AAA-04-27-2021-B **RFI STATUS: Submitted to county** **PREPARED BY:** **DATE: 4/20/2021**

Digital Audio Processors Amplifiers

RFI Line Items

ECPU:ESTIMATED COST P/UNIT PMP:POTENTIAL MINIMUM PURCHASE PAP:POTENTIAL ANNUAL PURCHASE PF:PURCHASE FREQUENCY ETD:ESTIMATED DELIVERY TIME

Product name	MFR	MFR product #	ECPU	Min qty	PMP	PAP	PF	ETD	Details
D20 4I 2,000 Watt Amplifier	Lab Gruppen	D 20:4L		1			1	2	D20 4I 2,000 Watt Amplifier with 4 Flexible Output Channels, LAKE Digital Signal Processing and Dante Digital Audio Networking for Installation Applications in stock. Processing / Network Lake / Dante Number of amplifier channels 4 Total burst power all channels (share among channels with RPM) 2000 W Max output power (all channels driven)1 2 ohms 500 W 2.67 ohms 500 W/4 ohms 500 W/8 ohms 500 W/ 16 ohms 425 W/ Hi-Z 25 V 500 W/ Hi-Z 70 V 500 W/ Hi-Z 100 V 250 W Max output power single channel (all models)1 2 ohms 850 W/ 2.67 ohms 1150 W/4 ohms 1600 W 8 ohms 1100 W 16 ohms 600 W Hi-Z 25 V 500 W Hi-Z 70 V 1400 W Hi-Z 100 V 1000 W Amplifier output modules (all models, all channels) Peak output voltage 142 Vpk; Max output Current 30 Apk Rational Power Management (RPM) Share "Total burst power" of the product freely among channels. Any channel can scale up to the "single channel max power" Default voltage limitation (can be lifted with RPM configuration) 100 Vpk Protection features: Current Average Limiter (CAL), Very High Frequency Protection (VHF), Direct Current Protection (DC), Short Circuit Protection, Current-Clip Limiter, Voltage Clip Limiter, Temperature protection. Amplifier platform:Inter Sample Voltage Peak Limiter (ISVPL) Configurable Peak voltage threshold and profile. Amplifier gain: Digital configurable amplifier gain 22 - 44 dB Dynamic range > 112 dB; Load impedance analysis Yes; Temperature regulated fans (front-to-rear airflow) and show must go on limitation (ATL, PTL); Internal Sample Rate / Data path 96 kHz / 32 bit floating point; Product propagation delay AES 96 kHz / analog input 1.61 / 1.68 ms; Lake processing; Loudspeaker processing ; Up to 4 modules of Classic/linear-phase/FIR crossover, EQ, delay, LimiterMax™ - peak and RMS limiters System tuning - Group control with Raised Cosine™ MESA EG™ asymmetric filters Input redundancy / Matrix - Automatic 4 level input redundancy / 4 input mixers System integration - Comprehensive 3rd party protocol over UDP Ethernet Dante Audio Network - Dante I/O 8 x 8 Network topology / redundancy Flexible topology / Supports daisy-chained and Dual redundant networks Sample Rates / Transport - 48, 96 kHz / Uni + Multicast Network latency - 0.25, 0.5, 1.0, 2.0, 5.0 ms; AES Inputs - 4 AES inputs Supported sample rates / resolution - 44.1, 48, 88.2, 96, 176.4, 192 kHz / up to 24 bits Sample rate conversion THD+N 20 Hz - 20 kHz unweighted 0.0000003 Analog Inputs - 4 high quality inputs with Iso-Float ground isolation Maximum input / digital reference - +26 dBu / +21 dBu Sampling rate / Resolution - 96 kHz / 24 bit Input impedance balanced / unbalanced - 20 / 10 kOhm THD+N (typical at 1 kHz unweighted) - 0.0000022 THD+N (typical at 20 Hz and 20 kHz unweighted) - 0.0000033 Back panel Interface - Analog inputs 4 x Terminal block connectors analog input with +, - and ground AES inputs - 4 x Terminal block connectors analog input with +, - and ground Output connectors - 4 x 2 pole Terminal block connectors rated at 1000 V / 41 A (exceeding amplifier capacity) Can take up to 8 mm2 (8.2 AWG) cables; Ethernet Ports -2 x EtherCon RJ45 Lake Controller, Dante controller and/or DLM (3rd party protocol) Detachable mains cord - Detachable locking 3-pin IEC rated at 250 V / 16 A Front-panel user interface - System status indication 3 x tri-color LED. FRAME, TEMP, PSU for device status indication Channel status indication - 3 x tri-color LED per channel. Status indication separated for channel LOAD, AMP, SIGNAL status; Mute - Per channel touch button for MUTE control and tri-color LED for indication Power - Touch button for ON/STANDBY control and tri-color LED for power state indication Select - Touch button and LED for bidirectional device software select functionality Mains Power - Nominal voltage 100 - 240 Volt AC 50 - 60 Hz Operating voltage - 70 - 265 V AC 45 - 66 Hz Mains wall plug - Selectable on order CEE 7/7 "Schuko" 230 V / 16 A, NEMA 5-15 125 V / 15 A, BS1363-A 250 V / 13 A, IA16A3 250 V / 16 A, AU/NZ 250 V / 10 A, JP 125 V / 15 A, CPCS-CCC 250 V / 10 A Power supply features- Soft start / Inrush power Yes; Power factor correction - > 0.98 for mains power > 300 W; Regulated switch mode power supply (R.SMPS) - Yes; Breaker Emulation Limiter (BEL) - No; BEL max current threshold - Fixed 8 A; Power Average Limiter (PAL) - Yes; Under Voltage Limiter (UVL) - Yes; Mains undervoltage and overvoltage protection and mains glitch tolerance - Yes; Dimensions-Rack rail to rear panel W: 483 mm (19"), H: 44 mm (1 U), D: 425 mm (16.7"); Overall depth front-rear support - D: 463 mm; Weight 7.9 kg (17.3 lbs); Finish -Black painted steel chassis with grey painted steel front with detachable grille; Approvals - CE, ETL (ANSI/UL, CSA), PSE, RCM, BIS, CCC
Low-Profile Lay-In 2' x 2' Ceiling TileLoudspeaker	JBL	LCT81C/T		8			1	2	Low-Profile Lay-In 2' x 2' Ceiling Tile Loudspeaker with 200 mm (8 in) Driver. High efficiency 200 mm (8 in) dual-cone driver; Easy lay-in installation into 2' x 2' US-style suspended grid ceilings. No cutting of ceiling tiles is necessary. Perforated metal grille included. Combined 70V/100V and low impedance direct operation. 20 Watts at 8Ω (low-impedance) direct setting. 10 Watt multi-tap at 70V/100V with taps at 10W, 5W, 2.5W (and 1.3W for 70V only) Very low-profile at just 103 mm (4.1 in) deep, to fit into ceilings that are shallow or that contain obstructions. Easy bare-wire connection in protected compartment. Wire entrance from either top or side via knock-out. Very high 96 dB sensitivity turns power from small amplifiers into maximum sound level for listeners. Designed for high speech intelligibility. 100° coverage pattern (conical). UL1480A and UL2043 certifications for use in ceiling plenum spaces.
Shure dual rx	Shure	ulxd4d		1			1	2	Two receivers in a rugged 1RU metal chassis with internal power supply Individual gain controls, LED meters, and XLR outputs for each channel Up to 64 MHz tuning range (region dependent); Digital predictive switching diversity; High Density mode optimizes ULX-D systems to simultaneously operate significantly more channels in applications up to 30 meters; RF cascade ports allow distribution of RF signal to another unit; Optimized scanning automatically finds, prioritizes, and deploys the cleanest frequencies to transmitters over IR sync; Bodypack frequency diversity ensures uninterrupted audio for mission-critical applications; AES 256-bit encryption-enabled for secure transmission; Audio summing routes both audio channels to each XLR receiver output; Dante™ digital networked audio over Ethernet; Up to 60 dB independently adjustable gain for each channel; Ethernet networking for streamlined frequency coordination and deployment across multiple receivers; Wireless Workbench® 6 (WWB6) software integration for advanced coordination, monitoring, and control; AMX/Crestron® control AXT600 Axient® Spectrum Manager compatible; Yamaha® device ID allows simplified channel patching on CL consoles; Intuitive front panel LCD menu and controls with lockout feature; Audio and RF LED meters with peak indicator; XLR connectors with switchable mic/line output level; Remoteable ½ wave antennas
Shure ULXD2 Handheld BETA 87A	Shure	ulxd2beta87		2			1	2	AES 256-bit encryption for applications for which secure transmission is needed; Proprietary Shure Gain Ranging optimizes the system's dynamic range for any input source, eliminating the need for transmitter gain adjustments; Optional Shure SB900A lithium-ion rechargeable battery pack provides over 12 hours of battery life, precision metering in hours and minutes, and zero memory effect; External charging contacts for docked charging (with the SBC200 Dual Docking Charger); Transmitter Mute Mode repurposes the On/Off switch into a mute switch, enabling audio muting while preserving RF channel presence; Backlit LCD with easy to navigate menu and controls; Rugged metal construction; Frequency and power lockout.
