

DATASHEET



COD882MSL **Eight channel DTV server**

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2. Overview

COD882MSL is a compact size eight channel DTV server. It is able to convert up to 8 independent analog A/V signals into D1 resolution digital streams, compressed with 8 independent MPEG2 encoders and multiplexed into a single prepared for DVB broadcast MPEG2 MPTS stream. Embedded DVB-CAS scrambler and CAS Crypton SMS generator makes it possible the device to be used in the networks where conditional access is applied. Additionally DVB SDT, EPG, NIT, TOT and TDT tables can be injected into the output transport stream. Embedded DVB-S modulator output L-band upconverted QPSK modulated signal.

All device control, service information and subscriber, in case of conditional access, management is performed with DTV Master that is a program from Crypton Software Suite.

Ethernet is used to controll all Crypton devices from a single host PC via TCP/IP connections.

COD882MSL is basically applied in CATV, MMDS, LVDS, IPTV or other Digital TV Distribution networks.

3. Features

- **Eight analog inputs.** Up to 8 independent analog A/V signals are converted into D1 resolution digital streams, compressed with 8 independent MPEG2 encoders and multiplexed into a single prepared for DVB broadcast MPEG2 MPTS stream.
- **Different video/audio stream bitrates.** It's possible to set up different video and audio bitrates individually for every of the channels. Flexible channel settings let you employ your frequency resource efficiently. Dynamic programs usually require more bitrates but slow picture changes need less bitrates with no significant loss of quality.
- **Constant or variable MPEG2 encoder modes.** You can chose constant or variable bitrates MPEG2 encoder mode depending of the picture quality or dynamics requirements. Usually variable bitrates is more efficient for fast changing events such as sports or music video programs.
- **Video filter.** You can use different bandwidth video filters. That feature can help you to save your frequency resources if the noisy input signal must be used.
- **TV or radio programs.** Every program stream can be configured as TV, when both video and stereo audio data are transmitted, or radio if only audio transmission is required.
- **Switching off the programs.** Every program data can be independently removed from the output multiplex if by some reason you may need it. No other program data will suffer from such a switching off/on actions
- **Independent change of program settings.** Independent from other programs settings change mechanism sometimes is required during long time nonstop broadcasting. Such settings changes do not affect other programs changes.



- **Conditional access.** You may arrange Conditional access to each of the programs in accordance with DVB-CAS (ETR-289). Subscriber management is provided in accordance with DVB Symulcrypt technology and uses CAS Crypton data scrambling and synchronization mechanism.
- **DVB EPG.** The device is able to inject DVB-EPG tables in accordance with EN300468. It provide you with an easy mechanism to arrange electronic TV program guide for your network.
- **DVB NIT.** DVB-NIT injection techniques provide your network with automatic program search capability .
- **TOT, TDT.** TOT and TDT tables let you support you network time services.
- **DVB-S output .** Completely multiplexed and prepared for broadcast MPEG2 MPTS is fed to the input of the embedded DVB-S modulator that output L-band(950-1750 MHz) up-converted signal.
- **TCP/IP control.** All crypton devices along with host PC can be combined in one Ethernet network. TCP/IP network protocol is used to control the devices from a host PC.
- **Control Software.** “Crypton Software Suite” is used for device control, CAS Crypton subscriber management, EPG data edit and performing other services that may be required during your network operation.

4. General description

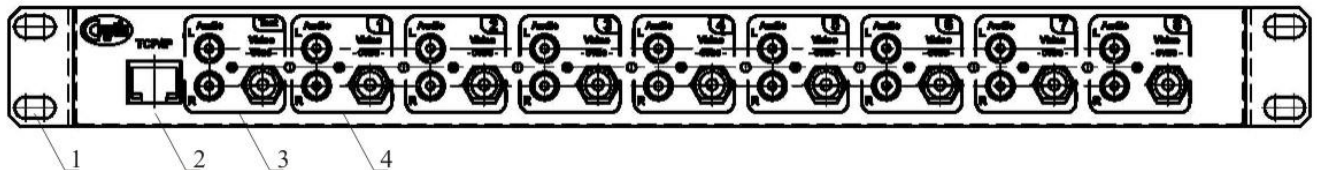


Fig. 1 Front pannel

1. Mounting holes;
2. RJ45 for TCP/IP network device control. Only use crossover cable for direct connection the device to a host PC. Use patch cable if ethernet switch(hab) is used.
3. Diagnostic video output is used for device operation control. Leave it open in normal operation mode;
4. Eight CVBS Video and stereo audio inputs.

