

L-Band Block Upconverter Q Band Outdoor

Upconverter Type:	VHBU-Q-WR22-OD-LPN-RIN-IFT-RFT-S03279													
RF-Output Frequency:	Q-Band: 43.50 ... 45.50 GHz													
LO Frequency:	41.50 GHz													
IF-Input Frequency:	2000 ... 4000 MHz													
Phase Noise:	<table border="1"> <tr> <td>10 Hz</td> <td>-50</td> </tr> <tr> <td>100 Hz</td> <td>-72</td> </tr> <tr> <td>1 kHz</td> <td>-85</td> </tr> <tr> <td>10 kHz</td> <td>-90</td> </tr> <tr> <td>100 kHz</td> <td>-97</td> </tr> <tr> <td>1 MHz</td> <td>-117</td> </tr> </table>	10 Hz	-50	100 Hz	-72	1 kHz	-85	10 kHz	-90	100 kHz	-97	1 MHz	-117	
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100 kHz	-97													
1 MHz	-117													
	max. values in dBc/Hz													
Conversion Scheme:	Block up conversion, no frequency inversion													
Front Panel:	Standard													
IF-Input Characteristics:	Impedance:	50 Ω												
	Return loss:	> 18 dB												
	Maximum Aggregate Input Level:	0 dBm (damage Level)												
	Connector:	N (female)												
IF/RF-Monitor:	Signal level in ref. to output:	-20 dB ±3 dB												
	Impedance:	50 Ω												
	Connector:	SMA (female) / 2.4 mm (female)												
RF-Output Characteristics:	Impedance:	50 Ω												
	Return loss:	> 18 dB												
	1 dB compression point:	> 10 dBm ¹⁾												
	Output muting:	> 75 dB (by command or sense input or by alarm condition)												
	Connector:	WR22 (UG-599/U flange), 4-40 UNC threads												
Transfer Characteristics:	Max. Conversion Gain:	35 dB ±1 dB												
	Attenuation range:	0 ... 20 dB, 0.1 dB steps												
	Gain Variation over Temp.:	±0.5 dB max.												
	Gain Flatness over Freq.:	±1.0 dB max. over band												
	Gain Flatness over 40 MHz:	±0.5 dB												
	Image Rejection:	> 80 dB												
	Noise Figure:	< 20 dB ¹⁾												
Group Delay:	Ripple, Slope:	1 ns peak to peak / 80 MHz												
Spurious Outputs:	Signal related:	< -60 dBc ^{1) 2)}												
	Output harmonics:	< -40 dBc ^{1) 2)}												
	Signal independent:	< -75 dBm												
Output Intercept Point 3rd Order:	OIP3:	> 20 dBm ¹⁾												
Internal Frequency Stability:		±1 x 10 ⁻⁷ , -30 °C ... 60 °C ±1 x 10 ⁻⁸ , -30 °C ... 60 °C (after 30 min warm up) ±1 x 10 ⁻⁹ per day (fixed temperature after 24 h warm up)												
Reference Input:	Frequency:	5 or 10 MHz sine wave												
	Level:	5 dBm ±5 dB												
	Modes:	auto/extern/intern												
	Connector:	SMA (female)												
Combined Monitoring and Control Interface and Alarm Interface:	Protocol:	Multipoint packet format commands												
	Connection:	RS232 or RS422/RS485 (configurable)												
	Alarm output:	Two potential free contacts (DPDT) 24 V DC output: max. 0.3 A												
	Connection type:	MIL-C-26482: MS 3120 E 14-19-S (WM Standard)												
	Mute Input:	TTL logic input with internal pull up												
Monitoring and Control Interface:	Protocol:	SNMP												
	Connection:	UDP over Ethernet (10 or 100 Mbps, auto sensing), connector RJ-45												
	Protocol:	HTTP (web browser interface)												
	Connection:	TCP/IP over Ethernet (10 or 100 Mbps, auto sensing), connector RJ-45												
	Protocol:	Multipoint packet format commands												
	Connection:	TCP/IP over Ethernet (10 or 100 Mbps, auto sensing), connector RJ-45												
Temperature Range:	-30 °C ... 60 °C operating, (10 minutes warm up at -30 °C)													
Relative Humidity:	< 100 %													
Mains Power Input:	100 ... 240 V AC nominal, 90 ... 264 V AC max., 47 ... 63 Hz													
Mains Power Consumption:	Max: 60 VA / 35 W													
Mains Power Input Connector:	Amphenol C16-1 (3+PE) male													
Dimension and Weight:	322 x 108 x 391 mm ³ (W x H x D), approx. 8.2 kg, ODU-S													
Degree of Protection:	IP 67 (acc. IEC 529)													

¹⁾ at max. conversion gain

²⁾ Pout = 0 dBm

Specifications are subject to change