DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF TRANSPORT, HIGHWAYS AND URBAN DEVELOPMENT
SRI LANKA LAND DEVELOPMENT CORPORATION

BIDDING DOCUMENT

THREE (3) YEARS COMPREHENSIVE MAINTENANCE AGREEMENT FOR VIDEO WALL DISPLAY SYSTEM AT RTC

PROCUREMENT NO : S/520/26

CLOSING DATE : 26th November 2026 13.30 Hrs

READ ONLY

Chairman,
Department Procurement Committee
Sri Lanka Land Development Corporation
No. 03, Sri Jayewardenepura Mawatha
Welikdada
Rajagiriya.

Tel. No. : 0112866832 Fax No. : 0112871637 Email : supplies@sllrdc.lk

November - 2026

REQUEST FOR BID (RFB)

MINISTRY OF TRANSPORT, HIGHWAYS AND URBAN DEVELOPMENT

SRI LANKA LAND DEVELOPMENT CORPORATION

THREE (3) YEARS COMPREHENSIVE MAINTENANCE AGREEMENT FOR VIDEO WALL DISPLAY SYSTEM AT RTC

Contract (Bid) No: S/520/16

1. The Chairman, Procuring Entity, on behalf of the Sri Lanka Land Development Corporation (SLLDC), invites sealed bids from eligible and qualified bidders to carry out **Three (3) Years Comprehensive Maintenance Agreement for Video Wall Display System at RTC** established under the Integrated Flood Management System for a period of three (3) consecutive years.

2. To be eligible for contract award, the successful bidder shall not have been blacklisted and shall meet the following requirements.

- Three (3) years or above experience undertaking comprehensive maintenance services of LED video wall display system, Video Wall Control Software (CMS) with relevant accessories, HDMI IP encoders, HDMI IP decoders, network switches, cable management, computer, monitors, online UPS (10kVA) and etc.

3. Bidding will be conducted through National Competitive Bidding.

4. Interested eligible bidders may obtain further information from Deputy General Manager (Urban Water Management), via slldcurwm@gmail.com and inspect the Procurement Documents at the address given below from **09:00 hrs to 15:30 hrs.**

READ ONLY

Deputy General Manager (Supplies & Store)
Sri Lanka Land Development Corporation
No. 03, Sri Jayawardenapura Mawatha,
Welikada, Rajagiriya.

5. A complete set of Bidding Documents may be purchased by interested bidders on the submission of a written application to the address below and upon payment of a non-refundable fee **LKR. 3,500/=.** The method of payment will be Cash and payment can be made to our Cashier located in Finance Division, 03rd Floor, SLLDC.

Deputy General Manager (Supplies & Store)
Sri Lanka Land Development Corporation
No. 03, Sri Jayawardenapura Mawatha,
Welikada, Rajagiriya

6. Sealed bids must be delivered in duplicate to the address below at or before **13.30 hrs** on **26th November 2026.** Late bids shall be rejected. Bids will be opened in the presence of the bidders or representatives who choose to attend in person or virtually at the address below at **13:30hrs on 26th November 2026** All bids shall be accompanied by a Bid Security of Rupees Thirty Thousand (Rs.30,000/-) issued in favour of the General Manager, Sri Lanka Land Development Corporation, and valid upto **20th March 2027** from the closing date of bids (119 days).

The bid security shall be from a licensed commercial bank operating in Sri Lanka and approved by the Central Bank of Sri Lanka. It shall be irrevocable and unconditionally encashable upon the first written demand by the employer. Cash Bond also could be submitted (Bidder Could pay cash to cashier, SLLDC and attach receipt to the bid).

The Chairman
Department Procurement Committee
Sri Lanka Land Development Corporation,
No. 03, Sri Jayawardenapura Mawatha,
Welikada, Rajagiriya.

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7. A pre-bid meeting will be held on **10th November 2026 at 10.00 hrs**. in **Meeting Room, Urban Water Management Division, 2nd floor, Urban Water Management Centre Building, No 260, Lake Drive, Colombo 05** and followed by a site visit

The Chairman
Department Procurement Committee
Sri Lanka Land Development Corporation,
No. 03, Sri Jayawardenapura Mawatha,
Welikada, Rajagiriya.

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Section I – Instructions to Bidders

A. General

1. Scope of Bid

1.1 The Employer, as defined in the Bidding Data, invites bids for the Services, as described in the Appendix A to the Contract. The name and identification number of the Contract is provided in the Bidding Data.

1.2 The successful Bidder shall be required to continue the performance of the Services for the duration specified in the Bidding Data.

2. Qualification and Experience of the Bidder

2.1 All bidders shall provide in Section III, Forms of Bid and Qualification and Experience Information, a preliminary description of the proposed work method and schedule, including drawings and charts, as necessary.

2.2 If stated in the Bidding Data, all bidders shall include the following information and documents with their bids in Section III:

(a) List of Services performed for each of the last three (03) years;

(c) Experience in Services of a similar nature for each of the last three years, and details of Services under way or contractually committed; and names and address of clients who may be contacted for further information on those contracts;

(d) Work plan and methodology;

(e) List of major items of equipment proposed to carry out the Contract;

(f) Qualifications and experience of key staff proposed for the Contract;

(g) Any other if listed in the Bidding Data

3. Cost of Bidding

3.1 The Bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible or liable for those costs.

4. Site Visit

4.1 The Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site of required Services and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for the Services. The costs of visiting the Site shall be at the Bidder's own expense

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B. Bidding Documents

5 Content of Bidding Documents

5.1 The set of bidding documents comprises the documents listed below:

Volume 1

Section I	Instructions to Bidders
Section IV	Conditions of Contract
Section VIII	Forms of Securities

Volume 2

Invitation for Bid

Section II	Bidding Data
Section III	Forms of Bid and Qualification Information and Contract
Section V	Contract Data
Section VI	Employer's Requirements and Drawings
Section VII	Activity/Price/Rate Schedules
Section VIII	Preventive Maintenance Checklist
Section IX	Standard Forms

6. Clarification of Bidding Documents

6.1 A prospective Bidder requiring any clarification of the bidding documents may notify the Employer in writing at the Employer's address indicated in the invitation to bid.

C. Preparation of Bids

7. Language of Bid

7.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Employer shall be written in English Language.

8. Documents Comprising the Bid

8.1 The Bidder shall submit the Bid in a sealed envelope comprising the following documents:

(i) Volume 1 of the Bidding Document
(ii) Bid security
(iii) Duly filled 'A' Schedules, "Qualification and Experience Information"
(iv) Other information listed in Bidding Data
(v) Duly filled and signed Price Bid Submission Form and Price/Rate Schedules
(vi) Duly filled Activity Schedules
(vii) Agreed/Consent letter to provide the Preventive Maintenance Checklist for every visit
(viii) Standard Forms
(xi) Any other information, bidder may wish to include

8.2 The Envelope shall:

(a) be addressed to the Employer at the address provided in the Bidding Data;

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(b) bear the name and identification number of the Contract as defined in Bidding Data;

9. Bid Prices

9.1 The Contract shall be for the Services, as described in the Employer's Requirements, Section VI, based on the priced Activity Schedule submitted by the Bidder.

9.2 The Bidder shall fill in rates and prices for all items of the Services described in the Price schedule, Section VII and listed in the Activity Schedule, Section VII. Items for which no rate or price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed covered by the other rates and prices in the Activity Schedule.

9.3 All duties, taxes, and other levies payable by the Service Provider under the Contract, or for any other cause, as of the date 28 days prior to the deadline for submission of bids, shall be included in the total Bid price submitted by the Bidder. However, VAT shall be included separately.

10. Currency of Bid and Payment

10.1 The lump sum price shall be quoted by the Bidder shall be in Sri Lanka Rupees.

11. Bid Validity

11.1 Bids shall remain valid for the period specified in the Bidding Data.

11.2 In exceptional circumstances, the Employer may request that the bidders extend the period of validity for a specified additional period. The request and the bidders' responses shall be made in writing. A Bidder may refuse the request without forfeiting the Bid Security (if submitted). A Bidder agreeing to the request will not be required or permitted to otherwise modify the Bid, but will be required to extend the validity of Bid Security (if submitted) for the period of the extension, and in compliance with Clause 12 in all respects.

12 Bid Security

12.1 If indicated in the Bidding Data, the Bidder shall furnish, as part of the Bid, a Bid Security, in the amount specified in the Bidding Data and valid till the date specified in the Bidding Data.

12.2 If a Bid Security is requested under sub-clause 12.1 above, any bid not accompanied by an acceptable Bid Security shall be rejected by the Employer.

12.3 The Bid Security of unsuccessful bidders will be returned within 28 days of the end of the Bid validity period specified in Sub-Clause 12.1.

12.4 The Bid Security of the successful Bidder will be discharged when the Bidder has signed the Agreement and furnished the required Performance Security (if required).

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12.5 The Bid Security may be forfeited:

(a) if the Bidder withdraws the Bid after Bid opening during the period of Bid validity;

(b) if the Bidder does not accept the correction of the Bid price, pursuant to Clause 22; or

(c) in the case of a successful Bidder, if the Bidder fails within the specified time limit to
(i) sign the Contract; or
(ii) furnish the required Performance Security (if required).

13. Format and Signing of Bid

13.1 The Bidder shall prepare one original of the documents comprising the Bid as described in Clause 8 of these Instructions to Bidders.

13.2 The original of the Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorized to sign on behalf of the Bidder. All pages of the Bid where entries or amendments have been made shall be initialed by the person or persons signing the Bid.

13.3 The Bid shall contain no alterations or additions, except those to comply with instructions issued by the Employer, or as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

D. Submission of Bids

14. Sealing and Marking of Bids

14.1 The outer envelope prepared in accordance with sub-clause 8.2 shall:

(a) be addressed to the Employer at the address provided in the Bidding Data;

(b) bear the name and identification number of the Contract as defined in the Bidding Data; and

(a) provide a warning not to open before the specified time and date for Bid opening as defined in the Bidding Data.

14.2 In addition to the identification required in Sub-Clause 14.2, the envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened if required.

14.3 If the envelope is not sealed and marked as above, the Employer will assume no responsibility for the misplacement or premature opening of the Bid.

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15. Deadline for Submission of Bids

15.1 Bids shall be delivered to the Employer at the address specified above no later than the time and date specified in the Bidding Data.

15.2 Employer may extend the deadline for submission of bids by issuing an amendment, in which case all rights and obligations of the Parties previously subject to the original deadline will then be subject to the new deadline.

16. Late Bids

16.1 Any Bid received by the Employer after the deadline prescribed in Clause 15 will be returned unopened to the Bidder.

E. Bid Opening and Evaluation

17. Bid Opening

17.1 The Employer will open the bid, in the presence of Bidders' designated representatives who choose to attend, at the time, date, and location stipulated in the Invitation to Bid. The Bidders' representatives who are present shall confirm their attendance by signing the attendance sheet.

17.2 The Bidders' names, the presence (or absence) of Bid security, the presence (or absence) of the Financial Bid and any such other details as the Employer may consider appropriate, will be announced by the Employer at the opening.

18. Clarification of Bids

18.1 To assist in the examination, evaluation, and comparison of bids, the Employer may, at the Employer's discretion, request any Bidder for clarification of the Bidder's Bid, including breakdowns of the prices in the Activity Schedule, and other information that the Employer may require. The request for clarification and the response shall be in writing, but no change in the price or substance of the Bid shall be sought, offered, or permitted except as required to confirm the correction of arithmetic errors discovered by the Employer in the evaluation of the bids in accordance with Clause 22.

19. Examination of Bids and Determination of Responsiveness

19.1 Prior to the detailed evaluation of bids, using the information provided in bid, the Employer will determine whether each Bid (a) is accompanied by the required securities (if requested); and (b) is substantially responsive to the requirements of the bidding documents.

19.2 A substantially responsive Bid is one which conforms to all the terms, conditions, and Employer's Requirements of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Services; (b) which limits in any substantial way, inconsistent with the bidding documents,

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the Employer's rights or the Bidder's obligations under the Contract; or (c) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids.

19.3 If a Bid is not substantially responsive, it will be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the nonconforming deviation or reservation.

20. Evaluation of Qualification and Experience

20.1 The Employer will evaluate and compare only the Bids determined to be substantially responsive in accordance with Clause 19.

20.2 A two-stage procedure will be adopted in detailed evaluation of substantial responsive Bids. The evaluation of qualifications and experience will be completed prior to any financial terms. The Employer evaluates the Qualification and Experience on the basis of their responsiveness to the Employer's Requirements, applying the evaluation criteria, and point system specified in Sub-Clause 20.3.

20.3 During the evaluation for qualification and experience, the Employer will determine whether the Bidders are qualified and whether work plan and methodology are substantially responsive to the requirements set forth in the Bidding Document. In order to reach such a determination, the Employer will examine the information supplied by the Bidders, and other requirements in the Bidding Document, taking into account the factors and point system outlined in the Bidding Data.

20.4 Each substantial responsive bid will be given a score as described under sub-clause 20.3. A Bid shall be rejected at this stage if it does not respond to important aspects of the Employer's Requirements or if it fails to achieve an overall minimum of 70 points together with the minimum given against each criterion.

20.5 In evaluating the Financial Bid, the Employer will determine for each Bid the Evaluated Bid Price by adjusting the Bid Price as follows:

- excluding Provisional Sums and the provision, if any;
- Correcting the arithmetical errors pursuant to Clause 22;
- Making appropriate adjustments for the following: breakdown rectification services, repair of equipment, and replacement of equipment parts;
- Applying any discounts offered by the Bidder;

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- The evaluated Bid price calculation mechanism for evaluation purposes only is described in the Bidding Data.

20.6 The Employer reserves the right to accept or reject any variation, deviation, or alternative offer. Variations, deviations, alternative offers, and other factors that are in excess of the requirements of the Bidding document shall not be taken into account in Bid evaluation.

21. Correction of Errors

21.1 Bids determined to be substantially responsive will be checked by the Employer for any arithmetic errors. Arithmetical errors will be rectified by the Employer on the following basis: if there is a discrepancy between unit prices and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected; if there is a discrepancy between the amounts in figures and in words, the amount in words will prevail.

21.2 The amount stated in the Bid will be adjusted by the Employer in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, the Bid will be rejected, and the Bid Security may be forfeited in accordance with Sub-Clause 12.5.

F. Award of Contract

22. Award Criteria

22.1 Subject to Clause 24, the Employer will award the Contract to the Bidder whose Bid has been determined to be substantially responsive to the bidding documents and who has offered the lowest evaluated Bid price.

23. Employer's Right to Accept any Bid and to Reject any or all Bids

23.1 Notwithstanding Clause 23, the Employer reserves the right to accept or reject any Bid, and to cancel the bidding process 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 grounds for the Employer's action.

24. Notification of Award and Signing of Agreement

24.1 The Bidder whose Bid has been accepted will be notified in writing, of the award by the Employer prior to expiration of the Bid validity period. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") will state the sum that the Employer will pay the Service Provider in consideration of the Services provided by the Service Provider as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price").

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

24.3 The Contract, in the form provided in the bidding documents, will incorporate all agreements between the Employer and the successful Bidder.

25. Performance Security

25.1 If requested in the Bidding Data, within 14 days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the amount and in the form (Bank Guarantee and/or Performance Bond) stipulated in the Bidding Data, denominated in the type and proportions of currencies in the Letter of Acceptance and in accordance with the General Conditions of Contract.

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Section II – Bidding Data

ITB Clause Reference	Data
(1.1)	**The Employer**: General Manager, Sri Lanka Land Development Corporation. **The Procurement No**: S/520/26
(1.2)	**The Intended Completion date**: ……
(2.2)	The information required from bidders in Sub-Clause2.2 is: (a) Detail of Company Registration; (b) VAT Registration number; (c) Past experience in undertaking service agreements of comprehensive maintenance services of video wall display systems, particularly large-format LED/LCD panels (if available), with integrated controllers, processors, and indoor display equipment with including Video Wall Control Software (CMS), Encoders, Decoders, UPS, Computer, Monitors, Switches, Cable management and any other relevent accessories. A copy of each Service Agreement should be provided with the bidding documents as proof — letters of acceptance will not be considered as proof documents. (d) Past experience in undertaking comprehensive maintenance services of video wall display systems which exceeding LKR 500,000.00 per year for the last three (03) years. A Copy of each Service Agreement should be provided with the bidding documents as proof letter of acceptance will not be considered as a proof document.
(8.2)	Address for submission of Bids: Deputy General Manager (Supplies & Store), Sri Lanka Land Development Corporation, No. 03, Sri Jayawardenapura Mawatha, Welikada, Rajagiriya.
(11.1)	The period of Bid validity: **25th February 2027** (91 Days)
(12.1)	The amount of Bid Security: **LKR 30,000.00.** The Bid Security validity period: **20th March 2027** (119 Days)

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The bid security shall be from a licensed commercial bank operating in Sri Lanka and approved by the Central Bank of Sri Lanka. It shall be irrevocable and unconditionally encashable upon the first written demand by the employer. Cash Bond also could be submitted (Bidder Could pay cash to cashier, SLLDC and attach receipt to the bid).

s(14.2) The Employer's address for the purpose of Bid submission:

General Manager,
Sri Lanka Land Development Corporation,
No. 03, Sri Jayawardenapura Mawatha,
Welikada, Rajagiriya.

For identification of the bid the envelopes should indicate:

Name of Procurement: Three (3) Years Comprehensive Maintenance Agreement for Video Wall Display System at RTC

Procurement No: S/520/26

(15.1) The deadline for submission of bids shall be **26th November 2026**

(17.1) Bids will be opened at **13.30 Hrs**. of the day **26th November 2026** at the following address:

Deputy General Manager (Supplies & Stores),
Sri Lanka Land Development Corporation,
No 03, Sri Jayawardanapura Mawatha,
Welikada, Rajagiriya

(20.3) Criteria for Evaluation of Qualification and Experience:

	Criteria	Maximum Points	Minimum Required
a	Experience in similar assignments	40	30
b	General Experience	30	20
c	Work plan and Methodology	10	5
d	Key Staff & Equipment/ devices Proposed for Replacement of existing devices	10	10
e	Financial capability	10	5
	Total	100	70

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Experience in similar assignments:
The determination will take into account the Bidder's involvement in maintenance services of past experience last three (03) years in undertaking service agreements of comprehensive maintenance services of video wall display systems, particularly large-format LED/LCD panels (if available), with integrated controllers, processors, and indoor display equipment with including Video Wall Control Software (CMS), Encoders, Decoders, UPS, Computer, Monitors, Switches, Cable management and any other relevant accessories recent past.

General Experience
The determination will take into account the Bidder's involvement in undertaking comprehensive maintenance services of video wall display systems with integrated controllers, processors, and indoor display equipment with including Video Wall Control Software (CMS), Encoders, Decoders, UPS, Computer, Monitors, Switches, Cable management and any other relevant accessories recent past.

Work plan and Methodology:
The determination will take into account the bidder's submitted work programme to undertake the services quoted in the Price Schedule of Section VII – Activity / Price / Rate Schedule. The Bidders consent to conduct maintenance work with accordance to the Supplier's Project Service Maintenance Manual in Annexure G and the bidder need provide their consent and agreed to submit preventive maintenance status according the submitted format (Refer Section VIII) will be considered.

Key Staff:
Only the Key staff proposed by the bidder will be evaluated

Financial Capability:
All financial aspects including the annual turnover and other financial information will be evaluated.

(20.5) Criteria for evaluation for the quoted price

X = Bidder price for 3-year comprehensive maintenance –
(Provisional Sums + Taxes +/- Arithmetic errors)

Evaluated Bid price = X

(25.1) The Performance Security acceptable to the Employer shall be an unconditional form of guarantee to an amount equal to 5% of the Contract Price.

(26.1) The selected service provider shall deliver a performance bond of 5% of the Contract Price (Excluding VAT & Contingencies) within 14 days after receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the amount and in the form of Unconditional Bank Guarantee or Performance Bond

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Section III. Forms of Bid, Qualification Information and Contract

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Form of Bid

[date]

To: General Manager,
Sri Lanka Land Development Corporation
No. 03, Sri Jayawardenepura Mawatha
Welikada, Rajagiriya

Having examined the bidding documents, we offer to provide the Services for *Three (3) Years Comprehensive Maintenance Agreement for Video Wall Display System at RTC* in accordance with the Conditions of Contract, Employer's Requirements, drawings and activity schedule accompanying this Bid for the Contract Price of *[amount in numbers]*, *[amount in words]* or any other sum derived in accordance with the said documents.

This Bid and your written acceptance of it shall constitute a binding Contract between us. We understand that you are not bound to accept the lowest or any Bid you receive.

We hereby confirm that this Bid complies with the Bid validity required by the bidding documents and specified in the Bidding Data.

Authorised Signature: _____

Name and Title of Signatory: _____

Name of Bidder: _____

Address: _____

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Non-collusion Declaration

(Relevant Reference to the Procurement Guidelines - 1.5)

I, the undersigned bidder/ bidder's representative/ bidder's agent, honestly, truthfully and solemnly declare that;

I, nor any other member, agent or representative of the firm/ company/ corporation/ partnership/ sole proprietorship that I represent, have entered into any combination, collusion or similar agreement with any person in connection with the prices to be submitted by any person with respect to the invitation for bid;

I, nor any person who represents me have acted to prevent any person from submitting a bid or to induce any person to refrain from submitting a bid in connection with the intention for bid (Bid No. …….);

This bid is not submitted in collusion with any other bid and is not made pursuant to any agreement, understanding or association with any other person in relation to such bid.

I declare that, I have not received and will not accept any discount, fee, reward, commission or anything of value, directly or indirectly, from any person, company or corporation in connection with the submission of this bid.

I further declare that, I have not given and will not give any discount, fee, reward, commission or anything of value, directly or indirectly, to any person, company or corporation in connection with the submission of this bid.

I, taking full responsibility for ensuring the absence of collusion, hereby pledge to abide by fair and ethical competitive practices throughout the entire procurement process and to fully comply with the relevant Procurement Guidelines issued by the National Procurement Commission.

I hereby declare that all the statements made by me above are true and correct.

Signature of the Declarant

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Qualification Information

Notes on Form of Qualification Information
The information to be filled in by bidders in the following pages will be used for purposes of bid evaluation as described in the Instructions to Bidders. Attach additional pages as necessary.

Schedule A –Legal Status of the Bidder and Eligibility	
Backlisted Service Provider	
Have you been declared as a defaulted service provider by NPC or any other Agency?	Yes/No
IF yes provide details	*(Attach as annex)*
VAT Registration Number	Required only for VAT-registered bidders
Legal Status	(public company/private company/partnership/sole proprietor) (Attach relevant status copies, including company registration, as an annex)
Power of attorney/ board resolution for the bidder's authorized signatory in the bid document	Only required for public company/ private company/ partnership *(Attach as annex)*

Schedule B-1 –Experience in Similar Assignments During the Last Three (3) Years
(Attach documentary evidence to substantiate the stated experience.)

Period	Employer	Description of Works	Amount	Contractor's Responsibility (%)
		Total		

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Schedule B-2 – General Experience During the Last Three (3) Years

(Attach documentary evidence to substantiate the stated experience.)

Period	Employer	Description of Works	Amount	Contractor's Responsibility (%)
		Total		

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Schedule C – Work Plan and Methodology

[If requested under ITB clause 20.3 only]

The work plan and methodology are designed to provide a clear, practical framework for delivering the project successfully. The approach will respond to all the requirements given in the Employer's Requirements, ensuring that each activity is aligned with the stated objectives. Work will be organized into manageable phases. Throughout the process, quality assurance and effective communication will be maintained to achieve timely and reliable results.

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Schedule D -1 – Key Staff [If requested under ITB clause 20.3 only) *(Attached CVs of key technical persons proposed)*		
Name	Position	Task

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Schedule D - 2 - Equipment/ devices Proposed for Replacement of existing devices

Sub Component	Technical Specifications and Standards		
	Current Specification & Employers Requirements	Bidder's Offer	
		Yes(Y)/ No(N)	Remarks
1.1	**Triolion LED Display Screen (Refer supplementary data)**		
	Panel Parameter		
	Brand : TRIOLION		
	Model : TRD1055L7		
	Diagonal Size : 55″		
	Panel Type : IPS		
	Backlight Type : Direct LED Backlight		
	Pixel Pitch : H - 0.63mm | V – 0.63mm		
	Pixel Area : Width – 1209.6mm | Height – 680.4mm		
	Physical Resolution : 1920*1080		
	Luminance of White : 500cd/m²		
	Contrast Ratio : 1400:1		
	Response Time : 8ms		
	Display Colors : 10bit		
	Viewing Angle : 178″(H)/178″(V)		
	Power Supply		
	Working Power Consumption : 160W		
	Standby Power Consumption : ≤0.5W		
	Power Supply : AC 100-240V. 50/60Hz		
	Physical Parameter		
	Dimensions (Without Mounts) Width : 1213.4mm Height : 684.2mm Depth : 132.5		
	Bezel Width : 2.3mm (U/L) | 1.2mm (R/B) | Optical Gap 3.8mm		
	Bezel Color : Black		

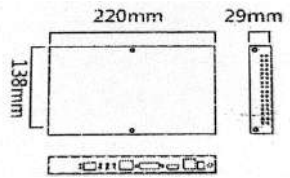
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	Weight – 26kg		
	Operation Condition		
	Operating Temperature : 0-50 ℃		
	Operating Humidity : 10% - 90% (Non-condensing)		
	MTBF (Mean Time Between Failures) : 50,000 hours		
	Lifespan: more than 50,000 hours (Screen on time)		
	I/O Interface		
	Signal Input : Solution 1 : VGA, DVI, HDMI, CVBS Solution 2 : VGA, DVI, HDMI, CVBS, RJ45 (Signal Loop In) Solution 3 : VGA, DVI, HDMI MHL, HDMI 4K, DP 4K Solution 4 : VGA, DVI, HDMI 4K, DP 4K, USB (Optional)		
	Signal Output : Solution 1 : CVBS (Signal Loop Out) Solution 2 : RJ45 (Signal Loop Out for VGA/DVI/HDMI/CVBS) Solution 3 : DP (Signal Loop Out for VGA/DVI/HDMI MHL/ HDMI 4K/ DP4K Solution 4 : HDMI (Signal Loop Out for HDMI 4K), Audio		
	Control Input : Solution 1 : RS232 IN (RJ45 Port), DEBUG ISP (RJ45 Port), IR Remote (Optional) Solution 2 : RS232 IN, RJ45 IN (Loop In), USB, IR Remote (Optional) Solution 3 : RS232 IN (RJ45 Port), IR Remote (Optional) Solution 4 : RS232 IN (RJ45 Port), USB, IR Remote (Optional)		
	Control Output : Solution 1 : RS232 OUT*2 (RJ45 Port) Solution 2 : RJ45*1 (Loop Out) Solution 3 : RS232 OUT (RJ45 Port) Solution 4 : RS232 Out*2 (RJ45 Port)		
	Warranty – 3 Years		
1.2	**Support Structure and the screen mounts (Refer supplementary data)**		

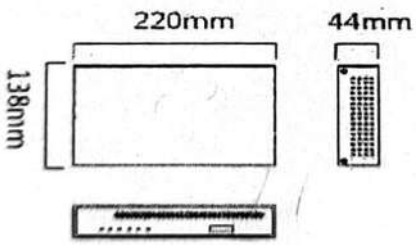
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	Brand : TRIOLION		
1.3	**2K HDMI Node (2HDMI IN = 1 HDMI Loop OUT) IP Encoder for PC Inputs (Refer supplementary data)**		
	Interface		
	Brand : AVCIT		
	Model : DSII-2K-HDMI-RIN		
	Video Input : 2x HDMI (one for backup)		
	Video Output : 1x HDMI loop out		
	USB 2.0 : 1x USB		
	USB 3.0 :1x USB		
	RS232 : 1		
	RS485 : 1		
	I/O : 3		
	IR : 3		
	Relay : 3		
	Audio in/out : 1in + 1out		
	MIC : 1xMIC		
	Ethernet (PoE) : RJ45		
	SFP (Optional for network redundant) : SFP Duplex LC Connectors		
	Technical Parameters		
	Video Compression: H.264 / H.265		
	Video Resolution: Up to 3840x2160		
	Streaming Protocol : HDCP, DVI 1.0, HDMI 2.0, RTSP		
	Bit Rates : Configurable 4-40Mbps per video streaming		
	Copy Protection : HDCP 1.4, 3DES		
	Power Consumption : 15-30W		
	Physical Parameters		

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	2K-DSII Series – DSII-2K-HDMI-RIN  220x138x29mm 0.7kg/node		
	Warranty – 3 Years		
1.4	**2K HDMI Node (1 HDMI OUT + 1 DVI OUT) IP Decoder for Video Wall Displays (Refer supplementary data)**		
	Interface		
	Brand : AVCIT		
	Model : DSII-2K-ROUT-VW		
	Video Input : NONE		
	Video Output : 1x HDMI + 1 x DVI		
	USB 2.0 : NONE		
	USB 3.0 : NONE		
	RS232 : 3		
	RS485 : 1		
	I/O : 4		
	IR : 4		
	Relay : NONE		
	Audio in/out : 1in + 2out		
	MIC : 1xMIC		
	Ethernet (PoE) : RJ45		
	SFP (Optional for network redundant) : SFP Duplex LC Connectors		
	Technical Parameters		
	Video Compression: H.264 / H.265		
	Video Resolution: Up to 3840x2160		
	Streaming Protocol : HDCP, DVI 1.0, HDMI 2.0, RTSP		
	Bit Rates : Configurable 4-40Mbps per video streaming		
	Copy Protection : HDCP 1.4, 3DES		

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	Power Consumption : 15-30W		
	Physical Parameters		
	2K-DSII Series – DSII-2K-ROUT-VW  220x138x44mm 0.9kg/node		
	Warranty – 3 Years		
1.5	**DTB Gigabit Ethernet Switch** (Refer supplementary data)		
	Brand : AVCIT		
	Model : DTB-24C-PWR-HI		
	Switching Capacity : ≥ 598 Gbps (more than 40 node)		
	Forwarding Capacity : ≥ 222 Mpps (more than 40 node)		
	PoE Support: yes, PoE+		
	Environment: Operating Temperature/Humidity: 0℃-50℃, 10%-90% non-condensing; Storage Temperature/Humidity: -20℃-70℃, 5%-95% non-condensing		
	Power: AC : 100V-240V, 50Hz±10%; Optional dual power module		
	Color : Black		
	Body Material : Metal		
	Number of Ethernet inputs (RJ-45) : 24		
	Total Ports : 24 Ethernet 10/100/1000 POE+,4 10 Gig SFP		

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	Physical Design : Front Side  Back Side 		
	Warranty – 3 Years		
1.6	**Video Wall Control Software (CMS) with Dongle - (Refer supplementary data)**		
	Brand : AVCIT		
	Model : DTB-EL		
	Support : Yes		
1.7	**10kVA (Tower Type) UPS (Refer supplementary data)**		
	Brand : KEHUA		
	Model : KR1110S+		
	Input		
	Voltage (Vac) : 80~275		
	Frequency : 50/60± 10% (50/60Hz auto-sensing)		
	Power Factor : ≥0.99		
	THDi at full linear load : <4%		
	Output		
	Capacity (VA) : 10000		
	AC/AC Efficiency (Max) : 95%		
	Power Factor : 0.9 (1.0 Optional)		
	Voltage (Vac) : 208/220/230/240 ± 1% (Selectable on display panel)		
	Frequency (Hz) : 50/60±0.2% (battery mode)		
	THDv : THD<1% (linear load); THD<4% (nonlinear load)		

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	Overload : 101~105& Long run, 106~130% load for 10mins, 131~150% 30s, over 150% 500ms		
	Transfer Time : 0		
	Current Crest Ratio : 3:1		
	Battery		
	Voltage (Standard) Vdc : 192~240		
	BATT Type (Standard) : 16X9Ah		
	Voltage (Long Backup) Vdc : 192~240		
	BATT Type (Long Backup) : External 16~20 units settable		
	Charger Current (A) Max. : 1~8 (adjustable)		
	Other		
	Communication Interface: RS232+EPO (USB,SNAP,RS485+dry contact are optional in slot)		
	LCD Display: AC Input & output voltage, frequency, load level, Battery level, Temperature, AC mode, Battery mode, Bypass mode and fault		
	Alarm : Low Battery, abnormal AC input, UPS failure, etc.		
	Protection : Low Battery, overload, short circuit and over temperature, etc.		
	Noise (dB) : <55		
	Working Temperature (℃) : -5 ~ 40		
	Relative Humidity : 0~95%, No condensation		
	Regulatory Approvals : CE, IEC62040-1, IEC62040-2		
	Dimension (WxDxH)(mm) : 230x502x553 (Standard) 190x422x337 (Long Backup)		
	Weight Standard) (kg) : 56.2		
	Warranty – 3 Years		
1.5	**Desktop PC with Compatible Keyboard & Compatible Optical Mouse (This Computer run the display system and softwares)**		
	Brand : HP		
	Model : HP Pro Tower 280 G9		
	Note * - Detailed Specification Attached Please refer (See the Annexures)		

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1.6	**Monitor for the PC**		
	Brand : HP		
	Model : HP P22h G4 FHD		
	Display size : 21.5 Inch		
	Aspect ratio : 16:9		
	Native resolution : FHD (1920 x 1080)		
	Resolutions supported : 1024 x 768; 1280 x 1024; 1280 x 720; 1280 x 800; 1366 x 768; 1440 x 900; 1600 x 900; 1680 x 1050; 1920 x 1080; 640 x 480; 720 x 400; 800 x 600		
	Pixel pitch : 0.247 mm		
	Brightness : 250 nits		
	Contrast ratio : 1000:1		
	Onscreen controls : Brightness; Color control; Exit; Image control; Information; Management; Power control; Input control; Menu control		
	Display features : Asset control; On-screen controls; Plug and Play; User controls; Low blue light mode; Anti-glare		
	Physical security : Security lock-ready		
	DisplayPort : 1 DisplayPort		
	Webcam : No integrated camera		
	Dimensions (W x D x H) : 19.59 x 1.81 x 11.85 in		
	Product dimensions with stand (W x D x H) : 19.59 x 8.33 x 17.91 in		
	Power : 100 - 240 VAC 50/60 Hz		
	Power consumption : 21 W (maximum), 19 W (typical), 0.3 W (standby)		
	Operating temperature range : 5 to 35°C 41 to 95°F		
	Operating humidity range : 20 to 80% non-condensing		
	Energy efficiency : ENERGY STAR® certified; EPEAT® 2019 registered		

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Schedule E – Annual Turn-over Information (Last three years) [If requested under ITB clause 20.3 only) *(Attach audited reports)*		
Year	**Turn-over (LKR)**	**Remarks**
2023		
2024		
2025		

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Form of Contract

This CONTRACT (hereinafter called the "Contract") is made the *[day]* day of the month of *[month]*, *[year]*, between, on the one hand, *[name of Employer]* (hereinafter called the "Employer") and, on the other hand, *[name of Service Provider]* (hereinafter called the "Service Provider").

