• DESCRIPTION

The NTC/2281/xP modulator is fully compliant to the Chinese ABS-S standard for video broadcast transmission over satellite.

The NTC/2281/xP is a member of the field-proven modular Azimuth series and is designed to packetize, encode and modulate one MPEG Transport Stream. At the output, the signal is converted to an L-band signal (950-1750 MHz).

Designed for the broadcasting, contribution or distribution of digital television signals, the NTC/2281/xP provides a standard ASI and SPI-LVDS data input.

The NTC/2281/xP handles symbol rates from 1 up to 45 Mbaud, using a QPSK or 8PSK modulation scheme. The roll-off factor is selectable between 0.2, 0.25 or 0.35.

The NTC/2281/xP is standard equipped with an L-band output. An L-band monitoring output is provided for connection of e.g. an IRD or spectrum analyzer.

All Control and Monitoring parameters are available locally on the front panel (LCD display & keyboard) and remotely through a web interface (Http) or through the RS-485/232 port or through the 10/100 Base-T Ethernet port. The last two use the RMCPv2 protocol.

A dual contact closure output is 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 alarms.

• APPLICATIONS

Up to 45 Mbaud data rate transmission of satellite services such as broadcast, distribution or contribution of Digital TV (HDTV / SDTV) signals, Digital Satellite News Gathering, data content distribution, and other professional applications

• FEATURES

- ABS-S compliant
- Single input Transport Stream
- CCM (Constant Coding and Modulation)
- 1Mbps up to 120 Mbps interface rate (FEC- & modulation dependent)
- QPSK, 8PSK for optimal bandwidth Efficiency
- Automatic (redundancy switching) or manual ASI data input switching
- L-band monitoring output (fixed frequency)
- Programmable external LO frequency
- Level indication offset
- Programmable amplitude slope equalizer
- Local & remote M&C access to all menus through a
  - * web interface (HTTP protocol)
  - * RS-485/RS-232 (RMCP v2 protocol)
  - * 10/100 Base-T Ethernet port (RMCP v2 protocol)
- L-band output selectable
- User-programmable menu structure
- Action Keys (group of commands under single button)
- Real-time clock for alarm occurrence logging
- Internal test-generator and detector (PRBS counter)
- Very compact: 1Ru (height: 4.4 cm !)
- highly reliable Newtec design
- CE label
- Dynamic build-up of alarm menu
- Diagnostics generator

• VERSIONS & OPTIONS

1. Base Band Data Interface Module :

The modulator is equipped with an ASI/SPI/serial-LVDS interface card including an automatic rate adapter.

Option: Optical ASI interface

2. Modulator Board:

Modulation scheme: QPSK/8PSK
Symbol rate : max 45 Mbaud/sec

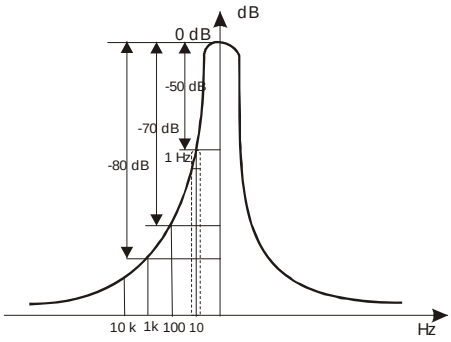
• DATA SUMMARY

DATA INTERFACE
- ASI/SPI/serial-LVDS (see data sheet NTC/3453.x.xx)

L-BAND OUTPUT
Operational output
Level : -7/-50 dBm (± 2 dB)
frequency : 950 - 1750 MHz (resolution 95 Hz)
connector : SMA (F) – 50 Ohm
return loss : >10dB

L-BAND MONITORING OUTPUT
level : -45 dBm
frequency : Frequency identical to operational output
connector : SMA (F) - 50 Ohm
return loss (50): > 7 dB

PHASE NOISE
10 Hz : < -50 dBc/Hz
100 Hz : < -70 dBc/Hz
1 kHz : < -80 dBc/Hz
10 kHz : < -85 dBc/Hz
100 kHz : < -95 dBc/Hz



SPURIOUS
better than 65 dBc @ -10 dBm

ABS-S COMPLIANT
Single Transport Stream/data Input interface

LDPC CODING
1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 13/15, 9/10
4, 6, 8 and 10 code words of 15360 coded bits per frame
For QPSK or 8PSK

BIT MAPPING
QPSK, 8PSK
Fixed physical layer frame-sizes of 30848 symbols without pilots, 31676 symbols with pilots

INTERNAL REFERENCE FREQUENCY
- standard : ± 5 ppm
Ageing : ± 5 ppm/10 years

MONITOR & CONTROL INTERFACES :
a) protocol : HTTP (via web-browser)
connector : RJ-45
electrical : Ethernet 10 base-T
b) protocol : RMCP **version 2 only**
connector : 9 pin sub-D female
electrical : RS-485 / RS-232
c) protocol : RMCP **version 2 only** over TCP-IP or UDP, SNMP
connector : RJ-45
electrical : Ethernet 10 base-T

ALARM INTERFACE :
connector : 9 pin sub-D (F)
electrical : interface + device alarms

