TENDER FOR

Supply, Installation and Commissioning of CCTV System

TECHNO-COMMERCIAL BID

Issued to:  

<table>
<thead>
<tr>
<th>Tender Reference No.</th>
<th>IIMASR/NIT/36/2017-18-RE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of Issue of NIT</td>
<td>13-07-2017</td>
</tr>
<tr>
<td>Date of Issue of Tender</td>
<td>13-07-2017</td>
</tr>
<tr>
<td>Date of receipt of Tender</td>
<td>04-08-2017 till 3:00 PM</td>
</tr>
<tr>
<td>Date &amp; Time for Opening of Tender</td>
<td>04-08-2017 till 3:30 PM</td>
</tr>
<tr>
<td>Opening of Price Bid</td>
<td>Will be Intimated Later</td>
</tr>
</tbody>
</table>
PREAMBLE / INTRODUCTION

Indian Institute of Management, Amritsar is one of the six IIMs set up by the Ministry of Human Resources Development, Government of India in the union Budget of 2014. As per the directive of the union ministry of Human Resources Development, Indian Institute of Management, Kozhikode is the mentor institute of IIM, Amritsar.

1. Submission of Bids:


i) The Tenderers/Bidders should submit the Price Bids as per the list of items attached. The specifications given therein are bare minimum and the Tenderers/Bidders are free to offer technically better and cost-effective solutions.

ii) Equipment supplied shall be complete in every respect with all mountings, power supply, fittings, fixtures and standard accessories normally provided with such equipment and/or needed for erection, completion and safe operation of the equipment.

iii) The Prices quoted shall be with an onsite warranty for a period of three years and shall be all inclusive (i.e. inclusive of all the taxes, duties, transportation and all other incidental charges).

iv) The tenderer shall be required to submit non-refundable tender fee for an amount of 500/- (Rupees Five Hundreds only) by way of demand draft only. The demand draft shall be drawn in favor of “Indian Institute of Management Amritsar, payable at Amritsar”. The demand drafts for tender fee must be enclosed in the envelope containing the technical bid.

v) The Price Bid, along with all necessary documents as stipulated, is to be submitted in a sealed envelope super-scribed “Commercial Bid for Supply, Installation and Commissioning of CCTV System”

vi) The Price Bid should be either deposited in the “Tender Box” kept in the Reception counter of the Administrative Block of the Institute or sent by Registered Post to the following address:

THE NODAL OFFICER,
INDIAN INSTITUTE OF MANAGEMENT AMRITSAR
PIT BUILDING, INSIDE GOVT. POLYTECHNIC CAMPUS;
POLYTECHNIC ROAD; CHIEHARTA, G.T. ROAD AMRITSAR – 143105
PHONE NO- 0183- 2253548

IIM Amritsar is not liable for non-receipt of the Tender in time due to change in address on the envelope.
2. **Outline of Scope:**
   a. Supply, Installation and Commissioning of CCTV System along with comprehensive on-site warranty for a period of 3(three) years from the date of commissioning & integration.
   b. Allied software (if any) must be provided with the solution.
   c. The project has to be completed by the single vendor, who will be completely responsible for the execution of the project as a single point solution provider and will be the sole prime contractor for the entire project.
   d. The bidders are advised to visit the above mentioned sites before quoting bid in the tender.
   e. The successful bidder shall give comprehensive hands on Training to the IIM Amritsar on operations, preventive maintenance, recording and retrieval of the CCTV recordings etc.

3. **Pre-Qualification Criteria for OEM:**

   OEM should have:
   b. ISO 14001:2004 Certification for Environmental Management System
   c. 9 x 7 Toll Free Technical Support Number
   d. India-based operation at least for a period of 10 (ten) years

