

Technical Specification



STS 1916 IPSR CT CI

Default access data:

HTML: 192.168.0.120/121

SFTP: 192.168.0.120

User: admin

Password: geheim

DESCRIPTION

The head-end station consists of two parts:

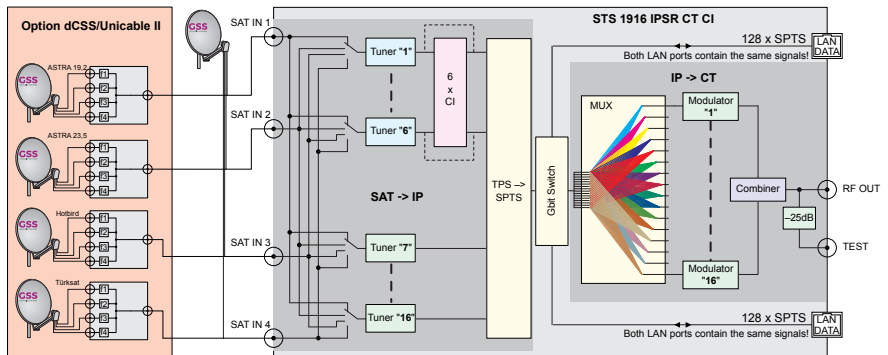
The **"SAT -> IP"** part converts 16 DVBS-S/S2/S2X modulated transponders (up to 32 APSK) into up to 128 SPTS transport streams. In conjunction with specially programmed multiswitches up to 4 satellites can be received.

An integrated MediaPlayer enables the output of a video stream (max. data rate 10MBit/s) in a loop.

The **"IP -> CT"** part converts up to 128 SPTS data streams (max. total input data rate 900 Mbit/s) into 16 multiplexes and outputs them as 16 QAM- or 16 COFDM-modulated transponders.

The two parts are connected via an internal switch, to which two data interfaces are also connected (maximum total data rate 820 MBit/s).

BLOCK DIAGRAM



DESIGN TYPE

Version GSS.lamina
 Aluminium housing with stainless steel covers 483 mm x 44.5 mm (1HU) x 490 mm 19" rack
 Weight: 5.5 kg
 Permissible ambient temperature: 0 ... +50 °C
 PSUs: 2 (redundant; can be exchanged individually during operation)
 Active cooling 3 case fans (can be exchanged individually during operation), 2 PSU fans

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 ¹⁾	max. 4 satellites with 4 levels each
	¹⁾ in conjunction with specially programmed multi-switches
LAN data in-/output	1
LAN data in-/output (redundant via an integrated 1000-BASE-T switch).....	1
LAN control inputs ²⁾	2 (for control and another Lamina)
	²⁾ internally connected via an integrated 100-BASE-T switch
DVB-C/T output	1
DVB-C/T test output (-25 dB).....	1

INPUT SIGNAL PROCESSING

"SAT -> IP" PART

Individual input designation (inputs 1...4).....	adjustable; e.g. satellite/level
Individual input signal name.....	for input lines 1...16
Input lines 1...16	DVB-S/S2/S2X; inputs 1...4 selectable
	Display of frequency offset and C/N with reserve

"IP -> CT" PART

Maximum over all input data rate (Σ input lines 1-128)	900 MBit/s
Buffer memory	1 GBit (corresponds e.g. at 128 x 6 MBit/s to approx. 128 x 6 ms buffer)
IGMP.....	V2
Display of the current total input data rate.....	Σ of all activated input lines
Input lines can be switched off individually	
Input lines (LAN)	128 x SPTS
Display of TS/ON IDs	
Quick setup.....	for input lines 1...128

CA

"SAT -> IP" PART

6 CI slots for CA modules.....	lines 1...6
TS/ON ID indication.....	lines 1...16

MULTIPLEX

The services of the input lines can be assigned arbitrarily to the output lines. ³⁾

³⁾ depending on the maximum possible data rates/line and over all

Indication of the...