MECHANICAL :
19" sub rack, height: 1RU, weight 6 kg, depth 51 cm

POWER SUPPLY :
90-130/180-260V, 105VA, 47-63 Hz

TEMPERATURE:
operational : 0° up to +40°C
storage : -40° up to +70°C

Control

Physical input selection, (ASI/SPI), interface rate (1 bit/s resol.) and symbol rate (1 baud resol.), data framing (MPEG TS internal/external), rate adaptation, input buffer size, FEC-rate, Modulation scheme, pilots, L-band frequency (95 Hz resol.), internal PRBS generator/detector

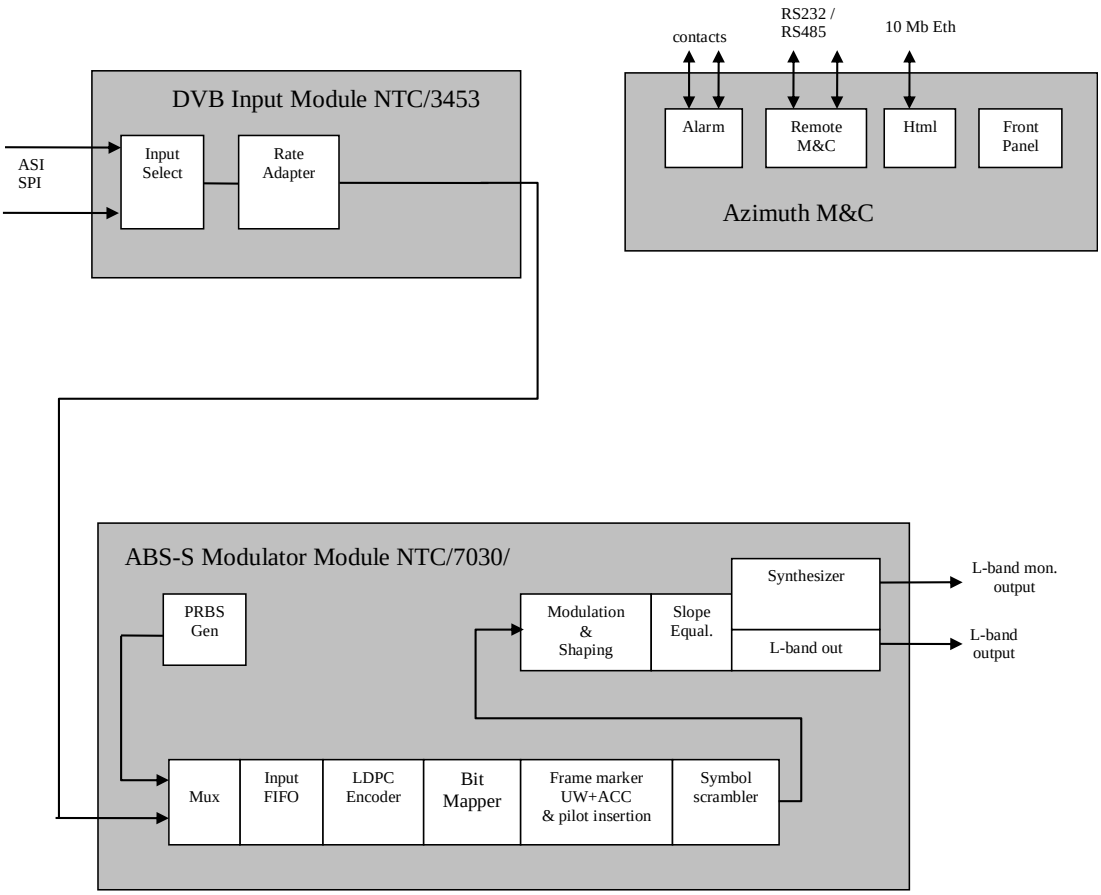
Performance

Interface rate vs satellite baud rate in ABS-S mode, no pilots

Satellite baud rate: 1Mbaud to 45 Mbaud

		Bandw./interf.R (35% Roll-Off)			
modul	**FEC**	1Mbaud	45 Mbaud	-3dB	-26dB
QPSK	**1/2**	1,00	44,84	1,009	1,362
QPSK	**3/5**	1,20	53,85	0,840	1,134
QPSK	**2/3**	1,33	59,86	0,756	1,020
QPSK	**3/4**	1,50	67,37	0,672	0,907
QPSK	**4/5**	1,60	71,87	0,629	0,850
QPSK	**5/6**	1,66	74,88	0,604	0,816
QPSK	**13/15**	1,73	77,88	0,581	0,784
QPSK	**9/10**	1,80	80,88	0,559	0,755
8PSK	**3/5**	1,80	80,79	0,560	0,756
8PSK	**2/3**	2,00	89,8	0,504	0,680
8PSK	**3/4**	2,25	101,1	0,448	0,604
8PSK	**5/6**	2,50	112,3	0,403	0,544
8PSK	**13/15**	2,60	116,8	0,387	0,523
8PSK	**9/10**	2,70	121,3	0,373	0,503

- **BLOCK DIAGRAM**



For further information please contact:
sales@newtec.be (European & African customers, general enquiries)
sales@newtecamerica.com (Newtec America)
sales@newtec.com.sg (Newtec Asia Pacific)
sales@newtecchina.com.cn (Newtec China)
sales@newtecmena.com (Newtec Middle East & North Africa)

Main Office
Laarstraat 5, B-9100 Sint-Niklaas, Belgium
Tel: +32 3 780 65 00
Fax: +32 3 780 65 49