

## STC 93701U, STC 93701D

### IF to Ku-band Synthesized Frequency Up and Downconverter



STC 93701U, STC 93701D fully synthesized frequency UP and Downconverters are providing a high-performance, convenient and economical solution for systems, requiring IF (70MHz or 140MHz) to Ku-band interface, where small frequency step size 1KHz is required.

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

- **Satellite ground stations**
- **Satellite multi-service systems**
- **Satellite News Gathering Uplinks**
- **Fly-Away Terminals**

### Key Features

- Available all Ku and SHF bands
- High amplitude linearity
- Low phase noise
- Small group delay distortion
- User friendly interface
- Smart fail-free air cooling system
- Small weight and only 13" depth 1U rack

### Options

- IF 140 MHz  $\pm$ 36 MHz
- RF/IF Sample Test Points
- Ethernet M&C
- Downconverter high gain
- RF/IF sample test points
- Customization to user requirements and logo is available

**Table 1. Technical Specifications**

<b>Upconverter</b>		Amplitude response over any 36 MHz	± 0.5* dB typ(±0.75 dB max)
IF Input Frequency Range	70 MHz±18 MHz; 140 MHz±36 MHz (Opt 1)	Amplitude response over the band	± 0.75* dB typ (± 1dB max)
Connection	50Ω BNC Female (75Ω Opt 4)	Group delay	Linear 0.025ns/MHz Parabolic 0.015ns/MHz <sup>2</sup> Ripple 1ns p-p
VSWR	1.5:1	Gain stability	- over 24h ±0.5dB @25°C - 0°C - +50°C ±0.75dB
Ku-band Output Frequency Range		Harmonics	Better then -60dBc
Model <a href="#">STC93701U-A</a>	14000-14500 MHz	Phase Noise	-76dBc/Hz at 100 Hz -86dBc/Hz at 1 kHz -87dBc/Hz at 10 kHz -90dBc/Hz at 100 kHz -110dBc/Hz at 1 MHz
Model <a href="#">STC93701U-B</a>	13750-14500 MHz	Noise Figure	12 dB max (6.5 dB w/option 3)
Model <a href="#">STC93701U-C</a>	12750-13250 MHz	Spurious carrier related	-60dBc max
Model <a href="#">STC93701U-F</a>	12750- 14500 MHz	Spurious, non-carrier	-60dBm max
Model <a href="#">STC93701U-D</a>	17300-18100 MHz	Intercept point	+30 dBm
Connection	50Ω SMA-Type Female	Carrier mute	-80 dBm min
VSWR	1.5:1	Spectrum sense	Non-inverted
Synthesizer Step Size	1 KHz	Output Power at P1db	+15 dBm nom
Gain	20 dB to 40dB with 0.5dB step	<b>Internal Reference</b>	
Amplitude response over any 36 MHz	± 0.5* dB typ(±0.75 dB max)	Stability (0 to 50 °C)	± 1E-8 ppm
Amplitude response over the band	± 0.75* dB typ (± 1dB max)	Phase Noise	-120dBc/Hz at 10 Hz -140dBc/Hz at 100 Hz -145dBc/Hz at 1 kHz -150dBc/Hz at 10 kHz
Group delay	Linear 0.025ns/MHz Parabolic 0.015ns/MHz <sup>2</sup> Ripple 1ns p-p	<b>Standard Features</b>	
Gain stability		M & C Interface	RS-232/RS-422/485- 9-pin D (M)
- over 24h	±0.5dB @25°C	Redundancy ready	Summary Alarm Relay Closure
- 0°C - +50°C	±0.75dB	Auxiliary L-band access	Input for Upconverter Output for Downconverter
Harmonics	Better then -60dBc	External Reference In	Automatic sense of 10 MHz 0dBm
Phase Noise	-75dBc/Hz at 100 Hz -85dBc/Hz at 1 kHz -85dBc/Hz at 10 kHz -90dBc/Hz at 100 kHz -110dBc/Hz at 1 MHz	Internal Temperature Monitoring	On LCD Display
Noise Figure	5.5 dB max	<b>Mechanical</b>	
Spurious carrier related	-60dBc max	Width	19", standard rack mount
Spurious, non-carrier	-60dBm max	Height	1U(1.75")
Intercept point	+20 dBm	Depth	13", plus connectors
Carrier mute	-80 dBm min	Weight	6.6 lb (3 kg)
Spectrum sense	Non-inverted	Construction	Aluminum Chassis
Output Power at P1db	+10 dBm nom	<b>Power Requirements</b>	
		Voltage	115/230 VAC (auto-ranging)
		Frequency	47 to 63 Hz
		Power consumption	23W
		<b>Operating Temperature</b>	0 to +50 °C
		Local control interface	LCD 20x2, 16 keypad
		Alarm	LO lock failure
		<b>Options</b>	
		1. IF frequency and bandwidth	140 MHz±36 MHz
		2. RF/IF sample test points	-20dBc SMA connector
		3.Ethernet M&C	Instead of RS Interface
		4. IF connector impedance	BNC 75Ω
		5. Downconverter high gain	35 dB to 55dB
		6 - Custom logo	
<b>Downconverter</b>			
Ku-band Input Frequency Range			
Model <a href="#">STC93701D-A</a>	10.95 GHz to 11.7 GHz		
Model <a href="#">STC93701D-B</a>	11.70 GHz to 12.25 GHz		
Model <a href="#">STC93701D-C</a>	12.20 GHz to 12.75 GHz		
Model <a href="#">STC93701D-F</a>	10.7 GHz to 12.75 GHz		
Connection	50Ω SMA-Type		
VSWR	1.5:1		
IF Output Frequency Range	70 MHz±18 MHz; 140 MHz±36 MHz (Opt 1)		
Connection	50Ω BNC Female (75Ω Opt4)		
VSWR	1.5:1		
Synthesizer Step Size	1 KHz		
Gain	15 dB to 35dB with 0.5dB step		
Gain (option 5)	35 dB to 55dB with 0.5dB step		

\*+25°C

Specification is subject to change without notice.