



## COMMERCIAL AUDIO

**Preamplifier-Mixers**

**Amplifiers**

**Mixer-Amplifiers**

**XM Business Music Systems**





## Adaptable

### ► FEATURES

- 4 or 8 inputs, 1 or 2 output channels.
- Ideal for commercial and industrial use.
- Balanced Phoenix-type mic/line inputs; RCA inputs.
- Balanced Phoenix-type line outputs.
- Any input can be sent to any output.
- Built-in tone generator.
- Priority muting.
- Independent bass and treble controls for each input.

Model	Inputs	System Zones
14M	4	Single-zone
28M	8	Two-zone

### ► SPECIFICATIONS

#### Performance

**Frequency Response** (at line out): 20 Hz to 20 kHz +/- 1 dB.

**Signal to Noise Ratio** (master volume at minimum): 100 dB.

**THD**: 0.05% typical with 800 mV balanced input, 1V output.

**Input Sensitivity** (volts RMS for full output at maximum gain):

Balanced mic inputs: 3 mV.  
Balanced line inputs: 800 mV.  
RCA connectors: 400 mV.

**Input Impedance** (nominal):

Mic: 400 ohms.  
Line: 100 kilohms.  
RCA: 50 kilohms.

**Crosstalk** (all controls at "10"): -50 dB at 1kHz.

**Line Output Level** (nominal): 1.2 V into 10 kilohms.

**Phantom Power**: 15 VDC.

**AC Line Voltage and Frequency Configurations Available:**

100V 50/60 Hz.  
120V 60 Hz.  
220V 50/60 Hz.  
230V 50/60 Hz.  
240V 50/60 Hz.

**Operating Temperature/Humidity**: 0° C to 40° C at 95% relative humidity (non-condensing).

**Storage Temperature**: -20° C to 85° C.

#### Front Panel Controls and Indicators

**Power Switch**: Push-button on-off switch. The power switch does not affect the 24V DC auxiliary power input.

**Input Volume Controls**: Microphone/line, four in 14M, eight in 28M. Detented potentiometers with knobs.

**Tone Controls**: Bass and Treble non-detented potentiometers on each input channel. Bass ±10 dB at 100 Hz, Treble ±10 dB at 10 kHz.

**Power Indicator**: Blue LED indicates power on.

**Input Signal Presence Indicator**: Green LED, one for each input channel, illuminates when input signal exceeds -24 dBu (line) or -70 dBu (mic).

**Output Signal Presence Indicator**: Green LED, one for each output channel, illuminates when output signal level exceeds 100 mV.

**Clip Indicators**: Red LED, one per output channel. Illuminates at threshold of audible distortion.

**Output Volume Controls**: One per output channel. Detented potentiometer with knob.

#### Back Panel Controls and Connectors

**Fuse**: Protects the power supply.

**AC Power Inlet**: Detachable IEC.

**Auxiliary Power Input**: 2-position terminal strip for 24 VDC (±10%) backup power. Accepts up to 10 AWG terminal forks.

**Mixer Config Switch**: A DIP switch with two functions:

1. Assigns an input as the priority input for each output, thereby temporarily muting the remaining inputs. Muting is activated by contact closure.
2. Global enable switch for phantom power. Does not affect RCA inputs. Default position is off.

**Priority Connector**: 3-pin Phoenix-type connector allows Input 1 or Input 5 (28M only) to mute other input signals by contact closure.

**Input Routing Switch (28M only)**: DIP switches that assign each input signal to each output. Two switches per input.

**Line Out Connector**: One 3-pin balanced Phoenix-type connector per output channel. Level controlled by master volume control.

**Tone Generator Connector**: 5-pin Phoenix-type connector. Tones include Pre-Announce Chime, Bell, Alert Tone, and Evacuate Tone. All tones are activated by contact closures on the connector.

**Tone Level**: One potentiometer per output channel sets the volume of the tones. Tone level is not affected by output volume controls.

**Input Connectors**: Mic/Line Connector: 3-pin Phoenix-type, balanced, one per input channel.

**Dual RCA Input Connector**: For stereo music signals, unbalanced, summed together, two connectors per input channel.

**Mic/line Switch**: Selects mic-level or line-level signals. One switch for each balanced input

#### Included Accessories

Power cord.  
Detachable rack ears.  
Phoenix-type connectors.  
Spade lugs.

#### Dimensions

EIA Standard 19-inch (48.3-cm) rack mount width (EIA RS-310-B) with rack ears, 1.7-inch (4.3-cm) height and 10.7-inch (27.18-cm) depth behind the mounting surface.

#### Weight

**Net Weight:**  
14M: 8.7 lb (3.9 kg).  
28M: 8.7 lb (3.9 kg).

#### Shipping Weight:

14M: 14 lb (6.4 kg).  
28M: 14 lb (6.4 kg).

#### Regulatory Certifications



Note: All measurements are related to 120VAC units 60 Hz unless otherwise specified. Specifications for units supplied outside the U.S.A. may vary slightly at different AC voltages and frequencies.

The Crown® 14M and 28M are high-value mixers for commercial and industrial audio. The mixers are part of Crown's Commercial Audio Series, which also includes mixer-amplifiers and power amplifiers. These low-cost units provide all necessary features in a simple building-block format. Some applications include schools, hospitals, factories, restaurant/retail, houses of worship, fitness facilities, A/V boardrooms, correctional facilities, and small offices. Typical uses are paging, background music, security and evacuation instructions. Input routing allows each input to be assigned to any output. You can add more mixers for more inputs, or add more power amps (or mixer-amps) to handle more zones. Other features include priority muting, phantom power, and a four-tone generator.