Shure Wall-Mounted Wideband Antenna (470-698 MHz)	Shure	ua864us		2			1	2	Wideband Performance; Low-Profile Design; Wall or Ceiling Mounting Options; Metal Surface Mounting Capability; LED Indicators for Gain Settings; Four-Position Gain Switch; Neutral White, Paintable Housing

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100' uhf remote antenna extension cable bnc bnc	Shure	ua8100		2			1	2	100-foot coaxial cable offers BNC to BNC connection
ASHLY NE4800T NETWORK ENABLED PROTEA DSP AUDIO SYSTEM PROCES	ASHLY	NE4800T		1			1	2	ASHLY NE4800T NETWORK ENABLED PROTEA DSP AUDIO SYSTEM PROCESSOR 4-IN X 8-OUT + DANTE -7-10 days
D20 4I 2,000 Watt Amplifier with 4 Flexible Output Channels	LAB.GRUPPEN	D20 4I		4			1	2	D20 4I 2,000 Watt Amplifier with 4 Flexible Output Channels, LAKE Digital Signal Processing and Dante Digital Audio Networking for installation Applications in stock. Processing / Network Lake / Dante; Number of amplifier channels 4; Total burst power all channels (share among channels with RPM) 2000 W; Max output power (all channels driven)1 2 ohms 500 W 2.67 ohms 500 W/4 ohms 500 W/8 ohms 500 W/ 16 ohms 425 W/ Hi-Z 25 V 500 W/ Hi-Z 70 V 500 W/ Hi-Z 100 V 250 W; Max output power single channel (all models)1 2 ohms 850 W/ 2.67 ohms 1150 W/4 ohms 1600 W 8 ohms 1100 W 16 ohms 600 W Hi-Z 25 V 500 W Hi-Z 70 V 1400 W Hi-Z 100 V 1000 W; Amplifier output modules (all models, all channels) Peak output voltage 142 Vpk; Max output Current 30 Apk; Rational Power Management (RPM); Share "Total burst power" of the product freely among channels. Any channel can scale up to the "single channel max power"; Default voltage limitation (can be lifted with RPM configuration) 100 Vpk; Protection features Current Average Limiter (CAL), Very High Frequency Protection (VHF), Direct Current Protection (DC), Short Circuit Protection, Current-Clip Limiter, Voltage Clip Limiter, Temperature protection; Amplifier platform Inter Sample Voltage Peak Limiter (ISVPL) Configurable Peak voltage threshold and profile Amplifier gain Digital configurable amplifier gain 22 - 44 dB; Dynamic range > 112 dB; Load impedance analysis Yes; Temperature regulated fans (front-to-rear airflow) and show must go on limitation (ATL, PTL); Internal Sample Rate / Data path 96 kHz / 32 bit floating point; Product propagation delay AES 96 kHz / analog input 1.61 / 1.68 ms; Lake processing; Loudspeaker processing Up to 4 modules of Classic/linear-phase/FIR crossover, EQ, delay, LimiterMax™ - peak and RMS limiters System tuning Group control with Raised Cosine™ MESA EG™ asymmetric filters; Input redundancy / Matrix Automatic 4 level input redundancy / 4 input mixers; System integration Comprehensive 3rd party protocol over UDP Ethernet; Dante Audio Network Dante I/O 8 x 8; Network topology / redundancy Flexible topology / Supports daisy-chained and Dual redundant networks; Sample Rates / Transport 48, 96 kHz / Uni + Multicast; Network latency 0.25, 0.5, 1.0, 2.0, 5.0 ms; AES Inputs 4 AES inputs; Supported sample rates / resolution 44.1, 48, 88.2, 96, 176.4, 192 kHz / up to 24 bits; Sample rate conversion THD+N 20 Hz - 20 kHz unweighted 0.0000003; Analog Inputs 4 high quality inputs with Iso-Float ground isolation; Maximum input / digital reference +26 dBu / +21 dBu; Sampling rate / Resolution 96 kHz / 24 bit; Input impedance balanced / unbalanced 20 / 10 kOhm; THD+N (typical at 1 