

***TELIKOU* Intercom System**

**WS-200 Two-Channel Recessed Speaker Station**

**Instruction Manual**

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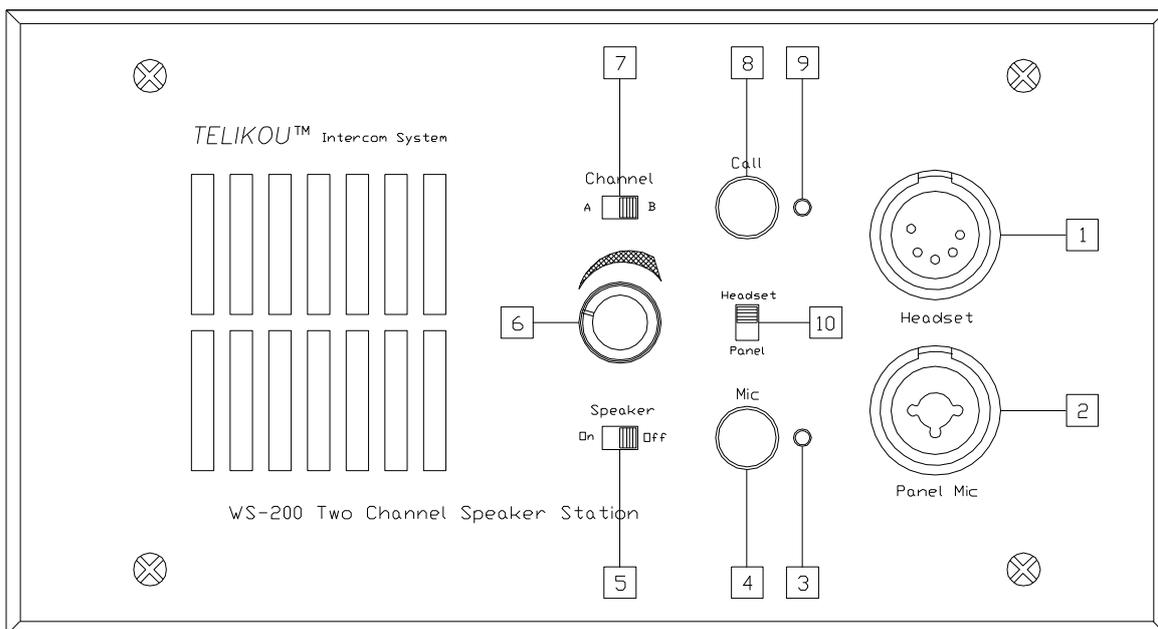
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### I. Introduction

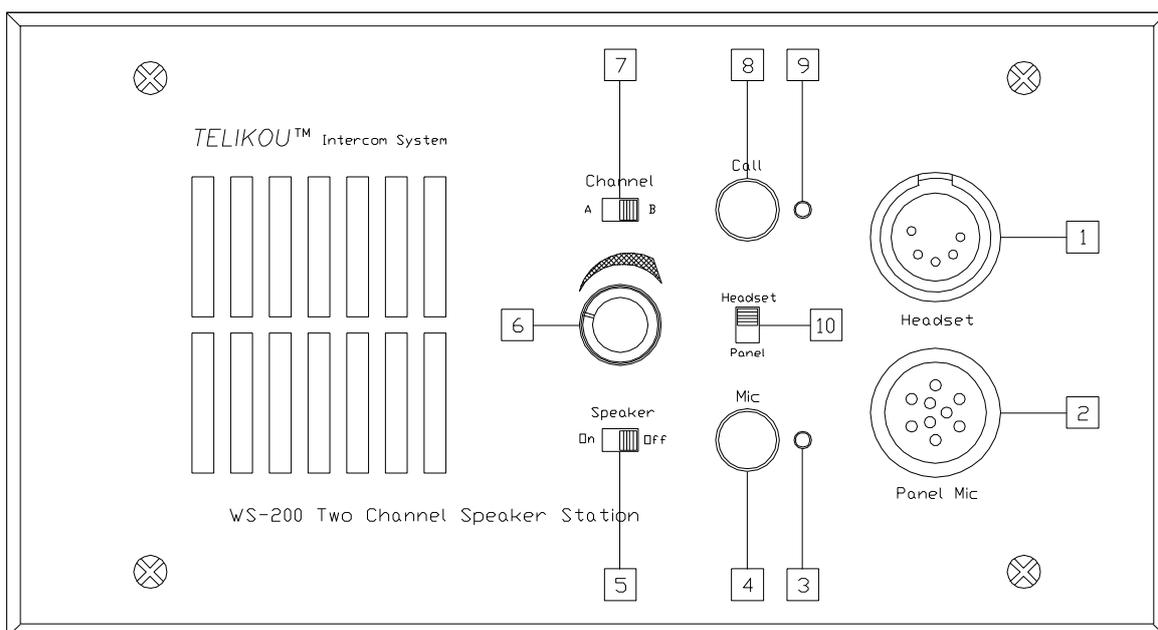
Thank you for choosing TELIKOU intercom product. The WS-200 Two-channel recessed main station suitable for the situation which needs the equipments mounted on the wall.

