this program input is automatically cut off.

The pinout of the Program Input connector is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- + Audio

Pin 3 --- - Audio

25. Announce Out

This connector is 3-pin XLR male. Press the Announce button (3) to make stage or PA system announcements. It directs the audio from the selected headset or panel microphone to the Ann Out rear panel connector. The output impedance is 600 ohm for balanced output.

The pinout of Announce Out is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- +Audio

Pin 3 --- -Audio

26. Online Connector

It is used for online function among TELIKOU working main stations. If there are more than one TELIKOU main stations in system and they are connected by Online Connector, by pressing any RMK button of any main station kills all the microphones of belt packs in system. All the TELIKOU main stations can be connected by Intercom Line Connector as well. But under this condition, by pressing RMK button of any main station will not affect any belt packs which are not directly connected to this main station.

This connector is a 3-Pin XLR male. The pinout of Online Connector is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- Control Signal

Pin 3 --- Audio Signal

Notice:

1. This connector only can be connected to **TELIKOU** main station. It is not allowed to be connected with **Intercom Line Connector** (Intercom Line); otherwise, the system will not work properly.

2. When connecting those non-TELIKOU main stations to TELIKOU main station, must use Intercom Line Connector. Besides, the Pin-2 of XLR should connect a homopolar capacitor in series, whose capacity is not smaller than $1\mu\text{F}$.

27. AC Power Connection and Power Switch

Input 90V-260V, 50-60Hz AC, and the power consumption is less than 95VA.

IV. Installation and cable

1. Installation

MS-800 main workstation adopts 19-inches 1U cabinet, and this workstation can be mounted on rack or placed on desktop. If it is placed on desktop, it is required to adhere 4 rubber foot pads provided with machine to four corners at the bottom of cabinet with double-face adhesive tape.

2. Intercom cable

A). Rules for cable selection

TELIKOU intercom system adopts double-core shielded audio cable, one core is used for transmitting audio signal, another core is used for transmitting DC power or control signal, and the shielded layer is used as common line for audio and power supply. To decrease resistance of common line and crosstalk interference, the cable with larger cross section area should be used. When it is used in fixed way, the cross section area of single line should be at least 1.5mm^2 , when it is used in mobile mode, the cross section area of single line should be at least 0.75mm^2 . When the cable is longer, the cross section area of cable should be larger. If the cable has more than 2 cores, it is recommended to use the additional core as common line.

B). Cable connection

The standard TELIKOU intercom cable is connected with a pair of 3-pin XLR connectors, one male and one female. If longer cable is required, you can connect several cables together with head-end method.

The wiring of connector is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- Power or Control Signal

Pin 3 --- Audio Signal

Notice: the pin-1 GND connection for each XLR connector must be insulated from cabinet, and cannot be connected to shell of XLR connector.

V Troubleshooting

Problem: Power LED wink

Cause 1: Direct short on the intercom channel

Solution 1: Remove all the intercom cables from MS-800. Check each channel one by one, until find the short channel.

Cause 2: Overload

Solution 2: Decrease the amount of remote stations.

Problem: System feedback (Acoustical)

Cause 1: Listen level control at this station or a remote station is set too high

Solution 1: Adjust

Cause 2: Sidetone null control at this station or a remote station is not adjusted correctly

Solution 2: Adjust. Refer to the procedure in the Front Panel section of this manual.

Cause 3: Channel unterminated.

Solution 3: Set the MS-800 termination switch to the ON position.

Cause4: A headset cord is too long or jointing quality.

Solution4: Check headset cord

Problem: Excessive crosstalk

Cause 1: High DC resistance in ground return.

Solution 1: Use heavier cable; add additional conductor(s) to ground return.

Cause 2: Headset cables are not wired properly or shielded properly.

Solution 2: Correct wiring. Use headsets with properly shielded wiring.

Problem: Hum or buzz in system

Cause 1: **Be earth-free or imperfect earth.**

Solution 1: **Check the plug, and make sure it is perfect earth.**

Cause 2: Inductive pickup caused by close proximity of this main station or connected remote stations to power lines or transformers.

Solution 2: Relocate the offending unit.

Cause 3: Intercom line cable is not wired properly; the shield of microphone cable is not connected to Pin-1 of 3-XLR

Solution 3: Check intercom line cable. Make sure all the cables' Pin-1 of 3-XLR connects correct.

