TopEast Distributed AV

QG-FBSLTR001 Datasheet

Distributed AV Processing Node

Embedded distributed management node with a codec that runs encode or decode, one mode at a time; 1 HDMI input and 1 HDMI output, covering video wall, KVM seats, conference integration and environmental control.

QG-FBSLTR001 is an integrated management node of the distributed AV processing system. It ingests, switches and displays video and audio over a Gigabit IP network at low bit rates with low latency, covering source ingest, video wall composition, seat operation, conference interworking and peripheral device control in one unit. Encoding and decoding sit in one unit and only one runs at a time: in encode mode the input captures and encodes while the output works as a loop-through for local monitoring; in decode mode the output receives the stream and drives the display. Panel buttons or the web page switch the mode, and the change takes effect at once. Nodes are configured and scheduled from one place in the QG-FBSIMC distributed management platform. The node runs an embedded Linux platform, draws no more than 10W at full load and weighs about 0.5kg.

Key Features

· Video coding: H.265 / H.264 (HP/MP/BP)
· Encode resolution: QCIF to 4K30, non-standard rates, source-adaptive encoding
· Frame rate / bit rate: 5 to 60fps; 32kbps to 16Mbps
· Encode channels: 1 x 4K30, main and sub streams
· Video decoding: H.265 / H.264 (HP/MP/BP), up to 4K30 adaptive
· Decode channels: 1 x 4K30, or 2 x 1080P60, or 4 x 1080P30
· Audio codec: G.711A / G.711U / G.722.2 / AAC-LC / OPUS
· Sampling / bit rate: 8 to 48kHz; 8 to 320kbps; 4 decode channels
· Video wall: 4 layers of 1080P30; window roaming, overlay, zoom and scrolling subtitles
· Output sync: Frame-synchronous wall output, microsecond accuracy
· Switching: Switching has no black frame, no flicker, no frozen frame, within 15ms
· KVM seat: Single-screen remote KVM; preview, switch, cross-screen, send-to-display, recall, seat follow
· Latency: Within 60ms
· Protocols: TCP/IP; TCP / UDP / RTSP / RTP / ONVIF / HTTP
· Management: B/S web; C/S client (Windows / iOS / Android)

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

Hardware Specifications

Module	Item	Specification
System	System	Embedded Linux platform, 1GB memory
Video	Video input	1 HDMI input, active in encode mode; idle in decode mode
Video	Video output	1 HDMI output, decode to display in decode mode; loop-through in encode mode
Audio	Audio input	1 x 3.5mm stereo
Audio	Audio output	1 x 3.5mm stereo
Control	RS232	1 channel
Control	USB	USB Type-A x 2, USB Type-B x 1
Network	Network	1 RJ45, 10/100/1000M auto
Panel	Panel	4 indicators (power, video, running, network)
Environment	Power	Max 10W, DC 12V/3A
Environment	Net weight	About 0.5kg
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 coding	Video coding	H.265 / H.264 (HP/MP/BP)
Video coding	Encode resolution	QCIF to 4K30, non-standard rates, source-adaptive encoding
Video coding	Frame rate / bit rate	5 to 60fps; 32kbps to 16Mbps
Video coding	Encode channels	1 x 4K30, main and sub streams
Video decoding	Video decoding	H.265 / H.264 (HP/MP/BP), up to 4K30 adaptive
Video decoding	Decode channels	1 x 4K30, or 2 x 1080P60, or 4 x 1080P30
Audio	Audio codec	G.711A / G.711U / G.722.2 / AAC-LC / OPUS
Audio	Sampling / bit rate	8 to 48kHz; 8 to 320kbps; 4 decode channels
Splicing	Video wall	4 layers of 1080P30; window roaming, overlay, zoom and scrolling subtitles
Splicing	Output sync	Frame-synchronous wall output, microsecond accuracy
Splicing	Switching	Switching has no black frame, no flicker, no frozen frame, within 15ms
KVM	KVM seat	Single-screen remote KVM; preview, switch, cross-screen, send-to-display, recall, seat follow
KVM	Latency	Within 60ms
Protocol	Protocols	TCP/IP; TCP / UDP / RTSP / RTP / ONVIF / HTTP
Management	Management	B/S web; C/S client (Windows / iOS / Android)

Typical Applications

· Small and mid-size command centres: conference and CCTV sources to the wall, seats with mutual backup
· Multi-purpose rooms: encodes local signals for the session, switches to decode when a remote feed is needed
· Branch-room signal aggregation: remote streams decoded for local monitoring, no separate decoder points

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.