STC 83602D

L-Band Synthesized Dual Downconverter

The STC 83602D is a high-performance, fully synthesized L-Band Dual Downconverter indoor unit, housed in a light aluminum standard 1RU (1.75 in.) 19"wide rack, providing space-saving and convenient solution for systems, requiring frequency conversion from L-Band to IF.

The unit contains two independently synthesized L-Band Downconverter modules, monitor and control microprocessor board, internal 10MHz reference source and AC voltage auto-sensing power supply.

Impressive amplitude linearity, ultra low phase noise, far exciding IESS 308 / IESS 309 requirements, low spurious, high dynamic range make the converter ideally suitable for SCPC, MCPC, DAMA with high data rates transmission and advanced digital modulation.

Applications

Fly-Away Terminals
Satellite multi-service systems
Satellite ground stations
VSATs and Hubs

Key Features

- Exceptional performance parameters, low cost by design
- Software configurable spectrum inversion mode
- RF Mute mode, 80 dB minimum
- Smart fail-free air cooling system
- Customization to user requirements is available

Options

- High stability 10 MHz reference oscillator
- 10 MHz reference output enabled/disabled from the front panel
- 125 KHz synthesizer step size
- External reference auto-sensed level custom adjustment for 100% compatibility
- Built-in 1:N redundancy switching capabilities
- RS485/RS422 and RS232 remote monitoring and control interface
- Automatic sense of external 10 MHz reference
- 10MHz reference signal and 24/18/48 VDC for ODU
- Unit temperature and output power monitoring

Table 1. Technical Specification

Downconverter 1, 2

L-band Input

Frequency Range	950 to 1525 MHz 1500 to 2150 MHz (optional)
Connection	50Ω N Type Female
Power Levels	-75 to –35 dBm
Synthesizer Step Size	1 MHz (opt 125 KHz)

IF Output

Frequency Range	50 to 90 MHz
Connection	50Ω BNC Female (opt 75Ω)
Power @ P1db	+15 dBm minimum

Performance

Conversion Gain	25 to 45 dB, stepped in 0.5 dB
Gain Linearity (over 10dB)	±0.5dB
Amplitude response over any 36 MHz	±0.5 dB typ* (±0.75 dB max)
Amplitude response over 575 MHz	±0.5 dB typ* (±1 dB max)
Harmonics	–60 dBc min
Spurious (52MHz to 88MHz)	-60 dBc max. @0dBm Pout
Spurious non-carrier related	
950 to 1525MHz	-60 dBm
1500 to 2150 MHz	-54dBm
Phase Noise	-75dBc/Hz @ 100 Hz -76dBc/Hz @ 1 kHz -82dBc/Hz @ 10 kHz -90dBc/Hz @ 100 kHz -110dBc/Hz @ => 1MHz
Noise Figure	15dB max

General

Internal Reference

Frequency	10 MHz
Stability (0 to 50 °C)	± 1ppm
Output Level	+5dBm min
Phase Noise	-100dBc/Hz at 10 Hz -130dBc/Hz at 100 Hz -145dBc/Hz at 1 kHz -150dBc/Hz at 10 kHz
Frequency Programmable Control	10ppm in 0.04ppm steps

High Stability Ref (optional)

Frequency	10 MHz
Stability (0 to 50 °C)	± 0.01ppm (High Stability)
Phase Noise	
	-120dBc/Hz at 10 Hz -140dBc/Hz at 100 Hz -145dBc/Hz at 1 kHz -150dBc/Hz at 10 kHz
Frequency electrical trimming	1ppm in 0.004ppm steps

External Reference Input

Frequency	10MHz
Input Level	0± dBm nom
Frequency Stability	As Required

Mechanical

Width	19”, standard rack mount
Height	1U(1.75”)
Depth	13”, plus connectors
Weight	4.8 lb (2.2 kg)

Power Requirements

Voltage	115/230 VAC (auto-ranging)
Frequency	47 to 63 Hz
Power consumption	20W (without LNB and SSPB)

Operating Temperature 0 to +50 °C

M & C system

Remote control interface	RS-422/485, RS-232
Local control interface	LCD 20x2, 16 keypad
Alarms	TX/RX LO lock failure

Options

Unit temperature monitoring	
Redundancy ready	
10 MHz Reference out to ODU	0 dBm ± 1dB or custom
DC output to ODU	+24/18/48 V, 0.5 A max
10 MHz Ref Out Control	Enable/Disable
10 MHz ref In with autosence	0 dBm or custom
ODU current monitoring	
Output Power Monitoring	
IF 140 MHz	
Choice of IN/OUT connectors	N-type, BNC 75 OHm

*+25°C

Typical Specification. Subject to change without notice.