

ZOOLOGICAL GARDEN, ALIPORE2, Alipore Road, Kolkata-27

Memo No:- 785/ZGA/Works/E-tender/2024-25

Date : 22.07.2024

Notice inviting e-Tender No. e-Tender No. 1/ZGA/works/e-tender/2024-25 , invites e-tender for the work detailed in the table below.

(Submission of Bid through **online**)List of Schemes:-

Sl. No	Name of the work (1)	Earnest Money (Rs.) (3) 2%	Period of Completion (4)	Name of the Concerned Officer (5)	Eligibility of Contractor (6)
1.	Supply and installation Surveillance with Bezel Display System at Zoological Garden Alipore.	Rs. 80,000.00	30 (Thirty) days from the date of commencement.	Director Zoological Garden, Alipore	1) valid Trade License 2) Professional Tax Regn. No. & Current challan 3) Income Tax Pan No. & I.T. Return 4) GSTIN Regn. No. with current challan. 5) OEM criteria guidelines should be follow. 6) Others details see in page-7

In the event of e-filling, intending bidder may download the tender documents from the website <https://wbtenders.gov.in> (the web portal of West Bengal Zoo Authority) directly with the help of Digital Signature Certificate. Earnest Money may be remitted through Demand Draft / Pay Order issued from any nationalized bank in favour of the “**Zoological Garden, Alipore**” payable at **KOLKATA** and also to be documented through e-filling. Earnest Money Deposit (EMD) or documents in support should be submitted physically in the Office of Director, Zoological Garden under sealed cover said date and time.

1) Both **Technical Bid** and **Financial Bid** are to be submitted concurrently duly digitally signed in the website <https://wbtenders.gov.in> Tender documents may be downloaded from website and submission of Technical Bid and Financial Bid will be done as per Time Schedule stated in Sl. No. 03.

2) The **FINANCIAL OFFER** of the prospective tenderer will be considered only if the **TECHNICAL BID** of the tenderer is found qualified by the ‘Tender Evaluation Committee’ formed by the Director, ZGA. The decision of the ‘Tender Evaluation Committee’ will be final and absolute in this respect. The list of Qualified Bidders will be displayed in the website.

The prospective bidders or any of their constituent partner shall neither have abandoned any work nor any of their contract have been rescinded during the last 3 (three) years. Such abandonment or rescission will be considered as disqualification towards eligibility. **(A declaration in this respect through affidavit has to be furnished by the prospective bidders without which the Technical Bid shall be treated as non-responsive.)**

Registered Partnership Deed for Partnership Firm only along with Power of Attorney is to be submitted. The company shall furnish the Article of Association and Memorandum. **Joint Ventures will not be allowed.**

A prospective bidder shall be allowed to participate in the instant job either in the capacity of individual or as a partner of a firm. Running payment for work may be made to the executing agency as per availability of fund. The executing agency may not get a running payment unless the gross amount of running bill is 05 (five) lakh or 20% of the tendered amount whichever is less. **No mobilization advance and secured advance will be allowed.**

Security Deposit : Retention money towards performance Security amounting to 10% (*ten percent*) of the value of the work shall be deducted from the running account bill of the tenderer as per prevailing order. **No interest will be paid on Security Deposit.**

All materials required for the proposed work shall be of specified grade in conformity with relevant code of practice (latest revision) accordingly and shall be procured and supplied by the agency at their own cost including all taxes. If required by the Engineer-in-Charge, further testing from any Government approved Testing Laboratory shall have to be conducted by the agency at their own cost.

Constructional Labour Welfare CESS @ 1% (one percent) of cost of construction will be deducted from every Bill of the executing agency as per norms.

There shall be no provision of Arbitration.

Bid shall remain valid for a period of 120 (one hundred twenty) days from the last date of submission of Financial Bid / Sealed Bid. If the bidder withdraws the bid during the validity period of bid, the earnest money as deposited will be forfeited forthwith without assigning any reason thereof.

3) Date and Time Schedule:

Sl. No.	Particulars	Date & Time
1	Date of uploading of N.I.T. & other Documents (online) (Publishing Date)	23.07.2024 AT 10.00 HRS
2	Documents download / sell / submission start date Online)	23.07.2024 AT 10.00 HRS
3	Bid Submission closing (On line)	06.08.2024 AT 16.00 HRS
4	Last Date of submission of original copies of Tender Documents and Earnest Money Deposit (Demand Draft) Off line & hard copy of Tender documents	06.08.2024 AT 17.00 HRS
5	Bid opening date : Technical Bid	08.08.2024 AT 16.00 HRS

4) The Prospective Bidder shall have to execute the work in such a manner so that appropriate service level of the work is maintained during progress of work. If any defect / damage is found during the period of 6(six) months after the completion of work, the contractor shall restore the damage/defect at his own cost to the specification at par with instant project work. On failure to do so, penal action against the contractor will be imposed by the garden authority as deemed fit. The contractor may quote his rate considering the above aspect and after visit. Refund of Security Deposit will only be made after successful maintaining of appropriate service level of the work as mentioned above after 12 (twelve) months from the date of completion of the work.

- 5) Site of work and necessary drawings may be handed over to the agency phase wise. No claim in this regards will be entertained.
- 6) Earnest Money: The amount of Earnest Money @ 80,000(*Eighty thousand*) in the shape of Bank Draft / Pay **Order of any nationalized bank drawn in favour of the , “Zoological Garden,Alipore” payable at Kolkata against the work as per the NIT.** The said amount will be adjusted with the security money of the successful bidder.
- 7) The Bidder, at his own responsibility and risk is encouraged to visit and examine the site of works and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the work as mentioned in the Notice Inviting Tender, before submitting offer with full satisfaction, the cost of visiting the site shall be at his own expense.
- 8) The intending Bidders shall clearly understand that whatever may be the out come of the present invitation of Bids, no cost of Bidding shall be reimbursable by the garden authority. The tender accepting authority of Zoological Garden reserves the right to accept or reject any offer without assigning any reason thereof whatsoever and is not liable for any cost that might have been incurred by any Tenderer at the stage of Bidding.
- 9) Refund of EMD: The Earnest Money of all the unsuccessful tenderers deposited in favour of Zoological Garden,Alipore will be refunded by the Director ,Zoological Garden, Alipore on receipt of application from tenderers .
- 10) Prospective applicants are advised to note carefully the minimum qualification criteria as mentioned in '**Instructions to Bidders**' stated in Section – 'A' before tendering the bids.
- 11) Conditional / Incomplete tenders will not be accepted under any circumstances.**
- 12) The intending tenderers are required to quote the rate *online*.**
- 13) Contractor shall have to comply with the provisions of (a) the contract labour (Regulation Abolition) Act. 1970 (b) Apprentice Act. 1961 and (c) minimum wages Act. 1948 of the notification thereof or any other laws relating there to and the rules made and order issued there under from time to time.
- 14) During scrutiny, if it comes to the notice of the tender inviting authority that the credential or any other paper found incorrect / manufactured / fabricated, that bidder would not be allowed to participate in the tender and that application will be rejected without any prejudice.

