

NTC/11130 IP modem

Elevation Product Family

ELEVATION

Description

The NTC/11130 is an IP modem specifically designed for the transmission and reception of IP signals over satellite in compliance with the DVB-S, DVB-DSNG or DVB-S2 standards. The NTC/11130 interfaces directly to terrestrial IP network infrastructures via a single auto-switching Gigabit Ethernet interface. The modem filters, encapsulates and modulates the data to be transmitted and simultaneously demodulates, restores and filters the data received from the satellite.

This advanced equipment supports all the advanced features of the DVB-S2 standard, including VCM (Variable Coding and Modulation), ACM (Adaptive Coding and Modulation) and the Generic mode (low overhead encapsulation). It is ideal to optimize the bandwidth efficiency of any satellite IP application at rates of up to 10 Mbits/sec in the uplink and up to 105 Mbits/sec in the downlink.

Key features

- DVB-S2 and DVB-DSNG/S compliant
- CCM, VCM and ACM enabled
- QPSK, 8PSK and 16APSK
- Modulator part up to 10 Mbps
- Demodulator part up to 105 Mbps
- Auto-switching GbE interface
- LNB and BUC support

Main advantages

- Highest bandwidth efficiency for reduced operational costs
- Cost-effective design for a low initial investment
- Full compatibility with the DVB-S2 standard for a guaranteed interoperability
- Highest service availability due to stable operation and robust build
- Large range of advanced features for a maximum data throughput and operational flexibility
- Ideally suited for star topology

Applications

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

- ISP applications: backhauling via star IP trunking network
- Corporate networking: satellite IP connection for remote sites
- Cellular networks: backhauling of mobile traffic over IP
- DSNG IP Applications: IP connectivity for remote vans
- Leased line in the sky: medium speed point to point links

Related products

NTC/11120 DVB-S2 IP receiver
NTC/2280/xx DVB-S2 High Performance Satellite Modulator

For an optimum end-to-end satellite IP network solution, this equipment can be combined seamlessly with the following software solutions from Tellitec. See www.tellitec.be for details.

TELLINET: high performance and bandwidth saving satellite and mobile TCP/IP communications through TCP acceleration, control traffic minimizing, HTTP prefetching and SMB/CIFS enhancement.

TELLICAST: a new dimension of secure and reliable IP multicast communication

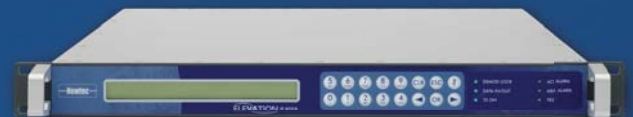
TELLISHAPE: traffic policing in shared networks and DVB-S2 XPE IP encapsulation.

Application notes:

NTC/2263xF/APN01 Performance comparison between NTC DVB-S and DVB-S2 demodulators
NTC/2263xF/APN02 Satmaster inputs for DVB-S2

DVB-S2 calculator:

Newtec has a useful link budget tool on its website, called the DVB-S2 calculator. This tool can be used to calculate the occupied bandwidth and the transmission performance on satellite.



Newtec
SHAPING THE FUTURE OF SATELLITE COMMUNICATIONS

www.newtec.eu

R3/12.2007

Specification IP modem

Supported modulation standards

Max baudrates

- DVB-S2
 - QPSK/8PSK 0,256 to 45 Mbaud
 - 16APSK 0,256 to 40 Mbaud
- DVB-S/DSNG 1-45 Mbaud

Frame length

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

Mixing of NF & SF not possible in multi-stream

Modulator

L-band operational output:

- level -50/-7 dBm (+/- 2dB)
- frequency 950 - 1750 MHz (adjustable in steps of 50 Hz)
- connector SMA (F), 50 Ohm
- return loss > 10 dB

