

**Technical Specification**



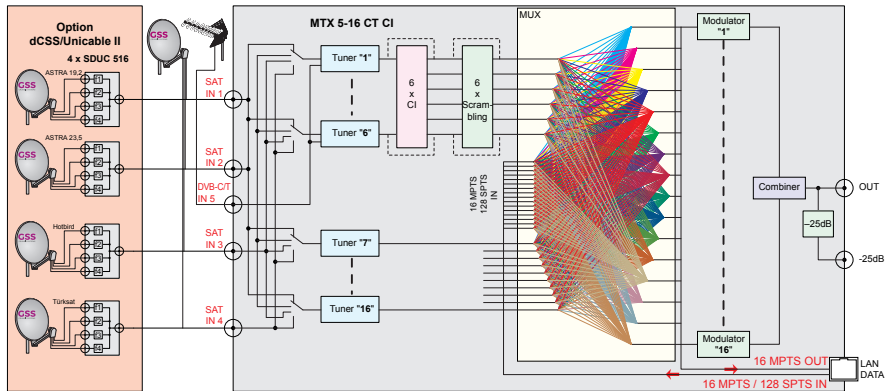
**MTX 5-16 CT CI**

**Default access data:**  
192.168.0.120  
User: admin  
Password: geheim

## DESCRIPTION

The head-end station can generate 16 transport streams and output as MPTS transport streams and/or QAM/COFDM transponders from a multiplex of 6 x DVB-S2/S2X/C/T/T2 with 6 x CI + 10 x DVB-S2/S2X + 16 x MPTS + 128 x SPTS. In conjunction with specially programmed multi-switches up to 4 satellites can be received.

## BLOCK DIAGRAM



## DESIGN TYPE

Version ..... GSS.compact classic  
 Stainless steel housing 341 x 282 x 105 mm ..... wall mounting  
 Weight: ..... 7 kg  
 Permissible ambient temperature: ..... 0 ... +50 °C  
 Cooling ..... passive, fanless

## FEATURES

### IN-/OUTPUTS

SAT IF inputs..... 4 (inputs 1...4)  
 LNB power supply 14V/18V optionally 14V fix; switchable.....max. 500 mA  
 dCSS/Unicable II operation <sup>1)</sup> ..... max. 4 satellites with 4 levels each  
<sup>1)</sup> in conjunction with specially programmed multi-switches

DVB-C/T/T2 input..... 1 (input 5)  
 Antenna supply 5V; switchable.....max. 500 mA

LAN in/output..... 1  
 DVB-C/T output ..... 1  
 DVB-C/T test output (-25 dB)..... 1  
 LAN control input..... 1

## INPUT SIGNAL PROCESSING

<b>Maximum over all input data rate (<math>\Sigma</math> lines 1-160)</b> .....	<b>900 MBit/s</b>
Buffer memory .....	1 GBit (corresponds e.g. at 16 x 50 MBit/s to approx. 16 x 50 ms buffer)
Display of the current total input data rate .....	$\Sigma$ of all <b>activated</b> input lines
Input lines can be switched off individually	
Individual input designation (inputs 1...4).....	adjustable; e.g. satellite/level
Individual input signal name .....	for input lines 1...160
<b>Input lines 1...6</b> .....	DVB-S/S2/S2X/C/T/T2; inputs 1...5 selectable
	Display of frequency offset and C/N with reserve 6 CI slots for CA modules
	Scrambling of selected services independent of CA modules
<b>Input lines 7...16</b> .....	DVB-S/S2/S2X; inputs 1...4 selectable
	Display of frequency offset and C/N with reserve
<b>Input lines 17...32 (LAN)</b> .....	16 x MPTS
<b>Input lines 33...160 (LAN)</b> .....	128 x SPTS
	Display of TS/ON IDs
IGMP.....	V2
Quick setup.....	for input lines 17...160

## MULTIPLEX

**The services of the input lines can be assigned arbitrarily to the output lines.** <sup>2)</sup>

	<sup>2)</sup> depending on the maximum possible data rates/line and over all
Display of the current/maximum possible <sup>3)</sup> total output data rate .....	$\Sigma$ Output lines 1...16
Display of the current output data rate .....	Output lines 1...16
Display of peak value of output data rate reached so far .....	Output lines 1...16
Display of maximum possible output data rate <sup>3)</sup> .....	Output lines 1...16
	<sup>3)</sup> depending on the output settings
SID Remapping.....	for each service

## OUTPUT SIGNAL PROCESSING

<b>Maximum over all output data rate (<math>\Sigma</math> output lines 1...16)</b> .....	<b>820 MBit/s</b>
Output lines.....	16
Output signal form .....	MPTS + RF (DVB-C or DVB-T)
TS/ON ID Remapping.....	for output lines 1...16
Display of the current/maximum possible <sup>3)</sup> output data rate .....	for output lines 1...16
	<sup>3)</sup> depending on the output settings

<b>RF output signals</b> .....	suitable for adjacent channels
Output modulation adjustable for the complete station .....	<b>QAM or COFDM</b>
Output lines can be switched off individually .....	RF output lines 1...16
Total output level adjustable.....	0...-31 dB

### QAM

Frequency/Channel; Symbol rate; Modulation, Spectrum, Level (0...-10dB) individually adjustable for each output line.

