AZ730
Up & Down-converter
Azimuth Product Family

AZIMUTH SERIES

Description

The AZ730 is a high performance Up & Down frequency converter designed for a wide range of broadcast, telco and IP satellite applications. In its default configuration, the AZ730 upconverts IF signals (70 or 140 MHz) to L-band (950–1750 MHz) and simultaneously downconverts L-band signals (950–2150 MHz) to IF. Optionally, the AZ730 can upconvert IF signals to C, Ku or DBS-band.

The AZ730 offers some advanced and unique features such as a calibrated high linearity over the entire bandwidth combined with a very high frequency stability. These features make the AZ730 the perfect solution for a wide range of transmissions ranging from very small carriers to full transponder applications.

The IF frequency is switchable from 70 MHz to 140 MHz and the L-band frequency is adjustable in steps of 48 Hz.

The high output frequency stability is provided by an internal 10 MHz reference clock. For applications requiring a very high frequency stability such as very low data rate carriers, an optional reference clock of 0,01ppm can be ordered separately.

A 24V DC power supply and a reference frequency on the L-band output are also available as options, providing a compact and cost effective solution when the AZ730 is used in combination with an outdoor RF upconverter and/or amplifier.

Optionally, an LNB power supply, a frequency band selection signal and a 10MHz reference frequency can be delivered to an LNB via the L-band input.

The AZ730 is 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 AZ730 via RMCP or SNMP.

Key features

- Agile IF to L-band up/down converter
- Optional up-conversion to C, Ku or DBS-band
- Ultra fine frequency resolution
- IF frequency switchable between 70 MHZ & 140 MHz
- Very high frequency stability
- Very low spurious characteristics
- Phase noise compliant to Intelsat IBS/ Eutelsat SMS
- High linearity over the entire bandwidth
- Optional 10 MHz + 24V DC for BUC
- Optional LNB power supply + 10 MHz

Main advantages

- Highest signal quality
- Extensive coverage of all transponder frequencies
- High flexibility

Applications

- Earth Stations
- DTH uplinks
- DSNG
- Telco and trunking satellite infrastructures
- VSAT hubs
- Generic satcom applications

Related products

AZ710 Upconverter
AZ720 Downconverter
AZ740 Indoor L-band Block Upconverter
AZ750 L-band Combiner

AZ270 1+1 Frequency Converter Redundancy Switch
AZ200 Universal Switching System

Related documents

Care Pack Brochure

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Specifications – AZ730(R6)

Interfaces

Input interface upconverter (IF):

- Connector BNC (F), 50 ohms
- Return loss >15dB
- Frequency range 70 MHz +/- 18MHz
  140 MHz +/- 36 MHz
- Input level IF (typical) -35 to +5 dBm

Output interface upconverter (L-band):

- Connector SMA (F), 50 ohms
- Return loss >15dB
- Frequency range 950 to 1750 MHz
- Frequency step size 48 Hz
- Output level -30 to +10 dBm

Output interface upconverter (RF), optional:

- Connector RF-band out SMA (F), 50 ohms
- Return loss >12dB
- Output level C & Ku-band >0 dBm
- Output level DBS-band >+10 dBm

- 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

BUC power and reference frequency (optional)

- max. current 1,5 A
- voltage 24V
- frequency 10MHz
- stability $\pm 5x10^{-8}$ over 0°C to 65°C

Input interface downconverter (L-band)

- Connector SMA (F), 50 ohms
- Return loss >15dB
- Frequency range 950 to 2150 MHz
- Input level Max composite 8-20dBm

Output interface downconverter (IF)

- Connector BNC (F), 50 ohms
- Return loss >15dB
- Frequency range 70 ± 20MHz,140 ± 40MHz
- Output level <=0 dBm typical

LNB power and control (optional)

- max. current 350 mA (on L-band input)
- voltage 11,5 -14 V (Vertical polarization)
  16 -19 V (Horizontal polarization)
  & additional 22 kHz +/- 4KHz
  (band selection according to universal LNB)
- 10 MHz reference

10 MHz reference input / output (optional)

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

Channel characteristics

Gain (upconverter)

