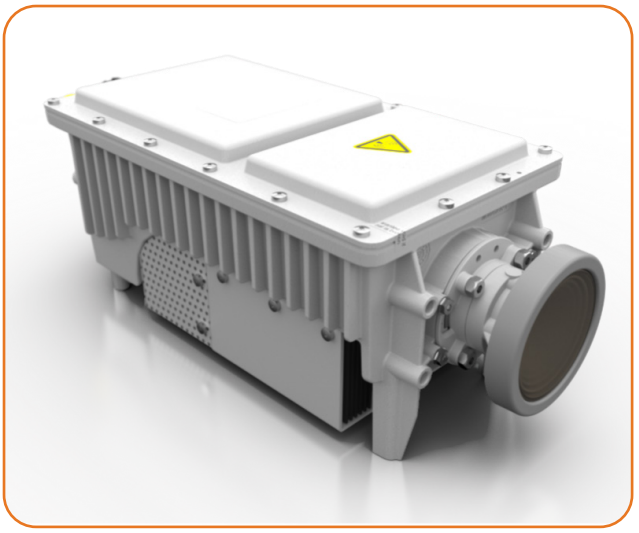
XRJ3XFX9
10/20/40/50W Mil-Ka band Transceivers

Overview

The Global Invacom XRJ transceiver is a breakthrough in cutting edge Ka-Band VSAT engineering. A GEO/ MEO/ LEO compatible, ruggedised IP-67 sealed enclosure integrates a BUC, LNB, and TRF in a single unit.

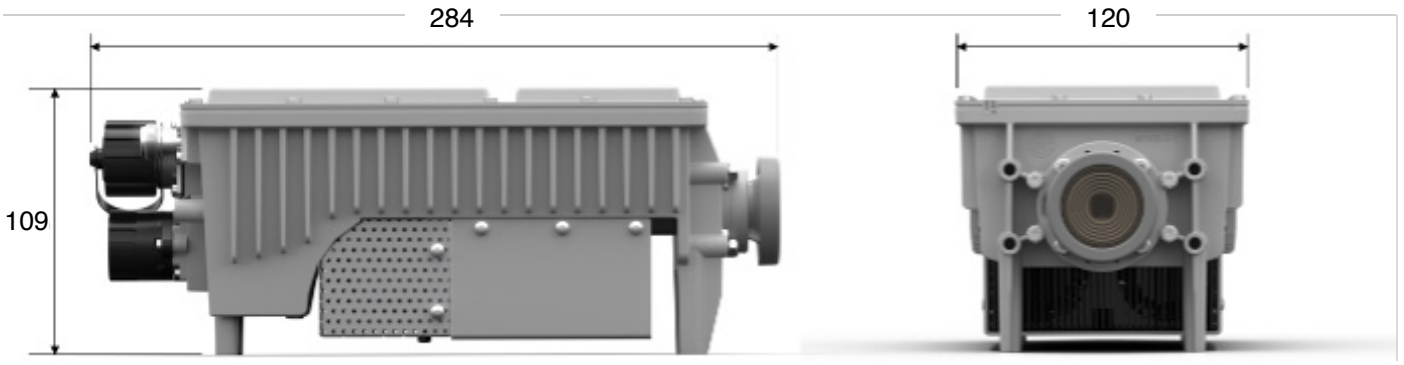
The transceiver is designed to operate in all MilGov networks, compliant with MIL-STD/STANAG specifications.

Production units are 100% tested with a rigorous process to ensure reliable maintenance-free operation for more than 10 years.



Product Features

- BUC, LNB, OMT and TRF integrated into compact & lightweight package.
- Very low power consumption.
- Integrated polariser allowing manual polarity switching of TX & RX circular polarisation.
- Full MilGov Ka-band coverage (29-31GHz TX & 19.2-21.2 GHz RX) single or multi sub-band transmit/receive options.
- 10W/20W/40W/50W P_{sat} output variants available (power measured at the feed not the OMT).
- PLL LNB with external or internal (4ppm) REF.
- L/S-Band (1400-2400MHz TX) IF modem interface with 10MHz or 50MHz reference.
- Durable IP-67 rated enclosure, available in white, military/olive green or khaki.
- MIL-STD 810H/461G/188-164C compliant.
- Optional monitoring & control via Open BMIP / SNMP protocols, web interface with event logger, CLI.
- Optional RF gain control and output power detection.



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Specifications (Typical Performance)

Feed and Polariser

Parameter	Min	Typical	Max	Unit	Note
Feed and polariser subsystem		Integrated			Matched to Global Invacom antennas
Polarisation		RHCP/LHCP			Field configurable, RX/TX orthogonal
XPD	25			dB	Mil-STD 188-164C Compliant

Tx Subsystem

Parameter	Min	Typical	Max	Unit	Note
IF input frequency range	1400		2400	MHz	
RF output frequency range	29		31	GHz	4 sub-bands
Local oscillator frequency	27.6		29.05	GHz	Up to 4 LO's. Controlled via M&C interface
Local oscillator integrated phase noise			2	deg	Mil-STD 188-164C, IESS 308/309 compliant
Local oscillator reference frequency		10 or 50		MHz	
SSG stability (24 hours)			0.25	dBpp	
IF input impedance		50		Ohm	N-Type
Conversion gain (attenauator at OdB) **10W/20W** **40W/50W**		68/71 74/74		dB	
RF output spurious level		According to ETSI EN301 459/360 74 and FCC 47 CFR 15/25 AB			Mil-STD 188-164C compliant
TX output power @P_{sat} **10W/20W** **40W/50W**		40/43 46/47		dBm	
TX output power @P_{lin} **10W/20W** **40W/50W**		37/40 43/44		dBm	Plin is defined as the power at which an ACPR of 25 dBc is achieved with a 1MS/s QPSK modulated carrier with α = 0.2
Group delay variation **Over 100MHz BW** **Over 250MHz BW**			1 2.5	ns	

Rx Subsystem

Parameter	Min	Typical	Max	Unit	Note
RF input frequency range	19.2		21.2	GHz	3 sub-bands
IF output frequency range	950		2150	MHz	
Local oscillator frequency	18.25		19.25	GHz	Tone and voltage or via M&C interface
Local oscillator frequency tolerance			± 4	ppm	internal reference
Local oscillator intergrated phase noise			2	deg	Mil-STD 188-164C, IESS 308/309 compliant
Total transceiver noise figure @ 25°C		1.5	1.7	dB	At the feed port (including TRF/OMT)
Conversion gain	50	56	60	dB	
Image band rejection	40			dB	
Gain stability			5	dB	Over full temp range
IF output impedance			50	Ohm	N-Type

General

Parameter	Min	Typical	Max	Unit	Note
Operating temperature	-40		+60	°C	
Moisture/ humidity protection					IP67
Weight		3		kg	XCVR + Feed
Supply voltage	36	48	60	V	Positive or negative polarity
DC power consumption **20W Total Rx & Tx** **40W Total Rx & Tx**			120 230	w	At P_{lin}
M&C					

Compliance with RED, MIL-STD 810H, 1674C, 461G

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