



State of West Virginia  
Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

# Solicitation

NUMBER

LOT494

PAGE

1

ADDRESS CORRESPONDENCE TO ATTENTION OF:

CONNIE HILL  
304-558-2157

\*709033620 01 304-397-4100  
LEE HARTMAN & SONS INC  
3 DAVIS COURT

HURRICANE WV 25526

WEST VIRGINIA LOTTERY

900 PENNSYLVANIA AVE  
CHARLESTON, WV  
25302 304-558-0500

DATE PRINTED

06/25/2012

BID OPENING DATE:

08/01/2012

BID OPENING TIME

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
THE STATE OF WEST VIRGINIA AND ITS AGENCY THE WEST VIRGINIA LOTTERY REQUEST A QUOTE FOR AUDIO-VISUAL EQUIPMENT, LABOR AND MATERIALS FOR INSTALLATION AT THE WEST VIRGINIA LOTTERY, 900 PENNSYLVANIA AVENUE, CHARLESTON, WV PER THE ATTACHED SPECIFICATIONS.						
*****MANDATORY PRE-BID MEETING***** JULY 11 @ 1:30 PM  LOCATION: WV LOTTERY HEADQUARTERS 900 PENNSYLVANIA AVENUE CHARLESTON, WV  BID OPENING: AUGUST 1, 2012 AT 1:30 PM  LOCATION: PURCHASING DIVISION, BUILDING #15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305						
0001	1	JB		840-99		\$81,502.95
AUDIO/VISUAL EQUIPMENT  LABOR & MATERIALS TO INSTALL PER THE ATTACHED SPECIFICATIONS.						

RECEIVED

2012 AUG -1 AM 11:21

WV PURCHASING  
DIVISION

SIGNATURE

*Pammy Hays*

TELEPHONE

304-397-4100

DATE

07/30/12

TITLE

Area Manager

FEIN

54-0716361

ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

## INSTRUCTIONS TO VENDORS SUBMITTING BIDS

1. **REVIEW DOCUMENTS THOROUGHLY:** The attached documents contain a solicitation for bids. Please read these instructions and all documents attached in their entirety. These instructions provide critical information about requirements that if overlooked could lead to disqualification of a Vendor's bid. All bids must be submitted in accordance with the provisions contained in these instructions and the Solicitation. Failure to do so may result in disqualification of Vendor's bid.
2. **MANDATORY TERMS:** The Solicitation may contain mandatory provisions identified by the use of the words "must," "will," and "shall." Failure to comply with a mandatory term in the Solicitation will result in bid disqualification.
3. **PREBID MEETING:** The item identified below shall apply to this Solicitation.

☐ | A pre-bid meeting will not be held prior to bid opening.

☐ | A NON-MANDATORY PRE-BID meeting will be held at the following place and time:

☒ | A MANDATORY PRE-BID meeting will be held at the following place and time:

July 11, 2012 at 1:30 pm

Lottery Headquarters, 900 Pennsylvania Ave., Charleston, WV

All Vendors submitting a bid must attend the mandatory pre-bid meeting. Failure to attend the mandatory pre-bid meeting shall result in disqualification of the Vendor's bid. No one person attending the pre-bid meeting may represent more than one Vendor.

An attendance sheet provided at the pre-bid meeting shall serve as the official document verifying attendance. The State will not accept any other form of proof or documentation to verify attendance. Any person attending the pre-bid meeting on behalf of a Vendor must list on the attendance sheet his or her name and the name of the Vendor he or she is representing. Additionally, the person attending the pre-bid meeting should include the Vendor's E-Mail address and Fax number on the attendance sheet. It is the Vendor's responsibility to locate the attendance sheet and provide the required information. Failure to complete the attendance sheet as required may result in disqualification of Vendor's bid.

All Vendors should arrive prior to the starting time for the pre-bid. Vendors who arrive after the starting time but prior to the end of the pre-bid will be permitted to sign in; but are charged with knowing all matters discussed at the pre-bid.

Questions submitted at least five business days prior to a scheduled pre-bid will be discussed at the pre-bid meeting if possible. Any discussions or answers to questions at

the pre-bid meeting are preliminary in nature and are non-binding. Official and binding answers to questions will be published in a written addendum to the Solicitation prior to bid opening.

4. **VENDOR QUESTION DEADLINE:** Vendors may submit questions relating to this Solicitation to the Purchasing Division. Questions must be submitted in writing. All questions must be submitted on or before the date listed below and to the address listed below in order to be considered. A written response will be published in a Solicitation addendum if a response is possible and appropriate. Non-written discussions, conversations, or questions and answers regarding this Solicitation are preliminary in nature and are non-binding.

Question Submission Deadline: July 16, 2012

Submit Questions to: Connie Hill  
2019 Washington Street, East  
P.O. Box 50130  
Charleston, WV 25305  
Fax: 304-558-3970  
Email: Connie.S.Hill@wv.gov

5. **VERBAL COMMUNICATION:** Any verbal communication between the Vendor and any State personnel is not binding, including that made at the mandatory pre-bid conference. Only information issued in writing and added to the Solicitation by an official written addendum by the Purchasing Division is binding.
6. **BID SUBMISSION:** All bids must be signed and delivered by the Vendor to the Purchasing Division at the address listed below on or before the date and time of the bid opening. Any bid received by the Purchasing Division staff is considered to be in the possession of the Purchasing Division and will not be returned for any reason. The bid delivery address is:

Department of Administration, Purchasing Division  
2019 Washington Street East  
P.O. Box 50130,  
Charleston, WV 25305-0130

The bid should contain the information listed below on the face of the envelope or the bid may not be considered:

SEALED BID  
BUYER: \_\_\_\_\_  
SOLICITATION NO.: \_\_\_\_\_  
BID OPENING DATE: \_\_\_\_\_  
BID OPENING TIME: \_\_\_\_\_  
FAX NUMBER: \_\_\_\_\_

In the event that Vendor is responding to a request for proposal, the Vendor shall submit one original technical and one original cost proposal plus \_\_\_\_\_ convenience copies of each to the Purchasing Division at the address shown above. Additionally, the Vendor should identify the bid type as either a technical or cost proposal on the face of each bid envelope submitted in response to a request for proposal or expression of interest as follows:

BID TYPE:    ☐    Technical  
                   ☐    Cost

7. **BID OPENING:** Bids submitted in response to this Solicitation will be opened at the location identified below on the date and time listed below. Delivery of a bid after the bid opening date and time will result in bid disqualification. For purposes of this Solicitation, a bid is considered delivered when time stamped by the official Purchasing Division time clock.

**Bid Opening Date and Time:** August 1, 2012 at 1:30 pm

**Bid Opening Location:** Department of Administration, Purchasing Division  
 2019 Washington Street East  
 P.O. Box 50130,  
 Charleston, WV 25305-0130

8. **ADDENDUM ACKNOWLEDGEMENT:** Changes or revisions to this Solicitation will be made by an official written addendum issued by the Purchasing Division. Vendor should acknowledge receipt of all addenda issued with this Solicitation by completing an Addendum Acknowledgment Form, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.
9. **BID FORMATTING:** Vendor should type or electronically enter the information onto its bid to prevent errors in the evaluation. Failure to type or electronically enter the information may result in bid disqualification.



**GENERAL TERMS AND CONDITIONS:**

1. **CONTRACTUAL AGREEMENT:** Issuance of a Purchase Order signed by the Purchasing Division Director, or his designee, and approved as to form by the Attorney General's office constitutes acceptance of this Contract made by and between the State of West Virginia and the Vendor. Vendor's signature on its bid signifies Vendor's agreement to be bound by and accept the terms and conditions contained in this Contract.
2. **DEFINITIONS:** As used in this Solicitation / Contract, the following terms shall have the meanings attributed to them below. Additional definitions may be found in the specifications included with this Solicitation / Contract.
  - 2.1 "Agency" or "Agencies" means the agency, board, commission, or other entity of the State of West Virginia that is identified on the first page of the Solicitation or any other public entity seeking to procure goods or services under this Contract.
  - 2.2 "Contract" means the binding agreement that is entered into between the State and the Vendor to provide the goods and services requested in the Solicitation.
  - 2.3 "Director" means the Director of the West Virginia Department of Administration, Purchasing Division.
  - 2.4 "Purchasing Division" means the West Virginia Department of Administration, Purchasing Division.
  - 2.5 "Purchase Order" means the document signed by the Agency and the Purchasing Division, and approved as to form by the Attorney General, that identifies the Vendor as the successful bidder and Contract holder.
  - 2.6 "Solicitation" means the official solicitation published by the Purchasing Division and identified by number on the first page thereof.
  - 2.7 "State" means the State of West Virginia and/or any of its agencies, commissions, boards, etc. as context requires.
  - 2.8 "Vendor" or "Vendors" means any entity submitting a bid in response to the Solicitation, the entity that has been selected as the lowest responsible bidder, or the entity that has been awarded the Contract as context requires.

3. **CONTRACT TERM; RENEWAL; EXTENSION:** The term of this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below:

**| | Term for Open End, Service, and Similar Contracts**

**Initial Contract Term:** This Contract becomes effective on \_\_\_\_\_ and extends for a period of \_\_\_\_\_ year(s).

**Renewal Term:** This Contract may be renewed upon the mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). Any request for renewal must be submitted to the Purchasing Division Director thirty (30) days prior to the expiration date of the initial contract term or appropriate renewal term. A Contract renewal shall be in accordance with the terms and conditions of the original contract. Renewal of this Contract is limited to \_\_\_\_\_ successive one (1) year periods. Automatic renewal of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases. Attorney General approval may be required for vendor terms and conditions.

**Reasonable Time Extension:** At the sole discretion of the Purchasing Division Director, and with approval from the Attorney General's office (Attorney General approval is as to form only), this Contract may be extended for a reasonable time after the initial Contract term or after any renewal term as may be necessary to obtain a new contract or renew this Contract. Any reasonable time extension shall not exceed twelve (12) months. Vendor may avoid a reasonable time extension by providing the Purchasing Division Director with written notice of Vendor's desire to terminate this Contract 30 days prior to the expiration of the then current term. During any reasonable time extension period, the Vendor may terminate this Contract for any reason upon giving the Purchasing Division Director 30 days written notice. Automatic extension of this Contract is prohibited. Notwithstanding the foregoing, Purchasing Division approval is not required on agency delegated or exempt purchases, but Attorney General approval may be required.

- |✓| One Time Purchase:** The term of this Contract shall run for one year from the date the Purchase Order is issued or from the date the Purchase Order is issued until all of the goods contracted for have been delivered, whichever is shorter.

4. **QUANTITIES:** The quantities required under this Contract shall be determined in accordance with the category that has been identified as applicable to this Contract below.

**| | Open End Contract:** Quantities listed in this Solicitation are approximations only, based on estimates supplied by the Agency. It is understood and agreed that the Contract shall cover the quantities actually ordered for delivery during the term of the Contract, whether more or less than the quantities shown.

- |✓| Service:** The scope of the service to be provided will be more clearly defined in the specifications included herewith.

- ☐ **Combined Service and Goods:** The scope of the service and deliverable goods to be provided will be more clearly defined in the specifications included herewith.
  - ☒ **One Time Purchase:** This Contract is for the purchase of a set quantity of goods that are identified in the specifications included herewith. Once those items have been delivered, no additional goods may be procured under this Contract without an appropriate change order approved by the Vendor, Agency, Purchasing Division, and Attorney General's office.
5. **PRICING:** The pricing set forth herein is firm for the life of the Contract, unless specified elsewhere within this Solicitation/Contract by the State. A Vendor's inclusion of price adjustment provisions in its bid, without an express authorization from the State in the Solicitation to do so, may result in bid disqualification.
6. **EMERGENCY PURCHASES:** The Purchasing Division Director may authorize the Agency to purchase goods or services in the open market that Vendor would otherwise provide under this Contract if those goods or services are for immediate or expedited delivery in an emergency. Emergencies shall include, but are not limited to, delays in transportation or an unanticipated increase in the volume of work. An emergency purchase in the open market, approved by the Purchasing Division Director, shall not constitute a breach of this Contract and shall not entitle the Vendor to any form of compensation or damages. This provision does not excuse the State from fulfilling its obligations under a One Time Purchase contract.
7. **REQUIRED DOCUMENTS:** All of the items checked below must be provided to the Purchasing Division by the Vendor as specified below.
- ☒ **BID BOND:** All Vendors shall furnish a bid bond in the amount of five percent (5%) of the total amount of the bid protecting the State of West Virginia. The bid bond must be submitted with the bid.
  - ☒ **PERFORMANCE BOND:** The apparent successful Vendor shall provide a performance bond in the amount of . The performance bond must be issued and received by the Purchasing Division prior to Contract award. On construction contracts, the performance bond must be 100% of the Contract value.
  - ☒ **LABOR/MATERIAL PAYMENT BOND:** The apparent successful Vendor shall provide a labor/material payment bond in the amount of 100% of the Contract value. The labor/material payment bond must be issued and delivered to the Purchasing Division prior to Contract award.

In lieu of the Bid Bond, Performance Bond, and Labor/Material Payment Bond, the Vendor may provide certified checks, cashier's checks, or irrevocable letters of credit. Any certified check, cashier's check, or irrevocable letter of credit provided in lieu of a bond must be of the same amount and delivered on the same schedule as the bond it replaces. A letter of credit submitted in lieu of a performance and labor/material payment bond will only be allowed for projects under \$100,000. Personal or business checks are not acceptable.

☐ **MAINTENANCE BOND:** The apparent successful Vendor shall provide a two (2) year maintenance bond covering the roofing system. The maintenance bond must be issued and delivered to the Purchasing Division prior to Contract award.

☒ **WORKERS' COMPENSATION INSURANCE:** The apparent successful Vendor shall have appropriate workers' compensation insurance and shall provide proof thereof upon request.

☒ **INSURANCE:** The apparent successful Vendor shall furnish proof of the following insurance prior to Contract award:

☒ **Commercial General Liability Insurance:**  
\$1,000,000.00 minimum or more.

☐ **Builders Risk Insurance:** builders risk – all risk insurance in an amount equal to 100% of the amount of the Contract.

☒ Property Damage Insurance, \$1,000,000.00 minimum.

☒ Professional Liability \$500,000.00 minimum

☐

☐

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The apparent successful Vendor shall also furnish proof of any additional insurance requirements contained in the specifications prior to Contract award regardless of whether or not that insurance requirement is listed above.

☒ **LICENSE(S) / CERTIFICATIONS:** In addition to anything required under Section 39, entitled Licensing, of the General Terms and Conditions, the apparent successful Vendor shall furnish proof of the following licenses prior to Contract award, in a form acceptable to the Purchasing Division.

☒ WV State Contractors License must be furnished with your bid.

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The apparent successful Vendor shall also furnish proof of any additional licenses or certifications contained in the specifications prior to Contract award regardless of whether or not that requirement is listed above.

8. **LITIGATION BOND:** The Director reserves the right to require any Vendor that files a protest of an award to submit a litigation bond in the amount equal to one percent of the lowest bid submitted or \$5,000, whichever is greater. The entire amount of the bond shall be forfeited if the hearing officer determines that the protest was filed for frivolous or improper purpose, including but not limited to, the purpose of harassing, causing unnecessary delay, or needless expense for the Agency. All litigation bonds shall be made payable to the Purchasing Division. In lieu of a bond, the protester may submit a cashier's check or certified check payable to the Purchasing Division. Cashier's or certified checks will be deposited with and held by the State Treasurer's office. If it is determined that the protest has not been filed for frivolous or improper purpose, the bond or deposit shall be returned in its entirety.
9. **ALTERNATES:** Any model, brand, or specification listed herein establishes the acceptable level of quality only and is not intended to reflect a preference for, or in any way favor, a particular brand or vendor. Vendors may bid alternates to a listed model or brand provided that the alternate is at least equal to the model or brand and complies with the required specifications. The equality of any alternate being bid shall be determined by the State at its sole discretion. Any Vendor bidding an alternate model or brand should clearly identify the alternate items in its bid and should include manufacturer's specifications, industry literature, and/or any other relevant documentation demonstrating the equality of the alternate items. Failure to provide information for alternate items may be grounds for rejection of a Vendor's bid.
10. **EXCEPTIONS AND CLARIFICATIONS:** The Solicitation contains the specifications that shall form the basis of a contractual agreement. Vendor shall clearly mark any exceptions, clarifications, or other proposed modifications in its bid. Exceptions to, clarifications of, or modifications of a requirement or term and condition of the Solicitation may result in bid disqualification.
11. **LIQUIDATED DAMAGES:** Vendor shall pay liquidated damages in the amount \_\_\_\_\_ for \_\_\_\_\_. This clause shall in no way be considered exclusive and shall not limit the State or Agency's right to pursue any other available remedy.
12. **ACCEPTANCE/REJECTION:** The State may accept or reject any bid in whole, or in part. Vendor's signature on its bid signifies acceptance of the terms and conditions contained in the Solicitation and Vendor agrees to be bound by the terms of the Contract, as reflected in the Purchase Order, upon receipt.
13. **REGISTRATION:** Prior to Contract award, the apparent successful Vendor must be properly registered with the West Virginia Purchasing Division and must have paid the \$125 fee if applicable.
14. **COMMUNICATION LIMITATIONS:** In accordance with West Virginia Code of State Rules §148-1-6.6, communication with the State of West Virginia or any of its employees regarding this Solicitation during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited without prior Purchasing Division approval. Purchasing Division approval for such communication is implied for all agency delegated and exempt purchases.
15. **FUNDING:** This Contract shall continue for the term stated herein, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not



appropriated or otherwise made available, this Contract becomes void and of no effect beginning on July 1 of the fiscal year for which funding has not been appropriated or otherwise made available.

16. **PAYMENT:** Payment in advance is prohibited under this Contract. Payment may only be made after the delivery and acceptance of goods or services. The Vendor shall submit invoices, in arrears, to the Agency at the address on the face of the purchase order labeled "Invoice To."
17. **UNIT PRICE:** Unit prices shall prevail in cases of a discrepancy in the Vendor's bid.
18. **DELIVERY:** All quotations are considered freight on board destination ("F.O.B. destination") unless alternate shipping terms are clearly identified in the bid. Vendor's listing of shipping terms that contradict the shipping terms expressly required by this Solicitation may result in bid disqualification.
19. **INTEREST:** Interest attributable to late payment will only be permitted if authorized by the West Virginia Code. Presently, there is no provision in the law for interest on late payments.
20. **PREFERENCE:** Vendor Preference may only be granted upon written request and only in accordance with the West Virginia Code § 5A-3-37 and the West Virginia Code of State Rules. A Resident Vendor Certification form has been attached hereto to allow Vendor to apply for the preference. Vendor's failure to submit the Resident Vendor Certification form with its bid will result in denial of Vendor Preference. Vendor Preference does not apply to construction projects.
21. **SMALL, WOMAN-OWNED, OR MINORITY-OWNED BUSINESSES:** For any solicitations publicly advertised for bid on or after July 1, 2012, in accordance with West Virginia Code §5A-3-37(a)(7) and W. Va. CSR § 148-22-9, any non-resident vendor certified as a small, women-owned, or minority-owned business under W. Va. CSR § 148-22-9 shall be provided the same preference made available to any resident vendor. Any non-resident small, women-owned, or minority-owned business must identify itself as such in writing, must submit that writing to the Purchasing Division with its bid, and must be properly certified under W. Va. CSR § 148-22-9 prior to submission of its bid to receive the preferences made available to resident vendors. Preference for a non-resident small, woman-owned, or minority owned business shall be applied in accordance with W. Va. CSR § 148-22-9.
22. **TAXES:** The Vendor shall pay any applicable sales, use, personal property or any other taxes arising out of this Contract and the transactions contemplated thereby. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
23. **CANCELLATION:** The Purchasing Division Director reserves the right to cancel this Contract immediately upon written notice to the vendor if the materials or workmanship supplied do not conform to the specifications contained in the Contract. The Purchasing Division Director may cancel any purchase or Contract upon 30 days written notice to the Vendor in accordance with West Virginia Code of State Rules § 148-1-7.16.2.
24. **WAIVER OF MINOR IRREGULARITIES:** The Director reserves the right to waive minor irregularities in bids or specifications in accordance with West Virginia Code of State Rules § 148-1-4.6.
25. **TIME:** Time is of the essence with regard to all matters of time and performance in this Contract.

26. **APPLICABLE LAW:** This Contract is governed by and interpreted under West Virginia law without giving effect to its choice of law principles. Any information provided in specification manuals, or any other source, verbal or written, which contradicts or violates the West Virginia Constitution, West Virginia Code or West Virginia Code of State Rules is void and of no effect.
27. **COMPLIANCE:** Vendor shall comply with all applicable federal, state, and local laws, regulations and ordinances. By submitting a bid, Vendors acknowledge that they have reviewed, understand, and will comply with all applicable law.
28. **PREVAILING WAGE:** On any contract for the construction of a public improvement, Vendor and any subcontractors utilized by Vendor shall pay a rate or rates of wages which shall not be less than the fair minimum rate or rates of wages (prevailing wage), as established by the West Virginia Division of Labor under West Virginia Code §§ 21-5A-1 et seq. and available at <http://www.sos.wv.gov/administrative-law/wagerates/Pages/default.aspx>. Vendor shall be responsible for ensuring compliance with prevailing wage requirements and determining when prevailing wage requirements are applicable. The required contract provisions contained in West Virginia Code of State Rules § 42-7-3 are specifically incorporated herein by reference.
29. **ARBITRATION:** Any references made to arbitration contained in this Contract, Vendor's bid, or in any American Institute of Architects documents pertaining to this Contract are hereby deleted, void, and of no effect.
30. **MODIFICATIONS:** This writing is the parties' final expression of intent. Notwithstanding anything contained in this Contract to the contrary, no modification of this Contract shall be binding without mutual written consent of the Agency, and the Vendor, with approval of the Purchasing Division and the Attorney General's office (Attorney General approval is as to form only). **No Change shall be implemented by the Vendor until such time as the Vendor receives an approved written change order from the Purchasing Division.** Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.
31. **WAIVER:** The failure of either party to insist upon a strict performance of any of the terms or provision of this Contract, or to exercise any option, right, or remedy herein contained, shall not be construed as a waiver or a relinquishment for the future of such term, provision, option, right, or remedy, but the same shall continue in remain in full force and effect. Any waiver must be expressly stated in writing and signed by the waiving party.
32. **SUBSEQUENT FORMS:** The terms and conditions contained in this Contract shall supersede any and all subsequent terms and conditions which may appear on any form documents submitted by Vendor to the Agency or Purchasing Division such as price lists, order forms, invoices, sales agreements, or maintenance agreements, and includes internet websites or other electronic documents. Acceptance or use of Vendor's forms does not constitute acceptance of the terms and conditions contained thereon.
33. **ASSIGNMENT:** Neither this Contract nor any monies due, or to become due hereunder, may be assigned by the Vendor without the express written consent of the Agency, the Purchasing Division, the Attorney General's office (as to form only), and any other government agency or office that may be



required to approve such assignments. Notwithstanding the foregoing, Purchasing Division approval may or may not be required on certain agency delegated or exempt purchases.

34. **WARRANTY:** The Vendor expressly warrants that the goods and/or services covered by this Contract will: (a) conform to the specifications, drawings, samples, or other description furnished or specified by the Agency; (b) be merchantable and fit for the purpose intended; and (c) be free from defect in material and workmanship.
35. **STATE EMPLOYEES:** State employees are not permitted to utilize this Contract for personal use and the Vendor is prohibited from permitting or facilitating the same.
36. **BANKRUPTCY:** In the event the Vendor files for bankruptcy protection, the State of West Virginia may deem this Contract null and void, and terminate this Contract without notice.
37. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at <http://www.state.wv.us/admin/purchase/vrc/hipaa.html> and is hereby made part of the agreement provided that the Agency meets the definition of a Covered entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the Vendor.
38. **CONFIDENTIALITY:** The Vendor agrees that it will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the Agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the Agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/default.html>.
39. **DISCLOSURE:** Vendor's response to the Solicitation and the resulting Contract are considered public documents and will be disclosed to the public in accordance with the laws, rules, and policies governing the West Virginia Purchasing Division. Those laws include, but are not limited to, the Freedom of Information Act found in West Virginia Code § 29B-1-1 et seq.

If a Vendor considers any part of its bid to be exempt from public disclosure, Vendor must so indicate by specifically identifying the exempt information, identifying the exemption that applies, providing a detailed justification for the exemption, segregating the exempt information from the general bid information, and submitting the exempt information as part of its bid but in a segregated and clearly identifiable format. Failure to comply with the foregoing requirements will result in public disclosure of the Vendor's bid without further notice. A Vendor's act of marking all or nearly all of its bid as exempt is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor's act of marking a bid or any part thereof as "confidential" or "proprietary" is not sufficient to avoid disclosure and WILL NOT BE HONORED. In addition, a legend or other statement indicating that all or substantially all of the bid is exempt from disclosure is not sufficient to avoid disclosure and WILL NOT BE HONORED. Vendor will be required to defend any claimed exemption for nondisclosure in the event of an administrative or judicial challenge to the State's nondisclosure. Vendor must indemnify the State for any costs incurred related to any exemptions claimed by Vendor. Any questions regarding the

applicability of the the various public records laws should be addressed to your own legal counsel prior to bid submission.

- 40. LICENSING:** In accordance with West Virginia Code of State Rules §148-1-6.1.7, Vendor must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Upon request, the Vendor must provide all necessary releases to obtain information to enable the Purchasing Division Director or the Agency to verify that the Vendor is licensed and in good standing with the above entities.
- 41. ANTITRUST:** In submitting a bid to, signing a contract with, or accepting a Purchase Order from any agency of the State of West Virginia, the Vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to Vendor.
- 42. VENDOR CERTIFICATIONS:** By signing its bid or entering into this Contract, Vendor certifies (1) that its bid was made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, person or entity submitting a bid for the same material, supplies, equipment or services; (2) that its bid is in all respects fair and without collusion or fraud; (3) that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; and (4) that it has reviewed this RFQ in its entirety; understands the requirements, terms and conditions, and other information contained herein. Vendor's signature on its bid also affirms that neither it nor its representatives have any interest, nor shall acquire any interest, direct or indirect; which would compromise the performance of its services hereunder. Any such interests shall be promptly presented in detail to the Agency.

The individual signing this bid on behalf of Vendor certifies that he or she is authorized by the Vendor to execute this bid or any documents related thereto on Vendor's behalf; that he or she is authorized to bind the Vendor in a contractual relationship; and that, to the best of his or her knowledge, the Vendor has properly registered with any State agency that may require registration.

- 43. PURCHASING CARD ACCEPTANCE:** The State of West Virginia currently utilizes a Purchasing Card program, administered under contract by a banking institution, to process payment for goods and services. The Vendor must accept the State of West Virginia's Purchasing Card for payment of all orders under this Contract.
- 44. VENDOR RELATIONSHIP:** The relationship of the Vendor to the State shall be that of an independent contractor and no principal-agent relationship or employer-employee relationship is contemplated or created by this Contract. The Vendor as an independent contractor is solely liable for the acts and omissions of its employees and agents. Vendor shall be responsible for selecting, supervising, and compensating any and all individuals employed pursuant to the terms of this Solicitation and resulting contract. Neither the Vendor, nor any employees or subcontractors of the

Vendor, shall be deemed to be employees of the State for any purpose whatsoever. Vendor shall be exclusively responsible for payment of employees and contractors for all wages and salaries, taxes, withholding payments, penalties, fees, fringe benefits, professional liability insurance premiums, contributions to insurance and pension, or other deferred compensation plans, including but not limited to, Workers' Compensation and Social Security obligations, licensing fees, *etc.* and the filing of all necessary documents, forms and returns pertinent to all of the foregoing. Vendor shall hold harmless the State, and shall provide the State and Agency with a defense against any and all claims including, but not limited to, the foregoing payments, withholdings, contributions, taxes, Social Security taxes, and employer income tax returns.

45. **INDEMNIFICATION:** The Vendor agrees to indemnify, defend, and hold harmless the State and the Agency, their officers, and employees from and against: (1) Any claims or losses for services rendered by any subcontractor, person, or firm performing or supplying services, materials, or supplies in connection with the performance of the Contract; (2) Any claims or losses resulting to any person or entity injured or damaged by the Vendor, its officers, employees, or subcontractors by the publication, translation, reproduction, delivery, performance, use, or disposition of any data used under the Contract in a manner not authorized by the Contract, or by Federal or State statutes or regulations; and (3) Any failure of the Vendor, its officers, employees, or subcontractors to observe State and Federal laws including, but not limited to, labor and wage and hour laws.
46. **PURCHASING AFFIDAVIT:** In accordance with West Virginia Code § 5A-3-10a, all Vendors are required to sign, notarize, and submit the Purchasing Affidavit stating that neither the Vendor nor a related party owe a debt to the State in excess of \$1,000. The affidavit must be submitted prior to award, but should be submitted with the Vendor's bid. A copy of the Purchasing Affidavit is included herewith.
47. **ADDITIONAL AGENCY AND LOCAL GOVERNMENT USE:** This Contract may be utilized by and extends to other agencies, spending units, and political subdivisions of the State of West Virginia; county, municipal, and other local government bodies; and school districts ("Other Government Entities"). This Contract shall be extended to the aforementioned Other Government Entities on the same prices, terms, and conditions as those offered and agreed to in this Contract. If the Vendor does not wish to extend the prices, terms, and conditions of its bid and subsequent contract to the Other Government Entities, the Vendor must clearly indicate such refusal in its bid. A refusal to extend this Contract to the Other Government Entities shall not impact or influence the award of this Contract in any manner.
48. **CONFLICT OF INTEREST:** Vendor, its officers or members or employees, shall not presently have or acquire any interest, direct or indirect, which would conflict with or compromise the performance of its obligations hereunder. Vendor shall periodically inquire of its officers, members and employees to ensure that a conflict of interest does not arise. Any conflict of interest discovered shall be promptly presented in detail to the Agency.
49. **BACKGROUND CHECK:** In accordance with W. Va. Code § 15-2D-3, the Director of the Division of Protective Services may require any service provider whose employees are regularly employed on the grounds or in the buildings of the Capitol complex or who have access to sensitive or critical

information to submit to a fingerprint-based state and federal background inquiry through the state repository.

After the contract for such services has been approved, but before any such employees are permitted to be on the grounds or in the buildings of the Capitol complex or have access to sensitive or critical information, the service provider shall submit a list of all persons who will be physically present and working at the Capitol complex to the Director of the Division of Protective Services for purposes of verifying compliance with this provision.

The State reserves the right to prohibit a service provider's employees from accessing sensitive or critical information or to be present at the Capitol complex based upon results addressed from a criminal background check.

**ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)**

1. **NOTICE TO PROCEED:** The Vendor shall begin performance of this Contract immediately upon receiving notice to proceed. Unless otherwise specified, the fully executed Purchase Order will be considered notice to proceed.
  
2. **CONTRACTOR'S LICENSE:** West Virginia Code § 21-11-2 requires that all persons desiring to perform contracting work in this state be licensed. The West Virginia Contractors Licensing Board is empowered to issue the contractor's license. Applications for a contractor's license may be made by contacting the West Virginia Division of Labor.  
 West Virginia Code § 21-11-11 requires any prospective Vendor to include the contractor's license number on its bid. Failure to include a contractor's license number on the bid shall result in Vendor's bid being disqualified. Vendors should include a contractor's license number in the space provided below.

