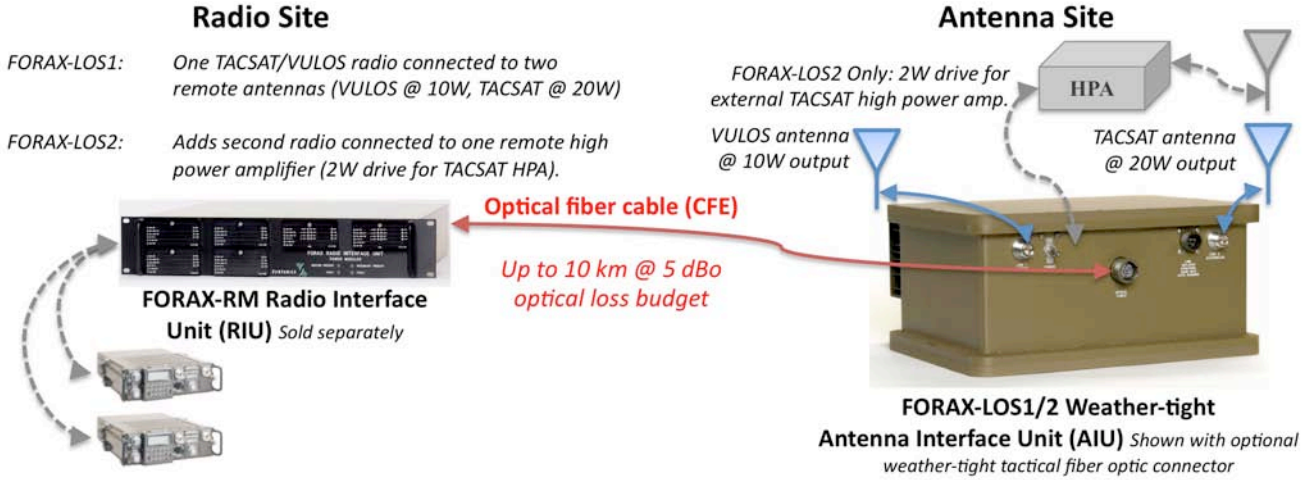


**FORAX-LOS1 & FORAX-LOS2
RF-over-Fiber Antenna Interface Unit (AIU)**

The **FORAX-LOS1** (line-of-sight, 1 radio) AIU connects one radio to two User-selectable remote antennas: one UHF military satellite communications antenna (“UHF MILSATCOM” or “TACSAT”, 243-318 MHz) and one VHF/UHF line-of-sight antenna (“VULOS,” 30-512 MHz). **FORAX-LOS2** (line-of-sight, 2 radios) adds the capability to connect a second radio to a remote TACSAT power amplifier + antenna.



The **FORAX-LOS1 or FORAX-LOS2** Antenna Interface Unit (AIU) is connected by User-supplied optical fibers to a FORAX Radio Interface Unit (RIU), procured separately. At the radio site, the RIU is connected to the radio’s antenna port by coaxial cable. At the antenna site, Link #1 of both models provides 10W to a VULOS antenna and 20W to a TACSAT antenna, which are connected to the AIU by User-supplied coaxial cables. Link #2 of the FORAX-LOS2 model provides 2W to drive an external TACSAT high power amplifier (HPA) and antenna.

FORAX functions as a long, loss-free link between the radio and its antenna. System limitations and installation difficulties associated with coaxial cable are overcome by the simplicity and performance of RF-over-fiber connections. FORAX provides:

Feature	Benefit
Long Connections	» Radio and its antenna can be located up to 10 km apart using single mode fiber
EMP/EMI Immunity	» Lightning, electromagnetic pulses, or RF interference cannot propagate over, or influence the signals on, optical fiber cables » Radio equipment is opto-isolated from antenna
Easy Routing	» RF signals are carried on lightweight, flexible, rugged, optical cables » Multiple radios can be carried on a single fiber optic cable » Geographic diversity in RF signal routing becomes easy
Line-of-Sight Communications plus TACSAT (including HPW & DAMA)	» Link #1 is engineered for all LOS frequencies and most military waveforms in the 30-512 MHz band » Links #1 and #2 (FORAX-LOS2 only) are engineered for UHF military satellite communications (“TACSAT,” 243-318 MHz), including HPW and DAMA

FORAX-LOS1/2 Specifications

RF Link Parameters	RF Performance									
Bandwidth	30-512 MHz									
Link gain	+18 dB (with 30m of fiber)									
Noise figure (NF)	+9 dB									
1-dB compression point	-20 dBm									
Third-order intercept point (IIP3)	-10 dBm (with 30m of fiber)									
Spur-free dynamic range (SFDR)	+103 dBm/Hz (with 30m of fiber)									
Product Characteristics	Radio Interface Unit (RIU)	Amplifier Interface Unit (AIU)								
Number of RF-over-fiber links	Link #1 supports 30-512 MHz LOS @ 10W and TACSAT @ 20W (both models) Links #2 support TACSAT @ 2W (FORAX-LOS2 only)									
Optical loss budget	< 5 dBo									
RX/TX Switching Time	Supports DAMA satcom									
Radio TX power into FORAX RIU	5 W nominal, 20 W survive (Other configurations available)									
FORAX AIU output RF power to external High Power Amplifier		Link #1: 10W (LOS) or 20W (TACSAT) Link #2: 2W (TACSAT)								
User Interface	<ul style="list-style-type: none"> ▪ Provided by FORAX-RM RIU (procured separately) ▪ RIU's Status & Control Panel indicates: <ul style="list-style-type: none"> ○ Laser operation (end-to-end) ○ TX RF operation ○ AIU TX amplifier over-temp ○ Command link fault ▪ RIU's Status & Control Panel controls seven sub-bands in LOS mode: <table style="margin-left: 20px; border: none;"> <tr> <td style="padding: 2px 10px;">30-46 MHz</td> <td style="padding: 2px 10px;">46-70.5 MHz</td> </tr> <tr> <td style="padding: 2px 10px;">70.5-108 MHz</td> <td style="padding: 2px 10px;">90-139 MHz</td> </tr> <tr> <td style="padding: 2px 10px;">139-216 MHz</td> <td style="padding: 2px 10px;">216-331.5 MHz</td> </tr> <tr> <td style="padding: 2px 10px;">331.5-512 MHz</td> <td></td> </tr> </table> 	30-46 MHz	46-70.5 MHz	70.5-108 MHz	90-139 MHz	139-216 MHz	216-331.5 MHz	331.5-512 MHz		<ul style="list-style-type: none"> ▪ Monitor LED: <ul style="list-style-type: none"> ○ Power
30-46 MHz	46-70.5 MHz									
70.5-108 MHz	90-139 MHz									
139-216 MHz	216-331.5 MHz									
331.5-512 MHz										
Packaging	See FORAX-RM datasheets	Weather-tight terminal with cooling fan Durable olive drab powder coat finish 36-cm W x 17-cm H x 33-cm D (14.2-in W x 6.8-in H x 12.8-in D) 8.7 kg (19 lb)								
Fiber optic connector type	SC/APC standard Weather-tight connectors optional (MIL-28876, TFOCA-II, and others)									
RF connector type	N-type female (Other types available)									
Power Supply	90/264 Vac @ 47/63 Hz									
Power consumption	See FORAX-RM datasheets	15 W (2@RX) 230 W (2@TX)								
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, and other application-specific revisions.