DATASHEET

COD912MSL
CAS Crypton Scrambler

Company Crypton, Ocotober, 2009

1. Contents

2. Overview

COD912MSL is a DVB scrambler and CAS Crypton SMS generator for Pay TV application. Additional embedded 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., are performed from a single host PC located within the same Ethernet network as the controlled Crypton device.
TCT/IP network protocol is used for communication realibility.
Crypton Software Suite is a set of device and CA control software utilities that once installed on the host PC makes your broadcast network resurces management easy and comfortable.

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

3. Features

- **ASI input.** Transport stream from different sources (for example from DVB multiplexer) is received to ASI input.
- **Service information editing.** To achieve an extra flexibility when generating a new multiprogramm transport stream the service information editing function is applied in COD912MSL.
- **DVB NIT/EPG support.** COD912MSL can support DVB NIT/EPG. NIT/EPG subsystem is fully corresponds to DVB specifications and can be received by any subscriber receiver supporting the functionality.
- **Conditional Access System.** DVB scrambler and CAS Crypton SMS generator let you employ COD912MSL for providing Conditional access in digital television broadcast networks. It is important to mention that high-reliabile CA operation is achieved due to a simultaneus CAS Crypton SMS generator 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.** COD912MSL 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

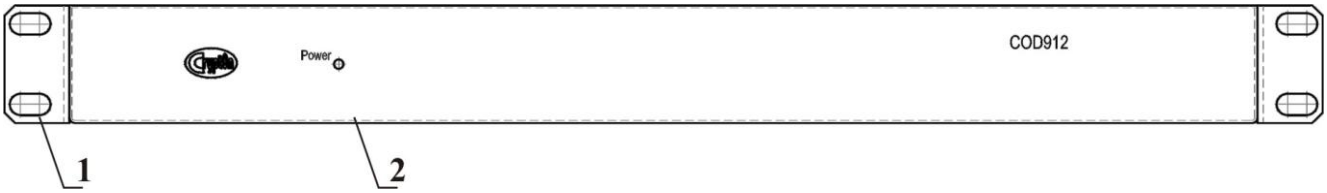

Fig. 1 Front pannel

1. Mounting holes;
2. Power on LED.

Fig. 2 Rear pannel

1. Mounting holes;
2. DVB-S modulator output;
3. ASI output;
4. ASI input;
5. TCP/IP control port;
6. Power socket, 90…260 V, 50/60 Hz;
7. Power switch.

5. Functional block diagram

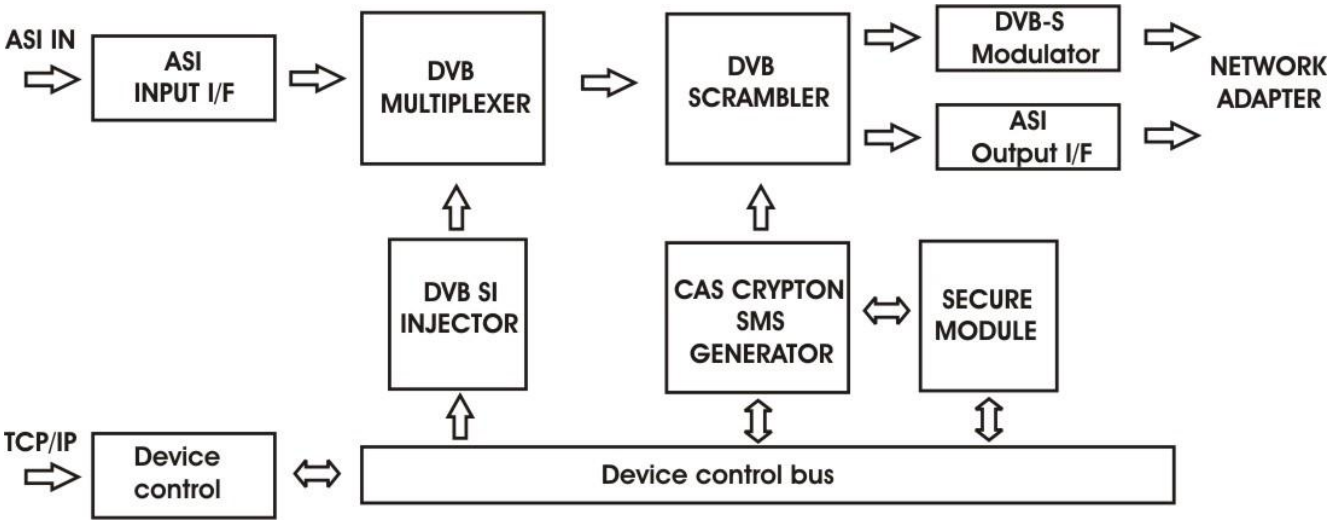

Fig. 3. COD912MSL functional block diagram.

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 inputs.

DVB Multiplexer. DVB multiplexer is used to manage the TS stream content. Service information editing is also supported on COD912MSL according to EN300468 specification.

DVB Scrambler. The scrambler used in COD912MSL is a DVB-compatible in accordance with DVB-CAS (ETR-289). DVB services can be scrambled selectively. Scrambling technology prevents non-permitted subscribers from watching TV-programs.

CAS Crypton SMS Generator. CAS Crypton SMS messages are generated locally from the subscriber lists (lists of subscribers 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 into the output transport stream.

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
Input	DVB ASI	EN 50083-9 specification, BNC connectors (75 Ohm)
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	
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	ºC
Size		
Width, mm	485	
Depth, mm	406	50/60 Hz
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