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- WRE2710-S-UL Kit (UL Listed Enclosure not Included)
 - WRE2710-S-ULE Kit (UL Listed Enclosure Included)

M2M –Cellular Signal Amplifier with Passive Bypass Technology
UL864 Listed





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Overview

The WRE2710 Wireless Network Range Extender is a high performance, microprocessor controlled, bidirectional RF amplifier for the entire North American 850 MHz cellular and 1900 MHz PCS frequency bands. The amplifier has an automatic gain and oscillation control system that will automatically adjust the gain and the output power if a signal anomaly occurs. This amplifier is designed to operate as a direct connect unit within a cellular system, for maximum performance in weak signal coverage areas. The input power requirements for the amplifier are positive 9.5 to 29.0 volts DC (negative ground).



Parts List

Depending upon the connector type of the cellular communicator, ClearRF can customize the M2M kit to include the appropriate adapters to ensure a seamless and quick installation. Adapter types include, but are not limited to SMA, RP-SMA, MMCX, U.FL, MCX, FME, and TNC.

<p>1. WRE2710 Amplifier Unit</p> 	<p>2. SMA-to-MMCX Device Cable –If connecting to an MMCX device.</p> 
<p>3. Hardwire DC Power Cable</p> 	<p>4. Magnetic-Mount Outdoor Signal Antenna</p> 
<p>5. Optional -SMA-to-U.fl Device Cable –If connecting to an U.FL device</p> 	<p>6. UL Listed Locking Enclosure –Included in WRE2710-S-ULE only. 7x12x3.5</p> 

Installation Guide

Disclaimer: Installation of this device requires knowledge of basic electrical and experience with installing electronic devices. We recommend seeking a professional installer if you are not accustomed to installing electronics or high tech devices. Installation of this device is at your own risk. ClearRF, LLC assumes no responsibility for the installation or improper operation of this device. Contact your dealer or CustomerService@ClearRF.com with “Installation Help” in the subject line for assistance.



Installation of the WRE2710-S-UL(E)

1. Mount the WRE2710 Amplifier into a UL Listed Locking Enclosure in an inside dry location.



2. Run the Antenna Cable through the top of the enclosure knockout. Install Listed Grommet in knockout hole to prevent wire abrasion.



3. Connect the SMA end of the Antenna cable to the WRE2710 antenna connection.





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4. Mount the Outdoor Signal Antenna vertically on the enclosure metal surface. Antenna must be located in the same room as the amplifier and the cellular communicator.



5. Connect the SMA to MMCX or U.FL cable to the Device connector on the WRE2710 connector marked "Device".



6. Connect the MMCX (or U.fl) to SMA device cable to the cellular communicator:
 - a. MMCX





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b. U.fl



7. Plug the Hardware Power Cable into the WRE2710 power connector.



8. Connect the hardwire power cable to the auxiliary battery backup power source.

LED Diagnostics

Once the amplifier is installed properly and power is applied, the LEDs will both turn on followed by the green LED flashing. The green LED will flash while the amplifier increases its gain to the optimum level. The red LED may also flash during this stage while the gain (power) is properly set on the amplifier. When power control is established, the green LED will remain constantly on. You may see the green and red LEDs flash back and forth, THIS IS NORMAL. In areas where the cellular network is adequate, the amplifier will maintain a maximum power level acceptable for normal operation and prevent overloading the wireless phone, as well as keeping RF signal levels at a minimum for a healthy environment. **If the red LED is constantly on and the green LED is off, the amplifier has**



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detected a fault. The amplifier will shut down automatically and restart. If the fault persists, reposition the antenna until normal operation is achieved. - Once normal operation is established, you may permanently mount the antennas in the locations you chose in the prior steps.

Diagnostic LED definitions

1. Solid Green and Red – LED test, the unit is initializing
2. Solid Green – Normal operation
3. Flashing Green – Normal operation, increasing gain setting
4. Solid Green and Flashing Red – Normal operation, decreasing gain setting
5. Solid Red and no Green – Fault detected (Unit will shut down until power is cycled.)

Optional Accessories

Contact us at www.clearrf.com for pricing and availability or see your Clear RF™ dealer. Replacement parts and additional accessories may also be available.

