

**DEAN, FACULTY OF AGRICULTURE
RAJMATA VIJAYRAJE SCINDIA KRISHI VISHWA VIDYALAYA**

GWALIOR, 474002, M.P.

IPRO/DFA/CCTV /2024-25/ 2238

Dated: 11/03/2025


e-TENDER INVITING NOTICE

Online tender(s) under two bid system (i) Technical bids (ii) Financial bids are invited by the Dean Faculty of Agriculture, RVSKVV, Gwalior from reputed Manufacturers/ Authorized Dealers/Distributors in the line for supply and installation of surveillance CCTV setup /item(s)/structures for the items for installing CCTV MONITORING SYSTEM under the "Development Grant" on or before **21.03.2025** up to 05:00 PM *via e tender*. For the list of items, tender forms, terms & conditions and other related information please visit RVSKVV website www.rvskvv.net and for purchase of tenders www.mptenders.gov.in from 11.03.2025

Any related corrigendum, if required, will be published on RVSKVV website (www.rvskvv.net) and www.mptenders.gov.in only.

NAME OF ITEM: 01. CCTV Monitoring System

Date: 11.03.2025


**Dean Faculty of Agriculture
RVSKVV, Gwalior**

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| Sl. No. | Name of item | Divisions/Units/ Reg. Stations | Amount of EMD (Rs) | Tender publication fees (Rs) |
|---------|------------------------|---|--------------------|------------------------------|
| 1. | CCTV monitoring System | Dean, Faculty of Agriculture, RVSKVV, Gwalior | 50000 | 2000 Plus Portal Charges |

CRITICAL DATES

| S. No. | Item | Date | Time |
|--------|---|------------|-------|
| 1. | Publishing Date | 11.03.2025 | 11:30 |
| 2. | Document Purchase Start Date | 11.03.2025 | 13:00 |
| 3. | Last date for submission of technical e-Bid | 21.03.2025 | 17:00 |
| 4. | Opening of the Technical Bid at Office of Dean, Faculty of Agriculture, RVSKVV, Gwalior | 24.03.2025 | 11:00 |
| 5. | Evaluation of Technical Bids at Office of Dean, Faculty of Agriculture, RVSKVV, Gwalior | 24.03.2025 | 15:30 |
| 6. | Opening of Financial/Price e Bid at Office of Dean, Faculty of Agriculture, RVSKVV, Gwalior | 25.03.2025 | 13:00 |

Tender form can be downloaded from the website www.mptenders.gov.in and can also be seen on university website www.rvskvv.net. Tender documents with specifications can be purchased from this site by paying ₹ 2000 plus portal charges

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E-Tender Document

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| 6. | Opening of Financial/Price e Bid at Office of Dean, Faculty of Agriculture, RVSKVV, Gwalior | 25.03.2025 | 13:00 |

DEPOSITING THE BIDS:

The bids will be submitted through on-line mode of www.mptenders.gov.in. Details are as follows:

On-line Submission:

(i) **Cover-I:** Will contain the Technical Bids with the following documents:

- Detailed technical write-up highlighting the model Name/Number features offered and / or technical literature/manuals.
- Duly signed certificate for acceptance of terms and conditions of tender enquiry on firms' letterhead.
- Original Equipment Manufacturer (OEM) certificate or authorized dealership/distributorship certificate as applicable.
- Manufacturing Registration No. (if available)
- Company Printed Price List (If available)
- Last 3 (three) years Income Tax Return.
- Audited Balance Sheet for Last 3 (Three) years.
- TIN number/PAN Number/Certificate/GST number
- Business Registration Certificate.
- Scanned Copy of EMD as shown against each item.
- Compliance Certificate. Certificate of clause-by-clause compliance of specifications as mentioned in tender.

GENERAL TERMS AND CONDITIONS:

1. *Only the manufactures and/or their authorized dealer/distributors/sole agents/ need to submit their tender.
2. No person or firm shall submit more than one Tender for the same item. No offer should have more than one model quoted; in case of more than one alternate offer only the first option will be considered.
3. It is mandatory to provide all the relevant information in **Annexure -I**.
4. Broad-based specifications of equipment/items/systems/works *etc.* are given in **Annexure- II** of purchased tender. The tenderer should also take note of the remarks, if any, given their in.
5. a. Last date for submission of e-Tender is **21.03.2025** up to 5:00 PM on www.mptenders.gov.in.
b. Belated tender due to postal or any other delay will be rejected.
c. If offers for more than one item are clubbed together, tender will be rejected.
d. The tender offers should have a validity of 180 days or more from the due date. The tenders will be valid for 6 months from the date of opening and may be **asked for extension by taking written concern of the firms if needed.**
e. **Price bid will be opened online at www.mptenders.gov.in on 25.03.2025 from 13:00 P.M. If date of opening of price bid will be changed due to any circumstances. That will be informed to bidders.**
f. R.V.S. Krishi Vishwa Vidyalaya (RVSKVV) reserves the right to extend the opening due date and or the date of opening the tenders.
g. All the leaflets in the offer should be marked with signature and seal of authorized person.
6. a. The rates quoted should in Indian Rupees (₹) for a **single complete unit** with F.O.R. delivery at RVSKV, Gwalior. The rates quoted should be inclusive of packing and forwarding charges/loading/unloading/handling charges/freight/full risk coverage/insurance, *etc.* In case of imported goods all the expenses towards custom duty, clearing charges and transportation with insurance will be borne by the firm/tenderer and they must quote the rates inclusive of all FOR, RVSKV, Gwalior in INR.
b. Excise duty/Sales Tax/GST/Custom duty (with and without concession certificate) and other levies, if any should be shown separately and the **total price** of each item should be worked out incorporating the all.

