

Smarter RF Pico Installation Manual



Smarter RF™
Advanced Wireless Coverage Solution

**Easier Touching
More Touched**



CELLULAR SIGNAL BOOSTER 
FOR BUILDING USE Dual-Band 800 & 1900 MHz



Installation Guide

Dual Band (800/1900 MHz) Wireless SOHO Signal Booster

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Appearance of device and accessories may vary.

Note: This manual contains important safety and operating information. Please read and follow the instructions mentioned.

Model:Z11MA Z11MB

FCC ID:P6HZ11M

1.What is Smarter RF Pico?

1.1 It amplifies a weak or shadowed signal in mobile, in-building applications. When using a Smarter RF Pico product in conjunction with our antennas, the outdoor antenna will collect the cell tower signal and send it through the cable to the Signal Booster. The signal is amplified and retransmitted through the Indoor Antenna into the room. Cell phones in that area then communicate with the enhanced signals. When a cell phone or cellular device transmits, the signal is received by the Indoor Antenna, then amplified by the Smarter RF Pico product and went back to the cell tower through the Outdoor Antenna.

2.Package Items



Accessories:



Notes:

1:Outdoor Antenna Options:① ②
2:Indoor Antenna Options:③ ④

3:Cables:⑤
4:AC/DC power supply:⑥

Appearance of device and accessories may vary

Contact our customer service with any questions at 905-604-3748. Hours:
10 am-5pm MST

3. Installation Instructions

3.1 How to install

3.1.1 Select a location to install the Signal Booster that is away from excessive heat, direct sunlight, moisture and has proper ventilation. Do not place the Signal Booster in an air-tight enclosure.

3.1.2 Select a location on the roof of the building to install the Outdoor Antenna. Use a cell phone in test mode to find the strongest signal from the cell tower.

3.1.3 Operate the Outdoor Antenna cable to the Signal Booster and attach it to the connector on the Signal Booster. Operate the Indoor Antenna cable to the Signal Booster and attach it to the connector on the Signal Booster. Lightning Surge Protection is recommended for all in-building installations.

3.1.4 Select a location for the Indoor Antenna, preferably in the center of where the signal needs to be amplified. A minimum separation distance of 20 vertical (within the null zone) or 50 horizontal feet is necessary for proper operation. If the inside coverage is not sufficient you may need to increase the separation distance even further.

3.1.5 Before powering up the Signal Booster, verify that both the Outdoor Antenna and the Indoor Antenna are connected and check that all connections are tight. Note: Be careful when plugging the connectors in so as not to bend the center pins on the connectors.

3.1.6 The Signal Booster has been packaged with the gain control knobs adjusted to the highest gain position. If one or both of the lights are not green, please refer to page (xxx).



Warning: Connecting the Signal Booster directly to a cell phone with use of an adapter may harm the cell phone and /or the Signal Booster.

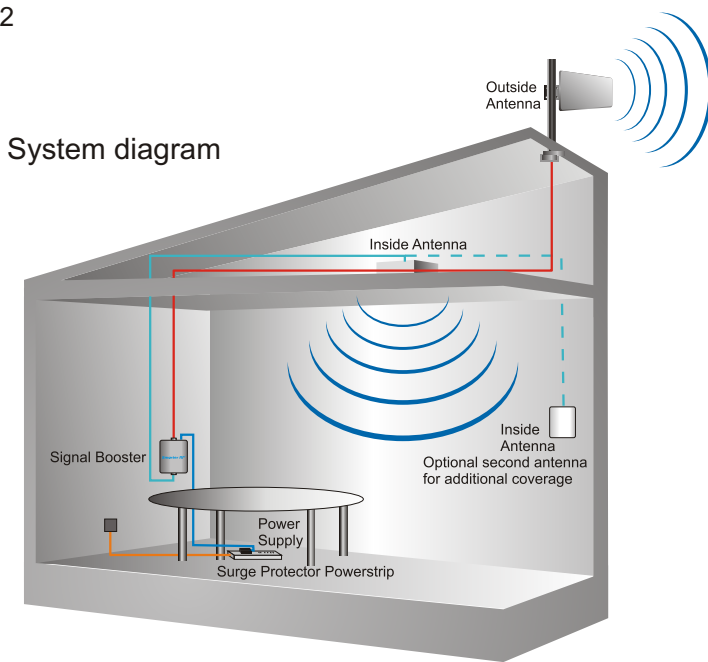
3.2 Mounting Guide

3.2.1 Note: Indoor Antenna may be mounted on the wall directly under the Outdoor Antenna, in the null zone, if 20 feet of vertical separation can be maintained.

