



# ETX-200

## COFDM Processor

Art. no: 115200.01

## PRODUCT INFORMATION

### ETX-200

The ETX-200 is a part of the A2B EXM-system.

The EXM-system receives, handles, decodes, remuxes and remodulates any digital TV source to most other digital or analogue output format.

The ETX-200 is a digital terrestrial receiver and processor that handles input signals in DVB-T in MPEG-2 and MPEG-4 formats.

### Features:

- Complete DVB-T receiver
- ASI input and output <sup>1)</sup>
- Decryption of services via CI connection
- Embedded remultiplexer for creating your own output multiplexes <sup>1)</sup>
- IPTV output <sup>1)</sup>
- Simulcrypt SW option for encryption
- QAM (DVB-C), COFDM (DVB-T) or Analogue VSB-AM modulator output. <sup>1)</sup>
- Embedded web server for controls and settings
- SNMP Interface for surveillance
- Extremely compact design and low power consumption
- Extremely high flexibility
- SW options for adding new functionality
- Designed for environmentally friendly manufacturing and operation

<sup>1)</sup> Depending on selected software options



This product information relates to software version 1.22

# design for TV

# ETX-200 COFDM processor

## TECHNICAL SPECIFICATION

(This specification may be subject to change without notice).

### Connectors and Interfaces

Control and IP out connector	RJ-45 (10/100 BaseT)
RF input connector	F female, 75 $\Omega$
RF output connector	F female, 75 $\Omega$
ASI input connector	BNC female, 75 $\Omega$
ASI output connector	BNC female, 75 $\Omega$
CAM connector	PCMCIA (5 VDC)
LED Indicator lights	Power on, QPSK/8PSK/Rx error TX/Access error
SNMP Interface	RJ-45, 10/100 BaseT
Audio/Video out connector,	3,5 mm, 4-pole

### MPEG Decoder - Video

Supported formats	MPEG2 MP@ML, MPEG4 H.264 AVC
Output standards	PAL, SECAM or NTSC
Impedance	75 $\Omega$
Output level	1 Vpp @ 75 $\Omega$
Aspect Ratio	Letterbox, Pan/Scan, or conversion Combined (14:9) programmable, WSS
Teletext	Insertion in VBI
Subtitling	Teletext or DVB subtitling
Decryption	Common Interface (PCMCIA 5 VDC)

### COFDM Terrestrial Receiver

Input frequency	50 - 858 MHz (centre freq.)
Input freq step size	250 kHz
Input level range	-60 to -30 dBm *)
Input impedance	75 $\Omega$
Input return loss	12 dB
C/N limit	18 dB *)
Bandwidth	6/7/8 MHz
DVB compliance	DVB-T
Co/adj channel PAL	Compliant to Nordig 2 PAL
Automatic mode change recovery	Yes
Echo performance	Compliant to Nordig 2 unified

\*) QEF reception with test signal: 8k, 64QAM, 1/8 guard interval, 2/3 FEC

### RF Modulation (analogue)

Standards	B/G, I, D/K, L, M/N
Sound	Mono, NICAM stereo, A2/A2* stereo
Modulation video	VSB AM, neg. or pos.
Modulation mono	Audio FM or AM
Output frequency	47 - 862 MHz
Output level	$\geq 110$ dBuV (47-470 MHz) $\geq 105$ dBuV (470-862 MHz)
S/N, weighted	$\geq 57$ dB
C/N, broadband	$\geq 70$ dB
NICAM standards	NICAM 728 (EN 300 163)
Power ratio	B/G -20dB, (Vision/NICAM carrier) I -24dB, D/K -24dB, L -27dB
Tolerance	+/- 1dB
Impedance	75 $\Omega$

### MPEG Decoder - Audio

Supported formats	MPEG 1 layer II, AAC HE, selection of Dual mono in Stereo or Mono
Output	
Impedance	< 100 $\Omega$
Output level	0 dBu
Level adjustment	+3 to -9dB