4. **List of items :**

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Item Description</th>
<th>Qty</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IP Camera (Type I)</td>
<td>1 No</td>
<td>ANNEXURE A</td>
</tr>
<tr>
<td>2</td>
<td>IP Camera (Type II)</td>
<td>4 No</td>
<td>ANNEXURE B</td>
</tr>
<tr>
<td>3</td>
<td>Network Video Recorder (NVR)-16 channel</td>
<td>1 No</td>
<td>ANNEXURE C</td>
</tr>
<tr>
<td>4</td>
<td>CAT 6 UTP cable*</td>
<td>2 Box</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Outdoor CAT 6 UTP cable*</td>
<td>2 Box</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>12 U rack</td>
<td>1 Nos</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LED screen 32”</td>
<td>1 Nos</td>
<td>(Samsung/LG/Sony)</td>
</tr>
<tr>
<td>8</td>
<td>ISI marked Casing cape</td>
<td>400 Mtrs</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cat 6 UTP Patch Cord (2Mtr)</td>
<td>12 Nos</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Other items, accessories required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*The passive components like CAT 6 UTP Cable and patch cord should be of same and reputed make [such as AMP, KRONE, MOLEX, D-Link and Schneider]*
Labour:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item Description</th>
<th>Estimated Quantity</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Installation of IP Camera</td>
<td>5</td>
<td>Nos</td>
</tr>
<tr>
<td>2</td>
<td>UTP Laying</td>
<td>1200</td>
<td>Meters</td>
</tr>
<tr>
<td>3</td>
<td>Casing capping Laying</td>
<td>400</td>
<td>Meters</td>
</tr>
<tr>
<td>4</td>
<td>Fixing of 12 U Rack</td>
<td>1</td>
<td>Nos.</td>
</tr>
<tr>
<td>5</td>
<td>Any additional labor required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Items mentioned are tentative and if any additional item is required to meet the requirements, please include the same in your proposed List of items.
- All labor/installation/fixing/laying charges will be paid at actuals.

5. Earnest Money Deposit (EMD) and Security Deposit:
   a) Along with the Price bid, Tenderers/ Bidders shall furnish EMD of Rs 3700/- @ 2.5% of the Estimated Cost of the Work in the form of Demand Draft of Schedule Bank issued in favor of Indian Institute of Management Amritsar payable at Amritsar. Price Bid received without EMD shall be rejected. The EMD will be refunded to the unsuccessful Tenderers/ Bidders within one month of the acceptance of the bid.
   b) Within ten days of the award of Contract, the Vendor (i.e. successful Tenderer/ Bidder) shall furnish a Bank Guarantee for a sum equivalent to 5% of the order value as Security Deposit (Performance Guarantee) valid for the Delivery/ Completion period plus two months. EMD already deposited along with tender shall be returned on furnishing the Security Deposit (Performance Guarantee).

The Security Deposit/EMD shall not bear any interest.

6. Authorized signatory:
   If the Bid is made by or on behalf of a company incorporated under the Companies Act of 1956, it shall be signed by the Managing Director or one of the Directors duly authorized on that behalf.

7. Site visit:
   Every Tenderer/ Bidder is expected to inspect the site, where the audio-visual equipment are to be provided, at his own cost before quoting the rates. He must also go through all the terms and conditions as stipulated in the documents. It will be construed that the Vendor has inspected the site and satisfied himself about the Institute’s Audio-visual requirements, site conditions, availability of materials and other relevant matters and the quoted rates shall hold good in all conditions.

8. Original Equipment Manufacturer (OEM) Authorization:
   Tenderers/Bidders are required to furnish along with the Price Bid, the OEM’s Authorization letter authorizing Tenderer/Bidder for participating in the tender.
9. **OEM Warranty:**
Tenderers/Bidders are required to furnish along with the Price Bid, the OEM’s Warranty Letter, in support of the OEM’s warranty for the equipment quoted.

10. **List of documents to be submitted with Price Bid:**
   i) OEM’s Authorization
   ii) OEM’s Warranty Letter
   iii) Detailed Schematics showing details of CCTV system.
   iv) Detail Specification sheet of each item quoted
   v) Technical Compliance sheet with brand, Make, Model & OEM part number including deviation/remarks

11. **Acceptance period:**
The Tender/ Bid shall remain valid for acceptance for a period of 90 days from the date of opening of the Price Bid.
Rates quoted by the Vender shall be all inclusive, i.e. including cost of transportation of the equipment to the Institute, all taxes & duties, etc. No claim after submitting the Price Bid shall be entertained. Any other charges over the quoted rates shall be clearly indicated. The Institute will not provide Form C & D (Sales Tax /GST) or any other certificates to the Vendor.
No alternations in tender forms shall be made by the Tenderer/ Bidder and if any such alteration is made, the tender is liable to be rejected.

12. **Training requirements:**
The Vendor shall impart operation & maintenance Training, consisting of on-site group and individual training, to all the staff members of IIM Amritsar who are associated with the systems and facilities.