## Power Zone

### ► FEATURES

- Ideal for commercial and industrial use.
- Balanced Phoenix-type line inputs; touch-proofed screw-terminal speaker outputs.
- Advanced protection system includes output current limiting, DC protection, circuit breaker/fuse, and thermal protection.
- 1 or 2 inputs; 1 to 2 amplifier output channels.

#### POWER OUTPUT\*

Models	4-ohm	70V/100V	Inputs	System Zones
<b>180A</b>	<b>80W</b>	<b>80W</b>	<b>1</b>	<b>Single-zone</b>
<b>280A</b>	<b>80W</b>	<b>80W</b>	<b>2</b>	<b>Two-zone</b>
<b>1160A</b>	<b>160W</b>	<b>160W</b>	<b>1</b>	<b>Single-zone</b>

\*Minimum guaranteed power in watts at 1 kHz with 0.5% THD.

### ► SPECIFICATIONS

#### Performance

**Frequency Response** (at 1 watt from 4-ohm tap): 70 Hz to 19 kHz +/- 1 dB.

**Frequency Response** (at line out): 20 Hz to 20 kHz +/- 1 dB.

**Power Bandwidth** (at 4-ohm tap, 2 dB below maximum 1 kHz power): 50 Hz to 20 kHz with < 0.5% THD

**Signal to Noise Ratio** (ref. to rated power, master volume at minimum): 85 dB.

**DC Output Offset:** < ±5 mV.

**THD:** Less than 0.5% at rated power at 1 kHz.

**Input Sensitivity** (for full output at maximum gain): 800 mV.

**Input Impedance** (nominal): 100 kilohms.

**Crosstalk** (all controls at "10"): -70 dB at 1kHz.

**Line Output Level** (nominal): 1V into 10 kilohms.

#### AC Line Voltage and Frequency Configurations Available:

100V 50/60 Hz.

120V 60 Hz.

220V 50/60 Hz.

230V 50/60 Hz.

240V 50/60 Hz.

**Operating Temperature/Humidity:** 0° C to 40° C at 95% relative humidity (non-condensing).

**Storage Temperature:** -20° C to 85° C.

#### Front Panel Controls and Indicators

**Power Switch:** Push-button on-off switch. The power switch does not affect the 24V DC auxiliary power input.

**Power Indicator:** Blue LED indicates power on.

**Output Signal Presence Indicator:** Green LED, one for each output channel, illuminates when output signal level exceeds 100 mV (45 dB below full power) from the 4-ohm tap.

**Clip Indicators:** Red LED, one per output channel. Illuminates at threshold of audible distortion.

**Master Volume Controls:** One per output channel. Detented potentiometer with knob.

**Tone Controls:** Bass and Treble non-detented potentiometers on each channel. Bass ±10 dB at 100 Hz, Treble ±10 dB at 10 kHz.

#### Back Panel Controls and Connectors

**Reset Switch:** Resets the circuit breaker that protects the power supply. 220/230/240V units have a fuse instead.

**AC Power Inlet:** Detachable IEC.

**Auxiliary Power Input:** 2-position terminal strip for 24 VDC (±10%) backup power. Accepts up to 14 AWG terminal forks.

**Amplifier Outputs Connectors:** One per channel, 4-position terminal strip with COM (Common), 4 ohms, 70V and 100V terminals. Accepts up to 10 AWG terminal forks. Non-touch cover included.

**Output VCA Connector:** One for every two channels, 4-pin Phoenix-type connector for two VCA control lines of +10 VDC and ground. Compatible with Crown 1-VCAP and 4-VCAP modules.

**Line Out Connector:** One 3-pin balanced Phoenix-type connector per output channel. Post master, pre-VCA. Level controlled by master volume control.

**Amp Input Connector:** 3-pin Phoenix-type, high-impedance balanced, one per amplifier channel.

#### Cooling

Convection cooled.

#### Protection

**Current Limit Protection:** Included.

**Thermal Limit Protection:** Over-temperature thermal cutout.

**DC-Fault Load Protection:** Included.

#### Included Accessories

Power cord.

Detachable rack ears.

Screws for rack ears.

Non-touch cover for output connectors.

Phoenix-type connectors.

Spade lugs.

#### Optional Accessories

1-VCAP remote volume control for one channel.

4-VCAP remote volume control for four channels.

#### Dimensions

EIA Standard 19-inch (48.3-cm) rack mount width (EIA RS-310-B) with rack ears, 3.5-inch (8.9-cm) height and 12.2-inch (31.0-cm) depth behind the mounting surface (not including non-touch cover). 4.1 inches (10.5 cm) high including feet. 13.9 inches (35.2 cm) deep from front of knobs to back of non-touch cover.

#### Weight

**Net Weight:**

180A: 21.0 lb (9.5 kg).

280A: 25.3 lb (11.5 kg).

1160A: 25.3 lb (11.5 kg).

**Shipping Weight:**


180A: 26.0 lb (11.8 kg).

280A: 30.3 lb (13.7 kg).

1160A: 30.3 lb (13.7 kg).

