TopEast Distributed AV

QG-FBSLTR003 Datasheet

Distributed AV Processing Node

Embedded 4K@60 codec node running encode or decode, one mode at a time; 1 HDMI input and 1 HDMI output (loop-through in encode mode); Gigabit copper with PoE and Gigabit fibre in mutual backup.

QG-FBSLTR003 is a 4K@60 integrated codec node of the distributed system with 1 HDMI input and 1 HDMI output. In encode mode the input takes the source and the output works as a loop-through for local monitoring; in decode mode the output receives the stream and drives the display while the input stays idle. Only one mode runs at a time; panel buttons or the web page switch it, and the change takes effect without a reboot. Encoding runs H.264 SVC / HP / MP / BP and H.265 MP; decoding runs 1 x 4K@60 or 8 x 1080P30, with codec latency within 32ms. Hardware interfaces match the encoding node: 4 USB ports, 1 RS232 and 1 RS485, 4 IO / IR, 3 RELAY, Gigabit copper with PoE and Gigabit fibre in mutual backup. Pick this node where signal points are few and one node must both take in and send out.

Key Features

- Encoding: H.264 SVC / HP / MP / BP; H.265 MP; 1 x 4K@60, source-adaptive
- Decoding: 1 x 4K@60 or 8 x 1080P30 decode, adaptive
- Frame rate / bit rate: 5 to 60fps; 32kbps to 16Mbps; VBR / CBR / fixed QP
- Latency: Codec latency within 32ms
- Audio: Encode G.711A / G.711U / AAC; decode G.711A / G.711U / G.722.2 / AAC / OPUS
- Sampling / bit rate: 8k to 48k; 8 to 320kbps
- Video wall: 8 layers; open, roam, overlay, subtitle scroll
- KVM seat: USB keyboard and mouse pass-through, single-screen remote control
- Network: TCP/IP; TCP / UDP transport; RTSP / ONVIF / MUDP streaming
- Management: SNMP; 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, 7x24
Video	Video interface	1 HDMI 4K@60 input and 1 HDMI 4K@60 output; output acts as loop in encode mode and drives the display in decode mode
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
Codec	Encoding	H.264 SVC / HP / MP / BP; H.265 MP; 1 x 4K@60, source-adaptive
Codec	Decoding	1 x 4K@60 or 8 x 1080P30 decode, adaptive
Codec	Frame rate / bit rate	5 to 60fps; 32kbps to 16Mbps; VBR / CBR / fixed QP
Codec	Latency	Codec latency within 32ms
Audio	Audio	Encode G.711A / G.711U / AAC; decode G.711A / G.711U / G.722.2 / AAC / OPUS
Audio	Sampling / bit rate	8k to 48k; 8 to 320kbps
Splicing	Video wall	8 layers; open, roam, overlay, subtitle scroll
KVM	KVM seat	USB keyboard and mouse pass-through, single-screen remote control
Protocol	Network	TCP/IP; TCP / UDP transport; RTSP / ONVIF / MUDP streaming
Management	Management	SNMP; B/S web; C/S client (Windows / iOS / Android / Kylin)

Typical Applications

· Small meeting rooms: encodes the session by default, switches to decode when a remote feed comes in
· Branch-point relay: switches between decoding a remote stream to a local screen and encoding a local stream back
· Tight racks: codec in one saves a node, dual-link backup stays in place

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.