



**Note: Before installing your Cyfre™ In Building Booster, You Must Read the Entire Contents of this Manual to Insure Proper Operation and Performance.**

## **Section # 1 WARNINGS!**

- ▽ Antennas must be mounted a **MINIMUM** distance of 20 cm (7.87 inches) away from any person. Each antenna must be separated in a vertical plane, (above and below each other) a **minimum of 9 feet with a wall or ceiling, made of metal, stone, concrete, or solid fiberglass separation between the antennas. UNDER NO CIRCUMSTANCES CAN AN EXTERIOR ANTENNA BE INSTALLED INDOORS. External and internal antennas CANNOT be located in the same area.**
- ▽ When selecting a location for the interior antenna a **minimum distance of 12 feet (3.64m) from the booster is required. Positioning the antennas too close together may result in unit failure and void the warranty. The external antenna must be installed a minimum of 12 inches above the roofline of a building with a clear view of the surrounding area.**
- ▽ The power supply must be plugged into a 120 VAC electrical outlet that is a minimum of 1-ampere circuit breaker.
- ▽ Under no circumstances should the booster be powered up without a properly connected 50 ohm 800/ 1900 MHz dual band cellular antenna connected to both the internal and external connections or the unit may be damaged, resulting in the manufacturer' warranty being voided.
- ▽ For optimum performance and compatibility with PCS cellular service provider requirements, use of antennas of higher gain than 3dBi is in violation of FCC regulations for which the offender will be fully liable, and void the warranty.
- ▽ Do not combine the external antenna cable with another coaxial cable. \*\*\*It is recommended that only qualified or informed installation technicians install this product in a building. Installation by any other person is at the risk of the owner and operator.
- ▽ Use caution to avoid drilling through or near electrical, water or gas lines.
- ▽ **Do not mount the booster or its associated wiring in a location that may contain hazardous materials or materials that are corrosive or explosive or that contain any type of volatile vapors.**
- ▽ Do not attempt to ground the **external** antenna. It is designed with its own interior ground system.
- ▽ **The interior antenna requires a ground plane.** The interior magnetic mount antenna should be mounted on any type of metal surface that allows for the antenna base attach to. You must use a metal plate of at least 4 square feet in size for the proper ground plane.

## **Section # 2 Tools and Other Materials Required for Quality Performance**

### **Item Description**

- 1 Electric drill (as required for amplifier mounting holes, and external antenna mounting)
- 2 Screw driver, 7/16<sup>th</sup>'s wrench
- 3 Qty 8 fasteners (length and type as required for amplifier and external antenna mounting)
- 4 Wire cutters / strippers
- 5 Cable ties for clamping the external and interior antenna cables to rigid structure
- 6 24 inch by 24 inch metal (minimum) grounding plate



## Section # 3 Parts List

Item Qty	Description
1 1	Cyfre™ In Building PCS Booster
2 1	Cyfre external antenna with 15ft low loss cable
3 1	Cyfre interior antenna with 4 meters of low loss antenna cable (Picture for illustration purposes only)
4 1	Cyfre 120 VAC power supply 1 ampere
5 1	Cyfre 4 meter low loss antenna cable with "N" connectors



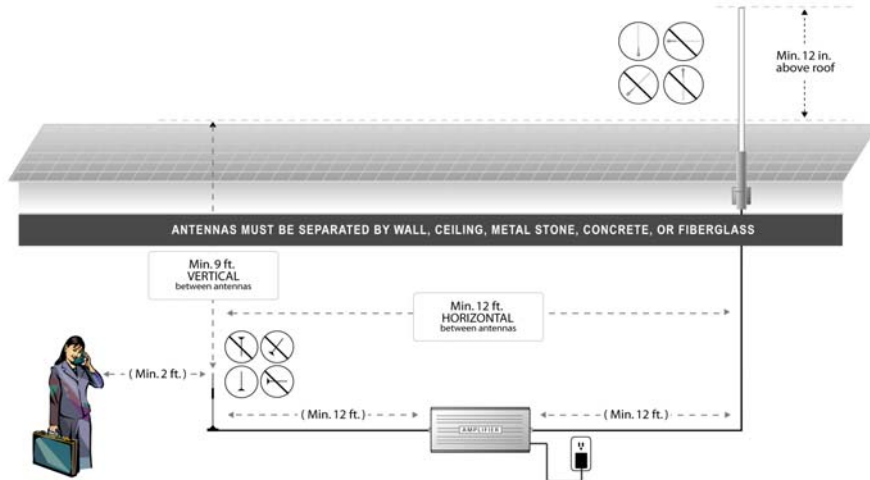
## Section # 4 Selecting a Suitable Location To Install The Booster

