Application:

COD881ASI is a perfect solution for converting analog signals into DVB digital stream. ASI output of COD881ASI is designed for joint operation together with DVB modulator.

In arbitrary order COD881ASI can scramble 8 digital TV-programs by aid of dynamic keys, which are unique for every program. Subscribers message system (SMS) allows to having 16 million subscribers in aggregate for all of the eight channels. According to ETS-300468 specification COD881ASI inserts PSI and SI information into the stream.

Typical applications of COD881ASI are head-end stations of digital cable, MITRIS, MMDS- and LMDS networks.

Scope:

▲ **Eight analog inputs.** Video and stereo audio for each of the eight channels are converted into eight DVB-compliant streams (MPEG2-video, MPEG1 Layer2- audio). Then, each stream is multiplexed into one common DVB stream.

▲ **Set of bitrates for video and audio.** A desirable bit rate can be set for every channel. Flexible setting allows to using frequency resource more effectively. Channels with dynamic image could be set at the high bit rate. For the channels where the still images are dominant a bit rate can be reduced without a significant decrease in quality.

▲ **TV and radio channels.** Each channel could be set as a TV channel (video and stereo audio) or as a radio channel (stereo audio only).

▲ **Channel disabling (if required).** Any channel can be disabled during the pre-check works (or for other reasons). When channel is disabled the stream will be fully removed from aggregate output stream without affecting any other channel.

▲ **Self-contained channels reset.** In order to maintain an operational status of device for a long period of time, it is required to have a mechanism that quickly eliminates the possible defects. Any of eight MPEG encoders can be reset and reloaded in accordance with the channel settings within a short period of time.

▲ **DVB-compliant scrambler.** The scrambler is a realization of Common Scrambler Algorithm, described in DVB-CAS ETR-289 specification.

▲ **ASI digital output.** Signal at the output of COD881ASI can be fed to the channel modulator, supporting ASI interface.
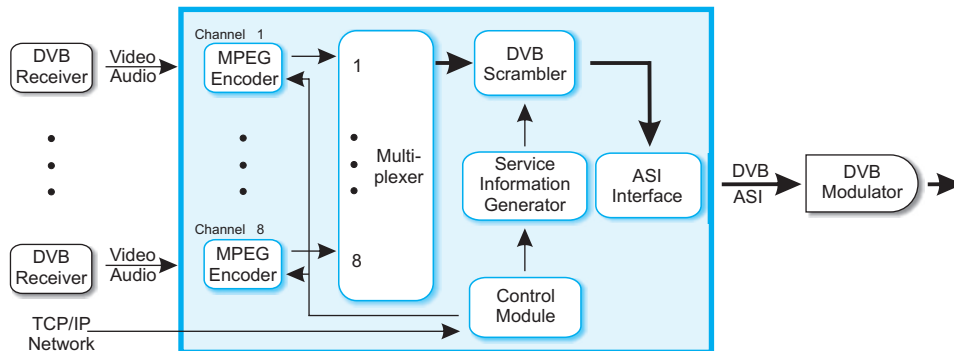
▲ **TCP/IP network.** Connection between COD881ASI and operator's control computer is done via regular TCP/IP network equipment.

▲ **Reliable software.** "Crypton DTV Master" software package allows controlling and monitoring the status of network devices in real time.

COD 881ASI
DTV server Crypton

Functional block diagram COD881ASI:

Concise description of COD881ASI units:

MPEG Encoder module converts analogue picture and audio signals into digital stream.
Multiplexer generates one aggregate stream out of the eight digital channels.
DVB Scrambler selectively scrambles Digital TV-programs thus excluding unauthorized viewing of TV-programs.
Service Information Generator inserts control messages so the receiver may decide what to do with the selected TV-channel.
The Control Module performs the subscribers control, status information gathering, Encoders control and so on.
ASI interface. Output interface of digital stream transmission according to EN 50083-9.

Technical characteristics

Inputs	**Video** •Quantity: 8 •Formats: PAL/SECAM •Analog interface: composite (CVBS) •10 bit A/D •Input voltage: 0,1 – 1 V •Automatic gain setting •Connector: BNC	**Audio** •8 stereo channels (analog) •Input voltage: 0,1 – 1 V •Connector: RCA **Inputs operating mode:** •TV, radio, disabled

Processing	**Coding parameters of video**
	•MPEG-2 4:2:0 P@ML
	•Bit rates: 3, 4, 5, 6 Мбит/с (CBR), 4 Мбит/с (VBR)
	
	Coding parameters of audio
	•MPEG I Layer II
	•Sampling rate: 44.1 Khz
	•Bit rates: 64, 128, 192, 224, 256, 384 Kbps
	
	Multiplexer
	•Multiplex of up to 8 DVB transport streams
	•PID-assignment
		PSI/SI tables generator
		•PSI/SI tables insertion according to ETS-300468
		•SI tables:
		    SDT – programs' description table
		    ECM – conditional access information
		•PSI tables
		    PAT – programs table
		    PMT – program's content table
		
		Conditional access
		•Built-in DVB-compliant scrambler
		•Conditional Access System "Crypton" corresponds to ETR-289, DVB Simulcrypt
		•Maximum quantity of the scrambling channels – 8

Output	**DVB ASI (according to EN50083-9)** •Electric 2 x ASI	•Output bitrate: 54 Mbs/sec •Connector: BNC
Control and monitoring	•Ethernet (TCP/IP)	•Software «CryptOn DTV Master»
Physical characteristics	**Size** •2U(19" rack) •93mm x 482,6mm x 336mm •3.65" x 19" x 13.25” •Weight: 4,3 kg	**Power** •90-260V AC 50/60 Hz •Power consumption: 80W max
Environmental conditions	**Operation** •Temperature 0 °C - +45 °C •Humidity: 5-85 % (non-condensing) •Forced ventilation	**Storage and transportation** •Temperature: -40 °C - +70 °C •Humidity: 0% - 85% (non-condensing)