

TOA Electronics, Inc.

**Architects & Engineering Specifications for
IR-802 Classroom IR Wireless System**

IR-802 IR Wireless Tuner / Mixer

The IR wireless system shall consist of an integrated IR (Infra-Red) tuner and audio mixer in a 1U height, ½ rack metal housing measuring 8.3" (W) x 1.8" (H) x 12.3" (D) and weighing 3.7 lbs. The unit is capable of being rack-mounted via an optional rack kit (MB-15B-BK) or wall/desk-mount via an option wall-bracket (TBA). The unit shall provide two independent IR channels, each selectable to one of two available IR frequencies in the 3 mHz range (3.10 & 3.35 mHz). Each channel shall have an independent front panel input level control. The unit shall also be equipped with (3) Auxiliary line input channels which will allow connection of various sources. Each will be designated for a particular source. These include (but are not limited to) DVD Player, PC & MP3 Player, each with a corresponding rear panel input connector (1/8" mini-plug, dual RCA & 1/8" mini-plug respectively) and front panel input level adjustment. There shall be a 1/8" mini-plug connection with volume control for use with an ALD (Assisted Listening Device) though this may also be used for recording or remote classroom feed. The rear panel shall be equipped with a 2-wire MUTE IN jack (on removable phoenix connector) allowing priority override via VOX signal from a school-wide paging source. This signal will mute the classroom audio as well as the ALD output. The rear panel shall be equipped with a three-band Equalizer, providing tonal adjustment for the classroom sound. The unit shall have a rear panel RJ-45 jack for connection to the remote powered speaker/IR sensor via CAT5 wiring. The unit shall power from a supplied external 24VDC power adapter and shall consume a max of 40W at rated output (IR-802SP). Security caps for front panel adjustment knobs shall be supplied and may replace the existing knobs to prevent unauthorized tampering.

The unit shall be called the TOA IR-802T.

IR-820SP Powered speaker / IR Sensor

The IR-802 wireless system shall also consist of an integrated Powered Speaker & IR Sensor. The speaker shall be an in-ceiling type consisting of a 5" low-frequency driver & 1" coaxially mounted high-frequency driver housed in a UL plenum-rated metal back-can with a perforated metal grille. The speaker shall generate sound with a dispersion angle of 170° within the vocal range and provide high-intelligibility for typical 30' x 30' classroom environments. The unit's housing shall measure 12.6" in diameter and 8.1" in depth and shall weigh 7.5 lbs. The speaker shall be powered by an internal Class D amplifier, producing a maximum output of 20W with less than 5% distortion. The unit shall also incorporate an integrated IR sensor array configured around the front speaker grill and will be fitted with a matte-finished, dark-tinted plexi-glass cover. The IR sensor will provide 360° angle of coverage and transmit signals received on both IR channels. The rear-can connection shall be an RJ-45 type mounted in a recessed well behind a hinged cover plate. The unit will connect to the IR-802T via standard CAT5 cable, which will transmit the IR sensor signals to the tuner/mixer, as well as the input audio and DC power signal to the speaker. The unit shall be supplied with a standard reinforcement trim ring and detachable steel safety cable. An optional tile bridge kit (HY-TB1) will also be available.

The unit shall be called the TOA **IR-820SP**.

Compatible IR Wireless Transmitters

There shall be two available IR microphone transmitters. Each will be capable of operating on one of two selectable IR frequencies in the 3 MHz range (3.10 & 3.35 MHz) and two of either model (or one of each) can operate simultaneously with a single IR-702T Tuner in a given (optically isolated) location. Each transmitter will also be capable of operation on either two AA alkaline batteries or two rechargeable AA NiMH batteries for continuous operation of up to 10hrs. Both transmitter units shall have gold-plated charging contacts on the bottom portion of the casing and may be charged by direct insertion into an optional battery charging station.

IR-200M Handheld IR Wireless Microphone

The hand-held-style transmitter model shall be housed in a cylindrical ABS plastic case measuring 1.3" (W) x 5.8"(H) x 0.4" (D) & weighing .4 lbs (incl. batteries). It shall include an integrated uni-directional condenser microphone for maximum gain-before-feedback. There shall be an array of multiple IR LEDs at the front of the housing and one LED at the rear to facilitate clear transmission regardless of vertical orientation. There shall be an accessible on/off switch on the barrel of the transmitter. The lower portion of the case shall slide open to allow access to the battery compartment and controls for frequency select. There shall also be a switch to select Hi or Low transmission output for compensating for operating distance or battery life. The unit shall have a frequency response of 100Hz to 12kHz and can accept a maximum Sound Pressure Level of 120dB. The unit shall be treated with an anti-bacterial coating to help reduce the likelihood of transmitting common bacterial agents from user to user. The unit shall work with standard AA alkaline batteries (x2) or optional IR-200BT NiMH rechargeable batteries.

The unit shall be called the TOA **IR-200M**.

IR-300M Pendant IR Wireless Microphone

The pendent-style transmitter model shall be housed in an ABS plastic case measuring 2.5" (W) x 3.6" (H) x 1.1" (D) & weighing .3lbs (incl. batteries & strap). It shall include an integrated omni-directional microphone and also an input for use with an external lapel or headset mic (such as YP-M101 or WH-4000H) via a 3.5mm mini-jack. There shall be an array of multiple IR LEDs at the front of the housing to facilitate clear transmission. There shall be an internal switch for selecting sensitivity for use with different external microphones. The unit shall have a frequency response of 100Hz to 12kHz and can accept a maximum Sound Pressure Level of 120dB. The unit shall be treated with an anti-bacterial coating to help reduce the likelihood of transmitting common bacterial agents from user to user. An integrated nylon lanyard allows the pendent to be comfortably worn around the user's neck. The unit shall work with standard AA alkaline batteries (x2) or optional IR-200BT NiMH rechargeable batteries.

The unit shall be called the TOA **IR-300M**.

IR-200BC Battery Charger

The unit shall be a two mic charging dock adaptable to accept insertion of an IR-200M or IR-300M mic in either receptacle (with supplied adapters), when the IR-200BT NiMH rechargeable. The unit shall perform full charge to each mic in approximately 3 hours. The unit's charging cradles shall each incorporate non-shorting contacts at the bottom of the well, which are compatible with contacts on each IR microphone. The unit shall include LED indicators for charging status on each receptacle (RED=Charging / GREEN=Charge Complete). The unit shall also have a power on/off switch and a jack for connection of the supplied DC power adapter. (The IR-200BT NiMH rechargeable batteries are optional for each IR mic).

The unit shall be called the TOA **IR-200BC**.

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