State of West Virginia
Department of Administration
Purchasing Division

N O T I C E

Due to the size of this bid, it was impractical to scan every page for online viewing. We have made an attempt to scan and publish all pertinent bid information. However, it is important to note that some pages were necessarily omitted.

If you would like to review the bid in its entirety, please contact the buyer. Thank you.

***

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

Solicitation

NUMBER	PAGE
DCH13059	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:

CONNIE OSWALD
304-558-2157

RFQ COPY
TYPE NAME/ADDRESS HERE

VENDOR

N-Powell Company, Inc.
P.O. Box 239
3828 Main Street
Weirton, WV 26062

SHIP TO

DIVISION OF CULTURE & HISTORY
GRAVE CREEK ARCHEOLOGY COMPLEX
801 JEFFERSON AVENUE
PO BOX 527
MOUNDSVILLE, WV
26041   304-558-0220

DATE PRINTED
03/21/2013

BID OPENING DATE: 04/23/2013   BID OPENING TIME   1:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

THE STATE OF WEST VIRGINIA AND ITS AGENCY THE
WEST VIRGINIA DIVISION OF CULTURE & HISTORY REQUEST
A QUOTE TO PROVIDE LABOR, MATERIALS, EQUIPMENT &
SUPPLIES FOR AN ENHANCEMENT OF THE THEATER AND
RESTROOMS AT GRAVE CREEK ARCHEALOGICAL COMPLEX LOCATED
AT 801 JEFFERSON AVENUE, MOUNDSVILLE, WV 26041 PER
THE SPECIFICATIONS, PROJECT MANUAL, DRAWINGS AND
INSTRUCTIONS TO BIDDERS.

MANDATORY PRE-BID MEETING: APRIL 5, 2013 AT 10:00 AM
                         (SEE INSTRUCTIONS TO BIDDERS)

BID OPENING: APRIL 23, 2013 AT 1:30 PM
            (SEE INSTRUCTIONS TO BIDDERS)

ALL WORK SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND
PROJECT MANUAL PREPARED BY MCKINLEY & ASSOCIATES.
BIDDING DOCUMENTS MAY BE OBTAINED FROM MCKINLEY &
ASSOCIATES UPON PAYMENT OF A DEPOSIT OF $75.00 PER
SET.   THE DEPOSIT WILL BE REFUNDED IF DRAWINGS AND
SPECIFICATIONS ARE RETURNED IN GOOD CONDITION WITHIN
10 DAYS FOLLOWING RECEIPT OF BIDS.

MCKINLEY & ASSOCIATES INC.
THE MAXWELL CENTRE, SUITE 100
32-20TH STREET
WHEELING, WV 26003
PH: 304-233-0140
FAX: 304-233-4613

05/08/13 01:16:09 PM
West Virginia Purchasing Division

BIDDERS MAY ALSO EXAMINE BID DOCUMENTS AT SEVERAL OTHER
LOCATIONS NOTED BELOW:

SIGNATURE _____   TELEPHONE 304-748-3338   DATE May 8, 2013

TITLE President   FEIN 47-0947745   ADDRESS CHANGES TO BE NOTED ABOVE

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

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Weirton, WV 26062

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26041   304-558-0220

DATE PRINTED: 03/21/2013

BID OPENING DATE: 04/23/2013   BID OPENING TIME 1:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT

OHIO VALLEY CONSTRUCTION EMPLOYERS COUNCIL
21 ARMORY DRIVE
WHEELING, WV 26003
PH. 304-242-0520
FAX 304-242-7261

GRAVE CREEK MOUND MUSEUM   PITTSBURGH BUILDERS EXCH.
801 JEFFERSON AVENUE   1813 FRANKLIN STREET
MOUNDSVILLE, WV 26041   PITTSBURGH, PA 15233
PH. 304-843-4128   PH. 412-922-4200
FAX 304-843-4131   FAX 412-938-9406

DODGE REPORTS   PARKERSBURG-MARIETTA
600 WATERFRONT DRIVE   CONTRACTORS ASSOCIATION
PITTSBURGH, PA 15222   4424 B EMERSON AVENUE
PH. 412-330-2205   PARKERSBURG, WV 26104
FAX 412-231-6662   PH. 304-485-6485
                                 FAX 304-428-7622

CONTRACTORS ASSOC. OF WV   CONST. EMPLOYERS ASSOC. WV
2114 KANAWHA BLVD. EAST   2794 WHITE HALL BLVD.
CHARLESTON, WV 25311   WHITE HALL, WV 26554
PH. 304-342-1166   PH. 304-367-1290
FAX: 304-342-1074   FAX: 304-367-0126

REFERENCE ATTACHED INSTRUCTIONS TO BIDDERS AND TERMS
& CONDITIONS

| 0001 | | JB | | 968-42 | $283,700.00 | $283,700.00 |
| | 1 | | | GENERAL CONSTRUCTION | | |

SIGNATURE: _[signature]_   TELEPHONE 304-748-3338   DATE May 8, 2013

TITLE President   FEIN 47-0947745   ADDRESS CHANGES TO BE NOTED ABOVE

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

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Solicitation

NUMBER	PAGE
DCH13059	3

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26041   304-558-0220

DATE PRINTED
03/21/2013

BID OPENING DATE: 04/23/2013   BID OPENING TIME   1:30PM

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
				LABOR, MATERIALS, EQUIPMENT & SUPPLIES FOR ENHANCEMENT OF THE THEATER AND RESTROOMS LOCATED AT GRAVE CREEK ARCHAEOLOGICAL COMPLEX, MOUNDSVILLE, WV		
				****** THIS IS THE END OF RFQ DCH13059 ****** TOTAL:		$283,700.⁰⁰

Two hundred eighty three thousand
Seven hundred and 00/100 dollars

SIGNATURE	TELEPHONE	DATE
(signature)	304-748-3338	May 8, 2013
TITLE President	FEIN 47-0947745	ADDRESS CHANGES TO BE NOTED ABOVE

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

ADDITIONAL TERMS AND CONDITIONS (Construction Contracts Only)

1. 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: N-Powell Company, Inc.

   Contractor's License No. WV037247

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

2. 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.

3. AIA DOCUMENTS: All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the AIA A101-2007 and A201-2007 or the A107-2007 documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein.

4. 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.

EXHIBIT "A"
DCH13059 -- BID FORM and Contractors' Bid Form

1. THE PROJECT AND THE PARTIES:
   1.1. TO:
      1.1.1. Owner

      Randall Reid-Smith, Commissioner
      West Virginia Division of Culture and History
      The Culture Center
      State Capitol Complex
      1900 Kanawha Boulevard East
      Charleston, WV 25305

   1.2. FOR:
      1.2.1. GraveCreek Mound Archeological Complex
      State Project Number: DCH13059
      Enhancement of Theater/ Restrooms

   1.3. DATE: May 8, 2013

   1.4. SUBMITTED BY:
      1.4.1. Bidders Full Name: Nichole P. Northcraft
         1.4.1.1.   Address: P O Box 239 / 3828 Main Street
         1.4.1.2.   City, State, Zip: Weirton, WV 26062

   1.5. ALTERNATES
      1.5.1. Alternate #1: Provide all demolition and new construction required to install the elevated
      floor access way between the rear of the Auditorium and the Stage. Include a credit for the
      reduction in the number of seating positions and a credit for finishes not required due to the
      displacement caused by the elevated floor access way. Include the glass guard rail and
      alterations at the wooden stage. Include all patching of existing surfaces.
      1.5.2. Alternate #1 Cost: Forty eight thousand seven hundred and 00/100
      _____ Dollars
      ($ 48,700.00), in lawful money of the United States of America.
      1.5.3. Alternate #2: Complete repair and refinishing of the existing wood stage. Repair water
      damaged areas with new matching wood. Repair stage nosing with matching materials.
      Replace heavy duty rubber base around perimeter of the stage.
      1.5.4. Alternate #2 Cost: Seven thousand seven hundred and 00/100
      _____ Dollars
      ($ 7700.00), in lawful money of the United States of America.

   1.6. OFFER:

Having examined the Place of the Work and all matters referred to in the Instruction to Bidders and the
Contract Documents prepared by McKinley & Associates and the State of West Virginia Terms and
Conditions & Instruction to Bidders for the above project, we the undersigned, hereby offer to enter
into a Contract to perform the Work for the Sum of:

EXHIBIT "A"
DCH13059 – BID FORM and Contractors' Bid Form

1.6.1. _Two hundred eighty three thousand seven hundred and 00/100_ _____ Dollars

($ _283,700.00_), in lawful money of the United States of America.

1.6.2. We have included the required <u>documents</u> as required by the **Instructions to Bidders**.

    1.6.2.1.   Bid Bond is included.

    1.6.2.2.   Bid Includes the following:

        1.6.2.2.1.   <u>West Virginia Contractor's License number, Drug Free Workplace Affidavit, and Purchasing Affidavit.</u>

        1.6.2.2.2.   All applicable federal taxes and State of West Virginia taxes are included in the Bid Sum.

1.7. ACCEPTANCE:

    1.7.1. This offer shall be open to acceptance and is irrevocable for ___60___ days from the bid closing date.

1.8. CONTRACT TIME

    1.8.1. If this Bid is accepted we will:

    1.8.2. Complete the Work in ___120___ Calendar Days from the **Notice to Proceed.**

1.9. LIQUDATED DAMAGES

    1.9.1. The Contractor agrees to pay Liquidated Damages in the amount of **Five Hundred Dollars** ($500.00) for every calendar day the project extends beyond the schedule noted in the Bid Form.

1.10. CHANGES TO THE WORK

    1.10.1. See Section 00 7300 Supplementary Conditions, Article 7.3 in the Project Manual

    1.10.2. When Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be:

        1.10.2.1. ___15___ Percent overhead and profit on the net cost of our own work.

        1.10.2.2. ___15___ Percent on the cost of work done by any Subcontractor.

    1.10.3. On work deleted from the Contract, our credit to Owner shall be Architect-approved net cost plus _2%_ of the overhead and profit percentage noted above.

1.11. ADDENDA

    1.11.1. <u>The enclosed addendum acknowledgement has been fully executed and enclosed with the bid.</u>

1.12. CONTRACTOR'S LICENSE

    1.12.1. West Virginia Code 21-11-2 requires that all persons desiring to perform contractual work in this State must be duly licensed. The West Virginia Contractors' Board is empowered to issue the Contractors' license. Application for a Contractors' license may be made by contacting the West Virginia Division of Labor, Building 6, Room B749, State Capitol Complex, Charleston, West Virginia, 25305. Telephone

EXHIBIT "A"
DCH13059 – BID FORM and Contractors' Bid Form

(304) 558-7890. West Virginia Code 21-11-2 requires any prospective Bidder to include the Contractors' License number on their Bid. The Successful Bidder will be required to furnish a copy of their Contractors' License prior to issuance of a Purchase Order/Contract.

1.13.   **BID FORM SIGNATURE(S)**
The Corporate Seal of:

N - Powell Company, Inc.
_____
(Bidder- Print the full name of your Firm)

Was hereunto affixed in the presence of

_____, President
(Authorized signing office, Title)

(Seal)

_____
(Authorized signing office, Title)

1.14.   If the Bid is a Joint Venture or Partnership, add additional forms of execution as required.

END OF BID FORM

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

STATE OF ___West Virginia___

COUNTY OF ___Brooke___, TO-WIT:

I, ___Nichole P. Northcraf___ after being first duly sworn, depose and state as follows:

1. I am an employee of ___N-Powell Company, Inc.___; and,
    (Company Name)

2. I do hereby attest that ___N-Powell Company, 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.

___N-Powell Company, Inc.___
(Company Name)

By: _____

Title: ___President___

Date: ___May 8, 2013___

Taken, subscribed and sworn to before me this __8__ day of __June 2013__.

By Commission expires ___June 26, 2016___

(Seal)

> **Official Seal**
> **Notary Public, State of West Virginia**
> Wendy J. Craft
> R.R. #1 Wm-24
> Colliers, WV 26035
> My commission expires June 26, 2016
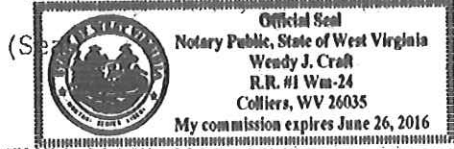
___Wendy J. Craft___
(Notary Public)

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.

Rev March 2009

RFQ No. DCH13059

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: Under W. Va. Code §5A-3-10a, 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: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. 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.

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.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"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 exceed five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: N-Powell, Company, Inc.

Authorized Signature: _(signature)_ Date: May 8, 2013

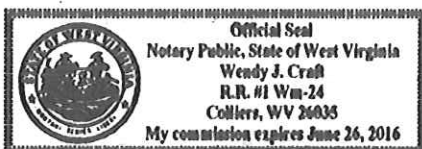State of West Virginia

County of Brooke , to-wit:

Taken, subscribed, and sworn to before me this 8th day of May , 20 13.

My Commission expires June 26 , 20 16.

AFFIX SEAL HERE

NOTARY PUBLIC Wendy J. Craft

Purchasing Affidavit (Revised 07/01/2012)

CERTIFICATION AND SIGNATURE PAGE

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.

N-Powell Company, Inc.
(Company)

(Authorized Signature)

Nichole P. Northcraft, President
(Representative Name, Title)

304-748-3338   304-748-2307
(Phone Number)   (Fax Number)

May 8, 2013
(Date)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: DCH13059

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.
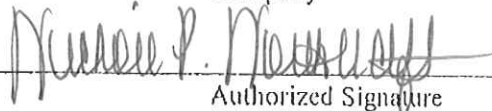
Addendum Numbers Received:
(Check the box next to each addendum received)

[X] Addendum No. 1   [ ] Addendum No. 6

[X] Addendum No. 2   [ ] Addendum No. 7

[X] Addendum No. 3   [ ] Addendum No. 8

[ ] Addendum No. 4   [ ] Addendum No. 9

[ ] Addendum No. 5   [ ] 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.

N-Powell Company, Inc.
_____
Company

_____
Authorized Signature

May 8, 2013
_____
Date

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

Revised 03/04/2013

▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼▼ \

CONTRACTOR LICENSE

Authorized by the

West Virginia Contractor Licensing Board

Number: WV037247

Classification:

GENERAL BUILDING

N-POWELL COMPANY INC
DBA N-POWELL COMPANY INC
PO BOX 239
WEIRTON, WV 26062

Date Issued	**Expiration Date**
JULY 12, 2012	JULY 12, 2013

Authorized Company Signature

Michael A. Carl
Chair, West Virginia Contractor
Licensing Board

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.

Agency _Purchasing Division_
REQ.P.O# _DCH13059_

BID BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, _N-Powell Company, Inc._
_____ of _Weirton_, _West Virginia_, as Principal, and _Western Surety Company_
_____ of _Sioux Falls_, _South Dakota_, a corporation organized and existing under the laws of the State of ____
South Dakota with its principal office in the City of _Sioux Falls_, as Surety, are held and firmly bound unto the State
of West Virginia, as Obligee, in the penal sum of _Five Percent (5%) of Bid_ ($_____) for the payment of which,
well and truly to be made, we jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns.

The Condition of the above obligation is such that whereas the Principal has submitted to the Purchasing Section of the
Department of Administration a certain bid or proposal, attached hereto and made a part hereof, to enter into a contract in writing for
Enhancement of the Theater and Restrooms at Grave Creek Archeological Complex, Moundsville, WV

NOW THEREFORE,

(a) If said bid shall be rejected, or
(b) If said bid shall be accepted and the Principal shall enter into a contract in accordance with the bid or proposal attached
hereto and shall furnish any other bonds and insurance required by the bid or proposal, and shall in all other respects perform the
agreement created by the acceptance of said bid, then this obligation shall be null and void, otherwise this obligation shall remain in full
force and effect. It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event,
exceed the penal amount of this obligation as herein stated.

The Surety, for the value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no
way impaired or affected by any extension of the time within which the Obligee may accept such bid, and said Surety does hereby
waive notice of any such extension.

IN WITNESS WHEREOF, Principal and Surety have hereunto set their hands and seals, and such of them as are corporations
have caused their corporate seals to be affixed hereunto and these presents to be signed by their proper officers, this
_23rd_ day of _April_, 20 _13_.

Principal Corporate Seal

N-Powell Company, Inc.
(Name of Principal)

By _____
(Must be President or
Vice President)

President
(Title)

Surety Corporate Seal

Western Surety Company
(Name of Surety)

Maggie Loeser Attorney-in-Fact

IMPORTANT – Surety executing bonds must be licensed in West Virginia to transact surety insurance. Raised corporate seals
must be affixed, a power of attorney must be attached.

WESTERN SURETY COMPANY
Sioux Falls, South Dakota
Statement of Net Admitted Assets and Liabilities
December 31, 2012

ASSETS

Bonds	$	1,544,217,378
Stocks		73,605,721
Cash and short-term investments		83,352,658
Uncollected premiums and agents' balances		37,034,747
Amounts recoverable from reinsurers		163,180
Net deferred tax asset		23,341,708
Electronic data processing equipment and software		47,102
Investment income due and accrued		18,997,574
Other assets		5,283,942
Total Assets	$	1,732,544,110

LIABILITIES AND SURPLUS

Losses	$	310,737,443
Loss adjustment expense		79,546,895
Contingent and other commissions payable		6,464,901
Other expenses		1,046,332
Taxes, licenses and fees		1,632,483
Unearned premiums		249,533,793
Other liabilities		31,210,018
Total Liabilities		680,145,567

Surplus Account:		
Capital paid up	4,000,000	
Gross paid in and contributed surplus	289,071,836	
Unassigned funds	758,326,707	
Surplus as regards policy holders	$	1,052,398,543
Total Liabilities and Capital	$	1,732,544,110

I, Ol B. Magnus, Assistant Vice President of Western Surety Company hereby certify that the above is an accurate representation of the financial statement of the Company dated December 31, 2012, as filed with the various Insurance Departments and is a true and correct statement of the condition of Western Surety Company as of that date.

Western Surety Company

By _____
Assistant Vice President

Subscribed and sworn to me this ___29th___ day of ___March___, 2013

My commission expires: _____
Notary Public
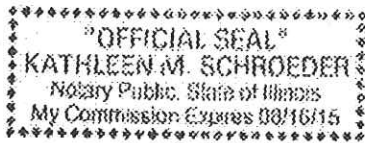
SECTION 275117 - AUDITORIUM SOUND SYSTEM

PART 1 - GENERAL

1.1   RELATED DOCUMENTS

   A.   Drawings and general provisions of the Contract, including General and Supplementary
        Conditions and Division 01 Specification Sections, apply to this Section.

1.2   SYSTEM DESCRIPTION

   A.   Provide a Sound System for the Museum's auditorium as indicated on the drawings and herein
        specified. This system shall include: Audio Rack that houses DSP, DVD Player, Wireless
        Microphones, Hearing Impaired System, Crestron Control, and Power Amplifier. Loudspeakers
        and all equipment required to make a complete and operating system as indicated on the sound
        system documents

   B.   A/V Integrator shall supply a Black Anodized 1/8 Aluminum panel to cover the existing Altec
        Wall Amplifier back box on stage right. This panel shall have cut-outs for the following
        equipment:

        (1)   Crestron TSW-700 Touch Screen
        (1)   Crestron DM-TX-200-2G AV Digital Interface Plate
        (1)   Neutrik 3 pin XLR Female Labeled Mic. 3

   C.   The sound system shall be activated by all Crestron control panels The Crestron Touchpanel
        control shall provide with the following attributes:

        1.   Sound System On/Off
        2.   Volume control for all the hardwire microphones input plates
        3.   Volume Control for 2 Wireless microphone
        4.   On/Off Projector and Up/Down Projector Screen Control
        5.   All playback controls for the DVD (audio and Video)
        6.   Control to select all CPU / AV Interface Plates
        7.   House light system presets control.

1.3   QUALIFICATIONS / QUALITY CONTROL

   A.   Bidding Qualifications **(Required with Bid package)**
        The Bid package will have a CD with the following information and Audio Equipment Specified
        in PDF format.

        1.   Sound system integrators shall be a direct factory authorized equipment dealer of all the
               equipment that will be provided on this project. All equipment must be provided by and
               installed by or under the direction of the primary AV integrator and not by a second AV
               integrator ensuring that only one AV Integrator will provide Training, service and
               warranty.

QUOTATION NUMBER: P5821
QUOTED BY: DBB

TO: Grave Creek Mound Museum
801 Jefferson Avenue
Moundville, WV 26041

RE:
DATE: 3/4/2013

CONTACT
PHONE
FAX

EMAIL

QUANTITY	MODEL NO.	MANUFACTURER	DESCRIPTION

Project No. ES13-111-34 Replace Auditorium Sound System

Click Below to View Data Sheet

000a		Spread Sheet		
000b	1	ACCENT AV QUALFICATIONS		
000c	1	Bi-Amp		
000d	1	CTS		
000e	1	Crestron		
000f	1	Crestron DM		
000g	1	Sound System Layout		
000h	1	Sound System Cable Layout		

Click to View
Factory-Authorized

Click Model Number to View Data Sheet

| | 000H | 1 | SEE All PDF IN Order | | |

	Model	Qty	Model No.	Manufacturer	Description		
Middle Atl	001	1	ERK-2725	Middle Atl	Stand-Alone Rack 27U Space		
Middle Atl	001	1	ERK-ST	Middle Atl	Solid Top		
Lowell	002	1	ACSPR-RPC1-2009-RT2	Lowell	VTE Power Panel		
Middle Atl	003	1	PD815R-PL	Middle Atl	Power Panel Less Switch		
BiAmp	004	1	NEXIA CS	BiAmp	NEXIA CS 10 x 6		
Telex	005	1	UAD4	Telex	Antenna and power splitter/combiner system		
Telex	005	4	TERMINATION-TP-2	Telex	50 ohm termination plug (TNC) for ACS-101		
Telex	006	1	FMR-500HD-*	Telex	FMR-500 Handheld System includes:		
Telex	006	1	FMR-500H/L-*	Telex	FMR-500 Combo System includes HT-500D handheld Mic and with		
					EV 767a dynamic mic, WT-500 Beltpack and RE97LTx Omnidirectional lapel mic		
Telex	007	1	ST-300	Telex	Assistive Listening Transmitter		
Telex	008	1	RM-S	Telex	Rack Mount Kit		
Denon	009	1	DBT1713UDP	Denon	DVD Blu-Ray Player		
Crestron	010	1	MC2E	Crestron	Processor		
Crestron	011	1	DM-MD6X1	Crestron	DM Switcher		
OPEN	012	1	TPE-S80	Trendnet	8 Port POE Switch System Switch		
Middle Atl	013	1	U1	Middle Atl	Utility Shelf 1U Rear Mounted		
RDL	014	1	STD 600	RDL	Balance Combine Unit 600 Ohm		
Yamaha	015	1	P2500s	Yamaha	Power Amp		
Proco	016	1	1477-03053B-01	Proco	Custom Rack Cover Altec Back Box Cut out Crestron Panel + AV Plate + Mic Conn		
Crestron	017	1	TSW-750	Crestron	Touch Panel		
Crestron	018	1	DM-TX-200-2G	Crestron	A/V Plate DigitalMedia™ CAT Transmitter 200 A/V Plate Apron Lt. and Rt		
Yamaha	019	1	IF2112/AS/Wht	Yamaha	Main Loudspeaker	White	60-100Deg. X60 Deg.
Yamaha	019	1	UB-2112/WHT	Yamaha	Loudspeaket U-Bracket	White	
Yamaha	020	1	IF2205Wht	Yamaha	Side Area Loudspeaker	White	90 Deg. X 60 Deg.
Yamaha	020	1	UB-2205/WHT	Yamaha	Loudspeaket U-Bracket	White	

Antenna

Telex	021	2	CLA-XX	Telex	1/2 Wave anenna.	
Telex	022	2	AB-2	Telex	Universal bracket for 1/2 wave antenna w/10' coax cable.	
Telex	023	2	CXU-50	Telex	50' 50 ohm low loss semi-flexible coaxial cable, TNC M Connetors	
Listen	024	1	LA-122	Listen	Hearing Impared Antenna	

Projector and Hardware

Lowell	025	1	ACSP-2002-VTC	Lowell	Surface Mount 1 Ckt Power Unit 20 Amp Surge Suppressor
Crestron	026	1	DM-RM-100	Crestron	Room controller-receiver for flat screen TV & Projector
Crestron	027	1	CBL-HD-DVI-3	Crestron	HDMI-DVI-D Cable

Personal Listening System Portable Equipment

Telex	007	4	SR-50	Telex	1 channel personal receiver
Telex	007	4	SEB-1	Telex	Ear Bud
Telex	007	1	SM-WP	Telex	Soundmate Plaque
Telex	007	4	CCS-12	Telex	Replacement Ear Cover

AV Wall Plates

Crestron	028	1	DM-TX-200-2G	Crestron	A/V Plate DigitalMedia™ CAT Transmitter 200 Stage Left Wall

Mic Wall Plate and Connector

Proco	029	1	WPE111	Proco	1 GANG SS MIC 3 W/1 XLRF Stage Left Wall.

Microphone and MISC

Shure	030	4	545SD-CN	Shure	Cardioid Dynamic With Switch
Proco	031	2	M25	Proco	Proco Mic.25' Cable
Atlas	032	1	MS10CE	Altas	Atlas Floor stand
Atlas	033	1	CO-1B	Atlas	Clamp-On Microphone Swivel
Atlas	034	1	GN-19E	Atlas	Ebony 19" Flexible Gooseneck
Crestron	035	1	DM-CONN-20	Crestron	DM Connectors
Crestron	036	1	DM-CBL-NP-SP500	Crestron	DigitalMedia™ Cable, Non plenum-rated 500'

Accent ESI is comprised of former Stanley Systems Integrators employees, who have designed, installed and serviced the following Audio / Video Systems.

Accent ESI Audio/Video System Designer – Dave Baret (Formerly of Stanley)
Accent ESI Audio/Video System Technician – Jason Godek (Formerly of Stanley)

REFERENCE PROJECTS- SIMILAR SIZE AND SCOPE
FIELD ENGINEERED, INSTALLED, SUPERVISED ETC.

10/10	DUQUESNE UNIVERSITY MARY PAPPERT SCHOOL OF MUSIC	THOMAS J. HASS OPERATIONS MANAGER	(412)-396-1695
06/10	WEST ALLEGHENY HIGH SCHOOL AUDITORIUM SOUND SYSTEM	TOM SNYDER HIGH SCHOOL MUSIC	(724)-695-7368
10/09	BURGETTSTOWN AREA /HIGH SCHOOL AUDITORIUM + GYM SOUND SYSTEM	PHYZZ	(724)-947-8100
10/09	CENTER CREATIVE PERFORMING ARTS LITTLE THEATER SOUND SYSTEM	CHRIS HOWARD THEATER MANAGER	(412) 338-6100
10/09	US OFFICE OF PERSONNEL MGMT TRAINING ROOM A/V SYSTEMS	BOB NEFF EC	(724)-658-8186
08/09	PA TECH & TRAINING ASSISTANCE NETWK TRAINING ROOM A/V SYSTEM	DONNA SCHNEPP BUSINESS SITE MANAGER	(412)-826-2336
08/08	QUAKER VALLEY HIGH SCHOOL AUDITORIUM SOUND SYSTEM	MATTHEW BOYCE HIGH SCHOOL MUSIC	(412)-749-6000
08/08	TRINITY HIGH SCHOOL AUDITORIUM AV SYSTEM	JOHN DEEGAN DIRECTOR of TECHNOLOGY	(724)-225-5380
01/08	SHAKER HEIGHTS H.S. AUDITORIUM SOUND SYSTEM	CHUCK TESSDALE STAGE DIRECTOR	(216) 295 4200
01/08	DUQUESNE UNIVERSITY POWER CENTER AUDIO AND VIDEO SYSTEMS	FACILITIES MANAGEMENT MARK MINOSKI AUDIO VIDEO CONSULTANT SEXTANT GROUP	(412) 396 6596 (412) 323 8580
10/07	AMBRIDGE AREA HIGH SCHOOL AUDIO AND VIDEO SYSTEMS	FOREMAN ARCHITECTS / ENGINEERS DAYNE VOLZ	(724) 452-9690
4/07	CHRIST CHURCH AT GROVE FARM AUDIO AND VIDEO SYSTEMS	DAVID CASE AUDIO VIDEO CONSULTANT	(412) 281-8500
7/06	FAIRFIELD MUNICIPAL COURT AUDIO AND VIDEO SYSTEMS	JOYCE A. CAMPBELL JUDGE	(513) 867-6002
1/07	NORTH HILL HIGH SCHOOL AUDIO AND VIDEO SYSTEMS	PAT MANNARINO PRINCIPAL	(412) 318 2247

11/03	SLIPPERY ROCK UNIVERSITY EISENBERG HALL AUDIO/VISUAL SYSTEM	ANDY WILSON FACILITIES DIRECTOR	(724) 738-2964
1/07	NEWARK SCIENCE PARK HIGH SCHOOL EDUCATIONAL FACILITY A/V SYSTEMS	JOHN MOORE MEP PROJECT MANAGER	(732) 923-1515
3/07	CHARTIERS VALLEY HIGH SCHOOL THEATER SOUND SYSTEM	ART TURNER FACILTIES MANAGER	(412) 429-3708
6/05	WEST BRANCH AREA HIGH SCHOOL AUDITORIUM A/V SYSTEM	BILL GABEL MUSIC DIRECTOR	(814) 345-6523
4/05	SOUTH PARK HIGH SCHOOL AUDITORIUM A/V SYSTEM	STEVE COTHERMAN ENGINEER	(724) 477-1240
1/05	NESHANNOCK SCHOOL DISTRICT BOARD ROOM A/V SYSTEM	MAYNARD HARVEY PRINCIPAL	(724) 658-5513
11/04	SCHENLEY HIGH SCHOOL AUDITORIUM SOUND REINFORCEMENT SYSTEM	CONNIE LUCAS	(412) 488-4323
10/04	MARS HIGH SCHOOL AUDITORIUM SOUND REINFORCEMENT SYSTEM	JEFF BITZER	(724) 625-1518
10/04	ST. CATHERINE OF SWEDEN SOUND REINFORCEMENT SYSTEM	FR. REGIS FARMER	(412) 486-6001
04/04	GREATER WORKS OUTREACH SOUND REINFORCEMENT SYSTEM	AARON SCHWINBERG	(412) 583-6665
02/04	JOHNSTOWN HIGH SCHOOL THEATER SOUND REINFORCEMENT SYSTEM	DAN MEYERS	(814) 533-5601
10/03	MELLON ARENA SOUND SYSTEM BALTZELL AUDIO DESIGN	PAUL SIMPSON PAT BALTZELL	(412) 642-1800 ENGINEERED, (818) 986-3520
9/03	UNION SWITCH & SIGNAL TRAINING CONFERENCE CENTER AUDIO/VISUAL SYSTEM UPGRADES	LINDA FRY	(412) 688-2400
08/03	SENECA VALLEY HIGH SCHOOL IHS AUDITORIUM SOUND SYSTEM	TIM HALL	(724) 452-6040 EXT 183
2/03	SOMERSET COURTHOUSE ENGINEERED BY THE SEXTANT GROUP COURTROOM AUDIO/CONTROL SYSTEM	JUDGE CASSIO	(814) 445-1400
10/02	SOUTH FAYETTE HIGH SCHOOL AUDITORIUM SOUND SYSTEM	GENE MANZINI	(412) 221-4542 EXT 234
08/02	VANCE PRESBYTERIAN CHURCH CHURCH SOUND SYSTEM	MIKE HOOPER	(304) 233-4000
03/02	CANON-MCMILLAN HIGH SCHOOL	ROB MARTENI	(724) 745-1400

