



Product overview

The BOSE® PANARAY® System digital controller II is a universal EQ controller engineered to provide BOSE® professional loudspeakers with active equalization. The EQs for BOSE® professional loudspeakers can be accessed by selecting the appropriate preset and configuration. No programming is required.

Product information

The PANARAY system digital controller II utilizes digital signal processing (DSP) architecture to provide active equalization and signal processing for BOSE® professional loudspeakers. The controller features a complete set of Bose active equalization presets. Individual input sensitivity and output range, as well as master output level, are adjustable via the user interface buttons and easy-to-read 2 x 16 backlit LCD display on the front panel.

The PANARAY system digital controller II can be configured for mono or stereo operation. A bass mono sum feature is available for situations where stereo mid/high loudspeakers are paired with a single bass loudspeaker. The controller offers configurations designed for bass array applications. It also offers global limiting to protect against unpredictable spikes in program material.

The PANARAY system digital controller II features two analog, balanced, differential XLR

inputs and four analog, balanced, differential XLR outputs. The unit also has a RS232 connector for future software updates.

Key features

- > Two balanced differential XLR inputs and balanced differential XLR outputs
- > Preset active equalization settings for all BOSE® professional loudspeakers
- > Bass mono sum option for using a single low-frequency loudspeaker with stereo mid/high loudspeakers
- > Bass array presets for PANARAY bass loudspeakers
- > Special "lockout" feature prevents tampering to maintain initial system settings
- > Global limiter protect function option
- > Easy-to-read 2 x 16 backlit LCD display
- > Signal input and clipping LED indicators
- > RS232 connector for software updates

Applications

The PANARAY system digital controller II is well-suited for portable and installed professional sound systems.

Detailed product specifications

Inputs:

2 analog, balanced, differential, XLR

Input impedance:

Differential 2.21kΩ @ 1 kHz

Maximum input level:

+18 dBu

Sensitivity range @ full scale:

Selectable, 0/+6/+12/+18 dBu

Outputs:

4 analog, balanced, differential, XLR

Output impedance:

Differential 200Ω

Maximum output level (balanced):

+18 dBu

Output ranges (balanced):

Selectable, 0/+6/+12/+18 dBu

Conversion:

44.1 kHz

Throughput delay:

1.52ms

Dynamic range:

103 dB (typical)

THD:

0.003% (typical)

Frequency response:

20 Hz to 20 kHz (+0/-1 dB)

Crosstalk:

100 dB (typical)

Communication port:

RS232 (for software updates only)

Audio indicators:

Signal (Present) – Green LED

Signal (Clip) – Red LED

Mains voltage:

100 to 240 VAC, 50 to 60 Hz (auto-select)

Power consumption:

15W

Environmental:

Operating temperature: 32° – 104°F
(0° – 40°C)

Storage temperature: -4° – 122°F
(-20° – 50°C)

Humidity: 95% relative humidity

Dimensions:

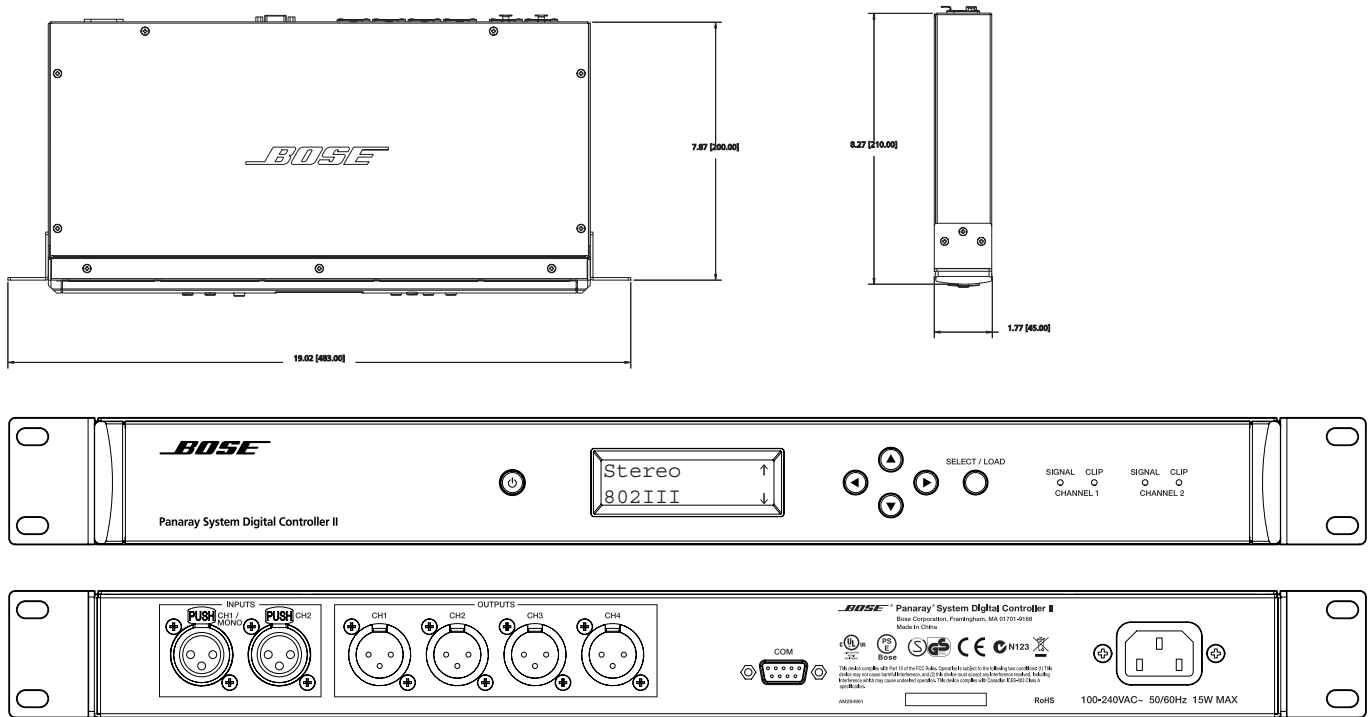
19"W x 8.27"D x 1.77"H
(483mm x 210mm x 45mm)

