Ka-Band Ext. Ref. PLL LNB

Model SPCR7401CF/CN

ELECTRICAL SPECIFICATIONS

NO.	ITEM	SPECIFICATIONS	Notes
1.0	**Power**		
1.1	DC Voltage	+15 to +24Vdc	
1.2	DC Current	400mA max.	
1.3	Interface	DC power will be multiplexed on a single coaxial connector with the IF and 10MHz reference signals.	
2.0	**RF Input**		
2.1	Frequency	20.2 to 21.2GHz	
2.2	Inteface	WR-42 waveguide flange with O-ring and threaded screw holes.	
2.3	Input VSWR	1.35:1 max.	LNB is Powered Off
2.4	Lo Leakage	-60dBm max at waveguide flange.	
2.5	Desensitization	The LNB shall suffer no more than 0.1dB of noise figure degradation with a signal of -20dBm (preliminary) in the transmit band, which is 30.0 to 31.0GHz.	
2.6	Damage	The LNB shall be able to receive a signal in the band of 20.2 to 21.2GHz at a level of -25dBm without damage to the unit.	
3.0	**10MHz Reference**		
3.1	Interface	10MHz reference for LNB multiplexed on the IF coaxial connector.	
3.2	Input Level	-5 to +5dBm (preliminary)	
3.3	Phase Noise	Reference phase noise will be as follows (or better)	
3.3.1	10Hz	-125 dBc/Hz max.	
3.3.2	100Hz	-150 dBc/Hz max.	
3.3.3	1KHz	-160 dBc/Hz max.	
3.3.4	10KHz	-165 dBc/Hz max.	
3.3.5	100KHz	-165 dBc/Hz max.	
4.0	**IF Output**		
4.1	Frequency	1000 to 2000MHz	
4.2	Interface	75Ω, F-type female coaxial connector (Optional 50Ω N-Conn) multiplexed with the 10MHz input and DC power	
4.3	P1dB	+15dBm min.	
4.4	Spectral Inversion	The unit shall have no spectral inversion.	
4.5	Output Spectral Content		
4.5.1	Spurious	The sum all spurious (including phase noise) power shall be 20dB below the power of the thermal output noise in a 1000MHz BW (1 to 2GHz).	
4.5.2	Phase Noise	The single sideband phase noise of the LNB shall not exceed:	
4.5.2.1	10Hz	-32 dBc/Hz max.	
4.5.2.2	100Hz	-62 dBc/Hz max.	
4.5.2.3	1KHz	-72 dBc/Hz max.	
4.5.2.4	10KHz	-82 dBc/Hz max.	
4.5.2.5	100KHz	-92 dBc/Hz max.	
4.5.2.6	1MHz	-102 dBc/Hz max.	
4.5.2.7	10MHz	-112 dBc/Hz max.	
4.5.2.8	100MHz	-112 dBc/Hz max.	
4.5.3	Image Rejection	–45dB min.	
4.6	Output VSWR	1.8:1 max	
4.8	3rd order ICP	+25dBm min.	

ELECTRICAL SPECIFICATIONS

NO.	ITEM	SPECIFICATIONS	Notes
5.0	**System**		
5.1	Noise Figure	1.5 dB typ. (120K noise temperature)	@ Room Temp.
5.2	Gain	The overall gain of the LNB shall be 60dB +/- 4dB max.	
5.3	Gain Stability 24 Hour period	+/-1dB max. at +25℃	
5.5	Gain Flatness		
5.5.1	Any 40MHz Bandwidth	+/-0.3dB max.	
5.5.2	Full Band as 20.2 to 21.2GHz	+/-1.5dB max.	

MECHANICAL SPECIFICATIONS

NO.	ITEM	SPECIFICATIONS	Notes
6.0	**Mechanical**		
6.1	Outline	See Outline Drawing S-BE13801	
6.2	Weight	approx. 700g	
6.3	Color Option	Munsell N9.5, color white Federal Standard FS33303 (SPCR7401CFY)	

ENVIRONMENTAL SPECIFICATIONS

NO.	ITEM	SPECIFICATIONS	Notes
7.0	**Environmental**		
7.1	Operating Temperature	-40℃ to +60℃	
7.2	Operating Altitude	10,000 ft ASL	
7.3	Operating Relative Humidity	100%, condensing	
7.4	Non-operating Temperature	-50℃ to +70℃	
7.5	Non-operating Altitude	50,000 ft. ASL	
7.6	F Shock	10g, 11ms half sine	
7.7	Vibration	MIL-STD-810E, method 514-4