AUDITORIUM SOUND SYSTEM

12/01   PITTSBURGH INTERNATIONAL AIRPORT   PAUL HOBAK   (412) 472-3532
        OPERATIONS CENTER AUDIO/VISUAL SYSTEM

<u>OTHER REFERENCE SYSTEMS</u>

BY DAVE BARET FOR GRAY SOUND

08/00   ERIE PLAYHOUSE THEATRE   SCOTT SESLER   (814) 453-4905
        COMPLEX THEATRE SOUND SYSTEM
        ENGINEER, INSTALLED, ETC. DAVE BARET

06/00   CARNEGIE LIBRARY HOMESTEAD   BONNIE HARVEY   (412) 462-3444
        AUDITORIUM SOUND SYSTEM
        ENGINEER, INSTALLED, ETC. DAVE BARET

11/99   O'REILLY THEATRE   ZACH MORRES   (412) 316-8200
        COMPLEX THEATRE SOUND SYSTEM
        FIELD ENGINEER TECH, ETC. DAVE BARET

11/99   LATROBE HIGH SCHOOL   LARRY STAUFFER   (724) 539-4211
        COMPLEX THEATRE SOUND SYSTEM
        FIELD ENGINEER TECH, ETC. DAVE BARET

08/87   BENEDUM CENTER THEATRE   CHRIS EVANS   (412) 456-2609
        COMPLEX THEATRE SOUND SYSTEM
        FIELD ENGINEER TECH, ETC. DAVE BARET
                        <u>QUALIFICATION OF TECHNICIANS/PERSONNEL</u>

PROJECT EXECUTIVE/SYSTEMS DESIGN ENGINEER
DAVE BARET

May 2008- PRESENT   ACCENT ELECTRONIC SYSTEM INTEGRATORS
                           PRO-SOUND SALES AND ENGINEERING
                           PROJECT FINAL EQUALIZATION AND TESTING SYSTEMS
                           CERTIFED AUDIO SYSTEM DESIGNER

2000- May 2008   STANLEY/COMM-GROUP
                           PRO-SOUND SALES AND ENGINEERING
                           PROJECT FINAL EQUALIZATION AND TESTING SYSTEMS
                           CERTIFED AUDIO SYSTEM DESIGNER

1975-2000   GRAY SOUND & COMMUNICATIONS
                           PROJECT MANAGER

FIELD SUPERVISION & FOREMAN
SITE ENGINEERING
TECHNICIAN, INSTALLER & SERVICE
PRO-SOUND SYSTEM ENGINEERING
PROJECT FINAL EQUALIZATION AND TESTING SYSTEMS
TRAINNING & FINAL DOCUMENTATION

LEAD TECHNICIAN/SYSTEMS PROGRAMMER
JASON GODEK, CTS   CERTIFIED TECHNOLOGY SPECIALIST (CTS)
                           BIAMP AUDIA CERTIFIED DESIGNER
                           CRESTRON LEVEL 2 PROGRAMMER
                           TANDBERG CERTIFIED ENGINEER

May2008- PRESENT   ACCENT ELECTRONIC SYSTEM INTEGRATORS
                           FIELD SUPERVISION
                           PROJECT MANAGEMENT
                           TECHNICIAN, PRO-SOUND/AV SYSTEMS
                           INSTALLATION & SERVICE
                           SYSTEMS PROGRAMMING, EQUALIZATION,
                           AND TESTING SYSTEMS
                           TRAINING & FINAL DOCUMENTATION

2002-2008   STANLEY/COMM-GROUP/BPS
                           FIELD SUPERVISION
                           PROJECT MANAGEMENT
                           TECHNICIAN, PRO-SOUND/AV SYSTEMS
                           INSTALLATION & SERVICE
                           SYSTEMS PROGRAMMING, EQUALIZATION,
                           AND TESTING SYSTEMS
                           TRAINING & FINAL DOCUMENTATION

2000-2002   GRAY SOUND & COMMUNICATIONS
                           FIELD SUPERVISION
                           TECHNICIAN, INSTALLER & SERVICE
                           PRO-SOUND/AV SYSTEMS TECHICIAN
                           EQUALIZATION AND TESTING SYSTEMS

TECHNICIAN
GREGG LAFEVER

July 2009- PRESENT ACCENT ELECTRONIC SYSTEM INTEGRATORS
                           FIELD SUPERVISION
                           PROJECT MANAGEMENT
                           TECHNICIAN, PRO-SOUND/AV SYSTEMS
                           INSTALLATION & SERVICE
                           SYSTEMS PROGRAMMING, EQUALIZATION,
                           AND TESTING SYSTEMS

2000-2009   TRAFFIC.COM/ NAVTEQ
                      DESIGN/BUILD ON-AIR & RECORDED RADIO STUDIOS
                      DESIGN/BUILD TV STUDIOS
                      A/V TECHNICIA/ AV SYSTEMS
                      INSTALLATION & SERVICE
                      SYSTEMS PROGRAMMING,
                      AND TESTING
                      TRAINING & FINAL DOCUMENTATION

OPERATIONS MANAGER
MICHAEL ROBBINS

PROJECT MANAGER
MICHAEL HAVEY

PRINCIPAL/ VP OF SALES
PAUL CARUSO

*ALL OTHER PERSONNEL INFORMATION AVAILABLE UPON REQUEST

TEST EQUIPMENT & SOFTWARE

- SIA SOFTWARE SMART LIVE ACOUSTIC, ANALYSIS & REAL TIME SOFTWARE

- EASE 4.0 ENHANCED ACOUSTIC SIMULATOR FOR ENGINEERS SOFTWARE

- DELL LATITUDE D-830 NOTEBOOK COMPUTER

- SOUND DEVICES USB-PRE A/D & D/A PREAMP

- 4-EARTHWORKS M-30 MEASUREMENT MICROPHONES

- STUDIO TECHNOLOGIES MODEL 90 SWITCHER

- IVIE IE-30A REAL TIME ANALYZER

- IVIE IE-20B NOISE GENERATOR

- HEWLETT PACKARD 209H AUDIO OSCILLATOR

- SENNHEISER ZP-2 ANALOG IMPEDANCE METER

- GOLDLINE ZM1P DIGITAL IMPEDANCE METER

- GALAXY AUDIO POLARITY TEST EQUIPMENT (CRICKET TX/RX)

- EXTRON VTG 300

- BECKMAN IND. FG2A FUNCTION GENERATOR

- TEKTRONIX 2246 100 MHz OSCILLOSOPE

- GALAXY AUDIO Cricket Pulse Generator and Detector Polarity Test System

- TEKTRONIX 100 MHz 2 Channel Oscilloscope

- HEWLETT PACKARD Audio Generator with low distortion

- FLUKE Digital Multimeter

- SIMPSOM VOM / VTVM Multimeter Meter

- Whirlwind MCT-7 Cable Detective Cable Testing Unit

Audia

DIGITAL AUDIO PLATFORM

Certificate of Achievement

AWARDED TO:

Jason Godek

For successfully completing Biamp Systems' Audia Training Course

ON:

April 07, 2004

AWARDED BY:

Ned Ludlum, Training Director

BIAMP

...your partner in audio excellence!

Certified Technology Specialist

Jason Godek

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
March 12, 2010

Date of Expiration
March 31, 2013

Certification Number
1274080

Spencer Bullins, CTS
Chair, InfoComm independent
Certification Committee

infoComm
INTERNATIONAL

CRESTRON ®

Crestron Training awarded to

crestron
TECHNICAL INSTITUTE

JASON GODEK

for successfully completing

INTERMEDIATE CRESTRON PROGRAMMING

May 18, 2006

Date

Authorized Signature

CRESTRON®

Crestron Training awarded to

crestron
TECHNICAL INSTITUTE

JASON GODEK

for successfully completing

DIGITAL MEDIA

November 17, 2009

Date

Authorized Signature

REVISIONS

Revision	Date	Description

SWITCHCRAFT
C3F
(Existing Floor Pocket Ring)
STAGE CENTER
FLOOR MICROPHONE

STAGE LEFT
WALL
WPE-111

BI AMP
NEXIA CS
DSP

YAMAHA
P2500S
AMPLIFIER

YAMAHA
IF2112/AS/W
MAIN LOUDSPEAKER

AMP #1

YAMAHA
IF2205W
SIDE SEATING AREA LOUDSPEAKER

TELEX
CLA
ANTENNAS

TELEX
FMR-500
WIRELESS MIC RECEIVER

TELEX
FMR-500
WIRELESS MIC RECEIVER

TELEX
ANTENNA SPLITTER

TELEX
SM-300
ASSISTED LISTENING TRANSMITTER

LISTEN TECHNOLOGIES
LA-122
HEARING IMPAIRED ANTENNA

AUDIO L
AUDIO R
STICK-ON
RADIO DESIGN LABS
STD-600
AUDIO DIVIDER/COMBINER

CRESTRON
TSW-750
7" TOUCHSCREEN

CRESTRON
DM MDfx1
DIGITAL MEDIA SWITCHER

DENON
DBT-1713UDP
DVD PLAYER

CRESTRON
DM-TX-200-2G
WALL PLATE DIGITALMEDIA
STAGE LEFT
WALL

HDMI 3

DM-MD 4

DM-MD 5

CRESTRON
DM-TX-200-2G
WALL PLATE DIGITALMEDIA

STAGE RIGHT
PROSCENIUM WALL BOX

CRESTRON
DM RMC-100
DIGITAL MEDIA RECEIVER

PROJECTOR
(BY OWNER)

PROJECTOR
SCREEN
(BY OWNER)

LVC

LOWELL
ACSP-2002-VTE
POWER SURGE SUPPRESSOR

AC

TRENDNET
TPE-S80
8-PORT SWITCH

CRESTRON NETWORK

TEST

CRESTRON
CEN-HPRFGW
WIRELESS GATEWAY

CRESTRON
MC2E
CONTROLLER

MIDDLE ATLANTIC
PD-815-PL
RACKMOUNT POWER

NET

RS232
RELAY 3 & 4
RS232

CRESTRON
PW-2420R4
POWER SUPPLY

AC

LIGHTING
CONTROLLER
(BY OTHERS)

LOWELL
ACSPR-8PC1-2009-RT
POWER PANEL

AC

ES1.00

TELEX
CLA
ANTENNAS

(2) Telex CXU-50

(1) WP-810

LISTEN TECHNOLOGIES
LA-122
HEARING IMPAIRED ANTENNA

(1) WP-291

STAGE LEFT
WALL
WPE-111

YAMAHA
IF2112/AS/W
MAIN LOUDSPEAKER

(1) WP-227

CRESTRON
DM-TX-200-2G
WALL PLATE DIGITALMEDIA

(1) Crestron DM-MD

STAGE LEFT
WALL

(1) WP-227

YAMAHA
IF2205W
SIDE SEATING AREA LOUDSPEAKER

SWITCHCRAFT
C3F
(Existing Floor Pocket Ring)

(1) WP-291

STAGE CENTER
FLOOR MICROPHONE

LVC

PROJECTOR
(BY OWNER)

(1) Crestron DM-MD

CRESTRON
TSW-750
7" TOUCHSCREEN

(1) Crestron DM-MD

A/V
RACK

CRESTRON
DM-TX-200-2G
WALL PLATE DIGITALMEDIA

(1) Crestron DM-MD

(1) WP-148

(1) WP-291

STAGE RIGHT
PROSCENIUM WALL BOX

(1) WP-4246

LIGHTING
CONTROLLER

(BY OTHERS)

(1) 120V, 20A
Circuit

REVISIONS

Revision	Date	Description

WEST VIRGINIA DIVISION OF CULTURE AND HISTORY
GRAVE CREEK MOUND ARCHAEOLOGICAL COMPLEX

GRAVE CREEK MOUND
MUSEUM

801 JEFFERSON AVENUE
MOUNDSVILLE, WEST VIRGINIA

SOUND SYSTEM

SOUND SYSTEM
CABLING DIAGRAM

Sales: DB
Design: DB
Proj. Mgnt:

Drawn By: CMH
Checked By: DB
Date: 03/08/2013
Job Number: P5821

Scale: NOT TO SCALE

ES2.00

ACCENT
ELECTRONIC SYSTEMS INTEGRATORS

QUOTATION NUMBER: P5821
QUOTED BY: DBB

TO: Grave Creek Mound Museum
801 Jefferson Avenue
Moundville, WV 26041

RE:
DATE: 3/4/2013

CONTACT
PHONE
FAX

EMAIL

QUANTITY	MODEL NO.	MANUFACTURER	DESCRIPTION

Project No. ES13-111-34 Replace Auditorium Sound System

Click Below to View Data Sheet

000a			Spread Sheet
000b	1		ACCENT AV QUALFICATIONS
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000d	1		CTS
000e	1		Crestron
000f	1		Crestron DM
000g	1		Sound System Layout
000h	1		Sound System Cable Layout

Click to View
Factory-Authorized

Click Model Number to View Data Sheet

	000H	1		**SEE All PDF IN Order**		

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Denon	009	1	DBT1713UDP	Denon	DVD Blu-Ray Player	
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Crestron	011	1	DM-MD6X1	Crestron	DM Switcher	
OPEN	012	1	TPE-S80	Trendnet	8 Port POE Switch System Switch	
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Yamaha	019	1	UB-2112/WHT	Yamaha	Loudspeaket U-Bracket	White	
Yamaha	020	1	IF2205Wht	Yamaha	Side Area Loudspeaker	White	90 Deg. X 60 Deg.
Yamaha	020	1	UB-2205/WHT	Yamaha	Loudspeaket U-Bracket	White	

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Telex	007	4	SEB-1	Telex	Ear Bud
Telex	007	1	SM-WP	Telex	Soundmate Plaque
Telex	007	4	CCS-12	Telex	Replacement Ear Cover

AV Wall Plates

Crestron	028	1	DM-TX-200-2G	Crestron	A/V Plate DigitalMedia™ CAT Transmitter 200 Stage Left Wall

Mic Wall Plate and Connector

Proco	029	1	WPE111	Proco	1 GANG SS MIC 3 W/1 XLRF Stage Left Wall.

Microphone and MISC

Shure	030	4	545SD-CN	Shure	Cardioid Dynamic With Switch
Proco	031	2	M25	Proco	Proco Mic.25' Cable
Atlas	032	1	MS10CE	Altas	Atlas Floor stand
Atlas	033	1	CO-1B	Atlas	Clamp-On Microphone Swivel
Atlas	034	1	GN-19E	Atlas	Ebony 19" Flexible Gooseneck
Crestron	035	1	DM-CONN-20	Crestron	DM Connectors
Crestron	036	1	DM-CBL-NP-SP500	Crestron	DigitalMedia™ Cable, Non plenum-rated 500'

Accent ESI is comprised of former Stanley Systems Integrators employees, who have designed, installed and serviced the following Audio / Video Systems.

Accent ESI Audio/Video System Designer – Dave Baret (Formerly of Stanley)
Accent ESI Audio/Video System Technician – Jason Godek (Formerly of Stanley)

REFERENCE PROJECTS- SIMILAR SIZE AND SCOPE
FIELD ENGINEERED, INSTALLED, SUPERVISED ETC.

10/10	DUQUESNE UNIVERSITY MARY PAPPERT SCHOOL OF MUSIC	THOMAS J. HASS OPERATIONS MANAGER	(412)-396-1695
06/10	WEST ALLEGHENY HIGH SCHOOL AUDITORIUM SOUND SYSTEM	TOM SNYDER HIGH SCHOOL MUSIC	(724)-695-7368
10/09	BURGETTSTOWN AREA /HIGH SCHOOL AUDITORIUM + GYM SOUND SYSTEM	PHYZZ	(724)-947-8100
10/09	CENTER CREATIVE PERFORMING ARTS LITTLE THEATER SOUND SYSTEM	CHRIS HOWARD THEATER MANAGER	(412) 338-6100
10/09	US OFFICE OF PERSONNEL MGMT TRAINING ROOM A/V SYSTEMS	BOB NEFF EC	(724)-658-8186
08/09	PA TECH & TRAINING ASSISTANCE NETWK TRAINING ROOM A/V SYSTEM	DONNA SCHNEPP BUSINESS SITE MANAGER	(412)-826-2336
08/08	QUAKER VALLEY HIGH SCHOOL AUDITORIUM SOUND SYSTEM	MATTHEW BOYCE HIGH SCHOOL MUSIC	(412)-749-6000
08/08	TRINITY HIGH SCHOOL AUDITORIUM AV SYSTEM	JOHN DEEGAN DIRECTOR of TECHNOLOGY	(724)-225-5380
01/08	SHAKER HEIGHTS H.S. AUDITORIUM SOUND SYSTEM	CHUCK TESSDALE STAGE DIRECTOR	(216) 295 4200
01/08	DUQUESNE UNIVERSITY POWER CENTER AUDIO AND VIDEO SYSTEMS	FACILITIES MANAGEMENT MARK MINOSKI AUDIO VIDEO CONSULTANT SEXTANT GROUP	 (412) 396 6596 (412) 323 8580
10/07	AMBRIDGE AREA HIGH SCHOOL AUDIO AND VIDEO SYSTEMS	FOREMAN ARCHITECTS / ENGINEERS DAYNE VOLZ	 (724) 452-9690
4/07	CHRIST CHURCH AT GROVE FARM AUDIO AND VIDEO SYSTEMS	DAVID CASE AUDIO VIDEO CONSULTANT	(412) 281-8500
7/06	FAIRFIELD MUNICIPAL COURT AUDIO AND VIDEO SYSTEMS	JOYCE A. CAMPBELL JUDGE	(513) 867-6002
1/07	NORTH HILL HIGH SCHOOL AUDIO AND VIDEO SYSTEMS	PAT MANNARINO PRINCIPAL	(412) 318 2247

11/03	SLIPPERY ROCK UNIVERSITY EISENBERG HALL AUDIO/VISUAL SYSTEM	ANDY WILSON FACILITIES DIRECTOR	(724) 738-2964
1/07	NEWARK SCIENCE PARK HIGH SCHOOL EDUCATIONAL FACILITY A/V SYSTEMS	JOHN MOORE MEP PROJECT MANAGER	(732) 923-1515
3/07	CHARTIERS VALLEY HIGH SCHOOL THEATER SOUND SYSTEM	ART TURNER FACILTIES MANAGER	(412) 429-3708
6/05	WEST BRANCH AREA HIGH SCHOOL AUDITORIUM A/V SYSTEM	BILL GABEL MUSIC DIRECTOR	(814) 345-6523
4/05	SOUTH PARK HIGH SCHOOL AUDITORIUM A/V SYSTEM	STEVE COTHERMAN ENGINEER	(724) 477-1240
1/05	NESHANNOCK SCHOOL DISTRICT BOARD ROOM A/V SYSTEM	MAYNARD HARVEY PRINCIPAL	(724) 658-5513
11/04	SCHENLEY HIGH SCHOOL AUDITORIUM SOUND REINFORCEMENT SYSTEM	CONNIE LUCAS	(412) 488-4323
10/04	MARS HIGH SCHOOL AUDITORIUM SOUND REINFORCEMENT SYSTEM	JEFF BITZER	(724) 625-1518
10/04	ST. CATHERINE OF SWEDEN SOUND REINFORCEMENT SYSTEM	FR. REGIS FARMER	(412) 486-6001
04/04	GREATER WORKS OUTREACH SOUND REINFORCEMENT SYSTEM	AARON SCHWINBERG	(412) 583-6665
02/04	JOHNSTOWN HIGH SCHOOL THEATER SOUND REINFORCEMENT SYSTEM	DAN MEYERS	(814) 533-5601
10/03	MELLON ARENA SOUND SYSTEM BALTZELL AUDIO DESIGN	PAUL SIMPSON PAT BALTZELL	(412) 642-1800 ENGINEERED, (818) 986-3520
9/03	UNION SWITCH & SIGNAL TRAINING CONFERENCE CENTER AUDIO/VISUAL SYSTEM UPGRADES	LINDA FRY	(412) 688-2400
08/03	SENECA VALLEY HIGH SCHOOL IHS AUDITORIUM SOUND SYSTEM	TIM HALL	(724) 452-6040 EXT 183
2/03	SOMERSET COURTHOUSE ENGINEERED BY THE SEXTANT GROUP COURTROOM AUDIO/CONTROL SYSTEM	JUDGE CASSIO	(814) 445-1400
10/02	SOUTH FAYETTE HIGH SCHOOL AUDITORIUM SOUND SYSTEM	GENE MANZINI	(412) 221-4542 EXT 234
08/02	VANCE PRESBYTERIAN CHURCH CHURCH SOUND SYSTEM	MIKE HOOPER	(304) 233-4000
03/02	CANON-MCMILLAN HIGH SCHOOL	ROB MARTENI	(724) 745-1400

AUDITORIUM SOUND SYSTEM

12/01   PITTSBURGH INTERNATIONAL AIRPORT   PAUL HOBAK   (412) 472-3532
OPERATIONS CENTER AUDIO/VISUAL SYSTEM

OTHER REFERENCE SYSTEMS

BY DAVE BARET FOR GRAY SOUND

08/00   ERIE PLAYHOUSE THEATRE   SCOTT SESLER   (814) 453-4905
COMPLEX THEATRE SOUND SYSTEM
ENGINEER, INSTALLED, ETC. DAVE BARET

06/00   CARNEGIE LIBRARY HOMESTEAD   BONNIE HARVEY   (412) 462-3444
AUDITORIUM SOUND SYSTEM
ENGINEER, INSTALLED, ETC. DAVE BARET

11/99   O'REILLY THEATRE   ZACH MORRES   (412) 316-8200
COMPLEX THEATRE SOUND SYSTEM
FIELD ENGINEER TECH, ETC. DAVE BARET

11/99   LATROBE HIGH SCHOOL   LARRY STAUFFER   (724) 539-4211
COMPLEX THEATRE SOUND SYSTEM
FIELD ENGINEER TECH, ETC. DAVE BARET

08/87   BENEDUM CENTER THEATRE   CHRIS EVANS   (412) 456-2609
COMPLEX THEATRE SOUND SYSTEM
FIELD ENGINEER TECH, ETC. DAVE BARET
QUALIFICATION OF TECHNICIANS/PERSONNEL

PROJECT EXECUTIVE/SYSTEMS DESIGN ENGINEER
DAVE BARET

May 2008- PRESENT   ACCENT ELECTRONIC SYSTEM INTEGRATORS
PRO-SOUND SALES AND ENGINEERING
PROJECT FINAL EQUALIZATION AND TESTING SYSTEMS
CERTIFED AUDIO SYSTEM DESIGNER

2000- May 2008   STANLEY/COMM-GROUP
PRO-SOUND SALES AND ENGINEERING
PROJECT FINAL EQUALIZATION AND TESTING SYSTEMS
CERTIFED AUDIO SYSTEM DESIGNER

1975-2000   GRAY SOUND & COMMUNICATIONS
PROJECT MANAGER

FIELD SUPERVISION & FOREMAN
SITE ENGINEERING
TECHNICIAN, INSTALLER & SERVICE
PRO-SOUND SYSTEM ENGINEERING
PROJECT FINAL EQUALIZATION AND TESTING SYSTEMS
TRAINNING & FINAL DOCUMENTATION

LEAD TECHNICIAN/SYSTEMS PROGRAMMER

JASON GODEK, CTS   CERTIFIED TECHNOLOGY SPECIALIST (CTS)
                          BIAMP AUDIA CERTIFIED DESIGNER
                          CRESTRON LEVEL 2 PROGRAMMER
                          TANDBERG CERTIFIED ENGINEER

May2008- PRESENT   ACCENT ELECTRONIC SYSTEM INTEGRATORS
                          FIELD SUPERVISION
                          PROJECT MANAGEMENT
                          TECHNICIAN, PRO-SOUND/AV SYSTEMS
                          INSTALLATION & SERVICE
                          SYSTEMS PROGRAMMING, EQUALIZATION,
                          AND TESTING SYSTEMS
                          TRAINING & FINAL DOCUMENTATION

2002-2008   STANLEY/COMM-GROUP/BPS
                          FIELD SUPERVISION
                          PROJECT MANAGEMENT
                          TECHNICIAN, PRO-SOUND/AV SYSTEMS
                          INSTALLATION & SERVICE
                          SYSTEMS PROGRAMMING, EQUALIZATION,
                          AND TESTING SYSTEMS
                          TRAINING & FINAL DOCUMENTATION

2000-2002   GRAY SOUND & COMMUNICATIONS
                          FIELD SUPERVISION
                          TECHNICIAN, INSTALLER & SERVICE
                          PRO-SOUND/AV SYSTEMS TECHICIAN
                          EQUALIZATION AND TESTING SYSTEMS

TECHNICIAN
GREGG LAFEVER

July 2009- PRESENT   ACCENT ELECTRONIC SYSTEM INTEGRATORS
                          FIELD SUPERVISION
                          PROJECT MANAGEMENT
                          TECHNICIAN, PRO-SOUND/AV SYSTEMS
                          INSTALLATION & SERVICE
                          SYSTEMS PROGRAMMING, EQUALIZATION,
                          AND TESTING SYSTEMS

TRAINING & FINAL DOCUMENTATION

2000-2009   TRAFFIC.COM/ NAVTEQ
                   DESIGN/BUILD ON-AIR & RECORDED RADIO STUDIOS
                   DESIGN/BUILD TV STUDIOS
                   A/V TECHNICIA/ AV SYSTEMS
                   INSTALLATION & SERVICE
                   SYSTEMS PROGRAMMING,
                   AND TESTING
                   TRAINING & FINAL DOCUMENTATION

OPERATIONS MANAGER
MICHAEL ROBBINS

PROJECT MANAGER
MICHAEL HAVEY

PRINCIPAL/ VP OF SALES
PAUL CARUSO

*ALL OTHER PERSONNEL INFORMATION AVAILABLE UPON REQUEST

98 Vanadium Road · Bldg. D · Bridgeville, PA 15017 · Phone 412-220-9700 · Fax: 412-220-9701

TEST EQUIPMENT & SOFTWARE

- SIA SOFTWARE SMART LIVE ACOUSTIC, ANALYSIS & REAL TIME SOFTWARE

- EASE 4.0 ENHANCED ACOUSTIC SIMULATOR FOR ENGINEERS SOFTWARE

- DELL LATITUDE D-830 NOTEBOOK COMPUTER

- SOUND DEVICES USB-PRE A/D & D/A PREAMP

- 4-EARTHWORKS M-30 MEASUREMENT MICROPHONES

- STUDIO TECHNOLOGIES MODEL 90 SWITCHER

- IVIE IE-30A REAL TIME ANALYZER

- IVIE IE-20B NOISE GENERATOR

- HEWLETT PACKARD 209H AUDIO OSCILLATOR

- SENNHEISER ZP-2 ANALOG IMPEDANCE METER

- GOLDLINE ZM1P DIGITAL IMPEDANCE METER

- GALAXY AUDIO POLARITY TEST EQUIPMENT (CRICKET TX/RX)

- EXTRON VTG 300

- BECKMAN IND. FG2A FUNCTION GENERATOR

- TEKTRONIX 2246 100 MHz OSCILLOSOPE

- GALAXY AUDIO Cricket Pulse Generator and Detector Polarity Test System

- TEKTRONIX 100 MHz 2 Channel Oscilloscope

- HEWLETT PACKARD Audio Generator with low distortion

- FLUKE Digital Multimeter

- SIMPSOM VOM / VTVM Multimeter Meter

- Whirlwind MCT-7 Cable Detective Cable Testing Unit

Audia

DIGITAL AUDIO PLATFORM

Certificate of Achievement

AWARDED TO:

Jason Godek

For successfully completing Biamp Systems' Audia Training Course

ON:

April 07, 2004

AWARDED BY:

Ned Ludlum, Training Director

BIAMP

...your partner in audio excellence!

Certified Technology Specialist

Jason Godek

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
March 12, 2010

Date of Expiration
March 31, 2013

Certification Number
1274080

Spencer Bullins, CTS
Chair, InfoComm independent
Certification Committee

*info*Comm
INTERNATIONAL®

CRESTRON®

Crestron Training awarded to

crestron
TECHNICAL INSTITUTE

JASON GODEK

for successfully completing

INTERMEDIATE CRESTRON PROGRAMMING

May 18, 2006

Date

Authorized Signature

CRESTRON®

Crestron Training awarded to

crestron
TECHNICAL INSTITUTE

JASON GODEK

for successfully completing

DIGITAL MEDIA

November 17, 2009

Date

Authorized Signature

REVISIONS

Revision	Date	Description

WEST VIRGINIA DIVISION OF CULTURE AND HISTORY
GRAVE CREEK MOUND ARCHAEOLOGICAL COMPLEX
GRAVE CREEK MOUND MUSEUM
801 JEFFERSON AVENUE
MOUNDSVILLE, WEST VIRGINIA
SOUND SYSTEM
SOUND SYSTEM WIRING SCHEMATIC

Sales:	DB
Design:	DB
Proj. Mgnt:	

Drawn By:	CMH
Checked By:	DB
Date:	03/08/2013
Job Number:	P5821

Scale: NOT TO SCALE

ES1.00

TELEX
CLA
ANTENNAS

(2) Telex CXU-50

(1) WP-291

STAGE LEFT
WALL
WPE-111

CRESTRON
DM-TX-200-2G
WALL PLATE DIGITALMEDIA

(1) Crestron DM-MD

STAGE LEFT
WALL

SWITCHCRAFT
C3F
(Existing Floor Pocket Ring)

(1) WP-291

STAGE CENTER
FLOOR MICROPHONE

CRESTRON
TSW-750
7" TOUCHSCREEN
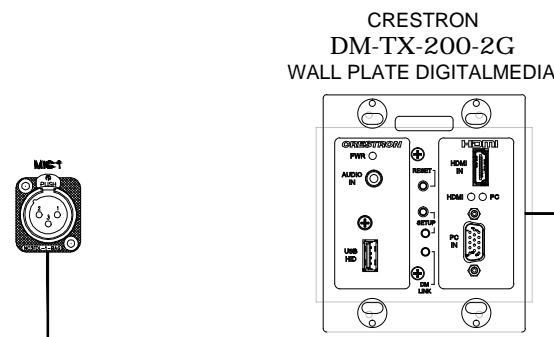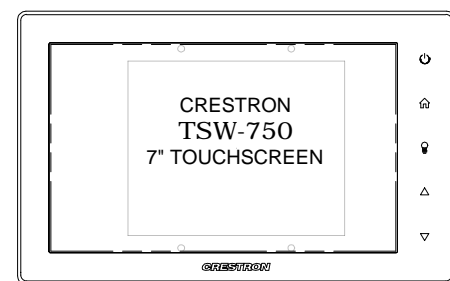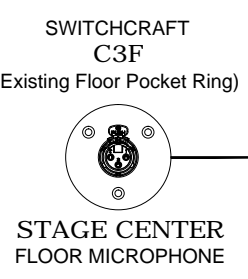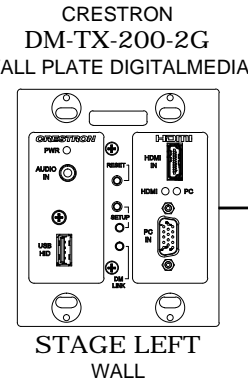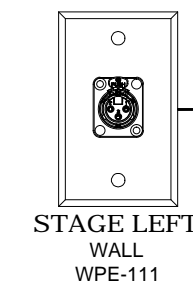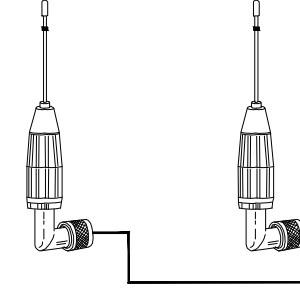
(1) Crestron DM-MD

CRESTRON
DM-TX-200-2G
WALL PLATE DIGITALMEDIA

(1) Crestron DM-MD

(1) WP-291

STAGE RIGHT
PROSCENIUM WALL BOX

A/V
RACK

(1) 120V, 20A
Circuit

(1) WP-810

LISTEN TECHNOLOGIES
LA-122
HEARING IMPAIRED ANTENNA

YAMAHA
IF2112/AS/W
MAIN LOUDSPEAKER

(1) WP-227

(1) WP-227

YAMAHA
IF2205W
SIDE SEATING AREA LOUDSPEAKER

LVC

PROJECTOR
(BY OWNER)

(1) Crestron DM-MD

(1) WP-148

LIGHTING
CONTROLLER

(BY OTHERS)

(1) WP-4246

REVISIONS

Revision	Date	Description

WEST VIRGINIA DIVISION OF CULTURE AND HISTORY
GRAVE CREEK MOUND ARCHAEOLOGICAL COMPLEX

GRAVE CREEK MOUND
MUSEUM

801 JEFFERSON AVENUE
MOUNDSVILLE, WEST VIRGINIA

SOUND SYSTEM

SOUND SYSTEM
CABLING DIAGRAM

Sales:	DB	Drawn By:	CMH
Design:	DB	Checked By:	DB
Proj. Mgnt:		Date:	03/08/2013
		Job Number:	P5821

Scale: NOT TO SCALE

ES2.00

Middle Atlantic Products, Inc.

