SOLICITATION, OFFER AND AWARD

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 7900)	RATING	PAGE	OF PAGES
		1	93

2. CONTRACT NUMBER	3. SOLICITATION NUMBER	4. TYPE OF SOLICITATION	5. DATE ISSUED	6. REQUISITION/PURCHASE NUMBER
	USDC-ME 2013.01	☐ SEALED BID (IFB) ☒ NEGOTIATED (RFP)	08/05/2013	

7. ISSUED BY	CODE	8. ADDRESS OFFER TO *(If other than item 7)*
United States District Court District of Maine		156 Federal Street Portland, Maine 04101

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and two (2) copies for furnishings the supplies or services in the Schedule will be received at the place specified in item 8, or if hand carried, in the depository located in Clerk's Office, 156 Federal Street, Portland, ME until 2:00 pm *(Hour)* local time 09/09/2013 *(Date)*

CAUTION LATE Submissions, Modifications, and Withdrawals: See Section L, Provision No. 52.214 7 or 52.215 1. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME	B. TELEPHONE *(NO COLLECT CALLS)* AREA CODE	NUMBER	EXT.	C. E MAIL ADDRESS
	Robert Guptill, Contracting Officer	207	7803356	5110	robert_guptill@med.uscourts.gov

11. TABLE OF CONTENTS

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
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OFFER *(Must be fully completed by offeror)*

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214 16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days *(60 calendar days unless a different period is inserted by the offeror)* from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT *(See Section I, Clause No. 52.232 8)*	10 CALENDAR DAYS (%)	20 CALENDAR DAYS (%)	30 CALENDAR DAYS (%)	CALENDAR DAYS(%)

14. ACKNOWLEDGMENT OF AMENDMENTS *(The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated):*	AMENDMENT NO.	DATE	AMENDMENT NO.	DATE

15A. NAME AND ADDRESS OF OFFER OR	CODE	FACILITY	16. NAME AND THE TITLE OF PERSON AUTHORIZED TO SIGN OFFER *(Type or print)*

15B. TELEPHONE NUMBER AREA CODE	NUMBER	EXT.	☐ 15C. CHECK IF REMITTANCE ADDRESS IS DIFFERENT FROM ABOVE ENTER SUCH ADDRESS IN SCHEDULE.	17. SIGNATURE	18. OFFER DATE

AWARD *(To be completed by Government)*

19. ACCEPTED AS TO ITEMS	20. AMOUNT	21. ACCOUNTING AND APPROPRIATION

22. AUTHORITY FOR USING OTHER THAN FULL OPEN COMPETITION: ☐ 10 U.S.C. 2304 (c) ☐ 41 U.S.C. 253 (c)	23. SUBMIT INVOICES TO ADDRESS SHOWN IN *(4 copies unless otherwise specified)*	ITEM

24. ADMINISTERED BY *(If other than Item 7)*	25. PAYMENT WILL BE MADE BY	CODE

26. NAME OF CONTRACTING OFFICER *(Type or print)*	27. UNITED STATES OF AMERICA *(Signature of Contracting Officer)*	28. AWARD DATE

IMPORTANT Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

SOLICITATION, OFFER AND AWARD

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PART I - THE SCHEDULE

SECTION A - SOLICITATION / CONTRACT FORM

Standard Form 33 (SF 33), Solicitation, Offer and Award, is the cover page of this solicitation.

A bilateral contract may be awarded without discussions simply by the additional signature of the Contracting Officer. If discussions are held and Best and Final Offers requested, the resulting bilateral contract must be prepared using the SF 26, Award/Contract for Section A.

SECTION B - PRODUCTS OR SERVICES AND PRICES / COSTS

B.1 PRICING OVERVIEW

The United States District Court for the District of Maine (the Court) is requesting proposals with Open Market pricing in anticipation of a contract for audio services and other related facilities, services, and items for the following location:

Edward T. Gignoux Federal Courthouse
156 Federal Street
Portland, Maine 04101

B.2 SUMMARY PRICING FORM

Contract Line Item No.	Supplies or Services	Qty	Unit	Unit Price
1	Courtroom 1 (include all parts, labor & travel)	1	Job	
2	Courtroom 2 ((include all parts, labor & travel)	1	Job	
3	Courtroom 3(include all parts, labor & travel)	1	Job	
4	Hearing Room(include all parts, labor & travel)	1	job	
5	Option 1 – three (3) additional wireless microphones in CR 1	1	job	
6	Option 2 – Press train media multiple in CR 1	1	job	
7	Option 3 – three (3) additional wireless microphones in CR 2	1	job	
8	Option 4 – Press train media multiple in CR 2	1	job	
Grand Total				

B.3 HARDWARE PRICING FORM

The attached Equipment List.xlxs shall be used as a line item pricing form for hardware.

SECTION C - SPECIFICATIONS / STATEMENT OF WORK

C.1 BACKGROUND

The United States District Court for the District of Maine (the Court) wishes to purchase and have installed audio services in the Edward T. Gignoux Federal Courthouse in the following locations:

U.S. District Courtroom 1;
U.S. District Courtroom 2;
U.S. District Courtroom 3; and
Magistrate Judge Hearing Room

Due to budget constraints the Court may, at its discretion, award a contract for a single courtroom or multiple courtrooms, dependent upon the availability of funds.

The Contractor shall furnish all the labor and all new equipment, material, and cable for all systems, with the following exceptions:

- Existing conduits in Courtroom #1.
- Existing sound equipment cabinet in adjacent closet for Courtroom #1. (Lowell L253 series (L253-61) 61 ¼" 35 RU wall mount cabinet)
- Three (3) flush-wall-mount Jury Box loudspeakers in Courtroom #1. (TOA H1 flush-mount loudspeakers)
- Desk-mount monitor loudspeakers in Courtroom #1 at: Judge's Bench, Witness, and Court Reporter. (Electro-Voice EVID-3.2t loudspeakers with HS-3 mount)

Note: All of the EVID-3.2 monitor loudspeakers will require a 70 volt, 5 watt internal matching transformer. Some of the existing monitor loudspeakers were previously used with an external matching transformer, which will no longer be used. For each of these loudspeakers, without matching transformers, a new, internal 70 volt, 5 watt transformer must be furnished and installed.

- Twelve (12) existing ceiling loudspeakers in Courtroom #1 are to be retained but disconnected. (Soundolier FC104-T72 loudspeaker, 51-4 baffle, 96-4 back box) The Court wishes to retain the option of reconnecting the ceiling loudspeakers in the future if desired.
- Existing conduits in Courtroom #2.
- Existing sound equipment cabinet in adjacent electric utility room for Courtroom #2. (Lowell L253 series (L253-61) 61 ¼" 35 RU wall mount cabinet)
- Three (3) flush-wall-mount Jury Box loudspeakers in vanity wall in Courtroom #2. (TOA H1 flush-mount loudspeakers)
- Desk-mount monitor loudspeakers in Courtroom #2 at: Judge's Bench, Witness, Case Manager, and Court Reporter. (Electro-Voice EVID-3.2t loudspeakers with HS-3 mount).

Note: All of the EVID-3.2 monitor loudspeakers will require a 70 volt, 5 watt internal matching transformer. Some of the existing monitor loudspeakers were previously

used with an external matching transformer, which will no longer be used. For each of these loudspeakers, without matching transformers, a new, internal 70 volt, 5 watt transformer must be furnished and installed.

- Six (6) existing Electro-Voice EP405-8T ceiling loudspeakers, back boxes, and 70 volt matching transformers in the Public Gallery at the rear of Courtroom #2 are to be retained.
- Eight (8) ceiling loudspeakers in the Courtroom proper and balcony are to be retained but disconnected. (Soundolier FC104-T72 loudspeaker, 51-4 baffle, 96-4 back box) The Court wishes to retain the option of reconnecting the ceiling loudspeakers in the future if desired.
- Existing conduits in Courtroom #3.
- Existing sound equipment cabinet in electric utility room for Courtroom #3. (Soundolier 300 Series (300-28) 28" 16 RU wall mount cabinet)
- Desk-mount monitor loudspeakers in Courtroom #3 at: Judge's Bench, Witness, and Case Manager. (Electro-Voice EVID-3.2t loudspeakers with HS-3 mount)

Note: All of the EVID-3.2 monitor loudspeakers will require a 70 volt, 5 watt internal matching transformer. Some of the existing monitor loudspeakers were previously used with an external matching transformer, which will no longer be used. For each of these loudspeakers, without matching transformers, a new, internal 70 volt, 5 watt transformer must be furnished and installed.

- The eight (8) existing ceiling loudspeakers and 70 volt matching transformers in Courtroom #3. (Soundolier FC104-T72 loudspeaker, 51-4 baffle, 96-4 back box)
- Existing conduits in Hearing Room.
- Existing sound equipment cabinet in electric utility room for Hearing Room. (Soundolier 300 Series (300-28) 28" 16 RU wall mount cabinet).
- Six (6) existing ceiling loudspeakers and 70 volt matching transformers in Hearing Room. (Soundolier FC104-T72 loudspeaker, 51-4 baffle, 96-4 back box)

The Contractor shall furnish the services and facilities that are called for in strict accordance with the conditions, requirements, and specifications of this contract. The Contractor shall supply the following audio visual services with installation, acceptance testing, and documentation. All references to time of day in this document are in Eastern Standard Time, local time.

Equipment, Materials, and Standards:

All equipment, cables, and related devices shall be installed in a neat and workmanlike manner using accepted professional engineering standards.

All cable terminations shall be accomplished using the appropriate connector type designated by the respective device manufacturer. Shielded pair, balanced line cables interconnecting devices within the equipment rack shall leave the shield not connected at one end (only) of the cable. By convention, this shall be the end of the interconnecting cable at the source, or output of the

feeding device. The end of the interconnecting cable which is an input shall have the shield connected. All XLR-type 3-pin connectors shall be terminated using the following standard (EIA Standard RS-297-B):

Pin 1 – Shield
Pin 2 - + or 'positive'
Pin 3 - - or 'negative'

All cables, both inside of and external to the equipment rack, shall be labeled using a permanent, adhesive wire tag wrapped around the cable, no more than three inches (3") from the cable connector. An identical number shall be installed at each end of the cable. A corresponding adhesive cable number shall be placed adjacent to the equipment connector, receptacle, or termination point where the wire is connected. A printed record of all cable numbers, specifying the identity of each cable, by number, shall be furnished to the owner's representative.

All cables within the equipment rack shall be harnessed or bundled using waxed lacing cable, or, in the alternative, using plastic cable ties may be used provided that the cut ends of the cable ties are sufficiently recessed so as not to present a sharp edge. Cables shall be separately bundled by signal level and purpose, with microphone level (-50dB) lines, line level (0dB) lines, loudspeaker lines (70 volt), and control lines isolated in separate harnesses. Cable harnesses shall provide a short service loop, allowing a piece of equipment to be removed from the front of the rack without disconnecting cables if needed. All cable harnesses shall be arranged so that they do not cover the rear of the individual equipment or devices, preventing access to the equipment.

All cables shall be stripped within no more than two inches (2") of the cable end, and the outer jacket shall be neatly removed with a clean circular cut around the cable outside perimeter, with no damage to the internal conductors or insulation. For shielded cables, the foil shield shall be similarly removed with a clean, circular cut, with no damage to the internal conductors or insulation. Heat shrink tubing, of appropriate size, shall be applied to the outside of all cable ends (except for those terminating *inside* of a connector (e.g., XLR, Speak-on, etc.). The heat shrink tubing shall extend no more than ¾" onto the outer jacket of the cable, and no more than ¼" beyond the outer jacket of the cable (over the inside conductors). For shielded cables, a smaller diameter heat shrink tubing shall be applied to the shield drain wire, making certain that the drain wire heat shrink tubing extends up inside of the outer heat shrink, to the outer jacket of the cable.

Equalization:

Equalization of the sound reinforcement systems shall be performed using a random pink noise generator, an ANSI Type 1 sound pressure meter, and a 1/3 octave real-time spectrum analyzer using ISO standard center frequencies. The equalization shall be performed to provide maximum speech intelligibility with a minimum of distortion and residual noise. The optimum equalization curve shall be obtained by the following process:

All system gooseneck condenser microphones shall be switched to the 80 Hz low-frequency roll-off position using the integral recessed switch on the microphone.

The individual microphone channel front-panel, screwdriver adjustable equalization (lo-frequency roll-off and high frequency shelving) controls on the automatic microphone mixers shall be adjusted to the detented (flat response) positions initially. The low-frequency roll-off controls for each channel shall then be adjusted, by channel, using a pink noise generator into each channel input, and real-time spectrum analyzer on the mixer output, to establish a high-pass of 160 Hz – 200 Hz, with a steep roll-off of ≥ -6dB/oct. below that.

For Courtrooms 1 and 2, the sound system electro-acoustical response shall be equalized, using accepted real-time spectrum analysis techniques, for the near field, approximately four feet (4') on axis from the monitor loudspeakers (Electro Voice EVID-3.2t). The equalization shall establish an essentially flat response (±1 dB) from ~200 Hz to 2500 Hz, with the aforementioned ≥-6dB/oct. roll-off below ~200 Hz, and then create a uniform, precise roll-off of -3dB/oct. from 2500 Hz up to the limits of audibility. At ~2500 Hz – 3150 Hz, an intelligibility 'bump' of no more than +2 dB shall be established before the high frequency (-3 dB/oct.) roll-off begins. The existing ceiling-mounted loudspeakers in Courtrooms 1 and 2 shall remain disconnected, and shall not factor into the overall system response. They are mounted far too high above the listeners, well into the reverberant field, and beyond critical distance (D_C) to be of any value.

For Courtroom 3 the existing ceiling-mounted loudspeakers (Soundolier FC104-T72) shall be the main reinforcement loudspeakers in the Courtroom proper and the Jury Box, so the overall electro-acoustical response shall be accomplished by averaging the electro-acoustical response of the ceiling loudspeakers above the Attorney's tables and Jury Box, and the near field response of the monitor loudspeakers at the Judge's Bench, Witness, and Case Manager's Desk, for best adherence to the response curve described above.

For the Hearing Room, the existing ceiling-mounted loudspeakers (Soundolier FC104-T72) shall be the only reinforcement loudspeakers, so the overall electro-acoustical response shall be adjusted by averaging response curves taken at the Judge's Bench, Witness, and two Attorney's tables, for best adherence to the response curve described above.

For the existing Jury Box loudspeakers in Courtrooms 1 and 2 (TOA H-1), the specified equalization module in the Jury Box mixer-amplifier (TOA E-04R) shall provide the raw curve required for optimum speech intelligibility. The second channel of the 1/3 octave graphic equalizer in Courtrooms 1 and 2 shall be used exclusively to provide the required curve for the pink noise in the Jury Box during Sidebar conferences, for speech privacy, and does not affect normal Courtroom audio.

It is the intent of the Court to provide the highest degree of speech privacy attainable between the Sidebar Microphone area near the Judge's Bench and the Jury Box, to prevent the jurors from listening to sidebar dialog. Inverse square law attenuation of speech from the Sidebar Microphone to the Jury Box, combined with the discretion of the sidebar participants, alone, will not provide the desired degree of reduction of speech levels. Since there is no acoustical barrier between these two parties, to reduce perceptible speech levels from the sidebar participants to the Jury Box, we must rely entirely upon the masking noise (pink noise) generated through the Jury Box loudspeakers to mask the sidebar dialog. There is a point of diminishing return beyond

which increasing the level of the masking noise, while possibly providing additional speech privacy, would introduce a distraction and discomfort for the jurors. The precise level of the masking noise in the Jury Box must be critically adjusted to find the best compromise between these extremes.

The pink noise channel of the graphic equalizer shall be adjusted for a boost/cut range of ±12 dB. With the pink noise input to the equalizer, the equalizer shall be adjusted, using a real-time spectrum analyzer and sampling microphone, for adherence to the NC35 noise criteria, in the bandpass of 400 Hz to 2500 Hz, at various positions within the Jury Box (sampling microphone placed at an ear height of four feet (4') above the floor for several seating positions within the Jury Box, and then averaged. The Court shall make the final determination of the level of the masking noise within the Jury Box.

The installing contractor shall have an appropriate impedance bridge, with a reference oscillator at 1 KHz, to measure the load impedance of all loudspeaker lines, *before* connecting any loudspeaker lines to the system amplifiers. A printed record of all loudspeaker line impedances, specifying the identity of each cable, by number, and the measured load in ohms, shall be furnished to the owner's representative.

C.2 Specifications

Summary

The design detailed herein is a definition of the Court's requirements as of bid date. The manufacturers and model numbers specified herein are not intended to be proprietary or limiting, but rather are intended to define a level of performance and quality sought by the Court. If the Contractor wishes to furnish a substitute for any piece of equipment specified herein, application is to be submitted in writing to the Court, complete with detailed specifications of the intended substitution, prior to installation. Final decision as to the acceptability of any proposed substitutions lies solely with the Court.

Cable Specifications

Microphone Cables:

The microphone level cables shall be a 22 AWG tinned copper, stranded (7x30), twisted, shielded pair with a 100% aluminum polyester foil shield, and a 22 AWG drain wire. The shielded pair shall be enclosed in a polyethylene jacket of 0.025" thickness. The nominal outside diameter shall be 0.175". The cable shall be rated for 300V, and have a temperature rating of -20ºC to +60 ºC. The cable shall have a maximum capacitance between conductors at 1000Hz of 24 pf/ft, and a maximum capacitance between conductors and the shield at 1000Hz of 47 pf/ft. It shall have a DC resistance per conductor of 17Ω/M'.

The microphone level cables shall be West Penn 77291, or approved equal.

Line level cables:

The line level cables shall be a 20 AWG tinned copper, stranded (7x28), twisted, shielded pair with a 100% aluminum polyester foil shield, and a 22 AWG drain wire. The shielded pair shall be enclosed in a polyethylene jacket of 0.028" thickness. The nominal outside diameter shall be 0.175". The cable shall be rated for 300V, and have a temperature rating of -20ºC to +60 ºC. The cable shall have a maximum capacitance between conductors at 1000Hz of 27 pf/ft, and a maximum capacitance between conductors and the shield at 1000Hz of 49 pf/ft. It shall have a DC resistance per conductor of 10.5Ω/M'.

The line level cables shall be West Penn 77292, or approved equal.

Speaker cables (70V):

The 70 volt speaker cables shall be an 18 AWG, stranded (7x26), bare copper twisted pair enclosed in a PVC jacket. The jacket shall have a nominal thickness of 0.017". The nominal outside diameter shall be 0.156". The cable shall be rated for 300V, and have a temperature rating of -20ºC to +60 ºC. The cable shall have a maximum capacitance between conductors at 1000Hz of 30 pf/ft. It shall have a DC resistance per conductor of 6.2Ω/M'.

The 70 volt speaker cables shall be West Penn 224, or approved equal.

FTR recorder cables:

The FTR recorder cables shall be a 22 AWG tinned copper, stranded (7x30), twisted, shielded pair with a 100% polypropylene foil shield, and a 22 AWG tinned drain wire. The shielded pair shall be enclosed in a PVC jacket of 0.025" thickness. The nominal outside diameter shall be 0.1378" (3.505 mm). The cable shall be rated for 300V, and have a temperature rating of -20ºC to +75 ºC. The cable shall have a maximum capacitance between conductors at 1000Hz of 24 pf/ft, and a maximum capacitance between conductors and the shield at 1000Hz of 47 pf/ft. It shall have a DC resistance per conductor of 17Ω/M'.

The FTR recorder cables shall be Belden 8451, or approved equal.

Equipment Racks

All equipment to be installed in the equipment racks shall use the rack elevation diagrams contained in the attached One Line and Rack Elevation.xlxs to determine the order and location for installation.

C.3 U.S. District Courtroom 1

Wired Microphones (Judge, Witness, Case Manager, Attorneys, Podium):

The microphone shall be a fixed-charge condenser designed for permanent installation or portable applications. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 139 dB with a dynamic range of 115 dB. Nominal open-circuit output voltage shall be 11.2 mV at 1 V, 1 Pascal. Output shall be low impedance balanced (250 ohms). It shall offer outstanding rejection of radio frequency interference (RFI). The microphone shall incorporate a self-contained power module with an XLRM-type connector at the base for direct connection to a mating XLRF-type panel jack or cable connector. It shall include a recessed switch to permit choice of flat response or 80 Hz low-frequency roll-off. A microphone shock mount shall be supplied for installing the microphone in a solid surface; it shall effectively isolate the microphone from noise, shock and vibration transmitted through the mounting surface. A two-stage foam windscreen shall also be included. The microphone shall be a small diameter alternating gooseneck design, with an overall length of 481.0 mm (18.94") and a head diameter of 12.2 mm (0.48"). Weight shall be 150 grams (5.3 oz). Finish shall be low-reflectance black.

The microphones shall be Audio-Technica U857QL, or approved equal.

Wired Microphone desk stands (Judge, Attorneys, Witness, Case Manager):

The heavy desk stand base shall be designed to work with any dynamic gooseneck or phantom powered condenser gooseneck microphone with an integral 3-pin XLRM-type output connector. The unit shall offer a 3-pin XLRF-type input connector and a 3-pin XLRM-type connector for audio output. The unit shall offer a low-reflectance black finish. The unit's dimensions shall be: 160.0 mm (6.29") maximum length, 130 mm (5.11") maximum width, 39.0 mm (1.53") maximum height.

The desk stand shall be Audio-Technica AT8615, or approved equal.

Podium Microphone Flush-Mount Receptacle:

For the Podium microphone, a flush-mount XLR-F receptacle shall be installed in the top of the Podium, at the center, near the top, leaving room for notes and paperwork. The XLR-F receptacle shall provide a direct mount for the gooseneck microphone. The XLR-F receptacle shall be wired, using the same type of cable specified for the microphone cables, to a short, 2' pigtail cable, terminated with an XLR-M connector inside the Podium. This XLR-M connector may be connected to a standard microphone cable (see below), and plugged into the Podium floor box receptacle (see below). Alternately, the Podium microphone pigtail cable may be plugged into a plug-on wireless microphone transmitter for completely portable, wireless use.

The XLR-F receptacle shall be Switchcraft D3F, or approved equal.
The XLR-M receptacle shall be Switchcraft A3M, or approved equal.

Wired Microphone Cables (Judge, Witness, Case Manager, Attorneys, Podium, Sidebar):
Microphone cables shall be twenty feet (20') in length. The microphone cables shall be engineered for maximum signal transfer and minimum loss. Designed for low-impedance operation, the balanced cables shall feature heavy-duty construction, and shall be terminated with XLR-type connectors, one male (XLR-M) and one female (XLR-F). To protect signal quality, each heavy-duty 24-gauge stranded copper conductor shall have an individual spiral shield inside the molded insulating sheath. A conductive PVC layer inside each shield dissipates static buildup during flexing. Dual copper outer shields and twin conductive PVC inner shields shall protect cable signal quality with 100% coverage. The heavy-duty PVC jacket shall stand up to tough use; provide extra flexibility, and low memory for ease of use/storage.

The microphone cables shall be Audio Technica AT-8314-20, or approved equal.

Note: The microphone cable for the Podium microphone (only) shall be as above, but shall terminate with a right angle male connector to plug into the floor receptacle. The right angle male connector shall be Switchcraft R3F, or approved equal.

Podium Microphone Receptacle Floor Box:

The microphone floor receptacle for the podium shall be Atlas Sound MRB Series Model MRB-1-13. Lid and cover shall be solid cast commercial red brass with a brushed finish. Lid shall require no tools for opening and shall be flush with the floor when closed. Receptacle shall be a Switchcraft C3F microphone connector. A standard 4" (102 mm) octagon box shall be furnished with four leveling legs and four leveling screws. For installation in carpeted areas, a carpet trim ring Model MRB-TR shall be supplied. No alternatives may be considered for this device, as it is intended to replace an original device installed in a poured concrete floor.

Microphone Wall-Mount Receptacles (Judge, Witness, Sidebar and Case Manager):

The wall-mounted microphone receptacles shall consist of a single XLR-type female receptacle, mounted on a single-gang Decora style white wall plate. The XLR connector shall be of the solder type.

The microphone wall-mount receptacles shall be Radio Design Labs D-XLR3F microphone receptacle, or approved equal.

Attorney Microphone Floor Receptacles:

The microphone receptacles for the attorney microphones shall be mounted in the existing floor boxes, under the attorney tables, using the existing covers and plates. The existing receptacles shall be replaced with similar XLR-F type receptacles, securely mounted in the existing yokes, if serviceable, or the yokes shall also be replaced.

The attorney microphone floor receptacles shall be Switchcraft D3F, or approved equal.

Auxiliary Line Input Receptacles:

The auxiliary line input receptacles, for connection of the existing portable A/V cart, shall provide for the passive mixing of two (stereo) unbalanced line-level audio sources to feed a mono balanced audio line. The front panel shall provide two gold plated phono jacks and a single 3.5 mm stereo mini-jack, intended for mono or stereo consumer level sources. An input signal may be connected to either the phono jacks or to the mini-jack. The left and right signal inputs are combined and balanced through audio transformers, configured to reject induced hum. A mono line-level output is provided on the rear-panel detachable terminal block for connection to a 10 k Ω or higher input impedance line-level module or equipment input. The receptacle plate shall be furnished in white.

The auxiliary line input receptacles shall be Radio Design Labs D-CJI3 mono input receptacle, or approved equal.

Videoconference/Teleconference Audio In/Out Receptacle Plate:

A videoconference/teleconference audio In/Out receptacle plate shall be furnished and installed on the front of the Judge Bench millwork, in the same one-gang electrical box as the present receptacle. It shall provide a panel-mount XLR-F male receptacle for the courtroom audio out, and a panel-mount XLR-M female receptacle for the far-end audio in. The receptacles shall both be mounted on the same single-gang Decora style white wall plate.

The videoconference/teleconference audio in/out receptacle plate shall be the RDL model D-XLR2.

Microphone and Line Level Receptacle Cover Plates:

The cover plates for all wall-mounted audio receptacles, and for all audio control devices, shall be of polished brass finish, and be of the Decora style, with the appropriate number of gangs.

The microphone receptacle, line level receptacle, and control panel cover plates shall be Brainerd 64122 series brass plate, or approved equal.

