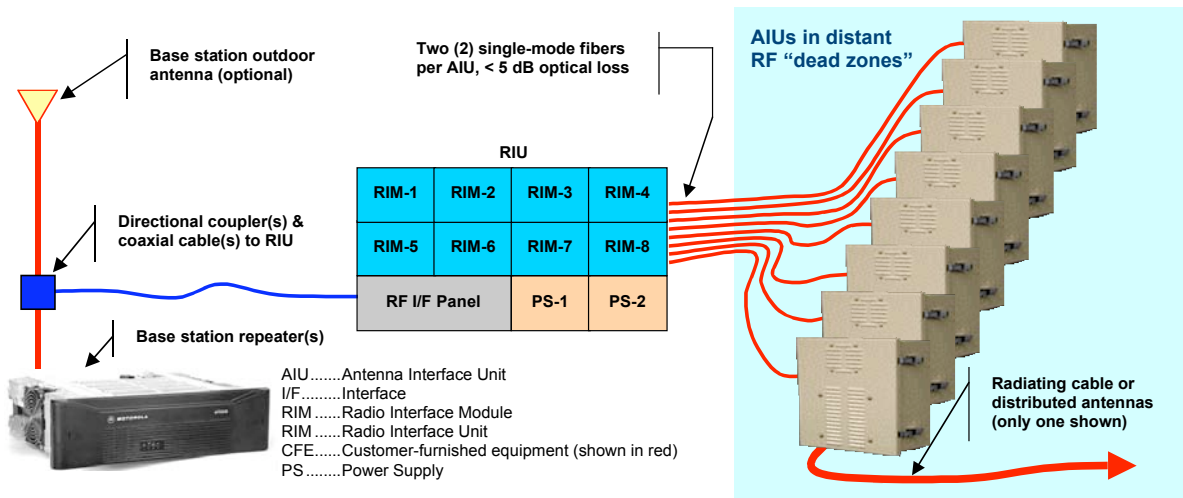


FORAX-RP8 RF-over-Fiber Repeater System

“Dead Zone” Coverage for Public Safety and Industrial Radio Systems

(Repeater, Eight Zone)

FORAX-RP8 (repeater, 8 zone) connects VHF/UHF repeaters used in public safety or industrial radio system to distant RF “dead zones,” such as building basements or tunnels, using fiber optic cables to transport the RF signals. **FORAX-RP8** offers a secure connection that takes advantage of your facility’s existing single mode optical fiber infrastructure. **FORAX-RP8** eliminates roof penetrations and awkward, power-consuming coaxial cable runs to outdoor antennas. Coverage in RF dead zones is possible up to 10 km from the base station (longer by special order). Transmit power levels are tailored for your specific installation and filtering is tailored to your channel assignments.



A **FORAX-RP8** system consists of a 19-in rack-mounted Radio Interface Unit (RIU) in the base station with up to eight Radio Interface Modules (RIMs) connected by User-supplied optical fiber cables to as many as eight Antenna Interface Units (AIUs). At the radio site, the RIU is connected to the repeaters’ antenna outputs; this detail is tailored to your specific installation. In each RF dead zone, the AIU is connected to radiating cable or distributed antennas.

FORAX-RP8 functions as a long, loss-free link between the radio and each RF dead zone. Performance limitations and the difficulty of coaxial cable runs to the roof – with their consequent roof leaks – are overcome by the simplicity and performance of RF-over-fiber connections. **FORAX-RP8** provides:

Feature	Benefit
Long Connections	» RIU and the AIUs can be located up to 10 km apart using single mode fiber » RF coverage for handheld radios is efficiently focused on each problem zone
Easy Routing	» RF signals are carried on lightweight, flexible, rugged, optical cables » Roof penetrations and coaxial cable runs for outdoor antennas are eliminated
EMP/EMI Immunity	» Lightning, electromagnetic pulses, or RF interference cannot propagate over, or influence the signals on, optical fiber cables » Base-station repeater equipment is opto-isolated from AIU antennas

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FORAX-RP8 Specifications

RF Link Parameters	RF Performance	
Operating Frequency	Any User-specified channel set in the VHF/UHF range	
RX link gain	Tailored for specific installation	
Noise figure (NF)	+9 dB	
1-dB compression point	-20 dBm	
Third-order intercept point (IIP3)	-10 dBm	
Spur-free dynamic range (SFDR)	+103 dBm/Hz	
Product Characteristics	Radio Interface	Amplifier Interface Unit (AIU)
Number of RF-over-fiber links	Up to eight	
Optical loss budget	≤ 5 dBo for each fiber optic link	
Nominal RF interface impedance		50 Ohm
Nominal RF interface VSWR		< 1.5
TX power to radiating cable/distributed antennas		Tailored for specific installation
User Interface	<ul style="list-style-type: none"> ▪ Two tri-state LEDs on each RIM indicate: <ul style="list-style-type: none"> ○ Laser operation (end-to-end) ○ TX RF operation ○ AIU TX amplifier over-temp ○ Command link fault 	<ul style="list-style-type: none"> ▪ Monitor LED: <ul style="list-style-type: none"> ○ Power
Packaging	19-in @ 3U (5.25-in) rack-mount chassis Durable black powder coat finish	Weatherproof wall-mount NEMA enclosure with pad-locking hasps 16-in W x 18-in H x 8-in D (41-cm W x 46-cm H x 20-cm D) Durable cream polyester (for extreme heat) power coat finish
Standard Installation Notes (Factory can bid other installation arrangements upon request)	User supplies 19-in rack, AC power, and single mode optical fiber cabling from RIU to AIUs	User supplies AC power to AIU plus radiating cable ("leaky coax") or distributed antennas
Fiber optic connector type	SC/APC (Other types available)	
RF connector type	N-type female (Other types available)	
Power Supply	120-240 Vac / 50-60 Hz	120-240 Vac / 50-60 Hz
Power consumption	20W per RIM	18 W, typ.
Operating temperature	-10 C to +60 C	
Storage temperature	-40 C to +80 C	

Syntonics will be pleased to quote custom configurations, frequencies, power supplies, enclosures, and other application-specific revisions.