ERK Series Enclosure

UL Listed | **SEISMIC RATED** | **EIA Compliant**
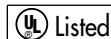
The ERK Series 19" welded rack enclosures
Advanced manufacturing techniques provide highest quality and lowest price

Features

- Fully welded construction

- $\frac{1}{8}$" thick structural steel internal braces

- UL listed

- Seismic rated (when used with ERK-Z4 option)

- 22" OD width, available 20" or 25" OD depth

- $\frac{1}{2}$", $\frac{3}{4}$", 1" & $1\frac{1}{2}$" electrical knockouts on removable rear plates

- Standard solid front, optional rear 11-gauge 10-32 threaded rackrail standard

- Keylocked solid rear door standard, optional vented rear doors available

- Optional front doors available

- Configurable top options on 44, 40, and 35 space sizes

- Durable black textured powder coat finish

CABINET ACCESSORIES
ADDITIONAL RACKRAIL KIT
CASTER BASE
COPPER BUS BAR
CRATING SERVICE
DOCUMENT POCKET
DOOR LATCH
LEVELING FEET
SEISMIC FLOOR ANCHOR BRACKETS
CONFIGURABLE TOPS
TOP RAILS
UNIVERSAL FRONT DOORS
VENTED REAR DOORS
WRINKLE TOUCH-UP PAINT
RISER BASES

for details- see the universal cabinet options pages of the Master catalog

ERK-4425

Architects' and Engineers' Specifications

- ERK shall be M.A.P. model number ERK-XXYY   (X=rackspaces req'd. Y= rack depth req'd.) (See chart prior to determining X & Y.)

- The ERK rack shall be constructed of the following materials:
  1. Rack top and bottom shall be 16-gauge CR Steel
  2. Sides shall be 16-gauge steel welded to structural supports of 16-gauge steel, giving an $\frac{1}{8}$" thick structure
  3. Front rack rail shall be 11-gauge steel, with tapped 10-32 holes in universal E.I.A. spacing
  4. Rear doors shall be of 18-gauge CR Steel
  5. The ERK series rack shall be phosphate pre-treated and finished in a durable black powder coat
  6. The ERK shall be of welded construction

OPTIONS
- Front doors shall be 16-gauge steel & available as part #FD-XX (solid), VFD-XX (vented), PFD-XX (plexi), (X=# of rack spaces of ERK rack)

- Vented rear doors shall be 16-gauge steel & available as part #ERK-VRD-XX, (X=# of rackspaces of ERK rack)

- Top panels, 16-gauge steel, in 4 styles - part # ERK-ST (blank), #ERK-10FT (10" fan), #ERK-4FT (three $4\frac{1}{2}$" fans), #ERK-VT (vented)

- Caster base, four casters shall have a total weight capacity of 1300 pounds, part # CBS-ERK-YY (Y= cabinet depth)

- Leveling feet part # LF, shall be $\frac{3}{8}$" threaded steel, adjustable from top or bottom

- Keyless Latch, replaces keylock & fits front & rear doors, part # LATCH

- Lacer strip, heavily perforated, 78" long, 11-gauge steel, part # LACE

- Rear rail kit, 11-gauge, 10-32 threaded, sold in pairs, hardware included, part # ERK-RRXX (X=# of rackspaces)

- Seismic Zone-4 compliancy floor anchor kit, part# ERK-Z4

- • AX-S option available (See AX-S Spec sheet 96-055S)

The RACK SYSTEM EXPERTS

w w w . m i d d l e a t l a n t i c . c o m

ERK basic dimensions

REAR VIEW, TOP & BOTTOM

1.718 8.406 2.125
1.500
2.188 2.188
3.280
removable EKO plates
22.000

TOP VIEW

Laser Knockouts

12.00 22.00
6.00
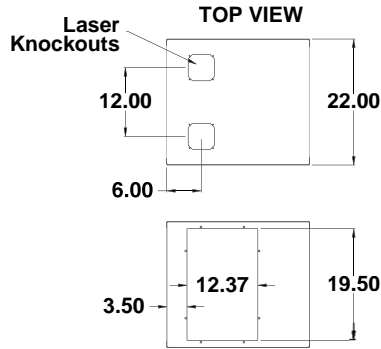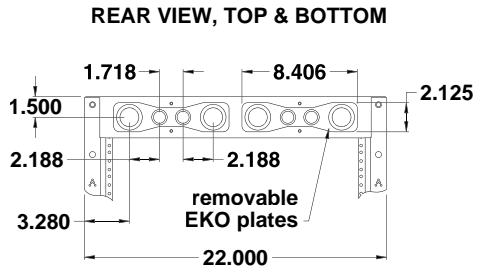
top for
ERK-18XX
ERK-21XX
ERK-27XX

3.50 12.37 19.50

top for
ERK-35XX
ERK-40XX
ERK-44XX

Part #	'A'	'B'	'C'	'D'	'E'
ERK-4425	81.125"	77.125"	75.125"	25.0"	20.25"
ERK-4025	74.125"	70.125"	68.125"	25.0"	20.25"
ERK-3525	65.375"	61.375"	59.375"	25.0"	20.25"
ERK-2725	51.375"	47.375"	45.375"	25.0"	20.25"
ERK-2125	40.875"	36.875"	34.875"	25.0"	20.25"
ERK-1825	35.625"	31.625"	29.625"	25.0"	20.25"
ERK-4420	81.125"	77.125"	75.125"	20.0"	15.25"
ERK-4020	74.125"	70.125"	68.125"	20.0"	15.25"
ERK-3520	65.375"	61.375"	59.375"	20.0"	15.25"
ERK-2720	51.375"	47.375"	45.375"	20.0"	15.25"
ERK-2120	40.875"	36.875"	34.875"	20.0"	15.25"
ERK-1820	35.625"	31.625"	29.625"	20.0"	15.25"

TOP VIEW OF ERK SIDE SECTIONAL VIEW

D
"F"

fully adjustable 10-32 threaded rackrail

front door clearance (with rackrail in forward-most position)
1.44 solid/vented door
1.25 plexi door

REAR VIEW

EKO's 1" & 1-1/2" 1/2" & 3/4"

"C"

3.000 Typical Rear

SIDE VIEW

Four 11/32" Dia. Laser Knockouts for Ganging on ERK-35, 40 & 44

Laser Knockouts for 2" Electrical Tubing on ERK-35, 40 &44

FRONT VIEW

19.25

"B" "A"

2.000 Typical Front

BOTTOM VIEW

REAR 2 FRONT

ø.406-4X
4.8
ERK-XX20=10.406
ERK-XX25=15.406

FLOOR MOUNTING LOCATIONS

BOTTOM VIEW

9.75 "E" 22.00
1.44
"D"

ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED

ERK top options
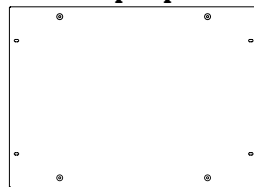
ERK-ST **ERK-VT** **ERK-4FT** **ERK-10FT**

Models: ACR-SCS4-2009-RT2, ACR-SCS4-2009K-RT2, ACSPR-SCS4-2009-RT2, ACR-2009-SPSQK
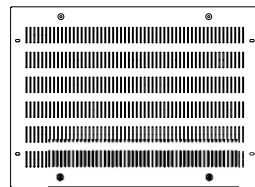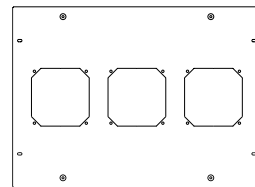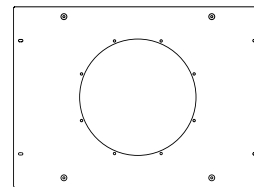
19" EIA Rackmount Panels – 20A Corded

Description:

The rackmount, 4-step sequential power panel with surge suppression and alarm interface is available with rocker or key-switch activation. The 1U steel chassis features a total of 9 outlets (6 switched, 3 unswitched) for sequential activation/deactivation of connected equipment. Delay between sequenced steps can be adjusted (0.5-10 seconds) using a small screwdriver (not included) to avoid unintended changes. ETL-listed in the U.S. and Canada to UL Standard 60065, panel has a power rating of 120V AC, 60Hz/20A with EMI/RFI filtering. Includes 9-ft. cord with NEMA 5-20P plug.

Rear termination blocks accommodate remote switches, external triggers and an alarm system interface for use where mandated by fire code. Includes two dry contact closures (steps 5 and 6) for triggering remote power control units (RPC-series units not included). Switches can be overridden for life safety systems where fire code mandates an alarm interface. Some models also include optional surge suppression function that defeats surges up to 72,000A and is UL1449-2 / ANSI C62.41-compliant.

Features:

- **Total of 9 outlets:** 6 switched (2-single on back, 2-duplex on back); 3 unswitched (1-single on front, 2-single on back).
- **Power Rating:** 120VAC, 60Hz, 20A (each receptacle rated 15A)
- **Actuation Switch:** front panel rocker- or key-switch with momentary contacts (normally open SPST) plus rear barrier strip termination blocks for momentary (normally open) remote switches.
- **Alarm Interface:** lock on, lock off and switch lock functions for alarm system or master control panel applications.
- **External Control Connections:** plug-in barrier strip terminal blocks
- **EMI/RFI Filter:** 19dB@500kHz, 42dB@30MHz
- **Dimensions:** 19"W x 1.75"H (1U) x 9"D
- **Made in the U.S.A.**

Optional:

- **Advanced Surge Suppression:** some models include surge suppression: UL1449-2 adjunct results: 1000 surges, 6000 volts, 3000A, C1 and B3 waveforms (IEEE C62.41), no failures.
  - LEDs indicate status: if one section of the surge suppressor has reduced protection, there are two additional sections available to safeguard equipment.
  - Initial Clamping Voltage: 205V, UL rating 330V
  - Endurance: IEEE C62.41-1991, B3 (C1), Pulses (lifetime): 1kv≥1,000,000; 3kv≥100,000; 6kv≥5000
  - Transient Noise Reduction: 25dB@100kHz, 50dB@1MHz
  - Response Time: less than 5 nanoseconds
  - Applicable Standards: IEEE standard 587-80 A & B, IEEE standard C62.41-1991, IEC 1000-4-5-1995 (IEC 801-5).
  - Protection Mode: line to neutral, zero ground leakage.

The 19" EIA rackmount power panel is available with a key switch or rocker switch (shown). This model also includes the optional surge suppression function.
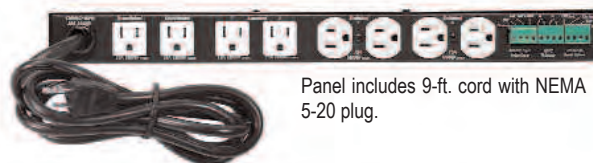
Panel includes 9-ft. cord with NEMA 5-20 plug.

A & E Specifications:

The sequential AC rackmount power panel shall be Lowell Model _____. It shall be ETL-listed and have a power rating of 120VAC, 60Hz/20A with EMI/RFI filtering and a total of 9 outlets (6 switched, 3 unswitched) and 2 steps providing contact closures to sequentially activate/deactivate equipment (4-6 steps) with a sequence delay of 0.5 to 10 seconds. It shall be housed in a 1U rackmount chassis with color-coded LEDs. Front activation shall be via a _____ (rocker or key) switch.

(OPTIONAL: It shall provide surge protection.)

Model No.	Formerly	Description
ACR-SCS4-2009-RT2	---	20A – AC Rackmount Panel (1U) with sequencing, remote control, rocker-switch
ACR-SCS4-2009K-RT2	---	20A – AC Rackmount Panel (1U) with sequencing, remote control, key-switch
ACSPR-SCS4-2009-RT2	---	20A – AC Rackmount Panel (1U) with sequencing, remote control, advanced surge suppression, rocker-switch
ACR-2009-SPSQK	ACSPR-SCS4-2009K-RT2	20A – AC Rackmount Panel (1U) with sequencing, remote control, advanced surge suppression, key-switch

Lowell™

Front Panel is available with rocker or key-switch.

Red LED flashes when cycling down and remains lit when system is off. Green LED flashes when cycling up and remains lit when system is on.

Optional surge suppression function with LEDs that indicate if there is full or reduced protection.

Rear

Includes 9-ft. cord with NEMA 5-20P plug.
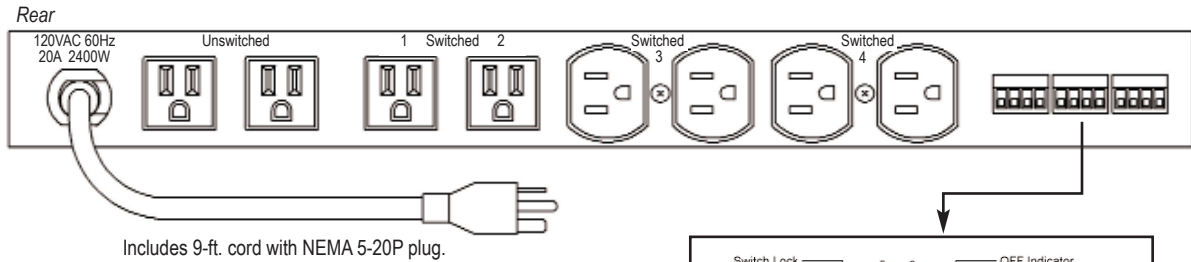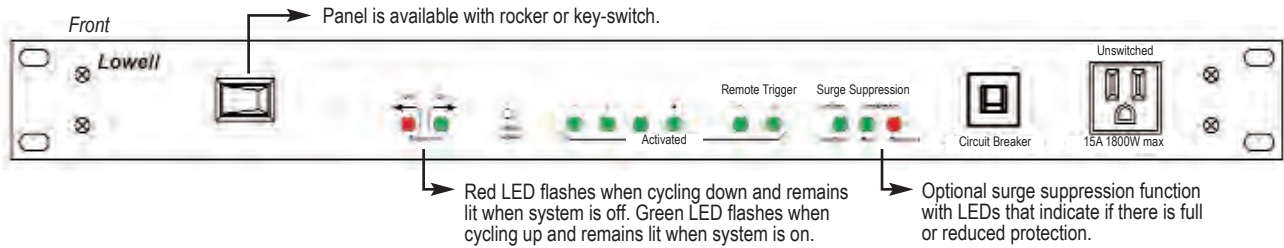
ALARM SYSTEM INTERFACE

If required by local building code, facility usage, or the Fire Marshal; the system switches can be overridden and the system controlled by contact closures provided by the fire alarm panel or other control system. A maintained contact between the "com" terminal and any of the terminals shown here will provide the following functions.

Lock Off: A maintained contact between the "COM" terminal and the "LOCK-OFF" terminal will turn the system off and keep it off regardless of other switch activations. If the system is already off, it will be kept off.

Lock On: A maintained contact between the "COM" terminal and the "LOCK-ON" terminal will turn the system on and keep it on regardless of other switch activations. If the system is already on, it will be kept on.

Switch Lock: A maintained contact between the "COM" terminal and the "SWITCH-LOCK" terminal will lock the system in its current state, either on or off, regardless of any other switch activations.

Caution: Do not allow alarm system to make more than one of the contacts described above at the same time. Controller board damage may result.

RPC TRIGGER CONNECTIONS

Multiple RPC-series remote power control units can be connected to outputs 5 and 6 (60 max. each, dependent upon limits of electrical panel). Order RPC units separately.

RPC-series remote power controls.
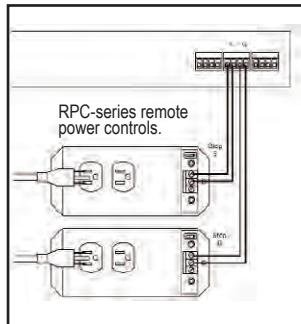
REMOTE SWITCH CONNECTIONS

Connect a maximum of 5 remote MOMENTARY switches. Order switches separately.*

Four conductors (2 LED switch).

Three conductors (1 LED switch).
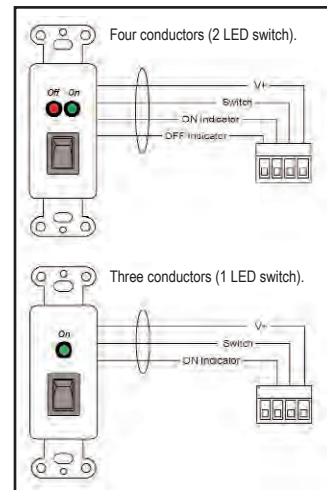
* See momentary switches:
- **Models with 2 LEDs:** RPSB2-MP, RPSB2-MKP, RPSW2-MP, RPSW2-MKP, RPSB2-MR, RPSB2-MKR
- **Models with 1 LED:** RPSB-MP, RPSB-MKP, RPSW-MP, RPSW-MKP, RPSB-MR, RPSB-MKR

Maximum wire distances: 24-ga 20,000 ft. (approximately 3.5 miles); 22-ga. 31,200 ft. (approx. 5.5 miles); 18-ga. 76,800 ft. (approx. 13.5 miles).

Lowell™

115 Volt Rackmount Power Strips

Middle Atlantic Products, Inc.
middleatlantic.com

EIA/TIA Compliant   C(UL)US LISTED

Rackmount units provide economical 15 and 20 amp power distribution

PD-915R / PD-920R-NS

front view

Features

PD-815R-PL

front view

PD-815RA-PL

front view

PD-815RC-PL

front view

- UL Listed (file # E204950)

- Available in 15 and 20 amp Models

- 8 circuit-breaker protected rear outlets

- Enhanced surge protection does not introduce potentially damaging ground contamination and noise (PD-915 and PD-815 Series only)

- Two models available with front outlet and illuminated power switch or pilot light for status indication

- Choice of finishes available: Black Brushed and Anodized, Silver Brushed and Anodized, Black Powdercoat

rear view

rear view (PD-920R-NS only)

Architects' and Engineers' Specifications

Rackmount power strip shall be Middle Atlantic Products model # _ (refer to chart), with a _ amp capacity (refer to chart), differential and common mode surge and spike protection (surge and spike protection available on 15 amp power only) and EMI filtering. Enhanced surge protection shall not introduce potentially damaging ground contamination and noise (PD-915 and PD-815 Series only). Rackmount power strip shall operate on 115 volt AC/60Hz current. Rackmount power strip shall include 9' 14/3 power cord with _ (refer to chart) plug, 8 rear outlets (refer to chart), _ front outlet(s) (NEMA 5-15R), and _ amp circuit breaker located on the power strip's _ (refer to chart). Rackmount power strip shall occupy one rackspace and be constructed of 18-gauge phosphate pre-treated steel with a _ finish (refer to chart). Rackmount power strip shall be warrantied to be free from defects in materials and workmanship under normal use and conditions for a period of 3 years. Rackmount power strip shall be UL listed in the US and Canada.

customizable specification clips available at middleatlantic.com

Engineered Mounting Solutions

Rackmount Power Strips basic dimensions

Front Panels

top view

8.75
[222]

front view (PD-920R-NS, PD-915R)

19.00 [483]

1.75
[44]

front view (PD-815RA-PL / PD815RC-PL)

front view (PD-815R-PL)

Rear Panels

rear view (PD-920R-NS)

rear view (PD-915R)

rear view (PD-815R-PL / PD-815RA-PL / PD815RC-PL)

Part #	Amps	Power Cord Type	# Front Outlets	# Rear Outlets	Circuit Breaker Location	Rear Outlet Type	Finish
PD-815R-PL	15	NEMA 5-15P	0	8	Rear	NEMA 5-15R	Black Powdercoat
PD-815RA-PL	15	NEMA 5-15P	0	8	Rear	NEMA 5-15R	Black Brushed and Anodized
PD-815RC-PL	15	NEMA 5-15P	0	8	Rear	NEMA 5-15R	Silver Brushed and Anodized
PD-915R	15	NEMA 5-15P	1	8	Front	NEMA 5-15R	Black Powdercoat
PD-920R-NS	20	NEMA 5-20P	1	8	Rear	NEMA 5-20R	Black Powdercoat

- Nominal line voltage: 120 VAC
- Maximum line current: 15 Amps
- Maximum allowable voltage: 125 VAC (RMS)
  - Maximum continuous voltage differential applied between line and neutral
  - Maximum clamping voltage: 395 volts@100 amps
- Peak impulse current (8/20 micro seconds):
  - 30,000 amps, one time
  - 21,000 amps, two times within 5 minutes
  - 9,000 amps, ten times within 2 minutes
  - Maximum peak impulse current pulse as defined between line and neutral
  - Maximum multiple impulse current derated per spec

- Response time: Instantaneous (Less than 1 nanosecond)
- EMI/ RF Suppression: More than 20 db
  - Calculated line to neutral, 100 KHz to 1 MHz suppression based upon nominal impedance

Middle Atlantic Products, Inc.

BIAMP™

NEXIA$_{CS}$ is a digital signal processor with 10 mic/line inputs and 6 independent mix outputs. Intended for a variety of conferencing applications such as boardrooms, courtrooms, and council chambers, NEXIA$_{CS}$ includes a broad selection of audio components, routing options, and signal processing. The internal system design is completely user definable via PC software, and can be controlled via dedicated software screens, RS-232 control systems, and/or a variety of optional remote control devices. Multi-unit NEXIA systems can be created utilizing Ethernet and NexLink™ digital audio linking.

FEATURES

- 10 balanced mic/line inputs on plug-in barrier strip
- 6 balanced outputs on plug-in barrier strip
- Ethernet port for software configuration/control
- serial port for third-party RS-232 remote control
- remote control bus for dedicated control panels

- NexLink ports for multi-unit system designs
- NEXIA software for Windows® 2000/XP
- pre-configured I/O with definable processing
- mix, route, combine, EQ, delay, control, etc.
- **CE** marked and **CSA** tested to UL 6500

ARCHITECTS & ENGINEERS SPECIFICATION

   The DSP conference system shall provide ten balanced mic/line inputs and six balanced mic/line outputs on plug-in barrier-strip connectors. Inputs and outputs shall be analog, with internal 24-bit A/D & D/A converters operating at a sample rate of 48kHz. All internal processing shall be digital (DSP). NexLink™ connections shall allow sharing of digital audio within multi-unit systems.

   Software shall be provided for creating/connecting DSP system components within each hardware unit. Available system components shall include (but not be limited to) various forms of: mixers, equalizers, filters, crossovers, dynamics/gain controls, routers, delays, remote controls, meters, generators, and diagnostics. Ethernet communications shall be utilized for software control and configuration. After initial programming, processors may be controlled via dedicated software screens, third-party RS-232 control systems, and/or optional remote control devices. Software shall operate on a PC computer, with network card installed, running Windows® 2000/XP.

   The DSP conference system shall be NEXIA™ CS.

BIAMP™

NEXIA™ CS SPECIFICATIONS

Frequency Response (20Hz~20kHz @ +4dBu)**:**	+0/-0.4dB	**Output Impedance** (balanced)**:**	200 ohms
THD +N (20Hz~20kHz @ +4dBu)**:**		**Maximum Output** (balanced)**:**	+24dBu
line level	< 0.006%	**Output Reference Level** (selectable)**:**	-31dBu ~ +24dBu
mic level	< 0.05%	**Sampling Rate:**	48kHz
Equivalent Input Noise (20Hz~20kHz, 66dB gain, 150 ohm)**:**	-125dBu	**A/D - D/A Converters:**	24-bit
Dynamic Range (20Hz~20kHz, 0dB)**:**	> 105dB	**Phantom Power:**	+48 VDC (7mA/input)
Maximum Gain (mic input to line output)**:**	66dB	**Power Consumption** (100~240VAC 50/60Hz)**:**	65 watts
Crosstalk (channel-to-channel @ 1kHz)**:**		**Dimensions:**	
line level input	< -80dB	height	1.75 inches (45mm)
mic level input	< -75dB	width	19 inches (483mm)
Input Impedance (mic/line balanced)**:**	8k ohms	depth	11.15 inches (283mm)
Maximum Input (mic/line balanced)**:**	+24dBu	**Weight:**	8.6 lbs. (3.9kg)
Input Gain Range (variable)**:**	0dB ~ +66dB		

NEXIA™ CS REAR PANEL DIAGRAM
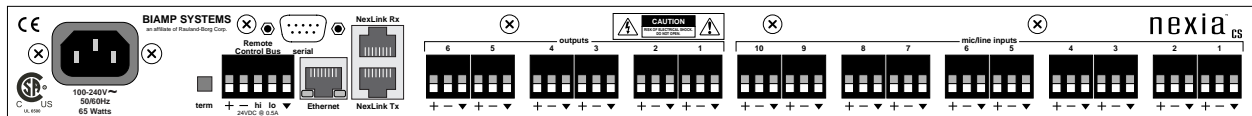
NEXIA™ BLOCK DIAGRAM

Telex®
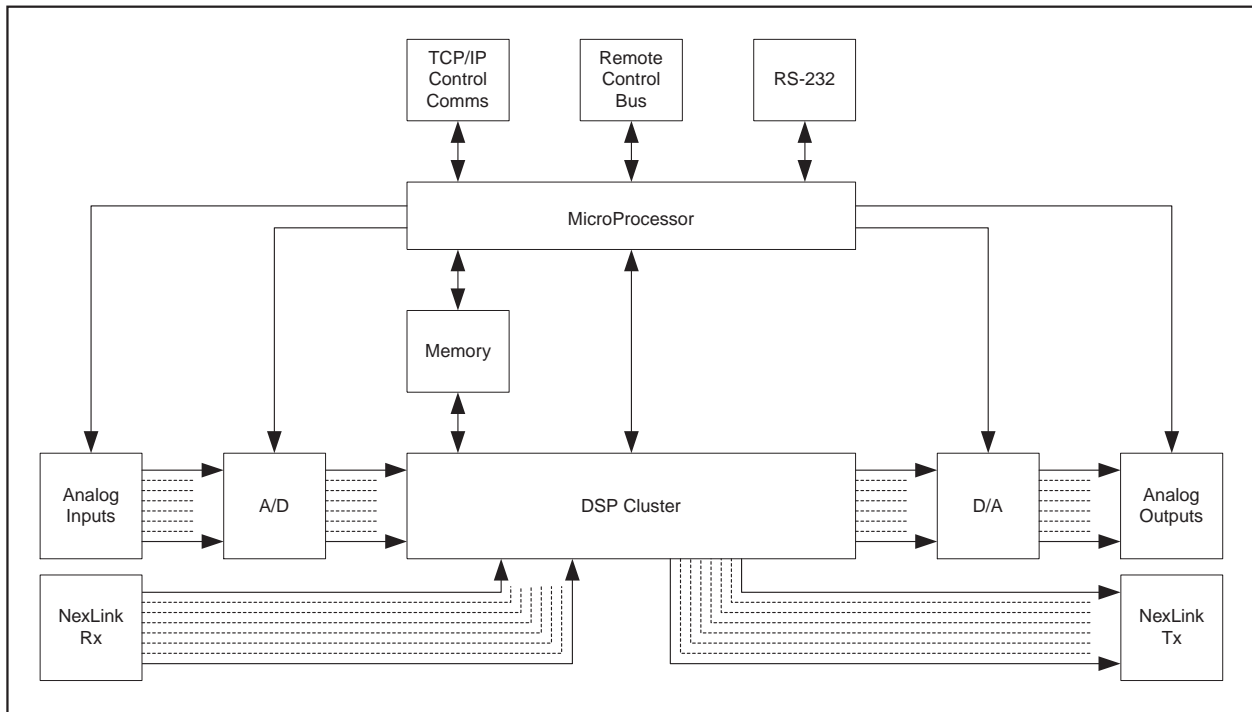
Instruction Sheet

UAD4
CAT. NO. 301614100   600-780 MHz
CAT. NO. 301614101   780-900 MHz
AMPLIFIED UHF
ANTENNA SPLITTER   PN 804036 Rev A

General Description

The UAD4 Amplified Antenna Splitter makes it possible to operate four UHF wireless diversity microphone receivers on four separate frequencies using only two antennas.

It also features a high degree of output isolation; a necessity in multi-frequency systems to prevent intermodulation.

The UAD4 Splitter is compatible with Telex UHF diversity wireless receivers.

SPECIFICATIONS

Frequency Range 301614100 ....600-780 MHz
                301614101...780-900 MHz
3rd Order Intercept Output ....greater than 18 dbm
Net Gain ....greater than 2 dB
Noise Figure ....less than 3 dB
Output Isolation..greater than 20 dB
Connectors, Antenna...Standard TNC receptacles
Power Requirements... 100-240VAC 50/60Hz

Features

The UAD4 is equipped with TNC type connectors. Low loss coaxial cables are also supplied for splitter to receiver antenna jack connections. The UAD4 has an internal power supply. Power out jacks and cables are provided to supply up to four receivers thus eliminating excess power supply clutter.

Rack panel mounting "ears" allow the UAD4 to be mounted in a standard 19 inch equipment rack. "Knock outs" in the ears allow front connection of antenna cables.

TELEX®

FMR-500 UHF

WIRELESS MICROPHONE SYSTEM

UHF

AGILE

1112 FREQUENCIES

UP TO 10+ SIMULTANEOUS SYSTEMS

Key Features

- Up to 10 systems can operate simultaneously from the pre-set groups of channels in one operating band. Groups of 16 coordinated channels between the two bands are also pre-set.