BUC power and reference frequency

- max. current 1,5 A
- voltage 24V
- frequency 10MHz
- stability $\pm 5 \times 10^{-8}$ over 0°C to 65°C
- warm up time 5 min (± 100 ppb)
- ageing ± 15 ppb/day
- ± 300 ppb/year

Spurious performance

- better than - 65 dBc @ -10 dBm

Demodulator

DVB-S2 performances at PER 1E-5

Satellite baudrate:
QPSK/8PSK: 0,256 to 45 Mbaud
16 APSK: 0,256 to 40 Mbaud

	Short Frames	Normal Frames
	< 15 Mbaud	< 30 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

L-band input: dual input

- Frequency range 950- 2150 MHz
- Return loss >9 dB Level
- level signal -25 to -65dBm
- adjacent signal < (Co+7) dBm/Hz

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 \pm 4 kHz (band selection according to universal LNB for ASTRA satellites) & DiSEqC command transmission (DVB-S only)

Ethernet interface

- Auto switching 10/100/1000 Base-T Ethernet interface
- Interface rate: from 160 kbp/s up to 10Mbit/s (uplink)
160 kbp/s up to 105Mbit/s (downlink)
- Supported data encapsulation protocols
 - Data piping: for data transport compatible with DVB specifications
 - Ultra Lightweight Encapsulation (ULE) for transmission of IP datagrams over MPEG-2/DVB systems
 - Multi Protocol Encapsulation (MPE): for data transport compatible with the DVB specifications (EN 301 192 V1.2.1).
 - Extended Performance Encapsulation (XPE): Newtec's highly efficient IP encapsulation protocol for the encapsulation of IP frames in DVB-S2 base band frames
- Outbound forwarding to the satellite:
 - Up to 32 VLANs
 - Up to 255 MAC filters
 - Up to 255 IP routes
- Inbound forwarding from the satellite:
 - Up to 32 AirMAC filters
 - Up to 32 VLANs + gateway IP addresses
- Layer 2 bridge mode – Ethernet frames over satellite
- Layer 3 bridge or router mode – IP packets over satellite
- DVB-S2 multistream support:
 - 32 simultaneous DVB-S2 streams
 - CCM + VCM/ACM support

Generic

Monitor & Control interfaces

- input level -3 to +7 dBm
- output level +7 dBm
- connector BNC (F) – 50 Ohm

Monitor and control interfaces

- Web server GUI (HTTP) via web browser
- Diagnostics report, alarm log (HTTP)
- RMCP over TCP-IP/UDP and RS232/RS485
- SNMP v.2c/MIB (optional license)

Alarm interface

- Electrical dual contact closure alarm contacts
- Connector 9-pin sub-D (F)
- Logical interface and general device alarm

Current configuration automatically stored in persistent memory

Real time clock

Redundant operation

Via dual contact closure output, available for 2 types of summary alarms: one contact is operated in case of device alarms, while the other contact opens (or closes) in case of input or output interface alarm

Physical

- Very compact: 1RU, width: 19", 6,5kg
- Power supply: 90-130 & 180-260 Vac, 105 VA
- Temperature
 - Operational: 0°C to 40°C
 - Storage: -40 to +70°C
- Humidity: 5% to 85% non-condensing
- CE label

Ordering information

- Elevation IP modem: NTC/11130.NA.AAA
- 16APSK option for IP modem: NTC/11130.x.xx

Europe
Tel: +32 3 780 65 00
Fax: +32 3 780 65 49

North-America
Tel: +1 (203) 323-0042
Fax: +1 (203) 323-8406

South-America
Tel: +55 (11) 6192 6220
Fax: +55 (11) 6193 3756

Asia-Pacific
Tel: +65 6777 22 08
Fax: +65 6777 08 87

China
Tel: +86 10-823 18 730
Fax: +86 10-823 18 731

MENA
Tel: +971 4 390 18 78
Fax: +971 4 368 67 68

Africa
Tel: +27 11 640 2745
mbr@newtec.eu