L7001

Synthesised L-band to IF Down Converter

The **L7001** is a synthesised L-Band down converter which provides a low-cost solution for systems requiring an IF interface at 70MHz ±18MHz or 140MHz ±36MHz. The unit incorporates an Ethernet based interface as standard for user control and the front panel provides a status indication.

For redundancy the **L7001** uses an optional CANBUS® interface and has an integral redundancy controller for 1+1 & 2+1 operation (for use with external **R1000L**, **R2000L** switch units), for N+1 systems a separate external control and switch unit is provided (**RCU1000 series**).

The **L7001** converters are designed to meet the phase noise, spurious, level and frequency stability requirements of Intelsat IBS/ Eutelsat SMS specifications and are compliant with IESS308/ 309. The product is most suitable for both high and low rate data and both digital and analogue TV signals.

The unit has a highly stable internal reference source and will automatically detect and lock to an external 10MHz signal, when applied.

Peak Features

- Compliant with IESS308/ 309 requirements
- Suitable for use with latest high order modulation schemes in excess of 100Mbits/sec
- Optional 1+1 & 2+1 CANBUS® redundancy control & N+1 switch system available
- Aux DC and 10MHz reference outputs for block converters
- Software selectable spectrum inversion
- Software trimming of internal 10MHz reference

L7001 – Typical Specification

L-band Input

Frequency	950 - 2150MHz
Connection	N-type (f), 50Ω

IF Output

Frequency	70 ±18MHz
Option 1b;	140 ±36MHz
Connection	BNC (f), 50Ω
Option 3b;	BNC (f), 75Ω
Spectrum invert	Switchable (via remote control)

Transfer Characteristics

Conversion gain	+30dB ±1dB
Attenuation	0 to 30dB, stepped 0.5dB
1 dB GCP	Input -10dBm, Output +10dBm
Gain stability	±0.5dB from 0 to 40^{0}C
	±0.1dB per week (constant temp.)
Gain flatness	±2.0dB full band
	±0.5dB across any 36MHz in band
Synth resolution	1 kHz

RF Performance

Phase noise	-65dBc/Hz at 10Hz
	-75dBc/Hz at 100Hz
	-80dBc/Hz at 1kHz
	-85dBc/Hz at 10kHz
	-95dBc/Hz at 100kHz
	-110dBc/Hz at 1MHz
Harmonics	Better than -50dBc (at input -50dBm, Gain 30dB)
Spurious	<-60dBm (in band non-carrier related mid gain)
	<-60dBc (in band carrier related)
Group delay	Linear 0.025ns/MHz
	Ripple 1ns p-p
	Parabolic 0.015ns/MHz^2
Noise figure	20dB nominal at maximum gain

Block DownConverter/ LNB Drive

Output reference	10MHz at 0dBm nominal
DC supply	+22.5 volts regulated at 0.65 amps
Connection	Fed on L-band cable
Control	Switchable from front panel

External Reference Input (with automatic detection)

Frequency	10MHz
Connector	BNC (f), 50Ω
Level	0dBm ±5dB
Phase Noise	To be better than 50dBc/Hz of output phase noise

Internal Back-up Reference

Frequency	10MHz
Adjustment	±0.45ppm, stepped 0.01ppm
Standard Stability	
Allan deviation	<5 x 10^{-12} over 1s
Ageing	<3 x 10^{-10} per day, <3 x 10^{-8} per year
Temp stability	<2 x 10^{-9} over -10 to 50^{0}C
High Stability (Option 8)	
Allan deviation	<3 x 10^{-12} over 1s
Ageing	<2 x 10^{-10} per day, <2 x 10^{-8} per year
Temp stability	<3 x 10^{-9} over -10 to 50^{0}C

Mechanical

Width	19”, standard rack mountable
Height	1U (1.75”)
Depth	250mm (10”), plus connectors
Construction	Aluminium chassis
Weight	Approx. 3.5kgs (8lbs)

Environmental

Operating temp	-10^{0}C to +50^{0}C
EMC	EN55022, part B & EN50082-1
Safety	EN60950

Power supply

Voltage	90-264VAC
Frequency	47-63Hz
Power	60 Watts

Control System

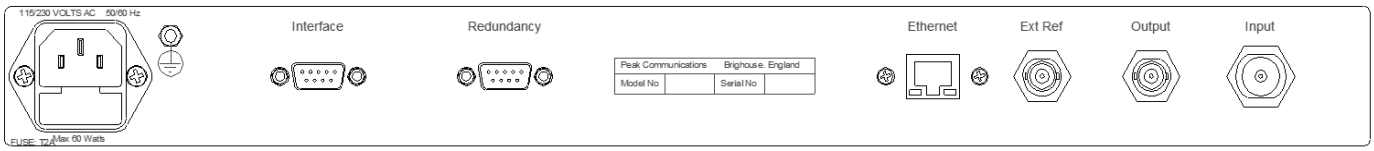
Remote Control	Ethernet; embedded web server & SNMP network management support
Redundancy (option 15)	Optional CANBUS® interface for N+1 system and in-built 1+1 & 2+1 controller
Alarms	LO lock failure PSU failure Summary failure relay (form C)

Options

1b) 140MHz IF output
3b) 75Ω IF output
6b) L-band fibre optic input (please refer to factory)
8) High stability internal reference option
15) CANBUS integrated redundancy interface

Note; the addition of options can modify the typical specification, for details please consult the factory

Rear Panel View



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