

**VMS2048EL-SG Series**

Video Management Server

2U 9-Bay Pro Embedded VMS Server | Perpetual Free Licensing | 8K/4K Multi-Screen Wall Display | Automatic Front-End Alarm Video Backup

A 2U enterprise video management server for 2048-channel (with free channel licensing) aggregation, 8K/4K multi-screen wall display, and an integrated Alarm Video workspace that binds every elevator-AI and NVR event to its own automatically archived video on VMS storage.

Model	VMS2048EL-SG
Product Name	Video Management Server
Channel Capacity	2,048 channels (free channel licence)
Form Factor	2U rackmount, 9 × SATA bays
Manufacturer	Qualitech Technology Pte. Ltd.
Quality System	ISO 9001 Certified
Document No.	QLT-VMS2048-V1.2.3
Revision	V1.2.3
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Product Overview

VMS2048EL-SG is a high-performance 2U enterprise video management server built for centralized surveillance management, high-density storage, and real-time video wall operations. With 800 Mbps network input bandwidth, it aggregates up to 2,048 channels under perpetual free channel licensing — a cost-effective core engine for large-scale deployments.

Nine SATA HDD bays (up to 16 TB each, 144 TB total) plus an eSATA expansion interface deliver reliable localstorage with 16-channel synchronous playback. Four HDMI outputs support flexible 8K/4K heterogeneous multi-screen wall display, driving video walls with up to 196 split-screen previews.

Automatically backs up alarm video triggered by elevator behavior and status analytics from AI edge models, as well as events from connected NVRs, directly to VMS local storage — protecting critical evidence against front-end overwriting, hardware failure, SD card degradation, or malicious tampering.

Key Features

System Capacity

- Aggregates up to 1022,048 channels — the sum of all channels on recorders registered to the server — at 800 Mbps network video input bandwidth.
- Perpetual channel licensing with no per-channel fees; includes 1-year complimentary Software Maintenance Agreement (SMA).

Video Decoding & Display

- H.265+ / H.265 / H.264 decoding, up to 12 MP resolution.
- 4 × HDMI outputs supporting single-screen 8K, dual hetero-source (8K + 4K), and quad hetero-source (3 × 4K + 1080P) display.
- Three selectable decoding modes (128, 100 + 100, or 49 × 4 preview windows), with 16-channel playback in every mode.

Recording & Storage

- 9 × hot-swappable SATA bays, up to 16 TB per drive, with RAID 0/1/5/10, JBOD, and Clone modes.
- Automatic failover to another volume if a disk is removed or fails, with no interruption to recording.
- 1 × eSATA expansion port; USB backup to portable hard disk or flash drive.

Alarm Video Workspace

- Converts elevator AI alarms and 21 NVR event types into alarm records, each bound one-to-one with an automatically archived video clip.
- Identical workspace on the web client and local HDMI display.
- Passenger-flow and lift running-hour reports generated from the same event data stream.

Operations & Management

- Real-time alarm display, alarm statistics, and multi-criteria alarm search.
- Digital zoom on live and playback images; channel tour groups; user-defined multi-view layouts.
- NTP time synchronisation; up to 32 local user accounts; fast boot with a redesigned interface.

Display & Decoding Modes

Mode	HDMI Outputs	Preview Capability	Playback
Mode 1	1	12 MP/D1 + 128 preview windows	16 channels
Mode 2	2	12 MP/D1 + dual screen, 100 + 100 preview windows	16 channels
Mode 3	4	8 MP/D1 + quad screen, 49 × 4 preview windows	16 channels

Output capability: single-screen 8K; dual-screen hetero-source HDMI (1 × 8K + 1 × 4K); quad-screen hetero-source HDMI (3 × 4K + 1 × 1080P); HDMI direct output.

Alarm Video Workspace

Alarm events are converted into alarm records and bound one-to-one with an automatically archived video clip, on an identical dedicated tab on the web client and local HDMI display.