- c. Any other charges, such as technical service charges, cost of training, installation charges, TA/DA of tenderer's staff *etc.* if any, should be shown separately for each item and each sub-item and the total price of each item should be worked out incorporating the same in final quoted price.
7. All losses during transit will have to be made good by the tenderers at his cost within a period of 15 days.
8. The tenderers must provide guarantee/warranty on **manufacturers' letterhead** of satisfactory functioning of the equipment/system and free service including free replacement of parts for a period of at least **3 years** from the date of successful and satisfactory installation of the equipment/system. Original to be deposited by the successful bidder at the time of supply.
9. **Performance Guarantee:** The Successful bidder/supplier will be required to furnish a Performance Guarantee in the form of FDR from a public sector bank or a private sector bank authorized to conduct government business for a sum equal to **10%** of the Supply Order value within 30 days of signing of the Supply Order. Performance Bank Guarantee will be valid up to the date of guarantee/warranty.
10. Offer must be accompanied by **Earnest Money** as stated against each item must be submitted on-line. Without the deposition of earnest money, the offers will be rejected.
11. The University will approve the rate on a total basis for the complete package, including equipment, installation, training, and any associated services, rather than on an individual item basis.
12. The standard terms and conditions of payment is in full only after the Supply/installation is affected to the satisfaction of RVSKVV authorities in INR only.
13. Please quote maximum discounted price, as no further negotiations will be made.
14. Complimentary items/gifts offered will not be given any preference and will not be considered for calculating the cost of the item.
15. *The offers must mention make, model all the specifications of the item clearly. The company must enclose printed literature/catalogue/manufacturer's web-site showing detailed technical specifications required. A folder showing many equipment without detailed technical specification, or tailor-made literature mentioning "yes" or "as per your specifications" for the specifications asked for, will not be considered. Specifications given in the offer must match to the website and/or printed technical literature otherwise the offers shall be rejected.
16. Technical specifications of the equipment / items have been very clearly formulated by the users/experts of the field as per the requirement of the work to be conducted. It will be sole

discretion of the bidder whether to quote or not for equipment with particular specifications.

17. *Firm must provide a compliance statement vis-à-vis specifications in a following "tabular form" clearly stating the compliance, supported by technical literature with clear reference. This statement must be signed, with the company seal, by the Tenderer for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the offer.

| Name of Equipment: | | |
|-------------------------|------------------|-------------------|
| Technical Specification | Compliance (Y/N) | Deviation, If any |
| | | |

18. *Offer must be accompanied with a comprehensive list of users on manufacturers' letterhead, wherever possible bidders may also provide certificates for satisfactory working of the equipment from users of universities and institutions of repute.
19. a. If so desired by RVSKVV, the bidders shall have to enter in to an agreement.
b. Any wrong information about item, any forged document and any deviation, variation of non-compliance of the terms and conditions by the tenderers shall be considered as a breach of contract and RVSKVV reserves the right to forfeit the amount of earnest money and/or security deposit in full and take action as per legal arrangement.
20. **Should there arise any dispute, the Hon'ble Vice Chancellor, RVSKVV, Gwalior shall be the sole Arbitrator whose decision in the matter shall be final and binding. Each and every judiciary transaction shall be subjected to Gwalior only.**
21. *Tender will not be considered if the firm does not supply a copy of the TIN/ GST& PAN/ Registration of the firm allotted to it for relevant items. PAN of the owner or any other persons will not be accepted.
22. This tender is being issued with no financial commitment and the Buyer reserves the right to change or vary any part thereof at any stage. Buyer also reserves the right to withdraw the tender, should it become necessary at any stage.
23. RVSKVV reserves the right to accept or reject any or all offers in full or in part without assigning any reason (s) thereof. It also reserves the right to place an order wholly or in part with one or more than one firm as it may be convenient to RVSKVV, Gwalior.



24. The tenderer shall have to give an undertaking that the terms and conditions as mentioned above of this tender are acceptable to the tenderers in form of downloaded Tender documents duly stamped and signed.
25. If firm wishes, they can send their representatives, duly authorized in writing, to attend the Technical Evaluation and clarification regarding bids which is scheduled at 11:00 AM on **24.03.2025**.
26. In case, if single manufacturer of the any item and having propriety rights. Items may be purchased with the permission of concerned higher authority.
Bidder should be submitted EMD (Provide EMD Details) in the form of DD/ MSME firms are exempted from EMD Submission.
27. The annual turnover of the agency should not be less than 20 lakhs for **CCTV MONITORING SYSTEM** during last five financial years. For the annual turnover audited balance sheet along with annual report and IT return of the agency should be submitted as supporting documents.
28. Firm should have 3 minimum years' experience of running minimum four similar project in any govt. dept./semi govt/ autonomous institution. (Attached documentary proof of work order and completion certificate)
29. Firms applying for the proposed work should have experience of establishing at least five similar natures of work of **CCTV MONITORING SYSTEM**.
30. Bidder should have experience of supply and installation **CCTV MONITORING SYSTEM** at least 1 work order value not less than 5 Lakh. (Attached documentary proof of work order), issued from Govt. or Non-Govt. Organization should be attached with tender documents in support of experience which clearly indicates firms name and work executed along with price list and payment proof.
31. The party/firm/company should be provided comprehensive work plan proposed with sealed Designs/Drawings using CAD (Computer aided Design)
32. Valid Authorization certificate from the manufacturer/ company/ distributor /dealer applicable in the current year/valid for published tender for items.
33. Joint Venture is not allowed for participate this tender.
34. Bidder should have a registered regional office in any district of Madhya Pradesh for MP region and supporting documents should be uploaded online.