3.2.2 Null Zone : The area under the Outdoor Antenna, Where the Outdoor Antenna emits the least.

3.2.3 Note: A Lightning Surge Protector is recommended for all building installations (sold separately). Make sure the protector is installed in line between the Outdoor Antenna and the Signal Booster.

Profile Map
Figure 2



3.3 Reasons for Weak Cellular Signals

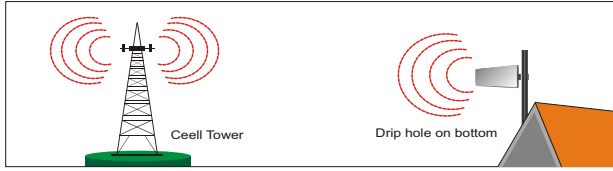
A strong cellular signal is rarely maintained due to one of two reasons:

3.3.1 Location of the nearest cell tower—cell towers are situated to provide large coverage; however, there are many areas in which signal strength may be reduced by topographic features or by local government restrictions on the placement of the towers themselves. i.e. rural areas generally have poorer signal strength than urban regions.

3.3.2 Signal strength can also be negatively affected by Natural and man-made obstructions, i.e. trees, hills and other high buildings. You may be relatively close to a cell tower but still unable to make a call. This often occurs in homes.

This product operates with two antennas. The Indoor Antenna connects with your cell phone and the Outdoor Antenna connects with the cell tower. (Note: The Signal Booster will only operate if there is an adequate signal to amplify).

3.4 Outdoor Antenna Installation



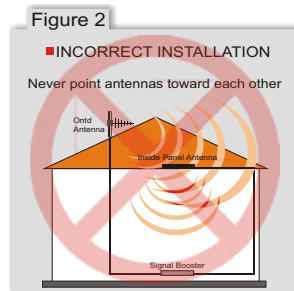
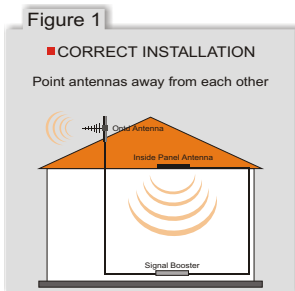
3.4.1 The antenna should be mounted as shown above.

3.4.2 Mount the antenna so that there is at least 3 feet of clearance in all directions around it. Position the antenna so that it has a clear line of sight to the cell tower's strongest signal. Make sure the antenna is not pointing across your own roof or at the Indoor Antenna as this will cause the Signal Booster close because of oscillation protection circuitry.

3.4.3 Note: Lightning protection is recommended for all installations. Take great care to ensure neither you nor the antenna comes near any electric power lines.

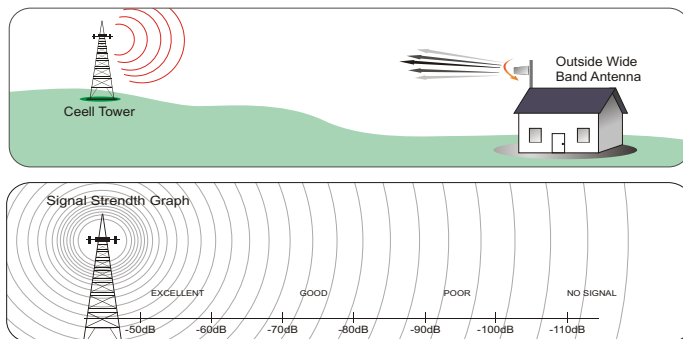
3.5 Right direction for the Outdoor Antenna

3.5.1 To get the strongest signal possible, it is very important to set up your Outdoor Antenna properly. Install the Outdoor Antenna on the clear location of roof. Use a cell phone in test mode to find the strongest signal from the cell tower. The Indoor and the Outdoor Antenna must be mounted in such a way that are able to pick up the strongest cell signal and provide the best possible signal on the inside of the building. Mount the Outdoor Antenna as high as possible facing the cell tower in an area with the best possible signal coverage. Note: Never point the front of a Directional Antenna towards the Indoor Antenna. See Figure 1&2 on page xx.



