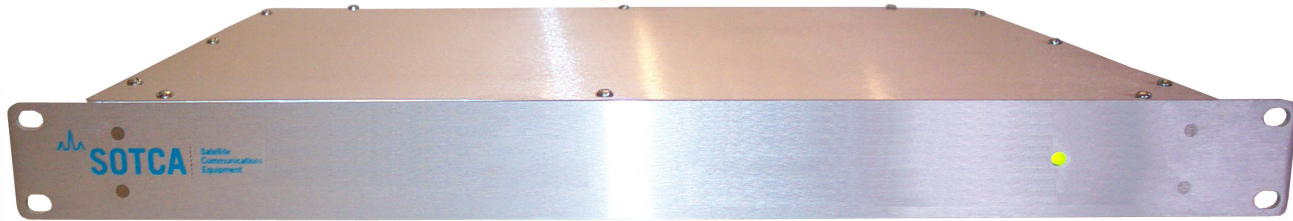


STC 300 series L-Band to SHF-Band Indoor Fixed Gain single and double Block-Upconverters and Block Downconverters



STC 300 Series Block Converters are fixed conversion devices, designed to provide high-performance, convenient and economical solution for systems, requiring translation from L-Band to SHF (C-, KU-) bands and from SHF- to L-Band. They feature a fixed type LO and fixed Gain that can be factory set to a customer specified value within its boundaries. A powerful system of proprietary developed filters allows to achieve low spurious and harmonics, high image rejection and low noise figure.

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

The STC 300 series are available in multiple different configurations to offer more flexibility.

STC 3001U/STC 3002U – single/dual L-band to SHF-band Block Upconverter;
STC 3001D/STC 3002D – single/dual SHF-band to L-band Block Downconverter;

Configuration on Fig 1 consists of 2 identical independent assemblies, each with autonomous reference oscillator, microcontroller and high-grade power supply. This configuration is recommended for use in space-saving installations where premium reliability is required and in 1U+1U redundant systems requiring back-up for all assembly components (see page 3, Fig 4).

Configuration on Fig 2 is a standard space-saving configuration, where additional cost reduction can be achieved by shared use of a single high-grade power supply, reference oscillator and microcontroller, as well as in redundant systems where redundancy is required only for the RF modules. See Fig 5 on page 3 for redundant system.

Configuration on Fig 3 is a standard 1U Rack unit as depicted on Fig 3.

