



Cell phone Signal Booster

User Manual

Thank you for choosing our company's Cell Phone Signal Booster Kit. Our product is specifically designed to address issues such as no signal, weak signal, inability to connect to the internet, and other mobile network problems.

We provide more targeted network coverage solutions for 2G, 3G, 4G. If you have any questions during the assembly of this kit, please contact technical support.

#### Cell Phone Signal Booster (Professional Name: Communication Signal Repeater)

Cell Phone Signal Booster functions by receiving outdoor mobile communication signals, amplifying them by repeater, and distributing them indoors via indoor antennas to enhance the strength of indoor mobile signals. It aims to provide a stable and reliable communication experience for all mobile users indoors.

#### Signal Blind Zone

1, It often occurs in mountainous or remote areas where the distance for signal transmission is too far, resulting in significant attenuation. The signal strength is lower than the minimum sensitivity that the phone can receive, causing the phone to be unable to receive communication signals normally.

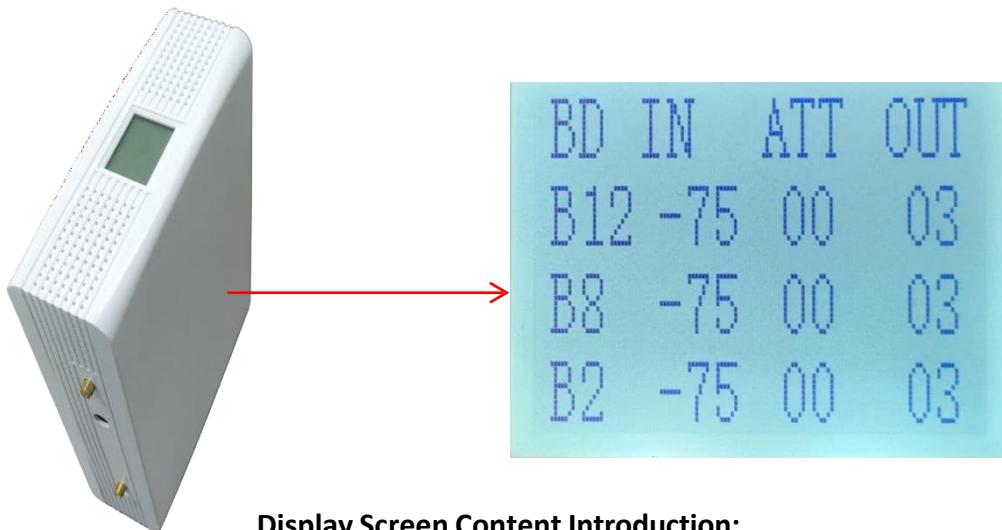
2, There are too many obstacles between the phone and the base station, preventing the signal from penetrating. With significant attenuation, the signal strength is lower than the minimum sensitivity that the phone can receive, causing the phone to be unable to receive communication signals normally.

#### Signal Congestion Zone

It often occurs in densely populated areas such as shopping malls, where a single base station serves too many communication terminals. The capacity of the base station is insufficient to meet the communication needs of all users in the area, resulting in many users being unable to communicate normally, similar to poor network performance when multiple users are using the internet simultaneously.

#### Ping-Pong Effect

It often occurs in high-rise areas where windows can simultaneously receive communication signals from nearby multiple base stations. As a result, during phone calls, the phone may frequently switch between different base stations, causing the signal strength displayed on the phone to be good, but the call quality to be intermittent.



#### Display Screen Content Introduction:

**Mode:** Frequency of the Repeater C: CDMA (Customizable frequency according to requirements)

G: GSM D: DCS W: WCDMA T: TLE2600 Outdoor: Indicates outdoor signal strength **Attenuation:**

Indicates the digital attenuation of the repeater's AGC circuit gain (if this number is close to 29, it is recommended to adjust the direction of the outdoor antenna or replace it with a low-gain outdoor antenna)

**Output:** Indicates the output power of the repeater

Usage Precautions: This device will automatically detect the strength of the outdoor signal and lock the gain of the repeater. Therefore, please connect the outdoor antenna and indoor antenna before turning on the device. If the main unit repeater displays a low gain, adjust the direction of the outdoor antenna, turn off the device, and then turn it back on; this will allow the repeater to lock the output gain again.