13. **Award Criteria:**
Contract may be awarded to the Tenderer/ Bidder whose technical proposal is responsive, cost-effective and meeting all the requirements of IIM Amritsar and whose price bid has been determined to be lowest. After opening of the price bids of the short-listed Bidders, if there is a discrepancy between words and figures, the amount indicated in words will prevail. However, the Institute reserves the right to accept or reject any offer without assigning any particular reason whatsoever and no communication will be entertained in this regard. IIM Amritsar also reserves the right to accept or reject any or all tenders either in whole or in part or to invite revised price bids or to annul the bidding process at any time prior to finalization without incurring any liability to the affected Tenderer / Bidder. The Director, IIM Amritsar does not bind himself to accept the lowest or any tender and reserves to himself the right of accepting the whole or any part of the tender and the Tenderer/Bidder shall be bound to perform the same at the rates quoted.
14. **Delivery Schedule and Penalty for Delay:**

The delivery/completion period shall be within 90 (Ninety) days from the date of issue of Order/Letter of Intent.

Delivery schedule shall clearly be indicated in the quotation submitted by the supplier. Penalty at the rate of 0.5% or part thereof of the order value per week, subject to a maximum of 2.5% will be imposed for delayed delivery and installation.

15. **Warranty:**

The equipment shall carry **three-year comprehensive on-site warranty**. Deviation in warranty terms, if any, shall clearly be mentioned in the offer. During the warranty period, the vendor shall be fully responsible for the manufacturer’s warranty in respect of proper design, quality and workmanship of the Equipment commissioned and integrated at the project. During the warranty period, the Vendor shall be responsible for attending to all the reported problems at no extra cost. **Tenderers/Bidders are required to furnish along with the Price Bid, the OEM’s Warranty Letter, in support of the OEM’s warranty for the equipment quoted.**

16. **Payments:**

Normal payment terms acceptable to the Institute shall be 95% payment within 30 days of satisfactory installation, testing, commissioning & integration of the equipment and the rest 5% after expiry of warranty period.

17. **Contact Details:**

Contact details of the person for all post sales/installation maintenance support:

**Name & Designation:**

**Phone No:**

**Fax No:**

**Mobile:**

**E-mail:**

18. **Operation and Management (O & M):**

The Vendor will be required to operate, manage and run the facilities for a period of 3 (three) years from the date of testing, commissioning and integration of all the CCTV Surveillance Equipments. During the O & M period, adequate number of qualified technicians has to be stationed at site for the trouble-free performance of the CCTV Surveillance Equipments.
19. **Placing the Order:**

The Tender submitted shall clearly mention the name of the firm/person in whose favor the Order is to be placed. Any request made after submitting the Tender for changing the name of the firm in whose favor the Order is to be placed shall not ordinarily be entertained.

20. **Income Tax:**

Every Tenderer/Bidder shall furnish along with the Tender the latest Income Tax Clearance Certificate without which his/her tender is liable to be rejected. The Institute will deduct amount towards Tax Deducted at Source (TDS) as per the latest Income Tax Rules from all payments made to the supplier/contractor.

21. **Termination of Contract:**

IIM Amritsar reserves its right to terminate the contract for any reason at its absolute discretion including, but not limited to the following:

i) If the Vendor is adjudicated insolvent by a Competent Court of Law or files for Insolvency or the Agency's Company is ordered to be wound up by a Competent Court. Vendor commits any material breach of the terms of this contract with IIM Amritsar or if Found guilty of any malpractice in the performance of the Contract.

ii) If any charge-sheet is filed by the Competent Authority of the Government against the Vendor is convicted by a criminal court on grounds of moral turpitude.

iii) In the event of non-satisfactory service or failure on the part of the Vendor or if the Vendor shall neglect to execute the Contract with due diligence or expedition or shall refuse or neglect to comply with any reasonable order given to him by IIM Amritsar in connection with the Project shall contravene the provisions of the Contract, IIM Amritsar shall have the option to terminate the Contract by giving one month notice and may get the procurement executed (either in part or in whole, as the case may be) by any alternate sources at the Vendor's risk and cost. In such an event the Vendor shall have no claims whatsoever against IIM Amritsar in consequence of such termination of the contract. The decision of IIM Amritsar in terminating the contract will be final and binding on the Vendor.

