TopEast Distributed AV

QG-FBSR5K Datasheet

Distributed AV Processing Node

Embedded 4K60 decoding node with 2 x HDMI outputs (1 main, 1 backup), 32-channel 1080P30 decoding and a 32-layer video wall, for KVM seats and video walls.

QG-FBSR5K is a 4K60 decoding node of the distributed system. It receives streams over a Gigabit IP network and drives displays and video walls, serves seat outputs, interworks with conference feeds and controls peripherals, with dual-link output backup. It outputs 2 x 4K@60 HDMI, 1 main and 1 backup. Decoding reaches 32 channels of 1080P30 at 6Mbps and the wall supports 32 layers. Audio decoding covers G.711A / G.711U / G.722.2 / AAC / OPUS across 32 network streams. The KVM seat screen slides multiple windows with latency within 42ms; SIP interaction takes 8 parties of 1080P30 in one call. Environmental control runs programmable RS232 / RS485 / IR / IO / RELAY. A Gigabit copper port with PoE and a Gigabit fibre port run in mutual backup. The panel carries a 0.9-inch OLED display.

Key Features

· Decode algorithm: H.265 / H.264 (HP/MP/BP)
· Decode resolution: Adaptive, up to 4K60fps
· Decode channels: 32 x 1080P30 @6Mbps
· Frame rate / bit rate: 5 to 60fps; 32kbps to 16Mbps
· Audio decoding: G.711A / G.711U / G.722.2 / AAC / OPUS, 32 network streams
· Sampling / bit rate: 8 to 48kHz; 8 to 320kbps
· Video wall: 32 layers; open, roam, overlay, subtitle scroll
· KVM seat: Multi-window screen; preview, push, capture, plan, follow
· USB: Keyboard, mouse, flash drive, USB AV, storage
· Latency: Within 42ms
· Interaction: SIP, 8-party 1080P30, dial, hang up, group call, contacts
· Protocols: TCP/IP; TCP / UDP / RTSP / RTP / ONVIF / SIP / HTTP
· Management: B/S web; C/S client (Windows / iOS / Android / Kylin)

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

Hardware Specifications

Module	Item	Specification
System	System	Embedded Linux, 8GB memory, 7x24
Video	Video output	2 x 4K@60 HDMI output, 1 main 1 backup
Audio	Line audio	Stereo line in x 1, out x 1; HDMI embedded audio out
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	3 ports: 1 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
Reset	Reset	1 factory reset button
Environment	Power	Max 20W, DC 12V/3A and PoE dual power
Environment	Net weight	About 1kg
Environment	Dimensions	220 x 140 x 30 mm (L x W x H)
Environment	Operating temperature	-10°C to +55°C, rise below 20°C

Software Specifications

Module	Item	Specification
Video decoding	Decode algorithm	H.265 / H.264 (HP/MP/BP)
Video decoding	Decode resolution	Adaptive, up to 4K60fps
Video decoding	Decode channels	32 x 1080P30 @6Mbps
Video decoding	Frame rate / bit rate	5 to 60fps; 32kbps to 16Mbps
Audio	Audio decoding	G.711A / G.711U / G.722.2 / AAC / OPUS, 32 network streams
Audio	Sampling / bit rate	8 to 48kHz; 8 to 320kbps
Splicing	Video wall	32 layers; open, roam, overlay, subtitle scroll
KVM	KVM seat	Multi-window screen; preview, push, capture, plan, follow
KVM	USB	Keyboard, mouse, flash drive, USB AV, storage
KVM	Latency	Within 42ms
Interaction	Interaction	SIP, 8-party 1080P30, dial, hang up, group call, contacts
Protocol	Protocols	TCP/IP; TCP / UDP / RTSP / RTP / ONVIF / SIP / HTTP
Management	Management	B/S web; C/S client (Windows / iOS / Android / Kylin)

Typical Applications

· Video-wall output: 32 layers per port, a 3x3 six-window or 9x2 eighteen-window build is common

· Seat output: dual-link main and backup displays, keyboard latency within 42ms

· Many-source walls: 32 concurrent 1080P30 decodes drive the whole CCTV wall

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.