15) The Director, Zoological Garden, Alipore reserves the right to cancel the N.I.T. due to unavoidable circumstances and no claim in this respect will be entertained.

16) If there be any objection regarding prequalifying the Agency that should be lodged on line to the Chairman of Tender Evaluation Committee **within 2 (two) days** from the date of publication of list of qualified agencies and beyond that time schedule, no objection will be entertained by the Tender Evaluation Committee.

17) Before issuance of EACH WORK ORDER, the tender inviting authority may verify the credential and other documents of the lowest tenderer, if found necessary. After verification if it is found that the documents submitted by the lowest tenderer is either manufactured or false in that case work order will not be issued in favour of the said Tenderer under any circumstances without any reference to the lowest tenderer.

The work will be commenced after the fund is available with the authority.

18) If any discrepancy arises between two similar clauses on different notification, the clause as stated in later notification will supersede former one in following sequence:

- 4) N.I.T.
- 5) Special Terms & Conditions
- 6) Technical Bid
- 7) Financial Bid
- 19) **Qualification criteria:**

The tender inviting and Accepting Authority through a "Tender Evaluation Committee" will determine the **eligibility of each bidder**. **The bidders shall have to meet all the minimum criteria regarding:**

- a) Financial Capacity
- b) Technical Capability and Eligibility as required in Column no. 6 in the table.
- c) Experience / Credential

The eligibility of a bidder will be ascertained on the basis of the document(s) in support of the minimum criteria as mentioned in Column no. 6 . If any document submitted by a bidder is either manufactured or false, in such cases the eligibility of the bidder / tenderer will be rejected at any stage without any notice.

20. **Escalation of Price** on any ground and consequent cost over run **shall not be entertained** under any circumstances. Rates should be quoted accordingly.

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Director

Zoological Garden, Alipore

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SECTION - A

INSTRUCTION TO BIDDERS

General guidance for e-Tendering:

Instructions / Guidelines for electronic submission of the tenders have been annexed for assisting the contractors to participate in e-Tendering.

- i. Registration of Contractor:
Any contractor willing to take part in the process of e-Tendering will have to be enrolled & registered with the Government e-Procurement System, through logging on to (the web portal of ZGA the contractor is to click on the link for e-Tendering site as given on the web portal.
- ii. Digital Signature certificate (DSC):
Each contractor is required to obtain a Digital Signature Certificate (DSC) for submission of tenders from the approved service provider of the National Informatics Centre (NIC) on payment of requisite amount. Details are available at the Web Site stated in Clause A.1. above. DSC is given as a USB e-Token.
- iii. The contractor can search & download N.I.T. & Tender Document(s) electronically from computer once he logs on to the website mentioned in Clause A.1. using the Digital Signature Certificate. This is the only mode of collection of Tender Documents.
- iv. Submission of Tenders:
Tenders are to be submitted through online to the website stated in Clause A.1. in two folders at a time for work, one in Technical Proposal & the other is Financial Proposal before the prescribed date & time using the Digital Signature Certificate (DSC). The documents are to be uploaded virus scanned copy duly Digitally Signed. The documents will get encrypted (transformed into non readable formats).

Technical Proposal:

The Technical proposal should contain scanned copies of the following in one covers (folders).

Statutory Cover Containing the following documents:**a) TENDERS FEES, EMD AND OTHER DOCUMENTS:**

- Demand Draft towards cost of tender documents as prescribed in the N.I.T. against the work in favour of the Zoological Garden, Alipore.
- Demand Draft towards Earnest Money (EMD) as prescribed in the N.I.T. against the work in favour of the Zoological Garden, Alipore.
- **Eligibility of Contractor**
 - 1) All intending firms shall have to visit this office premises and conduct proper site inspection/survey to get themselves acquainted with the existing operative CCTV Surveillance systems area before submission of their quotations. After bidding, no further request of site-survey from any intending firm will be entertained. The selected vendor should supply and install the new CCTV Surveillance system keeping in mind the model/brand and technical specification of existing systems so that both the existing and upcoming CCTV systems can be integrated technically. Interested bidder may obtain further information from office
 - 2) Intending firm should furnish the layout of the upcoming CCTV surveillance in respect of their bidding.
 - 3) The bidder(s) qualified for Technical Bid may have to appear before the committee of this office and if required, demonstration may also have to be present ed. Subject to satisfactory performance before the committee along with other criteria; the bidder(s) will be qualified for the Financial Bid.
 - 4) Visit for prevention/checking/correction of the supplied CCTV system of the of fice by the selected bidder as a remedial measure must be conducted at least twice a week and a certificate against each such visit regarding the current stat us of the system mentioning the period of CCTV footage retention will have to be produced to this office.
 - 5) Bidder shall undertake to train the staff nominated by this office for familiar's action of operation and functioning of the new CCTV system.
 - 6) The tender specific OEM certificate for the offered items should have to be furnished.
 - 7) The Bidder should have the presence of a local branch office within the city. This is essential such that the local service team is readily available for any emergencies. The bidder should have a direct presence in the city and not via any third party.

- 8) Neither prospective Tendered nor any of the constituent partners had been debarred to participate in any Tender by the State/ Central Government, State /Central Government undertaking, Statutory/ Autonomous bodies constituted under the Central/ State statute during the last 5 (five) years prior to the date of this NIT. Such debarring will be considered as disqualification towards eligibility. (A declaration in this respect has to be furnished by the prospective bidders as per prescribed format in non-judicial stamp paper, must be uploaded with both sides of Stamp Paper - Affidavit-Y).
- 9) An affidavit mentioning the name of technical staff.
- 10) Bidders are required to have Trade License, P-Tax Registration and GST Registration with Government of West Bengal.
- 11) Up to date p-tax challan,
- 12) Bidders shall be in similar business for more than 3 years.
- 13) Bidders are required to submit income tax return acknowledgement, audited balance sheet and p & I accounts for last 3 years.
- 14) Agencies are required to give a detail work programmer in the form of a bar chart/work flow chart along with tender
- 15) All affidavits are required to be submitted with stamp paper both side scanned. Without both side scanned stamp paper participation of bidder will be disqualified during technical evaluation
- 16) Where an individual person submitting tender on behalf of a company or the firm of which he happens to be a director or partner, such individual person shall, while submitting any tender for and on behalf of such company or firm, invariably submit a copy of registered power of attorney showing clear authorization in his favour, by the rest of the directors of such company or the partners of such firm, to submit such tender. The Power of Attorney shall have to be registered in accordance with the provisions of the Registration Act, 1908
- 17) OEM criteria guidelines should be follow .
 - b) N.I.T.
(NIT & Tender Document downloaded properly and upload the same Digitally Signed). The rate will be quoted in the B.O.Q. Quoted rate will be encrypted in the B.O.Q. under Financial Bid.

N.B.: Failure of submission of any of the above mentioned documents as stated in Sl. No. A.5.(a). and Sl. No. A.5.(b). will render the tenderer liable to be rejected.
Tender Evaluation Committee (TEC)

Evaluation Committee constituted by the Director, Zoological Garden, Alipore will function as Head of Evaluation Committee for selection of technically qualified contractors.

