Product specifications

	PLM-8M8 DSP Matrix Mixer	PLM-4Px2x DSP Amplifiers	PLM-8CS Call Station	PLM-WCP Wall Control Panel
Power Supply	**Mains voltage:** • Nominal input voltage 100 to 240 VAC 50/60 Hz • Input voltage limits 90 to 264 VAC **Power consumption:** • No devices <10 W • Maximum load, maximum devices connected 54 W	**Mains voltage:** • Nominal input voltage 100 to 240 VAC 50/60 Hz **Power consumption (6 dB/idle/standby):** • PLM 4P125 254 W / 27 W / 6 W • PLM 4P220 412 W / 36 W / 6 W	**Power:** • Powered over CAT5 by the PLM-8M8 Matrix Mixer	**Power:** • Powered over CAT5 by the PLM-8M8 Matrix Mixer
Performance	**Frequency response (-1 dB):** • 20 Hz to 20 kHz (+0/-3 dB) **Phantom power supply:** • 48 V **THD+N** (BGM): • <0.004 % **Dynamic range:** • >103 dB(A)	**Frequency response (-1 dB):** • 65 Hz to 20 kHz (+0/-3 dB) **Rated outputs voltage/impedance:** • 100 V / 70 V / 8 ohm / 4 ohm **Rated output power per channel:** • PLM-4P125 125 W • PLM-4P220 220 W **Bridged (CH 1-2 / 3-4):** • PLM-4P125 250 W • PLM-4P220 445 W **THD-N:** • PLM-4P125 0.1 % • PLM-4P220 0.03 % **Dynamic range:** • PLM-4P125 >101 dB(A) • PLM-4P220 >102 dB(A)	**Microphone Polarity:** • Cardoid **Freq. response (-3dB):** • 100 Hz to 20 kHz (+0/-3 dB) **Input Clip level:** • -11 dBu **THD+N (1 kHz, 6 dB FS):** • <0.03 % **Dynamic range:** • >97 dB(A) **Output level:** • 24.4 dBu	Not Applicable
Connectors	**Inputs:** • 4 x Mic/line XLR/TRS combo • 3 x BGM Cinch RCA pairs • 1 x Call station RJ45 • 1 x Override 3-pole Phoenix terminal **Outputs:** • 2 x Amp Link RJ45 (4 output channels per connector) • 8 x 3-pole Phoenix line level outputs **Controls:** • 1 x RJ45 - Ethernet Network 10/100 Mbps • 1 x RJ45 - RS485 control bus • 2 x Logic 4-pole Phoenix terminal for activation of EVAC, Alert and Active override	**Inputs (wired in parallel):** • 4 x line XLR/TRS combo • 4 x 3-pole balanced Phoenix terminal • 1 x RJ45 (Amp Link) • 1 x 3-pole balanced Phoenix terminal (Override input) **Outputs:** • 4 x 5-pole Phoenix terminal loudspeaker output • 1 x 2-pole Phoenix Terminal 12 V power output for motion sensors **Controls:** • 1 x 2-pole Phoenix Logic standby activation • 1 x 2-pole Phoenix terminal Logic activation of Override input • 1 x RJ45 Ethernet Network 10/100 Mbps	**Loop-through:** • 2 x RJ45 RS485	**Loop-through:** • 2 x RJ45 RS485
Mounting & Dimensions	**Mounting:** • 1 x Pair of removable 19" rack ears **Dimensions:** (H x W x D) • 45 x 440 x 358 mm • 1.8 x 17.3 x 14.1"	**Mounting:** • 1 x Pair of removable 19" rack ears **Dimensions:** (H x W x D) • 90 x 440 x 417 mm • 3.5 x 17.3 x 16.4"	**Mounting:** • Desktop/Free-standing **Base dimensions:** (H x W x D) • 50 x 156 x 140 mm • 2 x 6.1 x 5.5" **Microphone length:** • 390 mm • 15.35"	**Mounting:** • 1 x Surface/wall mounting bracket **Base dimensions:** (H x W x D) • 130 x 100 x 30 mm • 5.1 x 3.9 x 1.2" Download full product data sheets: **boschcommunications.com.au/plenamatrix**