Wireless Microphone Systems:

The frequency-agile FM wireless microphone systems shall each consist of a receiver and the appropriate transmitter. Operating in the UHF bands of 482.000–507.000 MHz, 541.500–566.375 MHz , or 655.500–680.375 MHz, the system shall be capable of operating on any of 996 – 1001 PLL-synthesized frequencies per band. The frequency-agile FM wireless receiver shall be all-metal and shall provide an automatic scanning function to select appropriate local usable channels for proper wireless system operation. All configuration functions of the receiver shall be controlled by soft-touch controls on the receiver front panel. It shall be a True Diversity

receiver with two independent internal receiver sections, automatically selecting the highest quality signal for the receiver's output. The system will be equipped with an advanced Tone Lock™ digital identification system to ensure that only the desired wireless microphone transmitter allows the receiver to be un-muted. The receiver shall have shall have an alert LED on the front panel that indicates transmitter low battery warning, signal loss and input overload. The receiver shall continuously monitor and display the battery life indicator of the wireless transmitter, the RF signal strength and the diversity selection of internal dual tuner sections (A&B). The receiver shall have a rear panel selector to lift the ground connection from pin 1 of the XLR-type output connector to prevent ground loops. The receiver shall be able to be powered by 120V AC 60 Hz or 12–18V DC at 500 mA. Antennas shall be located on the rear of the receiver and shall incorporate standard BNC-type connectors to allow them to be detached from the receiver to facilitate the receiver being used with external antennas or antenna distribution devices. Switchable 12V DC power shall be provided on the BNC-type connectors. An accessory bracket should allow for the antennas to be located at the front of the receiver. The receiver can be rack-mounted singly or in pairs in a single rack space. The receiver's design shall provide totally silent audio output mute when the wireless transmitter is turned off or signal is lost. The wireless receiver and the supplied metal rack-mounting brackets shall be industrial black.

The frequency-agile FM wireless body-pack transmitter shall have microphone and line level inputs. It shall provide DC voltage to power microphones requiring DC bias. The body-pack transmitter shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz , or 655.500–680.375 MHz. The body-pack transmitter shall have a reversible clip allowing for up or down cable entry. The transmitter shall have a recessed 4-pin locking input connector and a viewable fuel gauge to indicate the remaining battery life. 996-1001 frequencies shall be available and be selected with the soft-touch controls under the safety panel. The device shall have a dual-color LED to indicate power/mute status. There shall be an adjustment to allow input gain changes with a range of 18 dB. The transmitter shall include Tone Lock™ to identify the wireless transmitter to the wireless receiver. This transmitter shall utilize two RF output power levels and shall operate on two AA batteries. The transmitter battery compartment shall be locking. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The transmitter shall have a removable and field replaceable antenna.

The frequency-agile FM wireless handheld transmitter utilizing a dynamic cardioid element shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz, or 655.500–680.375 MHz. The capsule shall incorporate internal shock mounting and have a two-stage integral pop filter. It shall be capable of transmitting on any of 996-1001 frequencies per band. It shall have a metal housing with a plastic antenna end cap. The transmitter shall transmit a digital Tone Lock™ signal that allows the receiver to un-mute. A dual-color LED indicator shall illuminate green when the transmitter is turned on and shall illuminate red when the transmitter is muted. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The microphone shall have an audio input level adjustment range of 18 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. The transmitter shall operate on two AA batteries and contain a Hi/Lo RF power selector. A battery fuel gauge shall be

incorporated to indicate the status of the internal batteries. The transmitter shall be supplied with a heavy-duty stand clamp.

The wireless lavalier microphone systems shall be Audio-Technica ATW-3131b – Body-pack System with AT831cW Lavalier Microphone, or approved equal. Four (4) shall be provided.

The wireless hand-held microphone shall be Audio Technica ATW-T341bC, or approved equal. One (1) shall be provided, to be used in lieu of, and to operate on same frequency as, one of the lavalier systems.

Podium Wireless Microphone Transmitter:

To allow the Podium to be completely moveable in Courtroom 1 the Podium microphone flush-mount receptacle shall be wired with a short, 2' pigtail cable, terminated with an XLR-M connector inside the Podium. This XLR-M connector may be connected to a standard microphone cable (*q.v.*), and plugged into the Podium floor box receptacle (*q.v.*). Alternately, the Podium microphone pigtail cable may be plugged into a plug-on wireless microphone transmitter for completely portable use. The frequency-agile FM wireless plug-on transmitter with locking 3-pin XLRF-type connector shall be a part of a wireless microphone system operating in the bands of 541.500–566.375 MHz or 655.500–680.375 MHz. It shall be designed to convert a dynamic or condenser microphone to wireless operation. It shall be capable of transmitting on any of 996 PLL-synthesized frequencies (adjustable in 25 kHz steps) per band and shall be compatible with Audio-Technica 3000 Series or 1800 Series receivers. The transmitter shall transmit a digital Tone Lock signal that allows the receiver to un-mute. A dual color LED indicator shall illuminate "green" when the transmitter is turned on and "red" when the transmitter is muted. The transmitter shall have an audio input level adjustment range of 24 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. A sliding door shall cover the setup controls when not in use. The transmitter shall operate on two AA batteries and contain a Hi/Lo power selector. The transmitter shall be equipped with a backlit LCD screen used to show operating frequency and programming status. A battery fuel gauge shall be incorporated into the display to indicate the status of the internal batteries. The transmitter shall provide 12V DC to power condenser microphones. The transmitter housing shall be metal with integral antenna and captive battery door.

The frequency-agile FM wireless receiver shall be all-metal and shall provide an automatic scanning function to select appropriate local usable channels for proper wireless system operation. All configuration functions of the receiver shall be controlled by soft-touch controls on the receiver front panel. It shall be a True Diversity receiver with two independent internal receiver sections, automatically selecting the highest quality signal for the receiver's output. The system will be equipped with an advanced Tone Lock™ digital identification system to ensure that only the desired wireless microphone transmitter allows the receiver to be un-muted. The receiver shall have shall have an alert LED on the front panel that indicates transmitter low battery warning, signal loss and input overload. The receiver shall continuously monitor and display the battery life indicator of the wireless transmitter, the RF signal strength and the diversity selection of internal dual tuner sections (A&B). The receiver shall have a rear panel

selector to lift the ground connection from pin 1 of the XLR-type output connector to prevent ground loops. The receiver shall be able to be powered by 120V AC 60 Hz or 12–18V DC at 500 mA. Antennas shall be located on the rear of the receiver and shall incorporate standard BNC-type connectors to allow them to be detached from the receiver to facilitate the receiver being used with external antennas or antenna distribution devices. Switchable 12V DC power shall be provided on the BNC-type connectors. An accessory bracket should allow for the antennas to be located at the front of the receiver. The receiver can be rack-mounted singly or in pairs in a single rack space. The receiver's design shall provide totally silent audio output mute when the wireless transmitter is turned off or signal is lost. The wireless receiver and the supplied metal rack-mounting brackets shall be industrial black.

The wireless plug-on transmitter shall be the Audio-Technica ATW-T1802, or approved equal. The wireless microphone receiver shall be the Audio Technica ATW-R3100b or approved equal.

Wireless Microphone Antenna Distribution Amplifier:

The antenna distribution system shall consist of two independent "one-in by four-out" sections. Each section shall be bandpass filtered to minimize the pickup of undesirable RF signals. Additionally, a dedicated directional coupler output shall be provided to enable additional antenna distribution systems to be cascaded together for increased capacity. All antenna and receiver output connections shall be standard BNC-type, and ten RF jumper cables shall be provided with each antenna distribution system for interconnections. The antenna distribution system shall be capable of supplying 12V DC power on the antenna inputs to allow the use of active antennas or antenna in-line booster accessories. This voltage shall be protected against short-circuits and overloads. The antenna distribution system shall also be capable of supplying individual short circuit protected 12V DC outputs to power up to four associated wireless receivers operating on 12V DC at up to 500 mA each. Four sets of power jumpers (center pin positive) shall be included with the antenna distribution system. A front panel power switch with power-on indicators shall be provided on each unit. The antenna distribution system shall be designed to operate on 110-240V AC 50/60Hz power. Power input connections shall be standard IEC-type and an IEC-type AC power pass through output shall be provided to allow power to be cascaded to additional devices. The unit shall be designed to mount in a standard IEC equipment rack and shall occupy a single rack space. Construction shall be of steel with steel-reinforced front panel and rear rack-mount supports. Provisions shall be provided on the front panel to locate a pair of BNC antenna connections. Included with the unit will be a set of bulkhead BNC RF connectors and cables to facilitate top of rack antenna connections.

The antenna distribution amplifier shall be Audio-Technica AEW-DA550C, or approved equal. Two (2) shall be provided for Courtroom # 1.

Remote Controlled AC Receptacles:

The device for remotely controlling AC power shall include a power supply and relay housed within a 7.5"L x 3.25" W x 2.75" H steel chassis. The unit shall include one (1) duplex outlet with a power rating of 20 A, and shall provide terminals for remote connection of a dry contact

closure and LED status indicator. The power control device shall terminate with a 6 foot AC power cord. The device shall include surge protection for transient voltage.

The remote controlled AC receptacle shall be Lowell remote power control Model RPC-1-TVSS-CD, or approved equal.

Courtroom Power Control Switch:

The remote sound system power switching device, at the Case Manager's desk, shall provide a SPST rocker switch with 1 LED to indicate system power on. The switch and LED shall be mounted in a single gang Decora style white plate and be flush-mounted in an existing single gang electrical box on the Judge's bench top.

The Courtroom power control switch shall be Lowell RPS Model RPSW-P, or approved equal.

Equipment Rack Multiple Outlet Strips:

A UL Listed AC power outlet strip shall be mounted inside the existing sound system cabinet. Power rating shall be 120VAC 15A with circuit breaker protection and an LED indicator that is lit when protection is active. The power strip shall have a suppressed voltage rating of 400V with maximum surge at 6000V and 6500 Amperes maximum peak current. Power strip shall include twenty-four (24) outlets spaced to accept power supplies. It shall be terminated with a six foot cord and molded plug. It shall install to adjustable or fixed rail racks with a mounting clip and screw.

The equipment rack multiple outlet strip shall be the Lowell Model ACS-1524, or approved equal.

Automatic Microphone Mixers:

The mixer shall provide 8 differentially balanced mic/line inputs and one auxiliary line input, all on plug-in Phoenix-style connectors on the rear panel. The mixer shall accommodate any low impedance dynamic or condenser microphones. Phantom power shall be +48 volts, and shall be individually switch selectable for each microphone input via rear panel DIP switches. The auxiliary line input shall be selectable for either front or rear panel ¼" jacks via a rear panel DIP switch. Two front panel screwdriver adjustable equalization (lo-frequency roll-off and high frequency shelving) controls, and rear panel pad switches shall be provided for each input channel. Each input channel shall also include a rotary level control, an LED peak indicator, a high-pass filter switch, and an unbalanced direct output ¼" jack, which is non-gated, pre-fader, and pre-EQ. The mixer main output shall be electronically balanced on a plug-in barrier-strip connector. The output section shall include a limiter with threshold control and a 9-segment output level LED indicator, a rotary Master level control, and a headphone jack with level control. Link in and link out connectors shall allow up to 50 mixers (400 microphones) to be linked, for increased system input capability. Channel 1 automatic priority override shall be assignable on other input channels. Three logic terminals, (Gate Out, Mute In, and Override In) for each of the microphone inputs shall appear at a DB-25 connector on the rear panel. The logic

terminals can be used to control external devices such as loudspeaker mute relays. Rear panel DIP switches shall allow adjustment of the Manual/Automatic function, Last-Mic-on function, Hold time, Off attenuation, Limiter threshold, and Local/Global settings for multiple mixers.

The automatic microphone mixer shall allow for multiple microphone operation while maintaining the sound system below the threshold of feedback with fast-acting, noise-free microphone selection and automatic gain adjustment as additional microphones are activated. The mixer shall incorporate a noise adaptive threshold, which distinguishes between constant background noise and changing speech levels for each input. It shall continuously adjust the activation threshold so that only speech levels louder than the background noise activate a channel.

Frequency Response shall be +/- 2dB from 50Hz to 20kHz at +4dBu. THD + Noise shall be less than 0.1% from 20Hz to 20kHz at +18dBV. EIN shall be less than -125dBV and output Hum & Noise shall be less than -90 dBu from 20Hz to 20kHz at nominal level. Dimensions shall be 1.75 inches (1 rack space) high, 19 inches wide, and 12.5 inches deep. Weight shall be 9 lbs 9 ounces. The mixer shall operate from 120 VAC, 50/60 Hz. Power Consumption shall be less than 13 Watts. The mixer shall be CE marked with a UL / C-UL listed power source.

The automatic microphone mixers shall be Shure SCM810, or approved equal. Two (2) shall be provided for Courtroom #1.

Unbalanced-to-balanced Converters:

Unbalanced-to-balanced converters shall be used to convert the individual unbalanced direct out signal for each microphone (from the automatic microphone mixers) to a balanced, line level signal to be fed to the courtroom FTR mixer (FBO). The unbalanced-to-balanced converters shall be provided, six to a module. Each input is unbalanced, connected through a gold-plated phono jack. Each output is balanced. All outputs are connected through XLR jacks with gold-plated pins. A gain trim potentiometer is provided for each channel. The normal gain setting is indicated by the trimming potentiometer. This setting produces a +4 dBu balanced output for a −10 dBV unbalanced input. The gain is adjustable −5 dB to +10 dB from the normal gain. Therefore, a +4 dBu output signal is possible from input signals ranging from −20 dBV to −5 dBV.

The unbalanced-to-balanced converters shall be Radio Design Labs Model FP-UBC6 or approved equal. Three (3) shall be provided for Courtroom #1.

Rack Mount Kit:

A rack mount kit shall be provided and installed in the system equipment cabinet to house the system audio distribution amplifier (ADA), 3-input mixer, and remote volume control device (VCA). The rack mount kit shall be 19” in width, and occupy one rack unit (1.75”) of panel space. It shall provide three (3) front panel openings, for mounting of the ADA and VCA. Blank filler panels shall be provided for any unused openings. The 3-input mixer shall mount behind

the front panel, on the shelf portion of the rack mount kit. The finish of the rack mount kit shall be black powder epoxy paint.

The rack mount kit shall be Radio Design Labs model RU-RA3A, or approved equal.
The rack mount kit filler panels shall be Radio Design Labs model RU-FP1, or approved equal.

24 VDC Power Supply for Unbalanced-to-Balanced Converters:

The power supply for the unbalanced-to-balanced converters shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 2.76" x 1.37". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 500 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24E, or approved equal.

Remote Audio Level Control (VCA) for Main Courtroom Sound Reinforcement Audio:

A remotely controlled audio level control (VCA) shall be provided for control of the main Courtroom sound reinforcement audio. The VCA device shall be mounted in the rack mount kit in the sound system equipment cabinet. The remote control for the VCA shall be installed at the Case Manager's desk in the Courtroom. The remotely controlled voltage controlled amplifier (VCA) shall be a two channel audio attenuator, capable of being controlled, either remotely from a single location, or locally. One channel of the dual channel VCA shall be used for the main Courtroom audio, and the second channel shall be used for the videoconference/teleconference audio. The VCA shall accommodate either balanced or unbalanced line-level sources. Audio levels shall be controlled in 0.5 dB steps using noiseless zero-crossing digital attenuators for optimum reliability, precise tracking and long-term click-free service.
Each of the two (2) inputs of the VCA shall be >10 k Ω balanced bridging, or unbalanced, line level, with frequency response of 10 Hz to 50 kHz (+/- 0.5 dB). THD+N shall be < 0.005% (20 Hz to 20 kHz). Gain shall be adjustable from unity to <–96 dB. Headroom shall be > 18 dB (above +4 dBu), and residual noise shall be < -90 dB (referred to +4 dBu at unity gain). Attenuator step size shall be 0.5 dB, and ramp times shall be 0.5 second delay; then: 3 seconds to 10 seconds (UP and DOWN times individually adjustable on front panel). CMRR shall be > 65 dB (50 to 150 Hz), and crosstalk between channels shall be <-95 dB (1 kHz, typ.); < -85 dB (20 Hz to 5 kHz); < -75 dB (5 kHz to 20 kHz). The audio outputs shall be 150 Ω balanced (may be connected unbalanced). The ramp output shall be 0 to 10 Vdc, (Ground-referenced) , and the EQ ramp output shall be 0 to 10 Vdc, (Ground-referenced). The power requirement shall be 24 Vdc @ 120 mA, Ground-referenced. There shall be ten (10) front panel LED's indicating relative audio level (8), MAX condition (green), MIN condition (red). The dimensions of the VCA shall be 5.75" (14.6 cm) W x 1.65" (4.18 cm) H x 3.54" (9.0 cm) D;3.9" (9.9 cm) D with connectors. Control of the attenuators shall be accomplished by remote 10 k Ω linear taper pots. A single remote control location for each channel is possible using a remote 10 k Ω pot.
The remotely controlled VCA shall be Radio Design Labs RU-VCA2A, or approved equal.

Main Audio Remote Level Control:

The device for controlling the main courtroom VCA shall be a 10k Ω linear taper pot, mounted in a single gang white Decora style plate, and installed in the existing electrical box in the top of the Case Manager's desk. The pot shall have 10 graphic increments which provide a visual indication of the level setting. It shall be designed to directly interface with the 3-wire control input of the VCA module.
The remote level control shall be the Radio Design Labs RLC10K Remote Level Control or approved equal.

Audio Distribution Amplifier:

The audio distribution amplifier (ADA) shall be a four channel stereo device with both input and output gain adjustments and input level metering. The ADA may be operated in mono mode to provide up to eight distributed mono signals. The inputs and outputs are connected on rear-panel detachable terminal blocks. Each of the two line level inputs accepts either a balanced or an unbalanced signal. Each input is equipped with a front panel INPUT GAIN trimmer. Input signal levels between -14 dBV unbalanced and +9 dBu balanced may be set to the proper operating level as indicated by a dual-LED VU meter. This assures ample headroom at all normal operating levels. The maximum input level is + 25 dBu. A rear-panel switch selects between stereo and mono operation. In the mono position, input A (left) is used to drive all 8 output channels. When the module is used in a monaural system, only input A must be wired. Audio outputs are isolated from each other and may be wired balanced or unbalanced. Each of the outputs is provided with a front panel screwdriver adjusted OUTPUT LEVEL control. Relative to a balanced +4 dBu output level, this gain potentiometer allows an adjustment range from -9 dB to +6 dB. Relative to an unbalanced -10 dBV output, each output potentiometer allows an adjustment from -3 dB to +12 dB. The audio distribution amplifier shall offer exceptional headroom, very low distortion, excellent crosstalk isolation, wide flat frequency response and extremely low noise with very high common-mode signal rejection. It shall operate from 24 Vdc connected through a rear-panel detachable terminal block.
The audio distribution amplifier shall be the Radio Design Labs RU-ADA4D, or approved equal.

Three Input Line Level Audio Mixer:

The three input line level audio mixer shall provide audio mixing of up to three line-level inputs with individual input gain adjustments. The line-level output is capable of driving either high or low impedance, balanced or unbalanced loads. The mixer shall operate from a separate floating or bipolar dc power source. The three inputs shall be 30 k Ω balanced or unbalanced bridging. The input level shall be -20 dBu to +18 dBu (for +4 dBu output) and -24 dBu to +14 dBu (for 0 dBu output). The output shall be 400 Ω to drive low or high impedance balanced or unbalanced lines, and the output level shall be +4 dBu nominal, (adjustable; unbalanced output 6 dB below balanced line level). Frequency response shall be 10 Hz to 20 kHz (+/- 0.5 dB). THD+N shall be < 0.03% (10 Hz to 20 kHz), and output noise shall be < -80 dB (all inputs @ 10 dB gain, referenced to +4 dBu). Gain for each input shall be -14 dB to +24 dB (adjustable), with 18dB of headroom. CMRR shall be > 50 dB (50 to 120 Hz). Power requirement for the mixer shall be

ground referenced 24 VDC, 55 mA. The mixer shall measure 3.025" x 1.57" x 0.67", and shall mount on the rear shelf portion of the rack mount kit.

The three input line level mixer shall be Radio Design Labs ST-MX3, or approved equal.

24 VDC Power Supply for Audio Distribution Amplifier, 3-Input Mixer, and VCA:

The power supply for the devices mounted in the rack mount kit (audio distribution amplifier, 3-input mixer, VCA) shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 3.51" x 1.55". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 1000 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24KS, or approved equal.

Compressor/Limiter

The compressor/limiter shall be a two-channel unit with separate Gate Threshold, Compression Threshold, Compression Ratio and Output Level controls. A Link switch shall provide true Master / Slave operation of Gate, Compression and Output Level functions. Gate and compression threshold indicators shall be provided. A four-segment meter shall indicate compression gain-reduction for each channel. The Compressors shall provide a threshold range of +20 dBu to –40 dBu and a ratio range of 1:1 to ∞:1. The Gates shall operate with a threshold range of –20 dBu to –80 dBu with a fixed ratio of 2:1. The response time of the detector shall be 80 dB/ second. Each Input shall feature XLR and TRS connectors, active balanced input buffer, RFI filtering and –10 dBV / +4 dBu sensitivity switch. Input levels shall be monitored by +4 dBu and overload indicators. Each channel shall feature a bypass switch that disconnects the dynamics processing and connects the buffered input to the output amplifiers. Each output shall feature XLR and TRS connectors, active balanced line drivers and RFI filtering. The unit shall be capable of operation by means of its own built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. The unit shall occupy two rack spaces in height.

The compressor/limiter shall be a Rane Corporation Model DC22S, or approved equal.

1/3 Octave Graphic Equalizer

The graphic equalizer shall be of constant-Q design to minimize interactions between adjacent bands, and contain frequency bands located on standard ISO center frequencies. Each band shall have a bandwidth of 1/3-octave. A switchable boost/cut range of 12 dB or 6 dB shall be provided. A detented and positively grounded 0 dB point shall be provided on 20 mm linear sliders with dust dams. A rotary overall level control shall be provided with a range from off to +6 dB of gain in balanced mode. The input and output shall be active balanced/unbalanced designs terminated with both XLR and ." TRS (tip-ring-sleeve) connectors. RFI filters shall be provided. The unit shall provide a passive bypass feature requiring no power to operate. Infrasonic and ultrasonic filters shall be built-in. LEDs shall be provided to indicate overload

conditions. The unit shall be capable of operation by means of its own built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. A dual rack unit security cover shall be installed over the equalizer controls after the equalizer has been properly adjusted.

The dual channel 1/3 octave graphic equalizer shall be a Rane Corporation ME60S Equalizer, or approved equal.

Courtroom Loudspeaker Power Amplifier:

The power amplifier shall be a single channel model capable of operation from 120/ 240 VAC, 50/60 Hz line. The amplifier shall incorporate protection circuitry for high temperature, audio limiters, power up delay and peak current limiters. The load shall be similarly protected against subsonic signals, startup/shut down transients, low AC line voltage, and DC faults. A detented and marked level control on the rear panel shall provide hidden reliable level adjustments. Front panel LEDs shall indicate signal present, 0 dB, and limit. Phoenix type connectors for inputs and outputs provide easy rack wiring. A three stage front-to-rear cooling fan shall significantly reduce heat buildup and allow for more reliable operation in the slim two rack space chassis.

The power amplifier shall meet the following performance criteria: Input sensitivity for rated output power: 0 dBU. Input impedance (balanced): >20 kΩ. Continuous Rated Power (1 kHz, THD 1%) 100v: 270 Watts. Continuous Rated Power (1 kHz, THD 1%) 70v: 270 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 100v: 250 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 70v: 250 Watts. Frequency response: 65Hz-20kHz. Intermodulation Distortion (SMPTE): < 0.1 %. Total Harmonic Distortion: < 0.1 %. Signal-to-Noise Ratio (A-weighted): 103 dB. Crosstalk: < -75 dB. Slew Rate: 41/61 V/µs. The power amplifier dimensions shall be 3.46" H (2 RU), 19.02" W, and 15.98" D. The amplifier shall weigh 16.5 kg (36.38 lbs).

The Courtroom loudspeaker power amplifier shall be Electro-Voice PA-1250T, or approved equal.

Jury Box Loudspeaker Mixer-Amplifier:

The mixer power amplifier for powering the three (3) Jury Box loudspeakers shall have eight mixer input ports and shall be capable of operation from a 120V, 50/60Hz line. Each input port shall be usable with microphone, phono pickup or high-level devices. The amplifier shall meet the following performance criteria. Power output shall be 60W at less than 0.5% THD from 20 to 20,000Hz (direct output) or 50 to 20,000Hz (transformer output). Frequency response shall be ± 1 dB from 20 to 20,000Hz (direct output) or 20 to 15,000Hz (transformer output). Source impedance shall be 200/50K ohms with a microphone preamplifier, 50k ohms with a mag. phono preamplifier, 220k ohms with an auxiliary preamplifier, 10k ohms with a bridging transformer, 600 ohms with a line matching transformer and 600 ohms with a paging input. Load impedance shall be 4, 8, 10.4 (25V line) or 81.7 (70V line) ohms. Load voltage shall be 15.5, 21.9, 25 or 70 volts. Equivalent input noise shall be -126dBm with a Lo-Z microphone preamplifier. Output noise shall be 90dB below rated output when all gain controls are off. Plug-in accessory modules designed for use with the mixer power amplifier shall utilize the latest in surface mount

component technology and include microphone preamplifiers available with muting, remote volume control, voice gate and compressor options; auxiliary preamplifiers available with muting, remote volume control and compressor options; magnetic phono preamplifier; bridging transformers available with muting option; line matching transformers available with muting option; and signal generator modules, Also available shall be 600-ohm balanced output modules and an auxiliary input and balanced line output module for music-on-hold. The mixer power amplifier shall be rack mounted using a rack mounting bracket. The amplifier's dimensions shall be 16.5"(W) x 3.9"(H) x 14.1"(D) (420 x 99.1 x 358mm) and its weight shall be 21.2lbs (9.6kg).

The mixer power amplifier shall be TOA model A-906MK2 or approved equal.

Power Amplifier Input Modules:

Input modules shall be provided for the Jury Box mixer-amplifier to allow connection of the Courtroom audio from the microphone mixers, and for connection of a pink noise generator (PNG) to provide a level of speech privacy within the Jury Box during Sidebar conferences. These input modules shall incorporate a muting function, controlled by the Judge's 'Sidebar Microphone' switch, simultaneously turning on the sidebar microphone, turning off the courtroom audio to the Jury Box, and turning on the pink noise to the Jury Box. A separate equalizer module optimized for the existing TOA H1 Jury Box loudspeakers shall also be provided.