Contractor's Name: Lee Hartman & Sons, Inc.

Contractor's License No. WV 037465

The apparent successful Vendor must furnish a copy of its contractor's license prior to the issuance of a purchase order/contract.

3. **DRUG-FREE WORKPLACE:** W. Va. Code § 21-1D-5 provides that any solicitation for a public improvement contract requires each Vendor that submits a bid for the work to submit at the same time an affidavit that the Vendor has a written plan for a drug-free workplace policy. To comply with this law, Vendor must either complete the enclosed drug-free workplace affidavit and submit the same with its bid or complete a similar affidavit that fulfills all of the requirements of the applicable code. Failure to submit the signed and notarized drug-free workplace affidavit, or a similar affidavit that fully complies with the requirements of the applicable code, with the bid shall result in disqualification of Vendor's bid.
  
4. **PREFERENCE FOR USE OF DOMESTIC STEEL PRODUCTS:** Except when authorized by the Director of the Purchasing Division pursuant to W. Va. Code § 5A-3-56, no contractor may use or supply steel products for a State Contract Project other than those steel products made in the United States. A contractor who uses steel products in violation of this section may be subject to civil penalties pursuant to W. Va. Code § 5A-3-56. As used in this section:
  - a. "State Contract Project" means any erection or construction of, or any addition to, alteration of or other improvement to any building or structure, including, but not limited to, roads or highways, or the installation of any heating or cooling or ventilating plants or other equipment, or the supply of and materials for such projects, pursuant to a contract with the State of West Virginia for which bids were solicited on or after June 6, 2001.
  
  - b. "Steel Products" means products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated or otherwise similarly processed, or processed by a combination of two or more or



such operations, from steel made by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process.

The Purchasing Division Director may, in writing, authorize the use of foreign steel products if:

- a. The cost for each contract item used does not exceed one tenth of one percent (.1%) of the total contract cost or two thousand five hundred dollars (\$2,500.00), whichever is greater. For the purposes of this section, the cost is the value of the steel product as delivered to the project; or
- b. The Director of the Purchasing Division determines that specified steel materials are not produced in the United States in sufficient quantity or otherwise are not reasonably available to meet contract requirements.

5. **PREFERENCE FOR USE OF DOMESTIC ALUMINUM, GLASS, AND STEEL:** In Accordance with W. Va. Code § 5-19-1 et seq., and W. Va. CSR § 148-10-1 et seq., for every contract or subcontract, subject to the limitations contained herein, for the construction, reconstruction, alteration, repair, improvement or maintenance of public works or for the purchase of any item of machinery or equipment to be used at sites of public works, only domestic aluminum, glass or steel products shall be supplied unless the spending officer determines, in writing, after the receipt of offers or bids, (1) that the cost of domestic aluminum, glass or steel products is unreasonable or inconsistent with the public interest of the State of West Virginia, (2) that domestic aluminum, glass or steel products are not produced in sufficient quantities to meet the contract requirements, or (3) the available domestic aluminum, glass, or steel do not meet the contract specifications. This provision only applies to public works contracts awarded in an amount more than fifty thousand dollars (\$50,000) or public works contracts that require more than ten thousand pounds of steel products.

The cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than twenty percent (20%) of the bid or offered price for foreign made aluminum, glass, or steel products. If the domestic aluminum, glass or steel products to be supplied or produced in a "substantial labor surplus area", as defined by the United States Department of Labor, the cost of domestic aluminum, glass, or steel products may be unreasonable if the cost is more than thirty percent (30%) of the bid or offered price for foreign made aluminum, glass, or steel products.

This preference shall be applied to an item of machinery or equipment, as indicated above, when the item is a single unit of equipment or machinery manufactured primarily of aluminum, glass or steel, is part of a public works contract and has the sole purpose or of being a permanent part of a single public works project. This provision does not apply to equipment or machinery purchased by a spending unit for use by that spending unit and not as part of a single public works project.

All bids and offers including domestic aluminum, glass or steel products that exceed bid or offer prices including foreign aluminum, glass or steel products after application of the preferences provided in this provision may be reduced to a price equal to or lower than the lowest bid or offer price for foreign aluminum, glass or steel products plus the applicable preference. If the reduced bid or offer prices are made in writing and supersede the prior bid or offer prices, all bids or offers, including the reduced bid or offer prices, will be reevaluated in accordance with this rule.

6. **AIA DOCUMENTS:** All construction contracts will be governed by the AIA A101-2007 and A201-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.
  
7. **SUBCONTRACTOR LIST SUBMISSION:** In accordance with W. Va. Code § 5-22-1, The apparent low bidder on a contract for the construction, alteration, decoration, painting or improvement of a new or existing building or structure valued at more than \$500,000.00 shall submit a list of all subcontractors who will perform more than \$25,000.00 of work on the project including labor and materials. This provision shall not apply to any other construction projects, such as highway, mine reclamation, water or sewer projects.
  - a. **Required Information.** The subcontractor list shall contain the following information:
    - i. Bidder's name
    - ii. Name of each subcontractor
    - iii. License numbers as required by W. Va. Code § 21-11-1 et. seq.
    - iv. Notation that no subcontractors will be used if the bidder will perform the work
  
  - b. **Submission.** The completed subcontractor list shall be provided to the Purchasing Division within one business day of the opening of bids for review. Failure to submit the subcontractor list within one business day after the deadline for submitting bids shall result in disqualification of the bid.
  
  - c. **Substitution of Subcontractor.** Written approval must be obtained from the Purchasing Division before any subcontractor substitution is permitted. Substitutions are not permitted unless:
    - i. The subcontractor listed in the original bid has filed for bankruptcy;
    - ii. The subcontractor in the original bid has been debarred or suspended; or
    - iii. The contractor certifies in writing that the subcontractor listed in the original bill fails, is unable, or refuses to perform his subcontract.
  
8. **GREEN BUILDINGS MINIMUM ENERGY STANDARDS:** In accordance with § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: *Provided*, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.



**REQUEST FOR QUOTATION  
WEST VIRGINIA LOTTERY  
LOT494**

**TABLE OF CONTENTS**

- Section 1:** General Information  
**Section 2:** Project Specifications & Mandatory Requirements  
**Section 3:** Bid

**SECTION ONE: GENERAL INFORMATION**

- 1.1 Purpose: The Purchasing Division, hereinafter referred to as "State," is soliciting bids pursuant to **West Virginia Code §5A-3-10b** for the Department of Revenue, West Virginia Lottery, hereinafter referred to as "Agency," to provide various audio, video, data projection and communications equipment and components (A/V equipment) to be installed, tested, implemented, accepted and training conducted at 900 Pennsylvania Avenue, Charleston, WV 25302.
- 1.2 By signing and submitting its bid, the successful Bidder agrees to be bound by all the terms contained in this RFQ.
- 1.2.1 Compliance with Laws and Regulations: The Bidder shall procure all necessary permits and licenses to comply with all applicable Federal, State, or municipal laws, along with all regulations, and ordinances of any regulating body.
- 1.2.2 The Bidder shall pay any applicable sales, use or personal property taxes arising out of this contract and the transactions contemplated by it. Any other taxes levied upon this contract shall be borne by the Bidder. The Bidder acknowledges that the State of West Virginia is exempt from any taxes regarding performance of the scope of work of this contract.
- 1.3 Schedule of Events:
- |   |            |
|---|------------|
| Bidder's Written Questions Submission Deadline..... | 07/16/2012 |
| Mandatory Pre-bid Conference .....                  | 07/11/2012 |
| Addendum Issued .....                               | TBD        |
| Bid Opening Date .....                              | 08/01/2012 |
- 1.4 **Mandatory Pre-bid Conference:** A mandatory pre-bid conference will be conducted on the date listed below:

Date	JULY 11, 2012
Time	1:30 PM

## LOTTERY HEADQUARTERS

Location: 900 PENNSYLVANIA AVE., CHARLESTON, WV

Telephone Number: (304)558-0500

All interested Bidders are required to be represented at this meeting. **Failure to attend the mandatory pre-bid shall result in the disqualification of the bid.** No person may represent more than one Bidder.

All potential Bidders are requested to arrive prior to the starting time for the pre-bid conference. Bidders who arrive late, but prior to the dismissal of the technical portions of the pre-bid conference, will be permitted to sign in. Bidders who arrive after conclusion of the technical portion of the pre-bid, but during any subsequent part of the pre-bid, will not be permitted to sign the attendance sheet.

An attendance sheet will be made available for all potential Bidders to complete. This will serve as the official document verifying attendance at the mandatory pre-bid. Failure to provide your company and representative name on the attendance sheet will result in the disqualification of your bid. The State will not accept any other documentation to verify attendance. The Bidder is responsible for ensuring they have completed the information required on the attendance sheet. The State and the Agency will not assume any responsibility for a Bidder's failure to complete the pre-bid attendance sheet. In addition, all potential Bidders are asked to include their email address and fax number.

- 1.5 **Inquiries:** Inquiries regarding specifications of this RFQ must be submitted in writing to the State Buyer, with the exception of questions regarding the bid submission which may be oral. The deadline for written inquiries is identified in the Schedule of Events, Section 1.3. All inquiries regarding specification clarification must be addressed to:

Connie Hill, Senior Buyer  
Purchasing Division  
2019 Washington Street, East  
P.O. Box 50130  
Charleston, WV 25305-0130  
Fax: (304)558-3970

**No contact between the Bidder and the Agency is permitted without the express written consent of the State Buyer.** Violation may result in rejection of the bid. The State Buyer named above is the sole contact for any and all inquiries after this RFQ has been released.

- 1.6 **Verbal Communication:** Any verbal communication between the Bidder and any State personnel is **not** binding, including that made at the mandatory pre-bid conference. Only information issued in writing and added to the RFQ specifications by an official written addendum by Purchasing is binding.
- 1.7 **Addenda:** If it becomes necessary to revise any part of this RFQ, an official written addendum will be issued by the Purchasing Division.

## SECTION TWO: PROJECT SPECIFICATIONS

2.1 **Location:** Agency is located at 900 Pennsylvania Avenue, Charleston, WV 25302.

2.2 **Background and Current Operating Environment:**

2.2.1 **Commissioners' Conference Room (10<sup>th</sup> floor):** The A/V equipment for this conference room will consist of two (2) separate/combinable A/V systems. The first system will engage a large screen video projector in conjunction with two Lottery furnished electric ceiling mounted screens and ceiling mounted projector lifts. The screens will be installed by the Lottery's electrical subcontractor. Lifts will be supplied by the Lottery but their locations are to be determined and installed by the successful AV bidder. Power is provided in a receptacle above the ceiling. Sources will include a VGA/composite video and audio plate located at the front and rear of the room for implementation of PC presentations and/or video presentations from a composite video source. This system will include a rack mount Audio Codec/DSP for audio conferencing, Blu-Ray Disc player for high resolution video playback, recording device and wireless microphones. The audio conferencing codec will be used in conjunction with table top wireless microphones which will be housed on the docking/charging station when not in use. Two (2) handheld wireless microphones are being provided for audience participation in meetings and events. An SD/USB recording device will be rack mounted for remote recording of any meeting or events.

The control portion of this system will be provided via an Ethernet control processor capable of controlling all available functionality of all hardware via bi-directional communications. Bi-directional communications will provide full feedback to and functionality of all aspects of the A/V system in the room, including the OFE CRESTRON lighting controller. A 5.7" wireless touch panel connected via wireless access point will control all user available functions of the A/V system. This will include output volume control, MACRO functions for powering on and off the A/V equipment, all recording functions, dialing functions and microphone controls, and separation of microphone functions from each half of the room for multi-room use purposes.

2.2.2 **Conference Room 1036 (10<sup>th</sup> floor).** This system will consist of a 60" LCD display, along with a control processor/switcher, a 5.7" touch panel, and ceiling mounted speakers, and an audio conferencing/DSP with ceiling mounted microphones. The remaining rack mounted gear will be located in a network closet on the same floor in the adjacent hallway. The owner will provide a location in the existing network rack to mount the equipment. All cables must be run in existing cable trays through the hallway/wall penetrations. This room will also have six (6) ceiling mounted speakers to provide sound reinforcement for audio conferences and other general audio requirements

The control portion of this system will be provided via control processor capable of controlling all available functionality of all gear with bi-directional communications. Bi-directional communications will provide full feedback to and functionality of all aspects of the A/V system in the room. A 5.7" wireless touch panel connected via wireless access point will control all user available functions of the A/V system. This will include, output volume control, MACRO functions

for powering on and off the A/V equipment, dialing functions and microphone controls. The control system will include amplification and the ability to receive audio and video via CAT5 Cable. A CAT5 transmitter is included to send audio and video from any of the table location CAT5 floor jacks.

**2.2.3 Conference Room 1214 (12<sup>th</sup> floor).** This system will consist of a 60" LCD display, along with a control processor/switcher, a 5.7" touch panel, wall mounted smart board with a ceiling mounted projector, ceiling mounted speakers, and an audio conferencing/DSP with ceiling mounted microphones. The remaining rack mounted gear will be located in a network closet on the same floor in the adjacent hallway. The owner will provide a location in the existing network rack to mount the equipment. All cables must be run in existing cable trays through the hallway/wall penetrations. This room will also have 6 ceiling mounted speakers to provide sound reinforcement for audio conferences and other general audio requirements

The control portion of this system will be provided via control processor capable of controlling all available functionality of all gear with bi-directional communications. Bi-directional communications will provide full feedback to and functionality of all aspects of the A/V system in the room. A 5.7" wireless touch panel connected via wireless access point will control all user available functions of the A/V system. This will include, output volume control, MACRO functions for powering on and off the A/V equipment, dialing functions, and microphone controls. The control system will include amplification and the ability to receive audio and video via CAT5 Cable. A CAT5 transmitter is included to send audio and video from any of the table location CAT5 floor jacks.

**2.2.4 Director's Conference Room (13<sup>th</sup> floor).** The 13<sup>th</sup> Floor Conference Room will consist of a 60" LCD display, along with a control processor/switcher, a 5.7" touch panel and ceiling mounted speakers, and an audio conferencing/DSP with ceiling mounted microphones. All hardware will be located in the existing mill work. The 60" LCD will be wall mounted in the center of the conference room at the head of the table above the credenza.

The control portion of this system will be provided via control processor capable of controlling all available functionality of all gear with bi-directional communications. Bi-directional communications will provide full feedback to and functionality of all aspects of the A/V system in the room. A 5.7" wireless touch panel connected via wireless access point will control all user available functions of the A/V system. This will include, output volume control, MACRO functions for powering on and off the A/V equipment, dialing functions and microphone controls.

## **2.3 Mandatory Requirements**

The following mandatory requirements must be met by the Bidder as a part of the submitted bid. Failure to meet any of the mandatory specifications shall result in the disqualification of the bid. The terms "must", "will", "shall", "minimum", "maximum", or "is/are required" identify a mandatory item or factor. Decisions regarding compliance with any mandatory requirements shall be at the sole discretion of the State.

**2.3.1** Project shall include procurement, installation, testing, training and acceptance within thirty (30) days of issuance of purchase order.

- 2.3.2 Bidders must attend a mandatory pre-bid walk-through of the facility on 07/11/2012 AT 1:30 PM 900 Pennsylvania Ave, Charleston WV 25302.
- 2.3.3 Pricing shall include all labor and materials for proper installation of equipment.
- 2.3.4 Pricing shall include cost of Crestron (or equal) and related control programming.
- 2.3.5 Pricing shall be all-inclusive of delivery, installation and system testing and training.
- 2.3.6 Bidder shall provide with its bid a written schematic or plan for the installation of the equipment.
- 2.3.7 Bidder shall provide a projected delivery, installation, system testing and training timeline to detail how the sixty (60) day installation will be met.
- 2.3.8 Bidder shall maintain manufacturers' certifications required for resellers installation, programming, warranty and maintenance support.
- 2.3.9 Access above the ceiling and AC power outlets to restricted points shall be coordinated by a staff member of the West Virginia Lottery Commission.
- 2.3.10 Installation shall include all cable access and cable raceways and cable access to all equipment. The Bidder will be responsible for installing all bidder provided hardware into the existing structure, and for providing the necessary electrical and cable connections. The bidder will provide a single point of contact to assist in readying the site for system installation. The bidder will then be responsible for mounting, installing and connecting all components, including complete testing of the equipment.
- 2.3.11 A minimum of one day (eight hours) of training and documentation on operation and maintenance procedures shall be provided to designated Lottery personnel upon completion and acceptance of installation.
- 2.3.12 All equipment must be new, not used or refurbished. Delivery and installation must be completed within sixty (60) days of issuance of purchase order. The fully executed purchase order shall serve as the Notice to Proceed, and the date of the purchase order will determine the start of the sixty (60) day installation period.
- 2.3.13 All equipment must carry a minimum of a one (1) year warranty (with the exception of the Video Codec's, which shall have a three (3) year warranty on parts and labor) with on-site support as required. Bids must be all inclusive of travel expense.



2.3.14 Bidder will guarantee microphones will have no feedback.

2.3.15 Bidder will provide support response within twenty-four (24) hours of call for support.

2.3.16 Bidder must have at least 5 years of experience and have successfully completed at least 3 projects in the last 5 years of similar or larger scope. References will be required upon issue of the purchase order. Bidders will provide in **Attachment A: Bidder Response Sheet** information regarding their firm, such as staff qualifications and experience in completing similar projects; references; copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and what the project goals and objectives were and how they were met.

2.3.17 The model/brand/specification named herein establishes the acceptable level of quality only and is not intended to reflect a preference or favor any particular Bidder. The following specifications are to be considered minimum acceptable specification unless otherwise noted in this document. Manufacturer specification sheets must be provided with the bid. Failure to provide the manufacturer specifications may result in bidder disqualification.

As used herein, (EC)= Electrical Contractor installed.

#### Commissioners' Conference Room (10<sup>th</sup> Floor)

##### Qty. Item Description

2 OFE Draper screen (EC)

2 OFE Draper Orbiter lift (EC)

2 Draper Low Voltage Control LVCIII (EC)

Input: 115 VAC +/- 10%, 50/60 Hz

Output: 115 VAC, 5 Amps, 50/60 Hz. Fused with 250 VAC, 6.3 Amps UL and c-UL recognized. Two double-gang electrical boxes bolted together. One box contains the actual module, while the empty box is useful for making connections. The module contains a 3-screw terminal block for a wall switch (up, down, common), IR receiver jack, RF receiver jack, and a user-serviceable 6.3A fuse. A spare fuse is included. There is a 6-wire pigtail for Hot, Neutral, Ground, Common, Up and Down.

2 Christie Digital LCD Projector LW555

Image brightness • 4000 ANSI lumens (single lamp) contrast • 1000:1 (full on/off) uniformity • 90% brightness uniformity (corner to center) Display tech type • 3 x 0.75"

Inorganic LCDs native resolution • WXGA (1366 x 800) Native aspect ratio 16:10, selectable aspect ratios 16:9; 4:3, 14:9 Lamp type • 275W UHB lamp life • Normal mode: up to 2000hrs • Eco mode: up to 3000hrs Input signals • VGA through XGA (1600 x 1200) • Accepts current HDTV/DTV formats (480i up to 1080p) • NTSC, NTSC 4.43, PAL, PAL M, SECAM, PAL-N, PAL 60 pixel clock • 150MHz scan rates • Horizontal frequency range 31.5-106kHz • Vertical frequency range 56-120Hz Inputs, control and networking input • HDMI x 1 (HDCP Compliant) • HD 15 x 1 (with HD15 loop-through) • BNC x 5 (R,G,B,H,V & Y, Pb/Cb, Pr/Cr & Composite) • YPbPr (component video RCA x 3) • 1 RCA composite video • Mini DIN 4-pin (S-video) • Audio input (x 4) • Dsub-9 x 1 • LAN port • R/C Jack – Mini jack x 1 • Output HD 15 x 1 (loop-through) • Audio output x 1 mini jack output • Speakers 4W x 4 Optical system • Manual zoom, focus and lens shift Lenses fixed • Short 0.8:1 (121-100102-XX) zoom • Ships with standard lens 1.5-1.8:1 (N/A) • Short 1.2-1.9:1 (121-101103-XX) • Long 1.9-3.8:1 (121-102104-XX) • Ultra Long 3.9-7.3:1 (121-103105-XX) offsets • Vertical and Horizontal lens shift\*\* Accessories standard • Computer cable (Dsub15) • Wireless/wired remote control • AC line cord UL type (NEMA 6-20P plug type) • European 2P plug type optional • Filter cartridge (003-002119-01) • 275W UHB lamp (003-120457-01) Enhanced feature sets • Auto Detect • Auto Digital keystone (vertical) feature • Anti-theft: Kensington style slot and security bar • Support for closed caption video display (NTSC) • RJ45 LAN connection with network control and SNMP monitoring • Dynamic iris control • Customizable start-up logo Power requirements operating voltage • 90-132 VAC  $\pm 10\%$  • 198-264 VAC  $\pm 10\%$  operating current • 5.0A max (AC100V) • 2.1A max (AC200V) power • 460W max dissipation • 1570BTU/hr max Dimensions: size • Body with lens (LxWxH): 12.52 x 16.46 x 5.47" (318 x 418 x 139mm) weight • 15.8lbs (7.2kg) with lens shipping weight • 25.57lbs (11.6kg) shipping size • (LxWxH): 18.8 x 21.9 x 9.6" (478 x 555 x 244mm) Noise • Standard mode: 37dBA • Eco mode: 31dBA Operating environment • Operating temperature: 40-95°F (5-35°C) • Storage temperature: 14-140°F (-10-60°C) • Humidity (non-condensing): 10-85% Regulatory approvals • This product should conform to the following regulations related to product safety, environmental requirements and electromagnetic compatibility (EMC): • FCC Part 15, Subpart B Class A • CISPR22/EN55022 • CISPR24/EN55024 • UL 60950-1 first edition • CAN/CSA-C22.2 No 60950-1-03 first edition • IEC60950-1:2001 • 2002/95/EC RoHS Limited warranty projector • 3 years parts and labor lamp • 500hrs or 120 days (whichever comes first)

#### 10 JBL Ceiling mounted loud speaker Control 24 CT

Freq. Range (-10 dB)1: 80 Hz - 20 kHz

Power Capacity 2: 80 Watts Continuous Program Power 40 Watts Continuous Pink Noise

Nominal Sensitivity 3: 86 dB SPL @ 1 m (3.3 ft)

Nominal Coverage Angle 4: 130° conical coverage

Directivity Factor (Q): 2.4 averaged 500 Hz to 4 kHz

Directivity Index (DI): 3.8 averaged 500 Hz to 4 kHz Rated

Maximum SPL: 102 dB @ 1 m (3.3 ft)

Nominal Impedance (24C): 16 ohms (Min Z 16.1  $\Omega$  @ 320 Hz)

Transformer Taps (24CT): 70V: 30W, 15W, 7.5W & 3.7W taps 100V: 30W, 15W, & 7.5W taps Transducers: Low-Frequency: 100 mm (4.0 in) Polypropylene-coated, 1" coil on aluminum former. High-Frequency: 19 mm (0.75 in) Titanium coated polyester.



Physical: Enclosure: Backcan: Formed steel Baffle/Rim: Medium impact polystyrene, fire rated UL94V-0

Overload Protection: Full-range power limiting to protect network and transducers. (On Control 24C, not on Control 24CT)

Termination: Removable locking connector with screw-down terminals. 2 input terminals and 2 loop-thru output terminals. Max. wire size 12 AWG (2.5 mm<sup>2</sup>)

Safety Agency Rating: Suitable for use in air handling spaces per UL1480, UL2043, NFPA90 & NFPA 70. S7232/UL Listed, Signaling Speaker. Transformer UL registered per UL1876. In accordance with IEC60849/EN60849.

Outside Dimensions (H x Dia): 200 x 195 mm (7.9 x 7.7 in) 184 mm (7.2 in) front of ceiling tile to back of backcan Cutout Size: 168 mm (6.6 in) Net Weight (ea): 2.7 kg (6 lb) CT: 3.5 kg (8 lb)

Shipping Weight (pair): 6.4 kg (15 lb) CT: 8.0 kg (18 lb)

Included Accessories: C-shaped support backing plate 2 tile support rails (fits both 2 x 4 ft or 600 x 1200 mm tiles) Cutout template Paint shield Removable locking wiring connector.

## 1 QSC 8 Channel Amplifier CX108V

8 $\Omega$  / 20 Hz – 20 kHz / 0.05% THD 200 W, Signal to Noise (20 Hz – 20 kHz) > -107 dB, Input Sensitivity at 8 $\Omega$  1.26 Vrms, Gain at 8 $\Omega$  30 dB, Output Circuitry Class AB+BDistortion (typical) 20 Hz – 20 kHz: 10 dB below rated power < 0.01% THD 1.0 kHz and below: full rated power < 0.01% THD Frequency Response 20 Hz - 20 kHz,  $\pm$  0.2 dB Damping Factor > 500 Input Impedance 6k ohms unbalanced, 12k ohms balanced Input Clipping 10 Vrms (+22 dBu) Cooling Variable-speed fan, rear-to-front air flow

Connectors Input: 3-pin XLR & 3-pin detachable terminal blocks (1 each per channel) Output: Safety shrouded barrier strip Amplifier Protection Full short circuit, open circuit, thermal, ultrasonic, RF protection. Stable into reactive or mismatched loads Load Protection On/off muting, DC-fault power supply shutdown

Dimensions (HWD) 3.5" (8.9 cm) 2 RU x 19" (48.3 cm) rack mounting x 14" (35.6 cm) from front mounting rails

Weight - Net / Shipping 21 lb (9.5 kg) / 27 lb (12.3 kg)

## 1 Denon USB Recording Device DN-F650R

Compatible recording media SD/SDHC card, USB flash memory, external USB recording media Recording format MP3 MPEG1 Layer III audio compression WAV 16/24-bit linear PCM Recording MP3 bitrate(selectable) MONO 160, 128, 96, 64, 32 kbps STEREO 320, 256, 192, 128, 64 kbps Sampling frequency 96 kHz, (PCM recording only), Number of channels 2 (STEREO)1 (MONO)

Audio frequency characteristics 20 – 40,000 Hz  $\pm$  1.0 dB (Fs=96kHz)

S/N ratio, IEC-A filter 96 dB(0dBFS During playback at 1 kHz)

Total harmonic distortion (at 0 (AES-17 20kHz filter) VU (PCM))

Dynamic range 96 dB Variable pitch width -40% – +20%

**INPUT**

Balanced in L/R Type XLR (1:GND, 2:Hot, 3:Cold)

Input sensitivity +24 dBu,+20 dBu,+18 dBu,0 dBu / 24 k $\Omega$  (0dBFS Reference) Line in L/R Type RCA terminal Input sensitivity 500 mVrms/22 k $\Omega$  Unbalanced digital in Type RCA terminal Input impedance 75  $\Omega$  Standard input level 0.5 Vp-p Format IEC-60958 (SPDIF) Balanced digital in Type XLR (1:GND, 2:Hot, 3:Cold) Input impedance 110  $\Omega$  Standard input level 3.5 Vp-p Format IEC-60958 (AES/EBU)

**1 Biamp Digital Signal Processor Nexia TC**

8 wide-band AEC balanced mic/line inputs • 2 standard balanced mic/line inputs • 4 balanced mic/line outputs • telephone interface with line & set connections • Ethernet port for software configuration/control • serial port for third-party RS-232 remote control • NexLink ports for multi-unit system designs • Nexia software for Windows® XP Professional/Vista • pre-configured I/O with definable processing • RoHS compliance and AES grounding practices • CE marked and UL/C-UL listed • covered by Biamp Systems' five-year warranty • Ability to select, view, and calibrate: Mixers, Equalizers, Filters, Crossovers, Dynamics, Routers, Delays, Controls, Meters, Generators, Diagnostics • Telephone Interface capabilities include: ° initiation of outgoing calls ° detection and answering of incoming calls ° line echo cancellation ° TouchTone™ decoding ° caller ID reception ° call progress detection ° line intrusion detection ° continuous line status and fault monitoring Frequency Response (20Hz~20kHz @ +4dBu): +0/-0.4dB THD+N (20Hz~20kHz @ +4dBu): line level < 0.006% mic level < 0.05% Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm): -125dBu Dynamic Range 20Hz~20kHz, 0dB): > 105dB Maximum Gain (input channels): 66dB Crosstalk (channel-to-channel @ 1kHz): line level < -80dB mic level < -75dB Output Impedance (balanced): 200 ohms Input Impedance (mic/line balanced): 8k ohms Input Gain Range (variable trim): 0dB ~ +66dB Maximum Output (balanced): +24dBu Maximum Input (mic/line): +24dBu Full Scale Output Level (six selections) -31dBu ~ +24dBu Telephone Interface: ringer equivalency number 0.0B dynamic range 67dBu frequency response 250Hz ~ 3.4kHz

THD < 0.3% transhybrid balance 30dB Tail Length: up to 300ms

Convergence: up to 100dB/sec Phantom Power: +48 VDC (7mA/input

Sampling Rate: 48kHz A/D - D/A Converters: 24-bit Power Consumption (100~240VAC 50/60Hz): 65 watts

Dimensions: height 1.75 inches (45mm) width 19 inches (483mm) depth 11.15 inches (283mm) Weight: 8.6 lbs. (3.9kg) Compliance: AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive CE marked UL listed

**2 Telex Wireless Microphone FMR500HD-A**

Receiver Type Synthesized PLL Frequency Range (RF) A Band 648 – 676 MHz B Band 696 – 724 MHz Number of Channels 1112 possible frequencies Programmable in 25 kHz steps Modulation +/- 40 kHz

Diversity Digital Posi-Phase™ True Diversity RF Sensitivity < 1.0 mV for 12 dB SINAD Image Rejection > 60dB Squelch Tone Code plus Amplitude Ultimate Quieting > 100dB FCC Certification Approved under Part 15 Power Requirements 12 V AC/DC 300mA Operating Temperature -7° to 49° C (20° to 120° F) Dimensions 1.72" H x 7.5" W x 5.9" D 43.69mm H

x 190.50mm W x 150mm D

#### AUDIO PARAMETERS:

Frequency Response 50 – 15kHz +/- 2dB Balanced Output (max @ 40kHz deviation) Mic Position -10dBV Line Position adjustable 10mV - 2V RMS Unbalanced Output adjustable 10mV - 1V RMS Distortion <1.0%, 0.5% typical (ref 1kHz, 40kHz deviation) Signal-to-Noise Ratio >100dB A Weighted Dynamic Range >100dB Radiated Output 30 mW typical Microphone Head ElectroVoice 767a N/D 767a supercardioid N/DYM Dynamic Microphone Head ElectroVoice RE410 cardioid condenser Standard Lavalier Microphone ELM-22S MicroMini™ Omni-Directional Condenser TA4 Connector Wiring Pin 1: Ground; Pin 2 Mic Input; Pin 3: +5V bias; Pin 4: +5V bias through a 3k Ohm resistor Audio Gain Adjustment 40 dB (26dB HT500) Power Requirements 9 Volt Alkaline Battery Battery Life (Typical) > 8 hours with 9-Volt Alkaline Typical Bodypack Antenna Flexible external 1/4 wave Handheld Antenna Internal 1/2 wave Dimensions (Handheld) 9.4 in. (24.0cm) Long Dimensions (Bodypack) 3.8 in. H x 2.38 in. W x 0.92 in. D 96.5 mm H x 60.5 mm W x 23.4 mm D