22. **Force Majeure:**

If either party is prevented from the performance of its obligations in whole or in part for reasons of Force Majeure, viz., acts of God, acts of Government, acts of public enemy, war, hostility, civil commotion, blockade, sabotages, riots, fire floods, earthquake, explosions, epidemics, strike and lawful lockout, the period of Force Majeure shall be excluded accordingly. If Force Majeure event(s) continue beyond the period of three months, the parties shall hold consultation to chalk out the further course of action. Neither party can claim any compensation from the other party on account of Force Majeure.
23. **Conciliation:**

Any dispute or difference whatsoever arising between the parties relating to or arising out of Contract, shall be settled first by Conciliation in accordance with the Govt. Rules and settlement so rendered between the parties in pursuance thereof shall be final and binding on the parties. Reference to Arbitration shall be made only when the Conciliation has failed.

24. **Accommodation, Gate Pass, etc.:**

The Vendor shall be responsible for obtaining gate passes its personnel in connection with the execution of the project. IIM Amritsar in this regard shall provide necessary assistance to obtain gate pass.

25. **Institute to be indemnified:**

The Contractor shall at all times indemnify and keep indemnified the Institute and its officers, servants, agents and any other guest or person moving in the Campus Area premises from and against all third party claims whatsoever (including but not limited to property loss and damage, personal accident, injury or death of/to property or person of any Sub-contractor and/or the servants or agents of the contractor, any sub-contractor(s) and/or the Institute) and the contractor shall at his own cost and initiative at all times up to the successful conclusion of the Operation & Management period specified in Clause 17 hereof take out and maintain all insurable liabilities under this Clause, including but not limited to third party insurance and liabilities under the Motor Vehicles Act, Workmen's Compensation Act, Fatal Accidents Act, Personal Injuries Insurance Act, Emergency Risk Insurance Act and/or other Industrial Legislation from time to time in force in India.

26. **Any Other Condition:**

- IIM Amritsar reserves the right to alter/revise the list of items including the quantities thereof at any point of time.
- Wherever the term “Commercial Bid” is mentioned, it shall be construed to mean “Price Bid” and vice versa.

**Vendors are to abide by all the Terms and Conditions stated in the Tender Document. In case these terms and conditions are not acceptable to any Tenderer/ Bidder, he/she should clearly specify the deviations in his/her tender. IIM Amritsar reserves the right to accept or to reject them. In case of any dispute, the decision of the Director of the Institute shall be final and binding on all the parties.**
1. **Techno – Commercial Bid Format:**

1.1. **Format for Technical Bid:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
<th>Technical Specifications</th>
<th>Compliance with the Tendered Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IP Camera (Type I)</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>2</td>
<td>IP Camera (Type II)</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>3</td>
<td>NVR -16 channel</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>4</td>
<td>CAT 6 UTP cable</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>5</td>
<td>Outdoor CAT 6 UTP cable*</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>6</td>
<td>12 U rack</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>7</td>
<td>LED screen 32”</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>8</td>
<td>ISI marked Casing cape</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>9</td>
<td>Cat 6 UTP Patch Cord (2Mtr)</td>
<td></td>
<td>YES/NO</td>
</tr>
<tr>
<td>10</td>
<td>Other items, accessories required</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2. **Format for Price Bid:**

1.2.1. **Format for Cost:**

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Rate (₹)</th>
<th>Amount (₹)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IP Camera (Type I)</td>
<td>1</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>IP Camera (Type II)</td>
<td>4</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>NVR -16 channel</td>
<td>1</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CAT 6 UTP cable</td>
<td>3</td>
<td>Box</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Outdoor CAT 6 UTP cable</td>
<td>2</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>12 U rack</td>
<td>1</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>LED screen 32”</td>
<td>1</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ISI marked Casing cape</td>
<td>400</td>
<td>Meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Cat 6 UTP Patch Cord (2Mtr)</td>
<td>12</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Other items, accessories required</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**
1.2.2. Format for Cost of Labor/Labor Charges:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Item</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Rate (')</th>
<th>Amount (')</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Installation of IP Camera</td>
<td>5</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>UTP Laying</td>
<td>1200</td>
<td>Meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Casing capping Laying</td>
<td>400</td>
<td>Meters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Fixing of 12 U Rack</td>
<td>1</td>
<td>Nos</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Any additional labor required</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.2.3. Total Cost:

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Description</th>
<th>Amount (')</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cost of Components</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cost of Labor/Labor Charges</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL COST
### Technical specification of IP Camera (Type I)