35. An undertaking on rupees 100/- non judicial stamp paper should be given by the Bidder that his firm is not blacklisted by any government department or private organization in last 5 years.
36. Toll free number for servicing and after sale service will be provided by bidder.
37. Supply and installation at following location viz.,
 1. College of Agriculture, Gwalior
 2. College of Agriculture, Indore
 3. College of Agriculture, Sehore
 4. College of Agriculture, Khandwa
 5. College of Horticulture, Mandsaur
38. CA audited balance sheet of last three financial year should be uploaded online by the Bidder.
39. An undertaking on rupees 100/-non judicial stamp paper should be given by Bidder, that all the Information provided are true and all the documents uploaded online all true.
40. Each and every page of all the documents uploaded online should be duly sealed and signed by the Bidder.
41. The financial bids of only qualified firm in technical bid will be opened. The financial bid will be evaluated on the basis of total cost of the project quoted by the firm.
42. CCTV OEM should have manufacturing in India since last Five years and Foreign CCTV OEM should have manufacturing unit globally from last 10 Years. (Documentary evidence should be submitted).
43. The CCTV OEM should have ISO Certifications for Quality, Environment, Security management and Health & Safety Management system for manufacturing of all types of Cameras & NVR/ DVR. All the CCTV Components (Camera, NVR, DVR, etc) should be from same OEM for seamless integration and ease of operation. The Bidder/s shall attach the copy of the OEM's ISO Certificate along with the bid. ISO9001:2015, ISO 14001:2015, ISO 27001:2013, ISO 45001:2018.
44. All CCTV cameras offered in the project should be UL, CE, FCC, RoHS and BIS certified.
45. Local Service center at least 1 in Gwalior, Indore, Sehore /Bhopal Districts for further services.

Dated: 11.03.2025

**Dean Faculty of Agriculture
RVSKVV, Gwalior**

Annexure-I

**DEAN FACULTY OF AGRICULTURE
RAJMATA VIJAYRAJE SCINDIA KRISHI VISHWA VIDYALAYA
GWALIOR 474002, M.P.**

SUPPLEMENT / CHECK-LIST TO BE PROVIDED WITH TECHNICAL BID

ITEM No. _____ NAME _____

| S.No. | Information required | Proposed |
|-------|---|----------|
| 1. | Make of main item | |
| 2. | Model of main item | |
| 3. | Name of manufacturer of Main Item | |
| 4. | Country of origin of main item | |
| 5. | Name, Make and model of sub item I (if any) | |
| 6. | Name, Make and model of sub-item II (if any) | |
| 7. | Name, Make and model of sub-item III (if any) | |
| 8. | Delivery within (days) | |
| 9. | Rate of Excise duty (%) with surcharge, if applicable (item-wise if different ED is applicable) | |
| 10. | Rate of GST (%) livable. If no, state basis and terms of the exemption. | |
| 11. | Is Service Tax extra? If yes, rate of Service Tax livable (%) | |
| 12. | Any other Taxes / Duties / Octroi / Entry taxes etc. in % | |
| 13. | Order to be placed on | |
| 14. | Guarantee/Warranty (5 years) | |
| 15. | Validity (at least 180 days) | |
| 16. | FOR: CoA, Gwalior, CoA, Sehore, CoA, Indore, CoA Khandwa, CoH, Mandsaur | |
| 17. | List of current users (Attach, if any) | |
| 18. | Certification of satisfactory working of the equipment (Attach, if any) | |
| 19. | Compliance of equipment with current directives of ISI / CE / EEC / US / EU or equivalent standards | |
| 20. | Whether manufacturer / authorized distributor/sole agent? (Attach original certificate) | |
| 21. | Technical literature (Attach, if any) | |
| 22. | Earnest money (EMD) deposited on line and proof has been enclosed | |

| S.No. | Information required | Proposed |
|-------|--|----------|
| 23. | Situations of Authorized service centers/ service personals <i>etc.</i> (Provide complete address) | |
| 24. | Relevant documents such as ITCC, ST registration shop Act, establishment certificate, factory registration <i>etc.</i> (enlist and attach) | |
| 25. | TIN and PAN allotted (Attach a copy) | |
| 26. | GST number | |
| 27. | Any other relevant information | |

DECLARATION

The terms and conditions as mentioned in the tender are acceptable to us.

Authorized Signatory

(Seal of the Firm)

Item 1. Specifications of CCTV Monitoring System

| Sr. No | Description | Qty | Remarks |
|--------|--|---------------------|--|
| 1 | 4 MP fixed lens IP Dome camera | 98 | As discussed, total 5 locations are there and 8 cameras per location. |
| 2 | Embedded 16 Channel NVR | 7 | |
| 3 | Embedded 32 Channel NVR | 1 | |
| 4 | 8 TB HDD as per storage calculation | 15 | Please refer attached storage calculation sheet |
| 5 | VMS (video management software) base license | 1 | Base channel license |
| 6 | VMS (video management software) additional channel license | 82 | Video Surveillance Expansion package |
| 7 | POE switch 8 port | 7 | |
| 8 | POE switch 24 port | 2 | |
| 9 | 6U Network Rack | 7 | |
| 10 | PVC Box | 98 | |
| 11 | Junction Box | 10 | |
| 12 | Cable cat 6 | 20 Bundle (approx.) | Bundle (305 meter / bundle) |
| 13 | Installation, Configuring and commissioning and fitting charges for CCTV Monitoring system | As per requirement | 90 at different 5 Location (Gwalior, Indore, Sehore, Khandwa and Mandsaur) |
| 14 | Conduct pipe, casing Strip, and necessary items | As per requirement | |