3.6 Where is the Strongest Signal?

3.6.1 Aim the Signal Booster's Outside Antenna towards the best signal source from you service provider. Suggesting that have one person on the roof to rotate the Outdoor Antenna, which is connected to the Signal Booster. Turning the Outdoor Antenna about 45 degrees at a time, while the second person is watching the signal strength on the phone inside the building. It is advisable to set the cell phone in the test mode so that the signal strength can be most received.



Signal readings usually appear as a negative number (for example, -86). The closer you get zero the stronger the signal (see graph above).

3.7 Tips for Running Outdoor Antenna Cable

3.7.1 If you are mounting the Outdoor Antenna on the roof of your building, it is preferable to put your cable under the down side of your roof's flashing. If you have satellite TV service installed you may be able to follow the same route as the satellite TV cables (from outside of your building to the inside).

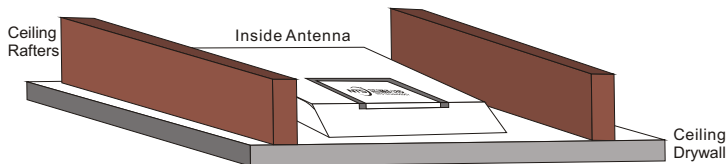
3.7.2 After routing the cable, we suggest sealing any areas where the cable getting through the building with cable bushings, silicone or other waterproof sealant to keep your installation from leaking. If you are mounting the Outdoor Antenna to the outside wall of your home or building, the simplest way is to operate the cable on the outside of the wall and attach it to the exterior of your home / office. Then drill a hole through the wall where you want on the inside of the building. Before drilling, make sure that there are no electrical outlets, sewer or water pipes etc. that you are about to drill through as this could somehow harm you or damage the building.

3.7.3 After drilling the required hole, operate the cable through and stick it with cable bushings, silicone or other waterproof sealant to surround the

hole. For examples, it may be possible to put the cable up into the edge of the attic overhang, as the cable will be accessible in the attic for further routing.

3.8 Installing the Indoor Antenna

Instructions for Panel Antenna



Warning : An Indoor Antenna must have a separation distance from all persons that is at least 15 inches for the Panel Antenna.

3.9 Installing the Signal Booster

3.9.1 Select a location to install the Signal Booster that is away from excessive heat, direct sunlight, moisture and that has proper ventilation. Do not place the Signal Booster in an air-tight enclosure. Recommended installation locations for in-building Signal Booster are near a power outlet and in a closet or on a shelf.

3.9.2 Note: The adequate air ventilation is necessary. Maintain at least 6 inches of clearance from surrounding objects. Be careful when plugging the connector in order not to damage the center pins on the connectors.

3.9.3 Operate Outdoor Antenna cable to the Signal Booster and attach it to the connector labeled “Outdoor Antenna” on the Signal Booster. Operate the Indoor Antenna cable to the Signal Booster and attach it to the connector labeled “Indoor Antenna” on the Signal Booster,

3.10 Mounting tips

3.10.1 Never point the front of a Directional Outdoor Antenna toward the Indoor Antenna. See Figures 1 & 2

3.10.2 Ensure that both the Outdoor Antenna cable and the Inside Antenna cable are connected to the Signal Booster and the Indoor Antenna cable are connected to the Signal Booster and the connections are tight before powering up the Signal Booster.

3.10.3 Plug the power supply into the Signal Booster input marked “5V DV”

and then into a wall outlet. Note we recommend that all AC power supplies for home electronics be plugged into a Surge Protector Power strip.

