

STENTOFON Audio Paging System

A & E GUIDE SPECIFICATIONS

PART I: GENERAL

1.1 WORK INCLUDED

- A. Furnish and install a complete wired Audio Paging System as described herein and shown on the plans. System shall include input controls, amplifiers, speakers, loudspeaker horns, sound reproducers, wire/cable, connectors, and accessories as required for an operational system.
- B. Scope of work shall include all Audio Paging equipment.

1.2 CONTRACT DOCUMENTS

- A. All work in this section shall comply with all contract documents.

1.3 RELATED WORK

- A. Communications contractor shall coordinate all work with other contractors and trades where necessary.
- B. All necessary conduit, raceways, pull boxes, standard boxes, (and special boxes, provided by audio equipment manufacturer), shall be installed by the electrical contractor.

(Note to specifier: indicate scope and all related work)

1.4 QUALITY ASSURANCE

- A. Installation shall comply with all applicable codes.
- B. All equipment shall be new, in current production and the standard products of one acceptable audio manufacturer.
- C. The system shall be installed by a factory authorized and trained, communications contractor.

1.5 WARRANTY

- A. All Audio Equipment shall include a factory warranty that equipment is free from defects in design, material, manufacturing, and operation. Factory Warranty shall be for (36) months from date of shipment from the manufacturer.
- B. Installing contractor shall guarantee the equipment, wire, cable and installation for (1) year from date of acceptance.

1.6 SUBMITTALS

- A. Shall include all data necessary to evaluate the function, quality and suitability of the equipment and the configuration of the system.

(Note to specifier : Indicate submittal requirements)

PART II: PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. The system and products described herein are based on the Audio Products as manufactured by Zenitel USA, Kansas City, Missouri. The Stentofon products meet all requirements of the specifications and shall be considered as the acceptable Base Bid.
- B. Any substitutions must meet all requirements of prior approval, as outlined in the contract documents. Substituted products that meet prior approval must be listed as an Alternate.

2.2 SYSTEM CONFIGURATION

(Note to specifier: Describe system configuration)

2.3 EQUIPMENT AND PRODUCTS

- A. **INTEGRATED MIXER AMPLIFIER (20 WATT)**
Shall be a compact (20) watt general purpose amplifier, capable of mixing two channels of audio input. Front controls shall include a Power On/Off switch, LED, Mic 1 & Mic 2 Volume Control, Aux volume control and Bass and Treble control. Frequency response shall be 60-15K Hz \pm 3 dB. Distortion (THD) shall be less than 1%, @ 1 KHz, at rated power. Inputs shall be screw terminals for MIC: 1 mV, 250 ohms, Balanced. TEL: 100 mV, 600 ohms, balanced. Outputs shall be transformer isolated screw terminals, switchable for 8 ohms or 25/70 & 100 volt speakers. Signal-to-Noise Ratio (S/N) shall be; MIC: 60 dB. TEL: 75 dB. Tone controls shall be; Bass: \pm 10 dB @ 100 Hz, Treble \pm 10 dB @ 10 KHz. Music or program mute shall be < -40 dB (adjustable) from MIC/TEL inputs. Dimensions shall not exceed 10.7" W x 3.5" H x 11.8" D. Shall be Stentofon #1801-A.
- B. **INTEGRATED MIXER AMPLIFIER (40 WATT)**
Shall be a compact (40) watt general purpose amplifier, capable of mixing two channels of audio input. Front controls shall include a Power On/Off switch, LED, Mic 1 & Mic 2 Volume Control, Aux volume control and Bass and Treble control. Frequency response shall be 60-15K Hz \pm 3 dB. Distortion (THD) shall be less than 3%, @ 1 KHz, at rated power. Inputs shall be screw terminals. MIC: 1 MVP, 250 ohms, Balanced. TEL: 100 mV, 600 ohms, Balanced. AUX: 100mV, 47 K ohms, unbalanced with RCA jack input. Outputs shall be transformer isolated screw terminals, switchable for 8 ohms or 25/70 & 100 volt speakers. Signal-to-Noise Ratio (S/N) shall be; MIC: 60 dB; TEL: 75 dB. Tone controls shall be; Bass: \pm 10 dB @ 100 Hz, Treble \pm 10 dB @ 10 KHz. Music or program mute shall be < -40 dB (adjustable) from MIC/TEL inputs. Shall include a switchable Hi-Pass Filter, at 315 Hz, -3dB (6 dB/Octave). Dimensions shall not exceed 10.7" W x 3.5" H x 11.8" D. Shall be Stentofon #1803-A.
- C. **INTEGRATED MIXER AMPLIFIER (60 WATT)**
Shall be a (60) watt general purpose, integrated amplifier capable of mixing (5) channels of audio inputs. Frequency response shall be 60-15K Hz \pm 3 dB. Distortion (THD) shall be less than 3%, at 1 KHz, at rated output. Signal-to-noise ratio shall be -80 dB for the power amp only, and -70 dB for the AUX & TEL input. Inputs shall include: (5) MIC at 150 ohm, 0.3mv, balanced, (3) AUX at 47 K ohm, 100 mv, and a TEL at 600 ohm, 100 mv, balanced (with vox muting).