... current/maximum possible ⁴⁾ total output data rate	Σ Output lines 1...16
... current output data rate	Output lines 1...16
... peak value of output data rate reached so far	Output lines 1...16
... maximum possible output data rate ⁴⁾	Output lines 1...16

⁴⁾ depending on the output settings

SID Remapping..... for each service

"SAT -> IP" PART

Maximum over all output data rate (Σ of all output lines) 820 MBit/s

Integrated **MediaPlayer** for one transport stream format file (max. 10MBit/s).

Output lines (streams) max. 128 + 1 (MediaPlayer)

Output signal form SPTS (Single Programme Transport Stream)

SPTS output signals

Protocols UDP or RTP

IGMP V2

Transmission of EPG data (Electronic Programme Guide) on/off switchable

Display of the current total output data rate Σ output lines 1...128

Display of the current output data rate output lines 1...128

Output lines can be switched off individually

Multicast IP addresses and ports adjustable output lines 1...128

Quick-Setup for output lines 1...128

SAP (Session Announcement Protocol) on/off switchable

Generation of a M3U service list ³⁾ for GSS DRIP 1000 devices

Generation of a M3U service list ³⁾ for Panasonic-VIERA-TV devices

Generation of a M3U service list ³⁾ for LOEWE TV devices

Generation of a service list ³⁾ for VESTEL TV devices

Generation of a service list ³⁾ for BEWATEC TV devices

Generation of a service list ³⁾ for PHILIPS TV devices

IPTV list of all services ³⁾ in form of a *.csv file

³⁾ possible via several connected stations

"IP -> CT" PART

Maximum over all output data rate (Σ output lines 1...16) 900 MBit/s

Output lines 16

Output signal form RF (DVB-C or DVB-T)

TS/ON ID Remapping for output lines 1...16

Display of the current/maximum possible ⁴⁾ output data rate for output lines 1...16

⁴⁾ depending on the output settings

RF output signals suitable for adjacent channels

Output modulation adjustable for the complete station QAM or COFDM

Output lines can be switched off individually

Total output level adjustable 0...-31dB

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

SYSTEM

User interface HTML

- User Administrator Full access
- User Guest read only, apply (save) locked

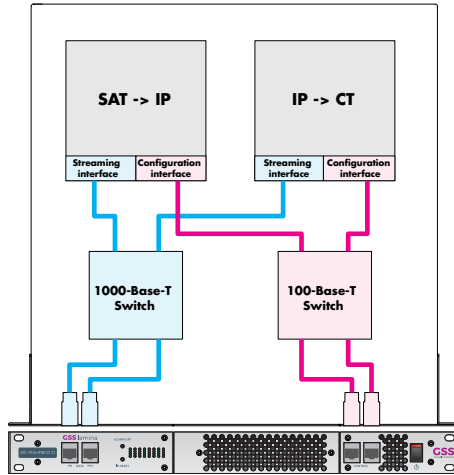
Logbook Display of warnings and events

- Response times adjustable for input signal and data overflow errors
- Notification in case of errors via mail and to your syslog server ⁴⁾
- Transmission of the logbook entries to a syslog server ⁴⁾