Item 1. Financial Bid for CCTV Monitoring System

| Sr. No | Description | Qty | Unit | Cost in Rs. |
|--------------|--|---------------------|------|-------------|
| 1 | 4 MP fixed lens IP Dome camera | 98 | No. | |
| 2 | Embedded 16 Channel NVR | 7 | No. | |
| 3 | Embedded 32 Channel NVR | 1 | No. | |
| 4 | 8 TB HDD as per storage calculation | 15 | No. | |
| 5 | VMS (video management software) base license | 1 | No. | |
| 6 | VMS (video management software) additional channel license | 82 | No. | |
| 7 | POE switch 8 port | 7 | No. | |
| 8 | POE switch 24 port | 2 | No. | |
| 9 | 6U Network Rack | 7 | No. | |
| 10 | PVC Box | 98 | No. | |
| 11 | Junction Box | 10 | No. | |
| 12 | Cable cat 6 | 20 Bundle (approx.) | No. | |
| 13 | Installation, Configuring and commissioning and fitting charges for CCTV Monitoring system | As per requirement | - | |
| 14 | Conduct pipe, casing Strip, and necessary items | As per requirement | - | |
| Total in Rs. | | | | |



| 4 MP DOME CAMERA | |
|-------------------------|--|
| Feature | Specification |
| Image Sensor | 1/2.9" 4MP PS CMOS Image Sensor (0.8758cm) |
| Minimum Illumination | 0.006 lux@F1.6 (Color, 30 IRE) 0.0006 lux@F1.6 (B/W, 30 IRE) 0 lux (IR on) |
| Effective Pixels | 2688 (H) × 1520 (V) |
| Shutter Speed | Auto/Manual 1/3 s–1/100000 s |
| White Balance | Auto/natural/street lamp/outdoor/manual/regional custom |
| Lens | 3.6mm lens (2.8mm Optional) |
| Lens Type | Fixed-focal |
| S/N Ratio | >56dB |
| Day/Night | Auto(ICR)/Color/B/W |
| Lens Mount | M12 |
| Max. Aperture | F1.6 |
| DORI Distance | 3.6mm– 85.4m (Detect) 34.2m (Observe) 17.1m (Recognize) 8.5m (Identify) 2.8mm– 63.6m (Detect) 25.4m (Observe) 12.7m (Recognize) 6.4m (Identify) |
| Gain Control (AGC) | Auto/Manual |
| Video Compression | H.265; H.264; Smart H.264+; H.264H; H.264B; MJPEG (Only supported by the sub stream) |
| Encode Strategy | Instastream |
| Noise Reduction | 3D-NR |
| Angle of View | 2.8 mm: H: 102°; V: 54°; D: 121°; 3.6 mm: H: 84°; V: 42°; D: 101° |
| Back Light Compensation | BLC / HLC / WDR(120dB) |
| Video Streaming | Main stream: 2688 × 1520@(1–20 fps)/2560 × 1440@(1–25/30 fps) Sub stream: 704 × 576@(1–25 fps)/704 × 480@(1–30 fps) *The values above are the max. frame rates of each stream; for multiple streams, the values will be subjected to the total encoding capacity. |
| Resolution | 4MP (2688 × 1520/2560 × 1440); 3MP (2304 × 1296); 1080p (1920 × 1080); 1.3MP (1280 × 960); 720p (1280 × 720); D1 (704 × 576/704 × 480); VGA (640 × 480); CIF (352 × 288/352 × 240) |
| Motion detection | OFF/ON (4 areas, rectangular) |

| Feature | Specification |
|-----------------------|--|
| Privacy Mask | 4 areas |
| ROI | Support (4 areas) |
| Audio | Built-in Mic |
| Audio Compression | G.711a; G.711Mu; G.726; PCM |
| Video Bit Rate | H.264: 32 kbps–6144 kbps; H.265: 12 kbps–6144 kbps |
| Bit Rate Control | CBR/VBR |
| Protocol | IPv4; IPv6; HTTP; TCP; UDP; ARP; RTP; RTSP; RTCP; RTMP; SMTP; FTP; SFTP; DHCP; DNS; DDNS; NTP; Multicast; ICMP; IGMP; ONVIF (Profile S/Profile G); CGI; InstaOn cloud |
| Smart Detection | Intrusion, tripwire (the two functions support the classification and accurate detection of vehicle and human) |
| Smart Search | Work together with Smart NVR to perform refine intelligent search, event extraction and merging to event videos |
| Ethernet | RJ-45 (10/100Base-T) |
| Smart IR | Support |
| Alarm Event | No SD card; SD card full; SD card error; network disconnection; IP conflict; illegal access; motion detection; video tampering; tripwire; intrusion; audio detection; voltage detection; SMD; |
| User/Host | 6 (Total bandwidth: 36 Mbps) |
| SDK and API | Support |
| Cyber Security | Video encryption; Firmware encryption; Configuration encryption; Digest; WSSE; Account lock-out; Security logs; IP/MAC filtering; Generation and importing of X.509 certification; syslog; HTTPS; 802.1x; Trusted boot; Trusted execution; Trusted upgrade |
| Smart Phone | iPhone, iPad, Android Phone |
| Browser | IE, Chrome, Firefox |
| Mirror | Support |
| IR | IR Range of 30 Mtr. |
| Storage | FTP; SFTP; Micro SD card (support max. 512GB) |
| Operating Temperature | -40 °C to +60 °C (-40 °F to +140 °F) |
| Operating Humidity | ≤95% |

| | |
|--------------|----------------------|
| Power Source | 12V DC/PoE (802.3af) |
|--------------|----------------------|

| 32 CHANNEL NVR | |
|-------------------------------|--|
| Feature | Specification |
| Processor | Industrial-grade embedded processor |
| IP Camera Input | 32 channel |
| Operating System | Embedded LINUX |
| Operation Interface | Web/operating in local GUI |
| Performance by Camera | 8 channel |
| AI Search by Camera | Search for pictures by channel, time and event type |
| Face Attributes | 6 attributes: Gender, age, glasses, expression, mouth mask, and beard |
| AI Search by Face Detection | Search for pictures by channel, time and face attributes |
| Performance by Face Detection | 4 channels |
| Video Output | 1 × VGA output, 1 × HDMI output, supports simultaneous video sources output for VGA and HDMI |
| Compression | Insatstream/H.265/Smart H.264+/H.264/MJPEG |
| Performance by SMD Camera | 12 channels |
| AI Search by SMD Camera | Search by target classification (human, vehicle) |
| Network Bandwidth | Access: 160 Mbps; Storage: 128 Mbps; Forward: 48 Mbps |
| Resolution | 8MP; 6MP; 5MP; 4MP; 3MP; 1080P; 720P; D1 |
| Decoding Capability | 8 × 1080p@30fps |
| Multi-screen Display | 1, 4, 8, 9, 16, 25, 32 views |
| Third-party Camera Access | ONVIF; RTSP |
| General Alarm | Motion detection, privacy masking, video loss, scene changing, PIR alarm, IPC external alarm |
| Anomaly Alarm | Camera disconnection, storage error, disk full, IP conflict, MAC conflict, login locked, and cybersecurity exception |
| Alarm Linkage | Recording, snapshot, local external alarm output, audio, buzzer, log, preset, and email |