“DC 5V”---Power Adapter Socket

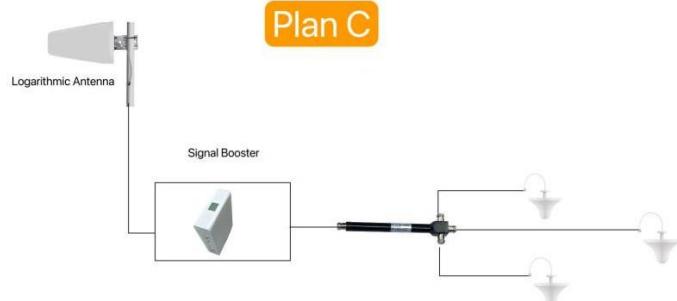
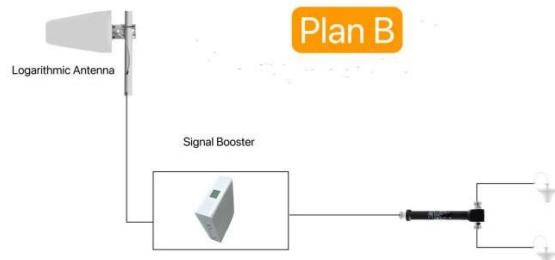
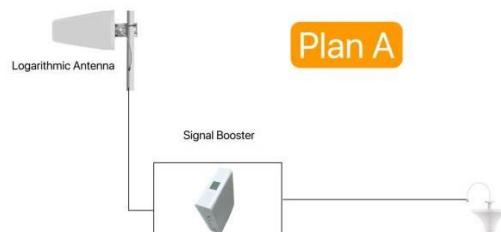
“MS” ---Transmit Antenna Interface (Connects to Indoor Antenna)

“BTS” ---Receive Antenna Interface (Connects to Outdoor Antenna)

#### Model HB-23 -Technical Specifications

Frequency	B5	B12	B13	B2	B4
UP(MHZ)	824-849	699-716	777-787	1850-1910	1710-1755
Down(MHZ)	869-894	729-746	746-756	1930-1990	2110-2155
Max Power	15dBm for downlink; 17 dBm for uplink				

# Signal Booster Installation Example



## Installation Instructions:

Search for a location with good signal strength:

Use your mobile phone to check signal strength. Around the area where signal optimization is needed, search for places with higher signal strength.

Test in multiple locations to find the best signal strength, preferably between -50 and -95 dB. (A smaller negative value indicates better signal; between -95 and -105 dB, the number of ceiling-mounted antennas should be reduced, and release approximately 5 dB of gain hidden in the main unit. There is about a 5 dB attenuation at the dip switch at the factory setting.)

(Note: The translation provided includes the technical information regarding signal strength levels and adjustments. If further clarification is needed or if you require additional translation, please feel free to ask.)

## Frequency check method

Step 1: Measure signal level and choose the strongest position on roof.

Install outdoor antenna on pole towards signal tower.



### Testing Outdoor Signal - Step 1:

Connect the main unit to the feeder cable and outdoor antenna, then plug in the main unit's

power supply. (Do not connect the indoor antenna at this stage to prevent self-excitation.)

#### **Testing Outdoor Signal - Step 2:**

Find a location with better signal strength, install the outdoor antenna, and keep the main unit 3-4 meters away from the indoor antenna. Adjust the position and direction of the outdoor antenna while observing the signal strength indicator on the main unit. The optimal effect is indicated by the green signal indicator light. Once you find the best position for the outdoor antenna, partially fix it in place.

