

HC20K-EDW

20 dBm Triple Band Mobile Signal Repeater

User Manual v1.0



HC20K-EDW Mobile Signal Repeater

User Manual

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1. SAFETY WARNING:

Users should follow the principles stated below:



Follow the system requirements of mobile signal enhancement equipment, assure good grounding and lightning protection to the booster.



The power supply voltage of the booster should meet the standards of security requirements.



Do not dismantle machine, maintain or displace accessories by yourself. In this way the equipment can be damaged and you take the risk of getting an electric shock.



Unplug the module before cleaning. Use only a damp solvent-free cloth. solvent.



Do not open the booster, touch the module of the booster, or open the cover of the module to touch the electronic component. The components will be damaged due to electrostatic.

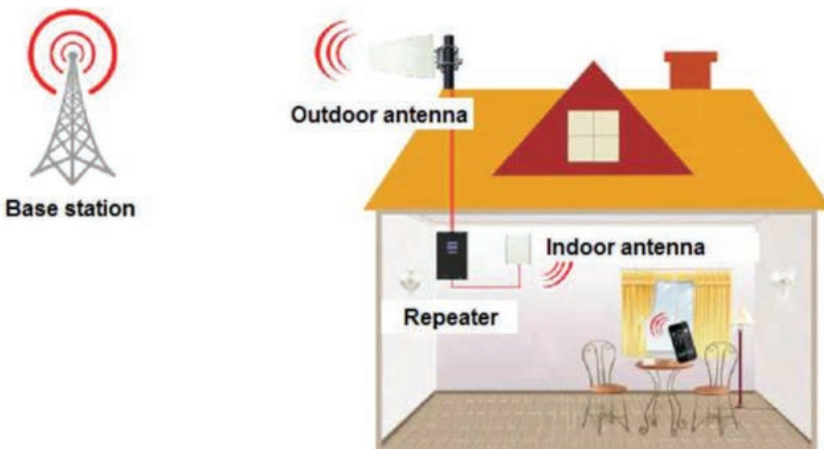


Keep away from heating equipment, because the booster will dissipate heat during working. And do not cover booster with anything that influences heat-dissipation.

2. HOW IT WORKS:

The signal repeater will enhance cellular signals to the area with weak cellular coverage.

Signals sent from a cell tower are received by the outside antenna, amplified by the repeater and then sent to your phone via the inside antenna. When your phone transmits, the signal will be sent to the inside antenna, amplified by the repeater and then sent to the cell tower via the outside antenna.



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3. TECHNICAL SPECIFICATIONS:

Items		Uplink	Downlink
Frequency Range	900(GSM/ WCDMA/ LTE)	880~915 MHz	925~960 MHz
	1800(GSM/ LTE)	1710~1785 MHz	1805~1880 MHz
	2100(WCDMA/ LTE)	1920~1980 MHz	2110~2170 MHz
Output Power	900	15±2 dBm	20±2 dBm
	1800	15±2 dBm	20±2 dBm
	2100	15±2 dBm	20±2 dBm
Gain	900	70±3 dB	70±3 dB
	1800	70±3 dB	70±3 dB
	2100	70±3 dB	70±3 dB
Ripple	900	≤10 dB	≤10 dB
	1800	≤10 dB	≤10 dB
	2100	≤8 dB	≤8 dB
VSWR	900	≤2	≤2
	1800	≤2	≤2
	2100	≤2	≤2
ATT step of 1dB (900)	1 ~ 10dB	$ \Delta \leq 1$ dB	$ \Delta \leq 1$ dB
	11 ~ 20dB	$ \Delta \leq 1$ dB	$ \Delta \leq 1$ dB
	21 ~ 31dB	$ \Delta \leq 1.5$ dB	$ \Delta \leq 1.5$ dB
ATT step of 1dB (1800)	1 ~ 10dB	$ \Delta \leq 1$ dB	$ \Delta \leq 1$ dB
	11 ~ 20dB	$ \Delta \leq 1$ dB	$ \Delta \leq 1$ dB
	21 ~ 31dB	$ \Delta \leq 1.5$ dB	$ \Delta \leq 1.5$ dB
ATT step of 1dB (2100)	1 ~ 10dB	$ \Delta \leq 1$ dB	$ \Delta \leq 1$ dB
	11 ~ 20dB	$ \Delta \leq 1$ dB	$ \Delta \leq 1$ dB
	21 ~ 31dB	$ \Delta \leq 1.5$ dB	$ \Delta \leq 1.5$ dB
ALC Active 10dB	900	$ \Delta \leq 2$ dB	$ \Delta \leq 2$ dB
	1800	$ \Delta \leq 2$ dB	$ \Delta \leq 2$ dB
	2100	$ \Delta \leq 2$ dB	$ \Delta \leq 2$ dB

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3. TECHNICAL SPECIFICATIONS:

