








C23S Dual Band series
repeater **User manual**



PLEASE KEEP APPROPRIATELY AND CAREFULLY READ THIS USER MANUAL BEFORE INSTALLATION

 <p>The power supply voltage of repeater should meet the standards of security requirements</p>	 <p>Ensure of grounding, waterproof and lightning protection when installing the repeater</p>
 <p>The repeater should be installed and started by professionals</p>	 <p>Do not open the repeater, maintain or replace the components</p>
 <p>Keep the repeater away from heat source, do not install in a narrow space</p>	

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Package content



C23S repeater 1PC



12V2A power adapter



installation screws



U-shaped back frame

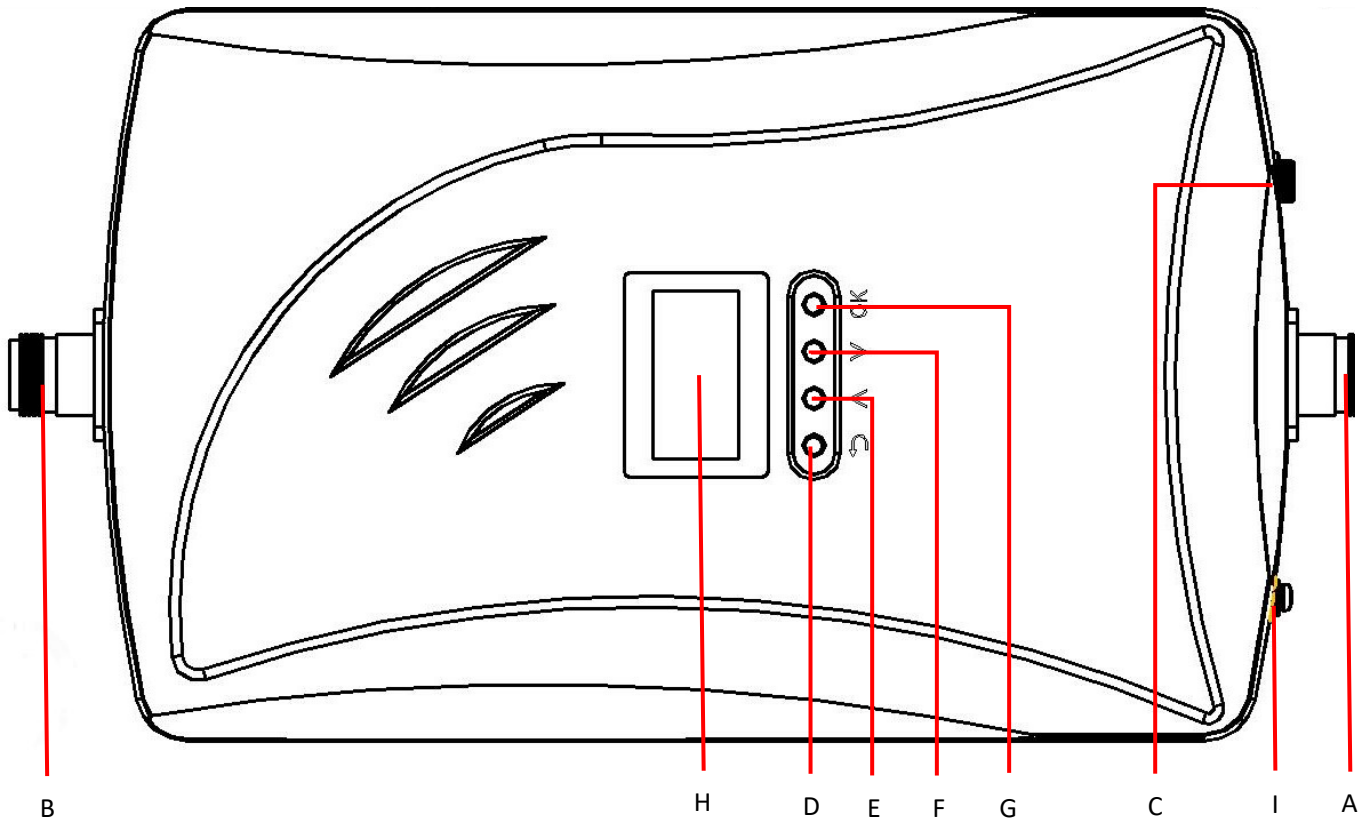
Product description

This product is a highly intelligent cell phone signal amplifier, the design of this product adopts digital ALC technology, anti-interference technology. This product is equipped with LCD intelligent display, the working status of the device such as working frequency, gain, output power, ISO, ALC alarm can be clearly displayed. This product has a elegant appearance, light structure, light weight. The installation and maintenance of this product is very easy.

