

## Description

This double conversion downconverter is intended for use in professional applications in X band like satellite earth stations. US/DC/X-70/3C includes three high performance downconverter modules with low noise local oscillators, microprocessor based monitor & control circuitry. A front panel with control keys & status display & own AC / DC power supply. US/DC/X-70/3C can be controlled from the front panel (manual control) & Ethernet (remote control).

## Specifications

3 Channel X-Band to 70 M Hz Down Converter	
Input Frequency	8025 to 8500 MHz
Type of Conversion	Double Conversion without Inversion
Frequency Sense	No Inversion
Frequency selection step size	1 KHz
Number of Channels	3
Tunability	First LO in 1 KHz step
Output Frequency	70 M Hz
3-dB Bandwidth ( for IF O/P)	± 25 MHz
Number of O/P ports	2 per channel equal level
Isolation b/w I/P and O/P ports	≥ 60 dB
Isolation b/w two O/P ports of same channel	≥ 30 dB
Isolation b/w O/P ports of two different channels	≥ 65 dB
I/P or O/P Impedance	50 ohms
I/P & O/P VSWR	≤ 1.5:1 max.
LO Leakage	- 65 dBm max.
O/P 1dB Compression Point (P1)	+10 dBm min.
Gain	35 dB ± 10 dB max
Gain Adjustment	within 30dB range in 0.5 dB step
Noise Figure	10 dB at max. gain 12 dB at 10 dB lower gain
Image Rejection	60 dB min.
Level Stability	± 0.5 dB over day at constant temperature
Group Delay Stability with temperature	< 5 ns for temperature range 22 ± 3 deg C
3rd Order IM Distortion	60 dBc at 0 dBm O/P
Gain tracking b/w channels	up to 1 dB max.
Phase tracking b/w channels	< 5 deg
Group delay variation	for temperature range 22 deg ± 3 deg C
Linear	≤ 0.8 ns / MHz
Parabolic	≤ 0.2 ns / MHz <sup>2</sup>
Ripple	≤ 1 ns p-p within ± 10 MHz of center frequency

### 3 Channel X-Band to 70 M Hz Down Converter

Spurious Outputs	Signal Related: - 60 dBc Signal Independent: - 80 dBm max.
Phase Noise	100 Hz away: -75 dBc / Hz 1 KHz away: -90 dBc / Hz 10 KHz away: -95 dBc / Hz
Internal Reference Stability	$1 \times 10^{-7}$ over temperature range
External Reference Input	5 / 10 MHz, $0 \pm 3$ dBm, 50 ohms Internal/ External auto selection
Local & Remote Functions	Frequency selection & display 1st & 2nd LO monitor O/p LO lock indication Channel gain adjustment & display Reference Int./ext. Failures / Alarms Local / Remote
M & C Interface	TCP/IP-LAN (100 Mbps) at rear panel, RJ45 connector
RF / IF Connectors	SMA / N-type, Rear Panel
LO Monitor	SMA Front Panel
Input Power	230 V , 50 Hz $\pm$ 10%
Operating ambient temperature	0 to 50 deg C
Humidity	Up to 95 %
Mechanical	19" Rack Mountable ( 2U Unit)
Colour	Light Grey (RAL 7035)
MTBF	> 50,000 Hours
MTTR	< 1 hour

### Online Drawings

