

***TELIKOU*<sup>®</sup> Intercom System**

**SKYLINE SK-100 / SK-190 Wireless Intercom**

**Instruction Manual**

© **TELIKOU Systems**

All Rights Reserved

## I. INTRODUCTION

Thank you for choosing TELIKOU SKYLINE series wireless intercom products.

1. This system consists of 1x SK-100 main station, max 4x SK-100ANT antenna(RJ45 connector), Max 16x SK-190 wireless belt packs.
2. SK-190 belt pack can roam among different antennas. If the belt pack walks out of the antenna signal range, it will sound a cue.
3. SK-190 belt pack can roam to another antenna manually .
4. All the SK-190 belt packs under one antenna form a party line group. In this group, everyone can talk to each other.
5. When SK-100 main station turns on a certain TALK button, all belt pack screens corresponding are awakened to listen to the base station.
6. When TALK button on main station is OFF, if a belt pack turns on the MIC button. The LED above TALK button flashes. After pressing the TALK button, it enters a full duplex conversation. If the main station turns on other channels at this time, they will all join the call.
7. After conversation, when the TALK button on main station is turned off , the corresponding belt pack MIC will also be turned off at same time.

## II. Main Station

Main station is the control unit for the whole wireless system. It talks with the corresponding group of any antenna through the button switch on front panel. It also can sent program audio, 2-Wire and 4-Wire audio to the system. When the active antenna is less than 200 meters away from the base station, the power is supplied by the base station; otherwise, the power is supplied by the local 24V or the USB port 5V.

### Front Panel



### 1. Headset

XLR-5M Pin definition:

- Pin 1 -- Mic-
- Pin 2 -- Mic+
- Pin 3 -- Ear-
- Pin 4 -- Ear+
- Pin 5 -- Ground

## 2. Panel Gooseneck Microphone

4 Pin Aviation Pin definition:

Pin 1 -- Mic-

Pin 2 -- Mic+

Pin 3 -- Ground

Pin 4 -- Null

## 3. Volume / Menu Control knob

Rotary encoder with switch. The rotary encoder is used to adjust the volume of the base station headphones, with a total of 16 choices. When the switch is pressed for more than 3S, the base station enters the setting function.

## 4. All Button

Press this button will turn on or off all the channel.

## 5. Channel Button (TALK) and Indicator LED

Each button corresponds one antenna group. For example, press channel 1 button to talk with belt packs which under antenna 1. In standby mode, if press MIC button on belt pack, the LED above corresponding channel button will flash. Press channel button to enter full duplex model.

If more than one channel button is pressed, these groups make a big communication group.

When the base station turns off the channel button after the call, the belt pack MIC button corresponding is also turned off at the same time.

## 6. LCD screen

Hold Volume/Menu knob more than 3s, main station enter setting menu. By rotating the Volume/Menu knob, the cursor will move between options, and the cursor will stop at a certain option, press the knob once to enter the option. Rotate the knob clockwise and anticlockwise to select the value of this option and return to the previous menu. In the top menu, select "Save&Exit" or "Exit" to exit the setting function.

### ● LCD screen display content under working status

First Line :        The name of antenna  
                         GP1   GP2   GP3   GP4

Second Line :     The number of registered belt packs and the status of Aux In.  
                         If antenna is not connected, this line is blank.

- **The Settings**

**Language :** English or Chinese

**MIC Select :** Headset - Panel microphone and panel speaker do not work.  
Panel MIC - Headset microphone does not work. Earphone volume drops 6dB.

**MIC Gain :** Change panel microphone gain. It has total 16 levels.

**Local Side tone :** Adjust the microphone level which sent back to panel speaker. It has total 16 levels.

**AUX. Audio :** There are four antenna groups to select. After select, there are three model to select.

On : Aux audio in is enable

OFF : Aux audio in is disable

INT : When channel button is disable, the aux audio in is enable;  
When channel button is enable, the aux audio in is disable.

**Tally :** Screen shows Tally 1 - Tally 4 four tally signal. Choose any signal, screen shows belt pack 1 to belt pack 16. Then assign the selected tally signal to this belt pack.