- ▽ Locate a suitable indoor dry place on a flat surface near an electrical power source that is well ventilated. The booster's location should be easily accessible and mounted away from moving parts, excessive heat or moisture.
- ▽ The exterior antenna must be mounted above the roofline of the building with a clear view of the surrounding area and at a distance that can be reached from the supplied antenna cable.
- ▽ Antennas must be mounted a **minimum** distance of 20 cm (7.87 inches) away from any person.
- ▽ When selecting a proper location for the interior antenna a minimum distance of 12 feet (3.64m) distance away from the amplifier.
- ▽ **Antennas cannot be located in the same area and must** be mounted at different heights and separated by a wall or ceiling to insure optimum performance. Positioning antennas too close together may result in amplifier failure and void the warranty.
- ▽ Exterior antennas can only be installed outdoors. Under no circumstances can an exterior antenna be installed indoors, Doing so may result in amplifier failure and void the warranty.
- ▽ If the signal level is increased in some areas but not others, it may be due to location of the interior antenna or building materials acting as a shield for the radio signals. This can be overcome by re-positioning the interior antenna or, the use of 2 internal antennas in conjunction with a very low loss high quality splitter. **Note that the use of multiple interior antennas require that they be placed at least twenty five (25) feet apart and should be separated by gypsum clad, masonry or metal constructed wall.**

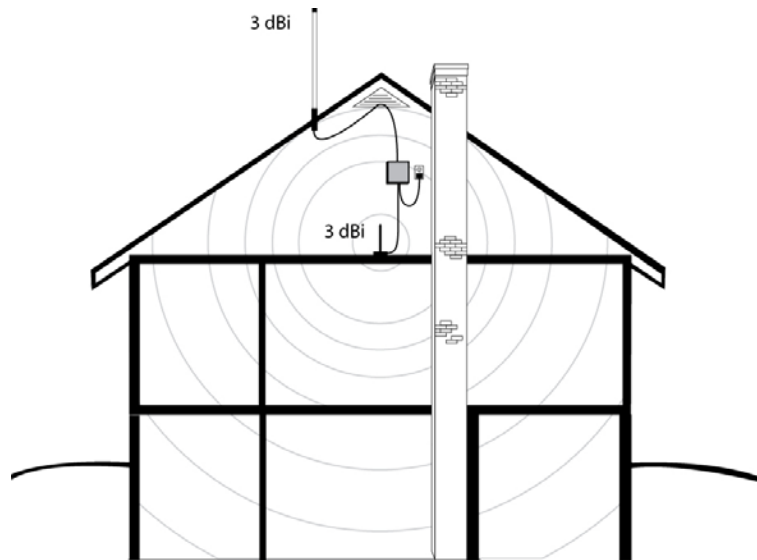


**Section # 5 Installation Of The Cellular In-Building PCS Booster**

**Typical Installation For the Cyfre™ In-Building Booster Series**



**Wireless Booster in home installation**



**Section # 5 Installation Of The Cellular In-Building PCS Booster, Continued**

1. Unpack the box with the booster; power supply, external and interior antennas, and cables.
2. The first step is to find a suitable location for the exterior antenna, make certain you have a clear view without obstruction, and also allow the antenna cable to penetrate either the roof area or a wall area below the roofline.
3. The exterior antenna contains two mounting brackets, a mounting tube, three sets screws, and the antenna. (See figures below)