#### Regulatory Certifications


 (all models)


 (180A and 280A only)

Note: All measurements are related to 120VAC units 60 Hz in stereo mode with 8-ohm loads at 1-kHz at rated power unless otherwise specified. Specifications for units supplied outside the U.S.A. may vary slightly at different AC voltages and frequencies.

The Crown® 180A, 280A and 1160A are high-value amplifiers for commercial and industrial audio. They provide 4-ohm and constant-voltage outputs (70V and 100V). The amps are part of Crown's Commercial Audio Series, which also includes mixers and mixer-amps. These low-cost units provide all necessary features in a simple building-block format.



## 6-Channel

### ► FEATURES

- 6 inputs; 6 amplifier output channels.
- Balanced Phoenix-type line inputs; touch-proof screw-terminal speaker outputs.
- Advanced protection system includes output current limiting, DC protection, circuit breaker/fuse, and thermal protection.
- Ideal for commercial and industrial use.

### ► SPECIFICATIONS

#### Performance

**Frequency Response** (at 1 watt from 4-ohm tap): 70 Hz to 19 kHz  $\pm 1$  dB.

**Frequency Response** (at line out): 20 Hz to 20 kHz  $\pm 1$  dB.

**Power Bandwidth** (at 4-ohm tap, 2 dB below maximum 1 kHz power): 50 Hz to 20 kHz with  $< 0.5\%$  THD

**Signal to Noise Ratio** (ref. to rated power, master volume at minimum): 85 dB.

**DC Output Offset:**  $< \pm 5$  mV.

**THD:** Less than 0.5% at rated power at 1 kHz.

**Input Sensitivity** (for full output at maximum gain): 800 mV.

**Input Impedance** (nominal): 100 kilohms.

**Crosstalk** (all controls at "10"):  $-70$  dB at 1kHz.

**Line Output Level** (nominal): 1V into 10 kilohms.

**AC Line Voltage and Frequency Configurations Available:**

**100V** 50/60 Hz.

**120V** 60 Hz.

**220V** 50/60 Hz.

**230V** 50/60 Hz.

**240V** 50/60 Hz.

**Operating Temperature/Humidity:** 0° C to 40° C at 95% relative humidity (non-condensing).

**Storage Temperature:**  $-20^{\circ}$  C to 85° C.

#### Front Panel Controls and Indicators

**Power Switch:** Push-button on-off switch. The power switch does not affect the 24V DC auxiliary power input.

**Power Indicator:** Blue LED indicates power on.

**Output Signal Presence Indicator:** Green LED, one for each output channel, illuminates when output signal level exceeds 100 mV (45 dB below full power) from the 4-ohm tap.

**Clip Indicators:** Red LED, one per output channel. Illuminates at threshold of audible distortion.

**Master Volume Controls:** One per output channel. Detented potentiometer with knob.

**Tone Controls:** Bass and Treble non-detented potentiometers on each channel. Bass  $\pm 10$  dB at 100 Hz, Treble  $\pm 10$  dB at 10 kHz.

#### Back Panel Controls and Connectors

**Reset Switch:** Resets the circuit breaker that protects the power supply. 220/230/240V units have a fuse instead.

**AC Power Inlet:** Detachable IEC.

**Amplifier Outputs Connectors:** One per channel, 4-position terminal strip with COM (Common), 4 ohms, 70V and 100V terminals. Accepts up to 10 AWG terminal forks. Non-touch cover included.

**Output VCA Connector:** One for every two channels, 4-pin Phoenix-type connector for two VCA control lines of +10 VDC and ground. Compatible with Crown 1-VCAP and 4-VCAP modules.

**Amp Input Connector:** 3-pin Phoenix-type, high-impedance balanced, one per amplifier channel.

#### Cooling

Convection cooled.

#### Protection

**Current Limit Protection:** Included.

**Thermal Limit Protection:** Over-temperature thermal cutout.

**DC-Fault Load Protection:** Included.

#### Included Accessories

Power cord.  
Detachable rack ears.  
Screws for rack ears.  
Non-touch cover for output connectors.  
Phoenix-type connectors.  
Spade lugs.

#### Optional Accessories

1-VCAP remote volume control for one channel.  
4-VCAP remote volume control for four channels.

#### Dimensions

EIA Standard 19-inch (48.3-cm) rack mount width (EIA RS-310-B) with rack ears, 3.5-inch (8.9-cm) height and 12.2-inch (31.0-cm) depth behind the mounting surface (not including non-touch cover). 4.1 inches (10.5 cm) high including feet. 13.9 inches (35.2 cm) deep from front of knobs to back of non-touch cover.

#### Weight

**Net Weight:** 30.3 lb (13.7 kg).

**Shipping Weight:** 35.3 lb (16.0 kg).

#### Regulatory Certifications



Note: All measurements are related to 120VAC units 60 Hz in stereo mode with 8-ohm loads at 1 kHz at rated power unless otherwise specified. Specifications for units supplied outside the U.S.A. may vary slightly at different AC voltages and frequencies.

#### POWER OUTPUT\*

Model	4-ohm	70V/100V	Inputs	System Zones
660A	60W	60W	6	Six-zone

\*Minimum guaranteed power in watts at 1 kHz with 0.5% THD.