**Frequency :** Select system working frequency

**Save&Exit :** Save change and exit setting

**Exit :** Without save any change and exit setting

## 7. AUX. In

Allows auxiliary audio input to system. The green LED above lights constantly.

## 8. AUX In Level Adjustment

Adjusts the auxiliary audio level input

## 9. 4-Wire

Allows external 4-wire audio input to system. The green LED above lights constantly

## 10. 4-Wire Level Adjustment

Adjust the 4-wire audio level input

## 11. 2-Wire

Allows external 2-wire audio input to system. The green LED above lights constantly  
When receives call signal, the green LED above flashes.

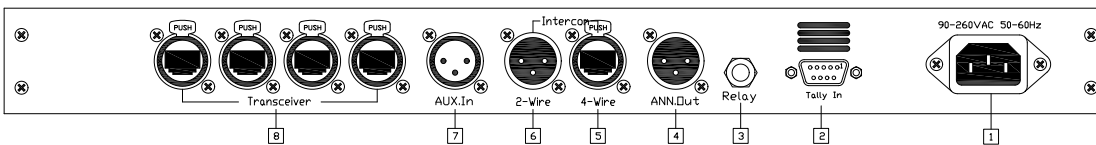
## 12. ANN. Out

Press and hold the button to sent microphone signal to ANN.out connector. The LED above lights. The internal relay pull in. The relay connector at rear panel status changes. Release the button, relay returns to its original state.

## 13. Panel Speaker

8ohm / 2W speaker

## Rear Panel



### 1. Power Connector

AC 90V~260V, 50-60Hz

### 2. DB-9 Data Connector

This DB-9 connects switcher Tally output. It receives four dual color tally signal and can be assigned to any belt pack you want.

Pin definition:

Pin 1 --- Tally 1 Green

Pin 2 --- Tally 1 Red

Pin 3 --- Tally 2 Green

Pin 4 --- Tally 2 Red

Pin 5 --- Tally 3 Green

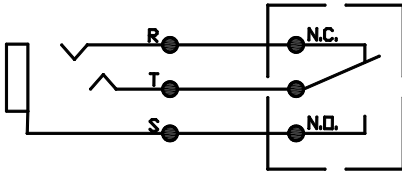
Pin 6 --- Tally 3 Red

Pin 7 --- Tally 4 Green

Pin 8 --- Tally 4 Red

### 3. Relay Connector

6.35mm / 1/4 inch connector. When ANN.Out button is pressed, this relay is closed.



R: Normally Closed Contact

T: Moving Contact

S: Noormally Open Contact

### 4. ANN. Out

Base station microphone output.

XLR-3M connector:

Pin 1 --- GND

Pin 2 --- Audio Out +

Pin 3 --- Audio Out -

### 5. 4-Wire Connector

Audio in and Audio out connector. Audio level is 1Vp-p

RJ-45 Connector:

Pin 1 --- GND

Pin 2 --- 12VDC

Pin 3 --- Audio In +

Pin 4 --- Audio Out +

Pin 5 --- Audio Out -

Pin 6 --- Audio In -

Pin 7 --- NULL

Pin 8 --- NULL

### 6. 2-Wire Connector

XLR-3M Connector

Pin 1 --- GND

Pin 2 --- 24VDC

Pin 3 --- Audio

## 7. AUX. In

XLR-3F Connector, 1Vp-p audio level

Pin 1 --- GND

Pin 2 --- Audio In +

Pin 3 --- Audio In -

## 8. Transceiver Connector

Four RJ-45 connector to Antenna

RJ-45 Connector:

Pin 1 --- GND

Pin 2 --- 24VDC

Pin 3 --- Rx +

Pin 4 --- Tx +

Pin 5 --- Tx -

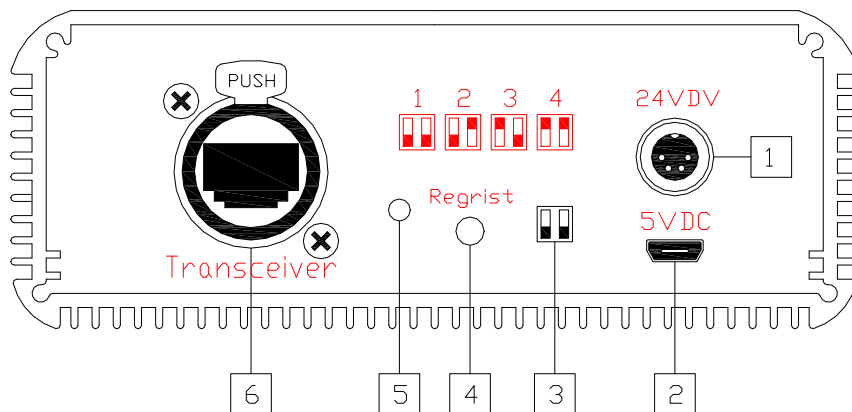
Pin 6 --- Rx -

Pin 7 --- 24VDC

Pin 8 --- GND

## III Active Antenna

The signal coverage radius of the antenna in the open area is 300 meters. Each antenna can connect up to 4 wireless belt packs.



### 1. Power Connector

Pin 1 --- GND

Pin 2 --- Null

Pin 3 --- Null

Pin 4 --- 24VDC

## 2. USB Connector

- External power bank supplies 5VDC
- Computer Data port

## 3. Antenna Sequence Number

Two digits coding switch. The number at the top of the chart is the antenna number corresponding to different dial positions

## 4. Register

Belt pack should register with all antennas that belt pack may roam to.

### A) Pairing Belt Pack

Press and hold the register button until the indicator flash. Belt pack enters setting menu and selects registration. Once the indicator becomes solid, it means that the pairing process is completed. Antenna backs to normal working mode.

### B) Delete Belt Pack

Make sure all the belt packs which are paired with this antenna is turned on. Press and hold the register button until the indicator flash. Press register button 7 times will delete all the belt pack pairing.

Note: If belt pack is not turned on before antenna deletes belt pack pairing. This belt pack must pairing again with same antenna otherwise this belt pack can not work properly.

Or this belt pack must be reset before use.

## 5. Power and Registration Indicator

After power on, the indicator light is always on. When the antenna enters the registration state, the indicator flashes slow (1s). After pairing finished, the indicator light becomes always on.

## 6. Active Antenna Connector

E1 connector. Antenna connects to base station through CAT5 cable.

Pin 1 --- GND

Pin 2 --- 12VDC

Pin 3 --- Audio Input +

Pin 4 --- Audio Output +

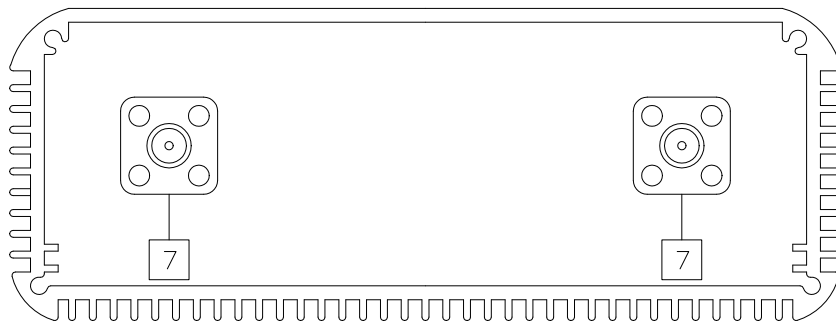
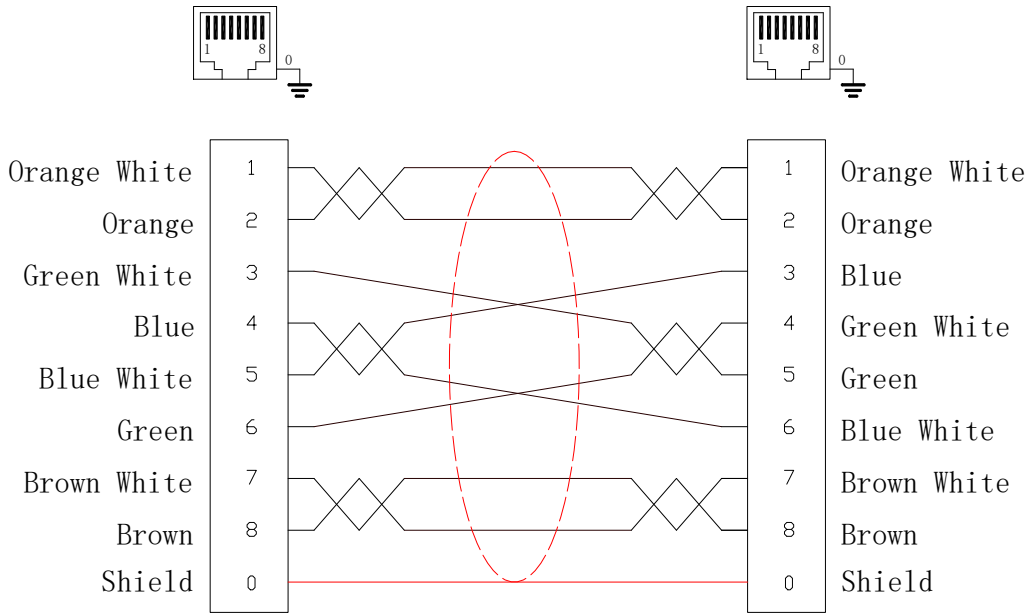
Pin 5 --- Audio Output -