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera type</td>
<td>Full HD Day &amp; Night Fixed Dome Network Camera</td>
</tr>
<tr>
<td>Functional Specifications</td>
<td>1/2.7” 2 Megapixel Progressive Scan CMOS sensor</td>
</tr>
<tr>
<td></td>
<td>Built-in Infrared-Cut Removable (ICR) Filter module</td>
</tr>
<tr>
<td></td>
<td>Focal Length 3.6mm</td>
</tr>
<tr>
<td></td>
<td>View Angle Horizontal 75°</td>
</tr>
<tr>
<td></td>
<td>15 meter illumination distance</td>
</tr>
<tr>
<td></td>
<td>Digital Zoom - minimum 4X</td>
</tr>
<tr>
<td></td>
<td>Minimum illumination:</td>
</tr>
<tr>
<td></td>
<td>• 0.2 Lux Black and White mode</td>
</tr>
<tr>
<td></td>
<td>• 0 Lux Black and White mode with IR LED on</td>
</tr>
<tr>
<td>Video Specifications</td>
<td>Simultaneous H.264 (BP/MP/HP)/MJPEG format compression, JPEG for still images</td>
</tr>
<tr>
<td></td>
<td>H.264 multicast streaming</td>
</tr>
<tr>
<td></td>
<td>Max resolution: 1920 x 1080</td>
</tr>
<tr>
<td></td>
<td>Main Stream : 2.0MP(1920x1080)/1.0(1280x720)</td>
</tr>
<tr>
<td></td>
<td>Second Stream : D1 to QVGA</td>
</tr>
<tr>
<td>Network Specifications</td>
<td><strong>Network Interface:</strong> Wired LAN : 10/100BASE-TX (RJ-45), 802.3af PoE</td>
</tr>
<tr>
<td></td>
<td><strong>Network Protocols:</strong> IPv6, IPv4, TCP/IP, UDP, ICMP, DHCP client, NTP client, DNS client, DDNS client, SMTP client, HTTP / HTTPS, PPPoE, RTP / RTSP / RTCP, Unicast and Multicast, ONVIF compliant</td>
</tr>
<tr>
<td></td>
<td><strong>Security:</strong> • HTTP and RTSP authentication</td>
</tr>
<tr>
<td></td>
<td>• HTTPS encryption for web access</td>
</tr>
<tr>
<td></td>
<td>• Administrator and user group protection</td>
</tr>
<tr>
<td></td>
<td>• Remote client access control</td>
</tr>
<tr>
<td>Software Specifications</td>
<td><strong>Event Management:</strong></td>
</tr>
<tr>
<td></td>
<td>• Motion detection</td>
</tr>
<tr>
<td></td>
<td>• Event notification and uploading of snapshots via e-mail</td>
</tr>
<tr>
<td></td>
<td>• Alerts to SMTP client, PTZ preset/link out, On Screen Alert</td>
</tr>
<tr>
<td></td>
<td>• Multiple event notifications</td>
</tr>
<tr>
<td></td>
<td>• Multiple recording methods for easy backup</td>
</tr>
<tr>
<td>Image Features:</td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>• Configurable image size, quality, frame rate, VBR/CBR (500Kbps ~ 12 Mbps)</td>
<td></td>
</tr>
<tr>
<td>• Time stamp and text overlays</td>
<td></td>
</tr>
<tr>
<td>• Customized text overlay</td>
<td></td>
</tr>
<tr>
<td>• Digital Noise reduction with 2D and 3D technology</td>
<td></td>
</tr>
<tr>
<td>• 4 zones configurable for ROI</td>
<td></td>
</tr>
<tr>
<td>• Configurable privacy mask zones</td>
<td></td>
</tr>
<tr>
<td>• Configurable exposure, brightness, saturation, contrast, sharpness, flip and mirror, 9:16 mode</td>
<td></td>
</tr>
<tr>
<td>• Image Enhancement with WDR, BLC, HLC,</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remote Management:</th>
<th>Configuration accessible via web browser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Input</td>
<td>100 to 240 V AC, 50/60 Hz, 802.3af PoE / 12 V</td>
</tr>
<tr>
<td>Max. Power Consumption</td>
<td>&lt; 3W @ IR Off, &lt; 5W @ IR ON</td>
</tr>
<tr>
<td>Weatherproof</td>
<td>IP66 compliant weatherproof housing</td>
</tr>
<tr>
<td>Certifications</td>
<td>CE, FCC</td>
</tr>
</tbody>
</table>
### Technical specification of IP Camera (Type II)