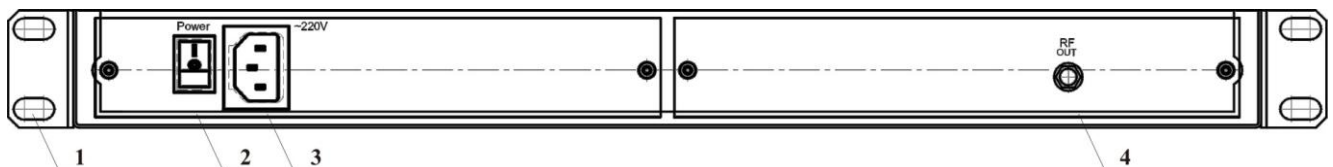


Fig. 2 Rear pannel

1. Mounting holes;
2. Power switch;
3. Power socket, 90...260 V, 50/60 Гц;
4. DVB-S modulator output.

5. Functional block diagram

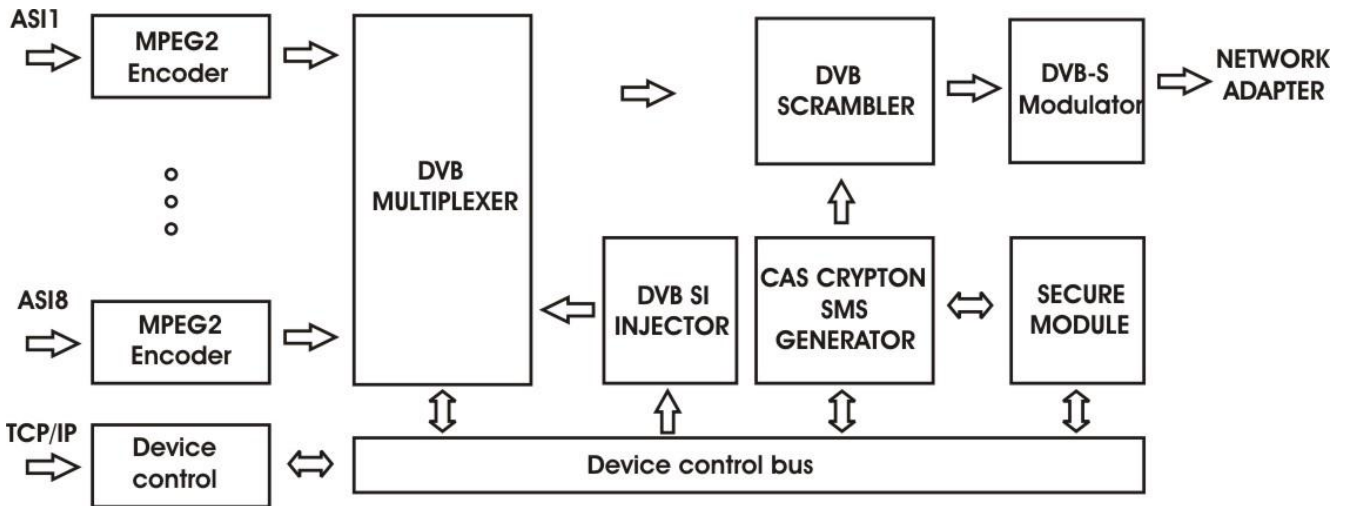


Fig. 3. COD882MSL functional block diagram.

MPEG2 Encoder. MPEG2 Encoder module converts CVBS video and stereo audio signals into MPEG2 video and MPEG1 layer 1,2 compliant audio digital streams.

DVB Multiplexer. Eight simultaneous Digital Video program streams along with injected Service Information(SI) and CAS Crypton subscriber management data are multiplexed in a single MPEG2 Multi Program Transport Stream(MPTS).

DVB Scrambler. DVB-CAS(ETR-289) scrambler is able to simultaneously(CWs are independent for each program too) encrypt each of the programs in the output TS.

DVB SI Injector. DVB SI Injector provide output TS with PAT, PMT tables compliant to ISO/IEC13818-1 and additionally SDT, NIT, TOT, TDT, EIT table according to ETSI EN 300468.

CAS Crypton SMS Generator. CAS Crypton SMS Generator provides the output TS with proper subscriber control messages, to arrange conditional access to your network Digital TV programs and reliable CAS synchronization mechanism.

SECURE MODULE. Secure module protects the device secret data from external intrusion and provide CAS Crypton safe and reliable operation.

DVB-S Modulator. DVB-S modulator output QPSK modulated and L-Band upconverted signal.

Device Control. Device control module is used for interfacing the device to a host PC via TCP/IP network and performing all other device management routines.

6. Technical specification

Parameter	Parameter value	Notes
Video inputs		
number of Inputs	8	
Signal type	CVBS	BNC(75 Ohm)
Audio inputs		
number of Inputs	8	
Signal type	Stereo	RCA(10 kOhm)
Encoding		
Video	MPEG2 Video MP@ML	ISO/IEC13818-2
Audio	MPEG1 Audio Layer 1/2	ISO/IEC11172-3 Sample rate 44.1кГц, Bit rate < 384кбит/с
Multiplexing	MPEG2 System TS	ISO/IEC13818-1
Conditional access		
Scrambling technology	DVB-CAS	ETR289
Conditional Access System	CAS Crypton	
Service Information	SDT, TOT, TDT, EIT, NIT	EN300468
Output	DVB-S modulator	EN300421, SMA(50 Ohm)
Frequency band, MHz	950 - 1750	Optionally 1500 - 1900

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Symbol rates, Msps	25 - 30	Optionally other value
Out of band emission, dB	< 40	
Carrier harmonics, dBc	< 30	
Carrier phase noise, dBc 1 kHz 10 kHz 100 kHz	70 80 90	
MER, dB	> 18	950 – 1750 МГц
Output power, dBm	-10 to 5	950 – 1750 МГц
Device control	100Mbps Ethernet, TCP/IP	RJ45 type connector
Control software	Crypton Software Suite	
Power supply, V	90 - 260	50/60 Hz
Power, W <	60	
Nominal temperature	10 – 30	°C
Size		
Width, mm	485	
Depth, mm	406	
height, mm	44	

7. Abbreviations

DVB	-	Digital Video Broadcasting
DTV	-	Digital Television
SI	-	Service Information
QPSK	-	Quaternary Phase Shift Keying
MMDS	-	Multichannel Multipoint Distribution System
SMS	-	Subscriber Management System
FEC	-	Forward Error Correction