The Crown® 660A is a very flexible, high-value six-channel amplifier for commercial and industrial audio. It provides 4-ohm and constant-voltage outputs (70V and 100V) on channels 1 through 4, and 4-ohm outputs on channels 5 and 6. The 660A is a part of Crown's Commercial Audio Series, which also includes mixers and mixer-amps. These low-cost units provide all necessary features in a simple building-block format.





## Practical

### ► FEATURES

- 4 to 8 inputs, 1 to 2 amplifier output channels.
- Ideal for commercial and industrial use.
- Balanced Phoenix-type mic/line inputs; touch-proofed screw-terminal speaker outputs.
- Any input can be sent to any output.
- Priority muting.
- Built-in four-tone generator.

#### POWER OUTPUT\*

Models	4-ohm	70V/100V	Inputs	System Zones
<b>180MA</b>	<b>80W</b>	<b>80W</b>	<b>4</b>	<b>Single-zone</b>
<b>280MA</b>	<b>80W</b>	<b>80W</b>	<b>8</b>	<b>Two-zone</b>
<b>1160MA</b>	<b>160W</b>	<b>160W</b>	<b>4</b>	<b>Single-zone</b>

\*Minimum guaranteed power in watts at 1 kHz with 0.5% THD.

### ► SPECIFICATIONS

#### Performance

**Frequency Response:** 30 Hz to 15 kHz  $\pm$ 1 dB at line out.

**Power Bandwidth:** 50 Hz to 20 kHz with < 0.5% THD at 2 dB below maximum 1 kHz power.

**Signal to Noise Ratio:** 85 dB, master volume at minimum.

**DC Output Offset:** <  $\pm$ 5 mV.

**THD:** Less than 0.5% at rated power at 1 kHz.

**Input Sensitivity** (for full output at maximum gain):

- Balanced mic inputs: 3 mV.
- Balanced line inputs: 800 mV.
- RCA connectors: 400 mV.

#### Input Impedance:

- Mic: 400 ohms.
- Line: 100 k ohms.
- RCA: 50 k ohms.

**Crosstalk:** -70dB at 1kHz.

**Line Output Level** (nominal): 1V into 10 kilohms.

**Phantom Power:** 15 VDC.

#### AC Line Voltage and Frequency Configurations

**Available:** 100V 50/60 Hz; 120V 60 Hz; 220V 50/60 Hz; 230V 50/60 Hz; 240V 50/60 Hz.

**Operating Temperature/Humidity:** 0°C to 40°C at 95% relative humidity (non-condensing).

**Storage Temperature:** -20°C to 85°C.

#### Front Panel Controls and Indicators

**Power Switch:** Push-button on-off switch.

**Input Volume Controls:** Microphone/line, four in 180MA and 1160MA, eight in 280MA. Detented pots with knobs.

**Tone Controls:** Bass and Treble non-detented potentiometers on each input channel. Bass  $\pm$ 10 dB at 100 Hz, Treble  $\pm$ 10 dB at 10 kHz.

**Power Indicator:** Blue LED indicates power on.

**Input Signal Presence Indicator:** Green LED, one for each input channel, illuminates when input signal exceeds -24 dBu (line) or -70 dBu (mic).

**Output Signal Presence Indicator:** Green LED, one for each output channel, illuminates when output signal level exceeds 100 mV.

**Clip Indicators:** Red LED, one per output channel. Illuminates at threshold of audible distortion.

**Output Volume Controls:** One per output channel. Detented pot with knob.

#### Back Panel Controls and Connectors

**Reset Switch:** Resets the circuit breaker that protects the power supply.

**AC Power Inlet:** Detachable IEC.

**Auxiliary Power Input:** 2-position terminal strip for 24 VDC ( $\pm$ 10%) backup power. Accepts up to 14 AWG terminal forks.

**Amplifier Outputs Connector:** One per channel, 4-position terminal strip with Com, 4 ohms, 70V and 100V terminals. Accepts up to 14 AWG terminal forks. Non-touch cover included.

**Output VCA Connector:** 4-pin Phoenix-type connector for two VCA control lines of +10 VDC and ground. Compatible with Crown 1-VCAP and 4-VCAP modules.

**Amp Config Switch:** A DIP switch with two functions:

1. Assigns one of the inputs as the priority input for each output, thereby temporarily muting the remaining inputs. Muting is activated by contact closure.
2. Global enable switch for phantom power. Does not affect RCA inputs. Default position is off.

**Priority Connector:** 3-pin Phoenix-type connector allows Input 1 or Input 5 (280MA only) to mute other input signals by contact closure.

**Input Routing Switch** (280MA only): DIP switches that assign each input signal to each output. One switch per input.

**Line Out Connector:** One 3-pin balanced Phoenix-type connector per output channel. Post master, pre-VCA, with level control.

**Tone Generator Connector:** 5-pin Phoenix-type connector. Tones include Bell, Pre-Announce Chime, Alert Tone, and Evacuate Tone. All tones are activated by contact closures on the connector.

**Tone Level:** One per channel, a rear-panel potentiometer that sets the volume of the tones.

**Input Connectors:** Mic/Line Connector, 3-pin Phoenix-type, low-impedance balanced, one per input channel. Dual RCA for stereo music signals,

unbalanced, summed together, two connectors per input channel. Amp Input Connector, 3-pin Phoenix-type, high-impedance balanced, one per amplifier channel. Used to link an additional mixer to the mixer-amplifier.