Function	Description
Elevator AI Alarm Ingest	Receives elevator passenger counting, floor, and running status in real time, along with object-left and object-removed alarms; displays device online status and automatically backs up alarm videos to local storage.
General Event Ingest	Receives routine event alarms from front-end devices and automatically triggers alarm video backup to local storage devices. Covers 21 event types: alarm input, motion detection, occlusion alarm, video loss, device abnormality, device error, passenger counting, line crossing detection, region detection, target detection, human figure detection, wrong-way detection, object-left/object-removed, electric vehicle detection, region intrusion, loitering detection, illegal parking, human body detection, vehicle detection, pet detection, and scheduled recording.
Automatic Alarm Backup	Backs up the video segment for the alarm window automatically; no manual operation required.
Recording Archive	Files clips into dated folders; filenames carry device name, channel number, and start/end time.
In-Page Playback	Selecting "View Recording" on an alarm record plays the associated clip directly in the interface.

Alarm Search	Multi-select filtering by date, time span, and alarm type, with quick preset time ranges.
Passenger Flow Reports	Daily, weekly, and monthly statistics of entries, exits, object-left counts, and object-removed counts, per device or aggregated across a multi-device selection.
Lift Running-Hour Statistics	Accumulates daily lift running time from running/stopped status rather than device power-on time. Offline periods are excluded and sessions spanning midnight are apportioned automatically, supporting usage-intensity analysis, capacity assessment, and maintenance planning.
Device Tree	Hierarchical Area → NVR → Device presentation with search and collapse.
Backup Statistics	Totals for alarms raised, backups succeeded, backups failed, backups in progress, and alarms with no recording available.
Recording File Browser	Browse archived recording files through the dated directory structure.
Archive Disk Management	The archive disk is selected in the interface and can be set as permanent, reapplied automatically after a restart.
Storage Fault Protection	Recording switches automatically to another available storage location if a disk is removed or fails.
Data Maintenance	Conditional deletion of alarm records and recordings, reset of same-day statistics with historical data retained, and clean-up of offline devices.
Automatic Channel Association	The recording channel matching an alarm is associated automatically; no manual channel mapping is required.
Operating Status	Displays device operating load, login status, and network mapping status.

Alarm Recording Timing

Alarm Source	Recording Interval	Duration
Elevator AI alarms (Passenger counting, object-left, object-removed, elevator status, etc.)	Recording interval: a configurable period before and after the alarm (default 15 seconds).	30s / User-configurable
NVR events (motion, tripwire, human shape, etc.)	Recording interval: a configurable period before and after the alarm (default 15 seconds).	30s / User-configurable

- Pre- and post-event durations are configurable; maximum single-clip length is 60 seconds.
- Clips archive automatically to the designated storage location, by date; failed backups retry automatically.
- Each alarm event and its clip are linked one-to-one, replayed with a single click in the Alarm Video interface.

Technical Specifications

SYSTEM CAPACITY

Channel Capacity	2,048 channels (sum of all connected recorders)
Network Video Input Bandwidth	800 Mbps
Channel Licensing	Free of charge (no per-channel fee)

VIDEO & DISPLAY

Video Compression	H.265+ / H.265 / H.264
Recording Resolution	12M / 4K / 1080P / 720P / D1
Audio Compression	G.711A / G.711U
Video Output	4 × HDMI — single-screen 8K, dual and quad hetero-source modes

STORAGE

Storage Interface	9 × SATA, up to 16 TB per drive
Storage Array	RAID 0 / 1 / 5 / 10 / JBOD / Clone (optional)
eSATA	1 expansion port
Backup Method	USB portable hard disk, USB flash drive

NETWORK & I/O

Network Interfaces	2 × RJ45 1000M Ethernet
Serial Interface	1 × standard RS-485
USB Interfaces	3 × USB 2.0
Audio I/O	1 × RCA in, 1 × RCA out