Continued

Items		Uplink	Downlink
Intermediation Products	900	≤ -40 dBc	≤ -40 dBc
	1800	≤ -40 dBc	≤ -40 dBc
	2100	≤ -40 dBc	≤ -40 dBc
Spurious Emission	9KHz~1GHz	≤ -36 dBm	≤ -36 dBm
	1GHz~12.75GHz	≤ -30 dBm	≤ -30 dBm
Noise Figure @ max. gain	900	≤ 8 dB	≤ 8 dB
	1800	≤ 8 dB	≤ 8 dB
	2100	≤ 8 dB	≤ 8 dB
Time Delay	900	≤ 1.5 μs	≤ 1.5 μs
	1800	≤ 1.5 μs	≤ 1.5 μs
	2100	≤ 1.5 μs	≤ 1.5 μs
Display and Set		LCD and Key	
Display content		Frequency Range	
		Output Power	
		Gain	
		Alarm	
Power Supply		DC +12V	
Power Consumption		≤25 W	
Dimensions		268mmx180mmx58mm	
Weight		< 3kg	
RF Connector		N-Female	
Environment Conditions		IP40	
Humidity		< 90%	
Operating Temperature		-10°C~+55°C	

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4. PACKAGE CONTENTS:

Standard Packing:



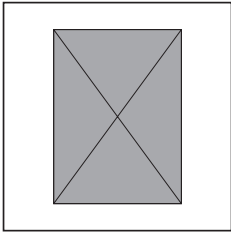
Mobile Signal Repeater



Power Supply Unit



Installation Kit



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Accessories Suggested (not included in packing):



Outdoor LPDA
Antenna



Coaxial cable to
connect the outdoor
antenna to booster

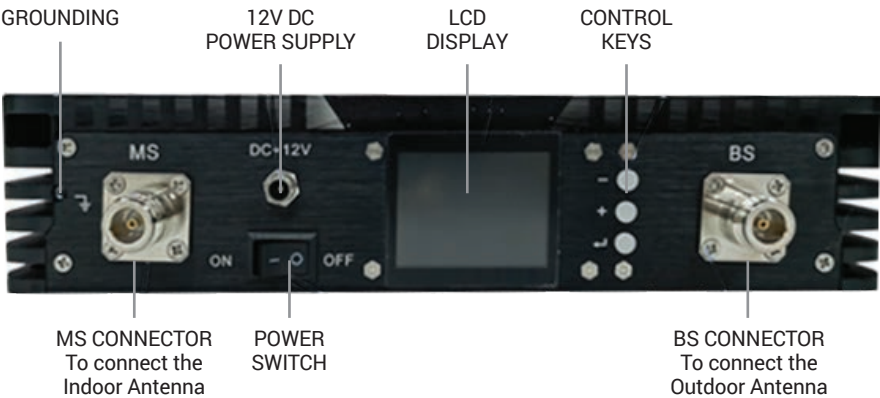


Coaxial cable to
connect the outdoor
antenna to booster



Indoor Omni Ceiling
Antenna

5. CONNECTORS AND DESCRIPTION:



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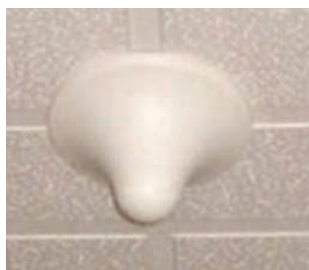
6. INSTALLATION:



STEP 1: Install the outdoor LPDA antenna on the top of building or other appropriate locations. Please make sure the antenna is towards to the base station or cell phone tower, and that it can receive good signal (better than -70 dBm).



STEP 2: Connect the outdoor antenna to the booster BS port by the coaxial cable. The connector of the outdoor antenna and the connector of the coaxial cable must be completely covered with waterproof tape.



STEP 3: Connect the omni indoor antenna to the booster MS port by the coaxial cable or connect the booster directly to the antenna. If you install more than one antenna, then you need to use a splitter.



STEP 4: Once the booster is installed, check carefully whether all cables connect tightly. Then plug the DC adapter.



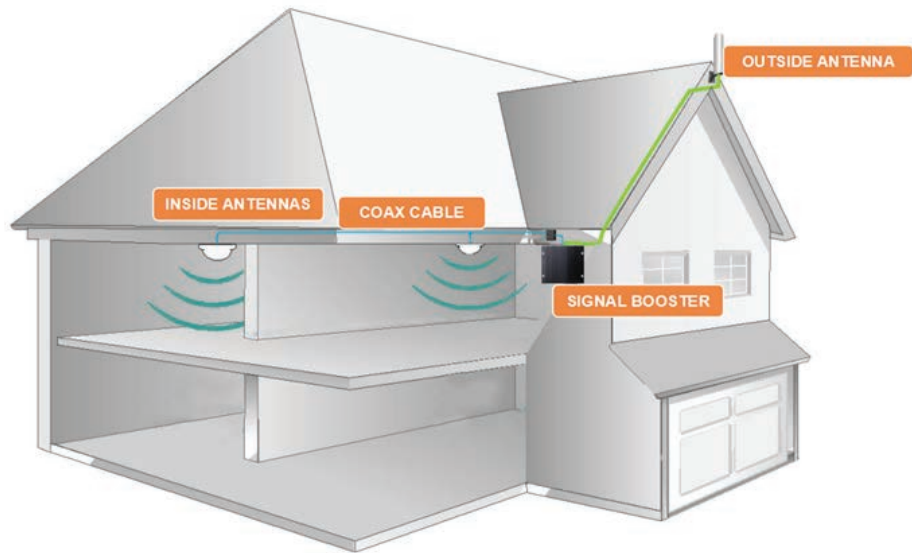
ATTENTION:

The indoor and outdoor antenna should be installed in vertical position and at a minimum distance between them of 5-10 meters to avoid the auto-oscillation phenomenon.

