Application:

DTV Server Remultiplexer COD980RMS is a remultiplexer equipped with the functions of DVB scrambler and subscriber service server of conditional access system "Crypton". Employing of ASI interface of the input and output DVB transport streams and built-in L-band QPSK modulator, which is by aid of frequency converter could be transferred to a desired UHF-band (for instance to Ku-band for satellite broadcasting systems and MITRIS) or by aid of QPSK/QAM transmodulator to RF-band for MMDS networks and head-ends.

8 ASI inputs are available in COD980RMS. Transport streams of digital TV-programs selected for being multiplexed are fed on each of 8 ASI inputs. Transport streams can be scrambled in arbitrary order by the dynamically changing keys, which are unique for each program. Subscriber message system allows to having 16 million subscribers maximum.

COD980RMS is mainly applied in head-end stations of digital cable, MITRIS, MMDS- and LMDS-networks.

Scope:

△ **Employing of 8 ASI inputs.** Digital TV-programs, selected for being remultiplexed come at the multiplexer input in order to be integrated into one multiprogrammed transport stream. Professional satellite receivers with transport stream output in ASI format (according to EN 50083-9) are usually appeared to be a signal source.

△ **Estimation of aggregate input stream** is provided for each channel. It is also possible to estimate the maximum aggregate rate of TV-programs' stream fed to the multiplexer. The COD980RMS performs a signaling when there is a redundant rate of input data by concurrently and automatically reducing a bit rate of some programs, according to the set priorities.

△ **Service information edit and program clock reference correction** provide a high quality generation of a new multiprogrammed transport stream by bringing additional networking functions useful for ultimate customer.

△ **Open channel for subscribers' data transfer.** It is possible to arrange an open channel of data transfer from the service provider server to the DVB-compatible subscriber terminal via active TCP/IP communication. Electronic Programme Guide, news, weather forecast, Internet and etc., may be transmitted via open channel.

△ **Conditional Access System.** If the content needs to be protected, COD980ASI provides an independent scrambling of the TV-channels in accordance with DVB-CAS and effective subscribers' management of pay-TV network. Subscribers' management is done via port of control with PC.

△ **QPSK modulator.** Device is equipped with built-in QPSK modulator with carrier frequency that can be set in the range of 1050-1750 MHz.

△ **Control.** Control of network devices is done on PC via TCP/IP communication.

△ **Reliable software.** "Crypton DTV Master" software package fulfills the control and monitoring tasks of the network devices status condition.

COD 980RMS
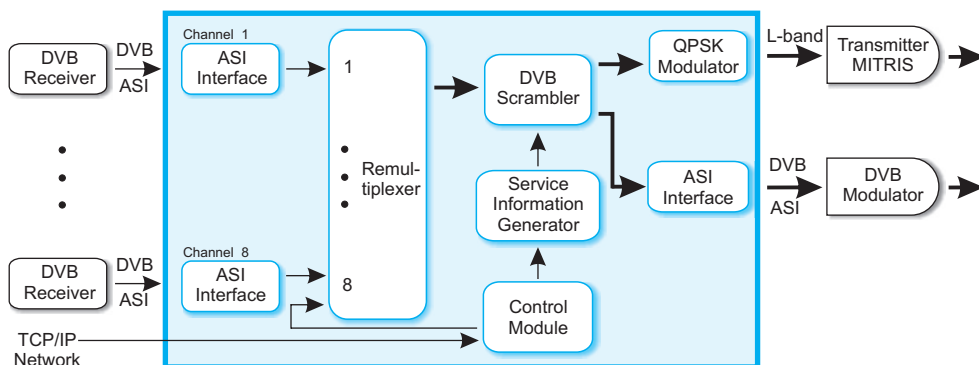# DTV Server Remultiplexer Crypton with QPSK modulator

Functional block diagram COD980RMS:

Concise description of COD910ASI units:

ASI interface - input and output interface of digital stream transmission according to EN 50083-9.

Remultiplexer. 8 (by one program from each channel) independent digital TV-programs could be fed to the multiplexer inputs. Subscribers' data, coming into device via open channel could be additionally fed to the multiplexer inputs. There are the mechanisms of program clock reference correction and PSI/SI tables edit and filtering.

DVB Scrambler. The scrambler performs a selective scrambling of digital TV-programs. The main purpose of scrambling is to exclude unauthorized viewing of the TV-programs.

Service information generator. The Crypton Service Information Generator performs the insertion of control messages, required for switching on/switching off any subscriber of pay-TV network.

Control module. The Control Module is used for performing the subscribers' management and the device diagnostics via active TCP/IP.

QPSK modulator. There are 50-Ohm output and frequency tolerance ± 5 KHz.

Technical characteristics

Input	**DVB ASI (in accordance with EN50083-9)** •Quantity: 8-multiprogrammed inputs •Type: electric	•Rate: Up to 54 Mbps on each input •Connector: BNC
Processing	**Remultiplexer** •Maximum quantity of multiplexed streams: 8 •PID swapping •PCR correction •PSI/SI automatic tables generator •PSI/SI tables processing and insertion according to ETS300468	**Conditional access** •Built-in DVB-compatible scrambler •Conditional Access System: "Crypton" complies with ETR-289, DVB Simulcrypt •Maximum quantity of service packs being scrambled: 8 •Maximum quantity of programs being scrambled: 24

Output	**DVB ASI (according to EN50083-9)**
	•Quantity: 1
	•Type: electrical
	•Output stream rate: 54 Mbps
	•Connector: BNC
	
	Modulator
	•QPSK modulation: corresponds to EN 300421
	•Input stream rate: 1 – 50 Mbps
	•Symbol rate: 25-29 (step - 0,125 Msymb/sec)
		•Bandwidth: 1000 – 1750 MHz (3 subbands)
		    1000-1250MHz
		    1200-1400MHz
		    1400-1750MHz
		•Frequency tolerance: ±5 kHz
		•Frequency step: 1 Hz
		•FEC Modes - 1/2, 2/3, 3/4, 5/6, 7/8
		•Output resistance: 50 Ohm
		•Connector: SMA

Control and monitoring	•Ethernet (TCP/IP)	•Software «CryptOn DTV Master»
Physical characteristics	**Size** •2U(19" rack) •93mm x 482,6mm x 300mm •3.65" x 19" x 13.25" •Weight: 4,6 kg	**Power** •90-260V AC 50/60 Hz •Power consumption: 55W max
Environmental conditions	**Operation** •Temperature 0 °C - +45 °C •Humidity: 5-85 % (non-condensing)	**Storage and transportation** •Temperature: -40 °C - +70 °C •Humidity: 0% - 85% (non-condensing)