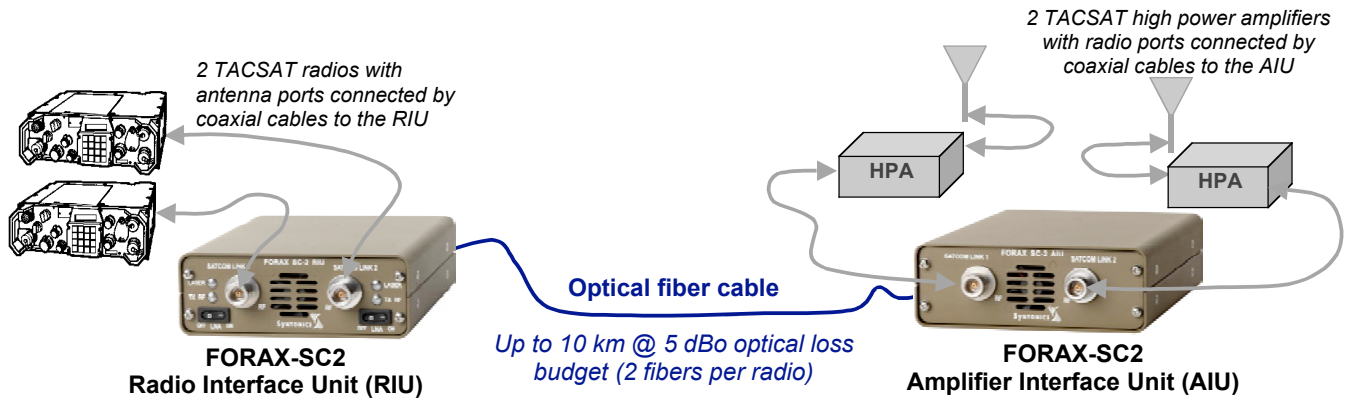


FORAX-SC2 RF-over-Fiber Tactical Communications System (Satcom, Two Radios)

FORAX-SC2 (satcom, 2 radios) connects one or two radios communicating via UHF tactical satellite communications (“DAMA TACSAT”, 240-320 MHz) to distant antennas. **FORAX-SC2** offers a high performance alternative to conventional radio-antenna coaxial cable connections, affording great flexibility in antenna location plus opto-isolation for all the User’s radios. Antennas can be located up to 10 km from the radios.



A **FORAX-SC2** system consists of a Radio Interface Unit (RIU) connected by a User-supplied optical fiber cable to an Amplifier Interface Unit (AIU). At the radio site, the RIU is connected to each radio’s antenna port by short coaxial cables. At the antenna site, the AIU is connected to each satcom high power amplifier (HPA) with short coaxial cables. Each AIU link provides 2W transmit power to drive the HPA.

FORAX-SC2 functions as a long, loss-free link between the radio and the HPA. System limitations and installation difficulties associated with coaxial cable are overcome by the simplicity and performance of RF-over-fiber connections. **FORAX-SC2** 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
HPW & DAMA TACSAT	» FORAX-SC2 systems are specifically engineered for UHF tactical satellite communications applications » FORAX-SC2 systems operate with all UHF tactical satcom waveforms



	including HPW and DAMA
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FORAX-SC2 Specifications

RF Link Parameters	RF Performance	
	LNA on	LNA off
Link gain	+18 dB (with 30-m of fiber)	-15 dB (with 30-m of fiber)
Noise figure (NF)	+9 dB	+39 dB
1-dB compression point	-20 dBm	+12 dBm
Third-order intercept point (IIP3)	-10 dBm (with 30-m of fiber)	+24 dBm (with 30-m of fiber)
Spur-free dynamic range (SFDR)	+103 dBm/Hz (with 30-m of fiber)	+105.5 dBm/Hz (with 30-m of fiber)
Product Characteristics	Radio Interface Unit (RIU)	Amplifier Interface Unit (AIU)
Number of RF-over-fiber links	Two	
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		2W
User Interface	<ul style="list-style-type: none"> ▪ LNA On/Off switch (each link) ▪ Two tri-state LEDs (each link) 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	15-cm W x 5.3-cm H x 23-cm D (6-in W x 2.1-in H x 9-in D) 1.6 kg (3.6 lb) Notches in case for securing to shelf Durable olive drab powder coat finish (Other colors available)	15-cm W x 5.3-cm H x 23-cm D (6-in W x 2.1-in H x 9-in D) 1.7 kg (3.7 lb) Notches in case for securing to shelf Durable olive drab powder coat finish (Other colors available)
Installation Notes	User supplies coaxial cabling to connect radios, 28-Vdc power, and optical fiber cabling from RIUs to AIUs. Patch Cable Kits optionally available from factory.	User supplies coaxial cabling to connect radios, 28 Vdc power, and optical fiber cabling from RIUs to AIUs. Patch Cable Kits optionally available from factory.
Fiber optic connector type	SC/APC (Other types available)	
RF connector type	N-type female (Other types available)	
Power Supply	28 Vdc	
Power connector	MIL-C-5015125 Miniature cylindrical wall mount, female receptacle, two pins, auto-polarization	
Power consumption	8 W (all modes)	12 W (2 @ RX) 36 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.