The equalizer module for the Jury Box loudspeakers shall be the TOA E-04R, or approved equal.
The input module for the Courtroom audio shall be the TOA B-11S, or approved equal.
The input module for the pink noise generator shall be the TOA B-11S, or approved equal.

Pink Noise Generator

A digital, random pink noise generator shall be provided and installed in the system equipment cabinet, and connected to the Jury Box mixer-amplifier to provide a level of speech privacy within the Jury Box during sidebar conferences at the Bench. During sidebar conferences, the normal courtroom audio shall be defeated in the Jury Box, and the pink noise shall be simultaneously activated only within the Jury Box, controlled by a single switch at the Judge's Bench. The generator shall produce a digital output signal for sound-masking that is pink noise (equal energy / octave) or white noise (equal energy / frequency). The sound-masking generator shall have a balanced low-impedance line output that may be switched between line level (500mv) and mic level (5mv) and a high-impedance unbalanced line output (500mv). Generator controls shall include output level and low pass filter. The chassis assembly shall occupy one single rack space, and shall be formed from heavy gauge steel and finished in black powder epoxy paint. Chassis shall measure 19"W x 1.75"H (1RU) x 4"D. An external power supply shall be included.

The sound-masking generator shall be Lowell Model SMG-1R, or approved equal.

Monitor Loudspeaker Systems:

The loudspeakers shall be a two-way system consisting of two 3.5”(89mm) low-frequency transducers, a .75” (19mm) high-frequency transducer, and a frequency-dividing network installed in a vented, line array enclosure. The network shall include a passive limiter for both the low-frequency and high frequency transducers. The loudspeaker system shall meet the following performance criteria: Power handling, 150 Watts of EIA RS-426A continuous pink noise (6 dB crest factor); Frequency response, 85 Hz – 20 kHz (-10 dB from rated sensitivity); Pressure sensitivity, 87 dB at one watt, 200 Hz – 10 kHz at one meter; Impedance, 8 ohms nominal, 6 ohms minimum. The enclosure shall be molded of acrylic butyl styrene. The enclosure shall be 9.2” (234mm) high, 5.1” (127mm) wide, 6.5” (165mm) deep. The finish shall be a paintable black. The grille shall be zinc plated, powder coated for corrosion resistance, and restrained with a safety leash. The loudspeaker shall be adjustable over a range of 100° horizontally and 90° vertically. The support bracket shall be low profile and integral with the enclosure. The system shall be weather resistant to MIL Spec 810 and IEC 529 IP 34 test conditions. The loudspeaker shall contain an integral 70 volt transformer with switch selectable taps at 70V: 3.75 W 70V/100V: 7.5W, 15W, and 30W.

The loudspeakers shall be the Electro-Voice® EVID model 3.2t, or approved equal.
The horizontal desk mount for the monitor loudspeakers shall be the Electro Voice HS-3, or approved equal.

Monitor Loudspeaker Connectors:

Each of the monitor loudspeakers shall be provided with an appropriate length cable, long enough to allow proper positioning of the loudspeaker on the Bench, desk, or table top, and to connect to the proper monitor loudspeaker receptacle. The cable shall be a two conductor, 16 AWG, flexible cable, with white jacket, and terminated with a 2-pole cord-mount connector. It shall plug into a mating 2-pole receptacle, mounted in a wall-mount or floor-mount plate.
The monitor loudspeaker connector shall be Neutrik NL2FC, or approved equal.
The mating panel-mount receptacle shall be Neutrik NL2MP, or approved equal.

Loudspeaker Mute Relays:

Individual loudspeaker mute relays shall be provided for the Judge, Witness, Attorney 1, and Attorney 2 loudspeakers in Courtroom #1. These relays shall be activated from the TTL +5V digital logic signals from the individual microphones on the automatic microphone mixers. When an individual microphone is activated, the logic signal appears at the mixer logic output, activating the relay, and muting the monitor loudspeaker at that microphone position. This process increases the gain-before-feedback for each of these microphones by eliminating a possible feedback loop. The mute relays shall be provided four to a circuit board, which shall include the active driver circuitry for each channel, LEDs to provide visual indication on the status of each relay, an individual SPDT relay for each channel, and a DC power jack which accepts connectors with a 2.1mm inside diameter and 5.5mm outside diameter. The jack requires a center-positive supply. The relay dry contacts and the TTL logic inputs shall be available at screw terminal connections. The circuit board, complete with four individual relay circuits, shall

be powered from a separate 24 VDC power source. The mute relay PCB shall mount within the sound system equipment rack using the DIN clip mounting option.

The loudspeaker mute relays shall be the Winford RLY104-24V-DIN 4-relay PCB, or approved equal.

Loudspeaker Mute Relay Power Supply:

The loudspeaker mute relay power supply shall be the RDL PS-24E 24 VDC 500 ma power supply.

Hearing Assistive System:

A wireless FM hearing assistive system shall be furnished for Courtroom #1. The hearing assistive system shall consist of a wireless FM transmitter, mounted in the equipment rack, and a series of four (4) portable receivers. The transmitter shall be microprocessor controlled with push button configuration. It shall have an operating range of up to 1000 feet. It shall have 17 wideband channels operating on 72.1–75.9 MHz. It shall have 77 narrowband channels operating on 72.025–75.975 MHz. The transmitter shall have a push button controlled LCD digital display. There shall be three pre-configured (selectable) application presets: Hearing Assist, Music and Voice. Configurations for Bandwidth, Frequency, Audio Input Source (Microphone, Line, Simplex), High Pass Filter, Low Pass Filter, Compressor Slope, Compressor Gain and RF Output Power shall be push button controlled. The audio level shall be adjustable by push button control. There shall be a 10 LED array showing audio level from +9 to -18 at 3dB intervals. The transmitter shall have a 1/4" phone jack with push button volume control. It shall have push button control for monitoring source audio or transmitted audio. It shall have an input overload indicator. It shall have an "on" indicator and power button. The transmitter shall be powered by 24 VAC power supply via a 3-pin Molex® connector. It shall have a 75 ohm F-connector antenna. It shall have an ANT 025 whip antenna on the top panel directly connected to the circuit board. The transmitter shall have an RCA line output jack. It shall have a combination 1/4" phone/XLR audio input jack. It shall have an RF "Off" timer that turns off RF signal after 1 hour of no audio activity. The transmitter shall be FCC compliant with RoHS and WEEE regulations and be powered by UL and CSA power supply. It shall have a Lifetime PLUS Limited Warranty. It shall be compatible with other specified FM equipment operating on 72-76 MHz.

The receiver shall be encased in black, PC/ABS impact-resistant plastic with a hinged battery door. The receiver shall be a body-pack style and include a detachable belt-clip for hands-free operation. The receiver shall have a 3.5mm stereo/mono jack to accommodate stereo or mono low impedance earphones, headphones and neckloops. Receiver shall have a combination volume control with power on/off rotary dial. It shall have a green LED indicating battery and system status codes. The receiver shall have access to 17 wideband channels between 72-76MHz. Channel selection shall be made by pushing the seek button inside the battery compartment. Receiver shall have channel-lock capability. Receiver shall have a slide switch inside the battery compartment to select Alkaline or rechargeable NiMH rechargeable battery operation. It shall have charger contacts on the bottom of the receiver for use with drop-in chargers. The receiver shall operate up to 48 hrs with two AA Alkaline batteries, and up to 30 hrs

with two AA NiMH rechargeable batteries. The receiver shall provide a maximum out of 35mW at 16 ohms with an earbud-type earphone. The system's audio frequency response shall be 200Hz to 15kHz ± 3dB and the signal-to-noise ratio shall be 65dB min. The receiver sensitivity shall be 2µV or better at 12dB Sinad with squelch defeated. The receiver shall accept up to ±75kHz FM deviation and have a 75µs de-emphasis time constant. The receiver shall have FCC, Industrie Canada approvals and be compliant with RoHS and WEEE regulations. The receiver shall be covered by a Lifetime PLUS Limited Warranty.

Due to the requirement for backwards compatibility with other Williams equipment presently in use by the Court, only the Williams PPA 337 system shall be acceptable.

The transmitter shall be a Williams Sound model number PPA T35.
The receiver shall be the Williams Sound model PPA R37.
The transmitter rack mount kit shall be Williams Model RPK-005.

Sidebar Microphone:

The microphone shall be a fixed-charge condenser designed for interviews and general audio acquisition. It shall have an omnidirectional polar pattern and a frequency response of 20 Hz to 20,000 Hz. The microphone shall operate from an external 11V to 52V DC phantom power source, or alternatively, from a 1.5V AA/UM3 battery. It shall be capable of handling sound input levels up to 137 dB (phantom) or 123 dB (battery) with a dynamic range of 113 dB (phantom) or 99 dB (battery).
Nominal open-circuit output voltage shall be 6.3 mV (phantom) or 5.6 mV (battery) at 1V, 1 Pascal. Output shall be low impedance balanced (250 ohms – phantom, 300 ohms – battery). The output of the microphone shall be a 3-pin XLRM-type connector. The microphone shall include a switch that permits choice of flat response or 80 Hz low-frequency roll-off. The microphone shall be 178.0 mm (7.01") long and have a head diameter of 26.0 mm (1.02"). Weight shall be 165 grams (5.8 oz). The microphone shall include a stand clamp, a windscreen, a battery and a soft protective pouch.

The sidebar microphone shall be the Audio Technica AT-8010, or approved equal.

Sidebar Microphone Floor Stand:

The sidebar microphone floor stand shall consist of a nine (9) pound hexagonal cast base and an adjustable (33" – 61") black shaft. The shaft shall install into the base by just pushing down and turning the shaft one-quarter turn clockwise to lock, or pushing down and turning one-quarter turn counter-clockwise to remove.

The sidebar microphone floor stand shall be the On Stage Stands MS-7625, or approved equal.

Sidebar Microphone Preamplifier:

A sidebar microphone preamplifier module shall be surface mounted on the underside of the Court Reporter's desk. The preamplifier module dimensions shall be 3.025" x 1.57" x 0.67". It

shall be powered by a separate 24 VCD power supply. It shall have a 500 Ω balanced; 5 k Ω unbalanced input, and provide 24Vdc; IEC 1938: 1996-12, filtered phantom power for the sidebar microphone. The preamplifier shall have two outputs: a line level output at +4 dBu 150Ω balanced, and a microphone level output at -45 dBu 150Ω balanced, with >20 dB of headroom. The gain of the preamplifier shall be adjustable from 35 to 65 dB for the line level output and adjustable from -15 to 15 dB for the microphone level output. The frequency response shall be 50 Hz to 20 kHz (+/-1 dB). The THD+N shall be < 0.05% (50 dB gain), and the residual noise shall be < -70 dB (below to +4 dBu; 150 Ω source @ 50 dB gain). There shall be a switch control input allowing the Judge to turn the Sidebar Microphone on and off. The switch control input shall connect to ground to activate signal; 0.5 mA maximum current required. The switching time shall be < 5 ms (soft-switching transition on or off). The off attenuation shall be > 100 dB (1 kHz) > 80 dB (50 Hz to 20 kHz). Power required for the preamplifier shall be ground referenced, 24 Vdc @ 25 mA.

The Sidebar Microphone Preamplifier shall be the RDL STM-2X microphone preamplifier, or approved equal.

Court Reporter's Sidebar Microphone Headphone Amplifier:

A Court Reporter's sidebar microphone headphone amplifier shall be surface mounted on the underside of the Court Reporter's desk. The headphone amplifier shall have two (stereo) inputs, wired in parallel for mono operation. The inputs shall be 10 k Ω balanced or unbalanced, bridging, and input sensitivity shall be -20 dBu (-22 dBV) to +6 dBu for normal output level: +4 dBu, and -10 dBu to +16 dBu for 250 mW, 8 Ω output. The output load impedance shall be 8 Ω to 5 k Ω to drive low or high impedance headphones. The output signal (normal rated) shall be +4 dBu into 100 Ω, and the maximum output signal shall be 250 mW into 8 Ω, 20 Vp-p into 2 k Ω. The frequency response shall be 20 Hz to 40 kHz (+/- 0.25 dB). THD+N shall be < 0.005% (0.0015% typical @ 1 kHz), and noise shall be < -100 dB below normal operating level. The noise shall be < -100 dB below normal operating level, with total dynamic range of > 115 dB. The gain shall be adjustable from -2 to 24 dB. Crosstalk between channels shall be < -65 dB (10 Hz to 20 kHz); < -80 dB @ 1 kHz. The power requirement shall be, 24 Vdc @ 200 mA, ground referenced. The **LEVEL ADJUST** terminals (**L**) and (**R**) may be wired to the respective wipers of a stereo 10 k Ω potentiometer to provide volume adjustment.

The Court Reporter Sidebar Microphone Headphone Amplifier shall be RDL ST-SH2 headphone amplifier, or approved equal.

Court Reporter's Sidebar Microphone Headphone:

The Court Reporter's sidebar microphone headphone shall be of the open-back dynamic type with cushioned ear pads, adjustable headband and lightweight design for long-lasting comfort. The headphone shall have a 3.3' cable with 3.5 mm stereo mini-plug, and a 1/4" (6.3 mm) phone plug adapter shall be included. The drivers shall be 40 mm in diameter, and have a frequency response of 20-20,000 Hz. The maximum input power shall be 100 mW. Sensitivity shall be 98 dB. Impedance shall be 22Ω. The headphone weight shall be 3.2 oz (90 g).

The Court Reporter headphone shall be the Audio Technica ATH-P3, or approved equal.

Court Reporter's Sidebar Microphone Volume Control and Headphone Jack Plate:

The Court Reporter's Sidebar Microphone Volume Control and Headphone Jack Plate shall consist of two Decora style single gang white plates, one with a stereo volume control installed, the other with two 1/8" (3.5 mm) stereo jacks installed. They shall mount side by side in the existing opening in the top of the Court Reporter's desk. The stereo volume control shall be a dual (ganged) 10KΩ, ½ watt, linear taper potentiometer with a ¼" shaft 0.5" in length. The potentiometer shall mount in the center of the Decora plate in a 0.26" hole using a hex nut. A plastic knob shall be installed on the potentiometer shaft. The two headphone jacks shall mount in the second Decora plate, wired in parallel for connection to either two headphones, or one headphone and a Court Reporter's recording device. A two-gang brass cover plate shall be installed over the two Decora plates.

The Decora style blank plates shall be Radio Design Labs D-Blank, or approved equal.
The stereo 10KΩ potentiometer shall be Alpha model RV24BF-10-15R1-B10K, or approved equal.

Sidebar Microphone Control Plate:

A single gang Decora style plate shall be provided at the Case Manager's desk with a 4PDT toggle switch, and two LEDs, one red and one green, to control the Sidebar Microphone and simultaneously turn on and off the pink noise to the Jury Box (only). One pole of the 4PDT switch shall control the Sidebar Microphone preamplifier mute, the second pole shall turn on the green LED when the Sidebar Microphone is on, turn on the red LED when the Sidebar Microphone is off. The third pole of the 4PDT switch shall toggle the Jury Box mixer-amplifier mute functions, simultaneously turning off the courtroom audio, and turning on the pink noise, to the Jury Box. The fourth pole of the 4PDT toggle switch shall mute all of the Courtroom microphones using the "Mute In" function of the automatic microphone mixers.

The Sidebar Microphone control plate shall be Radio Design Labs D-Blank, or approved equal.
The Sidebar Microphone 4PDT toggle switch shall be Parts Express 66-1220, or approved equal.

Option 1 - Wireless Loudspeakers:

The wireless loudspeaker shall be a powered speaker and have a sixteen channel wideband 72-76 MHz receiver that can be accessed on the back of the unit. It shall be housed in a black heavy duty plastic enclosure 12.4" x 7.09" x 5.6" and weigh approximately 9 lbs. It shall have a 20 watt amplifier and two way speaker system with a 5.25" magnetically shielded woofer and a 1" dome tweeter. The wireless loudspeaker shall have an RCA line input, RCA line output and 1/4" low impedance microphone input. It shall have separate microphone and line in level adjust and have a master tone and volume rotary adjust. The receiver sled shall have a 75 Ohm antenna output, on/off audio level rotary adjust, RF rotary squelch adjust and sixteen position rotary channel selector. The wireless loudspeaker shall be supplied with a 39 inch telescopic antenna. The loudspeaker shall be supplied with a wall mount bracket and have the ability to be mounted on a

microphone stand (not supplied). It shall be AC powered and have 230 - 115VAC switch on the back and be UL, C-UL, FCC, RoHS, and WEEE compliant.
The receiver sled shall be a sixteen channel wide band 72-76 MHz receiver designed specifically to work with the powered speaker/receiver. It shall be enclosed in a metal housing 5" x 5" x 1" and weigh 0.62 lb. It shall have a sixteen channel rotary channel select, rotary on/off audio level control, rotary squelch control, a 75 Ω F-connect antenna output and an RF LED indicator showing when the receiver is receiving an FM signal. The receiver shall be designed to slide into the back of the wireless loudspeaker and shall be locked in place by two thumb screws on the face plate. The receiver shall have a deviation of ±75 kHz, frequency response 40 - 15 kHz and S/N ratio of 60 dB The receiver shall be FCC, RoHS and WEEE compliant.

The wireless loudspeaker shall be the Williams PPA R1600 FM remote speaker.

Wireless Loudspeaker Floor Stands:

The wireless loudspeaker floor stands shall consist of a nine (9) pound hexagonal cast base and an adjustable (33" – 61") black shaft. The shaft shall install into the base by just pushing down and turning the shaft one-quarter turn clockwise to lock, or pushing down and turning one-quarter turn counter-clockwise to remove.

The wireless loudspeaker floor stands shall be the On Stage Stands MS-7625, or approved equal.

Option 2 - Media Multiple:

A portable, passive media multiple unit shall be provided for use during authorized public ceremonies and events. The input shall consist of one (1) XLR female and one (1) XLR male connector +4dBu nominal, 2k ohms, balanced. The unit shall allow not less than three units to be linked together for increased capacity. Frequency response shall be 30Hz, +0.1dB with a THD of not more than .001%. The output shall consist of not less than twenty-four (24) XLR male connectors for balanced outputs and not less than eight (8) 1/8th inch phone jacks for unbalanced outputs at –46dBu nominal, 150 ohms (mic level). At least 85dB isolation between outputs shall be provided. The portable unit version shall be constructed of a black anodized AVD series aluminum front panel and enclosed in an ABS case with a thermoplastic steel core handle, draw-bolt key locks, and aluminum frame. Its external dimensions shall not exceed 228mm H x 305mm W x 140mm D (9" x 12"x 5-1/2"), while providing internal storage space of at least 216mm H x 298mm W x 76mm D (8-1/4" x 11-3/4" x 3") and shall weigh not more than 3.7kg (5 lbs.) with the storage space empty.

The broadcast media multiple unit shall be a RCI Custom Products Model BM-24, or approved equal.

C.4 U.S. District Courtroom 2

Wired Microphones (Judge, Witness, Case Manager, Attorneys, Podium):

The microphone shall be a fixed-charge condenser designed for permanent installation or portable applications. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 139 dB with a dynamic range of 115 dB. Nominal open-circuit output voltage shall be 11.2 mV at 1 V, 1 Pascal. Output shall be low impedance balanced (250 ohms). It shall offer outstanding rejection of radio frequency interference (RFI). The microphone shall incorporate a self-contained power module with an XLRM-type connector at the base for direct connection to a mating XLRF-type panel jack or cable connector. It shall include a recessed switch to permit choice of flat response or 80 Hz low-frequency roll-off. A microphone shock mount shall be supplied for installing the microphone in a solid surface; it shall effectively isolate the microphone from noise, shock and vibration transmitted through the mounting surface. A two-stage foam windscreen shall also be included. The microphone shall be a small diameter alternating gooseneck design, with an overall length of 481.0 mm (18.94") and a head diameter of 12.2 mm (0.48"). Weight shall be 150 grams (5.3 oz). Finish shall be low-reflectance black.

The microphones shall be Audio-Technica U857QL, or approved equal.

Wired Microphone desk stands (Judge, Attorneys, Witness, Case Manager):

The heavy desk stand base shall be designed to work with any dynamic gooseneck or phantom powered condenser gooseneck microphone with an integral 3-pin XLRM-type output connector. The unit shall offer a 3-pin XLRF-type input connector and a 3-pin XLRM-type connector for audio output. The unit shall offer a low-reflectance black finish. The unit's dimensions shall be: 160.0 mm (6.29") maximum length, 130 mm (5.11") maximum width, 39.0 mm (1.53") maximum height.
The desk stand shall be Audio-Technica AT8615, or approved equal.

Podium Microphone Flush-Mount Receptacle:

For the Podium microphone, a flush-mount XLR-F receptacle shall be installed in the top of the Podium, at the center, near the top, leaving room for notes and paperwork. The XLR-F receptacle shall provide a direct mount for the gooseneck microphone. The XLR-F receptacle shall be wired, using the same type of cable specified for the microphone cables, to a similar XLR-M receptacle installed at the base of the podium, flush-mounted on the front face of the Podium.

The XLR-F receptacle shall be Switchcraft D3F, or approved equal.
The XLR-M receptacle shall be Switchcraft D3M, or approved equal.

Wired Microphone Cables (Judge, Witness, Case Manager, Attorneys, Podium, Sidebar):

Microphone cables shall be twenty feet (20') in length. The microphone cables shall be engineered for maximum signal transfer and minimum loss. Designed for low-impedance operation, the balanced cables shall feature heavy-duty construction, and shall be terminated with XLR-type connectors, one male (XLR-M) and one female (XLR-F). To protect signal quality, each heavy-duty 24-gauge stranded copper conductor shall have an individual spiral shield inside the molded insulating sheath. A conductive PVC layer inside each shield dissipates static buildup during flexing. Dual copper outer shields and twin conductive PVC inner shields shall protect cable signal quality with 100% coverage. The heavy-duty PVC jacket shall stand up to tough use, provide extra flexibility, and low memory for ease of use/storage

The microphone cables shall be Audio Technica AT-8314-20, or approved equal.

Note: The microphone cable for the Podium microphone (only) shall be as above, but shall terminate with a right angle male connector to plug into the floor receptacle. The right angle male connector shall be Switchcraft R3F, or approved equal.

Podium Microphone Receptacle Floor Box:

The microphone floor receptacle for the podium shall be Atlas Sound MRB Series Model MRB-1-13. Lid and cover shall be solid cast commercial red brass with a brushed finish. Lid shall require no tools for opening and shall be flush with the floor when closed. Receptacle shall be a Switchcraft C3F microphone connector. A standard 4" (102 mm) octagon box shall be furnished with four leveling legs and four leveling screws. For installation in carpeted areas, a carpet trim ring Model MRB-TR shall be supplied. No alternatives may be considered for this device, as it is intended to replace an original device installed in a poured concrete floor.

Microphone Wall-Mount Receptacles (Judge, Witness and Case Manager):

The wall-mounted microphone receptacles shall consist of a single XLR-type female receptacle, mounted on a single-gang Decora style white wall plate. The XLR connector shall be of the solder type.

The microphone wall-mount receptacles shall be Radio Design Labs D-XLR3F microphone receptacle, or approved equal.

Attorney Microphone Floor Receptacles:

The microphone receptacles for the attorney microphones shall be mounted in the existing floor boxes, under the attorney tables, using the existing covers and plates. The existing receptacles shall be replaced with similar XLR-F type receptacles, securely mounted in the existing yokes, if serviceable, or the yokes shall also be replaced.

The attorney microphone floor receptacles shall be Switchcraft D3F, or approved equal.

Auxiliary Line Input Receptacles:

The auxiliary line input receptacles shall provide for the passive mixing of two (stereo) unbalanced line-level audio sources to feed a mono balanced audio line. The front panel shall provide two gold plated phono jacks and a single 3.5 mm stereo mini-jack, intended for mono or stereo consumer level sources. An input signal may be connected to either the phono jacks or to the mini-jack. The left and right signal inputs are combined and balanced through audio transformers, configured to reject induced hum. A mono line-level output is provided on the rear-panel detachable terminal block for connection to a 10 k Ω or higher input impedance line-level module or equipment input. The receptacle plate shall be furnished in white.

The auxiliary line input receptacles shall be Radio Design Labs D-CJI3 mono input receptacle, or approved equal.

Videoconference/Teleconference Audio In/Out Receptacle Plate:

A videoconference/teleconference audio In/Out receptacle plate shall be furnished and installed on the floor in front of the Case Manager's desk, in the same location as the present receptacle. It shall provide a panel-mount XLR-F male receptacle for the courtroom audio out, and a panel-mount XLR-M female receptacle for the far-end audio in.

The videoconference/teleconference audio in/out receptacle plate shall be the RDL model D-XLR2.

Microphone and Line Level Receptacle Cover Plates:

The cover plates for all wall-mounted audio receptacles, and for all audio control devices, shall be of polished brass finish, and be of the Decora style, with the appropriate number of gangs.

The microphone receptacle, line level receptacle, and control panel cover plates shall be Brainerd 64122 series brass plate, or approved equal.

Wireless Microphone Systems:

The frequency-agile FM wireless microphone system shall consist of a receiver and the appropriate transmitter. Operating in the UHF bands of 482.000–507.000 MHz, 541.500–566.375 MHz , or 655.500–680.375 MHz, the system shall be capable of operating on any of 996 – 1001 PLL-synthesized frequencies per band. The frequency-agile FM wireless receiver shall be all-metal and shall provide an automatic scanning function to select appropriate local usable channels for proper wireless system operation. All configuration functions of the receiver shall be controlled by soft-touch controls on the receiver front panel. It shall be a True Diversity receiver with two independent internal receiver sections, automatically selecting the highest quality signal for the receiver's output. The system will be equipped with an advanced Tone Lock™ digital identification system to ensure that only the desired wireless microphone transmitter allows the receiver to be un-muted. The receiver shall have shall have an alert LED on the front panel that indicates transmitter low battery warning, signal loss and input overload.