**Mic/line Switch:** Selects mic-level or line-level signals. One switch for each balanced input.

**Link In/Out Switch:** Slide switch, one per channel. With the Link Switch IN, any signal applied to the Amp Input connector will be mixed with the input signal(s). With the Link Switch OUT, only the signal from the Amp Input Connector will appear at the amplifier output.

#### Cooling

Convection cooled.

#### Protection

Current Limit Protection; Thermal Limit Protection (over-temperature thermal cutout); DC-Fault Load Protection.

#### Included Accessories

Power Cord. Detachable rack ears. Non-touch cover for output connectors.

#### Optional Accessories

1-VCAP remote volume control for one channel. 4-VCAP remote volume control for four channels.

#### Dimensions

EIA Standard 19-inch (48.3-cm) rack mount width (EIA RS-310-B), 3.5-inch (8.9-cm) height and 14-inch (35.6-cm) depth behind the mounting surface.

#### Weight:

**Net Weight:**

180MA: 21.0 lbs. (9.5 kg).

280MA: 25.3 lbs. (11.5 kg)

1160MA: 25.3 lbs. (11.5 kg).

**Shipping Weight:**

180MA: 26.0 lbs. (11.8 kg).

280MA: 30.3 lbs. (13.7 kg).

1160MA: 30.3 lbs. (13.7 kg).

#### Regulatory Certifications



Note: All measurements are related to 120VAC units 60 Hz in stereo mode with 8-ohm loads at 1-kHz at rated power unless otherwise specified. Specifications for units supplied outside the U.S.A. may vary slightly at different AC voltages and frequencies.

## COMMERCIAL AUDIO

Crown's Commercial Audio mixer/amplifiers deliver legendary Crown quality to the commercial audio industry. These high-value mixer-amplifiers provide both 4-ohm and constant-voltage outputs (70V and 100V) for use in a wide range of commercial applications including schools, hospitals, factories, restaurant/retail, houses of worship, fitness facilities, A/V boardrooms, correctional facilities, and small offices. Easily configured for a range of uses such as paging, background music, security, and evacuation instructions, Crown's Commercial Audio units are the smart choice for commercial sound.



## Music & Paging

### ► FEATURES

- 4 inputs (each with a volume control), one 40W amplifier output channel.
- Ideal for paging, background music, and music-on-hold.
- Balanced Phoenix-type mic/line inputs, telephone input, dual RCA stereo music inputs, touch-proof screw-terminal speaker outputs.
- Priority ducking.
- Independent bass and treble controls for each input.

### POWER OUTPUT\*

Model	4-ohm	70V/100V	Inputs	System Zones
140MPA	40W	40W	4	Single-zone

\*Minimum guaranteed power in watts at 1 kHz with 0.5% THD.

### ► SPECIFICATIONS

#### Performance

**Frequency Response** (at 1 watt from 4-ohm tap): 50 Hz to 15 kHz  $\pm$  1 dB.

**Frequency Response** (at line out): 50 Hz to 15 kHz  $\pm$  1 dB.

**Power Bandwidth** (at 4-ohm tap, 2 dB below maximum 1 kHz power): 50 Hz to 20 kHz with < 0.5% THD.

**Signal to Noise Ratio** (ref. to rated power, master volume at minimum): >90 dB.

**DC Output Offset:** <  $\pm$ 5 mV.

**THD:** < 0.5% at rated power at 1 kHz.

**Input Sensitivity** (for full output at maximum gain):

**Balanced mic inputs:** 3 mV.

**Balanced line inputs:** 800 mV.

**RCA connectors:** 400 mV.

**Input Impedance** (nominal):

Mic: 400 ohms.

Line: 100 kilohms.

RCA: 50 kilohms.

**Crosstalk:** -70dB at 1kHz.

**Line Output Level** (nominal): 1V into 10 kilohms.

**Phantom Power:** 15 VDC.

**AC Line Voltage and Frequency Configurations Available** ( $\pm$ 10%):

120V/60Hz.

**Operating Temperature/Humidity:** 0° C to 40° C at 95% relative humidity (non-condensing).

**Storage Temperature:** -20° C to 85° C.

#### Front Panel Controls and Indicators

**Power Switch:** Push-button on-off switch.

**Input Volume Controls:** Four controls, one per input. Detented potentiometers with knobs.

**Tone Controls:** Bass and Treble non-detented recessed potentiometer on each input channel. Bass  $\pm$ 10 dB at 100 Hz, Treble  $\pm$ 10 dB at 10 kHz.

**Power Indicator:** Blue LED indicates power on.

**Input Signal Presence Indicator:** Green LED, one for each input channel, illuminates when input signal exceeds -40 dBu.

**Output Signal Presence Indicator:** Green LED illuminates when output signal level exceeds 100 mV (45 dB below full power) from the 4-ohm tap.

**Clip Indicator:** Red LED on output illuminates at threshold of audible distortion.

**Master Output Volume Control:** Detented potentiometer with knob.

#### Back Panel Controls, Connectors and Indicators

**Reset Switch:** Resets the circuit breaker that protects the power supply.

**AC Power Inlet:** Detachable IEC.

**Amplifier Output Connector:** 4-position terminal strip with COM (Common), 4 ohms, 25V and 70V terminals. Accepts up to 10 AWG terminal forks. Non-touch cover included.

**Output VCA Connector:** 4-pin Phoenix-type connector for two VCA control lines of +10 VDC and ground. Compatible with Crown 1-VCAP module.