### 1 Revo Labs Wireless Microphone system 01-HDEXEC-NM

**Audio Bandwidth** 50-20,000 Hz Selectable 50-12,000 Hz mode

**Channels** 4 or 8 channels per system North America 32 channels maximum (4 systems)  
International 40 channels maximum (5 systems)

**Radio Frequency** North America 1.92 to 1.93 GHz (UPCS North America) International 1.88 to 1.90 GHz (DECT EU)

**Range** 300' (91 meters) approx. (no obstructions) Out-of-range alarm

**Executive HD Base Station Dimensions** 16.9" (43.03 cm) x 8.0" (20.32 cm) x 1.7" (4.42 cm)  
2.9 lbs (1.31 kg)

**HD Charger Base Dimensions** 8.3" (21.1 cm) x 4.3" (10.9 cm) x 1.0" (2.56 cm) 1.1 lb (.49 kg)

**HD Charger Base Connectors** USB port DC power input port Proprietary 4 pin microphone charge jacks

**HD Charger Base Power Requirements** 20W

**Battery** Lithium Polymer Up to 8 hours of talk time **Charge Time** 2 hours

**Encryption** 128-bit proprietary (per microphone channel)

**Environmental Requirements** Temperature 40° to 100° F (5° to 40° C) operating Humidity 20% to 85%

### 8 Revo Labs Directional Microphone 01-HDTBLMIC-DR-11

**HD Wireless Microphone Features** Mute Button for muting and pairing LED Display for muting and pairing Audio Out port– 2.5 mm unbalanced Power/Charging Port– Requires Revolabs HD Charger Base

**Audio Bandwidth** 50-20,000 Hz

**Radio Frequency** North America

1.92 to 1.93 GHz (UPCS North America) International 1.88 to 1.90 GHz (DECT EU)

**Encryption** 128-bit proprietary (per microphone channel)

**Battery** Lithium Polymer Up to 8 hours of talk time **Charge Time** 2 hours

**HD Directional Wireless Microphone** 3.54" (9 cm) x 1.0" (2.5 cm) x .69" (1.75 cm) 0.07 lb

(.03 kg)

HD

# **1 Crestron Wireless Access Point CEN-WAP-ABG-Cm**

**Wireless Transceiver:** IEEE 802.11a/b/g Wi-Fi (5.8 or 2.4 GHz 2-way RF); 64, 128, & 152-bit WEP encryption; WPA & WAP2 with TKIP & AES Transmit Power: Up to 19 dBm

**Ethernet** 10BaseT/100BaseTX, auto-switching, auto-negotiating, auto-discovery, full/ half duplex, TCP/IP, UDP/IP, DHCP client and server, SNMP, IEEE 802.3u & 802.3af compliant

## **Controls and LED Indicators**

**LAN:** (1) Green LED, indicates wired Ethernet activity and link status

**Wi-Fi:** (1) Green LED, indicates Wi-Fi activity and connection status

**Reset:** (1) Recessed miniature pushbutton for hardware reset

**Connectors - Rear Panel NETWORK PoE:** (1) 8-wire RJ45, female;

10BaseT/100BaseTX Ethernet port, 802.3af Power over Ethernet compliant; Connects to LAN via a 802.3af compliant PoE power source

**Power Requirements** Power over Ethernet: IEEE 802.3af Class 1 PoE Powered Device

**Enclosure** Injection-molded plastic, paintable white matte finish, ceiling mountable using a 1-gang plaster ring or electrical box (2 inch deep minimum)

**Environmental** Temperature: 32° to 104°F (0° to 40°C) Humidity: 10% to 90% RH (non-condensing) Heat Dissipation: 11 BTU/Hr

**Dimensions** Height: 2.54 in (65 mm)

Diameter: 4.73 in (120 mm)

**Weight** 6.0 oz (168 g) Available Models CEN-WAP-ABG-CM: Ceiling Mount 802.11a/b/g Wireless Access Point CEN-WAP-ABG-POE-PWE-CM: Ceiling Mount 802.11a/b/g Wireless Access Point w/PoE Injector Included Accessories PWE-4803RU PoE Injector [Included Quantity for CEN-WAP-ABG-POE-PWECM: 1]Available Accessories PWE-4803RU: PoE Injector CEN-SW-POE-5: 5-Port PoE Switch CEN-SWPOE-24: 24-Port Managed PoE Switch

# **1 Crestron Control Processor MPS300 Processor**

**CPU:** 32-bit Freescale ColdFire® Microprocessor **Memory** 32 MB SDRAM, 256 KB NVRAM, 16 MB Flash **Operating System** Real-time, preemptive, multitasking kernel, multi-threaded; FAT3 filesystem with long names; supports SIMPL™ Windows® and SIMPL+®

**Ethernet** 10/100BaseT, static IP or DHCP/DNS, SSL, auto-negotiating, full duplex TCP/IP, UDP/IP, CIP, SMTP, SNMP, built-in Web server and e-mail client; supports Crestron e-Control®2 XPanel and RoomView® applications

**Video Switcher:** 8x7 crosspoint matrix including 3x3 QM signal routing, local QM delay skew compensation, RGB pass-thru mode (multi-format via RGB output connection)

**Signal Types:** RGB and composite, S-Video, or component video (does not transcode)

**Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p **RGB Formats:** RGBHV, RGBS,

**RGsB Maximum Resolution:** 2048 X 1536 @ 60Hz (1920 X 1200 @ 60Hz via QM)

**Blanking Time:** < 0.1 second **Sync Rise/Fall Time:** 3.5 ns maximum  
**Sync Latency:** < 30 ns **Gain:** 0dB (75 ohms terminated) **QM Cable Compensation:** 10-bit digitally controlled PEAK (bandwidth) and BOOST (frequency); 4-bit digitally controlled SKEW delay, 0 to 22 ns (independent for R, G, and B) **Audio Switcher/Preamp:** 8x4 stereo crosspoint matrix including 3x3 QM signal routing, 2-channel gated mic preamp with compressor & limiter, 8-channels mic EQ, 10X5 mic/program matrix mixer, 8x2 mic matrix mixer per each of 3 QM outputs, stereo volume/tone control and EQ per each of PROGRAM and RECORD outputs, mono volume/tone control and EQ/delay on SPEECH output, integrated power amplifier, QM auto-compensation with self-peaking **A-D/D-A Conversion:** 24-bit, 48 kHz **Volume Range:** -80 to +20 dB, 0.1dB steps (output); -80 to 0 dB, 0.1dB steps (mixer)  
**Mute:** -100dB (electronic), -120dB (relay) **Input Compensation:**  $\pm 10$ dB, 0.1dB steps **Mic Input Gain:** 0 to 100 % (40dB range) plus mute **Gate Level (Threshold):** 0 to 100 % **Gate Attack:** 0 to 100 mS  
**Gate Decay (Release):** 0 to 5000 mS **Gate Depth:** -80dB (mute) to 0dB, 0.1dB steps **Compression Threshold:** -80dB to +20dB, 0.1dB steps **Limit Threshold:** 0dB to 20dB, 0.1dB steps **Comp/Lim Attack:** Separately adjustable 0.1 to 300 mS **Comp/Lim Release:** Separately adjustable 1 to 500 mS **Compression Ratio:** 1.0:1 to 10.0:1 **Comp/Lim Curve:** Separately selectable hard or soft knee **Mic EQ:**  $\pm 12$ dB, 0.1 dB steps at 160, 500, 1.2k, and 3k Hz **Bass/Treble:**  $\pm 12$ dB, 0.5dB steps at 100Hz and 10kHz **Output Equalization:** 10-band graphic (GEQ) + 2-band parametric (PEQ) **GEQ:**  $\pm 12$ dB, 0.1dB steps at 31, 63, 125, 250, 500, 1k, 2k, 4k, 8k, and 16k Hz **PEQ Filter Gain/Center Frequency:**  $\pm 12$ dB, 0.1dB steps at 25Hz to 20kHz, 0.5Hz steps **PEQ Filter Bandwidth:** 0.1 to 3.0 octaves, 0.1 octave steps **PEQ Filter Types:** Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf **Speech Output Delay:** 0 to 40 mS, 1mS steps **Frequency Response:** 20Hz to 20kHz  $\pm 0.5$ dB (PROG/REC OUT), 50Hz to 20kHz  $\pm 0.5$ dB (SPEECH OUT), 20Hz to 20kHz  $\pm 0.5$ dB (SPEAKER @ 8 ohms), 100Hz to 20kHz  $\pm 1.5$ dB (SPEAKER @ 70V or 100V) **S/N Ratio:** 95dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz A-weighted), 95dB (SPEECH OUT @ 10dBV, 50Hz to 20kHz A-weighted), 90dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz A-weighted), 90dB (SPEAKER @ 70V or 100V, full output, 20Hz to 20kHz A-weighted) **THD+N:** 0.02% (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), 0.02% (SPEECH OUT @ 10dBV, 50Hz to 20kHz), 0.7% (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz), 0.7% (SPEAKER @ 70V or 100V, full output, 100Hz to 20kHz A-weighted) **Stereo Separation:** -80dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), -60dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz) **Channel Crosstalk:** -80dB (AUD IN @ 10dBV, 20Hz to 20kHz)

## 1 Crestron Touch Panel

### TPS-6X

#### Touchscreen Display

**Display Type:** TFT Active matrix color LCD **Size:** 5.7 inch (145 mm) diagonal **Aspect Ratio:** 4:3  
**VGA Resolution:** 640 x 480 pixels

**Brightness:** 350 nits (cd/m<sup>2</sup>) **Contrast:** 400:1 **Color Depth:** 18-bit, 256k colors

**Illumination:** Backlit fluorescent **Viewing Angle:**  $\pm 80^\circ$  horizontal,  $+80^\circ/-70^\circ$  vertical

**Touchscreen:** Resistive membrane

**Buttons & Switches Sleep:** (1) Programmable top-mounted pushbutton (left); normally initiates "Sleep" mode when docked, turns power on/off when undocked; also resets touchpanel if held for 5 seconds **Brightness:** (1) Programmable top-mounted pushbutton



(right), normally sets display brightness level Hard Keys: (8) Optional programmable pushbuttons, engravable backlit text [2] (default engraving included) Up/Down: (2) Optional programmable "up/down" pushbuttons, backlit, engravable backlit text[2] on bezel (default engraving included) Thumbpad: (5) Optional programmable pushbuttons for 4-way directional navigation and "enter", backlit

Battery: (1) Rear panel recessed DIP switch, shuts off battery for long-term storage LED Indicators Battery: (1) Green LED, indicates battery condition and charging status when docked

Connectors Docking Connector: (1) multi-pin connector; Mates with the docking port on the docking station[6] See the TPS-6X-IMCW interface module[6] specification for other connectors

Memory SDRAM: 32 MB Flash: 32 MB Maximum Project Size: 28 MB

Graphic Engine Isys engine; 16-bit non-palette graphics; 65,536 colors; Synapse image rendering algorithm; multi-mode objects, DNav dynamic menu objects, dynamic graphics, PNG translucency, full-motion (60 fps) animation, color key video windowing

RF Wireless RF Transceiver: 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), IEEE 802.15.4 compliant Transmitting Power: 75 mW (Ch.11), 100 mW (Ch.12-23), 15 mW (Ch.24), 3.5 mW (Ch.25), 1 mW (Ch.26) @ High Setting; 1 mW (Ch.11-25), 0.5 mW (Ch.26) @ Low Setting Range (typical): 100 to 200 feet maximum indoor, 1000 feet outdoor,

subject to site-specific conditions Gateway: Requires a CEN-HPRFGW Extended Range RF Gateway[5] Roaming: Supports roaming amongst up to 8 RF gateways

IR Wireless[1] IR Transmitter: 38 kHz, RC5 format

Range: 50 feet typical

## 2 Crestron QMWMC

Video Signal Types: RGB and composite, S-Video, or component[2] video Video/HDTV Formats: NTSC or PAL, HDTV up to 1080i/1080p[2]

RGB Formats: RGBHV, RGBS, or RGsB Gain: 0dB (75 ohms terminated)

Maximum Resolution: 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation at receiver

Audio A-D Conversion: 24-bit, 48 kHz Frequency Response: 20Hz to 20kHz

Communications QuickMedia: QM origination point device[1] Cresnet: Cresnet slave device

Connectors - Front Panel S-VIDEO: (1) 4-pin mini DIN female, S-Video (Y/C) input; Input Impedance: 75 Ohms; Maximum Input: 1 Vp-p; Signal sensing on Y S-VIDEO AUDIO R, L: (2) RCA female; Unbalanced stereo line-level audio input; Input Impedance: 10k Ohms; Maximum Input Level: 2 Vrms VIDEO: (1) RCA female, composite video input; Input Impedance: 75 Ohms; Maximum Input: 1 Vp-p; Includes signal sensing VIDEO AUDIO R, L: (2) RCA female; Unbalanced stereo line-level audio input; Input Impedance: 10k Ohms; Maximum Input Level: 2 Vrms COMPUTER: (1) DB15HD female; RGB(VGA)/component video input[2]; Formats: RGBHV, RGBS, RGsB, YPbPr; Input Impedance: 75 Ohms; H Sync Impedance: 1k Ohms; V Sync Impedance: 2.2k Ohms; Maximum Input Level: 1 Vp-p; Maximum Sync Level: 5 Vp-p; Signal sensing on H-SYNC only AUDIO (computer): (1) 3.5mm TRS mini phone jack; Unbalanced stereo line-level audio input; Input Impedance: 10k Ohms; Maximum Input Level: 1 Vrms MONITOR: (1) DB15HD female, buffered RGBHV pass-thru

Connectors - Rear Panel QM: (1) 8-wire RJ45 female, QuickMedia output port; Connects to QM input port of any QuickMedia device via CresCAT-QM or CresCAT-IM cable[1] NET: (2) 4-

pin 3.5mm detachable terminal blocks; Cresnet slave ports, paralleled; connect to Cresnet control network via CresCAT-QM or Cresnet cable GROUND: (1) Flying lead, grounding wire TO MIC: (1) 14-pin header; Accepts connection from optional QM-WMIC (sold separately) **Controls & Indicators** PWR: (1) green LED, indicates 24 Volts DC power supplied from Cresnet network NET: (1) yellow LED, indicates communication with Cresnet system SETUP: (1) miniature pushbutton and red LED, used for touch-settable ID (TSID) COMP: (1) red LED, indicates a signal at the COMPUTER input VIDEO: (1) red LED, indicates a signal at the VIDEO input S-VID: (1) red LED, indicates signal at the S-VIDEO input

**Power Requirements** Cresnet Power Usage : 5 Watts (0.21 Amp @ 24 Volts DC); 8 Watts (0.33 Amp) with QM-WMIC installed

**Environmental** Temperature: 41° to 104°F (5° to 40°C) Humidity: 10% to 90% RH (non-condensing) Heat Dissipation: 17 BTU/Hr

**Enclosure Construction:** Metal with black finish Flush Wall Mount: 2-gang mountable in a standard electrical box (2-1/2 inch deep minimum); requires decorator style faceplate (not included)

**Dimensions** Height: 4.12 in (105 mm) Width: 3.50 in (89 mm) Depth: 2.61 in (67 mm)

**Weight** 8.0 oz (230 g) Available Models QM-WMC: QuickMedia Wall Plate Media Center Available Accessories CRESCAT-QM-NP-SP500: QuickMedia® Cable, Low-skew CAT5e & Cresnet, non-plenum, 500 ft spool CRESCAT-QM-P-SP500: QuickMedia® Cable, Low-skew CAT5e & Cresnet, plenum, 500 ft spool QM-WMIC: Microphone Input Module.

## 1 Sony Blu Ray Player

### BDP-S480s

Video-DVD ☒ DVD 24p output : Yes BD ☒ HD (24Hz) (24p True Cinema) : Yes ☒ HD (50Hz) : No ☒ HD (60Hz) : 480i/480p/720p/1080i/1080p ☒ HD 24Hz to 60Hz conversion : Yes

General Features ☒ Region Code (BD) : A ☒ Region Code (DVD) : 1

Convenience Features ☒ USB Keyboard : Yes (standard 101 Key)

☒ BRAVIA® Sync™ : Yes ☒ Bit Rate Indicator (Video) : Yes

☒ Child Lock : Yes ☒ Easy Setup : Yes

☒ File System : FAT32/NTSF USB and HDD (Read Only)

☒ Media Remote : Yes (Media Remote 1.1, 2.0 and above)

Weights and Measurements ☒ Dimensions (Approx.) : 17" x 1.4" x 7.8" (430 x 36 x 199mm)

Power ☒ Power Consumption (in Operation) : 20W ☒ Power Requirements (frequency) : 60Hz

☒ Power requirements (voltage) : 120V Inputs and Outputs ☒ HDMI Output(s) : 1 (Rear) ☒

Composite Video Output(s) : 1 (Rear) ☒ Component Video Output(s) : 1 (Rear) ☒ Digital Audio

Output(s) : 1 (Rear) ☒ USB Input(s) : 2 (1 Rear/ 1 Front) ☒ Ethernet Connection(s) : 1 (Rear) ☒

Analog Audio 2ch Output(s) : 1 (Rear) Function ☒ PREV/NEXT : Yes ☒ Parental Control : Yes ☒

Play / Stop / Pause : Yes ☒ REV/ FWD : Yes ☒ Repeat (All/ 1title) : Yes ☒ Screen Saver : Yes

Video Features ☒ Preset Picture mode Cinema tuned : Yes (Theater room/Brighter room/Standard room/Film/Anime/Auto) ☒ 24p True Cinema™ Technology : Yes

☒ 3D Playback : Yes ☒ BD-R/RE Read Compatibility : Yes (BD-R / BD-RE) ☒ BD-ROM : Bonus View(Profile1.1); BD-Live(Profile2.0); BD-ROM (SL/DL) ☒ DVD Camcorder 8cm DVD : Yes RW/-

R (+VR) ☒ DVD Playback : Yes ☒ DVD+R Read Compatibility : Yes (+VR) ☒ DVD+RW Read Compatibility : Yes (+VR) ☒ DVD-R Read Compatibility : Yes ☒ DVD-RW Read Compatibility : Yes (+VR) ☒

JPEG Playback : BD/DVD/CD/USB/DLNA ☒ Noise Reduction : Yes (BNR on DVDs Only)



□ PhotoTV HD : Yes □ x.v.Color™ Technology : Yes Audio Features  
 □ Music : BD/DVD/CD/USB/DLNA (non secured) □ DTS : D/DVD/CD/USB/DLNA (non secured)  
 □ LPCM : BD/DVD/CD/USB/DLNA (non secured) □ MP3 Playback : BD/DVD/CD/USB/DLNA  
 (non secured) □ SA-CD : Yes Video □ Deep Color : Yes □ Precision Cinema HD Upscale : Yes  
 Network Features/SEN Wi-fi □ USB Wi-Fi Ready : Yes (UWA-BR100 adapter not supplied)  
 Supported Media Video □ MPEG-1 Video/PS (.mpg .mpeg, .m2ts, .mts) :  
 BD/DVD/CD/USB/DLNA  
 □ MPEG-2 Video/PS, TS (.mpg.mpeg, .m2ts, .mts) : BD/DVD/CD/USB/DLNA

# 1 Misc. Audio/Video cable and Connectors

## 1 Middle Atlantic Equipment Rack (24RU)

### WRK-24SA-27

Stand-alone equipment rack shall be Middle Atlantic Products model # WRK-2SA-27 (see chart for available models). Overall dimensions of rack shall be 48.125"H x 24.25"W x 27.6"D (refer to chart). Useable height shall be 24 rackspaces, useable depth shall be 25.75" (refer to chart). Fully welded construction shall provide a static load capacity of 10,000 lbs. and a UL Listed 2,500 lb. weight capacity. Top and bottom shall be 14-gauge steel, horizontal braces shall be 16-gauge steel welded to integral structural side panels of 16-gauge steel giving an 1/8" thick structure, all structural elements shall be finished in a durable black powder coat. Rack shall include a locking, latching rear door. Rack shall come equipped with two pairs of 11-gauge steel rackrail with tapped 10-32 mounting holes in universal EIA spacing.

Rackrail shall be finished in black e-coat with numbered rackspaces. Top and bottom of rack shall have a vertical slotted vent pattern. The WRK shall have a solid locking rear door. Rack shall have removable split rear knockout panels with 1/2", 3/4", 1", and 1-1/2" electrical knockouts installed in base, and removable split rear knockout panels with electrical knockouts and BNC knockouts for UHF/VHF antennae installed in top. Fully welded sides shall feature vertical vent pattern at top and bottom. Grounding and bonding stud shall be 1/4-20 threaded, installed in base of enclosure. WRK-24MDK shall additionally include a 3/4" thick, graphite-marbled laminate top, skirted wheel-base, latching front plexi door, latching vented rear door and front and rear rackrail. WRK-SA Series enclosures shall satisfy the 2007 & 2010 CBC; 2006, 2009 & 2012 IBC; ASCE 7-05 (2005 Edition) & ASCE 7-10 (2010 Edition) and the 2006 & 2009 editions of NFPA 5000 for use in areas of high seismicity, Seismic Use Group III, Zone 4 or Seismic Design Category (SDC) "D" with lateral force requirements for protecting 900 lbs. of essential equipment in locations with the highest level of seismicity and top floor or rooftop installations with an Importance factor (Ip) of 1.5 when used with WRK-24 seismic floor anchor bracket. WRK shall be UL Listed in the US and Canada. WRK shall be GREENGUARD Indoor Air Quality Certified for Children and Schools. WRK shall be RoHS EU Directive 2002/95/EC compliant. WRK shall be manufactured by an ISO 9001 and ISO 14001 registered company. Rack shall be warranted to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

## 1 Labor

## Conference Room.1036

### 1 Biamp Digital Signal Processor Nexia TC

8 wide-band AEC balanced mic/line inputs • 2 standard balanced mic/line inputs • 4 balanced mic/line outputs • telephone interface with line & set connections • Ethernet port for software configuration/control • serial port for third-party RS-232 remote control • NexLink ports for multi-unit system designs • Nexia software for Windows® XP Professional/Vista • pre-configured I/O with definable processing • RoHS compliance and AES grounding practices • CE marked and UL/C-UL listed • covered by Biamp Systems' five-year warranty • Ability to select, view, and calibrate: Mixers, Equalizers, Filters, Crossovers, Dynamics, Routers, Delays, Controls, Meters, Generators, Diagnostics • Telephone Interface capabilities include: ° initiation of outgoing calls ° detection and answering of incoming calls ° line echo cancellation ° TouchTone™ decoding ° caller ID reception ° call progress detection ° line intrusion detection ° continuous line status and fault monitoring Frequency Response (20Hz~20kHz @ +4dBu): +0/-0.4dB THD+N (20Hz~20kHz @ +4dBu): line level < 0.006% mic level < 0.05% Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm): -125dBu Dynamic Range 20Hz~20kHz, 0dB): > 105dB Maximum Gain (input channels): 66dB Crosstalk (channel-to-channel @ 1kHz): line level < -80dB mic level < -75dB Output Impedance (balanced): 200 ohms Input Impedance (mic/line balanced): 8k ohms Input Gain Range (variable trim): 0dB ~ +66dB Maximum Output (balanced): +24dBu Maximum Input (mic/line): +24dBu Full Scale Output Level (six selections) -31dBu ~ +24dBu Telephone Interface: ringer equivalency number 0.0B dynamic range 67dBu frequency response 250Hz ~ 3.4kHz

THD < 0.3% transhybrid balance 30dB Tail Length: up to 300ms

Convergence: up to 100dB/sec Phantom Power: +48 VDC (7mA/input

Sampling Rate: 48kHz A/D - D/A Converters: 24-bit Power Consumption (100~240VAC 50/60Hz): 65 watts

Dimensions: height 1.75 inches (45mm) width 19 inches (483mm) depth 11.15 inches (283mm) Weight: 8.6 lbs. (3.9kg) Compliance: AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive CE marked UL listed

### 3 CROWN PZM-10

Polar pattern, hemispherical.

Frequency range PZM®-10: 80 to 20,000 Hz; PZM®-10LL: 100 to 20,000 Hz

Sensitivity PZM®-10: 2.5 mV/Pa (-52 dBV); PZM®-10 LL: 1.4 V/Pa (+3 dBV) Max. SPL 120 dB

Equivalent noise level 26 dB-A Signal/noise ratio 68 dB (A-weighted)

Impedance PZM®-10: 240 ohms; PZM®-10 LL: 75 ohms

Connector PZM®-10: 3-pin XLR; PZM®-10 LL: stripped and tinned leads

Finish Off-white. May be painted any color.

Dimensions ø 3.9 cm x 7.2 cm (ø 1.53 x 2.829 in.)

Net weight PZM®-10: 74 g (22,6 oz.); PZM®-10 LL: 93 g (3,3 oz.) ROHS OK

### 1 Denon USB Recording Device DN-F650R

Compatible recording media SD/SDHC card, USB flash memory, external USB recording media  
Recording format MP3 MPEG1 Layer III audio compression WAV 16/24-bit linear PCM

Recording MP3 bitrate (selectable) MONO 160, 128, 96, 64, 32 kbps  
 STEREO 320, 256, 192, 128, 64 kbps Sampling frequency 96 kHz, (PCM recording only),  
 Number of channels 2 (STEREO)1 (MONO)  
 Audio frequency characteristics 20 – 40,000 Hz  $\pm$  1.0 dB (Fs=96kHz).  
 S/N ratio, IEC-A filter 96 dB(0dBFS During playback at 1 kHz)  
 Total harmonic distortion (at 0 (AES-17 20kHz filter) VU (PCM))  
 Dynamic range 96 dB Variable pitch width -40% – +20%

#### INPUT

Balanced in L/R Type XLR (1:GND, 2:Hot, 3:Cold)  
 Input sensitivity +24 dBu,+20 dBu,+18 dBu,0 dBu / 24 k $\Omega$  (0dBFS Reference) Line in L/R Type  
 RCA terminal Input sensitivity 500 mVrms/22 k $\Omega$  Unbalanced digital in Type RCA terminal  
 Input impedance 75  $\Omega$  Standard input level 0.5 Vp-p Format IEC-60958 (SPDIF) Balanced  
 digital in Type XLR (1:GND, 2:Hot, 3:Cold) Input impedance 110  $\Omega$  Standard input level 3.5 Vp-  
 p Format IEC-60958 (AES/EBU)

### 1 LG 60" Display 60PV450C

**PLASMA MODULE** Screen Size 60" class (59.8" measured diagonally) Native Display  
 Resolution 1920 x 1080 Brightness 1,500 cd/m<sup>2</sup> Dynamic Contrast Ratio 3,000,000:1  
 Protective Skin Glass Yes Color Reproduction (Panel Output) 16 Bit ISM (Image Sticking  
 Minimization) White Wash / Orbiter / Color Wash 600Hz Sub-Field Driving Yes (600Hz Max  
 Sub-Field Driving) Life Span (typical) 100,000 Hours

**VIDEO** Built-in tuner ATSC/NTSC/Clear QAM - 1 Tuner Dual XD Engine Yes Aspect Ratio 16:9  
 Aspect Ratio Correction 6 Modes (16:9 Just Scan, Set by Program, 4:3, Zoom1, Cinema  
 Zoom1) Just Scan (1:1 Pixel matching) HDMI 1080p/1080i/720p (0% overscan) Component  
 1080p/1080i/720p RF 1080i/720p Enhanced Noise Reduction 3D & MPEG Color Temperature  
 Control 3 Modes (Warm, Medium, Cool) 24p Real Cinema (3:3 Pulldown) Yes (HDMI 1080  
 24p) Cinema 3:2/2:2 Pulldown Mode Yes Picture Reset Yes AV Mode (Picture & Mode) Yes  
 Picture Mode 8 Modes (Vivid, Standard, APS, Cinema, Game, Sports, Expert 1, Expert 2) XD  
 Color (Active Color Management) Yes ISFccc Ready Yes Intelligent Sensor Mode Yes xvYCC Yes  
 DTV Signal Strength (Digital) Yes PC Resolution 1920 x 1080 @ 120Hz or better Color  
 Reproduction (Chassis Output) 10-Bit

**AUDIO** Mono/Stereo/Dual (MTS/SAP) Yes Audio Output (Watts - THD 10%) 10W + 10W  
 Speaker System Invisible Speaker (1 Way 2 Speaker) Dolby Digital 5.1 Decoder Yes Surround  
 System Infinite Sound Bass/Treble/Balance Yes Smart Volume Leveler (Auto Volume Leveler)  
 Yes Clear Voice II Yes Auto Volume Leveler II Yes Sound Mode 5 Modes (Standard, Music,  
 Cinema, Sports, Game) Mute Yes

**SPECIAL FEATURES** USB 2.0 MP3 & JPEG Public Display Settings Yes (V 2.5) Intelligent Sensor  
 Yes Auto Demo Yes Picture Wizard II Yes A/V Input Navigation / EZ Input Toggle Yes Input  
 Labeling Yes Quick View (Flashback) Yes Picture Freeze Yes Parental Control w/V-Chip Yes Key  
 Lock Yes Closed Caption Yes Simplink™ (HDMI CEC) Yes

**CONVENIENCE FEATURES** Language 3 (English, Spanish, French) Quick Menu Yes Auto Tuning  
 / Programming Yes Program (Channel) Edit (Add / Delete) Yes Favorite Channel Programming  
 Yes Auto/Manual Clock Yes On/Off Timer Yes Sleep Timer Yes Auto Off / Auto Sleep Yes

**JACK PACK TV – SIDE AV In** Yes (1) HDMI/HDCP Input Yes, 2D:  
 (480i/480p/720p/1080i/1080p), 1 Port PC Mode, SIMPLINK USB 2.0 Yes, (MP3, JPEG ) TV –

**REAR RF In** Yes (1) **AV In** Yes (1) **Component In** (Y,Pb,Pr) + **Audio** Yes (2) (480i/480p/720p/1080i/1080p) **Digital Audio Out (Optical)** Yes, (1, Optical) **HDMI/HDCP Input** Yes, 2D: (480i/480p/720p/1080i/1080p), 1 Port **PC Mode**, **SIMPLINK RGB In** (D-sub 15pin) - **PC** Yes (1) **PC Audio Input** Yes (1) **RS-232C In** Yes, (1, Control & Service) **Remote Control In** Yes (1) **Wired IR Jack** Yes

**CABINET/ACCESSORIES** **TruSlim Frame** Yes **Cabinet Color** Gloss Black **Speaker Invisible** **Speaker Table Stand Included Detachable** (20°/20°) **Swivel VESA™ Compliant** 600 x 400 (60") **Local Key Type** Touch Sensitive **Keys Remote Control** Yes, **Illuminated Quick Setup Guide** Yes **Power Cord** Yes

**POWER** **EcoSmart - Energy Savings Intelligent Sensor (auto)** Yes (automatic) **3 Mode Power Saving Levels** Yes (manual) **Voltage, Hz** 100~240V, 50/60Hz **Power Consumption** (IEC62087 dynamic 201W (60"), broadcast-content video signal) **Stand by Mode** Under 0.2W

