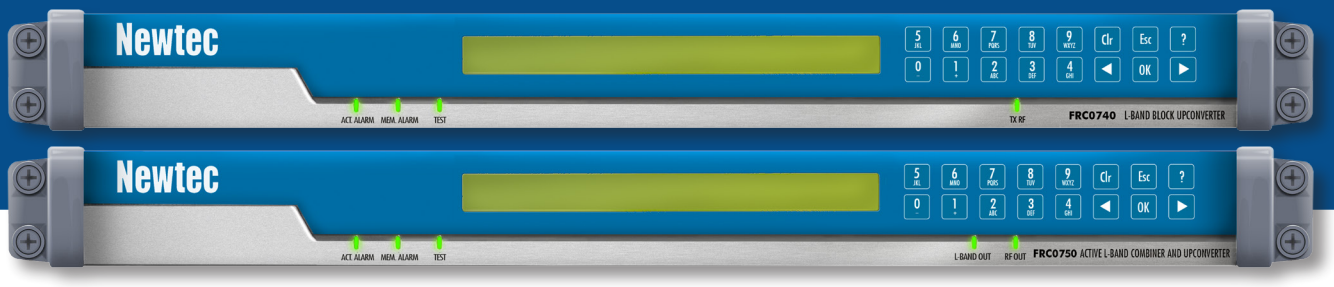
Newtec

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.

The FRC0740 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.

Newtec'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).

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 Newtec's proprietary RMCP protocol or via SNMP.

SPECIFICATIONS

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

Our Professional Equipment

Care Pack Basic and Care Pack Enhanced are the Newtec service and support packages protecting your Newtec equipment over a three-year period.

Related Products

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

FRC0740

Interfaces

INPUT INTERFACE UPCONVERTER (L-BAND):

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

SECONDARY INPUT INTERFACE UPCONVERTER (L-BAND):

- Connector: SMA (F), 50 ohms
- Return loss: >12dB
- Maximum 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: >15dB

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 30dB
- Gain step size: 0.1dB
- 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
  - Signal related for @ 0dBm output
    - DBS-band (for rate >200Kbaud): <-66dBc/4KHz
    - C- and Ku-band: <-65dBc
- RF output mute: >60dBc
- Phase noise

	DBS-band	C- and Ku-band
@ 10 Hz	<-30 dBc/Hz	<-50 dBc/Hz
@ 100 Hz	<-60 dBc/Hz	<-70 dBc/Hz
@ 1 KHz	<-75 dBc/Hz	<-80 dBc/Hz
@ 10 KHz	<-85 dBc/Hz	<-90 dBc/Hz
@ 100 KHz	<-95dBc/Hz	<-100 dBc/Hz

- Residual group delay: 1 ns peak-to-peak

FRC0740

FRC0750

FRC0750

Interfaces

INPUT / OUTPUT INTERFACE: L-BAND

- Connector — SMA (F), 50 ohms
- Return loss (50 ohms) — >14dB
- 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 — >12dB

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)

- Input level — -3dbm up to 7dBm
- Output level — +7 dBm ± 2 dB
- Connector — BNC (F) – 50 ohms

BUC POWER AND REFERENCE FREQUENCY (OPTIONAL)

- Connector — N(F) - 50 ohms
- Max. current — 4 A
- Voltage — 24V, 48V
- Frequency — 10MHz
- Stability — see Internal Reference Frequency

L-band channel characteristics

- 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

L-band to RF–band channel characteristics

- Frequency range RF-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 – 18.4 GHz
- Gain (over temperature and frequency) -20 to +20 dB
- Output 1dB compression Ku-band >+13dBm
- Output 1 dB compression C and DBS >+10dBm
- Gain flatness ±0.45dB/36MHz max
- In-band spurious
  - Non signal related <-80dBm
  - Signal related for rate >200 kbaud (up to 0dBm output) <-66dBc/4kHz
- RF output mute >60dBc
- Phase noise

	DBS-band	C- and Ku-band
@ 10 Hz	<-30 dBc/Hz	<-50 dBc/Hz
@ 100 Hz	<-60 dBc/Hz	<-70 dBc/Hz
@ 1 KHz	<-75 dBc/Hz	<-80 dBc/Hz
@ 10 KHz	<-85 dBc/Hz	<-90 dBc/Hz
@ 100 KHz	<-95 dBc/Hz	<-100 dBc/Hz

- Residual group delay 1 ns peak-to-peak

FRC0740 & FRC0750

Internal Reference frequency

- High Stability — Stability ±5x10-8 over 0°C to 70°C; Ageing ± 15 ppb/day, ± 300 ppb/year
- Very High Stability (optional) — Stability ±2x10-9 over 0°C to 65°C; Ageing ± 0.5 ppb/day, ± 500 ppb/10 year

Generic

MONITOR AND CONTROL INTERFACES

- Web based GUI
- Diagnostics report, alarm log
- 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

- 1RU, width: 19", depth 51 cm, <6 kg
- Power supply: 90-130 & 180-260 Vac, 105 VA, 47-63 Hz
- Temperature
  - Operational: 0°C to 40°C
  - Storage: -40 to +70°C
- Humidity: 5% to 85% non-condensing
- CE label

Newtec FRC0740 L-band Block Upconverter		Ordering n°
Default configuration		
L-band to RF, SNMP 10MHz reference In/Out: High stability		FRC0740
Configuration Options Category		
		Select 1 option
Output frequency	C-band (5,850 GHz - 7,05 GHz)	FA-12
	Ku-band (12,75 - 13,25 GHz)	FA-13
	Ku-band (13,75 - 14,80 GHz)	FA-14
	DBS-band (17,30-18,10 GHz)	FA-07
	DBS-band (17,60-18,40 GHz)	FA-08
		Select 1 option
10MHz reference In/Out	High stability	Default
	Very high stability	GR-02
Services Category		
		Max. 1 option per category
Support	Care Pack 3 Basic	GA-08
	Care Pack 3 Enhanced	GA-09

Newtec FRC0750 Active L-band Combiner and Upconverter		Ordering n°
Default configuration		
4-Input L-band combiner, SNMP Output interface: 950 - 1750MHz		FRC0750
Configuration Options Category		
		Select 1 option
Input interface	4-Input L-band	Default
	8-Input L-band	FE-02
		Select 1 option
Ouput interface	L-band (950 - 1750 MHz)	Default
	L-band + 10MHz for BUC	FA-02
	L-band + 10MHz + 24Vdc for BUC	FA-09
	L-band + 10MHz + 48Vdc for BUC	FA-10
	L+C-band (5,85 - 6,65 GHz)	FA-11
	L+Ku-band (12,75 - 13,25 GHz)	FA-13
	L+Ku-band (13,75 - 14,50 GHz)	FA-14
	L+DBS-band (17,30-18,10 GHz)	FA-07
	L+DBS-band (17,60-18,40 GHz)	FA-08
Additional Options Category		
		Max. 1 option per category
10MHz reference In/Out	High stability	GR-01
	Very high stability	GR-02
Services Category		
		Max. 1 option per category
Support	Care Pack 3 Basic	GA-08
	Care Pack 3 Enhanced	GA-09

Contact your sales representative
for details (sales@newtec.eu).

Request A Quote