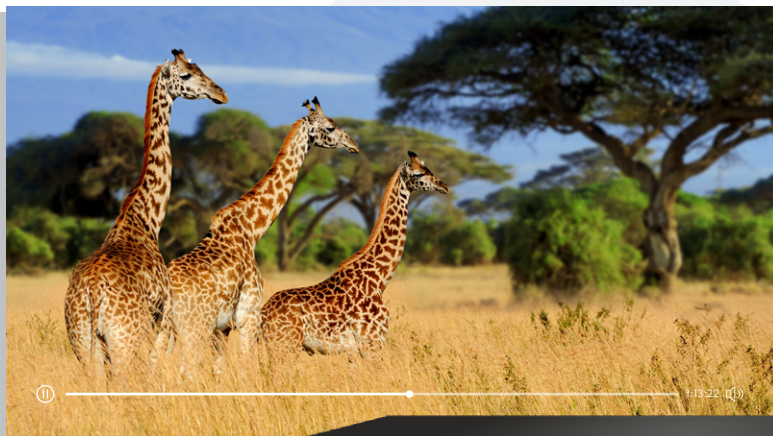




Tangram Video Platform Hospitality and Edge Solution

- ✓ Options for analog, QAM, ASI and encrypt/decrypt
- ✓ Low power consumption, AC or DC power options
- ✓ Bandwidth expansion with four SFP slots
- ✓ Combine up to 6 modules based on deployment needs
- ✓ Hot-swappable modules, fan trays and power supplies
- ✓ High reliability with module and source redundancy



- Save on rack space, power, and cooling costs for high-density deployments
- Combine modules in a 1RU chassis to meet specific application needs
- Bridge between digital and RF - migrate to IP distribution and connect to existing edge networks



Tangram chassis shown with GT12 module.

Applications

- ✓ Protect streams for hospitality applications with Pro:Idiom, BISS, Samsung LYNK encryption, or Verimatrix bulk decryption
- ✓ Integrate into existing infrastructure by replacing costly equipment with a high-density IP to QAM modulator
- ✓ Add additional value to video line up - insert specialized, local content from HDMI, SDI, or A/V inputs
- ✓ Connect directly with broadcasters or maintain secure point-to-point signals with SRT or ASI
- ✓ Maintain legacy streams for analog customers or fitness equipment at hospitality sites by bridging IP video streams to analog
- ✓ Improve visibility with a visual mosaic of all headend streams using All Seeing Eye monitoring platform



Tangram Video Platform Hospitality and Edge Solution

New modules



NEW!

GT35
HDMI Encoder

Up to 4x IP outputs from
HDMI input



NEW!

GT36
HD/SDI Encoder

Up to 4x IP outputs from HD/
SD-SDI or A/V analog inputs



NEW!

GT2000 Universal IP to Edge Next-Gen Processing Module

- The ultimate solution for high-density video processing
- Deploy one module for several applications
- Change functionality with an easy software upgrade
- Available for IP to Analog applications - additional software option for IP to QAM coming in future release

Module Specifications

GT2000 Universal IP to Edge Module

Operation Mode	Set or change functionality with software options: - IP to Analog with GT2100 software - IP to QAM with GT2300 software (future)
Connectors	1x RF output 1x RF test output 1x Genlock BNC socket

GT2100 Software for IP to Analog (GT2000 license)

IP Inputs	Decode MPEG-4 AVC and MPEG-2 IP inputs Decode HEVC with GTEHEVC license
Analog outputs	Up to 10 analog channels on 1 RF output with GT2100 software option
IP Input Protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP TS Input Format	SPTS CBR/VBR, MPTS CBR
Video Downscaling	10x HEVC/MPEG-4 AVC/MPEG-2 HD/SD, or 1x HEVC UHD/4k
Audio Dolby Decoding	Yes, with GTEDOL license

GT35 – HDMI Encoder

HDMI Ports	4x ports
HDMI Input Format	1080i@25/30, 720p@50/60, 480p@60, 480i@30, 576i@25
Encoded Outputs	4x HD/SD MPEG-2/MPEG-4 AVC IP outputs
IP-FEC Inputs/Outputs	32x input/output with GNSTREC software
SRT Send	Up to 4x SRT streams

GT36 – SDI Encoder

HD/SDI	4x inputs, audio embedded
HD-SDI Input Format	1080i@25/30, 720p@50/60
SD-SDI Input Format	480i@30, 576i@25
Encoded Outputs	4x HD/SD MPEG-2/MPEG-4 AVC IP outputs
IP-FEC Inputs/Outputs	32x input/output with GNSTREC software option
SRT Send	Up to 4x SRT streams



Available Modules

Up to 6 modules can be used in a single Tangram chassis. One module type can be installed exclusively or in combination with other modules to support different applications.