The receiver shall continuously monitor and display the battery life indicator of the wireless transmitter, the RF signal strength and the diversity selection of internal dual tuner sections (A&B). The receiver shall have a rear panel selector to lift the ground connection from pin 1 of the XLR-type output connector to prevent ground loops. The receiver shall be able to be powered by 120V AC 60 Hz or 12–18V DC at 500 mA. Antennas shall be located on the rear of the receiver and shall incorporate standard BNC-type connectors to allow them to be detached from the receiver to facilitate the receiver being used with external antennas or antenna distribution devices. Switchable 12V DC power shall be provided on the BNC-type connectors. An accessory bracket should allow for the antennas to be located at the front of the receiver. The receiver can be rack-mounted singly or in pairs in a single rack space. The receiver's design shall provide totally silent audio output mute when the wireless transmitter is turned off or signal is lost. The wireless receiver and the supplied metal rack-mounting brackets shall be industrial black.

The frequency-agile FM wireless body-pack transmitter shall have microphone and line level inputs. It shall provide DC voltage to power microphones requiring DC bias. The body-pack transmitter shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz , or 655.500–680.375 MHz. The body-pack transmitter shall have a reversible clip allowing for up or down cable entry. The transmitter shall have a recessed 4-pin locking input connector and a viewable fuel gauge to indicate the remaining battery life. 996-1001 frequencies shall be available and be selected with the soft-touch controls under the safety panel. The device shall have a dual-color LED to indicate power/mute status. There shall be an adjustment to allow input gain changes with a range of 18 dB. The transmitter shall include Tone Lock™ to identify the wireless transmitter to the wireless receiver. This transmitter shall utilize two RF output power levels and shall operate on two AA batteries. The transmitter battery compartment shall be locking. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The transmitter shall have a removable and field replaceable antenna.

The frequency-agile FM wireless handheld transmitter utilizing a dynamic cardioid element shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz, or 655.500–680.375 MHz. The capsule shall incorporate internal shock mounting and have a two-stage integral pop filter. It shall be capable of transmitting on any of 996-1001 frequencies per band. It shall have a metal housing with a plastic antenna end cap. The transmitter shall transmit a digital Tone Lock™ signal that allows the receiver to un-mute. A dual-color LED indicator shall illuminate green when the transmitter is turned on and shall illuminate red when the transmitter is muted. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The microphone shall have an audio input level adjustment range of 18 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. The transmitter shall operate on two AA batteries and contain a Hi/Lo RF power selector. A battery fuel gauge shall be incorporated to indicate the status of the internal batteries. The transmitter shall be supplied with a heavy-duty stand clamp.

The wireless lavalier microphone systems shall be Audio-Technica ATW-3131b – Body-pack System with AT831cW Lavalier Microphone, or approved equal. Four (4) shall be provided.

The wireless hand-held microphone shall be Audio Technica ATW-T341bC, or approved equal. One (1) shall be provided, to be used in lieu of, and to operate on same frequency as, one of the lavalier systems.

Podium Wireless Microphone Transmitter:

To allow the Podium to be completely moveable in Courtroom 2 the Podium microphone flush-mount receptacle shall be wired with a short, 2' pigtail cable, terminated with an XLR-M connector inside the Podium. This XLR-M connector may be connected to a standard microphone cable (*q.v.*), and plugged into the Podium floor box receptacle (*q.v.*). Alternately, the Podium microphone pigtail cable may be plugged into a plug-on wireless microphone transmitter for completely portable use. The frequency-agile FM wireless plug-on transmitter with locking 3-pin XLRF-type connector shall be a part of a wireless microphone system operating in the bands of 541.500–566.375 MHz or 655.500–680.375 MHz. It shall be designed to convert a dynamic or condenser microphone to wireless operation. It shall be capable of transmitting on any of 996 PLL-synthesized frequencies (adjustable in 25 kHz steps) per band and shall be compatible with Audio-Technica 3000 Series or 1800 Series receivers. The transmitter shall transmit a digital Tone Lock signal that allows the receiver to un-mute. A dual color LED indicator shall illuminate "green" when the transmitter is turned on and "red" when the transmitter is muted. The transmitter shall have an audio input level adjustment range of 24 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. A sliding door shall cover the setup controls when not in use. The transmitter shall operate on two AA batteries and contain a Hi/Lo power selector. The transmitter shall be equipped with a backlit LCD screen used to show operating frequency and programming status. A battery fuel gauge shall be incorporated into the display to indicate the status of the internal batteries. The transmitter shall provide 12V DC to power condenser microphones. The transmitter housing shall be metal with integral antenna and captive battery door.

The frequency-agile FM wireless receiver shall be all-metal and shall provide an automatic scanning function to select appropriate local usable channels for proper wireless system operation. All configuration functions of the receiver shall be controlled by soft-touch controls on the receiver front panel. It shall be a True Diversity receiver with two independent internal receiver sections, automatically selecting the highest quality signal for the receiver's output. The system will be equipped with an advanced Tone Lock™ digital identification system to ensure that only the desired wireless microphone transmitter allows the receiver to be un-muted. The receiver shall have shall have an alert LED on the front panel that indicates transmitter low battery warning, signal loss and input overload. The receiver shall continuously monitor and display the battery life indicator of the wireless transmitter, the RF signal strength and the diversity selection of internal dual tuner sections (A&B). The receiver shall have a rear panel selector to lift the ground connection from pin 1 of the XLR-type output connector to prevent ground loops. The receiver shall be able to be powered by 120V AC 60 Hz or 12–18V DC at 500 mA. Antennas shall be located on the rear of the receiver and shall incorporate standard BNC-type connectors to allow them to be detached from the receiver to facilitate the receiver being used with external antennas or antenna distribution devices. Switchable 12V DC power shall be

provided on the BNC-type connectors. An accessory bracket should allow for the antennas to be located at the front of the receiver. The receiver can be rack-mounted singly or in pairs in a single rack space. The receiver's design shall provide totally silent audio output mute when the wireless transmitter is turned off or signal is lost. The wireless receiver and the supplied metal rack-mounting brackets shall be industrial black.

The wireless plug-on transmitter shall be the Audio-Technica ATW-T1802, or approved equal. The wireless microphone receiver shall be the Audio Technica ATW-R3100b or approved equal.

Wireless Microphone Antenna Distribution Amplifier:

The antenna distribution system shall consist of two independent "one-in by four-out" sections. Each section shall be bandpass filtered to minimize the pickup of undesirable RF signals. Additionally, a dedicated directional coupler output shall be provided to enable additional antenna distribution systems to be cascaded together for increased capacity. All antenna and receiver output connections shall be standard BNC-type, and ten RF jumper cables shall be provided with each antenna distribution system for interconnections. The antenna distribution system shall be capable of supplying 12V DC power on the antenna inputs to allow the use of active antennas or antenna in-line booster accessories. This voltage shall be protected against short-circuits and overloads. The antenna distribution system shall also be capable of supplying individual short circuit protected 12V DC outputs to power up to four associated wireless receivers operating on 12V DC at up to 500 mA each. Four sets of power jumpers (center pin positive) shall be included with the antenna distribution system. A front panel power switch with power-on indicators shall be provided on each unit. The antenna distribution system shall be designed to operate on 110-240V AC 50/60Hz power. Power input connections shall be standard IEC-type and an IEC-type AC power pass through output shall be provided to allow power to be cascaded to additional devices. The unit shall be designed to mount in a standard IEC equipment rack and shall occupy a single rack space. Construction shall be of steel with steel-reinforced front panel and rear rack-mount supports. Provisions shall be provided on the front panel to locate a pair of BNC antenna connections. Included with the unit will be a set of bulkhead BNC RF connectors and cables to facilitate front panel antenna connections.

The antenna distribution amplifier shall be Audio-Technica AEW-DA550C, or approved equal. Two (2) shall be provided for Courtroom # 2.

Remote Controlled AC Receptacles:

The device for remotely controlling AC power shall include a power supply and relay housed within a 7.5"L x 3.25" W x 2.75" H steel chassis. The unit shall include one (1) duplex outlet with a power rating of 20 A, and shall provide terminals for remote connection of a dry contact closure and LED status indicator. The power control device shall terminate with a 6 foot AC power cord. The device shall include surge protection for transient voltage.

The remote controlled AC receptacle shall be Lowell remote power control Model RPC-1-TVSS-CD, or approved equal.

Courtroom Power Control Switch:

The remote sound system power switching device, at the Case Manager's desk, shall provide a SPST rocker switch with 1 LED to indicate system power on. The switch and LED shall be mounted in a single gang Decora style white plate and be flush-mounted in an existing single gang electrical box on the Judge's bench top.

The Courtroom power control switch shall be Lowell RPS Model RPSW-P, or approved equal.

Equipment Rack Multiple Outlet Strips:

A UL Listed AC power outlet strip shall be mounted inside the existing sound system cabinets. Power rating shall be 120VAC 15A with circuit breaker protection and an LED indicator that is lit when protection is active. The power strip shall have a suppressed voltage rating of 400V with maximum surge at 6000V and 6500 Amperes maximum peak current. Power strip shall include either twelve (12) or twenty-four (24) outlets spaced to accept power supplies. It shall be terminated with a six foot cord and molded plug. It shall install to adjustable or fixed rail racks with a mounting clip and screw.

The equipment rack multiple outlet strip shall be the Lowell Model ACS-1524, or approved equal.

Automatic Microphone Mixers:

The mixer shall provide 8 differentially balanced mic/line inputs and one auxiliary line input, all on plug-in Phoenix-style connectors on the rear panel. The mixer shall accommodate any low impedance dynamic or condenser microphones. Phantom power shall be +48 volts, and shall be individually switch selectable for each microphone input via rear panel DIP switches. The auxiliary line input shall be selectable for either front or rear panel ¼" jacks via a rear panel DIP switch. Two front panel screwdriver adjustable equalization (lo-frequency roll-off and high frequency shelving) controls, and rear panel pad switches shall be provided for each input channel. Each input channel shall also include a rotary level control, an LED peak indicator, a high-pass filter switch, and an unbalanced direct output ¼" jack, which is non-gated, pre-fader, and pre-EQ. The mixer main output shall be electronically balanced on a plug-in barrier-strip connector. The output section shall include a limiter with threshold control and a 9-segment output level LED indicator, a rotary Master level control, and a headphone jack with level control. Link in and link out connectors shall allow up to 50 mixers (400 microphones) to be linked, for increased system input capability. Channel 1 automatic priority override shall be assignable on other input channels. Three logic terminals, (Gate Out, Mute In, and Override In) for each of the microphone inputs shall appear at a DB-25 connector on the rear panel. The logic terminals can be used to control external devices such as loudspeaker mute relays. Rear panel DIP switches shall allow adjustment of the Manual/Automatic function, Last-Mic-on function, Hold time, Off attenuation, Limiter threshold, and Local/Global settings for multiple mixers.

The automatic microphone mixer shall allow for multiple microphone operation while maintaining the sound system below the threshold of feedback with fast-acting, noise-free microphone selection and automatic gain adjustment as additional microphones are activated. The mixer shall incorporate a noise adaptive threshold, which distinguishes between constant background noise and changing speech levels for each input. It shall continuously adjust the activation threshold so that only speech levels louder than the background noise activate a channel.

Frequency Response shall be +/- 2dB from 50Hz to 20kHz at +4dBu. THD + Noise shall be less than 0.1% from 20Hz to 20kHz at +18dBV. EIN shall be less than -125dBV and output Hum & Noise shall be less than -90 dBu from 20Hz to 20kHz at nominal level. Dimensions shall be 1.75 inches (1 rack space) high, 19 inches wide, and 12.5 inches deep. Weight shall be 9 lbs 9 ounces. The mixer shall operate from 120 VAC, 50/60 Hz. Power Consumption shall be less than 13 Watts. The mixer shall be CE marked with a UL / C-UL listed power source.

The automatic microphone mixers shall be Shure SCM810, or approved equal. Two (2) shall be provided for Courtroom #2.

Unbalanced-to-balanced Converters:

Unbalanced-to-balanced converters shall be used to convert the individual unbalanced direct out signal for each microphone (from the automatic microphone mixers) to a balanced, line level signal to be fed to the courtroom FTR mixer (FBO). The unbalanced-to-balanced converters shall be provided, six to a module. Each input channel is unbalanced, connected through a gold-plated phono jack. Each output is balanced. All outputs are connected through XLR jacks with gold-plated pins. A gain trim potentiometer is provided for each channel. The normal gain setting is indicated by the trimming potentiometer. This setting produces a +4 dBu balanced output for a −10 dBV unbalanced input. The gain is adjustable −5 dB to +10 dB from the normal gain. Therefore, a +4 dBu output signal is possible from input signals ranging from −20 dBV to −5 dBV.

The unbalanced-to-balanced converters shall be Radio Design Labs Model FP-UBC6 or approved equal. Three (3) shall be provided for each system.

Rack Mount Kit:

A rack mount kit shall be provided and installed in the system equipment cabinet to house the system audio distribution amplifier (ADA), 3-input mixer, and remote volume control device (VCA). The rack mount kit shall be 19” in width, and occupy one rack unit (1.75”) of panel space. It shall provide three (3) front panel openings, for mounting of the ADA and VCA. Blank filler panels shall be provided for any unused openings. The 3-input mixer shall mount behind the front panel, on the shelf portion of the rack mount kit. The finish of the rack mount kit shall be black powder epoxy paint.

The rack mount kit shall be Radio Design Labs model RU-RA3A, or approved equal.
The rack mount kit filler panels shall be Radio Design Labs model RU-FP1, or approved equal.

24 VDC Power Supply for Unbalanced-to-Balanced Converters:

The power supply for the unbalanced-to-balanced converters shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 2.76" x 1.37". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 500 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24E, or approved equal.

Remote Audio Level Control (VCA) for Main Courtroom Sound Reinforcement Audio:

A remotely controlled audio level control (VCA) shall be provided for control of the main Courtroom sound reinforcement audio. The VCA device shall be mounted in the rack mount kit in the sound system equipment cabinet. The remote control for the VCA shall be installed at the Case Manager's desk in the Courtroom. The remotely controlled voltage controlled amplifier (VCA) shall be a two channel audio attenuator, capable of being controlled, either remotely or locally, from a single location. One channel of the dual channel VCA shall be used for the main Courtroom audio, and the second channel shall be used for future expansion. The VCA shall accommodate either balanced or unbalanced line-level sources. Audio levels shall be controlled in 0.5 dB steps using noiseless zero-crossing digital attenuators for optimum reliability, precise tracking and long-term click-free service.

Each of the two (2) inputs of the VCA shall be >10 k Ω balanced bridging, or unbalanced, line level, with frequency response of 10 Hz to 50 kHz (+/- 0.5 dB). THD+N shall be < 0.005% (20 Hz to 20 kHz). Gain shall be adjustable from unity to <–96 dB. Headroom shall be > 18 dB (above +4 dBu), and residual noise shall be < -90 dB (referred to +4 dBu at unity gain). Attenuator step size shall be 0.5 dB, and ramp times shall be 0.5 second delay; then: 3 seconds to 10 seconds (UP and DOWN times individually adjustable on front panel). CMRR shall be > 65 dB (50 to 150 Hz), and crosstalk between channels shall be <-95 dB (1 kHz, typ.); < -85 dB (20 Hz to 5 kHz); < -75 dB (5 kHz to 20 kHz). The audio outputs shall be 150 Ω balanced (may be connected unbalanced). The ramp output shall be 0 to 10 Vdc, (Ground-referenced) , and the EQ ramp output shall be 0 to 10 Vdc, (Ground-referenced). The power requirement shall be 24 Vdc @ 120 mA, Ground-referenced. There shall be ten (10) front panel LED's indicating relative audio level (8), MAX condition (green), MIN condition (red). The dimensions of the VCA shall be 5.75" (14.6 cm) W x 1.65" (4.18 cm) H x 3.54" (9.0 cm) D;3.9" (9.9 cm) D with connectors. Control of the attenuators shall be accomplished by remote 10 k Ω linear taper pots. A single remote control location for each channel is possible using a remote 10 k Ω pot.

The remotely controlled VCA shall be Radio Design Labs RU-VCA2A, or approved equal.

Main Audio Remote Level Control:
The device for controlling the main courtroom VCA shall be a 10kΩ linear taper pot, mounted in a single gang white Decora style plate. The pot shall have 10 graphic increments which provide a visual indication of the level setting. It shall be designed to directly interface with the 3-wire control input of the VCA module.

The remote level control shall be the Radio Design Labs RLC10K Remote Level Control or approved equal.

Audio Distribution Amplifier:

The audio distribution amplifier (ADA) shall be a four channel stereo device with input and output gain adjustments and input level metering. The ADA may be operated in mono mode to provide up to eight distributed mono signals. The inputs and outputs are connected on rear-panel detachable terminal blocks. Each of the two line level inputs accepts either a balanced or an unbalanced signal. Each input is equipped with a front panel INPUT GAIN trimmer. Input signal levels between -14 dBV unbalanced and +9 dBu balanced may be set to the proper operating level as indicated by a dual-LED VU meter. This assures ample headroom at all normal operating levels. The maximum input level is + 25 dBu. A rear-panel switch selects between stereo and mono operation. In the mono position, input A (left) is used to drive all 8 output channels. When the module is used in a monaural system, only input A must be wired. Audio outputs are isolated from each other and may be wired balanced or unbalanced. Each of the outputs is provided with a front panel screwdriver adjusted OUTPUT LEVEL control. Relative to a balanced +4 dBu output level, this gain potentiometer allows an adjustment range from -9 dB to +6 dB. Relative to an unbalanced -10 dBV output, each output potentiometer allows an adjustment from -3 dB to +12 dB. The audio distribution amplifier shall offer exceptional headroom, very low distortion, excellent crosstalk isolation, wide flat frequency response and extremely low noise with very high common-mode signal rejection. It shall operate from 24 Vdc connected through a rear-panel detachable terminal block.

The audio distribution amplifier shall be the Radio Design Labs RU-ADA4D, or approved equal.

Three Input Line Level Audio Mixer:

The three input line level audio mixer shall provide audio mixing of up to three line-level inputs with individual input gain adjustments. The line-level output is capable of driving either high or low impedance, balanced or unbalanced loads. The mixer shall operate from a separate floating or bipolar dc power source. The three inputs shall be 30 k Ω balanced or unbalanced bridging. The input level shall be -20 dBu to +18 dBu (for +4 dBu output) and -24 dBu to +14 dBu (for 0 dBu output). The output shall be 400 Ω to drive low or high impedance balanced or unbalanced lines, and the output level shall be +4 dBu nominal, (adjustable; unbalanced output 6 dB below balanced line level). Frequency response shall be 10 Hz to 20 kHz (+/- 0.5 dB). THD+N shall be < 0.03% (10 Hz to 20 kHz), and output noise shall be < -80 dB (all inputs @ 10 dB gain, referenced to +4 dBu). Gain for each input shall be -14 dB to +24 dB (adjustable), with 18dB of headroom. CMRR shall be > 50 dB (50 to 120 Hz). Power requirement for the mixer shall be ground referenced 24 VDC, 55 mA. The mixer shall measure 3.025" x 1.57" x 0.67", and shall mount on the rear shelf portion of the rack mount kit.

The three input line level mixer shall be Radio Design Labs ST-MX3, or approved equal.

24 VDC Power Supply for Audio Distribution Amplifier, 3-Input Mixer, and VCA:

The power supply for the devices mounted in the rack mount kit (audio distribution amplifier, 3-input mixer, VCA) shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 3.51" x 1.55". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 1000 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24KS, or approved equal.

Compressor/Limiter

The compressor/limiter shall be a two-channel unit with separate Gate Threshold, Compression Threshold, Compression Ratio and Output Level controls. A Link switch shall provide true Master / Slave operation of Gate, Compression and Output Level functions. Gate and compression threshold indicators shall be provided. A four-segment meter shall indicate compression gain-reduction for each channel. The Compressors shall provide a threshold range of +20 dBu to –40 dBu and a ratio range of 1:1 to ∞:1. The Gates shall operate with a threshold range of –20 dBu to –80 dBu with a fixed ratio of 2:1. The response time of the detector shall be 80 dB/ second. Each Input shall feature XLR and TRS connectors, active balanced input buffer, RFI filtering and –10 dBV / +4 dBu sensitivity switch. Input levels shall be monitored by +4 dBu and overload indicators. Each channel shall feature a bypass switch that disconnects the dynamics processing and connects the buffered input to the output amplifiers. Each output shall feature XLR and TRS connectors, active balanced line drivers and RFI filtering. The unit shall be capable of operation by means of its own built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. The unit shall occupy one rack space in height.

The compressor/limiter shall be a Rane Corporation Model DC22S, or approved equal.

1/3 Octave Graphic Equalizer

The graphic equalizer shall be of constant-Q design to minimize interactions between adjacent bands, and contain frequency bands located on standard ISO center frequencies. Each band shall have a bandwidth of 1/3-octave. A switchable boost/cut range of 12 dB or 6 dB shall be provided. A detented and positively grounded 0 dB point shall be provided on 20 mm linear sliders with dust dams. A rotary overall level control shall be provided with a range from off to +6 dB of gain in balanced mode. The input and output shall be active balanced/unbalanced designs terminated with both XLR and ." TRS (tip-ring-sleeve) connectors. RFI filters shall be provided. The unit shall provide a passive bypass feature requiring no power to operate. Infrasonic and ultrasonic filters shall be built-in. LEDs shall be provided to indicate overload conditions. The unit shall be capable of operation by means of its own
built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. A dual rack unit security cover shall be installed over the equalizer controls after the equalizer has been properly adjusted.

The dual channel 1/3 octave graphic equalizer shall be a Rane Corporation ME60S Equalizer or approved equal.

Courtroom Loudspeaker Power Amplifier:

The power amplifier shall be a single channel model capable of operation from 120/ 240 VAC, 50/60 Hz line. The amplifier shall incorporate protection circuitry for high temperature, audio limiters, power up delay and peak current limiters. The load shall be similarly protected against subsonic signals, startup/shut down transients, low AC line voltage, and DC faults. A detented and marked level control on the rear panel shall provide hidden reliable level adjustments. Front panel LEDs shall indicate signal present, 0 dB, and limit. Phoenix type connectors for inputs and outputs provide easy rack wiring. A three stage front-to-rear cooling fan shall significantly reduce heat buildup and allow for more reliable operation in the slim two rack space chassis.

The power amplifier shall meet the following performance criteria: Input sensitivity for rated output power: 0 dBU. Input impedance (balanced): >20 kΩ. Continuous Rated Power (1 kHz, THD 1%) 100v: 270 Watts. Continuous Rated Power (1 kHz, THD 1%) 70v: 270 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 100v: 250 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 70v: 250 Watts. Frequency response: 65Hz-20kHz. Intermodulation Distortion (SMPTE): < 0.1 %. Total Harmonic Distortion: < 0.1 %. Signal-to-Noise Ratio (A-weighted): 103 dB. Crosstalk: < -75 dB. Slew Rate: 41/61 V/µs. The power amplifier dimensions shall be 3.46" H (2 RU), 19.02" W, and 15.98" D. The amplifier shall weigh 16.5 kg (36.38 lbs).

The Courtroom loudspeaker power amplifier shall be Electro-Voice PA-1250T, or approved equal.

Jury Box Loudspeaker Mixer-Amplifier:

The mixer power amplifier for powering the three (3) Jury Box loudspeakers shall have eight mixer input ports and shall be capable of operation from a 120V, 50/60Hz line. Each input port shall be usable with microphone, phono pickup or high-level devices. The amplifier shall meet the following performance criteria. Power output shall be 60W at less than 0.5% THD from 20 to 20,000Hz (direct output) or 50 to 20,000Hz (transformer output). Frequency response shall be ± 1 dB from 20 to 20,000Hz (direct output) or 20 to 15,000Hz (transformer output). Source impedance shall be 200/50K ohms with a microphone preamplifier, 50k ohms with a mag. phono preamplifier, 220k ohms with an auxiliary preamplifier, 10k ohms with a bridging transformer, 600 ohms with a line matching transformer and 600 ohms with a paging input. Load impedance shall be 4, 8, 10.4 (25V line) or 81.7 (70V line) ohms. Load voltage shall be 15.5, 21.9, 25 or 70 volts. Equivalent input noise shall be -126dBm with a Lo-Z microphone preamplifier. Output noise shall be 90dB below rated output when all gain controls are off. Plug-in accessory modules designed for use with the mixer power amplifier shall utilize the latest in surface mount component technology and include microphone preamplifiers available with muting, remote volume control, voice gate and compressor options; auxiliary preamplifiers available with muting, remote volume control and compressor options; magnetic phono preamplifier; bridging transformers available with muting option; line matching transformers available with muting option; and signal generator modules, Also available shall be 600-ohm balanced output modules

and an auxiliary input and balanced line output module for music-on-hold. The mixer power amplifier shall be rack mounted using a rack mounting bracket. The amplifier's dimensions shall be 16.5"(W) x 3.9"(H) x 14.1"(D) (420 x 99.1 x 358mm) and its weight shall be 21.2lbs (9.6kg).

The mixer power amplifier shall be TOA model A-906MK2 or approved equal.

Power Amplifier Input Modules:

Input modules shall be provided for the Jury Box mixer-amplifier to allow connection of the Courtroom audio from the microphone mixers, and for connection of a pink noise generator (PNG) to provide a level of speech privacy within the Jury Box during Sidebar conferences. These input modules shall incorporate a muting function, controlled by the Judge's 'Sidebar Microphone' switch, simultaneously turning on the sidebar microphone, turning off the courtroom audio to the Jury Box, and turning on the pink noise to the Jury Box. A separate equalizer module optimized for the existing TOA H1 Jury Box loudspeakers shall also be provided.

The equalizer module for the Jury Box loudspeakers shall be the TOA E-04R, or approved equal.
The input module for the Courtroom audio shall be the TOA B-11S, or approved equal.
The input module for the pink noise generator shall be the TOA B-11S, or approved equal.

Pink Noise Generator

A digital, random pink noise generator shall be provided and installed in the system equipment cabinet, and connected to the Jury Box mixer-amplifier to provide a level of speech privacy within the Jury Box during sidebar conferences at the Bench. During sidebar conferences, the normal courtroom audio shall be defeated in the Jury Box, and the pink noise shall be simultaneously activated only within the Jury Box, controlled by a single switch at the Judge's Bench. The generator shall produce a digital output signal for sound-masking that is pink noise (equal energy / octave) or white noise (equal energy / frequency). The sound-masking generator shall have a balanced low-impedance line output that may be switched between line level (500mv) and mic level (5mv) and a high-impedance unbalanced line output (500mv). Generator controls shall include output level and low pass filter. The chassis assembly shall occupy one single rack space, and shall be formed from heavy gauge steel and finished in black powder epoxy paint. Chassis shall measure 19"W x 1.75"H (1RU) x 4"D. An external power supply shall be included.