WHEREAS

(a) the Employer has requested the Service Provider to provide certain Services as defined in the Conditions of Contract and Contract Data attached to this Contract (hereinafter called the "Services");

(b) the Service Provider, having represented to the Employer that they have the required skills, and personnel and resources, have agreed to provide the Services on the terms and conditions set forth in this Contract at a contract price of .....

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The Conditions of Contract;
   (b) The Contract Data;
   (c) The Form of Bid
   (d) The Priced Activity Schedule
   (e) The Employer's Requirements
   (f) The following Appendices: [*Note: If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix and on the sheet attached hereto carrying the title of that Appendix*.]
   Appendix A: Description of the Services
   Appendix B: Schedule of Payments
   Appendix C: Key Personnel
   Appendix D: Breakdown of Contract Price

2. The mutual rights and obligations of the Employer and the Service Provider shall be as set forth in the Contract, in particular:
   (a) The Service Provider shall carry out the Services in accordance with the provisions of the Contract; and
   (b) the Employer shall make payments to the Service Provider in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Contract to be signed in their respective names as of the day and year first above written.

For and on behalf of *[name of Employer]*

[Authorized Representative]

For and on behalf of *[name of Service Provider]*

[Authorized Representative]

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Section IV. Conditions of Contract

1.0 General Provisions

1.1 Definitions Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "**Activity Schedule**" is the priced and completed list of items of Services to be performed by the Service Provider forming part of his Bid.

(b) "**Completion Date**" means the date of completion of the Services by the Service Provider as certified by the Employer.

(c) "**Contract**" means the Contract signed by the Parties, to which these Conditions of Contract (CC) are attached, together with all the documents listed in Clause 1 of such signed Contract.

(d) "**Contract Price**" means the price to be paid for the performance of the Services, in accordance with Clause 6.

(e) "**Employer**" means the party who employs the Service Provider.

(f) "**Party**" means the Employer or the Service Provider, as the case may be, and "Parties" means both of them.

(g) "**Personnel**" means persons hired by the Service Provider as employees and assigned to the performance of the Services or any part thereof.

(h) "**Service Provider**" is a person or corporate body whose Bid to provide the Services has been accepted by the Employer.

(i) "**Service Provider's Bid**" means the completed bidding document submitted by the Service Provider to the Employer.

(j) "**Employer's Requirements**" means the Employer's Requirements of the service included in the bidding

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document submitted by the Service Provider to the Employer.

(k) **"Services"** means the work to be performed by the Service Provider pursuant to this Contract, as described in Appendix A; and in the Employer's Requirements and Schedule of Activities included in the Service Provider's Bid.

1.2 Applicable Law The Contract shall be interpreted in accordance with the laws of the Socialist Democratic Republic of Sri Lanka.

1.3 Language This Contract has been executed in English Language.

1.4 Notices Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, to such Party at the address specified in the Contract Data.

1.5 Location The Services shall be performed at such locations as are specified in Appendix A, in the Employer's Requirements and, where the location of a particular task is not so specified, at such locations, as the Employer may approve.

1.6 Authorized Representatives Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Employer or the Service Provider may be taken or executed by the officials specified in the Contract Data.

2.0 Commencement, Completion, Modification, and Termination of Contract

2.1 Effectiveness of Contract This Contract shall come into effect on the date the Contract is signed by either party or such other later date as may be stated in the Contract Data.

2.2 Starting Date The Service Provider shall start carrying out the Services seven (07) days after the date the Contract becomes effective, or at such other date as may be specified in the Contract Data.

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2.3 Intended Completion Date

Unless terminated earlier pursuant to Clause 2.6, the Service Provider shall complete the activities by the Intended Completion Date, as is specified in the Contract Data. If the Service Provider does not complete the activities by the Intended Completion Date, it shall be liable to pay liquidated damages as per Sub-Clause 3.8. In this case, the Completion Date will be the date of completion of all activities.

2.5 Force Majeure

2.5.1 Definition

For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

2.5.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

2.5.3 Extension of Time

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

2.5.4 Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Service Provider shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period

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2.6 Termination

2.6.1 By the Employer

The Employer may terminate this Contract, by not less than thirty (30) days' written notice of termination to the Service Provider, to be given after the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause 2.6.1 and sixty (28) days' in the case of the event referred to in (f):

(a) if the Service Providers do not remedy a failure in the performance of their obligations under the Contract, within twenty eight (28) days after being notified or within any further period as the Employer may have subsequently approved in writing;

(b) if the Service Provider becomes insolvent or bankrupt;

(c) if, as the result of Force Majeure, the Service Provider/s are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or

(d) if the Service Provider does not maintain a Performance Security in accordance with Clause 3.9;

(e) if the Service Provider has delayed the completion of the Services by the number of days for which the maximum amount of liquidated damages can be paid in accordance with Sub-Clause 3.8.1 and the Contract Data;

(f) If the Employer, in its sole discretion, decides to terminate this Contract.

2.6.2 By the Service Provider

The Service Provider may terminate this Contract, by not less than thirty (30) days' written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) and (b) of this Clause 2.6.2

(a) if the Employer fails to pay any monies due to the Service Provider pursuant to this Contract and not subject to dispute pursuant to Clause 7 within forty-two (42) days after receiving written

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notice from the Service Provider that such payment is overdue; or

(b) if, as the result of Force Majeure, the Service Providers are unable to perform a material portion of the Services for a period of not less than fifty-six (56) days.

2.6.3 Payment upon Termination

Upon termination of this Contract pursuant to Clauses 2.6.1 or 2.6.2, the Employer shall make the following payments to the Service Provider

(a) remuneration pursuant to Clause 6 for Services satisfactorily performed prior to the effective date of termination;

(b) except in the case of termination pursuant to paragraphs (a), (b), (d) of Clause 2.6.1, reimbursement of any reasonable cost incident to the prompt and orderly termination of the Contract

3.0 **Obligations of the Service Provider**

3.1 General

The Service Providers shall perform the Services in accordance with the Employer's Requirements and the Activity Schedule, and carry out their obligations with all due diligence, efficiency, and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe methods. The Service Providers shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Subcontractors or third parties.

3.3 Confidentiality

The Service Providers, their Subcontractors, and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract, or the Employer's business or operations without the prior written consent of the Employer.

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3.5 Service Providers' Actions Requiring Employer's Prior Approval

The Service Providers shall obtain the Employer's prior approval in writing before taking any of the following actions:

(a) entering into a subcontract for the performance of any part of the Services;
(b) appointing such members of the Personnel not listed by name in Appendix C ("Key Personnel and Subcontractors");
(c) changing the Program of activities; and
(d) any other action that may be specified in the Contract Data.

3.6 **Reporting Obligations**

The Service Providers shall submit to the Employer the reports and documents specified in Appendix B in the form, in the numbers, and within the periods set forth in the said Appendix.

3.7 **Documents Prepared by the Service Providers to Be the Property of the Employer**

All plans, drawings, Employer's Requirements, designs, reports, and other documents and software submitted by the Service Providers in accordance with Clause 3.6 shall become and remain the property of the Employer, and the Service Providers shall, not later than upon termination or expiration of this Contract, deliver all such documents and software to the Employer, together with a detailed inventory thereof. The Service Providers may retain a copy of such documents and software. Restrictions about the future use of these documents, if any, shall be specified in the Contract Data.

3.8 Liquidated Damages

3.8.1 Payments of Liquidated Damages

The Service Provider shall pay liquidated damages to the Employer at the rate per day stated in the Contract Data for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the Contract Data. The Employer may deduct liquidated damages from payments due to the Service Provider. Payment of liquidated damages shall not affect the Service Provider's liabilities.

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3.8.2 Correction for Over-payment

If the Intended Completion Date is extended after liquidated damages have been paid, the Employer shall correct any overpayment of liquidated damages by the Service Provider by adjusting the next payment certificate. The Service Provider shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in Clause 6.5.

3.9 Performance Security

The Service Provider shall provide the Performance Security to the Employer no later than the date specified in the Letter of Acceptance. The Performance Security shall be issued in an amount and form and by a bank or surety acceptable to the Employer. The Performance Security shall be valid until a date 28 days from the Completion Date of the Contract.

4.0 Service Provider's Personnel

4.1 Description of Personnel

The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Service Provider's Key Personnel are described in Appendix C. The Key Personnel and Subcontractors listed by title as well as by name in Appendix C are hereby approved by the Employer.

4.2 Removal and/or Replacement of Personnel

(a) Except as the Employer may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Service Provider, it becomes necessary to replace any of the Key Personnel, the Service Provider shall provide as a replacement a person of equivalent or better qualifications.

(b) If the Employer finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Service Provider shall, at the Employer's written request specifying the grounds thereof, provide as a replacement a

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person with qualifications and experience acceptable to the Employer.

(c) The Service Provider shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

5.0 Obligations of the Employer

5.1 **Assistance and Exemptions**

The Employer shall use its best efforts to ensure that the Government shall provide the Service Provider such assistance and exemptions as specified in the SCC.

5.2 **Change in the Applicable Law**

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the Services rendered by the Service Provider, then the remuneration and reimbursable expenses otherwise payable to the Service Provider under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred to in Clauses 6.2 (a) or (b), as the case may be.

5.3 **Services and Facilities**

The Employer shall make available to the Service Provider the Services and Facilities listed under Appendix F.

6.0 Payments to the Service Provider

6.1 **Lump-Sum Remuneration**

The Service Provider's remuneration shall not exceed the Contract Price and shall be a fixed lump-sum including all Subcontractors' costs, and all other costs incurred by the Service Providers in carrying out the Services described in Appendix A. Except as provided in Clause 5.2, the Contract Price may only be increased above the amounts stated in Clause 6.2 if the Parties have agreed to additional payments in accordance with Clauses 2.4 and 6.3.

6.2 **Contract Price**

The Contract Price is set forth in the Contract Data.

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6.3 **Payment for Additional Services, and Performance Incentive Compensation**

6.3.1 For the purpose of determining the remuneration due for additional Services as may be agreed under Clause 2.4, a breakdown of the lump-sum price is provided in Appendices D.

6.4 **Terms and Conditions of Payment**

Payments will be made to the Service Provider according to the payment schedule stated in the Contract Data. Unless otherwise stated in the Contract Data, the first payment shall be made against the provision by the service provider of a bank guarantee for the same amount, and shall be valid for the period stated in the contract data. Any other payment shall be made after the conditions listed in the SCC for such payment have been met, and the Service Provider has submitted an invoice to the Employer specifying the amount due.

6.5 **Interest on Delayed Payments**

If the Employer has delayed payments beyond fifteen (15) days after the due date stated in the Contract Data, interest shall be paid to the Service Provider for each day of delay at the rate stated in the Contract Data.

7.0 Quality Control

7.1 **Identifying Defects**

The Employer shall check the Service Provider's performance and notify him of any Defects that are found. Such checking shall not affect the Service Provider's responsibilities.

7.2 **Correction of Defects, and Lack of Performance Penalty**

(a) The Employer shall give notice to the Service Provider of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

(b) Every time notice of a Defect is given, the Service Provider shall correct the notified Defect within the length of time specified by the Employer's notice.

(c) If the Service Provider has not corrected a Defect within the time specified in the Employer's notice, the Employer will assess the cost of having the Defect corrected, the Service Provider

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will pay this amount, and a Penalty for Lack of Performance calculated as described in Clause 3.8.

8. Warranty

8.1 Warranty

8.1.1 The Service Provider warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract

8.1.2 Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

8.1.3 Unless otherwise specified in the Contract Data, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Contract Data.

8.1.4 The employer shall give notice to the Service Provider stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Service Provider to inspect such defects

8.1.5 Upon receipt of such notice, the Service Provider shall, within the period specified in the Contract Data, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser

8.1.6 If having been notified, the Service Provider fails to remedy the defect within the period specified in the Contract Data, the Employer may proceed to take within a reasonable period such remedial action as may be necessary, at the Service Provider's risk and

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expense and without prejudice to any other rights which the Employer may have against the Service Provider under the Contract

9. Settlement of Disputes

9.1 Amicable Settlement

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Contract or its interpretation.

9.2 Dispute Settlement

9.2.1 Any dispute arising between the Employer and the Service Provider in connection with, or arising out of, the Contract or the provision of the Services, whether during carrying out the Services or after their completion, which was not settled amicably in accordance with Sub-Clause 8.2.1 above, shall be finally settled by arbitration in accordance with Arbitration Act No. 11 of 1995.

9.2.2 The arbitral tribunal shall consist of a sole arbitrator, who shall be appointed in the manner provided under Sub-Clause 8.2.3.

9.2.3 The Party desiring arbitration shall nominate three arbitrators out of which one to be selected by the other Party within 21 days of the receipt of such nomination. If the other Party does not select one to serve as Arbitrator within the stipulated period, then the Arbitrator shall be appointed in accordance with Arbitration Act No. 11 of 1995, or any other amendments thereof.

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Section V. Contract Data

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.1(c)	The contract name is **Three (3) Years Comprehensive Maintenance Agreement for Video Wall Display System at RTC**
1.1(e)	The Employer is **General Manager, Sri Lanka Land Development Corporation**
1.1(h)	The Service Provider is……..
1.4	The addresses are: Employer : Sri Lanka Land Development Corporation Attention : General Manager Tel : 011 2368002 Fax : 011 2368001 Service Provider : Attention : Tel : Fax :
1.6	The Authorized Representatives are: For the Employer : Deputy General Manager, Urban Water Management Division For the service provider:
2.1	The date on which this Contract shall come into effect is …….. 2026
2.2	The Starting Date for the commencement of Services is ……. 2026
2.3	The Intended Completion Date is .....
3.9	The Performance Security shall be 5% percent of the Initial Contract Price. (In the event that the selected Service Provider is unable or fails to execute the necessary service and maintenance, repair or replacement work as stipulated in the Service Level Agreement (SLA) or within the agreed timeframes, the Employer reserves the right to forfeit the Performance Security in full or in part without prior notice.)
6.2	The amount is **LKR. ……..**
6.4	Payments shall be made according to the **Appendix B—Schedule of Payments and Reporting Requirements.** The selected bidder must provide an **Advance Payment Guarantee** equal to the contract value (BOQ amount), which must remain valid

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until 01 year + 28 days after the contract signing date. The Advance Payment Guarantee shall be from a licensed commercial bank operating in Sri Lanka and approved by the Central Bank of Sri Lanka. It shall be irrevocable and unconditionally encashable upon the first written demand by the employer. Cash Bond also could be acceptable. (Bidder could pay cash to cashier, SLLDC)

The Advance Payment Guarantee shall be renewed annually for the remaining contract period of three (03) years, ensuring continuous validity throughout the contract duration.

The acceptable format for the advance payment guarantee is attached herewith for your reference.

6.5 Payment shall be made within *[28]* days of receipt of the invoice and the relevant documents specified in Clause 6.4, and within *[56]* days in the case of the final payment.

8.1.3 warranty shall remain valid for thirty-six (36) months

8.1.5 48 Hours after receiving the approval from Client the work must be concluded

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Appendices

Appendix A - Description of the Services

Three (3) Years Comprehensive Maintenance Agreement for Video Wall Display System at RTC established under the Integrated Flood Management System, including;

1.1 Preventive Maintenance

The Service Provider shall carry out quarterly preventive maintenance visits (a minimum of three (3) scheduled visits during the Agreement period) covering the following activities:

1.1.1 Video Wall Display Panels (Triolion 55" Panels x 16 Nos)

- Visual inspection of all sixteen (16) display panels for any dead pixels, colour uniformity, brightness degradation, burn-in, and physical damages.
- Cleaning of all display panel surfaces using appropriate cleaning tools, lint-free microfiber cloths, and manufacturer-approved cleaning solutions
- Cleaning of ventilation areas and exhaust fans to ensure proper airflow
- Alignment verification and bezel gap inspection to ensure uniform and consistent gap spacing across all panels
- Inspection and tightening of mounting brackets and support structures
- Verification of display orientation, tiling configuration, and image continuity across the video wall

1.1.2 Power Supply and Electrical Connections

- Inspection and testing of power supply units of all display panels
- Cable connection checks for all power cables, signal cables, and data cables
- Inspection of the 6-Way PDU for proper functioning and load distribution
- Inspection of cable management system (1U) for proper cable routing and organization

1.1.3 Signal Processing and Control Equipment

- Controller and input/output signal testing for all IP Encoders (8 units) and IP Decoders (16 units)

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- Functional testing of the AVCIT Video Wall Control Software (CMS), including layout configurations. (if any)
- DTB Gigabit Ethernet Switch (2 units) inspection, port testing, and network connectivity verification
- End-to-end signal path testing from source to display (if needed)

1.1.4 Software and Firmware

- Software and firmware health check for all connected devices
- Verification of software licenses and subscription validity (if applicable)
- Application of manufacturer-recommended firmware updates and security patches (subject to Client approval)
- Backup of system configurations, presets, and software settings (if any)
- CMS software performance optimization

1.1.5 Environmental and Thermal Management

- Temperature and ventilation inspection of all display panels, rack equipment, and the surrounding installation environment
- Thermal imaging or temperature measurement of critical components where applicable
- Verification of the cooling and airflow in the installation area of video wall at RTC Centre.
- Inspection and cleaning of cooling fans (if needed) and ventilation pathways

1.1.6 UPS System (Kehua 10KVA)

- Visual inspection and cleaning of the UPS unit
- Perform a battery health check and voltage measurement. If the battery is degraded, arrange for a replacement that meets the required specifications.
- Load testing and transfer switch verification
- Alarm and indicator verification
- Runtime estimation under current load conditions
- Inspection of input/output connections

1.1.7 Computing Equipment (HP Pro 280 i5 PC and Monitor)

- Hardware health check of the PC system including processor, memory, and storage

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- Operating system health check, disk cleanup, and performance optimization
- Antivirus and security software update verification
- Monitor calibration and display output verification
- Keyboard and mouse functionality check
- Verification of connectivity with Video Wall Control Software

1.1.8 Rack and Infrastructure (Cubicoan 22U Rack)

- Physical inspection of the 22U free-standing rack for structural integrity
- Inspection of rack-mounted equipment for proper seating and secure mounting
- Cable management inspection and re-routing if necessary
- Door lock and access panel inspection if necessary

PREVENTIVE MAINTENANCE SCHEDULE

Visit No.	Scheduled Period	Activities
1st Visit	Need to inform before 14 days	Full preventive maintenance as per the scope of work
2nd Visit	Need to inform before 14 days	Full preventive maintenance as per the scope of work
3rd Visit	Need to inform before 14 days	Full preventive maintenance as per the scope of work

Exact dates for each visit shall be mutually agreed upon between the Client and the Service Provider at least seven (07) days in advance. The dates must be provided.

RESPONSE TIME AND SERVICE LEVEL AGREEMENT (SLA)

No	Service Level Parameter	Target
01.	Response time (acknowledgment of breakdown report)	Within 6 working hours
02.	On-site attendance for breakdown	Within 24 working hours

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03.	Restoration time (without spare parts)	Within 48 working hours
04.	Restoration time (with spare parts)	Subject to parts availability; Client to be informed of estimated timeline
05.	Preventive maintenance visits	3 visits per annum
06.	Remote support availability	Monday to Friday, 8:30 AM – 5:00 PM Saturday, Sunday (If Available)
07.	Emergency support (critical system failure)	Best effort basis, including weekends and holidays

Support Escalation

The Service Provider shall establish a clear and structured escalation path to ensure timely resolution of technical and operational issues. As part of this obligation, the Service Provider must provide comprehensive contact details for all relevant personnel involved in the support hierarchy. This shall include, at minimum, the following roles:

- **Support Hotline —** A dedicated 24/7 contact number for immediate reporting of incidents and service disruptions.
- **System Support Engineer —** Primary technical contact responsible for first-level diagnosis, troubleshooting, and resolution.
- **System Engineer —** Secondary technical contact for advanced system-level issues requiring deeper expertise.
- **Manager – Technical —** Escalation point for unresolved technical matters, coordination of resources, and oversight of service quality.
- **Head of Technical —** Senior authority for critical technical escalations, ensuring compliance with SLA commitments and directing strategic resolutions.
- **Head of Business —** Executive-level contact for contractual, commercial, or service delivery concerns beyond technical scope.

For each of the above roles, the Service Provider shall furnish the following details: **name, designation, direct contact number, mobile no and official email address.** These details must remain current and be updated promptly in the event of personnel changes.

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Appendix B - Schedule of Payments and Reporting Requirements

I. Payment shall be made annually at the beginning of each year with respect to the date of signing of contract as mentioned below upon receiving an Advance Payment Guarantee for the amount equivalent to the annual payment.

- 1st Year payment - 1/3 of the contract price
- 2nd Year payment - 1/3 of the contract price
- 3rd Year payment - 1/3 of the contract price

The validity period for the Advance Payment Guarantee shall be 1 year + 28 days

The Advance Payment Guarantee shall be valid an unconditional on demand advance payment guarantee issued by a commercial bank operating in Sri Lanka approved by the Central Bank of Sri Lanka. Advance payment guarantee shall be furnished including the correct amount, validity and payable upon the receipt of the first demand in writing without.

II. Payment for Breakdown Service, Repair, and Replacement

i. Payment for breakdown services, repairs, and replacements shall be made upon certification by the Employer that the respective services have been satisfactorily completed, and upon submission of the relevant payment claim/invoice by the Service Provider.

ii. Instead, they will be calculated based on separate, market-rate quotations submitted by the Service Provider and approved by the Employer at the time the breakdown occurs. No repair or replacement work shall commence without prior written approval of the specific quotation by the Employer.

iii. The applicable payments must be calculated based on the provided quotation on that time.

III. Bills with two copies shall be forwarded to the Employer.

IV. The Employer reserves right to fully or partially pay the bill, considering the work done.

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Appendix C - Key Personnel

List under: Titles [and names, if already available], detailed job descriptions and minimum qualifications of Personnel to be assigned to, and staff-months for each.

I. Details of workers assigned for this work (Including their permanent address, copies of National Identity cards) to be submitted to the Engineer.

II. Prior to each maintenance inspection, the visit should be informed to the Engineer and details such as names, NIC numbers and details of traveling vehicles should be informed via letter or email to the RTC Urban Water Management Division of SLLDC.

III. The project Engineer reserves right to dismiss any kind of manpower who is not suitable in any ways.

IV. Contractor should not allocate employees who may be a threat to the National Security. If any kind of situation arise, contractor is fully responsible for the same.

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Section VI. Employer's Requirements and Drawings

1.0 Scope of Work

Three (3) years comprehensive maintenance of Video Wall Display System at RTC, established under the Integrated Flood Management System, including;

(The bidder is responsible to do the Appendix A - Description of the Services)

1.1.1 Video Wall Display Panels (Triolion 55" Panels x 16 Nos)
Inspection for defects, cleaning of surfaces and ventilation, alignment and bezel gap verification, mounting bracket checks, and orientation/image continuity verification.

1.1.2 Power Supply and Electrical Connections
Testing of power supply units, inspection of cable connections, verification of 6-Way PDU functionality, and cable management system checks.

1.1.3 Signal Processing and Control Equipment
Testing of controllers, IP Encoders (8) and Decoders (16), functional testing of AVCIT CMS software, inspection of DTB Gigabit Ethernet Switches (2), and end-to-end signal path verification.

1.1.4 Software and Firmware
Health checks of software/firmware, license validation, application of updates and patches (with Client approval), backup of configurations, and CMS performance optimization.

1.1.5 Environmental and Thermal Management
Inspection of temperature and ventilation, thermal imaging of critical components, verification of cooling and airflow at RTC Centre, and cleaning of cooling fans and pathways.

1.1.6 UPS System (Kehua 10KVA)
Visual inspection and cleaning, battery health and voltage checks, load testing and transfer switch verification, alarm/indicator checks, runtime estimation, and input/output connection inspection.

1.1.7 Computing Equipment (HP Pro 280 i5 PC and Monitor)
Hardware and OS health checks, disk cleanup and optimization, antivirus/security updates, monitor calibration, keyboard/mouse functionality checks, and verification of CMS connectivity.

After completing all cleaning activities and preventive maintenance tasks, the selected contractor shall verify the full functionality of the video wall system and associated equipment before leaving the RTC Centre. This verification must ensure that all components are operating correctly, signals are properly transmitted, and the system is fully functional, thereby confirming service quality and operational readiness at the end of each visit.

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If any breakdown occurs, it will be reported by the employer to the contractor, and the contractor shall attend within 48 hours. The repair will be carried out with necessary approval.

The selected bidder should provide a comprehensive maintenance annual schedule, including the following details, before signing the agreement.

- The Service Provider shall perform quarterly preventive maintenance, with a three (03) visits per year, to ensure the reliable operation of the video wall system and associated infrastructure. The scope of work includes inspection, cleaning, alignment, and performance checks of the 16 Triolion display panels; verification of power supply units, cabling, and PDUs; testing of signal processing equipment, controllers, encoders/decoders, and network switches; software and firmware updates with backups and license validation; environmental and thermal management of panels and racks; UPS system health checks including batteries and load testing; computing equipment optimization and security updates; and rack infrastructure inspection with cable management and structural integrity verification, all to be carried out consistently over a three-year period.

2.0 Labour Discipline & Behavior

1. Workers shall be worked as per the rules and regulations of the corporation.

2. Details of workers assigned for this work (Including their permanent address, copies of National Identity cards) to be submitted to the Engineer.

3. Prior to each maintenance inspection, the visit should be informed to the Engineer and details such as names, NIC numbers and details of traveling vehicles should be informed via letter to the respective institute where the weather station is located.

4. The project Engineer reserves right to dismiss any kind of manpower who is not suitable in any ways.

5. Contractor should not allocate employees who may be a threat to the National Security. If any kind of situation arise, contractor is fully responsible for the same.

3.0 Payments

1. Method of payment for the service agreement shall be made annually at the beginning of each year with respect to the date of signing of contract.

2. Payments shall be made according to the Appendix B—Schedule of Payments and Reporting Requirements. The winning bidder must provide an Advance Payment Guarantee equal to the contract value (BOQ amount), which must remain valid until 01 year + 28 days after the contract signing date. The

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Advance Payment Guarantee shall be from a licensed commercial bank operating in Sri Lanka and approved by the Central Bank of Sri Lanka. It shall be irrevocable and unconditionally encashable upon the first written demand by the employer. Cash Bond also could be acceptable. (Bidder could pay cash to cashier, SLLDC)

3. The Advance Payment Guarantee shall be renewed annually for the remaining contract period of three (03) years, ensuring continuous validity throughout the contract duration.

4. Repair and Replacement payment will be done after being certified by the engineer as successfully completed and after submission of respective payment certificate.

5. Bills with two copies shall be forwarded to the Engineer.

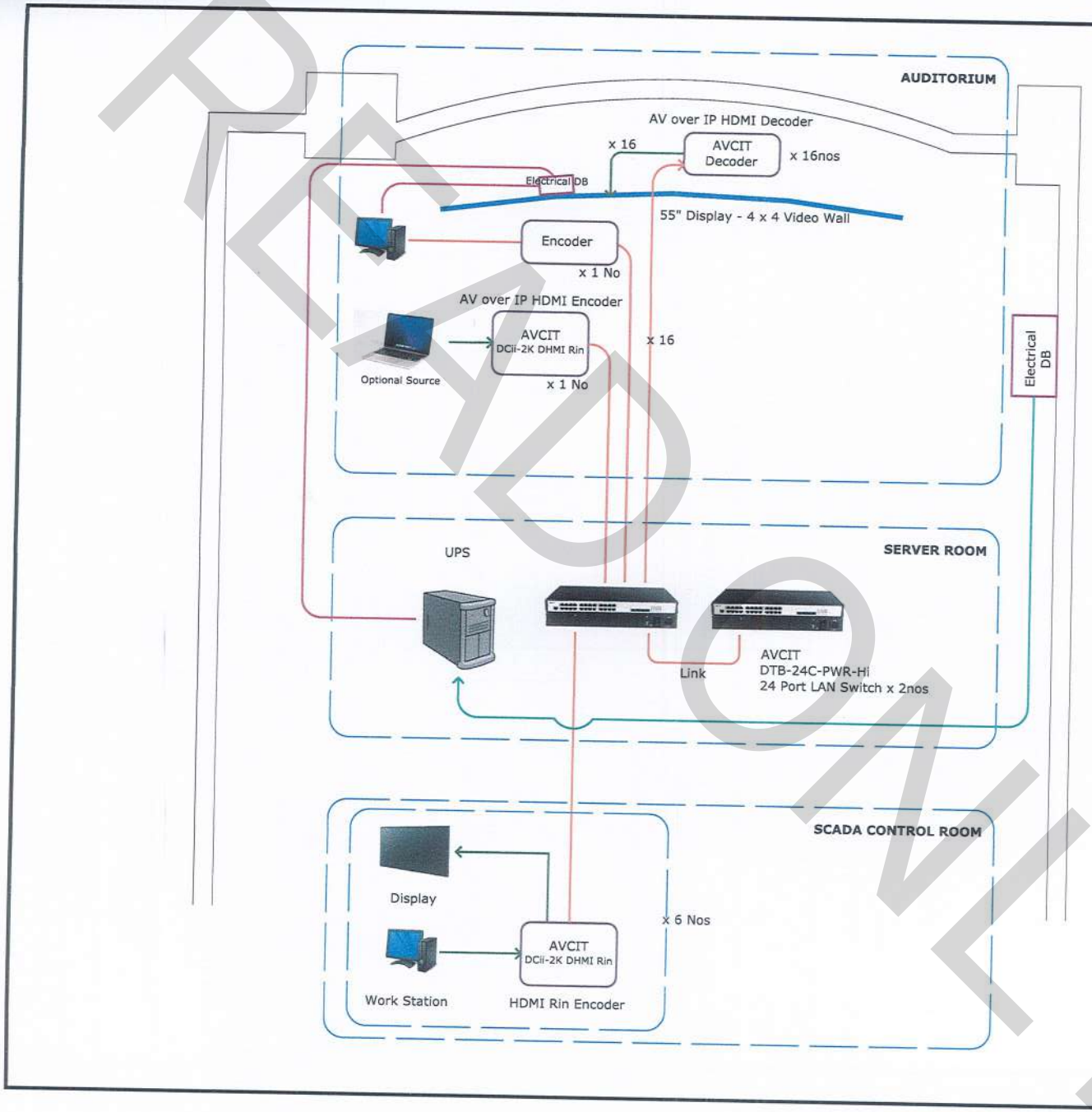
6. The Engineer reserves right to fully or partially pay the bill, considering the work done.

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1.0 Drawings, Diagrams & Supplementary Data

(Refer Annexure D)

READ ONLY



LEGEND

TYPE	DESCRIPTION
	CAT 6A CABLE-SHIELDED
	HDMI CABLE
	6mm 2 Core Cable & 2.5mm Earth Cable For UPS Output
	6mm 2 Core Cable & 2.5mm Earth Cable For UPS Input

NO	DATE	DESCRIPTION	APPROVED
01	30-01-2024	INITIAL SUBMISSION	

PROJECT :
SUPPLY AND INSTALLATION OF DISPLAY SYSTEM FOR REAL TIME FLOOD CONTROL CENTER BUILDING

CLIENT :
MINISTRY OF URBAN DEVELOPMENT AND HOUSING SRI LANKA LAND DEVELOPMENT OF CORPORATION
COLOMBO.

