

## 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

- Digital Satellite News Gathering systems (DSNG)
- Uplinks systems
- 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
- Local and remote RS485/RS422/RS232 monitoring and control interfaces
- Automatic 10 MHz internal/external reference selection (auto-sensing)
- 10MHz reference signal and 24VDC support for ODU
- Adjustable 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 and custom logo are available

### Options

- High stability 10 MHz reference oscillator
- DC output to SSPB +24V 2.5A max (other voltages avalabe)
- 10 MHz reference output programmable ON/OFF
- 125 KHz synthesizer step size
- Additional L-band monitoring output

**Table 1. Technical Specification**

Upconverter		General	
<b>IF Input</b>		<b>Internal Reference</b>	
Frequency Range	52 to 88 MHz	<b>Standard option</b>	
Connection	50Ω BNC Female	Frequency	10 MHz
Power Levels	-20 to -40 dBm	Stability (0 to 50 °C)	± 1ppm (Standard)
<b>L-band Output</b>		Output Level	+5dBm nom
Frequency Range	950 to 1525 MHz	Phase Noise	-100dBc/Hz at 10 Hz
Connection	50Ω SMA-Type		-130dBc/Hz at 100 Hz
Output Power at P1db	+15 dBm nom		-145dBc/Hz at 1 kHz
Synthesizer Step Size	1 MHz (125KHz optional)		-150dBc/Hz at 10 kHz
<b>Performance</b>		Frequency Control	10ppm in 0.04ppm steps
Conversion Gain	10 to 30 dB, 0.5 dB step	<b>High Stability Option</b>	
Gain Linearity (over 10dB)	± 0.5 dB	Frequency	10 MHz
Gain Linearity (over 20dB)	±1 dB	Stability (0 to 50 °C)	± 0.05 ppm (High Stability)
Amplitude response over any 36 MHz	±0.5 dB typ* (±0.75 dB max)	Output Level	+15dBm nom (custom adjust)
Amplitude response over 575 MHz	±0.5 dB typ* (±1 dB max)	Phase Noise	-145dBc/Hz at 1 kHz
Harmonics	Better then -60dBc		-120dBc/Hz at 10 Hz
Phase Noise			-140dBc/Hz at 100 Hz
			-150dBc/Hz at 10 kHz
		Frequency Control	1ppm in 0.004ppm steps
		<b>External Reference Input</b>	
Noise Figure	15 dB max	Frequency	10MHz
Spurious carrier related	-60 dBc max	Input Level	0 dBm nom
Spurious, non-carrier	-54 dBm max	Frequency Stability	As Required
3 <sup>rd</sup> Order Intermodulation	-60 dBc @ 0 dBm Pout	<b>Mechanical</b>	
Input and Output VSWR	1.5:1	Width	19", standard rack mount 1U(1.75")
		Depth	13", plus connectors
		Weight	4.8 lb (2.2 kg)
		<b>Power Requirements</b>	
		Voltage	115/230 VAC (auto-ranging)
		Frequency	47 to 63 Hz
		Power consumption	20W (without LNB and SSPB)
		<b>Operating Temperature</b>	
		0 to +50 °C	
		<b>M &amp; C system</b>	
		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 Summary Failure Relay
		<b>External Interface Options</b>	
		DC output to LNB	+24V, 1 A max
		DC output to SSPB	+24V, 2.5 A max
		10 MHz Reference output to LNB	Up to +15 dBm at LNB input connector, customizable
		10 MHz Reference output to SSPB	Up to +15 dBm at SSPB output connector, custom level adjustments available

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