ST Engineering

FRC0740
L-BAND BLOCK UPCONVERTER

FRC0750
ACTIVE L-BAND COMBINER AND UPCONVERTER

Description

The FRC0740 L-band Block Upconverter is a High Performance frequency Block Upconverter designed for a wide range of Broadcast, Telco and IP satellite applications. The FRC0740 translates frequencies from L-band to a wide range of RF frequencies such as C-, Ku- and DBS-band.

The FRC0740 guarantees the best signal quality thanks to a very high frequency stability and very low spurious characteristics. It is the ideal solution when the Block Upconverter cannot be included in the modulator. The FRC0740 has a 30-dB variable gain control on one L-band input and one L-band monitoring output. There is a second input with fixed 10-dB gain. The signals on the two L-band inputs can be combined inside the unit before being up-converted. The high output frequency stability is provided by an internal 10 MHz reference clock. For applications requiring a very high frequency stability (such as for very low data rate carriers), an optional very high stability reference clock can be ordered.

The FRC0750 Active L-band Combiner and Block Upconverter is primarily designed to bring together several L-band carriers in a single satellite channel. To equalize the level of the incoming signals, each input has its own amplifier/ attenuator. The FRC0750 can also be used as an active switching device for signal routing purposes or redundancy switching operations. In its default configuration, the FRC0750 combines up to four different L-band signals into one L-band signal. As an option it is possible to combine up to eight different L-band signals within the same unit. A DC power supply and a reference frequency are also available on the L-band output, providing a compact and cost effective solution when the FRC0750 is used in combination with an outdoor RF upconverter and/or amplifier. The FRC0750 can be delivered with an integrated block upconverter as an option. In this configuration, the FRC0750 converts the L-band output signal of the combiner to C-, Ku- or DBS-band.

Both the FRC0740 and FRC0750 are easy to operate and monitor. All control and monitoring parameters are available locally on the front panel and remotely through a web interface. It is also possible to control or monitor the FRC0750 via our proprietary RMCP protocol or via SNMP.

DIALOG

powered by Newtec iDirect

ST Engineering iDirect's range of Frequency Converters consists of a complete portfolio for broadcast, telco and IP satellite applications. It contains easy to operate and monitor Upconverters, Downconverters, Up & Down-converters, L-band Upconverters and Combiners.

These Up & Downconverters offer the highest signal quality, thanks to the high frequency stability, very low spurious characteristics and high linearity over the entire bandwidth; as well as extensive coverage of all transponder frequencies (IF, L, C, Ku and DBS band).

Key Features

FRC0740

- Wide choice of RF frequency ranges covering C, Ku, and DBS-bands
- Converts Extended L-band (950-2150 MHz) to Extended C-band (5.85 - 7.05 GHz)
- Very high frequency stability
- Very low spurious characteristics
- Two L-band inputs and one L-band output
- One L-band input with 30dB variable gain range
- Integrated signal combiner
- Very high linearity
- Very good gain flatness over the entire bandwidth

FRC0750

- Up to eight L-band inputs
- Each input is switchable and gain adjustable
- Optional upconversion to C-, Ku-, or DBS-band
- Optional 10 MHz +DC power for BUC
- OPtional 10 MHz reference input/output
- Advanced monitoring and control

Applications

- Broadcast primary distribution
- Broadcast contribution
- Direct-To-Home (DTH) uplinks
- Telco and trunking satellite infrastructures
- VSAT hubs
- Generic satcom applications

Related Products

M6100	Broadcast Sattelite Modulator
MDM6100	Broadcast Satellite Modem
MDM6000	Satellite Modem
FRC0710	Upconverter
FRC0720	Downconverter
FRC0730	Up and Down Converter
USS0202	Universal Redundancy Switch

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Interfaces

FRC0740

Input Interface Upconverter (L-band):

Connector	SMA (F), 50 ohms
Return loss	>18 dB
Max. input power for no damage	+13 dBm

Secondary Input Interface upconverter (L-band):

Connector	SMA (F), 50 ohms
Return loss	>12 dB
Max. input power for no damage	+13 dBm

Output Interface (L-band Monitoring):

Connector	SMA (F), 50 ohms
Return loss	>12 dB
Gain	follows RF output gain

Output Interface (RF):

