

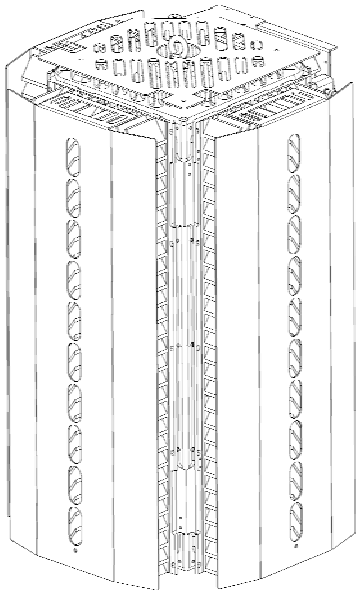


FlexWave™ URH Operation and Maintenance Manual - Preliminary

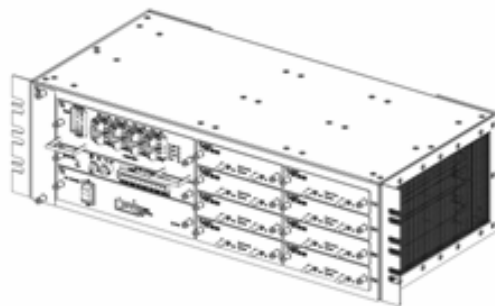
PRODUCT DESCRIPTION

This publication provides basic information about the FlexWave™ URH installation. The FlexWave URH provides the same functionality as the ADC Wireless family of distributed antenna systems (DAS). However, the URH platform implements three single band DAS system capability into one single chassis. The system is comprised of a host and remote chassis with a fiber optic interface. The host chassis is intended for central office equipment enclosure/indoor use. This remote chassis is functional for indoor and outdoor installation. The remote chassis provides the degree of protection specified by NEMA 6 and IP67 as defined by IEC Publication 60529.

INSTALLATION OVERVIEW



REMOTE ENCLOSURE



HOST ENCLOSURE



Mounting

The FlexWave™ URH host chassis is 19/23 inch equipment rack mountable requiring 3 RU spacing.

The Flexwave URH remote chassis has a mounting bracket provided with each unit. The mounting bracket is banded to the pole with three 1.0" wide stainless steel bands. The chassis is then hung from the bracket by means of protrusions and keyhole slots. Once the chassis is in place, it is further secured to the mounting bracket with two 7/16" stainless steel hex bolts.



SPECIFICATIONS

RF Specification

Supported Frequency Blocks	1-3 per Remote Unit; 1-8 per Host Unit
Bandwidth	1.5 to 35 MHz non-contiguous
Frequency Band Supported	800 Cellular, E-SMR 800/900, 1900 PCS, 1800/2100 AWS (First Release) 700, 1800 & 2500 MHz (Future Releases)
Digital Simulcast	Up to 8:1 Single Host (can daisy chain Host for higher simulcast)
Diversity Receive	Yes (Optional)

Propagation Delay

System Delay	<12 microseconds
Delay Management Digital	(Manual or Automatic)

Noise Figure

Noise Figure	<5 dB
Input IP3	>-8 dBm

Optical Specifications

Optical Budget	10 dB (Standard); 26 dB (Optional)
Digital Transport Rate	3.072 Gbps

Output Power

Output Power per Band	38 dBm (6.5 Watts) Cell/SMR - October '07 43 dBm (20 Watts) PCS - November '07 43 dBm (20 Watts) AWS - December '07 43 dBm (20 Watts) Cell & SMR - Q2 '08 39 dBm (8 Watts) WiMAX - Q2 '08
Nominal Passband Gain	~75 dB for 20 Watt System ~70 dB for 6.5 Watt System

General Specifications

Remote Unit Outside Ambient Temp Rating	-40°C to +50°C
Storage Temperature	-40°C to +70°C
Humidity	10% to 90% non-condensing
Lightning Protection	20kA IEC 1000-45 8/30 μ s Waveform
Remote Unit	
Enclosure	IP-65
Mounting	Wall, Pole
Dimensions	16.45" x 15.6" x 29.38"
Weight	\leq 200 Pounds (No component greater than 80 pounds)
Volume	3.66 cubic feet
Cooling	Passive Convection
Optical Connectors	Sealed ProAx
Impedance	50 Ohm
Host Unit	
Mounting	19- and 23-inch rack
Rack Units	3 Rack Units
Weight	<25 Pounds
Host Unit Power Requirements	
Power Source	21 to 60 VDC floating
Remote Unit Power Requirements	
Power Supply	100-240 VAC
Battery Backup	UPS
Element Management	
Embedded EMS	Yes
SNMP Based Management	Yes



STANDARDS CERTIFICATION

FCC: This equipment complies with the applicable sections of Title 47 CFR Part 15 (Host unit), Part 22 (800 MHz Cellular), Part 24 (1900 MHz - PCS), and Part 90 (800/900 - SMR)

IC: This equipment complies with the applicable sections of RSS-131. The term "IC:" before the radio certification number only signifies that Industry 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.

