

COD982MSL

Datasheet



DATASHEET



COD982MSL
PAY TV REMULTIPLEXER

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2. Overview

COD982MSL – is a multifunctional eight ASI input DVB remultiplexer with embeded DVB Scrambler and CAS Crypton SMS generator for Pay TV. Additional DVB EPG, NIT and other DVB SI injection modules let you build the DTV distribution network with minimum expences and maximum efficiency. Embedded DVB-S modulator outputs upconverted to L-Band QPSK modulated IF signal.

All Crypton devices control, CAS subscribers management, EPG control etc. is performed from a single host PC located in the same Ethernet network as the controlled Crypton devices.

TCT/IP network protocol is used for communication reliability.

Crypton Software Suite is a set of device and CA control software utilities that once installed at the host PC makes your broadcast network resources management easy and comfortable.

Application: DVT Cable Networks;
DTV MMDS;
DTV LVDS;
IPTV.

3. Features

- **Eight ASI inputs:** The transport streams coming from different sources (for example, from professional digital receivers with ASI outputs) are received to 8 ASI inputs. There are up to 24 programs which can be selected from the inputs. After being multiplexed the programs are arriving to the DVB scrambler and then to the device ASI output or embedded DVB-S modulator.
- **Higher-priority multiplexing.** Flexible channel settings let you employ your frequency resource more efficiently. Higher priority can be assigned to the dynamic picture programs thus providing their passing the channel with a maximum quality.
- **Multiplexing Quality estimation.** To use the channel capacity more efficiently many digital TV-programs are broadcasted with a variable stream rate presenting some difficulties for cable operators while remultiplexing these programs. Quality analyzer of multiplexing estimates a proper generation of a new multiprogramm transport stream by gathering information of exceeding allowable transmission channel bit rate for a selected time span.
- **Service information editing.** To achieve an extra flexibility when generating a new multiprogramm transport stream the service information editing function is applied.
- **DVB NIT/EPG support.** COD982MSL can support DVB NIT/EPG. NIT/EPG subsystem is fully corresponds to DVB specifications and can be received by any subscriber receivers supporting the functionality.
- **Conditional Access System.** DVB scrambler and CAS Crypton SMS generator let you employ COD982MSL to provide conditional access in digital television broadcast networks. It is important to mention that high-reliable CA operation is achieved due to a simultaneous CAS Crypton SMS generator is embedded into each device and only periodic host PC intrusion is required to update subscriber information or EPG data. Up to 24 programs can be arranged into 8 scrambling control groups each having its independent scrambling key and list of subscribers who are allowed to preview the program at the present time.
- **ASI output.** COD982MSL DVB ASI output supports bite/packet, 188/204 byte operation modes according to EN50083-9.
- **DVB-S modulator.** Embedded DVB-S modulator is able to output new multiplexed MPTS as upconverted to L-Band QPSK modulated IF carrier signal.



- **TCP/IP control.** All Crypton devices are controlled via TCP/IP network with software package "Crypton Software Suite" installed on a host PC.
- **Reloadable Software.** Address Device Firmware update can be made with a special FW update module of "DTV Master", the basic control program of "Crypton Software Suite".

4. General description

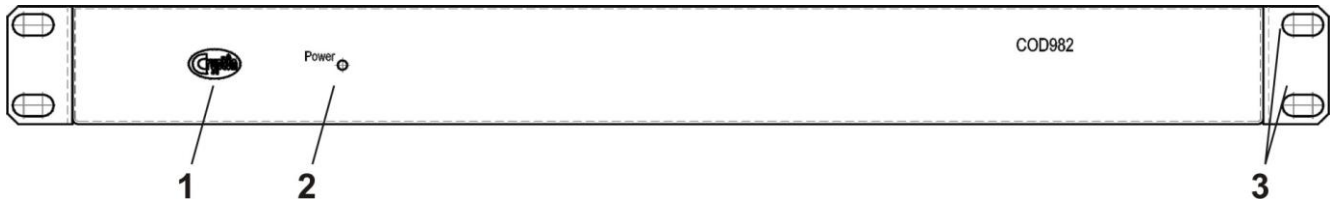


Fig. 1 Front panel

1. Front panel;
2. Power Led;
3. Mounting holes.

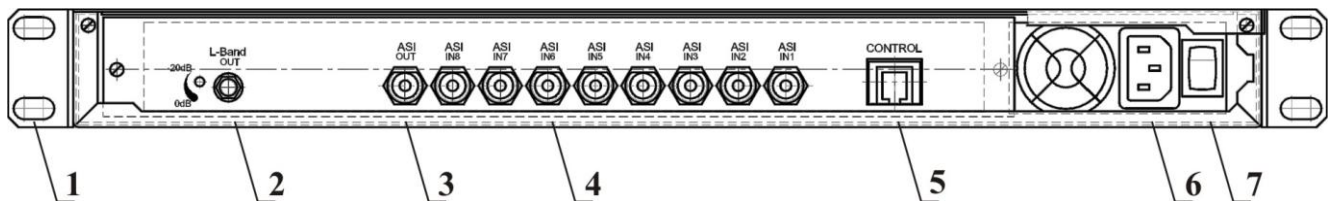


Fig. 2 Rear panel

1. Mounting holes;
2. DVB-S modulator output
3. DVB-ASI output;
4. 8 DVB-ASI inputs;
5. RJ 45 for device control over TCP/IP;
6. Power socket, 90...260 V, 50/60 Гц;
7. Power switch;