Functional Features

- The display shows the working status of the device clearly, and the key operation is more convenient and faster.
- Simultaneous support for dual-band multi-operator networks.
- Low power consumption and low interference.
- digital ALC technology, automatic control of output power to ensure stable signal coverage.
- Anti-interference technology, automatic detection of isolation degree and self-excitation elimination function to prevent self-excitation from interference with base stations.
- manual gain attenuation function, with 1dB step to attenuate the gain among the range of 1-31dB.

Connector Description



- A : Donor antenna port (N-female)
- B : Service antenna port(N-female)
- C : 12V DC power supply port
- D : Return button
- E : Up button
- F : Down button
- G : OK button
- H : Display screen
- I : Grounding screw

Operation and display instructions

a. The functions of the control panel are as follows.

Return button: Return to the previous level button.

Up button: Select the button from the bottom up.

Down button: Select the button from the top down.

Confirmation key: Select the confirmation key.

b. Screen and display

After power-on,the main menu interface of the display shows the real-time working frequency, input and output power, gain, and alarm prompts (the following instructions are for reference only, and the specific frequency will be matching the equipment in use).

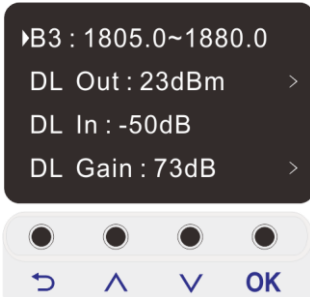


Figure 1

c. The display of Working frequency, power.

Press the return button to check the uplink frequency and downlink frequency, input and output power and gain (as shown in Figure 2, 3).



Figure2

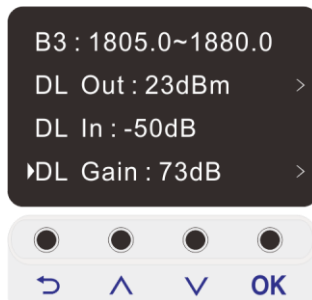


figure3

d. Smart/Manual mode setting.

Press the Return button to Figure 4, press the Up or Down button to move the display cursor to the second line "Status:OK" and press the Confirm button to enter (Figure 5), then press the Up or Down button to move the display cursor to "Device:OK" and press the Confirm button to enter. Finally, press the up or down button to select manual or automatic mode, press the confirmation button to confirm (Figure 6), press the return key to return to the main menu interface.

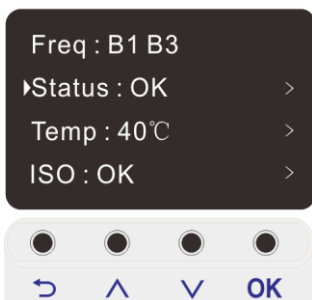


Figure 4

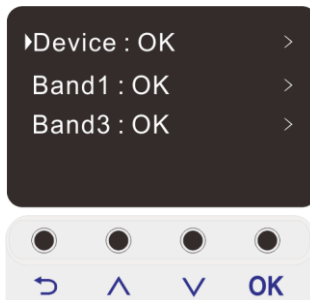


Figure 5

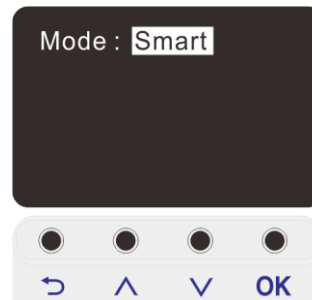


Figure 6

e. Switching the AP manually.

setting the PA switch can only be operated in manual mode, press the Return button to the uplink and downlink display of the system to switch the PA, then press the Up or Down button to move the display cursor to the second line of "DL/UL Out:xx" (Figure 7), then press the Confirm button to enter "XL PA:XX "(Figure 8,9), Press the confirmation button to enter "Enable:ON or OFF" ,press the up or down button to set the PA on or off and then press the confirmation button. Press the Return button to return to the main menu interface when the setting is completed.



