

# Datasheet



**CRT1081SMA**  
**CRYPTON COMPACT SIZE SMATV SYSTEM**

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## 2. Overview

CRT1081SMA is a compact size SMATV system. It combines 8 full featured DVB-S receivers with Common Interface for descrambling services, 2 ASI input interfaces, 4 DVB multiplexers with ASI outputs and 2 DVB-C RF Band modulators all in one pack. Flexible configuration technology and devices cascading capability helps you to build your Home Multi Room, SMATV, CATV, MMDS or other network with exceptional time and cost efficiency. WEB control interface lets you to control all the system no matter where you are at the moment. 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.

### 3. Features

- **2 DVB-ASI inputs.** EN 50083-9 compatible. 188/204 size byte/packet mode auto detection.
- **8 DVB-S receivers.** Full featured DVB-S receivers.
- **8 CI Slots.** DVB-CI compatible interfaces for CAM module services descrambling.
- **4 independent multiplexer channels.** Can be used to form up to 4 new MPTS Transport Streams of 8 DVB-S receiver and 2 DVB-ASI interface MPTS sources.
- **4 DVB-ASI outputs.** EN 50083-9 compatible. 188 size byte/packet user defined operation modes. For every of multiplexers.
- **Conditional Access.** Optionally embedded DVB-CAS scrambler and CAS Crypton SMS generator can be used.
- **Modulator.** Embedded two DVB-C RF band modulators.
- **TCP/IP connection.** Industry standard TCP/IP interface is used to access the device.
- **Web Interface.** Standard Web interface is used for device control and embedded applications configurations.
- **AC 220V power supply.** 220 power supply source is used for device normal operation.
- **Compact size.** Thanks to its compact size (19" 1U) the device can be easily integrated into the DVB head ends or can be used as high efficient SMATV system.
- **Applications.** Home multiroom or SMATV system, CATV, MMDS, MVDS head ends.

### 4. General description

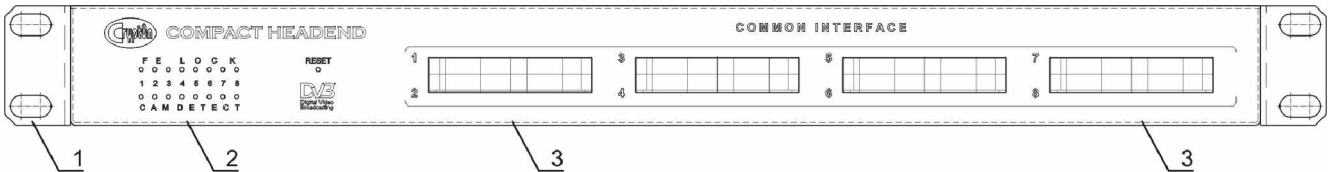


Fig. 1 Front panel

### Front panel description

1. Front panel with mounting holes.
2. Leds for tuner lock and CAM module insertion indication.
3. Common Interface slots for CAM modules.

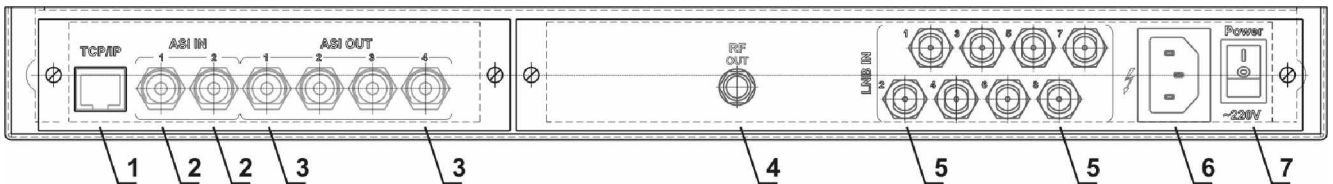


Fig. 2 Rear panel

### Rear panel description

1. Ethernet port for device control via TCP/IP;
2. 2 DVB-ASI inputs;
3. 4 DVB-ASI outputs of 4 DVB multiplexers;
4. Double DVB-C RF band mixed output.
5. 8 DVB-S receiver inputs. IF 950-2150MHz;
6. Power inlet AC220V;
7. Power switch;