Pin 6 --- Audio Input -

Pin 7 --- Control Signal

Pin 8 --- Control Signal





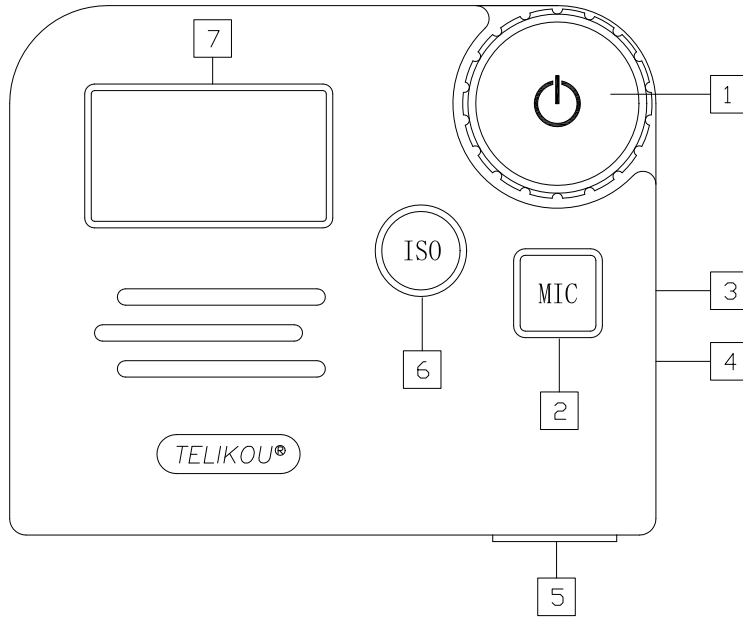
**7. SMA Antenna Connector**

Two SMA connectors

**IV. Belt Pack**

SKYLINE-190 belt pack uses 4x AA battery. Rechargeable battery can be charged through micro-USB connector. In the multi-antenna signal coverage area, belt pack can manually switch to different registered antenna. When walk over the antenna coverage, belt pack headset gives warning sound.

Belt pack is in standby mode after power on. When there is an external call, it will be answered automatically. When press Mic button, it will make a full duplex communication.



### 1. Power Button and Volume Adjustment

With switch encoder. Turn it clockwise or anti-clockwise to adjust earphone audio volume. There is 16 levels to select. If hold button more than 5s, the belt pack is turned on or off.

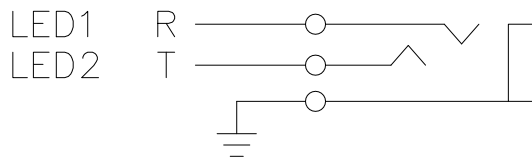
### 2. Mic Button

Touch button with two operating mode

- PTT: Push to talk
- Latch:

### 3. Tally Light Connector

3.5mm connector



### 4. Micro-USB Connector

Charging port. If the belt pack has a Ni-MH/Ni-Cd rechargeable battery, you can connect a 5v adapter to charge it.

