



**C10G-CP**

# **User's Manual**

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## Overview

C10G-CP wide band mini Booster is designed with harmonious humanity conception, as a perfect combination of environmental protection and signal coverage. The C10G-CP products carried with many features like, low consumption, light weight, high gain, low output power and easy installation, etc, It provides a rapid and perfect solution to solve and optimize the weak signal of houses, offices, hotels, elevators, underground parking lots and other small weak signal area.

On the condition that to assure the normal communication, C10G-CP products using the smallest Rx and Tx power to achieve the link balance among BTS and mobile phone and Boosters, guaranteed that the least Rx and Tx power from the products, the least harm to environmental pollution and human body's radiation.

C10G series products has ALC and ATT function, which offer the product reliability and the coverage stable signal technically. In addition, the C10G series products add ALC warning directive function to let users knowing signal quality by the indicator's colour.

## Function and Features

- The system has the automatic gain control function. By comparing the voltage value of the UL detection tube and the line detection tube with the set value, if the sampling value is larger than the set value, then increase the attenuation value of the corresponding channel attenuator until the corresponding detection tube voltage is less than the set value. If the sampling value is less than the set value, then decrease the attenuation value of the corresponding channel attenuator until the corresponding detection tube voltage is larger than the set value or the attenuation value is 0.  
The system has the output over power cut off function. When the attenuation value of the UL or DL attenuator caused by the AGC control is more than or equal to 31dB, the system will switch off the corresponding channel. Otherwise, when the attenuation value is less than 31dB, turn on the corresponding channel switch.  
The system has self-excited detection function. When its UL or DL occurs self-excitation, the system shuts down the switch and keep 400 seconds, the number of self-excited statistics plus 1. After 400 seconds, turn on the switch of UL and DL, if continue to detect the self-excited then turn off the switch and keep 400s, the number of self-excited statistics plus 1. If there is no self-excited, the self-excited statistics are cleared and the system return to normal. If the self-excited is detected up to 3 times is succession, the switch will be permanently turned off until the power off and restarted. Any detection results in no self-excited before the permanent shut-off, the number of self - excitation statistics will be cleared, and the system will return to normal.
- Booster is a linear amplification of the wireless signal. When the Booster is not installed right and lead to self-excited situation, the Booster by detecting the linear relationship between input and output to determine self-excited, if self-excitation it will turn off their own to prevent Network with itself until troubleshooting.

- Inside the detection area of Boosters, if the UL does not occur calls or data exchange in a long time (about 5 minutes), it will judge this area do not need Booster. At the same time, Booster will shut down the UL automatically and sleep until it detects its UL activity and return back to the working state.  
Through the radio frequency detection. Detect input and output, to determine the immediate work status
- Booster will directly filter all signal outside the network and do not do control test
- When UL output power is less than -80dBm and lasts for more than 5 minutes, the UL output switch will turn off, system will get into sleep status.
- Up / Down Output Over Power Shutdown: When the UL or DL output power increases to ATT chip attenuation value is more than or equal to 31dB, turn off the corresponding UL or DL switch. When the UL or DL output power is reduced to ATT chip attenuation is less than 31dB, turn on the corresponding UL or DL switch  
Self-excited shut down: When its UL or DL occurs self-excitation, the system shuts down the switch and keep 400 seconds, the number of self-excited statistics plus 1. After 400 seconds, turn on the switch of UL and DL, if continue to detect the self-excited then turn off the switch and keep 400s, the number of self-excited statistics plus 1. If there is no self-excited, the self-excited statistics are cleared and the system return to normal. If the self-excited is detected up to 3 times is succession, the switch will be permanently turned off until the power off and restarted. Any detection results in no self-excited before the permanent shut-off, the number of self-excitation statistics will be cleared, and the system will return to normal.
- Booster will adjust its gain and output power automatically according to the outdoor signal strengthen; auto-sleep function could reduce interference.

## Parts List

### Kit Configuration (Default)



C10G-CP Booster



AC/DC Power Adapter



Indoor Antenna



Donor Antenna



N-male To N-male RF Cable

### Optional antenna kits

The option 1 of A and option 2 of B are shipped with this booster.

