# Quint Band Cradle Signal Booster

## User's Manual

## Content

# 1 WHAT IS INCLUDED

1. Quint Band Cradle Signal Booster
2. Car Charger Power Supply with USB port
3. Magnet Antenna
4. Car Holder

**Warning:** Unauthorized antennas,and/or coupling devices are prohibited by new FCC rules. Please contact FCC for details: 1-888-CALL-FCC.

# 2 HOW IT WORKS

The cellular booster provides reliable two-way cellular coverage by improving signal strength in cars and other areas where cellular reception is weak or unreliable.

The system amplifies the signal from the nearest cellular tower and retransmits at a higher power level within a local area.

This manual provides simple installation instructions that will have your cellular booster kit running in record time.

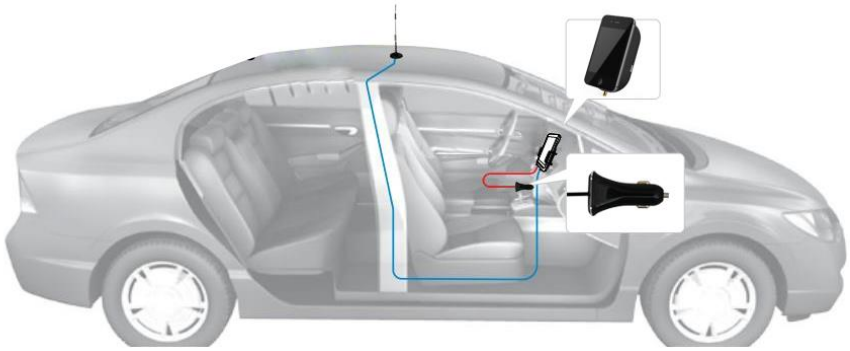
# 3 TOOL OPTIONS

Phillips Screwdriver

Drill

Cellular Phone (to check signal strength)

# 4 HOW TO INSTALL YOUR CRADLE SIGNAL BOOSTER (for Mobile Installations)



## 4.1 Outside antenna:

- Install the car magnet antenna.
- Function: receive the signal from the base station, through the feeder to booster. Meanwhile transmit back the signal to the base station after enlarge the signal.

## 4.2 Cradle signal booster:

- Attach the cradle signal booster to the Car Holder.
- Function: two-way, full-duplex amplifier the inside &outside signal of the car.

## 4.3 Feeder

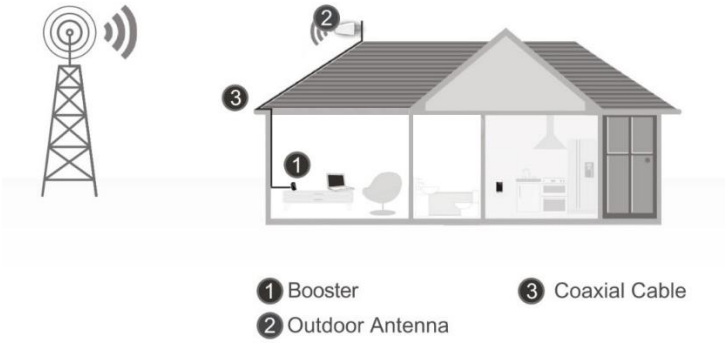
- When install, hide it in the decoration materials or pads.
- Function: Connect the feeder, antenna, and mobile phone seat.

## 4.4 Power supply

- Adopt the 5V power supply, and it is extremely convenient for direct feed by the car power, also we support the car charger.

Note: The cradle signal booster has a convenient USB charging ports located on the left side of the signal booster. This USB port allows for charging your phone.

# 5 HOW TO INSTALL YOUR NEW CELLULAR BOOSTER (for Fixed Installations)




## 5.1 Overview

This guide will help you properly install your cellular booster kit. It is important to read through all of the installation steps before installing your equipment. Thoroughly read through the instructions, visualize where all the equipment will need to be installed and do a soft installation before mounting any equipment.

1

- **BOOSTER – select location**
- Install the booster in an area that is protected from the weather, properly ventilated and is away from excessive heat and moisture.

2

- **DONOR ANTENNA (OUTDOOR)- select location**
- Mount the signal (outdoor) antenna in an elevated outdoor location so that it points towards the cellular tower and away from where the inside antenna will be located.

3

- **OUTDOOR COAXIAL CABLE - select location**
- The outdoor coaxial cable is used to connect the donor (outdoor) antenna to the booster.