- Advanced ClearScan™ and one touch Auto ClearScan automatic group and channel selections, for quick and easy system setup.

- Completely programmable in 25kHz steps across 28MHz for 1112 possible frequencies

- Backlit receiver LCD display shows the Group/Channel, Frequency, transmitter battery status, diversity operation, and RF and Audio level meters.

- Balanced XLR audio output for Microphone or Line level signals and a 1/4 inch line level jack to match any application.

- Fourth generation Posi-Phase™ diversity and advanced audio circuits provide maximum range and professional sound quality.

- Includes single and dual rack mount hardware with front mount antenna cables.

- "Smart" battery circuit means there is no way to put the battery in wrong.

- Tone Code plus Amplitude squelch with one button on/off.

- Three year warranty.

Power, Performance, Flexibility, and Simplicity.

The FMR-500 brings professional features and performance to the small and medium sized wireless microphone installs that are so popular today. One touch Auto ClearScan™ selects the clearest channel in the clearest group of compatible channels in just seconds with the push of one button. The new HT-500 programmable handheld microphone transmitter is the smallest Telex has ever built and it has a screw-on battery cover that also hides the controls, and an LCD display. Choose the EV® N/D 767a dynamic microphone or the EV RE410 condenser microphone for high quality vocal performance. The WT-500 bodypack transmitter features a cell phone style beltclip, dual latching battery door, and a TA4 connector with a wide variety of lapel and headworn microphone options. The combination of sound and RF features are hard to beat at twice the price.

FMR-500 Receiver
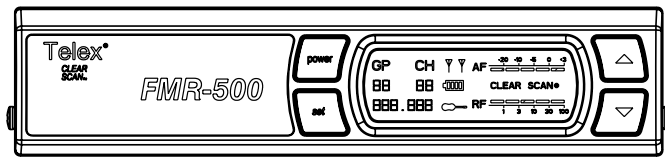
FRONT PANEL
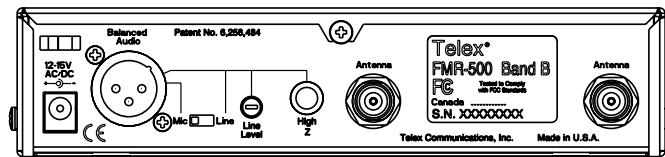
REAR PANEL

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
   Mic Position
   Line Position
	(max @ 40kHz deviation)
	-10dBV
	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

Transmitters WT-500 and HT-500

CLOSE UP

TOP VIEW

UNDER BATTERY COVER

CONTROL VIEW
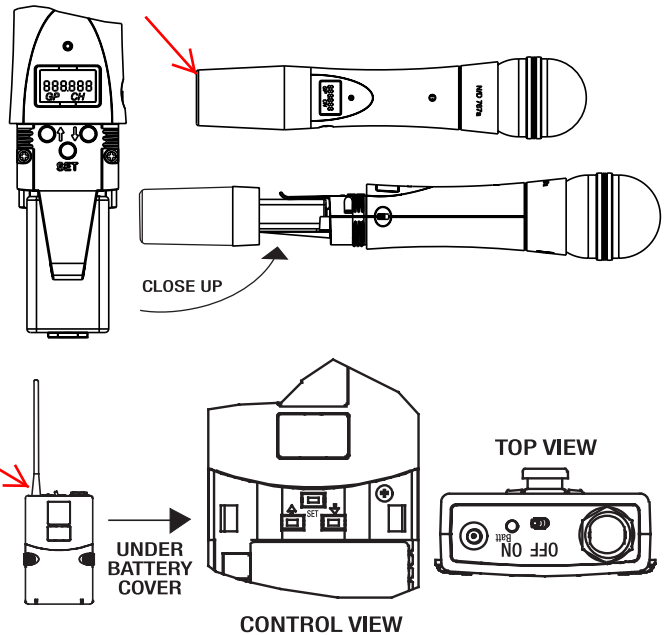
Radiated Output	30 mW typical
Microphone Head ElectroVoice767a	N/D 767a supercardioid N/DYM Dynamic
Microphone Head ElectroVoice RE410	RE410 cardioid condenser
Standard Lavalier Microphone	ELM-22S MicroMini™ Omni-Directional Condenser
TA4 Connector Wiring	Pin 1: Ground; Pin 2 Mic Input; Pin 3: +5V bias; 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

PERSONAL
listening systems

SoundMate™

ST-300

PBT-170

TELEX®

The *SoundMate™*
Personal Listening System

Telex SoundMate™ personal listening systems help overcome background noise and poor building acoustics that can make listening difficult for the hearing impaired listener. A Telex base station, portable belt pack transmitter, your choice of receivers, and a wide assortment of accessories allow you to meet the needs of individuals who require hearing assistance. These listening systems are even compatible with a variety of hearing instrument styles for hearing aid users. Let Telex, the acknowledged leader in personal assistive listening products, help you select the system that's right for any listening environment.
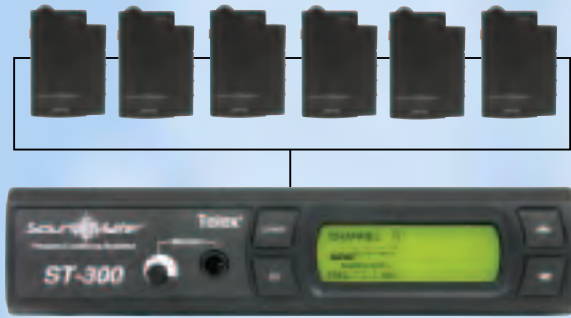
AUDIO SOURCE: Amplifier, Direct Microphone, or Mixer.

System Versatility - A sound system amplifier, mixer or wired microphone can plug directly into the ST-300 base station transmitter. The ST-300 then sends the audio signal to an *unlimited* number of personal receivers.

T R A N S M I T T E R S

BACK
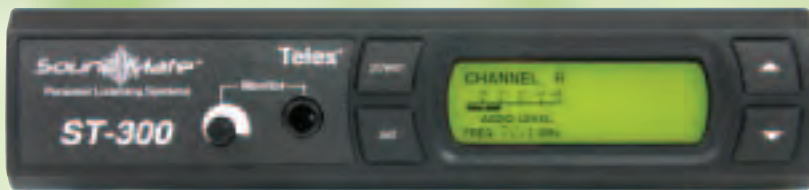
FRONT

ST 300

ST-300 TRANSMITTER The ST-300 Base Transmitter features 17 user selectable frequencies digitally controlled from the front panel control buttons, a headphone jack with adjustable level for input signal monitoring, and a backlit LCD display that shows Channel, Frequency and Audio Input Level. On the back of the unit is a balanced XLR-3F as well as an unbalanced 1/4" input. Front panel controls and LCD display allow the user to select mic, line, and 70 volt input options, attenuate the input levels and change hi/low RF transmit power. A new feature called Enhanced Dynamic Range (E.D.R.) works with the SR-400 receiver to provide clearer, more dynamic audio.

TOP

FRONT

PST 170

THE PST-170 BELT PACK TRANSMITTER The PST-170 Belt Pack Transmitter may be set to any one of the 17 channels which is displayed on the backlit LCD, and operates on frequencies in the 72-76 MHz band. It is lightweight, battery operated and includes a small lapel microphone for convenient portable use. The PST-170 has two audio input jacks. The Auxiliary input is designed to allow the use of audio devices such as teacher's aids or tape players. The second jack is normally used with a microphone and is located on the top panel. The PST-170 is also compatible with the E.D.R. feature of the SR-400.

RECEIVERS

SR 400

TOP

FRONT

THE SR-400 17 CHANNEL RECEIVER is the perfect solution to multiple transmitter hearing assistance systems. The SR-400 features an advanced digital PLL synthesizer to tune all 17 narrow-band frequencies offered in the 72-76 MHz band and a backlit LCD display. The receiver also includes a special high frequency contour filter and boost switch to increase the intelligibility of the audio signal, and E.D.R. for increased dynamic range. Additional features include a battery saving automatic power shutoff when the earphone is unplugged.

THE SR-50 SINGLE CHANNEL RECEIVER provides clear reception and the simplicity of a fixed channel. This economical receiver operates on one of 17 fixed narrow-band frequencies in the 72-76 MHz band. Ergonomic raised volume control knob make level adjustments easily accessible by feel. Recessed headphone jack provides extra protection for earphone connections. Two AA batteries give up to 30 hours continuous battery life.

TOP

SR 50

FRONT

SYSTEMS

SMP 2

SM 2

SM-2 SYSTEM Includes:

(1) ST-300 base transmitter,
(4) SR-50 receivers
(4) SEB-1 earbuds
(1) SoundMate wall plaque.
(SM case sold separately).

SMP-2 SYSTEM Includes:

(1) PST-170 portable belt pack transmitter
(6) SR-50 single channel receivers
(6) HED-2 collapsible headphones
(14) AA Alkaline batteries
(1) Deluxe system carrying case
(1) HM-2 head worn microphone
(1) User manual for SR-50 and PST-170

BATTERY CHARGER

BC 100

THE BC-100 BATTERY CHARGER

charges two SR-50's, SR-400's or PST-170's or any combination of transmitters and receivers.

A NL-4S Neckloop Assembly
  (for use with hearing aids equipped with telecoils)

B HED-2 Collapsible Lightweight Headphone

C HED-3 Full Cushion Noise Reduction Headphones

D AFC-1 Under Chin Eartube
  (for use with CMT-98 and Telethin Earphone Driver)

E • CMT-98 5' Cord
  • EH-S/EH-L Earshell Holder for
    Telethin Drivers
  • RTV-04/RTW-04/RTR-04
    Telethin Earphone Driver

F DEB-2 Dual Earbud *with cord*

G SEB-1 Single Earbud *with cord*

H CCS-12 Replacement Cushion Covers
  (Package of 12, for SEB-1, DEB-2 and HED-1 earbuds)

I HED-1 Ultra Lightweight Headphone

J HM-2 Head Worn Mic

K PH-21 Noise Canceling Head Worn Mic

L OLM-10 Mic *(Supplied with PST-170)*

M HGA-1 1/2 Wave Dipole Gain Antenna

NOT SHOWN   RM-S Single Rack Kit
                 RM-D Double Rack Kit

SPECIFICATIONS

There are 17 standard frequency options for the following products:
72.1, 72.2, 72.3, 72.4, 72.5, 72.6, 72.7, 72.8, 72.9, 74.7, 75.3, 75.4, 75.5, 75.6, 75.7, 75.8, 75.9 MHz

TRANSMITTERS

ST-300 17-CHANNEL TRANSMITTER *(CATALOG NO. 71912-000)*

RF Frequency Range	72 to 76 MHz
Modulation:	FM ±25 KHz deviation
Signal-To-Noise Ratio	58 dB (77 dB with E.D.R.)
Maximum Deviation	±25 KHz
Audio Input	Balanced XLR-3F and unbalanced 1/4"
Antenna	1/4" wave telescoping omnidirectional
Audio Controls	Audio input level, monitor jack volume, E.D.R.
Power Requirements	13-20 Vdc or 12 Vac; 115Vac 60 Hz @ 300 mA plug-in wallpack power supply
Dimensions	H 1-3/4" (4.5 cm) x W 7-1/2" (19.2 cm) x D 5.9" (15 cm)
FCC ID	B5DM522
Backlit LCD Display	Ch., Freq, Audio Meter, Input setup, RF level, and E.D.R.
RF Output Power @ 3M	
Normal	25K µV/m
High	80K µV/m

PST-170 17-CHANNEL TRANSMITTER *(CATALOG NO. 71914-000)*

Audio Input Characteristics	Mic TA4M connector, 7.75 mV RMS input for ±25 KHz deviation. Impedance, 10K Ohms, nominal. Aux. Input, Female 3.5mm. 100mV Unbalanced, 100K Ohm nominal
Antenna	Permanently attached trailing wire
Modulation:	FM ±25 KHz deviation
Frequency Response (System)	100 Hz to 10,000 Hz
System Signal-To-Noise	58 dB (77 dB with E.D.R.)
Pre-emphasis	115 µ seconds
Maximum RF Power	80K µV/m @ 3 m
Power Requirements	(2) AA batteries, Alkaline, NiMH or NICAD 8 hours Alkaline, 8 hours NiMH, 4 hours NICAD
FCC ID	B5DM521

RECEIVERS

SR-400 17-CHANNEL RECEIVER *(CATALOG NO. 71913-000)*

Power Requirements	(2) AA batteries, Alkaline, NiMH or NICAD 20 hours Alkaline, 16 hours NiMH, 8 hours NICAD
Audio Frequency Response	<3 dB Variation (100 Hz-10 KHz)
Modulation:	FM ±25 KHz deviation
Sensitivity	0.5 µV typical, 1.0 µV maximum,12 dB SINAD
Image Rejection	>65 dB
Signal-To-Noise Ratio	>77 dB with E.D.R.
Distortion	<2% T.H.D.
Audio Output @ 10% distortion	into 8 Ohms: 2.0V / 15mW 3.0V / 80mV into 32 Ohms: 2.0V / 10mW 3.0V / 50mW
Antenna Type	omnidirectional in earphone cord
Audio Controls	Volume, On/Off, High frequency boost control, E.D.R.
Earphone Connector Type	3.5 mm stereo or mono
Dimensions	H 4" (101 mm) x W 2-3/4" (70 mm) x D 1" (25 mm)
Visual Indicators	Backlit LCD Channel, Hi Freq, E.D.R.
Charger Contacts	Bottom of unit
FCC	Complies with Part 15

SR-50 RECEIVER *(CATALOG NO. 71155-XXX*)*

Power Requirements	(2) AA batteries, Alkaline, NiMH or NICAD 30 hours Alkaline, 20 hours NiMH, 10 hours NICAD
Audio Frequency Response	<3 dB Variation (100 Hz-10 KHz)
Sensitivity	0.5 µV typical, 1.0 µV maximum,12 dB SINAD
Signal-To-Noise @ 1 mV Input	>60 dB
Distortion	<2% T.H.D.
Audio Output @ 10% distortion	into 8 Ohms: 2.0V / 15mW 3.0V / 80mV into 32 Ohms: 2.0V / 10mW 3.0V / 50mW
Antenna Type	omnidirectional in earphone cord
Controls	Volume/On/Off Switch
Dimensions	H 4" *(101 mm)* x W 2-3/4" *(70 mm)* x D 1" *(25 mm)*
Visual Indicators	Red LED On Indicator
Earphone Connector Type	3.5 mm stereo or mono
Charger Contacts	Bottom of unit
FCC	Complies with Part 15

In accordance with Federal Communications Commission (FCC) rules and regulations, Telex SoundMate personal listening systems are intended only for use in providing auditory assistance to the handicapped and are not intended for use by the general public.

* The last three digits in the transmitter catalog number (XXX) will be determined by the frequency that is selected.

Denon 3D Universal disc player
with versatile media and streaming service supports

Denon's 3D 'Universal' disc playback technology provides playback of virtually all popular disc formats, including high definition Blu-ray discs, as well as DVD-Audio and Super Audio CD high resolution stereo and multi-channel music format discs, along with DVD-Video and music CD playback. The DBT-1713UD also supports playback of your locally stored music, photo and video content via network (DLNA 1.5) and USB, as well as versatile online video streaming services such as Netflix, Youtube, Hulu Plus, and VUDU, all with Denon superb audio and video technology.

Features

New Features
• Design Matching to the new Denon A/V Receivers

• Wide variety of video streaming, movies, videos, TV shows
  (YouTube, Netflix, VUDU, Hulu Plus)

• Quick response for disc loading and playback
  (20% faster than current model)

• Quick Start mode, enables fast access to play

• New servo circuit, to reduce moving noise of pickup mechanism

• HDMI cable included (HIGH SPEED HDMI™ CABLE)

*Netflix is available in certain countries. Unlimited membership required. More information at www.netflix.com.

Denon Technologies for superior sound and picture quality
• Universal Disc Playability
  (Blu-ray, DVD-Audio, DVD-Video, Super Audio CD, CD)

• DLNA 1.5 Support and front USB port
  for music, photo, video contents playback

• 1080p/24 video output, to bring out the full quality of film

• HDMI source direct mode to output native resolution of the disc

• Picture adjustments

• Playing high-quality audio, using by pure direct function

Build Quality
• Fully Shielded Mechanism, suppress internal and external vibrations and
  electromagnetic noises for high precision disc playability at all times

• Separated 4-block construction for faithful playback of audio and video
  signals (Disc mechanism, Video/Audio, Power supply, and Indicator block)

• Fan-less construction for noise reduction

• Solid cabinet and large foot

Ease of Use
• Easy-to-use Multi language GUI and CD-ROM interactive manual

• User-friendly GUI

• Easy-to-use remote control handset
  -Glow-key for cursor keys and operation keys
  -Direct access for online video services
  -Remote Control also controls Denon AV receiver for convenience

• New "Denon Remote App" control
  via 2012 new Denon networking A/V Receivers*1)

Others
• One stereo channel (2ch) output for Multi-zone

• Eco Stand-by mode, lower power consumption (0.3W)

• Detachable AC cord

*1) The DBT-1713UD has remote control functionality by using the new "Denon Remote App" together
    with Denon new A/V Receiver such as AVR-1713.

Design Matching to the new Denon A/V Receivers
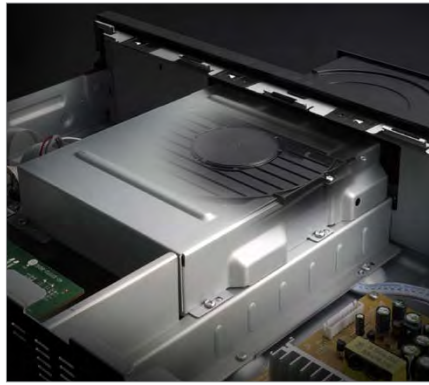
Fully Shielded Mechanism

Easy-to-use remote control handset

Versatile Disc Formats Playability

- BD-Video
- BD-R
- BD-RE
- DVD-Video
- DVD-Audio
- DVD+R, DVD+RW
  (Video mode, AVCHD format)
- DVD-R, DVD-RW
  (Video mode, AVCHD format)
- Super Audio CD
- Audio CD
- CD-R, CD-RW

Playable files	Playable media		
	BD-R/-RE DVD-R/-RW/+R/+RW/ CD-R/-RW	USB memory device	Network
MP3 (.mp3)	●	●	●
WMA (.wma)	●	●	●
AAC (.m4a)	●	●	●
LPCM (.wav)	●*1	●	●
FLAC (.flac)	●*1	●	●
JPEG (.jpg/.jpeg)	●	●	●
PNG (.png)	●	●	●
DivX® (.avi/.divx/.mkv)	●*1	●	●
MPEG (.mpg/.mpeg/.mp4/.ts/.m2t)	●*1	●	●
WMV (.wmv)	●*1	●	●
AVI (.avi)	●*1	●	●

* Depending on recording conditions (Bit-rate), these files may not be playable.

*1) Except CD-R/-RW.

Main Specifications

Video
Signal format	NTSC, PAL

Audio output characteristics
S/N	115 dB (BD)
Total harmonic distortion	1 kHz, 0.0025% (BD)
Dynamic range	100 dB (BD)

General
Power supply	120V, 60Hz
Power consumption	20 W
	0.3 W (Energy Saving Standby)
	0.5 W (Normal Standby)
	12 W (Quick Start)
Dimensions W x H x D	17 3/32" x 4 1/4" x 11 39/64"
	434 x 108 x 295 mm
Weight	10 lbs 13 oz, 4.9 kg

Ports

Video	HDMI output	1
Audio	Analog output (2ch, L/R)	1
Control	Ethernet	1
	USB port	1
	Remote control (IN/OUT)	1 / 1

*Design and specifications are subject to change without notice.
*The "BD-LIVE" logo is trademark of Blu-ray Disc Association
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HDMI™ HIGH SPEED

High Speed HDMI™ Cable Included

1-855-MY.DENON
1-855-693-3666
Call for Assistance: 9:00AM to 8:00PM M-F E.S.T.
For frequently asked questions please visit www.usa.denon.com/FAQ

MC2E

Compact Control System with Ethernet

Crestron® 2-Series Control Systems are the brain of a complete integrated AV or automation solution. Every audio, video, and environmental element of the home, boardroom, classroom, or command center becomes integrated and accessible through the control system. Crestron 2-Series control systems are unmatched for power, performance and scalability, providing the ideal choice for today's demanding control applications.

The MC2E is a low-cost 2-Series Ethernet control system ideally suited for any application requiring the powerful control engine and Ethernet connectivity of larger Crestron control systems, but with fewer control ports. The MC2E features two built-in COM ports, four IR/Serial ports, four I/O Versiports, four isolated relays, and Ethernet for control of video projectors, plasma displays, switchers, DVD players, screens, lifts, and much more. Additional control ports may be added using Cresnet expansion modules, or by "slaving" additional control processors.

2-Series Engine
At the heart of the MC2E is the powerful 2-Series engine. Our exclusive enhanced real-time operating system makes the MC2E the fastest, most reliable control system available.

Cresnet®
Cresnet is the communications backbone for many Crestron touchpanels, keypads, lighting controls, and other devices. The Cresnet bus is a simple, yet flexible 4-wire network that provides rock-solid bidirectional communication for numerous Cresnet devices.

Cresnet Slave Mode
Selectable Cresnet Slave Mode enables the MC2E to be configured as a Cresnet slave device, effectively transforming it into a Cresnet expansion module. Such flexibility can offer a cost-effective solution for system expansion, providing a host of additional control ports in a single module.

Ethernet
Crestron pioneered the IP-based control system to harness the vast possibilities of Ethernet and the Internet for remote control, monitoring, programming, and diagnostics. The MC2E is designed to deliver the world's most advanced IP control solution with full-duplex 10/100 Ethernet, built-in Web server and email client, and support for both static and dynamic IP addressing.

e-Control®2
Our award-winning e-Control 2 XPanel solutions offer the most flexible range of IP control possibilities available. Using a computer or mobile device, e-Control 2 provides an amazing control GUI that looks and behaves just like a Crestron touchpanel.

RoomView™
Every Ethernet-enabled 2-Series control system works directly with Crestron's exclusive RoomView Help Desk software for the industry's most comprehensive facility-wide asset management solution.

SNMP
Built-in SNMP support enables network management of Crestron control systems using third-party SNMP software. As an alternate or supplement to RoomView, SNMP allows full control and monitoring from the IT Help Desk or NOC in a format that's familiar to IT personnel.

SSL
All Ethernet-enabled 2-Series control systems support SSL (Secure Sockets Layer), the industry standard for protecting sensitive network communications.

IR Wireless Option
When equipped with an optional CNXRMIRD IR receiver, the MC2E provides a low-cost wireless control solution using any Crestron IR wireless touchpanel, or a third-party universal IR remote.

> 2-Series engine | Dual-bus architecture

> Cresnet port - master/slave selectable

> 10/100 Ethernet | SSL encryption

> e-Control 2 and RoomView enabled | SNMP support

> 2 Com ports (RS-232/422/485)

> 4 IR/serial ports

> 4 Versiport I/O ports

> 4 Low-voltage relay ports

> IR wireless compatible using CNXRMIRD

> External power pack included

> Single-space EIA rack-mountable

CRESTRON®

SPECIFICATIONS

Memory
SDRAM: 32 MB
NVRAM: 256 KB
Flash: 4 MB

Operating System
Real-time, preemptive multi-threaded/multitasking kernel; FAT32 file system with long names; supports SIMPL Windows™ and SIMPL+®

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

Connectors
COM A - B : (2) DB9 male, bidirectional RS-232/422/485 ports;
Up to 115.2k baud;
Hardware and software handshaking support;
All ports support C2N-NPA8 Network Poll Accelerator
INFRARED-SERIAL OUTPUT A - D : (4) 2-pin 3.5mm detachable terminal blocks, IR/Serial output ports;
IR output up to 1.2 MHz;
1-way serial TTL/RS-232 (0-5 Volts) up to 115.2k baud;
Individual signal generator per port, allowing simultaneous firing of all ports
I/O Versiports 1 - 4 : (1) 5-pin 3.5mm detachable terminal block comprising (4) digital input/output or analog input ports (referenced to GND);
Digital Input: Rated for 0-24 Volts DC, input impedance 20k ohms, logic threshold 1.24 Volts DC;
Digital Output: 250mA sink from maximum 24 Volts DC, catch diodes for use with "real world" loads;
Analog Input: Rated for 0-10 Volts DC, protected to 24 Volts DC maximum, input impedance 20k ohms;
Programmable 5 Volts, 2k ohms pull-up resistor per pin
RELAY OUTPUT 1 - 4 : (1) 8-pin 3.5mm detachable terminal block comprising (4) normally open, isolated relays;
Rated 1 Amp, 30 Volts AC/DC;
MOV arc suppression across contacts
IR IN: (1) 3-pin 3.5mm detachable terminal block;
For connection of the CNXRMIRD IR Receiver (sold separately);
Allows IR wireless control from Crestron or third-party remotes using RC-5 IR commands
LAN: (1) 8-wire RJ45 with 2 LED indicators;
10/100BaseT Ethernet port;
Green LED indicates link status;
Yellow LED indicates Ethernet activity
COMPUTER: (1) DB9 female,RS-232 computer console port
NET: (1) 4-pin 3.5mm detachable terminal block;
Cresnet port, Master/Slave selectable;
Expandable via C2N-NPA8 Network Poll Accelerator
24VDC: (1) 2.1mm barrel DC power jack,24 Volt DC power input;
(PW-2420RU power pack included);
Passes through to NET port to power Cresnet devices

Reset Buttons
HW-R: Hardware reset (reboots the control system)
SW-R: Software reset (restarts the SIMPL program)

LED Indicators
PWR: (1 green) Indicates DC power supplied to unit
NET: (1 yellow) Indicates Cresnet bus activity
MSG: (1 red) Indicates control system has generated an error message
LNK: (1 red) Indicates a valid connection on LAN port
ACT: (1 red) Indicates activity on LAN port

Power Requirements
Power Pack: 2.0 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2420RU included
Available Cresnet Power: 38 Watts using PW-2420RU power pack (included)
Cresnet Power Usage: 12 Watts (0.5 Amp @ 24 Volts DC) using Cresnet network power (no power pack connected to the 24VDC connector)

Environmental
Temperature: 41° to 113°F (5° to 45°C)
Humidity: 10% to 90% RH (non-condensing)

Enclosure
Chassis: Metal, black matte finish
Faceplate: Extruded aluminum, black matte finish with polycarbonate label overlay
Mounting: Freestanding or 1U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions
Height: 1.80 in (46 mm);
1.70 in (44 mm) without feet
Width: 17.03 in (433 mm);
19.0 in (483 mm) with ears
Depth: 8.65 in (220 mm)

Weight
4.3 lbs (2.0 kg)

Available Models
MC2E: Compact Control System with Ethernet

Included Accessories
PW-2420RU Power Pack, Desktop, 24VDC, 2A (50 Watts), Regulated, US/International [Included Quantity: 1]

Available Accessories
C2N-HBLOCK: Multi-type Cresnet Distribution Block
CNSP-XX: Custom Serial Interface Cable
CNXRMIRD: IR Receiver
IRP2: IR Emitter Probe

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Tel: 800.237.2041 / 201.767.3400 | Fax: 201.767.1905
www.crestron.com

CRESTRON

DM-MD6X1

6x1 DigitalMedia™ Switcher

The DM-MD6X1 delivers an incredibly versatile and cost-effective solution for managing a complete range of digital and analog AV sources in a small conference room or classroom, or as part of a larger DigitalMedia distribution system. High-resolution computer signals, standard and high-definition video, stereo analog and digital multi-channel audio sources are all handled by the DM-MD6X1, providing a perfect standalone switcher or multi-format interface for installation in an equipment rack or presentation lectern.

Additional DigitalMedia (DM) inputs and output allow the DM-MD6X1 to work with the full line of Crestron® DM transmitters, switchers, receivers, and room controllers, affording extensive capabilities for routing and distributing all of today's multimedia AV signal types throughout a single room or larger facility. Combining DM technology with a full complement of analog connections affords a perfect signal converter for integrating DigitalMedia into any analog-based system like Crestron MPS, QuickMedia®, and the CEN-RGBHV Series.

Multimedia Computer/AV Switcher
Inputs on the DM-MD6X1 include multi-format BNC video, RGB, HDMI®, balanced line-level and SPDIF digital audio. The HDMI input supports HDMI with HDCP, handling WUXGA computer resolutions and 1080p60 HDTV with multi-channel lossless audio. The HDMI input can also handle DVI and DisplayPort Multimode signals using an appropriate adapter or dongle[1]. The RGB input handles analog RGB signals up to WUXGA 1920x1200 pixels, as well as component video up to 1080p60[2]. The multi-format BNC input also accepts component HDTV signals up to 1080p60, as well as standard definition NTSC/PAL composite and S-Video. Dedicated audio inputs include two stereo balanced line-level analog and one SPDIF coaxial digital.

Additional inputs are easily added at locations up to 450 feet (137 m) away[3] using DM Transmitters. Three CAT-type DM inputs are provided on the DM-MD6X1, accepting inputs from individual DM Transmitters as well as other DM switchers. A single DM CAT output is provided to drive a DM Receiver/Room Controller at the display location, or to feed another DM switcher. HDMI and analog audio outputs are also included to feed a local video display and audio system. The analog stereo output includes professional balanced terminals and programmable volume control.

DigitalMedia™
As the leader in HDMI and control system technologies, Crestron has developed DigitalMedia, the first complete HD AV distribution system that takes HDMI to a higher level, and allows virtually any mix of AV sources to be distributed throughout the home, office, school, or virtually any other facility.

DigitalMedia distributes uncompressed digital video and audio signals up to 450 feet (137 m) using DM cable[3]. DigitalMedia thoughtfully manages all of the different signals and devices, matching each source's output to the capabilities of the selected display(s) without using scaling or compression. Every signal is preserved in its native video resolution and audio format, ensuring a pure, lossless signal path throughout.

QuickSwitch HD® Technology
Crestron exclusive QuickSwitch HD technology minimizes the annoying switching latency that plagues typical HDMI switchers. QuickSwitch HD achieves very fast switching of HDMI signals by maintaining a constant HDCP connection with each HDMI device in the system, eliminating the

need to re-authenticate each time a different source is selected.
Keyboard/Mouse Extender
The DM-MD6X1 also functions as a keyboard/mouse extender and switcher, allowing a computer or other USB HID-compliant host device connected to the DM-MD6X1 to be controlled by a keyboard and mouse at the display location using a DM-RMC-100-1 room controller, or at a presenter's location using select DM transmitters.

EDID Format Management
The DM-MD6X1 allows for management of the EDID (Extended Display Identification Data) information that passes between the display devices and input sources in the system. Using Crestron Toolbox™ software, the format and resolution capabilities of each device can be assessed and managed through the DM-MD6X1, ensuring reliable operation by instructing sources to output only the resolutions and formats that can be handled by the displays and system wiring.

CEC Embedded Device Control
The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-MD6X1 provides a gateway for controlling AV devices right through their HDMI connections, potentially eliminating the need for any dedicated control wires or IR probes. Through proper CEC signal management, DigitalMedia allows you to take control of each device in the system as you like.

