

STC 83601D

L-Band Synthesized Series Downconverter



The STC 83601D is a high-performance, low-cost fully synthesized Downconverter, providing solution for satellite systems, requiring frequency conversion down from L-Band to 70 MHz. Impressive linearity, low phase noise, low spurious and high dynamic range make the converter suitable for working with high bit rates signals. Low power consumption and 2 fans smart air-cooling system insures the optimum thermal mode, therefore increasing the reliability of the equipment unit and the service life of fans.

Applications

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

Key Features

- Built-in 1:N redundancy switching capabilities
- Exceptional performance parameters, low cost by design
- RS485/RS422 and RS232 remote monitoring and control interface
- Software configurable spectrum inversion mode
- Automatic sense of external 10 MHz reference
- 10MHz reference signal for ODU
- 24VDC support for outdoor LNB
- Cable slope equalizer
- Built-in internal temperature and output power monitoring
- RF Mute mode, 80 dB minimum
- Smart 2 fans air cooling system
- Customization to user requirements is available

Options

- High stability 10 MHz reference oscillator
- 10 MHz reference output, could be Enabled/Disabled from the front panel.
- 125 KHz synthesizer step size
- External reference auto-sensed level custom adjustment for 100% compatibility

Table 1. Technical Specifications

Downconverter		General	
L-band Input		Internal Reference Standard option	
Frequency Range	950 to 1525 MHz	Frequency	10 MHz
Connection	50Ω SMA-Type	Stability (0 to 50 °C)	± 1ppm (Standard)
Power Levels	-75 to -35 dBm	Output Level	+5dBm nom
Input harmonic, max	-50dBc	Phase Noise	-100dBc/Hz at 10 Hz
Synthesizer Step Size	1 MHz (125KHz optional)		-130dBc/Hz at 100 Hz
			-145dBc/Hz at 1 kHz
			-150dBc/Hz at 10 kHz
		Frequency Control	10ppm in 0.04ppm steps
IF Output		High Stability Option 1	
Frequency Range	52 to 88 MHz	Frequency	10 MHz
Connection	50Ω BNC	Stability (0 to 50 °C)	± 0.05ppm (High Stability)
Power @ P1db	+15 dBm nom	Output Level	+15dBm nom (custom adjustable)
Performance		Phase Noise	-120dBc/Hz at 10 Hz
Conversion Gain	25 to 45 dB, 0.5 dB step		-140dBc/Hz at 100 Hz
Amplitude response over any 36 MHz	±0.5 dB typ* (±0.75 dB max)		-145dBc/Hz at 1 kHz
Amplitude response over 575 MHz	±1 dB typ* (±1 dB max)		-150dBc/Hz at 10 kHz
Harmonics	Better then -60 dBc	Frequency Control	1ppm in 0.004ppm steps
Spurious, carrier related	-60 dBc max		
Spurious, non-carrier	-50 dBm	External Reference Input	
3 rd Order Intermodulation	-60 dBc @ 0dBm Pout	Frequency	10MHz
Group delay variation over any 36 MHz	3ns p-to-p	Input Level	0 dBm nom, customizable
Phase Noise	-65dBc/Hz @10 Hz	Frequency Stability	As Required
	-75dBc/Hz @ 100 Hz	Mechanical	
	-76dBc/Hz @ 1 kHz	Width	19", standard rack mount
	-82dBc/Hz @ 10 kHz	1.5:1	1U(1.75")
	-90dBc/Hz @ 100 kHz	Depth	13", plus connectors
	-110dBc/Hz @ => 1MHz	Weight	4.8 lb (2.2 kg)
Noise Figure	15dB max	Power Requirements	
Input and Output VSWR	1.5:1	Voltage	115/230 VAC (auto-ranging)
		Frequency	47 to 63 Hz
		Power consumption	20W (without LNB)
		Operating Temperature	
		0 to +50 °C	
		M & C system	
		Remote control interface	RS-422/485, RS-232
		Local control interface	LCD 20x2, 16 keypad
		Security (optional)	Password protection
		Alarms	TX/RX LO lock failure
			Temperature
			LNB current
			External alarms input
			Summary Failure Relay
		External Interface Options	
		DC output to LNB	+24V, 1 A max
		10 MHz Reference output to LNB	Up to +15 dBm at LNB input connector

*+25°C

Typical Specification. Subject to change without notice.