STC 83801D

C-Band to IF Synthesized Frequency Downconverter

STC 83801D fully synthesized frequency Downconverter is providing a high-performance, convenient and economical solution for systems, requiring C-Band to IF interface.

Impressive amplitude linearity, low phase noise, spectral purity, high dynamic range make this converter ideally suitable for all current high speed data transmission rates and advanced digital modulation schemes.

Applications

- **Fly-Away Terminals**
- **Satellite multi-service systems**
- **Satellite ground stations**

Key Features

- Standard and extended C-Bands
- High amplitude linearity
- Excellent phase noise
- Low group delay distortion
- User friendly interface
- Smart 2 fans air cooling system
- Customization to user requirements and logo is available

Options

- Redundancy switching capabilities
- High stability 10 MHz reference oscillator
- Built-in output RF Power monitoring
- Built-in internal temperature monitoring
- RS485/RS422 remote monitoring and control
- Automatic sense of external 10 MHz reference

Table 1. Technical Specifications

IF Output	
Frequency Range	70MHz ±20MHz (140MHz ±40MHz opt 7)
Connection	50Ω BNC Female
Output Power at P1db	+15dBm nom
Synthesizer Step Size	125 KHz
VSWR	1.5:1
C-band Input	Frequency Range 3625 MHz to 4200 MHz 3400 MHz to 4200 MHz (opt 8)
Connection	50Ω SMA-Type F (N-type F Opt 5)
VSWR	1.5:1
Performance	
Conversion Gain	50dB ± 1.5dB
Gain adjustment	20 dB, 0.25 dB step
Amplitude response over any 36 MHz	± 0.5* dB typ (±0.75 dB max)
Amplitude response over the band	± 0.75* dB typ (± 1dB max)
Group delay	Linear 0.025ns/MHz Parabolic 0.015ns/MHz² Ripple 1ns p-p
Gain stability	
- over 24h	±0.25dB @25°C
- 0°C -+50°C	±0.5dB
Harmonics	Better then –60dBc
Phase Noise	
	-65dBc/Hz at 100 Hz -74dBc/Hz at 1 kHz -85dBc/Hz at 10 kHz -96dBc/Hz at 100 kHz -105dBc/Hz at 1 MHz
Noise Figure	15 dB max
Spurious carrier related	-60dBc max
Spurious, non-carrier	-60dBm max
3rd Order Intermodulation	-60dBc max. @ -10dBm Pout
Carrier mute	-80 dBm min
Spectrum sense	Non-inverted

*+25°C

General

Internal Reference	
Frequency	10 MHz
Stability (0 to 50 °C)	± 1E-8 ppm
Phase Noise	
	-120dBc/Hz at 10 Hz -140dBc/Hz at 100 Hz -145dBc/Hz at 1 kHz -150dBc/Hz at 10 kHz
Frequency Programmable Control	10ppm in 0.04ppm steps
Mechanical	
Width	19”, standard rack mount
Height	1U(1.75”)
Depth	13”, plus connectors
Weight	5 lb (2.6 kg)
Construction	Aluminum Chassis
Power Requirements	
Voltage	115/230 VAC (auto-ranging)
Frequency	47 to 63 Hz
Power consumption	35W
Operating Temperature	0 to +50 °C
Local control interface	LCD 20x2, 16 keypad
Alarms	LO lock failure Summary Failure Relay (Form C)

Options

1. Redundancy ready	Redundancy switching capabilities 9-pin D (F)
2. External reference in	Automatic sense of 10 MHz external reference with custom level. BNC (F)
3. Serial M & C	- RS-422/485 9-pin D (M) - RS-232 9-pin D (M)
4. Ethernet M & C	Ethernet Interface
5. N-Type F connector	On C-Band input
6. Frequency band	Custom frequency bands available
7. Dual IF	IF = 140MHz ±40MHz
8. Extended C-Band	3400 MHz to 4200 MHz
9. L-band monitoring	L-band output SMA F connector
10. Custom Logo	

Preliminary Specification. Subject to change without notice.