### 5. Headset Connector

XLR-5M connector

- Pin 1 --- Mic -
- Pin 2 --- Mic +
- Pin 3 --- Ear -
- Pin 4 --- Ear +
- Pin 5 --- GND

## 6. ISO Button

Press and hold the button. The belt pack makes an isolated conversation with ISO target belt pack. Release the button, the ISO conversation is finished.

## 7. LCD Screen

- Display content:
  - Registered antenna number, Current working antenna number and Signal field strength
  - Battery Power
  - Working Frequency
  - Belt Pack Label (BP-1, BP-2, BP-3, BP-4, BP-5, BP-6, ..., BP-16 )
  - ISO Target Label ( ISO: Null, BP-1, BP-2, BP-3, BP-4, BP-5, BP-6, ..., BP-16)

- Setting Menu

Hold the Mic button and press power button will enter setting menu. LCD screen displays menu. Rotate the power and volume encoder to move the cursor. When the cursor is on an option, press the power and volume encoder to enter the option. Rotate the power and volume encoder to Change parameters.

- Language: English or Chinese
- ISO Set: Base and other belt packs which under same antenna
- Mic Gain: Volume 1 ~ Volume 16
- Frequency: select 1.8G or 1.9G first, then select country or area.
- Registration: Register belt pack to antenna
- Label: BP-1, BP-2, BP-3, BP-4, BP-5, BP-6, ..., BP-16
- Reset: When the belt pack can not work normally due to problems such as registration, you can use this function to clear the registration information and restore the factory settings.
- Save&Exit: Save change and exit
- Exit: Exit without save any change

## 8. Roaming

Every belt pack can be paired with four antennas. Belt pack shows the antenna number (1-4)

which are already paired on LCD screen. Belt pack can roam among these antennas. Press and rotate the power and volume encoder can switch antenna manually.

**V Technical Parameters**

1. Power: 4xAA Battery or 4xAA Rechargeable Battery
2. Standby Time: Over 72 hours
3. Working Time: Over 10 hours
4. Charging: Micro-USB 5VDC
5. Frequency

1.8G Channel		
Channel	Transmit	Receive
0	1897.344	1897.344
1	1895.616	1895.616
2	1893.888	1893.888
3	1892.160	1892.160
4	1890.432	1890.432
5	1888.704	1888.704
6	1886.976	1886.976
7	1885.248	1885.248
8	1883.520	1883.520
9	1881.792	1881.792
1.9G Channel		
Channel	Transmit	Receive
0	1921.536	1921.536
1	1923.264	1923.264
2	1924.992	1924.992
3	1926.720	1926.720
4	1928.448	1928.448

6. DECT 1.8G RF unit test

Parameter		Nominal	Limit	Unit
TX POWER		22	≥ 18	dBm
Frequency OFFSET (Use FIG31 patter)		f © +/- 0	± 50	KHz
Freq deviation (FIG31) B FIELD	CH5	360	±30	KHz
	The other	360	300—400	KHz
Frequency drift	PCBA	0	± 15	KHz/slot
Receive sensitivity (@BER < 1000ppm)		-94	≤-90	dBm
Timing Fitter		0	± 5	ppm
RSSI @ RF CH5 & RF Level -50dBm		TBD	TBD	V
Reference clock		13.824000	±0.000010	MHz

**7. DECT 1.9G RF unit test**

Parameter		Nominal	Limit	Unit
TX NTP for PCBA		20	± 2	dBm
Frequency OFFSET (Use FIG31 patter)		f © +/- 0	± 50	KHz
Freq deviation (FIG31)	B FIELD	DATA: 360KHZ	For ATE: 320-400 (AT CH2)	KHZ
Frequency drift (PCBA)		0	± 20	KHz/slot
Receive sensitivity (@BER < 1000ppm		-94	<= -90	dBm
Timing Fitter		0	+/- 5	ppm
RSSI @ RF CH5 & RF Level -50dBm		TBD	TBD	V

**8. Size**

SK-100 Base Station: 480 x 255 x 45mm

SK-100 Antenna: 135 x 130 x 50mm(without antenna), 165 x 130 x 200mm(with antenna),

SK-190 Belt Pack: 105 x 90 x 35mm

**9. Weight**

SK-100 Base Station: 2KG

SK-100 Antenna: 0.45KG

SK-190 Belt Pack: 0.12KG (without battery)