BOSCH
Invented for life

Control
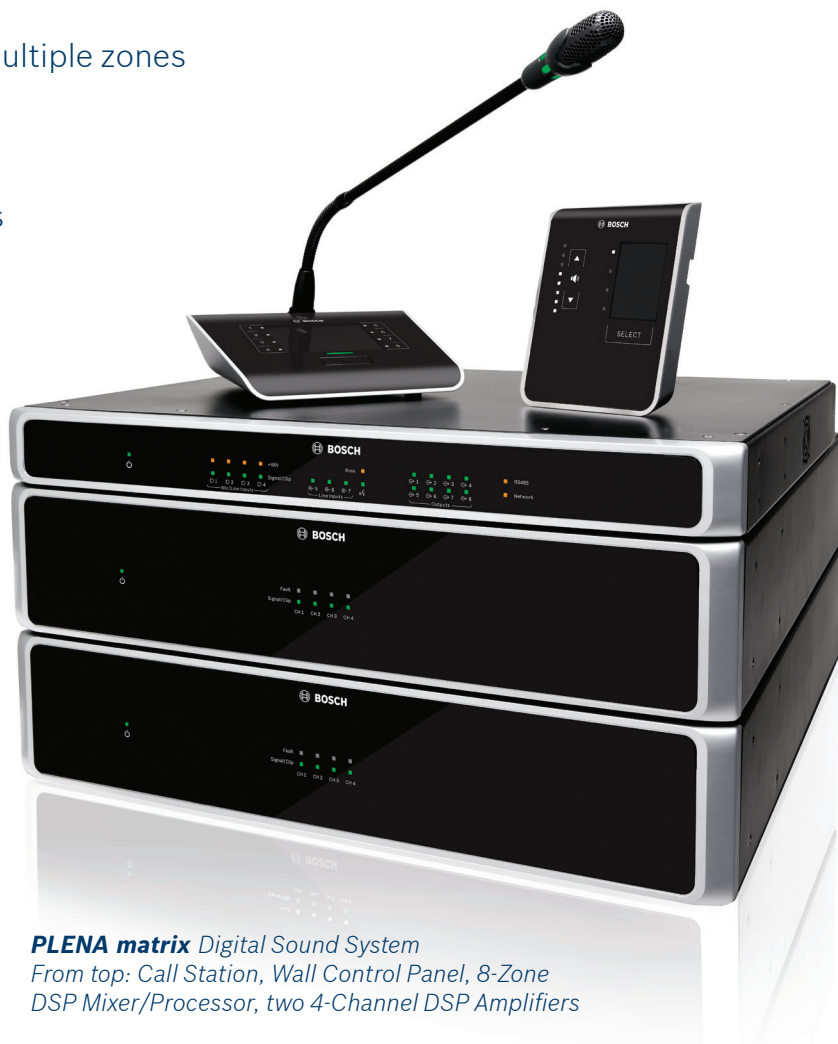## Flexibility
Performance

Digital Sound System
Multizone, DSP Matrix, Public Address, Background Music, High-Performance Sound.

Features

▶ Networked or wireless control across multiple zones

▶ Easy installation and intuitive interface

▶ Quality and reliability

▶ Future-proof innovation for cost savings

▶ Optimum acoustic performance

▶ Full-featured DSP capabilities

▶ Multiple control options including an iOS app for Apple mobile devices

Perfect for

▶ Pubs and clubs

▶ Gyms and sport centres

▶ Restaurants and bars

▶ Conference facilities

▶ Business offices

▶ Houses of worship

▶ Retail spaces

▶ Education facilities

▶ Recreational centres

▶ Hotels and motels

PLENA matrix Digital Sound System
From top: Call Station, Wall Control Panel, 8-Zone
DSP Mixer/Processor, two 4-Channel DSP Amplifiers

Benefits

▶ Ideal for any small to medium installation requiring up to 8 zones

▶ Excellent audio to suit quality speakers including EV, Bosch and Dynacord

▶ Powerful DSP to give the integrator the right tools for a professional setup

▶ Hardware and software features for quick and easy installation

▶ High-quality sound & great value

For consultants

▶ Standardised yet flexible tool box for an extensive range of applications

▶ Bosch quality engineering guarantees product performance and reliability

▶ Leading specifications in its class

▶ DSP power amplifiers that can be used as stand alone mixers and processors

▶ Innovative power management feature

For integrators

▶ Amp Link and CAT5 connection to all components for a quicker and easier install

▶ Full-featured DSP set for maximum control and optimum sound quality

▶ Ideal for use with leading loudspeakers including EVID, ZX1i and EVU

▶ Amazing system flexibility suitable for a myriad of applications

▶ Product that offers great sound, dramatically reduced power use, and increased life