5. Functional block diagram

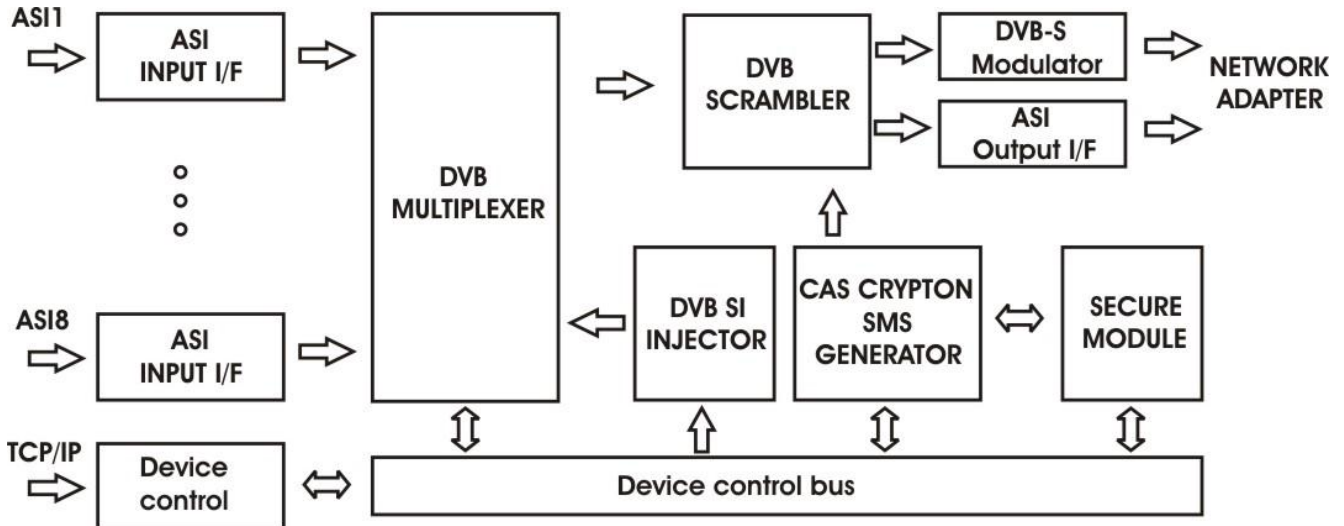


Fig. 3. COD982MSL functional block diagram.

ASI INPUT I/F. DVB ASI interface is used as input and output interface of digital transport stream transmission according to EN 50083-9. All basic modes are supported: «byte/packet», «188/204 byte». The source mode is determined automatically by ASI module.

DVB Multiplexer. Up to 24 programs, from up to 8 MPTS streams that come from ASI inputs can be selected for new multiplex. Program priority assignment system allows high priority services be multiplexed without any data loss when under some circumstance (sudden bitrate increase at high priority programs) low priority program are allowed to slightly lose in quality. Service information editing is also supported on COD982MSL according to EN300468.

DVB Scrambler. The scrambler used in COD982MSL is a DVB-compatible in accordance with DVB-CAS (ETR-289). DVB services can be scrambled selectively and belong to any one of up to 8 scrambling control groups that can be arranged on a single device. Maximum 24 programs can be individually scrambled on each of the devices.

CAS Crypton SMS Generator. CAS Crypton SMS messages are generated locally from the subscriber lists (lists of subscribers who are permitted to watch the program) for each of up to 8 scrambling control groups assigned to each of the devices in your network.

DVB SI INJECTOR. Service information injector is designed for embedding service tables such as SDT, NIT, EIT (EPG), TOT and other DVB service information into the output transport stream.

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SECURE MODULE. Secure module is used to protect the system secret information.

Device Control. Device control module is used for managing COD982MSL by aid of “Crypton Software Suite” installed on a host PC of a network operator.

DVB-S Modulator. Embedded DVB-S modulator is able to output new multiplexed MPTS as upconverted to L-Band QPSK modulated IF carrier signal.

6. Technical specification

Parameter	Parameter value	Notes
Inputs	8 multiprogramm DVB-ASI inputs	EN 50083-9 specification, BNC connectors (75 Ohm)
Multiplexing	MPEG2 System TS	ISO/IEC13818-1
Maximum number of programs being multiplexed	24	
Conditional Access		
Scrambling technology	DVB-CAS	ETR289
Conditional Access System	CAS Crypton	
Maximum number of programs being scrambled	24	
Maximum number of scrambling control groups	8	
Service Information	SDT, TOT, TDT, EIT, NIT	EN300468
Outputs		
ASI	DVB-ASI	EN 50083-9 specification, BNC connector (75 Ohm)
Maximum bitrate of output stream Mbit/s	54	
DVB-S modulator	QPSK	EN300421
Frequency band, MHz	950 – 1750	Optionally 1450 - 1950
Symbol rate, Mbps	25 – 28	
Spurious, dBc/4kHz	< 40	

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Carrier harmonics, dBc/4kHz	< 30	
Carrier phase noise, dBc 1 кГц 10 кГц 100 кГц	70 80 90	
MER, dB	> 18	950 – 1750 МГц
Output power, dBm	-10... +5	950 – 1750 МГц
Connector	SMA	50 Ом
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