

STREAM LINE DVB-IP-Gateway OS xx



Product information



Features:

- Modular platform for DVB-MPEG Video streaming
- Up to 6 DVB frontend modules
- Support for DVB-S, DVB-S2, DVB-C, DVB-T, DVB-ASI, SDI, IP and MPEG-AV encoder
- MPTS/SPTS Demultiplexing and GigE aggregation
- up to 6 CI slots (supports professional CAMs)
- Multiple service CAM support
- MPEG-TS over UDP protocol
- Separate Ethernet port (10/100 Mb/s) for management interface
- Configuration via Webinterface
- Contribution- and IPTV applications

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Description

Concept

Stand-alone IP-streamer for DVB-transport-stream signals. The modular platform provides 6 input slots which can be fitted with various DVB front ends like DVB-S, DVB-T, S2, ASI, SDI or AV Encoder, etc. A dedicated common interface slot is available for each input signal stream. Each transport stream is encapsulated into IP packets. The integrated, switch aggregates these DVB-IP transport streams to a GigE output stream, ready for contribution MPTS and distribution SPTS in carrier or hospitality networks respectively.

All features of the WISI OS streamer can be configured via a web interface which provides access to all RF and IP parameters as well as the decoder settings for the CI interfaces of the input signal sources.

The system creates MPTS and SPTS streams depending on configuration. Additionally it provides a session-announcement-protocol and session-description-protocol which facilitates simple program selection for IPTV set top boxes.

The output stream can be routed through any protected IP infrastructure. A careful selection of manageable routers and switches is advisable to maintain.

Common interface

up to 6 CI slots are at your disposal. They are accessible from the front side of the unit. The CAM modules can be simple as well as professional CAMs. Professional CAMs, if supported by the content provider, have the advantage to open (descramble) more than one program per data stream. OS supports this feature up to as many programs per CAM stream as you are licensed to use by the provider.

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OS xx



Specifications Input modules

ASI input

Data format	DVB A010 ASI-C, EN50083-9
Bitrate	270 Mb/s
ASI mode	Burst or continuous
Packet framing	188 / 204 byte per packet
Sensitivity	200mV (p-p)
Max. signal level	880mV(p-p)
Input impedance	75 Ohm
Input return loss	> 17 dB (27-270 MHz)
Lock indicator	front panel LED

Audio-, Video Transportstream encoder

Video - input

Input format	Composite PAL
Input level	1 Vpp
Input impedance	75 Ω
Gain control	automatic gain clamped control
Encoding standard	MPEG 2 ISO/IEC 13818-2
	MP@ML (4:2:2)
Bit rate	1.504 - 9 Mb/s, CBR + VBR
Supported resolutions	Full D1
Picture Size	horizontal 720 pixel vertical 576 pixel
Picture encoding type	I,P,B

Audio - input

Input format	Analog (left, right)
Input level	500 mVeff / 600 Ohm
Sampling frequency	32 / 44,1 / 48 kHz
Encoding standard	MPEG 1 L1/2 ISO/IEC 13818-3
Bit rate	up to 192 kbit/s
Lock indicator	front panel LED

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DVB-IP-Gateway

OS xx



Specifications Input modules

SDI-MPEG Encoder

Video - input	
Input format	SDI SMPTE 259M-C 270 Mb/s 625Z
Input impedance	75 Ω
Gain control	automatic gain clamped control
Encoding standard	MPEG 2 ISO/IEC 13818-2
	MP@ML (4:2:2)
Bit rate	1.504 - 9 Mb/s, CBR + VBR
Supported resolutions	Full D1
Picture Size	horizontal 720 pixel vertical 576 pixel
Picture encoding type	I,P,B
Audio input	
Input format	Analogue (left, right) or digital (SDI with embedded Audio)
Input level	0 dBm / 600 Ohm
Encoding standard	MPEG 1 L1/2 ISO/IEC 13818-3
Bit rate	up to 192 kbit/s
Emphasis	none
Mode	Stereo, joint stereo, dual, single
Sampling frequency	48 kHz

DVB-S2

Input impedance	75 Ω
Input frequency range	950 - 2150 MHz
Input frequency steps	1 MHz
Input return loss	> 8 dB
IF-frequency/-bandwidth	none (Zero-IF)
Input level range	47 - 70 dB μ V
AFC	\pm 10 MHz
Modulation scheme	QPSK, 8PSK
Symbolrate	10 - 30 MS/s
Filtering	Nyquist $\sqrt{\cos}$
Roll-Off	20% / 25% / 35 %
FEC outer code	BCH,
FEC inner code	LDPC R=1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
Data format	EN302307
Spectral inversion	C-/KU band
Bitrate	81 Mbit max.
Lock indicator	front panel LED

