

AZ120

Telco Satellite Modulator

Azimuth Product Family

AZIMUTH

SERIES

Description

The AZ120 is a state-of-the-art satellite modulator designed for fixed-rate telco voice and data applications over satellite in full compliance with the DVB standards. The AZ120 can be used in conjunction with the telco satellite demodulator AZ920.

The AZ120 interfaces directly with terrestrial data and voice networks through a standard G.703 interface.

In its default configuration, the AZ120 supports E1 rates. The support of E2, T2, E3 and T3(DS3) rates are available as configuration option.

It is also possible to configure the modulator with a secondary G.703 input, for the implementation of a redundant configuration or to allow the modulator to be compatible with two different transmission rates.

At the output of the modulator, the signal is available on an L-band interface. IF- and RF-band as well as DC power supply and reference frequency are available as configuration options, providing a compact and cost effective solution.

This modulator is fully compliant with the DVB-S and DVB-S2 standards and provides exceptional performance and bandwidth efficiency. When activated, the unique linear and non-linear predistortion option Equalink™ provides an additional link margin improvement of up to 2,5dB, truly unleashing the full efficiency of higher modulation schemes such as 16 and 32 APSK.

Key features

- DVB-S2 and DVB-DSNG/S compliant
- QPSK, 8PSK, 16APSK and 32APSK
- G.703 interface with E1, T2, E2, E3 or T3 (DS3) rates
- L-band monitoring output
- Programmable amplitude slope equalizer
- Optional integrated RF upconverter
- Optional 10 MHz reference input/output
- Optional Linear and non-linear predistortion (Equalink™)
- Featured-based pricing and software upgradability

Main advantages

- Lower operational costs thanks to highest bandwidth efficiency
- High compactness
- Fully compatible with the satellite DVB standards

Applications

- Telephony backbone
- Data backbone
- Mobile telephony backhauling
- Cable restoration
- Leased lines in the sky

Related products

AZ420 Telco Satellite Modem
AZ920 Telco Satellite Demodulator

AZ7x0 Frequency converters
AZ210 1+1 Modulator Redundancy Switch
AZ200 Universal Switching System

Related Documents

White paper Equalink™



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Specifications



Input interface

G.703 input :

rate : 2.048 ; 6.312 ; 8.448 ; 34.368 ;
44.736 Mbit/s
connector : BNC (F)
impedance : 75 ohms

Clock stability - G703 :

2 Mbit/s : ± 50 ppm
6 & 8 Mbit/s : ± 30 ppm
34 & 44 Mbit/s : ± 20 ppm

Line coding

fully compliant to the ITU-T G.703 standard
HDB3 for E1, E2, and E3
B3ZS for DS-3 (T3)

Adaptive equalizer with 4 preset values,
compensating cable lengths up to 1350ft

Modulation

Supported modulation schemes and FEC

- DVB-S/DSNG:
 - Outer/Inner FEC: Reed Solomon /Viterbi
 - MODCODS: QPSK: 1/2, 2/3, 3/4, 5/6, 7/8;
 - 8PSK: 2/3, 5/6;
 - 16QAM: 3/4, 7/8
- DVB-S2:
 - Outer/Inner FEC: BCH/ LDPC
 - MODCODS: QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10;
 - 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10;
 - 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10;
 - 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10

Baud rate range

- DVB-S2 : 0,256 – 45 Mbaud
- DVB-S/DSNG : 1-45 Mbaud

Frame length

- DVB-S/DSNG : 188 bytes
- DVB-S2 Short Frames : 16200 bits
- DVB-S2 Normal Frames : 64800 bits

Roll-off factor

- 20 % - 25% -35%

Output interfaces

L-band output (default):

- Connector : SMA (F), 50 ohms
- Level : -50/-7 dBm (+/- 2dB)
- Frequency : 950 - 1750 MHz (50 Hz steps)
- Return loss : > 10 dB

IF-band (optional):

- Connector : BNC (F) - 75 ohms (intermateable with 50 ohms)
- Level : -30/+5 dBm (± 3 dB)
- Frequency : 50 - 180 MHz (50 Hz steps)
- Return loss : 50 ohms : > 14 dB
75 ohms : > 20 dB

L-band + IF (optional)

- L-band: same as above
- IF: fixed 70 or 140 MHz frequency
-34/+1 dBm (+/- 3 dB) output level

RF band (optional)

- Connector : SMA (F), 50 ohms
- Return loss : > 12 dB
- Frequencies : 5.85-6.65 GHz
12.75-13.25 GHz
13.75-14.5 GHz
- Level : -50/-7 dBm (+/- 3dB)
- Frequencies : 17.30-18.10 GHz
17.60-18.40 GHz
- Level : -40/+3 dBm (+/- 3dB)

L-band monitoring output (default):

- Connector : SMA (F), 50 ohms
- Return loss : > 7 dB
- Frequency : 1080 MHz (fixed frequency)
- Level : -45 dBm

BUC power and reference frequency (optional)

- Max. current : 1,5 A
- Voltage : 24V
- Frequency : 10MHz
- Stability : ±5x10-8 over 0°C to 65°C

Spurious performance

- better than - 65 dBc @ -10 dBm output level

10 MHz reference input / output (optional)

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

Generic

Monitor and control interfaces

- Web server GUI (HTTP) via web browser
- Diagnostics report, alarm log (HTTP)
- RMCP over TCP-IP/UDP and RS232/RS485
- SNMP v.2c/MIB

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

AZ120 Telco Satellite Modulator		Order n°
Default Configuration		
DVB Modulator with G.703 interface, SNMP Modulation: DVB-S Q/8PSK 16QAM DVB-S2 Q/8PSK Input interface: G.703 2,048 Mbits/s Output interface: L-band (950-1750 MHz)		AZ120
Configuration options		
Category	Max. 1 option per category	
Rate	2,048 Mbit/s (E1)	Default
	6,312 Mbit/s (T2)	AK-02
	8,448 Mbit/s (E2)	AK-03
	34,368 Mbit/s (E3)	AK-04
	44,736 Mbit/s (T3/DS3)	AK-05
Output Interface	L-band (950-1750 MHz)	Default
	IF (50-180 MHz)	AA-02
	L-band + 10MHz for BUC	AA-03
	L-band + 10MHz + 24Vdc for BUC	AA-04
	IF+ L-band	AA-06
	L + C-band (5,85-6,65 GHz)	AA-07
	L+ Ku-band (12,75-13,25 GHz)	AA-08
	L+ Ku-band (13,75-14,50 GHz)	AA-09
	L + DBS-band (17,30-18,10 GHz)	AA-10
	L + DBS-band (17,60-18,40 GHz)	AA-11
	Modulation	DVB-S/S2 Q/8PSK
DVB-S/S2 Q/8PSK, 16APSK*		AB-12
DVB-S/S2 Q/8PSK, 16/32APSK*		AB-16
Additional options		
Category	Max. 1 option per category	
Secondary input	2,048 Mbit/s (E1)	AH-01
	6,312 Mbit/s (T2)	AH-02
	8,448 Mbit/s (E2)	AH-03
	34,368 Mbit/s (E3)	AH-04
	44,736 Mbit/s (T3/DS3)	AH-05
10MHz reference In/Out	Internal reference : 1 ppm	GR-01
	Internal reference : 0,01 ppm	GR-02
Predistortion	Equalink *	AC-01

(*) upgradeable via license key

Other configurations and options are available on request,
such as RF output modules.
Contact your sales representative for details (sales@newtec.eu).

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