AZ930
WAN Satellite Demodulator
Azimuth Product Family

AZIMUTH SERIES

Description

The AZ930 is a state-of-the-art satellite demodulator designed for applications where two parts of a Wide Area Network (WAN) are connected over satellite using routers with HSSI interfaces. The AZ930 can be used in conjunction with the WAN Satellite Modulator AZ130.

The AZ930 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.

At the output of the demodulator, the signal is available on an HSSI interface with bit rates up to 52 Mbit/s (standard HSSI) or 110 Mbit/s (extended HSSI).

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

The AZ930 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
- HSSI interface
- Max data rates up to 52 or 110 Mbit/s
- Adaptive equalizer
- Noise & Distortion Estimator (NoDE) tool
- Optional 10 MHz reference input/output

Main advantages

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

Applications

- Satellite interconnection of routers
- High speed satellite links

Related products

AZ130 WAN Satellite modulator

AZ290 1+1 Demodulator Redundancy switch
AZ200 Universal Switching system
AZ7x0 Frequency converters

Related Documents

Care Pack Brochure

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Specifications – AZ930(R6)

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-S2 Short Frames 16200 bit
- DVB-S2 Normal Frames 64800 bit
- DVB-S/DSNG 188 byte

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 interface

HSSI interface

connector	sub-D (F)
rate	0.05 - 110 Mbit/s
output levels	ECL-10 kH (330 ohms; -5 V)
input levels	0.15 - 1 Vptp (diff. 110 ohms)

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

AZ 930 WAN SATELLITE DEMODULATOR		Order n°
Default Configuration		
DVB demodulator with HSSI interface, SNMP Output interface: HSSI 52 Mbit/s Modulation: DVB-S Q/8PSK, DVB-S2 Q/8PSK 45Mbaud		AZ930
Configuration options Category Max. 1 option per category		
Output HSSI Interface	max 52 Mbit/s	Default
	max 110 Mbit/s (extended)	AP-10
Input Interface	L-band	Default
	L-band + 10MHz	AJ-02
	IF+ L-band	AJ-03
	IF+ L-band + 10MHz	AJ-04
Modulation & Baud rate	DVB-S/S2 Q/8PSK 45Mbaud *	Default
	DVB-S/S2 Q/8PSK, 16QAM, 16APSK 45Mbaud *	AL-12
	DVB-S/S2 Q/8PSK, 16QAM, 16/32APSK 45/33Mbaud *	AL-16
Additional options Category Max. 1 option per category		
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