| Feature | Specification |
|------------------------|---|
| Intelligent Alarm | Face detection, perimeter protection (intrusion and tripwire), IVS, people counting, heat map, and SMD alarms |
| Audio Compression | PCM/G711A/G711U/G726/AAC |
| Audio Input | 1 × RCA input |
| Audio Output | 1 × RCA output |
| Alarm Input | 4 Channel |
| Alarm Output | 2 Channel |
| Record Mode | Manual record; alarm recording; SMD recording; smart recording |
| Smart Phone | iPhone, iPad, Android Phone |
| Hard Disk | 2 SATA III ports, up to 10 TB for a single HDD. The maximum HDD capacity varies with environment temperature |
| Browser | Chrome; IE9 or later; Firefox |
| Disk Group | Yes |
| Multi-channel Playback | Up to 16 channels for playback |
| Playback Function | Play/pause/stop/slow/quick/backward/by frame Full screen, backup (video clip/file), partial zoom in, and audio on/off |
| Storage | Local HDD; network |
| Backup | USB storage device |
| Interface Ports | 2 USB Ports (1 × front USB2.0; 1 × back USB2.0) |
| Ethernet | 1 × RJ-45, 10/100/1000 Mbps self-adaptive Ethernet port |
| Protocols | HTTP; HTTPS; TCP/IP; IPv4/IPv6; UPnP; SNMP; RTSP; UDP; SMTP; NTP; DHCP; DNS; IP Filter; DDNS; FTP; Alarm Server; IP Search, InstaOn, auto register, ONVIF (profile T/S/G); CGI; SDK |
| Power Supply | 12 V DC, 4 A |
| Power Consumption | < 5.6 W (HDD not included, idling) |
| Working Temperature | -10°C to +55°C (+10 °F to +131 °F) |
| Storage Temperature | 0 °C to +40 °C (32 °F to 104 °F) |
| Storage Humidity | 30%~85% |
| Operating Humidity | 10%~93% |
| Operating Altitude | 3000 m |

| | |
|------------|---|
| Dimensions | 375 mm × 282.4 mm × 53 mm (14.76" × 11.12" × 2.09") (W × L × H) |
| Weight | 1.5 kg |

| 16 CHANNEL NVR | |
|---|---|
| Feature | Specification |
| Processor | Industrial-grade processor |
| IP Camera Input | 16 channel |
| Operating System | Embedded LINUX |
| User Interface | Web, Local GUI |
| AI by Camera | Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map |
| AI by Recorder | SMD Plus |
| Perimeter Performance of AI by Camera | 6 ch. |
| Video Output | 1 HDMI, 1 VGA Simultaneous: HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720 VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 Heterogeneous: HDMI: 1920 × 1080, 1280 × 1024, 1280 × 720 VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 |
| Face Attributes | Gender; age group; glasses; expressions; face mask; beard |
| SMD Plus by NVR | 4 channels: Secondary filtering for human and motor vehicle, reducing false alarms caused by leaves, rain and lighting condition change |
| SMD Plus by Camera | 6 Ch. |
| Face Recognition Performance of AI Camera | 6 ch. |
| Resolution | 12 MP; 8 MP; 6 MP; 5 MP; 4 MP; 3 MP; 1080p; 960p; 720p; D1; CIF; QCIF |
| Network Bandwidth | AI disabled: 160 Mbps incoming, 160 Mbps recording and 80 Mbps outgoing AI enabled: 80 Mbps incoming, 80 Mbps recording and 60 Mbps outgoing |
| Multi Screen Preview | Main Screen: 1/4/8/9/16 Sub Screen: 1/4/8/9/16 |

| Feature | Specification |
|----------------------------|--|
| Decoding Capability | AI disabled: 1-channel 12 MP@30 fps; 2-channel 8 MP@30 fps; 3-channel 5 MP@30 fps; 4- channel 4 MP@30 fps; 8-channel 1080p@30 fps AI enabled: 1-channel 12 MP@30 fps; 1- channel 8 MP@30 fps; 2-channel 5 MP@30 fps; 3-channel 4 MP@30 fps; 7-channel 1080p@30 fps |
| Record Mode | General, motion detection; intelligent; alarm |
| Video Compression | H.265; Smart H.264+; H.264 |
| Encode Strategy | Smart Instastream; |
| Audio Compression | G.711a; G.711u; PCM; G726 |
| Audio Input | 1-channel RCA |
| Audio Output | 1-channel RCA |
| Alarm Input | 4 channels |
| Alarm Output | 2 channels (1-channel 12 V 1 A output) |
| Smart Phone | iPhone, iPad, Android, Windows Phone |
| Disk Group | Support |
| Disk Interface | 2 SATA ports. Each disk can contain up to 20 TB. This limit varies depending on the environ- ment temperature. |
| General Alarm | Motion detection; privacy masking; video loss; scene changing; PIR alarm; IPC external alarm |
| Anomaly Alarm | Camera disconnection; storage error; disk full; IP conflict; MAC conflict; login locked; and cyber-security exception |
| Trigger Events | Recording, PTZ, Tour, Alarm, Video Push, Email, FTP, Spot, Buzzer & Screen |
| Intelligent Alarm | Face detection; face recognition; perimeter protection; SMD Plus; people counting; stereo analysis; heat map |
| Alarm Linkage | Record; snapshot; IPC external alarm output; audio; buzzer; log; preset; email |
| Recording Mode | Manual, Schedule(Regular(Continuous), MD, Alarm), Stop |
| Face Detection Performance | 6 ch. |
| Browser | Chrome; IE; Safari; Edge; Firefox |
| Search Mode | Time/Date, Alarm, MD & Exact search (accurate to second), Smart search |
| Multi-Channel Playback | Up to 16 Ch. |
| Playback | Play, Pause, Stop, Rewind, Fast play, Slow play, Next file, Previous file, Next camera, Previous camera, Full screen, Repeat, Shuffle, Backup selection,Digital zoom |
| Playbackfunction | Instant playback, general playback, event playback, tag playback, smart playback |