Specifications Input modules

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DVB-S

Input impedance	75 Ω
Input frequency range	950 - 2150 MHz
Input frequency steps	1 MHz
Input return loss	> 8 dB
IF-frequency/-bandwidth	none (Zero-IF)
Input level range	47 - 70 dB μ V
AFC	\pm 5 MHz
Modulation scheme	QPSK
Symbolrate	2 - 45 Ms/s
Filtering	Nyquist $\sqrt{\cos}$
Roll-Off	35 %
FEC inner code	Conv., K=7, R=1/2, 2/3, 3/4, 4/5, 6/7, 7/8, 8/9
FEC outer code	RS (204, 188, 8)
Spectral inversion	C-/KU-band
Interleaving	Conv., I=12
Lock indicator	front panel LED

DVB-T

Input impedance	75 Ω
Input frequency range	146 – 858 MHz
Input frequency steps	250 kHz
Input frequency offset	8 MHz +/- 166,67 kHz 7 MHz +/- 125kHz
Input return loss	> 9 dB
Input level range	40 – 90 dB μ V
IF-bandwidth	7 / 8 MHz
Modulation scheme	QPSK, 16 QAM, 64 QAM
COFDM	2k-FFT, 8k-FFT
Guard interval	1/4, 1/8, 1/16, 1/32
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Lock indicator	front panel LED

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Specifications Input modules

DVB-C

Input impedance	75 Ω
Input frequency range	47 - 862 MHz
Input frequency steps	250 kHz
Input return loss	> 8 dB
Input level range	45 - 75 dB μ V
Spectral inversion	on, off
Modulation scheme	16, 32, 64, 128, 256 QAM,
Symbolrate	1,75 – 7,125MS/s
Lock indicator	front panel LED

IP Module

Ethernet input	
Interface	10/100 Base (RJ45)
Frame Format	Ethernet II
Rate	10/100 Mbps autosensing
Protocol	UDP/IP, ARP, ICMP(ping), IGMPv2
Ethernet transmitting	Unicast, Multicast

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Specifications

TS Processor / Streamer

Transmodulator mode

- no modification of incoming (P)SI tables
- no SAP/SDP
- **stuffing to constant bitrates**

Legend

SAP = Session Announce Protocol
SDP = Session Description Protocol

SPTS mode

- up to 32 different SPTS, total bitrate of up to 90 Mbit/s
- each SPTS is synthesized from single components of the incoming TS
e.g. Video, Audio, Teletext, Data
- dynamic creation of PAT, PMT, SDT
- dynamic creation of SAP/SDP (multicast)
- stuffing to CBR possible (CBR = Constant Bitrate)
- when stuffing enabled: Automatic PCR correction
- including/excluding EIT and TDT/TOT
- also possible: Generate MPTS containing several services of the incoming TS
- SAP/SDP

Output

Protocol	Ethernet
Transfer rate	1000 Mb/s
Duplex mode	full
IP version	4
Streaming protocol	MPEG-TS over UDP
TS packet number	7

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OS xx



Standard compliance	
ISO 639	Code for the Representation of Names of Languages
ISO/IEC 13818-1	Information technology – Generic coding of moving pictures and associated audio informations - Systems
IETF RFC 791	IP v4
IETF RFC 768	User Datagram Protocol (UDP)
IETF RFC 793	Transmission Control Protocol (TCP)
IETF RFC 1065	Structure and identification of management information for TCP/IP-based internets. SNMP v1
IETF RFC 1066	Management information base for network management of TCP/IP-based internets. SNMP v1
IETF RFC 1067 A	simple network protocol. SNMP v1
IETF RFC 1901	Introduction to community-based SNMP v2
IETF RFC 1908	Coexistence between Version 1 and Version 2 of the internet standard network management framework.
IETF RFC 2616	Hypertext Transfer Protocol (HPPT / 1.1)
Standard compliance	
ETSI EN 300421	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for 11/12 GHz satellite services.
ETSI EN 300429	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for cable systems.
ETSI EN 300468	Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems.
ETSI EN 300744	Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for digital terrestrial television
General data	
RF-input	F-connector
ASI-input	BNC-connector
AV-input	BNC-/ audio jack (3.5mm) connector
IP-streaming	SFP
Management/Control	RJ45
Housing	19" 1RU
Power supply	230 VAC 50/60 Hz
Operating temperatur range	0°C ... + 50°C