**GT21
IP to Analog**
Up to 6x analog channels on 2x RF outputs



**GT23
IP to QAM**
Up to 12x QAM channels on 2x RF outputs



**GT32
ASI to IP/IP to ASI**
4x ASI input or output, demux & passthrough



**GT41
Video Processor**
Encrypt/decrypt, mux/demux, SRT, RTP + FEC

Module Specifications

GT21 IP to Analog

IP Inputs	32x Services
IP Input Protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP TS Input Format	SPTS CBR/VBR, MPTS CBR
Video Downscaling	6x MPEG-2/MPEG-4 AVC SD, or 3x MPEG-2/MPEG-4 AVC HD and 3x MPEG-2/MPEG-4 AVC SD
Audio Dolby Decoding	Yes, with GTDOL license

GT23 IP to QAM

IP Inputs	128x Services
IP Input Protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
Modulation Compliance	DVB-C, Annex B
Modulation Type	16-, 32-, 64-, 128-, 256-QAM
Service Remultiplexing	Yes, with GTSYMUX license
Service Processing	PID filtering & remapping, PCR correction and de-jitter, Advanced PSI/SI regeneration

GT32 ASI to IP/IP to ASI

ASI Inputs & Outputs	4x Ports
IP Inputs & Outputs	64x Streams (128 with GTSTRX license)
IP Input & Output Protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP TS Input & Output Format	SPTS CBR/VBR, MPTS CBR
IP FEC Inputs & Outputs	Yes, with GTFEC license
Service Remultiplexing	Yes, with GTSYMUX license

GT41 Video Processor

IP Inputs & Outputs	32x or 64x Streams <i>(128 with GTSTRX license)</i>
IP Input & Output Protocol	UDP/RTP/RTP+FEC Unicast and Multicast, IGMP v2 and v3
IP TS Input & Output Format	SPTS CBR/VBR, MPTS CBR
IP FEC Inputs & Outputs	32x or 64x or 128x streams <i>(with GTFEC license)</i>
Service Remultiplexing	Yes (GTSYMUX functionality is included)
Encryption	AES128, Samsung LYNK, Pro:Idiom, BISS
Bulk Decryption	BISS, Verimatrix
SRT Receive	Up to 4x SRT streams with AES encryption

System Specifications

Management

Configuration	Web-based user interface
Monitoring	Stream monitoring and logging with GTMON All Seeing Eye integration with GTASE
Network Interface	4x GigE Use GT12 module to add 4x SFP
SNMP	SNMP Trap Forwarding

Transport Stream Processing

Input & Output Codecs	Support for MPEG-2 and MPEG-4 AVC, HEVC, SPTS & MPTS, demux & remux
Optimization	Strip null padding, jitter correction, PID & program remap & filter*

* Not applicable to GT21 IP to Analog module



Tangram Video Platform Hospitality and Edge Solution

Chassis Options	GT01W0110 (for AC power)	GT01W0048 (for DC power)
Physical	1RU chassis with backplane, fan tray and integrated GigE switch	1RU chassis with backplane, fan tray and integrated GigE switch
Dimensions	19" x 1.77" x 18.6" (483 x 45 x 473 mm)	19" x 1.77" x 18.6" (483 x 45 x 473 mm)
Power Supply	Single or Redundant PSU 110V AC	Single or Redundant PSU 48V DC
Power Consumption	<250 W	<250 W
Operating Temperature	-5 - 45°C, 23 - 113°F, ETSI EN 300 019-1-3 Class 3.1	-5 - 45°C, 23 - 113°F ETSI EN 300 019-1-3 Class 3.1
EMC	EN 50083-2, FCC CFR 47 Part 15 (Class A)	EN 50083-2, FCC CFR 47 Part 15 (Class A)
Safety compliance	CE, UL/CSA/CAN 60950-1	CE, UL/CSA/CAN 60950-1