Figure 7



Figure 8

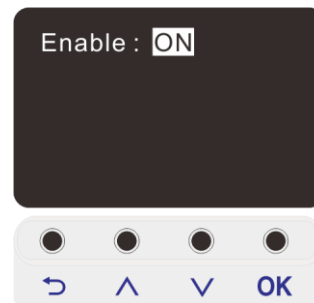


Figure 9

f. the setting of Uplink hibernation function

setting the hibernation function only can be operated in manual mode, press the Return button to the UL display of the system you want to switch the hibernation function, then press the Up or Down button to move the display cursor to the third line "UL In:xx" (Figure 10), then press the Confirm key to enter the setting,press the Up or Down button to move the display cursor to the second line "Status:XX" to set the hibernation function on or off (Figure 11,12), finally press the Return button to return to the main menu interface.

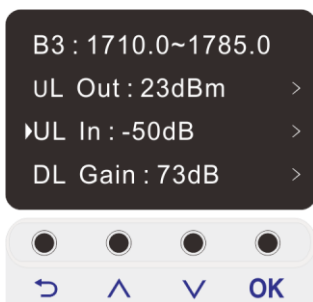


Figure10



Figure11

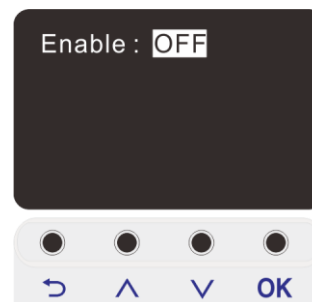


Figure12

g. ATT setting

ATT setting can only be operated in manual mode, press the Return button to go to the uplink or downlink of the system you want to set ATT (Figure 13), then press the Up or Down button to move the cursor to "DL/UL Gain: XX dB", press the Confirm button to enter (Figure 14), then press the Up or Down button to move the cursor to Press the up or down button to move the cursor to "ATT: XX dB", press the confirmation button to enter "ATT Value: 00 dB", then press the up or

down button to adjust the ATT value (Figure 15), and press the confirmation button to confirm.

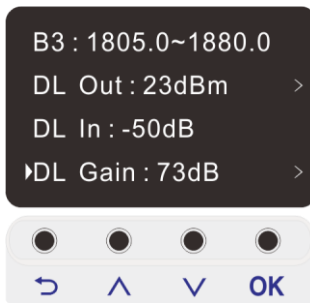


Figure13

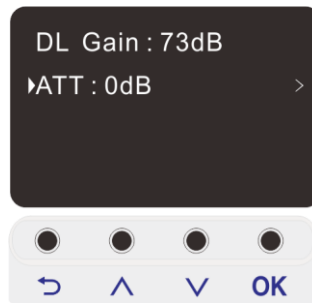


Figure14

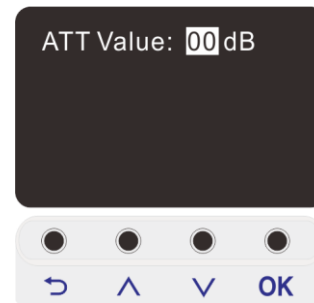


Figure15

h. Temperature alarm threshold and enable setting

The temperature alarm threshold setting can only be operated in manual mode, press the Return button to Figure 16 to check the real-time temperature of the equipment, then press the Up or Down button to move the cursor to "Temp: XX °C", press the Confirm button to enter (Figure 16,17), then press the Up or Down button to move the cursor to "Threshold:XX °C", press the Confirm button to enter, then press the Up or Down button to adjust the temperature threshold (Figure 18), then press the Confirm button to enter.