- Programmable IF gain 15 to 20dB
- Programmable L-band gain -20 to +20dB
- Programmable RF gain (C&Ku) -20 to +20 dB(±5dB)
- Programmable RF gain (DBS) -10 to +30 dB
- Gain step size 0.1dB
- Gain variation over 36/72 MHz BW (L-band)
  1.2 dB peak-to-peak
- Gain variation over 36/72 MHz BW (RF)
  2.6 dB peak-to-peak

Gain (downconverter)

- Programmable Gain 0 to 50 dB
- Gain step size 0.1 dB
- Gain variation over 36/72 MHz BW
  1.2 dB peak-to-peak
- Gain variation over T°(+20 to +40°C)
  ± 0.5 dB

Linearity (upconverter)

- Output 1dB compression (L-band) +10dBm
- Output 1dB compression (C & Ku-band) +0 dBm
- Output 1dB compression (DBS-band) +10dBm
- Third order intermod <-60 dBc (typical)
- Third order intercept (L-band) +26dBm
- Third order intercept (C & Ku-band) >+10 dBm
- Third order intercept (DBS-band) >+20dBm
- AM/PM conversion (L-band) 0.1°/dB max@0dBm

Linearity (downconverter)

- Output 1dB compression IF +10dBm
- AM/PM conversion 0.1°/dB max@0dBm

Switching

- Spectrum inversion Switchable
- Output switching suppression <-80 dBm

Noise (upconverter)

- Noise figure <20 dB (typical)
- In-band spurious <-65 dBc
  (@ -10 dBm output level and for rates >200 kbaud)
- Phase noise

	L-band	RF
@ 10 Hz	<-50 dBc/Hz	<-35 dBc/HZ
@ 100 Hz	<-70 dBc/Hz	<-60 dBc/Hz
@ 1KHz	<-80 dBc/Hz	<-75 dBC/Hz
@ 10 KHz	<-85 dBc/Hz	<-85 dBc/Hz
@ 100 KHz	<-95 dBc/Hz	<-95 dBc/Hz

Noise (downconverter)

- Noise figure <15 dB at max gain
- In band spurious (signal related) <-60 dBc
  (@-25 dBm input and 0 dBm output)
- Non signal related spurious <-70dBm
- Image rejection -60dBc
- Phase noise

@ 10 Hz	<-50 dBc/Hz
@ 100 Hz	<-70 dBc/Hz
@ 1KHz	<-80 dBc/Hz
@ 10 KHz	<-85 dBc/Hz
@ 100 KHz	<-95 dBc/Hz

Group delay:

	@ 72 MHz BW	@ 36 MHz BW
Linear group delay	0.05 ns/MHz	0.03 ns/MHz
Parabolic group delay	0.0035 ns/MHz²	0.01 ns/MHz²
Residual group delay	1 ns peak-to-peak	1 ns peak-to-peak

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

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

Ordering information

AZ 730 Up & Down converter		Order n°
Default Configuration		
Upconverter input and Downconverter output IF: 70MHz or 140MHz, SNMP Downconverter input: L-band (950 - 2150MHz) Upconverter output : L-band (950 - 1750MHz) 10MHz reference In/Out: High stability		AZ730
Configuration options Category	Max. 1 option per category	
Upconverter output	L-band (950 - 1750MHz)	Default
	L-band + 10MHz for BUC	FA-02
	L-band + 10MHz + 24Vdc for BUC	FA-03
	L+C-band (5,85 - 6,65 GHz)	FA-04
	L+Ku-band (12,75 - 13,25 GHz)	FA-05
	L+Ku-band (13,75 - 14,50 GHz)	FA-06
	L+DBS-band (17,30-18,10 GHz)	FA-07
	L+DBS-band (17,60-18,40 GHz)	FA-08
10MHz reference In/ Out	High stability	Default
	Very High stability	GR-02
Additional options Category	Max. 1 option per category	
Downconverter input	LNB power supply	FC-01
	LNB power supply + 10 MHz reference	FC-02
Services Category		
Assistance	Care Pack Basic	GA-06
	Care Pack Extended	GA-07

- Other configurations and options, such as RF-band amplifiers and L-band splitters, are available on request.
- Contact your sales representative for details (sales@newtec.eu)