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### QAM modulation (Option)

QAM modes	16, 32, 64, 128 or 256 QAM
Symbol rate	4 – 7.2 Mbaud/s
MER (at RF out)	> 38 dB for 256-QAM
DVB compliance	DVB-C (EN 300 429)
QAM output frequency	47 - 862 MHz (1 kHz step)
Output level	Min 105 dBuV (47-470 MHz) Min 100 dBuV (470-862 MHz)
PSI/SI management	Yes
Remultiplexing	Yes

### COFDM modulation (Option)

COFDM mode	2K
Guard interval	1/32
FEC	7/8
MER	>34 dB
DVB compliance	DVB-T (EN 300 744)
Max output bit rate	32 Mbit/s (8 MHz bandwidth)
Output frequency	47 – 862 MHz (1 kHz step)
Output level	Min 100 dBuV (47-470 MHz) Min 95 dBuV (470-862 MHz)
PSI/SI management	Yes
Remultiplexing	Yes

### IPTV out (Option)

Max output bit rate	55 Mbit/s <sup>2)</sup>
Connector	RJ 45 (same as control)
Output protocol	UDP, Multicast and Unicast
PSI/SI management	Yes
Remultiplexing	Yes

<sup>2)</sup> Single SPTS/MPTS and only IPTV as output

### Graphical User Interface (GUI)



Graphical User Interface for easy set up of complex systems. Simple handling of remultiplexing and creation of new multiplexes from any input.

Default settings of PSI/SI tables to avoid clashes in the output multiplexes. Simple menu structure for setting input, output and processing parameters.

Each ETX-200 contains an embedded web server. Standard web browsers (Internet Explorer 8, Mozilla Firefox etc.) are supported

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### ASI input(option) - output

ASI bit rate	270 Mbit/s
Max payload bit rates:	
Input bit rate	55 Mbit/s <sup>3)</sup>
Output bit rate	55 Mbit/s <sup>3)</sup>
PCR restamping	Yes
PSI/SI management	Yes
Remultiplexing	Yes

<sup>3)</sup> The input, output and throughput bit rate is highly dependent on the type of application that is running in the unit.

### Remultiplexing

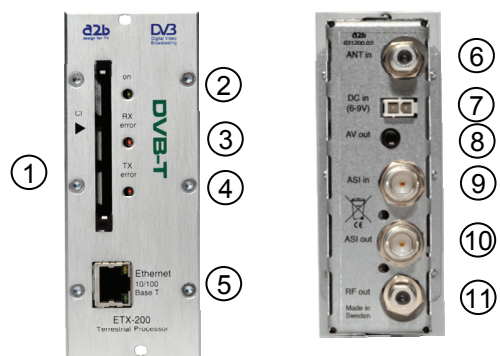
Each ETX-200 contains a remultiplexer for 2 incoming transport streams. The transports streams can be received from satellite and from the ASI input. PID remapping is made automatically. LCN (Logical Channel Number) can be chosen.

The following components can be remultiplexed:

Audio, Video, Subtitling, PAT, PMT, NIT actual, EIT, CAT, SDT, TDT, TOT.

IP connection between EXM units in a system is required for NIT, EIT other and SDT other.

### Connections and indications



- |                          |                   |
|--------------------------|-------------------|
| 1. Common Interface slot | 6. DVB-T input    |
| 2. "On" indicator        | 7. Supply voltage |
| 3. COFDM error           | 8. A/V output     |
| 4. Access or TX error    | 9. ASI input      |
| 5. Ethernet connection   | 10. ASI output    |
|                          | 11. RF output     |

### Miscellaneous

Power supply	7,5 VDC nom. (6-10 VDC)
Power consumption	Typ. 13 W
Dimensions	165x105x37 mm (ex. connectors)
Weight	Approx. 390 g
Controller	Embedded web server
Operating temperature	-20 to +50°C, non condensing

645200.01 rev E FW 1.22

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