4

- **INDOOR COAXIAL CABLE- (if used)**
- Indoor Antenna is integrated into the signal booster.Not the indoor coaxial cable is needed.

5

- **SERVER ANTENNA (indoor)**
- Indoor Antenna is integrated into the signal booster.
- NOTE:The signal strength will be strongest closest to the antenna.

- **IMPORTANT**: The signal antenna (outdoor)should always be separated from the distribution antenna (indoor)by at least 20 vertical feet including the separation of a thick barrier. Depending on the strength of your outdoor signal, the weaker the signal the less separation distance is required.

7

- **LIGHTNING SURGE PROTECTOR- (SOLD SEPARATELY)**
- The lightning surge protector connects in between the signal antenna and the booster.
- IMPORTANT: Lightning surge protector must be grounded.

8

- COMMISSIONING THE SYSTEM

## 5.2 Plan the layout of your system

Before you get started you will need to plan the layout of your system. This involves checking signal strength for signals coming from the cellular tower, as well as antenna, booster and cable placement.

## 5.3 Check for Signal Strength

Select a location on the roof of the building to install the signal antenna, by monitoring your cellular phone's signal strength (signal bars) to find the strongest signal from your carrier's cellular tower.
Mark that area as the installation location for the Donor (outdoor)
IMPORTANT: Confirm that you have at least 20 feet of vertical distance between the marked antenna location and the location where you will place the Server (indoor) antenna. To prevent the system from oscillation (feedback) you want to ensure that there is enough separation between the distribution and signal antenna or that they are shielded from each other to ensure the distribution antenna does not send a signal back into the signal antenna. If you cannot achieve these separations, either choose an alternate location for the donor (outdoor) antenna or determine if there are natural barriers in the building construction itself that will attenuate signals between the two antennas so that oscillation can be prevented.

## 5.4 Run coaxial cable

Loosely run the coaxial cable from your outdoor antenna to your booster. (After you have tested the system you can permanently secure the coaxial cable).
As you route and pull cabling, follow these general guidelines:

- Bend cables and route them smoothly, and protect the outer skin against any damage.
- Keep horizontal cables straight and fasten them with a tie every three to five feet.
- Bind and fasten vertical cables every six to eight feet.
- Waterproof all outdoor connections with silicone caulking
- Be careful when plugging the connector in so as not to damage the center pins on the connectors.

## 5.5 Install the Donor (Outdoor) antenna

Connect the supplied coaxial cable to the antenna. We recommend applying silicone caulking to fully waterproof the connection.
Attach the cable in such a way that a drip loop is formed.
Once mounted, connect one end of the coaxial cable to the donor (outdoor) antenna and the other end to the cellular booster.

## 5.6 Install the Server (Indoor) antenna

Indoor Antenna is integrated into the signal booster.

## 5.7 Install your cellular booster

Install the cellular booster in a location that is properly ventilated and not exposed to excessive heat, moisture and/or direct sunlight. The optimal area would be on a wall located near a power outlet.
It should be mounted in an easily accessible area so it's easy to perform general maintenance with the coaxial cable connections, dip switch settings and power adaptor.
Make sure all cables and antennas are securely connected before commissioning the system.

## 5.8 Power up your cellular booster

Once all the Following precautions have been taken, power on the cellular booster.

1. Verify that you have left at least 20 feet of vertical separation space between the indoor and outdoor antennas.
2. Never point the front of the yagi donor (outdoor) antenna towards the inside of the server (outdoor)antenna.
3. Verify that the supplied coaxial cables from both the donor (outdoor) antenna and the server (outdoor)antenna are properly connected to the cellular booster before powering it up.
4. Carefully plug in the supplied power adaptor into the back of the cellular booster where it is marked 'power' and connect the other end to a power outlet.

