NTC7072/AB
DVB–S/S2 Demodulator Board
OEM Product

Description

The NTC/7072 board is a state-of–the-art professional DVB-S2 demodulator specifically designed for satellite distribution applications. The NTC/7072 operates in DVB-S, DVB-DSNG and DVB-S2. Available to third party manufacturers under OEM agreement, the NTC/7072 is the ideal cost effective solution for the demodulation of DVB-S/S2 carriers in IRDs, IP receivers, and Mobile or Digital Terrestrial TV transceivers.

The demodulator board is capable to demodulate an MPEG transport stream in DVB-S, DVB-DSNG and DVB-S2 up to 45 Mbaud.

The NTC/7072 has a dual L-band input (950-2150 MHz). The active input is selectable and can provide DC power and frequency band selection signals compatible with most professional and commercial LNBs.

The demodulator board delivers an MPEG transport stream on a parallel output.

To compensate for linear distortion in the transmission channel, the NTC/7072 is equipped with an adaptive equalizer in DVB-S2 mode.

The demodulator board provides a comprehensive range of monitoring and control functions. The monitoring and control is performed through an I^2C or a TTL asynchronous serial link interface using the Newtec RMCP protocol.

Key features

- DVB-S / DVB-DSNG compliant
- DVB-S2 compliant (CCM, single stream)
- QPSK / 8PSK / 16QAM / 16APSK modulation schemes
- DVB-S / DSNG: 1 to 45Mbaud
- DVB-S2: 3 to 45 Mbaud
- Dual L-band input
- Automatic ModCod detection
- Adaptive equalizer in DVB-S2 mode
- LNB power and control
- Monitoring and control via RMCP

Main advantages

- Reduce time to market
- Easy integration
- High compactness
- Low cost
- Guaranteed interoperability with DVB modulators
- High versatility and flexibility

Applications

- Primary distribution
- IP trunking
- Data broadcast

Related products

NTC/7044/BB DVB-S/S2 Demodulator Board

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Specifications – NTC7072/AB

Input interface

Dual L-band input

- Connector: 2 x F-type (F), 75 ohms
- Min level: -65 dBm+10 log(Baud rate) Baud rate in Mbaud
- Max level: -25dBm
- Frequency: 950 - 2150 MHz
- Return loss: >9 dB
- adjacent signal: < (C0 + 7) dBm/Hz with C0 = signal level density

LNB Power & Control

- Current: max 450 mA (on selected L-band input)
- voltage: 11.5-14 V (vertical polarisation)
  16-19 V (horizontal polarisation)
  & additional 22 KHz ± 4 kHz (band selection according to universal LNB for ASTRA satellites)

Demodulation

Supported modulation schemes and FEC

- 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: 1/2, 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

Min - Max baudrates

- DVB-S2
  QPSK/8PSK/16APSK: 3 - 45 Mbaud

- DVB-S/DSNG
  QPSK/8PSK/16QAM: 1 - 45 Mbaud

Frame length

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

Roll-off factor

- DVB-S2: 20 % - 25 % -35 %
- DVB-S-DSNG: 25% - 35 %

Performance

DVB-S2: Specification for BER=1E-7

Config	Short Frames	Normal Frames
QPSK- 1/2	1.0	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	10.2	10.0
16APSK- 3/4	11.4	11.2
16APSK- 4/5	12.2	12.0
16APSK- 5/6	12.9	12.6
16APSK- 8/9	14.2	13.9
16APSK- 9/10	-	14.1

DVB-DSNG: Specification for BER=1E-7 after RS

Config	Eb/No (dB)	Eb/No (dB)
	< 20 Mbaud	> 20 Mbaud
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

Output interface

Data output

- Connector: HE10 50 pin

Physical

- Mechanical: Single PCB, 160 x 100 mm

- Power supply
  Main: +5V ± 5% at 2 A
  Secondary: +10V / 0.18 A to +15V / 0.08 A (no LNB current)
  +10V /1.2A to +15V / 0.7A (350 mA LNB current)
- Temperature
  - Operational: 0°C to 50°C
  - Storage: -40 to +70°C

Generic

Monitor and control interfaces

On same connector as Data outputs

- I^2C
- Async serial TTL link, even parity, 1 start, 1 stop bit, Baudrate 9.600 (default) to 115.2 kbaud, RMCPv2 protocol

Control

- Interface and symbol rate
- Roll-off factor
- Decoding & Demodulation Mode
- Spectrum Inversion On/Off/Auto
- Acquisition range
- LNB band and polarisation selection (13/18 V and 22 kHz)
- IFL input selection (A or B)
- Global reset

Monitoring

- All control parameters
- Input level, carrier & clock frequency offset
- Uncorrectable base-band frames count (DVB-S2)
- Es/No (DVB-S2)
- Eb/No (DVB-S/DSNG)
- Uncorrectable TS packets count (DVB-S/DSNG)
- Estimated BER after decoding (DVB-S/DSNG)
- Sync status, alarms
- Board + firmware version

Ordering information

NTC/7072/AB		Order n°
Default configuration		
NTC7072/AB DVB-S/S2 Demodulator Board DVB-S/DSNG/S2 Q/8PSK 30 Mbaud		NTC/7072/AB BOBC
Configuration options Category	Max. 1 option per category	
Modulation & Baud rate	DVB-S/DSNG/S2 Q/8PSK 45 Mbaud	BOBD
	DVB-S/DSNG/S2 Q/8PSK/16QAM/16APSK 30 Mbaud	BOCC
	DVB-S/DSNG/S2 Q/8PSK/16QAM/16APSK 45 Mbaud	BOCD

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