Newtec AZ920

AZ920
Telco Satellite Demodulator
Azimuth Product Family

AZIMUTH SERIES

Description

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

In its default configuration, the AZ920 supports E1 rates. The support of E2, T2, E3 and T3 (DS3) rates are available as configuration option.

At the output of the demodulator, the signal is available on a G.703 interface.

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

The AZ920 has a dual L-band input (950-2150 MHz). The active input is selected by the user and can provide DC power and frequency band selection signals compatible with most professional and commercial LNBs. Optionally, one L-band input can be replaced by an IF (50-180 MHz) input.

This demodulator is fully compliant with the DVB-S and DVB-S2 standards and provides exceptional performance and bandwidth efficiency.

The AZ920 is equipped with an adaptive equalizer to compensates linear distortion of the transmission channel.

The integrated Noise & Distortion Estimator tool provides an accurate reading of the satellite link margin even in presence of non-linear distortion and allows the user to find the optimum input back-off setting very easily for 16APSK or 32APSK operation, whether or not non-linear predistortion is applied .

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
- Noise & Distortion Estimator (NoDE) tool
- Adaptive equalizer
- Optional 10 MHz reference input/output

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

AZ120 Telco Satellite Modulator
AZ420 Telco Satellite Modem

AZ7x0 Frequency converters

AZ290 1+1 Demodulator Redundancy Switch
AZ200 Universal Switching System

Related Documents

Care Pack Brochure

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Specifications – AZ920(R6)

Newtec AZ920

Input interface

Dual L-band input (default)

- Connector 2 x F-type (F), 75 ohms
- Return loss > 7 dB
- Frequency 950 - 2150 MHz
- Level -65/-25dBm
- Adjacent signal < (Co+7) dBm/Hz
  where Co = signal level density

IF-band input (optional, replaces one L-band input)

- Connector BNC (F) - 75 ohms
- Return loss > 15 dB
- Frequency 50 - 180 MHz
- Level -55 to -15 dBm
- Adjacent signal < (Co+7) dBm/Hz
  where Co = signal level density

LNB power and control

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

Demodulation

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, 8/9
  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
  - QPSK/8PSK/16APSK 0,256 – 45 Mbaud
  - 32 APSK 1-33 Mbaud
- DVB-S/DSNG
  - QPSK/8PSK/16QAM 1-45Mbaud

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%

DVB-S2 performances at PER 1E-5

	Short Frames	Normal Frames
	< 15 Mbaud	< 45 Mbaud
Config	Es/No	Es/No
QPSK- 1/3	-0.6	-0.7
QPSK- 2/5	0.4	0.2
QPSK- 1/2	1	1.4
QPSK- 3/5	3.1	2.8
QPSK- 2/3	3.8	3.6
QPSK- 3/4	4.5	4.3
QPSK- 4/5	5.1	5.1
QPSK- 5/6	5.8	5.5
QPSK- 8/9	6.7	6.6
QPSK- 9/10	-	6.7
8PSK- 3/5	6.5	6.3
8PSK- 2/3	7.4	7.1
8PSK- 3/4	8.6	8.4
8PSK- 5/6	10.2	9.7
8PSK- 8/9	11.4	11.1
8PSK- 9/10	-	11.3
16APSK- 2/3	9.9	9.6
16APSK- 3/4	10.9	10.5
16APSK- 4/5	11.6	11.5
16APSK- 5/6	12.4	12.1
16APSK- 8/9	13.6	13.3
16APSK- 9/10	-	13.6
32APSK-3/4	-	13.6
32APSK-4/5	-	14.5
32APSK-5/6	-	14.9
32APSK-8/9	-	16.1
32APSK-9/10	-	16.5

DVB DSNG/S performances at BER 1E-7 after RS

	< 20 Mbaud	> 20 Mbaud
Config	Eb/No	Eb/No
QPSK- 1/2	3.9	3.9
QPSK- 2/3	4.4	4.5
QPSK- 3/4	4.9	5.1
QPSK- 5/6	5.4	5.8
QPSK- 7/8	5.8	6.4
8PSK- 2/3	6.3	6.5
8PSK- 5/6	8.3	8.8
8PSK- 8/9	8.8	9.8
16QAM - 3/4	8.4	8.6
16 QAM- 7/8	10.1	11.1

Output interfaces

G.703 output :

Connector BNC (F)
Rate 2.048 ; 6.312 ; 8.448; 34.368 ; 44.736 Mbps
Impedance 75 ohms

Clock stability – G.703 :

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)

10 MHz reference input / output (optional)

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

Internal Reference frequency

- High Stability (optional)
  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

Physical

- Very compact: 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

AZ920 TELCO SATELLITE DEMODULATOR		Order n°
Default Configuration		
DVB demodulator with G.703 interface, SNMP Rate: 2,048 Mbit/s Input interface : L-band (950-2150 MHz) Modulation : DVB-S Q/8PSK, DVB-S2 Q/8PSK		AZ920
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
Input Interface	L-band	Default
	L-band + 10MHz	AJ-02
	IF+ L-band	AJ-03
	IF + L-band + 10MHz	AJ-04
Modulation	DVB-S/S2 Q/8PSK	Default
	DVB-S/S2 Q/8PSK, 16QAM, 16APSK*	AL-12
	DVB-S/S2 Q/8PSK,16QAM, 16/32APSK*	AL-16
Additional options Category	Max. 1 option per category	
Secondary Output	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	High stability	GR-01
	Very High stability	GR-02
Services Category		
Assistance	Care Pack Basic	GA-06
	Care Pack Extended	GA-07

(*) upgradeable via license key

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