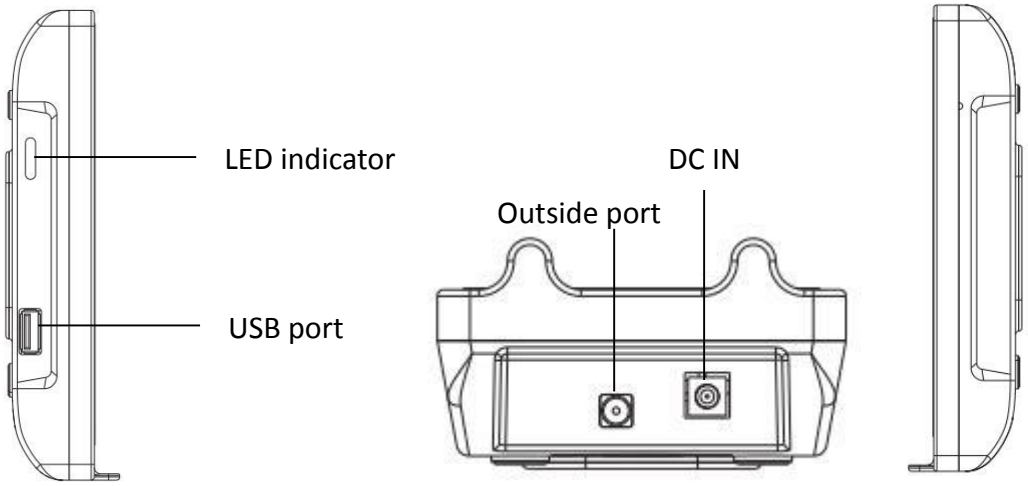
The LED indicator marked power should light up green.

## 5.9 Check the Cellular Booster Status

Your cellular booster comes equipped with electronic sensors designed to identify cellular signal overload or oscillation which can hinder signal boosting performance. Your cellular booster is specially designed to automatically decrease gain to compensate for these circumstances. The device also has a feature to automatically shut down in case of excessive oscillation. Improper equipment installation and unusable signal quality can cause oscillation, this is why it is important to fully understand the LED alarm lights on your booster, as they will help you identify and solve any potential issues.
The color of the LED indicates the status of the booster system.

# 6 UNDERSTAND THE PORTS, LED STATUS

## 6.1 Repeater ports




Outside port: connected with the outside antenna by cable.
DC IN: connected with power supply.
USB port: allows for charging your phone.
LED indicator: indicate the working status of signal booster

## 6.2 LED status

Status and Definition of LED indicator:

| Status | ALARM |
|---|---|
| Green | It is working in linearity |
| | attention: Input signals may be not enough |
| Flashing Red | The booster automatically shuts off for protection from excessive downlink signal from tower or due to very severe self-oscillation. |
| Flashing Green | It is working in linearity |
| | There are overloading or self-oscillation, strong input signals. |

# 7 AUTHORIZED KITTING OPTIONS

The following accessories are authorized by the FCC to be used with the cradle signal booster.

| Outdoor Antenna Kit Options for Mobile Installations | | |
|---|---|---|
| 1. Kit numbers:5-10400 | 4. Kit numbers:5-30400 | 7. Kit numbers:5-30200 |
| 2. Kit numbers:5-75400 | 5. Kit numbers:5-50300 | 8. Kit numbers:5-01174 |
| 3. Kit numbers:5-50400 | 6. Kit numbers:5-30300 | |

| Outdoor Antenna Kit Options for Fixed Installation | | |
|---|---|---|
| 1. Kit numbers: 11-100400 | 18. Kit numbers:10-50300 | 35. Kit numbers:9-30400 |
| 2. Kit numbers: 11-75400 | 19. Kit numbers:10-30300 | 36. Kit numbers:9-100300 |
| 3. Kit numbers: 11-50400 | 20. Kit numbers:10-50200 | 37. Kit numbers:9-75300 |
| 4. Kit numbers: 11-30400 | 21. Kit numbers:10-30200 | 38. Kit numbers:9-50300 |
| 5. Kit numbers: 11-100300 | 22. Kit numbers:10-100400 | 39. Kit numbers:9-30300 |
| 6. Kit numbers: 11-75300 | 23. Kit numbers:10-75400 | 40. Kit numbers:9-50200 |
| 7. Kit numbers: 11-50300 | 24. Kit numbers:10-50400 | 41. Kit numbers:9-30200 |
| 8. Kit numbers: 11-30300 | 25. Kit numbers:10-30400 | 42. Kit numbers:7-100400 |
| 9. Kit numbers: 11-75200 | 26. Kit numbers:10-100300 | 43. Kit numbers:7-75400 |
| 10. Kit numbers: 11-50200 | 27. Kit numbers:10-75300 | 44. Kit numbers:7-50400 |
| 11. Kit numbers: 11-30200 | 28. Kit numbers:10-50300 | 45. Kit numbers:7-30400 |
| 12. Kit numbers:10-100400 | 29. Kit numbers:10-30300 | 46. Kit numbers:7-75300 |
| 13. Kit numbers:10-75400 | 30. Kit numbers:10-50200 | 47. Kit numbers:7-50300 |
| 14. Kit numbers:10-50400 | 31. Kit numbers:10-30200 | 48. Kit numbers:7-30300 |
| 15. Kit numbers:10-30400 | 32. Kit numbers:9-100400 | 49. Kit numbers:7-50200 |
| 16. Kit numbers:10-100300 | 33. Kit numbers:9-75400 | 50. Kit numbers:7-30200 |
| 17. Kit numbers:10-75300 | 34. Kit numbers:9-50400 | |

