

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

Electrical Characteristics:

Parameter		Min	Typ	Max	Units
RF Frequency Range		13.75		14.5	GHz
Dual LO Frequency range			12.8 and 13.05		GHz
IF Frequency Range		950		1700	MHz
Output Power		50			dBm
Output P1dB		47.1			dBm
Gain		68	72		dB
Two-tone intermodulation (5MHz space)		-26 dBc max at total P1dB			
LO leakage				-45	dBm
Spurious				-50	dBc
External Reference Input Frequency			10(sine wave)		MHz
External Reference Input Power		-5		+5	dBm
TX Gain Variation	@40MHz		±0.5		dB
	@full band		±1.8		
TX Gain Stability@temperature range			±1.5	±1.8	dB
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

Electrical Characteristics:

Parameter		Min	Typ	Max	Units
Phase Noise	@10Hz			-55	dBc/Hz
	@100Hz			-65	
	@1KHz			-75	
	@10KHz			-85	
	@100KHz			-95	
	@1MHz			-115	
Noise Power Density	@Transmit			-80	dBm/Hz
	@Receive			-125	
Noise Figure				15	dB
VSWR				1.5	:1
AC Supply Voltage		80		240	V AC
Power Consumption@Psat				499	W

Mechanical Specifications:

Parameter	Value	Units
IF Connector	N type or F type	
Output Connector	WR-75	
M&C connectors	RS-232/485 / Ethernet / FSK	Optional
Ingress Protection Grade	IP-67	
Size	TBD	mm
Weight	7.5	Kg

Absolute Maximum Ratings:

Parameter	Value
IF Input Power	+5 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature	-40		+55	°C
Non-operating Temperature	-55		+85	°C
Relative humidity		95		%
Altitude	3,000			meters
Shock / Vibration(MIL-STD-810F)	10G rms (15 degree 2KHz) endurance			
Shock(non operating)	50G for 12msc half sin wave			

Ordering Information:

Base Number	Description	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