EL940
Satellite IP Receiver
Elevation Product Family

ELEVATION

Description

The EL940 is a high performance professional satellite IP receiver designed for the reception of IP traffic transmitted over satellite in compliance with the DVB-S, DVB-DSNG or DVB-S2 standards. The EL940 connects directly to terrestrial IP network infrastructures via a single auto-switching Gigabit Ethernet interface. The receiver demodulates, restores and filters the data received from the satellite at rates of up to 154Mbit/s.

The EL940 comes with a single, fixed hardware configuration optimized for applications that requires a low initial investment without compromising on performance. It is ideally suited for point-to-multipoint applications, such as content distribution.

The PC architecture and the Linux operating system of the EL940 allows to integrate data processing software, such as Newtec's Tellitec IP software, directly on the unit (this integration may modify the performance of the device).

Key features

- DVB-S2 and DVB-DSNG/S compliant
- QPSK, 8PSK, 16APSK and 32APSK
- Multistream and VCM support
- Compatible with MPE and XPE encapsulation
- IP reception up to 154 Mbit/s
- Auto-switching GbE interface
- Linux-based PC architecture
- LNB control

Main advantages

- Cost-effective design for a low initial investment
- Full compatibility with the DVB-S/S2 standard for a guaranteed interoperability
- Highest service availability due to stable operation and robust build
- Advanced features for a maximum data throughput and operational flexibility
- Ideally suited for star topology
- Possible integration with data processing software

Applications

The IP receiver can be used in both bidirectional applications and in unidirectional applications.

- Content distribution: digital cinema, digital signage
- Primary distribution of IPTV
- IP trunking
- Corporate networking
- DSNG IP Applications

Related products

EL170 Satellite IP modulator
EL178 High Speed Satellite IP modulator
EL470 Satellite IP modem
EL478 High Speed Satellite IP modem
EL970 Satellite IP demodulator
EL978 High Speed IP Satellite Demodulator
EL8x0 Protocol Enhancement Proxy appliances

TL100 **TELLINET: IP traffic enhancement** and security software
TL200 **TELLICAST**: reliable IP multicast software
DVB-S2 link calculator (free download on www.newtec.eu)

Related Documents
White paper optimization of satellite capacity
Care Pack Brochure
Reference cases

Newtec

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Specifications – EL940(R6)

Input interface

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

LNB power and control
- max. current 350 mA (on selected L-band input)
- voltage 11.5-14 V (vertical polarization), 16-19 V (horizontal polarization) & additional 22 kHz ± 4 kHz (band selection according to universal LNB for ASTRA satellites) & DiSEqC command transmission (DVB-S only)

Demodulation

Baud rate range

- DVB-S/DSNG: 1-45 Mbaud
- DVB-S2 Q/8PSK, 16APSK: 0.256 -45 Mbaud
- DVB-S2 32APSK: 1 - 30 Mbaud (with option AL-15)

Supported modulation and coding types

- DVB-S/DSNG:
  Outer/Innner 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
- Support of DVB-S2 Variable Coding and Modulation (VCM) mode

Performance

DVB-S2 performances at PER 1E-5

Config	Short Frames < 15 Mbaud Es/No	Normal Frames < 45 Mbaud 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

Config	< 20 Mbaud Es/No	> 20 Mbaud 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

Supported frame length

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

Data Processing

- Maximum rate: 154 Mbit/s or 200,000 packets per second
- Supported data encapsulation protocol:
  Multi Protocol Encapsulation (MPE) (EN 301 192 V1.2.1).
  Extended Performance Encapsulation (XPE)
  - Newtec's highly efficient encapsulation protocol for theencapsulation of Ethernet/IP frames in DVB-S2 Base-Band frames
- Data filtering:
  - 1 stream in DVB-S2 Multistream
  - up to 256 configurable PID filters
  - one air MAC address filter

Output interface

Ethernet interface
- Auto-switching 10/100/1000 Base-T Ethernet interface

Generic

Monitor & Control
- Web based GUI
- Management via IP interface over Ethernet (UDP and TCP supported)
- Key monitor parameters available locally on front panel
- Device setup available through the front panel
- Real time clock
- Persistent memory for configuration storage

Physical

- Very compact: 1RU, width: 19", depth: 15,3", 6kg
- Power supply: 90-130 & 180-260 Vac, 60VA
- Temperature: - Operational: 5 to 35°C
  - Storage: -40 to +70°C
- Humidity: 5% to 85% non-condensing
- CE label

Ordering information

EL940 IP SATELLITE RECEIVER		Order n°
Default configuration		
DVB-S/DVB-DSNG-DVB-S2 IP receiver with GbE interface, MPE & XPE decapsulator, Multistream, VCM, L-band (950 - 2150 MHz) input, SNMP Modulation & Baud rate: DVB-S/DSNG/DVB-S2 Q/8PSK-16APSK-16QAM 45Mbaud		EL940
Configuration options		
Category	Max. 1 option per category	
Modulation & Baud rate	QPSK-8PSK-16APSK-16QAM 45Mbaud	Default
	Q/8PSK-16APSK-16QAM 45Mbaud, 32APSK 30Mbaud *	AL-15
Additional options		
Category	Max. 1 option per category	
Rack mount assembly Sliding rails		GM-01
Services		
Category		
Assistance	Care Pack Basic	GA-06
	Care Pack Extended	GA-07

* upgradeable via license key