A: The outdoor Antenna kitting. There are 2 options with different type of antennas or variable cable length.

Option 1: 9.5dBi Log Periodic Antenna with 20 meters 5D-FB Coax Cable (N-Male Connectors)

| Frequency               | 824~894 | 1850~1990 |
|-------------------------|---------|-----------|
| Antenna Gain (dBi)      | 8.2     | 9.5       |
| Coaxial Cable Loss (dB) | 4.5     | 5.0       |
| Final Gain Less         | 3.7     | 4.5       |



Option2: 10dBi Outdoor Panel Antenna with 20 meters 5D-FB Coax Cable (N-Male Connectors)

| Frequency               | 824~894 | 1850~1990 |
|-------------------------|---------|-----------|
| Antenna Gain (dBi)      | 10      | 10        |
| Coaxial Cable Loss (dB) | 4.5     | 5.0       |
| Final Gain Less         | 5.5     | 5.0       |



B: The Indoor Antenna kit. There are 3 options with different type of antennas or variable cable length.

Option1: 5dBi Outdoor Panel Antenna with 10 meters 5D-FB Coax Cable (N-Male Connectors)

| Frequency               | 824~894 | 1850~1990 |
|-------------------------|---------|-----------|
| Antenna Gain (dBi)      | 5       | 5         |
| Coaxial Cable Loss (dB) | 2.5     | 3.0       |
| Final Gain Less         | 2.5     | 2.0       |



Option2: 10dBi Indoor Panel Antenna (N-Male Connectors)

| Frequency               | 824~894 | 1850~1990 |
|-------------------------|---------|-----------|
| Antenna Gain (dBi)      | 10      | 10        |
| Coaxial Cable Loss (dB) | 2.5     | 3.0       |
|                         | 7.5     | 7.0       |

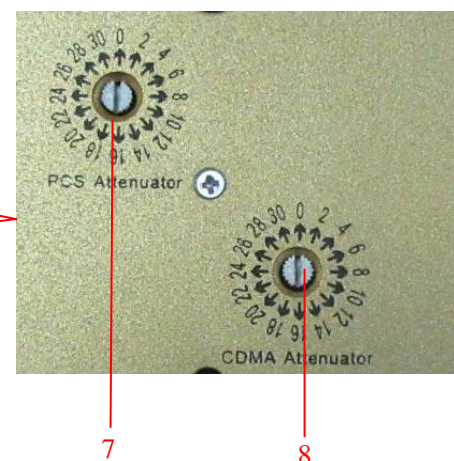


Option3: 2.5dBi Pucker Rubber Antenna

| Frequency               | 824~894 | 1850~1990 |
|-------------------------|---------|-----------|
| Antenna Gain (dBi)      | 2.5     | 2.5       |
| Coaxial Cable Loss (dB) | 0       | 0         |
| Final Gain Less         | 2.5     | 2.5       |



## Appearance & Interface Diagram



1. DC+5V: <sup>2</sup> Power supply voltage is +5V
2. BS: Output port, to be connected with service antenna
3. Grounding, equipment can be grounded by screwing
4. MS: Input port, to be connected with donor antenna
5. CDMA Alarm Indicator
  - Green: Means ALC doesn't work;
  - Orange: Means ALC starts control in 5~10dB;
  - Red: Means ALC starts control in 15~20dB.
6. PCS Alarm Indicator
  - Green: Means ALC doesn't work;
  - Orange: Means ALC starts control in 5~10dB;
  - Red: Means ALC starts control in 15~20dB.
7. PCS ATT :
  - To adjust Uplink or Downlink Gain. ( arrow pointed to 5 means the gain will be reduced 5dB; arrow pointed to 10 means the gain will be reduced 10db ; arrow pointed to 15 means the gain will be reduced 15dB )
8. Cellular ATT:
  - To adjust Uplink or Downlink Gain. ( arrow pointed to 5 means the gain will be reduced 5dB; arrow pointed to 10 means the gain will be reduced 10dB ; arrow pointed to 15 means the gain will be reduced 15dB )

## Installation Guide

### Before your install

- Make sure have sufficient cable length between proposed donor to server antenna location and booster connector.
- Make sure the position you install the booster is near to one existing electrical outlet, and well ventilated, away from excessive heat, moisture, direct sunlight.

