

COMMERCIAL

Crown Commercial Audio Product Line



Preamplifier-Mixers



Amplifiers

AUDIO



Mixer-Amplifiers

COMMERCIAL AUDIO

14M, 28M



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
- 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 1 kHz.

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

Phantom Power: 15 VDC.

AC Line Voltages 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: Pushbutton on-off switch. The power switch does not affect the 24V DC auxiliary power input.

Input Level 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 Level 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.

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

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



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 and phantom power.

COMMERCIAL AUDIO

180A, 280A, 1160A



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
180A	80W	80W	1	Single-zone
280A	80W	80W	2	Two-zone
1160A	160W	160W	1	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): 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.

Minimum Load Impedance:

100V output: 160 ohms.

70V output: 80 ohms.

4-ohm output: 4/8 ohms.

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

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

AC Line Voltages 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: Pushbutton 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 Level 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



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.

2012

COMMERCIAL AUDIO

180MA, 280MA, 1160MA



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

POWER OUTPUT*				
Models	4-ohm	70V/100V	Inputs	System Zones
180MA	80W	80W	4	Single-zone
280MA	80W	80W	8	Two-zone
1160MA	160W	160W	4	Single-zone

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

► SPECIFICATIONS

Performance

Frequency Reponse (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.

Input Impedance (nominal):

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

Crosstalk: -70 dB at 1 kHz.

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

Phantom Power: 15 VDC.

AC Line Voltages 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: Pushbutton on-off switch. The power switch does not affect the 24V DC auxiliary power input.

Input Level Controls: Microphone/line, four on 180MA and 1160MA, eight on 280MA. Detented potentiometers with knobs.

Tone Controls: Bass and Treble non-detented recessed 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 (45 dB

below full power) from the 4-ohm tap. Does not respond to signals from the AMP INPUT connector.

Clip Indicators: Red LED, one per output channel. Illuminates at threshold of audible distortion. Does not respond to signals from the AMP INPUT connector.

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

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 ($\pm 10\%$) backup power. Accepts up to 10 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: 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 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 (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. Two switches per input.

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

The tone generator has been omitted. Call Crown Tech Support if you have a tone generator question.

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.

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

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. (13.8 kg)
1160MA: 30.3 lbs. (13.8 kg)

Regulatory Certifications



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.

2012

135MA, 160MA



PRACTICAL

► FEATURES

- 3 inputs and one 35W amplifier output channel in 135MA
- 4 inputs and one 60W amplifier output channel in 160MA
- Ideal for paging, background music, and music-on-hold
- Voice-activated priority muting (VOX)
- Pre-amp outputs

POWER OUTPUT*

Models	8-ohm	70V/100V	Inputs	System Zones
135MA	35W	35W	3	Single-zone
160MA	60W	60W	4	Single-zone

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

► SPECIFICATIONS

Performance

Frequency Response (at 1 watt from line out):

50 Hz to 20 kHz \pm 1 dB.
19 Hz to 34 kHz +0, -3 dB.

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

Mic: > 58 dB.
Line: > 60 dB.
Telephone: > 60 dB.
Inputs 2 or 3 (and 4 in 160MA): > 78 dB.

THD + N: < 0.5% at rated power at 1 kHz.
< 0.1% at 5W at 1 kHz.

Input Sensitivity (for full output at maximum gain):

Input 1: Mic 3mV, Line 800mV.
Input 2: 400mV.
Input 3: 400mV.
Input 4 (160MA only): 400mV.

Input Impedance (nominal):

Mic: 2.2 kilohms.
Line: 10 kilohms.
RCA: 10 kilohms.

Crosstalk: -82 dB at 1kHz (Ch. 1 line input 0.8V, Ch. 1 volume at minimum, other channel volumes at maximum).

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

Phantom Power: 15 VDC.

AC Line Voltages Available:

Universal Power Supply. Line voltage tolerance +15%, -20%.

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: Pushbutton on-off switch.

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

Tone Controls: Bass and Treble non-detented recessed potentiometers under master output volume control. Bass \pm 10 dB at 100 Hz, Treble \pm 10 dB at 10 kHz.

Power Indicator: Blue LED indicates power on.

Input Signal Presence Indicators: Green LED, one above each channel's input attenuator, illuminates when input signal exceeds -40 dBu.

Input Signal Clip Indicators: Green LED, one above each channel's input attenuator, flashes brightly at threshold of audible distortion.

Output Signal Presence Indicator: Green LED above master output volume control illuminates when any input signal exceeds -40 dBu.

Output Signal Clip Indicators: Red LED above master output volume control flashes brightly at threshold of audible distortion.

Master Output Level Control: Detented potentiometer with knob.

Back Panel Controls, Connectors and Indicators

AC Power Inlet: Detachable IEC accepts US or Euro style power cords.

Amplifier Output Connector: 4-position terminal barrier block with COM (Common), 8 ohms, 70V and 100V terminals. Accepts up to 10 AWG terminal forks. Non-touch cover included.

Preamp Line Out Connector: 3-pin balanced Phoenix-type for connection to external amplifiers. Level independent of master volume control.

Input Connector 1: 5-terminal Phoenix connector. 3 terminals for balanced signal, 2 terminals for priority contact closure, which mutes other channels when DIP switch 3 is on.

Input Connector 2: Unbalanced line-level RCA-type connectors.

Input Connector 3: Unbalanced line-level RCA-type connectors.

Input Connector 4 (160MA only): Unbalanced line-level RCA-type connectors.

Telephone (MOH) Output Connector: 4-terminal Phoenix connector (2 terminals for 1W output to 8-ohm speaker, 2 terminals for 600-ohm output to PBX music-on-hold port).

MOH Level Control: Trim pot adjusts level for Music-On-Hold output from Telephone (MOH) Output Connector.

Amp Configuration DIP Switch: DIP switch selection for multiple functions.

1. On: Sets CH1 to Mic Input. Off: Sets CH1 to Line Input.
2. On: Sets CH1 to Normal mode (no priority).
3. On: CH1 priority contact closure mutes other channels.

4. On: CH1 VOX mutes other channels by sensing signal through Input 1.
5. On: Routes CH1 to MOH output.
6. On: Routes CH2 to MOH output.
7. On: Routes CH3 to MOH output.
8. On: 15V phantom power.

VOX Threshold: Trim pot controls how loud the voice on CH1 must be before muting other channels. Can be set for no muting.

Cooling

Convection cooled.

Protection

Included protection mechanisms are current limiting, over-temperature thermal cutout, and DC-fault load protection. The unit is protected against turn-on/turn-off thumps.

Included Accessories

Power cord
No-touch cover for output connectors
Phoenix-type connectors

Optional Accessories

Part no. IST 600-ohm Isolation Transformer for Telephone Output or Input 1.
Part no. RM1 single rack mount kit for mounting a single MA unit in a rack.
Part no. RM2 double rack mount kit for mounting two MA units side-by-side in a rack.
Part no. S-Cover 10-pack of security knobs.

Dimensions

Width: Half rack width (9.5 in. or 24.1 cm).
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 panel): 13.9 in. (35.2 cm).

Weight

Net Weight:
135MA: 8 lb 2 oz (3.7 kg).
160MA: 9 lb 7 oz (4.3 kg).

Shipping Weight:

135MA: 10 lb 16 oz (4.9 kg).
160MA: 12 lb 4 oz (5.6 kg).

Regulatory Certifications



Crown's Commercial Audio mixer/amplifiers deliver legendary Crown quality to the commercial audio industry. These high-value mixer-amplifiers provide both 8-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.