Opening & evaluation of tender:

If any contractor is exempted from payment of EMD, copy of relevant Government Order needs to be furnished.

Opening of Technical Bid:

Technical proposals will be opened by the Concerned Tender Inviting Authority or his authorized representative electronically from the website using their Digital Signature Certificate (DSC).

Intending tenderers may remain present if they so desire.

Cover (folder) for Statutory Documents Ref. Sl. No. A.5.(a)&(b.) will be opened first. If there is any deficiency in the Statutory Documents the tender will summarily be rejected.

Decrypted (transformed into readable formats) documents of the non-statutory cover will be downloaded & handed over to the Tender Evaluation Committee.

Summary list of technically qualified tenderers will be uploaded online.

Pursuant to scrutiny & decision of the Tender Evaluation Committee the summary list of eligible tenderers & the serial number of work for which their proposal will be considered will be uploaded in the web portals.

During evaluation the committee may summon of the tenderers & seek clarification / information or additional documents or original hard copy of any of the documents already submitted & if these are not produced within the stipulated time frame, their proposals will be liable for rejection.

i. **Financial Bid**

The financial bid should contain the following documents in one cover (folder) i.e. Bill of Quantities (BOQ). The contractor is to quote the rate online through computer in the space marked for quoting rate in the BOQ.

Only downloaded copies of the above documents are to be uploaded virus scanned & Digitally Signed by the contractor.

Financial capacity of a bidder will be judged on the basis of information furnished in Section - B.

Penalty for suppression / distortion of facts :

If any tenderer fails to produce the original hard copies of the documents like Completion Certificates and any other documents on demand of the Tender Evaluation Committee within a specified time frame or if any deviation is detected in the hard copies from the uploaded soft copies, it may be treated as submission of false documents by the tenderer and action may be referred to the appropriate authority for prosecution as per relevant Act.

Rejection of Bid:

Tendering authority reserves the right to accept or reject any Bid and to cancel the Bidding processes and reject all Bids at any time prior to the award of Contract without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the ground for Tendering authority's action.

Award of Contract

The Bidder whose Bid has been accepted will be notified by the Tender Inviting Authority through acceptance letter / Letter of Acceptance.

The notification of award will constitute the formation of the Contract.

The Agreement in Form No. 2911(ii) will incorporate all agreements between the Tender Inviting Authority and the successful bidder. All the tender documents including N.I.T. & B.O.Q. will be the part of the contract documents. After receipt of Letter of Acceptance, the successful bidder shall have to submit requisite copies of contract documents downloading from the website stated in Sl. No. 1 of N.I.T. along with requisite cost through Demand Draft / Pay Order issued from any nationalized bank in favour of the Zoological Garden, Alipore within time limit to be set in the letter of acceptance.

Section -B

ZOOLOGICAL GARDEN, ALIPORE
Special Terms, Conditions and Specifications.**1) General:**

Unless otherwise stipulated all the works are to be done as per general conditions and general specifications as mentioned either in—

OEM Criteria

Sl. No.	General Conditions
Sr. No.	General Conditions - To Prequalify all the OEMs should satisfy the Eligibility Criteria mentioned below.
1	All CCTV Camera and NVR must be in compliance with UL/ BIS India certifications. BIS certificate should be in the name of Quoted OEM only.
2	The OEM should offer ISO 9001:2015, ISO 14001:2015, ISO 27001: 2013, ISO 45000:2018 for their manufacturing process. OEM document details to be submitted for the same.
3	The OEM should have its own factory in India since last 6 years and the factory should be registered in the OEMs name itself. The OEM should offer India factory license in its own name. OEMs getting their products manufactured by a third party manufacturing company will not be considered. OEM document details to be submitted for the same.
4	The OEM for CCTV camera should have at least 800 employees on its payroll in India. This is to justify that CCTV OEM has made investment in India and is serious about its business in India which will ensure long term after sales support and spare support from the OEM. Bidder to produce documentary proof to establish the eligibility.
5	The OEM should have the presence of a local branch office and a local service center within the city for last 6 years. The OEM should have a direct presence in the state and not via any third party distributor or system integrator.
6	The OEM should have a dedicated online CCTV support call center operational during working hours and a fully equipped repair and maintenance office in India for the past 6 years. OEM document details to be submitted for the same.
7	The OEM should offer CMMI Level 5 Certificate for their performance across critical business capabilities. OEM document details to be submitted for the same.
8	The MAC address of the cameras must be registered in the name of OEM. If the MAC address does not match, it means that the device is not created by the original manufacturer, its only an assembling or a labeling which has been done, and such party shall be immediately rejected.
9	In case the OEM is not participating directly, bidder should be an authorized reseller or channel partner of the OEM. An authorization letter from the OEM need to be submitted in original.
10	Quoted Product should be Compliant by ONVIF . same will be cross check online in ONVIF website.

GOODS AND SERVICE TAX (GST) will be applicable as per Notification No.5050-F(Y) dt. 16.08.2017 of Finance Department, Audit Branch, Govt. of West Bengal.

Constructional Labour Welfare Cess shall be @1% of the bill value . GST, Royalty & all other Statutory levy/ Cess will have to be borne by the selected contractor..

GST (Goods & Service Tax) in tender online e-Procurement System of Govt. of West Bengal or wherever shall be applicable as per rules .

2) Definition of Engineer-in-Charge and commencement of work:

The word “Engineer-in-Charge” means the concerned Chief Engineer. The word “Department” appearing anywhere in the tender documents means WBZA, who have jurisdiction, administrative or executive, over part or whole of the works forming the subject matter of the tender or contract. The word “approved” appearing anywhere in the documents means approved by the Engineer-in-Charge. In case, the work is transferred to any other Chief Engineer under whom the work will be executed should be treated as the Engineer-in-Charge. The work shall have to be taken up within seven days of the receipt of the work order or otherwise mentioned therein. Failure to do so will constitute a violation of the contract stipulation as regards of proportionate progress and timely completion of work and the contractor will thereby make himself liable to pay compensation or other penal action as per stipulation of the printed tender form.

3) Transportation arrangement:

The contractor shall arrange for all means of transport required for carriage and supply of materials and also the materials required for the construction work. The contractor must consider this aspect while quoting rate.

4) Contractor’s Site Office:

The contractor shall have an office adjacent to the work as may be approved by the Engineer-in-Charge where all directions and notice of any kind whatsoever, which the Engineer-in-Charge or his representative may desire to give to the contractor in connection with the contract, may be left or sent by post to such office or delivered to the contractor’s authorized agent or representative. For such intimation to the contractor’s site office, it shall be deemed to be sufficient enough to be served upon the contractor..

8) Electrical Supervisor :-

The Contractor shall engage one Electrical supervisor for supervision of electrical works having valid supervisory competency Certificate issued by the Directorate of electricity .