3.10.4 If you know that only one frequency band (800 or 1900) is available in your coverage area (or going to be used), reduce the gain control on the frequency band that is NOT in use to the lowest setting. This will reduce the power consumption of the Signal Booster.

3.10.5 If you use multiple Signal Booster in one installation could cause interference to the cell tower.

4. Troubleshooting for Signal Booster lights

4.1 If the 120V AC is connected, the power indicator light is not working. Firstly check if the AC socket is working and then check the output voltage of the power adapter is in normal.

4.2 If the power supply is normal, the signals are not good, please check the coaxial cable connections, and the positioning and orientation of the antennas.

4.3 If the Alarm indicator light is on, please enlarge the distance between the Indoor and Outdoor antenna until the indicator light is off.

5. Warnings

5.1 The Directional Antenna must be located so the back or side points to the Indoor Antenna. Never point the front of the Outdoor Antenna toward the Indoor Antenna- to prevent wavering.

5.2 Connect the Signal Booster directly to the cell phone with use of an adapter will damage the cell phone.

5.3 Use only the power supply provided. Use of non-Smarter RF Pico products may damage your equipment.

5.4 RF Safety: FCC regulations require that any fixed Outdoor Antenna used with this Signal Booster may not have gain(less cable loss) that exceeds 6.0 dBi and must be located at least 30 inches from all people. Inside Antennas must not exceed 5.0 dBi gain(Less cable loss) and must be located at least 15 inches from all people.

5.5 Verify that both the Outdoor Antenna and the Indoor Antenna are connected to the Signal Booster before powering up the Signal Booster.

6.Recommendations

6.1 Lightning Surge Protection is recommended for all in-building installations.

6.2 For a list of Frequently Asked Questions and a complete and up-to-date Troubleshooting Guide, please visit our website at: www.smarter-rf.com.

6.3 You can also consult a NTS Co., Ltd. technical specialist directly by sending an e-mail to us at: www.smarter-rf.com.

7.WARRANTY

7.1 30-Day Money-Back Guarantee

7.1.1 Products of NTS Co., Ltd. are protected by our 30-day money-back guarantee. If for any reason the performance of product is not acceptable, simply return the product directly to the reseller with a dated evidence of purchase.

7.2 Year Warranty

7.2.1 Our Signal Booster warranted for one year against defects in workmanship and /or materials. Warranty cases may be resolved by returning the product directly to the reseller with a dated evidence of purchase.

7.2.2 Signal Booster may also be returned directly to the manufacturer at the consumer's expense, with a dated proof of purchase and a Returned Material Authorization number supplied by NTS Co., Ltd. NTS Co., Ltd. shall, at its option, either repair or replace the product. (NTS Co., Ltd. will pay for delivery of the repaired or replaced product back to the original consumer if located within the continental U.S.)

7.2.3 This warranty does not apply to any Signal Booster determined by NTS Co., Ltd. to have been subjected to misuse, abuse, neglect, or mishandling that modifies or damages physical or electronic properties.

7.2.4 Note: This device complies with Part 15 of FCC rules. The transaction is subject to 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 NTS Co., Ltd. could void the authority to operate this equipment.

7.3 Disclaimer:

7.3.1 The information provided by NTS Co., Ltd. is believed to be complete and accurate. However, no responsibility is assumed by NTS Co., Ltd. for any business or personal losses arising from its use, or for any infringements of patents or other rights of third parties that may result from its use.

8. Technical Specifications

Frequency Uplink: 824-849 MHz and 1850-1910 MHz

Downlink: 869-894 MHz and 1930-1990 MHz

Input Impedance 50 ohm

Average Gain : 55dB Uplink/60dB Downlink

Maximum Gain : 62dB Uplink/66dB Downlink

VSWR \leq 2:1

Standard Supported CDMA/WCDMA,GSM,EDGE,TDMA AMPS etc.

AC Power Transformer Input: AC 120V, 60Hz; Output: DC 5V

DC Power (optional) 5V

Maximum RF Output Power 2 Watts EIRP

Noise Figure 8dB

9. FCC Statement

Please Note: It is normal for your repeater to be quite warm while in use.

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



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