The sound-masking generator shall be Lowell Model SMG-1R or approved equal.

Monitor Loudspeaker Systems:

The loudspeakers shall be a two-way system consisting of two 3.5"(89mm) low-frequency transducers, a .75" (19mm) high-frequency transducer, and a frequency-dividing network installed in a vented, line array enclosure. The network shall include a passive limiter for both the low-frequency and high frequency transducers. The loudspeaker system shall meet the following performance criteria: Power handling, 150 Watts of EIA RS-426A continuous pink

noise (6 dB crest factor); Frequency response, 85 Hz – 20 kHz (-10 dB from rated sensitivity); Pressure sensitivity, 87 dB at one watt, 200 Hz – 10 kHz at one meter; Impedance, 8 ohms nominal, 6 ohms minimum. The enclosure shall be molded of acrylic butyl styrene. The enclosure shall be 9.2" (234mm) high, 5.1" (127mm) wide, 6.5" (165mm) deep. The finish shall be a paintable black. The grille shall be zinc plated, powder coated for corrosion resistance, and restrained with a safety leash. The loudspeaker shall be adjustable over a range of 100° horizontally and 90° vertically. The support bracket shall be low profile and integral with the enclosure. The system shall be weather resistant to MIL Spec 810 and IEC 529 IP 34 test conditions. The loudspeaker shall contain an integral 70 volt transformer with switch selectable taps at 70V: 3.75 W 70V/100V: 7.5W, 15W, and 30W.

The loudspeaker shall be the Electro-Voice® EVID model 3.2t, or approved equal.
The horizontal desk mount for the monitor loudspeakers shall be the Electro Voice HS-3, or approved equal.

Monitor Loudspeaker Connectors:

Each of the monitor loudspeakers shall be provided with an appropriate length cable, long enough to allow proper positioning on the Bench, desk, or table top, and to connect to the proper monitor loudspeaker receptacle. The cable shall be a two conductor, 16 AWG, flexible cable, with white jacket, and terminated with a 2-pole cord-mount connector. It shall plug into a mating 2-pole receptacle, mounted in a wall-mount or floor-mount plate.

The monitor loudspeaker connector shall be Neutrik NL2FC, or approved equal.
The mating panel-mount receptacle shall be Neutrik NL2MP, or approved equal.

Loudspeaker Mute Relays:

Individual loudspeaker mute relays shall be provided for the Judge, Witness, Attorney 1, Attorney 2, Attorney 3, and Attorney 4 loudspeakers in Courtroom #2. These relays shall be activated from the TTL +5V digital logic signals from the individual microphones on the automatic microphone mixers. When an individual microphone is activated, the logic signal appears at the mixer logic output, activating the relay, and muting the monitor loudspeaker at that microphone position. This process increases the gain-before-feedback for each of these microphones by eliminating a possible feedback loop. The mute relays shall be provided four to a circuit board, which shall include the active driver circuitry for each channel, LEDs to provide visual indication on the status of each relay, an individual SPDT relay for each channel, and a DC power jack which accepts connectors with a 2.1mm inside diameter and 5.5mm outside diameter. The jack requires a center-positive supply. The relay dry contacts and the TTL logic inputs shall be available at screw terminal connections. The circuit board, complete with four individual relay circuits, shall be powered from a separate 24 VDC power source. The mute relay PCB shall mount within the sound system equipment rack using the DIN clip mounting option.

The loudspeaker mute relays shall be the Winford RLY104-24V-DIN 4-relay PCB, or approved equal.

Loudspeaker Mute Relay Power Supply:

The loudspeaker mute relay power supply shall be the RDL PS-24E 24 VDC 500 ma power supply

Hearing Assistive System:

A wireless FM hearing assistive system shall be furnished for Courtroom #2. The hearing assistive system shall consist of a wireless FM transmitter, mounted in the equipment rack, and a series of four (4) portable receivers. The transmitter shall be microprocessor controlled with push button configuration. It shall have an operating range of up to 1000 feet. It shall have 17 wideband channels operating on 72.1–75.9 MHz. It shall have 77 narrowband channels operating on 72.025–75.975 MHz. The transmitter shall have a push button controlled LCD digital display. There shall be three pre-configured (selectable) application presets: Hearing Assist, Music and Voice. Configurations for Bandwidth, Frequency, Audio Input Source (Microphone, Line, Simplex), High Pass Filter, Low Pass Filter, Compressor Slope, Compressor Gain and RF Output Power shall be push button controlled. The audio level shall be adjustable by push button control. There shall be a 10 LED array showing audio level from +9 to -18 at 3dB intervals. The transmitter shall have a 1/4" phone jack with push button volume control. It shall have push button control for monitoring source audio or transmitted audio. It shall have an input overload indicator. It shall have an "on" indicator and power button. The transmitter shall be powered by 24 VAC power supply via a 3-pin Molex® connector. It shall have a 75 ohm F-connector antenna. It shall have an ANT 025 whip antenna on the top panel directly connected to the circuit board. The transmitter shall have an RCA line output jack. It shall have a combination 1/4" phone/XLR audio input jack. It shall have an RF "Off" timer that turns off RF signal after 1 hour of no audio activity. The transmitter shall be FCC compliant with RoHS and WEEE regulations and be powered by UL and CSA power supply. It shall have a Lifetime PLUS Limited Warranty. It shall be compatible with other specified FM equipment operating on 72-76 MHz.

The receiver shall be encased in black, PC/ABS impact-resistant plastic with a hinged battery door. The receiver shall be a body-pack style and include a detachable belt-clip for hands-free operation. The receiver shall have a 3.5mm stereo/mono jack to accommodate stereo or mono low impedance earphones, headphones and neckloops. Receiver shall have a combination volume control with power on/off rotary dial. It shall have a green LED indicating battery and system status codes. The receiver shall have access to 17 wideband channels between 72-76MHz. Channel selection shall be made by pushing the seek button inside the battery compartment. Receiver shall have channel-lock capability. Receiver shall have a slide switch inside the battery compartment to select Alkaline or rechargeable NiMH rechargeable battery operation. It shall have charger contacts on the bottom of the receiver for use with drop-in chargers. The receiver shall operate up to 48 hrs with two AA Alkaline batteries, and up to 30 hrs with two AA NiMH rechargeable batteries. The receiver shall provide a maximum out of 35mW at 16 ohms with an earbud-type earphone. The system's audio frequency response shall be 200Hz to 15kHz ± 3dB and the signal-to-noise ratio shall be 65dB min. The receiver sensitivity shall be 2µV or better at 12dB Sinad with squelch defeated. The receiver shall accept up to ±75kHz FM deviation and have a 75µs de-emphasis time constant. The receiver shall have

FCC, Industrie Canada approvals and be compliant with RoHS and WEEE regulations. The receiver shall be covered by a Lifetime PLUS Limited Warranty.

Due to the requirement for backwards compatibility with other Williams equipment presently in use by the Court, only the Williams PPA 337 system shall be acceptable.

The transmitter shall be a Williams Sound model number PPA T35.

The receiver model shall be the Williams Sound model PPA R37.

The rack mount kit shall be Williams Model RPK-005.

Sidebar Microphone:

The microphone shall be a fixed-charge condenser designed for use in surface-mount applications. It shall have an omnidirectional polar pattern in the hemisphere above the mounting surface and a frequency response of 30 Hz to 20,000 Hz. The microphone shall operate from an external 11V to 52V DC phantom power source or, alternatively, from a 1.5V AA/UM3 battery. It shall be capable of handling sound input levels up to 132 dB (phantom) or 122 dB (battery) with a dynamic range of 111 dB (phantom) or 101 dB (battery). Nominal open-circuit output voltage shall be 11.2 mV (phantom) or 10.0 mV (battery) at 1V, 1 Pascal. Output shall be low impedance balanced (200 ohms – phantom, 270 ohms – battery). It shall offer outstanding rejection of radio frequency interference (RFI). The microphone shall have a 7.6 m (25') permanently attached miniature cable terminating in a special TA3F-type output connector designed to optimize RFI immunity. The output connector shall connect to a TB3M-type jack on the included power module. The power module shall house the battery, and shall contain a switch that permits choice of off, on/flat response, or on/low-roll-off (80 Hz). The output of the power module shall be a 3-pin XLRM-type connector. The microphone shall have a diameter of 65.0 mm (2.56") and a maximum height of 15.1 mm (0.59"). Weight shall be 78 grams (2.8 oz). The microphone shall be housed in a die-cast case with a perforated steel grille. Finish shall be low-reflectance black. The microphone shall include a power module, a battery and a soft protective pouch

The sidebar microphone shall be the Audio Technica U841a, or approved equal.

Sidebar Microphone Preamplifier:

A sidebar microphone preamplifier module shall be surface mounted on the underside of the Court Reporter's desk. The preamplifier module dimensions shall be 3.025" x 1.57" x 0.67". It shall be powered by a separate 24 VCD power supply. It shall have a 500 Ω balanced; 5 k Ω unbalanced input, and provide 24Vdc; IEC 1938: 1996-12, filtered phantom power for the sidebar microphone. The preamplifier shall have two outputs: a line level output at +4 dBu 150Ω balanced, and a microphone level output at -45 dBu 150Ω balanced, with >20 dB of headroom. The gain of the preamplifier shall be adjustable from 35 to 65 dB for the line level output and adjustable from -15 to 15 dB for the microphone level output. The frequency response shall be 50 Hz to 20 kHz (+/-1 dB). The THD+N shall be < 0.05% (50 dB gain), and the residual noise

shall be < -70 dB (below to +4 dBu; 150 Ω source @ 50 dB gain). There shall be a switch control input allowing the Judge to turn the Sidebar Microphone on and off. The switch control input shall connect to ground to activate signal; 0.5 mA maximum current required. The switching time shall be < 5 ms (soft-switching transition on or off). The off attenuation shall be > 100 dB (1 kHz) > 80 dB (50 Hz to 20 kHz). Power required for the preamplifier shall be ground referenced, 24 Vdc @ 25 mA.

The Sidebar Microphone Preamplifier shall be the RDL STM-2X microphone preamplifier, or approved equal.

Sidebar Microphone Headphone Amplifier:

A Court Reporter's sidebar microphone headphone amplifier shall be surface mounted on the underside of the Court Reporter's desk. The headphone amplifier shall have two (stereo) inputs, wired in parallel for mono operation. The inputs shall be 10 k Ω balanced or unbalanced, bridging, and input sensitivity shall be -20 dBu (-22 dBV) to +6 dBu for normal output level: +4 dBu, and -10 dBu to +16 dBu for 250 mW, 8 Ω output. The output load impedance shall be 8 Ω to 5 k Ω to drive low or high impedance headphones. The output signal (normal rated) shall be +4 dBu into 100 Ω, and the maximum output signal shall be 250 mW into 8 Ω, 20 Vp-p into 2 k Ω. The frequency response shall be 20 Hz to 40 kHz (+/- 0.25 dB). THD+N shall be < 0.005% (0.0015% typical @ 1 kHz), and noise shall be < -100 dB below normal operating level. The noise shall be < -100 dB below normal operating level, with total dynamic range of > 115 dB. The gain shall be adjustable from -2 to 24 dB. Crosstalk between channels shall be < -65 dB (10 Hz to 20 kHz); < -80 dB @ 1 kHz. The power requirement shall be, 24 Vdc @ 200 mA, ground referenced. The **LEVEL ADJUST** terminals (**L**) and (**R**) may be wired to the respective wipers of a stereo 10 k Ω potentiometer to provide volume adjustment.

The Court Reporter Sidebar Microphone Headphone Amplifier shall be RDL ST-SH2 headphone amplifier, or approved equal.

Court Reporter's Sidebar Microphone Headphone:

The Court Reporter's sidebar microphone headphone shall be of the open-back dynamic type with cushioned ear pads, adjustable headband and lightweight design for long-lasting comfort. The headphone shall have a 3.3' cable with 3.5 mm stereo mini-plug, and a 1/4" (6.3 mm) phone plug adapter shall be included. The drivers shall be 40 mm in diameter, and have a frequency response of 20-20,000 Hz. The maximum input power shall be 100 mW. Sensitivity shall be 98 dB. Impedance shall be 22Ω. The headphone weight shall be 3.2 oz (90 g).

The Court Reporter headphone shall be the Audio Technica ATH-P3, or approved equal.

Court Reporter's Sidebar Microphone Volume Control and Headphone Jack Plate:

The Court Reporter's Sidebar Microphone Volume Control and Headphone Jack Plate shall consist of two Decora style single gang white plates, one with a stereo volume control installed, the other with two 1/8" (3.5 mm) stereo jacks installed. They shall mount side by side in the

existing opening in the top of the Court Reporter's desk. The stereo volume control shall be a dual (ganged) 10KΩ, ½ watt, linear taper potentiometer with a ¼" shaft 0.5" in length. The potentiometer shall mount in the center of the Decora plate in a 0.26" hole using a hex nut. A plastic knob shall be installed on the potentiometer shaft. The two headphone jacks shall mount in the second Decora plate, wired in parallel for connection to either two headphones, or one headphone and a Court Reporter's recording device. A two-gang brass cover plate shall be installed over the two Decora plates.

The Decora style blank plates shall be Radio Design Labs D-Blank, or approved equal.
The stereo 10KΩ potentiometer shall be Alpha model RV24BF-10-15R1-B10K, or approved equal.

Sidebar Microphone Control Plate:

A single gang Decora style plate shall be provided at the Case Manager's desk with a 4PDT toggle switch, and two LEDs, one red and one green, to control the Sidebar Microphone and simultaneously turn on and off the pink noise to the Jury Box (only). One pole of the 4PDT switch shall control the Sidebar Microphone preamplifier mute, the second pole shall turn on the green LED when the Sidebar Microphone is on, turn on the red LED when the Sidebar Microphone is off. The third pole of the 4PDT switch shall toggle the Jury Box mixer-amplifier mute functions, simultaneously turning off the courtroom audio, and turning on the pink noise, to the Jury Box. The fourth pole of the 4PDT toggle switch shall mute all of the Courtroom microphones using the "Mute In" function of the automatic microphone mixers.

The Sidebar Microphone control plate shall be Radio Design Labs D-Blank, or approved equal.
The Sidebar Microphone 4PDT toggle switch shall be Parts Express 66-1220, or approved equal.

Option 1 - Media Multiple:

A portable, passive media multiple unit shall be provided for use during authorized public ceremonies and events. The input shall consist of one (1) XLR female and one (1) XLR male connector +4dBu nominal, 2k ohms, balanced. The unit shall allow not less than three units to be linked together for increased capacity. Frequency response shall be 30Hz, +0.1dB with a THD of not more than .001%. The output shall consist of not less than twenty-four (24) XLR male connectors for balanced outputs and not less than eight (8) 1/8th inch phone jacks for unbalanced outputs at –46dBu nominal, 150 ohms (mic level). At least 85dB isolation between outputs shall be provided. The portable unit version shall be constructed of a black anodized AVD series aluminum front panel and enclosed in an ABS case with a thermoplastic steel core handle, draw-bolt key locks, and aluminum frame. Its external dimensions shall not exceed 228mm H x 305mm W x 140mm D (9" x 12"x 5-1/2"), while providing internal storage space of at least 216mm H x 298mm W x 76mm D (8-1/4" x 11-3/4" x 3") and shall weigh not more than 3.7kg (5 lbs.) with the storage space empty.

The broadcast media multiple unit shall be a RCI Custom Products Model BM-24, or approved equal.

C.5 U.S. District Courtroom 3

Wired Microphones (Judge, Witness, Case Manager, Attorneys, Podium):

The microphone shall be a fixed-charge condenser designed for permanent installation or portable applications. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 139 dB with a dynamic range of 115 dB. Nominal open-circuit output voltage shall be 11.2 mV at 1 V, 1 Pascal. Output shall be low impedance balanced (250 ohms). It shall offer outstanding rejection of radio frequency interference (RFI). The microphone shall incorporate a self-contained power module with an XLRM-type connector at the base for direct connection to a mating XLRF-type panel jack or cable connector. It shall include a recessed switch to permit choice of flat response or 80 Hz low-frequency roll-off. A microphone shock mount shall be supplied for installing the microphone in a solid surface; it shall effectively isolate the microphone from noise, shock and vibration transmitted through the mounting surface. A two-stage foam windscreen shall also be included. The microphone shall be a small diameter alternating gooseneck design, with an overall length of 481.0 mm (18.94") and a head diameter of 12.2 mm (0.48"). Weight shall be 150 grams (5.3 oz). Finish shall be low-reflectance black.

The microphones shall be Audio-Technica U857QL, or approved equal.

Wired Microphone desk stands (Judge, Witness, Case Manager, Attorneys, Podium):

The heavy desk stand base shall be designed to work with any dynamic gooseneck or phantom powered condenser gooseneck microphone with an integral 3-pin XLRM-type output connector. The unit shall offer a 3-pin XLRF-type input connector and a 3-pin XLRM-type connector for audio output. The unit shall offer a low-reflectance black finish. The unit's dimensions shall be: 160.0 mm (6.29") maximum length, 130 mm (5.11") maximum width, 39.0 mm (1.53") maximum height.

The desk stand shall be Audio-Technica AT8615, or approved equal.

Wired Microphone Cables (Judge, Witness, Case Manager, Attorneys, Podium, Sidebar):

Microphone cables shall be twenty feet (20') in length. The microphone cables shall be engineered for maximum signal transfer and minimum loss. Designed for low-impedance operation, the balanced cables shall feature heavy-duty construction, and shall be terminated with XLR-type connectors, one male (XLR-M) and one female (XLR-F). To protect signal quality, each heavy-duty 24-gauge stranded copper conductor shall have an individual spiral shield inside the molded insulating sheath. A conductive PVC layer inside each shield dissipates static buildup during flexing. Dual copper outer shields and twin conductive PVC inner shields shall protect cable signal quality with 100% coverage. The heavy-duty PVC jacket shall stand up to tough use, provide extra flexibility, and low memory for ease of use/storage

The microphone cables shall be Audio Technica AT-8314-20, or approved equal.

Note: The microphone cable for the Podium microphone (only) shall be as above, but shall terminate with a right angle male connector to plug into the floor receptacle. The right angle male connector shall be Switchcraft R3F, or approved equal.

Podium Microphone Receptacle Floor Box:

The microphone floor receptacle for the podium shall be Atlas Sound MRB Series Model MRB-1-13. Lid and cover shall be solid cast commercial red brass with a brushed finish. Lid shall require no tools for opening and shall be flush with the floor when closed. Receptacle shall be a Switchcraft C3F microphone connector. A standard 4" (102 mm) octagon box shall be furnished with four leveling legs and four leveling screws. For installation in carpeted areas, a carpet trim ring Model MRB-TR shall be supplied. No alternatives may be considered for this device, as it is intended to replace an original device installed in a poured concrete floor.

Microphone Wall-Mount Receptacles (Judge, Witness and Case Manager):

The wall-mounted microphone receptacles shall consist of a single XLR-type female receptacle, mounted on a single-gang Decora style white wall plate. The XLR connector shall be of the solder type.

The microphone wall-mount receptacles shall be Radio Design Labs D-XLR3F microphone receptacle, or approved equal.

Attorney Microphone Floor Receptacles:

The microphone receptacles for the attorney microphones shall be mounted in the existing floor boxes, under the attorney tables, using the existing covers and plates. The existing receptacles shall be replaced with similar XLR-F type receptacles, securely mounted in the existing yokes, if serviceable, or the yokes shall also be replaced.

The attorney microphone floor receptacles shall be Switchcraft D3F, or approved equal.

Auxiliary Line Input Receptacles:

The auxiliary line input receptacles shall provide for the passive mixing of two (stereo) unbalanced line-level audio sources to feed a mono balanced audio line. The front panel shall provide two gold plated phono jacks and a single 3.5 mm stereo mini-jack, intended for mono or stereo consumer level sources. An input signal may be connected to either the phono jacks or to the mini-jack. The left and right signal inputs are combined and balanced through audio transformers, configured to reject induced hum. A mono line-level output is provided on the rear-panel detachable terminal block for connection to a 10 k Ω or higher input impedance line-level module or equipment input. The receptacle plate shall be furnished in white.

The auxiliary line input receptacles shall be Radio Design Labs D-CJI3 mono input receptacle, or approved equal.

Videoconference/Teleconference Audio In/Out Receptacle Plate:

A videoconference/teleconference audio In/Out receptacle plate shall be furnished and installed on the front of the Jury Box millwork. It shall provide a panel-mount XLR-F male receptacle for the courtroom audio out, and a panel-mount XLR-M female receptacle for the far-end audio in. The receptacles shall both be mounted on the same single-gang Decora style white wall plate.

The videoconference/teleconference audio in/out receptacle plate shall be the RDL model D-XLR2.

Microphone and Line Level Receptacle Cover Plates:

The cover plates for all wall-mounted audio receptacles, and for all audio control devices, shall be of polished brass finish, and be of the Decora style, with the appropriate number of gangs.

The microphone receptacle, line level receptacle, and control panel cover plates shall be Brainerd 64122 series brass plate, or approved equal.

Remote Controlled AC Receptacles:

The device for remotely controlling AC power shall include a power supply and relay housed within a 7.5"L x 3.25" W x 2.75" H steel chassis. The unit shall include one (1) duplex outlet with a power rating of 20 A, and shall provide terminals for remote connection of a dry contact closure and LED status indicator. The power control device shall terminate with a 6 foot AC power cord. The device shall include surge protection for transient voltage.

The remote controlled AC receptacle shall be Lowell remote power control Model RPC-1-TVSS-CD, or approved equal.

Courtroom Power Control Switch:

The remote sound system power switching device, at the Case Manager's desk, shall provide a SPST rocker switch with 1 LED to indicate system power on. The switch and LED shall be mounted in a single gang Decora style white plate and be flush-mounted in an existing single gang electrical box on the Case Manager's desktop.

The Courtroom power control switch shall be Lowell RPS Model RPSW-P, or approved equal.

Equipment Rack Multiple Outlet Strips:

A UL Listed AC power outlet strip shall be mounted inside the existing sound system cabinets. Power rating shall be 120VAC 15A with circuit breaker protection and an LED indicator that is lit when protection is active. The power strip shall have a suppressed voltage rating of 400V with

maximum surge at 6000V and 6500 Amperes maximum peak current. Power strip shall include either twelve (12) or twenty-four (24) outlets spaced to accept power supplies. It shall be terminated with a six foot cord and molded plug. It shall install to adjustable or fixed rail racks with a mounting clip and screw.

The multiple outlet strip shall be the Lowell Model ACS-1512, or approved equal.

Automatic Microphone Mixer:

The mixer shall provide 8 differentially balanced mic/line inputs and one auxiliary line input, all on plug-in Phoenix-style connectors on the rear panel. The mixer shall accommodate any low impedance dynamic or condenser microphones. Phantom power shall be +48 volts, and shall be individually switch selectable for each microphone input via rear panel DIP switches. The auxiliary line input shall be selectable for either front or rear panel ¼" jacks via a rear panel DIP switch. Two front panel screwdriver adjustable equalization (lo-frequency roll-off and high frequency shelving) controls, and rear panel pad switches shall be provided for each input channel. Each input channel shall also include a rotary level control, an LED peak indicator, a high-pass filter switch, and an unbalanced direct output ¼" jack, which is non-gated, pre-fader, and pre-EQ. The mixer main output shall be electronically balanced on a plug-in barrier-strip connector. The output section shall include a limiter with threshold control and a 9-segment output level LED indicator, a rotary Master level control, and a headphone jack with level control. Link in and link out connectors shall allow up to 50 mixers (400 microphones) to be linked, for increased system input capability. Channel 1 automatic priority override shall be assignable on other input channels. Three logic terminals, (Gate Out, Mute In, and Override In) for each of the microphone inputs shall appear at a DB-25 connector on the rear panel. The logic terminals can be used to control external devices such as loudspeaker mute relays. Rear panel DIP switches shall allow adjustment of the Manual/Automatic function, Last-Mic-on function, Hold time, Off attenuation, Limiter threshold, and Local/Global settings for multiple mixers.

The automatic microphone mixer shall allow for multiple microphone operation while maintaining the sound system below the threshold of feedback with fast-acting, noise-free microphone selection and automatic gain adjustment as additional microphones are activated. The mixer shall incorporate a noise adaptive threshold, which distinguishes between constant background noise and changing speech levels for each input. It shall continuously adjust the activation threshold so that only speech levels louder than the background noise activate a channel.

Frequency Response shall be +/- 2dB from 50Hz to 20kHz at +4dBu. THD + Noise shall be less than 0.1% from 20Hz to 20kHz at +18dBV. EIN shall be less than -125dBV and output Hum & Noise shall be less than -90 dBu from 20Hz to 20kHz at nominal level. Dimensions shall be 1.75 inches (1 rack space) high, 19 inches wide, and 12.5 inches deep. Weight shall be 9 lbs 9 ounces. The mixer shall operate from 120 VAC, 50/60 Hz. Power Consumption shall be less than 13 Watts. The mixer shall be CE marked with a UL / C-UL listed power source.

The automatic microphone mixers shall be Shure SCM810, or approved equal. One (1) shall be provided for Courtroom #3.

Unbalanced-to-balanced Converters:

Unbalanced-to-balanced converters shall be used to convert the individual unbalanced direct out signal for each microphone (from the automatic microphone mixers) to a balanced, line level signal to be fed to the courtroom FTR mixer (FBO). The unbalanced-to-balanced converters shall be provided, six to a module. Each input channel is unbalanced, connected through a gold-plated phono jack. Each output is balanced. All outputs are connected through XLR jacks with gold-plated pins. A gain trim potentiometer is provided for each channel. The normal gain setting is indicated by the trimming potentiometer. This setting produces a +4 dBu balanced output for a −10 dBV unbalanced input. The gain is adjustable −5 dB to +10 dB from the normal gain. Therefore, a +4 dBu output signal is possible from input signals ranging from −20 dBV to −5 dBV.

The 6 channel unbalanced-to-balanced converters shall be Radio Design Labs Model FP-UBC6 orapproved equal.