### Installation overview

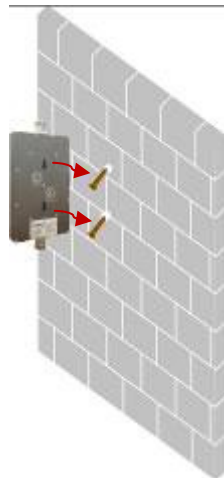
- Install your donor antenna on the roof where there is the strongest signal.
- Mount your signal booster, connect cables to the signal booster from the outside antenna and inside antenna at the designated ports, and connect the booster to AC power supply.
- Install the indoor antenna where you want to improve signals.



1. Donor Antenna      2. C10G-CP Cellular signal booster      3. Indoor antenna

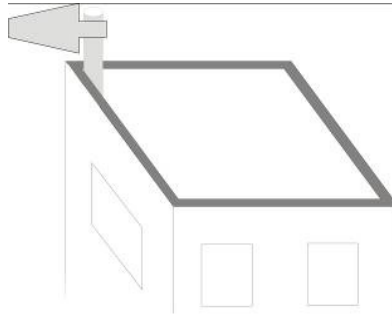
### Installing the Booster

1. Select a location close to a power outlet, normally a wall.
2. Mount the booster by supplied screws like the image shoes.



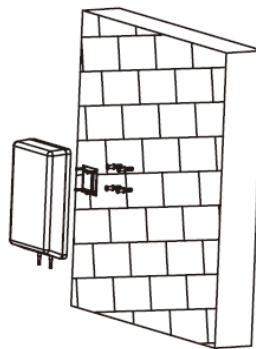
### Installing Donor antenna

1. Use your mobile phone find an area with the strongest signal.
2. Select a proper place to install the donor antenna.
3. Based on the installation environment, take the right way to install donor antenna on the best signal place, as below:



### Installing Indoor antenna

1. Select a place on a wall projecting the area where you want reception.
2. Mount the bracket on the wall after drilling the screw to the wall.



### Connected antennas

1. Take one of cable Connect the Donor antenna to the BS port of the Booster.
2. Take another cable connect the indoor antenna to the MS port of the Booster.

### Power on

1. Plug in the 5V/4A DC on the power outlet.
2. Plug in the power adapter in AC (AC100~264V) power outlet.
3. Test the signal inside the coverage area and call quality by telephone.

### Important Notice

1. Do not dismounting the equipment by yourself.
2. Do not add extra pressure to Booster surface.
3. Please use the corresponding power supply adaptor for the Booster.
4. Please avoid choose strong electricity, high-intensity magnetic field, corrosive, moist and other likely environment when select the installation location, and make sure the ventilation is good and cool.
5. Please install in the place that is not easy to be reached by kids and irrelevant people.
6. Do not setup and use the antenna, cables and / or coupling devices unauthorized by the manufacturer. Details were presented in *Optional Antenna Kits*.

## Troubleshooting

### 1.The AC/DC Power Adapter LED is OFF

| Cause                                                                  | Action                             |
|------------------------------------------------------------------------|------------------------------------|
| Power cable of the power adapter unit has not been connected or faulty | Check connection of adapter system |

### 2. The AC/DC Power Adapter LED is ON( Green ) but no signal transmits

| Cause                                                                 | Action                                                                                                                         |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Signal cable from outdoor antenna has not been connected              | Check all connections                                                                                                          |
| Coaxial cable is connected but cable is damage or connector is broken | Make sure there is no sharp bends or breaks in the cable. and check the connectors to see whether they are fixed firmly or not |

### 3. Output power is not enough (Green )

| Cause                                                              | Action                                                                                     |
|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Input signal is too weak and unstable.<br>(The Alarm LED is green) | Adjust the donor antenna's position and direction, make sure the input signal is moderate. |