Weight:

Product: 5.9lb (2.7kg)

Shipping: 7.8lb (3.5kg)

Mechanical diagram



Engineers’ and architects’ specifications

The controller shall use a digital signal processing architecture running at a 44.1 kHz sample rate. The frequency response shall be from 20 Hz to 20 kHz (+0/-1 dB). The dynamic range shall be 103 dB (typical) 20 Hz to 20 kHz.

The controller shall include a single analog, balanced, differential XLR input connector for each of the two input channels. It shall have a single analog, balanced, differential XLR output for each of its four outputs. The maximum input level shall be +18 dBu. The maximum output level shall be +18 dBu. The input impedance shall be 2.21k ohms for balanced operation. The output impedance shall be 200 ohms.

The throughput delay time through the controller shall be 1.52ms.

Crosstalk shall be <-100 dB (typical).
The THD shall be <0.003% (typical).

A 9-pin RS232 connector COM port shall be used for software updates.

The power supply shall be auto switching from 100 to 240 VAC, 50 to 60 Hz. Power consumption shall be < 15W.

The controller shall be the BOSE® PANARAY® system digital controller II.

Safety and regulatory compliance

The PANARAY system digital controller II complies with CE requirements, is cUL Listed according to UL60065 (7th edition) and CAN/CSA C22.2 No. 60065-03, CB approved according to IEC60065 (7th edition) including group and National differences, GS approved according to EN600065 (7th edition) and is PSE compliant. It also complies with FCC Part 15B Class A (2003), EN55103-1 (1997), EN55103-2 (1996), and CISPR13 (2003) requirements.

Limited warranty

The PANARAY system digital controller II is covered by a two-year transferable limited warranty.

Product codes

PANARAY system digital controller II
230V – EU PC 040502
230V – UK PC 040503

Configuration diagrams

PANARAY® System Digital Controller II Display

Bass Array ↑
MB4 2XEF180Hz ↓

Preset

MB4 2X Endfire Bass Array

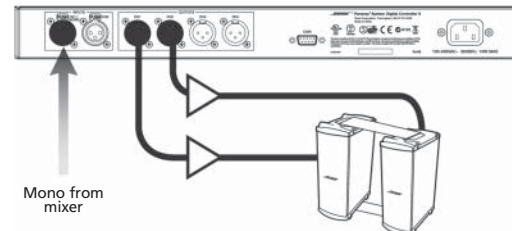
Controller Inputs

CH 1/Mono	Mono from mixer
CH 2	No input

Controller Defaults Output Routing

	Ch 1	Ch 2	Ch 3	Ch 4
Routing	MB4 (1) Mono	MB4 (2) Mono	N/A	N/A
Delay	On	On	Off	Off

2X endfire bass array



PANARAY® System Digital Controller II Display

Mono ↑
502A+502B ↓

Preset

502" A Speaker Mono with 502 Speaker Mono

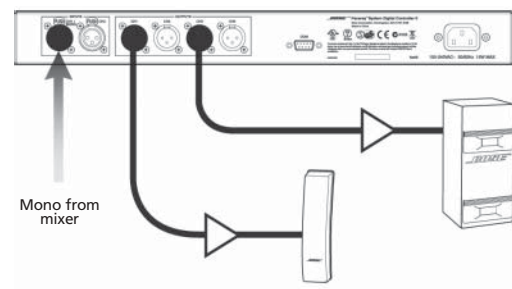
Controller Inputs

CH 1/Mono	Mono from mixer
CH 2	No input

Controller Defaults Output Routing

	Ch 1	Ch 2	Ch 3	Ch 4
Routing	502A Mono (High freq)	502A Mono (High freq)	502B Mono (Low freq)	502B Mono (Low freq)

Mono mid/high with mono bass



PANARAY® System Digital Controller II Display

Stereo ↑
402II+MB ↓

Preset

402" II Speaker Stereo with MB4 Speaker Mono

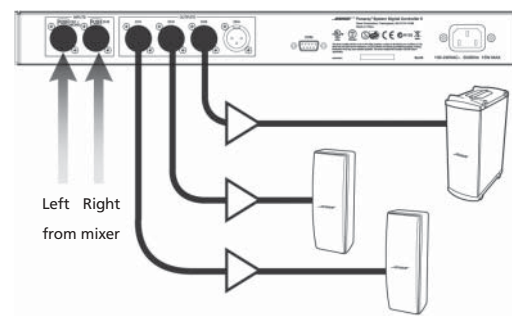
Controller Inputs

CH 1/Mono	Left from mixer
CH 2	Right from mixer

Controller Defaults Output Routing

	Ch 1	Ch 2	Ch 3	Ch 4
Routing	402-II Left (High freq)	402-II Right (High freq)	MB4 Mono (Low freq)	MB4 Mono (Low freq)

Stereo mid/high with mono bass



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