

## STC 310 series L-Band to SHF-Band Indoor Variable Gain single and double Block-Up/Downconverter



STC 310 series frequency block converters (frequency translators) series is designed to provide high-performance, convenient and economical solution for systems, requiring interface between L-Band and SHF-Bands.

The series includes following configurations:

[STC 3101U/STC 3102U](#) – single and double frequency Block Upconverter;

[STC 3101D/STC 3102D](#) – single and double frequency Block Downconverter;

[STC 310UD](#) – Up/Down frequency Block Converter;

High amplitude linearity, low phase noise, spectral purity and high dynamic range make this frequency converter ideally suitable for all current high speed data transmission rates and advanced digital modulation schemes.

### Applications

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

### Key Features

- Simple to use
- High amplitude linearity
- Low phase noise
- Customization to user requirements

### Options

- Redundancy switching capabilities
- External 10MHz reference input with automatic sense

**Table 1. Technical Specifications**

		<b>General</b>
<b>L to Ku-band single and double Upconverters</b>		<b>Internal Reference High Stability</b>
STC 3101U-B/ STC 3102U-B	950-1700 MHz to 13750-14500 MHz	Stability (0 to 50 °C) 0.01ppm
STC 3101U-A/ STC 3102U-A	950-1700 MHz to 12750-13500 MHz	Phase Noise -120dBc/Hz at 10 Hz
STC 3101U-C/ STC 3102U-C	950-1450 MHz to 14000-14500 MHz	-140dBc/Hz at 100 Hz
STC 3101U-D/ STC 3102U-D	950-1750 MHz to 17300-18100 MHz	-145dBc/Hz at 1 kHz
		-150dBc/Hz at 10 kHz
<b>Ku to L-band single and double Downconverters</b>		<b>Mechanical</b>
STC 3101D-B/ STC 3102D-B	10950-11700 MHz to 950-1700 MHz	Width 19", standard rack mount
STC 3101D-D/ STC 3102D-D	11700-12500 MHz to 950-1750 MHz	Height 1U(1.75")
STC 3101D-C/ STC 3102D-C	11200-12000 MHz to 950-1750 MHz	Depth 13", plus connectors
STC 3101D-F/ STC 3102D-F	12200-12750 MHz to 950-1500 MHz	Weight 4 lb (1.8 kg)
STC 3101D-A/ STC 3102D-A	10700-11700 MHz to 950-1950 MHz	Construction Aluminum Chassis
STC 3101D-L/ STC3102D-L	14000-14500 MHz to 950-1450 MHz	
<b>L to C-band single and double Upconverters</b>		<b>M &amp; C system</b>
STC 3101U-K / STC 3102U-K	950-1525 MHz to 5.85-6.425 MHz	Remote control interface RS-422/485, RS-232
STC 3101U-L/ STC 3102U-L	950-1750 MHz to 5.85-6.65 MHz	Local control interface LCD 20x2, 16 keypad
STC 3101U-M/ STC 3102U-M	950-1550 MHz to 5.85-6.45 MHz	
<b>C-band to L-band single and double Downconverters</b>		Alarms TX/RX LO lock failure
STC 3101D-K/ STC 93722D-K	3400-4200 MHz to 950-1750 MHz	Temperature
STC 3101D-L/ STC 93722D-L	3700-4200 MHz to 950-1450 MHz	Summary Failure Relay
<b>Ku-band Input/Output</b>		<b>Power Requirements</b>
RF connector	50Ω SMA Female	Voltage 115/230 VAC (auto-ranging)
	(N-type Female optional)	Frequency 47 to 63 Hz
VSWR	1.5:1	Power consumption 15W
<b>L-band Output/Input</b>		<b>Operating Temperature</b>
Output RF connector	50Ω SMA Female	0 to +50 °C
	(N-type Female optional)	
VSWR	1.5:1	<b>Alarms</b>
<b>Performance</b>		<b>Options</b>
Variable Conversion Gain	10dB to 30dB	Opt. 1 External 10MHz reference input with automatic sense
Output Power at P1dB	+10dBm nom Upconverter	
Output Power at P1dB	+15dBm nom Downconverter	Opt 2. RS485 + Ethernet M&C
Amplitude response over any 36 MHz	± 0.5dB max	Opt 3. Redundancy ready
Amplitude response over the band	± 1dB max,	
Gain stability (24hours)	± 1.5dB for bands > 575MHz	
Channel-to-channel gain mach	± 0.25dB @ constant temperature	
Channel-to-channel isolation	± 1dB max	
Harmonics	60dB	
Phase Noise	Better then -60dBc	
	-75dBc/Hz at 100 Hz	
	-80dBc/Hz at 1 kHz	
	-85dBc/Hz at 10 kHz	
	-90dBc/Hz at 100 kHz	
	-110dBc/Hz at 1 MHz	
Noise Figure	5.5 dB @max gain	
Spurious carrier related	-60dBc max	
Spurious, non-carrier, in band	-70 dBm max	
Spurious out of band	-60dBc max	
Output two-tone 3 <sup>rd</sup> Order Intercept point	+20 dBm Upconverter	
Intercept point	+25 dBm Downconverter	
Spectrum sense	Non-inverted	

\*+25°C

The specification is subject to change without notice.