

MEG Media Edge Gateway

PowerVu IRD MPEG2 | H.264 | H.265 | 4K Transcoder



The Media Edge Gateway (MEG and MEG.mini) is a flexible, software-defined edge processor equipped with powerful edge processing functions such as transcoding, regionalization, time delay, blackout, decrypt, decode and encode across satellite/ CDN/IP networks. The platform provides cloud-to-ground and ground-to-cloud connectivity and tailors content handoff to meet the needs of affiliates and MVPDs. The futureproof gateway leverages multiple deployment options – including Synamedia appliances, COTS servers, containers, and full virtual environments – to increase your business' agility. By working in your environment of choice – on-premises, public cloud, or hybrid cloud – you can control costs and simplify management. Integrate with Synamedia's PowerVu or third-party content protection solutions to secure your entire video network chain from distribution, through processing, to delivery. MEG includes two or four satellite RF ports per satellite input card to provide support for up to four or eight satellite demodulators with DVB-S, DVB-S2, and DVB-S2X support. The platform enables you to create cost-effective, application-specific gateways, such as satellite/ATSC 3.0 receivers and SMPTE ST 2110/ SMPTE ST 2022-6/3G-SDI output decoders, to deliver innovative value-added experiences and to unlock new monetization opportunities.

Key Functionalities

Optimized distribution and flexible deployment options

- Leverages in-house, state-of-the-art video/audio codecs to optimize distribution bandwidth cost
- Consolidates workflows to run multiple video applications across all screens efficiently and easily
- Deploys edge application either in the cloud or on-premises with Quortex PowerVu workflows to increase flexibility

Flexible decoding/transcoding/encoding across single or multiple streams

Decoding

- One 4K UHD (2160p)
- Up to four full high definition (1080p)
- Up to eight high definition (1080i, 720p)
- Up to eight standard definition (480i) MPEG-2, advanced video coding (AVC), or HEVC video-encoded services
- Support for SMPTE ST 2110, SMPTE ST 2022-6, or SDI/3G-SDI outputs

Transcoding / Encoding / Processing

- Targets applications requiring transcoding of multiple video services within single or multiple transport streams, including HEVC, MPEG-4 AVC and MPEG-2
- Offers advanced re-multiplexing and PID management
- Encoding from SDI to HEVC/ MPEG-4 AVC

Technical Advantages

- Scalable, dense platform with MPEG-2, AVC and HEVC decoding support, as well as HEVC and AVC transcoding and encoding support
- Extensive IP delivery support options, such as SMPTE ST 2022-2 with FEC, Zixi, RIST, and SRT, including TS over CDN, HLS, and DASH with ABR2TS conversion
- SMPTE ST 2022-6 and SMPTE ST 2110 output and NMOS support for integration with all-IP production and playout solutions
- Generic interfaces such as 3G-SDI, ASI input and output support, satellite RF DVB-S/S2/S2X input support, and appliance option for ATSC 1.0/3.0 reception support
- Integrated with Synamedia's PowerVu Network Center, including PowerVu monitoring via PowerVu Insight, to offer content protection features such as conditional access module (CAM) card, BISS-1/E, BISS-CA support, and PowerVu conditional access support
- Flexible TS backup options: any-to-any input type
- Time delay
- Myriad of graphic overlay functions for content identification
- Versatile deployment options: Synamedia appliances, COTS servers, virtualized environments, containers

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Product Specifications (model dependent)

