TopEast Distributed AV

QG-FBST5K Datasheet

Distributed AV Processing Node

Embedded 4K60 encoding node with 1 HDMI input plus loop-through, H.264 SVC/HP/MP/BP and H.265 codecs, source ingest for KVM seats.

QG-FBST5K is a 4K60 encoding node of the distributed system. It encodes 1 HDMI input at up to 4K@60 and streams it over a Gigabit IP network, with a loop-through output for local monitoring. Video encoding covers H.264 SVC / HP / MP / BP and H.265 MP at 5 to 60fps and 32kbps to 16Mbps. Resolutions run from QCIF to 4K, including 800x600 to 1920x1200 and non-standard rates, with source-adaptive direct encoding. Audio encoding supports G.711A / G.711U / AAC. Streaming runs RTSP / ONVIF / MUDP and management runs SNMP. The node works once attached to the IP network, and seat users operate the source PC directly.

Key Features

- Codec: H.264 SVC / HP / MP / BP; H.265 MP
- Encode channels: 1 x 4K@60, source-adaptive
- Resolution: QCIF / CIF / 4CIF / PAL / NTSC / 480P / 576P / 720P / 1080P / 4K; 800x600 to 1920x1200 and non-standard
- Frame rate / bit rate: 5 to 60fps; 32kbps to 16Mbps
- Stream type: Audio-only / video-only / mixed stream
- Audio coding: G.711A / G.711U / AAC; 8k to 48k sampling
- Network: TCP/IP; TCP / UDP transport; RTSP / ONVIF / MUDP streaming
- Management: SNMP; embedded Linux

Features open progressively with software versions; the factory firmware feature sheet governs.

Hardware Specifications

Module	Item	Specification
System	System	Embedded Linux, 7x24
Video	Video input	1 HDMI input, 1 loop-through, up to 4K@60
Audio	Line audio	Stereo line in x 1, out x 1
Audio	Intercom	1 x 3.5mm for headset
Control	RS232 / RS485	1 x RS232, 1 x RS485, 3P Phoenix, programmable
Control	IO / IR	4 x 2P terminals, IO or IR; 1 IR receiver
Control	RELAY	3 x 2P terminals, programmable
Control	USB	4 ports: 2 x USB 3.0 + 2 x USB 2.0
Network	Network	Gigabit RJ45 (PoE) + Gigabit fibre, mutual backup
Panel	Panel	0.9-inch OLED, 4 indicators
Environment	Power	Max 20W, DC 12V/3A and PoE dual power, locking DC connector
Environment	Net weight	About 1kg
Environment	Dimensions	220 x 140 x 30 mm (L x W x H)
Environment	Operating temperature	0°C to +55°C, rise below 20°C

Software Specifications

Module	Item	Specification
Video coding	Codec	H.264 SVC / HP / MP / BP; H.265 MP
Video coding	Encode channels	1 x 4K@60, source-adaptive
Video coding	Resolution	QCIF / CIF / 4CIF / PAL / NTSC / 480P / 576P / 720P / 1080P / 4K; 800x600 to 1920x1200 and non-standard
Video coding	Frame rate / bit rate	5 to 60fps; 32kbps to 16Mbps
Video coding	Stream type	Audio-only / video-only / mixed stream
Audio	Audio coding	G.711A / G.711U / AAC; 8k to 48k sampling
Protocol	Network	TCP/IP; TCP / UDP transport; RTSP / ONVIF / MUDP streaming
Protocol	Management	SNMP; embedded Linux

Typical Applications

· Seat source ingest: design workstations, CCTV clients and GIS platforms into input nodes
· Multi-port graphics cards: grouped encoding keeps oversized sources in sync without tearing
· LED-wall sources: non-standard rates pass through losslessly, point-to-point

Network Requirements

Item	Requirement and advice
Switch requirements	Gigabit or above, L2/L3; beyond 100 nodes interconnect the switch group over 10G; enable IGMP Snooping with fast leave
Multicast planning	Class-D multicast carries streams by default; keep management and stream traffic in separate VLANs with the gateway on the core switch
Bandwidth estimate	Node stream bandwidth = bit rate x 1.15 (protocol overhead); keep switch load under 40% of capacity
Cascade and extension	Fibre cascades across floors; on dual-link models copper runs main and fibre stands by without dropping streams
Powering	PoE models take power straight from the switch (802.3at); a DC 12V/3A adapter ships in the box

Interface and networking details: see the user manual, Chapter 3.

Model Selection

Model	Class	Positioning
QG-FBSLTR001	Distributed management node, 4K30	Encode or decode, one mode at a time, backbone of small systems
QG-FBSLTR002	Distributed integrated codec node, 4K60	Encode or decode, one mode at a time, trunk links and main displays
QG-FBSLTR003	Distributed integrated codec node, 4K60	Encode or decode, one mode at a time, one pair of HDMI ports
QG-FBST5K	Encoding node, 4K60	Seat source ingest, single-channel encoding (4K60)
QG-FBSR5K	Decoding node, 4K60	Seat and wall output, single-channel decoding (4K60)
QG-FBST52K	Dual-channel encoding node, 4K60	Dual sources encoded at once (dual-channel, in bulk)
QG-FBSR52K	Dual-channel decoding node, 4K60	Two displays driven independently (dual-channel, in bulk)

Packing List

Item	Qty
Node unit	1
DC 12V/3A adapter	1 (not needed on PoE builds)
3.5mm audio cable	1
Mounting ears and screws	2 sets
Certificate and quick-start card	1 each

Compliance and Reliability

· Embedded Linux software copyright registered (QG-FBSIMC Integrated Management Platform V3.0 and others)

· CCC-certified power adapter in the box; hardware designed to GB4943 IT-equipment safety

· MTBF no less than 150000 hours

· Runs on domestic OS clients (Kylin)

Appearance, interface counts or accessories may vary by hardware batch; the packing list page governs. Volume orders can be customised with project-specific accessories and pre-configured firmware.