**Priority Connector:** 3-pin Phoenix-type connector for push-to-talk mic contact closure.

**Preamp Line Out Connector:** 3-pin balanced Phoenix-type connector. Post master, pre-VCA. Level controlled by master volume control.

**MOH 1V Level Control:** Trim pot adjusts level for Music-On-Hold 1V output.

**MOH 1W Level Control:** Trim pot adjusts level for Music-On-Hold 1W output.

**MOH SPI Indicator:** Flashes when MOH signal is present.

**MOH 1V Phoenix Connector:** 3-pin Phoenix connector for 1V, 600-ohm transformer-isolated output.

**MOH 1W Phoenix Connector:** 3-pin Phoenix connector for 1W output.

**MOH 1V RCA Connector:** Two mono RCA connectors for 1V output (in parallel with 600-ohm connections so they are isolated).

**Balanced Input Connector:** Detachable 3-pin Phoenix style connector for balanced line-level signals, one each for input channels 2-4.

**Balanced Input Connector:** Detachable 3-pin Phoenix style connector for balanced mic-level line-level signals, for input channel 1.

**Tel Connector:** Transformer-isolated 600-ohm input, summed into Input 1 for paging from a telephone system.

**Dual RCA Input Connector:** For stereo music signals, unbalanced, summed together, two connectors per input channel.

**Amp Input Connector:** 3-pin Phoenix-type, high impedance balanced. Used to link an additional mixer to the mixer-amplifier. Can be used to connect an external processor.

**Mic/line Switch:** Selects mic-level or line-level signal for Input 1.

**Phantom Power Switch:** Turns phantom power on or off for Input 1.

**VOX Threshold:** Trim pot controls how loud the voice must be before ducking occurs. Can be set for no ducking.

**Link In/Out Switch:** Slide switch. When set to IN, any signal applied to the Amp Input connector will be mixed with the input signal(s). When set to OUT, only the signal from the Amp Input Connector will appear at the amplifier output.

**Priority Connector:** 3-pin Phoenix-type connector for push-to-talk mic contact closure. Input 1 is the priority input for the amplified output, so Input 1 ducks the other inputs. Threshold of activation depends on input voltage. Ducking does not affect MOH outputs.

**Active Indicator:** Illuminates when VOX ducking is active.

#### Cooling

Convection cooled.

#### Protection

**Current Limit Protection:** Included.

**Thermal Limit Protection:** Over-temperature thermal cutout.

**DC-Fault Load Protection:** Included.

**Turn On/Turn Off:** No thumps or pops.

#### Included Accessories

Power cord.

Detachable rack ears.

Screws for rack ears.

Non-touch cover for output connectors.

Phoenix-type connectors.

Spade lugs.

#### Optional Accessories

1-VCAP remote volume control.

#### Dimensions

**Width** (without rack ears): 17.3 in. (43.8 cm).

**Width** (with rack ears): EIA Standard 19 in. (48.3 cm) W (EIA RS-310-B).

**Height** (front panel): 3.5 in. (8.9 cm).

**Height** (including feet): 4.1 in. (10.5 cm).

**Depth** (front panel to back panel): 12.2 in. (31.0 cm).

**Depth** (front of knobs to back of non-touch cover): 13.9 in. (35.2 cm).

#### Weight

**Net Weight:** 17 lb (7.7 kg).

**Shipping Weight:** 22 lb (9.98 kg).

#### Regulatory Certifications



COMMERCIAL AUDIO

The Crown® 140MPA is a high-value mixer-amplifier for commercial audio. It provides 4-ohm and constant-voltage outputs (25V and 70V). Typical uses are paging, background music, and music-on-hold. The unit provides 4 inputs (each with a volume control) and a 40W amplifier output. Other features include priority ducking, phantom power, and capability for remote volume control. Multiple units can be linked.

COMMERCIAL AUDIO ► XM TUNER-MIXER-AMPLIFIERS

**180MAx Pack** (180MAx tuner-mixer-amplifier also available separately)



## XM Enabled

### ► FEATURES

- Programmable XM tuner with XM channel data display.
- Independent bass and treble controls for each input.
- Balanced Phoenix-type mic/line inputs; touch-proof screw-terminal speaker outputs.
- Priority ducking, Music-On-Hold (MOH) outputs.
- 180 MAx Pack includes four JBL Control 1ST 2-way speakers with 70V transformer and mounting brackets, remote control and XM antenna.

### ► SPECIFICATIONS

#### Performance

**Frequency Response** (at 1 watt from 4-ohm tap): 70 Hz to 19 kHz  $\pm 1$  dB.

**Frequency Response** (at line out): 20 Hz to 20 kHz  $\pm 1$  dB.

**Power Bandwidth** (at 4-ohm tap, 2 dB below maximum 1 kHz power): 50 Hz to 20 kHz with  $< 0.5\%$  THD

**Signal to Noise Ratio** (ref. to rated power, master volume at minimum): 85 dB.

**DC Output Offset:**  $< \pm 5$  mV.

**THD:** Less than 0.5% at rated power at 1 kHz.

**Input Sensitivity** (for full output at maximum gain):

Balanced mic inputs: 3 mV.

Balanced line inputs: 800 mV.

RCA connectors: 400 mV.

Isolated telephone input: 75 mV.

**Input Impedance** (nominal):

Mic: 400 ohms.

