

Block Up-Converter

50dBm Output Power

Model: TLBUC13.75G14.5G-100W

The TLBUC13.75G14.5G-100W is a block up-converter operating in the L-band to Ku-band. It features an integrated local oscillator, with input IF frequency of 950-1700 MHz and output RF frequency of 13.75 to 14.5 GHz. Providing up to 100W of saturated output power, it also supports switchable functionality between internal and external references.

Features:

- IF Frequency: 950~1700MHz.
- RF Frequency: 13.75-14.5GHz.
- Saturated output power: 100W.
- Internal auto-sensing and controllable 10MHz high stability reference (optional).

Applications:

- Communication/Radar Systems
- Test Labs

电气特性 Electrical Characteristics:

参数 Parameter		Min	Typ	Max	单位 Units
RF频率范围 RF Frequency Range		13.75		14.5	GHz
双LO频率范围 Dual LO Frequency range			12.8 and 13.05		GHz
IF频率范围 IF Frequency Range		950		1700	MHz
输出功率 Output Power		50			dBm
线性输出功率 Output P1dB		47.1			dBm
增益 Gain		68	72		dB
双音互调 Two-tone intermodulation (5MHz space)		-26 dBc max at total P1dB			
LO泄露 LO leakage				-45	dBm
杂散 Spurious				-50	dBc
外参考输入频率 External Reference Input Frequency			10(sine wave)		MHz
外参考输入功率 External Reference Input Power		-5		+5	dBm
TX增益变化 TX Gain Variation	@40MHz		±0.5		dB
	@full band		±1.8		
温度变化TX增益稳定度 TX Gain Stability@temperature range			±1.5	±1.8	dB
频谱再生 Spectral Regrowth		-30(QPSK at 1.5x and OQPSK at 1.0x symbol rate off set with 2dB back-off from rated output power)			dBc

电气特性 Electrical Characteristics:

参数 Parameter		Min	Typ	Max	单位 Units
相位噪声 Phase Noise	@10Hz			-55	dBc/Hz
	@100Hz			-65	
	@1KHz			-75	
	@10KHz			-85	
	@100KHz			-95	
	@1MHz			-115	
噪声功率谱密度 Noise Power Density	@Transmit			-80	dBm/Hz
	@Receive			-125	
噪声系数 Noise Figure				15	dB
驻波 VSWR				1.5	:1
交流电压 AC Supply Voltage		80		240	V AC
功耗 Power Consumption@Psat				499	W

机械特性 Mechanical Specifications:

参数 Parameter	指标 Value	单位 Units
IF接口 IF Connector	N type or F type	
输出接口 Output Connector	WR-75	
监控&控制接口 M&C connectors	RS-232/485 / Ethernet / FSK	Optional
防护等级 Ingress Protection Grade	IP-67	
尺寸 Size	TBD	mm
重量 Weight	7.5	Kg

绝对最大值 Absolute Maximum Ratings:

参数 Parameter	指标 Value
IF输入功率 IF Input Power	+5 dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-40		+55	°C
存储温度 Non-operating Temperature	-55		+85	°C
相对湿度 Relative humidity		95		%
海拔 Altitude	3,000			meters
震动 Shock / Vibration(MIL-STD-810F)	10G rms (15 degree 2KHz) endurance			
冲击 Shock(non operating)	50G for 12msc half sin wave			

订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLBUC13.75G14.5G-100W	Block Up-Converter, IF frequency range:950-1700MHz; RF output frequency range: 13.75-14.5GHz; 100W output power	Rev.1.0