

KB-211 KB-211GM Two-Channel Speaker Stations



KB-211

FEATURES

- **Selectable two-channel, full-duplex operation**
- **Microprocessor-controlled logic and switching**
- **Momentary/latching talk button**
- **Visual and audible call signaling, with bright LED indicator**
- **Balanced local program input with separate level control**
- **Internal controls for call signal tracking, mic latch disable, and other functions**
- **Use with headset or handset, with integral speaker for monitoring**
- **KB-211GM adds mic jack for gooseneck mic plus VOX circuitry**
- **Optional TW and 4-Wire daughter boards provide additional flexibility**
- **Wall or console mount, or optional V-Box for portable or desktop use**

DESCRIPTION

The KB-211 remote speaker station permits the user to select between two channels of party-line communications, with the ability to talk and/or listen on the selected channel. The user can listen via the integral speaker, or may use a headset or telephone-style handset – and can talk via a headset mic, a telephone handset, or a push-to-talk microphone.

The KB-211GM adds a gooseneck-mic connector and VOX circuitry, for hands-free full-duplex communications without a headset. A switch allows the user to choose between the optional GM-9 or GM-18 microphone and the headset connector. The adjustable-sensitivity, close-in VOX feature automatically detects the user's voice at the mic and dips the level of the integral speaker while increasing the gain of the microphone, performing in the opposite manner when listening. The potential for acoustic feedback is minimized while permitting natural conversation levels and dynamics.

Microprocessor-controlled logic and switching yields a feature-rich intercom station in a compact format. Electronic switching for the talk button, with mic-on LED indicator, permits momentary or latching operation. For call signaling, a bright LED lights when a call is activated on a connected intercom channel. A defeatable audible call signal, with level control, is also provided.

Separate level controls are provided for intercom level and for balanced program input. A local program source may be fed to the station, allowing the user to monitor that source while remaining in contact on the intercom system. The balanced program input can also be used in conjunction with the stage-announce output of a main station to provide a paging interrupt, allowing paging at the KB station even if the intercom volume control is turned down.

A set of option dip switches is located at the top of the circuit board. Switches are provided for mic-latch disable (momentary-only talk), long-line operation, channel selection, call signal tracking, and audible call signaling.

These versatile stations may be wall or console mounted in a standard U.S. 4-gang electrical box, or may be mounted in the optional V-Box for desktop, surface-mount, or portable applications.

Either of the stations may be used with the optional 4-wire or TW (two channels on a single mic cable) daughter boards. With the TW board, the stations become plug-in compatible with a Clear-Com TW system. The 4-wire board creates separate send and receive circuits, so that the station may be attached to fiber-optic lines or other audio routing systems with 4-wire connections.

The stations are powered by the intercom line or by a local power supply when used with the optional 4-wire daughter board.



KB-211GM
(detail showing mic connector and mic/headset switch)

KB-212 Single-Channel Speaker Station



KB-212

FEATURES

- **Single-channel, push-to-talk speaker station**
- **Four different modes of operation, internally programmable**
- **Microprocessor-controlled logic and switching**
- **Flush-mounted internal microphone**
- **Visual and audible call signaling, with bright LED indicator**
- **Balanced local program input with separate level control**
- **Optional TW and 4-Wire daughter boards provide additional flexibility**
- **Wall or console mount, or optional V-Box for portable or desktop use**

DESCRIPTION

The KB-212 remote speaker station connects to a single channel of party-line intercom, and operates in half-duplex mode, similar to a walkie-talkie. It features both an integral speaker and a flush-mount electret microphone with mic limiter and a push-to-talk button. The station may be programmed via two internal dip switches to operate in four different modes, activated by other stations within the intercom system.

The different operating modes are activated using the call signaling function of another station, which allows for individual control of the speaker and microphone. The default mode is speaker on/mic off, with push-to-talk active on the front panel. In the remote page mode, the mic is activated locally and the speaker is off except when turned on by another station. For remote push-to-talk, the speaker is on and mic is off, unless it is turned on by another station. And in the talk-back remote page mode, the mic is normally on for hands-free talking and the speaker is off; another station can turn off the microphone and turn on the speaker for paging to the KB-212.

Microprocessor-controlled logic and switching yields a feature-rich intercom station in a compact format. An electronic momentary-only talk button activates the talk function. A green LED indicator lights whenever the mic is activated, either by the talk button or by remote control from another station. Mic sensitivity is selectable for either close or distant voice pickup.

The KB-212 offers both visual and audible call signaling, gaining the attention of the user when not at the station. A bright yellow LED lights when a call is activated on a connected intercom channel. A defeatable audible call signal, with level control, is also provided.