Rack Mount Kit:

A rack mount kit shall be provided and installed in the system equipment cabinet to house the system audio distribution amplifier (ADA), 3-input mixer, and remote volume control device (VCA). The rack mount kit shall be 19" in width, and occupy one rack unit (1.75") of panel space. It shall provide three (3) front panel openings, for mounting of the ADA and VCA. Blank filler panels shall be provided for any unused openings. The 3-input mixer shall mount behind the front panel, on the shelf portion of the rack mount kit. The finish of the rack mount kit shall be black powder epoxy paint.

The rack mount kit shall be Radio Design Labs model RU-RA3A, or approved equal.
The rack mount kit filler panels shall be Radio Design Labs model RU-FP1, or approved equal.

24 VDC Power Supply for Unbalanced-to-Balanced Converters:

The power supply for the unbalanced-to-balanced converters shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 2.76" x 1.37". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 500 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24E, or approved equal.

Remote Audio Level Control (VCA) for Main Courtroom Sound Reinforcement Audio:

A remotely controlled audio level control (VCA) shall be provided for control of the main Courtroom sound reinforcement audio. The VCA device shall be mounted in the rack mount kit in the sound system equipment cabinet. The remote control for the VCA shall be installed at the Case Manager's desk in the Courtroom. The remotely controlled voltage controlled amplifier (VCA) shall be a two channel audio attenuator, capable of being controlled, either remotely or locally, from a single location. One channel of the dual channel VCA shall be used for the main

Courtroom audio, and the second channel shall be used for future expansion. The VCA shall accommodate either balanced or unbalanced line-level sources. Audio levels shall be controlled in 0.5 dB steps using noiseless zero-crossing digital attenuators for optimum reliability, precise tracking and long-term click-free service.

Each of the two (2) inputs of the VCA shall be >10 k Ω balanced bridging, or unbalanced, line level, with frequency response of 10 Hz to 50 kHz (+/- 0.5 dB). THD+N shall be < 0.005% (20 Hz to 20 kHz). Gain shall be adjustable from unity to <–96 dB. Headroom shall be > 18 dB (above +4 dBu), and residual noise shall be < -90 dB (referred to +4 dBu at unity gain). Attenuator step size shall be 0.5 dB, and ramp times shall be 0.5 second delay; then: 3 seconds to 10 seconds (UP and DOWN times individually adjustable on front panel). CMRR shall be > 65 dB (50 to 150 Hz), and crosstalk between channels shall be <-95 dB (1 kHz, typ.); < -85 dB (20 Hz to 5 kHz); < -75 dB (5 kHz to 20 kHz). The audio outputs shall be 150 Ω balanced (may be connected unbalanced). The ramp output shall be 0 to 10 Vdc, (Ground-referenced) , and the EQ ramp output shall be 0 to 10 Vdc, (Ground-referenced). The power requirement shall be 24 Vdc @ 120 mA, Ground-referenced. There shall be ten (10) front panel LED's indicating relative audio level (8), MAX condition (green), MIN condition (red). The dimensions of the VCA shall be 5.75" (14.6 cm) W x 1.65" (4.18 cm) H x 3.54" (9.0 cm) D;3.9" (9.9 cm) D with connectors. Control of the attenuators shall be accomplished by remote 10k Ω linear taper pots. A single remote control location for each channel is possible using a remote 10k Ω pot.

The remotely controlled VCA shall be Radio Design Labs RU-VCA2A, or approved equal.

Main Audio Remote Level Control:

The device for controlling the main courtroom VCA shall be a 10k Ω linear taper pot, mounted in a single gang white Decora style plate. The pot shall have 10 graphic increments which provide a visual indication of the level setting. It shall be designed to directly interface with the 3-wire control input of the VCA module.

The remote level control shall be the Radio Design Labs RLC10K Remote Level Control or approved equal.

Audio Distribution Amplifier:

The audio distribution amplifier (ADA) shall be a four channel stereo device with input and output gain adjustments and input level metering. The ADA may be operated in mono mode to provide up to eight distributed mono signals. The inputs and outputs are connected on rear-panel detachable terminal blocks. Each of the two line level inputs accepts either a balanced or an unbalanced signal. Each input is equipped with a front panel INPUT GAIN trimmer. Input signal levels between -14 dBV unbalanced and +9 dBu balanced may be set to the proper operating level as indicated by a dual-LED VU meter. This assures ample headroom at all normal operating levels. The maximum input level is + 25 dBu. A rear-panel switch selects between stereo and mono operation. In the mono position, input A (left) is used to drive all 8 output channels. When the module is used in a monaural system, only input A must be wired. Audio outputs are isolated from each other and may be wired balanced or unbalanced. Each of the

outputs is provided with a front panel screwdriver adjusted OUTPUT LEVEL control. Relative to a balanced +4 dBu output level, this gain potentiometer allows an adjustment range from -9 dB to +6 dB. Relative to an unbalanced -10 dBV output, each output potentiometer allows an adjustment from -3 dB to +12 dB. The audio distribution amplifier shall offer exceptional headroom, very low distortion, excellent crosstalk isolation, wide flat frequency response and extremely low noise with very high common-mode signal rejection. It shall operate from 24 Vdc connected through a rear-panel detachable terminal block.

The audio distribution amplifier shall be the Radio Design Labs RU-ADA4D, or approved equal.

Three Input Line Level Audio Mixer:

The three input line level audio mixer shall provide audio mixing of up to three line-level inputs with individual input gain adjustments. The line-level output is capable of driving either high or low impedance, balanced or unbalanced loads. The mixer shall operate from a separate floating or bipolar dc power source. The three inputs shall be 30 k Ω balanced or unbalanced bridging. The input level shall be -20 dBu to +18 dBu (for +4 dBu output) and -24 dBu to +14 dBu (for 0 dBu output). The output shall be 400 Ω to drive low or high impedance balanced or unbalanced lines, and the output level shall be +4 dBu nominal, (adjustable; unbalanced output 6 dB below balanced line level). Frequency response shall be 10 Hz to 20 kHz (+/- 0.5 dB). THD+N shall be < 0.03% (10 Hz to 20 kHz), and output noise shall be < -80 dB (all inputs @ 10 dB gain, referenced to +4 dBu). Gain for each input shall be -14 dB to +24 dB (adjustable), with 18dB of headroom. CMRR shall be > 50 dB (50 to 120 Hz). Power requirement for the mixer shall be ground referenced 24 VDC, 55 mA. The mixer shall measure 3.025" x 1.57" x 0.67", and shall mount on the rear shelf portion of the rack mount kit.

The three input line level mixer shall be Radio Design Labs ST-MX3, or approved equal.

24 VDC Power Supply for Audio Distribution Amplifier, 3-Input Mixer, and VCA:

The power supply for the devices mounted in the rack mount kit (audio distribution amplifier, 3-input mixer, VCA) shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 3.51" x 1.55". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 1000 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24KS, or approved equal.

Compressor/Limiter

The compressor/limiter shall be a two-channel unit with separate Gate Threshold, Compression Threshold, Compression Ratio and Output Level controls. A Link switch shall provide true Master / Slave operation of Gate, Compression and Output Level functions. Gate and compression threshold indicators shall be provided. A four-segment meter shall indicate compression gain-reduction for each channel. The Compressors shall provide a threshold range

of +20 dBu to –40 dBu and a ratio range of 1:1 to ∞:1. The Gates shall operate with a threshold range of –20 dBu to –80 dBu with a fixed ratio of 2:1. The response time of the detector shall be 80 dB/ second. Each Input shall feature XLR and TRS connectors, active balanced input buffer, RFI filtering and –10 dBV / +4 dBu sensitivity switch. Input levels shall be monitored by +4 dBu and overload indicators. Each channel shall feature a bypass switch that disconnects the dynamics processing and connects the buffered input to the output amplifiers. Each output shall feature XLR and TRS connectors, active balanced line drivers and RFI filtering. The unit shall be capable of operation by means of its own built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. The unit shall occupy one rack space in height.

The compressor/limiter shall be a Rane Corporation Model DC22S, or approved equal.

1/3 Octave Graphic Equalizer

The graphic equalizer shall be of constant-Q design to minimize interactions between adjacent bands, and contain frequency bands located on standard ISO center frequencies. Each band shall have a bandwidth of 1/3-octave. A switchable boost/cut range of 12 dB or 6 dB shall be provided. A detented and positively grounded 0 dB point shall be provided on 20 mm linear sliders with dust dams. A rotary overall level control shall be provided with a range from off to +6 dB of gain in balanced mode. The input and output shall be active balanced/unbalanced designs terminated with both XLR and ." TRS (tip-ring-sleeve) connectors. RFI filters shall be provided. The unit shall provide a passive bypass feature requiring no power to operate. Infrasonic and ultrasonic filters shall be built-in. LEDs shall be provided to indicate overload conditions. The unit shall be capable of operation by means of its own
built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. A single rack unit security cover shall be installed over the equalizer controls after the equalizer has been properly adjusted.

The 1/3 octave graphic equalizer shall be a Rane Corporation ME30S Equalizer or approved equal.

Courtroom Loudspeaker Power Amplifier:

The power amplifier shall be a single channel model capable of operation from 120/ 240 VAC, 50/60 Hz line. The amplifier shall incorporate protection circuitry for high temperature, audio limiters, power up delay and peak current limiters. The load shall be similarly protected against subsonic signals, startup/shut down transients, low AC line voltage, and DC faults. A detented and marked level control on the rear panel shall provide hidden reliable level adjustments. Front panel LEDs shall indicate signal present, 0 dB, and limit. Phoenix type connectors for inputs and outputs provide easy rack wiring. A three stage front-to-rear cooling fan shall significantly reduce heat buildup and allow for more reliable operation in the slim two rack space chassis.

The power amplifier shall meet the following performance criteria: Input sensitivity for rated output power: 0 dBU. Input impedance (balanced): >20 kΩ. Continuous Rated Power (1 kHz,

THD 1%) 100v: 270 Watts. Continuous Rated Power (1 kHz, THD 1%) 70v: 270 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 100v: 250 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 70v: 250 Watts. Frequency response: 65Hz-20kHz. Intermodulation Distortion (SMPTE): < 0.1 %. Total Harmonic Distortion: < 0.1 %. Signal-to-Noise Ratio (A-weighted): 103 dB. Crosstalk: < -75 dB. Slew Rate: 41/61 V/µs. The power amplifier dimensions shall be 3.46" H (2 RU), 19.02" W, and 15.98" D. The amplifier shall weigh 16.5 kg (36.38 lbs).

The Courtroom loudspeaker power amplifier shall be Electro-Voice PA-1250T, or approved equal.

Loudspeaker Systems:

The loudspeaker shall be a two-way system consisting of two 3.5"(89mm) low-frequency transducers, a .75" (19mm) high-frequency transducer, and a frequency-dividing network installed in a vented, line array enclosure. The network shall include a passive limiter for both the low-frequency and high frequency transducers. The loudspeaker system shall meet the following performance criteria: Power handling, 150 Watts of EIA RS-426A continuous pink noise (6 dB crest factor); Frequency response, 85 Hz – 20 kHz (-10 dB from rated sensitivity); Pressure sensitivity, 87 dB at one watt, 200 Hz – 10 kHz at one meter; Impedance, 8 ohms nominal, 6 ohms minimum. The enclosure shall be molded of acrylic butyl styrene. The enclosure shall be 9.2" (234mm) high, 5.1" (127mm) wide, 6.5" (165mm) deep. The finish shall be a paintable black. The grille shall be zinc plated, powder coated for corrosion resistance, and restrained with a safety leash. The loudspeaker shall be adjustable over a range of 100° horizontally and 90° vertically. The support bracket shall be low profile and integral with the enclosure. The system shall be weather resistant to MIL Spec 810 and IEC 529 IP 34 test conditions. The loudspeaker shall contain an integral 70 volt transformer with switch selectable taps at 70V: 3.75 W 70V/100V: 7.5W, 15W, and 30W.

The loudspeaker shall be the Electro-Voice® EVID model 3.2t, or approved equal.
The horizontal desk mount for the monitor loudspeakers shall be the Electro Voice HS-3, or approved equal.

Loudspeaker Mute Relays:

Individual loudspeaker mute relays shall be provided for the Judge and Witness loudspeakers in Courtroom #3. These relays shall be activated from the TTL +5V digital logic signals from the individual microphones on the automatic microphone mixers. When an individual microphone is activated, the logic signal appears at the mixer logic output, activating the relay, and muting the monitor loudspeaker at that microphone position. This process increases the gain-before-feedback for each of these microphones by eliminating a possible feedback loop. The mute relays shall be provided four to a circuit board, which shall include the active driver circuitry for each channel, LEDs to provide visual indication on the status of each relay, an individual SPDT relay for each channel, and a DC power jack which accepts connectors with a 2.1mm inside diameter and 5.5mm outside diameter. The jack requires a center-positive supply. The relay dry contacts and the TTL logic inputs shall be available at screw terminal connections. The circuit board, complete with four individual relay circuits, shall be powered from a separate 24 VDC

power source. The mute relay PCB shall mount within the sound system equipment rack using the DIN clip mounting option.

The loudspeaker mute relays shall be the Winford RLY104-24V-DIN 4-relay PCB, or approved equal.

Loudspeaker Mute Relay Power Supply:

The loudspeaker mute relay power supply shall be the RDL PS-24E 24 VDC 500 ma power supply

Sidebar Microphone:

The microphone shall be a fixed-charge condenser designed for interviews and general audio acquisition. It shall have an omnidirectional polar pattern and a frequency response of 20 Hz to 20,000 Hz. The microphone shall operate from an external 11V to 52V DC phantom power source, or alternatively, from a 1.5V AA/UM3 battery. It shall be capable of handling sound input levels up to 137 dB (phantom) or 123 dB (battery) with a dynamic range of 113 dB (phantom) or 99 dB (battery).

Nominal open-circuit output voltage shall be 6.3 mV (phantom) or 5.6 mV (battery) at 1V, 1 Pascal. Output shall be low impedance balanced (250 ohms – phantom, 300 ohms – battery). The output of the microphone shall be a 3-pin XLRM-type connector. The microphone shall include a switch that permits choice of flat response or 80 Hz low-frequency roll-off. The microphone shall be 178.0 mm (7.01") long and have a head diameter of 26.0 mm (1.02"). Weight shall be 165 grams (5.8 oz). The microphone shall include a stand clamp, a windscreen, a battery and a soft protective pouch.

The sidebar microphone shall be the Audio Technica AT-8010, or approved equal.

Sidebar Microphone Floor Stand:

The sidebar microphone floor stand shall consist of a nine (9) pound hexagonal cast base and an adjustable (33” – 61”) black shaft. The shaft shall install into the base by just pushing down and turning the shaft one-quarter turn clockwise to lock, or pushing down and turning one-quarter turn counter-clockwise to remove.

The sidebar microphone floor stand shall be the On Stage Stands MS-7625, or approved equal.

Sidebar Microphone Preamplifier:

A sidebar microphone preamplifier module shall be surface mounted on the underside of the Case Manager’s desk. The preamplifier module dimensions shall be 3.025” x 1.57” x 0.67”. It shall be powered by a separate 24 VCD power supply. It shall have a 500 Ω balanced; 5 k Ω unbalanced input, and provide 24Vdc; IEC 1938: 1996-12, filtered phantom power for the sidebar microphone. The preamplifier shall have two outputs: a line level output at +4 dBu 150Ω

balanced, and a microphone level output at -45 dBu 150Ω balanced, with >20 dB of headroom. The gain of the preamplifier shall be adjustable from 35 to 65 dB for the line level output and adjustable from -15 to 15 dB for the microphone level output. The frequency response shall be 50 Hz to 20 kHz (+/-1 dB). The THD+N shall be < 0.05% (50 dB gain), and the residual noise shall be < -70 dB (below to +4 dBu; 150 Ω source @ 50 dB gain). There shall be a switch control input allowing the Judge to turn the Sidebar Microphone on and off. The switch control input shall connect to ground to activate signal; 0.5 mA maximum current required. The switching time shall be < 5 ms (soft-switching transition on or off). The off attenuation shall be > 100 dB (1 kHz) > 80 dB (50 Hz to 20 kHz). Power required for the preamplifier shall be ground referenced, 24 Vdc @ 25 mA.

The Sidebar Microphone Preamplifier shall be the RDL STM-2X microphone preamplifier, or approved equal.

Sidebar Microphone Headphone Amplifier:

A Court Reporter's sidebar microphone headphone amplifier shall be surface mounted on the underside of the Court Reporter's desk. The headphone amplifier shall have two (stereo) inputs, wired in parallel for mono operation. The inputs shall be 10 k Ω balanced or unbalanced, bridging, and input sensitivity shall be -20 dBu (-22 dBV) to +6 dBu for normal output level: +4 dBu, and -10 dBu to +16 dBu for 250 mW, 8 Ω output. The output load impedance shall be 8 Ω to 5 k Ω to drive low or high impedance headphones. The output signal (normal rated) shall be +4 dBu into 100 Ω, and the maximum output signal shall be 250 mW into 8 Ω, 20 Vp-p into 2 k Ω. The frequency response shall be 20 Hz to 40 kHz (+/- 0.25 dB). THD+N shall be < 0.005% (0.0015% typical @ 1 kHz), and noise shall be < -100 dB below normal operating level. The noise shall be < -100 dB below normal operating level, with total dynamic range of > 115 dB. The gain shall be adjustable from -2 to 24 dB. Crosstalk between channels shall be < -65 dB (10 Hz to 20 kHz); < -80 dB @ 1 kHz. The power requirement shall be, 24 Vdc @ 200 mA, ground referenced. The **LEVEL ADJUST** terminals (**L**) and (**R**) may be wired to the respective wipers of a stereo 10 k Ω potentiometer to provide volume adjustment.

The Court Reporter Sidebar Microphone Headphone Amplifier shall be RDL ST-SH2 headphone amplifier, or approved equal.

Court Reporter's Sidebar Microphone Headphone:

The Court Reporter's sidebar microphone headphone shall be of the open-back dynamic type with cushioned ear pads, adjustable headband and lightweight design for long-lasting comfort. The headphone shall have a 3.3' cable with 3.5 mm stereo mini-plug, and a 1/4" (6.3 mm) phone plug adapter shall be included. The drivers shall be 40 mm in diameter, and have a frequency response of 20-20,000 Hz. The maximum input power shall be 100 mW. Sensitivity shall be 98 dB. Impedance shall be 22Ω. The headphone weight shall be 3.2 oz (90 g).

The Court Reporter headphone shall be the Audio Technica ATH-P3, or approved equal.

Court Reporter's Sidebar Microphone Volume Control and Headphone Jack Plate:

The Court Reporter's Sidebar Microphone Volume Control and Headphone Jack Plate shall consist of two Decora style single gang white plates, one with a stereo volume control installed, the other with two 1/8" (3.5 mm) stereo jacks installed. They shall mount side by side in the existing opening in the top of the Court Reporter's desk. The stereo volume control shall be a dual (ganged) 10KΩ, ½ watt, linear taper potentiometer with a ¼" shaft 0.5" in length. The potentiometer shall mount in the center of the Decora plate in a 0.26" hole using a hex nut. A plastic knob shall be installed on the potentiometer shaft. The two headphone jacks shall mount in the second Decora plate, wired in parallel for connection to either two headphones, or one headphone and a Court Reporter's recording device. A two-gang brass cover plate shall be installed over the two Decora plates.

The Decora style blank plates shall be Radio Design Labs D-Blank, or approved equal.
The stereo 10KΩ potentiometer shall be Alpha model RV24BF-10-15R1-B10K, or approved equal.

Sidebar Microphone Control Plate:

A single gang Decora style plate shall be provided at the Judge's Bench, with a DPDT toggle switch, and two LEDs, one red and one green, to control the Sidebar Microphone and simultaneously turn on and off the pink noise to the Jury Box (only). One pole of the DPDT switch shall control the Sidebar Microphone preamplifier mute, the second pole shall turn on the green LED when the Sidebar Microphone is on, turn on the red LED when the Sidebar Microphone is off.

The Sidebar Microphone control plate shall be Radio Design Labs D-Blank, or approved equal.
The Sidebar Microphone DPDT toggle switch shall be Alco Switch MTA206N, or approved equal.

C.6 U.S. Magistrate Judge Hearing Room

Wired Microphones (Judge, Witness, Case Manager, Attorneys, Podium):

The microphone shall be a fixed-charge condenser designed for permanent installation or portable applications. It shall have a cardioid polar pattern with a uniform 120° angle of acceptance and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 139 dB with a dynamic range of 115 dB. Nominal open-circuit output voltage shall be 11.2 mV at 1 V, 1 Pascal. Output shall be low impedance balanced (250 ohms). It shall offer outstanding rejection of radio frequency interference (RFI). The microphone shall incorporate a self-contained power module with an XLRM-type connector at the base for direct connection to a mating XLRF-type panel jack or cable connector. It shall include a recessed switch to permit choice of flat response or 80 Hz low-frequency roll-off. A microphone shock

mount shall be supplied for installing the microphone in a solid surface; it shall effectively isolate the microphone from noise, shock and vibration transmitted through the mounting surface. A two-stage foam windscreen shall also be included. The microphone shall be a small diameter alternating gooseneck design, with an overall length of 481.0 mm (18.94") and a head diameter of 12.2 mm (0.48"). Weight shall be 150 grams (5.3 oz). Finish shall be low-reflectance black.

The microphones shall be Audio-Technica U857QL, or approved equal.

Wired Microphone desk stands (Judge, Witness, Case Manager, Attorneys):

The heavy desk stand base shall be designed to work with any dynamic gooseneck or phantom powered condenser gooseneck microphone with an integral 3-pin XLRM-type output connector. The unit shall offer a 3-pin XLRF-type input connector and a 3-pin XLRM-type connector for audio output. The unit shall offer a low-reflectance black finish. The unit's dimensions shall be: 160.0 mm (6.29") maximum length, 130 mm (5.11") maximum width, 39.0 mm (1.53") maximum height.

The desk stand shall be Audio-Technica AT8615, or approved equal.

Podium Microphone Flush-Mount Receptacle:

For the Podium microphone, a flush-mount XLR-F receptacle shall be installed in the top of the Podium, at the left, near the top, leaving room for notes and paperwork. The XLR-F receptacle shall provide a direct mount for the gooseneck microphone. The XLR-F receptacle shall be wired, using the same type of cable specified for the microphone cables, to a similar XLR-M receptacle installed at the base of the podium, flush-mounted on the front face of the Podium.

The XLR-F receptacle shall be Switchcraft D3F, or approved equal.
The XLR-M receptacle shall be Switchcraft D3M, or approved equal.

Podium Microphone Receptacle Floor Box:

The microphone floor receptacle for the podium shall be Atlas Sound MRB Series Model MRB-1-13. Lid and cover shall be solid cast commercial red brass with a brushed finish. Lid shall require no tools for opening and shall be flush with the floor when closed. Receptacle shall be a Switchcraft C3F microphone connector. A standard 4" (102 mm) octagon box shall be furnished with four leveling legs and four leveling screws. For installation in carpeted areas, a carpet trim ring Model MRB-TR shall be supplied. No alternatives may be considered for this device, as it is intended to replace an original device installed in a poured concrete floor.

Attorney Microphone Floor Receptacles:

The microphone receptacles for the attorney microphones shall be mounted in the existing floor boxes, under the attorney tables, using the existing covers and plates. The existing receptacles

shall be replaced with similar XLR-F type receptacles, securely mounted in the existing yokes, if serviceable, or the yokes shall also be replaced.

The attorney microphone floor receptacles shall be Switchcraft D3F, or approved equal.

Wired Microphone Cables (Judge, Witness, Case Manager, Attorneys, Podium):

Microphone cables shall be twenty feet (20') in length. The microphone cables shall be engineered for maximum signal transfer and minimum loss. Designed for low-impedance operation, the balanced cables shall feature heavy-duty construction, and shall be terminated with XLR-type connectors, one male (XLR-M) and one female (XLR-F). To protect signal quality, each heavy-duty 24-gauge stranded copper conductor shall have an individual spiral shield inside the molded insulating sheath. A conductive PVC layer inside each shield dissipates static buildup during flexing. Dual copper outer shields and twin conductive PVC inner shields shall protect cable signal quality with 100% coverage. The heavy-duty PVC jacket shall stand up to tough use, provide extra flexibility, and low memory for ease of use/storage

The microphone cables shall be Audio Technica AT-8314-20, or approved equal.

Note: The microphone cable for the Podium microphone (only) shall be as above, but shall terminate with a right angle male connector to plug into the floor receptacle. The right angle male connector shall be Switchcraft R3F, or approved equal.

Microphone Wall-Mount Receptacles (Judge, Witness and Case Manager):

The wall-mounted microphone receptacles shall consist of a single XLR-type female receptacle, mounted on a single-gang Decora style white wall plate. The XLR connector shall be of the solder type.

The microphone wall-mount receptacles shall be Radio Design Labs D-XLR3F microphone receptacle, or approved equal.

Auxiliary Line Input Receptacle:

The auxiliary line input receptacle shall provide for the passive mixing of two (stereo) unbalanced line-level audio sources to feed a mono balanced audio line. The front panel shall provide two gold plated phono jacks and a single 3.5 mm stereo mini-jack, intended for mono or stereo consumer level sources. An input signal may be connected to either the phono jacks or to the mini-jack. The left and right signal inputs are combined and balanced through audio transformers, configured to reject induced hum. A mono line-level output is provided on the rear-panel detachable terminal block for connection to a 10 k Ω or higher input impedance line-level module or equipment input. The receptacle plate shall be furnished in white.

The auxiliary line input receptacles shall be Radio Design Labs D-CJI3 mono input receptacle, or approved equal.

Videoconference/Teleconference Audio In/Out Receptacle Plate:

A videoconference/teleconference audio In/Out receptacle plate shall be furnished and installed on the left of the Judge Bench millwork (under the desk to the left of the witness), in the same one-gang electrical box as the present receptacle. It shall provide a panel-mount XLR-F male receptacle for the hearing room audio out, and a panel-mount XLR-M female receptacle for the far-end audio in. The receptacles shall both be mounted on the same single-gang Decora style white wall plate.

The videoconference/teleconference audio in/out receptacle plate shall be the RDL model D-XLR2.

Microphone and Line Level Receptacle Cover Plates:

The cover plates for all wall-mounted audio receptacles, and for all audio control devices, shall be of polished brass finish, and be of the Decora style, with the appropriate number of gangs.