Connector RF-band out	SMA (F), 50 ohms
Return loss	18 dB minimum

10 MHz Reference Input / Output

Connector	BNC (F), 50 ohms
Input level	-3dBm up to 7dBm
Output level	+7dBm +/- 2dB

Channel Characteristics (L-band to RF-band)

Output Frequency Ranges:

Band	Input freq. MHz	Output freq GHz	LO freq. MHz
C-band:	950 - 2150	5.85 - 7.05	4900
Ku-band:	950 - 1450	12.75 - 13.25	11800
Ku-band	950 - 2000	13.75 - 14.80	12800
DBS-band:	950 - 1750	17.30 - 18.10	16350
DBS-band:	950 - 1750	17.60 - 18.40	16650

Gain	0 to 30 dB
Gain step size	0.1 dB
Gain stability/day	±0.25dB
Gain stability/temperature	±1dB (0-40°C)
Amplitude response/RF band	±1dB
Gain flatness	±0.35dB/72MHz max
Output @ 1dB compression	
DBS-band	>+10dBm
C- and Ku-band	>+13dBm
3rd order IMD	<-50dBc @ 0dBm
Noise figure @ maximum gain	15dB
Noise spectral density	<-82dBm/4kHz
In-band spurious	
Non signal related	<-75dBm

Interfaces

FRC0750

Input / Output Interface (L-band):

Connector	SMA (F), 50 ohms
Return loss (50 ohms)	>14 dB
Frequency Range	950 to 1750 MHz
Max. input power	-10 dBm

Output Interface: RF, (Optional):

Connector RF-band out	SMA (F), 50 ohms
Return loss	18 dB minimum

Output L-band Monitoring (with upconverter option):

Connector	SMA (F), 50 ohms
Return loss	>12 dB
Gain	0 dB

10 MHz Reference Input / Output (Optional):

Connector	BNC (F) - 50 ohms
Input level	-3dBm up to 7dBm
Output level	+7dBm +/- 2dB

BUC Power and Refernce Frequency (Optional)

Connector	N (F) - 50 ohms
Max. Current	4 Amps
Voltagel	24V, 48V
Frequency	10 MHz
Stability	See Internal Reference Frequency

Channel Characteristics (L-band)

Gain	-30 to 10dB
Output 1dB compression	+10dBm
Gain flatness over 36MHz	<± 0.25 dB
Gain flatness over L-band	<± 1dB
Spurious(@-10dBm output power)	<-65 dBc/4KHz
L-band output mute	>60 dBc
Crosstalk	>60 dBc

Channel Characteristics (L-band to RF-band)

Frequency Range RF-band:

Band

C-band:	5.85 - 6.65 GHz
Ku-band:	12.75 - 13.25 GHz
Ku-band	13.75 - 14.50 GHz
DBS-band:	17.30 - 18.10 GHz
DBS-band:	17.60 - 18.40 GHz
Gain (over temp. and frequency)	-20 to +20 dB
Output 1 dB compression Ku-band	>+13dBm
Output 1 dB compression C and DBS	>+10dBm
Gain flatness	±0.45 dB / 36 MHz max
In-band spurious Non signal related	< -80 dBm
Signal related for rate >200 kbaud (up to 0dBm output)	<-66dBc/4kHz

For more information please contact your Sales Representative at **sales@idirect.net.**

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FRC0740

FRC0750

FRC0740 & FRC0750

Internal Reference Frequency

High Stability:

Stability	± 5 x 10-8 over 0°C to 70°C
Ageing	± 15 ppb/day
	± 300 ppb/day

Very High Stability (optional)

Stability	± 2 x 10-9 over 0°C to 65°C
Ageing	± 0.5 ppb/day
	± 500 ppb/10 year

Generic

Monitoring and Control Interfaces:

- Web based GUI
- Diagnostics
- RMCP over TCP-IP/UDP and RS232/RS485
- SNMP v2c

Alarm Interface

- Electrical dual contact closure alarm contacts
- Connector 9-pin sub-D (F)
- Logical interface and general device alarm

Available Alarms (FRC0740)

- 10 MHz alarm
- Power supply alarm
- Temperature alarm
- Synthesizer out-of-lock

Physical

Size

Dimensions	19", depth 51 cm
Weight	< 6 kg

Tempurature

Operational	0°C to 40°C
Storage	-40 to +70°C

Humidity

Operational	5% to 85% non-condensing

Power Supply

90-130 & 180-260 VAC, 105 VA, 47-63 Hz

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