FIG 1. STC 3002U/STC3002D FULLY INDEPENDENT Modules Configuration diagram

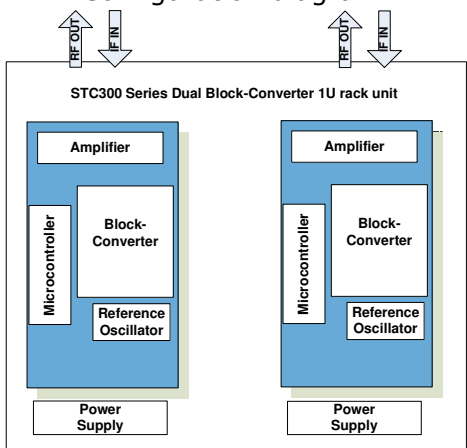


FIG 2. STC 3002U-X/STC 3002D-X STANDARD DUAL Modules Configuration diagram

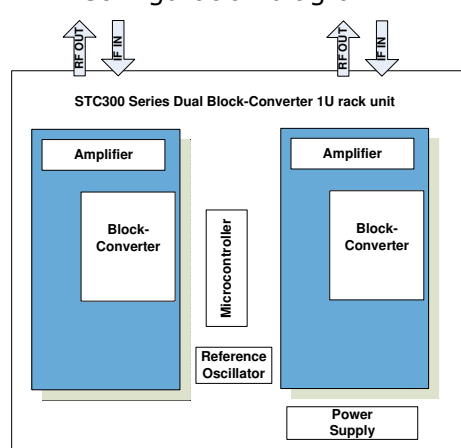


FIG 3. STC 3001U-X/STC 3001D-X STANDARD SINGLE Modules Configuration diagram

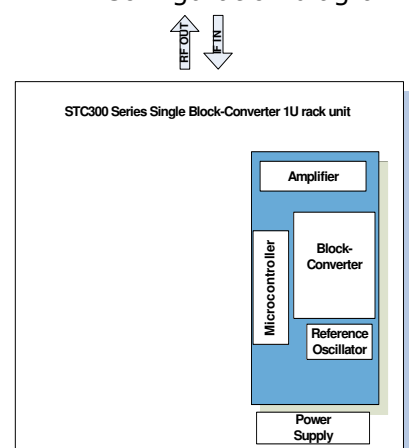


Table 1. Technical Specifications

		General	
L to Ku-band single Upconverters		Internal Reference High Stability	
STC 3001U-B/ STC 3002U-B	950-1700 MHz to 13750-14500 MHz	Stability (0 to 50 °C)	0.01ppm
STC 3001U-A/ STC 3002U-A	950-1700 MHz to 12750-13500 MHz	Phase Noise	-120dBc/Hz at 10 Hz
STC 3001U-C/ STC 3002U-C	950-1450 MHz to 14000-14500 MHz		-140dBc/Hz at 100 Hz
STC 3001U-D/ STC 3002U-D	950-1750 MHz to 17300-18100 MHz		-145dBc/Hz at 1 kHz
			-150dBc/Hz at 10 kHz
Ku to L-band single and double Downconverters		Mechanical	
STC 3001D-B/ STC 3002D-B	10950-11700 MHz to 950-1750 MHz	Width	19", standard rack mount
STC 3001D-D/ STC 3002D-D	11700-12500 MHz to 950-1750 MHz	Height	1U(1.75")
STC 3001D-C/ STC 3002D-C	11200-12000 MHz to 950-1750 MHz	Depth	13", plus connectors
STC 3001D-F/ STC 3002D-F	12200-12750 MHz to 950-1500 MHz	Weight	4 lb (1.8 kg)
STC 3001D-A/ STC 3002D-A	10700-11700 MHz to 950-1950 MHz	Construction	Aluminum Chassis
L to C-band single Upconverters		Power Requirements	
STC 3001U-K/ STC 300U-K	950-1525 MHz to 5.85-6.425 MHz	Voltage	115/230 VAC (auto-ranging)
STC 3001U-L/ STC 3002U-L	950-1750 MHz to 5.85-6.65 MHz	Frequency	47 to 63 Hz
		Power consumption	15W
C-band to L-band double Downconverters		Environmental	
STC 3001D-K/ STC 3002D-K	3400-4200 MHz to 950-1750 MHz	Operating	
STC 3001D-L/ STC 3002D-L	3700-4200 MHz to 950-1450 MHz	Ambient Temperature	0 to +50°C
		Relative humidity	Up to 95% @ 30°C
		Atmospheric pressure	Up to 10,000 feet
Ku-band Input/Output		Non-Operating	
RF connector	50Ω SMA Female (N-type Female optional)	Ambient Temperature	-50 to +70°C
VSWR	1.5:1	Shock and vibration	Normal handling by commercial carriers
L-band Output/Input			TX LO lock failure
Output RF connector	50Ω SMA Female (N-type Female optional)	Alarms	
VSWR	1.5:1		
Performance		Options	
Fixed Conversion Gain	10dB to 30dB (factory set)	1. Input/Output connector	
Output Power at P1dB	+10dBm nom Upconverter	N-type Female	
Output Power at P1dB	+15dBm nom Downconverter		
Amplitude response over any 36 MHz	± 0.5dB max		
Amplitude response over the band	± 1dB max, ± 1.5dB for bands > 575MHz		
Gain stability (0 to + 50 °C)	± 1dB		
Gain stability over 24 hours and constant temperature	± 0.1dB		
Channel-to-channel gain match	± 1dB max		
Channel-to-channel isolation	60dB		
Harmonics	Better then -60dBc		
Phase Noise	-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	8 dB max *1		
Spurious carrier related	-60dBc max		
Spurious, non-carrier, in band	-70 dBm max		
Image rejection	-70dBm minimum		
Output two-tone 3 rd Order Intercept point	+20 dBm Upconverter		
Intercept point	+30 dBm Downconverter		
Spectrum sense	Non-inverted		
	*+25°C		
	*1 15 dB for STC 3001D-K		

The specification is subject to change without prior notice.

FIG 4. STC 3002U/STC3002D
FULLY INDEPENDENT Modules
1U+1U Redundant Configuration diagram

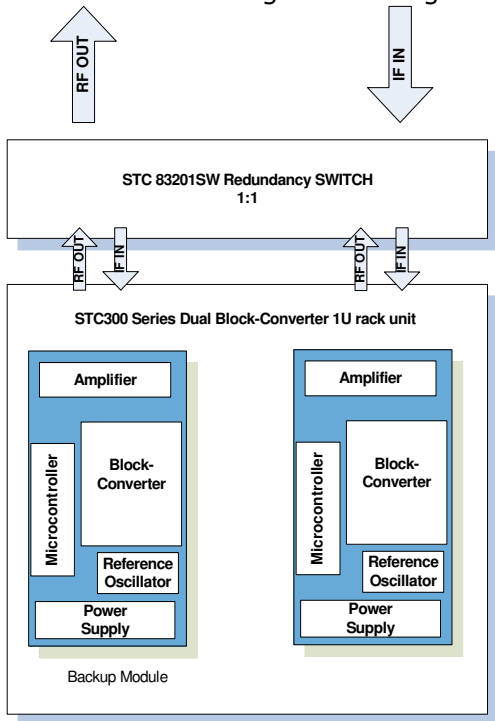


FIG 5. STC 3002U-X/STC 3002D-X
STANDARD DUAL Modules
1U+1URedundant Configuration diagram