### 5. Functional block diagram

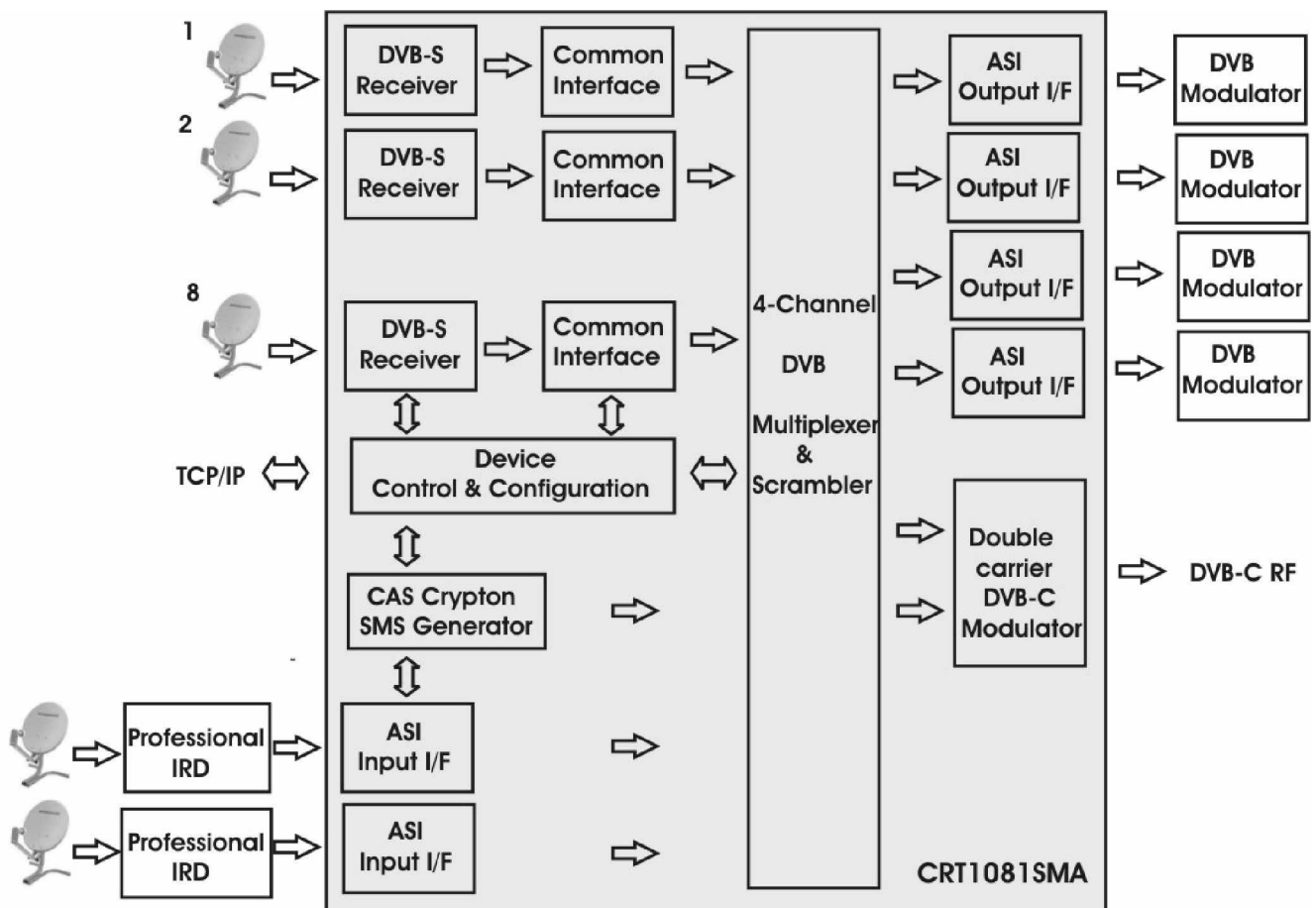


Fig. 3. Functional block diagram of CRT1081SMA

#### Functional blocks description.

**DVB-S receiver.** 8 full featured DVB-S receiver blocks take signal from LNBS, demodulate it and route 8 MPTS to Common interface blocks for descrambling or direct to re-multiplexer.