4. Slide the two mounting bracket on to the mounting tube, tighten the center mounting screws hand tight when the brackets are within 2 inches of the top and bottom of the mounting tube. When the assembly is mounted to the wall surface, make certain the center-mounting hole of the mounting tube is facing outward.
5. Mark the wall surface through the four holes of the mounting brackets.
6. Drill the holes for the mounting brackets and use masonry fasteners, self-tapping screws or bolts to mount the mounting brackets and tube to the wall surface.
7. Attach one end of the RF Coaxial cable with the N connectors to the antenna.
8. Slide the cable through the mounting tube and push the antenna into the top of the tube until the locking threaded hole in the antenna base lines up with the mounting tube hole.
9. Drop the antenna cable through either the roof, or wall penetration into the area below the roofline. Seal all penetrations with either a mechanical device or with some form of silicon sealer.
10. Place the 10 mm hex bolt through the mounting tube hole, with the lock washer and tighten the assembly together.
11. Drill holes or Velcro tape and mount the booster (ITEM 1) in the selected location.
12. Place the interior antenna as central to the building as possible.
13. Place the antenna on a metal sheet 24 inches by 24 inches or larger on a shelf or any other flat dry surface for a good ground plane. Make sure that the inside antenna is at least eight (8) feet or more below the external antenna in a vertical measurement with a solid roof, ceiling or other separating structure. Never attempt to install the Interior antenna in the same horizontal plane as the external antenna. Make sure that the internal antenna is not in line of sight of windows, as this could result in feedback from the external and internal antenna signals mixing.
14. Connect the external coaxial antenna cable to the "External Antenna" connection on the booster case marked "exterior antenna" This will be on the side with no power LED light or power input.
15. Connect the inside antenna to the "Interior Antenna" connection on the side of the booster case that has the power LED light and power input.
16. Insert the 2.5 x 5.5 mm power plug from the power supply (ITEM 4) into the booster input next to the power LED light.
17. Insert the power supply to wall 120 VAC power.
18. Makes sure that the power light comes on. Your installation is now complete.

## Section # 6 TROUBLESHOOTING

- ▽ If the booster ever feels warm, it is because it is oscillation from incorrectly placed antennas
- ▽ If there are any doubts as to the booster's performance, place an ammeter on one of the power supply cables. Separate the two cables with your fingers and connect either one to a DC ammeter on the 1 amp range. Make sure the current draw is less than 400 milli amperes. Anything above, 500+ means the unit is in oscillation and should be shut down immediately.
- ▽ If the booster is drawing less than 400 milli amperes, and there is still no boost in the area, the external antenna is not connected, or the cable has an open connection.

## Section # 7 Optional Interior, Exterior Antennas, and Splitters

If you have fluctuations in signal strength that appear on your PCS/cellular phone, it may be a sign of weak exterior signal to the booster. You may also have other areas in a building that are not reached by the standard interior antenna. In these instances, Cyfre offers custom interior and exterior antennas, and splitters to allow the use of multiple interior antennas.

1. Cyfre offers a two way and a four-way splitter for the interior to allow the use of two or four interior antennas. These extra interior antennas allow feeds into remote locations in a building and spread the signal correctly to those areas. **Using any product other than the Cyfre supplied splitters and interior antennas or cable will void the warranty.** The splitters have been designed for a specific very low loss and impedance to work with the booster. If you try any other splitters, we cannot guarantee the units will work, and they may damage the booster, which would be out of warranty damage.
2. The splitter must be mounted directly on the booster on the inside terminal. The multiple antenna wires must then be connected to the splitter.
3. Cyfre also offers special higher gain exterior and Yagi style antennas for maximum gain in a remote area.



## Cyfre Antennas

Gain even more reception with  
Cyfre antenna upgrades



Magnetic Mounts



Omni-Directional



Hole Mounts



Yagi Antennas

805-777-1100 - [www.CyfreAdapters.com](http://www.CyfreAdapters.com)

### Section # 8 Industry Canada RSS-131 Requirements

IWVA819 Specifications per paragraph 5.3

1. The nominal passband gain is 65 dB.
2. The nominal bandwidth is, CDMA 1.2 MHz, TDMA 40 KHz, GSM 300 KHz
3. The rated mean output power:  
0.664 W (28.22 dBm) 1850.025 – 1909.975 MHz  
0.566 W (27.53 dBm) 1930.025 – 1989.975 MHz
4. The input and output impedance is 50 ohms
5. Notice: The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, there is no change in the rating of the unit. Regardless of the input to the unit, the device will not exceed the rated level of output. The output power per band is the same regardless of whether it is single or multi-carrier operation.

### Section # 9 Limited 1 Year Warranty

Cyfre™ warrants that this product is free from any defects in material or workmanship for a period of one year. If a defect in material or workmanship is found, Cyfre™ agrees to repair or replace the product at its own discretion, free of charge, to the original purchaser excluding all shipping charges. To return product, all parts, packaging, and accessories along with original receipt from where you purchased your product must be included with your return. Failure to return all product, parts, packaging, and accessories will result in product The warranty is void if the product has been modified, abused, tampered with, or subjected to abnormal conditions. Any use of non Cyfre™ antennas or cables will void this warranty.