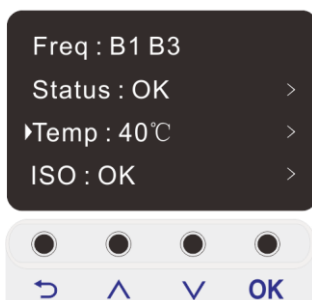


Figure16



Figure17

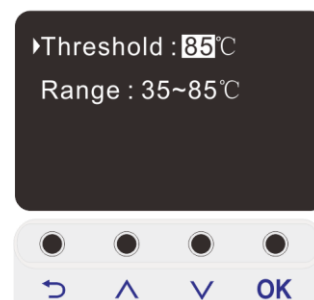


Figure18

The temperature alarm enable setting can only be operated in manual mode, press the Return key to Figure 16, then press the Up or Down key to move the cursor to "Alarm Enable: ON", press the Confirm key to enter (Figure 19,20), then press the Up or Down key to set the "Enable NO/OFF" temperature alarm enable switch, press the confirmation key to set, and press the return key to return to the main menu interface.



Figure19

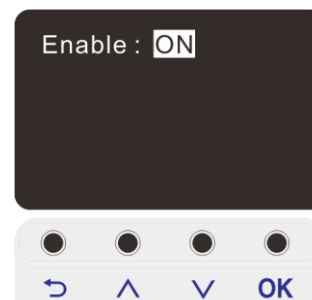


Figure20

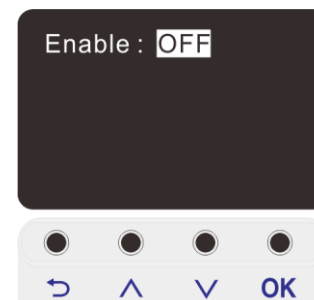


Figure21

i. Check the Isolation degrees.

Press the Return key to Figure 22, then press the Up or Down key to move the cursor to "ISO : XX", and press the Confirm key to enter (Figure 23) to view the isolation degree.

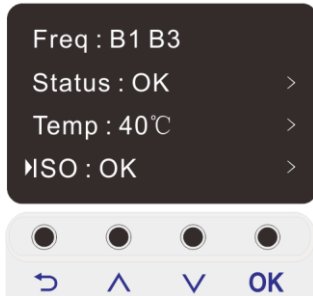


Figure22



Figure23

Technical parameters

Model	Uplink	Downlink
C23S-B1B3	1710 ~ 1785/1920 ~ 1980 MHz	1805 ~ 1880/2110 ~ 2170 MHz
C23S-B3B8	880 ~ 915/1710 ~ 1785 MHz	925 ~ 960/1805 ~ 1880MHz
C23S-B1B8	880 ~ 915/1920 ~ 1980 MHz	925 ~ 960/2110 ~ 2170MHz
C23S-B1B5	824 ~ 849/1920 ~ 1980 MHz	869 ~ 894/2110 ~ 2170MHz
C23S-B4B5	824 ~ 849/1710 ~ 1785 MHz	869 ~ 894/2110 ~ 2170 MHz
C23S-B2B5	824 ~ 849/1850 ~ 1910 MHz	869 ~ 894/1930 ~ 1990MHz
C23S-B8B20	832 ~ 862/880 ~ 915 MHz	791 ~ 821/925 ~ 960MHz

Item	Uplink	Downlink
Output power	23±2 dBm	23±2 dBm
Gain	73±2 dB	73±2 dB
Ripple in band	≤6~15 dB	≤6~15 dB
Spurious emission	9KHz~1GHz	≤-36 dBm
	1GHz~12.75GHz	≤-30 dBm
Gain Attentute Range	1~31 dB,step of 1 dB	
ALC control Range	≥ 25 dB	≥ 25 dB
OLED Indication	Band	Band name & frequency
	Gain	Uplink & downlink gain
	Pout	Downlink output power
	Work	Device work indication
	ISO	Isolation status indication

Automatically mute when there is no user: Available

Self oscillation elimination & turn off function: Available

Item	Uplink	Downlink
Over input turn-off:		Available
EVM	Fully comply with 3GPP	
PCDE	Fully comply with 3GPP	
ACRR	Fully comply with 3GPP	
Noise figure	≤8 dB	≤8 dB
Group delay	≤1.5 μs	≤1.5 μs
I/O impedance	50Ω	
Power supply	DC: +12 V	
Power consumption	< 20 W	
RF connector	N-Female	
Operating temperature	-10°C ~ +55°C	
Size	292*140*48mm	
Weight	<1.8kg	

Installation Guidance

Repeater installation requirements

- 1) Install in a space where there is no corrosive gas, smoke or liquid leakage.
- 2) Installed on a wall that is waterproof, lightning-proof, sun-proof and cool and airy.
- 3) The installation height should be easy to wire, easy to dissipate heat, safe and easy to maintain.
- 4) Have a stable and independent power supply.