⁴⁾ Internet connection required

Network interfaces adjustable

- Streaming interfaces 2
- Configuration interfaces 2



SFTP access (via configuration interface of SAT -> IP part) for Media player

OpenVPN connection world wide access to the head-end station ⁴⁾

⁴⁾ 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

Monitoring of power supplies and case fans

Assembly instruction (offline; PDF) in menu Help

APPLICATION EXAMPLE

dCSS/Uicable II
operation
up to 4
Satellites



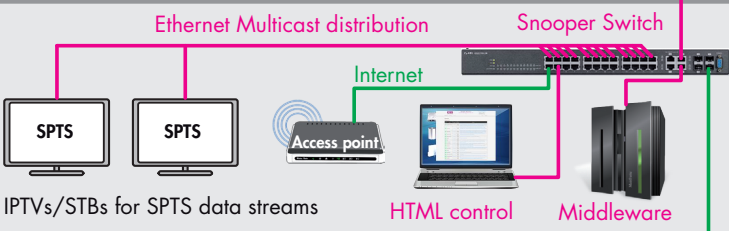
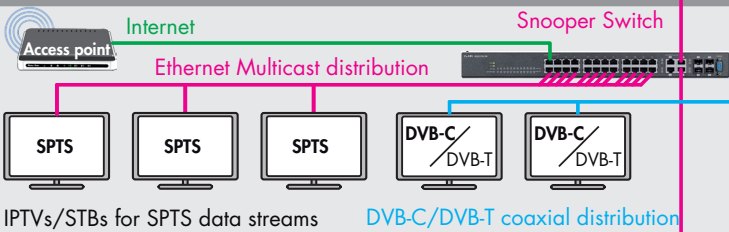
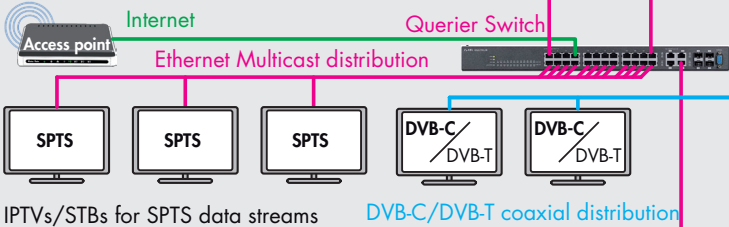
DVB-S2/S2X

Receiving station
STS 1916 IPSR CT CI
Conversion
16 x SAT to 128 x IPTV SPTS
and 16 x QAM/COFDM

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



128 SPTS redundant
128 SPTS



Internet



TECHNICAL DATA

The devices meet the following EU directives:

2011/65/EU, 2014/30/EU, 2014/35/EU

The product fulfils the guidelines and standards for CE labelling.

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

"SAT -> IP" PART

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

Frequency range:	910 ... 2150 MHz
DVB-S modes:	QPSK 1/2, 2/3, 3/4, 5/6, 7/8
DVB-S2 modes:	QPSK 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 16APSK 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 32APSK 3/4, 4/5, 5/6, 8/9, 9/10
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:	83MBit/s
Level range:	60 dB μ V ... 80 dB μ V
Input impedance:	75 Ω
LNC supply:	14 V/18 V; maximum total output of 500 mA

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

SPTS:	max. 128 + 1 (Mediaplayer)
IGMP:	V2
Protocols:	UDP (User Data Protocol), RTP (Real-Time Transport Protocol)

"IP -> CT" PART

Data input

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

Input data

Maximum over all input data rate (Σ lines 1-128):	900 MBit/s
Buffer memory:	1 GBit (corresponds e.g. at 128 x 6 MBit/s to approx. 128 x 6 ms buffer)

RF output QAM

Frequency range:	42.0 MHz ... 868.0 MHz
Types of modulation:	QAM 4, 16, 32, 64, 128, 256
Output level:	80...96 dB μ V

Dynamic phase error: < 0.2 °
 MER: > 45 dB
 Output impedance: 75 Ω
 Symbol rate: 1000...7500 kBd

RF output COFDM

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 dBμV
 Output impedance: 75 Ω

GENERAL

PSUs: 2 (redundant; can be exchanged individually during operation)
 Mains voltage: 100...240 V, 50/60 Hz
 Maximum Power consumption 100 W
 Admissible ambient temperature: 0 ... +50 °C
 Dimensions (WxHxD): 483 mm x 44,5 mm (1HE) x 490 mm
 Weight: 5.5 kg

LAN interface (for data)

Standard: 1000-BASE-T
 Data rate: ≤ 820 MBit/s
 IGMP V2
 Protocols: UDP (User Data Protocol), RTP (Real-Time Transport Protocol)

Connections

LAN (for data) 1000-BASE-T: 1 RJ45 sockets
 LAN redundant (for data) 1000-BASE-T: 1 RJ45 sockets
 LAN (for control) 100-BASE-T: 2 RJ45 sockets
 RF output: 1 F socket
 RF test output (-25 dB): 1 F socket
 Common Interfaces 6

GSS Grundig Systems GmbH • Beuthener Straße 43 • D-90471 Nuremberg
 Phone: +49 (0) 911 / 633 240 0 • Fax: +49 (0) 911 / 633 240 98
www.gss.de/en • info@gss.de



Service: Phone: +49 (0) 911 / 633 240 90 • service@gss.de