MAIN CONTRACTOR :
V S INFORMATION SYSTEMS (PVT) LTD.
NO. 07, SULEIMAN TERRACE, COLOMBO 05, SRI LANKA.
TEL: (+94) 11 203 8500
FAX: (+94) 11 203 8555
EMAIL: info@vsis.lk
WEB: www.vsis.lk

AS BUILT DRAWING

JOB NO :	DATE :	SHEET :
	30 JAN 2024	A3

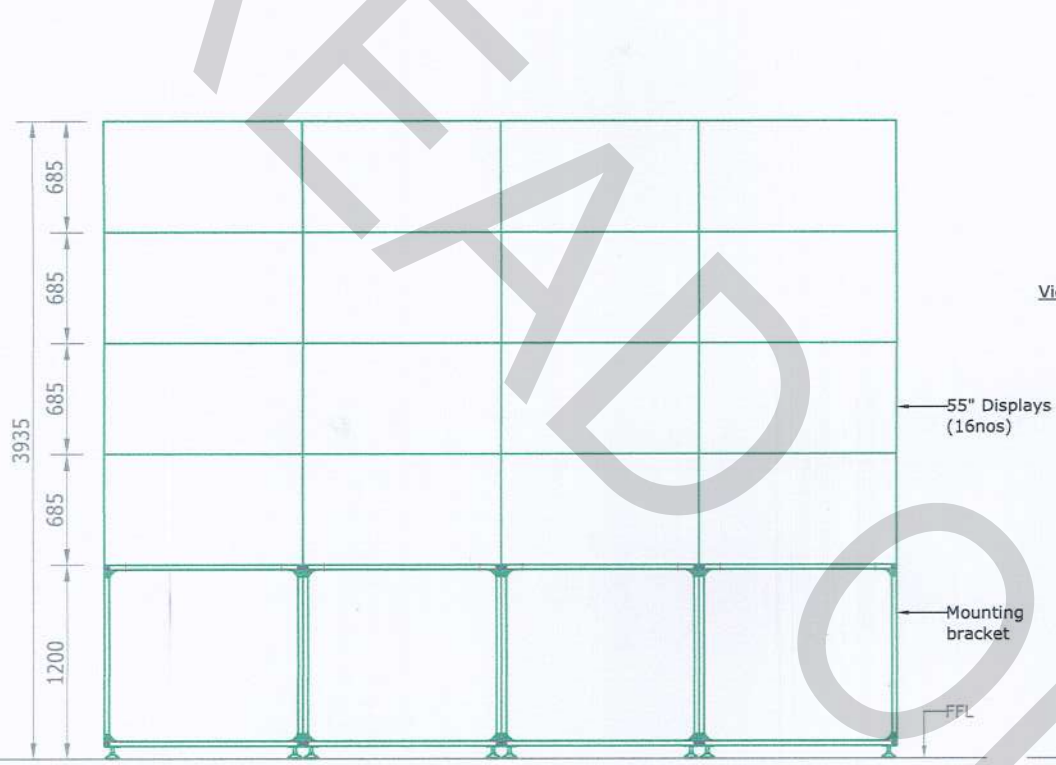
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SCALE :	DRAWING NO :	
NTS	VSIS-LDC-AB-AV-CD-01	

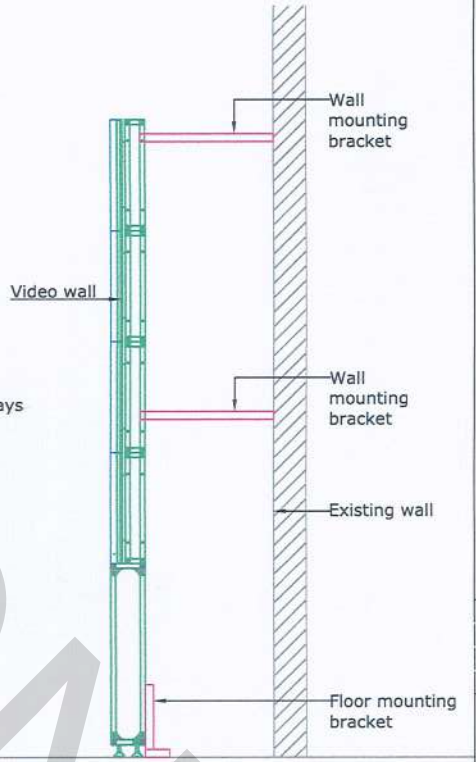
DESIGNED BY :	DRAWN BY :	CHECKED BY :	APPROVED BY :	REVISION
DINESH	PRASAD	HASARANGA	PRASHADI	R1

READ ONLY

READ ONLY



VIDEO WALL
FRONT ELEVATION
SCALE 1:30



VIDEO WALL
TYPICAL CROSS SECTION
SCALE 1:30

LEGEND

	WORKSTATION
UPS	UPS
	25mm PVC CONDUIT PIPE FOR UNDER THE RAISED FLOOR RUNNING ON CAT6 CABLES
	25mm PVC CONDUIT PIPE FOR UNDER THE RAISED FLOOR RUNNING ON POWER CABLES
	UPWARD
	3° CURVE

Note:
All mechanical component (structural support brackets) dimensions are approximate values.

Mechanical structural support frame fastening details:
Brackets are fixed in to a concrete wall with anchor bolts (M12)
Custom built bracket is constructed from mild steel hallow section bars (40 x 20mm / t-1.4mm) welded with mild steel plates (t-6mm).



WALL MOUNTING BRACKET DETAIL FLOOR MOUNTING BRACKET DETAIL

NO	DATE	DESCRIPTION	APPROVED
01	30-01-2024	CHANGED THE UPS LOCATION	
00	12-01-2024	INITIAL SUBMISSION	

PROJECT :
SUPPLY AND INSTALLATION OF DISPLAY SYSTEM FOR REAL TIME FLOOD CONTROL CENTER BUILDING

CLIENT :
MINISTRY OF URBAN DEVELOPMENT AND HOUSING SRI LANKA LAND DEVELOPMENT OF CORPORATION
COLOMBO.

MAIN CONTRACTOR :
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EMAIL: info@vsis.lk
WEB: www.vsis.lk

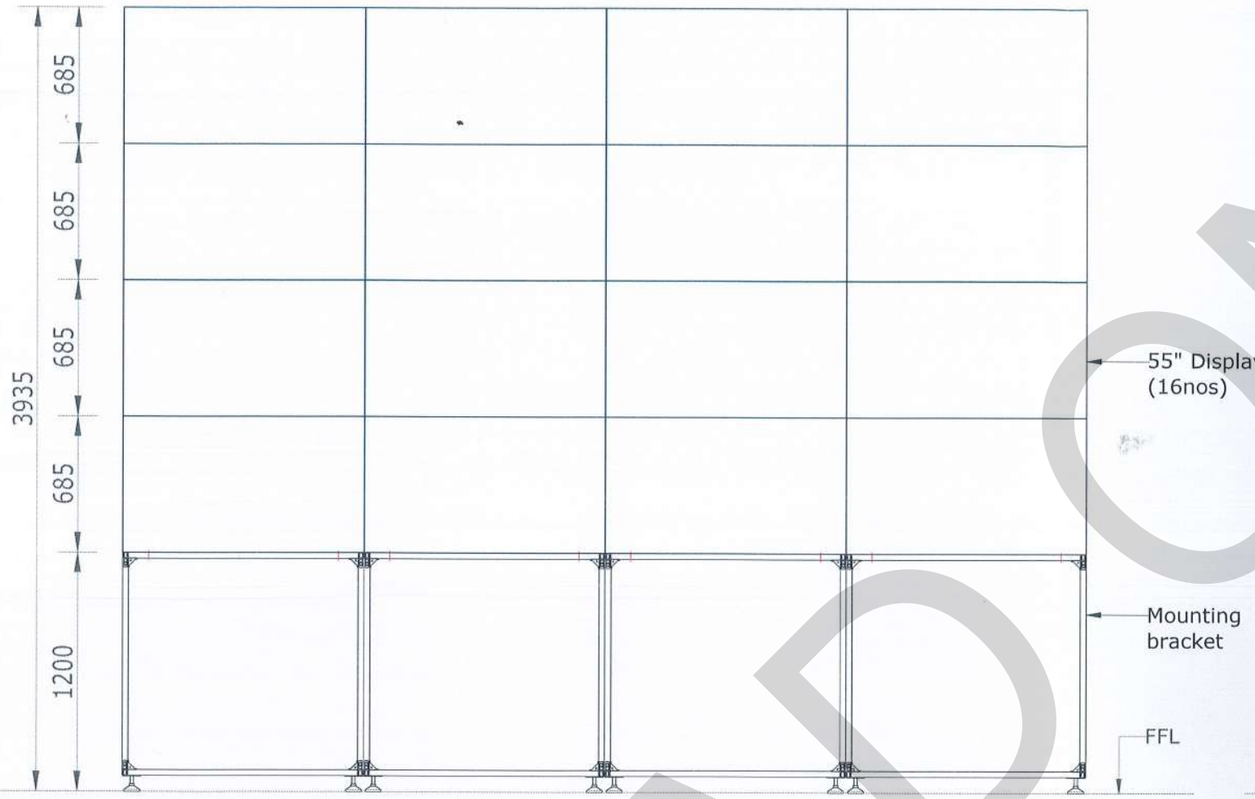
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JOB NO :	DATE :	SHEET :
	12 JAN 2024	A3

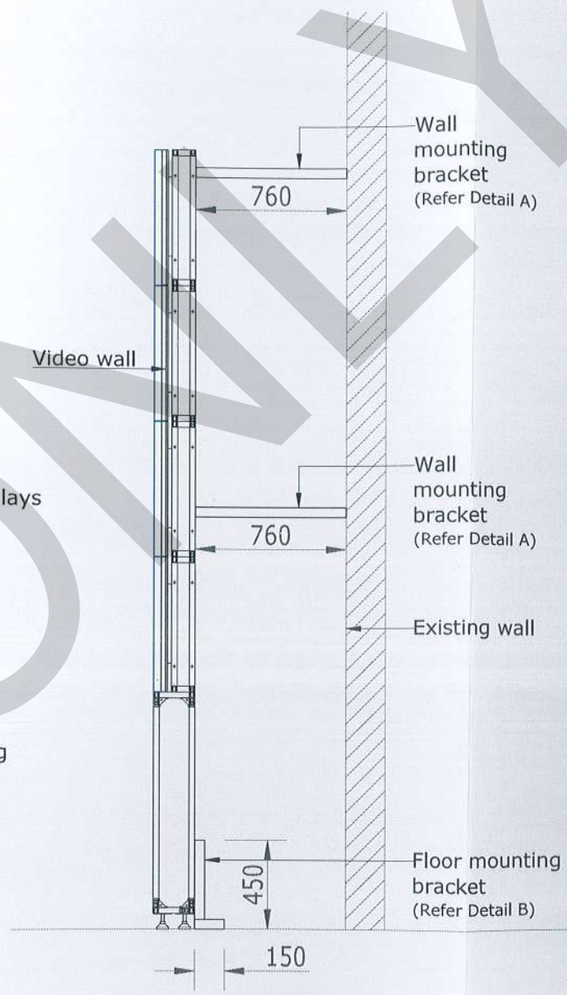
TITLE :
VIDEO WALL FRONT ELEVATION AND SECTIONAL DETAILS

SCALE :	DRAWING NO :
AS SHOWN	VSIS-LDC-AB-AV-2F-02

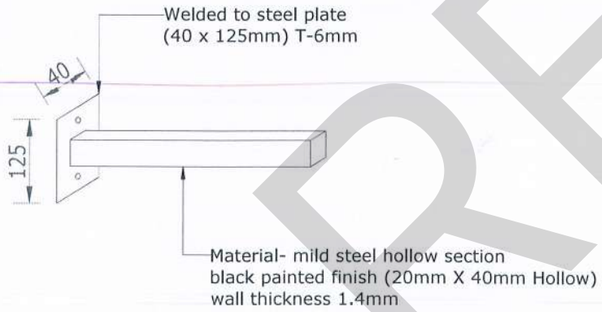
DESIGNED BY :	DRAWN BY :	CHECKED BY :	APPROVED BY :	REVISION
DINESH	ASHAN	HASARANGA	PRASHADI	R1



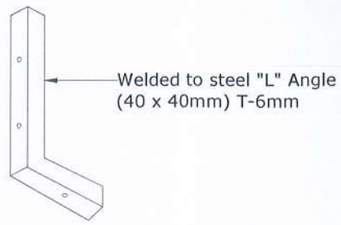
VIDEO WALL
FRONT ELEVATION
SCALE 1:30



VIDEO WALL
TYPICAL CROSS SECTION
SCALE 1:30



WALL MOUNTING BRACKET DETAIL-A



FLOOR MOUNTING BRACKET DETAIL-B

Note:
All mechanical component (structural support brackets) dimensions are approximate values.

Mechanical structural support frame fastening details:
Brackets are fixed in to a concrete wall with anchor bolts (M12)
Custom built bracket is constructed from mild steel hallow section bars (40 x 20mm / t-1.4mm) welded with mild steel plates (t-6mm).

LEGEND

WORKSTATION	WORKSTATION
UPS	UPS
	25mm PVC CONDUIT PIPE FOR UNDER THE RAISED FLOOR RUNNING ON CAT6 CABLES
	25mm PVC CONDUIT PIPE FOR UNDER THE RAISED FLOOR RUNNING ON POWER CABLES
	UPWARD

Note:

All Dimensions are in Millimeters.

NO	DATE	DESCRIPTION	APPROVED
02	02-04-2024	AS PER THE CLIENT COMMENTS	
01	30-01-2024	CHANGED THE UPS LOCATION	
00	12-01-2024	INITIAL SUBMISSION	

PROJECT :
SUPPLY AND INSTALLATION OF DISPLAY SYSTEM FOR REAL TIME FLOOD CONTROL CENTER BUILDING

CLIENT :
MINISTRY OF URBAN DEVELOPMENT AND HOUSING SRI LANKA LAND DEVELOPMENT OF CORPORATION
COLOMBO.

MAIN CONTRACTOR :
V S INFORMATION SYSTEMS (PVT) LTD.
NO. 07, SULEIMAN TERRACE,
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SRI LANKA.
TEL: (+94) 11 203 8500
FAX: (+94) 11 203 8555
EMAIL: info@vsis.lk
WEB: www.vsis.lk

AS BUILT DRAWING

JOB NO :	DATE :	SHEET :
	12 JAN 2024	A3

TITLE :
VIDEO WALL FRONT ELEVATION AND SECTIONAL DETAILS

SCALE :	DRAWING NO :
AS SHOWN	VSIS-LDC-AB-AV-2F-02

DESIGNED BY :	DRAWN BY :	CHECKED BY :	APPROVED BY :	REVISION
DINESH	ASHAN	HASARANGA	PRASHADI	R2

READ ONLY

TRIOLION LCD Display Screen Specifications (L Series)

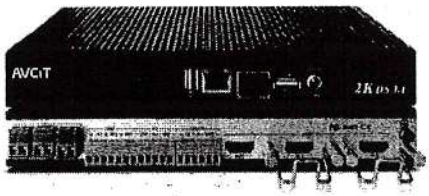
Model			TRD1049L7	TRD1055L7	TRD1055L9	TRD1055LA	TRD1055LB
Panel Parameter	Diagonal Size		49"	55"			
	Panel Type		IPS				
	Backlight Type		Direct LED Backlight				
	Pixel Pitch	H	0.55926mm	0.63mm			
		V	0.55926mm	0.63mm			
	Image Area	Width	1073.8mm	1209.6mm			
		Height	604mm	680.4mm			
	Physical Resolution		1920*1080				
	Luminance of White		450cd/m²	500cd/m²	500cd/m²	500cd/m²	700cd/m²
	Contrast Ratio		1300:1	1400:1			
	Response Time		8ms				
	Display Colors		10bit				
	Display Ratio		16:9				
	Viewing Angle		178°(H)/178°(V)				
Power Supply	Working Power Consumption		140W	160W	160W	160W	200W
	Standby Power Consumption		≤0.5W				
	Power Supply		AC 100-240V, 50/60Hz				
Physical Parameter	Dimensions (Without Mounts)	Width	1077.6mm	1213.4mm	1211.4mm	1210.5mm	
		Height	607.8mm	684.2mm	682.2mm	681.2mm	
		Depth	131.7mm	132.5	132.5	132.5	
	Bezel Width		2.3mm(U/L), 1.2mm(R/B), Optical Gap: 3.8mm	2.3mm(U/L), 1.2mm(R/B), Optical Gap: 3.8mm	1.8mm or 2.6mm	0.44mm(U/L), 0.44mm(R/B), Optical Gap: 1.0mm	
	Bezel Color		Black				
	Weight		21kg	26kg			
Operation Condition	Operating Temperature		0-50℃				
	Operating Humidity		10%-90% (Non-condensing)				
	MTBF		50000 hours				
I/O Interface	Signal Input		Solution 1: VGA, DVI, HDMI, CVBS Solution 2: VGA, DVI, HDMI, CVBS, RJ45 (Signal Loop In) Solution 3: VGA, DVI, HDMI MHL, HDMI 4K, DP 4K Solution 4: VGA, DVI, HDMI 4K, DP 4K, USB (Optional)				
	Signal Output		Solution 1:CVBS (Signal Loop Out) Solution 2: RJ45 (Signal Loop Out for VGA/DVI/HDMI/CVBS) Solution 3: DP (Signal Loop Out for VGA/DVI/HDMI MHL/HDMI 4K/DP 4K) Solution 4: HDMI (Signal Loop Out for HDMI 4K), Audio				
	Control Input		Solution 1: RS232 IN (RJ45 Port), DEBUG ISP (RJ45 Port), IR Remote (Optional) Solution 2: RS232 IN, RJ45 IN (Loop In), USB, IR Remote (Optional) Solution 3: RS232 IN (RJ45 Port), IR Remote (Optional) Solution 4: RS232 IN (RJ45 Port), USB, IR Remote (Optional)				
	Control Output		Solution 1: RS232 OUT*2 (RJ45 Port) Solution 2: RJ45*1 (Loop Out) Solution 3: RS232 OUT (RJ45 Port) Solution 4: RS232 Out*2 (RJ45 Port)				

Version: 2022-06-01

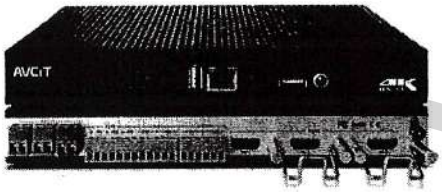
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AVCiT DSII Series

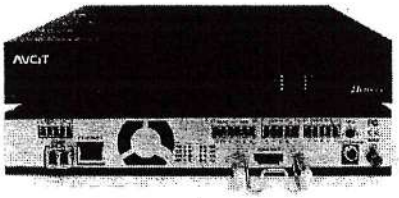
Intuitive Video Wall Control System over IP



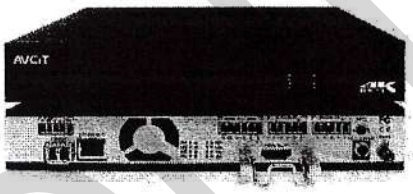
DSII-2K-HDMI-RIN



DSII-4K-HDMI-RIN



DSII-2K-ROUT-VW



DSII-4K-ROUT-VW

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What's New?

AVCiT DSII Series is IP Based Virtual Video Wall Matrix System, provides intuitive & real time information on the video walls and control panels, which is combined functions of LED/DLP/LCD Video Wall processor,extender,multi viewer and video matrix as well as environment controller. Compared to conventional command center solution by modular design video wall controller, features of AVCiT AV over IP:

- ✓ No standalone LED/LCD Wall Controller required
- ✓ Realized 4:4:4 image chroma over 20 Mbps H.265 streams**(4K)**, also supports **4K@60**
- ✓ Great image sync for LCD display and LED sending box with irregular resolution
- ✓ No central management server required
- ✓ IP structure without chassis and input and output cards
- ✓ Decentralized architecture

AVCiT DSII series node is compact video encoder for FHD/4K video source, and decoder for standalone display, single monitor of a LCD video wall, or LED sending box of any kind of LED wall; It is designed to transmit FHD/4K video over standard ONE Gigabit Ethernet with low latency with high image quality performance;

The unique H.265 algorithm by AVCiT, realized extraordinary chroma of 4:4:4, over low-bitrate (4~20Mbps) streams, which is significant for information sharing and collaborating among multiple control rooms in multiple locations.

Benefiting from its no-server architecture, any single encoder/decoder's bug will not affect the entire system, it will surely add much value on your design of mission critical command & control center.

Features of DSII series Node

Both 2K and 4K DSII Series node have HDMI/DVI input and output port, bi-directional RS232/IR/IO port. User can have a visualized & intuitive experience touch control on iOS+Win10 control tablet, by simply drag/drop/zoom

in/out /resize,roaming, reposition/PIP/POP etc by mouse & finger dragging.

- ✓ No centralized video wall processor/server required
- ✓ Realized 4:4:4 image chroma over 20 Mbps H.265 streams**(Optional)**, also supports 4K@60
- ✓ No limit on the channels of input and outputs to video wall display
- ✓ Built-in video wall processor for LCD display and LED sending box
- ✓ Great performance of image sync for LCD display and LED sending box with irregular resolution
- ✓ Visualized drag/drop control by mouse & finger
- ✓ Layout preset and recall for different modes, such as meeting mode, client mode,emergency mode etc
- ✓ Annotation features by touch or pen

- ✓ **Banner and scrolling text support**
- ✓ **Preset layout recall by the scheduled timing and Video wall layout can be customized flexible**
- ✓ **Cropping support for the images for the video walls**
- ✓ **Real-time preview of content on iOS/Window/Android control tablet**
- ✓ **Power ON/Off for the Video walls support on the control panel**
- ✓ **UDP/RS232/485/IO/IR control support(e.g. display the AQI,PM2.5 on the control panel support)**
- ✓ **Can control the HD Camera right/left/up/down side/zoom in/out (RS232/UPD control support)**
- ✓ **Cross-Network, Cross-VLAN support, no need to make the configuration for Router &Lan switches**
- ✓
- ✓ Support iOS/Windows OS/Andriod/Web based control
- ✓ Sources management and tree structures feature on control tablet
- ✓ Add/Delete the devices directly on the control panel
- ✓ Scheduled sources playing on control tablet, set the interval time to play one by one
- ✓ Native capability to decode 3rd party RTSP streams, can get directly access to RTSP without any CODEC
- ✓ Compatible with 3rd party CCTV server and SCADA SYSTEM
- ✓ Operating & Maintenance system with User-friendly and Intuitively Interface to monitor system's health such as online&offline status and bandwith etc and manage all the devices etc. **(Optional software)**
- ✓ Soft KVM features support when connect with the KVM ENCODER solution
- ✓ Support 8K signals input from workstations which is with multiple graphic card, perfect image sync
- ✓ Build-in audio mixer up to 16 channel,and also support transmit the audio separately
- ✓ 1080p+UDP+USB+RS232/RS485/IR over CAT6e, up to 90m

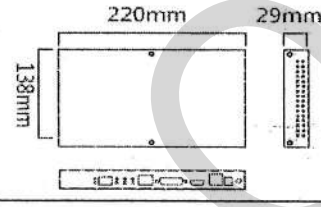
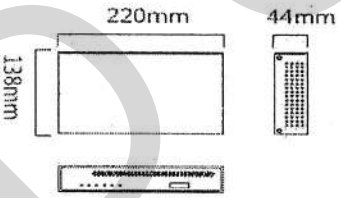
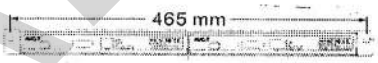
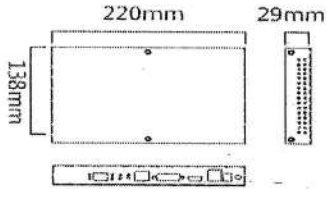
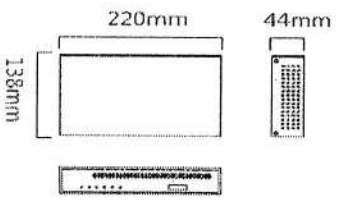
Technical Specification

Interface Port				
Item	2K-DSII Series		4K-DSII Series	
Codec Design	YES		YES	
Model#	DSII-2K-HDMI-RIN	DSII-2K-ROUT-VW	DSII-4K-HDMI-RIN	DSII-4K-ROUT-VW
Video Input	2 x HDMI(one for backup)	NONE	2 x HDMI(one for backup)	NONE
Video Output	1 x HDMI loop out	1 x HDMI + 1 x DVI	1 x HDMI loop out	1 x HDMI + 1 x DVI
USB2.0	1 x USB	NONE	1 x USB	NONE
USB3.0	1 x USB	NONE	1 x USB	NONE
RS232	1	3	1	3
RS485	1	1	1	1

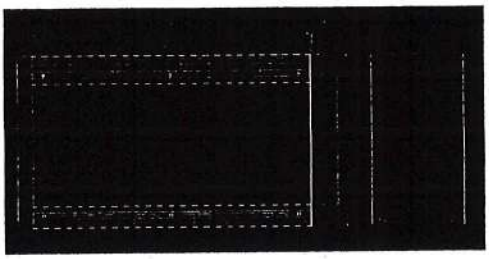
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I/O	3	4	3	4
IR	3	4	3	4
Relay	3	NONE	3	NONE
Audio in/out	1 in +1 out	1 in+ 2 out	1 in +1 out	1 in + 2 out
MIC	1 xMIC	1 xMIC	1 xMIC	1 xMIC
Ethernet(PoE)	RJ45		RJ45	
SFP(Optional for network redundant)	SFP Duplex LC Connectors		SFP Duplex LC Connectors	

Technical Parameters	
Video Compression	H.264/H.265
Video Resolutions	Up to 3840x2160
Streaming Protocol	HDCP, DVI 1.0, HDMI 2.0, RTSP
Bit Rates	Configurable 4-40Mbps per video streaming
Copy Protection	HDCP 1.4, 3DES
Power Consumption	15-30W

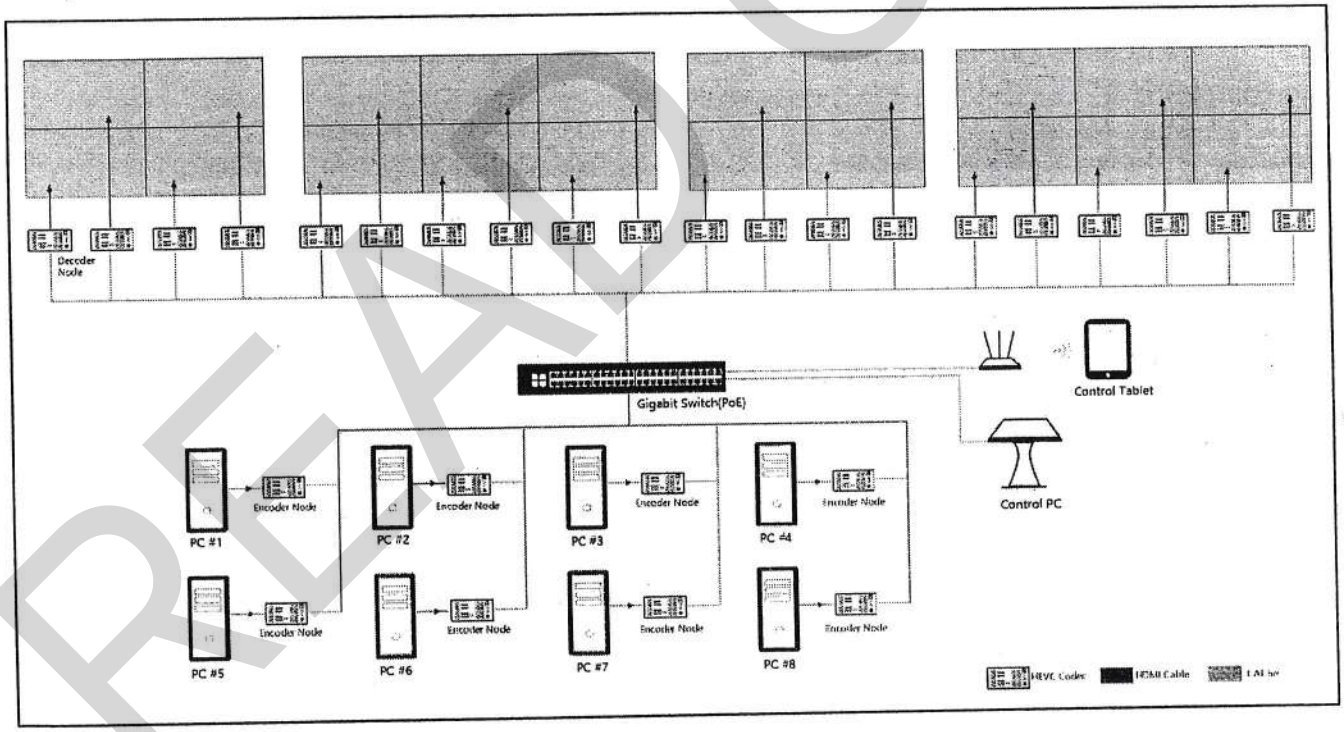
Physical Parameters			
2K- DSII SERIES	✓ DSII-2K-HDMI-RIN		220x138x29mm 0.7kg/node
	✓ DSII-2K-ROUT-VW		220x138x44mm 0.9kg/node
	1/2U Rack Mount Bar		
4K-DSII SERIES	✓ DSII-4K-HDMI-RIN		220x138x29mm 0.7kg/node
	✓ DSII-4K-ROUT-VW		220x138x44mm 0.9kg/node

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	7 U Rack Mount Kit		484.3x147.1x310mm Each rack mount kit can install 10 DSIII encoders and KVM decoders or 8 DSIII VW decoders.
Carton(packing box)	285x220x120mm per node		

Requirement of Ethernet Switch	
Switching Capacity	≥ 598Gbps(more than 40 node)
Forwarding Performance	≥ 222Mpps(more than 40 node)
POE Feature	Required(or choose 3rd party POE injector)
Recommend Model	1 Gigabit Lan Switchers,two layer or three layer(e.g HuaweiS5720-36C-PWR-EI-AC)

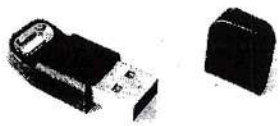
System Topology



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AVCiT

DSWORKS features

DTB-EML(License for Windows OS videowall management) 	1) User Interface can be custom made, and support different language, such as English, Arabic, Spain, Russian etc. 2) Friendly & Intuitive control, support to drag & drop when switching the source on video wall. 3) All the video source content can be previewed on UI in real time, which avoid to display wrong source on video wall 4) Visualized operation, what you see on vitual video wall is what displaying on physical video wall. 5) Scenario preset & recall, support to preset the video wall layout and evironment control status at multiple scenario, and recall it by one touch. 6) Flexible to rename and delete reset & recall button, which allow to 7) Free resize, re-position, overlap source windows on video wall. 8) Support multiple control tablet for same system, what displaying on video wall will be synchronized to all User Interface. 9) Support to clear all the source windows on video wall by one key. 10) Quick Search Feature: operator can fastly search the source by input its ID into search bar, which is important if there are lots of input source in system. (DS Works only) 11) Control Layout Preview: support to switch sources and manage displaying layout on vitual video wall, then cast to physical video wall by one "SEND" button. (DS Works only) 12) Source Grouping: input source can be classified by different group, which makes operator easier to search and switch it. (DS Works only） 13) Source Autoplay: flexible to choose any sources to display on video wall in time and , whose playback time can be set according to requirement. (DS Works only） 14) Client Mode: support to configure video wall layout & partition, and save as a preset. The source content can be interchanged between two partition by drag&drop. 15)Support the Tree management for CCTV system 16)Support the Scrolling Text on the VW(DSWORKS only) 17)Support the Annotation features

READ ONLY

Data sheet

HP Pro Tower 280 G9 PCI Desktop PC

Maximize your investment

Take on your everyday work at an affordable price with the HP Pro Tower 280 G9. Get the reliable computing power you need while reducing the total cost of ownership—now that's a smart investment.



*Product image may differ from actual product

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Powered-up processing

- Keep up with daily tasks with performance from up to a 13th Gen Intel® Core™ i7 processor[2], optional AMD, NVIDIA®, or Intel® discrete graphics[3], up to 64GB DDR4 memory[3], and slots for future growth.

Expansion for the future

- Two bays and two full-height slots, including PCIe x16 and PCIe x1 slots, provide expandability for the future. Featuring USB 3.0, USB 2.0, USB-C™[4] ports and a DisplayPort™[4], helping ensure broad compatibility with existing technology.

Help keep data safe

- Help protect your investment and your data with firmware TPM, HP DriveLock[5], and a physical security lock slot.[6] Additional security is provided by an optional intrusion sensor[7] and an integrated cable lock system to secure your cabled devices.

