# HZ932

Newtec

horizon

## Dual Satellite Receiver and Deconcentrator

## Horizon Product Family

### Description

Large scale deployments of remote terrestrial transmission sites are the natural habitat for the HZ932 dual satellite receiver and deconcentrator. With the HZ932, Newtec equips transmission towers with satellite receivers in a budget-friendly way.

Transparent and efficient transport of content are key elements for each player in the primary distribution of terrestrial and mobile TV.

The HZ932 is the new member in the Horizon product family. It merges the functionalities of two HZ930 deconcentrator units into a single unit. The HZ932 makes use of the innovative proprietary concentration technology by Newtec. This technology combines up to 8 MPEG Transport streams into a single stream without changing their content. The resulting stream remains compatible with MPEG/DVB transmission equipment such as modulators or ATM interfaces.

The HZ932 is installed at the receiving end of Newtec's concentrator solution.

The HZ932 integrates two independent demodulators enabling it to receive two satellite signals simultaneously and extract up to 4 transport streams from each of them.

The high level of integration offers a cost and space efficient solution for highly demanding distribution environments and large scale deployments. The dual demodulator allows a multi-transponder configuration as the high number of Transport streams may exceed the capacity of one transponder.

The HZ932 supports both DVB-S and DVB-S2 modulation standards. A descrambling feature has been added to protect each stream individually against piracy

The HZ932 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 HZ932 via RMCP or SNMP.

### Key features

- Dual demodulator for simultaneous reception of two independent carriers.
- Deconcentrates each bundled Transport stream into 4 individual ASI streams
- Fully transparent and efficient transport of content without compromising the integrity of the original signal.
- Compliant to SFN requirements
- Each individual Transport stream can be descrambled independently
- Matrix routing enables extracting individual Transport streams from the concentrated bundle in order to send over to various access points in the network.

### Main advantages

- Reduced capital investment on hub and remote sites
- Lower operational costs thanks to efficient use of transmission bandwidth
- Cost-effective and easy to implement technology compared to traditional multiplexer solutions
- Protection of the data content against unauthorized access by other parties.

### Applications

1. Primary digital TV distribution

Newtec has engineered the perfect solution to increase the efficiency of satellite bandwidth usage. Transport streams from different broadcasters or intended for different regions can be bundled on the same satellite carrier. Cable head-ends and terrestrial/mobile TV remote transmitters can now benefit from optimized feeder links over satellite. Additionally this solution is fully compatible with SFN requirements and allows protecting the different transport streams independently.

2. ASI networking and routing

The matrix routing function enables routing between the multiple inputs and the multiple outputs of the concentrator and deconcentrator devices.
In a cabled or wireless network, the combined Transport streams can be deconcentrated and the signals extracted individually in order to send the required Transport streams to various access points in the network.

### Related products

AZ860 – Concentrator
HZ930 – Deconcentrator-Receiver
HZ410 – Multistream Transceiver
HZ420 – Intelligent Transceiver
AZ110 – Broadcast Satellite Modulator
AZ910 – DSNG and Contribution Demodulator

### Related documents

White paper on ASI concentration and deconcentration


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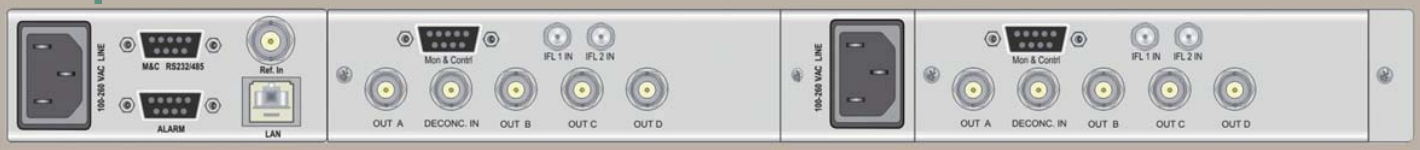
# Specifications – HZ932




## Interfaces

**L-band input : dual input, selectable (per demodulator)**

- Frequency range 950-2150 MHz
- Return loss > 7 dB (75 Ohm-F(F))
- Signal level -25 to -65 dBm
- Adjacent signal < (C0 + 7) dBm/Hz with C0 = signal level density

**ASI Deconcentrator outputs (default)**

- Connector 2x4 BNC female / 75 Ohm
- Level 800 mVpp ± 10%

## Performance

**Transport stream rate limits :**

4 Mbit/s (min) to 158 Mbit/s (max)

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

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

**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 | Es/No | Es/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 |

## Generic

**Control**

- Output select (per output) any TS, Concentrator or OFF
- Reference clock internal / external (optional)
- Scrambling mode ON/OFF per output
- Scrambling key 6 byte (per output)

**Monitoring**

- Alarms on all inputs
- All control parameters
- External reference alarm

**Monitor and control interfaces**

- Web server GUI (HTTP) via web browser
- Diagnostic report, alarm log (HTTP)
- RMCP over TCP-IP/UDP connector: RJ-45
- Ethernet 10base-T + MIB/SNMP
- RMCP over RS232/RS485 connector 9 pin sub D female

**Alarm interface**

- Electrical switch-over contact
- Connector 9-pins SUB-D Female interface

## Physical

- Very compact: 1RU, width 19", depth 45 cm, 4 kg
- Power Supply: 90-130 and 180-260 Vac, 40 VA, 47-63 HZ
- Temperature:
  Operational 0° to 40°C
  Storage -40° to +70°C
- Humidity: 5% to 85% non-condensing
- CE Label

## Ordering information

| HZ932 Dual Demodulator-Deconcentrator | | Order n° |
|---|---|---|
| **Default Configuration** | | |
| L Band – ASI Deconcentrator interface<br>DVB-S Q/8PSK 30 Mbaud<br>SNMP | | HZ932 |
| **Configuration options**<br>Category Max. 1 option per category | | |
| Modulation & Baud rate | DVB-S QSPK-8PSK 30Mbaud * | Default |
| | DVB-S QSPK-8PSK 45Mbaud * | HA-17 |
| | DVB-S QSPK-8PSK-16QAM 30Mbaud * | HA-03 |
| | DVB-S QSPK-8PSK-16QAM 45Mbaud * | HA-04 |
| | DVB-S/S2 QSPK-8PSK 30Mbaud * | HA-07 |
| | DVB-S/S2 QSPK-8PSK 45Mbaud * | HA-08 |
| | DVB-S/S2 QSPK-8PSK-16QAM/16APSK 30Mbaud * | HA-11 |
| | DVB-S/S2 QSPK-8PSK-16QAM/16APSK 45Mbaud * | HA-12 |
| | DVB-S/S2 32APSK 45Mbaud * | HA-16 |

(*) upgradeable via license key