**Common Interface.** 8 Common interface blocks are able to send and receive TS data to/from CAM modules for descrambling services .

**ASI input I/F.** 2 DVB-ASI input interfaces increase capabilities of the device due to you are able to cascade the devices for better sources utilization.

**4 channel DVB multiplexer & Scrambler.** Powerful DVB multiplexer capable to make up to 4 simultaneous output MPTS from the input MPTS streams that comes from 8 DVB-S receivers and 2 DVB-ASI inputs. Every program that selected for a new multiplex can be independently scrambled with a DVB-CAS Scrambler that accompany each of the multiplexers.

**CAS Crypton SMS Generator.** For CAS Crypton pprotected networks subscriber management CAS Crypton SMS Generator is used. ECM tables realtime generation is autonomouse and only needs periodic host device interaction if any subscriber information changes. Such mechanism makes the system exceptionally safe and reliable.

**ASI output I/F.** 4 DVB-ASI output interfaces are used to transmit up to 4 multiplexer output TS to a third party equipment.

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**Device control & configuration.** All device control and configuration is made via active TCP/IP connection and use Web Interface technology.

**Double carrier DVB-C Modulator.** UP to 2 independent multiplexer outputs can be optionally routed to a double carrier DVB-C modulator that outputs RF up-converted and mixed signal.

**DVB Scrambler & SMS Generator.** For conditional access implementation you may need an optional DVB-CAS Scrambler and CAS Crypton SMS generator to be activated.

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### 6. Technical specification

<b>DVB-S receiver</b>	
Number of channels	8
Receiving frequency range	950-2150 MHz
Input signal level	-65~-25 dBm
Nominal RF input impedance	75 Ohm
Connector type	IEC, F-type
SR	1-45 MBaud
FEC	1/2, 2/3, 3/4, 5/6, 7/8
<b>Common Interface</b>	
Number of channels	8
Specification	EN50221, ETSI TS 101699
<b>DVB-ASI Input</b>	
Number of channels	2
Specification	EN 50083-9
Input impedance	75 Ohm
Connector type	IEC 169-8, BNC-type
Operation modes	Byte/packet, 188/204 auto detect
Maximum input bit rate	213 Mbps(packet), 72Mbps(byte)
<b>DVB multiplexer</b>	
Number of channels	4
Specification	ISO IEC 13818-1
Maximum channel bit rate	54 Mbps
SI/PSI management	SI/PSI editing,
PID management	PID remapping
Post multiplexing PCR jitter	< 500ns
<b>DVB-ASI Output</b>	
Number of channels	4
Specification	EN 50083-9
Pick-to-pick voltage	1V±0.1V
Output impedance	75 Ohm
Connector type	IEC 169-8, BNC-type
Operation modes	Byte/packet, 188 byte
Maximum output bit rate	213 Mbps(packet), 72Mbps(byte)
<b>DVB Srambler(optional)</b>	
Number of channels	4
Specification	ETR-289
Maximum channel bit rate	54 Mbps
<b>SMS Generator</b>	
	CAS Crypton SMS generator
<b>DVB-C Modulator(optional)</b>	
Number of channels	2
Specification	EN 300429
S/R	6.875 Msps
QAM modulation	16, 32, 64, 128, 256
Frequency range	230-330MHz
Output impedance	75 Ohm, IEC F-type connector

### 7. Abbreviations

<b>DVB</b>	-	Digital Video Broadcasting
<b>DTV</b>	-	Digital Television
<b>SI</b>	-	Service Information
<b>PSI</b>	-	Program Specific Information
<b>QAM</b>	-	Quadrature Amplitude Modulation
<b>QPSK</b>	-	Quaternary Phase Shift Keying
<b>SMATV</b>	-	Satellite Master Antenna Television
<b>CATV</b>	-	Cable Television
<b>MMDS</b>	-	Multichannel Multipoint Distribution System
<b>MVDS</b>	-	Multipoint Video Distribution System
<b>SMS</b>	-	Subscriber Management System
<b>SR</b>	-	Symbol Rate
<b>FEC</b>	-	Forward Error Correction