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CLEAR RF

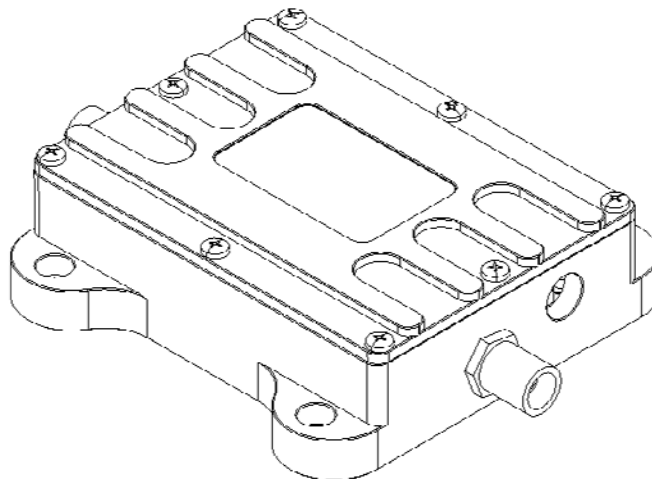
TM

WRE2700-S Operator's Manual and Installation Guide:

M2M –Machine to Machine

Overview

The WRE2700 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 tethered (direct connect) unit within a cellular system, for maximum performance in weak signal coverage areas. The input power requirements for the amplifier are positive 8.0 to 36.0 volts DC (negative ground). This M2M kit includes an AC power adapter for use with typical household 120 volt AC power.





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Parts List

Depending upon the connector type of the cellular device, 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, MCX, FME, and TNC.

<p>1. WRE2700 Amplifier Unit</p> 	<p>2. AC/DC Power Adapter</p> 
<p>3. Hardwire DC Power Cable</p> 	<p>4. Magnetic-Mount Outdoor Signal Antenna</p> 
<p>5. TNC to SMA Device Cable –If connecting to an SMA device</p> 	<p>6. TNC to MMCX Device Cable –If connecting to an MMCX device.</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



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device. Contact your dealer or CustomerService@ClearRF.com with “Installation Help” in the subject line for assistance.



INSTALLATION WITH AN SMA DEVICE

1. If connecting to a Cellular Modem (e.g. Raven X, CradlePoint), connect the TNC to SMA device cable (#5 on Parts List) to the ClearRF Amplifier connector marked “Device”.





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2. Connect the SMA end of the TNC to SMA device cable to the Cellular Modem antenna connection.



3. Mount the Outdoor Signal Antenna (#4 on Parts List) vertically on any metal surface.



- a. Connect the Outdoor Signal Antenna connector to the ClearRF amplifier TNC connector marked "Antenna".



4. Plug the AC Adapter (#2 on Parts List) into a nearby wall outlet.
5. Insert the AC Adapter connector plug into the amplifier and watch the LED indicators.





INSTALLATION WITH A MMCX DEVICE

1. If connecting to a Cellular Module (e.g. Motorola, Sierra Wireless), connect the TNC to MMCX device cable (#6 on Parts List) to the ClearRF Amplifier connector marked "Device."



2. Connect the MMCX end of the TNC to MMCX device cable to the Cellular Module.



3. Mount the Outdoor Signal Antenna (#4 on Parts List) vertically on any metal surface.



4. Connect the Outdoor Signal Antenna connector to the ClearRF amplifier TNC connector marked "Antenna".





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5. Plug the AC Adapter (#2 on Parts List) into a nearby wall outlet.
6. Insert the AC Adapter connector plug into the amplifier and watch the LED indicators.



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 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 temporarily shut down and restart)

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.



WRE-2700 Specifications

- Frequency Range: Cellular 850 (824MHz – 894MHz), PCS 1900 (1850MHz – 1990MHz)
- Maximum Output Power¹: Uplink; 3 Watts Downlink; 0.0001 Watts
- Current Draw @ 12VDC: Idle: 350 milliamperes; Max: 1.5 amperes
- Power Requirement: 8.0 to 36.0 volts DC (negative ground), Connector is center positive
- Maximum Gain: Cellular 850: 25dB nominal, PCS 1900: 25dB nominal
- Input/output Impedance: 50 Ohms

FCC ID: XS7-WRE2700

IC ID: 8918A-WRE2700

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.

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.

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.

¹ Output power is software controlled.



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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}
12825 E. Mirabeau Parkway
Suite 104
Spokane Valley, WA 99216