kHz unweighted) 0.0000022; THD+N (typical at 20 Hz and 20 kHz unweighted) 0.0000033; Back panel Interface Analog inputs 4 x Terminal block connectors analog input with +, - and ground; AES inputs 4 x Terminal block connectors analog input with +, - and ground; Output connectors 4 x 2 pole Terminal block connectors rated at 1000 V / 41 A (exceeding amplifier capacity) Can take up to 8 mm2 (8.2 AWG) cables; Ethernet Ports 2 x EtherCon RJ45 Lake Controller, Dante controller and/or DLM (3rd party protocol); Detachable mains cord Detachable locking 3-pin IEC rated at 250 V / 16 A; Front-panel user interface System status indication 3 x tri-color LED. FRAME, TEMP, PSU for device status indication; Channel status indication 3 x tri-color LED per channel. Status indication separated for channel LOAD, AMP, SIGNAL status; Mute Per channel touch button for MUTE control and tri-color LED for indication; Power Touch button for ON/STANDBY control and tri-color LED for power state indication; Select Touch button and LED for bidirectional device software select functionality; Mains Power Nominal voltage 100 - 240 Volt AC 50 - 60 Hz; Operating voltage 70 - 265 V AC 45 - 66 Hz; Mains wall plug; Selectable on order CEE 7/7 "Schuko" 230 V / 16 A, NEMA 5-15 125 V / 15 A, BS1363-A 250 V / 13 A, IA16A3 250 V / 16 A, AU/NZ 250 V / 10 A, JP 125 V / 15 A, CPCS-CCC 250 V / 10 A; Power supply features Soft start / Inrush power Yes; Power factor correction > 0.98 for mains power > 300 W; Regulated switch mode power supply (R.SMPS) Yes; Breaker Emulation Limiter (BEL) No; BEL max current threshold Fixed 8 A; Power Average Limiter (PAL) Yes; Under Voltage Limiter (UVL) Yes; Mains undervoltage and overvoltage protection and mains glitch tolerance Yes; Dimensions Rack rail to rear panel W: 483 mm (19"), H: 44 mm (1 U), D: 425 mm (16.7"); Overall depth front-rear support D: 463 mm; Weight 7.9 kg (17.3 lbs); Finish Black painted steel chassis with grey painted steel front with detachable grille; Approvals CE, ETL (ANSI/UL, CSA), PSE, RCM, BIS, CCC
D40 4L LAB.GRUPPEN D40:4L 4 CHANNEL POWER AMPLIFIER	LAB.GRUPPEN	D40 4L		2			1	2	D40 4L LAB.GRUPPEN D40:4L 4 CHANNEL POWER AMPLIFIER. Rational Power Management™ (RPM) – True flexibility in allocating total available power output across channel count for most efficient use of system inventory; Any channel capable of being significantly scaled up for driving high power elements (e.g. subwoofers); Lake processing Classic/linear-phase/FIR speaker processing platform with 4 throughputs; Input with multitude of automatic redundancy (4) "Lake class" analog inputs with Iso-Float™ ground isolation; (4) AES inputs; (8) Dual Redundant Dante™ inputs; Integration potential with 3rd party matrix systems including BSS, Q-SYS and MediaMatrix via purpose developed middleware; CAFÉ (Configuring Amplifiers For the Environment) Software incorporating ESP (Equipment Specification Predictor) for design, system planning and equipment planning, installation and commissioning. Regulated Switch-Mode Power Supply (R.SMPS™); Breaker Emulation Limiter (BEL™) to prevent power interruption; Under-voltage Limiting (UVL™) for continued operation despite severe voltage drops; Best-in-class Power Factor Correction (PFC) with Current Draw Modelling; Proven and reliable IDEEA Class D Output Stage with direct drive 70 and 100 V constant voltage systems as well as