Help protect our shared future

- The outer box of the HP Pro Tower 280 G9 is 92 percent sustainably sourced and recyclable. Molded Pulp cushions made from 100% recycled wood fiber and organic materials.[8]
- Work anywhere without compromising on performance with Windows 11 and HP collaboration, security, and connectivity technology.[1]
- Configure your HP Pro Tower 200's CPU for the perfect combination of power, snappy performance, and value. With up to a 13th Gen Intel® Core® i7 processor and up to 64GB memory, handle multiple work tasks smoothly and reliably.[2,3]
- Help keep unauthorized users from accessing data on your primary drive. Prevent your primary drive from running without entering a password using HP Drive Lock.[5]
- Spend less time and get right to the updates you need with HP Support Assistant.[10]
- Help secure your PC with a physical security lock slot, an optional intrusion sensor, and an integrated accessory cable lock to secure your cabled mouse and keyboard on the HP Pro Tower 280.[6,7]

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HP Pro Tower 280 G9 PCI Desktop PC Specifications Table





*Product image may differ from actual product

Available Operating Systems	Windows 11 Pro[1] Windows 11 Home – HP recommends Windows 11 Pro for business[1] Windows 10 Pro (available through downgrade rights from Windows 11 Pro)[1,2,20] FreeDOS
Processor family	Intel® Pentium® processor; Intel® Celeron® processor; 13th Generation Intel® Core™ i7 processor; 13th Generation Intel® Core™ i5 processor; 13th Generation Intel® Core™ i3 processor; 12th Generation Intel® Core™ i7 processor; 12th Generation Intel® Core™ i5 processor; 12th Generation Intel® Core™ i3 processor
Available Processors[3,4,5,20]	Intel® Pentium® Gold G7400 with Intel® UHD Graphics (3.7 GHz base frequency, 6 MB L3 cache, 2 cores, 4 threads); Intel® Celeron® G6900 with Intel® UHD Graphics (3.4 GHz base frequency, 4 MB L3 cache, 2 cores, 2 threads); Intel® Core™ i7-12700 with Intel® UHD Graphics (2.1 GHz base frequency, up to 4.9 GHz with Intel® Turbo Boost Technology, 25 MB L3 cache, 12 cores, 20 threads), supports Intel® vPro® Technology; Intel® Core™ i5-12500 with Intel® UHD Graphics (3.0 GHz base frequency, up to 4.6 GHz with Intel® Turbo Boost Technology, 18 MB L3 cache, 6 cores, 12 threads), supports Intel® vPro® Technology; Intel® Core™ i5-12400 with Intel® UHD Graphics (2.5 GHz base frequency, up to 4.4 GHz with Intel® Turbo Boost Technology, 18 MB L3 cache, 6 cores, 12 threads); Intel® Core™ i3-12100 with Intel® UHD Graphics (3.3 GHz base frequency, up to 4.3 GHz with Intel® Turbo Boost Technology, 12 MB L3 cache, 4 cores, 8 threads) Intel® Core™ i3-13100 (4.5 GHz P-core base frequency, up to 3.4 GHz P-core Max Turbo frequency, 12 MB L3 cache, 8 P-cores and 0 E-cores, 8 threads); Intel® Core™ i5-13400 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.3 GHz E-core Max Turbo frequency, up to 4.6 GHz P-core Max Turbo frequency, 20 MB L3 cache, 6 P-cores and 4 E-cores, 16 threads); Intel® Core™ i7-13700 (1.5 GHz E-core base frequency, 2.1 GHz P-core base frequency, up to 4.1 GHz E-core Max Turbo frequency, up to 5.1 GHz P-core Max Turbo frequency, 30 MB L3 cache, 8 P-cores and 8 E-cores, 24 threads), supports Intel® vPro® Technology; Intel® Core™ i5-13500 (1.8 GHz E-core base frequency, 2.5 GHz P-core base frequency, up to 3.5 GHz E-core Max Turbo frequency, up to 4.8 GHz P-core Max Turbo frequency, 24 MB L3 cache, 6 P-cores and 8 E-cores, 20 threads), supports Intel® vPro® Technology
Chipset[3]	Intel® H670; Intel® H770
Form factor	Tower
Maximum memory	64 GB DDR4-3200 SDRAM [6] Transfer rates up to 3200 MT/s.
Memory slots	2 DIMM
Internal storage	500 GB up to 2 TB 7200 rpm SATA HDD[7,20,21] 256 GB up to 1 TB PCIe® NVMe™ M.2 SSD[7,21] 128 GB up to 1 TB PCIe® NVMe™ TLC M.2 SSD[7,20,21]
Optical drive	HP 9.5 mm Slim DVD-Writer; HP 9.5 mm Slim DVD-ROM [8] (##opticaldriveavailnote##)
Available Graphics	Integrated: Intel® UHD Graphics 730; Intel® UHD Graphics 770; Intel® UHD Graphics 710 Discrete: AMD Radeon™ RX 6400XT Graphics (4 GB GDDR6 dedicated); NVIDIA® GeForce RTX™ 3050 (8 GB GDDR6 dedicated); AMD Radeon™ RX 6300 Graphics (2 GB GDDR6 dedicated); NVIDIA® GeForce RTX™ 4060 (8 GB GDDR6 dedicated)[20]
Audio	Realtek ALC3867 codec, universal audio jack with CTIA headset support, audio line-out rear ports (3.5 mm), multi-streaming capable
Expansion slots	1 full-height PCI; 2 M.2; 1 PCIe 3 x1; 1 PCIe 4 x16 [9,10,11] (1 M.2 slot for WLAN and 1 M.2 2242/2280 slot for storage.)
Ports and connectors	Front: 2 USB Type-A 10Gbps signaling rate, 4 USB Type-A 5Gbps signaling rate, 1 headphone/microphone combo (systems with 12th Generation Intel® Core™ processors); 2 USB Type-A 10Gbps signaling rate, 2 USB Type-A 5Gbps signaling rate, 1 USB Type-C®, 1 USB 2.0 Type-A, 1 headphone/microphone combo (systems with 13th Generation Intel® Core™ processors) ; Rear: 2 USB 2.0 Type-A, 1 HDMI, 1VGA, 1 RJ-45, 1 power connector, 1 serial, 1 line in, 1 line out (systems with 12th Generation Intel® Core™ processors); 2 USB 2.0 Type-A, 1 HDMI, 1 DisplayPort™, 1 RJ-45, 1 power connector, 1 serial, 1 line in, 1 line out (systems with 12th Generation Intel® Core™ processors)[11,20] ; Optional Ports: 1 4x serial; 1 parallel; 1 PS/2; 1 serial; 2 USB 2.0 Type-A; 1 3-in-1 SD card reader[20]
Input devices	HP Wired Desktop 320K Keyboard; HP PS/2 Business Slim Keyboard; HP 125 Wired Keyboard; HP 125 Antimicrobial Wired Keyboard; HP PS/2 mouse; HP Wired Desktop 320M mouse; HP 125 Wired Mouse; HP 128 Laser Wired Mouse; HP 125 Antimicrobial Wired Mouse;
Communications	LAN: Integrated 10/100/1000M GbE ; WLAN: Realtek RTL8821CE 802.11a/b/g/n/ac (1x1) Wi-Fi® and Bluetooth® 4.2 wireless card; Realtek RTL8822CE 802.11a/b/g/n/ac (2x2) Wi-Fi® and Bluetooth® 5 wireless card; Realtek Wi-Fi 6 RTL8852BE 802.11a/b/g/n/ax (2x2) and Bluetooth® 5.3 wireless card ;
Drive Bays	Two 3.5" HDD
Environmental	Operating temperature: 0 to 40°C; Operating humidity: 10 to 90% RH;
Software	HP Audio Switch; HP Documentation; HP Setup Integrated OOBE Win10; HP Support Assistant; HP System Event Utility; McAfee LiveSafe™; Buy Office (sold separately); HP JumpStarts; Xerox® DocuShare® 90 day free trial offer; [12,13,20]
Security management	Padlock loop; Trusted Platform Module (TPM) 2.0; Integrated accessories cable lock; Slim cable lock;[14,15,16]
Power	180 W external power adapter, up to 90% efficiency, active PFC; 260 W internal power adapter, up to 92% efficiency, active PFC; 500 W internal power supply, up to 90% efficiency, active PFC; 350 W internal power supply, up to 90% efficiency, active PFC[17]
Dimensions	15.5 x 30.3 x 33.7 cm; (System dimensions may fluctuate due to configuration and manufacturing variances.)
Weight	4.7 kg; (Exact weight depends on configuration.)
Ecolabels	CECP; EPEAT® registered; SEPA[18]
Energy star certified (series fixed)	ENERGY STAR® certified
Sustainable impact specifications	15% post-consumer recycled plastic; 80 Plus® Gold power supplies available[19]

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Accessories and services (not included)

HP Stereo USB Headset G2



Plug right in and get ready to speak and hear clearly all day. With noise-cancelling, comfortable design, and easy adjustment, your sound comfort will carry you from call to call without interference or frustration.
Product number: 428K6AA
[1] Google tested to meet Chromebook compatibility standards.
[2] This product works with devices capable of running the latest version of Chrome OS and has been certified to meet Google's compatibility standards. Google is not responsible for the operation of this product or its compliance with safety requirements. Chromebook and the Works With Chromebook badge are trademarks of Google LLC.

HyperX DuoCast - USB Microphone (Black) - RGB Lighting



Featuring an elegant design, a low-profile shock mount, and a tasteful RGB light ring, the HyperX DuoCast is a full-featured USB microphone that's built for gaming, working, and content creation. It shares the fan-favorite features of its HyperX mic siblings, such as tap-to-mute, and the vibrant LED mic mute indicator, but also brings its own unique, subtle style. A low-profile shock mount complements the sleek, minimalist aesthetic, while also absorbing vibrations, and taking up less space. An included mount adapter allows for compability with most mounts and the versatile DuoCast is also compatible with PC, PS5™, PS4™, and Mac®. Use HyperX NGENUITY Software and customize the RGB light ring to broadcast your own signature style.
Product number: 4P5E2AA

HyperX Cloud Buds Black



HyperX's true wireless Cloud Buds are made for busy students and driven people on their grind, people who need to be in two worlds at once. With Bluetooth® wireless connectivity, they'll quickly pair with Bluetooth ready media devices, allowing you to listen to music or podcasts, or take calls while you're on the go. These earbuds feature convenient touch controls, rich, bassy sound, and 3 different sizes of silicon ear tips so you'll get the fit that's right for you. The included charging case gives you freedom to recharge without the cords and keep your earbuds safe and secure when it's time for you to hear the real world again.
Product number: 56R62AA
[1] 1 Actual battery life will vary with use and will naturally decrease with time and usage. Earbuds have up to 4 hours of battery life and up to an additional 22 hours using the charging case.

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HP Pro Tower 280 G9 PCI Desktop PC

Messaging Footnotes

[2] Multicore is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
[3] Optional feature that must be configured at the time of purchase.
[4] USB-C™ port and DisplayPort™ only available with 13th Gen PCI support.
[5] HP DriveLock is not supported on NVMe drives.
[6] Solenoid lock and cable required and sold separately.
[7] HP Tamper Lock must be enabled by the customer or your administrator.
[8] 92 percent outer box packaging made from sustainably sourced certified and recycled fibers. Molded Pulp cushions made from 100% recycled wood fiber and organic materials.
[1] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com.
[10] Internet access required.

Technical Specifications Footnotes

[1] Not all features are available in all editions or versions of Windows. Systems may require upgraded and/or separately purchased hardware, drivers, software or BIOS update to take full advantage of Windows functionality. Windows is automatically updated and enabled. High speed internet and Microsoft account required. ISP fees may apply and additional requirements may apply over time for updates. See http://www.windows.com .
[2] This system is preinstalled with Windows 10 Pro software and also comes with a license for Windows 11 Pro software and provision for recovery software. You may only use one version of the Windows software at a time. Switching between versions will require you to uninstall one version and install the other version. You must back up all data (files, photos, etc.) before uninstalling and installing operating systems to avoid loss of your data.
[3] Intel vPro® requires Windows 10 Pro 64 bit or higher, a vPro supported processor, vPro enabled chipset, vPro enabled wired LAN and/or Wi-Fi 6E WLAN and TPM 2.0. Some functionality requires additional 3rd party software in order to run. Features of vPro® Essentials and Enterprise vary. See http://intel.com/vpro .
[4] Multi-core is designed to improve performance of certain software products. Not all customers or software applications will necessarily benefit from use of this technology. Performance and clock frequency will vary depending on application workload and your hardware and software configurations. Intel's numbering, branding and/or naming is not a measurement of higher performance.
[5] Intel® Turbo Boost technology requires a PC with a processor with Intel Turbo Boost capability. Intel Turbo Boost performance varies depending on hardware, software and overall system configuration. See www.intel.com/technology/turboboost for more information.
[6] Full availability of 4 GB or more of memory requires a 64-bit operating system. With Windows 32-bit operating systems, the amount of usable memory is dependent upon your configuration, so that above 3 GB all memory may not be available due to system resource requirements. Memory modules support data transfer rates up to 3200 MT/s; actual data rate is determined by the system's configured processor. See processor specifications for supported memory data rate.
[7] For storage drives, GB = 1 billion bytes. TB = 1 trillion bytes. Actual formatted capacity is less. Up to 30 GB (for Windows) of disk is reserved for system recovery software.
[8] Optical drives are optional or add on features. Duplication of copyrighted material is strictly prohibited. Actual speeds may vary. Double Layer media compatibility will widely vary with some home DVD players and DVD-ROM drives.
[9] Card sold separately.
[10] 4 serial port: optional via PCIe slot, and only available for specific region.
[11] HDMI/VGA ports will be covered up when a non-internal graphics processor is configured on shipped machine.
[12] McAfee LiveSafe™: subscription required.
[13] Simply sign up and start using Xerox® DocuShare® Go. No credit card. No obligation. Data will become unavailable unless a subscription is entered before the end of the 90 day free trial period. See www.xerox.com/docusharego for details.
[14] Security cable lock supported (sold separately).
[15] TPM feature will be supported on machine pre-configured with FreeDOS, and will be default set as enabled in BIOS setup menu if the machine is dTPM, but will be default set as disabled in BIOS setup menu if the machine is fTPM.
[16] Physical cable lock for cable management.
[17] All power supplies are not available in every region.
[18] Based on US EPEAT® registration according to IEEE 1680.1-2018 EPEAT®. EPEAT® status varies by country. Visit www.epeat.net for more information.
[19] Recycled plastic content percentage is based on the definition set in the IEEE 1680.1-2018 standard.
[20] Available on select skus only.
[21] Starting November 1, 2023, HP PCs with Windows require Windows to be installed on SSD. HDD can only be configured as additional data drives and not as the boot drive.

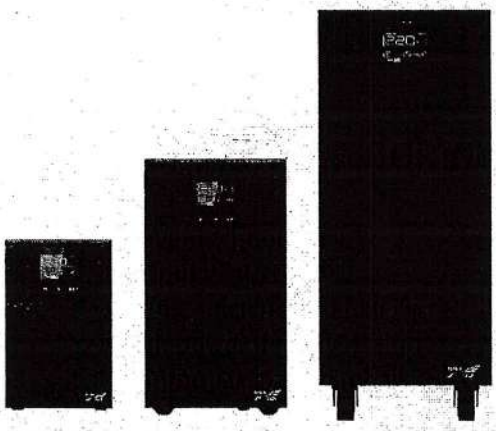
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KEHUA TECH



KR11 Plus Series

Online UPS 1~10kVA

» 3 level Technology
» Output PF up to 1.0
» AC/AC efficiency up to 95%
» High power density design
» Comformal coating for all PCB

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High Reliable

Wide input voltage range for higher grid adaptability
- Full DSP control for top performance
- Anti-corrosion resistant coating for all PCB boards

Generator compatible ensure the clean power for extend power outage
- EPO function as standard for immediataly remove power from connected load for emergency

Separate bypass, input and battery breaker for 6-10KVA g cabinet model

Green Power:

3 level technology for input power factor up to 0.996, Low THDi (< 4%), decrease pollution to city power

AC/AC efficiency up to 95% and ECO mode up to 98%, less TCO and more energy saving
- Output power factor up to 1.0, more powerful to connect more critical loads

lexible Design:

- Multiple socket for 1-3KVA for global application
- Output voltage and ECO mode are selectable via LCD

Input frequency range and Bypass enable by software
- 1~8A charging current settable via software (6-10KVA)
- Batteries number settable via software (16/17/18/19/20 for 6-10kVA)

Wheel for 6-10KVA which is easy for moving

Optional:

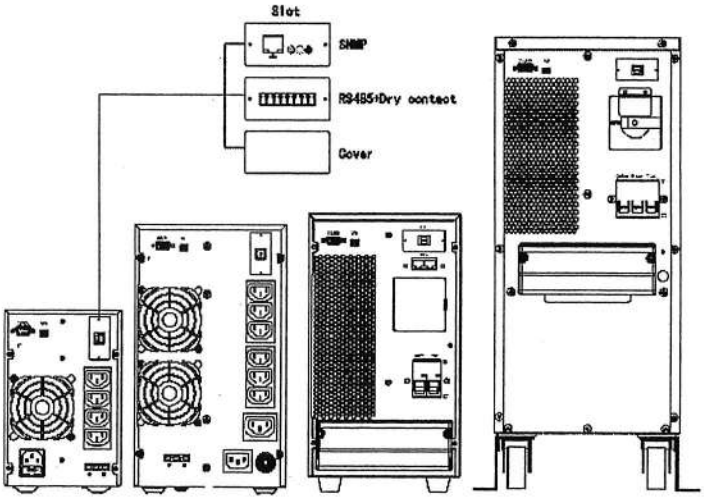
SNMP/USB/dry contact slot card

Addtional 4A charger for 1-3KVA long back up
- Battery disconnection alarm

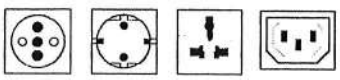
Charging voltage temperature compensation

Typical Applications:





Available Socket:



Ecological Power Network

KR11 Plus Series Online UPS

1~10kVA

Technical Specification:

MODEL	KR1000(L)+	KR2000(L)+	KR3000(L)+	KR6000(L)+	KR1110(S)+
Input					
Voltage (Vac)	120~295			80~275	
Frequency (Hz)	50/60± 10% (50/60Hz auto-sensing)				
Power Factor	≥0.99				
THDi at full linear load	<4%				
Output					
Capacity (VA)	1000	2000	3000	6000	10000
AC/AC Efficiency (Max.)	92%	93%	94%	95%	95%
Power Factor	0.9 (1.0 optional)				
Voltage (Vac)	208/220/230/240±1% (selectable on display panel)				
Frequency (Hz)	50/60±0.2% (battery mode)				
THDv	THD<2% (linear load);THD<5% (nonlinear load)			THD<1% (linear load);THD<4% (nonlinear load)	
Overload*	101%~130% load for 1 min, 131%~150% load for 1s, above 150% load for 200ms			101~105% Long run, 106~130% load for 10mins, 131~150% 30s, over 150% 500ms.	
Transfer Time	0				
Current Crest Ratio	3:1				
Battery					
Voltage (Standard)(Vdc)	24	48	72	192~240	
BATT Type (Standard)	2x9Ah	4x9Ah	6x9Ah	16x7Ah	16x9Ah
Voltage (Long Backup)(Vdc)	36	72	96	192~240	
BATT Type (Long Backup)	External			External 16~20 units settable	
Charger Current (A) Max.	1(Standard), 4(Long back up)			1~8 (adjustable)	
Other					
Communication Interface	RS232+EPO (USB,SNMP, RS485+dry contact are optional in slot)				
LCD Display	AC input & output voltage, frequency, Load level, Battery level, Temperature; AC mode, Battery mode, Bypass mode, and Fault				
Alarm	Low battery, abnormal AC input, UPS failure, etc.				
Protection	Low battery, overload, short-circuit and over temperature, etc.				
Noise (dB)	<50	<55			
Working Temperature (°C)	-5 ~ 40				
Relative Humidity	0 ~ 95%, No condensation				
Regulatory Approvals	CE, IEC62040-1,IEC62040-2				
Dimension (WxDxH)(mm)	145x360x225	190x400x330		230x502x553(Standard) 190x422x337 (Long Backup)	
Weight(Standard) (kg)	9.2	17.7	22.9	54.5	56.2

- Specification is subject to change without prior notice.
- * Condition Comply.

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Version No.: 20211101

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2.0 Information Table of Material List
(Refer Annexure E)

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3 Delivered Equipment List

No	Item Description	Brand	Model	Unit	QTY	Serial number
1	55" 3.5mm Bezel 500NIT /1920 x1080 / LED Backlight (IPS Panel Type) Video Wall Display	Triolion	TRD1055L7	Nos	16	T23L18001L
						T23L18002L
						T23L18003L
						T23L18004L
						T23L18005L
						T23L18006L
						T23L18007L
						T23L18008L
						T23L18009L
						T23L18010L
						T23L18011L
						T23L18012L
						T23L18013L
						T23L18014L
						T23L18015L
						T23L18016L
2	Support Structure for the Video wall	Triolion		Nos	16	
3	2K HDMI Node (2HDMI IN + 1 HDMI Loop OUT) IP Encoders for PC Inputs	AVCIT	DSII-2K-HDMI-RIN	Nos	8	F23LAB06100338
						F23LAB06100339
						F23LAB06100340
						F23LAB06100341
						F23LAB06100342
						F23LAB06100343
						F23LAB06100344
						F23LAB06100345
4	2K HDMI Node (1 HDMI OUT + 1 DVI OUT) IP Decoders for Video Wall Displays	AVCIT	DSII-2K-ROUT-VW	Nos	16	F23LAB06100346
						F23LAB06100347
						F23LAB06100348
						F23LAB06100349
						F23LAB06100350
						F23LAB06100351
						F23LAB06100352
						F23LAB06100353
						F23LAB06100354
						F23LAB06100355
						F23LAB06100356
						F23LAB06100357
						F23LAB06100358
						F23LAB06100359
						F23LAB06100360

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						F23LAB06100361
5	Video Wall Control Software (CMS)	AVCIT	DTB-EL	Nos	1	
~~6~~	~~RS-232 Control Key Pad~~	~~BeingHD~~	~~BYOD-1000~~	~~Nos~~	~~1~~	
7	DTB Gigabit Ethernet Switch	AVCIT	DTB-24C-PWR-HI	Nos	2	F23LAB06100397 F23LAB06100398
8	22U Free Standing Rack (Depth - 800mm)	Cubicoan	22U	Nos	1	
9	6Way PDU	Cubicoan		Nos	1	
10	Cable Management (IU)	Cubicoan		Nos	1	
11	10KVA (Tower type) UPS	Kehua	KR1110S+	Nos	1	551111024130P9100001
12	HP Pro 280 I5 PC with, keyboard, and mouse	HP	HP PRO 280 G9	Nos	1	4CE335BR1S
	HP P22h G4 FHD 21.5" monitor	HP	HP P22h G4 FHD	Nos	1	3CM2020V4Z

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3.0 Layouts
(Refer Annexure F)

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Actual View of Display System





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4.0 Supplier's Project Service Maintenance Manual
(Refer Annexure G)

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1.Introduction

Welcome to the Operation and Maintenance manual for the Video Wall System. This manual provides comprehensive guidance for the maintenance of the video wall system comprising multiple displays, encoders, decoders and network switches.

2.System Overview

IP based 4*4 video wall system consists of standalone encoders and decoders for each display panel module. System is fully controlled by state-of-the-art software application.

3.Equipment List

Item name	Model	Unit	QTY
55" 3.5mm Bezel 500NIT /1920 x1080 / LED Backlight (IPS Panel Type) Video Wall Display	TRD1055L7	Nos	16
Support Structure for the Video wall		Nos	16
2K HDMI Node (2HDMI IN + 1 HDMI Loop OUT) IP Encoders for PC Inputs	DSII-2K-HDMI-RIN	Nos	8
2K HDMI Node (1 HDMI OUT + 1 DVI OUT) IP Decoders for Video Wall Displays	DSII-2K-ROUT-VW	Nos	16
Video Wall Control Software (CMS)	DTB-EL	Nos	1
RS-232 Control Key Pad	BYOD-1000	Nos	1
DTB Gigabit Ethernet Switch	DTB-24C-PWR-HI	Nos	2
22U Free Standing Rack (Depth- 800mm	Cubicoan	Nos	1
6Way PDU		Nos	1
Cable Management (IU)		Nos	1
10KVA (Tower type) UPS	KR1110S+	Nos	1
HP Pro 280 I5 PC with, keyboard, and mouse	HP PRO 280 G9	Nos	1
HP P22h G4 FHD 21.5" monitor	HP P22h G4 FHD	Nos	1
Cable and connectors		Lot	1

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4. Maintenance Procedures

Field maintenance will be conducted by VS Information Systems in once every six months up to two years effective from 02nd of February 2024 to 01st of February 2026.

Visual Inspection

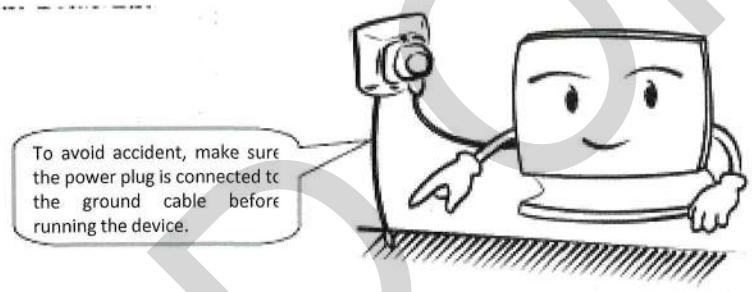
Inspect Displays, Encoders, Decoders and switches for any physical damage or abnormalities.
Check for loose cables or connections.
Ensure proper ventilation around equipment.

Cleaning

Use a soft dry cloth to remove dust and fingerprints from displays and equipment surfaces.
Avoid using abrasive cleaners or solvents.

- ✧ Do not frequently start up or shut down the device during running.
- ✧ Place the device with caution and do not knock it.
- ✧ The screen must be protected with a membrane.

  The protective screen is used to protect the display screen and avoid scraping during transmission. Before installing the LCD display screen, remove the protective membrane.
- ✧ Connection of the device to a ground cable



- ✧ Condensed vapor

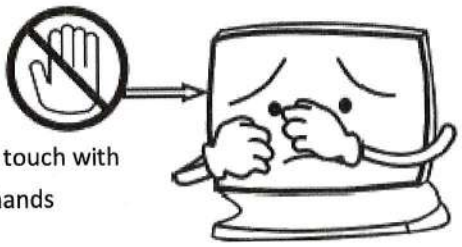
  If the device is moved from a low temperature environment to a high temperature environment, there is vapor condensing on the LCD display panel which will affect screen quality. In case of this problem, keep the device in startup status till the vapor disappears.
- ✧ Fan for heat dissipation.

  The heat dissipation fan for the device must be replaced after it is used for three years. This is covered by VS Information systems PVT Ltd under the warranty period.

Cleaning Body and Display

Each time the system is shut down and the power supply is disconnected, use a piece of special dustless cloth to scrub the display screen and body. Do not touch the display screen with hands. Do not scrub the device with hard and poor object or chemical cleanser,this is because the display is likely to be scrapped.

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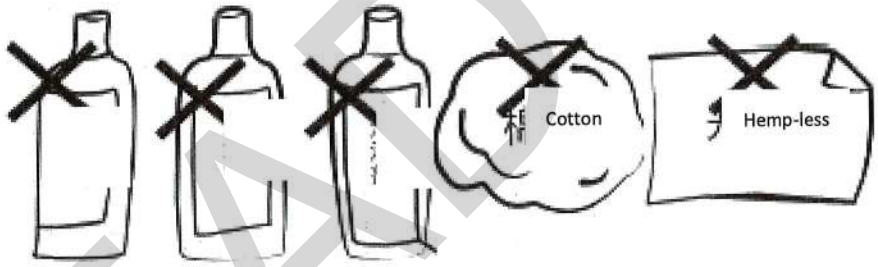


It is required to use the special dustless cloth to scrub the display screen and body. Ifnecessary, use a little water or pure ethanol (99.99% purified ethanol) to scrub the device or blow the dust off the device surface using dry compressed air (compressed air without oil).

Warning: It is forbidden to use the following organic or volatile solvents to clean the device.

Do not use the following solvents <except for pure alcohol (99.99% purified ethanol)>: gasoline,bananas oil, windshield washing fluid, detergent, cotton, or hemp-less paper to clean the body anddisplay. Otherwise, the protective layer of the device will peel off or age. Other materials such asrubber or plastics will leave stain on the display screen if it sticks to the screen surface for a periodof time, thus affecting screen color.

DO NOT



Software Updates

Check for and install firmware updates for install for encoders, decoders and network switches as recommended by the manufacturers.
Ensure compatibility and stability of the system.

Cable Inspection:

Inspect all cables for signs of wear, bending or fraying.
Replace damaged cables promptly to prevent signal degradation or loss.

Power Cycling

Power cycle the entire system to refresh connections and clear any temporary issues.

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Performance Testing

Conduct performance test to ensure proper functionality of displays, encoders, decoders and switches.
Verify signal integrity and Network bandwidth.

Deep Cleaning

Perform a thorough cleaning of all components and equipment including internal components if accessible.
Use appropriate cleaning solutions and techniques recommended by manufacturers.

Recommendation of Dongle

if it under the warranty period, VS Information Systems can replace the dongle, subject to condition of the dongle (to ensure it is not malfunction due to physical damage) physical damages doesn't cover under the warranty period, if the dongle is missed placed, client needs to buy a new one from supplier.

5. Troubleshooting Guide

Image problem

To resolve the following problems, open the rear cover of an LCD display unit: Black screen:

1. Check indicators. A green indicator indicates the device is running; a red indicator indicates the device is in standby mode; and if the indicator is not on, the power supply is not connected.
2. Check the section between the device inverter cable and screen for loose or poor connection.
3. Check the section between the device screen cable and screen for loose or poor connection.

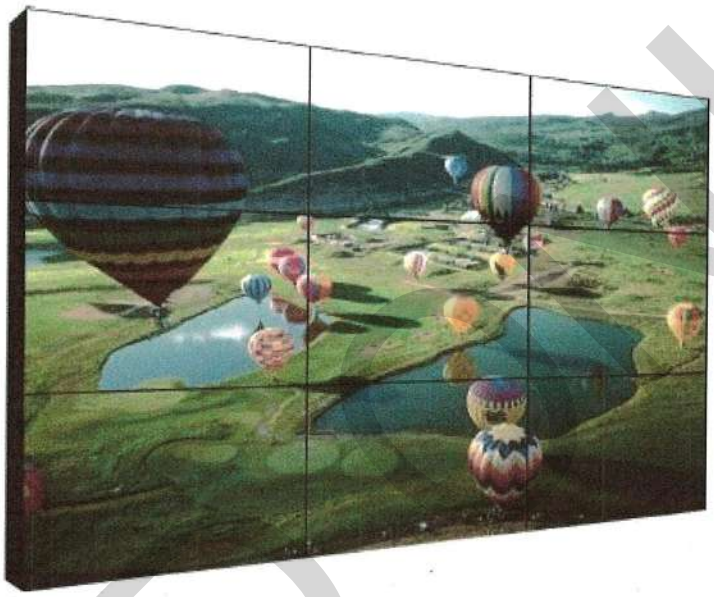
White screen: Check the section between the device inverter cable and screen for loose or poor connection.
Screen artifacts: Check the section between the device screen cable and screen for loose or poor connection.
Note: for any other fault that is found, please contact our engineer.

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5.0 Display Unit User Manual
(Refer Annexure H)

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LCD Display Unit User Manual

V1.4

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Contents

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Chapter 2 Product Introduction 5
2.1 Product Features 5
2.2 Introduction to Main Parts 6
2.3 LCD Display Unit and Packaging Diagram 10
2.4 Support Input Mode 11
Chapter 3 System Adjustment 12
3.1 Control Unit and ID Setting 12
3.2 Control Software Operation Description 13

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Chapter 1 Precautions

- In case of smog or special gas coming out of the device, turn off the power switch immediately and remove the power plug. After confirming that the smog or gas stops smoking, contact the supplier to repair the device; otherwise, the device may cause fire or electric shock.
- If the screen does not have image display, turn off the power switch immediately and remove the power plug. Contact the supplier to repair the device; otherwise, the device may cause fire or electric shock.
- If there is water or other foreign object entering the device, turn off the power switch immediately and remove the power plug. Contact the supplier to repair the device; otherwise, the device may cause fire or electric shock.
- If the device or case falls and breaks, turn off the power switch immediately and remove the power plug. Contact the supplier to repair the device; otherwise, the device may cause fire or electric shock.
- Do not block the vent of the device or hinder ventilation around the device; otherwise, the device temperature will increase which is likely to cause fire.
- Do not install this device in oily, vapor, or dusty environment, for example, in kitchen.
- Do not expose this device to windy or rainy environment; otherwise, the screen may be blown down by wind which is likely to cause an accident and rainwater may enter the device to cause fire or electric shock.
- Do not dismantle the back cover. There is high voltage inside the case and it is likely to cause electric shock.
- Users are not allowed to dismantle the device by their own; otherwise, fire or electric shock may occur. If the device needs repair, contact the supplier.
- Do not arbitrarily change position of the power cable and do not forcibly bend the cable. Keep the device away from hot source to avoid fire and electric shock.
- Do not expose the device to humid environment or place a humidifier around the device. Humid environment will cause fire or electric shock and cause the screen to fade or break thus result in personal injury.
- To disconnect the power supply, hold and remove the power plug. Avoid removing/inserting the power plug with wet hand.
- Do not place the device on stairs or set heavy objects onto the device; otherwise, the device will lose balance and cause damage or injury.
- If the device will be set aside for a long period of time, disconnect the power supply and remove the power plug to ensure safety.
- Check whether a grounding cable is provided to connect to the power terminal of the device. This cable helps avoid electric shock.
- If a power cable other than the specified one will be used, check whether the specification and protection grade of the power cable meet requirements. Sub-grade power cable may cause fire or electric shock if it is used,
- Avoid connecting multiple loads to the same terminal; otherwise, fire or electric shock may occur due to the overload.
- All mechanic and electronic components in this system have special safety protection

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functions. These protection functions are likely to be ignored during inspection, but they are indispensible to protect high voltage and high power and cannot be substituted by any other part. Any other part that does not have the same protection function may cause fire, electric shock, or other danger.