#### **Call Test:**

To ensure that the mobile signal can quickly switch to the frequency band amplified by the amplifier, make a phone call within a 2-meter range of the indoor antenna, then hang up. After 20 seconds, make another call and check if the call quality is normal after connecting. Also, observe if the signal bars displayed on the phone screen improve during the call.

#### **Performance Test:**

During a call, gradually move away from the indoor antenna and test if the call quality and signal format displayed on the phone improve in various areas that need coverage.

#### **Fixing Device:**

Once the performance test is completed and the expected results are achieved, you have finished the tuning and installation process correctly. You can proceed with fixing the outdoor antenna, feeder cable, and indoor antenna in place. If the performance test does not meet the expected results, please refer to the troubleshooting guide.

## **Installation Attention**

### **1. Antenna:**

- a. Outdoor antennas should be placed away from obstacles and as high as possible.
- b. Outdoor antennas should not be placed near other high-frequency antennas, metal grids, high-voltage wires, or transformers.
- c. If the installation location of outdoor antennas is prone to lightning strikes, lightning protection devices should be installed.
- d. Indoor antennas should be placed away from walls as much as possible to increase the effective coverage area of the signal.

2. Avoid rainwater flowing into the amplifier through the feeder cable, which may cause a short circuit.

3. Accessories and Application Method: If, after testing with a mobile phone, the best condition of the outdoor signal source is shown as only four bars (five bars indicating full signal) or less, it is recommended to install the following optional accessories to ensure signal reception quality.

## **Troubleshooting Common Issues**

### **Dealing with No effect After Installation:**

- A. Make sure that the frequency of the outdoor antenna matches that of the selected amplifier, and that the signal strength is not lower than -95 dB.
- B. Reconfirm whether the amplifier, antenna, and other related accessories have been selected correctly.
- C. Verify that all cables, splitters, antennas, and amplifiers are connected properly.

### **Dealing with Signal Improvement but Inability to Make Calls:**

- A. Ensure that the outdoor antenna is accurately aligned with the base station.
- B. Confirm that the communication distance between the outdoor antenna and the base station is within 5 kilometers.
- C. Verify that the length of the cable between the outdoor antenna and the amplifier does not exceed 40 meters and is not less than 10 meters.
- D. Check the direction of both the outdoor and indoor antennas to prevent the signal transmitted by the indoor antenna from being received by the outdoor antenna.

**Poor Call Quality:**

- A. Adjust the installation position and direction of the outdoor antenna.
- B. Adjust the path of the signal transmission line from the outdoor antenna to the amplifier (choose the most direct and shortest route, try to avoid sharp bends, and do not exceed 90 degrees).
- C. Confirm whether the cable between the outdoor antenna and the amplifier uses coaxial cable with an impedance of 50 ohms or above.
- D. Check whether the distance between the outdoor antenna and the indoor antenna is too close (a too-short distance may cause self-excitation). It is recommended that the distance between the outdoor and indoor antennas be at least 20 meters, and preferably separated by walls, floors, or other objects to prevent the signal emitted by the indoor amplifier from being received by the outdoor antenna, leading to loop amplification (self-excitation).

**Dealing with Limited Coverage Despite Signal Improvement After Installation:**

- A. Confirm the signal strength at the location of the outdoor antenna.
- B. Ensure that the length of the cable from the indoor antenna to the amplifier does not exceed 50 meters, the cable joints are correct and intact, and the cable material meets the standard. Ensure that the splitter is not connected to too many devices.
- C. Confirm that the length of the cable from the outdoor antenna to the amplifier does not exceed 30 meters, the cable joints are correct and intact, and the cable material meets the standard.
- D. Choose a more powerful mobile signal amplifier.

**Dealing with Interference to Communication Base Stations:**

- A. The cause is excessive uplink power of the amplifier or proximity to the base station.
- B. The solution is to adjust the installation positions of indoor and outdoor antennas away from the base station. Alternatively, replace the outdoor antenna with one of lower gain, such as a barrel antenna or a fiberglass antenna.

