

LCT2 30W Transceiver Specifications:

A. Performance (Note: Operating range -25° C to +70° C case temperature)

	Parameter	Range	Notes
1.0	Receiver Performance		
1.1	Noise figure	< 2.5 dB	
1.2	Input Impedance	50 Ω	
1.3	Input Frequency	2106.40625 MHz	
1.4	Maximum RF Input Level	-50 dBm	
1.5	Input Signal Dynamic Range	-134 dBm to -80 dBm	
1.6	Acquisition Range	+/- 14.5 KHz	
1.7	Acquisition Rate	700 Hz/sec	Not to exceed
1.7	Short Code Acquisition Time	< 2 sec	With 90% probability
1.8	Carrier Acquisition Time	0.5 sec	After short code acquisition
1.9	Tracking Threshold	-134 dBm	For 400 bps or less
1.10	Tracking Range	+/- 25 KHz	About center frequency
2.0	Transmitter Performance		
2.1	RF Power Output	44.8 dBm +/-1dB	Into 50Ω load
2.2	Output Impedance	50 Ω	Isolated output
2.3	Load VSWR	< 2:1	Power output may decrease at 2:1 VSWR
2.4	Frequency Range	2200 - 2300 MHz	Frequency fixed at factory
2.5	Spurious Outputs	> -80 dBc outside ± 5% of Fc > -55 dBc within ± 5% of Fc	Harmonics < -40 dBc
2.6	Spectral Mask	Taylored to application	
2.7	Frequency Stability	< ± 1 ppm	- 25° C to +70° C
2.8	Aging Stability	< 1 ppm first year < 3.0 ppm over 10 years	
2.9	Phase Noise	< 1.5° rms 100 Hz to 1 kHz < 1.5° rms 1 kHz to 6 MHz	Under 14 G rms random vibration
3.0	Modulation Performance		
3.1	Modulation Modes	BPSK, QPSK, SQPSK, DSSS	Spread Spectrum: TDRSS DG1, Mode 2
3.2	Data Rates	< 4 Msymbols/sec BPSK < 8 Msymbols/sec QPSK,SQPSK	> 1 kbps minimum rate Pre-mod filter mode rates listed. Unit configurable for rates < 50 Mbps
3.3	Carrier Suppression	> 30 dB	
3.4	I/Q Amplitude Imbalance	< 0.5 dB	
3.5	I/Q Phase Imbalance	< 5 deg	
3.6	Output code	NRZ-L,M,S	
3.7	Forward error correction	Convolutional coding, R= 1/2, k = 7	G2 polarity selectable
3.8	End to end TDRSS implementation Loss	< 1.5 dB	Tested @ 1.2 Mbps BPSK, 100 kbps DG1 M2
4.0	Power Interface		
4.1	Input Voltage Range	18 - 36 VDC	
3.2	Input Current	5.4 A @ 22V 5.0 A @ 24V 4.6 A @ 26V 4.3 A @ 28 V 4.0 A @ 30V 3.7 A @ 32V 3.5 A @ 34V Typical	Current will vary slightly as RF output gain changes over temp
3.3	In Rush Current	< 7A @ 28 V	
4.4	Input power/return chassis isolation	> 1 MΩ	
4.5	Reverse polarity protection	Vr = 50V max.	Any duration
4.6	Over-voltage Protection	Unit shutdown at 37 Vdc typ	
4.7	Input Surge Protection	Withstand 50 V for 100 ms	
4.8	Under Voltage Protection	Undervoltage turn-off at 15.5 Vdc typ	No damage to unit at input < 18 Vdc
5.0	User interfaces		
5.1	RS232 control/status		Optional
5.2	RS232 Receiver Input Threshold	Low: 0.6 min, High: 2.4V max	Input voltage max range: ± 20 V
5.3	RS232 Transmitter	± 5.4 V into 3kΩ typ	No damage with continuous output short circuit
5.4	RS422 Data Interface	Rate: > 25 MHz V _{CM} : ± 7V @ V _{ID} = 3V max Diff Input Threshold: ± 200 mV max	Data and clock
5.5	Analog voltage monitors	0 to +5 Vdc	Internal temp, FWD power indicator
6.0	Mechanical		
6.1	Size	4" x 5" x 1.5"	
6.2	Weight	< 2 lbs	