| 8+2+2 POE GIGA SWITCH | |
|------------------------------|--|
| Feature | Specification |
| Uplink Ports | 2 x 1000Mbps RJ45 ports + 2 x 1000Mbps SFP ports |
| Network Standard | IEEE802.3i/802.3u/802.3x/802.3af/802.3ab/ IEEE 802 |
| Switch Capacity | 24Gbps Full duplex |
| Packet Forwarding Rate | 1.488Mpps/port |
| PoE Ports | 8, 1000Mbps; RJ45 ports; Max. 30W Output of Single PoE Port |
| Network Ports | 12 port |
| Transmission Distance | 0-100m/1000Mbps or Port 7-8 Max. 250m/10Mbps via Cat.5e or more under Extend mode |
| MAC Address List | 2k |
| PoE Feature | All ports support MDI/MDI |
| PoE Standard | IEEE802.3af, IEEE802.3at |
| PoE watchdog | Supported |
| PoE Power Supply | 1/2(+),3/6(-) |
| PoE Power Budget | 96W |
| Ethernet Port Light | Green light off: Link is disconnected Green light on: Link is connected Green light flash: Data Transmitting |
| Surge Protection | Common mode/RJ45 port: 4KV Differential mode/RJ45 port: 2KV Common mode/Power board: 2K Differential mode/Power board: 2KV |
| Forwarding Mode | Store-and-forward |
| Power Source | Input: 100-240V AC, 50/60Hz, Built-in Power Supply |
| Operating Temperature | -10°C ~50°C |
| Power Consumption | <5W |

| CAT-6 CABLE | |
|---------------------------------|--|
| Feature | Specification |
| Conduct Type | Solid Bare Electrolytic Grade Copper |
| Nominal Conductor Diameter | 24 AWG |
| Insulation | Polyethylene (HDPE) |
| Separator | Each pair separated with a cross separator |
| Pairing | 2 insulated conductors twisted together |
| Separator Material | Polyethylene (HDPE) |
| Outer Sheath | FR PVC |
| Colour of Sheath | Grey |
| Approximate OD | 5.8mm \pm 0.1mm |
| Sheath Thickness | .45mm \pm .05mm |
| Rip Cord | Yes |
| Sequential Marking | Every Meter |
| Characteristic Impedance | 100 \pm 15 Ω |
| Nominal Velocity of Propagation | 69% |
| Resistance Unbalance | 5% Max |
| Conductor Resistance | \leq 9.38/100m |
| Capacitance Unbalance | 330pF/100m |
| Bending Radius | < 4 x Cable Diameter at -20° \pm 1°C |
| Delay Skew | <45nS |
| Mutual Capacitance | <5.6nf/100m |
| Packing | 305 Mtrs |

Video Management Software

| Sr No. | Description |
|---|---|
| 1. Central Video Surveillance Management Service | |
| | Authenticates the Control Client access; manages the users, roles, permissions and monitors devices |
| | Provides the interface for third-party system integration |
| | VSM which forwards and distributes the video and audio data |
| | 3rd Party Device Access Gateway: Communication between VSM and third-party device |
| | Smart Wall Management Service: |
| | a. Communicates with VSM |
| | b. Responds to Control Client's request and sends real-time messages to Control Client |
| 2. Responds to Control Client's request and sends real-time messages to Control Client | |
| 3. Accessibility and Management Capabilities | |
| Administration functions and operation functions are performed separately in the following clients: | |
| | 1. Web Client: All administration of VSM shall be performed using a web browser client via LAN, WAN or Internet. No client software is required for administration of the system. |
| | 2. Control Client: All security operator features shall be accessed through the Control Client connected to VSM via LAN, WAN, or Internet |
| 4. It Shall support H.264, H.264+, H.265, and H.265+ encoding formats. | |
| 5. It Shall remotely connect to the VSM server via TCP/IP and perform the following functions: | |
| | 1. Add encoding devices to the VSM using the following discovery options: |
| | a. IP/Domain |
| | b. IP Segment |
| | c. Port Segment |
| | d. Batch Import |
| | 2. When adding NVRs and Network Cameras, devices shall have the option to automatically create logical areas by device name or add to an existing area. |
| | a) Automatically add device's recording schedule for future remote management. It Shall be able to set and modify NVR recording schedules. |
| | b) When adding an NVR, user can check the online and offline status of NVR channels. |
| | 3. Once added, shows the online/offline status of devices in both physical view and logical view. |
| | 4. Shall remotely configure NVRs and Network Cameras and set all functions that are available if connecting to devices directly. |
| | 5. When adding SANs, shall be able to set as host server for network camera or as an N+1 hot spare for SANs recording redundancy |
| | 6. It Shall support Cloud Storage Server. |
| | 7. Improved security authentication. |
| | 8. It Shall add up to 8 Smart Walls |
| | 9. It Shall support the linkage between decoding device's video outputs and Smart Wall screens. |
| | 10. It Shall display channels in the same area in alphabetical order |
| | 11. It Shall synchronize NVR channel names with the names displayed on the Web Client. |
| 6. Recording: Shall have the ability to configure camera recording schedule and Picture Storage. | |
| | 1. Recording Configuration |
| | a. Batch add new recording schedules |
| | b. Delete/modify existing recording schedules |