- The TRD10 series LCD display module is specially designed for the combination system. A combination system that displays an image for a long period of time may cause display imbalance, inclusive of image reservation. To prolong service life of the module and optimize its function, pay attention to the following before use:

1. Normal working status
   Temperature: 0°C~50°C
   Relative humidity: 20%~90% (no condensing)
   Display mode: dynamic picture or periodic switchover

   Note: Longtime static image may cause display imbalance.

2. Operation that needs attention in abnormal working status. Note (1)
   a. Shutdown and screen protection application
      –Periodic system shutdown or screen protection is necessary after a long period of static display. Note (2)

Notes:

(1): Abnormal working status indicates various kinds of operation conditions except for the normal operation conditions.

(2): For the screen protection application, it is strongly recommended to use dynamic picture or back pattern.

3. To ensure that display imbalance is not caused by longtime static information display, pay attention to the following:
   a. Proper operation time: less than 20 hours per day
   b. Dynamic picture is recommended in case of static information display
      –Dynamic pictures last for 10 seconds after 5-minute static information display.
   c. Background and character (picture) colors change.
      –Use different colors for background and character.
      –Periodically replace color.
   d. Use different brightness to avoid integration of background and character.
4. The service life of the LCD display unit can be ensured so long as it is operated in accordance with the preceding operation method.

Statement

This is a level A product and it may cause radio interference in living environment. Users may be required to take feasible measures to cope with the interference.

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Chapter 2 Product Introduction

2.1 Product Features

The product adopts Samsung original ultra-narrow digital panel.

The TRD10 series industry level LCD display unit adopts digital panel of Samsung original ultra-narrow encapsulation technology which is a brand new LCD product of Samsung. The digital panel responds at high speed (≤ 8ms). With ultrathin and ultra-narrow design, the LCD display product boasts super large screen as well as ultrathin and lightweight features, facilitating combination and installation.

- **Unique Samsung SPVA technology**

  The 46"/55" TRD10 series industry level LCD display units can be combined at random to extend screen size and meet requirements of different scenes. The unique Samsung technology Super Patterned Vertical Align (SPVA) allows wider view. With Patterned Vertical Align (PVA), view can reach 178° in both directions (both horizontally and vertically).

- **Access multiple channels of signal at ease**

  Be able to output HDMI signal, DVI signal, VGA signal, CVBS video, and CVBS signal (simple version supports this function).

- **Embedded image combination controller**

  The external image combination controller of this product can combine input image based on the set ID to implement image combination function.

- **High quality screen and view**

  Compared with traditional PC or TV LCD, this display unit provides one time higher contrast and brightness, which is three times of rear projection display system.

- **Convenient and easy installation and durability**

  The display unit can be combined and extended with ease and supports horizontal and vertical compatibility. With LCD light source, the display unit enables up to 50,000 hours service life which ensures that each LCD provides consistent brightness, contrast, and hue after a longtime use and consumes less than 0.5W power in standby mode. With ultralow power consumption and leadless material, the device is friendly to the environment.

- **Reliable control system**

  This LCD display unit can be controlled by connecting with a PC over the RS-232 interface and it boasts stable DE mode (data startup) and Low Voltage Differential Signaling (LVDS) interface (1 pixel/clock).

Notes:

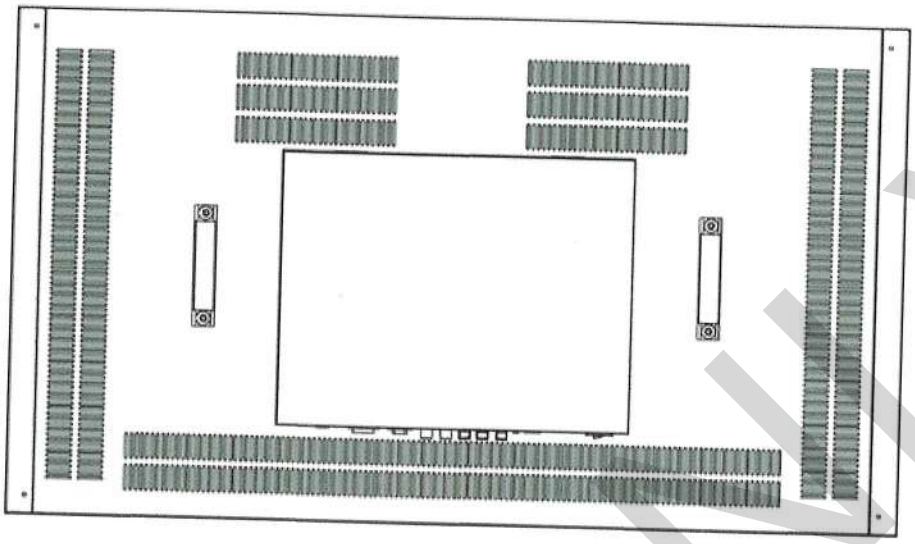
(1) For details about the preceding parameters, refer to chapter 3 Technical Specifications.

(2) The aforesaid more than 50,000-hour service life indicates predicted average life of light source. Actual service life is subject to the actual use conditions.

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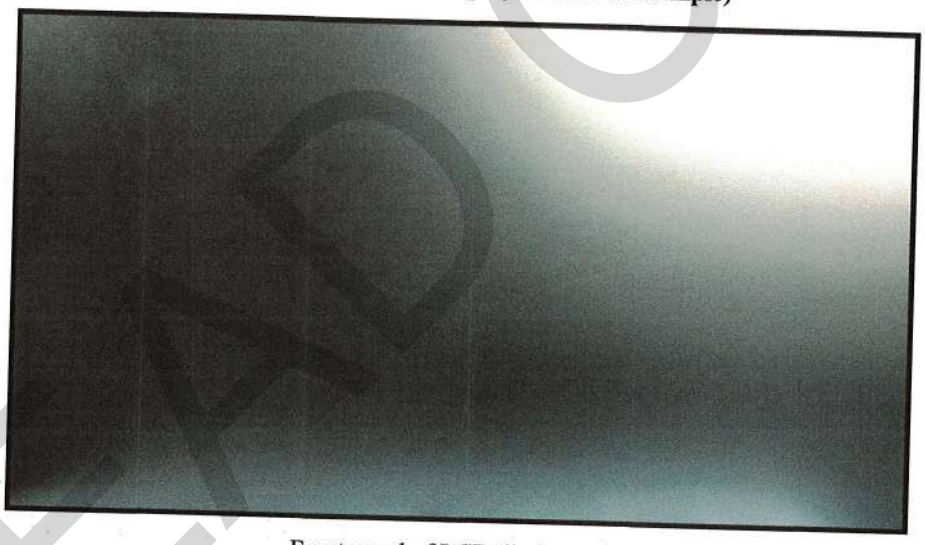
2.2 Introduction to Main Parts

2.2.1 Rear Panel and Parts (take 46" LCD display unit as an example)



Rear panel of LCD display unit

2.2.2 Front Panel and Parts (take 46" LCD display unit as an example)



Front panel of LCD display unit

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2.2.3 I/O Panel

1 Standard Version

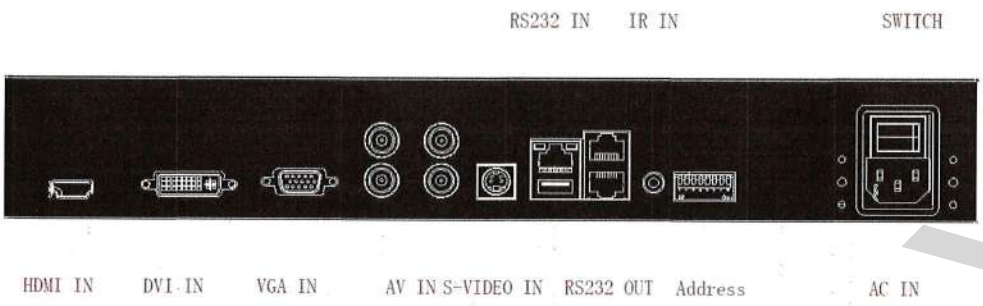


Panel diagram

Name	Function	Remark
Address	Indicate address of a single LCD display in a large multi-screen display	8bit DIP switch
HDMI IN terminal	Indicate HD digital signal input	HDMI-A
DVI IN terminal	Indicate digital signal input	24+1 pin HD
VGA IN terminal	Indicate RGBHV digital signal input	15-pin HD D-sub (female)
RS-232 IN/OUT communication port	Indicate I/O bay used in RS-232 data transmission	RJ-45
AC IN	Indicate AC input	3-pin socket
LCD indicator	Indicate power indicator	Green/Red LCD
Switch	Indicate power switch	Single pole, double throw switch
AV IN terminal	Indicate input terminal of composite video signal	BNC terminal
AV OUT terminal	Indicate output terminal of composite video signal	BNC terminal

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2 Enhanced Version

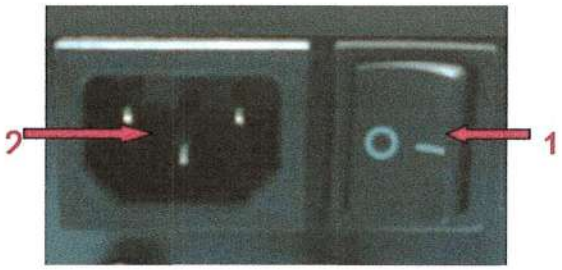


Panel diagram

Name	Function	Remark
Address	Indicate address of a single LCD display in a large multi-screen display	8bit DIP switch
HDMI IN terminal	Indicate HD digital signal input	HDMI-A
DVI IN terminal	Indicate digital signal input	24+1 pin HD
VGA IN terminal	Indicate RGBHV digital signal input	15-pin HD D-sub (female)
RS-232 IN/OUT communication port	Indicate I/O bay used in RS-232 data transmission	RJ-45
AC IN	Indicate AC input	3-pin socket
LCD indicator	Indicate power indicator	Green/Red LCD
Switch	Indicate power switch	Single pole, double throw switch
AV IN terminal	Indicate input terminal of composite video signal	BNC terminal
IR IN	Indicate infra-red interface	Infra-red data communication
S-VIDEO IN	Indicate input of S-format video	Mini-DIN interface

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2.2.4 Power Switch Panel



Power switch panel (subject to actual product)

SN	Name	Function	Remark
1	Power switch	For turning on/off the power supply of the LCD display unit (located in the rear part of the case)	On, off
2	AC input interface	AC 220V, 50/60Hz input plughole (max.: 8A)	3-pin socket

Note: About power cable

- The power cable meet the requirements specified in China Compulsory Certification.

2.2.4.1 Power Switch and Power Indicator

The AC power supply is turned on/off using the power switch. If the power switch is ON, corresponding power indicator will be on and the LCD display unit will enter the running status. After the power switch is turned on, the system will show image on the display several seconds later.

Note: System startup/shutdown must be performed in accordance with the following description:

(1) Startup procedure: Turn on the power switch, and then use the control software to enable and light up the LCD display unit.

(2) Shutdown procedure: Confirm that the system is in non-adjustment status, use the control software to disable the LCD display unit, and then turn off the power switch to disconnect from the power supply.

2.2.4.2 LCD Status Indicator

System status indicator (System)

- Red light: the system is in standby mode.
- Green light: the system works normally.

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2.3 LCD Display Unit and Packaging Diagram

2.3.1 LCD Display Unit



LCD display unit

2.3.2 Outer Package



LCD display unit packaging diagram (subject to actual product)

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2.4 Support Input Mode

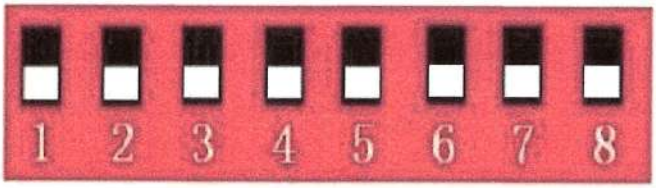
The following table shows different types of input signals acceptable to the display unit. This LCD display unit can automatically distinguish mode of input signals based on the frequency of the input signals. When signals of the NTSC/PAL/SECAM system are provided and transmitted to the default input terminal of videos, the frequency in the horizontal direction is scanned internally for doubling. This kind of digital signal conversion function does not support transmission of RGB and DVI signals of the NTSC/PAL/SECAM system into the device. Besides, this kind of digital signal conversion function does not support unstable signals as well.

Mode	Resolution	H.Freq (KHz))	V.Freq (Hz)	Pixel Frequency (MHz)	Hor SyncPolarity	Ver SyncPolarity	Standard Type
NTSC	--	15.734	59.940	16.521	NEGATIVE	NEGATIVE	--
PAL	--	15.625	50.000	16.406	NEGATIVE	NEGATIVE	--
TEXT-60	640*350	21.339	59.713	16.620	POSITIVE	NEGATIVE	Industry
TEXT-85	640*350	37.861	85.080	31.500	POSITIVE	NEGATIVE	VESA
TEXT-85	640*400	37.861	85.080	31.500	NEGATIVE	POSITIVE	VESA
VGA-60	640* 480	31.469	59.940	25.175	NEGATIVE	NEGATIVE	Industry
VGA-72	640*480	37.861	72.809	31.500	NEGATIVE	NEGATIVE	VESA
VGA-75	640*480	37.500	75.000	31.500	NEGATIVE	NEGATIVE	VESA
TEXT-85	720*400	37.927	85.039	35.500	NEGATIVE	POSITIVE	VESA
SVGA-56	800* 600	35.156	56.250	36.000	POSITIVE	POSITIVE	VESA
SVGA-60	800* 600	37.879	60.317	40.000	POSITIVE	POSITIVE	VESA
SVGA-72	800* 600	48.077	72.188	50.000	POSITIVE	POSITIVE	VESA
SVGA-75	800* 600	46.875	75.000	49.500	POSITIVE	POSITIVE	VESA
XGA-60	1024*768	48.363	60.004	65.000	NEGATIVE	NEGATIVE	VESA
XGA-70	1024*768	56.476	70.069	75.000	NEGATIVE	NEGATIVE	VESA
XGA-75	1024 *768	60.023	75.029	78.750	POSITIVE	POSITIVE	VESA
SXGA-60	1280*1024	63.981	60.020	108.00	POSITIVE	POSITIVE	VESA
SXGA-70	1280*1024	79.976	75.025	135.000	POSITIVE	POSITIVE	VESA
TEXT-60	1360*768	47.712	60.015	85.500	POSITIVE	POSITIVE	VESA
UXGA	1600*1200	75.000	60.000	162.00	POSITIVE	POSITIVE	VESA
TEXT-60	1920*1080	67.500	60.000	148.500	POSITIVE	POSITIVE	--

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Chapter 3 System Adjustment

3.1 Control Unit and ID Setting



Note: Lateral DIP switch (up switch is valid and down switch is invalid)

Detailed description is as follows:

1, 2, 3, and 4 indicate addresses of lines: position 1 indicates number 1; position 2 number 2, position 3 number 4, and position 4 number 8. (If all numbers are added up, up to 15 lines can be got.)

5, 6, 7, and 8 indicate addresses of columns: position 5 indicates number 1; position 6 number 2, position 7 number 4, and position 8 number 8. (If all numbers are added up, up to 15 columns can be got.)

For example, for a 3 × 3 combined display (with three lines and three columns):

The first screen along the first line should be switched to 1 (line: position 1 indicates number 1) and 5 (column: position 5 indicates number 1).

The second screen along the first line should be switched to 1 (line: position 1 indicates number 1) and 6 column: (column: position 5 indicates number 2).

The third screen along the first line should be switched to 1 (line: position 1 indicates number 1) and 5&6 (column: position 5 indicates number 1; position 6 indicates number 2; the two numbers are added up together to get 3, so it is switched two positions).

The first screen along the second line should be switched to 2 (line: position 2 indicates number 2) and 5 (column: position 5 indicates number 1).

The second screen along the second line should be switched to 2 (line: position 2 indicates number 2) and 6 (column: position 6 indicates number 2).

The third screen along the second line should be switched to 2 (line: position 2 indicates number 2) and 5&6 (column: position 5 indicates number 1; position 6 indicates number 2; the two numbers are added up together to get 3, so it is switched two positions).

The first screen along the third line should be switched to 1&2 (line: position 1 indicates number 1; position 2 indicates number 2) and 5 (column: position 5 indicates number 1).

The second screen along the third line should be switched to 1&2 (line: position 1 indicates number 1; position 2 indicates number 2) and 6 (column: position 6 indicates number 2).

The third screen along the third line should be switched to 1&2 (line: position 1 indicates number 1; position 2 indicates number 2) and 5&6 (column: position 5 indicates number 1; position 6 indicates number 2; the two numbers are added up together to get 3, so it is switched two positions).

1~5 Screen 1	1~6 Screen 2	1~5,6 Screen 3
2~5 Screen 4	2~6 Screen 5	2~5,6 Screen 6
1~2, 5 Screen 7	1,2~6 Screen 8	1,2~5,6 Screen 9

READ ONLY

3.1Control Software Operation Description

3.1.1 Operation Description for Standard Version Control Software

Start up the system

Before system running, check the following wiring:

1. The LCD display unit has been connected to the PC that runs this software over an RS-232 cable.
2. Signal cable and power cable have been correctly connected.

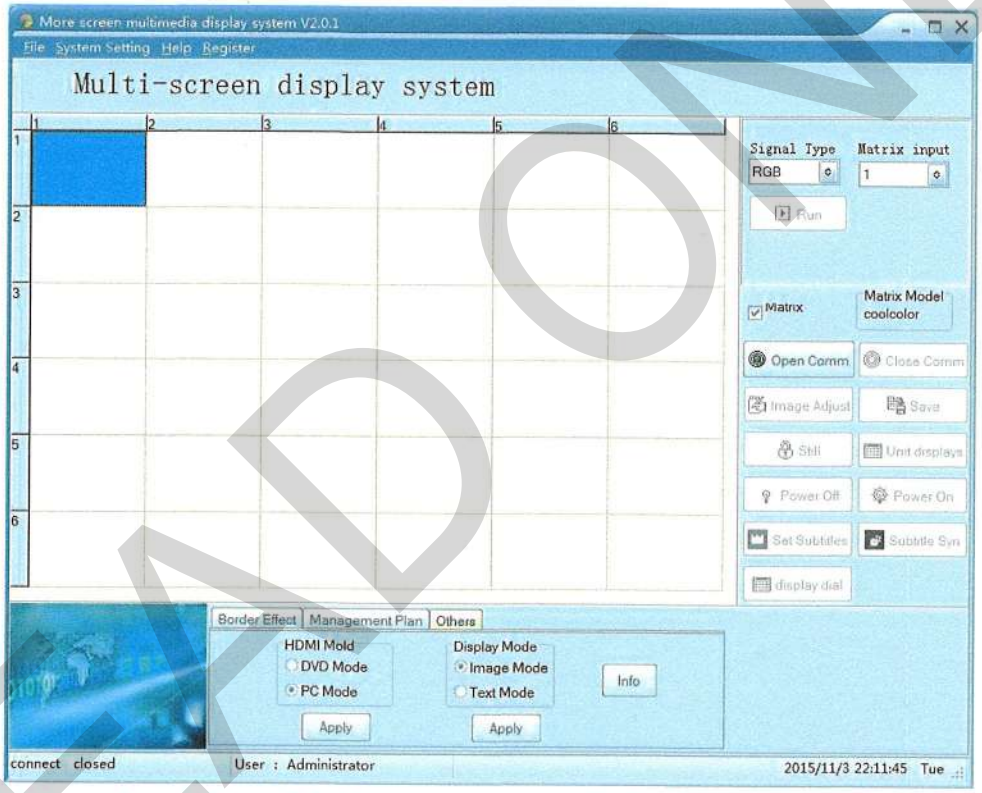
System running procedure:

1. Turn on the power supply and the power indicator is lit up.

Green indicates the system is running; orange indicates the system in standby mode.

2. Run this software.

Find the folder where the software is located and click the file **FWM.exe**. The following operation interface appears.



Actual operation interface and display content may vary with the software version to be instalLCD. Contact the after-sale service persons.

Descriptions of function areas marked by blue words in the preceding figure:

1. Menu area: an area for select relevant menu functions.
2. Operation area: each cell indicates corresponding screen. Click a cell, drag a cell, or press a key on the keyboard to select a cell.
3. Function area: include general function buttons.
4. User title area: users may modify title display on the interface based on actual requirement.

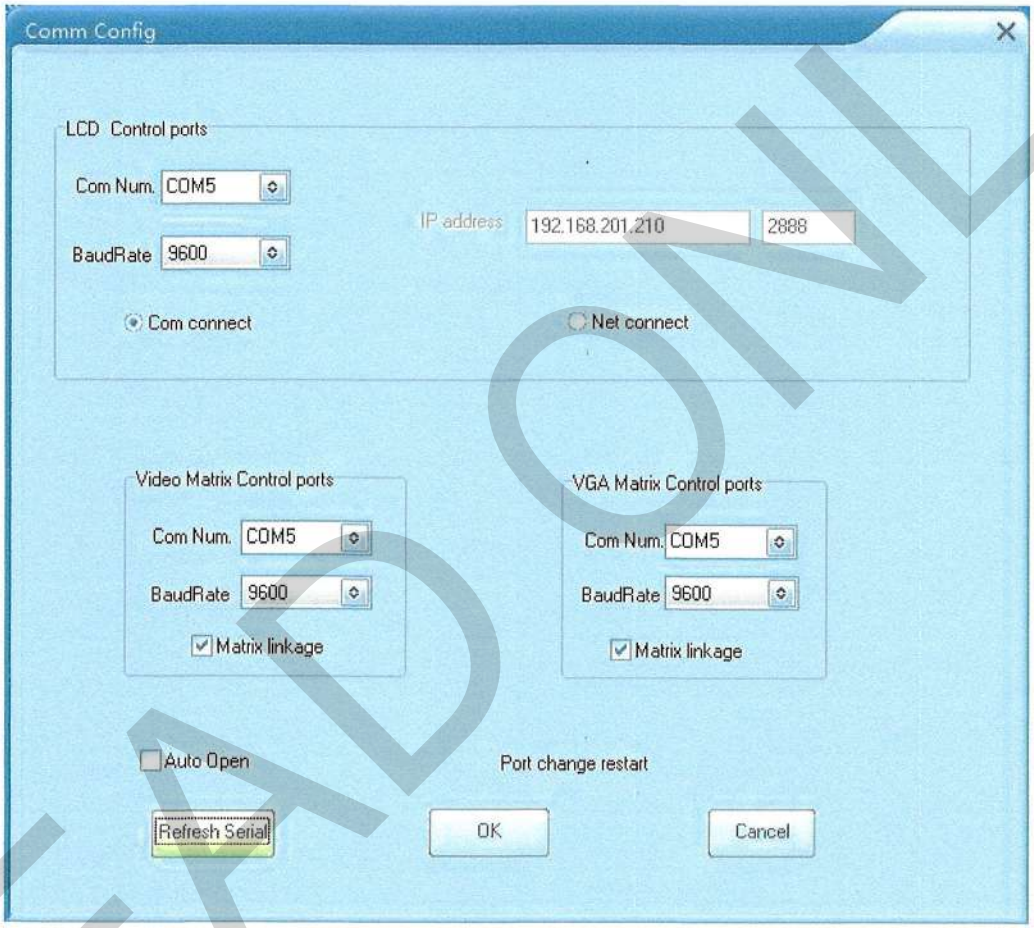
READ ONLY

5. User picture area: users may modify picture display on the interface based on actual requirement, for example, a company logo or project logo.
6. Additional function area: different additional items are provided based on actual software version.
7. Status area: show COM port status, operation permission status, and local time and date.

How to prepare the software

1. Communication setting

   Choose **System Configuration-> Communication Configuration.**



Select a COM port number to allow the system to normally run.

Set the COM port to be automatically opened when the software is enabled.

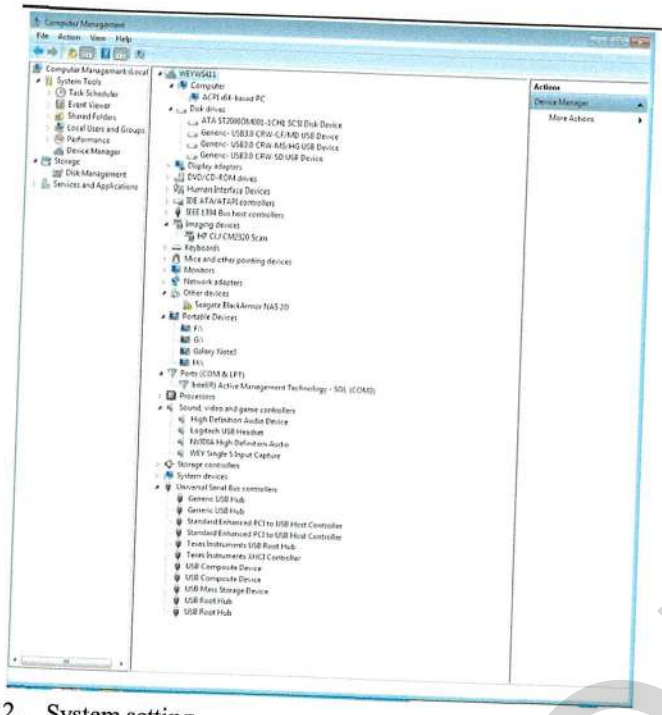
Note: it is advised to use two COM ports at least, for example, one for the LCD display unit and the other for the matrix to share.

How to select a COM port

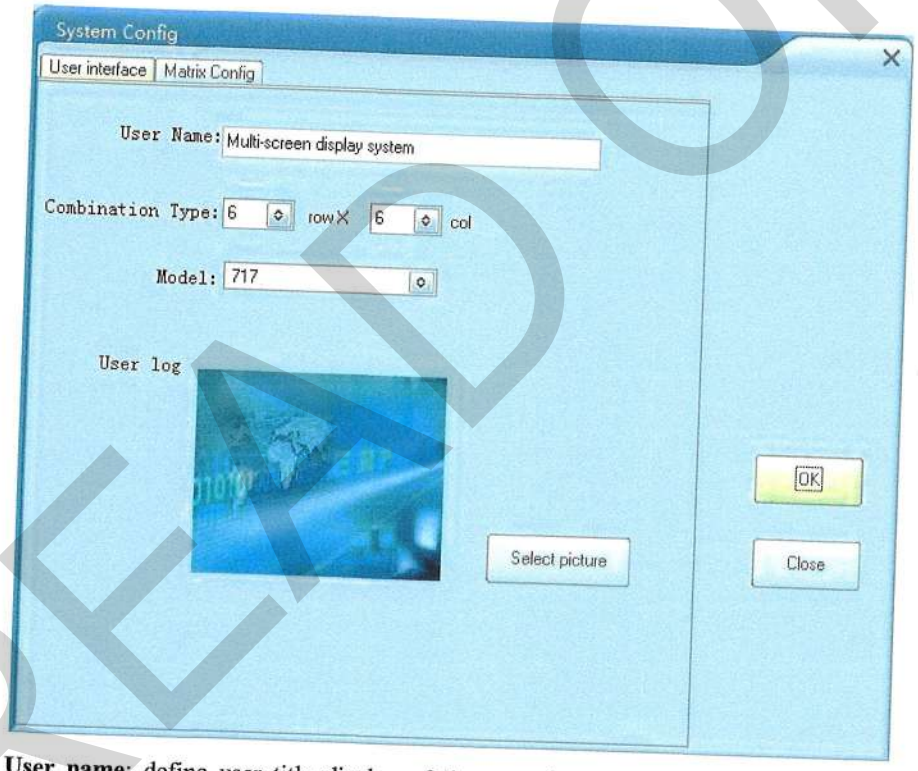
To set and view a COM port, right-click **My Computer** and choose **Management -> Device Manager -> Port (COM and LPT)**.

View related COM port of the PC.

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2. System setting



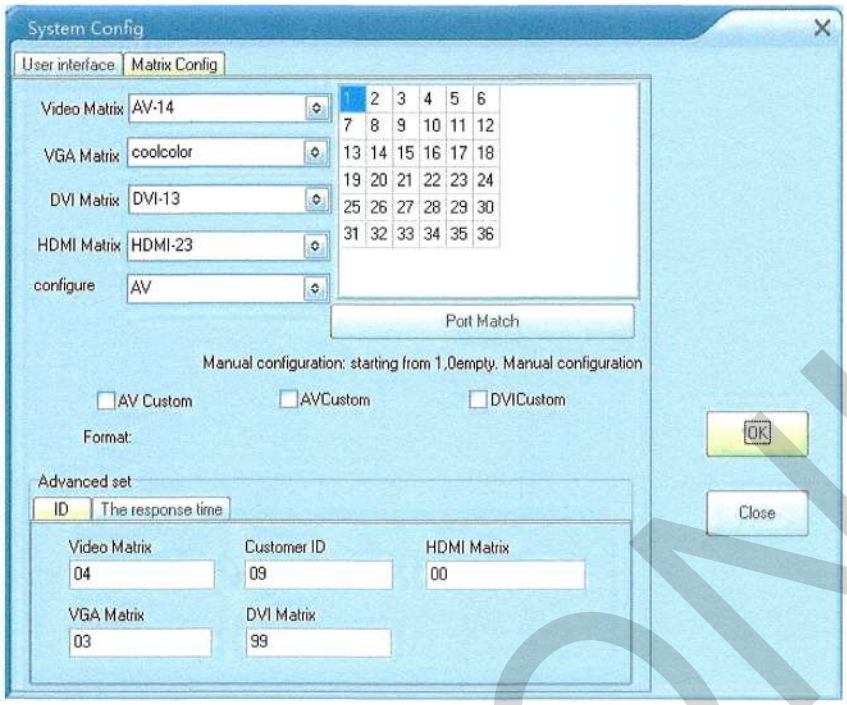
User name: define user title display of the operation interface. You can modify it based on requirements.

Combination type: select a combination mode that is consistent with the screen, for example, 3X3 or 4X6.

User logo: define user picture display of the operation interface, You can modify it based on

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requirements and click **OK** to save the modification.



Matrix configuration: select model of a matrix and set address.

Port match: indicate the matrix output channel corresponding to the large screen position.

For example, the first display of the large screen corresponds to the first channel output of the matrix.

Matrix start address: part of matrix does not need this function. It is

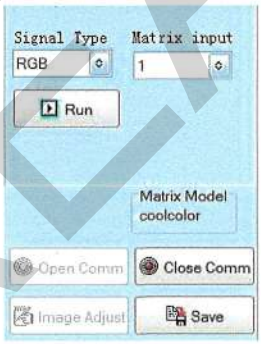
Matrix address: it is used to set a matrix address. If you do not know this address, contact the matrix manufacturer.

Response address: indicate the time between the matrix and combiner command.

Interval time: indicate the time between matrix commands.

Combination operation

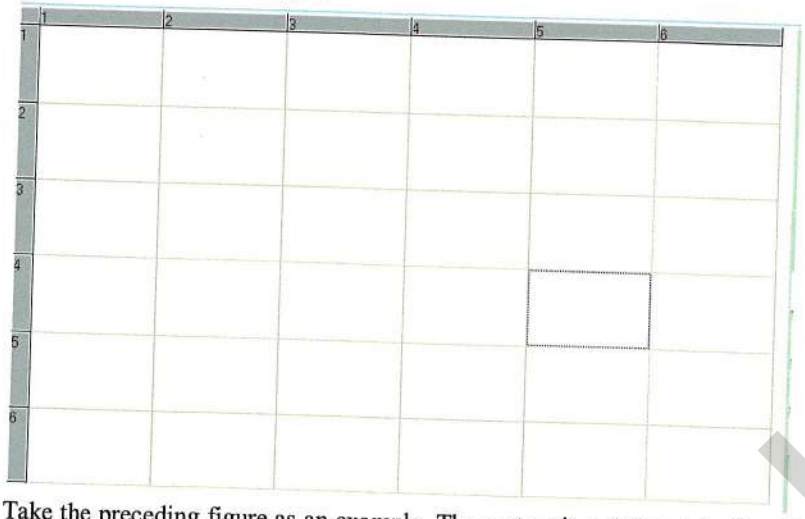
1. Click **Open Comm** in the function area to perform combination operation.



2. Set **Signal Type** to **Video** or **RGB** based on your system.
3. If a matrix has been configured, tick **Matrix Linkage** and select a channel for matrix output. For details, refer to the matrix description.