For end users

▶ High-performance sound system at an affordable price

▶ Auto Standby feature to cut running costs and increase product life

▶ Three levels of controls to suit different job functions and responsibilities

▶ PLENA matrix iOS app for Apple mobile devices to control any or all zones wirelessly

▶ System that distributes live or recorded music and speech in almost any application

▶ Peace of mind with a quality investment

Engineered with precision, designed for reliability

Reflecting the Bosch dedication to quality, PLENA matrix systems are engineered with precision to ensure performance and reliability. Our sound systems are depended upon around the world in business, education, and leisure environments. The innovative technology used to develop the PLENA matrix system enables users to enjoy premium audio quality for a wide range of applications that require high-performance sound distribution.

Easy installation and setup

The PLENA matrix system's Amp Link and CAT5 connection to all components, including daisy chaining of call stations and wall control panels, enable faster installation with drastically reduced cable runs.

The powerful, yet very intuitive PC GUI provides a full-featured set of DSP controls. Getting the right electro-acoustic setup, tailored for the venue and application, could not be easier. Advanced configuration features are password protected and the administrator can tailor the available feature set for various end-user roles.

Multiple levels of control including iOS app

Adding to the professional acoustic tools, network control via the PC GUI and Ethernet enables PLENA matrix to be integrated with a wide range of building management and control systems.

For intermediate users, the PLENA matrix iOS app for the iPad® and iPhone® is ideal for controlling any of the 8 zones. The wireless mobility enables the user to quickly review settings and performance zone by zone, on the fly. This is ideal for venues where the zone usage changes periodically or at very short notice.

For basic every-day use, a wall-mounted control panel can be utilised in each zone to control the volume and source selection. This is ideal for venues such as gyms, where the music source and volume are adjusted frequently to suit changing instructors and activities.

Optimum acoustic performance

In addition to impressive specifications, the PLENA matrix system comes with a full-featured DSP mixer and loudspeaker processor, as well as power amplifiers featuring their own DSP. This combination, and the use of quality loudspeakers, delivers optimum sound performance that borders with pro sound systems. From basic to advanced system configurations, the PLENA matrix system will ensure the desired acoustic results.
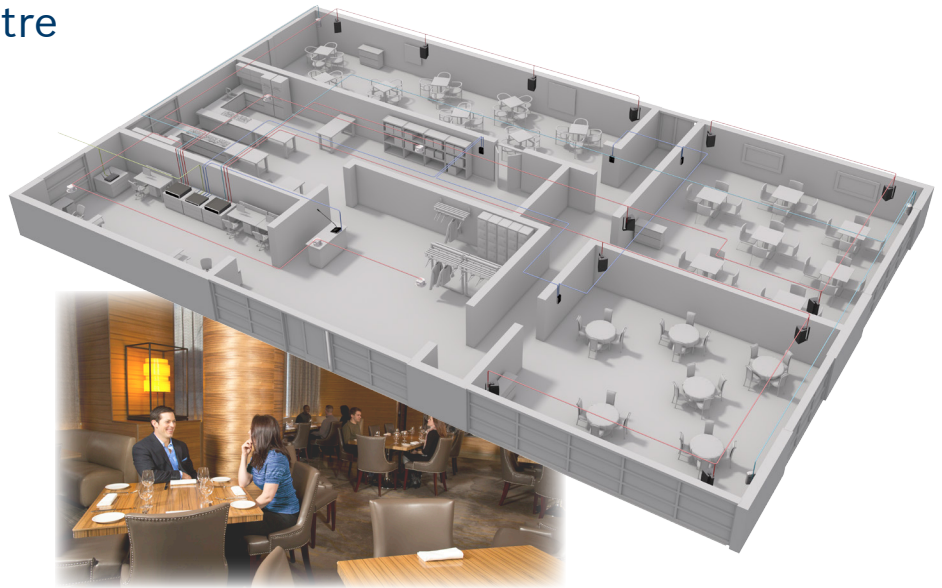
Sample applications

Restaurant/Function Centre

From a small cafe to a function centre
A PLENA matrix DSP power amplifier can be used stand alone for small venues such as a bistro or cafe.

Larger restaurants with a cocktail bar, a lounge area and one or two dining areas, will benefit from the DSP matrix mixer and its zone controls. 1 or 2 power amplifiers will cover 4 to 8 zones.

