

Installation and Operating handbook

F1202 IF to L Band Upconverter

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EN 55022 CLASS B
EN 50082-1
EN 60950



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**IMPORTANT NOTE: THE INFORMATION AND SPECIFICATIONS
CONTAINED IN THIS DOCUMENT SUPERCEDE ALL PREVIOUSLY
PUBLISHED INFORMATION CONCERNING THIS PRODUCT**

PEAK COMMUNICATIONS Ltd maintains a continuing programme of product improvement and therefore reserves the right to change specifications without notice

INTRODUCTION

The F1202 is a fixed frequency, fixed gain IF to L-Band Upconverter. The F1202 provides a low-cost solution for systems requiring an IF interface at 70 MHz \pm 20 MHz (or 140MHz \pm 40 MHz) and an output at L-Band. The unit is designed to interface with many manufacturers L-Band modems.

The F1202 Upconverter is a high grade unit which can be applied to many situations where good stability and phase noise is required.

The unit is housed in 19 inch 1'U' high chassis, suitable for rack mounting, is 400 mm deep and may be fitted with rack slides if required.

SPECIFICATION

Input	70 \pm 18 MHz or option 140 \pm 38MHz
Output	1200 MHz fixed (customer selectable at time of order in 950 to 1450 MHz range)
Phase noise (dBc/Hz)	-80 @ 100Hz; -90 @ 1kHz; -95 @ 10kHz; -100 @ 100kHz; -120 @ 1MHz
Group delay	Linear 0.025nS, Parabolic 0.015nS/MHz ² , Ripple 1nS p-p.
Conversion gain	Zero
Gain flatness	\pm 0.5 dB across 40 MHz
1 dB comp. point	0 dBm
Output spurious	<-60 dBm(in band non carrier related), <-60 dBc in band (in band carrier related)
Reference frequency	Internal 10 MHz
Stability	1 second <5 x 10 ⁻¹¹ , ageing <7.5 x 10 ⁻⁸ per yr, 5 x 10 ⁻¹⁰ per 12 hrs
Input connector	BNC female
Input imp./return loss	50 Ω , better than 10 dB (optional 75 ohms)
Output connector	N-Type female
Output imp./return loss	50 Ω , better than 10 dB
Summary Alarm	LO lock fail, Amp fail, Power supply voltages out of limits
Mechanical	1U chassis – 400mm deep, weight 4kg
Environmental	Operating temperature range -10 to 50 ⁰ C
Compliance	EMC to EN 55022 part B and EN 50082-1, safety to EN 60950
Power supply	110-240VAC

EMC AND SAFETY

EMC

The F1202 L Band Upconverter has been designed to comply with the following standards;

Emissions : EN 55022 Class B; Limits and methods of measurement of radio interference characteristics of Information Technology Equipment.

Immunity : EN 50082 Part 1; Generic immunity standard, part 1: Domestic, commercial and light industrial environment.

The equipment must be operated with its lid on at all times. If it is necessary to remove the lid for routine servicing or fault finding then it is essential that the lid is fitted back correctly before normal operation.

For the Alarm and Remote Control data interfaces all 'D' type connectors must have grounding fingers on the plug shell to guarantee continuous shielding. The back-shells must comply to the requirements of VDE 0871 and FCC 20708, providing at least 40 dB of attenuation from 30 MHz to 1 GHz.

Connecting cables must be of the shielded type

Operation of the equipment in a non standard manner will invalidate compliancy to these standards.

Safety

To ensure safety of operator the F1202 L Band Upconverter unit has been designed to comply with the following safety standard;

EN 60950 Safety of information technology equipment, including electrical business machines.

Before operation the user must ensure that the installation complies with the information given.

The equipment is designed to operate in a static 19 inch rack system conforming to IEC 297-2. Operation of the equipment in transportable vehicles equipped with the means of providing a stable environment is permissible. Operation of the equipment on board vehicles, ships or aircraft without means of environmental conditioning will invalidate the safety compliancy; please contact the factory for further advice. Operation of the

equipment in an environment other than that stated in the specifications will also invalidate the safety compliancy. The equipment must not be operated above 2000 metre altitude, extremes of temperature; excessive dust, moisture or vibration; flammable gases; corrosive or explosive atmospheres.

Installation

The equipment is classified in EN 60950 as a pluggable equipment class A for connection to the mains supply, as such it is provided with a mains inlet cord suitable for use in the country of operation. In normal circumstances this will be of an adequate length for installation in the rack. If the mains cord proves to be too short then any replacement must have a similar type fuse (if fitted) and be manufactured to similar specification: check for HAR, BASEC or HOXXX-X ratings on the cable. The connector ends should be marked with one of the following : BS1636A (UK free plug 13 amp); BSI, VDE, NF-USE, UL, CSA, OVE, CEBEC, NEMKO, DEMKO, SETI, IMQ, SEV and KEMA-KEUR for the IEC 6 amp free socket. Schuko and North American free plugs must have similar markings.

The installation of the equipment and the connection to the mains supply must be made in compliance to local or national wiring regulations for a category II impulse over voltage installation. The positioning of the equipment must be such that the mains supply socket outlet for the equipment should be near the equipment and easily accessible or that there should be another suitable means of disconnection from the mains supply.

The equipment is designed to operate from a TN type power supply system as specified in EN 60950. This is a system that has separate earth, line and neutral conductors. The equipment is not designed to operate with an IT power system which has no direct connection to earth.

UNIT DESCRIPTION

Front panel indicators

The F1202 L Band Upconverter front panel has one indicator lights which is as follows

STATUS Normally lit GREEN but will turn RED with any internal failure causing an alarm

An Internal alarm is caused by power failure, amp failure or unit out of lock.

F1202 Rear panel connections

RF IN Input at 70/140MHz. Maximum input ideally should not exceed -0dBm

RF OUT Output at 1200MHz at same power level as input power

INTERFACE Digital interface with the following signals

Ground	1	9	PSU OK - N/Closed
PSU Common	2	10	LO OK - N/Closed
LO Common	3	11	AMP OK - N/Open
AMP Detect common	4	12	Unit select input
Not used	5	13	Not used
Not used	6	14	Not used
Not used	7	15	Not used
Ext Ref detect	8		

OPERATION

On switching on the unit the STATUS indicator on the front of the unit should turn GREEN if all is OK.

If an alarm condition shows, check alarm conditions on the rear panel

Connect the signal in to the INPUT BNC connector taking note of the power of the signal being input. Care should be taken not to have any DC present.

Output from the unit at L Band is from the N-Type output marked OUTPUT. Again take care not to have any DC present.