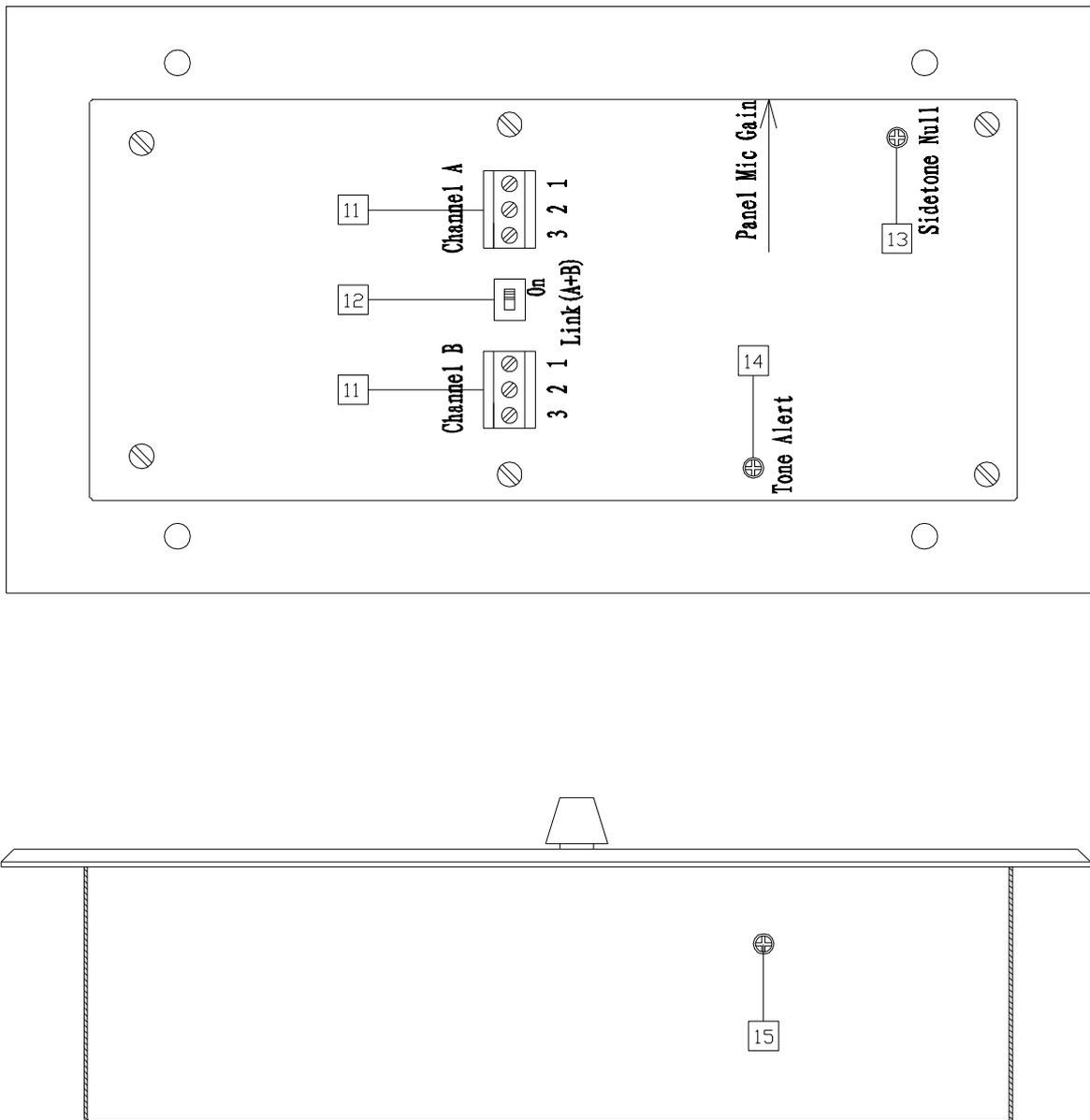
This system adopts wired connection, and has following features, free of external emission interference, stable and reliable performance, flexible configuration, full-duplex communication, clear and loud communication sound, easy operation, and strong noise resistance.