Function centres, depending on size, may benefit from 2 x 8 zone systems and integration with building management and control systems.

Gym/Recreation Centre

Small gym through to a sports centre
As classes, activities and instructors change frequently, gyms and similar facilities require flexible control options.

Staff can select music sources and adjust volume using wall control panels in each zone, or wirelessly control any zone using an iOS app for Apple mobile device.

Sound from wireless mics used for activities such as aerobics can be easily distributed through the selected zone.
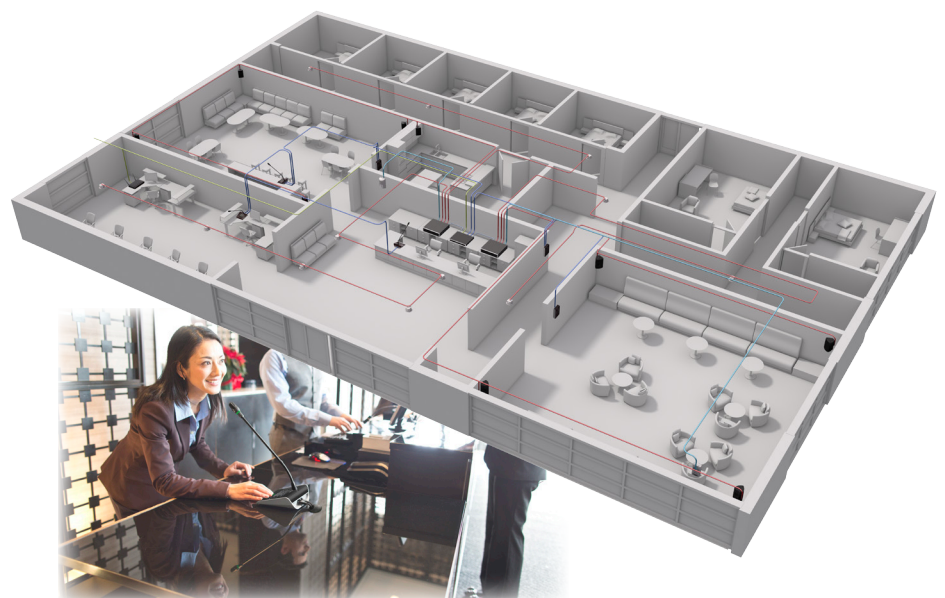
Hotel/Motel
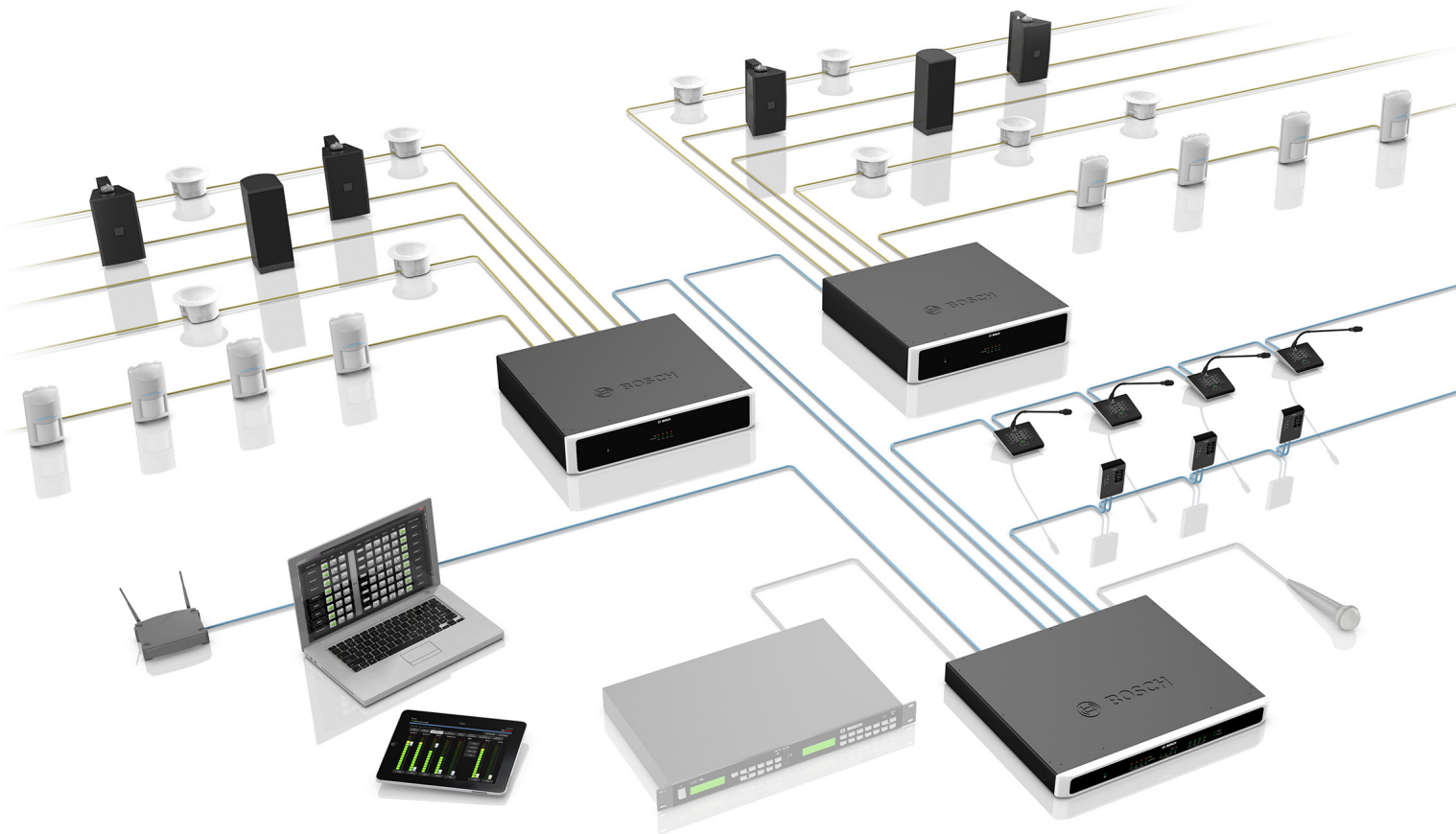
Reception area, lounge bar, hallway
One PLENA matrix system with the DSP mixer, two 4-channel amplifiers, call stations, and wall control panels, can easily cover a small hotel.