9) Eligibility criteria for participation in tender :-

- All intending firms shall have to visit this office premises and conduct proper site inspection/survey to get themselves acquainted with the existing operative CCTV Surveillance systems area before submission of their quotations. After bidding, no further request of site-survey from any intending firm will be entertained. The selected vendor should supply and install the new CCTV Surveillance system keeping in mind the model/brand and technical specification of existing systems so that both the existing and upcoming CCTV systems can be integrated technically. Interested bidder may obtain further information from office
- Intending firm should furnish the layout of the upcoming CCTV surveillance in respect of their bidding.
- The bidder(s) qualified for Technical Bid may have to appear before the committee of this office and if required, demonstration may also have to be present ed. Subject to satisfactory performance before the committee along with other criteria; the bidder(s) will be qualified for the Financial Bid.
- Visit for prevention/checking/correction of the supplied CCTV system of the of fice by the selected bidder as a remedial measure must be conducted at least twice a week and a certificate against each such visit regarding the current stat us of the system mentioning the period of CCTV footage retention will have to be produced to this office.
- Bidder shall undertake to train the staff nominated by this office for familiar's action of operation and functioning of the new CCTV system.
- The tender specific OEM certificate for the offered items should have to be furnished.
- The Bidder should have the presence of a local branch office within the city. This is essential such that the local service team is readily available for any emergencies. The bidder should have a direct presence in the city and not via any third party.
- Neither prospective Tendered nor any of the constituent partners had been debarred to participate in any Tender by the State/ Central Government, State /Central Government undertaking, Statutory/ Autonomous bodies constituted under the Central/ State statute during the last 5 (five) years prior to the date of this NIT. Such debarring will be considered as disqualification towards eligibility. (A declaration in this respect has to be furnished by the prospective bidders as per prescribed format in non-judicial stamp paper, must be uploaded with both sides of Stamp Paper - Affidavit-Y).
- An affidavit mentioning the name of technical staff.

- Bidders are required to have Trade License, P-Tax Registration and GST Registration with Government of West Bengal.
- Up to date p-tax challan,
- Bidders shall be in similar business for more than 3 years.
- Bidders are required to submit income tax return acknowledgement, audited balance sheet and p & I accounts for last 3 years.
- Agencies are required to give a detail work programmer in the form of a bar chart/work flow chart along with tender
- All affidavits are required to be submitted with stamp paper both side scanned. Without both side scanned stamp paper participation of bidder will be disqualified during technical evaluation
- Where an individual person submitting tender on behalf of a company or the firm of which he happens to be a director or partner, such individual person shall, while submitting any tender for and on behalf of such company or firm, invariably submit a copy of registered power of attorney showing clear authorization in his favour, by the rest of the directors of such company or the partners of such firm, to submit such tender. The Power of Attorney shall have to be registered in accordance with the provisions of the Registration Act, 1908

- The intending Tenderers should produce credentials of a similar nature works of
 - i) completed work of the minimum value of 40% of the estimated amount put to tender during 5(five) years prior to the date of issue of the tender notice or 2(two) similar nature of completed work, each of the minimum value 30% of the estimated amount put to tender during 5(five) years prior to the date of issue of the tender notice.

10) Additional Conditions:

A few additional conditions under special terms and conditions:

- 11)** Rate quoted shall be inclusive of clearing site as per direction of the Director.

- 12) Rate quoted shall be inclusive of West Bengal Sales Tax, Income Tax, Octroi and all other duties, if any.
- 13) Display board (Informatory) of size 150 cm X 90 cm is to be provided at the work-site with aluminum plate hoisted on steel tubular pipe / angle post to a height of 1.5 Metre at the cost of the contractor including fitting, fixing, painting, lettering, etc. complete as per direction of Engineer-in-Charge.
- 14) The Contractor is to display caution board at his own cost as per direction of Director.
- 15) Deep excavation of trenches and left out for days shall be avoided.
- 16) Labour welfare CESS will be deducted @ 1% (*one percent*) of gross bill value as per rule.
- 17) The whole work will have to be executed as per departmental drawings available in this connection at the tender rate.
- 18) Income Tax will be deducted from each bill of the contractor as per applicable rate and rules in force.
- 19) In accordance with the West Bengal Taxation Laws (amendment) Ordinance, 1993 amending the West Bengal Finance (Sales Tax) Act, 1994 necessary LWS will be deducted as per rate in force from the bill in addition to other deduction as per extent rules.

17) For Electrical works the Contractor shall have one Electrical Diploma Engineer / One Supervisor in its pay roll having expertise in electrical works with valid Supervisory Certificate of Competency issued by the Directorate of Electricity, Govt. of West Bengal .

The Agency shall have the following measuring instruments :

- i. Insulation Tester (500V) Megger
- ii. Digital Multi-meter

iii. Tong Tester .

The electrical work shall be progressed with the progress of civil work. No claim of the contractor shall be entertained by the Department for the idle labour.

The conduit shall be laid in the RCC works in general well before their concreting and in walls well before their plastering and in polythene pipes as per instruction of Engineer-in-Charge for electrical work.

Samples of electrical materials are to be approved by the concerned SAE , Electrical Wing before use. If I.S.I marked material is not available it should be conforming to BIS specification amended up to date.

The contractor shall submit the completion certificates and completion Plans for Electrical work as per General Specification.

AFFIDAVIT – “Y”

(To be furnished in Non Judicial Stamp paper of appropriate value duly notarized)

- 1) I, the under-signed do certify that all the statements made in the attached documents are true and correct. I have all machineries as per NIT & all will be at site during entire period of work. In case of any information submitted proved to be false or concealed, the application may be rejected and no objection/claim will be raised by the under-signed.
- 2) The under-signed also hereby certifies that neither our firm M/S..... nor any of constituent partner had been debarred to participate in tender by the any Government Department during the last 3 (three) years prior to the date of this N.I.T. I/We have presently.....nos of works in my hand & I would finish the work in time.
- 3) The under-signed would authorize and request any Bank, person, Firm or Corporation to furnish pertinent information as deemed necessary and/or as requested by the Department to verify this statement.
- 4) The under-signed understands that further qualifying information may be requested and agrees to furnish any such information at the request of the Department.
- 5) Certified that I have applied certified that I have applied in the tender in the capacity of individual/ as a partner of a firm/authorized representative of company or society and I will not handover the job to any other person except my employee to supervise.

Signed by an authorized officer of the firm.