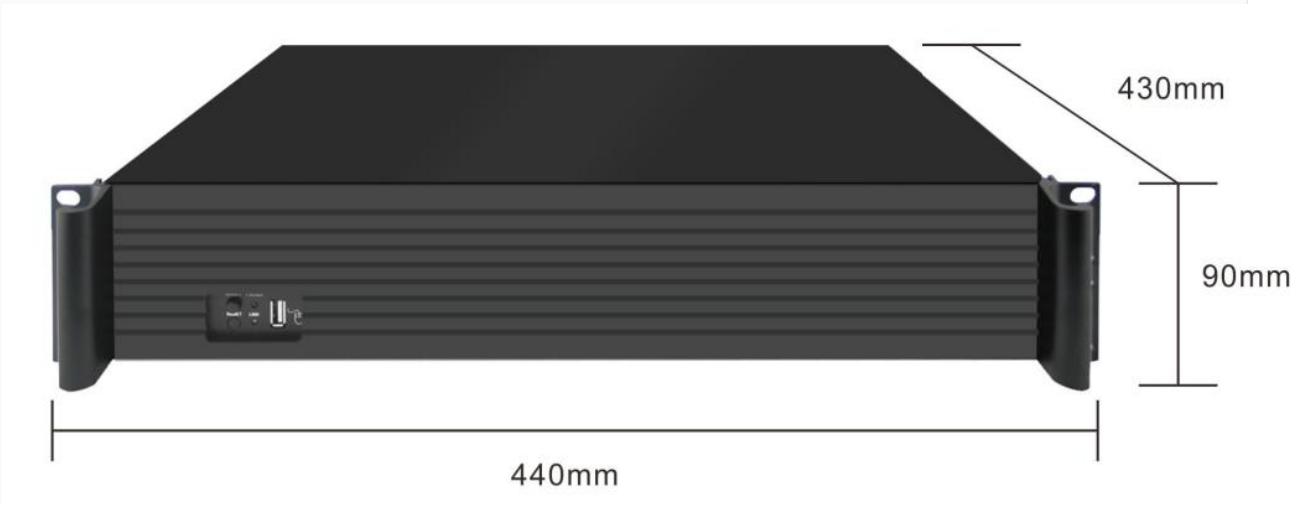
PHYSICAL & ELECTRICAL

Chassis	2U rackmount, 9 drive bays
Dimensions	440 mm (W) × 430 mm (D) × 90 mm (H)
Cooling	Active fan cooling
Power Supply	AC 100–240V, 250W
Operating Temperature	-10°C to +55°C
Operating Humidity	10%–90%

ISO 9001 Certified · Server hardware with management software included

Hard disks are not included unless specified in the order; drive capacity, RAID level, and retention period are confirmed against the project recording plan.

