



ATSCcheduler

ATSC Broadcast Gateway for **ATSC 3.0**

ATSCHEDULER IS ENENSYS' ATSC BROADCAST GATEWAY MODULE THAT ENCAPSULATES MMT, ROUTE, ALP OR ANY IP STREAMS INTO A ATSC MULTIPLEX, INSERTS SYNCHRONIZATION DATA FOR SINGLE FREQUENCY NETWORK BROADCASTING, ALLOCATES DATA INTO THE DIFFERENT SUB-FRAME AND PHYSICAL LAYER PIPES AND GENERATES STL OUTPUT PACKETS OVER IP.

Running at the studio or central head-end, **ATSCcheduler** encapsulates one or several IP Streams from Signaling, Application or data servers and HEVC encoders that deliver the compressed audiovisual content over ROUTE or MMTP protocols. It outputs the resulting ATSC 3.0 compliant multiplex using the **STL** (Studio to Transmitter Link) protocol over IP (STLTIP). The **ATSCcheduler** module operates in the HDc chassis that can accommodate up to 6x **ATSCcheduler** modules in 1U.

SCHEDULER WITH MULTIPLE SUB-FRAME AND MULTIPLE PLP SUPPORT

The **ATSCcheduler** is the central body of the operational ATSC 3.0 network as it provides in-band control and signaling to all the ATSC modulators. When using Multiple Sub-Frames and/or Multiple PLP (Physical Layer Pipes) feature to provide service-specific robustness, the **ATSCcheduler** enables all the modulators to generate the same PLP data in a deterministic manner. **ATSCcheduler** supports by default the management of 4 PLP.

SFN MANAGEMENT

Also the **ATSCcheduler** enables SFN (Single Frequency Network) broadcasting over ATSC. It provides in-band synchronization information in the STL output to all modulators that enables them to generate exactly the same data at exactly the same time over exactly the same frequency.

ALP ENCAPSULATION

The **ATSCcheduler** performs ALP (ATSC Link Layer Protocol) encapsulation of incoming IP streams prior the encapsulation into BaseBand Frames. It also generates the LMT tables (Link Mapping Tables) to link the PLP to IP streams.

APPLICATIONS

- ATSC 3.0 SFN operation
- ATSC 3.0 Mobile broadcasting
- ATSC 3.0 Multi-PLP management
- ATSC 3.0 Multi Sub-Frame management

BENEFITS

- Housed in High Density chassis (HDc):
 - support multiple ATSC in 1U
 - works with IPGuard changeover switch to provide 1+1 redundancy
- Central body of the ATSC 3.0 network
- Straightforward handling of ATSC 3.0 complexity
- Improve broadcast coverage when broadcasting over SFN

CHARACTERISTICS

- ROUTE, MMTP input
- Encapsulation of IP streams into ALP
- Encapsulation into ATSC baseband frame
- LMT tables generation
- Configuration of ATSC modulators
- ATSC SFN Adaption
- Single and multiple sub-frame management
- Single and Multiple PLP management
- Generation of STL output packets over IP (STLTIP)
- Validation of ATSC 3.0 transmission parameters
- Full SNMPv2 support





INPUTS

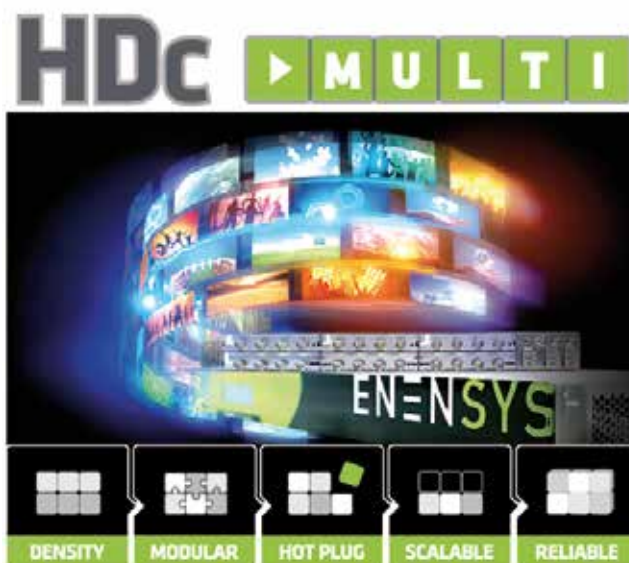
Control	1x Gigabit Ethernet (RJ45) for GUI/SNMP
ROUTE MMTp	Up to 2x Gigabit Ethernet (RJ45)
GPS	1x PPS and 10 Mhz (BNC 50 Ω) 1x TNC for GPS antenna input and internal GPS clock - Option

OUTPUTS

STL stream	Up to 2x Gigabit Ethernet (RJ45) (mirrored)
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FEATURING

ATSC standard	V3.0 support
ATSC encapsulation	IP encapsulation into ALP packets ALP encapsulation into BB frames LMT tables generation
ATSC network configuration	In-band control of ATSC transmitters SubFrames management
SFN Adaptation	Integrated SFN adapter Timestamp generation and insertion
Sub-Frame management	Single and Multi-Sub-Frame support 2 Sub-Frames supported by default
PLP management	Single PLP and Multi-PLP handling 4 PLP supported by default
STL output	Generation of STL stream over IP
IP management	4x Gigabit ports available Allow 1+1 redundant IP input and mirrored IP output
Monitoring and Supervision	Validation of ATSC parameters Full SNMP v2 support Easy-to-use WEB GUI



CHASSIS

Height	43 mm / 1.69 in.
Width	443,7 mm / 17.46 in.
Depth	322,8 mm / 12,70 in.
Format	1 RU, width 19"
Front Panel	LCD Display and controls
Power supply	100-240V 50/60Hz or 48V DC
Power consumption	20W/module

ORDERING CODES

HDc-Multi-220V High Density chassis with 220V input

HDc-Multi-48V High Density chassis with 48V input

Chassis Options

HDcMulti-In220VRedundant 110V/220V redundant power supply

HDcMulti-In48VRedundant 48V DC redundant power supply

HDm-ATSCcheduler ATSC Broadcast Gateway module

Module Options

ATSCcheduler-MPLP8 Management of up to 8 PLP