Easy Setup
The DM-MD6X1 is designed to be placed on a shelf or mounted in an equipment rack or lectern. The front panel provides basic operation right out of the box. User-friendly setup and troubleshooting tools are provided via Crestron Toolbox™ software, performing automatic input and output configuration while letting the installer make intelligent design decisions along the way. The switcher even tests and measures the length of each DM cable, automatically making the appropriate calibrations for optimal signal transmission to each DM device.

CRESTRON

A Digital Upgrade for Legacy Systems

The DM-MD6X1 also affords a perfect signal converter for integrating DigitalMedia with analog-based systems like Crestron MPS, QuickMedia®, and the CEN-RGBHV Series. A simple HD15 VGA cable connected between the output of an MPS system and the input of the DM-MD6X1 allows every RGB, component, S-Video, and composite video input on the MPS to be converted to DigitalMedia[2]. Analog audio is converted similarly through a simple balanced stereo audio cable. The DM-MD6X1's HDMI and DM inputs may also be used to expand the input capabilities of the MPS system to handle digital AV sources, and its analog audio output can easily be fed into any spare input on the MPS to allow the digital audio signals to be amplified and controlled through the MPS system.

Please refer to the DigitalMedia Design Guide, Doc. #4789 for additional information.

> DigitalMedia™ switcher and interface

> HDMI®, RGB, and multi-format BNC video inputs

> Balanced analog and SPDIF audio inputs

> 3 DM CAT inputs and 1 DM CAT output

> HDMI and analog stereo audio outputs

> Integrated USB HID keyboard/mouse extender and switch

> Supports HDMI with multi-channel lossless audio

> Supports video resolutions up to WUXGA 1920x1200 and HD 1080p60

> Detects and reports detailed video and audio input information

> Performs automatic AV signal format management via EDID

> Allows cable length to 450 feet using DigitalMedia Cable

> QuickSwitch HD® technology achieves low-latency HDMI switching

> Enables device control via CEC

> Support 3D HDTV via DM in/out

> Easy setup and diagnostics tools via software

> Extends the life of analog-based AV systems

> Built-in power distribution for DM transmitters and room controller

> 2-space 19-inch rack-mountable

SPECIFICATIONS

Video

Switcher: 6x1 combination digital/analog switch, Crestron QuickSwitch HD®
Input Signal Types: DM CAT (DigitalMedia over shielded twisted-pair copper wire), HDMI®, DVI[1], DisplayPort Multimode[1], RGB, component (YPbPr)[2], S-Video (Y/C)[2], composite[2]
Output Signal Types: DM CAT, HDMI, DVI[1]
Formats: HDMI, DVI, HDCP content protection support, 3D (via DM only), RGBHV up to UXGA/WUXGA, HDTV up to 1080p60, NTSC or PAL

Input Resolutions, HDMI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock
Input Resolutions, HDMI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock
Input Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz
Input Resolutions, Component: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60
Input Resolutions, Composite and S-Video: 480i, 576i
Output Resolutions: Matched to inputs
Analog-To-Digital Conversion: 10-bit 165 MHz per each of 3 channels

Audio

Switcher: 6x1 combination digital/analog switch, limited audio breakaway[4]; independent input compensation and master volume adjustment for analog output
Input Signal Types: DM CAT, HDMI, DisplayPort Multimode[1], S/PDIF coaxial, analog stereo
Output Signal Types: DM CAT, HDMI, analog stereo
Formats, HDMI and SPDIF: Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, 2ch PCM
Formats, HDMI only: Up to 8ch PCM
Formats, Analog: Stereo 2-Channel
Analog-To-Digital Conversion: 24-bit 48 kHz
Digital-To-Analog Conversion: 24-bit 48 kHz
Volume Gain Range (analog out): -80dB to 0dB, adjustable from 0% to 100%
Input Compensation (analog out): ±10dB per input
Performance (analog): Frequency Response: 20Hz to 20kHz ±0.75dB;
S/N Ratio: >90dB, 20Hz to 20kHz A-weighted;
THD+N: <0.05% @ 1kHz;
Stereo Separation: >90dB

Communications

DigitalMedia: DM CAT, DMNet, HDCP management, EDID format management, CEC
Ethernet: 10BaseT/100BaseTX, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, RSTP
USB: Supports USB HID class devices

Ethernet Switch

Provides (1) onboard 10BaseT/100BaseTX Ethernet port, (1) internal 10BaseT/100BaseTX Ethernet port for the switcher, and (4) remote 10BaseT/100BaseTX Ethernet ports via select outboard devices

Connectors

VIDEO IN 1: (3) BNC female comprising (1) auto-sensing multi-format analog video input;
Signal Types: Component (YPbPr), S-Video (Y/C), or composite input;
Input Level: 1 Vp-p nominal;
Input Impedance: 75 Ohms nominal

CRESTRON

AUDIO OUT: (1) 5-pin 3.5mm detachable terminal block;
Balanced/unbalanced stereo line-level output, variable level;
Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced;
Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced
DM IN D/M 4 - 6: (3) DM CAT inputs, each composed of (2) 8-pin RJ45 female, shielded;
Connect to DM CAT outputs of DM transmitters or other DM devices via DM-CBL cable[3]
DM IN 24ABG: (3) 4-pin 3.5mm detachable terminal blocks, DMNet ports;
Connect to DMNet ports of DM transmitters or other DM devices via DM-CBL cable[3]
DM OUT D/M: (1) DM CAT output composed of (2) 8-pin RJ45 female, shielded;
Connects to DM CAT input of a DM receiver/room controller, switcher, or other DM device via DM-CBL cable[3]
DM OUT 24ABG: (1) 4-pin 3.5mm detachable terminal block, DMNet port;
Connects to DMNet port of a DM receiver/room controller, switcher, or other DM device via DM-CBL cable[3]
EXT PWR: (1) 3-pin 3.5mm detachable terminal block, power selection port;
Connects to an external power supply[5], or to the internal power source via a jumper, to power the DM devices connected to DM IN 4 - 6 and DM OUT;
Maximum Load: 75 Watts (3.13 Amps @ 24 Volts DC) total for all ports when connected to external power supply[5], otherwise limited to available DMNet power (see "Power Requirements" below)
HDMI OUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
Carries same audio and video signals as DM OUT
USB HID: (1) USB Type B female;
USB 1.1 device port for connection to the USB host interface of a computer or other USB HID-compliant host device
LAN: (1) 8-wire RJ45 female w/2 LED indicators;
10BaseT/100BaseTX Ethernet port;
Green LED indicates link status;
Yellow LED indicates Ethernet activity
100-240V ~2.3A 50/60Hz: (1) IEC C14 male chassis plug, main power input;
Mates with removable power cord, included
G: (1) 6-32 screw, chassis ground lug
COMPUTER (front): (1) USB Type B female;
USB 1.1 computer console port (6 ft cable included)

DM Cable Length
Cable Type:
DM-CBL DigitalMedia CableMaximum length per port without, between, before, or after repeaters:

- 200 ft (60 m) for 720p, 1080i, 1080p24
- 200 ft (60 m) for 1024x768 @75Hz
- 150 ft (45 m) for 1080p60
- 150 ft (45 m) for 1280x1024 @75Hz
- 150 ft (45 m) for 1920x1200 @60Hz
- 125 ft (38 m) for 1600x1200 @60Hz

Maximum total length per port using up to 2 repeaters:

- 450 ft (137 m) for 720p, 1080i, 1080p24
- 450 ft (137 m) for 1024x768 @75Hz
- 450 ft (137 m) for 1080p60
- 450 ft (137 m) for 1280x1024 @75Hz
- 450 ft (137 m) for 1920x1200 @60Hz
- 375 ft (114 m) for 1600x1200 @60Hz

Controls and Indicators
PWR: (1) green LED, indicates operating power supplied via Main Power Input
USB HID DISABLED: (1) red LED, indicates the COMPUTER port is in use causing USB HID to be disabled

RESET: (1) recessed miniature pushbutton for hardware reset, reboots the switcher
SYNC: (1) pushbutton and red LED, selects SYNC mode so the INPUTS LEDs indicate input signal presence
ROUTE: (1) pushbutton and red LED, selects ROUTE mode to allow routing changes
INPUTS 1 - 6: (6) pushbuttons and red LEDs, select input for routing
SETUP (rear): (1) red LED and (1) miniature recessed pushbutton for Ethernet auto-discovery

Power Requirements
Main Power: 90 Watts @ 100-240 Volts AC, 50/60 Hz
Available DMNet Power: 30 Watts (1.25 Amps @ 24 Volts DC) from internal power supply

Environmental
Temperature: 32° to 104°F (0° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 307 BTU/Hr

Enclosure
Chassis: Metal with black finish, vented sides, fan-cooled
Faceplate: Extruded aluminum, black finish with polycarbonate label overlay
Mounting: Freestanding or 2U 19-inch rack-mountable (adhesive feet and rack ears included)

Dimensions
Height: 3.47 in (89 mm) without feet
Width: 17.03 in (433 mm), 19.00 in (483 mm) with ears
Depth: 12.21 in (310 mm)

Weight
7.5 lb (3.4 kg)

Available Models
DM-MD6X1: 6x1 DigitalMedia™ Switcher

Available Accessories
DM-CBL-P-SP500: DigitalMedia™ Cable, plenum-rated, 500 ft spool
DM-CBL-NP-SP500: DigitalMedia™ Cable, non-plenum, 500 ft spool
DM-CONN-20: DigitalMedia™ Cable Connectors, 20-Pack
DM-DR: DigitalMedia™ Repeater
CBL-HD-1.5: Crestron® Certified HDMI® Interface Cable, 1.5 ft
CBL-HD-3: Crestron® Certified HDMI® Interface Cable, 3 ft
CBL-HD-6: Crestron® Certified HDMI® Interface Cable, 6 ft
CBL-HD-12: Crestron® Certified HDMI® Interface Cable, 12 ft
CBL-HD-20: Crestron® Certified HDMI® Interface Cable, 20 ft
CBL-HD-30: Crestron® Certified HDMI® Interface Cable, 30 ft
CBL-DP-HD-1.5: Crestron® Certified DisplayPort to HDMI® Interface Cable, 1.5 ft [Discontinued]
CBL-DP-HD-3: Crestron® Certified DisplayPort to HDMI® Interface Cable, 3 ft [Discontinued]
CBL-DP-HD-6: Crestron® Certified DisplayPort to HDMI® Interface Cable, 6 ft [Discontinued]
CBL-DP-HD-12: Crestron® Certified DisplayPort to HDMI® Interface Cable, 12 ft [Discontinued]
CBL-DP-HD-20: Crestron® Certified DisplayPort to HDMI® Interface Cable, 20 ft [Discontinued]
CBL-DP-HD-30: Crestron® Certified DisplayPort to HDMI® Interface Cable, 30 ft [Discontinued]
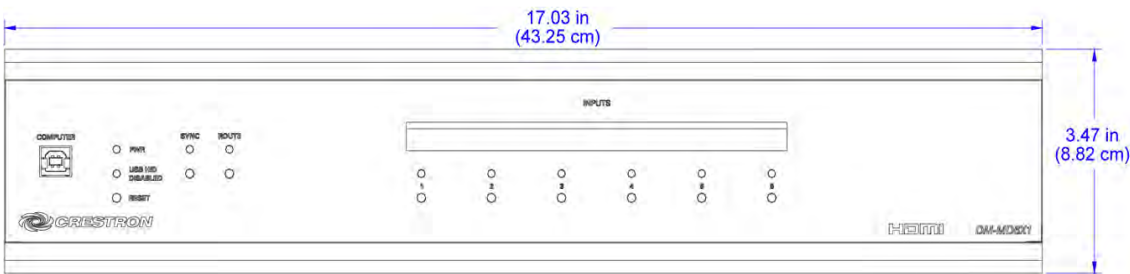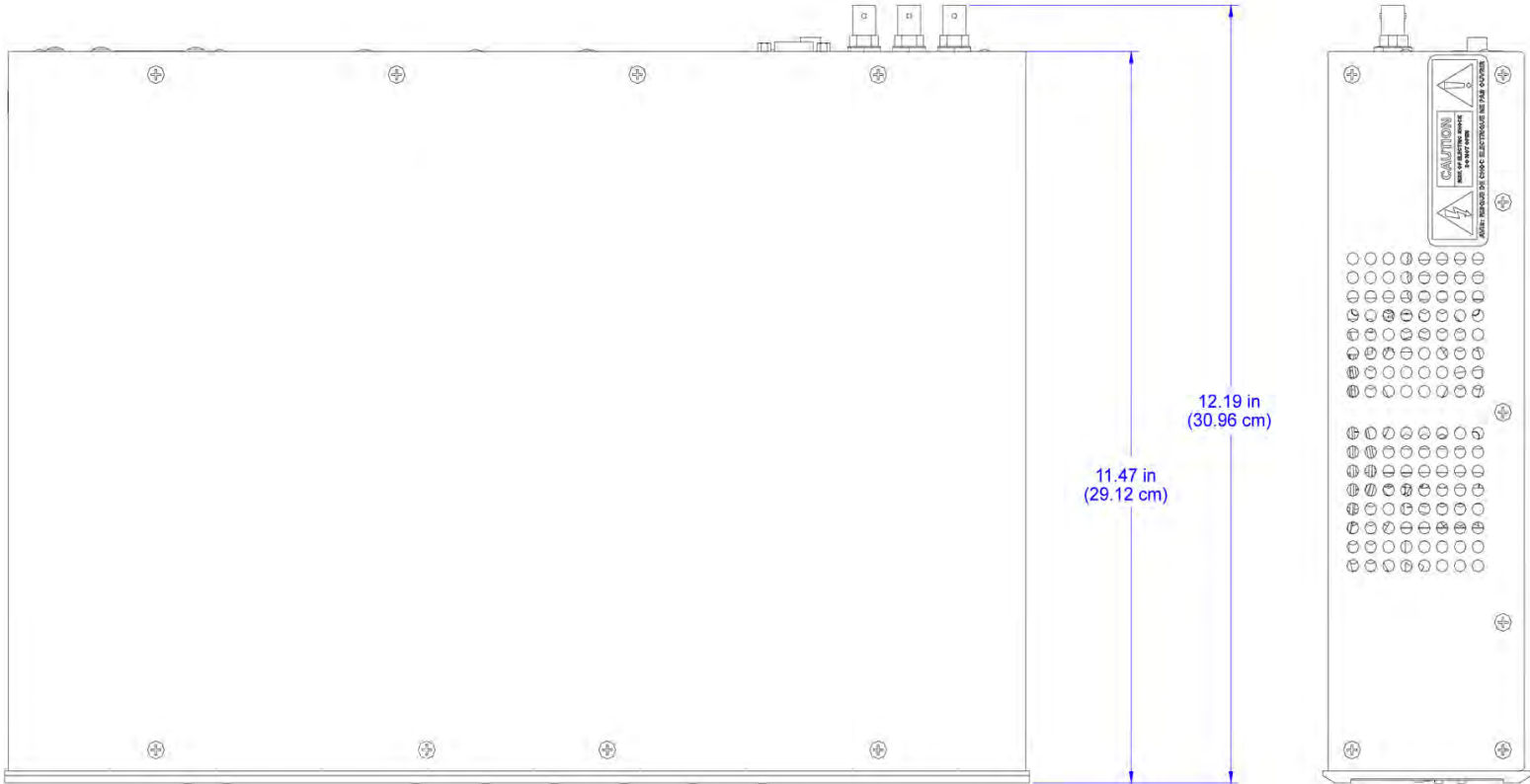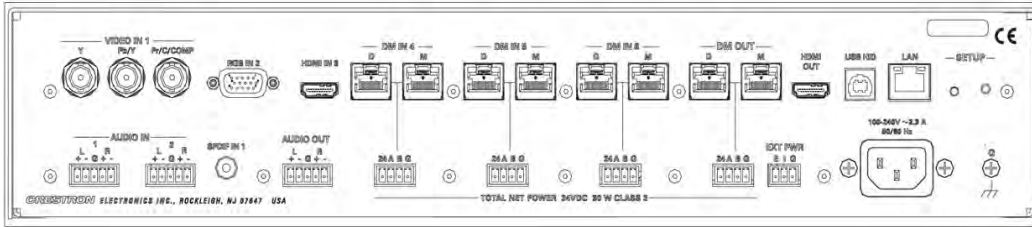**CBL-HD-DVI-1.5:** Crestron® Certified HDMI® to DVI Interface Cable, 1.5 ft
CBL-HD-DVI-3: Crestron® Certified HDMI® to DVI Interface Cable, 3 ft
CBL-HD-DVI-6: Crestron® Certified HDMI® to DVI Interface Cable, 6 ft

Crestron Electronics, Inc. 15 Volvo Drive | Rockleigh, NJ 07647
Tel: 800.237.2041 / 201.767.3400 | Fax: 201.767.1905
www.crestron.com

CRESTRON®

CBL-HD-DVI-12: Crestron® Certified HDMI® to DVI Interface Cable, 12 ft
CBL-HD-DVI-20: Crestron® Certified HDMI® to DVI Interface Cable, 20 ft
CBL-HD-DVI-30: Crestron® Certified HDMI® to DVI Interface Cable, 30 ft
CBL-VGA-1.5: Crestron® Certified Computer VGA Interface Cable, 1.5 ft
CBL-VGA-3: Crestron® Certified Computer VGA Interface Cable, 3 ft
CBL-VGA-6: Crestron® Certified Computer VGA Interface Cable, 6 ft
CBL-VGA-12: Crestron® Certified Computer VGA Interface Cable, 12 ft
CBL-VGA-25: Crestron® Certified Computer VGA Interface Cable, 25 ft
CBL-RCA-1.5: Crestron® Certified RCA Coaxial Digital Audio Interface Cable, 1.5 ft
CBL-RCA-3: Crestron® Certified RCA Coaxial Digital Audio Interface Cable, 3 ft
CBL-RCA-6: Crestron® Certified RCA Coaxial Digital Audio Interface Cable, 6 ft
CBL-RCA-12: Crestron® Certified RCA Coaxial Digital Audio Interface Cable, 12 ft
MP-WP130-B: Media Presentation Wall Plate - DB15HD Computer VGA w/ Mini-TRS Stereo Audio, Bulkhead, Black
MP-WP130-W: Media Presentation Wall Plate - DB15HD Computer VGA w/ Mini-TRS Stereo Audio, Bulkhead, White
MP-WP131-B: Media Presentation Wall Plate - DB15HD Computer VGA w/ Mini-TRS Stereo Audio, Breakout, Black
MP-WP131-W: Media Presentation Wall Plate - DB15HD Computer VGA w/ Mini-TRS Stereo Audio, Breakout, White
MP-WP150-B: Media Presentation Wall Plate - HDMI® w/Mini-TRS Stereo Audio, Black
MP-WP150-W: Media Presentation Wall Plate - HDMI® w/Mini-TRS Stereo Audio, White
MP-WP152-B: Media Presentation Wall Plate - HDMI®, Black
MP-WP152-W: Media Presentation Wall Plate - HDMI®, White
MP-WP160-B: Media Presentation Wall Plate - DisplayPort w/Mini-TRS Stereo Audio, Black
MP-WP160-W: Media Presentation Wall Plate - DisplayPort w/Mini-TRS Stereo Audio, White
MP-WP162-B: Media Presentation Wall Plate - DisplayPort, Black
MP-WP162-W: Media Presentation Wall Plate - DisplayPort, White
MP-WP140-B: Media Presentation Wall Plate - DVI-I w/Mini-TRS Stereo Audio, Black
MP-WP140-W: Media Presentation Wall Plate - DVI-I w/Mini-TRS Stereo Audio, White
MP-WP185-B: Media Presentation Wall Plate - DigitalMedia™ CAT, Black
MP-WP185-W: Media Presentation Wall Plate - DigitalMedia™ CAT, White

Notes:
1. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. CBL-HD-DVI and CBL-DP-HD interface cables available separately.

2. The RGB input can accept component, composite, and S-Video signals via direct interface to Crestron MPS Series products, or through an appropriate adapter (not included). Input sync detection is not provided for composite or S-Video signal types through the RGB connection.

3. For DigitalMedia CAT wiring, use DM-CBL DigitalMedia Cable. Up to two DM Repeaters (Model DM-DR) may be required. Refer to the Crestron DigitalMedia Design Guide, Doc. #4789 for complete wiring guidelines.

4. Audio breakaway capabilities and limitations: AUDIO/SPDIF IN 1 and AUDIO IN 2 may each be switched freely regardless which video input is selected; HDMI IN 3 audio may be switched freely only when HDMI IN 3 video, or any DM IN video input, is selected; HDMI IN 3 audio cannot be selected when VIDEO IN 1 or RGB IN 2 video inputs are selected; DM IN 4, DM IN 5, and DM IN 6 audio may each be switched freely except when any other numbered DM IN video input is selected; AUDIO IN 1 and SPDIF IN 1 inputs are mutually exclusive.

5. For external DMNet power, use a Crestron CNPWS-75, C2N-SPWS300, or other Cresnet power supply as required. Do not interconnect DMNet with Cresnet.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.

Crestron Electronics, Inc. 15 Volvo Drive | Rockleigh, NJ 07647
Tel: 800.237.2041 / 201.767.3400 | Fax: 201.767.1905
www.crestron.com

CRESTRON.

12.19 in
(30.96 cm)

11.47 in
(29.12 cm)

17.03 in
(43.25 cm)

3.47 in
(8.82 cm)

Crestron Electronics, Inc. 15 Volvo Drive | Rockleigh, NJ 07647

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Specifications subject to change without notice. 6/5/2012

8-Port 10/100Mbps PoE Switch
TPE-S80 (V1.0R)

The 8-Port 10/100Mbps PoE Switch, model TPE-S80, reduces equipment and installation costs by delivering data and power over existing Ethernet cables to Power over Ethernet (PoE) enabled devices such as Access Points and IP Cameras.

Boost office efficiency and reduce network congestion with a total switching capacity of 1.6Gbps. LED indicators display device status for easy power management and troubleshooting. An internal power supply reduces clutter and delivers 15.4 Watts to each PoE port. A convenient on/off button is located on the back of the switch. Non-PoE devices can connect to the switch—auto-sensing PoE technology cuts power to non-PoE connected devices. Use TRENDnet's PoE Splitter with the TPE-S80 to install non-PoE devices in remote locations.

Features

- IEEE 802.3af Power over Ethernet (PoE) compliant
- 8 x 10/100Mbps Auto-MDIX RJ-45 PoE ports
- On/Off power switch
- Provides 15.4 watts per PoE port
- Supports PoE Powered Device (PD) classification
- 1.6Gbps switching fabric
- Full wire-speed non-blocking reception and transmission
- Store-and-forward switching method
- Back pressure Flow Control for half-duplex mode
- IEEE 802.3x Flow Control for full-duplex mode
- 512Kbits RAM Data Buffer and 1K MAC address entries
- Diagnostic LEDs (Power, Link/Activity, PoE Act/Status)
- Plug and Play
- Sturdy metal enclosure
- Mounting hardware included
- 5-year limited warranty

8-Port 10/100Mbps PoE Switch
TPE-S80 (V1.0R)

SPECIFICATIONS

Hardware	
Standards	• IEEE 802.3 10Base-T • IEEE802.3u 100Base-TX • IEEE 802.3af Power over Ethernet • IEEE 802.3x Flow Control
Ports	• 8 x 10/100Mbps Auto-MDIX PoE ports
Power Switch	• On/Off power switch
Data Transfer Rate	• Ethernet: 10/20Mbps (half/full duplex) • Fast Ethernet: 100/200Mbps (half/full duplex)
Data RAM Buffer	• 512Kbits
Address Table	• 1K MAC entries
Switch Fabric	• 1.6Gbps
Power	• 100~240VAC 50/60Hz, internal universal switching power
Diagnostic LEDs	• Power, Link/Activity, PoE Act/Status
Power Consumption	• 6 Watts max. (no Power Device (PD) connected) • 132 Watts max. (8 x 15.4 watts PoE devices connected)
Temperature	• Operating: 0° ~ 45°C (32° ~ 113°F) • Storage: -10° ~ 70°C (14° ~ 158°F)
Humidity	• 10%- 95% (non-condensing)
Dimensions	• 266 x 160 x 44 mm (10.5 x 6.3 x 1.73 in.)
Weight	• 1.4 kg (3.1 lb)
Certifications	• CE, FCC
Hardware	
Power over Ethernet	• Up to 15.4 watts per port; PD classification • Polymer switch for short protection • PoE: pin 3,6 for power+ and pin 1,2 for power

NETWORKING SOLUTIONS

8-Port 10/100Mbps PoE Switch
(TPE-S80)

8-Port Gigabit Web Smart PoE Switch
(TPE-80WS)

ProView Megapixel PoE Internet Camera
(TV-IP522P)

ProView PoE Internet Camera
(TV-IP512P)

ProView PoE Internet Camera
(TV-IP512P)

Power + Ethernet Data
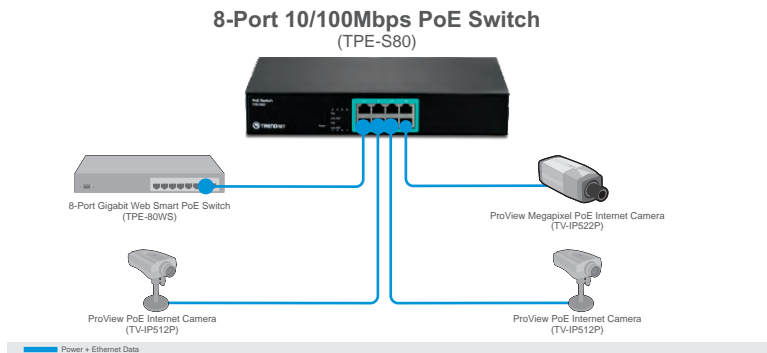
PACKAGE CONTENTS

• TPE-S80

• Multi-Language Quick Installation Guide

• Rack mounting kit

• Power cord

RELATED PRODUCTS

TV-IP512P	ProView PoE Internet Camera
TPE-102S	Power over Ethernet Splitter
TPE-80WS	8-Port Gigabit Web Smart PoE Switch

CONTACT INFORMATION

TRENDnet®

20675 Manhattan Place,Torrance, CA 90501 USA
Tel: 1-310-961-5500
Fax: 1-310-961-5511
Web: www.trendnet.com
Email: sales@trendnet.com
1-888-326-6061

![Middle Atlantic Products, Inc. logo]

middleatlantic.com

U Series/U317/UTR1 Rackshelves

EIA/TIA Compliant

U Series / U317 / UTR1 Rackshelves

Features

U Series - Universal rackshelves
- Available in 1 through 4 rackspaces
- Weight capacity from 35 to 85 lbs. depending on size
- Accommodates most standard non-rackmountable components
- See chart for part numbers and dimensions
- Contractor packs available
- UL Listed in the US and Canada

U317 - Vented 3 space rackshelf
- 17- 3/4" depth allows for deeper components
- 60 lb. weight capacity
- Vent pattern provides superior air circulation
- Slotted rear flange for cable management

UTR1 - Half / third rack shelf
- 25 lb. weight capacity
- Generous vent pattern provides superior air circulation
- Hook & loop strips included for mounting any half or third space components without hardware
- Contractor packs available

U2
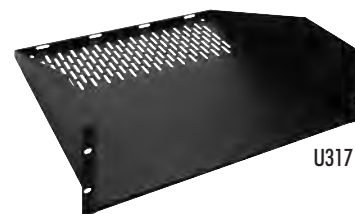
U317
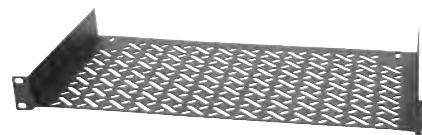
UTR1

Architects' and Engineers' Specifications

U Series
Solid, one-piece 16-gauge steel rackshelf shall be Middle Atlantic Products model # Ux (x = # of rackspaces, refer to chart). Weight capacity shall be___(refer to chart). Rackshelf shall feature durable flat black powder coat finish. Contractor packs shall be available with twelve U1 or six U2 rackshelves and shall be model # U1-RP12 or U2-RP6. U series rackshelf shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product. U series rackshelf shall be UL Listed in the US and Canada.

U317
Vented three rackspace rackshelf shall be Middle Atlantic Products model # U317. One-piece, 16-gauge rackshelf shall provide a 60 lb. weight capacity. U317 shall features slotted rear flange for cable management. Depth of 17-3/4" shall accommodate deeper components. U317 shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

UTR1
Half / third rack shelf with 10" depth shall be Middle Atlantic Products model # UTR1. Weight capacity shall be 25 lbs. UTR1 shall include two 2" x 10" hook & loop strips for component mounting and a generous vent pattern for superior air circulation. Contractor packs shall be available with twelve UTR1 rackshelves and shall be model # UTR1-RP12. UTR1 shall be warrantied to be free from defects in material or workmanship under normal use and conditions for the lifetime of the product.

electronic version available at middleatlantic.com

Engineered Mounting Solutions

US: New Jersey • California • Illinois • Voice: 973-839-1011 Fax: 973-839-1976 • middleatlantic.com
Canada: Ontario • British Columbia • Voice: 613-836-2501 Fax: 613-836-2690 • middleatlantic.ca

U Series / U317 / UTR1 basic dimensions

U Series

TOP VIEW

17.56 [446]

C
B
D

.56 [14]
(rear flange)

SIDE VIEW

FRONT VIEW

17.38 [441]

A

.31 [8] front flange
on U2, U3 and U4
only
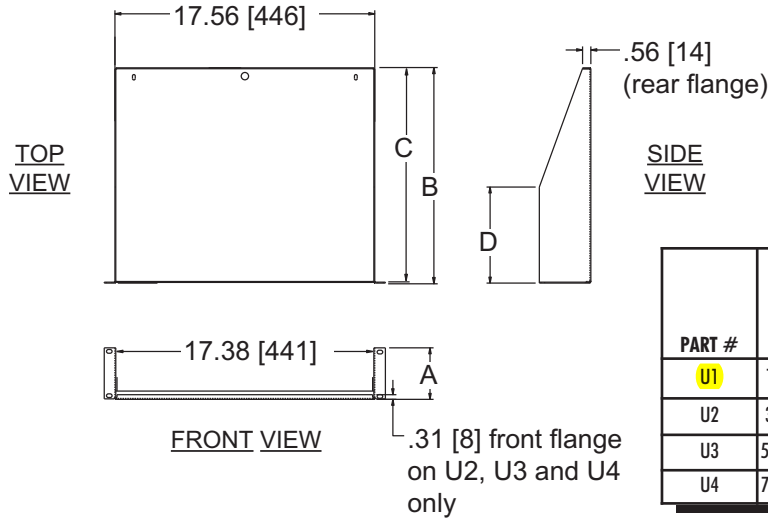
PART #	RACKING HEIGHT / RACKSPACES "A"	OVERALL DEPTH "B"	USEABLE DEPTH "C"	"D"	WEIGHT CAPACITY
U1	1.75 [44] (1 SP)	10.78 [274]	10.72 [272]	6.05 [154]	35 lbs. [16 kg]
U2	3.50 [89] (2 SP)	14.55 [370]	14.43 [367]	6.49 [165]	50 lbs. [23 kg]
U3	5.25 [133] (3 SP)	14.55 [370]	14.43 [367]	5.71 [145]	70 lbs. [32 kg]
U4	7.00 [178] (4 SP)	15.50 [394]	15.38 [391]	6.00 [152]	85 lbs. [39 kg]

U317

TOP VIEW

.31 [8] (rear flange depth)

17.86 [454] overall depth

17.75 [451] useable depth

.63 [16] (rear flange)

SIDE VIEW

5.00 [127]

5.25 [133]

FRONT VIEW

5.25 [133]

17.38 [441]

.31 [8] (front flange)

UTR1

TOP VIEW

17.50 [445]

10.00 [254]

FRONT VIEW

19.00 [483]

1.72 [44]

Middle Atlantic Products, Inc.

