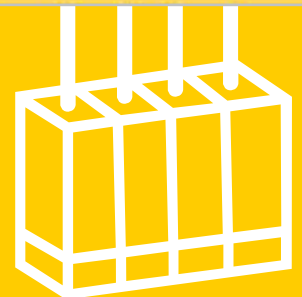




High Density Video Processing Platform



excellence in digital ...

WISI TANGRAM Video Platform

The WISI TANGRAM Video Platform is a high density digital TV Headend for contribution of digital TV via IP Networks and end to end IPTV solutions such as On Demand TV, Connected TV and OTT (Over The Top) Web TV.

The platform is highly customizable and offers advanced DVB stream processing in a small footprint 1 RU chassis concept.

The TANGRAM chassis can be equipped with 6+1 modules and comes with an integrated GigE switch.

The six rear loaded modules have different functionalities, and can perform all necessary signal processing functions.

The TANGRAM platform can be used in a central or distributed Headend architecture and provides the following processing functions in a central location:

DVB-IP Gateway for DVB-S/S2, -C, -T, -T2, Descrambling, Remultiplexing, Scrambling, PSI/SI-Processing and Modulation.

In a decentralized architecture with regional Hubs, the modulation is done in the hub site and the aggregated digital TV streams are transported via an IP network and are terminated in Edge-QAMs, -COFDMs*, -PALs and -FMs for re-modulation and transmission in HFC networks.

A high capacity switching module implements two major functions of the WISI TANGRAM Video Platform. Firstly, it operates as a configurable switching unit for audio/video streaming via Gigabit Ethernet. Secondly, it provides the management interface for controlling the entire TANGRAM unit. TANGRAM supports Unicast and Multicast SPTS/MPTS traffic, including IGMP.

The TANGRAM chassis can optionally be equipped with two load sharing redundant power supplies (DC or AC) and contains high performance monitored fans for cooling. Modules, fans and power supplies are hot swappable.

The TANGRAM product portfolio is composed of the modules mentioned in the table on the right.

General features:

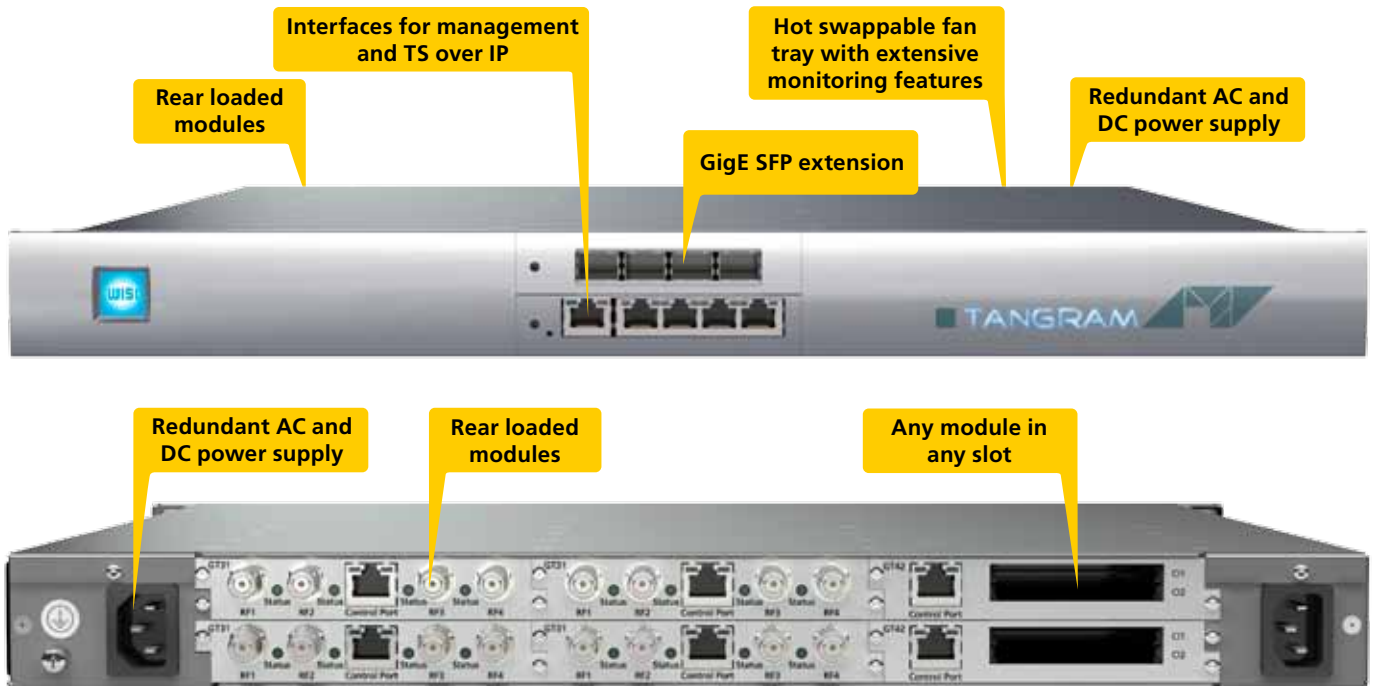
- Customizable headend architecture for CATV & IPTV
- Advanced DVB stream processing
- Small footprint in 1RU chassis
- 6+1 modules
- Hot swappable fan tray
- Fully redundant concept (1+1, n+1)
- Switch + passive backplane
- Optionally Scrambling + MUX function
- High density, high quality, high performance, high flexibility
- Edge modulation QAM, COFDM, PAL, FM
- DVB-Gateway, acquisition, aggregation
- DVB-CI interfaces for service descrambling
- RJ45 + SFP interfaces (optionally with GT 12)