# 8 TROUBLESHOOTING

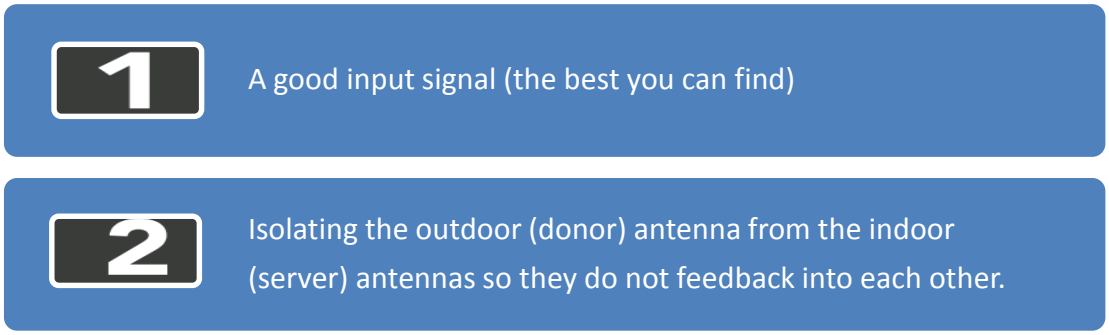
The LED represent the status of the booster. When the light is green the device is operating normally meaning that it is not experiencing any oscillation (feedback) and it is boosting the signal at maximum power. When the LED light begin to change color from green to flashing green to flashing red, it means that particular frequency is experiencing some oscillation (feedback).

If the oscillation is excessive the booster will shut down for that particular frequency. The booster will still work for the other frequency on a multi-band booster.

Oscillation is caused when the indoor (distribution) antenna sends a signal back into the outdoor (signal) antenna. Similar to a PA system, when the microphone gets too close to the speaker it causes feedback. This will occur if your antennas are too close together, or the indoor antenna is pointed at the outdoor antenna. Make sure you have adequate separation and some type of shielding between the antennas
(Usually your roof or a cement wall is good enough).

## IMPORTANT NOTES

The 2 most important things to look for when setting up your system is:




By capturing the best input signal you will be able to enjoy the maximum coverage and best quality signal inside where your Indoor antennas are located. The better the input signal, the better the output signal. In order to find the best input signal, you want to place your outdoor antenna as high as possible with the least amount of obstruction between the antenna and the cellular base tower. A clear line of site is ideal.

Isolating the signal from the antennas is done by ensuring that the antennas are not pointing to each other and by having enough distance or barrier shielding in between them. The signals travel like rays of sunlight, a directional antenna will send the signal in the direction that it is pointing. An omni directional antenna will send the signal in every direction around it. So depending on your equipment it's important to be sure that your Indoor antenna is not sending the signal back into the outdoor antenna.

### THINGS TO CHECK WHEN EXPERIENCING WEAK CELLULAR SIGNAL

1. Ensure the outdoor antenna is pointing in the correct direction and is capturing adequate signal for the booster.
2. Check all connections on the cable, antennas, and booster.
3. Check cable for bends and or cuts.
4. All LED lights on the booster should be green.
5. Outdoor antenna and the indoor antennas have adequate separation and are not causing feedback.

## 9 FREQUENTLY ASKED QUESTIONS

### WHY ARE THE LED LIGHTS TURNING FLASHING GREEN, FLASHING RED?

There are certain cases where your system could be experiencing oscillation. This can be attributed to either the quality of your input signal or having your outdoor antenna and indoor antenna too close together. Please review the following guidelines to help resolve this issue:

1. Adjust the direction or location of the outdoor antenna. If the system is receiving a very high input signal, you can point your outdoor antenna away from the cellular tower to reduce the strength of the input signal and therefore, reduce the oscillation. Alternatively if your system is receiving a very poor quality signal (weak and unusable signal), you can point your outdoor antenna more directly towards the cellular tower to increase the strength of the input signal. Sometimes this may require completely repositioning the antenna to a location

where you can achieve a line of site to the tower.

2. Increase the separation between the outdoor antenna and the indoor antenna. This can be achieved by increasing the distance between the two antennas or by placing barriers between them, such as moving the indoor antenna to an adjacent room where there would be an additional wall separating them from the outdoor antenna.