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera type</td>
<td>Full HD Day &amp; Night outdoor Fixed Bullet Network Camera</td>
</tr>
<tr>
<td>Functional Specifications</td>
<td>1/2.7&quot; 2 Megapixel Progressive Scan CMOS sensor</td>
</tr>
<tr>
<td></td>
<td>Built-in Infrared-Cut Removable (ICR) Filter module</td>
</tr>
<tr>
<td></td>
<td>Focal Length 3.6mm</td>
</tr>
<tr>
<td></td>
<td>View Angle Horizontal 75°</td>
</tr>
<tr>
<td></td>
<td>15 meter illumination distance</td>
</tr>
<tr>
<td></td>
<td>Digital Zoom - minimum 4X</td>
</tr>
<tr>
<td></td>
<td>Minimum illumination:</td>
</tr>
<tr>
<td></td>
<td>• 0.2 Lux Black and White mode</td>
</tr>
<tr>
<td></td>
<td>• 0 Lux Black and White mode with IR LED on</td>
</tr>
<tr>
<td>Video Specifications</td>
<td>Simultaneous H.264 (BP/MP/HP)/MJPEG format compression, JPEG for still images</td>
</tr>
<tr>
<td></td>
<td>H.264 multicast streaming</td>
</tr>
<tr>
<td></td>
<td>Max resolution: 1920 x 1080</td>
</tr>
<tr>
<td></td>
<td>Main Stream: 2.0MP(1920x1080)/1.0(1280x720)</td>
</tr>
<tr>
<td></td>
<td>Second Stream: D1 to QVGA</td>
</tr>
<tr>
<td>Network Specifications</td>
<td><strong>Network Interface:</strong> Wired LAN : 10/100BASE-TX (RJ-45), 802.3af PoE</td>
</tr>
<tr>
<td></td>
<td><strong>Network Protocols:</strong> IPv6, IPv4, TCP/IP, UDP, ICMP, DHCP client, NTP client, DNS client, DDNS client, SMTP client, HTTP / HTTPS, PPPoE, RTP / RTSP/ RTCP, Unicast and Multicast, ONVIF compliant</td>
</tr>
<tr>
<td></td>
<td><strong>Security:</strong> • HTTP and RTSP authentication</td>
</tr>
<tr>
<td></td>
<td>• HTTPS encryption for web access</td>
</tr>
<tr>
<td></td>
<td>• Administrator and user group protection</td>
</tr>
<tr>
<td></td>
<td>• Remote client access control</td>
</tr>
<tr>
<td>Software Specifications</td>
<td><strong>Event Management:</strong></td>
</tr>
<tr>
<td></td>
<td>• Motion detection</td>
</tr>
<tr>
<td></td>
<td>• Event notification and uploading of snapshots/video clips via e-mail</td>
</tr>
<tr>
<td></td>
<td>• Alerts to SMTP client, PTZ preset/link out, On Screen Alert</td>
</tr>
<tr>
<td></td>
<td>• Multiple event notifications</td>
</tr>
<tr>
<td></td>
<td>• Multiple recording methods for easy backup</td>
</tr>
<tr>
<td><strong>Image Features:</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>• Configurable image size, quality, frame rate, VBR/CBR (500Kbps ~ 12 Mbps)</td>
<td></td>
</tr>
<tr>
<td>• Time stamp and text overlays</td>
<td></td>
</tr>
<tr>
<td>• Customized text overlay</td>
<td></td>
</tr>
<tr>
<td>• Digital Noise reduction with 2D and 3D technology</td>
<td></td>
</tr>
<tr>
<td>• 4 zones configurable for ROI</td>
<td></td>
</tr>
<tr>
<td>• Configurable privacy mask zones</td>
<td></td>
</tr>
<tr>
<td>• Configurable exposure, brightness, saturation, contrast, sharpness, flip and mirror, 9:16 mode</td>
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</tr>
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<tr>
<td><strong>Max. Power Consumption</strong></td>
<td>&lt; 3W @ IR Off, &lt; 5W @ IR ON</td>
</tr>
<tr>
<td><strong>Weatherproof</strong></td>
<td>IP66 compliant weatherproof housing</td>
</tr>
<tr>
<td></td>
<td>Sunshield should be included</td>
</tr>
<tr>
<td><strong>Certifications</strong></td>
<td>CE, FCC</td>
</tr>
</tbody>
</table>
### Technical specification of Network Video Recorder (NVR)-16 channel