**REQUIRED APPROVALS** **RoHS Compliant** Yes **UL, c-UL, FCC** Yes

**DIMENSIONS & WEIGHT** **60PV450C** **Dimensions without Stand (W×H×D)** 54.6" x 32.9" x 2.0" with **Stand (W×H×D)** 54.6" x 35.6" x 13.2" **packaging (W×H×D)** 60.8" x 38.2" x 13.0" **Weight without Stand** 84.9 lbs with **Stand** 94.0 lbs with **packaging** 108.2 lbs

**LIMITED WARRANTY** 2 Years (Parts/Labor)

**UPC** 60PV450C 7 19192 90245 9

## 1 Chief LTA5536

### Flat Panel Wall Mount

**Certifications:** UL Listed **Color:Black** **Lateral Shift** 16" (406.4mm) **Maximum Screen Thickness** 6" **Minimum Depth** : 1.99" (50.5mm)

**Mounting Pattern Compatibility (Universal Versions):** 100 x 100mm- 895 x 505mm

**Orientation:** Landscape **Overall Dimensions (H x W x D):** 13.2" x 34.4" x 2.0" (335 x 875 x 51mm)

**Solution Type:** Custom **Tilt:** + 0° , - 12° **Typical Screen Sizes** 37 - 63" **Wall Stud**

**Compatibility (inches):** 12 - 34" **Weight Capacity** : 200 lbs (90.7kg)

## 1 Crestron QM transmitter

### QM-TX

**Video Signal Types:** RGB and composite, S-Video, or component video

**Video/HDTV Formats:** NTSC or PAL, **HDTV up to 1080i/1080p** **RGB Formats:** RGBHV, RGBS, or **RGsB** **Gain:** 0dB (75 ohms terminated) **Maximum Resolution:** 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation at receiver

**Audio A-D Conversion** : 24-bit, 48 kHz **Frequency Response** : 20Hz to 20kHz

**Connectors** R/C/Pr, G/Y/Y, B/COMP/Pb, H, V: (5) BNC female, **Multi-format RGB/Video input;** **Formats:** RGBHV, RGBS, RGsB, YPbPr, S-Video (Y/C), composite; **Input Impedance:** 75 ohms; **H/V Sync Impedance:** 620 ohms; **Maximum Input Level:** 0.7 Vp-p for RGB and C of S-Video; 1 Vp-p for composite and Y of S-Video; **Maximum H/V Sync Level:** 5 Vp-p; **Signal sensing on** G/Y/Y, B/COMP/Pb, and HG: (1) 6-32 screw, chassis ground lug **AUDIO:** (1) 5-pin 3.5mm detachable terminal block; **Balanced/unbalanced stereo line-level audio input;** **Maximum Input Level:** 4 Vrms balanced, 2 Vrms unbalanced; **Input Impedance:** 10k ohms balanced, 5k ohms unbalanced **QM OUT** : (1) 8-wire RJ45 female, **QuickMedia output port;** **Connects to QM input port of any QuickMedia device via CresCAT-QM or CresCAT-IM cable\*** **NET:** (2) 4-pin 3.5mm detachable terminal blocks; **Cresnet slave ports, paralleled;**



Connect to Cresnet control network via CresCAT-QM or Cresnet cable

**Buttons & LED Indicators** PWR: (1) green LED, indicates 24 Volts DC power supplied from Cresnet control network NET: (1) yellow LED, indicates communication with Cresnet system VIDEO ACT : (1) red LED, indicates signal at the G/Y/Y, B/COMP/PB, or H connectors

SETUP (rear) : (1) miniature pushbutton and red LED, used for touch-settable ID (TSID)

**Power Requirements** Cresnet Power Usage: 5 Watts (0.21 Amp @ 24 Volts DC)

**Environmental** Temperature: 41° to 104°F (5° to 40°C) Humidity: 10% to 90% RH (non-condensing)

**Enclosure Chassis:** Steel, black matte powder coat finish **Faceplate:** Extruded aluminum, black matte powder coat finish with polycarbonate label overlay **Mounting:** Freestanding or 0.5U 19-inch rack-mountable (adhesive feet included, ST-RMK rack kit sold separately)

## 1 Crestron Control Processor

### MPS300

#### Processor

**CPU:** 32-bit Freescale ColdFire® Microprocessor **Memory** 32 MB SDRAM, 256 KB NVRAM, 16 MB Flash **Operating System** Real-time, preemptive, multitasking kernel, multi-threaded; FAT3 filesystem with long names; supports SIMPL™ Windows® and SIMPL+®

**Ethernet** 10/100BaseT, static IP or DHCP/DNS, SSL, auto-negotiating, full duplex TCP/IP, UDP/IP, CIP, SMTP, SNMP, built-in Web server and e-mail client; supports Crestron e-Control® 2 XPanel and RoomView® applications

**Video Switcher:** 8x7 crosspoint matrix including 3x3 QM signal routing, local QM delay skew compensation, RGB pass-thru mode (multi-format via RGB output connection)

**Signal Types:** RGB and composite, S-Video, or component video (does not transcode)

**Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p **RGB Formats:** RGBHV, RGBS, RGsB **Maximum Resolution:** 2048 X 1536 @ 60Hz (1920 X 1200 @ 60Hz via QM)

**Blanking Time:** < 0.1 second **Sync Rise/Fall Time:** 3.5 ns maximum

**Sync Latency:** < 30 ns **Gain:** 0dB (75 ohms terminated) **QM Cable Compensation:** 10-bit digitally controlled PEAK (bandwidth) and BOOST (frequency); 4-bit digitally controlled SKEW delay, 0 to 22 ns (independent for R, G, and B) **Audio Switcher/Preamp:** 8x4 stereo crosspoint matrix including 3x3 QM signal routing, 2-channel gated mic preamp with compressor & limiter, 8-channels mic EQ, 10X5 mic/program matrix mixer, 8x2 mic matrix mixer per each of 3 QM outputs, stereo volume/tone control and EQ per each of PROGRAM and RECORD outputs, mono volume/tone control and EQ/delay on SPEECH output, integrated power amplifier, QM auto-compensation with self-peaking **A-D/D-A Conversion:** 24-bit, 48 kHz **Volume Range:** -80 to +20 dB, 0.1dB steps (output); -80 to 0 dB, 0.1dB steps (mixer)

**Mute:** -100dB (electronic), -120dB (relay) **Input Compensation:** ±10dB, 0.1dB steps **Mic Input Gain:** 0 to 100 % (40dB range) plus mute **Gate Level (Threshold):** 0 to 100 % **Gate Attack:** 0 to 100 mS

**Gate Decay (Release):** 0 to 5000 mS **Gate Depth:** -80dB (mute) to 0dB, 0.1dB steps **Compression Threshold:** -80dB to +20dB, 0.1dB steps **Limit Threshold:** 0dB to 20dB, 0.1dB steps **Comp/Lim Attack:** Separately adjustable 0.1 to 300 mS **Comp/Lim Release:**



Separately adjustable 1 to 500 mS Compression Ratio: 1.0:1 to 10.0:1 Comp/Lim Curve: Separately selectable hard or soft knee Mic EQ:  $\pm 12$ dB, 0.1 dB steps at 160, 500, 1.2k, and 3k Hz Bass/Treble:  $\pm 12$ dB, 0.5dB steps at 100Hz and 10kHz Output Equalization: 10-band graphic (GEQ) + 2-band parametric (PEQ) GEQ:  $\pm 12$ dB, 0.1dB steps at 31, 63, 125, 250, 500, 1k, 2k, 4k, 8k, and 16k Hz PEQ Filter Gain/Center Frequency:  $\pm 12$ dB, 0.1dB steps at 25Hz to 20kHz, 0.5Hz steps PEQ Filter Bandwidth: 0.1 to 3.0 octaves, 0.1 octave steps PEQ Filter Types: Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf Speech Output Delay: 0 to 40 mS, 1mS steps Frequency Response: 20Hz to 20kHz  $\pm 0.5$ dB (PROG/REC OUT), 50Hz to 20kHz  $\pm 0.5$ dB (SPEECH OUT), 20Hz to 20kHz  $\pm 0.5$ dB (SPEAKER @ 8 ohms), 100Hz to 20kHz  $\pm 1.5$ dB

(SPEAKER @ 70V or 100V) S/N Ratio: 95dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz A-weighted), 95dB (SPEECH OUT @ 10dBV, 50Hz to 20kHz A-weighted), 90dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz A-weighted), 90dB (SPEAKER @ 70V or 100V, full output, 20Hz to 20kHz A-weighted) THD+N: 0.02% (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), 0.02% (SPEECH OUT @ 10dBV, 50Hz to 20kHz), 0.7% (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz), 0.7% (SPEAKER @ 70V or 100V, full output, 100Hz to 20kHz A-weighted) Stereo Separation: -80dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), -60dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz) Channel Crosstalk: -80dB (AUD IN @ 10dBV, 20Hz to 20kHz)

## 1 Crestron Quick Media Receiver QMRX

Video Signal Types RGB and composite, S-Video, or component† video Video/HDTV Formats NTSC or PAL, HDTV up to 1080i/1080p†

RGB Formats RGBHV, RGBS, or RGsB Gain 0dB (75 ohms terminated) Maximum Resolution 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation

QM Cable Compensation 10-bit digitally controlled PEAK (bandwidth) and BOOST (frequency); 4-bit digitally controlled SKEW delay, 0 to 22 ns (independent for R/Pr, G/Y, and B/Pb) Connectors – Front Panel

QM (1) 8-wire RJ45 female, QuickMedia input port; Connects to QM output port of any QuickMedia device via CresCAT-QM or CRESCAT-IM cable\* NET (2) 4-pin 3.5mm detachable terminal blocks; Cresnet ports (paralleled), Master/Slave selectable; Connect to Cresnet control network via CresCAT-QM or Cresnet cable Connectors – Rear Panel RGBHV (1) DB15HD female, RGB(VGA)/component video† output; Formats: RGBHV, RGBS, RGsB, YPbPr; Output Level: 1 Vp-p nominal; Sync Level: 5 Vp-p nominal; Output Impedance: 75 ohms; H/V Sync Impedance: 100 ohms S-VIDEO (1) 4-pin mini DIN female, S-Video (Y/C) output; Output Level: 1.0 Vp-p (luma), 0.7 Vp-p (chroma);

Output Impedance: 75 ohms VIDEO (1) BNC female, composite video output; Output Level: 1.0 Vp-p; Output Impedance: 75 ohms G 6-32 screw, chassis ground lug COM (1) DB9 male, bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support IR (1) 2-pin 3.5mm detachable terminal block; IR/Serial port; IR output up to 1.2 MHz; 1-way serial TTL/RS-232 (0-5 Volts) up to 9600 baud INPUT 1 (1) 2-pin 3.5mm detachable terminal block;

Digital/contact closure input. Rated for 0-24 Volts DC, referenced to GND; Input Impedance: 2.2k ohms pulled up to 5 Volts DC; Logic Threshold: 2.5 Volts DC nominal with 1 Volt hysteresis band LED Indicators PWR (green) Indicates 24 Volts DC power supplied from Cresnet control network NET (yellow) Indicates communication with Cresnet system SETUP (red) Used for touch-settable ID (TSID) Buttons SETUP Used for touch-settable ID (TSID)

Power Requirements Cresnet Power Usage 8 Watts (0.33 Amp @ 24 Volts DC) Environmental Temperature 41° to 104°F (5° to 40°C) Humidity 10% to 90% RH (non-condensing) Enclosure Chassis Steel, black matte powder coat finish Mounting Free-standing, surface-mount, or pole-mount (adhesive feet and [4] "L" brackets included, MK-QM-RMCRX pole mount kit sold separately) Dimensions Height 1.71 in (4.34 cm) Width 6.96 in (17.68 cm) Depth 5.83 in (14.81 cm) Weight 1.1 lbs (0.5 kg)

## 1 Crestron Touch Panel

### TPS-6X

#### Touchscreen Display

Display Type: TFT Active matrix color LCD Size: 5.7 inch (145 mm) diagonal Aspect Ratio: 4:3 VGA Resolution: 640 x 480 pixels

Brightness: 350 nits (cd/m<sup>2</sup>) Contrast: 400:1 Color Depth: 18-bit, 256k colors

Illumination: Backlit fluorescent Viewing Angle: ±80° horizontal, +80°/-70° vertical

Touchscreen: Resistive membrane

Buttons & Switches Sleep: (1) Programmable top-mounted pushbutton (left); normally initiates "Sleep" mode when docked, turns power on/off when undocked; also resets touchpanel if held for 5 seconds Brightness: (1) Programmable top-mounted pushbutton (right), normally sets display brightness level Hard Keys: (8) Optional programmable pushbuttons, engravable backlit text [2] (default engraving included) Up/Down: (2) Optional programmable "up/down" pushbuttons, backlit, engravable backlit text[2] on bezel (default engraving included) Thumbpad: (5) Optional programmable pushbuttons for 4-way directional navigation and "enter", backlit

Battery: (1) Rear panel recessed DIP switch, shuts off battery for long-term storage LED Indicators Battery: (1) Green LED, indicates battery condition and charging status when docked

Connectors Docking Connector: (1) multi-pin connector; Mates with the docking port on the docking station[6] See the TPS-6X-IMCW interface module[6] specification for other connectors

Memory SDRAM: 32 MB Flash: 32 MB Maximum Project Size: 28 MB

Graphic Engine lsys engine; 16-bit non-palette graphics; 65,536 colors; Synapse image rendering algorithm; multi-mode objects, DNav dynamic menu objects, dynamic graphics, PNG translucency, full-motion (60 fps) animation, color key video windowing

RF Wireless RF Transceiver: 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), IEEE 802.15.4 compliant Transmitting Power: 75 mW (Ch.11), 100 mW (Ch.12-23), 15 mW (Ch.24), 3.5 mW (Ch.25), 1 mW (Ch.26) @ High Setting; 1 mW (Ch.11-25), 0.5 mW (Ch.26) @ Low Setting Range (typical): 100 to 200 feet maximum indoor, 1000 feet outdoor,

subject to site-specific conditions Gateway: Requires a CEN-HPRFGW Extended Range RF Gateway[5] Roaming: Supports roaming amongst up to 8 RF gateways

IR Wireless[1] IR Transmitter: 38 kHz, RC5 format  
Range: 50 feet typical

# **1 Crestron Wireless Access Point**

## **CEN-WAP-ABG-Cm**

Wireless Transceiver: IEEE 802.11a/b/g Wi-Fi (5.8 or 2.4 GHz 2-way RF); 64, 128, & 152-bit WEP encryption; WPA & WAP2 with TKIP & AES Transmit Power: Up to 19 dBm

Ethernet 10BaseT/100BaseTX, auto-switching, auto-negotiating, auto-discovery, full/ half duplex, TCP/IP, UDP/IP, DHCP client and server, SNMP, IEEE 802.3u & 802.3af compliant

## **Controls and LED Indicators**

LAN: (1) Green LED, indicates wired Ethernet activity and link status

Wi-Fi: (1) Green LED, indicates Wi-Fi activity and connection status

Reset: (1) Recessed miniature pushbutton for hardware reset

Connectors - Rear Panel NETWORK PoE: (1) 8-wire RJ45, female;

10BaseT/100BaseTX Ethernet port, 802.3af Power over Ethernet compliant; Connects to LAN via a 802.3af compliant PoE power source

**Power Requirements** Power over Ethernet: IEEE 802.3af Class 1 PoE Powered Device  
**Enclosure** Injection-molded plastic, paintable white matte finish, ceiling mountable using a 1-gang plaster ring or electrical box (2 inch deep minimum)

**Environmental** Temperature: 32° to 104°F (0° to 40°C) Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 11 BTU/Hr

**Dimensions** Height: 2.54 in (65 mm)

Diameter: 4.73 in (120 mm)

**Weight** 6.0 oz (168 g) Available Models CEN-WAP-ABG-CM: Ceiling Mount 802.11a/b/g Wireless Access Point CEN-WAP-ABG-POE-PWE-CM: Ceiling Mount 802.11a/b/g Wireless Access Point w/PoE Injector Included Accessories PWE-4803RU PoE Injector [Included Quantity for CEN-WAP-ABG-POE-PWECM: 1] Available Accessories PWE-4803RU: PoE Injector CEN-SW-POE-5: 5-Port PoE Switch CEN-SWPOE-24: 24-Port Managed PoE Switch

# **6 JBL Ceiling mounted loud speaker**

## **Control 24 CT**

Freq. Range (-10 dB)1: 80 Hz - 20 kHz

Power Capacity2: 80 Watts Continuous Program Power 40 Watts Continuous Pink Noise

Nominal Sensitivity3: 86 dB SPL @ 1 m (3.3 ft)

Nominal Coverage Angle4: 130° conical coverage Directivity Factor (Q): 2.4 averaged 500 Hz to 4 kHz Directivity Index (DI): 3.8 averaged 500 Hz to 4 kHz Rated Maximum SPL: 102 dB @ 1 m (3.3 ft) Nominal Impedance (24C): 16 ohms (Min Z 16.1  $\Omega$  @ 320 Hz) Transformer Taps (24CT): 70V: 30W, 15W, 7.5W & 3.7W taps 100V: 30W, 15W, & 7.5W taps Transducers: Low-Frequency: 100 mm (4.0 in) Polypropylene-coated, 1" coil on aluminum former High-Frequency: 19 mm (0.75 in) Titanium coated polyester. Physical: Enclosure: Backcan: Formed steel Baffle/Rim: Medium impact polystyrene, fire rated UL94V-0 Overload Protection: Full-range power limiting to protect network and transducers. (On Control 24C, not on Control 24CT) Termination: Removable locking connector with screw-down terminals. 2 input terminals and 2 loop-thru output terminals. Max. wire size 12 AWG (2.5

mm2) Safety Agency Rating: Suitable for use in air handling spaces per UL1480, UL2043, NFPA90 & NFPA 70. S7232/UL Listed, Signaling Speaker. Transformer UL registered per UL1876. In accordance with IEC60849/EN60849. Outside Dimensions (H x Dia): 200 x 195 mm (7.9 x 7.7 in) 184 mm (7.2 in) front of ceiling tile to back of backcan Cutout Size: 168 mm (6.6 in) Net Weight (ea): 2.7 kg (6 lb) CT: 3.5 kg (8 lb) Shipping Weight (pair): 6.4 kg (15 lb) CT: 8.0 kg (18 lb) Included Accessories: C-shaped support backing plate 2 tile support rails (fits both 2 x 4 ft or 600 x 1200 mm tiles) Cutout template Paint shield Removable locking wiring connector.

# 1 Misc. Audio/Video Cabling and Connectors

# 1 Labor

## Conference Room 1214

Qty.	Item Description
1	<p><b>Biamp Digital Signal Processor Nexia TC</b></p> <p>8 wide-band AEC balanced mic/line inputs • 2 standard balanced mic/line inputs • 4 balanced mic/line outputs • telephone interface with line &amp; set connections • Ethernet port for software configuration/control • serial port for third-party RS-232 remote control • NexLink ports for multi-unit system designs • Nexia software for Windows® XP Professional/Vista • pre-configured I/O with definable processing • RoHS compliance and AES grounding practices • CE marked and UL/C-UL listed • covered by Biamp Systems' five-year warranty • Ability to select, view, and calibrate: Mixers, Equalizers, Filters, Crossovers, Dynamics, Routers, Delays, Controls, Meters, Generators, Diagnostics • Telephone Interface capabilities include: ° initiation of outgoing calls ° detection and answering of incoming calls ° line echo cancellation ° TouchTone™ decoding ° caller ID reception ° call progress detection ° line intrusion detection ° continuous line status and fault monitoring Frequency Response (20Hz~20kHz @ +4dBu): +0/-0.4dB THD+N (20Hz~20kHz @ +4dBu): line level &lt; 0.006% mic level &lt; 0.05% Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm): -125dBu Dynamic Range 20Hz~20kHz, 0dB): &gt; 105dB Maximum Gain (input channels): 66dB Crosstalk (channel-to-channel @ 1kHz): line level &lt; -80dB mic level &lt; -75dB Output Impedance (balanced): 200 ohms Input Impedance (mic/line balanced): 8k ohms Input Gain Range (variable trim): 0dB ~ +66dB Maximum Output (balanced): +24dBu Maximum Input (mic/line): +24dBu Full Scale Output Level (six selections) -31dBu ~ +24dBu Telephone Interface: ringer equivalency number 0.0B dynamic range 67dBu frequency response 250Hz ~ 3.4kHz</p> <p>THD &lt; 0.3% transhybrid balance 30dB Tail Length: up to 300ms</p> <p>Convergence: up to 100dB/sec Phantom Power: +48 VDC (7mA/input</p> <p>Sampling Rate: 48kHz A/D - D/A Converters: 24-bit Power Consumption (100~240VAC 50/60Hz): 65 watts</p> <p>Dimensions: height 1.75 inches (45mm) width 19 inches (483mm) depth 11.15 inches (283mm) Weight: 8.6 lbs. (3.9kg) Compliance: AES48-2005 Grounding &amp; EMC practices EU Directive 2002/95/EC, RoHS directive CE marked UL listed</p>



### 3 CROWN PZM-10

Polar pattern, hemispherical. Frequency range PZM®-10: 80 to 20,000 Hz; PZM®-10LL: 100 to 20,000 Hz Sensitivity PZM®-10: 2.5 mV/Pa (-52 dBV); PZM®-10 LL: 1.4 V/Pa (+3 dBV) Max. SPL 120 dB Equivalent noise level 26 dB-A Signal/noise ratio 68 dB (A-weighted) Impedance PZM®-10: 240 ohms; PZM®-10 LL: 75 ohms Connector

PZM®-10: 3-pin XLR; PZM®-10 LL: stripped and tinned leads Finish Off-white.

May be painted any color. Dimensions ø 3.9 cm x 7.2 cm (ø 1.53 x 2.829 in.) Net weight PZM®-10: 74 g (22,6 oz.); PZM®-10 LL: 93 g (3,3 oz.) ROHS OK

### 1 LG 60" Display 60PV450C

**PLASMA MODULE** Screen Size 60" class (59.8" measured diagonally) Native Display Resolution 1920 x 1080 Brightness 1,500 cd/m2 Dynamic Contrast Ratio 3,000,000:1 Protective Skin Glass Yes Color Reproduction (Panel Output) 16 Bit ISM (Image Sticking Minimization) White Wash / Orbiter / Color Wash 600Hz Sub-Field Driving Yes (600Hz Max Sub-Field Driving) Life Span (typical) 100,000 Hours

**VIDEO** Built-in tuner ATSC/NTSC/Clear QAM - 1 Tuner Dual XD Engine Yes Aspect Ratio 16:9 Aspect Ratio Correction 6 Modes (16:9 Just Scan, Set by Program, 4:3, Zoom1, Cinema Zoom1) Just Scan (1:1 Pixel matching) HDMI 1080p/1080i/720p (0% overscan) Component 1080p/1080i/720p RF 1080i/720p Enhanced Noise Reduction 3D & MPEG Color Temperature Control 3 Modes (Warm, Medium, Cool) 24p Real Cinema (3:3 Pulldown) Yes (HDMI 1080 24p) Cinema 3:2/2:2 Pulldown Mode Yes Picture Reset Yes AV Mode (Picture & Mode) Yes Picture Mode 8 Modes (Vivid, Standard, APS, Cinema, Game, Sports, Expert 1, Expert 2) XD Color (Active Color Management) Yes ISFccc Ready Yes Intelligent Sensor Mode Yes xvYCC Yes DTV Signal Strength (Digital) Yes PC Resolution 1920 x 1080 @ 120Hz or better Color Reproduction (Chassis Output) 10-Bit

**AUDIO** Mono/Stereo/Dual (MTS/SAP) Yes Audio Output (Watts - THD 10%) 10W + 10W Speaker System Invisible Speaker (1 Way 2 Speaker) Dolby Digital 5.1 Decoder Yes Surround System Infinite Sound Bass/Treble/Balance Yes Smart Volume Leveler (Auto Volume Leveler) Yes Clear Voice II Yes Auto Volume Leveler II Yes Sound Mode 5 Modes (Standard, Music, Cinema, Sports, Game) Mute Yes

**SPECIAL FEATURES** USB 2.0 MP3 & JPEG Public Display Settings Yes (V 2.5) Intelligent Sensor Yes Auto Demo Yes Picture Wizard II Yes A/V Input Navigation / EZ Input Toggle Yes Input Labeling Yes Quick View (Flashback) Yes Picture Freeze Yes Parental Control w/V-Chip Yes Key Lock Yes Closed Caption Yes Simplink™ (HDMI CEC) Yes

**CONVENIENCE FEATURES** Language 3 (English, Spanish, French) Quick Menu Yes Auto Tuning / Programming Yes Program (Channel) Edit (Add / Delete) Yes Favorite Channel Programming Yes Auto/Manual Clock Yes On/Off Timer Yes Sleep Timer Yes Auto Off / Auto Sleep Yes

**JACK PACK TV - SIDE** AV In Yes (1) HDMI/HDCP Input Yes, 2D: (480i/480p/720p/1080i/1080p), 1 Port PC Mode, SIMPLINK USB 2.0 Yes, (MP3, JPEG) **TV - REAR** RF In Yes (1) AV In Yes (1) Component In (Y,Pb,Pr) + Audio Yes (2) (480i/480p/720p/1080i/1080p) Digital Audio Out (Optical) Yes, (1, Optical) HDMI/HDCP Input Yes, 2D: (480i/480p/720p/1080i/1080p), 1 Port PC Mode, SIMPLINK RGB In (D-sub 15pin) - PC Yes (1) PC Audio Input Yes (1) RS-232C In Yes, (1, Control & Service) Remote Control In Yes (1) Wired IR Jack Yes



**CABINET/ACCESSORIES** TruSlim Frame Yes Cabinet Color Gloss Black Speaker Invisible Speaker Table Stand Included Detachable (20°/20°) Swivel VESA™ Compliant 600 x 400 (60") Local Key Type Touch Sensitive Keys Remote Control Yes, Illuminated Quick Setup Guide Yes Power Cord Yes

**POWER** EcoSmart - Energy Savings Intelligent Sensor (auto) Yes (automatic) 3 Mode Power Saving Levels Yes (manual) Voltage, Hz 100~240V, 50/60Hz Power Consumption (IEC62087 dynamic 201W (60"), broadcast-content video signal) Stand by Mode Under 0.2W

**REQUIRED APPROVALS** RoHS Compliant Yes UL, c-UL, FCC Yes

**DIMENSIONS & WEIGHT** 60PV450C Dimensions without Stand (W×H×D) 54.6" x 32.9" x 2.0" with Stand (W×H×D) 54.6" x 35.6" x 13.2" packaging (W×H×D) 60.8" x 38.2" x 13.0" Weight without Stand 84.9 lbs with Stand 94.0 lbs with packaging 108.2 lbs

**LIMITED WARRANTY** 2 Years (Parts/Labor)

**UPC** 60PV450C 7 19192 90245 9

# 1 Chief LTA5536

## Flat Panel Wall Mount

**Certifications:** UL Listed Color:Black Lateral Shift 16" (406.4mm) Maximum Screen Thickness 6" Minimum Depth : 1.99" (50.5mm)

**Mounting Pattern Compatibility (Universal Versions):** 100 x 100mm- 895 x 505mm

**Orientation:** Landscape Overall Dimensions (H x W x D): 13.2" x 34.4" x 2.0" (335 x 875 x 51mm) **Solution Type:** Custom Tilt: + 0° , - 12° Typical Screen Sizes 37 - 63" Wall

**Stud Compatibility (inches):** 12 - 34" **Weight Capacity :** 200 lbs (90.7kg)

# 1 Crestron QM transmitter

## QM-TX

**Video Signal Types:** RGB and composite, S-Video, or component video

**Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p **RGB Formats:** RGBHV, RGBS, or RGsB **Gain:** 0dB (75 ohms terminated) **Maximum Resolution:** 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation at receiver

**Audio A-D Conversion :** 24-bit, 48 kHz **Frequency Response :** 20Hz to 20kHz

**Connectors** R/C/Pr, G/Y/Y, B/COMP/Pb, H, V: (5) BNC female, Multi-format RGB/Video input; **Formats:** RGBHV, RGBS, RGsB, YPbPr, S-Video (Y/C), composite; **Input Impedance:** 75 ohms; **H/V Sync Impedance:** 620 ohms; **Maximum Input Level:** 0.7 Vp-p for RGB and C of S-Video; 1 Vp-p for composite and Y of S-Video; **Maximum H/V Sync Level:** 5 Vp-p; **Signal sensing on** G/Y/Y, B/COMP/Pb, and H

**G:** (1) 6-32 screw, chassis ground lug **AUDIO:** (1) 5-pin 3.5mm detachable terminal block; **Balanced/unbalanced stereo line-level audio input;** **Maximum Input Level:** 4 Vrms balanced, 2 Vrms unbalanced; **Input Impedance:** 10k ohms balanced, 5k ohms unbalanced **QM OUT :** (1) 8-wire RJ45 female, QuickMedia output port; **Connects to** QM input port of any QuickMedia device via CresCAT-QM or CresCAT-IM cable\* **NET:** (2) 4-pin 3.5mm detachable terminal blocks; **Cresnet slave ports, paralleled;** **Connect to** Cresnet control network via CresCAT-QM or Cresnet cable

**Buttons & LED Indicators** **PWR:** (1) green LED, indicates 24 Volts DC power supplied from Cresnet control network **NET:** (1) yellow LED, indicates communication with

Cresnet system VIDEO ACT : (1) red LED, indicates signal at the G/Y/Y, B/COMP/PB, or H connectors

SETUP (rear) : (1) miniature pushbutton and red LED, used for touch-settable ID (TSID)

**Power Requirements** Cresnet Power Usage: 5 Watts (0.21 Amp @ 24 Volts DC)

**Environmental** Temperature: 41° to 104°F (5° to 40°C) Humidity: 10% to 90% RH (non-condensing)

**Enclosure** Chassis: Steel, black matte powder coat finish Faceplate: Extruded aluminum, black matte powder coat finish with polycarbonate label overlay Mounting: Freestanding or 0.5U 19-inch rack-mountable (adhesive feet included, ST-RMK rack kit sold separately)