### COFDM

Frequency/Channel; Spectrum; Modulation; Code rate; Guard interval; Bandwidth; Level (0...-10dB) individually adjustable for each output line

## NIT

Renew; delete; add transponder; import NIT of other devices; export NIT

NIT modes: Output of the displayed NIT (user); alternatively, transmission of the input NIT (original); alternatively, no NIT (deactivate).

Note in case of faulty NIT

## LCN

Generation of an LCN list (programme location number preassignment)

## MPTS output signals

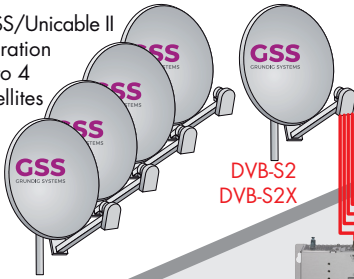
Protocols .....	UDP or RTP
IGMP .....	V2
Display of the current/maximum possible total output data rate .....	$\Sigma$ output lines 1...16
Display of the current/maximum possible output data rate .....	output lines 1...16
Output lines can be switched off individually .....	MPTS output lines 1...16
Multicast IP addresses and ports adjustable .....	MPTS output lines 1...16
Maximum output data rate/line adjustable ... only if the corresponding RF output line is switched off	
Quick-Setup .....	for output lines 1...16
Generation of a M3U service list .....	for GSS DRIP 1000 devices
Generation of a M3U service list .....	for Panasonic-VIERA-TV devices

## SYSTEM

User interface .....	HTML
- User Administrator .....	Full access
- User Guest .....	read only, apply (save) locked
Logbook .....	Display of warnings and events
- Response times adjustable .....	for input signal and data overflow errors
- Notification in case of errors .....	via mail <sup>4)</sup>
	<sup>4)</sup> Internet connection required
Network interfaces .....	adjustable
OpenVPN connection .....	world wide access to the head-end station <sup>4)</sup>
	<sup>4)</sup> Internet connection required
Safety .....	Password protection
Number format for IDs .....	switchable decimal or hexadecimal
Backup the configuration .....	Backup and restore
Manager .....	several configurations can be stored in the device
Network diagnostic tool .....	Ping
Factory reset (via menu "Firmware") .....	all settings except password and IP address!
Reset button .....	only network settings and password
Assembly instruction (offline; PDF) .....	in menu Help

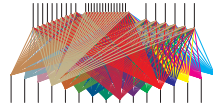
APPLICATION EXAMPLE

dCSS/Uicable II operation up to 4 Satellites

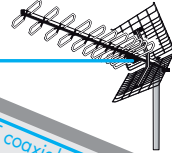


DVB-S2  
DVB-S2X

Receiving Station MTX 5-16 CT CI  
Multiplex conversion  
from SAT and DVB-T/T2 and IPTV