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| | c. Filter recording schedules by customized rules |
| | 2. Picture Storage: Shall store the pictures of passing vehicles, events, and alarms on VSM server's HDD |
| | a. Turn on/off Picture Storage |
| | b. Select picture storage location. |
| | 3. Recording Template Configuration shall have the ability to: |
| | a. Add multiple recording templates |
| | b. Delete/edit recording template |
| | c. Filter existing recording schedules by customized rules |
| | d. Set recording schedule for channels imported into the Central System from Remote Sites. |
| 7. Event & Alarm: Shall have the ability to configure the following: | |
| To avoid flooding operators with alarms, shall have the option of adding just an event from a device, that will be searchable via the Control Client, but not broadcast as an alarm: | |
| a) Shall batch add the following Video Content Analysis (VCA) events from cameras: | |
| | Motion detection |
| | Line crossing detection |
| | Intrusion detection |
| | Region entrance detection |
| | Region exiting detection |
| | Face Detection |
| | Audio Exception detection |
| | Other VCA events which is in camera are supported by VMS |
| b) Shall batch add alarm input events | |
| c) Shall batch add Health Monitoring events from Device: | |
| | Device Offline |
| | HDD Full |
| | R/W HDD Failure |
| | Video Standard Mismatch |
| | Camera/Recording Resolution Mismatch |
| | Array Exception |
| | Illegal Login |
| d) Shall batch add Health Monitoring events from servers: | |
| | Server Exception |
| | HDD Full |
| | R/W HDD Failure |
| | System Temperature Too High |
| | CPU Temperature Too High |
| | Environment Temperature Too High |
| | Memory Exception |
| | Disk Loss |
| | Disk Warning |
| | Bad Disk |
| | Disk Disconnect |
| | Physic Volume Alarm |
| | Array Initialization |

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| | Array Rebuilding |
| | Array Explanation |
| | Array Degradation |
| | Array Detection |
| | Array Repair |
| | Array Unavailable |
| | Video Loss Alarm |
| | Recording Exception Alarm |
| e) If an event is added or batch added and is not configured, the Web Client will offer to activate and remotely configure, if the event type is supported on the NVR or Network Cameras but not configured on the device | |
| f) Shall batch delete all invalid events that are not supported on NVR or Network Camera | |
| g) Shall have the ability to convert any of above stated events into an alarm | |
| h) Shall support email linkage | |
| i) After configuring a recording schedule, video files of events can be searched and played | |
| Alarms: NVR and Network Camera events shall also be able to be added directly as alarms by using the Alarm Configuration tab | |
| o Shall have the ability to set alarm recipients from users accounts set up in the VSM | |
| o Shall have the ability to associate up to 16 cameras recording with alarm events | |
| o Shall have the ability to associate a map with an alarm | |
| o Shall have the ability to trigger a pop-up window with an alarm event | |
| o Shall have the ability to lock associated alarm event video footage, so it is not autoerased based on the camera schedule | |
| Shall support importing newly-added alarms of Remote Sites, and alarm linkage of popup window, audible warnings, alarms outputs, e-map linkage, Smart Walls, and email linkage | |
| Alarm source, trigger events, and alarm priority can also be displayed | |
| Shall support site offline alarm for Remote Sites | |
| Shall support alarm linkage of Smart Walls, Smart Walls and screens can be selected | |
| Shall support displaying alarms in alphabetical order | |
| 8. Map: Shall have the ability to create graphical maps and add cameras, alarm inputs and alarm outputs | |
| | 1. Create map by importing images in JPEG, BMP, or PNG format |
| | 2. Shall have the ability to add "hot region" icon to be able to skip to different layers of maps |
| | 3. Shall have the ability to add icons representing - |
| | a. Camera |
| | b. Alarm Input |
| | c. Alarm Output |
| | Shall have the ability to import image files to create custom map icons |
| | Shall support switching to E-map of Remote Site by clicking the Remote Site icon |
| 9.Roles and Users : | |
| | 1. Shall have the ability to create user profile groups defined as Roles |
| | 2. Role shall be able to restrict user profile access for administration functions |
| Resource: Each "Role" can sub-divide the system and shall allow or deny access to the following features on a per-camera basis : | |
| | Live view |
| | Playback |

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| | Capture and Print Pictures |
| | Video Search |
| | Download |
| | Activate Manual Recording |
| | Two-Way Audio |
| | Tag Video <ul style="list-style-type: none"> o Add o Edit o Delete o View |
| | Lock video so it can't be overwritten by a schedule <ul style="list-style-type: none"> o Add o Edit o Delete o View |
| | PTZ Control |
| | Show Health Status |
| | Alarm Output Control |
| | Device (NVR, Network Camera) <ul style="list-style-type: none"> o Access device parameters/settings o Broadcast o Log search o Health Status |
| | Show Server health status |
| | Search log by user accounts |
| | Shall Control Smart Wall decoders |
| | Shall manage the permission of checking, adding, deleting, editing of each module on the Control Client |
| | Shall hide modules on the Control Client |
| | Alarm Center - <ul style="list-style-type: none"> i. View ii. Arm and Disarm iii. Delete Alarm iv. Acknowledge v. Trigger Pop-up Window vi. Search Alarm |
| 10.Users: shall be able to be added manually | |
| | a. Create user name |
| | b. Default password on for initial login and then user must create a unique password |
| | c. Set expiry date of user profile |
| | d. Select user status |
| | e. PTZ control permission level |
| | f. Assign roles to the user |
| | g. View role list and detailed information |
| | h. Add domain user group |
| | i. PTZ control permission: notify the user with lower PTZ permission that PTZ control has been appropriated by another user with higher permissions |



