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XRJ30F44ZD
5/10/20/25W Ka-Band VSAT Transceivers

Overview

The Global Skyware Limited XRJ transceiver is a breakthrough in cutting edge Ka-Band VSAT engineering techniques and application. A Transceiver suitable for GEO/MEO/LEO constellations and design ready for newer and wider Ka band satellite frequencies. The ruggedised IP-67 sealed enclosure integrates a BUC, LNB, and TRF guaranteeing consistent communications performance. The Transceiver is designed to work in all markets from fixed stations to marine and mobility markets. Supporting the latest S-Band modem IF technologies with 10 MHz reference compatibility, the XRJ is optimised for high throughput for global consumer enterprise deployments. Production units are 100% tested with a rigorous process to ensure reliable maintenance-free operation for >10 years. Available in power options of 5,10,20 and 25W.

Product Features

- BUC, LNB, OMT and TRF integrated into compact economical package
- Integrated polarizer allowing Manual Polarity Switching of TX & RX circular polarisation
- Full Ka-band coverage 27.5 – 30GHz transmit / 17.7 – 20.2GHz receive (17.3 CY25)
- Compatible with all Global Skyware antennas
- PLL LNB with external orinternal (4ppm) REF
- S-Band (1400-2400MHz TX) IF Modem interface with 10 MHz reference
- Durable IP-67 rated enclosure
- High reliability, field replaceable fans
- Monitoring & control via Open BMIP / SNMP protocols
- Includes RF gain control and output power detection

Mechanical Drawings

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Specifications

FEED AND POLARISER

PARAMETER		MIN	TYPICAL	MAX	UNIT	NOTE
FEED AND POLARISER SUBSYSTEM			Integrated			Matched to Global Skyware antennas
POLARISATION			RHCP/LHCP			Field configurable, RX/TX orthogonal
XPD	TX		22		dB	27.5-28.0GHz
	TX		25		dB	28.0-30.0GHz
	RX		20		dB	17.7-18.2GHz
	RX		25		dB	18.2-19.2GHz
	RX		23		dB	19.2-20.2GHz

TX SUBSYSTEM (BUC)

PARAMETER		MIN	TYPICAL	MAX	UNIT	NOTE
IF INPUT FREQUENCY RANGE		1400		2400	MHz	
RF OUTPUT FREQUENCY RANGE		27.5		30.0	GHz	4 sub-bands
LOCAL OSCILLATOR FREQUENCY		26.1		27.6	GHz	4 LO's, controlled via M&C interface
LOCAL OSCILLATOR PHASE NOISE				2	deg	DSB rms, 100 Hz - 1MHz
LOCAL OSCILLATOR REFERENCE FREQUENCY			10		MHz	
IF INPUT DRIVE POWER			-32		dBm	Nominal
IF INPUT IMPEDANCE			50		Ohm	
CONVERSION GAIN (ATTENAUATOR AT ODB)	XRJ3BF44ZD		71		dB	10 Watt version
	XRJ3AF44ZD		74		dB	20 Watt version
RF OUTPUT SPURIOUS LEVEL			According to ETSI EN301 459/360 and FCC 47 CFR 15/25 AB			
TX OUTPUT POWER Plin* MINIMUM	XRJ3BF44ZD	39	40		dBm	10 Watt version
	XRJ3AF44ZD	42	43		dBm	20 Watt version

* Plin is defined as the power at which an ACPR of 25 dBc is achieved with a 1Msym/s QPSK modulated carrier with α = 0.2

RX SUBSYSTEM (BUC)

PARAMETER	MIN	TYPICAL	MAX	UNIT	NOTE
RF INPUT FREQUENCY	17.7		20.2	GHz	Multiple sub-bands with >500MHz overlap
IF OUTPUT FREQUENCY RANGE	950		2150	MHz	
LOCAL OSCILLATOR FREQUENCY	16.75		21.15	GHz	Controllable via M&C interface
LOCAL OSCILLATOR FREQUENCY TOLERANCE			± 4	ppm	Overall (in case of internal REF)
LOCAL OSCILLATOR INTEGRATED PHASE NOISE			2.5	deg	DSB rms, 100Hz - 1 MHz
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	45			dB	
IF OUTPUT P1dB	+5			dBm	
IF OUTPUT IMPEDANCE		50		Ohm	

GENERAL

PARAMETER		MIN	TYPICAL	MAX	UNIT	NOTE
OPERATING TEMPERATURE		-40		+60	0°C	
MOISTURE/ HUMIDITY PROTECTION						IP67
WEIGHT			3		kg	XCVR + Feed
SUPPLY VOLTAGE		36	48	60	V	Positive or negative polarity
SUPPLY CURRENT REF ON, TX @ Plin*, VSUPPLY = 48V	XRJ3BF44ZD			2.2	A	At 48V
	XRJ3AF44ZD			3.75	A	At 48V