low impedance; Dedicated on-board surveillance & load monitoring system; Redundant audio inputs and onboard system surveillance for mission-critical Voice Alarm applications (PA/VA); Detachable Phoenix plug-in audio connectors for audio I/O. Lab Gruppen D 40:4L Specifications: Processing / Network: Lake / Dante; Number of amplifier channels: 4; Total burst power all channels (share among channelswith RPM): 4000 W; Lake processing: Loudspeaker processing: Up to 4 modules of Classic/linear-phase/FIR crossover, EQ, delay, LimiterMax™ - peak and RMS limiters; System tuning: Group control with Raised Cosine™ MESA EG™ asymmetric filters; Input redundancy / Matrix: Automatic 4 level input redundancy / 4 input mixers; System integration: Comprehensive 3rd party protocol over UDP Ethernet Dante Audio Network:Dante I/O 8 x 8 Network topology / redundancy: Flexible topology / Supports daisy-chained and Dual redundant networks; Sample Rates / Transport: 48, 96 kHz / Uni + Multicast Network latency: 0.25, 0.5, 1.0, 2.0, 5.0 ms Back panel Interface:Analog inputs: 4 x Terminal block connectors analog input with +, - and ground AES inputs: 4 x Terminal block connectors analog input with +, - and ground Output connectors: 4 x 2 pole Terminal block connectors rated at 1000 V / 41 A (exceeding amplifier capacity) Can take up to 8 mm2 (8.2 AWG) cables Ethernet Ports: 2 x EtherCon RJ45 Lake Controller, Dante controller and/or DLM (3rd party protocol) Detachable mains cord: Detachable locking 3-pin IEC rated at 250 V / 16 A Front-panel user interface: System status indication: 3 x tri-color LED. FRAME, TEMP, PSU for device status indication Channel status indication: 3 x tri-color LED per channel. Status indication separated for channel LOAD, AMP, SIGNAL status Mute: Per channel touch button for MUTE control and tri-color LED for indication Power: Touch button for ON/STANDBY control and tri-color LED for power state indication Select: Touch button and LED for bidirectional device software select functionality Dimensions: Rack rail to rear panel: W: 483 mm (19"), H: 44 mm (1 U), D: 425 mm (16.7") Overall depth front-rear support: D: 463 mm Weight: 8.3 kg (18.3 lbs) Finish: Black painted steel chassis with grey painted steel front withdetachable grille

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34x16 Matrix Mixer with Signal Processor	Yamaha	MTX5-D		1			1	2	Memory bank: PRESET: 50; Mixing Capacity: Mixing Channel : 16 Mono + 3 Stereo + 2 Effect Return + 8 Insert Output Busses: 16 Mono Input Channel Functions:Mono CH : 3-band PEQ, Comp, Gate, Auto Gain Control, Feedback suppressor (only available in ch 1-8) Stereo CH: 3-band PEQ, Comp, Auto Gain Control Output Channel Functions: Room Delay, Room EQ, Speaker Processor, X-Over (1-way,2-way), Delay, 6-band PEQ, Limiter Internal Processing: Priority Ducking, Ambient Noise Compensator Sampling frequency rate: 48kHz /44.1kHz Signal delay: Less than 3.0ms (AD-DA @48kHz) Total harmonic distortion: Less than 0.05% (+4dBu, Gain:-6dB), Less than 0.1% (+4dBu, Gain:+66dB) Frequency response: 20Hz to 20kHz, +0.5dB, -1.5dB Dynamic range: 107dB (Gain:-6dB) Hum & noise level: (20Hz to 20kHz), Rs=150 Ohms Phantom Power: +48V Crosstalk (@1kHz): -100dB Heat diffusion: 55.9kcal/h max Power requirements: AC100V-240V 50Hz/60Hz Power consumption: 50W Dimensions: 18.9" W x 3.4" x 13.9" D Weight: 13.9 lbs
Totals									