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| 11.Security for Users : | |
| | Lock IP Address - |
| | Failed password attempts : |
| | Configurable: 1 to 5 attempts |
| | Lock for: 10, 20, 30, 40, 50, or 60 minutes |
| | Shall enable Maximum Password Age |
| | Auto Lock Control Client |
| 12.System and Maintenance : | |
| | 1. Shall create a name for the current site |
| | 2. Shall set a static IP address for the WAN access |
| | 3. The NTP settings shall be able to be set for syncing the time between the VSM and the NTP server |
| | 4. Shall enable GIS map function and configure the map API URL |
| | 5. If you have the AD (Active Directory) domain controller which contains the information (e.g., user data, computer information), you shall be able to configure the settings to get the related information. In this way, you can add the users that belong to an organization unit (e.g., a department of your company) |
| | 6. The system shall be able to receive the configured generic events |
| | 7. Shall set transfer protocol as HTTP or HTTPS |
| | 8. Shall have system hot spare settings |
| | 9. Shall reset network information of added devices |
| | 10. Shall set database backup and restore. |
| 13.Control Client : | |
| | The Control Client should be Windows-based software for security operators to access NVRs, SANs, and network cameras using authorized client login credentials and view through the VSM. It shall provide multiple operating functionalities, including real-time live view, PTZ control, video playback and download/exporting, alarm management, VCA search, log query, and health monitoring module. |
| | Shall have the ability to support login to the Control Client through HTTP or HTTPS |
| | Shall have the ability to turn off and on VCA video overlay for both live and recorded video |
| | Shall have the ability to display the online/ offline status of Remote Sites in Central System |
| 14.Shall have the ability to view 3 auxiliary screens on 1 Control Client and shall have the following modules and functions: | |
| 1) Live View : | |
| | a. Ability to view up to 256 channels |
| | b. Ability to auto switch to sub stream of Network Camera, if more than 4 camera tiles are called up |
| | c. The following functions are available on the tile toolbar for easy access to operator: |
| | i. Capture: ability to save snapshots |
| | ii. Print camera image |
| | iii. Enable manual recording of displayed Network Camera |
| | iv. Enable and utilize two-way audio |
| | v. Digital zoom |
| | vi. 3D positioning for PTZ camera |
| | vii. Activate on-screen PTZ controls |
| | viii. Show camera statistics |
| | ix. Switch to sub or main stream of camera |

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| 2) Playback : | |
| a. | Ability to play back 1 to 16 cameras simultaneously |
| b. | When playing multiple cameras simultaneously, have ability to view in non-synchronized and synchronized mode |
| c. | Ability to export one or multiple cameras displayed simultaneously: <ul style="list-style-type: none"> i. Set export location ii. Set whether to download VSPlayer for viewing MP4 files iii. Export only in MP4 format |
| d. | The following functions are available on the camera playback tile toolbar for easy access to operator: |
| | i. Capture: ability to save JPEG snapshots |
| | ii. Print camera image |
| | iii. Clipping: ability to quickly export video clips |
| | iv. Add tag to video |
| | v. Digital zoom |
| | vi. Lock video: to prevent video segments from being over written by schedule |
| | vii. Video export |
| | viii. Show camera statistics |
| | ix. VCA search |
| e. | Supports channel decoding on the Smart Wall |
| f. | Displays resolution ratio, encoding format, and frame rate of cameras |
| g. | Plays back channels of Remote Sites |
| h. | Supports dual-stream playback |
| i. | Supports transcoding playback |
| j. | Supports AVI format for video file download |
| k. | Supports encryption for downloading in MP4 format |
| l. | Supports clicking and playing directly after downloading with player in MP4 format |
| m. | Supports privacy mask after downloaded and played with VSPlayer |
| n. | Supports customizing download time |
| 3) Video Search : | |
| a. | Ability to search for specific types of indexed video: <ul style="list-style-type: none"> i. Tag: Video that has been auto tagged or manually tagged at a certain timestamp ii. Lock: Search only video that has been "locked" to not be overwritten by schedule iii. Segment: Ability to search for up to 7 days of video averagely divided into segments from 1 to 100 iv. Interval: Ability to search for up to 7 days of video divided by intervals from 1 to 60 minutes or seconds v. Transaction Event vi. Supports thumbnails (only searching video files stored in SANs supports this function) |
| | VCA Search |
| | Support Motion Detection |
| | Support Line Crossing Detection |
| | Support Intrusion Detection |
| | Face Detection |
| | Region Entrance Detection |

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| | Region Exiting Detection |
| | Audio Exception Detection |
| | |
| 4) Map : | |
| | View maps created in the Web Client |
| | i. Ability to click on camera icons for live view of the camera |
| | ii. Ability to click camera and alarm input icons to set Arming Control |
| | iii. Ability to click camera and alarm input icons to show the history alarm |
| | iv. Dynamic icons that flash based on alarm status |
| | v. Ability to click on alarm output icons to turn on alarm output |
| 5) Health Monitoring : | |
| a. Ability to monitor all encoding devices, decoding devices, recording servers, Remote Sites, and Streaming Servers associated with VSM and the overall status of VSM itself. | |
| b. Overview: Provide status of the following devices and the ability to click on items for a detailed report: | |
| | i. Camera Offline |
| | ii. Signal Exception |
| | iii. Getting Signal Failed |
| | iv. Recording Exception |
| | v. Getting Recording Failed |
| | vi. No Recording Schedule |
| | vii. Video Surveillance Management Service |
| | viii. Recording Server Status |
| | ix. Streaming Server Status |
| c. Display host server and spare server when hot spare function is enabled | |
| d. Switch to physical view of the encoding devices | |
| e. Switch to logical view of cameras | |
| f. Get the encoding devices real-time status immediately via refreshing encoding devices | |
| g. Display channels of Remote Sites | |
| h. Restore the device accessing mode to Automatically Judge mode | |
| 7) Log: search and view logs for the following: | |
| | a. Server Logs - |
| | i. Operation Log, Server Logs -Operation Log |
| | ii. System Log, Server Logs - System Log |
| | b. Smart Wall Logs |
| | c. Device log |
| | d. Log searches are based on operation, user, and time interval searches of: |
| | i. Today |
| | ii. Last 6 hours |
| | iii. Yesterday |
| | iv. Last 7 days |
| | v. Custom time interval |