## 1 Crestron Control Processor

### MPS300

**CPU:** 32-bit Freescale ColdFire® Microprocessor **Memory** 32 MB SDRAM, 256 KB NVRAM, 16 MB Flash **Operating System** Real-time, preemptive, multitasking kernel, multi-threaded; FAT3 filesystem with long names; supports SIMPL™ Windows® and SIMPL+® **Ethernet** 10/100BaseT, static IP or DHCP/DNS, SSL, auto-negotiating, full duplex TCP/IP, UDP/IP, CIP, SMTP, SNMP, built-in Web server and e-mail client; supports Crestron e-Control®2 XPanel and RoomView® applications **Video Switcher:** 8x7 crosspoint matrix including 3x3 QM signal routing, local QM delay skew compensation, RGB pass-thru mode (multi-format via RGB output connection) **Signal Types:** RGB and composite, S-Video, or component video (does not transcode) **Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p **RGB Formats:** RGBHV, RGBS, RGsB **Maximum Resolution:** 2048 X 1536 @ 60Hz (1920 X 1200 @ 60Hz via QM) **Blanking Time:** < 0.1 second **Sync Rise/Fall Time:** 3.5 ns maximum **Sync Latency:** < 30 ns **Gain:** 0dB (75 ohms terminated) **QM Cable Compensation:** 10-bit digitally controlled PEAK (bandwidth) and BOOST (frequency); 4-bit digitally controlled SKEW delay, 0 to 22 ns (independent for R, G, and B) **Audio Switcher/Preamp:** 8x4 stereo crosspoint matrix including 3x3 QM signal routing, 2-channel gated mic preamp with compressor & limiter, 8-channels mic EQ, 10X5 mic/program matrix mixer, 8x2 mic matrix mixer per each of 3 QM outputs, stereo volume/tone control and EQ per each of PROGRAM and RECORD outputs; mono volume/tone control and EQ/delay on SPEECH output, integrated power amplifier, QM auto-compensation with self-peaking **A-D/D-A Conversion:** 24-bit, 48 kHz **Volume Range:** -80 to +20 dB, 0.1dB steps (output); -80 to 0 dB, 0.1dB steps (mixer) **Mute:** -100dB (electronic), -120dB (relay) **Input Compensation:** ±10dB, 0.1dB steps **Mic Input Gain:** 0 to 100 % (40dB range) plus mute **Gate Level (Threshold):** 0 to 100 % **Gate Attack:** 0 to 100 mS **Gate Decay (Release):** 0 to 5000 mS **Gate Depth:** -80dB (mute) to 0dB, 0.1dB steps **Compression Threshold:** -80dB to +20dB, 0.1dB steps **Limit Threshold:** 0dB to 20dB, 0.1dB steps **Comp/Lim Attack:** Separately adjustable 0.1 to 300 mS **Comp/Lim Release:** Separately adjustable 1 to 500 mS **Compression Ratio:** 1.0:1 to 10.0:1 **Comp/Lim Curve:** Separately selectable hard or soft knee **Mic EQ:** ±12dB, 0.1 dB steps at 160, 500, 1.2k, and 3k Hz **Bass/Treble:** ±12dB, 0.5dB steps at 100Hz and 10kHz **Output Equalization:** 10-band graphic (GEQ) + 2-band parametric (PEQ) **GEQ:** ±12dB, 0.1dB steps at 31, 63, 125, 250, 500, 1k, 2k, 4k, 8k, and 16k Hz **PEQ Filter Gain/Center Frequency:** ±12dB, 0.1dB steps at 25Hz to 20kHz, 0.5Hz steps **PEQ Filter Bandwidth:** 0.1 to 3.0 octaves, 0.1

octave steps **PEQ Filter Types:** Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf **Speech Output Delay:** 0 to 40 mS, 1mS steps **Frequency Response:** 20Hz to 20kHz  $\pm 0.5\text{dB}$  (PROG/REC OUT), 50Hz to 20kHz  $\pm 0.5\text{dB}$  (SPEECH OUT), 20Hz to 20kHz  $\pm 0.5\text{dB}$  (SPEAKER @ 8 ohms), 100Hz to 20kHz  $\pm 1.5\text{dB}$  (SPEAKER @ 70V or 100V) **S/N Ratio:** 95dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz A-weighted), 95dB (SPEECH OUT @ 10dBV, 50Hz to 20kHz A-weighted), 90dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz A-weighted), 90dB (SPEAKER @ 70V or 100V, full output, 20Hz to 20kHz A-weighted) **THD+N:** 0.02% (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), 0.02% (SPEECH OUT @ 10dBV, 50Hz to 20kHz), 0.7% (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz), 0.7% (SPEAKER @ 70V or 100V, full output, 100Hz to 20kHz A-weighted) **Stereo Separation:** -80dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), -60dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz) **Channel Crosstalk:** -80dB (AUD IN @ 10dBV, 20Hz to 20kHz)

## 2 **Crestron Quick Media Receiver** **QMRX**

**Video Signal Types** RGB and composite, S-Video, or component† video **Video/HDTV Formats** NTSC or PAL, HDTV up to 1080i/1080p†

**RGB Formats** RGBHV, RGBS, or RGsB **Gain** 0dB (75 ohms terminated) **Maximum Resolution** 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation

**QM Cable Compensation** 10-bit digitally controlled **PEAK** (bandwidth) and **BOOST** (frequency); 4-bit digitally controlled **SKEW** delay, 0 to 22 ns (independent for R/Pr, G/Y, and B/Pb) **Connectors – Front Panel**

**QM** (1) 8-wire RJ45 female, QuickMedia input port; Connects to QM output port of any QuickMedia device via CresCAT-QM or CRESCAT-IM cable\* **NET** (2) 4-pin 3.5mm detachable terminal blocks; Cresnet ports (paralleled), Master/Slave selectable; Connect to Cresnet control network via CresCAT-QM or Cresnet cable **Connectors – Rear Panel** **RGBHV** (1) DB15HD female, RGB(VGA)/component video† output; **Formats:** RGBHV, RGBS, RGsB, YPbPr; **Output Level:** 1 Vp-p nominal; **Sync Level:** 5 Vp-p nominal; **Output Impedance:** 75 ohms;

**H/V Sync Impedance:** 100 ohms **S-VIDEO** (1) 4-pin mini DIN female, S-Video (Y/C) output; **Output Level:** 1.0 Vp-p (luma), 0.7 Vp-p (chroma);

**Output Impedance:** 75 ohms **VIDEO** (1) BNC female, composite video output; **Output Level:** 1.0 Vp-p; **Output Impedance:** 75 ohms **G** 6-32 screw, chassis ground lug **COM** (1) DB9 male, bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support **IR** (1) 2-pin 3.5mm detachable terminal block; **IR/Serial port;** **IR output** up to 1.2 MHz; 1-way serial TTL/RS-232 (0-5 Volts) up to 9600 baud **INPUT 1**

(1) 2-pin 3.5mm detachable terminal block;

**Digital/contact closure input.** Rated for 0-24 Volts DC, referenced to GND; **Input Impedance:** 2.2k ohms pulled up to 5 Volts DC; **Logic Threshold:** 2.5 Volts DC nominal with 1 Volt hysteresis band **LED Indicators** **PWR** (green) Indicates 24 Volts DC power supplied from Cresnet control network **NET** (yellow) Indicates communication with Cresnet system **SETUP** (red) Used for touch-settable ID (TSID) **Buttons** **SETUP** Used for touch-settable ID (TSID) **Power Requirements**

**Cresnet Power Usage** 8 Watts (0.33 Amp @ 24 Volts DC) **Environmental Temperature**

41° to 104°F (5° to 40°C) Humidity 10% to 90% RH (non-condensing) Enclosure Chassis Steel, black matte powder coat finish Mounting Free-standing, surface-mount, or pole-mount (adhesive feet and [4] "L" brackets included, MK-QM-RMCRX pole mount kit sold separately) Dimensions Height 1.71 in (4.34 cm) Width 6.96 in (17.68 cm) Depth 5.83 in (14.81 cm) Weight 1.1 lbs (0.5 kg)

## 1 Crestron Touch Panel

### TPS-6X

#### Touchscreen Display

Display Type: TFT Active matrix color LCD Size: 5.7 inch (145 mm) diagonal Aspect Ratio: 4:3 VGA Resolution: 640 x 480 pixels

Brightness: 350 nits (cd/m<sup>2</sup>) Contrast: 400:1 Color Depth: 18-bit, 256k colors

Illumination: Backlit fluorescent Viewing Angle: ±80° horizontal, +80°/-70° vertical

Touchscreen: Resistive membrane

**Buttons & Switches** Sleep: (1) Programmable top-mounted pushbutton (left); normally initiates "Sleep" mode when docked, turns power on/off when undocked; also resets touchpanel if held for 5 seconds Brightness: (1) Programmable top-mounted pushbutton (right), normally sets display brightness level Hard Keys: (8) Optional programmable pushbuttons, engravable backlit text [2] (default engraving included) Up/Down: (2) Optional programmable "up/down" pushbuttons, backlit, engravable backlit text[2] on bezel (default engraving included) Thumbpad: (5) Optional programmable pushbuttons for 4-way directional navigation and "enter", backlit

**Battery:** (1) Rear panel recessed DIP switch, shuts off battery for long-term storage

**Indicators** Battery: (1) Green LED, indicates battery condition and charging status when docked

**Connectors** Docking Connector: (1) multi-pin connector; Mates with the docking port on the docking station[6] See the TPS-6X-IMCW interface module[6] specification for other connectors

**Memory** SDRAM: 32 MB Flash: 32 MB Maximum Project Size: 28 MB

#### Graphic Engine

Isys engine; 16-bit non-palette graphics; 65,536 colors; Synapse image rendering algorithm; multi-mode objects, DNav dynamic menu objects, dynamic graphics, PNG translucency, full-motion (60 fps) animation, color key video windowing

**RF Wireless** RF Transceiver: 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), IEEE 802.15.4 compliant Transmitting Power: 75 mW (Ch.11), 100 mW (Ch.12-23), 15 mW (Ch.24), 3.5 mW (Ch.25), 1 mW (Ch.26) @ High Setting; 1 mW (Ch.11-25), 0.5 mW (Ch.26) @ Low Setting Range (typical): 100 to 200 feet maximum indoor, 1000 feet outdoor, subject to site-specific conditions Gateway: Requires a CEN-HPRFGW Extended Range RF Gateway[5] Roaming: Supports roaming amongst up to 8 RF gateways **IR Wireless**[1] IR Transmitter: 38 kHz, RC5 format Range: 50 feet typical

## 2 Crestron QMWMC

**Video Signal Types:** RGB and composite, S-Video, or component[2] video Video/HDTV Formats: NTSC or PAL, HDTV up to 1080i/1080p[2]

**RGB Formats:** RGBHV, RGBS, or RGsB Gain: 0dB (75 ohms terminated)

**Maximum Resolution:** 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length



of 450 feet and maximum compensation at receiver Audio A-D Conversion: 24-bit, 48 kHz Frequency Response: 20Hz to 20kHz

Communications QuickMedia: QM origination point device[1] Cresnet: Cresnet slave device

**Connectors - Front Panel** S-VIDEO: (1) 4-pin mini DIN female, S-Video (Y/C) input; Input Impedance: 75 Ohms; Maximum Input: 1 Vp-p; Signal sensing on Y S-VIDEO AUDIO R, L: (2) RCA female; Unbalanced stereo line-level audio input; Input Impedance: 10k Ohms; Maximum Input Level: 2 Vrms VIDEO: (1) RCA female, composite video input; Input Impedance: 75 Ohms; Maximum Input: 1 Vp-p; Includes signal sensing VIDEO AUDIO R, L: (2) RCA female; Unbalanced stereo line-level audio input; Input Impedance: 10k Ohms; Maximum Input Level: 2 Vrms COMPUTER: (1) DB15HD female; RGB(VGA)/component video input[2]; Formats: RGBHV, RGBS, RGsB, YPbPr; Input Impedance: 75 Ohms; H Sync Impedance: 1k Ohms; V Sync Impedance: 2.2k Ohms; Maximum Input Level: 1 Vp-p; Maximum Sync Level: 5 Vp-p; Signal sensing on H-SYNC only AUDIO (computer): (1) 3.5mm TRS mini phone jack; Unbalanced stereo line-level audio input; Input Impedance: 10k Ohms; Maximum Input Level: 1 Vrms MONITOR: (1) DB15HD female, buffered RGBHV pass-thru

#### **Connectors - Rear Panel**

QM: (1) 8-wire RJ45 female, QuickMedia output port; Connects to QM input port of any QuickMedia device via CresCAT-QM or CresCAT-IM cable[1] NET: (2) 4-pin 3.5mm detachable terminal blocks; Cresnet slave ports, paralleled; connect to Cresnet control network via CresCAT-QM or Cresnet cable GROUND: (1) Flying lead, grounding wire TO MIC: (1) 14-pin header; Accepts connection from optional QM-WMIC (sold separately)

#### **Controls & Indicators**

PWR: (1) green LED, indicates 24 Volts DC power supplied from Cresnet network NET: (1) yellow LED, indicates communication with Cresnet system SETUP: (1) miniature pushbutton and red LED, used for touch-settable ID (TSID) COMP: (1) red LED, indicates a signal at the COMPUTER input VIDEO: (1) red LED, indicates a signal at the VIDEO input S-VID: (1) red LED, indicates signal at the S-VIDEO input

**Power Requirements** Cresnet Power Usage : 5 Watts (0.21 Amp @ 24 Volts DC); 8 Watts (0.33 Amp) with QM-WMIC installed

**Environmental** Temperature: 41° to 104°F (5° to 40°C) Humidity: 10% to 90% RH (non-condensing) Heat Dissipation: 17 BTU/Hr

**Enclosure Construction:** Metal with black finish Flush Wall Mount: 2-gang mountable in a standard electrical box (2-1/2 inch deep minimum); requires decorator style faceplate (not included)

**Dimensions** Height: 4.12 in (105 mm) Width: 3.50 in (89 mm) Depth: 2.61 in (67 mm)

**Weight** 8.0 oz (230 g) Available Models QM-WMC: QuickMedia Wall Plate Media

Center Available Accessories CRESCAT-QM-NP-SP500: QuickMedia® Cable, Low-skew CAT5e & Cresnet, non-plenum, 500 ft spool CRESCAT-QM-P-SP500: QuickMedia®

Cable, Low-skew CAT5e & Cresnet, plenum, 500 ft spool QM-WMIC: Microphone Input Module.

## **1 SMART Interactive White Board**

**SBX885**

Size 78 1/2" W × 51 1/8" H × 6 1/2" D (199.4 cm × 130 cm × 16.5 cm)



Active screen area (maximum interactive projected image)

73 7/8" W × 46 1/4" H (187.7 cm × 117.3 cm) 87" (221 cm) diagonal, 16:10 aspect ratio  
 Weight 60 lb. (27.2 kg) Shipping size 1 unit 56 3/4" W × 88" H × 4 3/8" D (144.1 cm × 223.5 cm × 11.1 cm) 10 units on pallet 44 1/4" W × 56 3/4" L × 92 5/8" H (112.4 cm × 144.1 cm × 235.3 cm) Shipping weight 1 unit 90 lb. (40.8 kg) 10 units on pallet 920 lb. (417 kg) All dimensions +/- 1/8" (0.3 cm). All weights +/- 2 lb. (0.9 kg)<sup>2</sup> | S P E C I F I C

A T I O N S – S M A R T B O A R D I N T E R A C T I V E W H I T E B O A R D –

M O D E L X 8 8 5 Touch and gestures Perform mouse functions with your finger, and write digital ink with a pen tray pen or erase it with the eraser. The object awareness feature enables you to pick up a pen, and then write, select or erase without putting the pen back in the tray. Dual sketch capabilities Enables two users to draw simultaneously on the interactive whiteboard surface SMART Ink™ Smooths out the appearance of the digital ink, improving the legibility of your handwriting. The ink becomes an object you can move and manipulate. Lockable pen option Hold down a pen color button on the pen tray until its light flashes to lock the interactive whiteboard in pen mode. In this mode you can use any device as a pen. Early education students and students with special needs can use an object like a tennis ball to write more easily on the surface. Pen tray Removeable end caps for optional accessories. Optical sensors in the pen tray detect when you lift a pen or eraser from the tray. Color buttons on the pen tray enable you to select a pen color. pens and eraser Two ergonomic pens with a comfort grip and a rectangular eraser Resolution Touch resolution is approximately 4000 × 4000. Screen surface The hard-coated steel surface is durable, optimized for projection, compatible with dry-erase markers and easily cleaned with whiteboard cleaner.

Digitizing technology Four camera DVIT™ (Digital Vision Touch) technology Frame finish Two-tone gray (dark gray approximates Pantone® Charcoal Gray 18-0601 TPX) Wall-mount bracket Two 32" (81.3 cm) wide brackets with ten screws and toggle bolt anchors to support a wall-mounted interactive whiteboard Computer connection 16' (5 m) USB 2.0 cable, 6' (1.8 m) power cable Power requirements Power consumption is less than 7 W (100V to 240V AC, 50/60 Hz, 5V DC 2.0A). Environmental compliance China EIP, EU RoHS, WEEE Regulatory certifications CE, CSA (U.S./Canada), FCC Warranty Five-year limited equipment warranty upon registration. Storage and operating specifications Storage -40°F to 120°F (-40°C to 50°C) Operation 41°F to 95°F (5°C to 35°C) with up to 80% humidity, non-condensing.

- 1 TecNec  
Custom USB Pass Through Plate

- 1 Christie Digital LCD Projector  
LW555

Image brightness • 4000 ANSI lumens (single lamp) contrast • 1000:1 (full on/off) uniformity • 90% brightness uniformity (corner to center) Display tech type • 3 x 0.75" Inorganic LCDs native resolution • WXGA (1366 x 800) Native aspect ratio 16:10, selectable aspect ratios 16:9; 4:3, 14:9 Lamp type • 275W UHB lamp life • Normal mode: up to 2000hrs • Eco mode: up to 3000hrs Input signals • VGA through XGA (1600 x 1200) • Accepts current HDTV/DTV formats (480i up to 1080p) • NTSC, NTSC

4.43, PAL, PAL M, SECAM, PAL-N, PAL 60 pixel clock • 150MHz scan rates • Horizontal frequency range 31.5-106kHz • Vertical frequency range 56-120Hz Inputs, control and networking input • HDMI x 1 (HDCP Compliant) • HD 15 x 1 (with HD15 loop-through) • BNC x 5 (R,G,B,H,V & Y, Pb/Cb, Pr/Cr & Composite) • YPbPr (component video RCA x 3) • 1 RCA composite video • Mini DIN 4-pin (S-video) • Audio input (x 4) • Dsub-9 x 1 • LAN port • R/C Jack – Mini jack x 1 • Output HD 15 x 1 (loop-through) • Audio output x 1 mini jack output • Speakers 4W x 4 Optical system • Manual zoom, focus and lens shift Lenses fixed • Short 0.8:1 (121-100102-XX) zoom • Ships with standard lens 1.5-1.8:1 (N/A) • Short 1.2-1.9:1 (121-101103-XX) • Long 1.9-3.8:1 (121-102104-XX) • Ultra Long 3.9-7.3:1 (121-103105-XX) offsets • Vertical and Horizontal lens shift\*\* Accessories standard • Computer cable (Dsub15) • Wireless/wired remote control • AC line cord UL type (NEMA 6-20P plug type) • European 2P plug type optional • Filter cartridge (003-002119-01) • 275W UHB lamp (003-120457-01) Enhanced feature sets • Auto Detect • Auto Digital keystone (vertical) feature • Anti-theft: Kensington style slot and security bar • Support for closed caption video display (NTSC) • RJ45 LAN connection with network control and SNMP monitoring • Dynamic iris control • Customizable start-up logo Power requirements operating voltage • 90-132 VAC  $\pm 10\%$  • 198-264 VAC  $\pm 10\%$  operating current • 5.0A max (AC100V) • 2.1A max (AC200V) power • 460W max dissipation • 1570BTU/hr max Dimensions size • Body with lens (LxWxH): 12.52 x 16.46 x 5.47" (318 x 418 x 139mm) weight • 15.8lbs (7.2kg) with lens shipping weight • 25.57lbs (11.6kg) shipping size • (LxWxH): 18.8 x 21.9 x 9.6" (478 x 555 x 244mm) Noise • Standard mode: 37dBA • Eco mode: 31dBA Operating environment • Operating temperature: 40-95°F (5-35°C) • Storage temperature: 14-140°F (-10-60°C) • Humidity (non-condensing): 10-85% Regulatory approvals • This product conforms to the following regulations related to product safety, environmental requirements and electromagnetic compatibility (EMC): • FCC Part 15, Subpart B Class A • CISPR22/EN55022 • CISPR24/EN55024 • UL 60950-1 first edition • CAN/CSA-C22.2 No 60950-1-03 first edition • IEC60950-1:2001 • 2002/95/EC RoHS Limited warranty projector • 3 years parts and labor lamp • 500hrs or 120 days (whichever comes first) • Contact an authorized Christie representative for full details of our limited warranty

# **1 Chief Projector Mount RPAU**

Specifications Adjustments: Roll: 4° Pitch: 25° Yaw: 360° Certifications: UL Listed Color: Black Overall Dimensions (H x W x D): 1.8" x 6.5" x 5.5" (44 x 165 x 140 mm) Solution Type: Universal Weight Capacity: 50 lbs (22.7 kg)

# **1 Crestron Wireless Access Point CEN-WAP-ABG-Cm**

Wireless Transceiver: IEEE 802.11a/b/g Wi-Fi (5.8 or 2.4 GHz 2-way RF); 64, 128, & 152-bit WEP encryption; WPA & WAP2 with TKIP & AES Transmit Power: Up to 19 dBm Ethernet 10BaseT/100BaseTX, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, DHCP client and server, SNMP, IEEE 802.3u & 802.3af compliant Controls and LED Indicators LAN: (1) Green LED, indicates wired

Ethernet activity and link status Wi-Fi: (1) Green LED, indicates Wi-Fi activity and connection status Reset: (1) Recessed miniature pushbutton for hardware reset

**Connectors - Rear Panel NETWORK PoE:** (1) 8-wire RJ45, female; 10BaseT/100BaseTX Ethernet port, 802.3af Power over Ethernet compliant; Connects to LAN via a 802.3af compliant PoE power source

**Power Requirements** Power over Ethernet: IEEE-802.3af Class 1 PoE Powered Device

**Enclosure** Injection-molded plastic, paintable white matte finish, ceiling mountable using a 1-gang plaster ring or electrical box (2 inch deep minimum)

**Environmental** Temperature: 32° to 104°F (0° to 40°C) Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 11 BTU/Hr

**Dimensions** Height: 2.54 in (65 mm) Diameter: 4.73 in (120 mm) **Weight** 6.0 oz (168 g)

**Available Models** CEN-WAP-ABG-CM: Ceiling Mount 802.11a/b/g Wireless Access Point

CEN-WAP-ABG-POE-PWE-CM: Ceiling Mount 802.11a/b/g Wireless Access Point w/PoE

Injector Included **Accessories** PWE-4803RU PoE Injector [Included Quantity for CEN-

WAP-ABG-POE-PWECM: 1] **Available Accessories** PWE-4803RU: PoE Injector CEN-SW-

POE-5: 5-Port PoE Switch CEN-SWPOE-24: 24-Port Managed PoE Switch

## 6 **JBL Ceiling mounted loud speaker**

### **Control 24 CT**

**Freq. Range** (-10 dB)1: 80 Hz - 20 kHz

**Power Capacity**2: 80 Watts Continuous Program Power 40 Watts Continuous Pink Noise Nominal Sensitivity3: 86 dB SPL @ 1 m (3.3 ft)

**Nominal Coverage Angle**4: 130° conical coverage **Directivity Factor (Q):** 2.4 averaged 500 Hz to 4 kHz **Directivity Index (DI):** 3.8 averaged 500 Hz to 4 kHz **Rated Maximum SPL:** 102 dB @ 1 m (3.3 ft) **Nominal Impedance (24C):** 16 ohms (Min Z 16.1 Ω @ 320 Hz)

**Transformer Taps (24CT):** 70V: 30W, 15W, 7.5W & 3.7W taps 100V: 30W, 15W, & 7.5W taps **Transducers:** Low-Frequency: 100 mm (4.0 in) Polypropylene-coated, 1" coil

on aluminum former High-Frequency: 19 mm (0.75 in) Titanium coated polyester.

**Physical:** Enclosure: Backcan: Formed steel Baffle/Rim: Medium impact polystyrene, fire rated UL94V-0

**Overload Protection:** Full-range power limiting to protect network and transducers. (On Control 24C, not on Control 24CT) **Termination:** Removable

locking connector with screw-down terminals. 2 input terminals and 2 loop-thru output terminals. Max. wire size 12 AWG (2.5 mm<sup>2</sup>)

**Safety Agency Rating:** Suitable for use in air handling spaces per UL1480, UL2043, NFPA90 & NFPA 70. S7232/UL Listed,

**Signaling Speaker.** Transformer UL registered per UL1876. In accordance with IEC60849/EN60849.

**Outside Dimensions (H x Dia):** 200 x 195 mm (7.9 x 7.7 in) 184 mm (7.2 in) front of ceiling tile to back of backcan

**Cutout Size:** 168 mm (6.6 in) **Net Weight (ea):** 2.7 kg (6 lb) CT: 3.5 kg (8 lb) **Shipping Weight (pair):** 6.4 kg (15 lb) CT: 8.0 kg (18 lb)

**Included Accessories:** C-shaped support backing plate 2 tile support rails (fits both 2 x 4 ft or 600 x 1200 mm tiles)

Cutout template Paint shield Removable locking wiring connector.

## 1 **Misc. Audio/Video Cabling and Connectors**

## 1 **Labor**

Director's Conference Room

Qty.	Item Description
1	<p><b>LG 60" Display 60PV450C</b></p> <p><b>PLASMA MODULE</b> Screen Size 60" class (59.8" measured diagonally) Native Display Resolution 1920 x 1080 Brightness 1,500 cd/m2 Dynamic Contrast Ratio 3,000,000:1 Protective Skin Glass Yes Color Reproduction (Panel Output) 16 Bit ISM (Image Sticking Minimization) White Wash / Orbiter / Color Wash 600Hz Sub-Field Driving Yes (600Hz Max Sub-Field Driving) Life Span (typical) 100,000 Hours</p> <p><b>VIDEO</b> Built-in tuner ATSC/NTSC/Clear QAM - 1 Tuner Dual XD Engine Yes Aspect Ratio 16:9 Aspect Ratio Correction 6 Modes (16:9 Just Scan, Set by Program, 4:3, Zoom1, Cinema Zoom1) Just Scan (1:1 Pixel matching) HDMI 1080p/1080i/720p (0% overscan) Component 1080p/1080i/720p RF 1080i/720p Enhanced Noise Reduction 3D &amp; MPEG Color Temperature Control 3 Modes (Warm, Medium, Cool) 24p Real Cinema (3:3 Pulldown) Yes (HDMI 1080 24p) Cinema 3:2/2:2 Pulldown Mode Yes Picture Reset Yes AV Mode (Picture &amp; Mode) Yes Picture Mode 8 Modes (Vivid, Standard, APS, Cinema, Game, Sports, Expert 1, Expert 2) XD Color (Active Color Management) Yes ISFccc Ready Yes Intelligent Sensor Mode Yes xvYCC Yes DTV Signal Strength (Digital) Yes PC Resolution 1920 x 1080 @ 120Hz or better Color Reproduction (Chassis Output) 10-Bit</p> <p><b>AUDIO</b> Mono/Stereo/Dual (MTS/SAP) Yes Audio Output (Watts - THD 10%) 10W + 10W Speaker System Invisible Speaker (1 Way 2 Speaker) Dolby Digital 5.1 Decoder Yes Surround System Infinite Sound Bass/Treble/Balance Yes Smart Volume Leveler (Auto Volume Leveler) Yes Clear Voice II Yes Auto Volume Leveler II Yes Sound Mode 5 Modes (Standard, Music, Cinema, Sports, Game) Mute Yes</p> <p><b>SPECIAL FEATURES</b> USB 2.0 MP3 &amp; JPEG Public Display Settings Yes (V 2.5) Intelligent Sensor Yes Auto Demo Yes Picture Wizard II Yes A/V Input Navigation / EZ Input Toggle Yes Input Labeling Yes Quick View (Flashback) Yes Picture Freeze Yes Parental Control w/V-Chip Yes Key Lock Yes Closed Caption Yes Simplink™ (HDMI CEC) Yes</p> <p><b>CONVENIENCE FEATURES</b> Language 3 (English, Spanish, French) Quick Menu Yes Auto Tuning / Programming Yes Program (Channel) Edit (Add / Delete) Yes Favorite Channel Programming Yes Auto/Manual Clock Yes On/Off Timer Yes Sleep Timer Yes Auto Off / Auto Sleep Yes</p> <p><b>JACK PACK TV – SIDE</b> AV In Yes (1) HDMI/HDCP Input Yes, 2D: (480i/480p/720p/1080i/1080p), 1 Port PC Mode, SIMPLINK USB 2.0 Yes, (MP3, JPEG )</p> <p><b>TV – REAR</b> RF In Yes (1) AV In Yes (1) Component In (Y,Pb,Pr) + Audio Yes (2) (480i/480p/720p/1080i/1080p) Digital Audio Out (Optical) Yes, (1, Optical) HDMI/HDCP Input Yes, 2D: (480i/480p/720p/1080i/1080p), 1 Port PC Mode, SIMPLINK RGB In (D-sub 15pin) - PC Yes (1) PC Audio Input Yes (1) RS-232C In Yes, (1, Control &amp; Service) Remote Control In Yes (1) Wired IR Jack Yes</p> <p><b>CABINET/ACCESSORIES</b> TruSlim Frame Yes Cabinet Color Gloss Black Speaker Invisible Speaker Table Stand Included Detachable (20°/20°) Swivel VESA™ Compliant 600 x 400 (60") Local Key Type Touch Sensitive Keys Remote Control Yes, Illuminated Quick Setup Guide Yes Power Cord Yes</p> <p><b>POWER</b> EcoSmart - Energy Savings Intelligent Sensor (auto) Yes (automatic) 3 Mode</p>



Power Saving Levels Yes (manual) Voltage, Hz 100~240V, 50/60Hz Power Consumption (IEC62087 dynamic 201W (60"), broadcast-content video signal) Stand by Mode Under 0.2W

**REQUIRED APPROVALS** RoHS Compliant Yes UL, c-UL, FCC Yes

**DIMENSIONS & WEIGHT** 60PV450C Dimensions without Stand (W×H×D) 54.6" x 32.9" x 2.0" with Stand (W×H×D) 54.6" x 35.6" x 13.2" packaging (W×H×D) 60.8" x 38.2" x 13.0" Weight without Stand 84.9 lbs with Stand 94.0 lbs with packaging 108.2 lbs

**LIMITED WARRANTY** 2 Years (Parts/Labor)

**UPC** 60PV450C 7 19192 90245 9

# 1 Chief LTA5536

## Flat Panel Wall Mount

Certifications: UL Listed Color:Black Lateral Shift 16" (406.4mm) Maximum Screen Thickness 6" Minimum Depth : 1.99" (50.5mm)

Mounting Pattern Compatibility (Universal Versions): 100 x 100mm- 895 x 505mm

Orientation: Landscape Overall Dimensions (H x W x D): 13.2" x 34.4" x 2.0" (335 x 875 x 51mm) Solution Type:

Custom Tilt: + 0° , - 12° Typical Screen Sizes 37 - 63" Wall Stud Compatibility (inches): 12 - 34" Weight Capacity : 200 lbs (90.7kg)

# 1 Crestron QM transmitter

## QM-TX

**Video Signal Types:** RGB and composite, S-Video, or component video

**Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p **RGB Formats:** RGBHV, RGBS, or RGsB **Gain:** 0dB (75 ohms terminated) **Maximum Resolution:** 1920 x 1200 @ 60Hz (at unity gain) with maximum cable length of 450 feet and maximum compensation at receiver **Audio A-D Conversion :** 24-bit, 48 kHz **Frequency Response :** 20Hz to 20kHz **Connectors** R/C/Pr, G/Y/Y, B/COMP/Pb, H, V: (5) BNC female, Multi-format RGB/Video input; **Formats:** RGBHV, RGBS, RGsB, YPbPr, S-Video (Y/C), composite; **Input Impedance:** 75 ohms; **H/V Sync Impedance:** 620 ohms; **Maximum Input Level:** 0.7 Vp-p for RGB and C of S-Video; 1 Vp-p for composite and Y of S-Video; **Maximum H/V Sync Level:** 5 Vp-p; **Signal sensing on** G/Y/Y, B/COMP/Pb, and H