Title of the officer
Name of the Firm with

Seal Date:

64 Channel Network Video Recorder (NVR) with 8-HDD slot

SI No	Feature	Specification	Compliance (Yes/No)	Deviations (if any)
1	Operating system	Embedded Linux		
2	IP video input	64-channel IP Video input		
3	Two-way audio	should support		
4	Incoming bandwidth	Min. 400 Mbps		
5	Outgoing bandwidth	Min. 400 Mbps		
6	Display interface	2 x HDMI , 2 x VGA		
7	HDMI-1	8K (7680 × 4320)/30Hz, 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz, 1600 × 1200/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz		
8	HDMI-2	4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz, 1600 × 1200/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz		
9	VGA Output	2-ch, 1920 × 1080/60Hz, 1280 × 1024/60Hz, 1280 × 720/60Hz, 1024 × 768/60Hz		
10	Audio output	2-ch, RCA (2.0 Vp-p , 1 KΩ)		
11	Split-Screen display	it should support multi split-screen live view on connected monitor.		
12	Recording resolution	32 MP/ 24 MP/ 12 MP/ 8 MP/ 7 MP/ 6 MP/ 5 MP/ 4 MP/ 3MP/ 1080p/ UXGA/ 720p/ VGA/ 4CIF/ DCIF/ 2CIF/ CIF/ QCIF		
13	Decoding format	H.265/H.265+/H.264+/H.264/MPEG4		
14	Synchronous playback	16-channel		
15	Smart Search option	Yes		
16	Motion Detection	Video analysis for human and vehicle recognition to reduce false alarm (minimum 4ch or better)		
17	IVS features	Supports special cameras, including people counting camera, ANPR (automatic number plate recognition) camera, and fisheye camera		
18	RAID function	RAID0, RAID1, RAID5, RAID6, RAID10		
19	SATA interface for HDD	should support 8 x SATA interfaces		
20	HDD Capacity	14 TB capacity for each HDD or better		
21	eSATA	1 eSATA interface		
22	Network interface	2, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interfaces		
23	USB interface	atleast 2 × USB 2.0; 2 × USB 3.0		
24	Serial interface	RS-485 (full-duplex), RS-232, Keyboard		
25	Alarm in/out	atleast 16 input / 9 output		
26	Power supply	100 to 240 VAC, 50 to 60 Hz (Redundant Power)		
27	Consumption (without hard disk)	≤50 W		
28	Working temperature	-10 to +55°C (14 to 131°F)		
29	Working humidity	10 to 90 %		
30	Certification	CE, FCC, RoHS/ BIS/ UL		
Camera & NVR should be from same OEM for smooth integration.				

Fixed Lens Network Bullet Camera

Sl. No.	Technical Specification :		Compliance (Yes/No)	Deviations (if any)
1	Image Sensor	1/2.7" Progressive Scan CMOS	Yes	
2	Min. illumination	Color: 0.003Lux (AGC On), 0 Lux with IR	Yes	
3	Preferred recording Resolution	2592 x 1944	Yes	
4	Day & Night	IR Cut Filter	Yes	
5	Shutter speed	1/3 s to 1/100,000 s	Yes	
6	Digital Noise Reduction	3D DNR	Yes	
7	WDR	120dB True WDR	Yes	
8	Lens	2.8, 4, and 6 mm optional	Yes	
9	IR range	min. 60m IR or higher	Yes	
10	Streaming Type	Should support Four streams	Yes	
		50 Hz: 25 fps (2592 x 1944, 2688 x 1520, 1920 x 1080, 1280 x 720) 60 Hz: 24 fps (2592 x 1944) 30 fps (2688 x 1520, 1920 x 1080, 1280 x 720)	Yes	
		50 Hz: 25 fps (640 x 480, 640 x 360) 60 Hz: 30 fps (640 x 480, 640 x 360)	Yes	
			Yes	
11	Video Compression	H.265, H.264, H.264+,H.265+	Yes	
12	Bit Rate Control	CBR/VBR	Yes	
13	Scalable Video Coding (SVC)	H.264 and H.265 encoding	Yes	
14	Audio Compression	G.711ulaw /G.711alaw/ G.722.1/ G.726/ MP2L2/ PCM/ MP3 /AAC	Yes	
15	Image Enhancement	BLC, HLC, 3D DNR, 120dB WDR, ROI (5 fixed regions for main stream and sub-stream), Auto-White Balance	Yes	
16	Image settings	Rotate mode, saturation, brightness, contrast, sharpness adjustable by client software or web browser	Yes	
17	Day/Night Switch	Day, Night, Auto, Schedule	Yes	
18	Network Protocol	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, NTP, UPnP, SMTP, IGMP, 802.1X, QoS, IPv4, IPv6, UDP, Bonjour, SSL/TLS, PPPoE, ARP, SNMP	Yes	
19	API	Open Network Video Interface (PROFILE S, PROFILE G, PROFILE T), SDK	Yes	
20	Simultaneous Live View	6 channel	Yes	
21	User Host	32 users. 3 user levels: administrator, operator and user	Yes	
22	Edge base Recording & Network storage	Built-in Micro SD/SDHC/SDXC slot, (256GB or better), NAS (NFS, SMB/CIFS), auto network replenishment (ANR)	Yes	
23	Preferable analytics	Line crossing detection, intrusion detection, Motion detection (human and vehicle targets classification), Unattended baggage detection, video tampering, Object removal detection, Scene change detection, audio exception detection, Face capture	Yes	
24	Ethernet Port	1 x RJ45 10M/100M Ethernet port	Yes	
25	Audio interface	1-in/ 1-out	Yes	
26	Alarm I/O	2-in/2-out	Yes	
27	Built-in Microphone	Yes	Yes	
28	Built-in Speaker	Yes	Yes	
29	strobe light, audible warning	Yes	Yes	
30	Power Supply	DC12V, PoE (802.3at /af)	Yes	
31	Operating Conditions	-30° C ~ + 60° C	Yes	
32	Ingress Protection	IP67 Ingress Protection	Yes	
33	Certifications	CE/ FCC/ BIS	Yes	
Camera & NVR should be from same OEM for smooth integration.				

2 Megapixel Fixed Lens Dome Camera with Built-in Mic

Sl. No.	Technical Specification :		Compliance (Yes/No)	Deviations (if any)
1	Image Sensor	1/2.7" Progressive Scan CMOS	Yes	
2	Min. illumination	Color: 0.005Lux (AGC On), 0 Lux with IR	Yes	
3	Image Resolution	2MP	Yes	
4	Day & Night	IR Cut Filter	Yes	
5	Digital Noise Reduction	3D DNR	Yes	
6	WDR	120 dB	Yes	
7	Built-in Microphone	Yes	Yes	
8	On-Board Storage	Built-in memory card slot, support microSD card, up to 256 GB	Yes	
9	Lens	Fixed Lens : 4mm/ 6mm (as per site requirement)	Yes	
10	IR range	min. 40m IR	Yes	
11	Streaming Type	Should Support Three stream	Yes	
12	Video Compression	H.265, H.264	Yes	
13	Image Enhancement	BLC, HLC, 3D DNR, Auto-White Balance, Privacy Mask	Yes	
14	Ethernet Port	1 x RJ45 10M/100M Ethernet port	Yes	
15	Network Protocol	TCP/IP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, NTP, UPnP™, SMTP, IGMP, 802.1X, QoS, IPv6, Bonjour, IPv4, UDP, SSL/TLS	Yes	
16	Preferable analytics	Motion detection, Line crossing, intrusion detection, Video tampering detection	Yes	
17	Power Supply	DC12V, PoE	Yes	
18	Operating Conditions	-30° C ~ + 60° C	Yes	
19	Ingress Protection	IP67	Yes	