READ ONLY

4. Select a combination area.

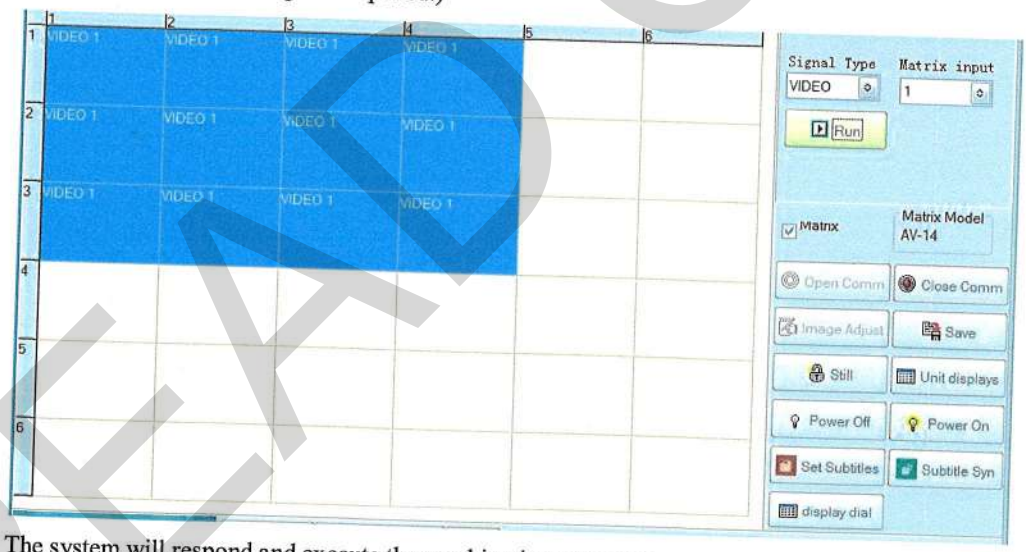


Take the preceding figure as an example. The system is a 6x6 matrix. Combine the area coordinates (1,1)~(3,3) into a 3x3 large screen.

Set **Signal Type** to **Video** and **Matrix Input** to **1**.

Operate according to the following example:

1. Move the cursor to the cell indicated by the coordinate (1,1). Press and hold the left key and then drag the cursor to the coordinates (3,3). Release the left key. The blue area is the selected combination area.
2. Check whether **Signal Type** is set to **Video** and **Matrix Input** to **1**. Click **Run**. (This button is valid when the COM port is opened.)



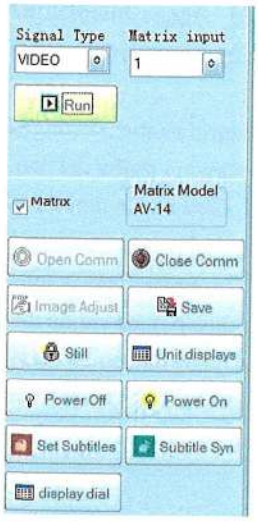
The system will respond and execute the combination operation.

To save the current setting, click **Save** in the function area. The combination type is saved in the memory of the controller. After the system is restarted, the setting will be restored.

Note: It takes 2~3 seconds for the system to save the setting. During this time, do not perform any other operation and shut down the power supply.

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Introduction to other functions



Close Comm: click this button to close the COM port. After the COM port is closed, all functions in relation with communication will be invalidated.

Still: click this button to make the screen still.

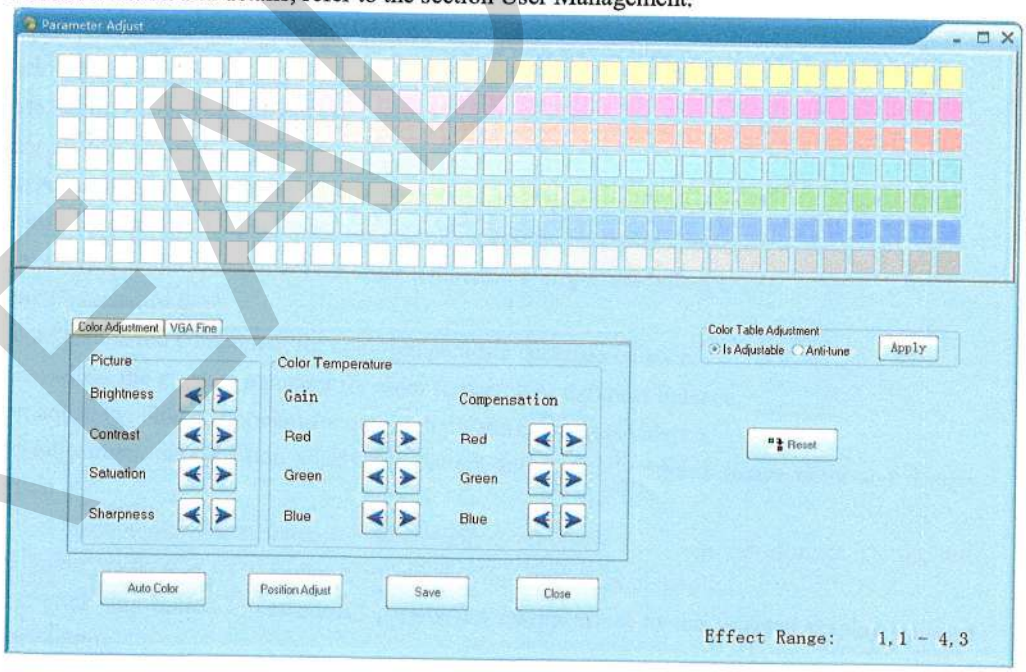
Unit displays: enable each combined unit to be displayed in a single screen.

Power off: click this button to turn off the power supplies of the selected display units and make the unit change to standby mode.

Power on: click this button to turn on the power supplies of the selected display units.

Note: It takes about 5~6 seconds to turn on the power supply. During this time, do not perform any other operation and shut down the power supply.

Image adjustment: click this button to open the image adjustment interface. This function is valid in Admin mode. For details, refer to the section User Management.



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User management

This system is configured with two levels of operation permissions.

1. Admin: possess full permission.
2. Operation: perform basic combination operation but cannot perform image adjustment and some other functions.

Operation method: choose **File** -> **Admin**.



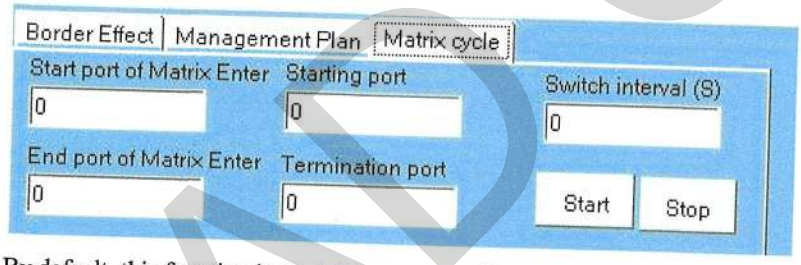
Log in and exit as an Admin and modify login password.

Note: the original login password is 123321. Make sure to remember the new password after modification.

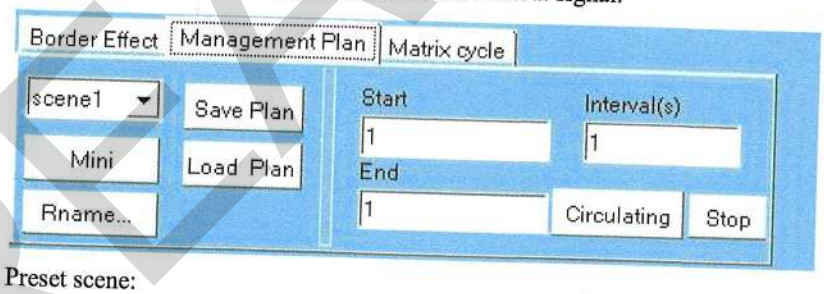
Current operation permission will be shown in the status bar.

Additional function area

Options contained in this area may vary, depending on customer requirement or software version used.



By default, this function is set to blue screen without signal.

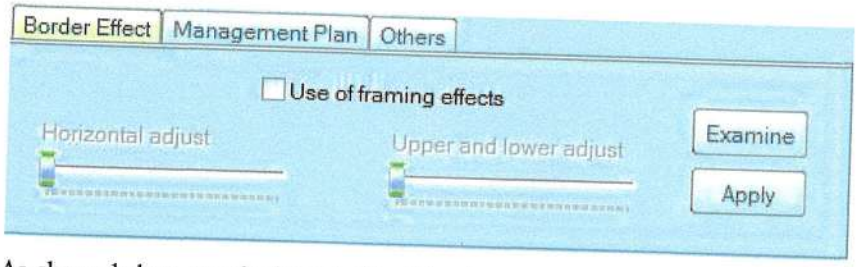


Preset scene:

This function is a macro definition for communication commands of general combination types preset in factory. Users can select an item or define, save, and load plans.

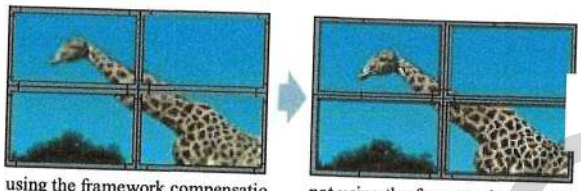
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Border effect



As shown below, use the border effect function to remove the physical seams existing between combined units. The combined screen, though image is changed, does not align. Adjust the horizontal size and up/down size to implement better effect.

For example, the value of border is set based on the physical board of the screen. If the border is an LCD display unit is 10mm and the border of two units are 20mm, then set the value of border to 20.



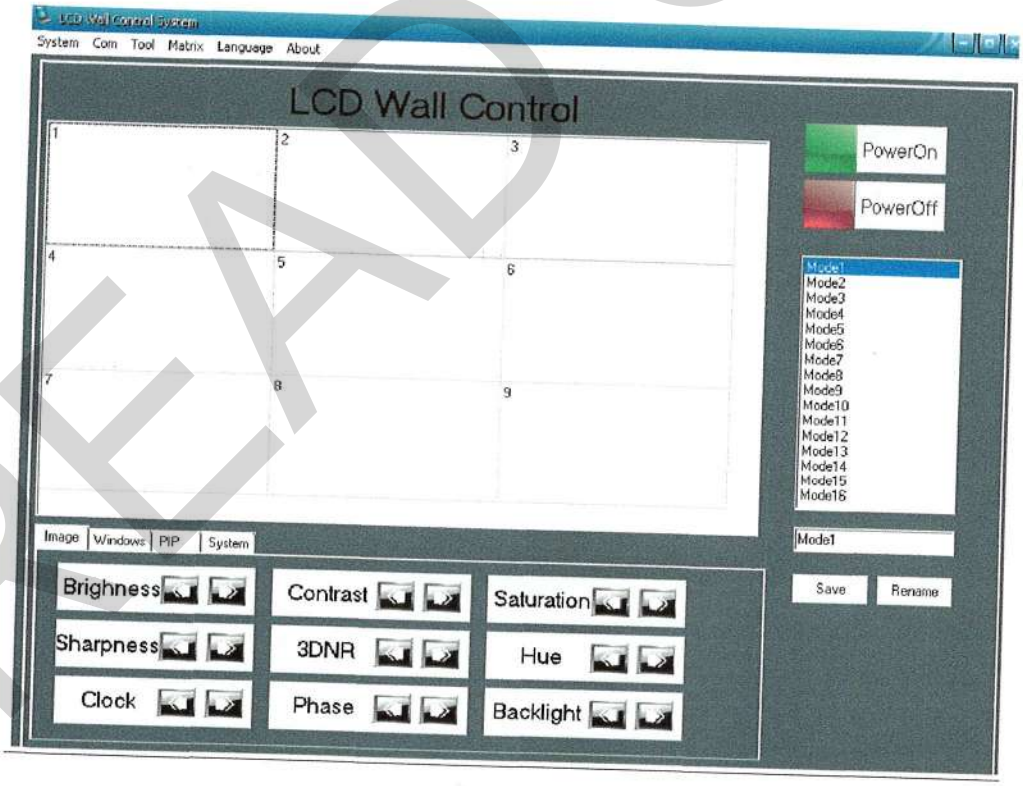
using the framework compensation function

not using the framework compensation function

3.1.2Operation Description for Enhanced Version Control Software

System login

After the software is installed, enable the software to open the following main interface:



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COM port setting

Choose **COM port -> COM port setting -> Port setting**.

Parameter:

COM port is set to com1.

Baud rate: 9600

Parity check: none

Data bits: 8

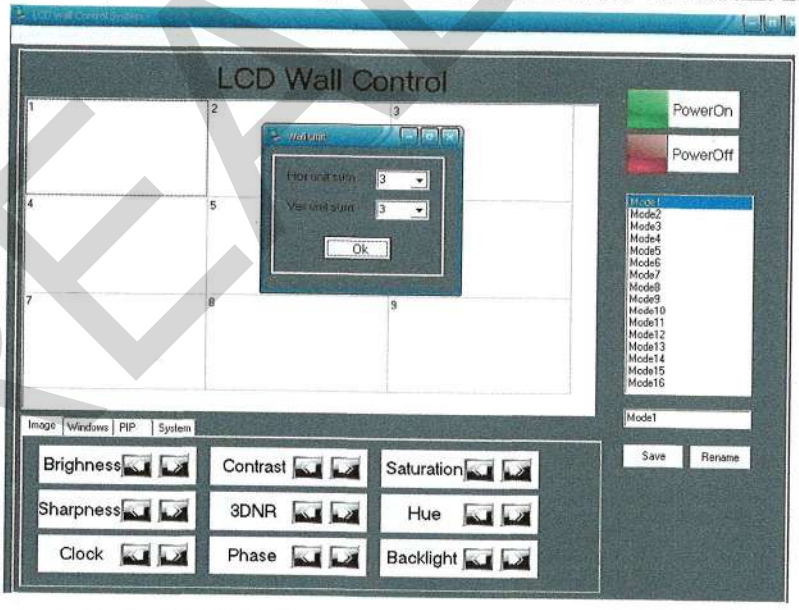
Stop bit: 1



Wall setting

Wall setting is performed based on actual size of the wall, as shown below

Choose **System -> Wall setting -> Horizontal unit number/Vertical unit number**.



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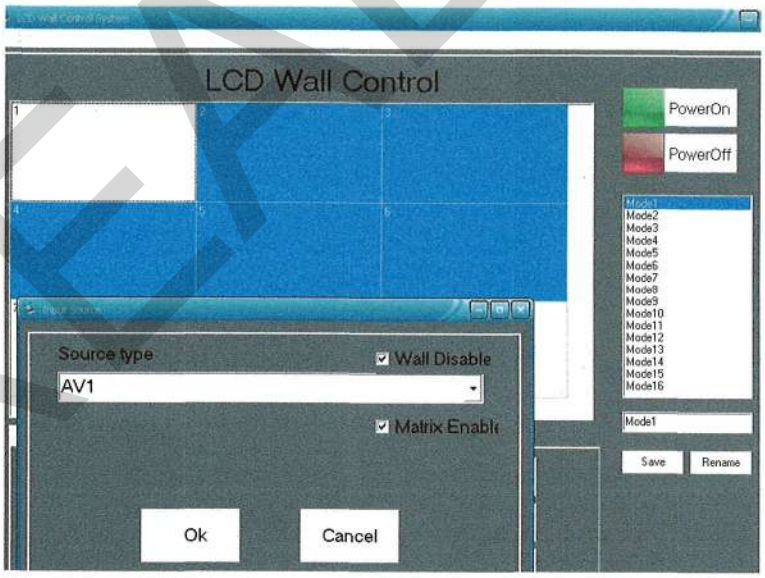
1) Matrix type: select AV or VGA to set corresponding matrix.
2) Brand: set the manufacturer of the matrix used.
3) Model (total input ports): set matrix model or total matrix input ports.
4) Address: COM port command address of matrix. Some matrix does not have address.
5) Connection channel: select AV1 / AV2 / VGA1 / VGA2 / DVI1 / DVI2 to set output port to corresponding matrix.
6) Cancel all: cancel all connections from selected channel of combination units to the output port of matrix.
7) One-to-one connection: restore the default one-to-one connection.
8) Connection diagram: select the method of connection from the current combination unit of the selected channel to the output port of matrix. Double-click a unit to set a connection. If it is set to 0, no connection is established.

3. The general procedure to set matrix is as follows:
   1. Select a matrix type (AV / VGA / DVI).
   2. Set matrix brand.
   3. Set matrix type of total input ports of matrix.
   4. Set matrix address (some matrix does not have address).
   5. Select a method of connection to the input channel of the combination case.
   6. Set connection method. By default, one-to-one connection method is used. Double-click a unit to change its connection method.

Note: for one-to-one connection, the first output of a matrix is connected to the first screen of wall, the second output is connected to the second screen of wall. By analogy, the following output is connected to respective screen. (For details about the sequence number of display units, please refer to the numbers shown in the wall operation box of the main interface.)

Signal source switchover and combination

In the wall operation box of the main interface, frame out the combination units to be operated and right-click to pop up a menu dialog box. The input control interface is shown as below:



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On the input control interface, there are source type and matrix input for users to set. Tick the matrix combo box to enable matrix control; otherwise, matrix control is invalid.

The operation procedure is as follows:

On the main interface, select a wall unit to be switched over.

On the input control interface, select a signal source to be switched over.

If matrix is used, select a matrix input port to be switched over.

Click **OK** to complete the switchover operation.

Plan mode operation:

The operation procedure is as follows:

1. Click the **Plan mode** frame on the main interface and click **Save** to save the current parameters to the selected plan mode.
2. Double-click the **Plan mode** frame on the main interface to invoke parameters of the selected plan.
3. Click the **Plan mode** frame on the main interface and click **Rename** to enter a new name to the selected plan mode.

Combination case parameter adjustment:

The operation procedure is as follows:

Select a combination unit to be operated from the wall operation frame of the main interface.

Select combination case parameters to be adjusted under the main interface.

Adjust the parameters in the combination case parameter adjustment area.

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IP Based KVM Video Collaboration System

MANUAL



AVCiT Electronic Technology Co.,Ltd

www.avcit.com

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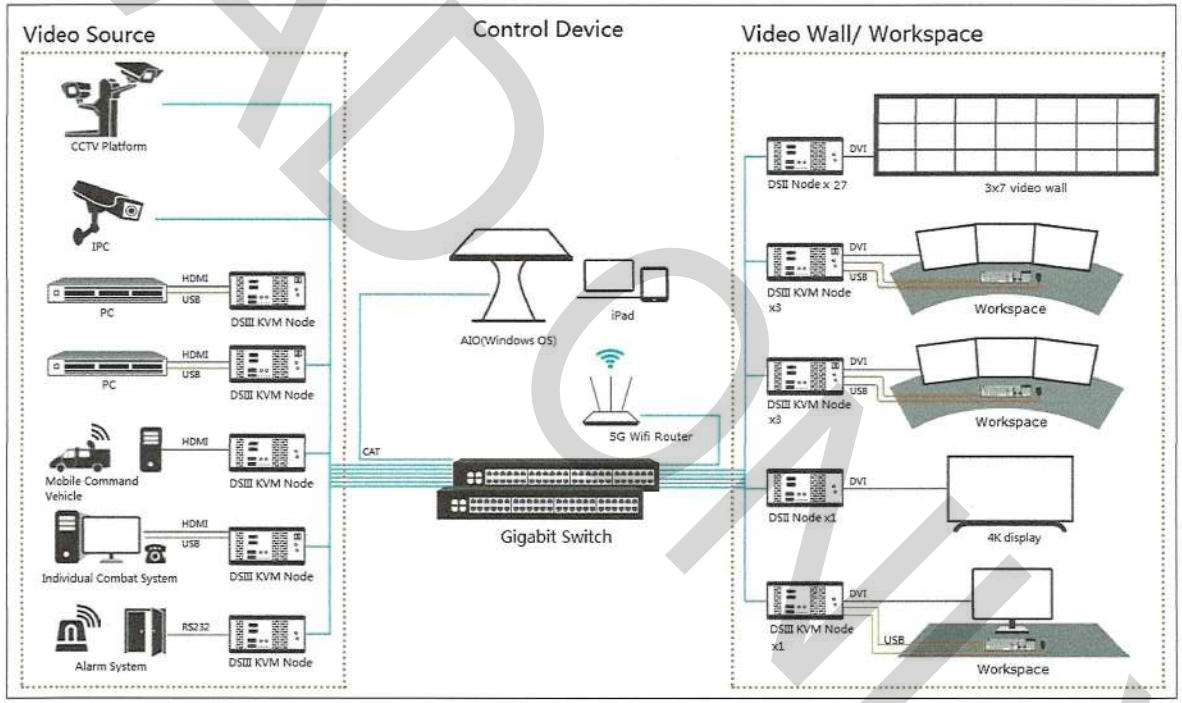
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Overview

IP Based KVM Video Collaboration System is all-in-one solution for command control center and meeting room, which consist of encoding node, network switch and decoding node only, simply cabling node and network switch by UTP or Fiber.

Each codec node is built in all features of video wall controller, KVM/AV matrix, signal extender and central controller. It's flexible to be configured either a virtual video matrix, a KVM matrix, a video wall controller or a central controller over IP.



-Schematic 1.1-

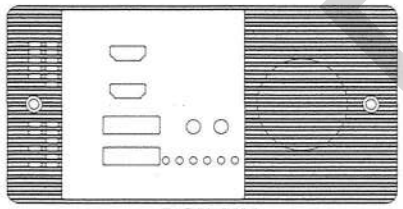
The system is based on standard network(1 gigabit), with distributed hardware architecture. Each node can calculate and process signal independently, no need central processing server.

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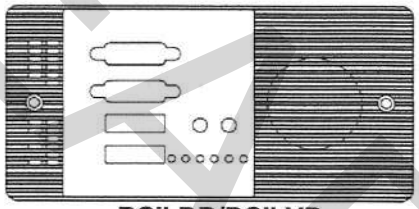
AVCiT

2K Codec Node

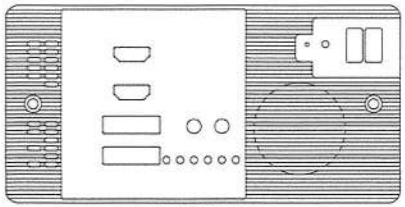
There are two series node, including DSIII KVM Node (hereafter called DSIII), DSII Node(hereafter called DSII)



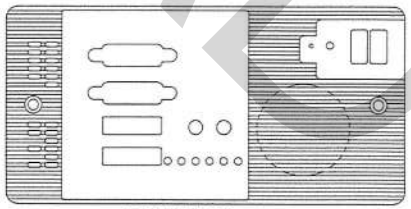
DSII-HH



DSII-DD/DSII-VD



DSIII-HH



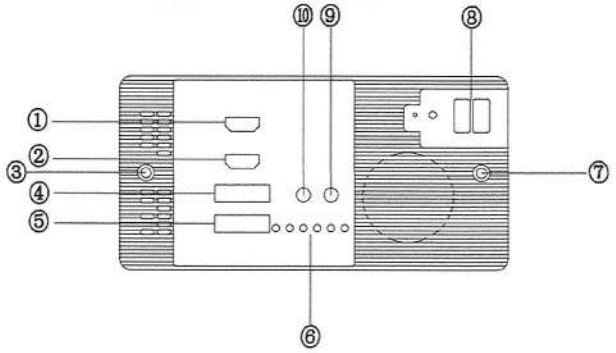
DSIII-DD

DSIII and DSII are bi-directional transceiver of AVCIT's IP Based KVM Video Collaboration system, it could be configured as an encoder or a decoder depending on whether input source or display is connected to it.

DSIII is mainly applied to process KVM source(HDMI + USB/ keyboard & mouse) and connect monitor of workspace; While DSII is mostly applied to process normal HDMI/DVI source(DVD, HD Camera, Video Conference Endpoint) and connect screen of video wall.

Note: Each node has two video port - IN and OUT, please use "IN" port if it is configured as an input node, otherwise use "OUT" port

Interface Port (Front Panel)



① Video input (HDMI/DVI-D/DVI-I)

② Video output (HDMI/DVI-D /DVI-I)

③ Screw hole for installation

④ 1 RS232 + 1 RS485

⑤ 3 IR/IO

⑥ LED indicating lamp

⑦ Screw hole for installation

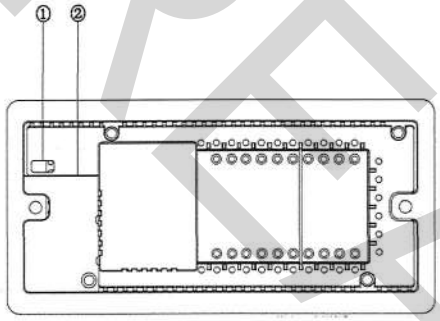
⑧ 2 USB (DSIII only)

⑨ Audio input(3.5 mm)

⑩ Audio input(3.5 mm)

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Interface Port (Rear Panel)



① + 5V 3A power interface ② RJ45 (support PoE)

KVM Adapter for DSIII

It's required when configuring DSIII as an encoder(transmitter), for encoding and encrypting USB(keyboard & mouse) signal.

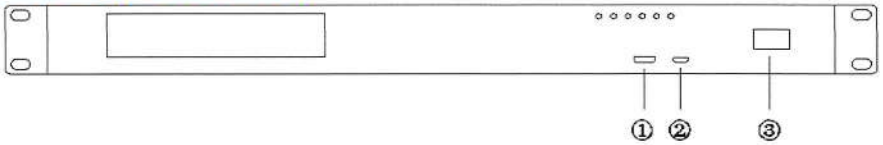




Central Controller E-CP4C(Optional)

It's only required for controlling third party device (displays, switchers, room devices, sensor etc.) via RS232/485,IO and IR.

Interface(Front Panel)



① HDMI output ② USB ③Power Switcher

Interface(Rear Panel)



① 8 x IO port ② RS232 ③ RJ45 ④ AC220V Power Interface

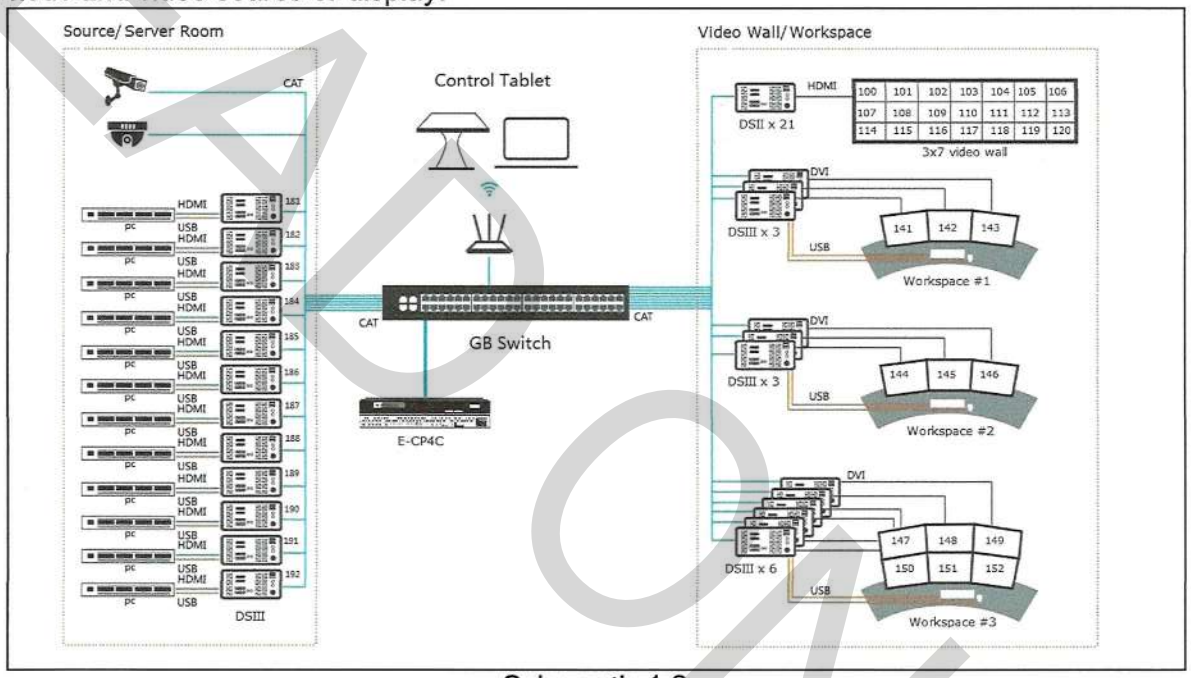
Network Switch

- Gigabit switch with PoE feature; Switching capacity, forwarding rate/speed and rate power are no less than the model recommended.
- Cable: at least CAT6e UTP; HDMI, DVI cable etc.
- Control device: iPad Pro for wireless control; AIO/PC (Windows OS) for wired control.

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Hardware Installation

Cabling the hardware according to system schematic, by CAT6e (at least) between node and Network Switch, HDMI/DVI cable between node and video source or display.



-Schematic 1.2-

Remark: number is the abbreviation of each node's IP address, for example: 181 means 192.168.1.181;

- Node's working status:
  When system is powered on, please check the condition of indicating lamp as below:
  PWR lamp: turn on.
  LINK lamp: turn off after lighting
  RES lamp: keep blanking.
  VOL lamp: Audio volume is loudest if VOL lamp keep lighting.

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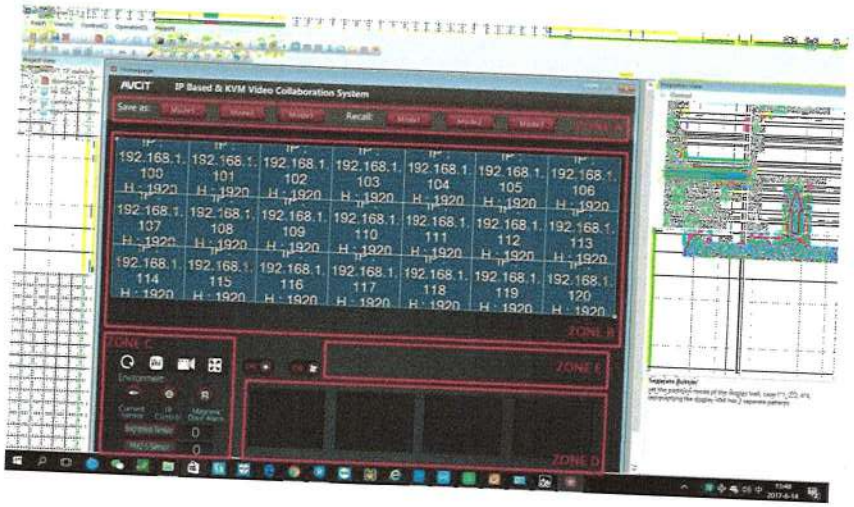
Software Introduction

- "TouchPanel 3.x.y" : Green software to design UI
- "DSworks x.y" : green software to run UI on PC(Windows OS), it doesn't work without USB Dongle.
- "I-CTL" : Software to run UI on iPad(iOS), free to download at Apple APP Store.
- "FbsSysTools": software to monitor/revise IP, ID, resolution of node.

Video Wall Configuration

Design UI by software "TouchPanel 3.x.y"

Please check the software introduction at appendix I, design UI according to schematic example 1.2, as below:

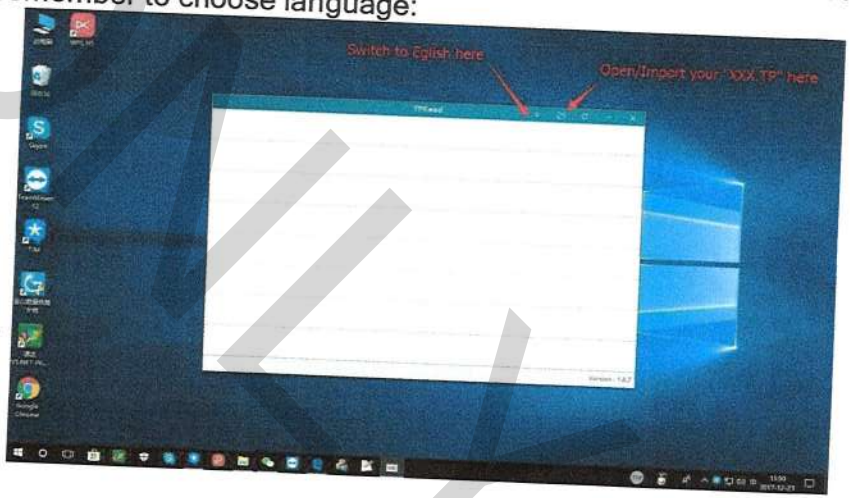


Zone A: Buttons to save and recall preset of video wall layout;
Zone B: Sync Video Wall, named video wall mirror, hereafter called VW Mirror
Zone C: Buttons to control third party device via RS232/485,IO and IR.
Zone D: Preview video content in real time
Zone E: Create virtual partition on VW Mirror. Please select "Yes" of "Free Mode Button", for freely re-sizing video windows on VW Mirror.