**G:** (1) 6-32 screw, chassis ground lug **AUDIO:** (1) 5-pin 3.5mm detachable terminal block; **Balanced/unbalanced stereo line-level audio input;** **Maximum Input Level:** 4 Vrms balanced, 2 Vrms unbalanced; **Input Impedance:** 10k ohms balanced, 5k ohms unbalanced **QM OUT :** (1) 8-wire RJ45 female, QuickMedia output port; **Connects to** QM input port of any QuickMedia device via CresCAT-QM or CresCAT-IM cable\* **NET:** (2) 4-pin 3.5mm detachable terminal blocks; Cresnet slave ports, paralleled;

**Connect to** Cresnet control network via CresCAT-QM or Cresnet cable

**Buttons & LED Indicators** **PWR:** (1) green LED, indicates 24 Volts DC power supplied from Cresnet control network **NET:** (1) yellow LED, indicates communication with Cresnet system **VIDEO ACT :** (1) red LED, indicates signal at the G/Y/Y, B/COMP/PB, or H connectors **SETUP (rear) :** (1) miniature pushbutton and red LED, used for touch-settable ID (TSID) **Power Requirements** Cresnet Power Usage: 5 Watts (0.21 Amp @ 24 Volts DC) **Environmental** **Temperature:** 41° to 104°F (5° to 40°C) **Humidity:** 10% to 90% RH (non-condensing)

**Enclosure** **Chassis:** Steel, black matte powder coat finish **Faceplate:** Extruded



aluminum, black matte powder coat finish with polycarbonate label overlay Mounting: Freestanding or 0.5U 19-inch rack-mountable (adhesive feet included, ST-RMK rack kit sold separately)

# 1 Crestron Control Processor

## MPS300

### Processor

**CPU:** 32-bit Freescale ColdFire® Microprocessor **Memory** 32 MB SDRAM, 256 KB NVRAM, 16 MB Flash **Operating System**

Real-time, preemptive, multitasking kernel, multi-threaded; FAT3 filesystem with long names; supports SIMPL™ Windows® and SIMPL+® Ethernet 10/100BaseT, static IP or DHCP/DNS, SSL, auto-negotiating, full duplex TCP/IP, UDP/IP, CIP, SMTP, SNMP, built-in Web server and e-mail client; supports Crestron e-Control®2 XPanel and RoomView® applications **Video Switcher:** 8x7 crosspoint matrix including 3x3 QM signal routing, local QM delay skew compensation, RGB pass-thru mode (multi-format via RGB output connection) **Signal Types:** RGB and composite, S-Video, or component video (does not transcode) **Video/HDTV Formats:** NTSC or PAL, HDTV up to 1080i/1080p **RGB Formats:** RGBHV, RGBS, RGsB **Maximum Resolution:** 2048 X 1536 @ 60Hz (1920 X 1200 @ 60Hz via QM)

**Blanking Time:** < 0.1 second **Sync Rise/Fall Time:** 3.5 ns maximum

**Sync Latency:** < 30 ns **Gain:** 0dB (75 ohms terminated) **QM Cable Compensation:** 10-bit digitally controlled PEAK (bandwidth) and BOOST (frequency); 4-bit digitally controlled SKEW delay, 0 to 22 ns (independent for R, G, and B) **Audio Switcher/Preamp:** 8x4 stereo crosspoint matrix including 3x3 QM signal routing, 2-channel gated mic preamp with compressor & limiter, 8-channels mic EQ, 10X5

mic/program matrix mixer, 8x2 mic matrix mixer per each of 3 QM outputs, stereo volume/tone control and EQ per each of PROGRAM and RECORD outputs, mono volume/tone control and EQ/delay on SPEECH output, integrated power amplifier, QM auto-compensation with self-peaking **A-D/D-A Conversion:** 24-bit, 48 kHz **Volume Range:** -80 to +20 dB, 0.1dB steps (output); -80 to 0 dB, 0.1dB steps (mixer)

**Mute:** -100dB (electronic), -120dB (relay) **Input Compensation:** ±10dB, 0.1dB steps **Mic Input Gain:** 0 to 100 % (40dB range) plus mute **Gate Level (Threshold):** 0 to 100 % **Gate Attack:** 0 to 100 mS

**Gate Decay (Release):** 0 to 5000 mS **Gate Depth:** -80dB (mute) to 0dB, 0.1dB steps **Compression Threshold:** -80dB to +20dB, 0.1dB steps **Limit Threshold:** 0dB to 20dB, 0.1dB steps **Comp/Lim Attack:** Separately adjustable 0.1 to 300 mS **Comp/Lim Release:** Separately adjustable 1 to 500 mS **Compression Ratio:** 1.0:1 to 10.0:1 **Comp/Lim Curve:** Separately selectable hard or soft knee **Mic EQ:** ±12dB, 0.1 dB steps at 160, 500, 1.2k, and 3k Hz **Bass/Treble:** ±12dB, 0.5dB steps at 100Hz and 10kHz **Output Equalization:** 10-band graphic (GEQ) + 2-band parametric (PEQ) **GEQ:** ±12dB, 0.1dB steps at 31, 63, 125, 250, 500, 1k, 2k, 4k, 8k, and 16k Hz **PEQ Filter Gain/Center Frequency:** ±12dB, 0.1dB steps at 25Hz to 20kHz, 0.5Hz steps **PEQ Filter Bandwidth:** 0.1 to 3.0 octaves, 0.1 octave steps **PEQ Filter Types:** Low Pass, High Pass, Peaking Eq, Notch, Treble Shelf, Bass Shelf **Speech Output Delay:** 0 to 40 mS, 1mS steps **Frequency Response:** 20Hz to 20kHz ±0.5dB (PROG/REC OUT), 50Hz to 20kHz ±0.5dB (SPEECH OUT), 20Hz to 20kHz ±0.5dB (SPEAKER @ 8 ohms), 100Hz to 20kHz ±1.5dB

(SPEAKER @ 70V or 100V) S/N Ratio: 95dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz A-weighted), 95dB (SPEECH OUT @ 10dBV, 50Hz to 20kHz A-weighted), 90dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz A-weighted), 90dB (SPEAKER @ 70V or 100V, full output, 20Hz to 20kHz A-weighted) THD+N: 0.02% (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), 0.02% (SPEECH OUT @ 10dBV, 50Hz to 20kHz), 0.7% (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz), 0.7% (SPEAKER @ 70V or 100V, full output, 100Hz to 20kHz A-weighted) Stereo Separation: -80dB (PROG/REC OUT @ 10dBV, 20Hz to 20kHz), -60dB (SPEAKER @ 8 ohms, full output, 20Hz to 20kHz) Channel Crosstalk: -80dB (AUD IN @ 10dBV, 20Hz to 20kHz)

# **1 Crestron Touch Panel TPS-6X**

## **Touchscreen Display**

Display Type: TFT Active matrix color LCD Size: 5.7 inch (145 mm) diagonal Aspect Ratio: 4:3 VGA Resolution: 640 x 480 pixels Brightness: 350 nits (cd/m<sup>2</sup>) Contrast: 400:1 Color Depth: 18-bit, 256k colors Illumination: Backlit fluorescent Viewing Angle: ±80° horizontal, +80°/-70° vertical Touchscreen: Resistive membrane

**Buttons & Switches** Sleep: (1) Programmable top-mounted pushbutton (left); normally initiates "Sleep" mode when docked, turns power on/off when undocked; also resets touchpanel if held for 5 seconds Brightness: (1) Programmable top-mounted pushbutton (right), normally sets display brightness level Hard Keys: (8) Optional programmable pushbuttons, engravable backlit text [2] (default engraving included) Up/Down: (2) Optional programmable "up/down" pushbuttons, backlit, engravable backlit text[2] on bezel (default engraving included) Thumbpad: (5) Optional programmable pushbuttons for 4-way directional navigation and "enter", backlit

**Battery:** (1) Rear panel recessed DIP switch, shuts off battery for long-term storage **LED Indicators** Battery: (1) Green LED, indicates battery condition and charging status when docked **Connectors** Docking Connector: (1) multi-pin connector; Mates with the docking port on the docking station[6] See the TPS-6X-IMCW interface module[6] specification for other connectors **Memory** SDRAM: 32 MB Flash: 32 MB Maximum Project Size: 28 MB **Graphic Engine** Isys engine; 16-bit non-palette graphics; 65,536 colors; Synapse image rendering algorithm; multi-mode objects, DNav dynamic menu objects, dynamic graphics, PNG translucency, full-motion (60 fps) animation, color key video windowing **RF Wireless** RF Transceiver: 2-way RF, 2.4 GHz ISM Channels 11-26 (2400 to 2483.5 MHz), IEEE 802.15.4 compliant Transmitting Power: 75 mW (Ch.11), 100 mW (Ch.12-23), 15 mW (Ch.24), 3.5 mW (Ch.25), 1 mW (Ch.26) @ High Setting; 1 mW (Ch.11-25), 0.5 mW (Ch.26) @ Low Setting Range (typical): 100 to 200 feet maximum indoor, 1000 feet outdoor, subject to site-specific conditions **Gateway:** Requires a CEN-HPRFGW Extended Range RF Gateway[5] **Roaming:** Supports roaming amongst up to 8 RF gateways **IR Wireless**[1] IR Transmitter: 38 kHz, RC5 format Range: 50 feet typical

# **1 Crestron Wireless Access Point CEN-WAP-ABG-Cm**

**Wireless Transceiver:** IEEE 802.11a/b/g Wi-Fi (5.8 or 2.4 GHz 2-way RF); 64, 128, & 152-bit WEP encryption; WPA & WAP2 with TKIP & AES Transmit Power: Up to 19 dBm

Ethernet 10BaseT/100BaseTX, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, DHCP client and server, SNMP, IEEE 802.3u & 802.3af compliant

#### **Controls and LED Indicators**

LAN: (1) Green LED, indicates wired Ethernet activity and link status

Wi-Fi: (1) Green LED, indicates Wi-Fi activity and connection status

Reset: (1) Recessed miniature pushbutton for hardware reset

**Connectors - Rear Panel NETWORK PoE:** (1) 8-wire RJ45, female; 10BaseT/100BaseTX Ethernet port, 802.3af Power over Ethernet compliant; Connects to LAN via a 802.3af compliant PoE power source

**Power Requirements** Power over Ethernet: IEEE 802.3af Class 1 PoE Powered Device

**Enclosure** Injection-molded plastic, paintable white matte finish, ceiling mountable using a 1-gang plaster ring or electrical box (2 inch deep minimum) **Environmental** Temperature: 32° to 104°F (0° to 40°C) Humidity: 10% to 90% RH (non-condensing)

Heat Dissipation: 11 BTU/Hr **Dimensions** Height: 2.54 in (65 mm) Diameter: 4.73 in (120 mm) **Weight** 6.0 oz (168 g) Available Models CEN-WAP-ABG-CM: Ceiling Mount

802.11a/b/g Wireless Access Point CEN-WAP-ABG-POE-PWE-CM: Ceiling Mount

802.11a/b/g Wireless Access Point w/PoE Injector Included Accessories PWE-4803RU

PoE Injector [Included Quantity for CEN-WAP-ABG-POE-PWECM: 1] Available

Accessories PWE-4803RU: PoE Injector CEN-SW-POE-5: 5-Port PoE Switch CEN-SWPOE-

24: 24-Port Managed PoE Switch

### **1 LOGITECH Wireless Keyboard/ Mouse**

#### **MX505**

**System Requirements** Windows-based computer Windows® XP or Windows Vista® or Windows® 7 USB port CD-ROM drive

**Warranty Information** 3-year limited hardware warranty **Package Contents** Logitech® Bluetooth® MX™ Keyboard Logitech® Bluetooth® MX™ Revolution Laser Mouse USB Bluetooth® mini-receiver (can be used as Bluetooth® hub) 4 AA alkaline batteries CD with software, comfort guidelines, and help center Quick-Start guide

### **6 JBL Ceiling mounted loud speaker**

#### **Control 24 CT**

**Freq. Range** (-10 dB)1: 80 Hz - 20 kHz

**Power Capacity**2: 80 Watts Continuous **Program Power** 40 Watts Continuous **Pink Noise Nominal Sensitivity**3: 86 dB SPL @ 1 m (3.3 ft)

**Nominal Coverage Angle**4: 130° conical coverage **Directivity Factor (Q)**: 2.4 averaged

500 Hz to 4 kHz **Directivity Index (DI)**: 3.8 averaged 500 Hz to 4 kHz **Rated Maximum**

**SPL**: 102 dB @ 1 m (3.3 ft) **Nominal Impedance (24C)**: 16 ohms (Min Z 16.1 Ω @ 320 Hz)

**Transformer Taps (24CT)**: 70V: 30W, 15W, 7.5W & 3.7W taps 100V: 30W, 15W, &

7.5W taps **Transducers**: Low-Frequency: 100 mm (4.0 in) Polypropylene-coated, 1" coil

on aluminum former High-Frequency: 19 mm (0.75 in) Titanium coated polyester.

**Physical**: Enclosure: Backcan: Formed steel Baffle/Rim: Medium impact polystyrene,

fire rated UL94V-0 **Overload Protection**: Full-range power limiting to protect network

and transducers. (On Control 24C, not on Control 24CT) **Termination**: Removable

locking connector with screw-down terminals. 2 input terminals and 2 loop-thru

output terminals. Max. wire size 12 AWG (2.5 mm<sup>2</sup>) Safety Agency Rating: Suitable for use in air handling spaces per UL1480, UL2043, NFPA90 & NFPA 70. S7232/UL Listed, Signaling Speaker. Transformer UL registered per UL1876. In accordance with IEC60849/EN60849. Outside Dimensions (H x Dia): 200 x 195 mm (7.9 x 7.7 in) 184 mm (7.2 in) front of ceiling tile to back of backcan Cutout Size: 168 mm (6.6 in) Net Weight (ea): 2.7 kg (6 lb) CT: 3.5 kg (8 lb) Shipping Weight (pair): 6.4 kg (15 lb) CT: 8.0 kg (18 lb) Included Accessories: C-shaped support backing plate 2 tile support rails (fits both 2 x 4 ft or 600 x 1200 mm tiles) Cutout template Paint shield Removable locking wiring connector.

## 1 Wall Plate VGA and Video with Audio

### 1 Biamp Digital Signal Processor

#### Nexia TC

8 wide-band AEC balanced mic/line inputs • 2 standard balanced mic/line inputs • 4 balanced mic/line outputs • telephone interface with line & set connections • Ethernet port for software configuration/control • serial port for third-party RS-232 remote control • NexLink ports for multi-unit system designs • Nexia software for Windows® XP Professional/Vista • pre-configured I/O with definable processing • RoHS compliance and AES grounding practices • CE marked and UL/C-UL listed • covered by Biamp Systems' five-year warranty • Ability to select, view, and calibrate:

° Mixers, Equalizers, Filters, Crossovers, Dynamics, Routers, Delays, Controls, Meters, Generators, Diagnostics • Telephone Interface capabilities include: ° initiation of outgoing calls ° detection and answering of incoming calls ° line echo cancellation ° TouchTone™ decoding ° caller ID reception ° call progress detection ° line intrusion detection ° continuous line status and fault monitoring Frequency Response (20Hz~20kHz @ +4dBu): +0/-0.4dB THD+N (20Hz~20kHz @ +4dBu): line level < 0.006% mic level < 0.05% Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm): -125dBu Dynamic Range 20Hz~20kHz, 0dB): > 105dB Maximum Gain (input channels): 66dB Crosstalk (channel-to-channel @ 1kHz): line level < -80dB mic level < -75dB Output Impedance (balanced): 200 ohms Input Impedance (mic/line balanced): 8k ohms Input Gain Range (variable trim): 0dB ~ +66dB Maximum Output (balanced): +24dBu Maximum Input (mic/line): +24dBu Full Scale Output Level (six selections) -31dBu ~ +24dBu Telephone Interface: ringer equivalency number 0.0B dynamic range 67dBu frequency response 250Hz ~ 3.4kHz THD < 0.3% transhybrid balance 30dB Tail Length: up to 300ms

Convergence: up to 100dB/sec Phantom Power: +48 VDC (7mA/input

Sampling Rate: 48kHz A/D - D/A Converters: 24-bit Power Consumption (100~240VAC 50/60Hz): 65 watts

Dimensions: height 1.75 inches (45mm) width 19 inches (483mm) depth 11.15 inches (283mm) Weight: 8.6 lbs. (3.9kg) Compliance: AES48-2005 Grounding & EMC practices EU Directive 2002/95/EC, RoHS directive CE marked UL listed

### 3 CROWN PZM-10

Polar pattern, hemispherical. Frequency range PZM®-10: 80 to 20,000 Hz; PZM®-10LL: 100 to 20,000 Hz Sensitivity PZM®-10: 2.5 mV/Pa (-52 dBV); PZM®-10 LL: 1.4 V/Pa (+3

dBV) Max. SPL 120 dB Equivalent noise level 26 dB-A Signal/noise ratio 68 dB (A-weighted) Impedance PZM®-10: 240 ohms; PZM®-10 LL: 75 ohms Connector PZM®-10: 3-pin XLR; PZM®-10 LL: stripped and tinned leads Finish Off-white. May be painted any color. Dimensions ø 3.9 cm x 7.2 cm (ø 1.53 x 2.829 in.) Net weight PZM®-10: 74 g (22,6 oz.); PZM®-10 LL: 93 g (3,3 oz.) ROHS OK

**1 Misc. Audio/Video Cabling and Connectors**

**1 Labor**

**SECTION THREE: BID**

**3.1 Economy of Preparation:** Bids should be prepared on the forms provided in this RFQ. Emphasis should be placed on completeness and clarity of the content.

**3.2 Incurring Cost:** Neither the State nor any of its employees or officers shall be held liable for any expenses incurred by any Bidder responding to this RFQ, including but not limited to preparation, delivery, or travel.

**3.3 Bid Format:** Bidders must use cost forms provided in this RFQ:

**3.4 Bid Submission:**

Bidders responding to this RFQ shall submit:

Two originals to:

Purchasing Division  
2019 Washington Street, East  
P.O. Box 50130  
Charleston, WV 25305-0130

The outside of the envelope or package(s) for both the technical and the cost should be clearly marked:

Bidder: \_\_\_\_\_  
Buyer: \_\_\_\_\_  
Req #: \_\_\_\_\_  
Opening Date: \_\_\_\_\_  
Opening Time: 1:30 p.m.

**3.5 Purchasing Affidavit:** West Virginia Code §5A-3-10a requires that all bidders submit an affidavit regarding any debt owed to the State. The affidavit must be signed and submitted prior to award. The affidavit shall be submitted with the bid.



#### SECTION FOUR: EVALUATION AND AWARD

- 4.1 **Evaluation Process:** Bids will be evaluated against the established criteria. The Bidder who demonstrates that they meet all of the mandatory specifications, has appropriately presented within their written bid their understanding in meeting the goals and objectives of the project; and attains the lowest cost of all Bidders shall be awarded the contract.
  - 4.1.1 Cost Evaluation: The Agency will review the cost bids and make a final recommendation to the Purchasing Division.
- 4.3 **Independent Price Determination:** A bid will not be considered for award if the price in the bid was not arrived at independently and without collusion, consultation, communication, or agreement as to any matter relating to prices with any competitor unless the bid is submitted as a joint venture.
- 4.4 **Rejection of Bids:** The State reserves the right to accept or reject any or all bids, in part or in whole at its discretion. The State further reserves the right to withdraw this RFQ at any time and for any reason. Submission of bids to or receipt of bids by the State confers no rights upon the bidder nor obligates the State in any manner.
- 4.5 **Vendor Registration:** Bidders participating in this process should complete and file a Vendor Registration and Disclosure Statement (Form WV-1) and remit the registration fee. Bidder is not required to be a registered Bidder in order to submit a bid, but the successful bidder must register and pay the fee prior to the award of an actual purchase order or contract.

**Attachment A: Bidder Response Sheet**

*Provide a response regarding the following: firm and staff qualifications and experience in completing similar projects; 3 references; copies of any staff certifications or degrees applicable to this project; proposed staffing plan; descriptions of past projects completed entailing the location of the project, project manager name and contact information, type of project, and what the project goals and objectives where and how they were met.*

## Attachment B: Cost Bid Sheet

WEST VIRGINIA LOTTERY  
REQUEST FOR QUOTATION LOT494COMMISSIONER'S CONFERENCE  
ROOM

ITEM DESCRIPTION	MANUFACTURER	MODEL NUMBER	Qty	PRICE	EXTENDED PRICE
Screen (OFE)	Draper	16x9 Screen	2	\$ _____	\$ _____ 0.00
Lift (OFE)	Draper	Orbiter	2	\$ _____	\$ _____ 0.00
LVC	Draper	LVC III	2	\$ 163.00	\$ 326.00
Projector	CHRISTIE	LW555	2	\$ 3,595.00	\$ 7,190.00
Speakers	JBL	Control 24cT	10	\$ 98.50	\$ 985.00
Amplifier 8 channel	QSC	CX108V	1	\$ 1,302.00	\$ 1,302.00
USB/SD recording device (rs232)	Denon	DN-F650R	1	\$ 670.00	\$ 670.00
DSP	BIAMP	NEXIA TC	1	\$ 2,030.00	\$ 2,030.00
Wireless Hand Held (ND767 capsule)	EV	FMR500HD-A	2	\$ 430.00	\$ 860.00
Wireless Microphone System	Revo Labs	01-HDEXEC-NM	1	\$ 4,010.00	\$ 4,010.00
		01-HDTBLMIC-DR-			
Directional Table Top Mics	Revo Labs	11	8	\$ 270.00	\$ 2,160.00
Wireless AP	Crestron	CEN-WAP-ABG-CM	1	\$ 215.00	\$ 215.00
Control System	Crestron	MPS300-70	1	\$ 3,415.00	\$ 3,415.00
Wireless Touch Panel	Crestron	TPS 6X	1	\$ 1,680.00	\$ 1,680.00
Wall plate VGA and Video with Audio	Crestron	OMWMC	2	\$ 580.00	\$ 1,160.00
DVD Blu Ray Payer	Sony	BDP-S480s BDP-S590	1	\$ 130.00	\$ 130.00
Misc Audio Cable and Connectors	LHS/WV	Misc material	1	\$ 400.00	\$ 400.00
Rack 24 RU Floor standing 27" Depth	Middle Atlantic	WRK-24SA-27	1	\$ 670.00	\$ 670.00
Labor	LHS/WV	Installation/Training		\$ 3,600.00	\$ 3,600.00
				Total	\$ 30,803.00

CONFERENCE ROOM 1036

Audio Codec	Biamp	NEXIA TC	1	\$ 2,030.00	\$ 2,030.00
Pressure Zone Microphone	Crown	PZM-10	3	\$ 113.00	\$ 339.00
USB/SD recording device (rs232)	Denon	DN-F650R	1	\$ 670.00	\$ 670.00
LCD 60"	LG	60PV450C	1	\$ 1,435.00	\$ 1,435.00
Wall Mount	Chief	LTA5536	1	\$ 120.00	\$ 120.00
Cat 5 RGBHV BALUN with Audio	Crestron	QM-TX	1	\$ 580.00	\$ 580.00
Control System	Crestron	MPS300	1	\$ 3,415.00	\$ 3,415.00
QuickMedia Receiver	Crestron	QM-RX	1	\$ 580.00	\$ 580.00
Wireless TP	Crestron	TPS 6X	1	\$ 1,680.00	\$ 1,680.00

Wireless AP	Crestron	CEN-WAP-ABG-CM	1	\$ 215.00	\$ 215.00
Speakers	JBL	Control 24cT	6	\$ 98.50	\$ 591.00
Cable	Cat5	Belden	1	\$ 165.00	\$ 165.00
Materials, rack screws, install hardware	LHS/WV	Misc material	1	\$ 150.00	\$ 150.00
Labor	LHS/WV	Installation/Training		\$ 2,400.00	\$ 2,400.00
				Total	\$ 14,370.00

CONFERENCE ROOM 1214

Audio Codec	Biamp	NEXIA TC	1	\$ 2,030.00	\$ 2,030.00
Pressure Zone Microphone	Crown	PZM-10	3	\$ 113.00	\$ 339.00
LCD 60"	LG	60PV450C	1	\$ 1,435.00	\$ 1,435.00
Wall Mount	Chief	LTA5536	1	\$ 120.00	\$ 120.00
Cat 5 RGBHV BALUN with Audio	Crestron	QM-TX	1	\$ 580.00	\$ 580.00
Control System	Crestron	MPS300	1	\$ 3,415.00	\$ 3,415.00
QuickMedia Receiver	Crestron	QMRX	2	\$ 580.00	\$ 1,160.00
Wireless TP	Crestron	TPS 6X	1	\$ 1,680.00	\$ 1,680.00
Wall plate VGA and Video with Audio	Crestron	OMWMC	2	\$ 580.00	\$ 1,160.00
Wireless AP	Crestron	CEN-WAP-ABG-CM	1	\$ 215.00	\$ 215.00
Interactive White Board	Smart	SBX885	1	\$ 2,699.00	\$ 2,699.00
USB Wall Plate	TecNec	WPLUSB	1	\$ 19.00	\$ 19.00
Projector	Christie	LW555	1	\$ 3,595.00	\$ 3,595.00
Projector Mount	Chief	RPAU	1	\$ 110.00	\$ 110.00
Speakers	JBL	Control 24cT	6	\$ 98.50	\$ 591.00
Cable	Cat5	Belden	1	\$ 165.00	\$ 165.00
Materials, rack screws, install hardware	LHS/WV	Misc material	1	\$ 200.00	\$ 200.00
Labor	LHS/WV	Installation/Training		\$ 3,400.00	\$ 3,400.00
				Total	\$ 22,913.00

DIRECTOR'S CONFERENCE ROOM

LCD 60"	LG	60PV450C	1	\$ 1,435.00	\$ 1,435.00
Wall Mount	Chief	LTA5536	1	\$ 120.00	\$ 120.00
Cat 5 RGBHV BALUN with Audio	Crestron	QM-TX	1	\$ 580.00	\$ 580.00
Control System	Crestron	MPS300	1	\$ 3,415.00	\$ 3,415.00
Wireless TP 5.7 "	Crestron	TPS 6X	1	\$ 1,680.00	\$ 1,680.00
Wireless AP	Crestron	CEN-WAP-ABG-CM	1	\$ 215.00	\$ 215.00
Wireless keyboard/Mouse	Logitech	MX5050	1	\$ 165.00	\$ 165.00
Speakers	JBL	Control 24cT	6	\$ 98.50	\$ 591.00
Wall plate VGA and Video with Audio	TecNec	WPL-1181	1	\$ 26.95	\$ 26.95
Audio Codec	Biamp	NEXIA TC	1	\$ 2,030.00	\$ 2,030.00
Pressure Zone Microphones	Crown	PZM10	3	\$ 113.00	\$ 339.00

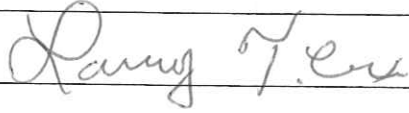
Cable	Belden	Cat5	1	\$ 220.00	\$ 220.00
Materials, rack screws, install hardware	LHS/WV	Misc material	1	\$ 200.00	\$ 200.00
Labor	LHS/WV	Installation/Training		\$ _____	\$ 2,400.00
				Total	\$13,416.95

**BID SUMMARY TOTALS**

<b>A</b>	<b>COMMISSIONER'S CONFERENCE ROOM</b>	<b>\$ 30,803.00</b>
<b>B</b>	<b>CONFERENCE ROOM 1036</b>	<b>\$ 14,370.00</b>
<b>C</b>	<b>CONFERENCE ROOM 1214</b>	<b>\$ 22,913.00</b>
<b>D</b>	<b>DIRECTOR'S CONFERENCE ROOM</b>	<b>\$ 13,416.95</b>
<b>TOTAL OF A+B+C+D</b>		<b>\$ 81,502.95</b>

*NOTE: Contract award will be based on the total of A, B, C, and D. However, the Lottery reserves the right to select all or part of the proposed items in the Bid Summary.*

By my signature below I certify that the bid submitted meets or exceeds all the mandatory specifications and minimum requirements of this RFQ. Additionally, I agree to provide any requested documentation and/or samples deemed necessary by the State of West Virginia to demonstrate compliance with said specifications.

SIGNATURE	
PRINT OR TYPE NAME	Larry T. Cox
COMPANY NAME	Lee Hartman & Sons, Inc.
COMPANY ADDRESS	3 Davis Court Hurricane WV 25526
CITY, STATE, ZIP	Hurricane WV 25526
PHONE	304-397-4100
FAX	304-397-4101
EMAIL	lcox@leehartman.com





State of West Virginia  
DRUG FREE WORKPLACE CONFORMANCE AFFIDAVIT  
West Virginia Code §21-1D-5

STATE OF West Virginia  
COUNTY OF Kanawha, TO-WIT:

I, Larry T. Cox, after being first duly sworn, depose and state as follows:

1. I am an employee of Lee Hartman & Sons, Inc.; and,  
(Company Name)
2. I do hereby attest that Lee Hartman & Sons, Inc.  
(Company Name)

maintains a valid written drug free workplace policy and that such policy is in compliance with **West Virginia Code** §21-1D-5.

The above statements are sworn to under the penalty of perjury.

Lee Hartman & Sons, Inc.

(Company Name)

By: [Signature]

Title: Area Manager

Date: July 30, 2012

Taken, subscribed and sworn to before me this 30 day of July, 2012



July 11, 2013

[Signature]  
(Notary Public)

**THIS AFFIDAVIT MUST BE SUBMITTED WITH THE BID IN ORDER TO COMPLY WITH WV CODE PROVISIONS. FAILURE TO INCLUDE THE AFFIDAVIT WITH THE BID SHALL RESULT IN DISQUALIFICATION OF THE BID.**

RFQ No.

LOT 494

STATE OF WEST VIRGINIA  
Purchasing Division

## PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

### DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (West Virginia Code §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

### WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: Lee Hartman & Sons, inc.

Authorized Signature: [Signature] Date: 7-30-2012

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 30 day of July, 2012.

My Commission expires July 11, 2013

AFFIX SEAL HERE



OFFICIAL SEAL  
NOTARY PUBLIC  
STATE OF WEST VIRGINIA  
SUSAN L. SHEPARD  
218 SIXTH AVE.  
P. O. BOX 418  
ST. ALBANS, WV 25177  
My commission expires July 11, 2013

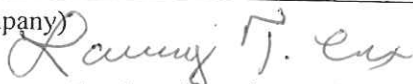
[Signature]

**CERTIFICATION AND SIGNATURE PAGE**LOT 494

By signing below, I certify that I have reviewed this Solicitation in its entirety; understand the requirements, terms and conditions, and other information contained herein; that I am submitting this bid or proposal for review and consideration; that I am authorized by the bidder to execute this bid or any documents related thereto on bidder's behalf; that I am authorized to bind the bidder in a contractual relationship; and that to the best of my knowledge, the bidder has properly registered with any State agency that may require registration.

Lee Hartman & Sons, Inc.

