TELIKOU Intercom System

MS-200 Main Station

Instruction Manual

I. Introduction

Thank you for choosing TELIKOU intercom product. The MS-200 two-channel main station is a powerful, yet user friendly unit that server as a heart of a TELIKOU intercom system. We recommend you read through this manual to better understand the function of MS-200. 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-200 is a two 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 and 1/4 inch compatible microphone jack.
- Automatic circuit short protection and indication.
- Sidetone Null adjustment.

III. Basic operations
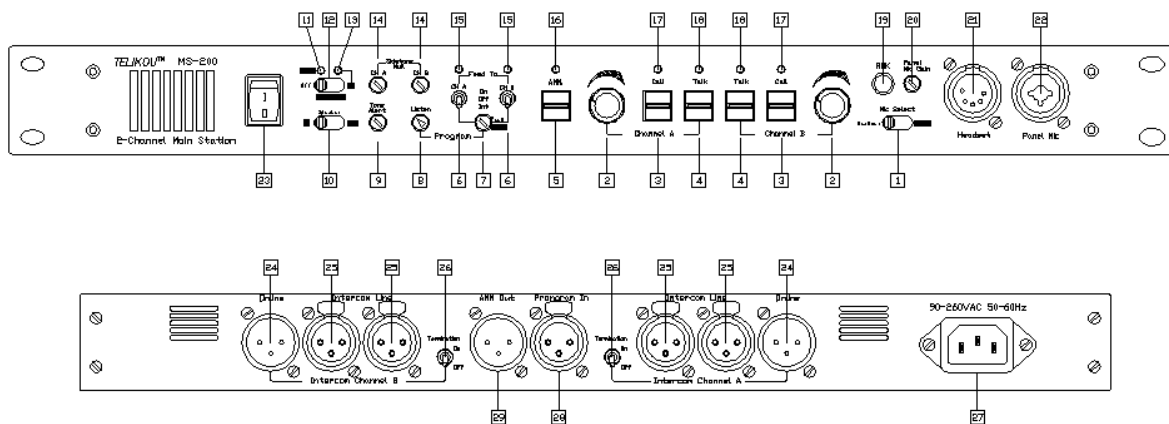
Front Panel

1. Mic Select Switch

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

2. 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.

3. Call Switch

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

4. Talk Switches (Talk With)

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 above will light (GREEN). The settings are as follow:

 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.

5. 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 above will light. The settings are as follow:

 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.

6. Program Feed To

Turn the switch up or down will send the external input signal to intercom channel. Each channel has corresponding control handle. The settings are as follow:

 ON: The corresponding channel receives program signal from Program Input at rear panel.

 OFF: The corresponding channel can not receive program signal.

 INT: The corresponding channel receives program signal from Program Input at rear panel. If Talk Switch is turned ON, the program signal will automatic interrupted.

When the switch is turned ON or INT, the LED above will light.

7. Program Level Control

Adjust this control to set the program audio level sent into intercom channel by clockwise or

counterclockwise direction.

8. Program Listen Level Control

Adjust this control to set the program audio level heard from the headset and panel speaker.

9. Tone Alert Level Control

When MS-200 receives a call signal from belt pack or other stations, an internal buzzer will sent a hum to panel speaker and earphone. This knob adjusts the hum level.

10. Speaker Switch

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

11. Power LED

This green LED lights on when the MS-200 is receiving AC power and the power switch on the rear panel is turned on.

12. Link (A+B)

When this switch is set to the Off position. Channel A and Channel B are individual and they can not communicate to each other.

When this switch is set to the ON position. The LED indicator right above this switch will light. Channel A and Channel B are connected to each other. Under this situation, all the user station on Channel B are added to Channel A. And the Channel B controls and switches will be inactive. The Sidetone zero-adjusting for Channel A may required some readjustment.

13. Link (A+B) LED:

This green LED is lit when the Link (A+B) switch is ON, to provide a visual indication that party line Channels A and B are linked together.

14. Sidetone zero-adjusting

The MS-200 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 here your own voice back in the speaker or headphones. This is called sidetone. If you are using the MS-200 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 the following procedures to correctly

set the sidetone level controls.