Upload UI data pack(.tp file) to DSworks and i-CTL

- **Upload UI data pack to DSworks**

Open it when USB Dongle (sentinel key) plugged into "control PC", remember to choose language:



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● Upload UI data pack to i-CTL

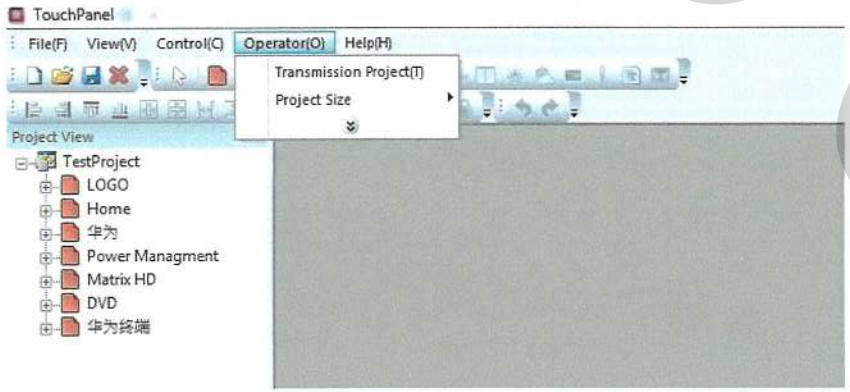
Following are 8 steps to import data pack to iOS devices:

① Install i-CTL from iOS APP stores, connect iPad with same WIFI as the Computer opening software" Touch Panel 3.x.y"

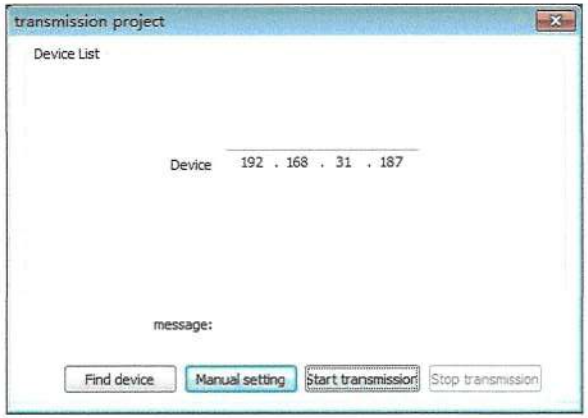
② Touch "Transfer" button in the upper left corner, then iPad's IP will show up:



③ Open the ".tp file" by TouchPanel 3.x.y", then click Operator/ Transmission Project(T)



④ Input iPad's IP address on "Manual setting" mode, then click "Start transmission".



⑤ After transmission, click "Back" on iPad, then choose project name "Project name" to enter UI pages

⑥ Long press blank area of i-CTL UI, until you see the menu, choose top row,"web setting", input password "avcit"

⑦ Change the IP to be that of your E-CP4C central controller if you use a E-CP4C, IP of E-CP4C central controller is default 192.168.1.234

⑧ Set all port 8888 to be 48689, and use default ID

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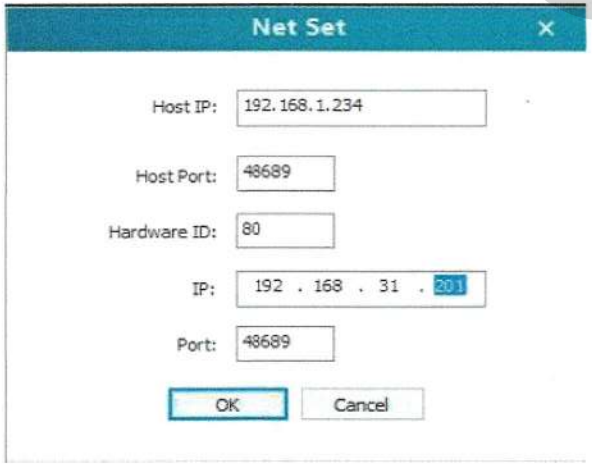
IP setting for DSworks and i-CTL

- **DSworks: please finish the setting as following step**

① Connect "control PC" with Gigabit Switch by CAT cable or WIFI.

② Manuel set "control PC" IP as same network segment with the system "192.168.1.x" but not conflict with any DSII/DSIII node's IP.
EG: 192.168.1.201

③ Right click your mouse(when mouse over any blank area) on UI, select "Net Setting", to change the "IP" of control PC 192.168.1.201



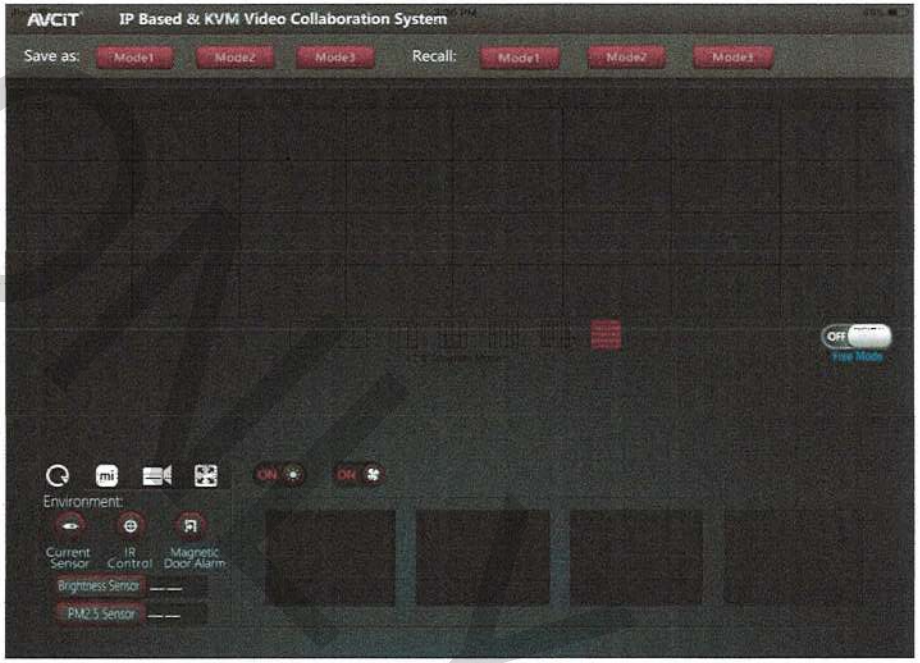
④ Do not change "Host IP", which works only if you have AVCIT central controller E-CP4C etc.

⑤ Check whether you can preview all video source

- **i-CTL : please finish the setting as following step**

Connect iPad with IP Based System via WIFI, then set IP manually by same network segment with the system "192.168.1.x" but not conflict with any DSII/DSIII node's IP

UI Overview on iPad Pro

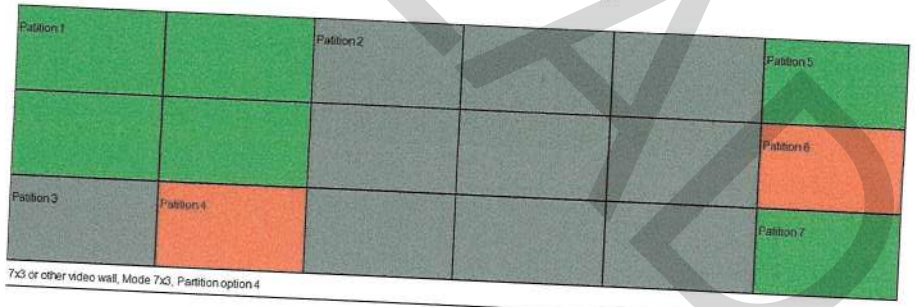


AVCiT

How to make partition on video wall

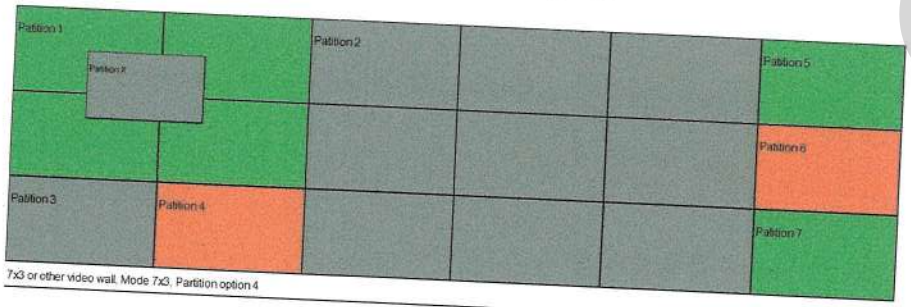
Easy to switch video and resize on UI by drag&drop.

- Close “free mode” button, and select “layout 3x7”, then drag any video source from Zone D to 7 different area ON VWS mirror, i.e. following Partition 1-7, one by one.



7x3 or other video wall, Mode 7x3, Partition option 4

- Open “free mode” button, then drag one more video source to “Partition 1”, and resize it, so that you can have “Partition X” as following, Or even more Options for you.

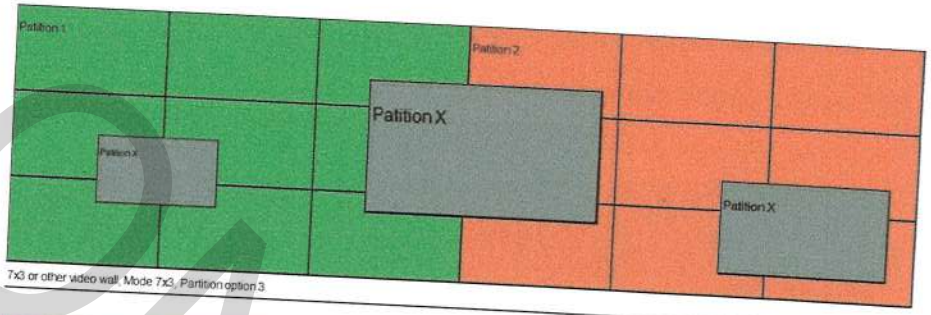


7x3 or other video wall, Mode 7x3, Partition option 4

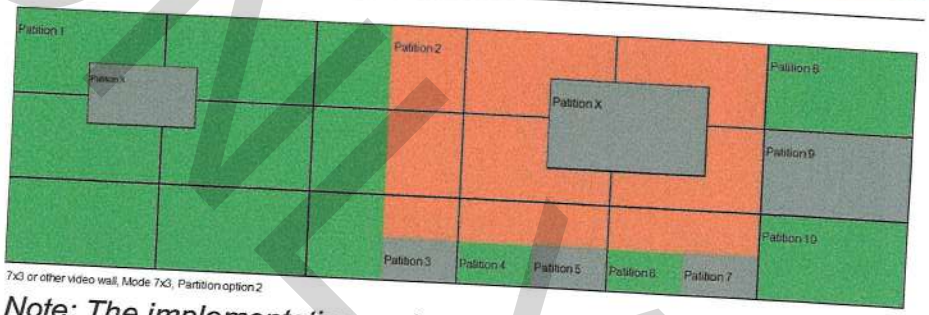
Make more layouts whatever you want:



7x3 or other video wall, Mode 7x3, Partition option 2



7x3 or other video wall, Mode 7x3, Partition option 3



7x3 or other video wall, Mode 7x3, Partition option 2

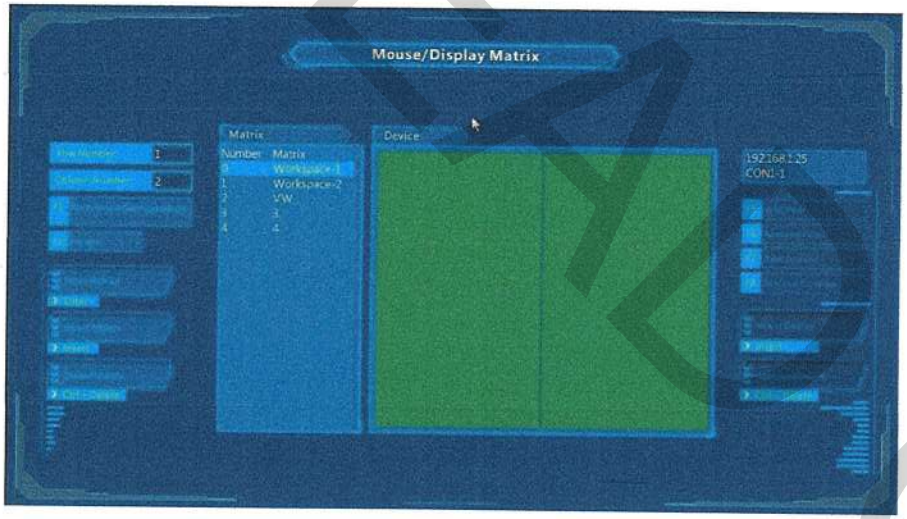
Note: The implementation and configuration is finished if you didn’t purchase KVM Node with USB port.

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Mouse/Display Matrix Configuration

Press F2 to enter Mouse/Display Matrix OSD

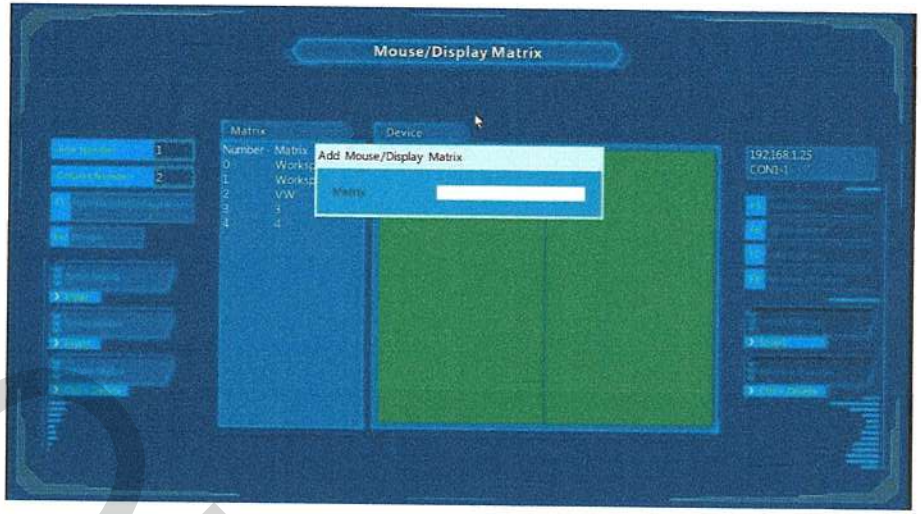


Video wall matrix configuration

Take this "3x7 video wall" as example (IP address refer 1.2 schematic)

IP : 192.168.1.100 H : 1920 V : 1080	IP : 192.168.1.101 H : 1920 V : 1080	IP : 192.168.1.102 H : 1920 V : 1080	IP : 192.168.1.103 H : 1920 V : 1080	IP : 192.168.1.104 H : 1920 V : 1080	IP : 192.168.1.105 H : 1920 V : 1080	IP : 192.168.1.106 H : 1920 V : 1080
IP : 192.168.1.107 H : 1920 V : 1080	IP : 192.168.1.108 H : 1920 V : 1080	IP : 192.168.1.109 H : 1920 V : 1080	IP : 192.168.1.110 H : 1920 V : 1080	IP : 192.168.1.111 H : 1920 V : 1080	IP : 192.168.1.112 H : 1920 V : 1080	IP : 192.168.1.113 H : 1920 V : 1080
IP : 192.168.1.114 H : 1920 V : 1080	IP : 192.168.1.115 H : 1920 V : 1080	IP : 192.168.1.116 H : 1920 V : 1080	IP : 192.168.1.117 H : 1920 V : 1080	IP : 192.168.1.118 H : 1920 V : 1080	IP : 192.168.1.119 H : 1920 V : 1080	IP : 192.168.1.120 H : 1920 V : 1080

① Press "Insert" to add display matrix, named as "VWS"



② Enter "VWS", then use following function key to create 3x7 VW matrix mirror

F5 Add row
F6 Remove row
F7 Add Column
F8 Remove Column

③ Move arrow key to left and top grid (21 in total), press "Insert" to choose the node with IP 192.168.1.100 from device list, and press "Enter".

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④ Insert other 20 node IP of rest screens in order according to installation, as follows

192.168.1.100, 192.168.1.101, ...192.168.1.106
192.168.1.107, 192.168.1.108, ...192.168.1.113
192.168.1.114, 192.168.1.115, ...192.168.1.120

⑤ Then press "Esc" to quit "VWS" matrix.

Mouse Matrix Configuration

Create KVM (Keyboard, Video, Mouse) matrix for Workspace, so that user can cross monitor switching by mouse between multiple monitors.

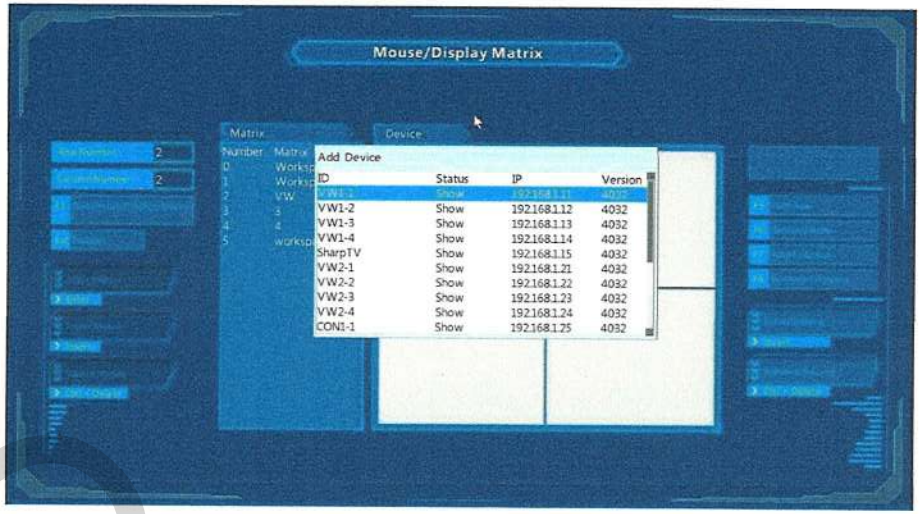
Take "Workspace 3" as example (refer schematic 1.2), it's 2 row with 2x3 monitor:

① At "Mouse/Display Matrix" OSD, press "Insert" to add mouse matrix, named as "Workspace3"

② Enter "KVM3", then create 2X3 KVM matrix by following key:

F5 Add row F6 Remove row
F7 Add Column F8 Remove Column

③ Move arrow key to left and top grid (six in total), press "Insert" to choose the KVM node with IP 192.168.1.147 from device list, and press "Enter"



④ Make sure six IP are in correct order as follows

192.168.1.147	192.168.1.148	192.168.1.149
192.168.1.150	192.168.1.151	192.168.1.152

⑤ Then press "Esc" to quit "KVM3" matrix.

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Create User Account And Permission Setting



Access Permission introduction

- EXCLUSIVE: The user can view and control the chosen computer. Once user access Exclusive computer, the others will lose view and control. [Remark: press "Shift + Enter" key on "GET" OSD]

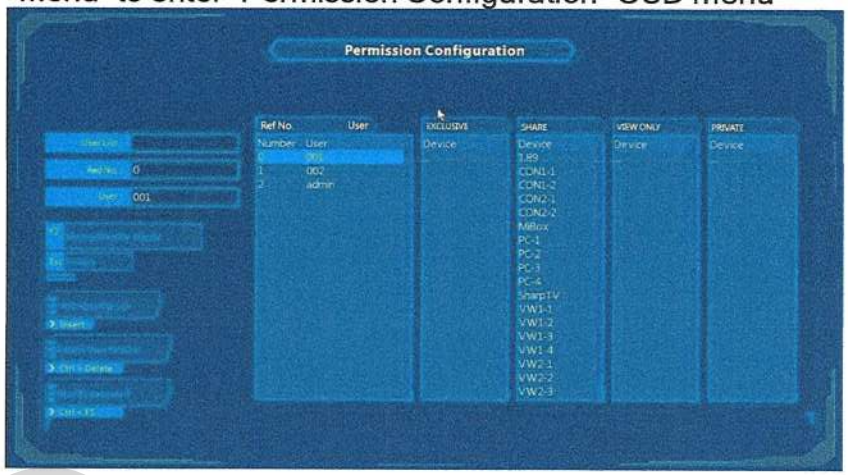
- SHARE: The user can view and control the chosen computer, which allow users with same permission, to view and control computer simultaneously .[Note: press "Enter" key to get it on "GET" OSD]

- VIEW ONLY: The user can view the chosen computer only but cannot control it. [Note: press "SPACE" key to get it on "GET" OSD]

- PRIVATE: The computer is forbidden to be accessed. The chosen computer won't be showed on "GET" OSD.

Create new user account

① Double press "Ctrl", then press "Windows" key and click "Menu" to enter "Permission Configuration" OSD menu

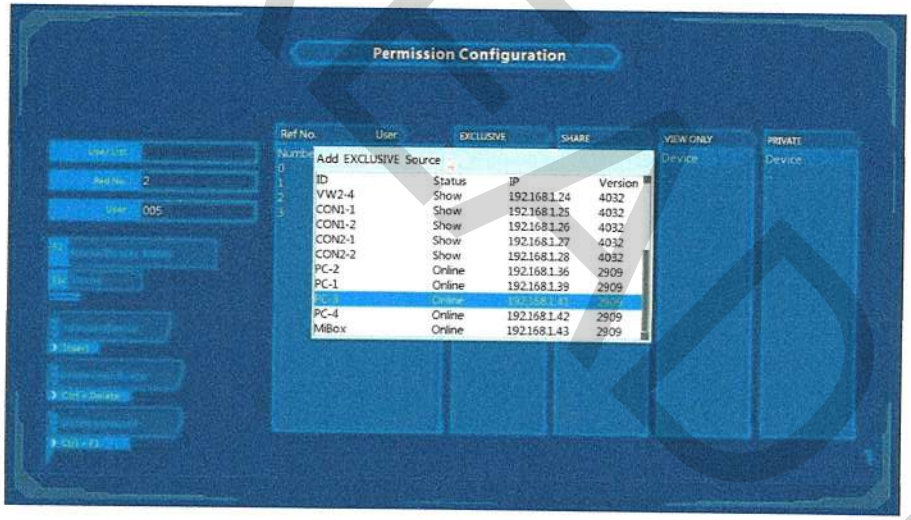


② Press "Insert" to create User account and password, such as "005", "005"



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③ Press "Enter" key or move arrow key to right side, to set permission level for each input Source and each display



④ Press "Enter" or "Insert" at any permission list to show all device list, identified by ID or IP

⑤ Select the correct IP and press "Enter" to confirm

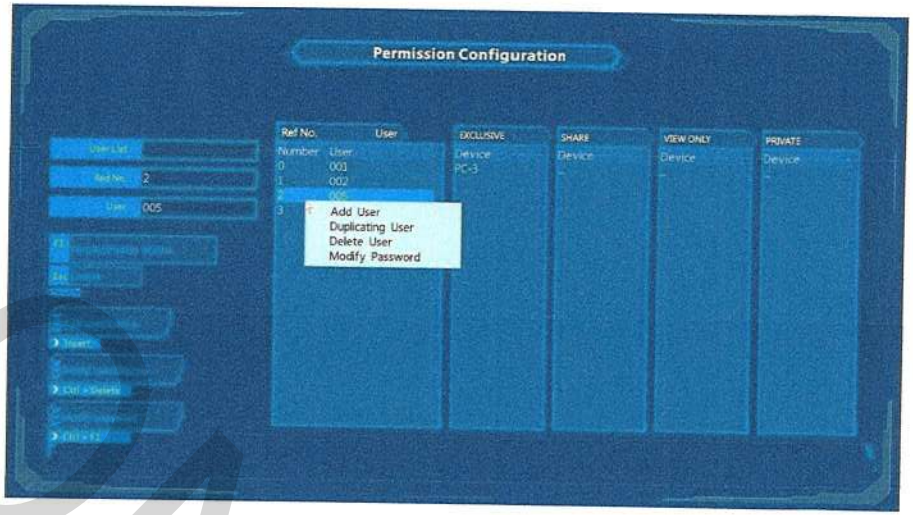
⑥ Press "Esc" to escape

Remark: Every KVM Source/channel should be granted with only one of 4 Permission level, EXCLUSIVE, SHARE, VIEW ONLY or PRIVATE. It's not available to grant IP by 2 permission to same user.

Create user group

If same permission for other user account is required, we can duplicate the created account easily.

Move mouse cursor to user 005, right click and choose "Duplicating User", then re-name it and revise password.



Congrats!

After setting above, it's ready to use.

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Hot Key Introduction

Once you finish the VWS partition and KVM Matrix Configuration, you can get access video source by "GET" OSD and push video source to video wall or other monitor by "PUSH" OSD.

"GET" OSD

After log in, double press "Ctrl" to enter "GET" OSD, then move arrow key, press "enter" to get access the server/PC



- Device: The list of all video source

- Priority List: The source list with high priority for getting access. It's easier for user to get access the frequently-used source by adding them at the list (choose the source at device list, press F3)

- Function Key introduction:
  - F1: Re-Numbering a source/display in Priority list
  - F2: Re-name source/display in Priority list
  - F3: Add current source into Priority list
  - F4: Remove current source from Priority list
  - F5: Refresh
  - Esc: Escape

"PUSH" OSD

Double press "Shift" to show OSD



- If push source content to video wall, move cursor to video wall matrix "VWS" at Priority list by "Enter", move arrow key to choose

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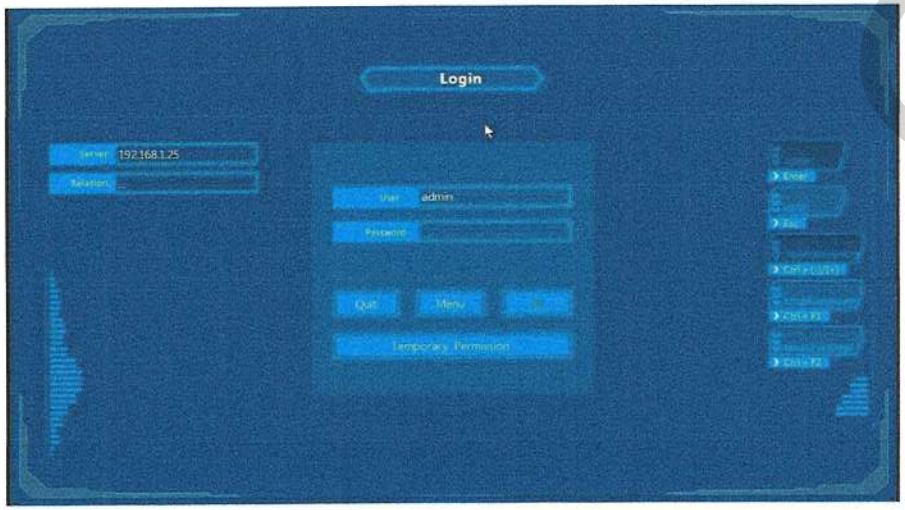
partition, the chosen one will light by red box on video wall, then press "enter" to push. Same operation to push video to monitor of Workspace.

- Function Key introduction

F1: Re-Numbering a source/display in Priority list
F2: Re-name source/display in Priority list
F3: Add current source into Priority list
F4: Remove current source from Priority list
F5: Refresh
Esc: Escape

Mouse Setting

After login, press "Windows" Key to enter "Login" OSD



Then press "Ctrl" + "F2" to show "Mouse Parameter" windows.



Time:
"0" hidden KVM System's mouse cursor
"1" show KVM System's mouse cursor, need to hide computer's mouse cursor.

Sidebar: setting according to gap between two monitors, normally set as 200

Width and Height: according to resolution of monitor

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Appendix Ⅰ——"Touch Panel 3.x.y"

Brief introduction

"Touch Panel" is developed by AVCiT for designing Graphic User Interface

TouchPanel

Demo Video: click this link to download it via google drive: https://drive.google.com/open?id=1MWWNn1BQIrEvQuSvcbuxJzHVJdSx555a

- **Icon Overview**



- **"Page"**

Create new .tp file

- **"Select"**

Icon cursor "select" is very important when you can not open the properties of such area.

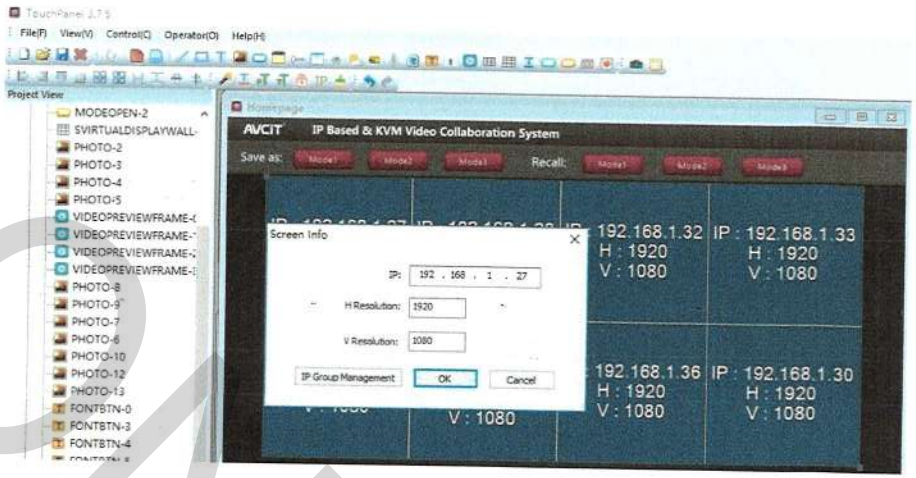
- **"Synchronous Display Wall"**

Create "Sync Display Wall" as video wall mirror.

How to create "Sync Display Wall", hereafter called "Sync VW":

Click icon and drag, set the "Row" , "Column" and "Separate Button" according to Video Wall and partition mode;

Then click "Select" icon, and double click any screen of "Sync VW" to revise IP and resolution according to related node and screen/projector/sending card of LED cabinet.

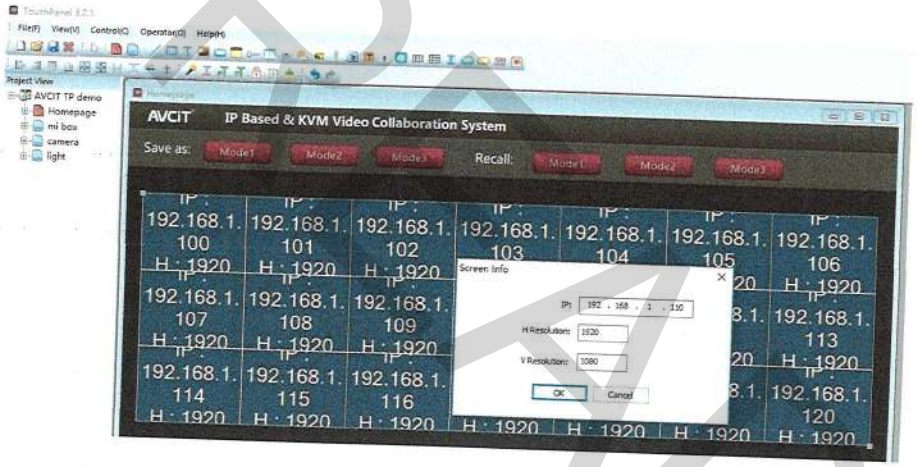


For example:7x3 video, IP from 192.168.1.100 to 192.168.1.120. and connect with video wall as following order:

192.168.1.100, 192.168.1.101, ...192.168.1.106
192.168.1.107, 192.168.1.108, ...192.168.1.113
192.168.1.114, 192.168.1.115, ...192.168.1.120

21 IP should be inputted as following:

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- **"Slider"**

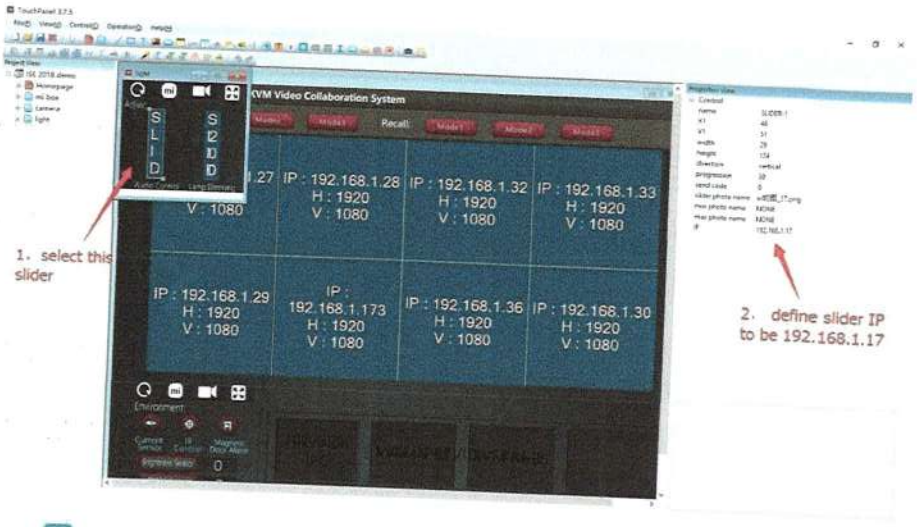
Control volume/dimming, i.e. define the slider as IP 192.168.1.17

Volume Control

if you drag any video source over the slider, the audio will be separated/de-embeded to node with IP 192.168.1.17. you can connect this node to amplifier and speaker, and try the build-in volume controller feature.

Dimming Control

you need to order E-CP4C or E-CP4C PRO controller, use DMX512 or I/O,RS232 PORT to control lamp and LED.



- **"Video Display Frame"**

Create preview frame for single video sources from AVCIT node or IP camera, need to write Node's IP and RTSP streaming format.