Separate level controls are provided for intercom level and for balanced program input. A local program source may be fed to the station, allowing the user to monitor that source while remaining in contact on the intercom system. The balanced program input can also be used in conjunction with the stage-announce output of a main station to provide a paging interrupt. This would allow paging at the station even if the intercom volume control is turned down. In addition, the intercom volume control of the KB-212 can be internally set so that an incoming message would still be audible, even if the control was turned all the way down.

The KB-212 may be wall or console mounted in a standard 4-gang electrical box, or may be mounted in the optional V-Box for desktop, surface-mount, or portable applications. It may be used with the optional 4-wire or TW (two channels on a single mic cable) daughter boards. The station is powered by the intercom line or by a local power supply when used with the optional 4-wire daughter board.

ACCESSORIES

4-WIRE OPTION MODULE

The EB-4 W4-wire option module plugs into pins on the KB-211, KB-211GM, and KB-212 speaker stations. It consists of the necessary circuitry and connectors to convert any of these stations to 4-wire operation, and can accept two 4-wire connections. This option allows the speaker station to be used at much longer distances than are possible with a standard two-wire intercom line, and also permits the station to operate via fiber optic cable and other devices with 4-wire connections. The module provides a transformer-isolated audio connection, and does not transfer the call signal. A station using this option module must be locally powered.

TW OPTION MODULE

The EB-TW option module plugs into pins on the KB-211, KB-211GM, and KB-212 speaker stations. This option allows the station to send and receive two channels of audio on a single 3-pin microphone cable. With the TW module in place, the station can become a part of a Clear-Com TW system, and is compatible with TW beltpacks and other components.

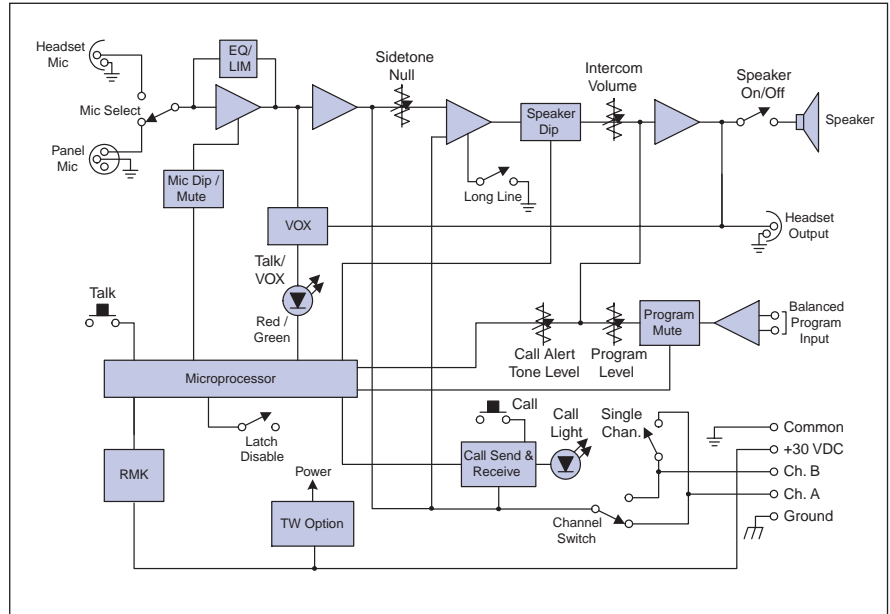
V-BOX DESKTOP/WALL-MOUNT ENCLOSURE

The V-Box converts any of the KB speaker stations into a desktop, portable, or wall-mount unit. The station panel may be secured with four screws in one of the two mounting spaces, for either an angled or a vertical panel orientation. A blank plate with mounting keyholes is provided to cover the second mounting space. 3-pin XLR male and female connectors are mounted on the side panel, wired to a connector block for easy connection to the speaker station. The rugged metal and stained-wood enclosure is both durable and attractive for long-term professional use.