16-port Giga PoE Switch

Sl. No		Compliance
1	Port number	16 × Gigabit PoE port, 1 × Gigabit RJ45 port, 1 × Gigabit fiber optical port
2	Port type	RJ45 port, full duplex, MDI/MDI-X adaptive
3	Standard	IEEE 802.3, IEEE 802.3u, IEEE 802.3x
4	MAC address table	8 K
5	Switching capacity	56 Gbps
6	Packet forwarding rate	41.66 Mpps
7	Internal cache	4.1 Mbits
8	PoE standard	IEEE 802.3af, IEEE 802.3at
9	Management	Local and Unified cloud management for security systems
10	Link Aggregation	Support static link aggregation and Support 8 aggregation groups.
11	Loop Prevention	Support 802.1D STP, 802.1w RSTP.
12	VLAN	Should support minimum 32 VLAN
13	PoE Transmission	Supports up to 300 m long-range PoE transmission (for specific port)
14	PoE port	Ports 1 to 16
15	Max. port power	30 W
16	PoE power budget	130 W
17	Max. power consumption	150 W
18	Operating temperature	-10 °C to 55 °C (14 °F to 131 °F)
19	Storage temperature	-40 °C to 85 °C (-40 °F to 185 °F)
20	Operating humidity	5% to 95% (no condensation)
21	Power supply	48 VDC or 100 to 240 VAC (with suitable power supply)

Sr_No	Specification Display Solution		Compliance (Yes / No)	Remarks
A	BEZEL SPECIFICATONS			
1	Resolution	It should support a minimum 1920 x 1080		
2	Size	The diagonal size of the display should be at least 55 inch or bigger		
3	Pixel Pitch	Should be greater than or equal 0.63mm		
4	Brightness	Minimum 500 NIT		
5	Contrast	Minimum 1200: 01		
6	Display Colors	8 bit - 16.7M		
7	Light Source	LED		
8	Response Time	It should have a response time 8 ms. Or better		
9	Viewing Angle	The Horizontal Viewing angle should be 178° & the Vertical viewing angle should be 178°		
10	Standard Inputs	It should have at least		
		RGB: DVI-D, Display Port 1.2		
		VIDEO : HDMI1		
		USB : 01 port		
11	Standard Outputs	It should have at least		
		RGB: Display Port 1.2 (for Looping)		
		AUDIO : stereo Mini Jack		
13	Control	Thru RS-232/RS-422/IR/ Ethernet		
14	Input Voltage	AC 100~240V@50/60 Hz		
15	Power Consumption per panel	Should be < 250W		
16	Standby Mode	Should be <0.5W		
17	Temperature Per Panel	0°C - 40°C		
19	Combined Bezel	3.5 mm or lower		
20	Haze/Anti-Glare	Minimum 25% or More		
21	Installation	Front Maintenance bracket and necessary cables should be supplied along with the displays		
23	Depth of the display	less than 100 mm,		
24	Certification	CE, FCC		
25	Front Maintenance Mount Bracket	To be provided during Installation		
B	CLUSTER DEVICE SPECIFICATONS			
1	Support computer, video conference terminals and so on video input signal source; support HDMI and HDMI 4K signal inputs.			
2	Support network camera, NVR, and other device types as network signal source inputs.			
3	Support HDMI embedded audio input; audio input supports 16 bit and 48K Hz sampling, two-channel and stereo sound.			
4	Support 2-ch 1080p@50/60 or 1-ch 4K@30 by HDMI 1.4 local directory input. Video Output			
5	Support HDMI 1.4 video signal output with 4K (3840 × 2160@30 Hz) ultra high definition output.			
6	Support two audio output methods: HDMI embedded audio and external audio output.			

7	Adopting frame synchronization technology to ensure complete synchronization of images from all output ports, complete graphics, smooth playback, no jamming or stuttering, no tearing or stitching.			
8	Adopting H.264/H.265 encoding standard, the default is H.264, supporting sub-stream and main stream encoding.			
9	Support decoding of network sources such as network cameras/NVR, decoding of sub-stream and main stream, and automatic sub-stream extraction for segmented images can be set.			
10	The device has 256 video decoding channels, supporting 128-ch 200 W or 256-ch 720p video decoding on the wall simultaneously.			
11	Support decoding streams of multiple resolution no more than 3200 W.			
12	H.264, H.265, H.264+, H.265+, MJPEG, HIK264 video compression decoding.			
13	G.722, G.711A, G.726, G.711U, MPEG2-L2, AAC, MP3, PCM audio compression decoding.			
14	Support front-end corridor mode decoding and up to 2560 × 1440 decoding output.			
15	Two decoding modes: active decoding and passive decoding.			
16	Support encryption stream, multi-track stream, and intelligent stream decoding; support stream modification and switching; support decoding exception prompt.			
17	Support remote video files decoding output. Video Wall			
18	Support single sided video wall splicing, window opening, window cross screen roaming, scene rotation, and window rotation functions, with single screen support for three 1080p or 1.5 4K layers.			
19	Support 1/2/4/6/8/9/12/16/25 screen splitting.			
20	Support scenes configuration up to 64 scenes.			
21	Support split screen sub-window double click to zoom in and zoom out.			
22	Support display output channel number			
23	Network Interface	RJ45 × 2, 10 M/100 M/1000 Mbps self-adaptive Ethernet interface Optic Interface × 2 100 base-FX/1000 base-X		
24	Alarm In	8-ch alarm in		
25	Alarm Out	8-ch alarm out		
26	Serial Interface	RS-232 (RJ45) × 1, RS-485 × 1		
27	USB Interface	USB 2.0 × 2		
28	Split Window	Yes		
29	Split Screen	1, 2, 4, 6, 8, 9, 12, 16, 25		
30	Max. Input Resolution	3840 × 2160@30 Hz, 1920 × 1080@50 Hz, 1920 × 1080@60 Hz, 1280 × 720@50/60 Hz		
31	Video Input Interface Type	2-ch: HDMI 1.4		
32	Video Encoding Channe	2 Minimum		
33	Working Temperature	-10 °C to 55 °C (14 °F to 131 °F)		
34	Working Humidity	10% to 90% RH		
35	Dimensions(W × D × H)	440 mm × 321 mm × 88 mm (17.32 inch × 12.64 inch × 3.64 inch)		
36	Power Consumption	< 150 W or better		

Specification Software Solution		Compliance (Yes / No)	Remarks
1. Central Video Surveillance Management Service			
1	Authenticates the Control Client access; manages the users, roles, permissions and monitors devices		
2	Provides the interface for third-party system integration		
3	3rd Party Device Access Gateway : Communication between VSM and third-party device		
2. VMS should be ONVIF complaint and encrypt when streaming/viewing/exporting			
3. Administration functions and operation functions are performed separately in the following clients:			
1	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	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:			
	Add encoding devices to the VSM using the following discovery options:		
1	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.		
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		
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:			
1	Motion detection		
2	Line crossing detection		
3	Intrusion detection		
b) Shall batch add alarm input events			
c) Shall batch add Health Monitoring events from Device.			
d) Shall batch add Health Monitoring events from servers.			
e) Shall support email linkage			
f) After configuring a recording schedule, video files of events can be searched and played			
Alarm Priority shall be configured to one of three levels by default:			