Muting shall be set at -30 dB, (0-50 dB adjustable). Built-in Telephone/Intercom input shall have separate input level screw driver adjustment on rear of amplifier. Shall have provision for optional XLR type plug-in

connectors. Each MIC input shall have Phantom Power (12-16 volts) available by optional internal strapping. Front controls shall include: Power on/off switch and LED, master volume, bass, treble, and (5) combination MIC & AUX volume controls. Power on switch shall include a slow delay to protect speakers and prevent "popping." Outputs shall be screw terminals for 8 ohms, 25,70 & 100 volt speakers, plus muting control. The preamp and power amp sections shall be separated and in/out terminal provide to allow cascading of amplifiers and preamp-out connection to tape recorders or in/out connection of external compressors or equalizers. Dimensions shall not exceed 3.5" H x 16.9" W x 11.8" D. Shall be Stentofon #1806-A.

D. INTEGRATED MIXER AMPLIFIER (120) WATTS

Shall be a (120) watt general purpose, integrated amplifier capable of mixing (5) channels of audio inputs. Frequency response shall be 60-15K Hz \pm 3 dB. Distortion (THD) shall be less than 3%, at 1 KHz, at rated output. Signal-to-noise ratio shall be -80 dB for the power amp only, and -70 dB for the AUX & TEL input. Inputs shall include: (5) MIC at 150 ohm, 0.3mv, balanced, (3) AUX at 47 K ohm, 100 mV, and a TEL at 600 ohm, 100 mV, balanced (with vox muting). Muting shall be set at -30 dB, (0-50 dB adjustable). Built-in Telephone/Intercom input shall have separate input level screw driver adjustment on rear of amplifier. Shall have provision for optional XLR type plug-in connectors. Each MIC input shall have Phantom Power (12-16 volts) available by optional internal strapping. Front controls shall include: Power on/off switch and LED, master volume, bass, treble and (5) combination MIC, AUX, volume controls. Power on switch shall include a slow delay to protect speakers and prevent "popping." Outputs shall be screw terminals for 8 ohms, 25&70 and 100 volt speakers, plus muting control. The preamp and power amp sections shall be separated and in/out terminal provided to allow cascading of amplifiers and preamp connection to tape recorders or in/out connection of external compressors or equalizers. Power input shall include a 5 amp protective fuse and the output shall include overload protective circuits with an Overload LED indicator on the front panel. Dimensions shall not exceed 3.5" H x 16.9" W x 11.8" D. Shall be Stentofon #1812-A.

E. CEILING SPEAKER, GENERAL PURPOSE

Shall be a general purpose paging speaker designed to flush mount in plaster or lift-out ceilings. Shall include a speaker, transformer and grille. Speaker shall be 8", paper cone, with 8 ohm voice coil, 5 oz magnet, capable of 8 watts of power. Transformer shall be designed for 70 volts, with (5) "pigtail" taps between .25 and 4 watts for volume adjustment. Frequency shall be between 60 - 17K Hz, with a sensitivity of 93 dB. Grille baffle shall be round, 22 guage steel, finished in white baked epoxy, with 4 mounting holes 11.25" apart. Shall be Stentofon #18161.

F. CEILING SPEAKER, MUSIC

Shall be a full range paging and commercial background music speaker designed to flush mount in plaster or lift-out ceilings. Shall include a speaker, transformer and grille. Speaker shall be 8", dual paper cone, with a hard fiber tweeter, with 8 ohm, 1" voice coil, 10 oz. barium ferrite ceramic magnet, capable of 15 watts of power. Transformer shall be designed for 25 or 70 volts, with (5) "pigtail" taps between .25 and 5 watts for volume adjustment. Frequency shall be between 60 - 16K Hz, with a sensitivity of 96 dB. Grille baffle shall be round, 22 guage steel, with hidden mounting studs, finished in white baked epoxy, with 4 mounting holes 11.25" apart. Shall be Stentofon #18160.