Ordering Part Numbers

Chassis Options

GT01W0110	Tangram chassis for AC power, capacity for up to 6x modules
GT01W0048	Tangram chassis for DC power, capacity for up to 6x modules
GT55W0110	Redundant power supply 110 V AC
GT55W0048	Redundant power supply 48 V DC

Module Options

GT12	SFP extension module
GT2000	Universal IP to Edge Module. Software licenses available to set or update functionality.
GT21	Tangram IP to analog (NTSC) module, up to 6x MPEG-2/4 AVC SD or 3x MPEG-2/4 AVC HD plus 3x MPEG-2/4 AVC SD IP sources
GT23	Tangram IP to QAM module, 12x QAM outputs
GT32	Tangram ASI to IP/IP to ASI module, 4x ASI input/output
GT35	Tangram encoder module for HDMI inputs
GT36	Tangram encoder module for SDI or A/V inputs
GT41	Tangram universal processing module for scrambling, mux/demux, up to 64x SPTS/MPTS <i>(includes GTSTR & GTSYMUX for IP streaming)</i>

Streaming/Multiplexing

GTSTRX	License option extension for IP streaming in GT32, & GT41 up to 128x SPTS/MPTS
GT FEC	IP streaming in/out FEC per module Up to 128x input & 32x output
GTEFEC	Input IP streams with FEC correction, per GT2000 module
GTSYMUX	License option for multiplexer for GT23, GT32
GTSRT	License option for SRT. One SRT connection per license. Up to 4x SRT connections per module. SRT send or receive available for GT41. SRT send only for GT35/36
GTGCINS	License option to insert a static channel list, for GT23
GTEHEVC	Decode HEVC encoded video with GT2000

Audio Licenses

GTBTS	4x BTSC/ (2 SAP) option for GT21
GTEBTS	BTSC/SAP modulation option for GT2000, per audio stream
GTDOL	6x Dolby AC3 decode option for GT21
GTEDOL	Decode Dolby Digital option for GT2000, per audio stream

Encryption/Decryption

GTAES	License option for AES128 or BISS2 scrambling for GT41 for 32x services
GTAES + GTAESX	License option for AES128 or BISS2 scrambling for GT41 for 128x services
GTLYNK	License option for Samsung Hotel TV LYNK scrambler for 32x services in one MPTS (IP output only)
GTLYNKX+GTLYNKX	License option extension for Samsung Hotel TV LYNK scrambler for 128x services in GT41
GTPISCR8	License option for Pro:Idiom scrambler for 8x services in GT41 (IP output only)
GTPISCR16	License option for Pro:Idiom scrambler for 16x services in GT41 (IP output only)
GTPISCR24	License option for Pro:Idiom scrambler for 24x services in GT41 (IP output only)
GTSCR	License option: - DVB simulcrypt (CSA) scrambling for GT23 & GT41 for up to 32x services - BISS scrambling for GT41 for up to 32x services
GTSCR + GTSCRX	License option extension: - DVB simulcrypt scrambler (CSA) for GT23 & GT41 for up to 128x services - BISS scrambling for GT41 for up to 128x services
GTBISS	License option for BISS or BISS2 descrambling for 8x services in GT41
GTVMX	License option for Verimatrix bulk descrambling (AES128) for 32x services in GT41
GTVMX + GTVMXX	License option extension for Verimatrix bulk descrambling (AES128) for 128x services in GT41

Monitoring

GTASE/GTEASE	Module license option for rendering TS info & thumbnails in Inca All Seeing Eye - powerful headend monitoring tool with overview mosaic. GTEASE required for GT2000
GTMON /GTEMON	License option for basic transport stream monitoring & logging per module. GTEMON required for GT2000

Redundancy

GTRED/GTERED	License option for input redundancy per GT module. GTERED required for GT2000
GTNRED	License option for N+1 module redundancy per chassis