STICK-ON® SERIES
Model STD Series
Divider/Combiner Networks

ANYWHERE YOU NEED...

- To Combine Audio Signals to a Single Output
- To Filter RF from an Audio Line
- To Combine Stereo Signals
- To Feed a Mono Signal to Stereo Inputs
- To Combine Multiple Mics to a Single Input
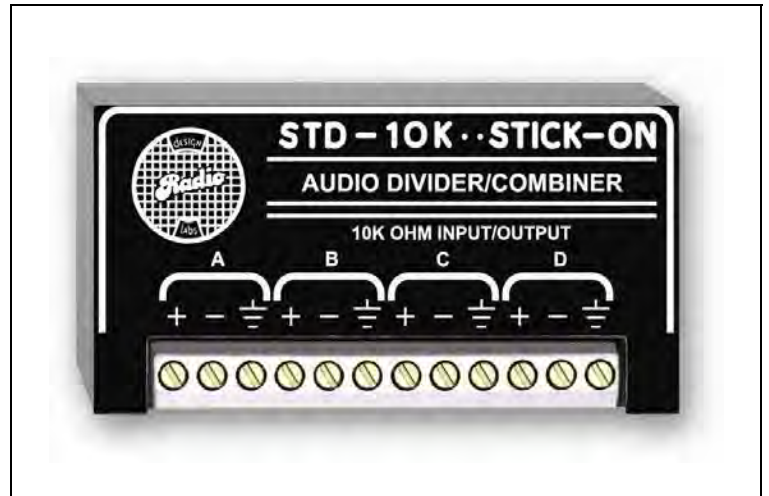
You Need The STD Series!

The STD series of products is part of the STICK-ON line of products from Radio Design Labs. It is a resistive branching network with RF filtering on each of the four channels. Any channel, A through D, may be either input or output. This permits combining stereo signals into mono inputs, splitting mono signals to multiple inputs, and even combining microphones with output shorting switches into a single amplifier input. The STD products are available in 150 Ω, 600 Ω and 10 kΩ models. All inputs and outputs are balanced.

STD Functional Block Diagram

RDL®
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™
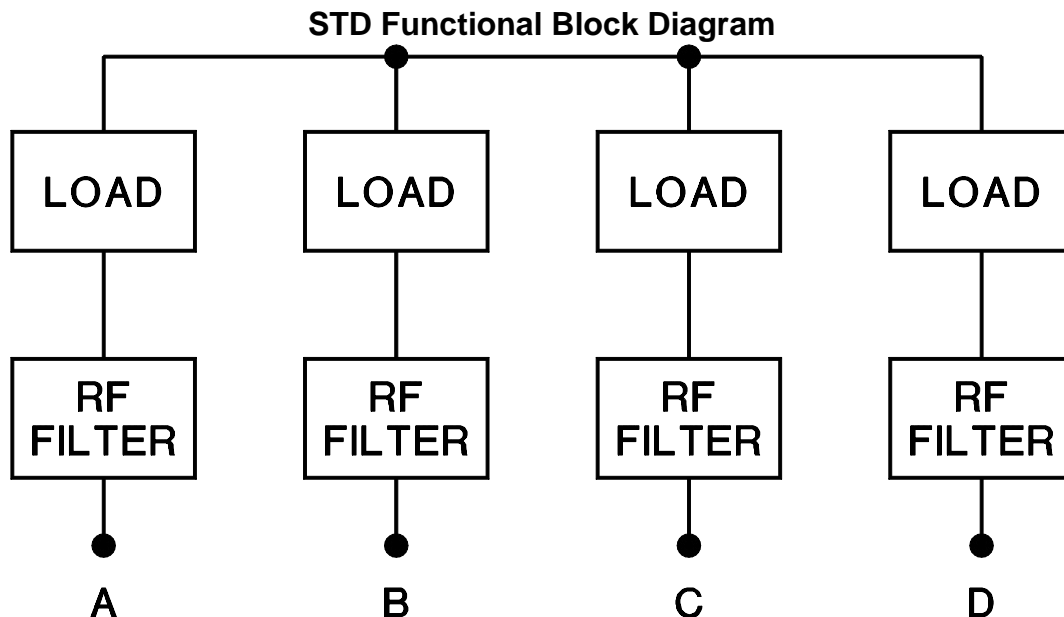
STICK-ON® SERIES
Model STD Series
Divider/Combiner Networks

Installation/Operation

CE

BRANCH A 150 OHM MIC TO MULTIPLE INPUTS

STD-150··STICK-ON
AUDIO DIVIDER/COMBINER
150 OHM INPUT/OUTPUT
A   B   C   D
+ − ⏚ + − ⏚ + − ⏚ + − ⏚

SIGNAL FROM BALANCED MIC-LEVEL SOURCE | SIGNAL FEEDING BALANCED MIC-LEVEL EQUIPMENT | SIGNAL FEEDING BALANCED MIC-LEVEL EQUIPMENT | SIGNAL FEEDING BALANCED MIC-LEVEL EQUIPMENT
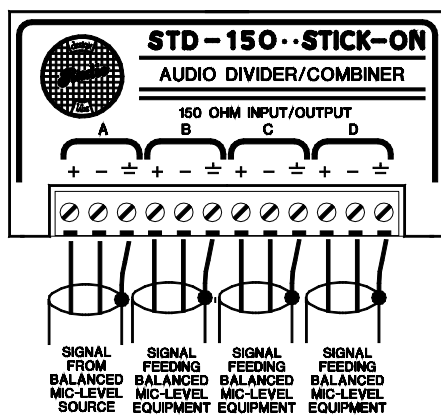
COMBINE MULTIPLE 150 OHM MICS TO SINGLE INPUT

STD-150··STICK-ON
AUDIO DIVIDER/COMBINER
150 OHM INPUT/OUTPUT
A   B   C   D
+ − ⏚ + − ⏚ + − ⏚ + − ⏚

SIGNAL FROM BALANCED MIC-LEVEL SOURCE | SIGNAL FROM BALANCED MIC-LEVEL SOURCE | SIGNAL FROM BALANCED MIC-LEVEL SOURCE | SIGNAL FEEDING BALANCED MIC-LEVEL EQUIPMENT
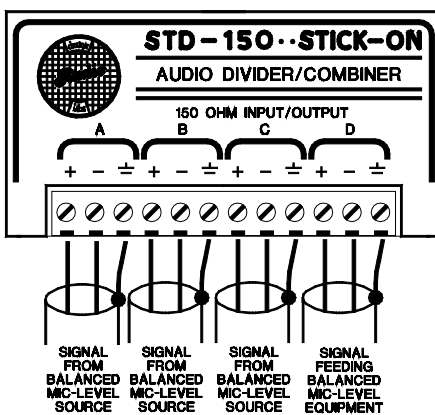
BRANCH A 600 OHM LINE TO 3 INPUTS

STD-600··STICK-ON
AUDIO DIVIDER/COMBINER
600 OHM INPUT / OUTPUT
A   B   C   D
+ − ⏚ + − ⏚ + − ⏚ + − ⏚

SIGNAL FROM BALANCED LINE-LEVEL SOURCE | SIGNAL FEEDING BALANCED 600 OHM EQUIPMENT | SIGNAL FEEDING BALANCED 600 OHM EQUIPMENT | SIGNAL FEEDING BALANCED 600 OHM EQUIPMENT
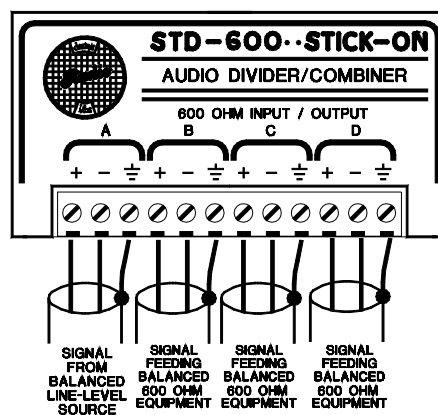
COMBINE MULTIPLE 600 OHM SIGNALS TO SINGLE INPUT

STD-600··STICK-ON
AUDIO DIVIDER/COMBINER
600 OHM INPUT / OUTPUT
A   B   C   D
+ − ⏚ + − ⏚ + − ⏚ + − ⏚

SIGNAL FROM BALANCED 600 OHM SOURCE | SIGNAL FROM BALANCED 600 OHM SOURCE | SIGNAL FROM BALANCED 600 OHM SOURCE | SIGNAL FEEDING BALANCED 600 OHM EQUIPMENT
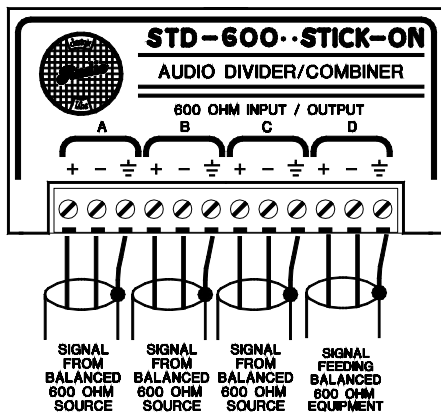
FEED MONO SIGNALS TO STEREO INPUTS

STD·········STICK-ON
AUDIO DIVIDER/COMBINER
MODEL TO MATCH CIRCUIT IMPEDANCE
A   B   C   D
+ − ⏚ + − ⏚ + − ⏚ + − ⏚

SIGNAL FROM BALANCED MONO SOURCE | SIGNAL FEEDING LEFT EQUIPMENT INPUT | SIGNAL FEEDING RIGHT EQUIPMENT INPUT

COMBINE STEREO SIGNALS INTO MONO INPUTS

STD·········STICK-ON
AUDIO DIVIDER/COMBINER
MODEL TO MATCH CIRCUIT IMPEDANCE
A   B   C   D
+ − ⏚ + − ⏚ + − ⏚ + − ⏚

SIGNAL FROM BALANCED LEFT SOURCE | SIGNAL FROM BALANCED RIGHT SOURCE | MONO SIGNAL FEEDING EQUIPMENT INPUT | MONO SIGNAL FEEDING EQUIPMENT INPUT

NOTE: DOES NOT PROVIDE ISOLATION BETWEEN CHANNELS

A MODULE MAY BE UNBALANCED BY CONNECTING ALL 4 NEGATIVE TERMINALS TO THE ADJACENT GROUNDS. BALANCED AND UNBALANCED WIRING MAY NOT BE MIXED.

TYPICAL PERFORMANCE

Circuit Type:	Passive
Circuit Configuration:	Balanced
Input/Output Impedance:	150, 600, or 10 kΩ as marked
Number of Inputs/Outputs:	4 Total: Useable in any combination: split 1 in to 3 out; 2 in to 2 out; 3 in to 1 out
Insertion Loss:	3 dB
Isolation between Channels:	3 dB (STD products are passive and therefore not intended as isolation devices; use RDL Mixers or Mixers or Distribution Amps for isolation)
Maximum Signal Input:	+28 dBu (at 600 Ω)
	+22 dBu (at 150 Ω)

Radio Design Labs Technical Support Centers
U.S.A. (800) 933-1780, (928) 778-3554; Fax: (928) 778-3506
Europe [NH Amsterdam] (++31) 20-6238 983; Fax: (++31) 20-6225-287

891-0039H

P-S Series

Power Amplifiers

P7000S

P5000S

P3500S

P2500S

P7000S Rear Panel

YS Processing EEEngine 2U

Reliable, professional-quality power amplification for a broad range of applications.

- In 4 bridged mode the P7000S delivers 3200 watts, the P5000S 2600 watts, the P3500S 2000 watts, and the P2500S 1300 watts.
- Yamaha's exclusive EEEngine technology significantly reduces power consumption and heat generation.
- Independent sweepable high-pass and low-pass filters on each channel so you can optimize output for subwoofer or full range systems.
- Neutrik Speakon output jacks and 1/4-inch output jacks for each channel, in addition to 5-way binding post.
- Balanced XLR and 1/4-inch TRS jacks are provided for channel input.
- Variable-speed fans offer quiet, efficient cooling.
- Comprehensive protection includes power on/off muting, DC detection, thermal protection, current limiting, and a protective cover for the attenuators.
- YS Processing (Yamaha Speaker Processing) achieves optimum matching with Yamaha Club Series loudspeaker systems.

GENERAL SPECIFICATIONS

Model		P7000S	P5000S	P3500S	P2500S
Output Power	4Ω per channel	1100W	750W	590W	390W
1kHz	8Ω per channel	750W	525W	390W	275W
THD+N=1%	8Ω / BRIDGE	2200W	1500W	1180W	780W
	4Ω per channel	950W	700W	450W	310W
20Hz-20kHz	8Ω per channel	700W / 650W(230V)	500W	350W	250W
THD+N=0.1%	8Ω / BRIDGE	1900W	1400W	900W	620W
1kHz	2Ω per channel	1600W	1300W	1000W	650W
20ms nonclip	4Ω / BRIDGE	3200W	2600W	2000W	1300W
Sensitivity (dBu)	RL=8Ω Att. max	+8.0	+6.0	+4.0	+3.0
S/N Ratio	20Hz-20kHz (DIN AUDIO)	104dB	103dB	102dB	100dB
Idle Power Consumption		35W	35W	30W	25W
1/8 Power Consumption (4Ω)		700W	550W	450W	320W
Power Bandwidth	(half power THD+N=0.5%)	10Hz-40kHz (THD+N=0.5%)			
THD+N	20Hz – 20kHz, half power	≤ 0.1%			
Intermodulation Distortion 60Hz: 7kHz, 4:1, half power		≤ 0.1%			
Frequency Response	8Ω, Po=1W,HPF=OFF	MAX +0.5dB, TYP 0dB, MIN −1dB f=20Hz-50kHz			
Channel Separation	Half power RL=8Ω 1kHz	≥ 70dB			
	ATT. Max input 600Ω shunt				
Residual Noise	ATT. Min 20Hz-20kHz (DIN AUDIO)	≤ -70dB			
Damping Factor	8Ω, f=1kHz	≥ 350		≥ 200	
Voltage Gain	ATT. max	32.1dB			
Input Impedance		30kΩ (balanced) 15kΩ (unbalanced)			
Controls	Front panel	POWER switch (push on/push off) attenuator (31position) x 2			
	Rear panel	MODE switch (STEREO/BRIDGE/PARALLEL), FILTER switch (SUB WOOFER/LOW CUT/OFF) x 2, FREQ.CONTROL (25Hz-150Hz) x 2, YAMAHA SPEAKER PROCESSING switch (ON/OFF)			
Connectors	Input	XLR-3-31 type/ch, 1/4" TRS/ch			
	Output	SPEAKON, 5way binding post, 1/4" phone/ch			
Indicators		POWER: x 1 (Green), PROTECTION: x 1 (Red), TEMP: x 1 (Red) heatsink temp ≥ 85°C, YS PROCESSING: x 1 (Yellow), SIGNAL: x 2 (Green), CLIP: x 2 (Red)			
Load Protection		POWER switch on/off mute, DC-fault power supply shutdown(P7000S/5000S), DC-fault power output cut (P3500S/2500S)			
Amplifier Protection		Thermal (heatsink temp ≥ 90°C), VI limiter (RL ≤ 1Ω)			
Limiter Circuit		comp. :THD ≥ 0.5%			
Cooling		Dual variable-speed fan		Single variable-speed fan	
Power Requirements		120V / 60Hz, 230V / 50Hz, 240V / 50Hz			
Dimensions (W x H x D)		480 x 88 x 456 mm (18-7/8" x 3-7/16" x 17-15/16")			
Weight		12kg (26.5 lbs.)	12kg (26.5 lbs.)	15kg (33.1 lbs.)	14kg (30.9 lbs.)
Included Accessories		Security cover (with a hex wrench), Owner's Manual			

*1: 1/8 Power = 9dB below rated power
*2: Half Power = 3dB below rated power
*3: 0dBu = 0.775Vrms

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DIMENSIONS

unit : mm

16.500

BAA

DRILL AND TAP FOR
#6-32 MS
8X

3.563

2.875

0.875

1.813

2 GANG CUTOUT

NC3FDL-1-BAG
C2

27.000

MIC 1

3.563

2.875

0.875

1.813

2 GANG CUTOUT

225 PARSONS STREET
KALAMAZOO, MI 49007
PHONE: 888-253-7360
FAX: 269-388-9681

REV: A

SCALE: NTS

CLIENT NAME:
QUOTE #:

DATE: 3/5/13   CREATED BY: S. BERTCH

ORDER #:   DRAWING
DUE DATE: CHECKED BY:

FILE: 1477-03053B-01.DWG

7" Touch Screen

> Ultra clean, modern appearance

> Thin profile and small footprint

> Affordable and easy to install

> 7" widescreen active-matrix color display

> Core 3 UI™ graphics[1]

> 800 x 480 WVGA display resolution

> Capacitive touch screen technology

> High-performance H.264 streaming video

> Rava™ SIP intercom and phone technology

> Customizable audio feedback

> Built-in microphone and speakers

> 5 soft-touch capacitive buttons

> Single-wire Ethernet connectivity

> PoE network powered

> Standard electrical wall box mounting[4]

> Available tabletop and swivel mount options[2]

> Available in smooth black or white finish

Advanced Touch Screen Control

A Crestron® touch screen offers an ideal user-interface for controlling all the technology in your home, boardroom, classroom, courtroom, or command center. Touch screens do away with piles of remote controls, cluttered wall switches, and cryptic computer screens, simplifying and enhancing the way you use technology. For controlling home theater, multimedia presentation, audio, video, lighting, HVAC, and other systems, Crestron touch screens are fully-customizable with easy-to-use controls and icons, true feedback and real-time status display, live streaming video, and advanced navigation of digital media servers, tuners, and other devices.

With its clean, contemporary design highlighted by edge-to-edge glass and stunning Core 3 UI™ color graphics, the Crestron TSW-750 touch screen makes an elegant statement on any wall, tabletop or lectern. Perfectly at home in the most contemporary residence or modern office building, its high-tech good looks underline its power for simplifying everyday tasks and functions throughout any facility.

The TSW-750 delivers the ultimate touch screen experience in an unobtrusive, space-saving design featuring a brilliant 7 inch capacitive touch screen display and 5 soft-touch buttons. PoE connectivity and standard gang-box mounting make installation a breeze for both new and retrofit applications. Additional features include high-performance H.264 video, Rava™ SIP Intercom, and advanced Core 3 UI touch screen graphics.

Powered by Core 3™[1]

Crestron touch screens have always offered the ultimate user experience. With Core 3 UI, they also deliver the ultimate value, enabling the creation of dynamically rich user interfaces with incredible efficiency and unparalleled functionality. Using Core 3 UI, programmers can swiftly integrate fluid gesture-driven controls, animated feedback, metadata,

embedded apps, and full-motion video for a deeply engaging and ultra-intuitive touch screen experience.

Some Core 3 UI enhancements:

- Cool-looking graphical buttons, sliders, knobs, and gauges are intuitive and fun to use.
- Kinetic effects enhance the feeling of realism with lists and toolbars that scroll with momentum at the flick of a fingertip.
- Drag-and-drop objects snap into place offering an easy way to assign assets to rooms.
- Desktop widgets personalize the touch screen with animated clocks, calendars, weather, news, and other information.
- Customizable themes allow a completely different look and feel for every user, event, or season.
- Fully-developed SmartObjects™ enable sophisticated control over complex devices with minimal programming.
- Smart Sizing™ scales objects perfectly and instantly for faster GUI development — even across different sized touch screens.

Soft-Touch Buttons

The TSW-750 includes five soft-touch capacitive buttons for quick access to commonly used functions. The buttons are pre-labeled with icons for "Power", "Home", "Lights", "Up", and "Down" functions. Each button is programmable via the control system for custom functionality.

Streaming Video

High-performance streaming video capability makes it possible to view security cameras and other video sources over the network right on the touch screen. Native support for H.264 and MJPEG formats allows the TSW-750 to display live video images from Web cameras and servers such as the Crestron CEN-NVS200 Network Video Streamer[2].

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TSW-750-W-S – Rear and Front Views

Rava™ SIP Intercom

Rava SIP Intercom Technology enables hands-free VoIP communication between any two Rava-enabled Crestron touch screens. Rava works over Ethernet, supporting 2-way intercom, video intercom[3], paging, and room monitoring without any special wiring. VoIP phone capability is also possible through integration with an SIP-compatible IP phone system or SIP server, allowing hands-free telephone functionality complete with speed-dialing, caller ID, custom ringers, and other enhancements. Built-in echo cancellation affords true-duplex performance for clear, seamless voice communication using the TSW-750's integrated microphone and speakers.

Audio Feedback

Customized audio files can be loaded to add another dimension to the touch screen graphics using personalized sounds, button feedback, and voice prompts.

TSW-750-B-S with TSW-750-TTK TableTop Mounting Kit

Single-Wire Connectivity

A simple Ethernet LAN connection is all that is required to wire the TSW-750, containing all control, video, intercom, and power signals within a single wire.

Power over Ethernet

Using PoE technology, the TSW-750 gets its operating power right through the LAN wiring. PoE (Power over Ethernet) eliminates the need for a local power supply or any dedicated power wiring. A PoE Injector (PWE-4803RU[2]) simply connects in line with the LAN cable at a convenient location. Crestron PoE switches (CEN-SW-POE-5, CEN-SWPOE-16 or CEN-SWPOE-24[2]) may also be used to provide a total networking solution with built-in PoE.

Simple, Versatile Mounting

The TSW-750 installs easily over a 2-gang or 3-gang electrical box, or a 2-gang European electrical box. It can also be attached directly to drywall and other surfaces over the front of a 2-3/8" H x 3-3/8" W (60mm H x 86mm W) cutout. When installed, it protrudes just 1/2 inch from the mounting surface and is magnetically adhered to its mounting bracket, eliminating any visible screws for an ultra clean appearance.[4]

TableTop Option

Using the optional TableTop Kit (TSW-750-TTK[2]), the TSW-750 becomes a stylish, freestanding touch screen that fits perfectly on a table, desk, or countertop. It can even be permanently attached to the surface using the optional Swivel Mount Kit (TSW-550/750/1050-SMK[2]).

SPECIFICATIONS

Touch Screen Display

Display Type: TFT Active matrix color LCD
Size: 7 inch (178 mm) diagonal
Aspect Ratio: 15:9 WVGA
Resolution: 800 x 480 pixels

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Brightness: 300 nits (cd/m²)
Contrast: 350:1
Color Depth: 18-bit, 262k colors
Illumination: Edgelit LED
Viewing Angle: ±70° horizontal, ±65° vertical
Touch Screen: Projected Capacitive

Buttons

Hard Keys: (5) Projected capacitive pushbuttons, programmable, pre-labeled with icons for "Power", "Home", "Lights", "Up", and "Down"
Reset: (1) Miniature pushbutton on rear panel for hardware reset

Memory

LPDDR2 RAM: 1 GB
Flash: 4 GB
Maximum Project Size: 512 MB

Graphics Engine

Core 3 UI™ [1]

Communications

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, IEEE 802.3af and 802.3at Type 1 compliant

Video

Streaming Formats: H.264 (MPEG-4 part 10 AVC), MJPEG

Audio

Features: Built-in microphone and speakers, Rava™ SIP Intercom
Audio Feedback Formats: MP3

Connectors

LAN PoE: (1) 8-wire RJ45 with 2 LED indicators;
10Base-T/100Base-TX Ethernet port;
Power over Ethernet compliant;
Green and yellow LEDs indicate Ethernet port status

Power Requirements

Power over Ethernet: IEEE 802.3af (802.3at Type 1) Class 3 PoE Powered Device

Environmental

Temperature: 32° to 112°F (0° to 45°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 44 BTU/hr

Enclosure

Construction: Plastic, smooth black or white finish
Mounting: Surface mount over a 2 or 3-gang electrical box, 2-Gang

European (DIN 49073) electrical box, or 2-3/8" H x 3-3/8" W (60mm H x 86mm W) cutout[4]; optional tabletop kit sold separately

Dimensions

Height: 4.74 in (121 mm)
Width: 7.59 in (193 mm)
Depth: 2.03 in (52 mm)

Weight

14.1 oz (400 g)

MODELS & ACCESSORIES

Available Models
TSW-750-B-S: 7" Touch Screen, Black Smooth
TSW-750-W-S: 7" Touch Screen, White Smooth

Available Accessories
TSW-750-TTK: TableTop Kit
TSW-550/750/1050-SMK: Swivel Mount Kit for TSW-750-TTK
PWE-4803RU: PoE Injector
CEN-SW-POE-5: 5-Port PoE Switch
CEN-SWPOE-16: 16-Port Managed PoE Switch
CEN-SWPOE-24: 24-Port Managed PoE Switch
CEN-NVS200: Network Video Streamer
SW-VMK-WIN: TouchPoint® Virtual Mouse & Keyboard Software for Windows®

Notes:

1. Supports Core 3 UI only. Not compatible with pre-Core 3 UI projects.
2. Item(s) sold separately.
3. H.264 compatible IP camera required.
4. For proper positioning of the touch screen unit, the electrical box or cut-out must be positioned approximately 1/4" to the right of center, and 1/10" above center.

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DM-TX-200-2G

Wall Plate DigitalMedia™ CAT Transmitter 200

The DM-TX-200-2G is a DM CAT transmitter and switcher that installs in a double-gang wall box to provide a convenient interface for computers and high-definition AV sources as part of a complete **DigitalMedia** system. With both HDMI™ and RGB inputs, the DM-TX-200-2G is ideal for wall, lectern, and floor box applications in a boardroom, classroom, or residence to provide an input for a laptop computer or similar source. It connects to any DM-MD series DigitalMedia switcher or **DM-RMC-100** Room Controller via a single DM cable.

DigitalMedia™

As the leader in HDMI and control system technologies, Crestron® has developed DigitalMedia, the first complete HD AV distribution system that takes HDMI to a higher level, and allows virtually any mix of AV sources to be distributed throughout the home, office, school, or virtually any other facility.

DigitalMedia distributes uncompressed digital video and audio signals up to 450 feet (137 m) using DM cable[1]. DigitalMedia thoughtfully manages all of the different signals and devices, matching each source's output to the capabilities of the selected display(s) without using scaling or compression. Every signal is preserved in its native video resolution and audio format, ensuring a pure, lossless signal path throughout.

Multimedia Computer/AV Interface

The DM-TX-200-2G provides simple switching between two inputs. Its HDMI input supports HDMI with HDCP, handling WUXGA computer resolutions and 1080p60 HDTV with multi-channel lossless audio. The HDMI input can also handle DVI and DisplayPort Multimode signals using an appropriate adapter or dongle[2]. The RGB input handles all analog RGB signals up to WUXGA 1920x1200 pixels, as well as component video up to 1080p60[3]. A mini-TRS stereo audio input is also provided to accept analog audio signals from an unbalanced line-level or headphone output.

Used with a single **DM-RMC-100** Room Controller and optional Crestron Control System, the DM-TX-200-2G affords a very simple solution for extending a multimedia computer or AV signal to a single display up to 450 feet (137 m) away[1]. As part of a larger system using a DM-MD series switcher, multiple DM-TX-200-2Gs may be installed to enable the distribution of several sources at different locations to feed multiple displays throughout any room or larger facility.

Keyboard/Mouse Extender

Also, when connected to a DM-MD series switcher, the DM-TX-200-2G functions as a keyboard/mouse extender, allowing a USB HID-compliant keyboard and/or mouse at the podium or conference table to control a computer or other host device located at the central equipment rack.

EDID Format Management

The DM-TX-200-2G allows for management of the EDID (Extended Display Identification Data) information that passes between the display devices and input sources in the system. Using **Crestron Toolbox™** software, the format and resolution capabilities of each device can be assessed and managed through the DM-TX-200-2G, ensuring reliable operation by instructing sources to output only the resolutions and formats that can be handled by the displays and system wiring.

CEC Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its

connection to the control system, the DM-TX-200-2G provides a gateway for controlling the connected source device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR probes. Through proper CEC signal management, DigitalMedia allows you to take control of each device in the system as you like.

Simple Wall Mount Design

The DM-TX-200-2G is designed to be wall mounted using a standard electrical box or plaster ring. The DM cable is terminated to the rear of the transmitter using screw terminals. An array of indicators on the front of the DM-TX-200-2G provides for easy setup and troubleshooting, verifying the status of connections and signal activity at a glance. Advanced configuration is enabled through **Crestron Toolbox™** software.

A Digital Upgrade for Legacy Systems

The DM-TX-200-2G also affords a perfect signal converter for integrating DigitalMedia with analog-based systems like Crestron **MPS**, **QuickMedia®**, and the CEN-RGBHV Series. A simple HD15 VGA cable connected between the output of an MPS system and the input of the DM-TX-200-2G allows every RGB, component, S-Video, and composite video input on the MPS to be converted to DigitalMedia[3]. Analog audio is converted similarly through a simple unbalanced stereo audio cable. The DM-TX-200-2G's HDMI input may also be used to expand the input capabilities of the MPS system to handle digital AV sources.

Please refer to the DigitalMedia Design Guide, Doc. #4789 for additional information.