High		
Medium		
Low		
Shall have the ability to set alarm recipients from users accounts set up.		
Shall have the ability to associate up to 16 cameras recording with alarm events		
Shall have the ability to associate a map with an alarm		
Shall have the ability to trigger a pop-up window with an alarm event		
Alarm source, trigger events, and alarm priority can also be displayed		
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 icons representing -		
a. Camera b. Alarm Input c. Alarm Output		
3. Shall have the ability to import image files to create custom map icons		
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		
Video Search		
Download		
Two-Way Audio		
PTZ Control		
Search log by user accounts		
10. 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		
11. 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		
4. Shall set database backup and restore.		
12. Control Client :		

The Control Client should be Windows-based software for security operators to access NVRs, and network cameras using authorized client login credentials. 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		
13. 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. Enable manual recording of displayed Network Camera		
iii. Enable and utilize two-way audio		
iv. Digital zoom		
v. 3D positioning for PTZ camera		
2) Playback :		
Ability to play back 1 to 16 cameras simultaneously		
Clipping: ability to quickly export video clips		
Digital zoom		
Video export		
VCA search		
Supports clicking and playing directly after downloading with player		
Supports customizing download time		
3) VCA Search		
Support Motion Detection		
Support Line Crossing Detection		
Support Intrusion Detection		
4) Health Monitoring :		
Ability to monitor all encoding devices, decoding devices, recording servers and Streaming Servers associated and the overall status of VMS itself.		
5) 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. Device log		
c. Log searches are based on operation, user, and time interval searches of:		

Sr No.	Technical Specification		Compliance Y/N
1	Operation system Linux	Embedded Linux	
2	Screen	7 inch touch screen, Ratio: 16:9, Resolution: 1024 × 600	
3	Camera	2 MP wide-angle dual-lens camera, WDR, Anti-Spoofing support	
4	Fingerprint recognizer	Capacitive	
5	Indicator	Audio Visual	
6	Recognition mode	Face: 1:1 and 1:N, Fingerprint: 1:1 and 1:N	
7	Face capacity	6000	
8	Fingerprint capacity	5000	
9	Face recognition duration	< 0.2 s per person	
10	Face recognition distance	0.3 to 3 m	
11	Card capacity	6000	
12	Card type	M1 card	
13	Card swiping duration	< 1 s	
14	Card swiping distance	0 to 5 cm	
15	Event capacity	50,000	
16	Interface	Network × 1, RS-485 × 1, Wiegand × 1, USB × 1, alarm output × 1, alarm input × 2, lock × 1, door contact × 1, exit button × 1, tamper × 1	
17	Network	10/100/1000 Mbps self-adaptive	
18	Working voltage	12 VDC/2 A	
19	Working temperature	-30 °C to +60 °C (-22 °F to +140 °F)	
20	Working humidity	0 to 90% (No condensing)	
21	Protection level	IP65	
22	Tamper	Support	
General Specification			
23	Adjusts supplement light brightness manually provision should be there		
24	Face recognition should support in dark environment also		
25	Face recognition should happen from distance: 0.3 to 3m		
26	It should support Deep learning algorithm		
27	It should support minimum 6000 face capacity, 5,000 fingerprint capacity, and 50,000 event capacity		
28	Should work in Multiple authentication modes		
29	Face recognition duration should have < 0.2 s/User; face recognition accuracy rate ≥ 99%		
30	It should support user data to the device via TCP/IP communication		
31	It should support CCTV integration for Capture linkage and captured pictures saving in case of any alarm		
32	Can Connects to one external card reader or access controller via RS-485 protocol		
33	Can Connects to external access controller or Wiegand card reader via Wiegand protocol		
34	Should have option to connects to secure door control unit via RS-485 protocol to avoid the door opening when the terminal is destroyed		

35	Two-way audio with client software, indoor station, and master station		
36	Should support Remote live view via RTSP protocol; encoding mode: H.264		
37	NTP, manually time synchronization, and auto synchronization		
38	Audio prompt		
39	Watchdog design and tamper function		
40	Supports 6 attendance status, including check in, check out, break in, break out, overtime in, overtime out on GUI		
41	Supports multiple languages		
42	Supports EHome 5.0 (ISUP 5.0), and ISAPI protocol		
43	Configuration can be done via web browser		
44	Product Warranty should be minimum 1 Years		
45	System should have CCTV integration, so in case of any event Admin will get the Pop-up in Command room and aligned CCTV should be live		
46	System should support MAP configuration so in case of any event Admin should know the exact place of Event on site MAP		

22U D-Link Floor Standing Steel Enclosure's designed for Servers (Make D-link)

Top and bottom Panel with ventilation and cable entry facility, Provision to mount the cooling fans on the top panel, Racks is 22U with 600mm depth and 1000 width configurations. Front & Rear Door, Side Panels, Cable Manager. Fans and Fan Modules. Hardware Packet, Jacking Feet , Lockable Toughened Glass Door, Steel Single, Steel Dual

Surveillance Hard Disk - 6 TB

Image Perfect™ firmware is designed to ensure seamless video footage capture in 24x7 surveillance workloads that record video from 64 HD cameras

Skyhawk Health Management actively helps protect your surveillance storage by focusing on prevention, intervention and recovery options.

NVR-ready design allows drives to maintain performance in multi-bay systems, giving customers the flexibility to scale their systems when more storage is needed.

ATA streaming support enables recordings from up to 64 HD cameras for smooth, uninterrupted footage.

Support an increased number of HD cameras and allows longer data retention periods.

Lower power consumption means a reduction in heat emissions, which improves reliability in surveillance solutions. Tarnish-resistant components help protect drive from environmental elements, increasing field reliability.

Server for VMS with minimum Spec

1. CPU: Intel® Xeon® E-2378 @ 2.60 GHz
2. RAM: 32 GB or better
3. NIC: GbE Network Interface Card
4. HDD: SATA-II 7200 RPM Enterprise Class HDD with minimum 650 GB HDD free after RAID 1
5. RAID Controller: Available
6. Operating System: Microsoft® Windows Server 2012 (R2) 64-bit or above
7. Input Devices: Wireless Keyboard and Mouse
8. Body Type: Rack Mount

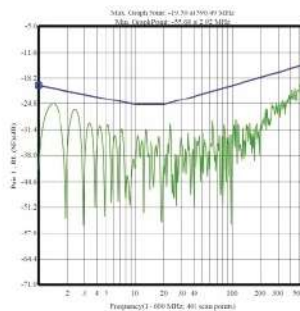
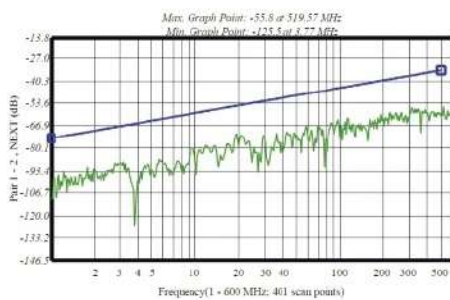
Viewing Client for VMS with minimum Spec

