

Ku-band VSAT Radio Module, type KR1426

Product Specification v 0.1

Polarization diplexer [OMT]

parameter		min	typ	max	unit	note
XPD on common port	TX	38			dB	
	RX	35				
Common port connector			C120			18.5 mm circular-WG flange, not grooved, see drawing

RX sub-system [LNB]

parameter		min	typ	max	unit	note
RF input frequency range	low band	10.95		11.70	GHz	
	high band	12.25		12.75	GHz	
IF output frequency range	low band	950		1700	MHz	
	high band	950		1450	MHz	
Local oscillator frequency, nominal	low band		10.00		GHz	
	high band		11.30		GHz	
	deviation within operational conditions and lifetime			+/- 3	MHz	
Local oscillator phase noise [SSB]	@ 1 kHz			-60	dBc/Hz	
	@ 10 kHz			-80	dBc/Hz	
	@ 100 kHz			-100	dBc/Hz	
Noise figure @ 25 °C	equiv. noise temp.		0.9	1.3	dB	TX on, IF drive off
			69	104	K	TX on, IF drive off
RF input return loss		3			dB	on OMT Common port
Conversion gain		50	56	62	dB	max - min max - min
	in-band variation			6	dB	
	in-band segment variation [any 33 MHz segment]			1.2	dB	
Image band rejection			80		dB	
IF output IP3		+ 10			dBm	TX on, IF drive on
IF output spurious				-65	dBm	
IF output spectrum inversion			no			
IF output impedance			75		Ohm	
IF output return loss		8			dB	
IF output connector		F-type receptacle				
Supply voltage / band switch control	low band	9.0		14.0	V	
	high band	16.0		20.0	V	
Supply current			90	120	mA	

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TX sub-system [BUC]

parameter	min	typ	max	unit	note
IF input frequency range	950		1450	MHz	
RF output frequency range	14.00		14.50	GHz	
Local oscillator frequency, nominal	13.05			GHz	
deviation within operational conditions and lifetime				ppm	dependant on External Ref.
Local oscillator phase noise [SSB]					
@ 100 Hz				dBc/Hz	dependant on External Ref.
@ 1 kHz			-72	dBc/Hz	
@ 10 kHz			-82	dBc/Hz	
@ 100 kHz			-92	dBc/Hz	
Local osc. Ext. Reference input	10			MHz	
frequency, nominal				ppm	sine wave
freq. capture range	-15		10		for PLDRO lock-in
input level	-5	0	5	dBm	
return loss	10			dB	
RF output power, operational	6.0			dBW	
variation over frequency, temperature & lifetime			+/- 0.5	dB	< -17 dBc spectral regrowth
RF output return loss	10			dB	on OMT / linear operation
RF output spurious					
out-of-band / 100 kHz	1.00 - 3.40 GHz		-49	dBm	SSPA on, carrier -on or -off
out-of-band / 100 kHz	3.40 - 10.70 GHz		-43	dBm	SSPA on, carrier -on or -off
out-of-band / 100 kHz	10.70 - 13.75 GHz		-37	dBm	SSPA on, carrier -on or -off
in-band / 100 kHz	13.75 - 14.00 GHz		-23	dBm	SSPA on, carrier -on or -off
in-band / 100 kHz	14.00 - 14.50 GHz		-23	dBm	SSPA on, carrier off
in-band / 100 kHz	14.00 - 14.50 GHz		-6	dBm	SSPA on, carrier on
in-band / 100 kHz	14.50 - 14.75 GHz		-23	dBm	SSPA on, carrier -on or -off
out-of-band / 100 kHz	14.75 - 21.20 GHz		-37	dBm	SSPA on, carrier -on or -off
out-of-band / 100 kHz	21.20 - 40.00 GHz		-31	dBm	SSPA on, carrier -on or -off
RF output noise density	13.75 - 14.75 GHz		-95	dBm/Hz	SSPA on, carrier off
RF output spectrum inversion	no				
IF input drive power	-16		-9	dBm	
nominal operation			-5	dBm	
no damage level					
IF input impedance, nominal		75		Ohm	
IF input return loss	10			dB	
IF input connector	F-type receptacle				
Conversion gain, linear operation	53	56	59	dB	
in-band-segment variation [any 2 MHz segment]			0.5	dB	max-min
Supply voltage	18	24	30	V	
Supply current		1.00	1.20	A	24 V, after inrush, IF drive on

General

parameter	min	typ	max	unit	note
Weight		1350		g	Radio module without feed
Operating temperature	-25		50	°C	
Moisture/humidity protection	IP67				
Design lifetime	7			years	