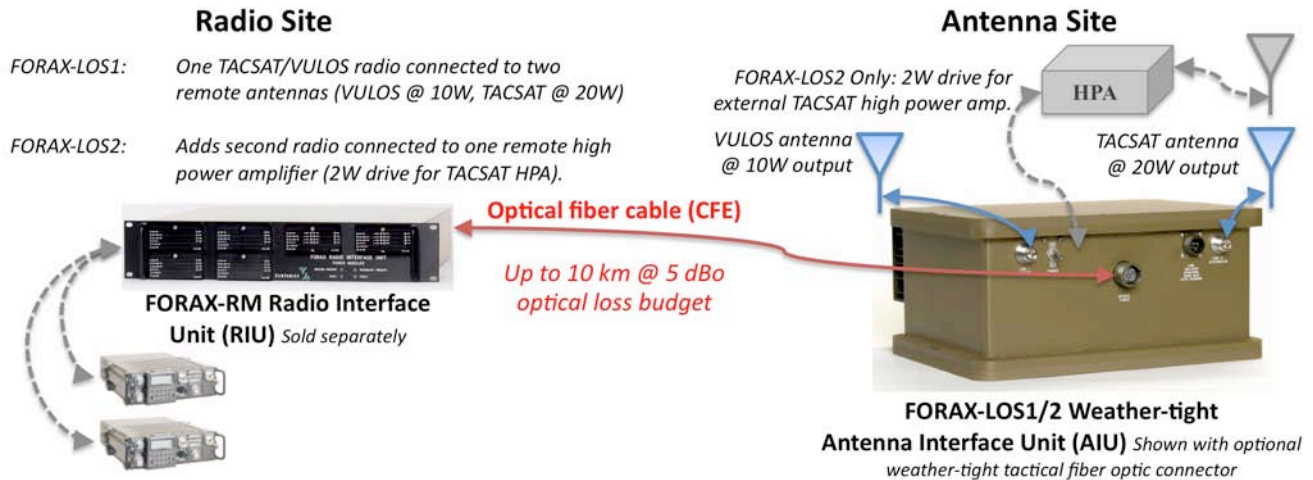


**FORAX-LOS1 & FORAX-LOS2  
RF-over-Fiber Antenna Interface Unit (AIU)**

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
<b>Long Connections</b>	» Radio and its antenna can be located up to 10 km apart using single mode fiber
<b>EMP/EMI Immunity</b>	» Lightning, electromagnetic pulses, or RF interference cannot propagate over, or influence the signals on, optical fiber cables » Radio equipment is opto-isolated from antenna
<b>Easy Routing</b>	» 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
<b>Line-of-Sight Communications plus TACSAT (including HPW &amp; DAMA)</b>	» 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									
<b>Bandwidth</b>	30-512 MHz									
<b>Link gain</b>	+18 dB (with 30m of fiber)									
<b>Noise figure (NF)</b>	+9 dB									
<b>1-dB compression point</b>	-20 dBm									
<b>Third-order intercept point (IIP3)</b>	-10 dBm (with 30m of fiber)									
<b>Spur-free dynamic range (SFDR)</b>	+103 dBm/Hz (with 30m of fiber)									
Product Characteristics	Radio Interface Unit (RIU)	Amplifier Interface Unit (AIU)								
<b>Number of RF-over-fiber links</b>	Link #1 supports 30-512 MHz LOS @ 10W and TACSAT @ 20W (both models) Links #2 support TACSAT @ 2W (FORAX-LOS2 only)									
<b>Optical loss budget</b>	< 5 dBo									
<b>RX/TX Switching Time</b>	Supports DAMA satcom									
<b>Radio TX power into FORAX RIU</b>	5 W nominal, 20 W survive (Other configurations available)									
<b>FORAX AIU output RF power to external High Power Amplifier</b>		Link #1: 10W (LOS) or 20W (TACSAT) Link #2: 2W (TACSAT)								
<b>User Interface</b>	<ul style="list-style-type: none"> <li>▪ Provided by FORAX-RM RIU (procured separately)</li> <li>▪ RIU's Status &amp; Control Panel indicates: <ul style="list-style-type: none"> <li>○ Laser operation (end-to-end)</li> <li>○ TX RF operation</li> <li>○ AIU TX amplifier over-temp</li> <li>○ Command link fault</li> </ul> </li> <li>▪ RIU's Status &amp; 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> </li> </ul>	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"> <li>▪ Monitor LED: <ul style="list-style-type: none"> <li>○ Power</li> </ul> </li> </ul>
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										
<b>Packaging</b>	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)								
<b>Fiber optic connector type</b>	SC/APC standard Weather-tight connectors optional (MIL-28876, TFOCA-II, and others)									
<b>RF connector type</b>	N-type female (Other types available)									
<b>Power Supply</b>	90/264 Vac @ 47/63 Hz									
<b>Power consumption</b>	See FORAX-RM datasheets	15 W (2@RX) 230 W (2@TX)								
<b>Operating temperature</b>	-10 C to +60 C									
<b>Storage temperature</b>	-40 C to +80 C									

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