Line: 100 kilohms.

RCA: 50 kilohms.

Telephone: 600 ohms.

**Crosstalk:**  $-70$ dB at 1kHz.

**Line Output Level** (nominal): 1V into 10 kilohms.

**Phantom Power:** 15 VDC.

**AC Line Voltage and Frequency Configurations Available** ( $\pm 10\%$ ): 120V, 60 Hz.

**Operating Temperature/Humidity:** 0° C to 40° C at 95% relative humidity (non-condensing).

**Storage Temperature:**  $-20$ ° C to 85° C.

#### Front Panel Controls and Indicators

**Power Switch:** Push-button on-off switch.

**Input Volume Controls:** Four detented potentiometers with knobs.

Input 1: Microphone/line (switchable)/telephone.

Inputs 2 and 3: Line.

Input 4: XM radio.

**Tone Controls:** Bass and Treble non-detented recessed potentiometers on each input channel. Bass  $\pm 10$  dB at 100 Hz, Treble  $\pm 10$  dB at 10 kHz.

**XM Tuner Menu Button:** Selects Direct, Preset, or Category mode.

**XM Tuner Category Buttons:** Scrolls through categories (rock, classical, news, country, etc).

**XM Tuner Scroll Knob:** Lets you scroll through channels and select them.

**XM Tuner Display:** LCD screen displays XM channel data (channel number, channel name, artist name, song title), 16 station presets and signal strength.

**Power Indicator:** Blue LED indicates power on.

**Input Signal Presence Indicator:** Green LED illuminates when input signal exceeds  $-24$  dBu (line) or  $-70$  dBu (mic).

**Output Signal Presence Indicator:** Green LED, illuminates when output signal level exceeds 100 mV (45 dB below full power) from the 4-ohm tap.

**Clip Indicator:** Red LED on output illuminates at threshold of audible distortion.

**Output Volume Control:** Detented potentiometer with knob.

#### Back Panel Controls, Connectors and Indicators

**Reset Switch:** Resets the circuit breaker that protects the power supply.

**MOH 1V Level Control:** Trim pot adjusts level for Music-On-Hold 1V output.

**MOH 1W Level Control:** Trim pot adjusts level for Music-On-Hold 1W output.

**MOH Signal Presence Indicator:** Flashes when MOH signal is present.

**MOH Source Switch:** Switches between Input 3 or XM, and routes the source to MOH 1V Line Out and MOH 1W connectors.

**MOH 1W Select Switch:** Feeds 1W MOH signal either to amplifier output or internal speaker.

**MOH 1V Line Output RCA Connectors:** Two RCA connectors (mono) for 1-volt output (in parallel with 600-ohm connectors, so they are isolated).

**MOH 1W Line Output Connector:** 3-pin Phoenix connector provides Music-On-Hold signal of approximately 1 watt.

**MOH 1V Line Output Phoenix Connector:** 3-pin Phoenix connector, 600-ohm transformer-isolated output, provides Music-On-Hold signal of approximately 1 volt.

**Phantom Power Switch:** Turns phantom power on or off for Input 1.

**Mic/line Switch:** Selects mic-level or line-level signal for Input 1.

**Link In/Out Switch:** Slide switch. When set to IN, any signal applied to the Amp Input connector will be mixed with the input signal(s); when set to OUT, only the signal from the Amp Input Connector will appear at the amplifier output.

**Amplifier Output Connectors:** 4-position terminal strip with COM (Common), 4 ohms, 25V and 70V terminals. Accepts up to 10 AWG crimp-on terminal forks. Non-touch cover included.

**XM Radio Stereo Line Out Connector:** Dual RCA jacks for stereo music out from XM Radio tuner.

**Preamp Line Out Connector:** 3-pin balanced Phoenix-type connector. Post master, pre-VCA. Level controlled by master volume control.

**Output VCA Connector:** 3-pin Phoenix-type connector for two VCA control lines of +10 VDC and ground. Compatible with Crown 1-VCAP module.

**Priority Connector:** 3-pin Phoenix-type connector for push-to-talk mic switch. Contact closure activates ducking. Ducking does not affect Music-On-Hold outputs or XM stereo line out.

**Active Indicator:** LED illuminates when VOX ducking is active.

**VOX Threshold:** Trim pot adjusts how loud the voice must be before ducking occurs. Can be set for no ducking.

**Priority Release Control:** Trim pot adjusts release time of VOX ducking.

**Mic/Line Input Connector** (Input 1 only): 3-pin Phoenix-type, balanced.

**Line Input Connectors** (Inputs 2 and 3 only): 3-pin Phoenix-type, balanced.

**Dual RCA Input Connector:** For stereo music signals, unbalanced, summed together, two connectors per input for inputs 1, 2 and 3.

**TEL Input Connector:** Transformer-isolated 600-ohm input, summed into Input 1 for paging from a telephone system.

**Amp Input Connector:** 3-pin Phoenix-type, high-impedance balanced. Used to link an additional mixer to the mixer-amplifier. Can be used to connect an external processor.

**AC Power Inlet:** Detachable IEC.

**XM Radio Antenna Input:** Connects to the XM antenna cable.

#### Cooling and Protection

Convection cooled, current limiting, thermal limiting, DC Fault.

#### Included Accessories

Power cord, detachable rack ears, screws for rack ears, non-touch cover for output connectors, Phoenix-type connectors, spade lugs, XM antenna, remote control.