- G. **TAMPER RESISTANT CEILING SPEAKER**
Shall be a general purpose paging speaker designed with a double reinforced, steel tamper resistant speaker grille. Grille baffle shall be round, two-pieces, #14 guage steel, with hidden mounting studs, finished in off-white baked epoxy. Speaker shall be 8" paper cone, with 5 oz. ceramic magnet, capable of 8 watts of power. Transformer shall be designed for a 70 volt balanced, and (5) taps for volume adjustments up to (4) watts. Shall be Stentofon #1817.
- H. **WALL MOUNT SPEAKER**
Shall be a general purpose paging speaker designed for surface wall mounting. Shall include a speaker, transformer and wooden composition baffle and grille. Speaker shall be 8", paper cone, with 8 ohm voice coil, 5 oz magnet, capable of 8 watts of power. Transformer shall be designed for 70 volts, with (5) "pigtail" taps between .25 and 4 watts for volume adjustment. Frequency shall be between 60 - 17K Hz, with a sensitivity of 93 dB. Sloping wooden baffle shall be finished in walnut. Shall be Stentofon #1818.
- I. **LOUDSPEAKER HORN 15 WATT**
Shall be a heavy duty, outdoor, all metal loudspeaker designed for general purpose paging from a central amplifier on a 70 volt, balanced audio line. Shall include a transformer, with screw driver adjustable taps on the coil windings to vary output power (volume) between .9 and 15 watts. Frequency response shall be 275-14K Hz. Sound level pressure shall be 121 dB @ 4', at 1K Hz on axis, at rated output. Dispersion shall be 110° from axis. Shall include a universal, 3-way adjustable mounting bracket. Dimensions shall be 8.5" W x 13" L. Shall be an all metal housing, finished in gray epoxy. Shall be Stentofon #1850.
- J. **LOUDSPEAKER HORN 30 WATT**
Shall be a heavy duty, outdoor, all metal loudspeaker designed for general purpose paging from a central amplifier on a 70 volt, balanced audio line. Shall include a transformer, with screw driver adjustable taps on the coil windings to vary output power (volume) between 1.8 and 30 watts. Frequency response shall be 275-14K Hz. Sound level pressure shall be 125 dB @ 4', at 1K Hz on axis, at rated output. Dispersion shall be 100° from axis. Shall include a universal, 3-way adjustable mounting bracket. Dimensions shall be 10.5" W x 15" L. Shall be an all metal housing, finished in gray epoxy. Shall be Stentofon #1851.
- K. **LOUDSPEAKING HORN 10 WATT**
Shall be heavy duty, outdoor, all metal loudspeaker designed specifically for intercom paging and talkback applications. Shall have a frequency response of 300-15K Hz, sound pressure level of 112 dB, @ 4' on axis, at a rated output of 10 watts of audio power. Sensitivity as a microphone shall be -22 dBm, with a dispersion of 110° from axis. Voice coil impedance shall be 8 ohms. Shall include a universal, 3-way adjustable mounting bracket, and an integral 18" hook-up cable with molded strain relief. Dimension shall be 6" W x 8" L. Shall be Stentofon #1840.
- L. **LOUDSPEAKING HORN 30 WATT**
Shall be general purpose, high efficiency, all metal, indoor/outdoor, loudspeaker, capable of reproducing 30 watts of audio power from an intercom amplifier. Voice coil impedance shall be 8 ohms. Frequency response shall be 300-7K Hz, ± 3 dB, with a sound pressure level of 125 dB, ± 2 dB, and a nominal dispersion of 60° (at 2K Hz). Shall include a universal, 3-way adjustable mounting bracket. Shall be made of Aluminum with a gray epoxy finish. Dimensions shall be 10.5" L x 10.5" W, with a minimum weight of 5.25 lbs. Shall be Stentofon # 1842.

- M. **FLUSH CEILING BACKBOX**
Shall be all metal, round box specifically designed to flush mount 8" speakers in ceilings. Shall be made of 22 gauge steel, coated with a protective finish and including a visco/elastic audio damping compound. Shall include 4 combination 1/2"-3/4" conduit knockouts. Required when using 18160 or 18160 ceiling speakers. Shall be Stentofon #1830.
- N. **CEILING MOUNT BRACKET**
Shall be all metal, bracket designed to flush mount 8" speakers for load bearing support is ceiling speaker unit is mounted in acoustical tile ceiling. Shall be Stentofon #1832.
- O. **WIRE & CABLE**
All necessary wire, cable and connectors to be provided by dealer or contractor installing the audio system.

PART III: EXECUTION

3.1 INSTALLATION

- A. Shall be installed by qualified audio technicians.
- B. All wiring shall be uniform, properly tagged and identified, and installed in accordance with the National Electric Code.
- C. Shall be installed and adjusted per manufactures instructions.

3.2 SYSTEM TESTING

- A. System shall be tested to insured that all components are hooked-up and working, and that the system functions in accordance with the plans and specifications.
- B. System shall be tested in the presence of the owners representative.

3.3 OWNER INSTRUCTION

- A. Installing contractor shall conduct up to (4) hours of instruction in the use, operation, and trouble-shooting of the system to designated owner representatives, within (30) days of system acceptance.

3.4 ON - SITE - SPARES

(Note to specifier: indicate spares required)