ACORDE TECHNOLOGIES

ACRC-TX-TB

Ed.03

SYNTHESIZED TRI-BAND UP CONVERTER

04/03/09

DESCRIPTION

ACORDE Synthesized Tri-Band frequency up converter is integrated in rack along with synthesizers and the rest of necessary elements, such as control card and power supply. This converter is designed for advanced satellite communication systems. Specifications have been optimised to provide user an efficient frequency conversion. It also enables the configuration of desired frequency and gain level of the converter.

FEATURES

- Automatic 10 MHz internal/external reference selection
- Remote Control via serial interface (RS485/RS232)
- RF signal monitor port
- Low intermodulation distorsion
- IESS-308/309 – 5dB compliant phase noise
- Compact rackmount package

TRANSMITTER SPECIFICATIONS

Input IF frequency	70 ± 20 MHz / 140 ± 40 MHz
Input level (no damage)	0 dBm
Input VSWR	< 1.3:1
Input impedance	50 Ω (75Ω as option)
Output RF frequency	5.85 – 6.425 GHz 7.9 – 8.4 GHz 13.75 – 14.5 GHz
Output VSWR	< 1.5:1
Output impedance	50 Ω
Output P1dB	+10 dBm
Spurious signal related	< -60 dBc at 0 dBm output
Spurious signal independent	< -70 dBm
Conversion Gain	30 ± 1 dB @ maximum gain settings
Gain adjustment range	20 dB (30 dB as option)
Gain adjustment step	0.5 dB (0.1 dB as option)
Gain flatness	± 0.5 dB over 36 MHz ± 0.75 dB over 72 MHz ± 1.5 dB over the whole bandwidth
Gain stability in 24 hours	± 0.25 dB at constant temperature
Gain stability vs temperature	± 1 dB over the whole range
Noise figure	< 15 dB @ maximum gain settings
Signal monitor RF	-20 ± 2 dBc
Mute	50 dB min
Group Delay	Linear → 0.03 nsec/MHz max. Parabolic → 0.01 nsec/MHz^2 Ripple → 1 nsec pp max.

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LOCAL OSCILLATOR

Frequency set step	125 KHz (1 KHz as option)
Output phase noise (IESS-308/309 – 5 dB):	
100 Hz	-65 dBc/Hz
1 KHz	-75 dBc/Hz
10 KHz	-85 dBc/Hz
100 KHz	-95 dBc/Hz
1 MHz	-105 dBc/Hz
Reference frequency	10 MHz
Reference mode	Internal (automatic external selection on presence)
Reference input level	0 dBm ± 3 dB
Reference stability	± $1x10^{-9}$ max/day, after 24 hours on time ± $5x10^{-8}$ max/year ± $5x10^{-8}$ max. for all temperature range
Minimum reference to compliant typical phase noise (IESS-308/309 – 5 dB):	
100 Hz	-135 dBc/Hz
1 KHz	-145 dBc/Hz
10 KHz	-155 dBc/Hz

POWER SUPPLY

AC input voltage	85-264 VAC autoranging (47-63 Hz)
Power consumption	80 W (typ.)

ENVIRONMENTAL SPECIFICATIONS

Storage temperature	-40 to +80°C
Operating temperature	0 to +50°C
Relative humidity	up to 95%
Operating altitude	up to 3500 m

MECHANICAL SPECIFICATIONS

Interfaces	RF output	→ SMA female
	IF input	→ BNC female
	RF monitor	→ SMA female
	Serial port	→ D – Sub9 RS485
	Serial to PC	→ D – Sub9 RS232
	AC line	→ IEC 603320 10A
	Front panel	→ Display and keyboard
	Ext. reference	→ BNC female
Dimensions	1 RU 19" rack	
Weight	9 Kg	

OPTIONS

Output frequency band	IF-band input	Model Number
5.85 - 6.425 GHz || 7.9 - 8.4 GHz || 13.75 - 14.5 GHz	70 ± 20 MHz	ACRC-TX-TB-E1-xxx
5.85 - 6.425 GHz || 7.9 - 8.4 GHz || 13.75 - 14.5 GHz	140 ± 40 MHz	ACRC-TX-TB-E2-xxx

UC1:	48 VDC Power supply (MS3112E12-3P connector)
UC2:	Input IF impedance 75 Ω
UC3:	Gain adjustment range 30 dB
UC4:	Gain adjustment step 0.1dB
UC5:	Frequency set step 1 KHz
UC6:	10 Base-T Ethernet interface
UCC:	Custom design