#### Optional Accessories

1-VCAP remote volume control.

#### Dimensions

**Width (without rack ears):** 17.3 in. (43.8 cm).

**Width (with rack ears):** EIA Standard 19-in. (48.3 cm) W (EIA RS-310-B).

**Height (front panel):** 3.5 in. (8.9 cm).

**Height (including feet):** 4.1 in. (10.5 cm).

**Depth (front panel to back panel):** 12.2 in. (31.0 cm).

**Depth (front of knobs to back of non-touch cover):** 13.9 in. (35.2 cm).

#### Weight

**Net Weight:** 20 lb (9.07 kg).

**Shipping Weight:** 25 lb (11.34 kg)

#### Regulatory Certifications



### COMMERCIAL AUDIO

Note: All measurements are related to 120VAC units 60 Hz in stereo mode with 4-ohm loads at 1-kHz at rated power unless otherwise specified. Specifications for units supplied outside the U.S.A. may vary slightly at different AC voltages and frequencies.

#### POWER OUTPUT\*

Model	4-ohm	25V/70V	Inputs	System Zones
<b>180MAx</b>	<b>80W</b>	<b>80W</b>	<b>4</b>	<b>Single-zone</b>

\*Minimum guaranteed power in watts at 1 kHz with 0.5% THD.

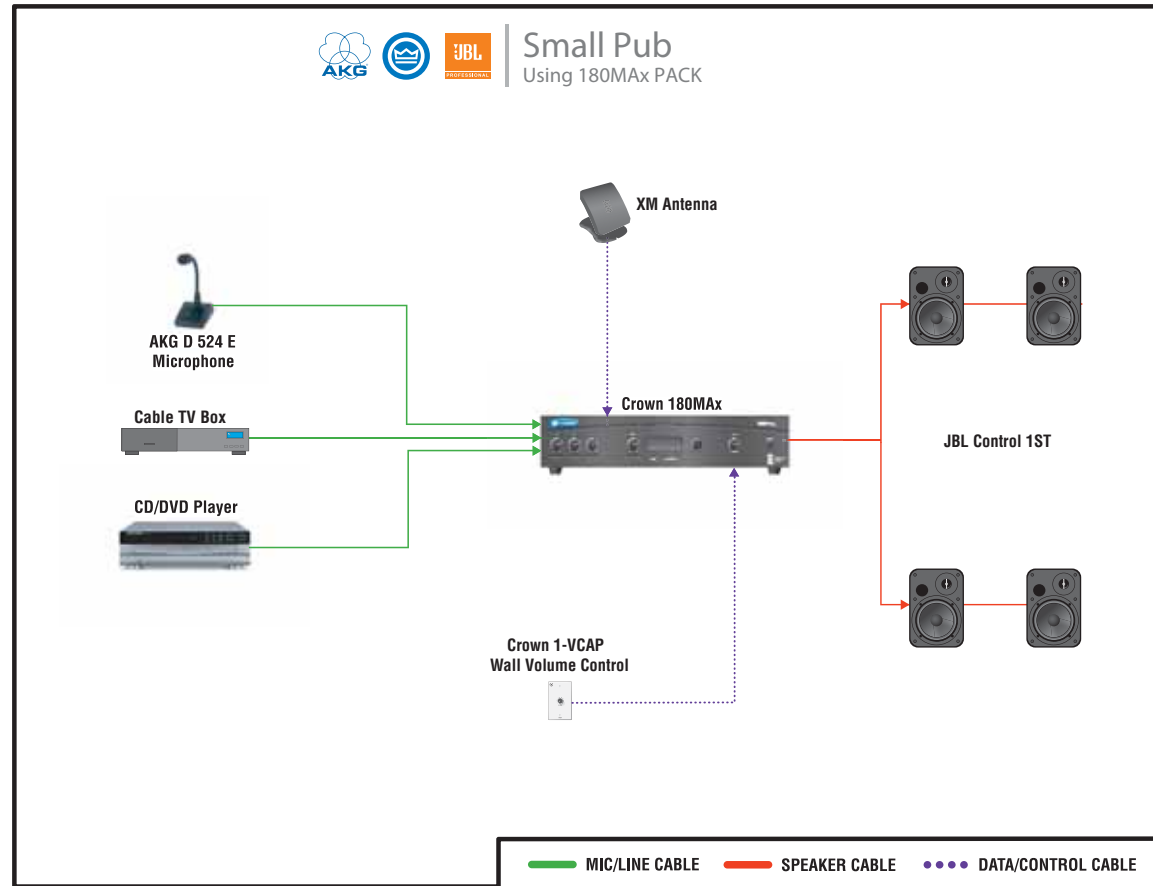
The Crown® 180MAx Pack is the first tuner-mixer-amplifier and loudspeaker system designed for commercial use. It is designed for easy installation. Applications include restaurants, retail stores, coffee shops and other commercial establishments. The system includes the Crown 180MAx tuner-mixer-amplifier (also available separately), four JBL® Control® 1ST 2-way loudspeakers with built-in 70V transformers, XM antenna and a wireless remote control. Built into the 180MAx is an XM Radio tuner that receives satellite radio stations with digital sound quality. The unit also accepts signals from line, telephone, or microphone (phantom power included). Other features include bass and treble controls, and priority ducking.





COMMERCIAL AUDIO

Product Applications



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