HZ914
Multistream Satellite Receiver
Horizon Product Family

horizon

Description

Newtec always aims to integrate the best performance and the newest technology in its products while maintaining their legendary reliability. With the HZ914 Newtec brings a state-of-the-art DVB-S2 satellite demodulator to the market with up to 4 ASI outputs designed for the Primary Distribution of Terrestrial and/or Mobile Television over satellite.

The HZ914 Multistream Satellite Receiver is fully compliant to the DVB-S2 standard. Multiple MPEG transport streams in a Multistream and/or VCM carrier can be extracted and demodulated by the HZ914. Multistream is a main advantage of the DVB-S2 standard that allows users to aggregate a number of independent transport streams or IP streams into one satellite carrier in a fully transparent manner, maintaining the integrity of the original content.
VCM (Variable Coding and Modulation) enables each of these streams to be modulated with its own parameters. Once received by the HZ914, the transport streams are separated again based on their DVB-S2 Input Stream Identifier (ISI). The HZ914 can simultaneously output up to 4 transport streams on ASI interfaces, plus a virtually unlimited number of IP streams on the GigaBit Ethernet port.

The HZ914 presents 4 ASI outputs. By default, only 2 ASI outputs are activated. An Ethernet output is standard in both configurations.

Among its capabilities, the features of the HZ914 that are of particular interest to the Primary Distribution of Television via satellite are:

- The ability to demodulate multiple transport streams from a single satellite carrier, in a way that guarantees the integrity of the content in order to be compatible with SFN operation.
- The ability to interface (via a GbE output) with equipment or networks that accept transport streams carried over IP with the RTP protocol.

The HZ914 supports the Input Stream Synchronizer (ISSY) operation mode of the DVB-S2 standard, which avoids jitter and time lapses in the television signal at the receiver's end.
The HZ914 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.

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 pre-distortion is applied .

The HZ914 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 HZ914 via RMCP or SNMP.

Key features

- Up to 4 ASI + GbE interfaces with integrated IP decapsulator
- DVB-S2 Multistream/VCM compliant
- QPSK, 8PSK, 16APSK and 32APSK
- ISSY synchronisation
- Aggregated data rates up to 120 Mbit/s
- Adaptive equalizer
- Noise & Distortion Estimator (NoDE) tool
- Support of Multistream and /or VCM operation
- Optional 10 MHz reference input/output

Main advantages

- Lower operational cost thanks to highest bandwidth efficiency
- Cost effective: Only 1 receiver required for reception of up to 4 independent transport streams.
- Fully compatible with the satellite DVB-S2 standard for a guaranteed interoperability
- Transparent operation compatible with SFN network
- High compactness: 1RU for reception of 4 transport streams.

Applications

Primary distribution of Mobile and Terrestrial TV
Broadcast contribution networks

Related products

AZ810 – Stream Aggregator
AZ110 – Broadcast Satellite Modulator
AZ910 – DSNG and Contribution Demodulator

Related documents

White paper on advantages of Multistream

Newtec

SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS

Specifications – HZ914(R2)

Input Interface

Dual L-band input (default)
- Connector 2 x F-type (F), 75 ohms
- Level -65/-25dBm
- Frequency 950 - 2150 MHz
- Return loss > 7 dB
- 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
- Level -55 to -15 dBm
- Frequency 50 - 180 MHz
- Return loss > 15 dB
- 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 & DiSEqC command transmission)
- 10 MHz reference

Demodulation

Supported modulation schemes and FEC
- 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
- DVB-S2 Multistream and VCM support

Max baud rates
- DVB-S2
  - QPSK/8PSK/16APSK 0,256 – 45 Mbaud
  - 32 APSK 1-33 Mbaud

Frame length
- DVB-S2 Short Frames 16200 bits
- DVB-S2 Normal Frames 64800 bits
- DVB-S/DSNG 188 bytes
  Mixing of normal frames & short frames not possible in Multistream

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

Output Interface

QUAD ASI (Asynchronous Serial Interface)
- Connector 4xASI
- 188 byte mode
- BNC (F) - 75 ohms (coax)
- Default: 2 ASI active, Optional: 4 ASI (SW upgrade)

Ethernet interfaces
- Auto switching 10/100/1000 Base-T Ethernet interface
  - Transport stream over IP (RTP/EDP) or data over IP interface
  - Layer 2 bridge mode: Ethernet frames over satellite (data piping)
  - Layer 3 bridge or router modes: IP packets over satellite using Multi Protocol (MPE) or Extended Performance (XPE) Encapsulation
  - Processing of up to 40 000 IP packets per second – maximum 50 Mbit/s

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 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

HZ914 MULTISTREAM SATELLITE RECEIVER		Order n°
Default Configuration		
DVB-S/S2 Demodulator with ASI and IP interface, Multistream, VCM, SNMP ASI outputs: 2 x ASI Input interface: L-Band Modulation & Baud rate: DVB-S Q/8PSK 16 QAM, DVB-S2 Q/8PSK 45 Mbaud		HZ914
Configuration options Category	Max. 1 option per category	
ASI Outputs	2 x ASI	Default
	4 x ASI*	HP-03
Input Interface	L-band	Default
	L-band + 10 MHz	HJ-02
	IF + L-band	HJ-03
	IF + L-band + 10 MHz	HJ-04
Modulation & Baud rate	DVB-S Q/8PSK 16 QAM, DVB-S2 Q/8PSK 45 Mbaud	Default
	DVB-S/S2 Q/8PSK, 16APSK 45Mbaud *	HA-12
	DVB-S/S2 Q/8PSK, 16APSK/32APSK 45/33Mbaud *	HA-16
Additional Options Category	Max. 1 option per category	
10 MHz reference In/Out	High Stability	GR-01
	Very high stability	GR-02

(*) upgradeable via license key

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