Cause4: 10 Ohm chassis ground resistor is open.

Solution4: **Bridge a 10 Ohm resistor between the common port of direct current output of power supply and earth terminal (crust).**

If this condition occurs, it is because the system ground came into contact with something that was "HOT" with respect to the power supply earth ground. Carefully check the system ground and AC distribution in the area.

WARNING: THIS IS A POTENTIALLY DANGEROUS SITUATION. A SHOCK HAZARD MAY EXIST BETWEEN A REMOTE STATION HEADSET AND GROUND.

Problem: Can not turn on the Mic function on all the beltpacks

Cause 1: The connection among TELIKOU main stations must go via Online

connector on rear panel. The Online connector of this station connected to the Intercom Line connector of another station.

Solution 1: Check the connection of Online connector. **When connecting those non-TELIKOU main stations to TELIKOU main station, must use Intercom Line Connector. Besides, the Pin-2 of XLR should connect a homopolar capacitor in series, whose capacity is not smaller than 1 μ F.**

Cause 2: If there is SPK-200 in the system. The Online connector of SPK-200 can connect to other station's Intercom Line connector. But Connect To switch of SPK-200 must be place on Intercom Line position. The setting of Connect To switch is not correct.

Solution 2: Place Connect To switch on Intercom Line position.

Problem: Can not turn off the Mic function on all the beltpacks after pressing RMK button

Cause 1: The connection among TELIKOU mains stations must go via Online connector. If main stations are connected by Intercom Line connector, RMK function will not work properly.

Solution 1: Check the connection among main stations. Please use Online connector.

Cause 2: Some stations are not TELIKOU. So these stations do not have Online connector.

Solution 2: Change to TELIKOU main station.

Problem: The volume of front panel speaker is too weak

Cause: When the front panel speaker is turned on, pressing Mic button will reduce the speaker output level about 6dB and helps minimize feedback

Solution : Turn off the Mic button after each speaking.

VI Technical Specification

PRE-AMP:

Microphone impedance: Dynamic 200ohm

Gain form Mic to intercom line: +49dB

Bandwidth: 40Hz-8000Hz \pm 2dB

POSTPOSITION-AMP:

Load impedance: 50-2000ohm

Output level: +17dBv

Distortion: <0.1% (1000Hz)

Gain from line to output: +31dB

BANDWIDTH:

200Hz-800Hz ±2dB

SIDETONE:

Adjustable range: -40dB, 32dB

EARPHONE:

Dynamic 50-2000 ohm

MICROPHONE:

Dynamic 100-600 ohm

CONNECTOR:

Panel Mic connector: XLR-3F

Pin 1 -- Mic common

Pin 2 -- Mic hot

Pin 3 -- parallel connected with Pin 2 internal

.

Headset connector: XLR-4M or XLR-5F

Pin 1--Mic common

Pin 2--Mic hot

Pin 3--headphone common

Pin 4--headphone hot

Pin 5—Null

Intercom cable connector: XLR-3F

Pin 1 --- Common (Shield)

Pin 2 --- Power (+24 VDC)

Pin 3 --- Audio

Program Input: XLR-3F

Pin 1 --- Common (Shield)

Pin 2 --- + Audio

Pin 3 --- - Audio

Announce Out: XLR-3M

Pin 1 --- Common (Shield)

Pin 2 --- +Audio

Pin 3 --- -Audio

Online Connector: XLR-3M

Pin 1 --- Common (Shield)

Pin 2 --- Control Signal

Pin 3 --- Audio Signal

POWER SUPPLY:

AC 90-260V, 50-60Hz, <45VA

Output voltage: 24V DC,

Output current: 2.5A peak (single), 5A peak (dual), 1.5A max (single), 3A max (dual)

Short circuit start current: 1.2-1.5 times max current

Short circuit reset time: 2 sec

STATION CAPACITY:

Single power supply 20 beltpacks; dual power supply 40 beltpacks;

ENVIRONMENTAL:

0° - 50°C (32°-122°F)

DIMENSION:

19" (W) x1.75" (H) x9.48" (D), 482mm x 44.5mm x 241mm

WEIGHT:

2.6kg

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