Note: To comply with Maximum Permissible Exposure (MPE) requirements, the maximum composite output from the antenna cannot exceed 1000 Watts ERP (Cellular and SMR), the antenna cannot exceed 1640 Watts EIRP (PCS), and the antenna must be permanently installed in a fixed location that provides at least 6 meters (20 feet) of separation from all persons.

UL/CUL: This will be installed in a restricted access location. This equipment complies with NEMA Type 6, per UL and CUL 50, Standard for Enclosures for Electrical Equipment. This equipment provides the degree of protection specified by IP67 as defined in IEC Publication 529.

Conforms to ANSI/UL Std. 60950. Certified to CAN/CSA STD C22.2 No 60950

FDA/CDRH: This equipment uses a Class 1 LASER according to FDA/CDRH Rules. This product conforms to all applicable standards of 21 CFR Part 1040.

Caution: Modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



AC Power Wiring Installation

A 15-foot connectorized 3-wire cable is provided for the AC power connections. The connectorized end of the cable connects to the AC power port located on the bottom of the enclosure. The stub end of the cable must be routed to an external junction box (not provided) for permanent connection to the AC power system wiring. The socket outlet shall be installed near the equipment and shall be easily accessible.

- ▶ **Note:** It is recommended that an AC outlet be installed near the enclosure for powering tools and test equipment. This outlet must include a GFCI device for protection.

The AC power source must supply 120 or 240 VAC, 50 or 60 Hz, single-phase power through a 15 Amp circuit breaker. The AC power cable provides three wire leads for line, neutral, and ground connections. The power cable is rated for indoor or outdoor use and must not be placed within electrical conduit as this will impede the cooling of the cable during usage. The electrical junction box and any conduit, wire, and fittings required must be provided by the installer.

- ▶ **Note:** All electrical work must comply with local codes and requirements. A locally licensed electrical contractor is best qualified to perform this work. For additional information, consult with the ADC Technical Assistance Center.



Danger: Use extreme caution when working with high voltage AC power. Ensure all power is disconnected before working on power circuits.

Use the following procedure to install the AC power wiring:

1. Locate the AC power cable that is provided separately with the enclosure.
2. Route the power cable between the AC power port, located on the underside of the enclosure and the nearest AC power junction box as shown in [Figure 14](#). It may be necessary to install a new junction box if an existing junction box is not available.

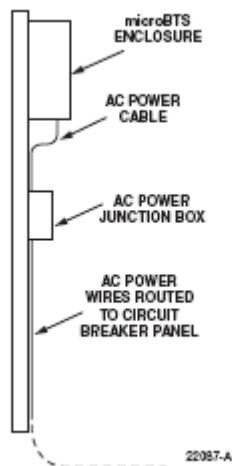


Figure 14. Typical AC Power Cable Routing



3. Secure the cable between the AC power port and the AC power junction box per local practice. Leave sufficient slack in the cable to allow it to be easily connected and disconnected from the AC power port.

▶ **Note:** The power cable is rated for indoor or outdoor use and must not be placed within electrical conduit as this will impede the cooling of the cable during usage. The cable run distance to the AC power source must not exceed 100 feet.

4. Install any AC power supply wires that may be required between the AC junction box and the AC circuit breaker box.

▶ **Note:** It is recommended that an AC outlet be installed near the enclosure for powering tools and test equipment. This outlet must include a GFCI device for protection.

5. Connect the AC power cable wires to the AC power supply wires. Refer to [Figure 15](#) to identify the color code and wire designations.

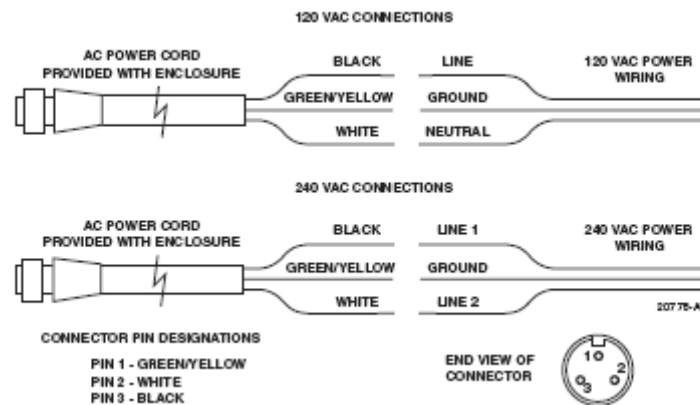


Figure 15. AC Power Cable Connections

6. At the AC circuit breaker box, connect the AC power supply load wires to a 15 Amp circuit breaker.

7. Place the circuit breaker in the ON position and then test the connectorized end of the AC power cable for proper voltage levels and correct polarity.

8. When testing is complete, place the circuit breaker in the OFF position.

9. Remove the dust cap from the AC power port located on the bottom of the enclosure.

Danger: While trying to connect the AC power cable to the remote unit AC power port, it is possible for the line terminal on the cable connector to contact the ground pin on the power port. If the AC cable is energized, this will result in a direct short to ground for the AC power. To avoid possible personal injury and equipment damage, always turn the AC power **off** before connecting the AC power cable to the AC power port.



10. Connect the power cable connector to the AC power port.

11. Tighten coupling nut until the green band at the top of the connector body is visible.