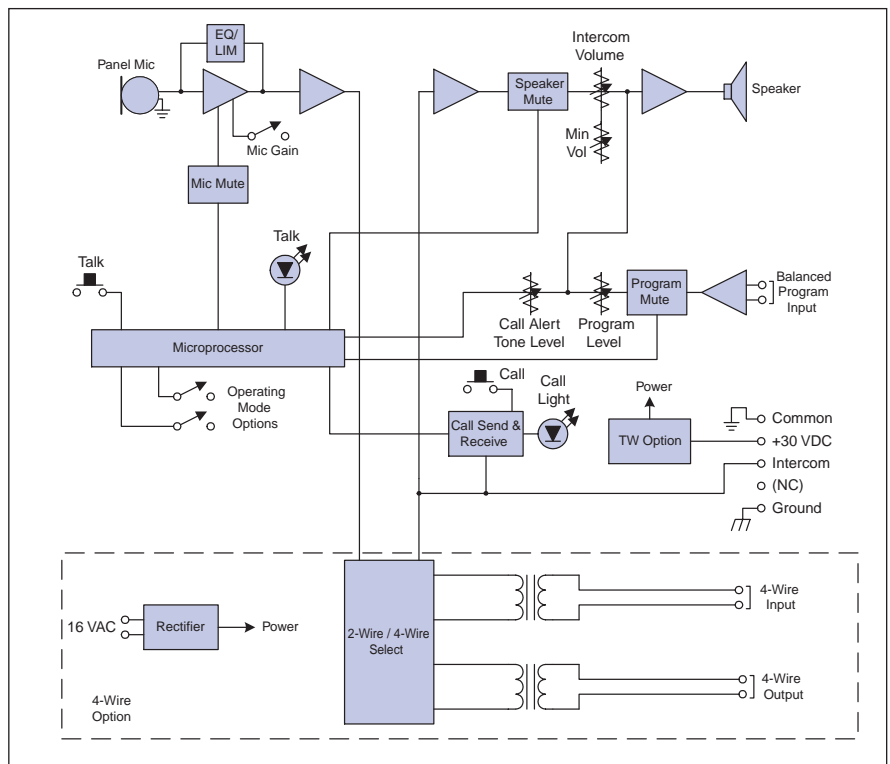


V-Box

BLOCK DIAGRAMS



KB-211GM (KB-211 does not include mic switch or vox circuitry.)



KB-212, shown with 4-wire option module

KB-211, 211GM SPECIFICATIONS

HEADSET MICROPHONE PRE-AMP

Input Type: Dynamic
 Impedance: 1,000 Ohms
 Input Level: -55 dBV nominal; -10 dBV max.
 Gain from headset mic to intercom line: +41 dB

PANEL MICROPHONE PRE-AMP (KB-211GM ONLY)

Input Type: Electret
 Input Level: -45 dBV nominal
 Gain from panel mic to intercom line:
 +31 dB VOX not tripped
 +41 dB VOX tripped

PRE-AMP RESPONSE CURVE

Frequency Response: 250 Hz - 12 kHz,
 contoured for intelligibility
 Limiter Range: 20 dB

HEADPHONE AMPLIFIER

Load Impedance Range: 50 - 2,000 Ohms
 Output Level: +20 dBV across 600 Ohms, minimum
 Distortion: < 0.5% THD @ 1 kHz
 Frequency Response: 200 Hz - 15 kHz, +/-3 dB
 Gain from intercom line: +37 dB
 Power Output: 110 dB SPL

SPEAKER AMPLIFIER

Speaker Type: 2.5" round, 16 Ohms
 Power Output: 2 watts into 16 Ohms
 Frequency Response: 200 Hz - 15 kHz, +/-3 dB
 Signal-to-Noise: 75 dB
 Gain from intercom line: +37 dB
 Distortion: < 0.5% THD @ 1 kHz
 Speaker Level: 98 dB SPL @ 3 feet

PROGRAM AMPLIFIER

(Transformerless, balanced differential input)
 Input Level: -20 dBV
 Input Impedance: > 100K Ohms
 Frequency Response: 150 Hz - 15 kHz, +/-3 dB

POWER REQUIREMENTS

Voltage: 30 volts DC standard unit;
 16 - 18 VAC with 4-Wire Option Module
 Current: 100 mA, average

INTERNAL CONNECTORS

Intercom: 5-position plug-on screw terminals
 Program: 3-position plug-on screw terminals
 AC Power (4-Wire Option Module):
 2-position plug-on screw terminals

INTERNAL CONTROLS

(1) Call Signal jumper; (3) Option switches;
 (1) Tone Alert Volume control

FRONT PANEL CONNECTORS

Panel Mic: (1) 1/4" panel mounting jack
 (KB-211GM only)
 Headset: (1) XLR-4M

FRONT PANEL CONTROLS & INDICATORS

(1) Panel / Headset Mic switch (KB-211GM only);
 (1) Program Level control; (1) Intercom volume control;
 (1) Sidetone Null control; (1) Talk button;
 (1) Call button; (1) VOX control (KB-211GM only);
 (1) Channel selector; (1) Speaker On-Off switch;
 (1) Talk LED; (1) Call LED

ENVIRONMENTAL

32° - 122° F (0° - 50° C)