> *DigitalMedia™ transmitter and computer interface*

> *Built-in 2x1 AV switcher*

> *DM CAT output supports up to 450 ft cable length[1]*

> *2-gang wall mount design*

> *Fits in a FSR FL-500P-6 Floor Box[4]*

> *Provides HDMI™ and RGB/component video inputs*

> *Also supports DVI and DisplayPort Multimode*

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sources[2]

> Includes mini-TRS stereo audio input

> Provides onboard auto-switching capability

> Includes USB HID keyboard/mouse port

> Affords single-wire connection to a DM-RMC-100 or DM-MD switcher

> Detects and reports detailed video and audio input information

> Performs automatic AV signal format management via EDID

> Enables device control via CEC

> Easy setup and diagnostics tools via software

> Extends the life of analog-based AV systems

SPECIFICATIONS

Video

Switcher: 2x1 combination digital/analog switch, Crestron QuickSwitch HD Input Signal Type: HDMI™, DVI, DisplayPort Multimode[2], RGB, component (YPbPr)[3], S-Video (Y/C)[3], composite[3]

Output Signal Type: DM CAT (DigitalMedia over twisted-pair copper wire)

Formats: HDMI, DVI, HDCP v.1.2 content protection support, RGBHV up to UXGA/WUXGA, HDTV up to 1080p60, NTSC or PAL

Input Resolutions, HDMI & DVI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, HDMI & DVI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz

Input Resolutions, Component[3]: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60

Input Resolutions, Composite and S-Video[3]: 480i, 576i

Output Resolutions: Matched to inputs

Analog-To-Digital Conversion: 10-bit 165 MHz per each of 3 channels

Audio

Switcher: 2x1 combination digital/analog switch

Input Signal Types: HDMI, DisplayPort Multimode[2], analog stereo

Output Signal Type: DM CAT

Formats, HDMI: Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, Up to 8ch PCM

Formats, Analog: Stereo 2-channel

Communications

DigitalMedia: DM CAT, DMNet, HDCP management, EDID format management, CEC

USB: Supports USB HID class devices

Connectors - Front

AUDIO IN: (1) 3.5mm TRS mini phone jack;
Unbalanced stereo line-level audio input;
Input Impedance: 10k Ohms;
Input Level: 2 Vrms maximum

USB HID: (1) USB Type A female;
USB 1.1 host port for connection of a mouse/keyboard or other USB HID-compliant device

HDMI IN: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input;
Also supports DVI and DisplayPort Multimode[2]

PC IN: (1) DB15HD female, RGB (VGA) or component (YPbPr) video input[3];
Formats: RGBHV, RGBS, RGsB, YPbPr;
Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration;
Input Impedance: 75 Ohms;
Sync Input Type: Autodetect RGBHV, RGBS, RGsB, YPbPr;
Sync Input Level: 3 to 5 Vp-p;
Sync Input Impedance: 1k Ohms

Connectors - Rear

D, M: (1) DM CAT output composed of (16) captive screw terminals with (2) grounded strain reliefs;
Connects to DM CAT input of a DM switcher, receiver/room controller, or other DM device via **DM-CBL** cable[1]

G B A 24: (1) DMNet port composed of (4) captive screw terminals;
Connects to DMNet port of a DM switcher, receiver/room controller, or other DM device via **DM-CBL** cable[1]

G: (1) Flying lead, chassis ground connection

DM Cable Length

Cable Type:
DM-CBL DigitalMedia Cable**Maximum length without, between, before, or after repeaters:**

- **200 ft (60 m) for 720p, 1080i, 1080p24**
- 200 ft (60 m) for 1024x768 @75Hz
- 150 ft (45 m) for 1080p60
- 150 ft (45 m) for 1280x1024 @75Hz
- 150 ft (45 m) for 1920x1200 @60Hz
- 125 ft (38 m) for 1600x1200 @60Hz

Maximum total length using up to 2 repeaters:

- 450 ft (137 m) for 720p, 1080i, 1080p24
- 450 ft (137 m) for 1024x768 @75Hz
- 450 ft (137 m) for 1080p60
- 450 ft (137 m) for 1280x1024 @75Hz
- 450 ft (137 m) for 1920x1200 @60Hz
- 375 ft (114 m) for 1600x1200 @60Hz

Controls & Indicators

PWR: (1) green LED, indicates operating power supplied via DMNet

RESET: (1) miniature recessed pushbutton for hardware reset

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SETUP: (1) red LED and (1) miniature recessed pushbutton for Ethernet auto-discovery
DM LINK: (1) green LED, indicates connection to a downstream DM device
HDMI: (1) green LED, indicates HDMI input is selected
PC: (1) green LED, indicates PC input is selected

Power Requirements
DMNet Power Usage: 10 Watts (0.42 Amps @ 24 Volts DC)

Environmental
Temperature: 32° to 104°F (0° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 35 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: 2.53 in (64 mm)

Weight
10.1 oz (285 g)

Available Models
DM-TX-200-2G: Wall Plate DigitalMedia™ CAT Transmitter 200

Available Accessories
DM-CBL-NP-SP500: DigitalMedia™ Cable, non-plenum, 500 ft spool
DM-CBL-P-SP500: DigitalMedia™ Cable, plenum-rated, 500 ft spool
DM-DR: DigitalMedia™ Repeater
CBL-HD-1.5: Crestron® Certified HDMI™ Interface Cable, 1.5 ft
CBL-HD-3: Crestron® Certified HDMI™ Interface Cable, 3 ft
CBL-HD-6: Crestron® Certified HDMI™ Interface Cable, 6 ft
CBL-HD-12: Crestron® Certified HDMI™ Interface Cable, 12 ft
CBL-HD-20: Crestron® Certified HDMI™ Interface Cable, 20 ft
CBL-HD-30: Crestron® Certified HDMI™ Interface Cable, 30 ft
CBL-HD-DVI-1.5: Crestron® Certified HDMI™ to DVI Interface Cable, 1.5 ft
CBL-HD-DVI-3: Crestron® Certified HDMI™ to DVI Interface Cable, 3 ft
CBL-HD-DVI-6: Crestron® Certified HDMI™ to DVI Interface Cable, 6 ft
CBL-HD-DVI-12: Crestron® Certified HDMI™ to DVI Interface Cable, 12 ft
CBL-HD-DVI-20: Crestron® Certified HDMI™ to DVI Interface Cable, 20 ft
CBL-HD-DVI-30: Crestron® Certified HDMI™ to DVI Interface Cable, 30 ft
CBL-DP-HD-1.5: Crestron® Certified DisplayPort to HDMI™ Interface Cable, 1.5 ft
[Release Date: TBA]
CBL-DP-HD-3: Crestron® Certified DisplayPort to HDMI™ Interface Cable, 3 ft
[Release Date: TBA]
CBL-DP-HD-6: Crestron® Certified DisplayPort to HDMI™ Interface Cable, 6 ft
[Release Date: TBA]

CBL-DP-HD-12: Crestron® Certified DisplayPort to HDMI™ Interface Cable, 12 ft
[Release Date: TBA]
CBL-DP-HD-20: Crestron® Certified DisplayPort to HDMI™ Interface Cable, 20 ft
[Release Date: TBA]
CBL-DP-HD-30: Crestron® Certified DisplayPort to HDMI™ Interface Cable, 30 ft
[Release Date: TBA]
CBL-VGA-1.5: Crestron® Certified Computer VGA Interface Cable, 1.5 ft
CBL-VGA-3: Crestron® Certified Computer VGA Interface Cable, 3 ft
CBL-VGA-6: Crestron® Certified Computer VGA Interface Cable, 6 ft
CBL-VGA-12: Crestron® Certified Computer VGA Interface Cable, 12 ft
CBL-VGA-25: Crestron® Certified Computer VGA Interface Cable, 25 ft
CBL-VGA-AUD-3: Crestron® Certified Computer VGA Interface Cable w/ Audio, 3 ft
[Release Date: TBA]
CBL-VGA-AUD-6: Crestron® Certified Computer VGA Interface Cable w/ Audio, 6 ft
[Release Date: TBA]
CBL-VGA-AUD-12: Crestron® Certified Computer VGA Interface Cable w/ Audio, 12 ft
[Release Date: TBA]
CBL-VGA-AUD-25: Crestron® Certified Computer VGA Interface Cable w/ Audio, 25 ft
[Release Date: TBA]
CBL-VGA-AUD-50: Crestron® Certified Computer VGA Interface Cable w/ Audio, 50 ft
[Release Date: TBA]
CBL-VGA-AUD-75: Crestron® Certified Computer VGA Interface Cable w/ Audio, 75 ft
[Release Date: TBA]
CBL-AUDIO-1.5: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 1.5 ft
CBL-AUDIO-3: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 3 ft
CBL-AUDIO-6: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 6 ft
CBL-AUDIO-12: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 12 ft

Notes:
1. For DigitalMedia CAT wiring, use **DM-CBL** DigitalMedia Cable. Up to two DM Repeaters (Model **DM-DR**) may be required. Refer to the Crestron DigitalMedia Design Guide, Doc. #4789 for complete wiring guidelines.
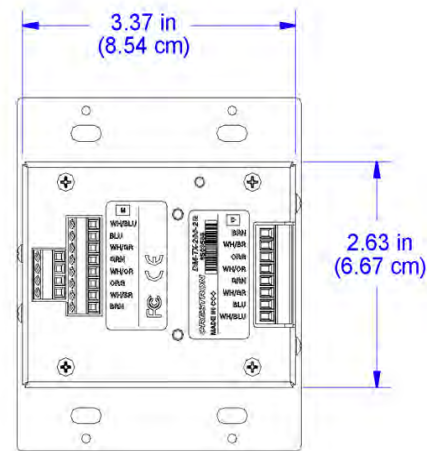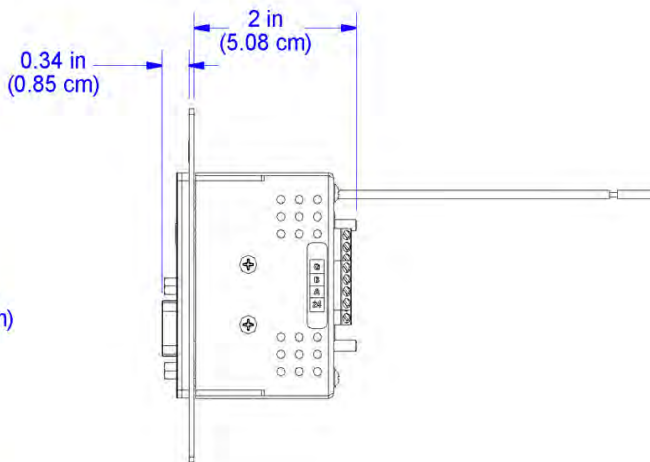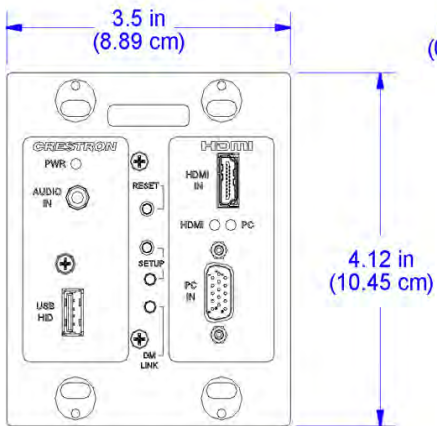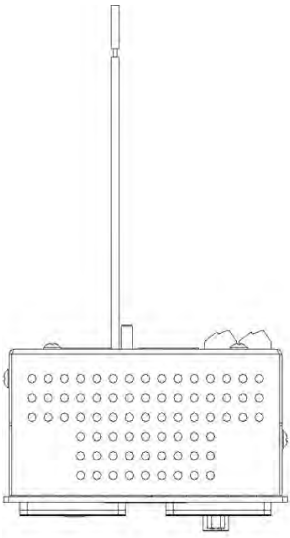
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. **CBL-HD-DVI** and **CBL-DP-HD** interface cables available separately.

3. The RGB input can accept component, composite, and S-Video signals via direct interface to Crestron MPS Series products, or through an appropriate adapter (not included). Input sync detection is not provided for composite or S-Video signal types through the RGB connection.

4. FSR FL-500P-6 Floor Box available to authorized FSR dealers from FSR Inc., 244 Bergen Boulevard, Woodland Park, NJ 07424; Tel: 973-785-4347; Web: http://www.fsrinc.com/.

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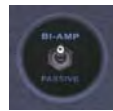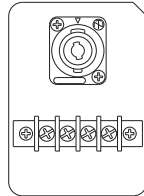**Crestron Electronics, Inc. 15 Volvo Drive | Rockleigh, NJ 07647**
Tel: 800.237.2041 / 201.767.3400 | Fax: 201.767.1905
www.crestron.com

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Speaker System

**IF2112 (M)
Rear Panel**
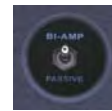
**IF2112/AS
Rear Panel**
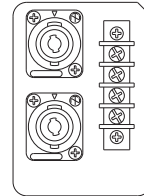
IF2112

IF2112M

IF2112/AS

IF2112

IF2112/AS

Two-way full-range models with 12-inch woofers deliver extraordinarily well-balanced sound.

- Sound and phase characteristics matched with all other Installation Series models for optimum performance in any combination.
- 12" woofer specially treated for superior sound and durability.
- 3" high-frequency compression driver with 1.4" exit (IF2112 and IF2112/AS) or 1.7" high-frequency compression driver with 1.4" exit (IF2112M).
- Three horn dispersion patterns available for IF2112 and IF2112M: 60° x 40° (/64), 90° x 50° (/95), and 90° x 90° (/99).
- Horn can be rotated 90-degrees for vertical or horizontal mounting.
- Switchable between passive and bi-amp operation.
- Fifteen 10-mm (M10) screw and four 8-mm (M8) screw suspension points provided for flexible rigging on the IF2112 and IF2112M; 16 10-mm screw (M10) points on the IF2112/AS.
- Durable black or white finish (can be painted to match any interior).
- Optional matching array frame and U-bracket available for the IF2112 and IF2112M.
- Optional matching U-bracket available for the IF2112/AS.
- Parallel-wired Neutrik NL4 and barrier strip connectors.
- Downloadable Y-S3 (Yamaha Sound System Simulator) software offers precise performance simulation for Installation Series speakers.
- IF2112/AS cabinet design is also ideal for floor monitor use.

OPTIONS

Accessories   Durable black or white finish which can be painted to match any interior.

HAF3-2112
Horizontal Array Frame
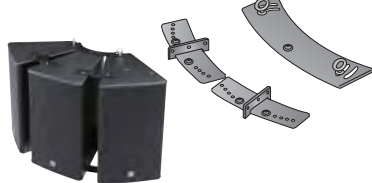
Weight:
9kg (19.8lbs)
*available for IF2112 and IF2112M

HAF2-2112
Horizontal Array Frame
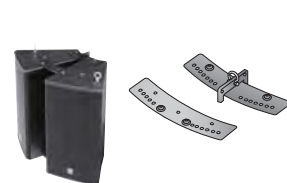
Weight:
4kg (8.8lbs)
*available for IF2112 and IF2112M

VAF2-2112
Vertical Array Frame

Weight:
4kg (8.8lbs)
*available for IF2112 and IF2112M

UB2112
U-Brackets
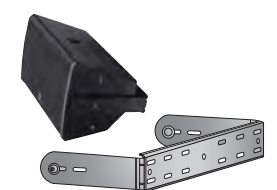
Weight:
4kg(8.8lbs)

Download the Rigging Guide from Yamaha's website for rigging details:
http://www.yamahaproaudio.com/

GENERAL SPECIFICATIONS

MODEL			IF2112/64(W)	IF2112/95(W)	IF2112/99(W)	IF2112/AS(W)
Nominal coverage @-6dB (Horizontal x Vertical)			60 x 40 (rotatable)	90 x 50 (rotatable)	90 x 90	60-100 x 60 (rotatable)
Nominal impedance	Passive		8Ω			
	Bi-amp LF/HF		LF:8Ω, HF:8Ω			
Power rating	Passive *1	NOISE	600W			
		PGM	1200W			
		MAX	2400W			
	Bi-amp LF/HF *2	NOISE	LF:700W, HF:110W			
		PGM	LF:1400W, HF:220W			
		MAX	LF:2800W, HF:440W			
Recommended amplifier	Passive		T5n, PC9501N, XP7000			
	Bi-amp LF/HF		LF:T5n, PC9501N, HF:XP1000, PC2001N			
Sensitivity (1W, 1m)	Passive		96dB SPL			
	Bi-amp	LF	96dB SPL			
		HF	110dB SPL	108dB SPL	106dB SPL	108dB SPL
Continuous SPL (calculated)	Passive		124dB SPL			
	Bi-amp	LF	124dB SPL			
		HF	130dB SPL	128dB SPL	126dB SPL	128dB SPL
Peak SPL (calculated)	Passive		130dB SPL			
	Bi-amp	LF	130dB SPL			
		HF	136dB SPL	134dB SPL	132dB SPL	134dB SPL
Components		LF	12" woofer, 4" voice coil			
		HF	Rotatable constant directivity horn, 1.4" exit, 3" voice coil compression driver			
Frequency range (-10dB) *3			50Hz-20kHz			
Passive Crossover Frequency *4			900 Hz		1.2 kHz	1.1 kHz
Connectors			1x NL4 and barrier strip, wired in parallel			2x NL4 and barrier strip, wired in parallel
Shape			30 degrees trapezoidal			Multi-angle wedge
Dimensions (W x H x D)			378 x 695 x 454mm (14.9" x 27.4" x 17.9")			378 x 695 x 333mm (14.9" x 27.4" x 13.1")
Weight			31.0kg (68.0lbs)			29.0kg (64lbs)
Flying hardware			15 x M10, 4 x M8			16x M10
Optional accessories			UB2112(W), HAF2-2112(W), HAF3-2112(W), VAF2-2112(W)			UB2112(W)
3rd Party Accessories	Omnimount (US)		120.0 series			-
	Multimount (US, Allen products)		120 series			-
	Powerdrive (UK)		120 series			-
	Ohashi (Japan)		-			-

*1 2hours, IEC *2 AES *3 Bi-amp mode, Yamaha recommended DSP configuration, full-space *4 At this frequency, the transducers produce equal sound pressure levels.

MODEL			IF2112M/64(W)	IF2112M/95(W)	IF2112M/99(W)
Nominal coverage @-6dB (Horizontal x Vertical)			60 x 40 (rotatable)	90 x 50 (rotatable)	90 x 90
Nominal impedance	Passive		8Ω		
	Bi-amp LF/HF		LF:8Ω, HF:8Ω		
Power rating	Passive *1	NOISE	350W		
		PGM	700W		
		MAX	1400W		
	Bi-amp LF/HF *2	NOISE	LF:400W, HF:60W		
		PGM	LF:800W, HF:120W		
		MAX	LF:1600W, HF:240W		
Recommended amplifier	Passive		T3n, PC6501N, XP7000		
	Bi-amp LF/HF		LF:T3n, PC6501N, XP7000, HF:XP1000, PC2001N		
Sensitivity (1W, 1m)	Passive		95dB SPL		
	Bi-amp	LF	96dB SPL		
		HF	110dB SPL	108dB SPL	
Continuous SPL (calculated)	Passive		120dB SPL		
	Bi-amp	LF	121dB SPL		
		HF	128dB SPL	126dB SPL	
Peak SPL (calculated)	Passive		126dB SPL		
	Bi-amp	LF	127dB SPL		
		HF	134dB SPL	132dB SPL	
Components		LF	12" woofer, 3 " voice coil		
		HF	Rotatable constant directivity horn, 1.4" exit, 1.7" voice coil compression driver		
Frequency range (-10dB) *3			55Hz-20kHz		
Passive Crossover Frequency *4			1 kHz		1.1 kHz
Connectors			1x NL4 and barrier strip, wired in parallel		
Shape			30 degrees trapezoidal		
Dimensions (W x H x D)			378 x 695 x 454mm (14.9" x 27.4" x 17.9")		
Weight			28.0kg (61.0lbs)		
Flying hardware			15 x M10, 4 x M8		
Optional accessories			UB2112(W), HAF2-2112(W), HAF3-2112(W), VAF2-2112(W)		
3rd Party Accessories	Omnimount (US)		120.0 series		
	Multimount (US, Allen products)		120 series		
	Powerdrive (UK)		120 series		
	Ohashi (Japan)		-		

*1 2hours, IEC *2 AES *3 Bi-amp mode, Yamaha recommended DSP configuration, full-space *4 At this frequency, the transducers produce equal sound pressure levels.

DIMENSIONS

unit : mm(inch)

IF2112/64/95/99(M)

IF2112/AS

● Center of balance

Speaker System

IF2208

IF2205

IF2108

**IF2208
Rear Panel**

**IF2108
Rear Panel**

IF2205 Rear Panel

Compact two-way full-range models with 8-inch or 5-inch woofers install easily in tight situations.

IF2208 & IF2108

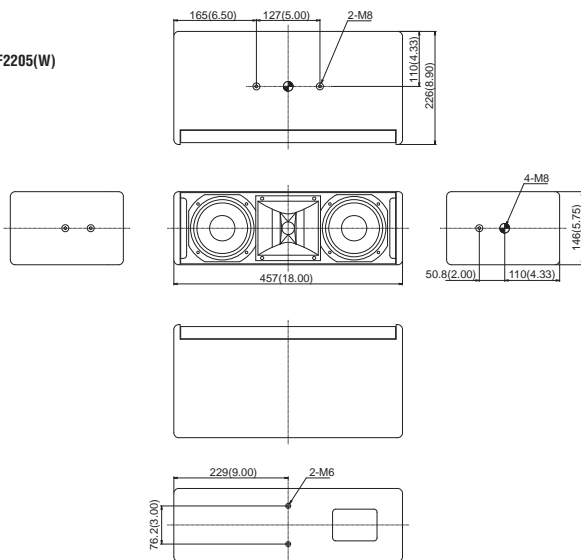- Sound and phase characteristics matched with all other Installation Series models.
- Single 8" woofer (IF2108) or dual 8" woofers (IF2208) plus 1.7" high-frequency compression driver with 1" exit.
- 90° x 60° dispersion pattern.
- Multi-angle cabinet design enables floor monitor applications.
- Horn can be rotated 90-degrees, allowing vertical or horizontal mounting.
- Eleven 10mm-screw (M10) and six 8mm-screw (M8) suspension points provided for flexible rigging.
- Durable black or white finish (can be painted to match any interior).
- Optional matching U-bracket available.
- Parallel-wired two Neutrik NL4 and barrier strip connectors.

IF2205

- Sound and phase characteristics matched with all other Installation Series models.
- Dual 5" woofers plus 1" high-frequency compression driver with 1" exit.
- 90° x 60° dispersion pattern.
- Horn can be rotated 90-degrees, allowing vertical or horizontal mounting.
- Six 8mm-screw (M8) and two 6mm-screw (M6) suspension points provided for flexible rigging.
- Durable black or white finish (can be painted to match any interior).
- Matching U-bracket available as an option.
- Barrier strip connectors.

OPTIONS

Accessories   Durable black or white finish as well as Installation series speaker, which can be painted to match any interior.

UB2208
U-Brackets
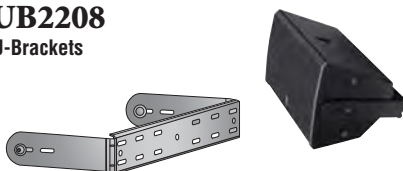
UB2108
U-Brackets
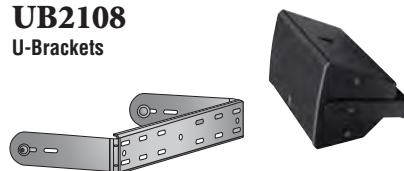
UB2205
U-Brackets
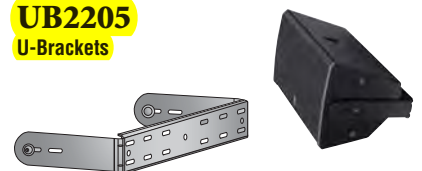
BCS251
Ceiling-Brackets

BWS251-300/400
Wall-Brackets

BBS251
Baton-Brackets

Download the Rigging Guide from Yamaha's website for rigging details:
http://www.yamahaproaudio.com/

GENERAL SPECIFICATIONS

Model		IF2208(W)	IF2108(W)	IF2205(W)
Nominal coverage @-6dB (Horizontal x Vertical)		90 x 60 (rotatable)		
Nominal impedance		8Ω		
Power rating *1	NOISE	200W	100W	100W
	PGM	400W	200W	200W
	MAX	800W	400W	400W
Sensitivity (1W, 1m)		95dB SPL		89dB SPL
Continuous SPL (calculated)		118dB SPL	115dB SPL	109dB SPL
Peak SPL (calculated)		124dB SPL	121dB SPL	115dB SPL
Components	LF	2x 8" woofer	8" woofer	2x 5" woofer
		2" voice coil	2" voice coil	1" voice coil
	HF	Rotatable constant directivity horn,		Rotatable constant directivity horn,
		1.4" exit, 1.7" voice coil compression driver		1" exit, 1" voice coil compression driver
Frequency range (-10dB) *2		55 Hz-19k Hz		65 Hz-19k Hz
Passive Crossover Frequency *3		1.4 kHz	1.6 kHz	1.7 kHz
Connectors		2x NL4 and barrier strip, wired in parallel		Barrier strip
Shape		Multi-angle wedge		Rectangular
Dimensions (W x H x D)		283 x 673 x 250mm (11.1" x 26.5" x 9.8")	283 x 448 x 250mm (11.1" x 17.6" x 9.8")	457 x 146 x 226mm (18.0" x 5.8" x 8.9")
Weight		19.0kg (42.0lbs)	14.0kg (31.0lbs)	7.5kg (17.0lbs)
Flying hardware		11x M10, 6x M8		6x M8, 2x M6
Optional accessories		UB2208(W)	UB2108(W)	UB2205(W)
3rd Party Accessories	Omnimount (US)	60.0 series	60.0 series	20.5 series
	Multimount (US, Allen products)	020, 022 series	020, 022 series	080 series
	Powerdrive (UK)	100 series	100 series	75 series
	Ohashi (Japan)	SPH-140, SPA-140, BCH-140 series	SPH-140, SPA-140, BCH-140 series	SPH-140, SPA-140, BCH-140 series

*1 2 hours, IEC *2 Yamaha recommended DSP configuration, full-space *3 At this frequency, the transducers produce equal sound pressure levels.

DIMENSIONS

unit : mm(inch)

IF2208(W)

IF2108(W)


● Center of balance
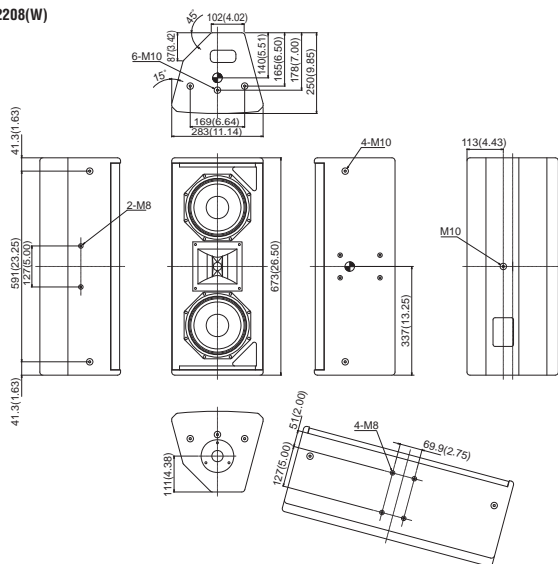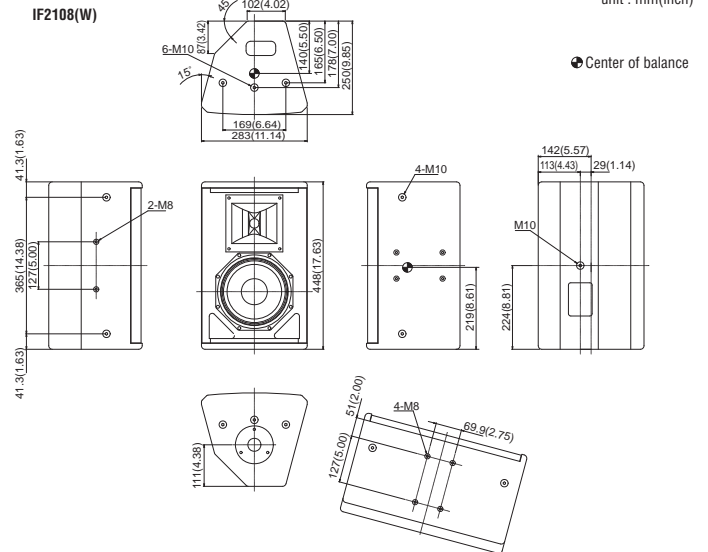
IF2205(W)

Antenna Requirements

The UAD4 may be used with a variety of antennas. For best results, use a pair of ALP-450 directional log periodic antennas. See Figure 4. The ALP-450 offers the best performance and broadest bandwidth available.

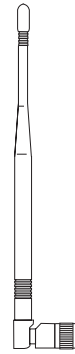Good results may be obtained with optional CLA or FA-500 1/2 wave antennas.

The 1/4-wave antennas that are supplied with the Telex wireless systems will provide adequate performance in some situations. The 1/4-wave antennas should be oriented as shown in Figure 5. **Do not** use 1/4-wave antennas for remote mounting.
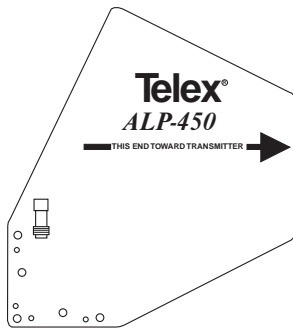
ALP-450
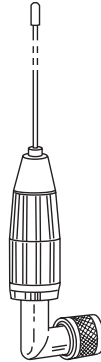
CLA
1/2 Wave Antenna

FA-500
1/2 Wave Antenna

Figure 4
Antennas

Antenna Placement

If antennas are mounted directly to the UAD4, they should be configured as shown in Figure 5.

Do not rack mount the UAD4 in this configuration. Serious loss of range and performance may occur.

Place the UAD4 with antennas in a location that is in direct view of the transmitters for best results.
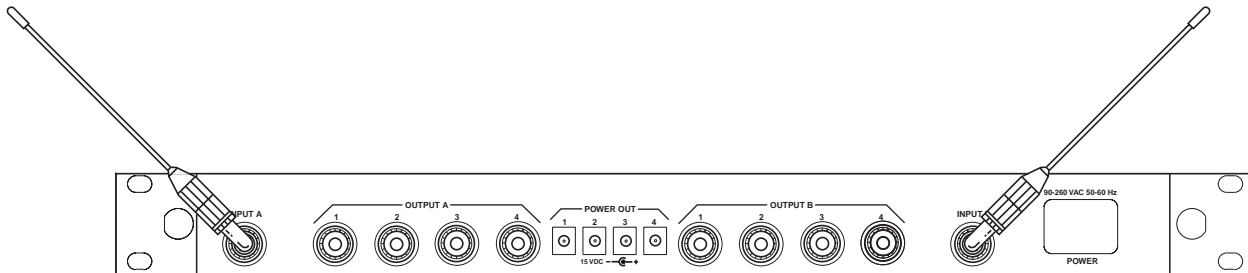
Figure 5
1/2 Wave Antenna Mounting

ENG   United States

Like   Share

Home   Mics   Antenna Accessories   AB-2

AB-2
½ wave antenna bracket

Description   Features

The AB-2 is a universal mounting bracket for ½-wave antennas, with 10-foot coax cable. For use with FA-XX and CLA-X ground independent half wave antennas.

Optional accessories
may be shown

Hover over image to zoom
Click image for fullsize

Complete the System:

REV Wireless

RE-2 Wireless

RE-2 PRO Wireless

EV in Action:

Check out more EV in Action content

Product Knowledge:

How do I properly set the Wireless "Gain"?

What are some guidelines for general microphone use?

What are Wireless Gain settings?

What considerations should I think about when selecting a wireless system?

What is Combination Squelch Circuit?

What is Diversity?

What is patented Posi-Phase Diversity?

What is Phase Cancellation?

What is Squelch Circuit?