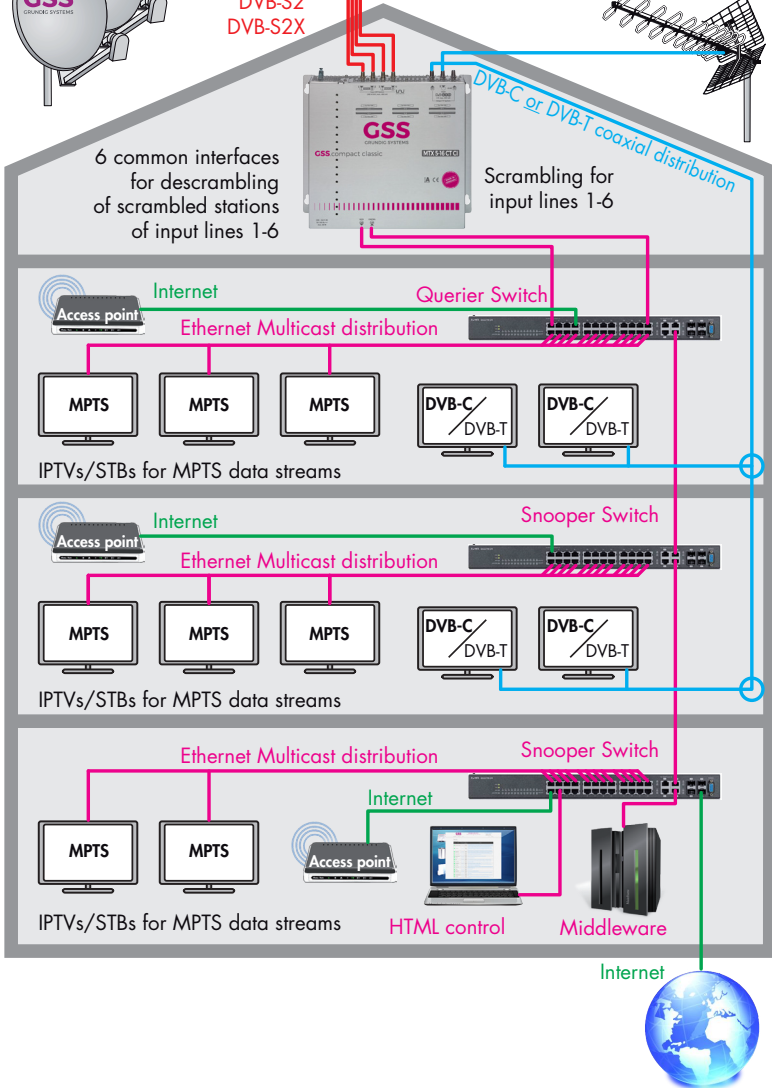
to IPTV and DVB-C or IPTV and DVB-T



6 common interfaces for descrambling of scrambled stations of input lines 1-6

Scrambling for input lines 1-6

DVB-C or DVB-T coaxial distribution



## TECHNICAL DATA

The devices meet the EU directives 2011/65/EU, 2014/30/EU and 2014/35/EU.  
The product fulfils the guidelines and standards for CE labelling.

Unless otherwise noted all values are specified as "typical".

### RF input DVB-S/S2/S2X (ETSI 300 421; ETSI EN 302 307-1/-2)

Frequency range:	950 ... 2150 MHz
DVB-S mode:	QPSK
DVB-S2 modes:	QPSK, 8PSK, 16APSK, 32APSK
DVB-S2X modes:	QPSK, 8PSK, 8APSK-L, 16APSK(-L), 32APSK(-L)
Symbol rate DVB-S:	QPSK: 1 ... 45 MSymb/s
Symbol rate DVB-S2:	
QPSK	4.5 ... 45 MSymb/s
8PSK	4.5 ... 45 MSymb/s
16APSK	4.5 ... 39 MSymb/s
32APSK	4.5 ... 32 MSymb/s
Maximum data rate/tuner	83 MBit/s
Level range:	60 dB $\mu$ V ... 80 dB $\mu$ V
Input impedance:	75 $\Omega$
LNC supply:	14 V/18 V max. 500 mA

### RF input DVB-T/T2/T2 HD/C acc. to EN 302755 v1.3.1/300429

Channels	C5...C12, S21...S41, C21...C69
Frequency range:	42 ... 866 MHz
Input level:	60 dB $\mu$ V ... 80 dB $\mu$ V
Antenna supply:	5 V max. 500 mA

### Data input

MPTS streams	16
SPTS streams	128
IGMP	V2
Protocols:	UDP (User Data Protocol), RTP (Real-Time Transport Protocol)

### Input data

Maximum over all input data rate ( $\Sigma$ lines 1-160):	900 MBit/s
Buffer memory	1 GBit (corresponds e.g. at 16 x 50 MBit/s to approx. 16 x 50 ms buffer)

### Over all output data

Data rate:	$\leq$ 820 MBit/s
Remapping	SIDs, TS-/ON-IDs
Services:	max. 256
PCR Corrections:	max. 256
EIT:	max. 256

### IPTV Output

MPTS	16
IGMP	V2
Protocols:	UDP (User Data Protocol), RTP (Real-Time Transport Protocol)

### RF output QAM (suitable for adjacent channels; symbol rates and modulation individually adjustable)

Frequency range:	42.0 MHz ... 868.0 MHz
Types of modulation:	QAM 4, 16, 32, 64, 128, 256
Output level:	80...96 dB $\mu$ V
Dynamic phase error:	$<$ 0.2 $^{\circ}$
MER:	$>$ 45 dB

Output impedance: .....75  $\Omega$   
Symbol rate: ..... 1000...7500 kBd

**RF output COFDM** (suitable for adjacent channels; modulation individually adjustable)

Frequency range: ..... 42.0 MHz ... 868.0 MHz  
Types of modulation: ..... QPSK, 16 QAM, 64 QAM  
Transmission modes .....2k  
Code rates ..... 1/2, 2/3, 3/4, 5/6, 7/8  
Guard intervals ..... 1/4, 1/8, 1/16, 1/32  
Output level: .....80...96 dB $\mu$ V  
Output impedance: .....75  $\Omega$

**Connections**

SAT inputs: ..... 4 F sockets  
Terrestrial input: ..... 1 F socket  
RF output: ..... 1 F socket  
Test output (-25 dB): ..... 1 F socket  
LAN (for control) 100-BASE-T: ..... 1 RJ 45 socket  
LAN (for data) 1000-BASE-T: ..... 1 RJ 45 socket  
Common Interfaces ..... 6

**General**

Mains voltage: ..... 200...240V~, 50/60 Hz  
Power consumption without LNC/CI .....46 W  
Maximum Power consumption: .....75 W  
Admissible ambient temperature: ..... 0 ... +50  $^{\circ}$ C  
Cooling ..... passive, fanless  
Dimensions (WxHxD): ..... 341 x 282 x 105 mm  
Weight: .....7 kg

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