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CONNECTION DIAGRAM:



Outdoor LDPA Antenna

Indoor Omni Ceiling Antenna

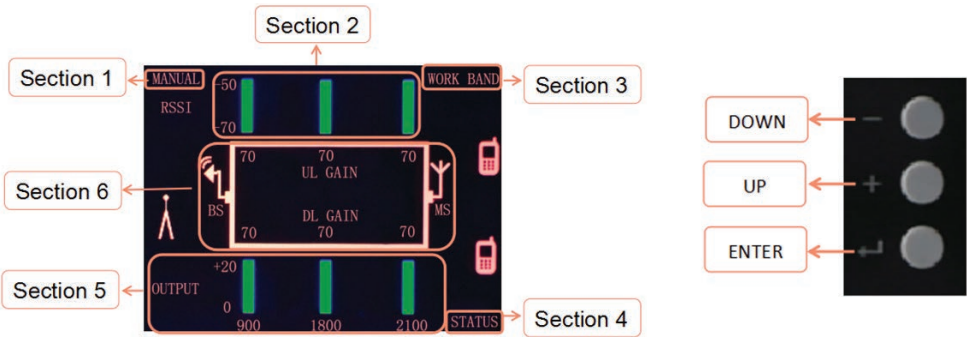


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7. LCD DISPLAY SCREEN OPERATION AND LED INDICATOR:

LCD DISPLAY SCREEN OPERATION

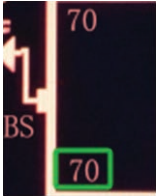


Section	Function	Description
Section 1	Working Mode	The repeater has two working modes: MANUAL and AUTO . Under MANUAL mode, users can set gain manually. While under AUTO mode, gain will be controlled automatically. Use UP and DOWN button to move the cursor to this section, press ENTER button, then the working mode can be changed.
Section 2	Input Signal Strength	Input downlink signal strength can be checked in this section. The green bar will show the real-time input signal strength of each system from -70 dBm to -50 dBm.
Section 3	Work Band	Users can check the work bands of the booster in this section. Use UP and DOWN button to move the cursor to this section. Press ENTER button, then the working frequencies can be checked on the screen.
Section 4	Status	When the repeater is working well, this section will shows “ OK ”. When alarm occurs, it will show “ ALARM ”. Users can choose this section and press ENTER button, and check the exact alarm item.
Section 5	Output Signal Strength	Output downlink signal strength can be checked in this section. The green bar will show the real-time output signal strength of each system from 0 dBm to +20 dBm.

CONTINUED OVERLEAF

7. LCD DISPLAY SCREEN OPERATION AND LED INDICATOR:

CONTINUED

Section 6	Gain Checking and Setting • Check Gain Value Downlink and Uplink gain can be checked in this section. The numbers on the screen are the real-time Uplink and Downlink gain of each system. • Set Gain Value Under MANUAL mode, users also can set the gain value in this section. Move the cursor by UP and DOWN button, choose a number (the number chose will turn green) and press ENTER button to enter the Gain Setting Page. For example, if users choose the number 70 as below (Picture 1), press ENTER button, then the Gain Setting Page of 900 MHz Downlink (Picture 2) will show on the screen.   Picture 1 Picture 2 Pin: Show the input signal strength. Pout: Show the output power. Gain: Show the downlink gain. Press UP and DOWN button, the gain valued can be changed. (The highest gain value of HC20K series can be set is 70 dB.
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8. FREQUENTLY ASKED QUESTIONS:

PROBLEM	SOLUTIONS
After installing the booster, the indoor signal is not very good, and the coverage area is too small.	1.Adjust the location and direction of the outdoor antenna to get better signal. 2.Check whether the cable is properly connected. 3.Use a higher position outdoor antenna to get better signal. 4.Use a booster with higher gain. 5.Use an outdoor antenna with higher gain.
The signal level is good, but the communication quality hasn't improved.	The outdoor antenna and indoor antenna are installed too close. Users need to enlarge the distance between the two antennas.
After installing the booster, the indoor signal level is not good, also with bad communication quality.	The outdoor antenna and indoor antenna are installed too close. Users need to enlarge the distance between the two antenna.
The booster works well for a long time but suddenly the signal quality turns bad.	1.Check outdoor cable connectors to see whether they have been influenced by water. 2.Check if there is alarm.



Helpline: 0861 40 41 42

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