The microphone receptacle, line level receptacle, and control panel cover plates shall be Brainerd 64122 series brass plate, or approved equal.

Remote Controlled AC Receptacles:

The device for remotely controlling AC power shall include a power supply and relay housed within a 7.5"L x 3.25" W x 2.75" H steel chassis. The unit shall include one (1) duplex outlet with a power rating of 20 A, and shall provide terminals for remote connection of a dry contact closure and LED status indicator. The power control device shall terminate with a 6 foot AC power cord. The device shall include surge protection for transient voltage.

The remote controlled AC receptacle shall be Lowell remote power control Model RPC-1-TVSS-CD, or approved equal.

Hearing Room Power Control Switch:

The remote sound system power switching device, at the Case Manager's desk, shall provide a SPST rocker switch with 1 LED to indicate system power on. The switch and LED shall be mounted in a single gang Decora style white plate and be flush-mounted in an existing single gang electrical box on the Judge's bench top.

The hearing room power control switch shall be Lowell RPS Model RPSW-P, or approved equal.

Equipment Rack Multiple Outlet Strips:

A UL Listed AC power outlet strip shall be mounted inside the existing sound system cabinets. Power rating shall be 120VAC 15A with circuit breaker protection and an LED indicator that is lit when protection is active. The power strip shall have a suppressed voltage rating of 400V with maximum surge at 6000V and 6500 Amperes maximum peak current. Power strip shall include

either twelve (12) or twenty-four (24) outlets spaced to accept power supplies. It shall be terminated with a six foot cord and molded plug. It shall install to adjustable or fixed rail racks with a mounting clip and screw.

The Lowell Model ACS-1512, or approved equal, is specified for the Hearing Room sound system cabinet.

Automatic Microphone Mixer:

The mixer shall provide 8 differentially balanced mic/line inputs and one auxiliary line input, all on plug-in Phoenix-style connectors on the rear panel. The mixer shall accommodate any low impedance dynamic or condenser microphones. Phantom power shall be +48 volts, and shall be individually switch selectable for each microphone input via rear panel DIP switches. The auxiliary line input shall be selectable for either front or rear panel ¼" jacks via a rear panel DIP switch. Two front panel screwdriver adjustable equalization (lo-frequency roll-off and high frequency shelving) controls, and rear panel pad switches shall be provided for each input channel. Each input channel shall also include a rotary level control, an LED peak indicator, a high-pass filter switch, and an unbalanced direct output ¼" jack, which is non-gated, pre-fader, and pre-EQ. The mixer main output shall be electronically balanced on a plug-in barrier-strip connector. The output section shall include a limiter with threshold control and a 9-segment output level LED indicator, a rotary Master level control, and a headphone jack with level control. Link in and link out connectors shall allow up to 50 mixers (400 microphones) to be linked, for increased system input capability. Channel 1 automatic priority override shall be assignable on other input channels. Three logic terminals, (Gate Out, Mute In, and Override In) for each of the microphone inputs shall appear at a DB-25 connector on the rear panel. The logic terminals can be used to control external devices such as loudspeaker mute relays. Rear panel DIP switches shall allow adjustment of the Manual/Automatic function, Last-Mic-on function, Hold time, Off attenuation, Limiter threshold, and Local/Global settings for multiple mixers.

The automatic microphone mixer shall allow for multiple microphone operation while maintaining the sound system below the threshold of feedback with fast-acting, noise-free microphone selection and automatic gain adjustment as additional microphones are activated. The mixer shall incorporate a noise adaptive threshold, which distinguishes between constant background noise and changing speech levels for each input. It shall continuously adjust the activation threshold so that only speech levels louder than the background noise activate a channel.

Frequency Response shall be +/- 2dB from 50Hz to 20kHz at +4dBu. THD + Noise shall be less than 0.1% from 20Hz to 20kHz at +18dBV. EIN shall be less than -125dBV and output Hum & Noise shall be less than -90 dBu from 20Hz to 20kHz at nominal level. Dimensions shall be 1.75 inches (1 rack space) high, 19 inches wide, and 12.5 inches deep. Weight shall be 9 lbs 9 ounces. The mixer shall operate from 120 VAC, 50/60 Hz. Power Consumption shall be less than 13 Watts. The mixer shall be CE marked with a UL / C-UL listed power source.

The automatic microphone mixers shall be Shure SCM810, or approved equal. One (1) shall be provided for the Hearing Room.

Unbalanced-to-balanced Converters:

Unbalanced-to-balanced converters shall be used to convert the individual unbalanced direct out signal for each microphone (from the automatic microphone mixers) to a balanced, line level signal to be fed to the hearing room FTR mixer (FBO). The unbalanced-to-balanced converters shall be provided, six to a module. Each input channel is unbalanced, connected through a gold-plated phono jack. Each output is balanced. All outputs are connected through XLR jacks with gold-plated pins. A gain trim potentiometer is provided for each channel. The normal gain setting is indicated by the trimming potentiometer. This setting produces a +4 dBu balanced output for a −10 dBV unbalanced input. The gain is adjustable −5 dB to +10 dB from the normal gain. Therefore, a +4 dBu output signal is possible from input signals ranging from −20 dBV to −5 dBV.

The 2 channel unbalanced-to-balanced converters shall be Radio Design Labs Model FP-UBC2 or approved equal.

Rack Mount Kit:

A rack mount kit shall be provided and installed in the system equipment cabinet to house the system audio distribution amplifier (ADA), 3-input mixer, and remote volume control device (VCA). The rack mount kit shall be 19" in width, and occupy one rack unit (1.75") of panel space. It shall provide three (3) front panel openings, for mounting of the ADA and VCA. Blank filler panels shall be provided for any unused openings. The 3-input mixer shall mount behind the front panel, on the shelf portion of the rack mount kit. The finish of the rack mount kit shall be black powder epoxy paint.

The rack mount kit shall be Radio Design Labs model RU-RA3A, or approved equal.
The rack mount kit filler panels shall be Radio Design Labs model RU-FP1, or approved equal.

24 VDC Power Supply for Unbalanced-to-Balanced Converters:

The power supply for the unbalanced-to-balanced converters shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 2.76" x 1.37". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 500 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24E, or approved equal.

Remote Audio Level Control (VCA) for Main Hearing Room Sound Reinforcement Audio:

A remotely controlled audio level control (VCA) shall be provided for control of the main hearing room sound reinforcement audio. The VCA device shall be mounted in the rack mount kit in the sound system equipment cabinet. The remote control for the VCA shall be installed at the Case Manager's desk in the hearing room. The remotely controlled voltage controlled amplifier (VCA) shall be a two channel audio attenuator, capable of being controlled, either remotely or locally, from a single location. One channel of the dual channel VCA shall be used

for the hearing room audio, and the second channel shall be used for future expansion. The VCA shall accommodate either balanced or unbalanced line-level sources. Audio levels shall be controlled in 0.5 dB steps using noiseless zero-crossing digital attenuators for optimum reliability, precise tracking and long-term click-free service.

Each of the two (2) inputs of the VCA shall be >10 k Ω balanced bridging, or unbalanced, line level, with frequency response of 10 Hz to 50 kHz (+/- 0.5 dB). THD+N shall be < 0.005% (20 Hz to 20 kHz). Gain shall be adjustable from unity to <–96 dB. Headroom shall be > 18 dB (above +4 dBu), and residual noise shall be < -90 dB (referred to +4 dBu at unity gain). Attenuator step size shall be 0.5 dB, and ramp times shall be 0.5 second delay; then: 3 seconds to 10 seconds (UP and DOWN times individually adjustable on front panel). CMRR shall be > 65 dB (50 to 150 Hz), and crosstalk between channels shall be <-95 dB (1 kHz, typ.); < -85 dB (20 Hz to 5 kHz); < -75 dB (5 kHz to 20 kHz). The audio outputs shall be 150 Ω balanced (may be connected unbalanced). The ramp output shall be 0 to 10 Vdc, (Ground-referenced) , and the EQ ramp output shall be 0 to 10 Vdc, (Ground-referenced). The power requirement shall be 24 Vdc @ 120 mA, Ground-referenced. There shall be ten (10) front panel LED's indicating relative audio level (8), MAX condition (green), MIN condition (red). The dimensions of the VCA shall be 5.75" (14.6 cm) W x 1.65" (4.18 cm) H x 3.54" (9.0 cm) D;3.9" (9.9 cm) D with connectors. Control of the attenuators shall be accomplished by remote 10 k Ω linear taper pots. A single remote control location for each channel is possible using a remote 10 k Ω pot.

The remotely controlled VCA shall be Radio Design Labs RU-VCA2A, or approved equal.

Main Audio Remote Level Control:

The device for controlling the hearing room VCA shall be a 10k Ω linear taper pot, mounted in a single gang white Decora style plate. The pot shall have 10 graphic increments which provide a visual indication of the level setting. It shall be designed to directly interface with the 3-wire control input of the VCA module.

The remote level control shall be the Radio Design Labs RLC10K Remote Level Control or approved equal.

Audio Distribution Amplifier:

The audio distribution amplifier (ADA) shall be a four channel stereo device with input and output gain adjustments and input level metering. The ADA may be operated in mono mode to provide up to eight distributed mono signals. The inputs and outputs are connected on rear-panel detachable terminal blocks. Each of the two line level inputs accepts either a balanced or an unbalanced signal. Each input is equipped with a front panel INPUT GAIN trimmer. Input signal levels between -14 dBV unbalanced and +9 dBu balanced may be set to the proper operating level as indicated by a dual-LED VU meter. This assures ample headroom at all normal operating levels. The maximum input level is + 25 dBu. A rear-panel switch selects between stereo and mono operation. In the mono position, input A (left) is used to drive all 8 output channels. When the module is used in a monaural system, only input A must be wired. Audio outputs are isolated from each other and may be wired balanced or unbalanced. Each of the

outputs is provided with a front panel screwdriver adjusted OUTPUT LEVEL control. Relative to a balanced +4 dBu output level, this gain potentiometer allows an adjustment range from -9 dB to +6 dB. Relative to an unbalanced -10 dBV output, each output potentiometer allows an adjustment from -3 dB to +12 dB. The audio distribution amplifier shall offer exceptional headroom, very low distortion, excellent crosstalk isolation, wide flat frequency response and extremely low noise with very high common-mode signal rejection. It shall operate from 24 Vdc connected through a rear-panel detachable terminal block.

The audio distribution amplifier shall be the Radio Design Labs RU-ADA4D, or approved equal.

Three Input Line Level Audio Mixer:

The three input line level audio mixer shall provide audio mixing of up to three line-level inputs with individual input gain adjustments. The line-level output is capable of driving either high or low impedance, balanced or unbalanced loads. The mixer shall operate from a separate floating or bipolar dc power source. The three inputs shall be 30 k Ω balanced or unbalanced bridging. The input level shall be -20 dBu to +18 dBu (for +4 dBu output) and -24 dBu to +14 dBu (for 0 dBu output). The output shall be 400 Ω to drive low or high impedance balanced or unbalanced lines, and the output level shall be +4 dBu nominal, (adjustable; unbalanced output 6 dB below balanced line level). Frequency response shall be 10 Hz to 20 kHz (+/- 0.5 dB). THD+N shall be < 0.03% (10 Hz to 20 kHz), and output noise shall be < -80 dB (all inputs @ 10 dB gain, referenced to +4 dBu). Gain for each input shall be -14 dB to +24 dB (adjustable), with 18dB of headroom. CMRR shall be > 50 dB (50 to 120 Hz). Power requirement for the mixer shall be ground referenced 24 VDC, 55 mA. The mixer shall measure 3.025" x 1.57" x 0.67", and shall mount on the rear shelf portion of the rack mount kit.

The three input line level mixer shall be Radio Design Labs ST-MX3, or approved equal.

24 VDC Power Supply for Audio Distribution Amplifier, 3-Input Mixer, and VCA:

The power supply for the devices mounted in the rack mount kit (audio distribution amplifier, 3-input mixer, VCA) shall be a 24 VDC switching unit, housed in a modular "wall wart" package 1.80" x 3.51" x 1.55". It shall have an integral AC plug for the 120 VAC input, and an integral 48" output cable for the 24 VDC output. Output shall be 24 VDC at 1000 mA. The power supply shall be both UL and CSA listed.

The 24 VDC power supply shall be Radio Design Labs PS-24KS, or approved equal.

Compressor/Limiter

The compressor/limiter shall be a two-channel unit with separate Gate Threshold, Compression Threshold, Compression Ratio and Output Level controls. A Link switch shall provide true Master / Slave operation of Gate, Compression and Output Level functions. Gate and compression threshold indicators shall be provided. A four-segment meter shall indicate compression gain-reduction for each channel. The Compressors shall provide a threshold range

of +20 dBu to –40 dBu and a ratio range of 1:1 to ∞:1. The Gates shall operate with a threshold range of –20 dBu to –80 dBu with a fixed ratio of 2:1. The response time of the detector shall be 80 dB/ second. Each Input shall feature XLR and TRS connectors, active balanced input buffer, RFI filtering and –10 dBV / +4 dBu sensitivity switch. Input levels shall be monitored by +4 dBu and overload indicators. Each channel shall feature a bypass switch that disconnects the dynamics processing and connects the buffered input to the output amplifiers. Each output shall feature XLR and TRS connectors, active balanced line drivers and RFI filtering. The unit shall be capable of operation by means of its own built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. The unit shall occupy one rack space in height.

The compressor/limiter shall be a Rane Corporation Model DC22S, or approved equal.

1/3 Octave Graphic Equalizer

The graphic equalizer shall be of constant-Q design to minimize interactions between adjacent bands, and contain frequency bands located on standard ISO center frequencies. Each band shall have a bandwidth of 1/3-octave. A switchable boost/cut range of 12 dB or 6 dB shall be provided. A detented and positively grounded 0 dB point shall be provided on 20 mm linear sliders with dust dams. A rotary overall level control shall be provided with a range from off to +6 dB of gain in balanced mode. The input and output shall be active balanced/unbalanced designs terminated with both XLR and ." TRS (tip-ring-sleeve) connectors. RFI filters shall be provided. The unit shall provide a passive bypass feature requiring no power to operate. Infrasonic and ultrasonic filters shall be built-in. LEDs shall be provided to indicate overload conditions. The unit shall be capable of operation by means of its own built-in universal power supply operating at 100-240 VAC and meet CE requirements. The unit shall be UL and cUL listed. The unit shall be entirely constructed from cold-rolled steel. A single rack unit security cover shall be installed over the equalizer controls after the equalizer has been properly adjusted.

The 1/3 octave graphic equalizer shall be a Rane Corporation ME30S Equalizer or approved equal.

Hearing Room Loudspeaker Power Amplifier:

The power amplifier shall be a single channel model capable of operation from 120/ 240 VAC, 50/60 Hz line. The amplifier shall incorporate protection circuitry for high temperature, audio limiters, power up delay and peak current limiters. The load shall be similarly protected against subsonic signals, startup/shut down transients, low AC line voltage, and DC faults. A detented and marked level control on the rear panel shall provide hidden reliable level adjustments. Front panel LEDs shall indicate signal present, 0 dB, and limit. Phoenix type connectors for inputs and outputs provide easy rack wiring. A three stage front-to-rear cooling fan shall significantly reduce heat buildup and allow for more reliable operation in the slim two rack space chassis.

The power amplifier shall meet the following performance criteria: Input sensitivity for rated output power: 0 dBU. Input impedance (balanced): >20 kΩ. Continuous Rated Power (1 kHz, THD 1%) 100v: 270 Watts. Continuous Rated Power (1 kHz, THD 1%) 70v: 270 Watts.

Continuous Rated Power (20-20 kHz, THD<0,2%) 100v: 250 Watts. Continuous Rated Power (20-20 kHz, THD<0,2%) 70v: 250 Watts. Frequency response: 65Hz-20kHz. Intermodulation Distortion (SMPTE): < 0.1 %. Total Harmonic Distortion: < 0.1 %. Signal-to-Noise Ratio (A-weighted): 103 dB. Crosstalk: < -75 dB. Slew Rate: 41/61 V/µs. The power amplifier dimensions shall be 3.46" H (2 RU), 19.02" W, and 15.98" D. The amplifier shall weigh 16.5 kg (36.38 lbs).

The hearing room loudspeaker power amplifier shall be Electro-Voice PA-1250T, or approved equal.

SECTION D - PACKAGING AND MARKING

D.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

CLAUSE NUMBER	TITLE	DATE
2-45	Packaging and Marking	AUG 2004

D.2 PAYMENT OF POSTAGE AND FEES

All postage and fees required for the submission of deliverables, return of government resources, property, and items, and/or otherwise required for the performance and completion of the contract shall be paid by the Contractor.

SECTION E - INSPECTION AND ACCEPTANCE

E.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

CLAUSE NUMBER	TITLE	DATE
2-5A	Inspection of Products	JAN 2003
2-5B	Inspection of Services	AUG 2004
2-10	Responsibility for Products	JAN 2010

E.2 SYSTEM ACCEPTANCE TEST PLAN

(a) The Contractor shall notify the Court at least three (3) business days in advance of the acceptance tests so that they may be witnessed and verified by the COTR to ensure that the requirements and specifications set forth in this contract are met.

(b) All facilities, services, and items shall operate correctly and as specified.

(c) The Court will accept the new facilities, services, and items when the acceptance tests have been satisfactorily completed and the specified criteria have been satisfied.

(d) All programming files will be provided to the Court upon acceptance.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

CLAUSE NUMBER	TITLE	DATE
2-25A	Delivery Terms and Contractor's Responsibilities	JAN 2003
2-30A	Time of Delivery	JAN 2003
2-35	F.o.b. Destination, Within Judiciary's Premises	JAN 2003
2-60	Stop-Work Order	JAN 2010
7-200	Judiciary Delay of Work	JAN 2003

F.2 DELIVERY SCHEDULE AND LOCATION

(a) Delivery and Installation shall be coordinated with the Court. A post-award meeting will be held within 10 working days after award.

(b) Installation will be completed no later than 04/01/2014.

(c) All specified facilities and services shall be installed at the Edward T. Gignoux Courthouse, 156 Federal Street, Portland, Maine 04101

F.3 DELAY OF DELIVERY SCHEDULE BY COURT

The Court reserves the right to delay any installation, at no additional cost to the judiciary, provided that the Contractor receives written notice from the Contracting Officer 15 calendar days prior to the scheduled installation date, or within 30 calendar days after award, whichever is later, or by any date which is mutually agreed to by the Court and the Contractor.

SECTION G - CONTRACT ADMINISTRATION DATA

G.1 CLAUSES B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

CLAUSE NUMBER	TITLE	DATE
7-1	Contract Administration	JAN 2003
7-5	Contracting Officer's Technical Representative	JAN 2003
7-125	Invoices	JAN 2010

G.2 CONTRACTING OFFICER

The Contracting Officer for this Contract is:

Robert A. Guptill, Jr.
U.S. District Court - District of Maine
Edward T. Gignoux Federal Courthouse
156 Federal Street
Portland, Maine 04101
E-mail: robert_guptill@med.uscourts.gov
Phone: 207-780-3356

G.3 BILLING AND PAYMENT TERMS

Contractor invoice(s) shall be submitted in arrears and shall provide an account summary showing all services, features, and items on the account. Invoice(s) may be submitted upon the Court's acceptance of all products, services, and items as ordered and/or as rendered.

Invoices shall be addressed and submitted to:

U.S. District Court – District of Maine
Edward T. Gignoux Courthouse
156 Federal Street
Portland, Maine 04101

G.4 CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE

(a) The Contracting Officer's Technical Representative for this Contract is:

Tim Reilley
U.S. District Court – District of Maine
Edward T. Gignoux Courthouse
156 Federal Street
Portland, Maine 04101
E-mail: tim_reilley@med.uscourts.gov
Phone: 207-780-3356

G.5 CLAUSE 7-10, CONTRACTOR REPRESENTATIVE (JAN 2003)

(a) The contractor's representative to be contacted for all contract administration matters is as follows (*contractor completes the information*):

1. Name:
2. Address:
3. Telephone:
4. E-mail:
5. Fax:

(b) The contractor's representative shall act as the central point of contact with the judiciary, shall be responsible for all contract administration issues relative to this contract, and shall have full authority to act for and legally bind the contractor on all such issues.

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

CLAUSE NUMBER	TITLE	DATE
1-1	Employment by the Government	JAN 2003
7-55	Contractor Use of Judiciary Networks	JAN 2003

H.2 CLAUSE 2-65, KEY PERSONNEL (APR 2013)

(a) Individuals identified below as Key Personnel (Project Manager) and accepted for this contract are expected to remain dedicated to this contract. However, in the event that it becomes necessary for the Contractor to replace any of the individuals designated as key personnel, the Contractor shall request such substitutions in accordance with this clause. Substitution of Key Personnel will be considered under the following circumstances only:

- All substitutes shall have qualifications at least equal to those of the person being replaced.
- All appointments of key personnel shall be approved in writing by the contracting officer, and no substitutions of such personnel shall be made without the advance written approval of the contracting officer.
- Except as provided in paragraph (4) of this clause, at least 30 days (60 days if security clearance is required) in advance of the proposed substitution, all proposed substitutions of key personnel shall be submitted in writing to the contracting officer, including the information required in paragraph (5) of this provision.
- The following identifies the requirements for situations where individuals proposed as key personnel become unavailable because of sudden illness, death or termination of employment. The contractor shall within 5 work days after the event, notify the contracting officer in writing of such unavailability. If the event happens after award, the contracting officer will determine if there is an immediate need for a temporary substitute and a continuing requirement for a permanent substitute for the key personnel position. The contracting officer will promptly inform the contractor of this determination. If the contracting officer specifies that a temporary substitute is required, the contractor shall as soon as is practical identify who will be performing the work as a temporary substitute. The

temporary substitute will then start performance on a date mutually acceptable to the contracting officer and the contractor. Within 15 work days following the event, if the contracting officer specifies that a permanent substitute is required, the contractor shall submit, in writing, for the contracting officer's approval, the information required in (5) and (6) below, for a proposed permanent substitute for the unavailable individual. The approval process will be the same as (7) below.

- Request for substitution of key personnel shall provide a detailed explanation of the circumstances necessitating substitution, a resume of the proposed substitute, and any other information requested by the contracting officer to make a determination as to the appropriateness of the proposed substitute's qualifications. All resumes shall be signed by the proposed substitute and his/her formal (per company accepted organizational chart) direct supervisor or higher authority.

- As a minimum (or as otherwise specified in the solicitation), resumes shall include the following:

    (a) name of person;

    (b) functional responsibility;

    (c) education (including, in reverse chronological order, colleges and/or technical schools attended (with dates), degree(s)/certification(s) received, major field(s) of study, and approximate number of total class hours);

    (d) citizenship status;

    (e) experience including, in reverse chronological order for up to ten years, area(s) or work in which a person is qualified, company and title of position, approximate starting and ending dates (month/year), concise descriptions of experience for each position held including specific experience related to the requirements of this contract; and

    (f) certification that the information contained in the resume is correct and accurate (signature of key person and date signed, and signature of the supervisor or higher authority and date signed will be accepted as certification).

- The CO will promptly notify the Contractor in writing of his/her approval or disapproval of all requests for substitution of Key Personnel. All disapprovals will require re-submission of another proposed substitution within 15 days by the Contractor.

The following individuals are designated as key personnel under this contract:
_Project Manager_____

H.3 PRICE MANAGEMENT

The Contractor shall agree that during the contract life, the prices set forth herein shall not exceed the Contractor's commercial price list (including applicable commercial discounts) and/or established tariff prices for similar (or identical) facilities, services, and items. If at any time this should occur, the Contractor shall immediately notify the Court's Contracting Officer and offer the lower prices for incorporation into this contract. Similar facilities, services, and items are defined as comparable commercial technical services.

H.4 CONTRACTOR PERSONNEL QUALIFICATIONS AND REQUIREMENTS

(a) Installation personnel must have received training and have a minimum of three (3) years of installation experience for the facilities, services and items proposed.

(b) Contractor personnel assigned to this contract must be able to communicate effectively in English (verbally and in writing) with Court staff and representatives.

(c) All Contractor personnel are required to present valid state-issued picture identification upon arrival to the Court's premises to begin project work.

(d) Contractor personnel shall be properly attired when on-site at a Court location and all dealings with Court staff and representatives shall be businesslike and courteous.

(e) For the purpose of the overall contract, the Contractor's Project Manager is designated as a key personnel under this contract and shall be the Contractor's authorized point of contact with the Court's Contracting Officer (CO) and the Contracting Officer's Technical Representative (COTR).

(f) The Contractor's Project Manager shall be a prime Contractor employee who has in-depth experience in the type of services and goods required by the contract resulting from this solicitation.

(g) The Contractor's Project Manager shall be responsible for providing project management oversight during all hours of task order activity for all Contractor personnel. The Contractor's Project Manager also shall be responsible for formulating and enforcing work standards, assigning schedules, and reviewing work discrepancies, and communicating policies, purposes, and goals of the organization to subordinates.

(h) The Court reserves the right to require the change/removal of any Contractor personnel from the contract, without penalty to the judiciary; furthermore, this right of removal may be exercised at any time during the term of the contract.

H.5 NOTIFICATION OF DEBARMENT / SUSPENSION STATUS

(a) During the contract period, the Contractor shall provide immediate written notice to the Contracting Officer in the event of being suspended, debarred, or declared ineligible by any Department or other Federal Agency, or upon receipt of a notice or proposed debarment from another Government Agency, during the performance of this contract.

(b) During the contract period, the Contractor shall provide immediate written notice to the Contracting Officer if the Contractor learns that its certification in response to JPV14, Provision 3-20 (Section K 3) was erroneous when submitted or has become erroneous by reason of changed circumstances.

H.6 MEETINGS / CONFERENCES

Technical meetings, post-award/pre-performance conferences, and/or meetings during contract performance, may be necessary to resolve problems and to facilitate understanding of the technical requirements of the contract. Participants at these meetings/conferences shall be members of the Contractor's technical staff and technical representatives of the Court. These meetings/conferences shall be scheduled with the agreement and arrangements made between the CO or their representative and the Contractor. All Contractor costs associated with the attendance at these meetings shall be incidental to the contract and not separately billed.