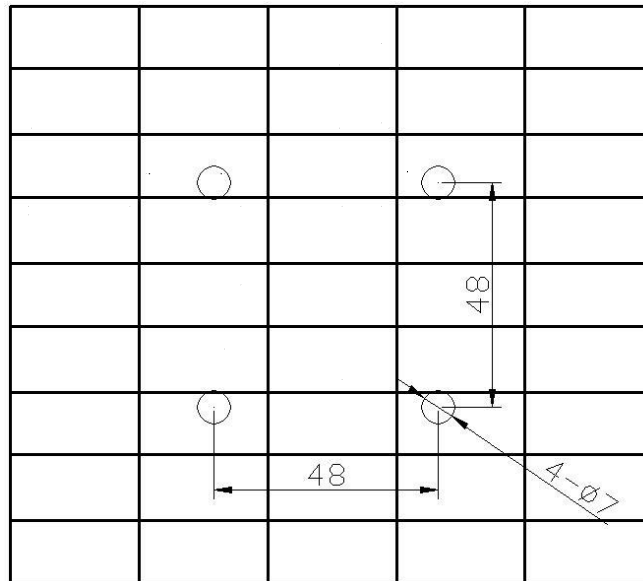
Installation tool

No.	Items	Quantity	Remarks
1	Percussion drill	1	Drill holes on wall, self-provided
2	Wrench	1	Reinforce the interface connection, self-provided
3	Expand plug, screws	4	Fix the device on the wall, included in the package
4	Mobile phone for testing	1	Test installation effectiveness, self-provided
5	Multimeter	1	Test voltage and wiring connection, self-provided
6	Screwdriver	1	Tighten or fasten the device, self-provided
7	Waterproof tape	A lot	Prevent liquid from leaking into the feeder interface, self-provided