(Company)

Larry T. Cox      Area Manager

(Representative Name, Title)

304-397-4100      304-397-4101

(Contact Phone/Fax Number)

July 30, 2012

(Date)

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: LOT 494**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

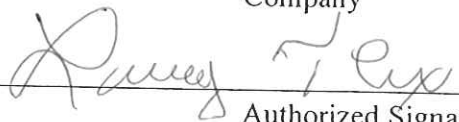
(Check the box next to each addendum received)

<input checked="" type="checkbox"/> Addendum No. 1	<input type="checkbox"/> Addendum No. 6
<input type="checkbox"/> Addendum No. 2	<input type="checkbox"/> Addendum No. 7
<input type="checkbox"/> Addendum No. 3	<input type="checkbox"/> Addendum No. 8
<input type="checkbox"/> Addendum No. 4	<input type="checkbox"/> Addendum No. 9
<input type="checkbox"/> Addendum No. 5	<input type="checkbox"/> Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

\_\_\_\_\_  
 Lee Hartman & Sons, Inc.

\_\_\_\_\_  
 Company

\_\_\_\_\_  
  
 Authorized Signature

\_\_\_\_\_  
 July 30, 2012

\_\_\_\_\_  
 Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.



State of West Virginia  
Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

# Solicitation

NUMBER	PAGE
LOT494	1
ADDRESS CORRESPONDENCE TO ATTENTION OF:	
CONNIE HILL	
304-558-2157	

V E N D O R	RFQ COPY
	TYPE NAME/ADDRESS HERE
	Lee Hartman & Sons, Inc.
	3 Davis Court Hurricane WV 25526

S H I P T O	WEST VIRGINIA LOTTERY
	900 PENNSYLVANIA AVE
	CHARLESTON, WV
	25302 304-558-0500

DATE PRINTED
07/18/2012

BID OPENING DATE: 08/01/2012 BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
ADDENDUM NO. 1						
1. TO PROVIDE ANSWERS TO QUESTIONS RECEIVED.						
2. TO PROVIDE MANDATORY PRE-BID SIGN IN SHEETS.						
3. TO PROVIDE ADDENDUM ACKNOWLEDGEMENT THIS DOCUMENT						
SHOULD BE SIGNED AND RETURNED WITH YOUR BID. FAILURE TO						
RETURN MAY RESULT IN DISQUALIFICATION OF YOUR BID.						
END OF ADDENDUM NO. 1						
0001	1	JB		840-99		
AUDIO/VISUAL EQUIPMENT (ROBIN MORRIS--PEL 30028)						

SIGNATURE	TELEPHONE	DATE
<i>[Signature]</i>	304-397-4100	07/30/12
TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
Area Manager	54-0716361	

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'





State of West Virginia  
Department of Administration  
Purchasing Division  
2019 Washington Street East  
Post Office Box 50130  
Charleston, WV 25305-0130

## Solicitation

NUMBER
LOT494

PAGE
2

ADDRESS CORRESPONDENCE TO ATTENTION OF:
CONNIE HILL 304-558-2157

V E N D O R	RFQ COPY
	TYPE NAME/ADDRESS HERE
	Lee Hartman & Sons, Inc.
	3 Davis Court Hurricane WV 25526

S H I P T O	WEST VIRGINIA LOTTERY
	900 PENNSYLVANIA AVE
	CHARLESTON, WV
	25302 304-558-0500

DATE PRINTED
07/18/2012

BID OPENING DATE: 08/01/2012

BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
LABOR & MATERIALS TO INSTALL PER THE ATTACHED SPECIFICATIONS.						
***** THIS IS THE END OF RFQ LOT494 ***** TOTAL: _____						

SIGNATURE <i>Danny Grey</i>	TELEPHONE 304-397-4100	DATE 07/30/12
TITLE Area Manager	FEIN 54-0716361	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO SOLICITATION, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

SOLICITATION NUMBER: LOT494

Addendum Number: 01

---

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

**Applicable Addendum Category:**

- ☐ | Modify bid opening date and time
- ☐ | Modify specifications of product or service being sought
- ☒ | Attachment of vendor questions and responses
- ☒ | Attachment of pre-bid sign-in sheet
- ☐ | Correction of error
- ☐ | Other

**Description of Modification to Solicitation:**

To provide answers to questions received; to provide mandatory pre-bid sign in sheet.

**Additional Documentation:** Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

**Terms and Conditions:**

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.
2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

# ATTACHMENT A

WEST VIRGINIA LOTTERY

LOT494 ADDENDUM #1

TO ANSWER VENDOR QUESTIONS

**QUESTION 1:** I am seeking clarification on an item on the above referenced bid.

The item is the Christie Projector Model Number LW555

This item is described starting on the bottom of page 24 and again on page 48

Two of these are listed in the equipment list on page 60, item #4, Commissioner's Conference Room,

a third one is listed on page 60, item #13, Conference Room 1214.

It appears that the specifications listed do not match the model number listed.

So I want clarification, does the agency want the model (or equal) as listed by the model number (LW555)

Or the model (or equal) as per the specifications?

**ANSWER 1:** Below is the model number and specifications for the three projectors requested in LOT494 on pages 24, 48, and 60. The projector must be new and unused and this specification (or equal).

**Christie Digital LW555**

•5500 ANSI lumens (single lamp) •800:1 (full on/off) • 80% brightness uniformity (corner to center) • 3 x 0.75" Inorganic LCDs • WXGA (1280 x 800) •Native aspect ratio 16:10, selectable aspect ratios 16:9; 4:3• 330W NSH lamp • Normal mode: up to 2000hrs • Eco mode: up to 3000hr • Up to UXGA/SXGA+/SXGA/WXGA(Native)/XGA/SVGA/VGA/MAC • Accepts current HDTV/DTV formats (720p up to 1080p) • NTSC, NTSC 4.43, PAL, PAL M,

SECAM, PAL-N, PAL 60 • 140MHz • Horizontal frequency range 15-100kHz • Vertical frequency range 48-100Hz • Input 1: HDMI (Version 1.3 with Deep Color) x 1; D-Sub15 x1 • Input 2: BNC x 5 (R, G, B, H, V & Y, Pb/Cb, Pr/Cr & Composite) • Input 3: S-Video (Mini DIN 4-pin), RCA x 3 (Video/Y, Pb/Cb, Pr/Cr) • Audio In – Mini jack x 2 (1, 2) (stereo) • RCA x 2 (R, L-mono) • Outputs: D-Sub15 (Monitor out) x 1 • Audio out – Mini jack x 1 (stereo) • Speakers 7.0W Mono • Motorized zoom, focus and lens shift • Vertical lens shift up/down • Horizontal lens shift left right • Mechanical light shutter • Short 0.8:1 (103-124108-XX) • Ships with standard lens 1.70-2.89:1 (103-126100-XX) • Short 1.25-1.70:1 (103-125109-XX) • Long 2.89-4.60:1 (103-127101-XX) • Ultra Long 4.60-7.36:1 (103-128102-XX) • Vertical and Horizontal lens shift\*\* • Computer cable (Dsub15) • Remote control • AC line cord UL type (NEMA 6-20P plug type) • European 2P plug type • AutoFilter cartridge (003-003084-XX) • 330W NSH lamp (003-120507-XX) • Auto Detect • Auto Digital keystone (vertical) feature • Anti-theft: kensington style slot and security bar • Support for closed caption video display (NTSC) • RJ45 LAN connection with network control and SNMP monitoring • Dynamic iris control • Customizable start-up logo • 100-120 VAC  $\pm 10\%$  • 200-240 VAC  $\pm 10\%$  • 5.2A max (AC100V) • 2.5A max (AC200V) • 490W • 1672 (100V); 1570 (200V) BTU/hr • Body with lens (LxWxH): 17.1 x 19.3 x 6.5" (434.8 x 489.5 x 164.0mm) • 21.4lbs (9.7kg) with lens • 34.8lbs (15.8kg) • (LxWxH): 22.9 x 26.8 x 12.5" (581.0 x 681.0 x 318.0mm) • Standard mode: 38dBA • Eco mode: 31dBA • Operating temperature: 41-104°F (5-40°C) • Storage temperature: 14-140°F (-10-60°C) • Humidity (non-condensing): 20-80% • This product conforms to the following regulations related to product safety, environmental requirements and electromagnetic compatibility (EMC): • FCC Part 15, Subpart B Class A • CISPR22/EN55022 • CISPR24/EN55024 • UL 60950-1 first edition • CAN/CSA-C22.2 No 60950-1-03 first edition • IEC60950-1:2001 • 2002/95/EC RoHS • 3 years parts and labor • 500hrs or 120 days (whichever comes first)•



**PRE-BID CONFERENCE  
SIGN IN SHEET**

Request for Quotation Number:

LOT494

Date:

7/11/2012

**PLEASE PRINT LEGIBLY. THIS INFORMATION IS ESSENTIAL TO CONTACT THE ATTENDEES IN A TIMELY MANNER. FAILURE TO DO SO MAY RESULT IN DELAYS IN YOUR COMPANY GETTING IMPORTANT BID INFORMATION.**

Firm Name:	WV LOTTERY
Firm Address:	900 PENNSYLVANIA AVENUE CHARLESTON WV 25302
Representative Attending:	BECKY JONES
Phone Number:	(304)558-0500 EXT 242
Fax Number:	(304)558-4183
Email Address:	bjones@wvlottery.com

Firm Name:	ELECTRONIC SPECIALTY
Firm Address:	1325 DUNBAR AVE DUNBAR, WV 25069
Representative Attending:	MARK WOOD
Phone Number:	304-766-6277
Fax Number:	304-766-6270
Email Address:	MARK @ ELECTRONIC SPECIALTY.COM

Firm Name:	Lee Hartman, 2700, Inc
Firm Address:	3 Davis Court Hartman, WV 25726
Representative Attending:	Larry T. Cox
Phone Number:	304-327-4100
Fax Number:	304-327-4101
Email Address:	L Cox @ lee Hartman.com

Firm Name:	Frontier Communications
Firm Address:	1500 McCorkle Ave Charleston, WV 25396
Representative Attending:	Chad Stepp
Phone Number:	304-410-5659
Fax Number:	
Email Address:	chad.stepp @ ftr.com

Firm Name:	Grandview Systems INC
Firm Address:	4200 1ST AVE 114 Santa Nitro WV 25173
Representative Attending:	Chuck Sizemore
Phone Number:	304-1392 204-1392
Fax Number:	304-204-1394
Email Address:	CSIZEMORE@GSIWV.COM

Firm Name:	
Firm Address:	
Representative Attending:	
Phone Number:	
Fax Number:	
Email Address:	

Came late  
1:45

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: LOT494**

**Instructions:** Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

**Acknowledgment:** I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

**Addendum Numbers Received:**

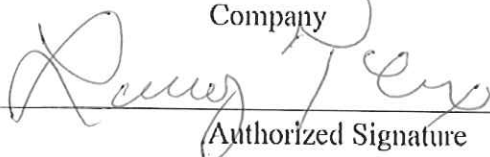
(Check the box next to each addendum received)

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6  |
| <input type="checkbox"/> Addendum No. 2            | <input type="checkbox"/> Addendum No. 7  |
| <input type="checkbox"/> Addendum No. 3            | <input type="checkbox"/> Addendum No. 8  |
| <input type="checkbox"/> Addendum No. 4            | <input type="checkbox"/> Addendum No. 9  |
| <input type="checkbox"/> Addendum No. 5            | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Lee Hartman & Sons, Inc.

Company



Authorized Signature

July 30, 2012

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.  
 Revised 6/8/2012



# The Ohio Casualty Insurance Company

136 North Third Street, Hamilton, Ohio 45012

## BID BOND

The American Institute of Architects,  
AIA Document No. A310 (February, 1970 Edition)

KNOW ALL MEN BY THESE PRESENTS, that we *Lee Hartman & Sons, Inc., P. O. Box 13365,  
3236 Cove Road, Roanoke, VA 24017*

as Principal, hereinafter called the Principal, and THE OHIO CASUALTY INSURANCE COMPANY of Hamilton, Ohio

a corporation duly organized under the laws of the State of Ohio

as Surety, hereinafter called the Surety, are held and firmly bound unto *State of West Virginia, Dept of  
Administration, Purchasing Division, 2019 Washington Street East, Post Office  
Box 50130, Charleston, WV 25305*

as Obligee, hereinafter called the Obligee, in the sum of *Five Percent of Bid Price*

for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a bid for *Solicitation number Lot 494 for the installation of  
Audio Visual equipment in 4 different conference rooms at the following address:  
West Virginia Lottery, 900 Pennsylvania Ave., Charleston, WV 25302*

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this *24th* day of *July, 2012.*

*Stephen M. Hartman*  
(Witness)

LEE HARTMAN & SONS, INC.

*Valerie J. Helms* (Principal)

BY: *Secretary* (Title)

THE OHIO CASUALTY INSURANCE COMPANY

(Surety)

By *Carson B. Hamilton*  
(Attorney-in-Fact)

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

CERTIFIED COPY OF POWER OF ATTORNEY  
THE OHIO CASUALTY INSURANCE COMPANY  
WEST AMERICAN INSURANCE COMPANY

No. 43-928

**Know All Men by These Presents:** That THE OHIO CASUALTY INSURANCE COMPANY, an Ohio Corporation, and WEST AMERICAN INSURANCE COMPANY, an Indiana Corporation, pursuant to the authority granted by Article III, Section 9 of the Code of Regulations and By-Laws of The Ohio Casualty Insurance Company and West American Insurance Company, do hereby nominate, constitute and appoint: **Carson B. Hamilton, Robert D. Lowery, Elizabeth S. Mabrey, Sandra P. Hamilton or Stephen T. Hamilton of Roanoke, Virginia** its true and lawful agent (s) and attorney (s)-in-fact, to make, execute, seal and deliver for and on its behalf as surety, and as its act and deed any and all BONDS, UNDERTAKINGS, and RECOGNIZANCES, not exceeding in any single instance **TEN MILLION (\$10,000,000.00) DOLLARS**, excluding, however, any bond(s) or undertaking(s) guaranteeing the payment of notes and interest thereon

And the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Companies at their administrative offices in Fairfield, Ohio, in their own proper persons.

The authority granted hereunder supersedes any previous authority heretofore granted the above named attorney(s)-in-fact.

In WITNESS WHEREOF, the undersigned officer of the said The Ohio Casualty Insurance Company and West American Insurance Company has hereunto subscribed his name and affixed the Corporate Seal of each Company this **9th day of December, 2010**.



*J. Timothy D'Errico*

J. Timothy D'Errico, Assistant Secretary

STATE OF OHIO,  
COUNTY OF BUTLER

On this **9th day of December, 2010** before the subscriber, a Notary Public of the State of Ohio, in and for the County of Butler, duly commissioned and qualified, came **J. Timothy D'Errico, Assistant Secretary** of THE OHIO CASUALTY INSURANCE COMPANY and WEST AMERICAN INSURANCE COMPANY, to me personally known to be the individual and officer described in, and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn deposes and says that he is the officer of the Companies aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and his signature as officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal at the City of Hamilton, State of Ohio, the day and year first above written.



*Audria M. Coleman*

Notary Public in and for County of Butler, State of Ohio  
My Commission expires August 17, 2013.

This power of attorney is granted under and by authority of Article III, Section 9 of the Code of Regulations and By-Laws of The Ohio Casualty Insurance Company and West American Insurance Company, extracts from which read:

Article III, Section 9. Appointment of Attorneys-in-Fact. The Chairman of the Board, the President, any Vice-President, the Secretary or any Assistant Secretary of the corporation shall be and is hereby vested with full power and authority to appoint attorneys-in-fact for the purpose of signing the name of the corporation as surety to, and to execute, attach the seal of the corporation to, acknowledge and deliver any and all bonds, recognizances, stipulations, undertakings or other instruments of suretyship and policies of insurance to be given in favor of any individual, firm, corporation, partnership, limited liability company or other entity, or the official representative thereof, or to any county or state, or any official board or boards of any county or state, or the United States of America or any agency thereof, or to any other political subdivision thereof

This instrument is signed and sealed as authorized by the following resolution adopted by the Boards of Directors of the Companies on October 21, 2004:

**RESOLVED**, That the signature of any officer of the Company authorized under Article III, Section 9 of its Code of Regulations and By-laws and the Company seal may be affixed by facsimile to any power of attorney or copy thereof issued on behalf of the Company to make, execute, seal and deliver for and on its behalf as surety any and all bonds, undertakings or other written obligations in the nature thereof; to prescribe their respective duties and the respective limits of their authority; and to revoke any such appointment. Such signatures and seal are hereby adopted by the Company as original signatures and seal and shall, with respect to any bond, undertaking or other written obligations in the nature thereof to which it is attached, be valid and binding upon the Company with the same force and effect as though manually affixed.

CERTIFICATE

I, the undersigned Assistant Secretary of The Ohio Casualty Insurance Company and West American Insurance Company, do hereby certify that the foregoing power of attorney, the referenced By-Laws of the Companies and the above resolution of their Boards of Directors are true and correct copies and are in full force and effect on this date.

In WITNESS WHEREOF, I have hereunto set my hand and the seals of the Companies this **24th** day of **July**, **2012**.



*Mark E. Schmidt*

Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, bank deposit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-513-867-3671 between 9:00 am and 4:30 pm EST on any business day.

**ACORD™ CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY)

07/23/2012

PRODUCER (540) 343-4309  
Commercial Insurance Services, Inc.  
P. O. Box 21829  
5007 Carriage Drive  
Roanoke, VA 24018-

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED  
LEE HARTMAN & SONS, INC.  
P. O. BOX 13365  
3236 COVE ROAD  
ROANOKE VA 24017

## INSURERS AFFORDING COVERAGE

NAIC #

INSURER A: STATE AUTO INSURANCE CO.

INSURER B:

INSURER C:

INSURER D:

INSURER E:

## COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	X	GENERAL LIABILITY	PBP2575593	10/01/2011	10/01/2012	EACH OCCURRENCE	\$ 1,000,000
	X	COMMERCIAL GENERAL LIABILITY				DAMAGE TO RENTED PREMISES (Ea occurrence)	\$ 500,000
		CLAIMS MADE <input checked="" type="checkbox"/> OCCUR				MED EXP (Any one person)	\$ 10,000
						PERSONAL & ADV INJURY	\$ 1,000,000
						GENERAL AGGREGATE	\$ 2,000,000
		GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS - COMP/OP AGG	\$ 2,000,000
		POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC					
A		AUTOMOBILE LIABILITY	BAP2305974	10/01/2011	10/01/2012	COMBINED SINGLE LIMIT (Ea accident)	\$ 1,000,000
	X	ANY AUTO				BODILY INJURY (Per person)	\$
		ALL OWNED AUTOS				BODILY INJURY (Per accident)	\$
		SCHEDULED AUTOS				PROPERTY DAMAGE (Per accident)	\$
	X	HIRED AUTOS					
	X	NON-OWNED AUTOS					
A	X	PHYSICAL DAMAGE					
	X	HIRED CAR INCLUDED					
		GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	\$
		ANY AUTO				OTHER THAN EA ACC	\$
						AUTO ONLY: AGG	\$
A		EXCESS/UMBRELLA LIABILITY	PBP2575593	10/01/2011	10/01/2012	EACH OCCURRENCE	\$ 5,000,000
	X	OCCUR <input type="checkbox"/> CLAIMS MADE				AGGREGATE	\$ 5,000,000
							\$
		DEDUCTIBLE					\$
		RETENTION \$ 0					\$
A		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WCP2171200 (VIRGINIA)	10/01/2011	10/01/2012	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER	
		ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	WCP2171206 (WEST VA)	10/01/2011	10/01/2012	E.L. EACH ACCIDENT	\$ 500,000
A		If yes, describe under SPECIAL PROVISIONS below				E.L. DISEASE - EA EMPLOYEE	\$ 500,000
						E.L. DISEASE - POLICY LIMIT	\$ 500,000
A		OTHER RENTAL EQUIPMENT	PBP2575593	10/01/2011	10/01/2012	LIMIT, \$500 DED	25,000
A		INSTALLATION FLOATER	PBP2575593	10/01/2011	10/01/2012	LIMIT, \$1000 DED	500,000
A		TRANSIT \$500000	PBP2575593	10/01/2011	10/01/2012	OFFSITE LIMIT	500,000

## DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

RE: SOLICITATION NUMBER LOT 494. FOR INSTALLATION OF AUDIO VISUAL EQUIPMENT IN 4 CONFERENCE ROOMS AT: WEST VIRGINIA LOTTERY, 900 PENNSYLVANIA AVENUE, CHARLESTON, WC 25302. BID DATE: AUGUST 1, 2012.

## CERTIFICATE HOLDER

( ) - ( ) -

STATE OF WV, DEPT OF ADMINISTRATION  
PURCHASING DIV. P.O. BOX 50130  
2019 WASHINGTON STREET EAST  
CHARLESTON WV 25305-

## CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

*Janet E. Truessee*



## **IMPORTANT**

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

## **DISCLAIMER**

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.

# State of West Virginia

## VENDOR PREFERENCE CERTIFICATE

Certification and application\* is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

**1. Application is made for 2.5% resident vendor preference for the reason checked:**

- ☐ Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
- ☐ Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,
- ☐ Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,

**2. Application is made for 2.5% resident vendor preference for the reason checked:**

- ☐ Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

**3. Application is made for 2.5% resident vendor preference for the reason checked:**

- ☐ Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,

**4. Application is made for 5% resident vendor preference for the reason checked:**

- ☐ Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,

**5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

- ☐ Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,

**6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:**

- ☐ Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

**7. Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.**

- ☒ Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

**Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.**

Bidder: Lee Hartman & Sons, Inc.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Title: Area Manager

STATE OF WEST VIRGINIA  
DEPARTMENT OF ADMINISTRATION  
PURCHASING DIVISION  
2019 WASHINGTON STREET, EAST  
POST OFFICE BOX 50130  
CHARLESTON, WEST VIRGINIA 25305-0130  
07/16/2012

LARRY T COX  
LEE HARTMAN & SONS INC  
3 DAVIS COURT

HURRICANE WV 25526

THIS IS TO NOTIFY YOU THAT YOUR REQUEST FOR CERTIFICATION AS A SMALL BUSINESS, A WOMEN-OWNED BUSINESS, OR A MINORITY-OWNED BUSINESS HAS BEEN APPROVED ON THE BASIS OF YOUR REPRESENTATIONS THAT THE VENDOR NAMED ABOVE MEETS THE DEFINITION OF A SMALL BUSINESS, A WOMEN-OWNED BUSINESS, OR A MINORITY-OWNED BUSINESS AS SET FORTH IN THE WEST VIRGINIA CODE OF STATE RULES 148-22-1, ET SEQ. THIS CERTIFICATION BECOMES EFFECTIVE:

07/16/2012

AND SHALL AUTOMATICALLY EXPIRE WITHOUT NOTICE TWO YEARS AFTER THE EFFECTIVE DATE UNLESS REVOKED BY THE PURCHASING DIRECTOR OR UPON EXPIRATION PURSUANT TO CSR 148-22-8. TYPE OF CERTIFICATION:

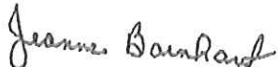
\*SMALL\*

TO MAINTAIN CERTIFICATION WITHOUT LAPSE, A CERTIFIED BUSINESS SHALL APPLY TO RENEW ITS CERTIFICATION AT LEAST 60 DAYS PRIOR TO THE END OF THE TWO-YEAR CERTIFICATION PERIOD. COMPLETE RENEWAL INSTRUCTIONS, RECERTIFICATION FORMS, AND A LIST OF ALL CERTIFIED BUSINESSES ARE AVAILABLE ONLINE AT:

[HTTP://WWW.STATE.WV.US/ADMIN/PURCHASE/VENDORREG.HTML](http://www.state.wv.us/admin/purchase/vendorreg.html)

IF YOU HAVE QUESTIONS, CONTACT THE PURCHASING DIVISION AT 304-558-2306.

SINCERELY YOURS,



VENDOR REGISTRATION

# WEST VIRGINIA DIVISION OF LABOR

749-B Building 6, Capitol Complex • Charleston, West Virginia 25305

Phone (304) 558-7890 • Fax (304) 558-3797

[www.wvlabor.org](http://www.wvlabor.org)

EARL RAY TOMBLIN  
Governor



DAVID W. MULLINS  
Commissioner

REC'D JUN 22 2012

June 18, 2012

Lee Hartman & Sons Inc.  
PO Box 13365  
Roanoke VA 25133

Dear Sir or Madam:

We have verified your company's continuous employee activity within the State of West Virginia for the consecutive years 2008, 2009, 2010, 2011, and 2012 through your unemployment contributions. Under the provisions of § 21-5-14 of the West Virginia Code, companies meeting this criteria receive Plus 5 Status and are exempt from the requirement to post a wage bond.

In order to maintain continued compliance without posting a bond, your company must provide similar documentation for our review each subsequent year. As we have already established employee activity for your company through the year 2012, no additional verification will be necessary until your next reporting period, which begins January 1, 2013.

Please post this notice on location at your West Virginia job sites in order that visiting officials can see evidence of your Plus 5 Status.

If you have any questions, please contact our office at (304) 558-7890, extension 144.

Sincerely,

A handwritten signature in cursive script that reads "Larry I. Walker".

Larry I. Walker, Director  
Wage & Hour Section

LIW / dln  
Cc: 054521 (WV037465)

# Warranty Statement

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## **Installation Warranty:**

Lee Hartman & Sons, Inc. warrants that all materials and workmanship directly related to the installation and integration of the system will be free from defects for a period of one year from the acceptance of the system. If a failure occurs during the active warranty period, it is the client's responsibility to contact the Lee Hartman & Sons, Inc. Service Center in a timely manner to resolve the issue. Should a problem occur that is attributable to the installation and/or integration of the system, Lee Hartman & Sons, Inc. will provide technicians to diagnose and take corrective action at no cost to the client. This system warranty is void if any service or modification is performed by anyone other than an employee or agent of Lee Hartman & Sons, Inc. without prior written approval of the Lee Hartman & Sons, Inc. Service Department. Covered components include: cables, connectors, equipment racks, rack mounting hardware, and power strips.

## **Equipment Warranty:**

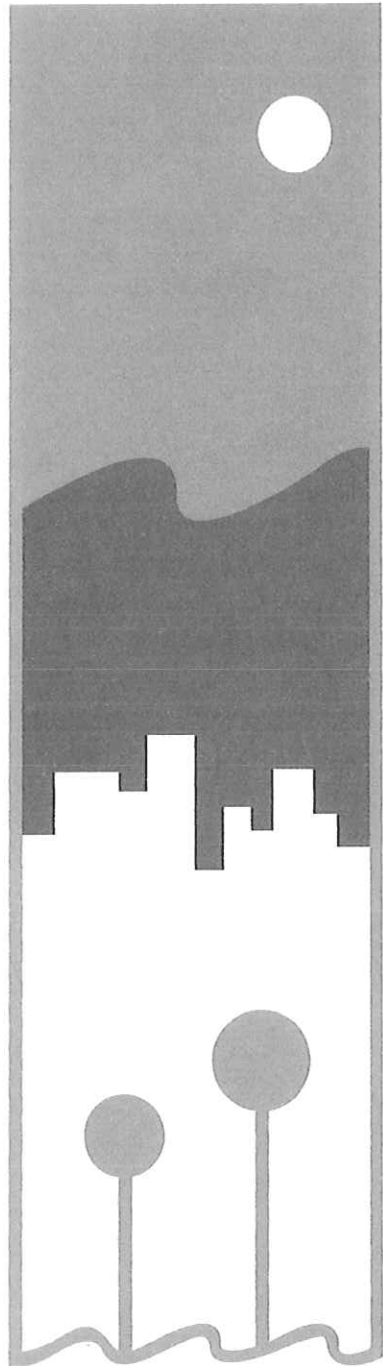
Integrated equipment is warranted by, and under the terms and conditions specified by, the original equipment manufacturer (OEM). All integrated equipment is warranted against defects in materials and workmanship for a period of one year from the date of system acceptance unless a longer warranty period is specified by the OEM. In the unusual event that the OEM warranty is for less than one year, or an OEM does not recognize the date of system acceptance as the start of the OEM warranty, Lee Hartman & Sons, Inc. will—at no additional cost to the client—extend the OEM warranty to one year from the date of system acceptance. Lee Hartman & Sons, Inc. will replace defective parts with factory-authorized components and repair malfunctioning products to manufacturer's specifications under this warranty when the defect occurs under normal installation and use—provided the unit is returned in a timely manner to our Service Department via pre-paid transportation with a copy of proof of purchase (i.e., sales invoice).

This warranty is contingent upon Lee Hartman & Sons, Inc.'s initial assessment of the returned equipment showing that, in our best judgment, the problem is due to a manufacturing defect. If we determine that the problem does not meet this condition, the repair will be billable at the current rates for time and materials. A minimum charge of one hour of labor will be assessed if the repair estimate is refused.



This warranty specifically excludes any service on any equipment or component as a result of any of the following causes:

- A modification, attachment, alteration, or addition has been made affecting the performance of the system or component unless the modification, addition, or alteration has been previously been authorized in writing by the Lee Hartman & Sons, Inc. Service Department. This includes—but is not limited to—software and/or firmware additions or upgrades, even if provided or authorized by the equipment manufacturer.
- Any computer-based equipment (e.g. nonlinear editors, character generators, video servers, operator terminals) infected by malicious code of any kind.
- Individual product or serial identification number is altered or removed without the express written consent of the Lee Hartman & Sons, Inc. Service Department.
- Accident, negligence, misuse, abuse, abnormal use, unauthorized repair, fire, flood, vandalism, theft, any act of God, operation of equipment with non-compatible equipment or contrary to operating instructions including environmental, electrical, and operating temperature standards, or any combination of the above, or caused by accessories, alterations, or attachments of other devices not furnished by Lee Hartman & Sons, Inc.



WEST VIRGINIA  
CONTRACTOR  
LICENSING  
BOARD

# CONTRACTOR LICENSE

Authorized by the

West Virginia Contractor Licensing Board

**Number:**

WV037465

**Classification:**

COMMUNICATION & SOUND

LEE HARTMAN & SONS INC  
DBA LEE HARTMAN & SONS INC  
PO BOX 13365  
ROANOKE, VA 25133

**Date Issued**

JULY 22, 2012

**Expiration Date**

JULY 22, 2013

Authorized Company Signature

Chair, West Virginia Contractor  
Licensing Board

This license, or a copy thereof, must be posted in a conspicuous place at every construction site where work is being performed. This license number must appear in all advertisements, on all bid submissions and on all fully executed and binding contracts. This license cannot be assigned or transferred by licensee. Issued under provisions of West Virginia Code, Chapter 21, Article 11.

STATE OF WEST VIRGINIA  
Department of Education  
Dr. Joree Marple  
State Superintendent of Schools



## The West Virginia Schools for the Deaf and the Blind

Established 1870  
301 EAST MAIN STREET  
ROMNEY, WEST VIRGINIA 26757  
Lynn Boyer, Ph.D.  
Superintendent  
Telephone - 304-822-4800  
FAX - 304-822-3370

January 5, 2012

To Whom It May Concern,

It is with great pleasure that I write this letter to convey my professional opinion of the West Virginia Division of Lee Hartman. I dealt with this company on a large project over the course of the past few years and was extremely satisfied with their work.

The project was not only handled professionally but was completed in a timely fashion. This project consisted of several schools, in different counties, and coordination of this took both patience and diligence on the part of Lee Hartman.