H.7 GENERAL WORKING HOURS AND GOVERNMENT HOLIDAYS

Normal business/office hours are from 8:00 a.m. to 5:00 p.m. Eastern Standard Time, local time; specific working hours, however, will be identified as required.

The following Government holidays are normally observed by judiciary personnel: New Year's Day, Martin Luther King's Birthday, President's Day, Memorial Day, Independence Day, Labor Day, Columbus Day, Veteran's Day, Thanksgiving Day, Christmas Day, and any other day designated by Federal Statute.

H.8 SECTION 508 COMPLIANCE

(a) Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d) requires that when federal departments or agencies "develop, procure, maintain, or use" EIT, they shall ensure that the EIT allows federal employees with disabilities to have access to and use of information and data that is comparable to the access to and use of information and data by other federal employees. Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a federal department or agency, have access to and use of information and data that is comparable to that provided to the public without disabilities. Comparable access is not required if it would impose an undue burden.

(b) For further information, refer to: http://www.section508.gov/index.cfm?FuseAction=content&ID=12#Telecommunications

(c) Solicitation evaluation will be based in part on the proposal responsiveness to the identified Section 508 requirements and considerations for accessibility. The Offeror shall provide proof of conformance with these requirements. The Voluntary Product Accessibility Template (VPAT) may be used for this purpose. The VPAT can be downloaded from the following website: http://www.itic.org/resources/voluntary-product-accessibility-template-vpat/

(d) Services delivered as a result of this solicitation will be accepted based in part on satisfaction of Section 508 requirements for accessibility.

H.9 OSHA COMPLIANCE

All services performed under the terms of the awarded contract shall comply with the requirements and standards specified in the Williams-Steiger Occupational Safety and Health Act of 1970 (Public Law 91-596), as well as with other applicable Federal, State, and local codes.

H.10 PERMITS

The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any applicable Federal, state, and municipal laws, codes, and regulations, and any applicable freight work permits, authorizations, etc. and/or visas in connection with the performance of the contract.

PART I - CONTRACT CLAUSES

SECTION I - CONTRACT CLAUSES

I.1 CLAUSE B-5, CLAUSES INCORPORATED BY REFERENCE (SEP 2010)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

CLAUSE NUMBER	TITLE	DATE
1-5	Conflict of Interest	AUG 2004
1-10	Gratuities or Gifts	JAN 2010
1-15	Disclosure of Contractor Information to the Public	AUG 2004
2-20A	Incorporation of Warranty	JAN 2003
2-20B	Contractor Warranty (Products)	JAN 2010
2-95	Material Requirements	JAN 2003
3-25	Protecting the Judiciary's Interest When Subcontracting with Contractors Debarred, Suspended or Proposed for Debarment	JAN 2003
3-35	Covenant Against Contingent Fees	JAN 2003
3-40	Restrictions on Subcontractor Sales to the Government	JAN 2003
3-45	Anti-Kickback Procedures	JAN2003
3-50	Cancellation, Rescission and Recovery of Funds for Illegal or Improper Activity	JUN 2012
3-55	Price or Fee Adjustment for Illegal or Improper Activity	JUN 2012
3-105	Audit and Records – Negotiations	APR 2011
3-120	Order of Precedence	JAN 2003
3-140	Notice to the Judiciary of Labor Disputes	JAN 2003
3-205	Protest after Award	JAN 2003
7-15	Observance of Regulations/Standards of Conduct	JAN 2003
7-20	Security Requirements	APR 2013
7-25	Indemnification	AUG 2004
7-30	Public Use of the Name of the Federal Judiciary	JAN 2003
7-35	Disclosure or Use of Information	APR 2013
7-65	Protection of Judiciary Buildings, Equipment, and Vegetation	JAN 2013
7-85	Examination of Records	JAN 2003

7-100A	Limitation of Liability (Products)	JAN 2003
7-100B	Limitation of Liability (Services)	JAN 2003
7-110	Bankruptcy	JAN 2003
7-130	Interest (Prompt Payment)	JAN 2003
7-135	Payments	JAN 2003
7-140	Discounts for Prompt Payment	JAN 2003
7-150	Extras	JAN 2003
7-185	Changes	APR 2013
7-210	Payment for Emergency Closures	APR 2013
7-215	Notification of Ownership Changes	JAN 2003
7-220	Termination for Convenience of the Judiciary (Fixed-Price)	JAN 2003
7-230	Termination for Default (Fixed-Price – Products and Services)	JAN 2003
7-235	Disputes	JAN 2003

I.2 CLAUSE 2-20C, WARRANTY OF SERVICES (JAN 2003)

(a) Definition. "Acceptance," as used in this clause, means the act of an authorized representative of the judiciary by which the judiciary assumes for itself, or as an agent of another, approves specific services, as partial or complete performance of the contract.

(b) Notwithstanding inspection and acceptance by the judiciary or any provision concerning the conclusiveness thereof, the contractor warrants that all services performed under this contract will, at the time of acceptance, be free from defects in workmanship and conform to the requirements of this contract. The contracting officer will give written notice of any defect or nonconformance to the contractor within 30 days from the date of acceptance by the judiciary. This notice will state either

(1) that the contractor shall correct or re-perform any defective or nonconforming services; or

(2) that the judiciary does not require correction or re-performance.

(c) If the contractor is required to correct or re-perform, it shall be at no cost to the judiciary, and any services corrected or re-performed by the contractor shall be subject to this clause to the same extent as work initially performed. If the contractor fails or refuses to correct or re-perform, the contracting officer may, by contract or otherwise, correct or replace with similar services and charge to the contractor the cost occasioned to the judiciary thereby, or make an equitable adjustment in the contract price.

(d) If the judiciary does not require correction or re-performance, the contracting officer will make an equitable adjustment in the contract price.

I.3 CLAUSE 6-20, INSURANCE – WORK ON OR WITHIN JUDICIARY FACILITY (APR 2011)

(a) The contractor shall, at its own expense, provide and maintain during the entire performance of this contract, at least the following kinds and minimum amounts of insurance:

(1) Workman's Compensation and Employee's Liability Insurance

The contractor shall comply with applicable federal and state workers' compensation and occupational disease statutes. If occupational diseases are not compensable under those statutes, they shall be covered under the employer's liability section of the insurance policy. Employer's liability coverage of at least $100,000 per incident is required.

(2) Automobile Liability Insurance

The contractor shall have coverage at a minimum of $200,000 per person; $500,000 per occurrence for bodily injury; and $20,000 per occurrence for property damage.

(3) General Liability Insurance

The contractor shall have coverage at a minimum of $200,000 per person and $500,000 per occurrence for death or bodily injury and $20,000 per occurrence for property damage.

(4) Self-Insurance

If the contractor has been approved to provide a qualified program of self-insurance, the contractor must submit any proposed changes to the program to the contracting officer for approval.

(b) Prior to beginning performance under this contract, the contractor shall provide the insurance carrier certification of the above minimum amounts.

(c) The maintenance of insurance coverage as required by this clause is a continuing obligation, and the lapse or termination of insurance coverage without replacement coverage being obtained will be grounds for termination for default.

(d) The certification evidencing required insurance shall contain an endorsement to the effect that any cancellation or any material change adversely affecting the judiciary's interest shall not be effective:

(1) for such period as the laws of the state in which this contract is to be performed prescribe; or

(2) until 30 days after the insurer or the contractor gives written notice to the contracting officer, whichever period is longer.

(e) The contractor shall insert the substance of this clause, including this paragraph (e), in subcontracts under this contract that require work in a judiciary facility and shall require subcontractors to provide and maintain the required insurance. The contractor shall maintain a copy of all subcontractors' proofs of required insurance, and shall make copies available to the contracting officer upon request.

PART III LIST OF DOCUMENTS, EXHIBITS, AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

ATTACHMENT	DOCUMENT TITLE	# OF PAGES
1	One Line and Rack Elevation.xlxs	8
2	Equipment List.xlxs	4

PART IV - REPRESENTATIONS AND INSTRUCTIONS

SECTION K - REPRESENTATIONS, CERTIFICATIONS, AND OTHER STATEMENTS OF OFFERORS

K.1 PROVISION B-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (SEP 2010)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its offer. Also, the full text of a solicitation provision may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

PROVISION NUMBER	TITLE	DATE
3-15	Place of Performance	JAN 2003

K.2 PROVISION 3-5, TAXPAYER IDENTIFICATION AND OTHER OFFEROR INFORMATION (APR 2011)

(a) Definitions.

> "Taxpayer Identification (TIN)," as used in this provision, means the number required by the Internal Revenue Service (IRS) to be used by the offeror in reporting income tax and other returns. The TIN may be either a social security number or an employer identification number.

(b) All offerors shall submit the information required in paragraphs (d) and (e) of this provision to comply with debt collection requirements of 31 U.S.C. §§ 7701(c) and 3325(d), reporting requirements of 26 U.S.C. §§ 6041, 6041A, and implementing regulations issued by the IRS. If the resulting contract is subject to the payment reporting requirements, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) The TIN may be used by the government to collect and report on any delinquent amounts arising out of the offeror's relationship with the government (31 U.S.C. § 7701(c)(3)). If the resulting contract is subject to payment recording requirements, the TIN provided hereunder may be matched with IRS records to verify the accuracy of the offeror's TIN.

(d) Taxpayer Identification Number (TIN): _____

[]TIN has been applied for.

[]TIN is not required, because:

[]Offeror is a nonresident alien, foreign corporation or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the United States and does not have an office or place of business or a fiscal paying agent in the United States;

[]Offeror is an agency or instrumentality of a foreign government;

[]Offeror is an agency or instrumentality of the federal government.

(e) Type of Organization:

[]sole proprietorship;

[]partnership;

[]corporate entity (not tax-exempt);

[]corporate entity (tax-exempt);

[]government entity (federal, state or local);

[]foreign government;

[]international organization per 26 CFR 1.6049-4;

[]other

(f) Contractor representations.

The offeror represents as part of its offer that it is [___], is not [___] 51% owned and the management and daily operations are controlled by one or more members of the selected socio-economic group(s) below:

[]Women Owned Business

[]Minority Owned Business (if selected then one sub-type is required)

[]Black American Owned

[]Hispanic American Owned

[]Native American Owned (American Indians, Eskimos, Aleuts, or Native Hawaiians)

[]Asian-Pacific American Owned (persons with origins from Burma, Thailand, Malaysia, Indonesia, Singapore, Brunei, Japan, China, Taiwan, Laos, Cambodia (Kampuchea), Vietnam, Korea, The Philippines, U.S. Trust Territory of the Pacific Islands (Republic of Palau), Republic of the Marshall Islands, Federated States of Micronesia, the Commonwealth of the Northern Mariana Islands, Guam, Samoa, Macao, Hong Kong, Fiji, Tonga, Kiribati, Tuvalu, or Nauru)

[]Subcontinent Asian (Asian-Indian) American Owned (persons with origins from India, Pakistan, Bangladesh, Sri Lanka, Bhutan, the Maldives Islands, or Nepal)

[]Individual/concern, other than one of the preceding.

K.3 PROVISION 3-20, CERTIFICATION REGARDING DEBARMENT, SUSPENSION, PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (APR 2011)

(a) (1) The offeror certifies, to the best of its knowledge and belief, that:

(i) the offeror and/or any of its principals:

(A) are ___ are not ___ presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any federal agency;

(B) have ___ have not ___, within the three-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) contract or subcontract; violation of federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, violating federal criminal tax laws, or receiving stolen property;

(C) are ___ are not ___ presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in paragraph (a)(1)(i)(B) of this provision;

(D) have ___, have not ___, within a three-year period preceding this offer, been notified of any delinquent federal taxes in an amount that exceeds $3,000 for which the liability remains unsatisfied.

(1) Federal taxes are considered delinquent if both of the following criteria apply:

(i) The tax liability is finally determined. The liability is finally determined if it has been assessed. A liability is not finally determined if there is a pending administrative or judicial challenge. In the case of a judicial challenge to the liability, the liability is not finally determined until all judicial appeal rights have been exhausted.

(ii) The taxpayer is delinquent in making payment. A taxpayer is delinquent if the taxpayer has failed to pay the tax liability when full payment was due and required. A taxpayer is not delinquent in cases where enforced collection action is precluded.

(2) Examples.

(i) The taxpayer has received a statutory notice of deficiency, under I.R.C. § 6212, which entitles the taxpayer to seek Tax Court review of a proposed tax deficiency. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(ii) The IRS has filed a notice of federal tax lien with respect to an assessed tax liability, and the taxpayer has been issued a notice under I.R.C. § 6320 entitling the taxpayer to request a hearing with the IRS Office of Appeals contesting the lien filing, and to further appeal to the Tax Court if the IRS determines to sustain the lien filing. In the course of the hearing, the taxpayer is entitled to contest the underlying tax liability because the taxpayer has had no prior opportunity to contest the liability. This is not a delinquent tax because it is not a final tax liability. Should the taxpayer seek Tax Court review, this will not be a final tax liability until the taxpayer has exercised all judicial appeal rights.

(iii) The taxpayer has entered into an installment agreement pursuant to I.R.C. § 6159. The taxpayer is making timely payments and is in full compliance with the agreement terms. The taxpayer is not delinquent because the taxpayer is not currently required to make full payment.

(iv) The taxpayer has filed for bankruptcy protection. The taxpayer is not delinquent because enforced collection action is stayed under 11 U.S.C. 362 (the Bankruptcy Code).

(ii)The offeror ___ has ___ has not, within a three-year period preceding this offer, had one or more contracts terminated for default by any federal agency.

(2) "Principal," for the purposes of this certification, means an officer; director; owner; partner or a person having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a division, or business segment, and similar positions).

This certification concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under 18 U.S.C. § 1001.

(b) The offeror shall provide immediate written notice to the contracting officer if, at any time prior to contract award, the offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

(c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the offeror's responsibility. Failure of the offeror to furnish a certification or provide such additional information as requested by the contracting officer may render the offeror non-responsible.

(d) Nothing contained in the foregoing will be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

(e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the offeror knowingly rendered an erroneous certification, in addition to other remedies available to the judiciary, the contracting officer may terminate the contract resulting from this solicitation for default.

K.4 PROVISION 3-30, CERTIFICATE OF INDEPENDENT PRICE DETERMINATION (JAN 2003)

(a) The offeror certifies that:

(1) the prices in this offer have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement, with any other offeror or with any competitor relating to:

(A) those prices;

(B)the intention to submit an offer; or

(C)the methods or factors used to calculate the prices offered.

(2)The prices in this offer have not been and will not be knowingly disclosed by the offeror, directly or indirectly, to any other offeror or contract award unless otherwise required by law; and

(3)no attempt has been made or will be made by the offeror to induce any other concern to submit or not to submit an offer for the purpose of restricting competition.

(b) Each signature on the offer is considered to be a certification by the signatory that the signatory:

(1) is the person in the offeror's organization responsible for determining the prices in this offer, and that the signatory has not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this provision; or

(2) (i) has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this provision _____ (*insert full name of person(s) in the offeror's organization responsible for determining the prices in this offer, and the title of his or her position in the offeror's organization*);

(ii) as an authorized agent, does certify that the principals named in subdivision (b)(2)(i) of this provision; have not participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this provision; and

(iii)as an agent, has not personally participated, and will not participate, in any action contrary to paragraphs (a)(1) through (a)(3) of this provision.

(c) If the offeror deletes or modifies paragraph (a)(2) of this provision, the offeror shall furnish with its offer a signed statement setting forth in detail the circumstances of the disclosure.

K.5 PROVISION 3-130, AUTHORIZED NEGOTIATORS (JAN 2003)

The offeror represents that the following persons are authorized to negotiate on its behalf with the judiciary in connection with this solicitation (*offeror lists names, titles, and telephone numbers of the authorized negotiators*).
Name: _____
Titles: _____
Telephone: _____
Fax: _____
E-mail: _____

SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICE TO OFFERORS

L.1 PROVISION B-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (SEP 2010)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its offer. Also, the full text of a solicitation provision may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

PROVISION NUMBER	TITLE	DATE
2-15	Warranty Information	JAN 2003
2-100	Brand Name or Equal	APR 2013
3-85	Explanation to Prospective Offerors	AUG 2004
3-95	Preparation of Offers	APR 2013
3-100	Instructions to Offerors	APR 2013
7-60	Judiciary Furnished Property or Services	JAN 2003

L.2 PROVISION 2-70, SITE VISIT (JAN 2003)

Offerors are urged and expected to inspect the site where services are to be performed and to satisfy themselves regarding all general and local conditions that may affect the cost of contract performance, to the extent that the information is reasonably obtainable. In no event will failure to inspect the site constitute grounds for a claim after contract award.

A site visit will be held on Friday, August 23, 2013 at 8:30 am. No responses will be provided to questions or inquiries during the site visit. No statements made during the site visit will be

binding on the Court. All questions and inquiries shall be submitted in writing as specified in Section L.6.

L.3 PROVISION 3-210, PROTESTS (SEP 2010)

(a) The protestor has a choice of protest forums. It is the policy of the judiciary to encourage parties first to seek resolution of disputes with the contracting officer. If the dispute cannot be resolved with the contracting officer, then it is the policy of the judiciary to encourage parties to seek a judiciary resolution of disputes with the Administrative Office of the United States Courts. However, if a party files a formal protest with an external forum on a solicitation on which it has filed a protest with the judiciary, the judiciary protest will be dismissed.

(b) Judiciary protests will be considered only if submitted in accordance with the following time limits and procedures:

(1) any protest shall be filed in writing with the contracting officer designated in the solicitation for resolution of the protest. It shall identify the solicitation or contract protested and set forth a complete statement of the alleged defects or grounds that make the solicitation terms or the award or proposed award defective. Mere statement of intent to file a protest is not a protest.

(2) a protest shall be filed not later than ten (10) calendar days after the basis of the protest is known, or should have been known. A protest based on alleged improprieties in a solicitation which are apparent prior to the closing date for receipt of offers, shall be filed prior to the closing date for receipt of offers. The judiciary, in its discretion, may consider the merits of any protest which is not timely filed. The office hours of the Administrative Office are 8:30 a.m. to 5:00 p.m., eastern time. Time for filing a document expires at 5:00 p.m., eastern time, on the last day on which such filing may be made.

(3) the protest shall include the following information:

(i) name, address, and fax and telephone numbers of the protester or its representative;

(ii) solicitation or contract number;

(iii) detailed statement of the legal and factual grounds for the protest, to include a description of resulting alleged prejudice to the protester;

(iv) copies of relevant documents;

(v) request for a ruling by the judiciary;

(vi) statement as to the form of relief requested;

(vii) all information establishing that the protester is an interested party for the purpose of filing a protest; and

(viii) all information establishing the timeliness of the protest.

(c) Unless stated otherwise elsewhere in this solicitation, protests that are filed directly with the judiciary, and copies of any protests that are filed with an external forum, shall be served on the contracting officer at the Issuing Office address on the standard form, if any, or elsewhere in this solicitation. Written and dated acknowledgment of receipt must be obtained from the Contracting Officer issuing this solicitation, or authorized designee.

(d) The copy of any protest shall be received in the office designated above within one day of filing a protest with an external forum.

L.4 PROVISION 4-1, TYPE OF CONTRACT (JAN 2003)

The judiciary plans to award a Firm Fixed Price contract, and all offers shall be submitted on this basis. Alternate offers based on other contract types will not be considered.

L.5 SUBMISSION ADDRESS AND DUE DATE

(a) Responses are due no later than 2:00 pm., Eastern Standard Time, on Monday, September 9, 2013.

(b) Responses shall be submitted to the Contracting Officer named in Section G.2 of this solicitation.

(c) Responses must be delivered sealed and the outside of the response envelope must reference the Solicitation Number: USDC-ME 2013.01

(d) Response submission by facsimile or e-mail is not permitted under this solicitation.

L.6 INQUIRIES

The individual responsible for supplying additional information and answering questions concerning this solicitation is the Contracting Officer. All questions and inquiries shall be submitted in writing via e-mail or hard copy by Friday, August 16, 2013 at 2:00 p.m., Eastern Standard Time no later than ten (10) business days from date of issuance of the solicitation. Answers to questions and clarifications will be provided to all Offerors, giving due regard to the proper protection of proprietary information. All questions and clarifications shall reference the Solicitation Number for this solicitation and shall be submitted to the CO named in Section G.2 of this solicitation.

L.7 RESPONSE SUBMISSION

The Offeror is responsible for any and all expenses related to the preparation and submission of a response to this solicitation. The Court shall incur no obligation except pursuant to the execution of a contract by the Court and the successful Offeror (Contractor).

L.8 MINIMUM ACCEPTANCE PERIOD

(a) All offers and pricing shall remain valid for a period of ninety (90) calendar days (e.g., minimum acceptance period) from the date specified for the receipt of offers, unless another time period is specified in an amendment to this solicitation. Offerors may specify a longer acceptance period than the Court's minimum requirement; an offer allowing less than the Court's minimum acceptance period, however, may be rejected.

(b) The Offeror agrees to perform all tasks and functions and furnish all facilities, services, and items in compliance with its proposed prices, as accepted by the Court, if awarded the contract within the acceptance period. It shall be noted that the longer acceptance period whether specified by the Court or by the Offeror will be used to determine the actual minimum acceptance period.

L.9 GENERAL INSTRUCTIONS FOR THE PREPARATION OF RESPONSES

This section provides general instructions on how to prepare and submit a response to this solicitation. The Offeror's response shall provide all of the information requested below. A cover letter may accompany the response to set forth any additional information that the Offeror wishes to bring to the attention of the Court.

(c) The Offeror shall submit a single response (e.g., offer) to this Solicitation. Multiple and/or alternate responses from the same Offeror will not be accepted.

(d) The Offeror shall furnish one (1) original and two (2) copies of the response in paper, hard copy form. One (1) electronic copy of the response also shall be provided. The electronic copy shall be provided in Adobe Acrobat format with the Pricing Forms.

(e) All responses must be in writing, signed by a representative of the Offeror who is authorized to submit an offer.

(f) All responses must be delivered sealed and marked as specified herein. Failure to properly address the outside of the response envelope could cause an offer to be misdirected.

L.10 CONTENT OF PROPOSALS

(a) Signed cover letter on offeror's letterhead listing all enclosed documentation, and referencing the solicitation.

(b) Section A (SF33) with Blocks 17 and 18 signed and dated to show that the Offeror has read, understands, accepts, and agrees to comply with all the conditions and instructions provided in the solicitation document, including all requirements, specifications and provisions. Therefore, the form shall be executed by a representative of the Offeror who is authorized to commit the Offeror to contractual obligations. Erasures or other changes shall be initialed by the individual signing the offer. Offers signed by an agent are to be accompanied by evidence of the agent's authority.

(c) Completed Section B. Offerors must make an offer for each and every item in Section B. Offerors for less than all items will not be considered. Prices shall include, but not be limited to, all services, equipment, accessories, cables, connectors, interface units, and other related items for fully installed facilities ready for operation by the Court.

(d) Completed Clauses G.5 and H.2, and all of Section K, completed for all applicable boxes or blocks.

(e) A list of at least five current (within 3 years) references, preferably federal agencies, for whom the Offeror has performed work of similar size and complexity. The Government reserves the right to contact references as part of its responsibility determination. At a minimum, each reference shall include the following information:

- Business/organization name and agencies supported.
- Technical Point of Contact (name, title, address, and telephone number).
- Contracting Officer (name, title, address, and telephone number).
- Original contract value and duration. May also provide total value to date of modifications / follow-ons to the original contract.
- Description of facilities, services, and items provided, the contract effort, and the installation date.

(f) The following information on all proposed equipment:

(1) Manufacturer's name
(2) Manufacturer's part number
(3) Description to include salient physical, functional, and/or performance characteristics
(4) Supporting documentation the proposed equipment is compatible with existing equipment described in the solicitation
(5) Applicable warranty information

(g) Any assumptions, conditions, and/or exceptions upon which the contractual and cost/price terms and conditions of the Offeror's proposal is based. If none are stated, it

will be assumed that none exist and that the Contractor agrees to comply with all of the terms and conditions set forth in this solicitation document, including all requirements, specifications, clauses, and provisions.

SECTION M - EVALUATION FACTORS FOR AWARD

M.1 PROVISION B-1, SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (SEP 2010)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the contracting officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its offer or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its offer. Also, the full text of a solicitation provision may be accessed electronically at this address: http://www.uscourts.gov/procurement.aspx.

PROVISION NUMBER	TITLE	DATE
3-70	Determination of Responsibility	JAN 2003

M.2 AWARD ON INITIAL RESPONSES

The Court reserves the right to award the contract based on the initial response submission, without discussions or negotiations of such responses. Therefore, it is important that each response be fully compliant, without exception to any requirement, clause, or provision. Offerors should submit initial responses which respond most favorably to the Court's requirements.

M.3 EVALUATION - GENERAL

(g) Award will be made on the basis of the lowest price/technically acceptable Offeror.

(h) The evaluation will be conducted using the evaluation criteria set forth in this section. Each initial offer should contain the Offeror's best terms from a price and technical standpoint. Clarification/revision requests may be issued which encompass any and all written documentation submitted in response to the solicitation as may be deemed necessary by the Contracting Officer, to fully explore and evaluate the merits of responses submitted. The Court reserves the right to conduct discussions, if later determined to be necessary.

M.4 EVALUATION PROCESS

Each response will be evaluated for: (1) technical acceptability, (2) responsiveness to the solicitation, and (3) price reasonableness. The Court reserves the right to consider as acceptable only those responses that are submitted in accordance with all requirements set forth or referenced in this solicitation. Offerors shall demonstrate an understanding of all requirements and a capability to provide the required facilities, services, and items. The Court reserves the right to reject responses that do not address the totality of the solicitation requirements, including the contract terms and conditions. Only those responses considered to be in compliance with all requirements herein will be evaluated.

Technical acceptability will be determined based upon the proposed equipment information submitted and past experience.

M.5 PRICE EVALUATION

Offerors' prices from the Pricing Form in Section B will be evaluated for reasonableness. Responses containing unrealistic prices will not be considered for award.

M.6 CONTRACT AWARD

(i) The Court intends to award a single contract resulting from this solicitation.

(j) Contract award will be made to the responsible Offeror whose response represents the lowest price technically acceptable offer.

(k) The Court reserves the right to make no award pursuant to this solicitation.

(l) The Court reserves the right to make an award for a single courtroom or multiple courtrooms, dependent upon the availability of funds.