### II. Basic operations



OR





### 1. 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

## **2. Panel Mic Connector**

WS-200A uses a double-purpose connector which supports XLR plug or 1/4inch plug unbalanced microphone.

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

Pin 1 -- Mic common

Pin 2 -- Mic hot

Pin 3 -- Null

WS-200B uses an internal microphone.

## **3. Microphone LED**

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

## **4. Microphone Switch Button (Mic)**

Press microphone button will turn on the microphone and the green LED light at right. The audio signal from microphone will be sent through intercom line. Press microphone button again, the microphone and LED light will be turned off. When WS-200 is connected to any stranded TELIKOU main station, this microphone switch button can be turned off by RMK function on main station.

When the front panel speaker is turned on, pressing microphone button will reduce the speaker output level about 6dB to help minimize the feedback.

After talking, the microphone should be turned off.

## **5. 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.

## **6. 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.

## **7. Channel Select Switch**

This switch selects which channel WS-200 is using.

## **8. Call Switch**

Send call signal from station to channel. Turn up or down the handle of call switch, the LED which

above the selected channel will light (RED). This switch is without self-locking function, release and reset.

### **9. Call LED**

This LED will light under two cases: a) called: when the call signal from communication channel is received; b) call: the call switch is turned on.

### **10. Mic Select Switch**

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

### **11. Intercom Line connector**

3-pin XLR female socket

intercom connectors is as follows:

Pin 1 --- Common (Shield)

Pin 2 --- Power (+24 VDC)

Pin 3 --- Audio

### **12. Channel Link Switch (Link)**

The switch is at 'ON', channel A and channel B are linked. The Channel Select Switch is unusable.

### **13. Sidetone zero-adjusting**

The WS-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 hear your own voice back in the speaker or headphones. This is called sidetone. Unexpected sidetone could cause feedback between speaker and microphone. In either case, the sidetone should be minimized. Sidetone zero-adjusting is for this purpose. Adjust the handle, make you hear yourself minimize.

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 on the Mic switch. Set Mic select switch to panel.
- 2 Turn the level control to a comfortable level.
- 3 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 on the Mic switch. Set Mic select switch to headset.
- 2 Turn the level control to a comfortable level by having someone talk to you from another station.
- 3 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 beltacks.
- 2 Followed by A) and B), adjust sidetone on MS-800 main station.
- 3 Turn on the microphone on sub-station and beltacks one by one, and then adjust the Sidetone to satisfied level.

**14. Tone Alert Level Control**

When Ws-200 receives a call signal from outside, the panel speaker gives a continued buzz. This knob is used to adjust the level of buzz.

**15. 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.

**III. Installation and cable**

**1. Installation**

A hole of size 210mm wide, 114mm high and 54mm deep is need for the installation of WS-200. Four 5mm fix holes are set evenly. The distance between any two holes is 144mm on width direction and 92mm on height direction.

**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  $0.5\text{mm}^2$ , when it is used in mobile mode, the cross section area of single line should be at least  $0.35\text{mm}^2$ . 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.

## **IV. Troubleshooting**

### **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 help minimize feedback

Solution: Turn off the Mic button after each speaking.

### **Problem: Power LED wink**

Cause 1: Direct short on the intercom channel

Solution 1: Remove all the intercom cables from SPK-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 unterminated.

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

Cause 4: A headset cord is too long or jointing quality.

Solution 4: 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.

Cause2: Inductive pickup caused by close proximity of this main station or connected remote stations to power lines or transformers.

Solution2: 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 correctly.

**V. 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  $\pm$ 2dB

**SIGNAL-TO-NOISE:**

>72dB

**SIDETONE:**

Adjustable range: >32dB

**EARPHONE:**

Dynamic 50-2000 ohm

**MICROPHONE:**

Dynamic 100-600 ohm

**CONNECTOR:**

A) Panel Mic connector:  $\varnothing$ 6.35mm/XLR-3F

Pin 1 -- Mic common

Pin 2 -- Mic hot

Pin 3 -- Null

B) Headset connector: XLR-5F

Pin 1--Mic common

Pin 2--Mic hot

Pin 3--headphone common

Pin 4--headphone hot

Pin 5—Null

C) Intercom cable connector: XLR-3F

Pin 1 --- Common (Shield)

Pin 2 --- Power (+24 VDC)

Pin 3 --- Audio

**POWER SUPPLY:**

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

Output voltage: 24V DC,

**ENVIRONMENTAL:**

0° - 70°C (32°-158°F)

**DIMENSION:**

8.27" (W) x4.49" (H) x2.13" (D), 210mm x 114mm x 54mm

**WEIGHT:**

0.56kg