I enjoyed working with this company and hope that I am able to use their services again to assist with technology needs on the campus of WVSDB.

If you need any further information please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Priscilla Bohrer".

Priscilla Bohrer

Technology Coordinator

West Virginia Schools for the Deaf and Blind



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

District Ten

270 Hardwood Lane · Princeton, West Virginia 24740 · (304) 487-5228

January 6, 2012

To Whom It May Concern:

I would like to take this opportunity to share with you my experience with the West Virginia Office of Lee Hartman and Sons, Incorporated. Last year, the District Ten District Manager had expressed his interest in upgrading the conference room in the Administration Building to facilitate training that was more professional but at the same time uncomplicated. For years, we were using either television sets on utility carts or projectors with makeshift screens on the cream-colored walls for our video needs and a portable sound system for our audio needs. Needless to say, this was a less than desirable situation. Having prior experience with Lee Hartman and Sons' Roanoke, Virginia Office, I contacted them and was placed in contact with their West Virginia Office in Hurricane.

Upon calling Lee Hartman and Sons' West Virginia Office, the professionalism began to flow the first minute of our conversation. Larry, Kipp, and all of the others that came to the site, provided the needed technical assistance to determine the end result for our conference room needs, and helped us develop a solution that was both beneficial and efficient. I furthermore want to compliment Lee Hartman and Sons for being willing to work with me and the others in the West Virginia State Government setting to insure all policies and regulations were followed seamlessly and for providing us technical assistance with writing the necessary specifications so that we received a quality product for the price, biddable by all interested parties.

I would highly recommend Lee Hartman and Sons, Incorporated West Virginia Office for our other audio and video needs in West Virginia State Government. Doing business with a company such as this reflects the values that we should place in our jobs and responsibilities each and every day. If you care to contact me at any time about Lee Hartman and Sons, please feel free to call me at (304) 887-3267 (Cell) or e-mail me at [Ryland.W.Musick@wv.gov](mailto:Ryland.W.Musick@wv.gov)

Thank you for your time, and I hope this has shed some light on this most reputable company.

Sincerely,

A handwritten signature in cursive script that reads "Ryland Wayne Musick, Jr., M.S.E., P.E.".

Ryland Wayne Musick, Jr., M.S.E., P.E.  
Regional Program Manager – Districts Nine and Ten



## WEST VIRGINIA SCHOOL OF OSTEOPATHIC MEDICINE

January 6, 2011

To whom it may concern:

I have worked with Lee Hartman & Sons, West Virginia branch office, for more than 4 years on numerous projects both large and small. Lee Hartman & Sons has provided professional services as both A/V supplier and systems integrator. Their team has guided me on equipment choices, integration options and provided expert technical support after installation.

It has been a pleasure to work with the Lee Hartman & Sons team and would highly recommend them to anyone planning an A/V project of any size.

Please feel free to contact me for further information.

Sincerely,

Rich McMahan  
Director of Media Services  
West Virginia School of Osteopathic Medicine

[rmcmahan@osteo.wvsom.edu](mailto:rmcmahan@osteo.wvsom.edu)  
304-667-9435





Staffing for Project: LOT494

Lee Hartman & Sons, Inc. currently employs more than 70 people in 4 office locations. Of these 70 some people 75% have some level of technical training, which allows us to draw from a very skilled and diverse group of installers, programmers, designers, lead techs, project managers, and field service people.

Our plan is to deploy as the Lead Programmer and Project Manager for this project, Carl (Kipp) McGhee III. Mr. McGhee has 20 years of field experience and 17 years of programming experience. He will be assisted by Colin Ward. Mr. Ward has 9 years of experience and is highly skilled; in fact he routinely teaches Programming classes for Crestron. Some of the equipment will be installed in an equipment Rack in our facility by Mike Martini and Lance Schrader. Mr. Martini has over 14 years of experience in system installation, system programming, and system design. Mr. Schrader has 16 years experience in the Audio/Video industry, including equipment staging, equipment rack installation, and set design.



## **WV Lottery Commission- Lot # 494 Installation Timeline**

Day 1- Upon receipt of Purchase Order or "Notice to proceed", Lee Hartman & Sons, Inc. will begin ordering the various pieces of hardware for the project. As the equipment begins to arrive, we stage the equipment in our facility. The Standard lead time on the items which are not already in our warehouse is typically 2-3 weeks.

Day 2-14 During this time period we coordinate with the facilities and Electrical Contractor to begin to finalize all duplex and hardwired connections, we also consult with carpenters etc for any mill-work.

Day 14-25 All hardware and software is counted, serial numbers recorded. We work with the client to secure on-site installation dates. We proceed to finish the staging of the equipment at our location, do mock set ups, and test the hardware and software functionality. It is during this time period that the client is invited to see their system in operation at our facility

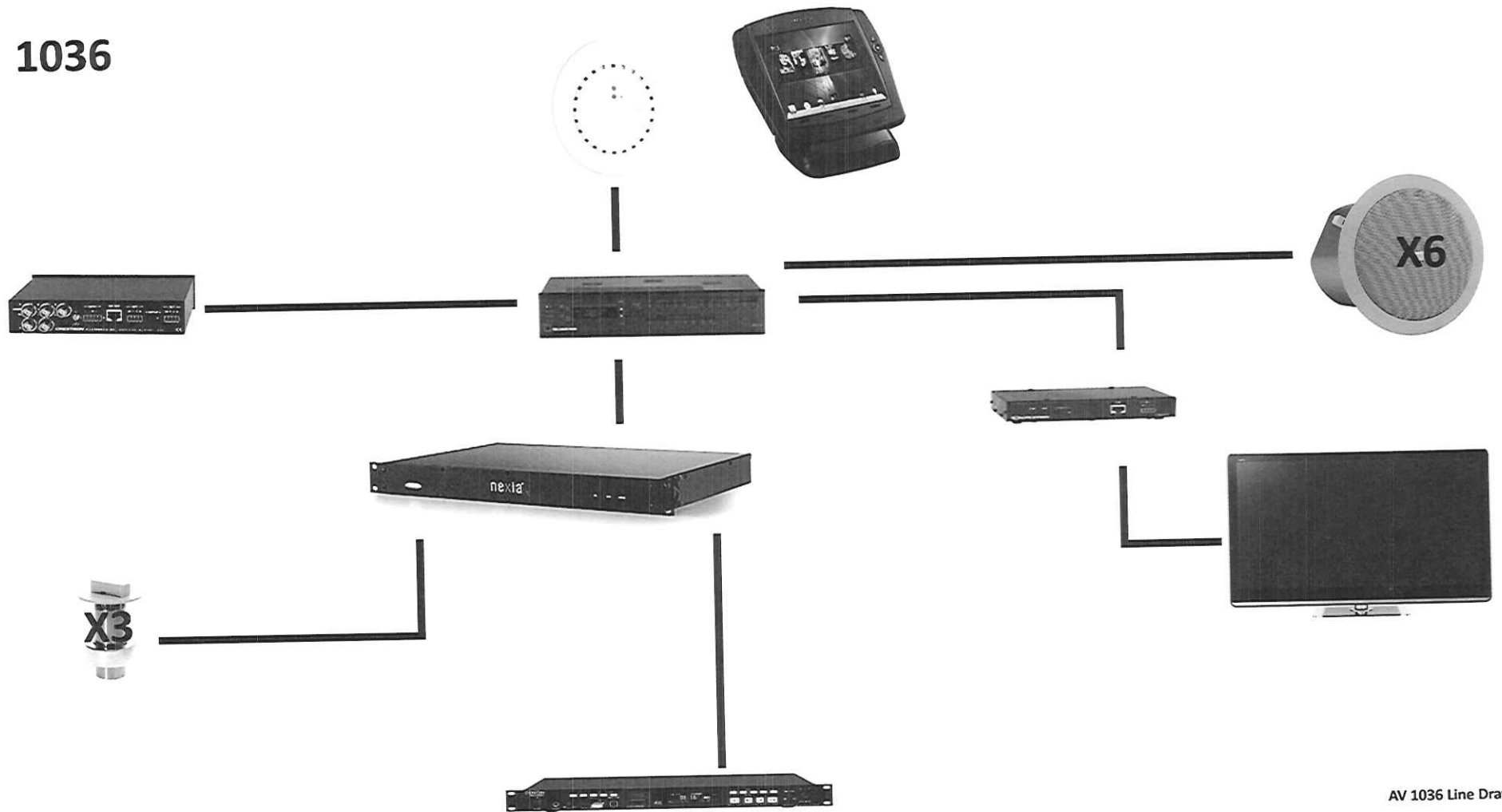
Day 25-50 This is the time period, depending on facility availability, that we deliver the hardware and software to the client location, and begin the on-site installation process.

Day 30-60 At this point all equipment has been delivered, installation is well under way. (or finished) Our goal is to deliver all equipment to the site, distribute it to the various locations in the facility. All pre-wiring takes place, and hardware final locations are determined with client input and suggestions.

Day 60 Project is finished and training has been completed. This training is typically 2-3 hours for each room. This client is encouraged to record this training for future reference. Client is given "as built" drawings, a binder with all operations manuals. These are divided by room and labeled as such.

Day 75-90 Client is contacted to ascertain, understanding of equipment operation ..during this time period we also contact the client to verify satisfaction with the system operation, our performance and to verify the system meets or exceeds their expectations.

1036



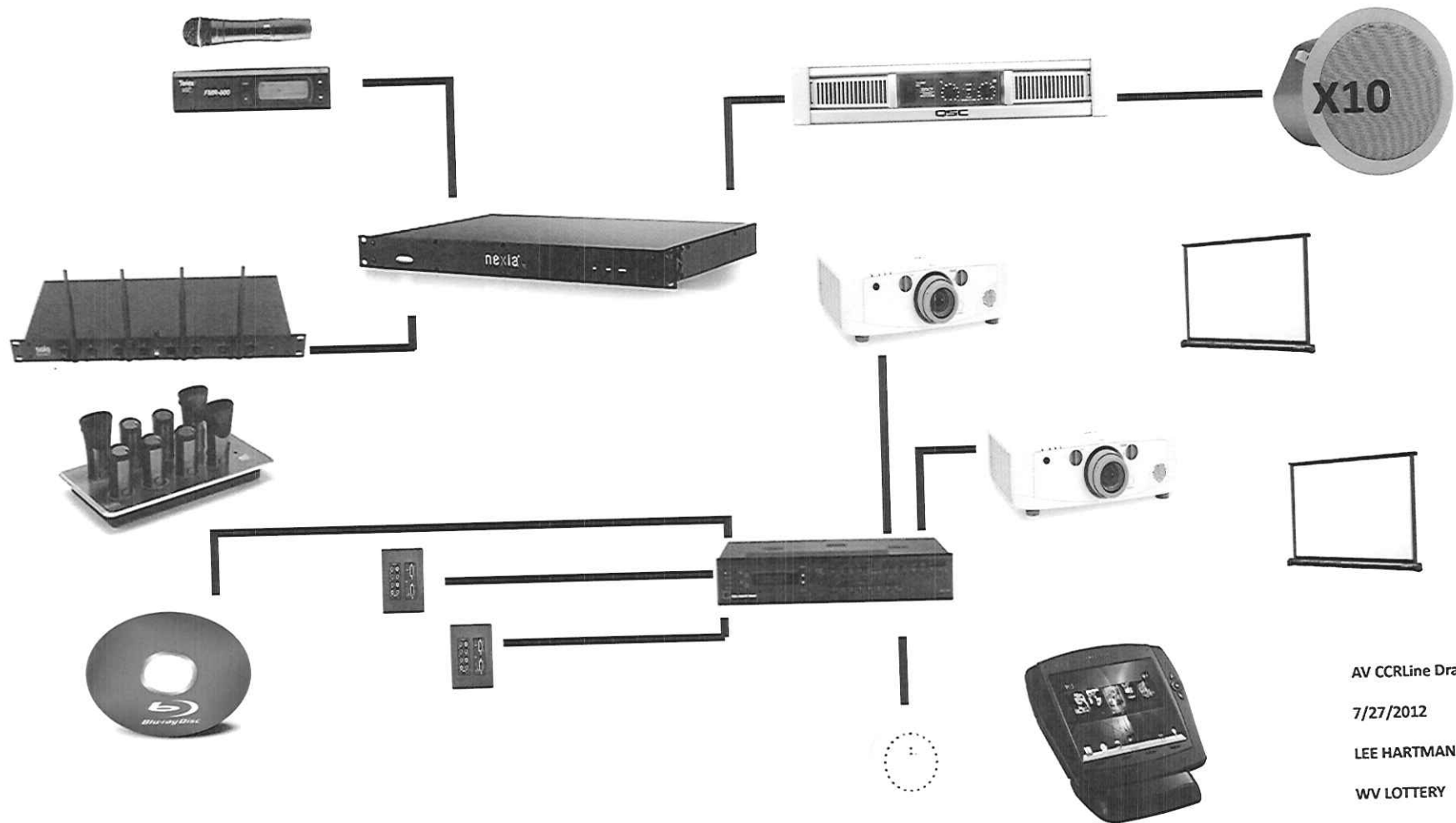
AV 1036 Line Drawing

7/27/2012

LEE HARTMAN

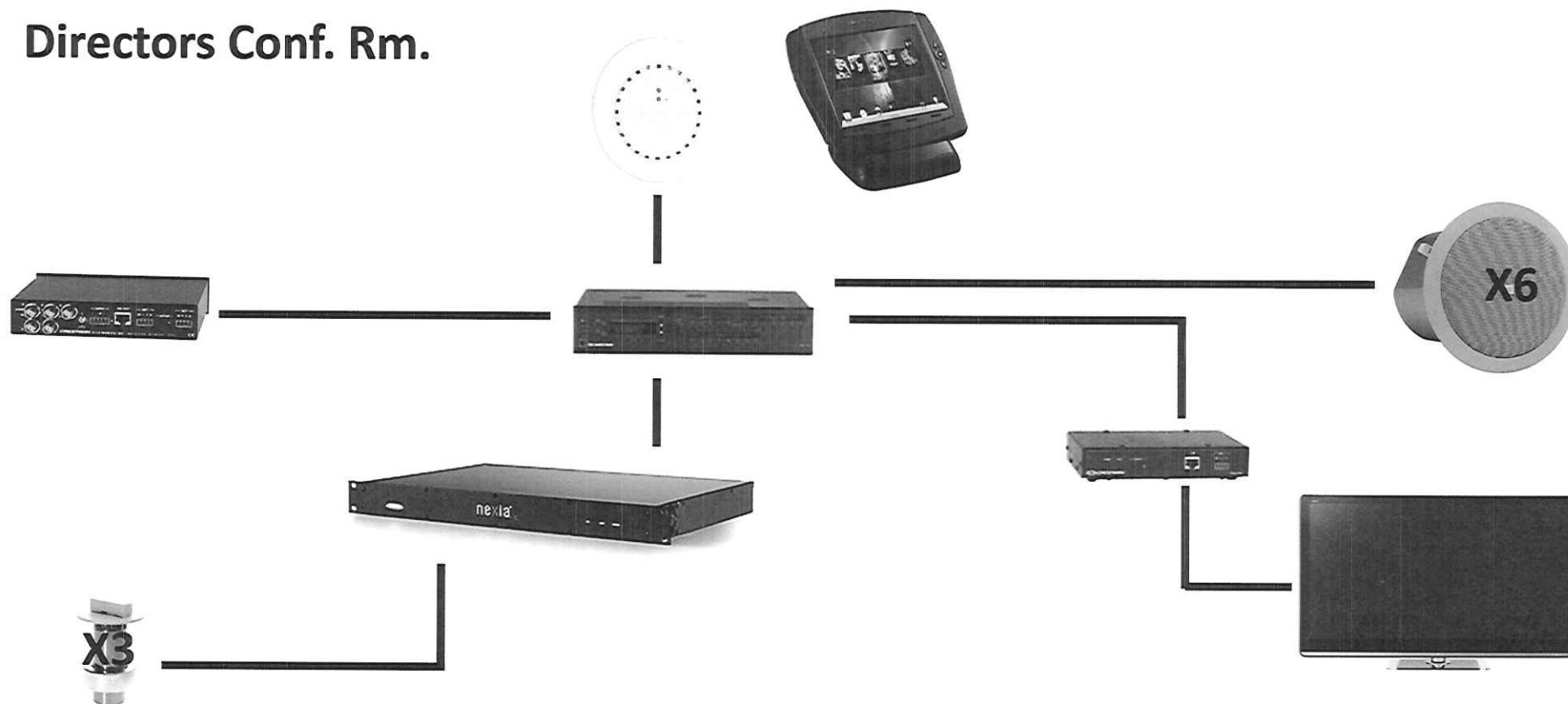
WV LOTTERY

# Commissioner's Conf. RM



AV CCRLine Drawing  
7/27/2012  
LEE HARTMAN  
WV LOTTERY

## Directors Conf. Rm.



AV DCR Line Drawing

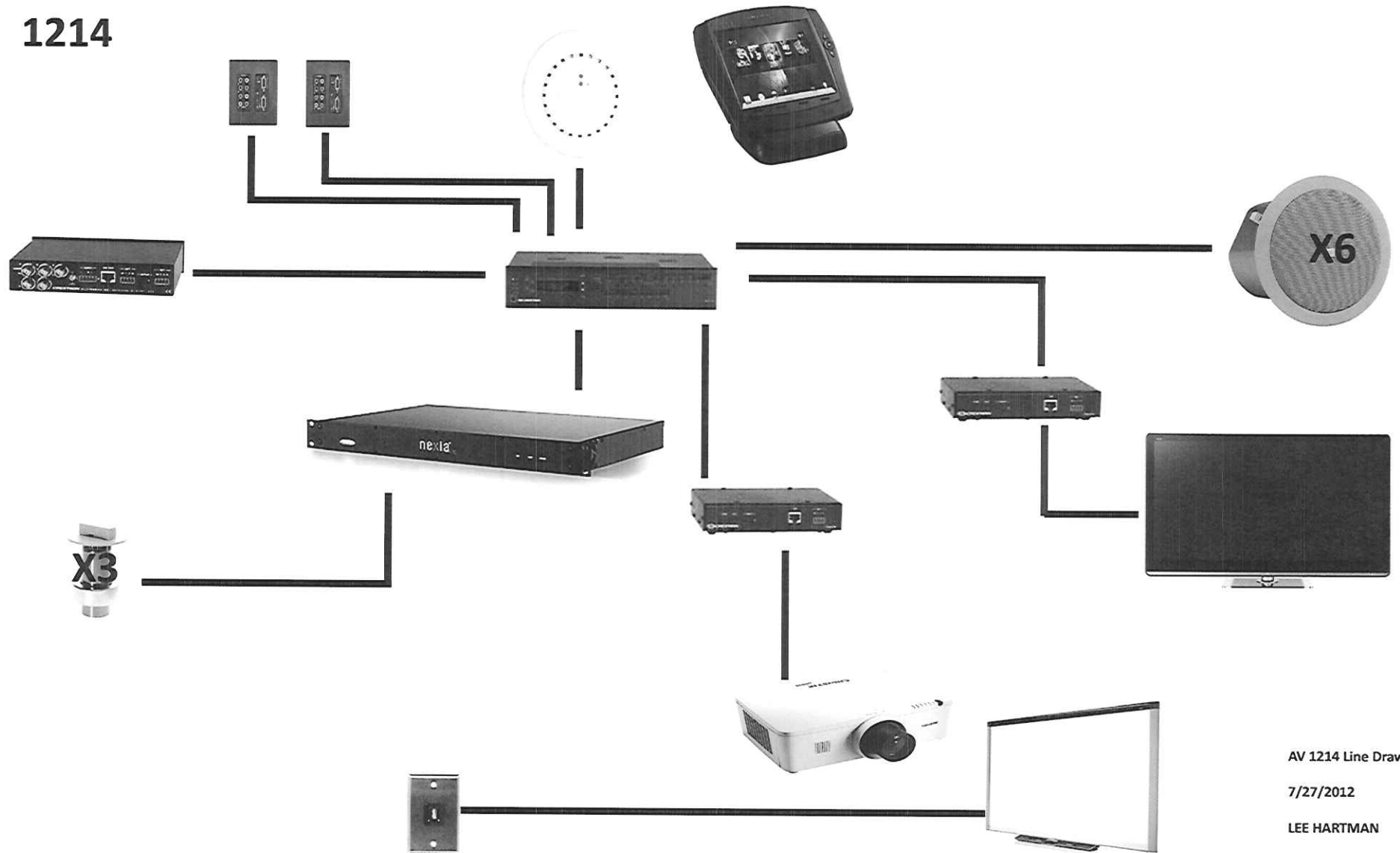
7/27/2012

LEE HARTMAN

WV LOTTERY



1214



AV 1214 Line Drawing

7/27/2012

LEE HARTMAN

WV LOTTERY

# CRESTRON TRAINING

awarded to

**CARL MCGHEE**

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for successfully completing

**INTERMEDIATE CRESTRON PROGRAMMING**

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**FEBRUARY 15, 2008**

---

Date

  
Signature





# Certified Technology Specialist

*Carl McGhee*

has been examined and has demonstrated competence in all technical aspects of a Certified Technology Specialist, has met the requirements of the InfoComm independent Certification Committee necessary for professional competency, is in good standing in the Directory of Certified Technology Specialists, has agreed to abide by the CTS Code of Ethics and Conduct, and is therefore entitled to use the name Certified Technology Specialist and the CTS® designation.

Effective Date  
**May 21, 2009**

Date of Expiration  
**May 31, 2015**

Certification Number  
**1258900**

Doug Dillman, CTS-D, CTS-I  
Chair, InfoComm independent  
Certification Committee



**infoComm**  
INTERNATIONAL®



The InfoComm Certified Technology Specialist certification is accredited by the American National Standards Institute (ANSI) under the International Standard ISO/IEC 17024 General Requirements for Bodies Operating Certification Schemes of Persons program.

audia.<sup>®</sup>  
*Certificate of Achievement*

AWARDED TO:

*Kipp McGhee*

*For successfully completing Biamp Systems' Audia Training Course*

July 23, 2009

AWARDED BY:

*Ned Ludlum, Training Director*

**B I A M P<sup>®</sup>**

**S Y S T E M S**

*...your partner in audio excellence!*

# NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES®

HEREBY CERTIFIES THAT

**MICHAEL A. MARTINI**

HAS ATTAINED THE GRADE OF  
**TECHNICIAN TRAINEE**

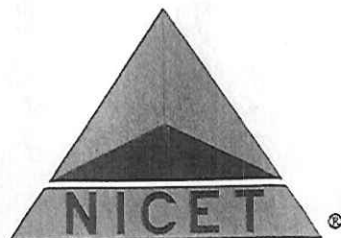
IN LOW VOLTAGE ELECTRONIC COMMUNICATION SYSTEMS  
AUDIO SYSTEMS

AND RECOGNIZES THAT THROUGH EDUCATION,  
EXPERIENCE, AND KNOWLEDGE THIS PERSON HAS  
MET THE STANDARDS SET FORTH BY THIS INSTITUTE

April 1997

CERTIFICATION NUMBER 94099

  
CHAIRMAN OF THE BOARD OF GOVERNORS, NICET



SPONSORED BY THE NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

# CRESTRON TRAINING

awarded to

**MIKE MARTINI**

---

for successfully completing

**INTERMEDIATE CRESTRON PROGRAMMING**

---

 crestron  
TECHNICAL INSTITUTE

03/15/07  
Date

  
Signature

 **CRESTRON®**



# CHIEF CERTIFIED PARTNER

This certificate is presented to

Larry Cox


In recognition of completing the CHIEF CERTIFIED PARTNER PROGRAM on September 13, 2011

InfoComm RU's obtained: 2

CEDIA CEU's obtained: 1

DSEG Credits obtained: 0.5

Signed:



Scott Gill, Chief Executive Officer, Steven Durkee, President - Chief & Sanus Products





***CRESTRON ADVANCED  
TRAINING 2007***

Colin Ward

---



February 13, 2008

Date

Authorized Signature

CERTIFIED



**CRESTRON®**

Programmer

**CRESTRON ADVANCED  
TRAINING 2008**

**COLIN WARD**

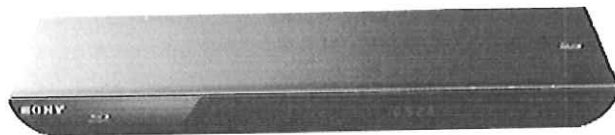


*January 14, 2009*  
Date

*[Signature]*  
Authorized Signature

*Part of Crestron Continuing Education Series*

# BDP-S590



## Product Specifications

### Video

#### DVD

- DVD 24p output : Yes
- TV Type Default Setting : 16:9

#### BD

- HD (24Hz) (24p True Cinema) : Yes
- HD (50Hz) : No
- HD (60Hz) : 480i 480p 720p 1080i 1080p
- HD 24Hz to 60Hz conversion : Yes

## Audio Features

### Coaxial

- DTS Neo 6 : Yes
- DTS bit-stream out : Yes
- Dolby Digital bit-stream out : Yes
- LPCM 2ch (~96kHz/~24bit) out : Yes

### Decodability

- AV Sync : Yes
- Dolby® : Dolby True HD decoding (5.1Ch)
- dts : dts-HD Master Audio decoding (MA)

### HDMI Audio Out

- DSD output : Yes
- DSD to LPCM conversion out : Yes
- DTS HD Master Audio bit-stream out : Yes
- Dolby TrueHD bit-stream out : Yes
- LPCM 2ch out : Yes

- LPCM 6ch out : Yes
- LPCM 8ch out : Yes

## Disc Playback Features

### Repeat

- All : Yes
- Chapter : Yes
- Title : Yes
- Track : Yes

### Playback Control

- PREV/NEXT : Yes
- Play/Stop/Pause : Yes
- REV/FWD : Yes
- STEP Playback (FWD/REV) : Yes
- Slow Playback (FWD/REV) : Yes

## Convenience Features

### 2nd Display (Media Remote)

- Media Remote 1.1 : Yes
- Media Remote : Version 2.0 and greater

## Video Features

### Noise Reduction

- BNR : Yes
- MNR : Yes

### Audio Features

- DTS : BD/DVD/CD/USB (non secured)
- LPCM : BD/DVD/CD/USB (non secured)
- MP3 Playback : BD/DVD/CD/USB (non secured)
- SA-CD : Yes

## General Features

- Disc Drive : Yes
- Region Code (BD) : A

- Region Code (DVD) : 1

## Video

- Deep Color : Yes
- Percision Cinema HD Upscale : Yes

## 3D

- Photo : Yes
- Streaming : Yes
- Video (from camcorder) : Yes

## Convenience Features

- USB Keyboard : Yes (standard 101 Key)
- BRAVIA® Sync™ : Yes
- Bit Rate Indicator (Video) : Yes
- Child Lock : Yes
- Easy Setup : Yes
- File System : FAT32/NTSF USB and HDD (Read Only)

## Inputs and Outputs

- HDMI Output(s) : 1 (Rear)
- Composite Video Output(s) : 1 (Rear)
- Digital Audio Output(s) : 1 Optical (Rear); 1 Coxial (Rear)
- Analog Audio 2ch Output(s) : 1 (Rear)
- Ethernet Connection(s) : 1 (Rear)
- USB Input(s) : 2 (1 Rear/ 1 Front)

## Video Features

- 24p True Cinema™ Technology : Yes
- 3D Playback : Yes
- BD-R/RE Read Compatibility : Yes (BD-R / BD-RE )
- BD-ROM : Bonus View(Profile1.1); BD-Live(Profile2.0); BD-ROM (SL/DL)
- DVD Camcorder 8cm DVD : Yes RW/-R (+VR)
- DVD Playback : Yes
- DVD+R Read Compatibility : Yes (+VR)
- DVD+RW Read Compatibility : Yes (+VR)
- DVD-R Read Compatibility : Yes



- DVD-RW Read Compatibility : Yes (+VR)
- JPEG Playback : BD/DVD/CD/USB/DLNA
- Noise Reduction : Yes (BNR on DVDs Only)
- PhotoTV HD : Yes
- x.v.Color™ Technology : Yes

## Audio

- Analog-to-Digital Converter : 192kHz, 24bit

## Function

- PREV/NEXT : Yes
- Parental Control : Yes
- Play / Stop / Pause : Yes
- REV/ FWD : Yes
- Repeat (All/ 1title) : Yes
- Screen Saver : Yes

## Power

- Power Requirements (frequency) : 60Hz
- Power Requirements (voltage) : 120V
- Power Consumption (in Operation) : 16W
- Power Consumption (in Standby) : 0.3W

## Weights and Measurements

- Dimensions (Approx.) : 16.9 x 1.6 x 7.8 in (430 x 42 x 199mm)
- Weight (Approx.) : 3.3 lbs. (1.5kg)

## Supported Media

### CD

- CD (CD-DA) : Yes
- CD-R/-RW : Yes
- SA-CD (SA-CD/CD) : Yes

### BD-ROM

- BD-Live (Profile2.0) : Yes
- BD-ROM (SL/DL) : Yes
- Bonus View (Profile1.1) : Yes

## Video

- AVCHD Disc Format Folder : BD/DVD/CD/USB/DLNA
- MPEG-1 Video/PS (.mpg, .mpeg, .m2ts, .mts) : BD/DVD/CD/USB/DLNA
- MPEG-2 Video/PS, TS ( .mpg, .mpeg, .m2ts, .mts) : BD/DVD/CD/USB/DLNA
- MPEG-4 AVC (.mkv, .mp4, .m4v, .m2ts, .mts) : BD/DVD/CD/USB/DLNA

## Hybrid Disc

- BD/CD : Yes (select in set-up menu)
- BD/DVD : Yes (select in set-up menu)
- HDDVD/DVD : Yes(DVD)

## Music

- AAC (.m4a) : BD/DVD/CD/USB/DLNA
- LPCM (.wav) : BD/DVD/CD/USB/DLNA
- MP3 (.mp3) : BD/DVD/CD/USB/DLNA
- WMA9 Standard (.wma) : BD/DVD/CD/USB/DLNA

## Mixed Disc

- BDAV/BDMV : Yes (BDMV)

## BDMV

- BD-R : Yes (ver.3.0, SL/DL)
- BD-RE : Yes (ver.2.0, SL/DL)

## Photo

- GIF (.gif) : Yes (BD, DVD, CD, USB, DLNA)
- JPEG (.jpg, .jpeg) : Yes (BD, DVD, CD, USB, DLNA)
- PNG (.png) : Yes (BD, DVD, CD, USB, DLNA)

## Photo

## Slide Show with Music

- CD : Yes
- USB : Yes

## Network Features/SEN

## BIVL

- Live Streaming : Yes
- Recommendation : Yes
- Subtitle : Yes

## Home Network

- DLNA(DMR) : Yes (Video, Audio, Photo)
- DLNA(DMP) : Yes (Video, Audio, Photo)

## Wi-fi

- Wi-Fi Built in : Built-in

## Entertainment DB Browser (Gracenote etc.)

- Cover Art : Yes
- History Browse : Yes
- Information Browse (with Web Browser) : Yes
- Information Browse (within Gracenote) : Yes
- Information Display : Yes
- Qriocity Recommendation : Yes
- Related Information : Yes (BD, DVD, CD, Network)
- Search Contents : Yes

## In the Box

- Batteries 2 AA
- Warranty Card
- Remote Control (RMT-B119A)
  - AV Cable
  - Owners Manual