Tangram Video Platform Components:

GT 01 W	19" 1 RU chassis with backplane, 1 power supply (48 VDC or 230 VAC), fan tray and integrated GigE switch (GT 11)
GT 12 W	Switch extension board SFP
GT 21 W	IP to PAL, 6 PAL channels out on 2 RF ports
GT 22 C	IP to FM, 8 FM channels out on 1 RF port
GT 23 W	IP to QAM, 8 QAM channels out on 2 RF ports, with remux and scrambling
GT 24 W	IP to COFDM, 8 COFDM channels out on 2 RF ports
GT 31 W	Input DVB-S/S2/T/T2/C frontend with 4 independent tuners
GT 32 W	Input ASI frontend with 4 independent ports
GT 42 W	CI module with 4 CAM slots
GT 55 W 0048	Additional power supply 48 VDC
GT 55 W 0230	Additional power supply 230 VAC



System Overview



Integrated GigE switch module

- Operates as a configurable switching unit for audio/video streaming via Gigabit Ethernet.
- Provides the management interface for controlling

Management interface

- Standard 1000Base-T, 100Base-TX
- Protocol SNMP, HTTP
- User Interface Webserver/HTML

Streaming interface

- Standard 1000BASE-T, 100BASE-TX
- Data format Unicast/Multicast SPTS/MPTS
- Encapsulation MPEG-TS over UDP/RTP

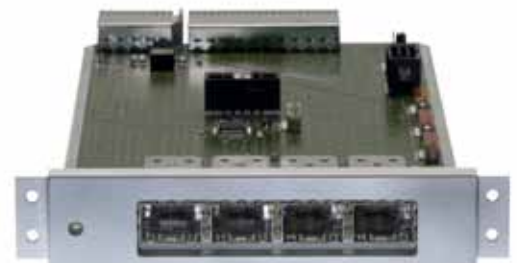
Platform modules

GT 12 W Switch extension board with 4 SFP slots

- Provides optical or electrical access
- Provides port and service redundancy

GT 42 W Descrambling module

- Module with 4 CI-slots
- Support of Multi Channel Decryption (MCD)
- Decryption of MPEG-2 & MPEG-4 streams



GT 12 W

- GT 55 W 0048 Additional power supply 48 VDC for redundancy
- GT 55 W 0230 Additional power supply 230 VAC for redundancy

System applications

DVB-IP Gateway



GT 31 W / GT 32 W – Streamer module

- Multi Transport Stream reception for DVB signals
- GT 31 W: up to 6x4 DVB-S/-S2/-T/-T2/-C inputs
- GT 32 W: up to 6x4 ASI inputs
- Gigabit Ethernet output for MPTS and SPTS
- Teletext and EPG data handling
- Web browser user interface
- Separate management port
- Supports GT 42 W (4x CI) for service descrambling
- Support for Multi Channel Decryption (MCD) of the 4 CIs
- 1+1, n+1 redundancy option

Edge processing



GT 21 W – Edge PAL module

- Full PAL-B/G, PAL-D/K, SECAM support
- Analogue Stereo and NICAM
- Supports GT 42 W (4x CI) for service descrambling
- 36 PAL channels per 1 RU

GT 22 C – Edge FM module

- Full MPEG-1/2 audio decoding
- Digital FM modulation
- RDS insertion
- 48 FM channels per 1 RU

GT 23 W – Edge QAM module

- Multiplexing & scrambling
- DVB-C
- Supports GT 42 W (4x CI) for service descrambling
- 48 QAM channels per 1 RU

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