RTSP streaming format of video sources from AVCIT DSII/DSIII node:

rtsp://192.168.1.41:2554/352;rtsp://192.168.1.41:554/1080

RTSP streaming format of video sources from IP camera, depending on the IPC brand:

Hikvision IP camera:

rtsp://admin:password@192.168.1.41/h264/ch1/sub/av_stream;rtsp://admin:password@192.168.1.41/h264/ch1/main/av_stream

PAGE ONLY

Samsung IP camera:
rtsp://admin:password@192.168.0.41:554/profile2/media.smp;rtsp://admin:password@192.168.0.41:554/profile3/media.smp

TP-LINK IP camera:
rtsp://admin:password@192.168.0.41:554/id=0;rtsp://admin:password@192.168.0.41:554/id=1

- **"Video Preview"**

Create preview frame, which can detecting IP automatically, no need to write RTSP streaming. Allow to set row and column. (perfect choice when video source is less than 10)

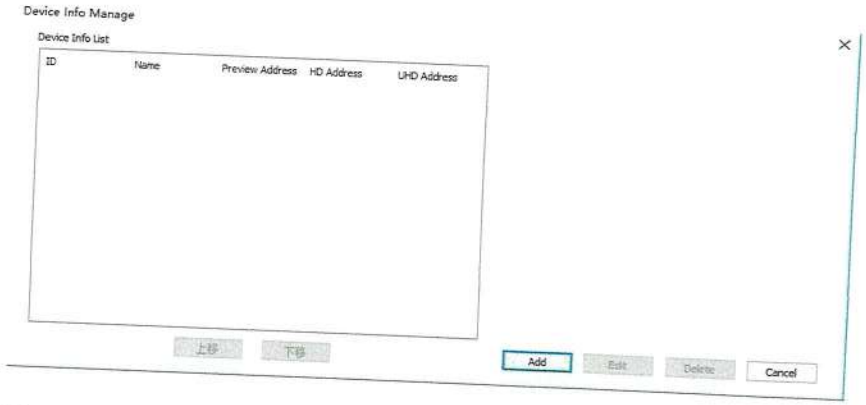
While we better use"Scroll Video Preview" if there are more than 10 video source.

- **"Scroll Video Preview"**

Create preview frame, which can detecting IP automatically in order what you set, perfect choice to make multiple preview pages f there are more than 10 video source.
Remard: decoding capacity of iPad Pro(12.9" 64GB version) is max. 15 video, while computer with intel i5 can decoding 15-16 video.

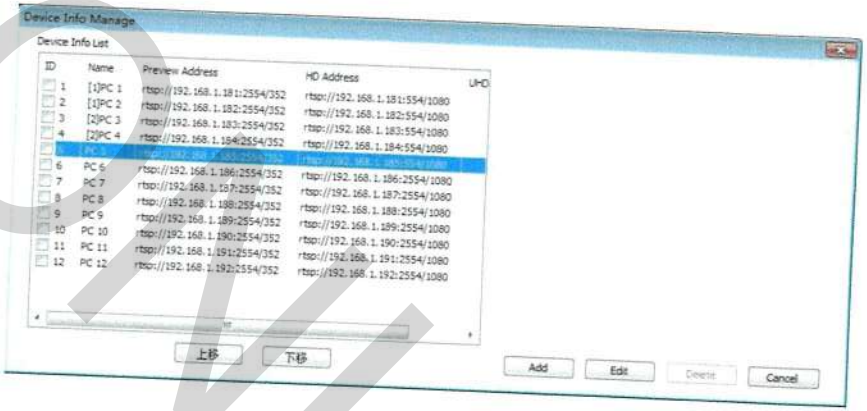
How to create "Scroll Video Preview" frame:

Click the icon and drag on empty area, choose "select" icon, then double-click "Scroll Video Preview" frame, "Device info Manage" pops up, then "ADD", to write the correct IP and RTSP streaming format.



How to create grouping for "Scroll Video Preview" frame:

Simply add [1] before "name", following PC 1,2,3,4 is group 1, they will scroll together



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- **"Preset Save/Recall"**

Scenario save and recall, all video wall layout can be saved and recall

- **"Web-camera"**

IP camera preview, we usually do it by "Video Display Frame" frame

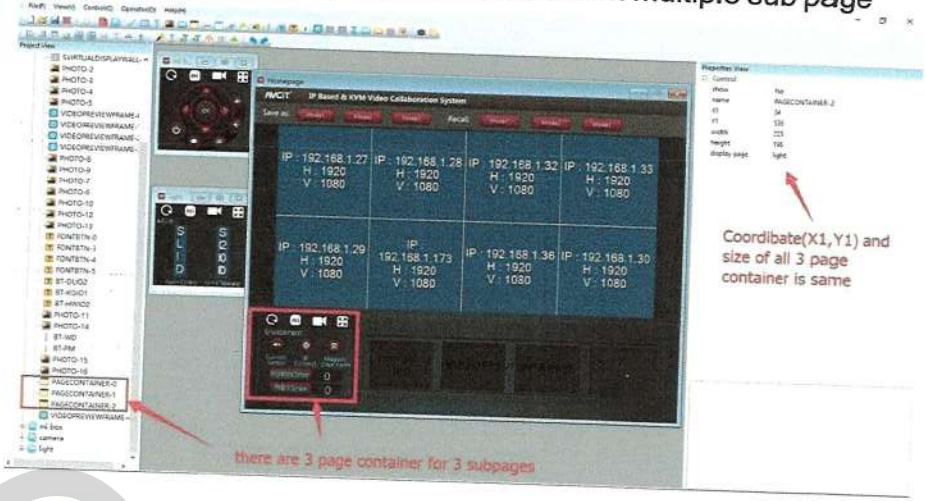
- **"Sensor"**

For environment detection,display and re-action these are useful when your system have sensors(of course you need AVCIT E-CP4C controller) such as temperature, brightness, air pollution, humidity, alarming system etc.

The status of these devices will be display here. Some reaction can be preset to be activated once something happened. Such as alarming is detected, or the value of temperature reach or exceed

- **"Pagecontainer and subpage"**

Create multiple sub page and switch between multiple sub page



- **" Picker and slider photo":** not usually used

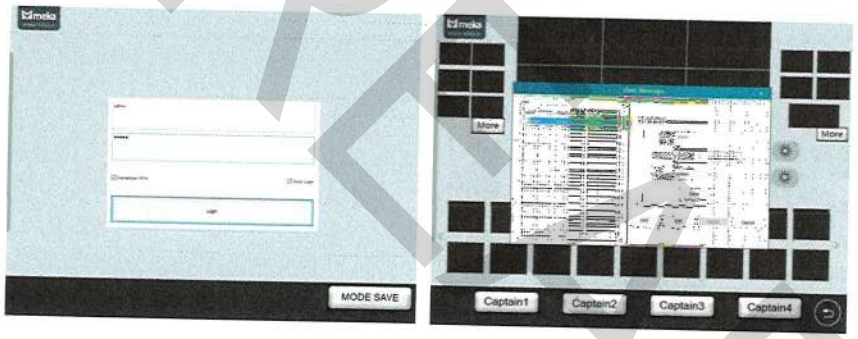
- **"log in"**

Create password and different user with different permission.

Function of "login" of i-CTL and DSworks is slightly different, following is UI of login in DSworks

Once you add "login" icon, you need to enter password, default admin ID and password is admin, you can or right click(or long press blank area, at i-CTL) , select "user manage" to change password, and create new user ID.

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- **"Recording"**

This for project that AVCIT's IP based playback system was involved, but this system is not open to oversea market in this stage

- **"E8platform and RVS platform"**

This icon is available from "Touch Panel" version 3.7.5, both are interface to integrate surveillance system or AI system(face identification), e.g. Hikvision DS-B20 system and YITU AI system.

This is mission critical for police and military, because they have a comprehensive surveillance and AI system, with thousand of cameras located all around the city. Several installation is already deployed in China.

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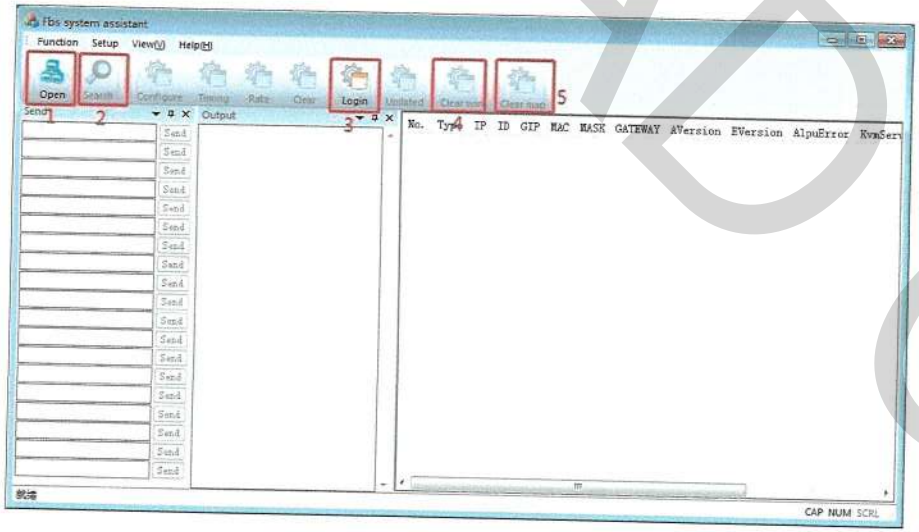
Appendix II——"FbsSysTool"

Brief Introduction

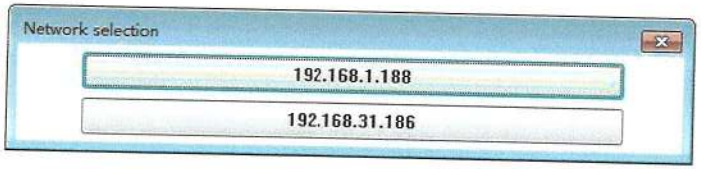
FbsSysTool is developed by AVCiT for system configuration, including: revise Node's ID, IP, resolution and other parameter setting.

FbsSysTools-1.41.18.423_english

- **Overview**



1 —— Connect the laptop with AVCiT system's network, please click exact one if your PC connecting with two network.



2 —— Click here to search all online node or refresh.

3 —— Please ask AVCiT team, if your version requires password.

4 —— Clear all online node information

5 —— Delete the background picture uploaded to node.

- **Tips to revise node's ID and IP**

It's important to revise node's ID and IP for future management and maintenance. Please revise them according to physical installation, and avoid IP conflict.

Example to rename ID:

PC-1, PC-2 .....PC-n for source
VW1-1, VW1-2 .... VW 3-3 for video wall
Workspace1-1, Workspace1-2.....for workspace

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Double click IP, then input new address and press “Enter” to confirm

7	DSIII(RX)	192.168.1.186	7号电脑2	239.1.1.1	0.11.245.98.117.148	255.255.0.0	192.168.1.1 V4032
8	DSIII(RX)	192.168.11.111	屏1—1	239.1.1.1	0.11.92.41.155.25	255.255.0.0	192.168.1.1
9	DSIII(RX)	192.168.11.112	屏1—2	239.1.1.1	0.11.70.254.91.23	255.255.0.0	192.168.1.1
10	DSIII(RX)	192.168.11.113	屏1—3	239.1.1.1	0.11.70.254.91.8	255.255.0.0	192.168.1.1

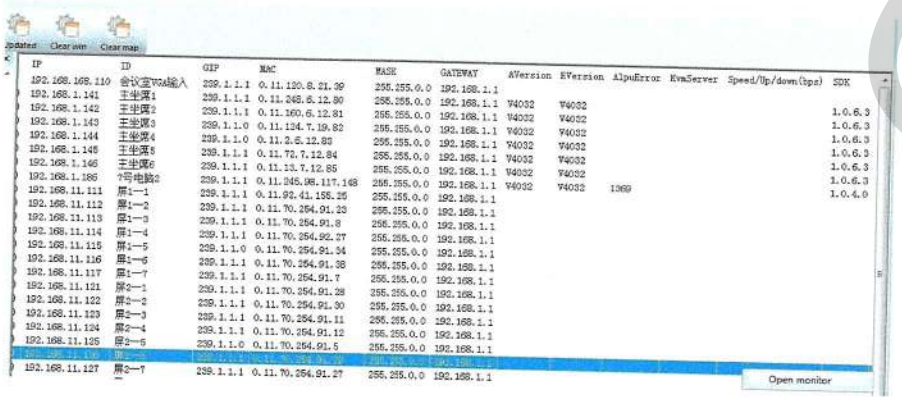
Double click ID, then input new name and press “Enter” to confirm.

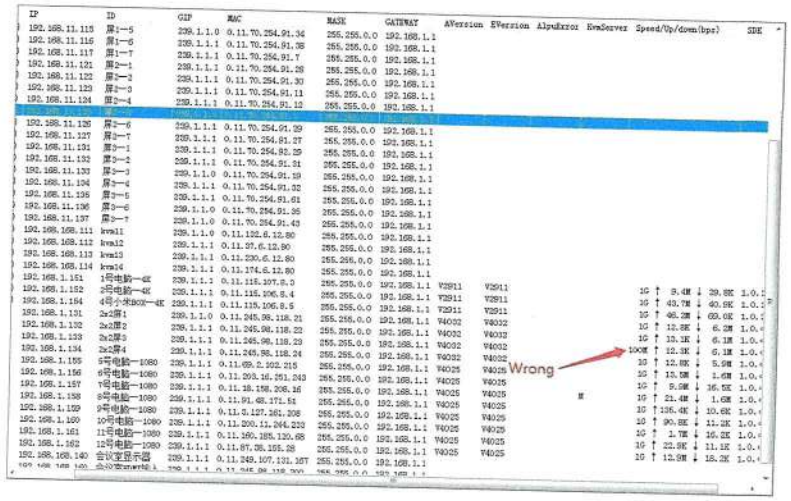
8	DSIII(RX)	192.168.11.111	屏1—1	239.1.1.1	0.11.92.41.155.25	255.255.0.0	192.168.1.1
9	DSIII(RX)	192.168.11.112	屏1—2	239.1.1.1	0.11.70.254.91.23	255.255.0.0	192.168.1.1
10	DSIII(RX)	192.168.11.113	屏1—3	239.1.1.1	0.11.70.254.91.8	255.255.0.0	192.168.1.1
11	DSIII(RX)	192.168.11.114	屏1—4	239.1.1.1	0.11.70.254.92.27	255.255.0.0	192.168.1.1

- **Tips to detect rate of UTP**

The UTP Cable should work by 1 G rate.

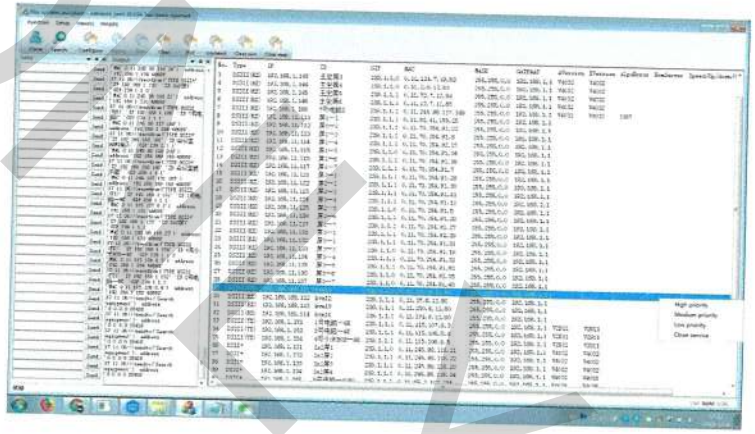
Right click “Speed/Up/Down(bps)” Zone of node, then click Open monitor.





- **Tips to set KVM’s priority (KVM Server)**

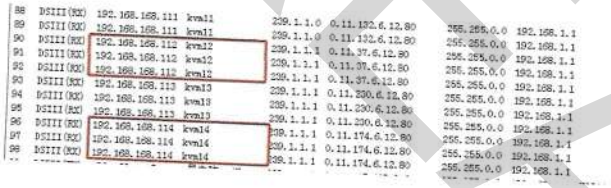
It’s required only for the system with KVM function.
Right click “KvmServer” Zone to choose High Priority for any DSIII KVM Node



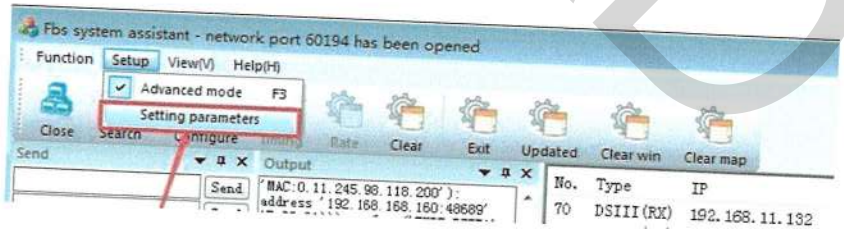
READ ONLY

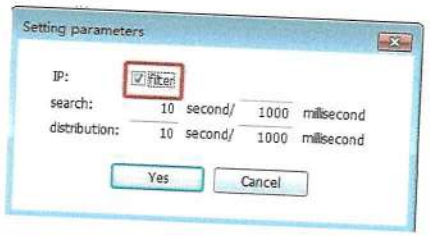
- **Tips to filter double IP**

Sometimes there will be double or triple IP for each node, as following



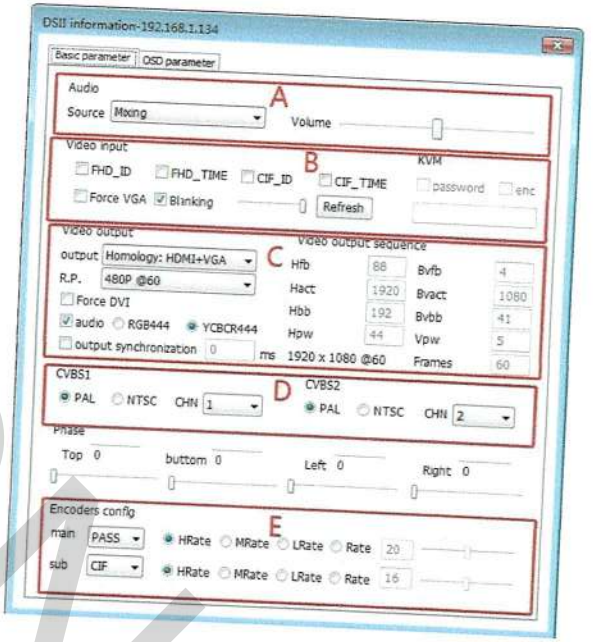
Click "Setup" to enter setting parameters windows, then check "filter" and click Yes.
Then refresh all by clicking Search.





- **Tips to revise node's output resolution, bit rate and other setting**

Double click node's No. to show its basic information. **Please do not** revise any parameter if the system works in good performance.



A —— Factory Setting is "Mixing", means audio can input from both HDMI and Audio Port; If choosing "Digital", the audio will input from HDMI only; If choosing will input from Audio input port only.

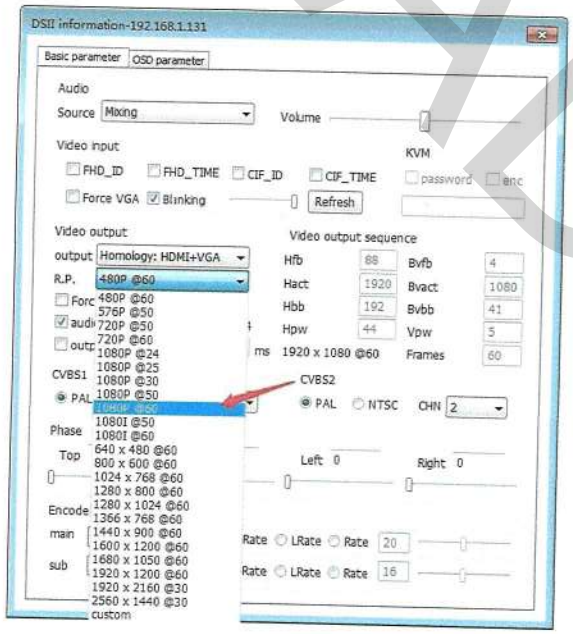
B —— Please do not revise factory setting.

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C —— Output mode should be “Homology: HDMI+VGA”, Please make sure R.P. is same with your display/monitor’s Resolution.

Output Synchronization: normally set as 150 ms

If your display can input DVI signal only, please check “Force DVI” for every node connecting with video wall display.

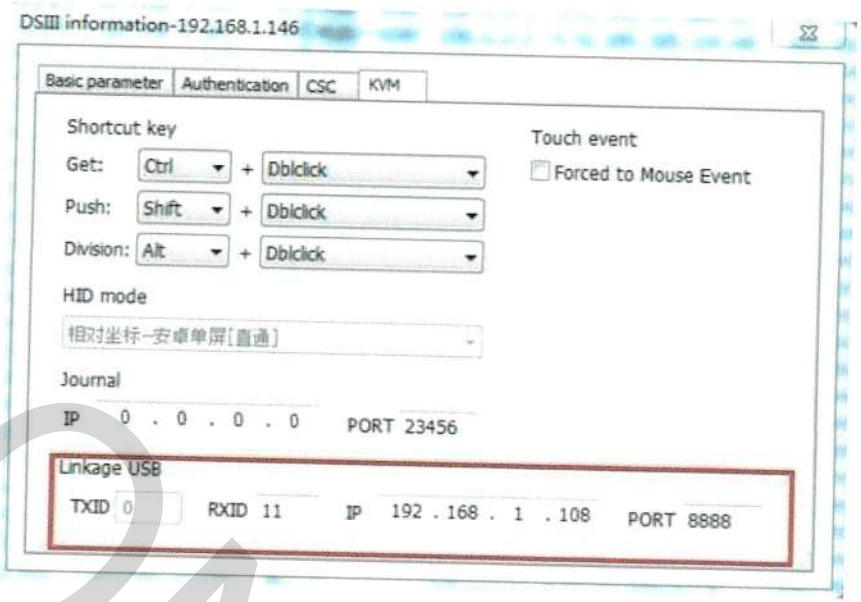


D —— Please do not revise factory setting

E ——Factory setting are “main pass” by 20, “sub CIF”by 16. The bigger rate and higher output resolution.

- **Tips to link USB Matrix system with KVM**

Skip this if you didn’t purchase USB Matrix System



TXID —— Port ID df USB Matirx, connecting with CPU-USB Node

RXID —— Port ID df USB Matirx, connecting with CON-USB Node

IP —— USB Matrix’s IP address, factory setting is 192.168.1.234

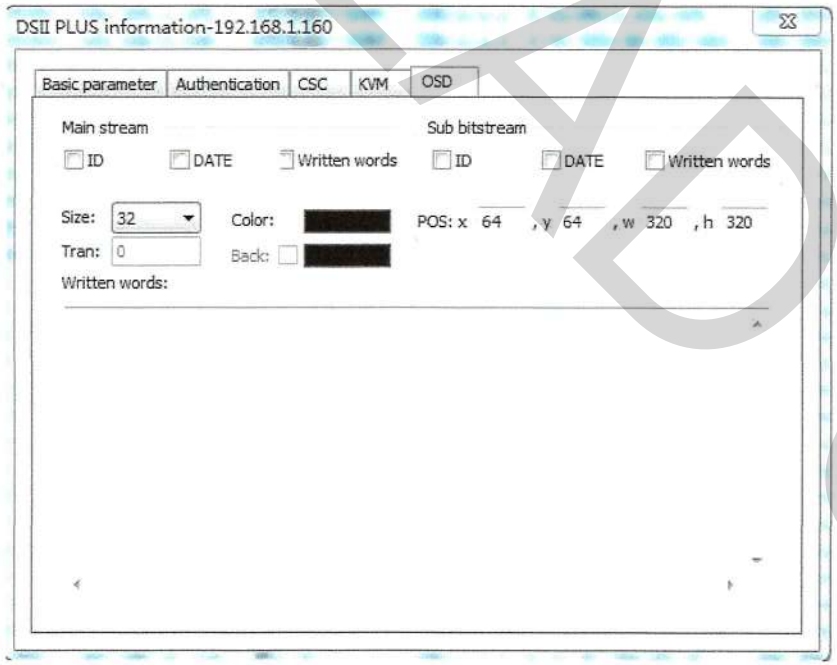
PORT —— 8888

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AVCiT

- **Tips to remark input source**

The remark/description of input source, so that operator can recognize the source immediately.



ID —— If selecting it, the remark will show the name of Node's ID

DATE —— If selecting it, the remark will show the date.

Written Words —— If selecting, the remark will show what you wrote below.

POS —— adjust position of remark.

END

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Section VII. Activity/ Price/Rate Schedule (Appendix D)

The rates and prices to be filled in by the Bidders in the following schedules shall be used for bid evaluation, as described in the Instructions to Bidders.

Price Schedule

For Three (3) Years Comprehensive Maintenance Agreement for Video Wall Display System at RTC, established under the Integrated Flood Management System

Item No.	Description	Rate per Preventive Maintenance Visit (LKR) (a)	Number of Visits per Year (b)	Total Cost per Year (LKR) (c = a × b)	No of years (d)	Total Amount (LKR.) (e = c × d)
1	The Service Provider shall perform three (03) visits for preventive maintenance per year to ensure the reliable operation of the video wall system and associated infrastructure. This includes inspection, cleaning (as per the 4.0 Supplier's Project Service Maintenance Manual), alignment, and performance checks of the 16 Triolion display panels; verification of power supply units, cabling, and PDUs; testing of signal processing equipment, controllers, encoders/decoders, and network switches; software and firmware updates with backups and license validation; environmental and thermal management of panels and racks; UPS system health checks including batteries and load testing; computing equipment optimization and security updates; and rack infrastructure inspection with cable management and structural integrity verification.		3		3	
Total Bidding Price						
Add: 18% VAT						
GRAND TOTAL						

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NOTE:-

i. The contractor shall provide all labours, ladders and tools etc.

ii. The contractor is responsible for providing transport facilities

iii. The contractor shall provide all the necessary software related to the video display system act computer etc.

iv. *The Contractor shall perform all maintenance services in strict accordance with the* ***Supplier's Project Service Maintenance Manual as set in Annexure G and Display Unit User Manual as set in Annexure H***

Total amount in words (Use for bid price in the form of bid): Rupees

……

……

……

Authorised person of the bidder

Name :…….

Designation :…….

Address :…….

……

……..

NIC No :…….

Mobile No :…….

Date :…….

Signature :…….

Common Seal

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Section VIII. Preventive Maintenance Checklist

Note : The bidder need provide their consent and agreed to submit following format for every preventive maintenance visit.

(To be completed by the Service Provider's technician during each preventive maintenance visit)

Visit No : _____

Date : _____

Technician Name : _____

No.	Check Item	Status (✓/X)	Remarks
A1. Video Wall Display Panels (Triolion 55" x 16 Units)			
1	Visual inspection of all 16 display panels		
2	Dead pixel / stuck pixel check		
3	Color uniformity and brightness consistency		
4	Burn-in / image retention inspection		
5	Panel surface cleaning completed		
6	Ventilation area cleaning completed		
7	Bezel alignment and gap inspection		
8	Mounting bracket and support structure inspection		
9	Power supply unit testing (all panels)		
10	Power cable and signal cable connection check		
11	Fan / ventilation system inspection		

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A2. Signal Processing Equipment (AVCIT Encoders, Decoders & Switches)			
1	IP Encoder functionality test (8 units)		
2	IP Decoder functionality test (16 units)		
3	HDMI / DVI signal quality verification		
4	Network connectivity test (Ethernet switches)		
5	CMS software functionality check		
6	Firmware version check and update status		
7	Configuration backup completed		
A3. UPS System (Kehua 10KVA)			
1	Visual inspection and cleaning		
2	Battery voltage measurement		
3	Load percentage check		
4	Transfer switch test		
5	Alarm / indicator verification		
6	Input / output voltage measurement		
7	Runtime estimation		
A4. Computing Equipment (HP Pro 280 i5 PC & Monitor)			
1	PC hardware health check		
2	OS performance and disk health check		
3	Antivirus / security update status		
4	Monitor display quality check		
5	Connectivity with video wall system verified		

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A5. Rack & Infrastructure			
1	Rack physical inspection		
2	Cable management inspection		
3	PDU functionality check		
4	Rack ventilation and temperature check		

Overall System Status: ☐ Fully Operational

☐ Operational with Minor Issues

☐ Requires Attention

Recommendations:

Service Provider		**Client Representative**	
Name:		Name:	
NIC No:			
Signature:		Signature:	
Date:		Date:	

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Section IX.
Standard Forms

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Format for Bid Security
(Relevant Reference to the Procurement Manual)

[*This bank Guarantee form shall be filled in accordance with the instructions indicated in brackets*]

[*Insert issuing agency's name and address of issuing branch or office*]

Beneficiary: ----------

[*name and address of Employer/ Purchaser shall be inserted by the PE*]

Date: ---------- ----------[*Insert (by issuing agency) date*]

BID GUARANTEE No.: ---------- [*Insert (issuing agency) number*]

We have been informed that ---------- [*Insert (issuing agency) name of the bidder; if a Joint Venture, list complete legal names of partners*] (hereinafter called "the bidder") has submitted to you its bid dated ---------- [*Insert (issuing agency) date*] (hereinafter called "the bid") for the execution/supply [*select appropriately*] of [*Insert name of contract*]
under invitation for bids No. ---------- [*Insert IFB number*] ("the IFB").

Furthermore, we understand that, according to your conditions, Bids must be supported by a Bid Guarantee.

At the request of the Bidder, we ---------- [*Insert name of issuing agency*] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of -----
---------- [*Insert amount in figures*] ---------- [*Insert amount in words*] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder,

(a) has withdrawn its Bid during the period of bid validity specified; or

(b) does not accept the correction of errors in accordance with the instructions to Bidders
(herein after "the **ITB**") of the **IFB**; or

(c) having been notified of the acceptance of its Bid by the Employer/Purchaser during the period of bid validity, (i) fails or refuses to execute the contract form, if required, or (ii) fails or refuses to furnish the Performance Security, in accordance with the **ITB.**

This Guarantee shall expire: (a) if the Bidder is the successful bidder, upon our receipt of copies of the Contract signed by the Bidder and of the Performance Security issued to you by the Bidder; or (b) if the Bidder is not the successful bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder that the Bidder was unsuccessful, otherwise it will remain in force up to ----------
(Insert date)
Consequently, any demand for payment under this Guarantee must be received by us at the office on or before that date ----------.

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[signature(s) authorized representative(s)]

Acceptable Format for Performance Guarantee/Security (Relevant Reference to the Procurement Manual)

[Issuing Agency's Name, and Address of Issuing Branch or Office]_

Beneficiary: **General Manager, Sri Lanka Land Development Corporation**
[Name and Address of Employer]

Date:

PERFORMANCE GUARANTEE/SECURITY No.: _____

We have been informed that _____[name of Contractor/supplier] (hereinafter called 'the Contractor") has entered into Contract No._____ [reference number of the contract] dated_____ with you for the _____ [insert "construction / "supply"] of_____[name of contract and brief description of Works or supply] (hereinafter called "the Contract") Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.

At the request of the Contractor, we_____ [name of Agency] hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of_____[amount of figures]_____[amou nt in words], such sum being payable in the types and proportions of currencies in which the Contract price is payable, upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or to show grounds for your demand or the sum specified therein.

This guarantee/security shall expire, no later than the _____day of _____ , 20_____ [insert 28 days beyond the scheduled contract completion date]. and any demand for payment under it must be received by us at this office on or before that date.

_____

[signature(s)]

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Annexure VII of Chapter 05
Acceptable Format for Advance Payment Guarantee
(Relevant Reference to the Procurement Manual - 5.17)

Advance payment securities issued in the format given below is acceptable:

---------- *[Name and addressed of Agency, and Address of issuing Branch or Office]*

Beneficiary: ---------- *[Name and Address of Employer]*

Date: ----------

ADVANCE PAYMENT GUARANTEE No.: ----------

We have been informed that ---------- *[name of contractor / supplier]*(hereinafter called "the Contractor") has entered in to contract No. ------ ---------- *[reference number of the contract]* dated ---------- with you, for the ------ ---------- *(insert "construction" or "supply")* of ---------- *[name of contract and brief description]* (hereinafter called "the Contract").

Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum ---------- [*amount of figures]* (----------) *[amount in words]* is to made against an advance payment Guarantee.

At the request of the Contractor, we ---------- *[name of issuing agency]* hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of *[amount of figures]* (----------) *[amount of words]*[1] upon receipt by us of your first demand in writing accompanied by a written statement stating that the Contractor is in breach of its obligation under the Contract.

The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment recovered from the contractor or repaid by the Contractor.

This guarantee shall expire, *Insert the date, 28 days beyond the expected expiration date (completion date) of the Contract.*

Consequently, any demand for payment under this guarantee must be received by us at this office on or before that date.

* *The guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency/currencies) of the advance payment as specified in the contract.*

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Check List for Bidders

Bidders are advised to fill in the following table:

ITEM	ITB Clause	YES (tick)	REFERENCE
Form of Bid			
Addressed to the Employer	18		
Completed?	18		
Signed?	18		
Bid Securing Declaration Form (if required)			
Properly filled and signed	16		
Bid Security (if required)			
Address to the Employer?	16		
Format as required?	16		
Issuing Agency as specified?	16		
Amount as requested?	16		
Validity 28 days beyond the validity of Bid?	16		
Declaration of Non-Collusion and Multiple Bids			
Affidavit with required signatures	NPC 5.6.4		
Qualification Information			
All relevant information completed?	4		
Signed?	4		
Addendum			
Contents of the addendum (if any) taken into account?	10		
BID package			
All the documents given in ITB Clause 12 are enclosed in the original and the copy?	12		
ITB Clause 19 followed before sealing the Bid package?	19		

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