Patented Passive Bypass Technology

The WRE2710 amplifier is equipped with ClearRF's Passive Bypass technology. This feature allows the amplifier to passively bypass itself and become merely a pass through cable when amplification is not necessary, during loss of power or when a fault is detected.

Passive Bypass Technology





WRE2710 Specifications

- Frequency Range: Cellular 850 (824MHz – 894MHz), PCS 1900 (1850MHz – 1990MHz)
- 20dB BW: 850 UL: 39MHz, 1900 UL: 115MHz
- Rated Uplink Maximum Output Power: Cellular 850; 27dBm, PCS 1900; 27dBm
- Rated Downlink Maximum Output Power: Cellular 850; -20dBm, PCS 1900; -20dBm
- Current Draw at idle 9.5 at VDC:- 277.5 milliampres
- Current Draw at idle at 29 VDC: 91 milliampres
- Power Requirement: 9.5 to 29.0 volts DC (negative ground), Connector is center positive
- Nominal Gain: Cellular 850: 15dB, PCS 1900: 15dB
- Input/output Impedance: 50 Ohms
- Rated Mean Output Power: 27dBm

FCC ID: XS7-WRE2710

IC ID: 8918A-WRE2710

This device complies with Part 15 of the FCC Rules. Operation is subject to the following 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.

The term “IC:” before the radio certification number only signifies that Industry of Canada technical specifications were met. The Manufacturer's rated output power of this equipment is for single carrier operation. For situations when multiple carrier signals are present, the rating would have to be reduced by 3.5 dB, especially where the output signal is re-radiated and can cause interference to adjacent band users. This power reduction is to be by means of input power or gain reduction and not by an attenuator at the output of the device.

La puissance de sortie nominale indiquée par le fabricant pour cet appareil concerne son fonctionnement avec porteuse unique. Pour des appareils avec porteuses multiples, on doit réduire la valeur nominale de 3,5 dB, surtout si le signal de sortie est retransmis et qu'il peut causer du brouillage aux utilisateurs de bandes adjacentes. Une telle réduction doit porter sur la puissance d'entrée ou sur le gain, et ne doit pas se faire au moyen d'un atténuateur raccordé à la sortie du dispositif.



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FCC Regulatory Guidance: ClearRF's WRE2710-S operates under the rules and regulations as provided by the Federal Communications Commission (FCC). For more information on these rules and regulations, please contact the FCC directly at (888)-225-5322.

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

Safeguard Features

The amplifier has an automatic gain and oscillation control system that will automatically adjust the gain and the output power if a signal anomaly occurs. This amplifier is designed to operate as a tethered (direct connect) unit within a cellular system, for maximum performance in weak signal coverage areas.

Antennas

You **MUST** operate this device with approved antennas and cables as specified by the manufacturer. Antennas **MUST** be installed as least 20 cm (8 inches) from any person.

Included Antenna: MSE-5721-001 Mag Mount Antenna to be installed in same room at amplifier and cellular communicator

Included Cable: CBL-SMA-U.FI or CBL-SMA-MMCX (other device cables available)

Warranty Information

Limited Warranty

ClearRF L.L.C. warrants that this product is free from defects in materials or workmanship for one year from the date of purchase. Within this period, ClearRF, will, at its sole option, repair or replace any components which fail in normal use. Such repairs or replacement will be made at no charge to the customer for parts or labor, provided that the customer shall be responsible for any transportation cost. This warranty does not cover failures due to abuse, misuse, accident or unauthorized alterations or repairs.



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Repairs have a 90 day warranty. If the unit sent in is still under its original warranty, then the new warranty is 90 days or to the end of the original one year warranty, depending upon which is longer.

ClearRF retains the exclusive right to repair or replace the product or offer a full refund of the purchase price at its sole discretion. Such remedy shall be your sole and exclusive remedy for any breach of warranty. ClearRF shall not be liable for any incidental or consequential damages for breach.

Procedure for Claims under Limited Warranties

To obtain warranty service, an original or copy of the sales receipt from the original retailer is required. To obtain warranty service, follow these two steps:

1. Contact ClearRF via email to receive authorization (RMA) number at warranty@clearrf.com
2. Once you have obtained an RMA #, ship the unit, copy of the sales receipt, along with the RMA number to:

ClearRF

RMA #: {insert RMA number}

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