<table>
<thead>
<tr>
<th>Functional Specifications</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Support</td>
<td>Should support camera discovery and megapixel resolution</td>
</tr>
<tr>
<td></td>
<td>Should Support ONVIF cameras</td>
</tr>
<tr>
<td></td>
<td>Should support 16 channels simultaneous live view on single hardware</td>
</tr>
<tr>
<td>Recording Performance</td>
<td>Resolution -</td>
</tr>
<tr>
<td></td>
<td>• 6MP/5MP/4MP/3MP/1080P/960P/720P/D1/VGA/CIF/QCIF</td>
</tr>
<tr>
<td></td>
<td>• Throughput - 160Mbps</td>
</tr>
<tr>
<td>Camera Search</td>
<td>UPnP, ONVIF</td>
</tr>
<tr>
<td>Audio/Video recording</td>
<td>Synchronized audio &amp; video recording</td>
</tr>
<tr>
<td>Compression Format</td>
<td>H.264</td>
</tr>
<tr>
<td>Video Settings</td>
<td>Resolution, quality, frame rate, Bitrate, enable/disable audio, audio compression</td>
</tr>
<tr>
<td>Recording Type</td>
<td>Record by schedule, manual, and event-based recording</td>
</tr>
<tr>
<td></td>
<td>Motion-triggered recording</td>
</tr>
<tr>
<td>Local Live View</td>
<td>HDMI and VGA</td>
</tr>
<tr>
<td></td>
<td>Supported via browser</td>
</tr>
<tr>
<td>Playback Control</td>
<td>At least 4 channel simultaneous playback</td>
</tr>
<tr>
<td></td>
<td>Play back with normal, fast forward/rewind and step forward/rewind,</td>
</tr>
<tr>
<td>Overwrite Recording</td>
<td>Auto recycling when disk storage is full</td>
</tr>
<tr>
<td>File export</td>
<td>Export videos in raw format, raw format must be able to play with normal player as VLC. Should not require any special player</td>
</tr>
<tr>
<td>Events and Alerts</td>
<td>The NVR Should send an Email alert for below events -</td>
</tr>
<tr>
<td></td>
<td>• <strong>Events</strong> - Motion Detection, Camera Analytics</td>
</tr>
<tr>
<td></td>
<td>• <strong>Alert</strong> - Email and DIDO alert</td>
</tr>
<tr>
<td>user account</td>
<td>Additional accounts can be created to allow users system access</td>
</tr>
<tr>
<td>System time</td>
<td>Set the system time (NTP input time, sync with computer, Daylight Saving Time)</td>
</tr>
<tr>
<td>Backup</td>
<td>Manual Backup to network folder</td>
</tr>
<tr>
<td></td>
<td>Manual Backup to Local hard disk</td>
</tr>
</tbody>
</table>
| Network protocols | IPV4, ARP, TCP, UDP, ICMP  
|                   | • DHCP Client  
|                   | • NTP Client  
|                   | • DNS Client  
|                   | • DDNS Client  
|                   | • SMTP Client  
|                   | • PPPoE  
|                   | • HTTP & HTTPS  
|                   | • IP filtering  
|                   | • UPnP  
|                   | • HTTPS  
|                   | • Multicast  
| User Interface | • HTTP Web browser  
|                 | • Smart phone - Android  
|                 | • Multiple Language GUI  
|                 | • HDMI/VGA  
| Hard Disk (Surveillance HD) | format Disk  
|                           | Should be at least 2 bay  
|                           | **Minimum 4 TB Hard disk** per bay  
| Memory | flash ROM: 128 MB  
|        | RAM: 1024 MB DDR III  
| I/O ports | • Two Gigabit Ethernet LAN port (10/100/1000 Mbps) with Auto MDI/MDI-X support  
|           | • DC-in jack  
|           | • One HDMI supporting resolution - 1920x1080, 1280x720, 1280x800, 1366x768, 800x600, 1024x768, 1440x900  
|           | • USB 2.0 x 2  
|           | • Audio input x 1, output x 1  
|           | • One VGA supporting resolution - 1920x1080, 1280x720, 1280x800, 1366x768, 800x600, 1024x768, 1440x900  
|           | • Reset Button  
| Size | 1U  
| certifications | CE, FCC |