**Intermittent Signal:**

- A. This situation is caused by amplifier self-excitation or poor contact of the connection line.

- B. The solution is to confirm that the input and output connectors are correct and that the shielding is good.
- C. Confirm that the distance between the outdoor antenna and the indoor antenna is at least 10 meters. It is best to separate the indoor and outdoor antennas with a wall.

**Inability to Make Calls Despite Full Signal Bars on Phone Display:**

- A. This situation is caused by insufficient uplink power of the amplifier or weak outdoor antenna signal.
- B. First, confirm that there is a mobile signal at the outdoor antenna end, reaching (-90dBm) or higher (full bars).
- C. Confirm that the distance between the indoor antenna and the outdoor antenna is at least 10 meters, preferably separated by a wall.
- D. Install the outdoor antenna higher and directly align it with the base station.
- E. Replace the signal transmission line from the outdoor antenna to the amplifier with a 50-ohm-7D coaxial cable, preferably one with multiple layers of shielding.

**Product Warranty Card**

**Product Name:**

**Model:**

**Inspection Date:**

**Inspector:**

**Inspection Conclusion:**

**Date of Sale:**

**Warranty Instructions:**

**1, One Year Warranty from Date of Sale.**

**2,Our company provides you with high-quality after-sales service.**

**3,The company does not provide warranty services for non-quality issues  
of the product.**

**4, Please keep this card properly as our company will use it as a basis  
for retention.**

## FCC Warning

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This is a **CONSUMER** device.

**BEFORE USE**, you **MUST REGISTER THIS DEVICE** with your wireless provider and have your provider's consent. Most wireless providers consent to the use of signal boosters. Some providers may not consent to the use of this device on their network. If you are unsure, contact your provider.

You **MUST** operate this device with approved antennas and cables as specified by the manufacturer. Antennas **MUST** be installed at least 20 cm (8 inches) from any person.

You **MUST** cease operating this device immediately if requested by the FCC or a licensed wireless service provider.

**WARNING.** E911 location information may not be provided or may be inaccurate for calls served by using this device.

- 1) **Warning:** The Inside Antennas for fixed installations must have 6 feet of separation distance from all active users.
- 2) **Warning:** The Outdoor Antennas/Indoor Antennas for fixed installations must be installed no higher than 10 meters above ground.
- 3) **Warning:** Unauthorized antennas, cables, and/or coupling devices are prohibited by FCC rules. Please contact FCC for Details: 1-888-CALL-FF.
- 4) **Warning:** The antenna, cable, and other accessories of the booster kits shall not be modified without the approval of the party responsible, others it shall be deemed invalid.

Name		Model	Gain/Loss	photo
Indoor Antenna	Ceiling Antenna	JY001	3dbi @698–787MHz 3dbi @824–894MHz 4. 5dbi @1710–1755MHz 4. 5dbi @1850–1995MHz 4. 5dbi @2110–2155MHz	
Outdoor Antenna	Indoor Panel Antenna	JY002	6dbi @698–787MHz 6dbi @824–894MHz 8dbi @1710–1755MHz 8dbi @1850–1995MHz 8dbi @2110–2155MHz	
Indoor Cable	10feet (3 meters) JY-400 Cable SMA male/N male	JY400-30SMAM/N male	1. 09db @698–787MHz 1. 75db @824–894MHz 2. 25db @1710–1755MHz 2. 34db @1850–1995MHz 2. 60db @2110–2155MHz	
Outdoor Cable	50feet (15 meters) JY-400 Cable SMA male/N male	JY400-20SMAM/N male	0. 9db @698–787MHz 1. 34db @824–894MHz 1. 66db @1710–1755MHz 1. 73db @1850–1995MHz 1. 80db @2110–2155MHz	