



STC 93801U

IF to C-Band Synthesized Frequency Upconverter



STC 93801U fully synthesized dual conversion C-Band Upconverter module is providing a high-performance, convenient and economical solution for systems, requiring IF to C-Band interface.

PERFORMANCE

Fine frequency resolution, impressive amplitude and phase linearity, maintained by an internal amplitude and group delay equalizer and low phase noise, exceeding the Intelsat phase noise mask for IBS and IDR, spectral purity, high dynamic range make this converter ideally suitable for all current high speed data transmission rates and advanced digital modulation schemes.

MONITORING & CONTROL

Front panel hardware switch is used for selecting local or remote RS-232/RS485 monitoring and control (M&C) interfaces. Optionally a converter unit can be equipped with Ethernet M&C interface. Simple ASCII commands used to control and set the converter parameters can be customized on request to fit existing M&C system.

Applications

- Satellite ground stations
- Satellite multi-service systems
- DVB Uplinks

Key Features

- Standard and extended C-Bands
- 125 KHz or 1KHz frequency resolution
- Excellent phase noise
- Low group delay distortion
- User friendly interface
- Automatic sense of external 10 MHz reference

Options

- Redundancy switching capabilities by a built-in switch or an external rack mounted switching unit.
- Choice of 70MHz or 140MHz IF
- Ethernet remote monitoring and control

Table 1. Technical Specifications

IF Input		M & C Interface	
Frequency range	70 MHz \pm 18 MHz (140 MHz \pm 36 MHz Opt 1)	Local control interface, front panel	LCD 20x2, 16 buttons keypad, LED Indicator.
Impedance	50 Ω or 75 Ω	Remote control, back panel	- RS-422/485 9-pin D (M)
Connector	BNC F	Alarm	- RS-232 9-pin D (M)
Return Loss	> 23 dB		- Summary Failure Relay
Input level	-25 dBm <u>nominal</u>		
C-band Output		Test Points Front Panel	
Frequency Range:		RF Sample	SMA F, -20 dBc Nominal
Model STC93801U - A	5845 MHz to 6425 MHz standard	IF Sample	BNC F, -20 dBc Nominal
Model STC93801U - B	5845 MHz to 6650 MHz extended		
Impedance	50 Ω		
Connector	SMA F (N-Type F Opt)		
Return loss	> 19 dB		
Output Power at P1dB	+10 dBm nominal		
Performance		Mechanical	
Conversion Type	Dual, No Inversion	Width	19", standard rack mount
Step Size	125 KHz standard, 1 KHz Opt 2	Height	1U(1.75")
Stability		Depth	21", plus connectors
- over 24 hours	\pm 0.5 x 10 ⁻⁹	Weight	10 lb
- 0°C -+50°C	\pm 1.0 x 10 ⁻⁸	Construction	Aluminum Chassis
Conversion Gain	35 dB \pm 2 dB	Power Requirements	
Gain adjust	0 to 30 dB in 0.2 dB steps	Voltage	115/230 VAC (auto-ranging)
Gain Ripple, \pm 18 MHz	\pm 0.25 dB typ, \pm 0.5 dB max	Frequency	47 to 63 Hz
Gain Ripple, \pm 36 MHz	0.75 dB typ, 1dB max	Dissipation	35W
Gain Slope	0.05 dB/MHz	Environmental	
Gain stability		Operating temperature	0 to +50 °C
- over 24 hours	\pm 0.25 dB @ 25°C	Storage temperature	-20°C to 70°C
- 0°C -+50°C	\pm 1 dB	Altitude	10,000 Feet MSL
Group delay		Humidity	0-95% , non-condensing
Linear	0.025 ns/MHz	External Reference IN	
Parabolic	0.01 ns/MHz ²		Automatic sense of 10 MHz external reference @ 0dBm \pm 3 dB, BNC F
Ripple	1.0 ns Peak-to-Peak		
Phase Noise @ offset:		Options	
100 Hz	-65 dBc/Hz	1. IF 140MHz	IF = 140MHz \pm 36MHz
1 kHz	-80 dBc/Hz	2. Step Size	1 KHz
10 kHz	-88 dBc/Hz	5. Ethernet M & C	Ethernet Interface, HTTP server,
100 kHz	-95 dBc/Hz	6. N-Type F connector	On C-Band output
1 MHz	-110 dBc/Hz	7. Frequency band	Custom frequency bands available
Spurious		8. Redundancy Ready	Built-In switching capabilities
Non-carrier	-75dBm max	9. High output power	+15 dBm @ P1dB
Carrier related	-65dBc max @ 0dBm Pout		
Noise Figure	12 dB max		
Intermodulation level	-50 dBc max. @ 0 dBm Pout		
Carrier mute	-80 dBm min		
AM/PM Conversion	0.1° @ -5 dBm Output		

*+25°C Specification is subject to change without prior notice.