



STC 83601U

L-Band synthesized upconverter



The STC 83601U is a high-performance, low-cost synthesized dual conversion Upconverter, providing solution for satellite systems requiring frequency conversion from IF up to L-Band.

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.

The STC 83601U standard model has +15 dBm minimum output power level at P1dB compression point and 30dB gain, which allows for longer cable runs, making it possible in many cases to work without external line amplifiers.

Applications	Key Features
<ul style="list-style-type: none"> • Satellite ground stations • Satellite multi-service systems • Uplinks systems • Digital Satellite News Gathering systems (DSNG) • Fly-Away Terminals 	<ul style="list-style-type: none"> • Built-in 1:N redundancy switching capabilities • Local and remote RS485/RS422/RS232 monitoring and control interfaces • Automatic 10 MHz internal/external reference selection (auto-sensing) • RF Mute mode, 80 dB minimum

Table 1. Technical Specification

Upconverter		General	
IF Input		Internal Reference	
Frequency Range	52 to 88 MHz	Standard option	
Connection	50Ω BNC Female (75Ω F optional)	Frequency	10 MHz
Input level	-20 to -40 dBm	Stability (0 to 50 °C)	± 1ppm (Standard)
L-band Output		Output Level	+5dBm nom
Frequency Range	950 to 1525 MHz	Phase Noise	-100dBc/Hz at 10 Hz -130dBc/Hz at 100 Hz -145dBc/Hz at 1 kHz -150dBc/Hz at 10 kHz
Connection	50Ω SMA-Type	Frequency Control	10ppm in 0.04ppm steps
Output Power at P1db	+15 dBm nom	High Stability Option	
Output return loss	15 dB	Frequency	10 MHz
Performance		Stability (0 to 50 °C)	± 0.05 ppm (High Stability)
Conversion Type	Dual, No Inversion	Output Level	+15dBm nom (custom adjust) -145dBc/Hz at 1 kHz
Synthesizer Step Size	125KHz	Phase Noise	-120dBc/Hz at 10 Hz -140dBc/Hz at 100 Hz -150dBc/Hz at 10 kHz
Conversion Gain	10 to 30 dB, 0.5 dB step	Frequency Control	1ppm in 0.004ppm steps
Gain Ripple, ±18 MHz	±0.75 dB max	External Reference Input	
Gain Ripple over 575 MHz	±1 dB max	Frequency	10MHz
Harmonics	Better then -60dBc	Input Level	0 dBm nom
Gain Stability, over 24 h	± 0.25 dB @ 25°C	Frequency Stability	As Required
Phase Noise	-65dBc/Hz at 10 Hz -78dBc/Hz at 100 Hz -82dBc/Hz at 1 kHz -86dBc/Hz at 10 kHz -96dBc/Hz at 100 kHz	Mechanical	
Noise Figure	-60 dBc max	Width	19", standard rack mount
Spurious carrier related	-65 dBm max	15 dB	1U(1.75")
Spurious, non-carrier	-65 dBm max	Depth	13", plus connectors
3 rd Order Intermodulation	-60 dBc @ 0 dBm Pout	Weight	4.8 lb (2.2 kg)
Input return loss	15 dB	Power Requirements	
		Voltage	115/230 VAC (auto-ranging)
		Frequency	47 to 63 Hz
		Power consumption	20W
		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 Summary Failure Relay

*+25°C Typical Specification. Subject to change without notice