1. CPU: Intel® Core™ i7-8700k @ 3.70 GHz
2. RAM: 16 GB or better
3. NIC: GbE Network Interface Card
4. Graphics Card: NVIDIA® GeForce RTX 2080 or higher
5. HDD: SATA-II 7200 RPM Enterprise Class HDD with minimum 650 GB HDD
6. Input Devices: Wireless Keyboard and Mouse
7. Operating System: Microsoft® Windows 10 (64-bit) or more
8. Body Type: Workstation

CCTV CABLE Cat 6 Cable

◆ TRANSMISSION CHARACTERISTICS PER 100M

Frequency MHz	Insertion Loss (dB/100m)	RL (dB)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB)	PSELFEXT (dB)	ACR (dB)	PSACR (dB)
1	2.0	20.0	74.3	72.3	67.8	64.8	72.3	70.3
4	3.8	23.0	65.3	63.3	55.8	52.8	61.5	59.5
8	5.3	24.5	60.8	58.8	49.7	46.7	55.5	53.5
10	6.0	25.0	59.3	57.3	47.8	44.8	53.3	51.3
16	7.6	25.0	56.2	54.2	43.7	40.7	48.6	46.6
20	8.5	25.0	54.8	52.8	41.8	38.8	46.3	44.3
25	9.5	24.3	53.3	51.3	39.8	36.8	43.8	41.8
31.25	10.7	23.6	51.9	49.9	37.9	34.9	41.2	39.2
62.5	15.4	21.5	47.4	45.4	31.9	28.9	32.0	30.0
100	19.8	20.1	44.3	42.3	27.8	24.8	24.5	22.5
200	29.0	18.0	39.8	37.8	21.8	18.8	10.8	8.8
250	32.8	17.3	38.3	36.3	19.8	16.8	5.5	3.5
500	45.3	15.2	33.8	31.8	13.8	10.8	4.5	2.8
600	51	14.5	31.2	29.9	11.8	8.6	3.5	2.1



◆ MECHANICAL PROPERTIES

Bending Radius: < 25.4mm at -20°C ± 1°C

Pulling Force: 11.5 Kg

Operating Temperature Range: -20°C to +70°C

Storage Temperature Range: 0°C to +50°C

◆ CONNECTION SYSTEM

Compatible with all common systems according to TIA/EIA 568-C.2 and ISO/IEC 11801 Class E

◆ PACKING

Reels of guaranteed 305m Length

◆ ORDERING INFORMATION

Part Code	Description
NCB-C6UGRYR-305	CAT6 UTP 23AWG Solid: 305M

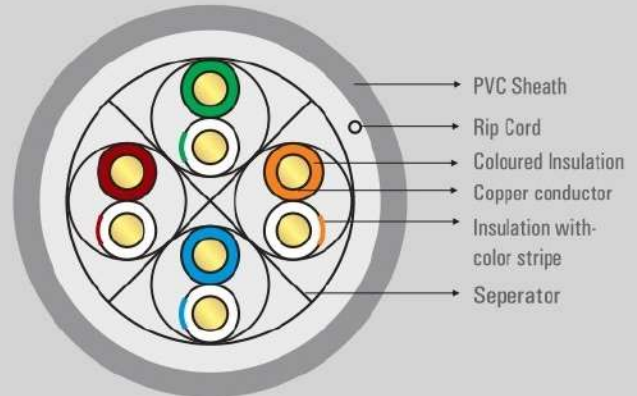
CCTV CABLE Cat 6 Cable

APPLICATION

Enhanced performance cable for transmission of high speed data, digital and analogue voice and video (RGB) signals on LANs. Supports Gigabit Ethernet (1000 baseT) standard. Performance verified up to 600 Mhz

This cable well exceeds the requirements of ANSI/TIA-568-C.2 category6 ISO 11801 Class E

Approval : UL Listed  & ETL Verified



CONSTRUCTION

Conductor:	23 AWG Solid bare Copper (4 pair)
Insulation:	High Density Polyethylene
Pairs:	2 Insulated conductors twisted together
Sheath:	FR-PVC Insulation thickness 0.2mm nominal
Cable Diameter:	6.1 mm nominal
Cable wt per Box:	13.6 Kgs nominal
Printing:	Each meter printed with sequential Length Counter

✦ ELECTRICAL PROPERTIES

Characteristic Impedance:	100 ± 15Ω
Conductor Resistance:	≤ 9.38 Ω /100m
Insulation Resistance:	100M Ω
Mutual Capacitance:	< 5.6nF/100m
Resistance Unbalance:	5% Max
Capacitance Unbalance:	330pF/100m
Delay Skew:	< 45nS
NVP (%):	69%
Operating Voltage:	72V
Dielectric Strength:	1.0KV dc or 0.75KV ac for 1min

✦ COLOR CODE

PAIR NO	COLOR
1-2	White-Orange Stripe and Orange
4-5	White-Blue Stripe and Blue

PAIR NO	COLOR
3-6	White-Green Stripe and Green
7-8	White-Brown Stripe and Brown

Optic Fiber Cable 6 and 12 Core

APPLICATION

- Suitable for Indoor & Outdoor (duct), aerial, pipeline.
- Excellent waterproofing performance.
- Lightweight, Small, Compact cable size

DESCRIPTION

- Central Loose tube with jelly compound.
- E - glass strength members.
- Sequential Meter Marking.

STANDARDS

- ISO 11801
- IEC 60793-1/60794-1-2
- ITU-T REC G.652D
- Telcordia GR-20-core

Mechanical & Environment Characteristics:

Operating Temperature	- 20 deg C to+60 deg C
Storage Temperature	- 40 deg C to+60 deg C
Jacket Material	HDPE / LSZH

Fiber Count	HDPE / LSZH Outer Diameter (mm)	HDPE / LSZH Thickness of Jacket (mm)	HDPE / LSZH Nominal Cable Weight (kg/km)	Pulling Tension IEC 60794-1-2-E1		Crush Load IEC 60794-1-2-E3 (N/100mm)		Bend Radius (mm) IEC 60794-1-2-E11 IEC 60794-1-2-E6	
				Short Term (N)	Long Term (N)	Short Term	Long Term	Short Term	Long Term
4	6.8+-0.3 / 6.2 +-0.3	1.8+-0.2/1.4+-0.2	34/45	1500	600	1000	300	20D	10D
? l / ; ;m nvc 6	6.8+-0.3 / 6.2 +-0.3	1.8+-0.2/1.4+-0.2	34/45	1500	600	1000	300	20D	10D

Characteristics (cabled) Single-Mode - Matched-Cladded optical fibers according to ITU

Fiber-Type & Refractive Index	Mode-Field/ Cladding Diameter(um)	Wavelength h(nm)	Dispersion (ps/(nm-km))	PMD (ps/km)	Cable Cut-off Wavelength (nm)
9/125 / G.652D	9.2 ± 0.4	131 0	≤3.5	≤ 0.2	≤ 1260
1.4670/1.4675	125 ± 0.7	155 0	≤18		