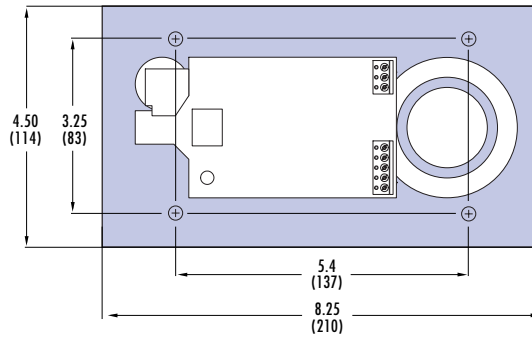
DIMENSIONS

8.25" W x 4.5" H x 1.75" D
 (210 mm x 114 mm x 44 mm)

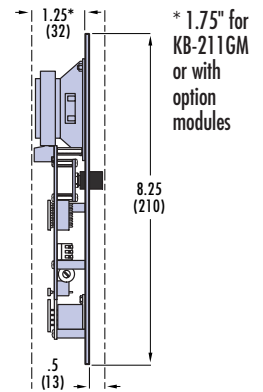
WEIGHT

1.22 lbs. (0.56 kg)

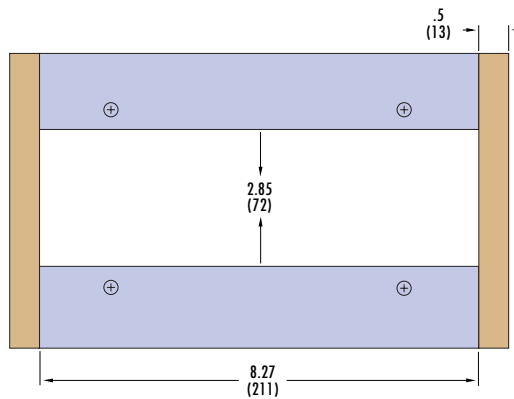
DIMENSIONAL DRAWINGS



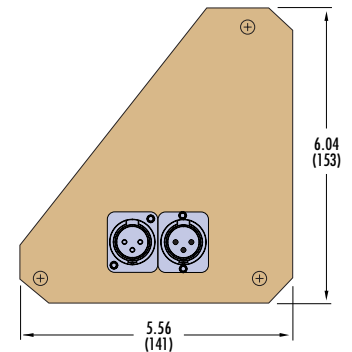
KB-211 REAR VIEW



KB-211 SIDE VIEW



V-BOX FRONT VIEW



V-BOX SIDE VIEW

KB 212 SPECIFICATIONS

PANEL MICROPHONE PRE-AMP

Input Type: Electret
 Gain from panel mic to intercom line: +25 dB,
 low sensitivity; +31.5 dB, high sensitivity

PRE-AMP RESPONSE CURVE

Frequency Response: 250 Hz - 12 kHz,
 contoured for intelligibility
 Limiter Range: 20 dB

SPEAKER AMPLIFIER

Speaker Type: 2.5" round, 16 Ohms
 Power Output: 2 watts into 16 Ohms
 Frequency Response: 200 Hz - 15 kHz, +/-3 dB
 Signal-to-Noise: 75 dB
 Gain from intercom line: +37 dB
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 Speaker Level: 98 dB SPL @ 3 feet

PROGRAM AMPLIFIER

(Transformerless, balanced differential input)
 Input Level: -20 dBV
 Input Impedance: > 100K Ohms
 Frequency Response: 150 Hz - 15 kHz, +/-3 dB

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Voltage: 30 volts DC standard unit;
 16 - 18 VAC with 4-Wire Option Module
 Current: 100 mA, average

INTERNAL CONNECTORS

Intercom: 5-position plug-on screw terminals
 Program: 3-position plug-on screw terminals
 AC Power (4-Wire Option Module):
 2-position plug-on screw terminals

INTERNAL CONTROLS

(3) Option switches; (1) Tone Alert Volume control;
 (1) Minimum Volume Level control

FRONT PANEL CONTROLS & INDICATORS

(1) Program Level control; (1) Intercom volume control;
 (1) Talk button; (1) Call button;
 (1) Talk LED; (1) Call LED

ENVIRONMENTAL

32° - 122° F (0° - 50° C)

DIMENSIONS

8.25" W x 4.5" H x 1.75" D
 (210 mm x 114 mm x 44 mm)

WEIGHT

1.04 lbs. (0.47 kg)

KB-211/212: Use 1.5" minimum electrical box
 KB-211GM OR WITH OPTION MODULES:
 Use 2.0" minimum electrical box

Specifications are subject to change without notice. * 0 dBv is referenced to 0.775 volts rms

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