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

1   Turn off the Party Line Link (A+B) switch.

2   Turn off all the microphones on sub-stations and belt packs.

3   Set Mic select switch to panel.

4   Turn the Level control for Channel B all the way down. Set the level control for Channel A to a comfortable level.

5   Press the Channel A Talk button and 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.

6   Repeat this procedure for Channel B by turning the Channel A Level control down and adjusting the Channel B controls.

B) Sidetone Adjustment Procedure for Headset:

1   Turn off the Party Line Link (A+B) switch.

2   Turn off all the microphones on sub-stations and belt packs.

3   Set Mic select switch to headset.

4   Turn the Level control for Channel B all the way down. Set the level control for Channel A to a comfortable level.

5   Press the Channel A Talk button and 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.

6   Repeat this procedure for Channel B by turning the Channel A Level control down and adjusting the Channel B controls.

C) System Sidetone Adjustment

1   Turn off all the microphones on sub-stations and belt packs.

2   Followed by A) and B), adjust sidetone for MS-200 main station.

3   Adjust sub-station and belt pack's sidetone one by one to satisfied level.

15. Feed To LED

This LED lights when Program Feed To function is set to ON or INT.

16. Announcement LED (ANN.LED)

This LED lights when announcement switch is enabled.

17. 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.

18. Talk LED

This LED lights when Talk switch turns to ON or PTT

19. 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 on 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.

20. 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.

21. 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 to be as follow :

Pin 1 -- Mic common

Pin 2 -- Mic hot

Pin 3 -- parallel connected with Pin 2 internal

22. 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 to be as follow:

Pin 1--Mic common

Pin 2--Mic hot

Pin 3--headphone common

Pin 4--headphone hot

Pin 5—Null

23. Power Switch

The Power Switch can be used to turn AC power to the MS-200 on or off.

Rear Panel

24. Online Connector

It is used for online function among TELIKOU working main stations. If there are more than one TELIKOU main station are connected by Online Connector in the system, pressing RMK button on any main station kills all the MIC of belt packs. All the TELIKOU main stations are can be connected by Intercom Line Connector as well. But under this condition, pressing RMK button on any main station will not affect other belt packs which are not directly connect to this main station. This 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 can only work with TELIKOU main station. It is not allowed to connect this interface to intercom cable connector (Intercom Line); otherwise, the system will not work properly.
2. Intercom Line connector is used to connect those main stations are not TELIKU. On this situation, RMK function only can work with belt packs which are connected to TELIKOU main stations.

25. Intercom Line connector

3-pin XLR female socket

The pinout of the intercom connectors is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- Power (+24 VDC)

Pin 3 --- Audio

26. Termination switch

When this switch is turned to ON position, one 220 ohm termination resistor will be connected to intercom line. If the intercom system is not terminated, the level of intercom line will be too 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 aggravated, and the level of intercom line will be too low.

This switch is set to ON position by factory default. Before using, you should set it to ON or OFF position according to the actual connection of intercom line.

27. AC Power Connection

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

28. Program Input

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

29. Announce Out

This connector is 3-pin XLR male. Press the Announce button 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

IV. Installation and cable

1. Installation

MS-200 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-200. 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 un-terminated.

Solution 3: Set the MS-200 termination switch to the ON position.

Cause 3: A headset cord is too long or jointing quality .

Solution 3: 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: Inductive pickup caused by close proximity of this main station or connected remote stations to power lines or transformers.

Solution 1: Relocate the offending unit.

Cause 2: Intercom line cable is not wired properly; the shield of microphone cable is not connected to Pin-1 of 3-XLR

Solution 2: Check intercom line cable. Make sure all the cables' Pin-1 of 3-XLR connects correct.

Cause 3: 10 Ohm chassis ground resistor is open.

Solution 3: Bridge a 10 Ohm resistor between system ground (G) and earth ground ($\overset{\perp}{\overline{\overline{}}}$) of   any power supply.

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

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.

VI Technical Specification

PRE-AMP:

Microphone impedance: Dynamic 200ohm

Gain form Mic to intercom line: +49dB

Bandwidth: 40Hz-8000Hz ±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 -- Null

.

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:

17 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

Notice

While TELIKOU makes every attempt to change its product manuals, that information is subject to change without notice.