### 4. Output power is full ( Orange )

| Cause                                                              | Action                                                                              |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| The Boosters is working in linearity<br>(The Alarm LED is Orange ) | This is the best working condition for the Booster, do not need to take any action. |

### 5.Signal Oscillation ( Red )

| Cause                                                                                             | Action                                                                                      |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Over accepting of donor antenna or strong interference<br>( The Alarm LED is red )                | Adjust the donor antenna's position and direction , make sure the input signal is moderate. |
| The isolation between donor antenna and service antenna is not enough<br>( The Alarm LED is red ) | Increase the distance between the two antennas, make sure the isolation more than 80dB      |

## Specification

| Items           |          | Uplink         | Downlink       |
|-----------------|----------|----------------|----------------|
| Frequency Range | Cellular | 824 ~ 849 MHz  | 869 ~ 894 MHz  |
|                 | PCS      | 1850~ 1910 MHz | 1930~ 1990 MHz |

| Items                           |                    | Uplink          | Downlink                 |
|---------------------------------|--------------------|-----------------|--------------------------|
| Conducted Output Power          |                    | 19±2 dBm        | 0±2 dBm                  |
| Gain                            |                    | 60±2 dB         | 60±2 dB                  |
| Ripple                          | Cellular           | ≤6 dB           | ≤6 dB                    |
|                                 | PCS                | ≤8 dB           | ≤8 dB                    |
| Max. Input Power Without Damage |                    | -10 dBm         | -10 dBm                  |
| Spurious Emission               | 9KHz~1GHz          | ≤-36 dBm        | ≤-36 dBm                 |
|                                 | 1GHz~12.75GHz      | ≤-30 dBm        | ≤-30 dBm                 |
| MGC step of 2dB                 | 1~10 dB            | Δ   ≤1 dB       | Δ   ≤1 dB                |
|                                 | 10~20 dB           | Δ   ≤1 dB       | Δ   ≤1 dB                |
|                                 | 20~30 dB           | Δ   ≤1.5 dB     | Δ   ≤1.5 dB              |
| ALC Active 10dB                 |                    | Δ   ≤2 dB       | Δ   ≤2 dB                |
| LED Indication                  | ALC not Active     | —               | Green                    |
|                                 | ALC Active 5-10dB  | —               | Orange                   |
|                                 | ALC Active 15-20dB | Red (Shut Down) |                          |
|                                 | Self-oscillation   | —               | Red Flashing (Shut Down) |
| Noise Figure @ max. gain        |                    | ≤8 dB           | ≤8 dB                    |
| Time Delay                      |                    | ≤1.5 μs         | ≤1.5 μs                  |
| Power Supply                    |                    | DC: +5 V        |                          |
| Power Consumption               |                    | < 8 W           |                          |
| RF Connector                    |                    | N-Female        |                          |
| Operating Temperature           |                    | -10℃ ~ +55℃     |                          |

## FCC Statement

### FCC RF Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instruction for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

### FCC Warning

**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 antenna and cables as specified by the manufacturer. Antennas **MUST** be installed at least 20cm (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 the device.

This device may be operated **ONLY** in a fixed location for in-building usage.

**Warning 1:** The Inside Antennas for fixed installations must have 6 feet of separation distance from all active users.

**Warning 2:** The Outdoor Antennas for fixed installations must be installed no higher than 10 meters above ground.

## Contact Information for providers

A subscriber must have the consent of a wireless provider to operate a Consumer Signal Booster. Please register your booster with your wireless service provider, refer to contact information for providers

Sprint:

[signalbooster@sprint.com](mailto:signalbooster@sprint.com)

T-Mobile:

[www.T-Mobile.com/BoosterRegistration](http://www.T-Mobile.com/BoosterRegistration)

<https://support.t-mobile.com/docs/DOC-9827>

Verizon:

<http://www.verizonwireless.com/wcms/consumer/register-signal-booster.html>

AT&T:

<https://securec45.securewebsession.com/attsignalbooster.com/>

U.S. Cellular:

<http://www.uscellular.com/uscellular/support/fcc-booster-registration.jsp>

Metro PCS

<https://www.metropcs.com/support/signal-booster>