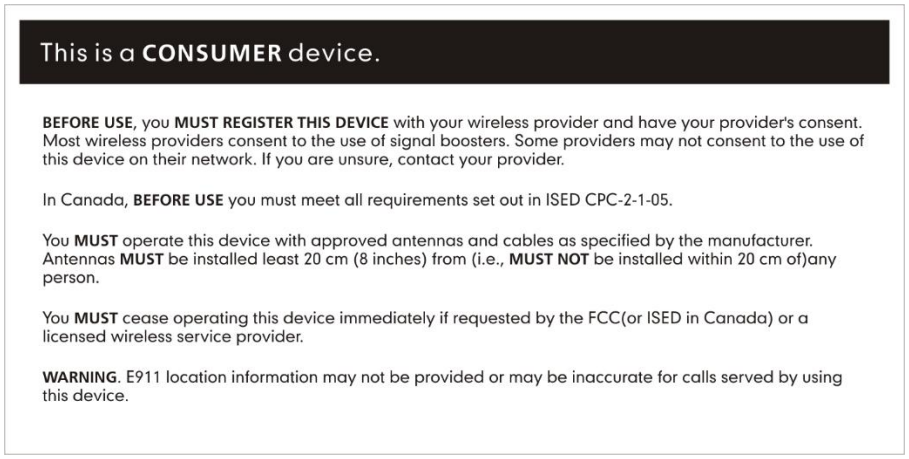
# 10 FCC RF Exposure Statement

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.

# 11 IC RF Exposure Statement

This device is compliance with RF exposure limits. The minimum distance from body to use the device is 20CM.
Le présent appareil conforme aux conformité ou aux limites d'intensité de champ RF. La distance minimale du corps à utiliser le dispositif est de 20 CM.

# 12 Warning and Statement




**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 generateds, 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.

Changes or modifications not expressly approved by Huaptec could void the user's authority to operate the equipment.


**Note:** For a complete list of antennas and cables approved for use with these boosters see **Authorized ktting opions** page 11 to page 16.

**FCC 27.50(d)(4)Statement:** Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground.
When used with any mobile device utilizing the 1710-1755 MHz band, the FCC limits booster equipment placement to a maximum of 10 meters above ground level. Installation of this equipment which does not comply with federal requirements may subject the owner to FCC enforcement action.

**FURTHER INFORMATION ON SIGNAL BOOSTER END-USE REGISTRATION**

The following is currently active contact of US wireless provider for booster register.
https://www.uscellular.com/uscellular/support/fcc-booster-registration.jsp
https://www.sprint.com/legal/fcc_boosters.html
https://www.verizonwireless.com/solutions-and-services/accessories/register-signal-booster/
https://support.t-mobile.com/docs/DOC-9827
https://securec45.securewebsession.com/attsignalbooster.com/

**IC Statement**

This device complies with Innovation,Science and Economic Development Canada ICES-003 compliance Label: CAN ICES-3(B)/NMB-3(B).

Le présent appareil est conforme Innovation, Sciences et Développement économique Canada ICES-003 Étiquette de conformité: CAN ICES-3(B)/NMB-3(B).

Link to CPC-2-1-05

http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf08942.html

# 13 Specification

| **RF Specifications** | | **Uplink** | **Downlink** |
|---|---|---|---|
| Frequency Range | 700 MHz Band 12/17 | 698~716 MHz | 728~746 MHz |
| | 700 MHz Band 13 | 776~787 MHz | 746~757 MHz |
| | 800 MHz Band 5 | 824~849MHz | 869~894MHz |
| | PCS1900 | 1850~1915MHz | 1930~1995MHz |
| | AWS2100 | 1710~1755MHz | 2110~2155MHz |
| Band width | 700 MHz Band 12/17 | 18 MHz | |
| | 700 MHz Band 13 | 11 MHz | |
| | 800 MHz Band 5 | 25 MHz | |
| | PCS1900 | 65 MHz | |
| | AWS2100 | 45 MHz | |
| Max. Gain | | 23 dB | |
| Max. Output Power | | 17~21 dBm | -8~-13 dBm |
| **Electrical Specifications** | | | |
| Power Supply | | DC 5V / 2A | |
| Impedance | | 50 ohm | |
| **Mechanical Specifications** | | | |
| I /O Port | | N-Female | |
| Environment Conditions | | IP40 | |
| Dimensions | | 134*65*26.4 mm | |
| Weight | | ≤ 1 Kg | |