Read more Knowledge articles

LOG PERIODIC ANTENNA

- Wide frequency range (450 - 900 MHz) easily handles UHF frequencies

- High gain (4.6 dB) provides clear, strong signals at greater distances than standard 1/2 wave "whip" antennas

- 120° directional pattern reception reduces interference from unwanted signals

- High-quality TNC connectors ensure consistent impedance across the entire frequency range

- Includes 10' coax cable

- Includes universal, **A** wall, **B** mic stand, and **C** mast clamp mounting hardware

- Measures 9$\frac{1}{2}$" L x 11" H
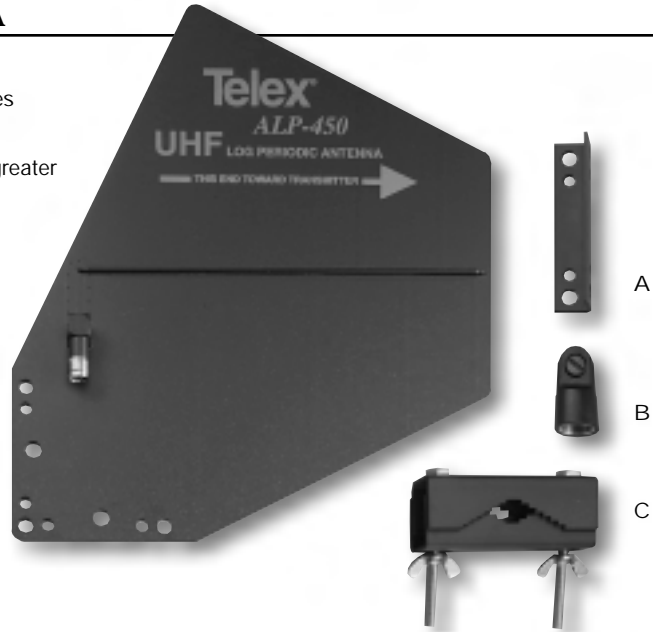
ALP-450 LOG PERIODIC ANTENNA

ALP-450   71147-000   *(matte black)*

(Specifications)

- Gain: 4.6 dBd
- SWR: 1.5:1
- 1/2 power beam width: 120°
- Front-to-back ratio: 19.4 dB
- Input impedance: 50 ohm
- Input connector: TNC

COAXIAL CABLES

LOW LOSS SEMI-FLEXIBLE COAXIAL CABLES

CXU-25	71151-025	25'	50 ohm	TNC connector *(shown)*
CXU-50	71151-050	50'	50 ohm	TNC connector
CXU-75	71151-075	75'	50 ohm	TNC connector
CXU-100	71151-100	100'	50 ohm	TNC connector

FRONT MOUNT CABLE ACCESSORY KIT

- TNC front mount connector kit

- Includes four cables for use with RM-S or RM-D for UHF receivers

FRONT MOUNT ACCESSORY KIT

FMC-K   878978   4 cables
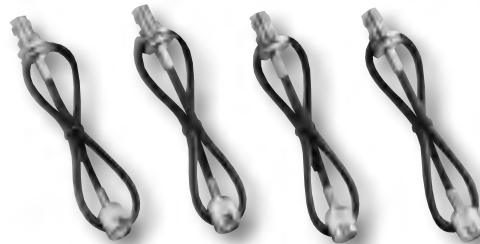
Universal Antenna Kit (72 and 216 MHz)

Part Number: LA-122

- Includes both 72 MHz and 216 MHz antennas.
- Monopole and dipole antenna options included.
- Rigid and flexible radials are included.
- All hardware to mount on a wall, on electrical boxes, on a horizontal surface (flat and inverse), inside a wall or ceiling is included.

Specifications	72 MHz	216 MHz
Frequencies	72.0 - 76.0 MHz	216.0 - 216.9875 MHz
Center-Frequencies	73.50 MHz	216.50 MHz
Antenna Types	Monopole and dipole	
Antenna Radials	Rigid and flexible	
Antenna Gain	Unity	
Dipole Vertical Clearance	79.75 in. (2.03 m)	25.75 in. (65.4 cm)
Connector	RG-58 BNC	
Coax Provided	25 ft. (7.6 m) RG-58, 50 ohm coaxial cable	
Mounting Options	Wall mount, dual and single electrical box, ceiling electrical box, horizontal surface mount (such as a top of a rack), ceiling/inverse mounting, flexible mounting in-wall or in ceiling and mast or conduit mount.	
Mounting Hardware	Includes self-tapping sheet, metal screws, drywall anchors, and all hardware required to mount to electrical boxes. Does not provide hardware required to mount to a mast (available at most hardware stores).	
Mounting Bracket Dimensions	4.5 x 7.0 x 2.5 in. (11 x 18 x 6.4 cm) W x D x H	
Mounting Plate Dimensions	4.48 x 4.55 in. (11.4 x 11.6 cm)	
Antenna Segment Lengths	39.25 in. (1.0 m)	12.25 in. (31.1 cm)
Weight	4.4 lbs. (2 kg)	
Shipping Weight	4.4 lbs. (2 kg)	
Shipping Box Dimensions	16.3 x 2.76 x 17.1 in. (41.4 x 7 x 43.3 cm)	
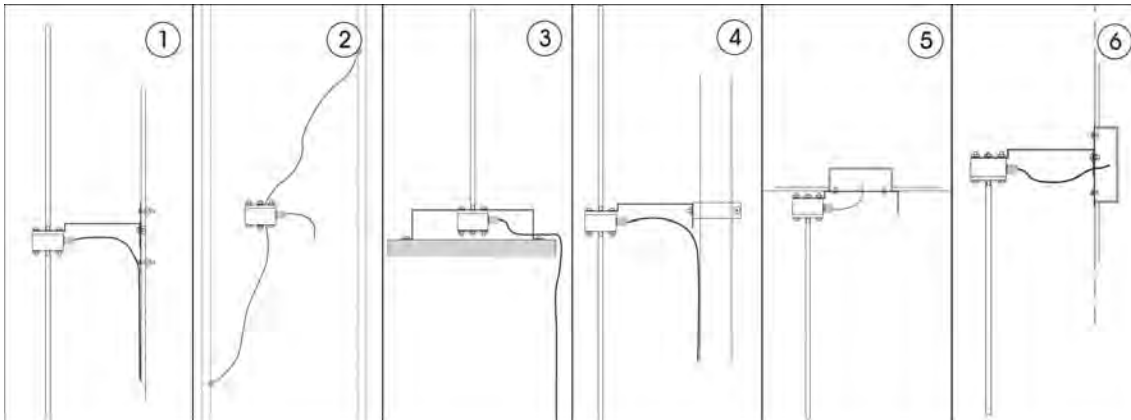
1. Wall mount dipole* or monopole
2. Flexible dipole (in a wall or rafter area)
3. Horizontal surface monopole (up or down)
4. Mast or conduit mount
5. Electrical box monopole inverse ceiling mount
6. Electrical box wall mount dipole* or monopole (single or double gang)

*Dipole antenna configuration recommended for best range/coverage. Should be oriented vertically for best results. Not weather proof or wind resistant. All of this and other information is available at www.ListenTech.com.

Models: ACSP-2002-VTE, ACSP-2002-RPC
Compact 20A Surge Suppressor with attached cord

Description
This advanced surge suppressor provides the highest current capacity available in devices of its size to protect multiple pieces of sensitive electronic equipment on a single circuit. It features industrial strength "zero failure" technology backed by a ten year warranty. It also includes a patented* rotating outlet plate that makes it easy to change the position of the outlets from top to side access. The compact body has a very low profile (1.75"H x 6"D x 9"W) and includes two mounting brackets for easy installation — on a wall behind a flat panel TV, under a counter, in a rack or just about anywhere. Both models feature two 20A outlets (1-duplex) and attached cord.

- Model **ACSP-2002-VTE:** includes VTE over/under protection (automatically turns receptacles off when line voltage drops below 100V or rises above 140V).

- Model **ACSP-2002-RPC:** includes remote power control capability by a low voltage sequencer, switch or control system that provides a maintained dry contact closure.

ACSP-2002-RPC

ACSP-2002-VTE

Both models include attached IEC cord with NEMA 5-20P plug and mounting brackets.

US Patent No. D535178S

Features
- ETL Listed, ANSI C62.41 Compliant
- Conforms to UL 1449-3
- Low-profile chassis (1.75"H x 6"D x 9"W)
- Two 20A outlets (1 duplex)
- Patented* outlet plate rotates 90° for front or side access.
- Front LEDs provide visual system status.
- Suppresses line to neutral with no ground contamination.
- TCR technology defeats surges up to 72,000 amps with zero failures
- Two mounting brackets allow versatile installation. (Optional mounting ears are available if standard 19" panel installation is preferred.)
- 6-ft. attached cord with NEMA 5-20P plug
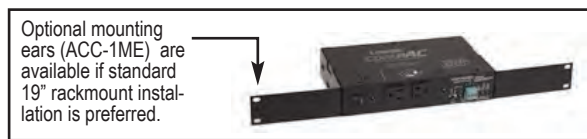- 10 year warranty

A & E Specifications
The 20A single-circuit surge suppressor shall be Lowell model _____ with one duplex outlet. It shall be ETL Listed and conform to UL1449-3. It shall meet ANSI C62.41 and protect line to neutral without ground wire contamination. It shall be capable of protecting electronic equipment from transient voltages, spikes and surges up to 72,000 amps and have a response time of less than 5 nanoseconds. It shall surface or rear rackmount using mounting brackets and include outlets mounted on a plate that can be rotated 90° for front or side access. It shall include LEDs for visual ground verification and surge diagnostics. [Model ACSP-2002-VTE shall also include automatic over/under voltage shutdown protection when voltage drops below 100V or rises above 140V. Model ACSP-2002-RPC shall also include remote power control capability (by a low voltage sequencer, switch or control system that provides a maintained dry contact closure).]

Optional mounting ears (ACC-1ME) are available if standard 19" rackmount installation is preferred.

Mechanical Specifications:

Dimensions:	9"W x 1.75"H x 6"D
Weight:	5 lbs.
Input Connections:	Attached cord with NEMA 5-20P plug
Output Connections:	(1) duplex 20A receptacle mounted on 90° rotatable plate.
Chassis:	Steel with black powder epoxy finish
Mounting:	(2) multi-mount brackets.

Performance Specifications:

Operating Voltage/Current:	120VAC / 20A, 60Hz
Maximum Surge Current:	72,000A (exceeds UL1449-3 6000V, 3000A)
Initial Clamping Voltage:	205V, UL rating 400V
Endurance:	IEEE C62.41-1991, B3 (C1), Pulses (lifetime): 1kv≥1,000,000; 3kv≥100,000; 6kv≥5000
Transient Noise Reduction:	29dB@100kHz, 70dB@1MHz
Response Time:	Less than 5 nanoseconds
Temperature Range:	25˚C (77˚F) nominal
Protection Mode:	Line to neutral, zero ground leakage
UL1449-2 Adjunct Results:	1000 surges, 6000 volts, 3000A, C1, and B3 waveforms (IEEE C62.41), *NO FAILURES*
Federal GSA specs (1996)	Grade A, Class 1, Mode 1
Diagnostic LEDs (surge)**	Top (green): ON = ground verified Center (green): ON = protection active Bottom (red): ON = protection reduced*
Applicable Standards:	UL1449-3, IEEE standard 587-80 A & B, IEEE standard C62.41-1991, IEC 1000-4-5-1995 (IEC 801-5).
Safety Agency Approvals:	ETL Listed US and Canada.

**TCR surge suppression technology provides the assurance of Grade A, Class 1, Mode 1 endurance and performance testing plus visual diagnostic LEDs. The ground verified (green LED), protection active (green LED) should always be ON and the reduced protection (red LED) should be OFF. In the unlikely event the red LED illuminates, full suppression capability is NOT immediately or even necessarily compromised. The red LED indicates the overall life expectancy of the unit may be reduced. Contact Lowell for repair or replacement under the unit's ten year warranty.
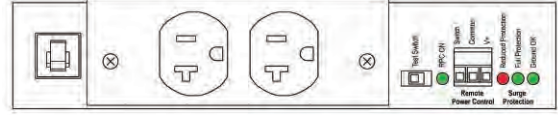
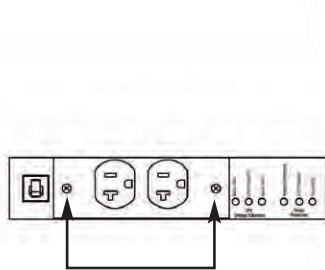| Model No.	Description	Outlets	Amperage	Termination	Over/Under Protection	Remote Control Capable
ACSP-2002-VTE	Compact surge suppressor	2 (1 duplex)	20A	attached cord	Yes	No
ACSP-2002-RPC	Compact surge suppressor	2 (1 duplex)	20A	attached cord	No	Yes
ACC-1ME	Mounting Ears (1-pr)					

Front Panel Layout
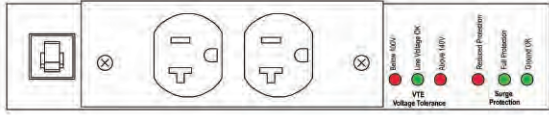
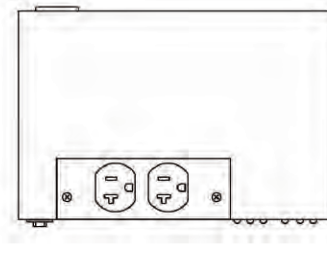

ACSP-2002-VTE

ACSP-2002-RPC

Rotating Outlet Plate*

Remove the 4 screws holding the rotating outlet plate (2 on front, 2 on top).
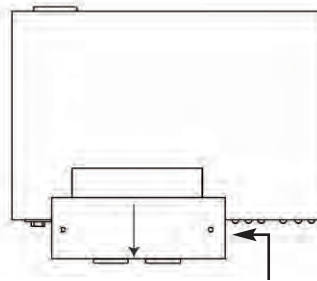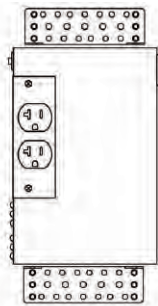
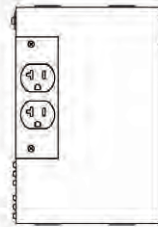Pull the outlet plate away from the chassis and rotate.

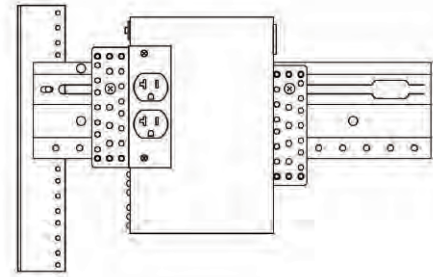Re-install the 4 screws.

*US Patent No. D535178S

Installation Options with Mounting Brackets
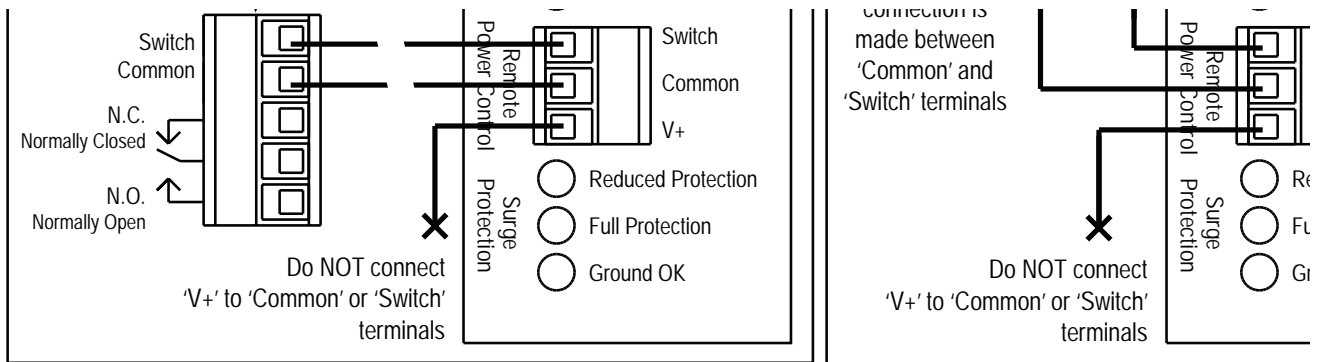

Surface-mount with exposed brackets.

Surface-mount with concealed brackets (behind unit).

Mount to rack rail supports or 10-32 tapped rack rail.

Control Options for ACSP-2002-RPC

Switch
Common
N.C.
Normally Closed
N.O.
Normally Open

Remote Power Control

Switch
Common
V+

Do NOT connect 'V+' to 'Common' or 'Switch' terminals

Surge Protection

○ Reduced Protection
○ Full Protection
○ Ground OK

connection is made between 'Common' and 'Switch' terminals

Remote Power Control

Do NOT connect 'V+' to 'Common' or 'Switch' terminals

Surge Protection

○ Re
○ Fu
○ Gr

DM-RMC-100

DigitalMedia™ Room Controller & DM CAT Receiver

The DM-RMC-100 provides a convenient one-box interface solution to support a single display device as part of a complete DigitalMedia system. It functions as a DM CAT receiver and control interface, providing a single HDMI output along with a variety of control ports. Its compact, low-profile design allows the DM-RMC-100 to be installed discreetly behind a flat panel display or above a ceiling mounted projector.

DigitalMedia™
As the leader in HDMI and control system technologies, Crestron has developed DigitalMedia, the first complete HD AV distribution system that takes HDMI to a higher level, and allows virtually any mix of AV sources to be distributed throughout the home, office, school, or virtually any other facility.

DigitalMedia distributes uncompressed digital video and audio signals up to 450 feet (137 m) using DM cable, or shorter distances using standard CAT5e/6*. DigitalMedia thoughtfully manages all of the different signals and devices, matching each source's output to the capabilities of the selected display(s) without using scaling or compression. Every signal is preserved in its native video resolution and audio format, ensuring a pure, lossless signal path throughout.

Multimedia Display Interface
A single HDMI digital AV output port is provided on the DM-RMC-100, supporting HDMI 1.3a w/Deep Color and HDCP, handling WUXGA computer resolutions and 1080p60 HDTV with multi-channel HD lossless audio—all through a single connection. The HDMI output can also handle DVI signals using an appropriate adapter or interface cable†. In addition, there are RS-232, IR, and Ethernet control ports provided for controlling the display device, plus two relays for screen and lift control, and a SENS input for connection of an optional current sensor or contact closure.

Multiple DM-RMC-100s may be installed to handle each display in a multi-room distribution system, all fed from a central DM-MD series switcher. Or, a single DM-RMC-100 can be fed straight from a **DM-TX-100** or other DM CAT transmitter to provide a simple solution for extending a computer or AV signal to feed a single display. The connection to the switcher or transmitter requires just one DigitalMedia cable, with a potential cable length up to 450 feet*. In lieu of a central switcher, the DM-RMC-100's LAN port may be used to connect over Ethernet to a 2-Series control system if needed.

Keyboard/Mouse Extender
When connected to a DM-MD series switcher or **DM-TX-100** transmitter, the DM-RMC-100 functions as a keyboard/mouse extender, allowing a USB HID-compliant keyboard and/or mouse to be connected at the display location, and used to control a computer or other host device located at the central equipment rack or some other remote location.

Embedded Device Control
The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. The DM-RMC-100 includes built-in RS-232, IR, and Ethernet control ports to allow programmable control of the display device connected to it. But, it can also provide an alternative to these conventional control methods by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-RMC-100 provides a gateway for controlling the display device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR probes.

Low-Profile Installation
The DM-RMC-100 mounts to a standard 2-gang, 4" square, or UK electrical box, and sticks out only one inch from the wall surface. Connections to the display are all positioned along the bottom edge of the receiver, allowing cables to be dressed neatly without obstruction. The DM and LAN connection are made behind the unit within the electrical box. An array of indicators on the front of the DM-RMC-100 provide for easy setup and troubleshooting, verifying the status of connections and signal activity at a glance.

Please refer to the DigitalMedia Design Guide, Doc. #4789 for additional information.

* *For DigitalMedia CAT wiring, use **DM-CBL** DigitalMedia Cable, **CresCAT-D**, or quality CAT5e/CAT6 cable. Do NOT use low-skew cable. The maximum allowable cable length depends on multiple factors. One or more DM Repeaters (Model **DM-DR**) may be required. Refer to the Crestron DigitalMedia Design Guide, Doc. #4789 for complete wiring guidelines.*

†*HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. **CBL-HD-DVI** interface cable available separately.*

> *DigitalMedia receiver and display controller*

> *DM CAT input supports up to 450 ft cable length**

> *Low-profile design*

> *Mounts to a 2-gang, 4" square, or UK electrical box*

> *Provides an HDMI/DVI† display output*

> *Includes USB HID keyboard/mouse port*

> *Enables device control via CEC, RS-232, IR, or Ethernet*

> *Provides relay screen/lift control*

> *Supports a power current sensor or contact closure*

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> Affords single-wire connection from a DM switcher or transmitter

> Provides 10/100 Ethernet connection for display device or control system

> Easy setup and diagnostics

SPECIFICATIONS

Video

Input Signal Type: DM CAT (DigitalMedia over twisted-pair copper wire)
Output Signal Types: HDMI, DVI†
Formats: HDMI v.1.3a w/Deep Color, DVI v.1.0, HDCP v.1.2 content protection support
Input Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI v.1.3a up to 165MHz pixel clock
Input Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI v.1.3a up to 165MHz pixel clock
Output Resolutions: Matched to input

Audio

Input Signal Type: DM CAT
Output Signal Type: HDMI v.1.3a
Formats: Dolby® TrueHD 7.1, Dolby Digital Plus 7.1, Dolby Digital AC3 5.1, Dolby Digital EX 5.1, DTS-HD Master Audio™ 7.1, DTS-HD High Res 7.1, DTS 5.1, DTS-ES Matrix 5.1, DTS-ES Discrete 6.1, DTS 96/24 5.1, up to 8ch PCM

USB

Protocols: Supports USB HID class devices

Connectors - Front

SENS: (1) 2-pin 3.5mm detachable terminal block;
Digital/contact closure sensing 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
HDMI: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
Also supports DVI†
USB: (1) USB Type A female;
USB 1.1 device port for mouse, keyboard, game controller, or other USB HID-compliant device
RELAY 1 - 2: (1) 4-pin 3.5mm detachable terminal block comprising (2) normally open, isolated relays;
Rated 1 Amp, 30 Volts AC/DC;
MOV arc suppression across contacts
COM: (1) 5-pin 3.5mm detachable terminal block, bidirectional RS-232 port;
Up to 115.2k baud, hardware and software handshaking support

IR 1 - 2: (1) 4-pin 3.5mm detachable terminal block comprising (2) IR/Serial ports;
IR output up to 1.1 MHz;
1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

Connectors - Rear

LAN: (1) 8-wire RJ45 female w/2 LED indicators;
10BaseT/100BaseTX Ethernet port;
Green LED indicates link status;
Yellow LED indicates Ethernet activity
DM INPUT: (1) DM CAT input composed of (2) 8-pin RJ45 female, shielded;
Connects to DM CAT output of a DM switcher, transmitter, or other DM device via **DM-CBL** or **CresCAT-D** cable*
24 A B G: (1) 4-pin 3.5mm detachable terminal block, DMNet port;
Connects to DMNet port of a DM switcher, transmitter, or other DM device via DM-CBL or CresCAT-D cable*

Controls & Indicators

PWR: (1) green LED, indicates operating power supplied via DMNet
DM LINK: (1) green LED, indicates connection to an upstream DM device
VIDEO: (1) red/green dual-color LED, indicates video signal presence and lock status
CNTRL: (1) red/green dual-color LED, indicates Ethernet connection and control system communication status
SETUP: (1) red LED and (1) miniature recessed pushbutton, for Ethernet auto-discovery

Power Requirements

DMNet Power Usage: 6 Watts (0.25 Amps @ 24 Volts DC)

Environmental

Temperature: 41° to 104°F (5° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 21 BTU/Hr

Enclosure

Chassis: Steel, black matte powder coat finish
Mounting: 2-gang, 4" square, or 1-gang UK (BS 4662) electrical box mountable

Dimensions

Height: 4.54 in (11.52 cm)
Width: 5.15 in (13.08 cm)
Depth: 1.41 in (3.58 cm)

Weight

13.8 oz (392 g)
* *For DigitalMedia CAT wiring, use **DM-CBL** DigitalMedia Cable, **CresCAT-D**, or quality CAT5e/CAT6 cable. Do NOT use low-skew cable. The maximum allowable cable length depends on multiple factors. One or more DM Repeaters (Model **DM-DR**) may be required. Refer to the Crestron DigitalMedia Design Guide, Doc. #4789 for complete wiring guidelines.*

*†HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. **CBL-HD-DVI** interface cable available separately.*

Available Models

DM-RMC-100: DigitalMedia™ CAT Receiver & Room Controller

Available Accessories

CBL-HD-1.5: Crestron® Certified HDMI™ Interface Cable, 1.5 ft
CBL-HD-12: Crestron® Certified HDMI™ Interface Cable, 12 ft
CBL-HD-20: Crestron® Certified HDMI™ Interface Cable, 20 ft
CBL-HD-3: Crestron® Certified HDMI™ Interface Cable, 3 ft
CBL-HD-30: Crestron® Certified HDMI™ Interface Cable, 30 ft
CBL-HD-6: Crestron® Certified HDMI™ Interface Cable, 6 ft
CBL-HD-DVI-1.5: Crestron® Certified HDMI™ to DVI Interface Cable, 1.5 ft
CBL-HD-DVI-12: Crestron® Certified HDMI™ to DVI Interface Cable, 12 ft
CBL-HD-DVI-20: Crestron® Certified HDMI™ to DVI Interface Cable, 20 ft
CBL-HD-DVI-3: Crestron® Certified HDMI™ to DVI Interface Cable, 3 ft

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CBL-HD-DVI-30: Crestron® Certified HDMI™ to DVI Interface Cable, 30 ft
CBL-HD-DVI-6: Crestron® Certified HDMI™ to DVI Interface Cable, 6 ft
CNSP-XX: Custom Serial Interface Cable
CNXRMCS: TV Current Sensor
DM-CBL-NP-SP500: DigitalMedia™ Cable, non-plenum, 500 ft spool
DM-CBL-P-SP500: DigitalMedia™ Cable, plenum-rated, 500 ft spool
DM-CONN-20: DigitalMedia™ Cable Connectors, 20-Pack
IRP2: IR Emitter Probe
MP-WP140-B: Media Presentation Wall Plate, Black - DVI-I w/Mini-TRS Stereo Audio
MP-WP140-W: Media Presentation Wall Plate, White - DVI-I w/Mini-TRS Stereo Audio
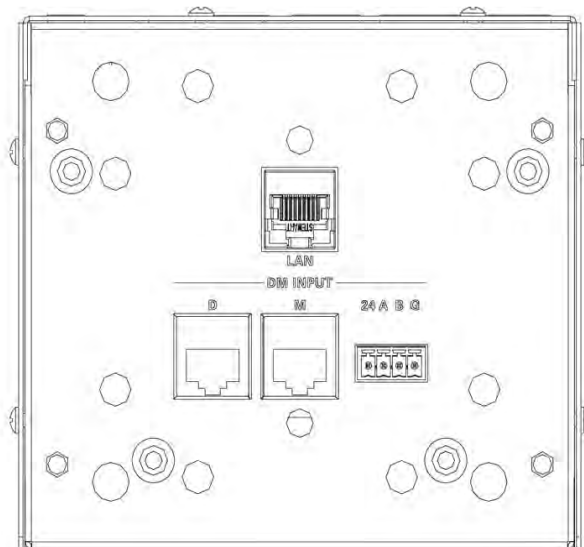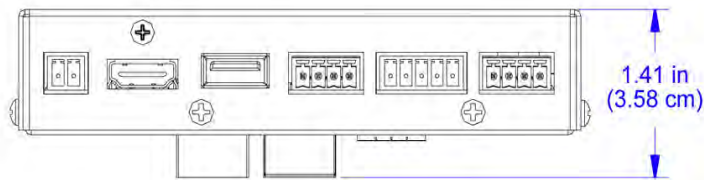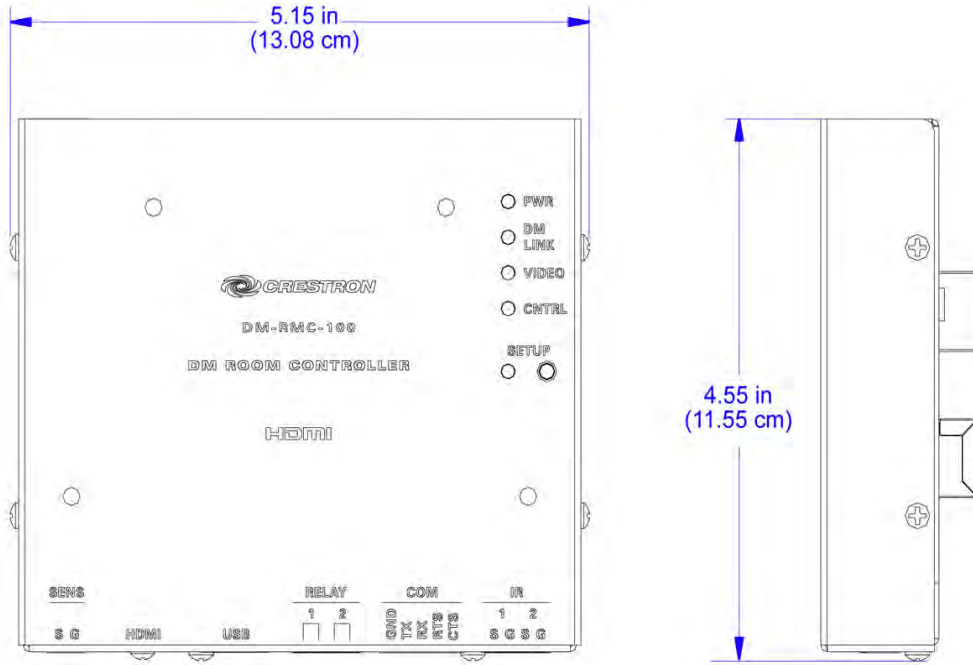**MP-WP152-B:** Media Presentation Wall Plate, Black - HDMI
MP-WP152-W: Media Presentation Wall Plate, White - HDMI
MP-WP185-B: Media Presentation Wall Plate, Black - DigitalMedia™ CAT
MP-WP185-W: Media Presentation Wall Plate, White - DigitalMedia™ CAT

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CBL-HD-DVI

Crestron® Certified HDMI™ to DVI Interface Cable

Crestron® Certified Interface Cables complete the total Crestron package, ensuring high-performance and end-to-end Crestron quality for every installation. A variety of cables is offered to support all types of analog and digital video and audio signals. A durable yet flexible CL3-rated jacket affords excellent handling with allowance for in-wall installation. Stylish and rugged connectors achieve an ultra-reliable connection with a designer appearance befitting the most high-end system.

The CBL-HD-DVI model is an HDMI to DVI conversion cable, featuring a male HDMI Type A connector at one end, and male DVI-D connector at the other. Both connectors are 24k gold-plated for excellent conductivity. A variety of popular lengths up to 30 feet is offered.

> High-quality HDMI to DVI cable

> Converts HDMI to DVI, or DVI to HDMI

> Supports 1080p60 HDTV and WUXGA computer resolutions

> 24k gold-plated HDMI Type A and DVI-D connectors

> High-flex CL3-rated jacket

> Crestron® guaranteed end-to-end system performance

> RoHS compliant

> Available in 1.5, 3, 6, 12, 20, and 30 ft lengths

Available Models
CBL-HD-DVI-1.5: Crestron® Certified HDMI® to DVI Interface Cable, 1.5 ft
CBL-HD-DVI-12: Crestron® Certified HDMI® to DVI Interface Cable, 12 ft
CBL-HD-DVI-20: Crestron® Certified HDMI® to DVI Interface Cable, 20 ft
CBL-HD-DVI-3: Crestron® Certified HDMI® to DVI Interface Cable, 3 ft
CBL-HD-DVI-30: Crestron® Certified HDMI® to DVI Interface Cable, 30 ft
CBL-HD-DVI-6: Crestron® Certified HDMI® to DVI Interface Cable, 6 ft