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OS xx



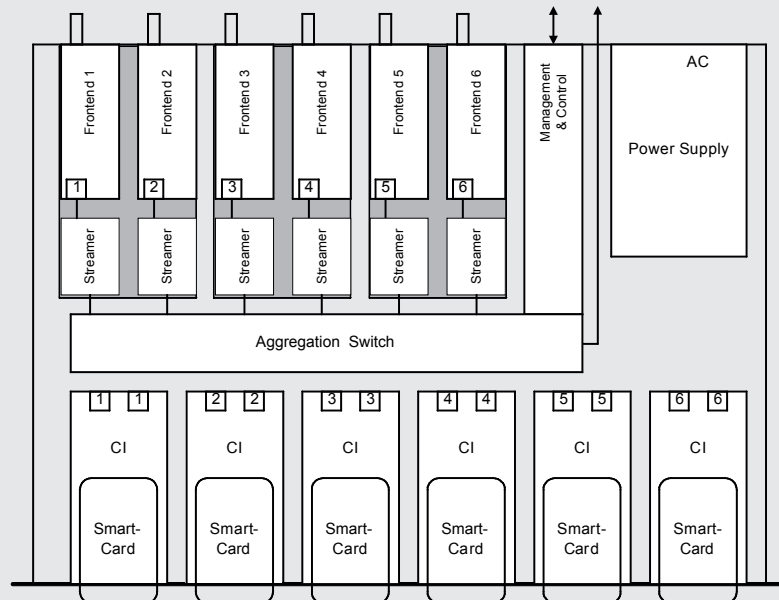
Accessory	Electrical SFP Module
	OSFP 01 - Adaptor FCLF-8521-3
	Supply Current 320 - 375 mA / 1.2W max power over
	Input Voltage 3.13 - 3.47 V
	Maximum Voltage 4 V
	Surge Current 30 mA
	SFP Output LOW 0 - 0.5 V
	SFP Output HIGH host_Vcc - 0.5 - host_Vcc + 0.3 V
	SFP Input LOW 0 - 0.8 V
	SFP Input HIGH 2 Vcc + 0.3 V
	Line Frequency 125 MHz
	Tx Output Impedance 100 Ohm
	Rx Input Impedance 100 Ohm
	Single ended data input swing 250 - 1200 mV
	Single ended data output swing 350 - 800 mV
	Rise/Fall Time 175 psec / 20%-80%
	Tx Input Impedance 50 Ohm
	Rx Output Impedance 50 Ohm
	Data Rate 10 - 1,000 Mb/sec
	Cable Length 100 m
	Operating Temperature 0 - 85 °C
	Storage Temperature -40 - 85 °C
	I ² C Clock Rate 0 - 100,000 Hz

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Block diagram

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OS xx



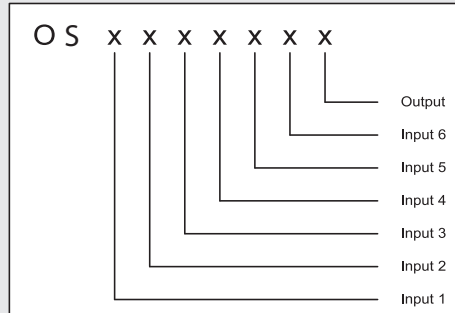
Notes

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Order informations



- Input:**
- 0 – empty
 - 1 – DVB-S (single)
 - 3 – DVB-S2 (single)
 - 4 – DVB-T (single)
 - 5 – DVB-C (single)
 - 6 – AV - MPEG2 – Encoder (single)
 - 7 – ASI – Input (single)
 - 9 – Ethernet – Input (single)
 - A – SDI-MPEG2-Encoder (single)

- Output**
- 6 = 3 x OSDS + 0 x OSCI
 - 7 = 3 x OSDS + 2 x OSCI
 - 8 = 3 x OSDS + 4 x OSCI
 - 9 = 3 x OSDS + 6 x OSCI

Application

1111119 = Streamer with 6 x DVB-S, 3 x OSDS + 6 x OSCI

Legend

OSDS= OS-DualStreamer

OSCI= OS-CI modules

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