Processing	
Input Types	• SMPTE ST 2022-2 (MPTS or SPTS) • Zixi/SRT/RIST/TS over HTTP/HLS/RTMP • RF ATSC 1.0/3.0 • RF DVB-S/S2/S2X (LNB power insertion 13V, 18V and 22Khz) • ASI • SDI
Output Types	• SMPTE ST 2022-2 (MPTS or SPTS) • Zixi/ SRT/ RIST/ RTMP • ASI • SDI, SMPTE ST2110-10/-20/-21/-30/-40 and SMPTE ST2022-6
Video Processing	• 4:2:0/8-bit or 4:2:2/10-bit decoding to SMPTE ST2110, SMPTE ST2022-6 and 3G-SDI output: • One 4k UHD (2160p) service • Up to (4) full high-definition (1080p) services • Up to (8) high-definition (1080i, 720p) services • Up to (8) standard-definition (480i) services • HEVC, AVC, MPEG-2 • SD, HD, FHD, UHD decode including down conversion support • Video transcoding option for HEVC, AVC inputs to AVC, MPEG-2 outputs for SD, HD, FHD and UHD • Video encoding from SDI option 4:2:0/8-bit MPEG-2, MPEG-4 AVC and HEVC • Time delay
Audio Processing	• Up to 8 audio decode channels on SDI output • Up to 8 Audio Transcode/Encode, Up-mixing and Down-mixing • MPEG1 Layer II, AAC, HE-AAC, Dolby Digital and Dolby Digital Plus (stereo and 5.1) • Dolby Digital Pass-through (stereo and 5.1) • SMPTE 302 PCM and Dolby-E Pass-through • Cue tone to Closed captions conversion
Splicing and Switching	• Live linear broadcast splicing • Linear stream switching
De-scrambling and Decryption	• DVB-CI (CAM support) • BISS / BISS-E / BISS-CA • PowerVU CA
Graphical Overlays in Decoded Output	• Static logos • Scrolling text banner • EAS banner • Slate on input loss • Time ticker • Teletext and subtitle burn-in
Redundancy	• 1:1 IP interface backup • SMPTE ST 2110 port mirroring • Input service and transport stream redundancy hitless merge for MPEG-2 transport stream input using user-configurable triggers • 1:1 MEG node redundancy • TS backup: any-to-any input type
Monitoring and Management	• Integrated Grafana dashboards • Elasticsearch, Logstash, and Kibana (ELK) stack support • Alarm notifications, including SNMP traps • Syslog • Easily controlled via local web GUI • Fully documented open API enabling third-party component integration • AMWA IS-04 NMOS discovery and registration • AMWA IS-05 NMOS device connection management

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Platform Support and Compatibility

Physical and Power	MEG-A (M and S variants)	MEG-MINI-SAT-GW MEG-MINI-CLOUD-GW	MEG-MINI-IP-GW
Size (H x L x W)	• 1RU, 1.73 x 22.04 x 17.24 in, 4.4 x 56 x 43.8 cm	• 1RU ½ width, 1.72 x 13 x 8.43 in, 4.4 x 33.0 x 21.4 cm	• Handheld 1.6 x 4.9 x 5.1 in, 4.1 x 12.4 x 12.8 cm
Weight	• 21.38 lb / 9.7 kg	• 7.5 lb / 3.4 kg	• 1 lb / 0.5 kg
Power Supply	• 1 AC PSU, AC input 100 to 240V AC • Second PSU optional (M variant)	• External Power DC 12V 20A (input 100 to 240V AC)	• External Power DC 12V 4A (input 100 to 240V AC)
Consumption	• 550W	• 176W	• 13W

Environmental			
Operating Temperature	• 32-113°F (0-45°C)	• 32-113°F (0-45°C)	• 32-113°F (0-40°C)
Storage Temperature	• 4-158°F (-20-70°C)	• 4-158°F (-20-70°C)	• 4-158°F (-20-60°C)
Operating Humidity	• 0-85% @40°C non-condensing	• 0-95% @40°C non-condensing	• 0-90% @40°C non-condensing
Operating Altitude	• 0-5,000 m (0-16,404 ft)	• 0-5,000 m (0-16,404 ft)	• 0-5,000 m (0-16,404 ft)

Ordering Information

Description	Part Number
Synamedia MEG software application (to be installed on Synamedia servers or in data center)	• MEG-APPS
Media Edge Gateway appliance	• MEG-A
Media Edge Gateway Mini - Satellite Gateway	• MEG-MINI-SAT-GW-A
Media Edge Gateway Mini - Cloud Gateway	• MEG-MINI-CLOUD-GW-A
Media Edge Gateway Mini - IP Gateway	• MEG-MINI-IP-GW