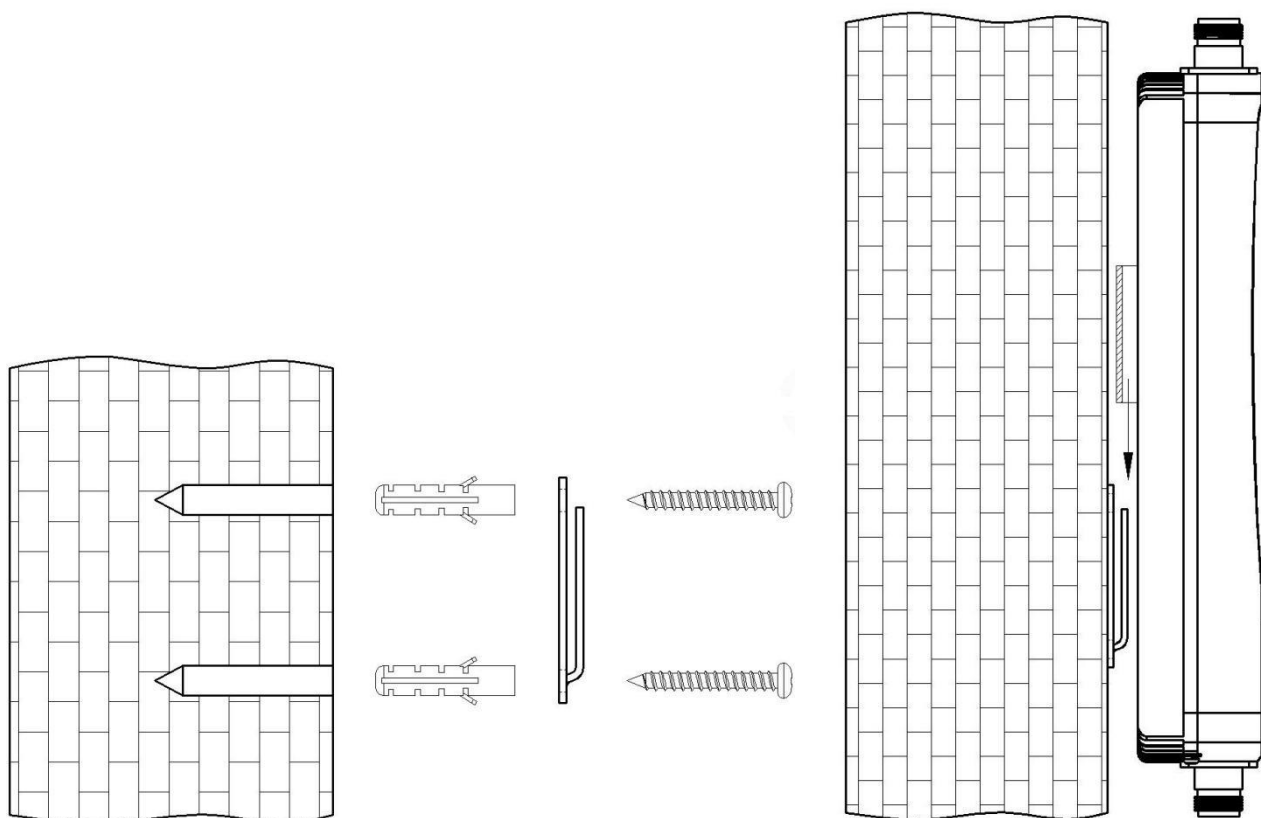
Installation Steps of repeater

This repeater needs to be installed on a solid wall, and its installation steps are as follows.

- 1) According to the size of the repeater and its installation requirements, choose a suitable place to place it.
- 2) Mark the U-shaped back frame installation hole position on the wall, drill holes with impact drill, the hole size is $\Phi 7$, and the hole point location diagram is as follows (unit: mm)



- 1) Put the $\Phi 8$ expansion tube into the 4 holes.
- 2) As shown in the picture, align the U-back frame fixing holes with the corresponding hole points, screw 4 M6*40 screws into the expansion tube with a screwdriver, then snap the repeater on the U-back frame and pull down to fasten.



Antenna connection

Select suitable outdoor and indoor antennas according to the characteristics of the coverage place, the installation and connection of outdoor and indoor antennas follow the following requirements.

- 1) Please refer to the antenna manual for the installation method of antenna;
- 2) The outdoor antenna shall be installed at the position with the strongest roof signal possibly, and the direction angle shall be aligned with the direction of the base station;
- 3) The length of 50-5 cable connected between outdoor antenna and repeater shall not exceed 20m;
- 4) The joint between outdoor antenna and feeder shall be wrapped with waterproof tape to avoid water oxidation or corrosion at the joint;
- 5) The height difference between indoor antenna and outdoor antenna shall be more than 5m, and the transmission direction shall not be aligned with the outdoor antenna;
- 6) It would be better to have a separation wall between the indoor antenna and the outdoor antenna;
- 7) The outdoor antenna is connected to the "BTS" port of the amplifier; The indoor antenna is connected to the "Ms" port of the amplifier;

Amplifier opening test

- 1) If possible, connect the amplifier grounding post to the grid ground with electric wire.
- 2) Check whether the connection joint between the repeater and the antenna is in good contact.
- 2) Plug the DC plug of the 5V/2A power adapter provided with the host into the DC +5V jack of the cell phone companion host and the AC plug into the nearest 220V power socket.
- 3) refer to the display function of the operating instructions, check the parameters of the display and determine whether the host is working properly.
- 4) Use the cell phone to test the signal strength and call quality within the coverage area.

Maintenance and Care

Operation and Maintenance

- **Power Supply**

Please ensure that the AC power supply voltage and frequency comply with the requirements of the Repeater.

- **Component Replacement**

Please do not repair or replace the components by yourself, otherwise may get an electric shock, only the authorized professional can maintain and replace the components

- **Waterproof and moisture-proof**

Please do not turn on or off the equipment in a humid environment.

Caution

Please switch off the power in the following cases.

- Power supply is not normal.
- Water or liquid flows into the equipment. Fire breaks out and the equipment is near to fire source.
- Working condition is not normal (Equipment overheating, abnormal smelling or abnormal sundries)
- Performance degradation

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