TCKU2W



Ku-band Frequency Transceiver TCKu2W – Integrated RF Unit for Satellite Uplink & Downlink by UMT LLC

UMT LLC's TCKu2W is a compact high-stability, low-phase-noise Ku-band transceiver operating at 13.75–14.5 GHz Tx and 10.95–11.7 GHz Rx. It combines an upconverter, amplifier, and low-noise downconverter and is suitable for VSAT, mobile, airborne, maritime, broadcast, and military satellite systems. Featuring PLL local oscillators, it supports 950–1700 MHz IF, a 25 MHz external reference, SMA-type female 50 Ohm RF interfaces, and U.FL-type female 50 Ohm IF interfaces.

2 W Ku-band block up-converter with LO of 9.75 GHz BUC-Ku02-9.75-v2.0 is designed for MVDS TV broadcasting systems application in accordance with DVB-S/S2 or DVB-C standards (use "Customized" button to choose needed parameters) and operates with up to 25 carriers. BUC-Ku02-9.75-v2.0 has output flange of PBR120 type and can be used with regular radio-relay link (directional) or broadcast (sector and OMNI) antennas. BUC-Ku02-9.75-v2.0 supports all modulation types up to 32APSK and 256QAM (you may choose the modulation type while filling the "customized equipment" form). BUC-Ku02-9.75-v2.0 has the best linearity parameters to ensure the stability of the output frequency and low IMD3 level (these parameters are very important for high quality modulation, therefore the local oscillator of BUC-Ku02-9.75-v2.0 is locked by PLL with internal frequency reference). BUC-Ku02-9.75-v2.0 provides 10.70 – 11.70 GHz output frequency range (bandwidth in Ku-band) for 950-1950 MHz input frequency range (bandwidth in L-band).

LO: 9.75 GHz **IN**: 950 – 1950 MHz **OUT**: 10.70 – 11.70 GHz

KEY FEATURES:

- Output flange: PBR120
- Output power (P1dB, min): 2 W
- Output frequency range: 10.70 – 11.70 GHz
- Input frequency range: 950 – 1950 MHz
- Gain (min): 53 dB
- Highly stable internal frequency reference
- LO is locked by PLL with internal frequency reference
- IMD3 level at ALC output power (the lowest value): -37 dBc max
- Operates with up to 25 carriers
- Supported modulation types: up to 32APSK and 256QAM

Input/Output Parameters:	
RX Input Frequency Range	10.95 – 11.7 GHz
TX Output Frequency Range	13.75 – 14.5 GHz
IF Output Frequency Range	950 – 1700 MHz
Signal Polarization (Tx/Rx)	Linear, orthogonal
Local Oscillator:	
LO Frequencies	Tx: 12.8 GHz Rx: 10.0 GHz
LO Phase Noise:	
@1 kHz	-93 dBc/Hz
@10 kHz	-104 dBc/Hz
@100 kHz	-107 dBc/Hz

@1 MHz	-121 dBc/Hz
Reference Frequency	25 MHz
Reference Stability	< 0.5 ppm
Performance:	
Noise Figure	≤ 3 dB
Image Rejection	> 60 dB
Spurious Emissions	< -50 dBc
Input & Output Port Return Loss	< -10 dB
VSWR (Rx/Tx)	Rx: ≤ 2.0 Tx: ≤ 1.8
Antenna Gain (Rx/Tx)	Rx: ≥ 18 dB Tx: ≥ 18 dB
Output Power at P1dB, min	2 W (33 dBm)
Conversion Gain	0 to 66 dB (adjustable)
Gain Flatness (250 MHz RTBW)	< 5 dB
Operation:	
Operating Modes	“Standby” – receive only “Communication session” – full duplex

Operating Time, not less	"Standby" mode – unlimited "Communication session" mode: · Without additional radiator/air cooling – 5 minutes · With additional radiator/air cooling – determined experimentally (depends on cooling level to avoid overheating)
Power Supply & Environment:	
Input Voltage	12 VDC
Power Consumption	20 W max
Operating Temperature Range	-40°C to +60°C

Taking into consideration that we (UMT LLC) are developer and system integrator, also do not stop on our technical growth and improvement, know that view of all our devices and equipment including their technical parameters may be different from pictures presented on website and parameters listed on each device webpage.

Note! All details customer has to confirm in advance during ordering and before payment. Those parameters that were not specified and / or were not agreed while ordering will be implemented as basic at the discretion of the manufacturer. Each our customer has 1.5 year warranty and 7 year aftersales support for whole range of our products.