Dimensions & Rear Panel



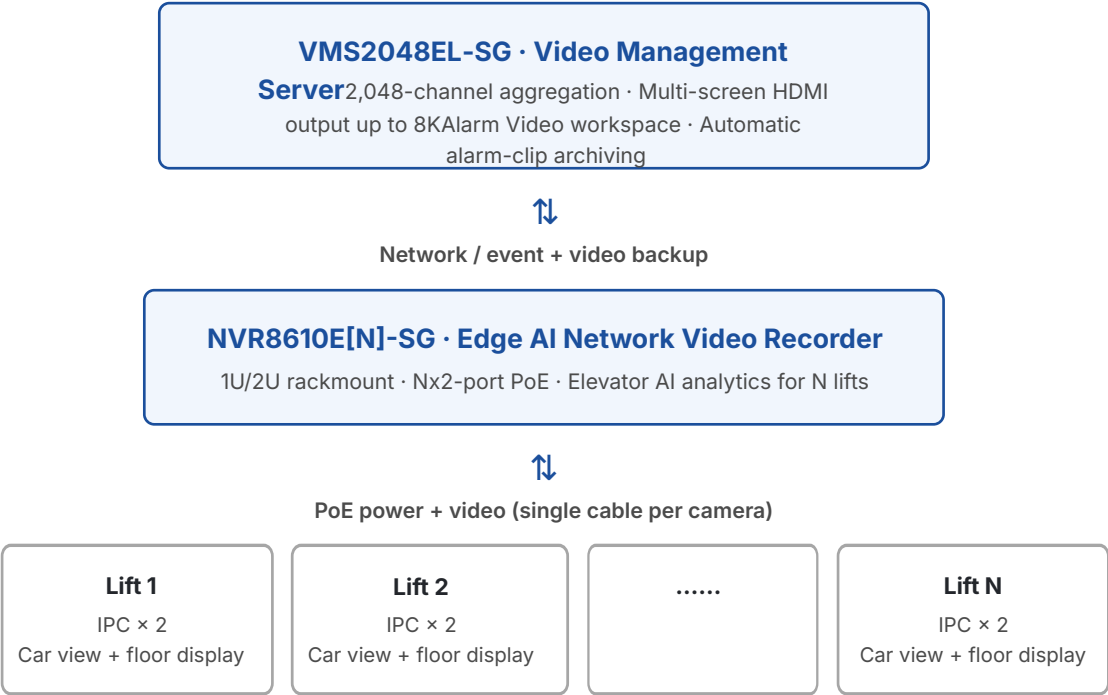
CHASSIS DIMENSIONS



REAR PANEL INTERFACE LAYOUT

- **Power:** AC 100–240V input, rear-mounted switch
- **Video Output:** 4× HDMI (HDMI1–4)
- **Network:** 2× RJ45 (LAN1–2)
- **Serial:** 2× RS-485 (A/B)
- **USB:** 1× USB 2.0 (rear)
- **Storage:** 1× eSATA
- **Audio:** 1× RCA in (A-IN), 1× RCA out (A-OUT)
- **Alarm I/O:** Multi-channel ALM-IN / ALM-NO / ALM-COM terminal blocks

System Architecture



Nx2 × IPC-H300M vandal-resistant dome cameras — 2 per lift, all powered by the NVR's PoE ports
Reference topology: one VMS aggregating recorders; each NVR handles N lifts and Nx2 cameras.

Application Scenarios

Building & Facility Operations

- Lift monitoring across residential, commercial, and mixed-use estates, with passenger-flow reporting and per-lift running-hour statistics for maintenance planning.
- Property and estate management centres consolidating multiple buildings under a single 2,048-channel platform.

Large-Scale Surveillance Estates

- Campuses, industrial parks, and transport hubs aggregating dozens of recorders into one control room.
- Control rooms requiring 8K or multi-screen hetero-source video walls driven directly from the server.
- Sites with strict evidence requirements where every alarm must carry an automatically archived, indexed video clip.
- Unattended or remote sites where storage faults must not interrupt recording service.

Retrospective Investigation & Reporting

- Lost-property and incident enquiries resolved from the alarm record itself, with the relevant clip already archived and linked.
- Passenger-flow analysis by day, week, or month across single or multiple devices for capacity and staffing decisions.
- Lift utilisation and running-hour reporting used as an input to preventive maintenance schedules.

Support & Partnership

Qualitech Technology provides technical guidance and engineering support services for partners.

Ordering Information

Model	Description	Warranty
VMS1024AI-SG	Video Management Server — 2U rackmount, 9 bays, 1,024 channels, 8K output (With Perpetual Free Channel Licensing)	2 year
VMS2048EL-S G	Video Management Server — 2U rackmount, 9 bays, 2,048 channels, 8K output (With Perpetual Free Channel Licensing)	2 year

Contact

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MODEL

VMS2048EL-S

G

PRODUCT NAME

Video Management Server

QUALITY SYSTEM

ISO 9001 Certified

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