Larger hotels can use multiple PLENA matrix systems to suit their layout. Multiple systems that are networked can be controlled by a single PC.

Paging, speech performances, live music, recorded background music, EVAC alarms and announcements are all seamless possibilities.

Flexibility meets performance

System flexibility

We understand that each venue and application requires a somewhat different solution. With a choice of two 4-channel, class-D DSP amplifiers, an 8-zone DSP mixer/processor, call stations, wall control panels, PC and iOS GUIs, and a myriad of input and output choices, PLENA matrix is ideal for just about any application of up to 8 zones.

Use the DSP amplifier stand alone in 1 or 2 room situations. Add another amplifier and the DSP mixer/processor for larger venues. Combine this with call stations for applications requiring paging capability. No matter what the need, PLENA matrix delivers.

Innovative power management feature

In addition to already one of the lowest power consumptions on the market, PLENA matrix class-D power amplifiers feature an Auto Standby mode that is activated by Bosch motion sensors when output zones are unoccupied. This helps to generate power savings of over 50% in a typical usage situation, when compared with standard amplifiers.

By reducing the overall power consumption, the environmental impact is significantly lowered. Additionally, the life of the amplifier is extended through lower power cycles.

Full-featured DSP and impressive specifications

The PLENA matrix system brings the benefits of the latest DSP technology. The professional set of DSP controls can be accessed using the PC GUI to provide integrators maximum control over the electro-acoustic setup.

The main components, the 8x8 DSP mixer/processor and the high-performance, 4-channel, bridgeable DSP power amplifiers (125 W and 220 W per channel), provide engineering excellence. Low distortion (DSP mixer 0.004%, 220 W amplifier 0.03%) and wide, flat frequency response (DSP mixer 20 Hz to 20 kHz, DSP amplifiers 65 Hz to 20 kHz), guarantee high-performance sound when used with quality loudspeakers.

Tested with leading loudspeakers

Bosch's dedication to excellence and focus on quality is evident throughout the PLENA matrix system. That is why we have tested and calibrated the system using only the best loudspeakers for each application.

Although suitable for use with any quality loudspeaker, the PLENA matrix system is ideal for use with the Electro-Voice, Dynacord and Bosch loudspeaker ranges.

PLM-8M8 DSP Matrix Mixer

User features

- Independent zone selection (up to 8 zones)
- Input metering (PFL)
- Independent mixing of 4 x mic/line inputs (per zone)
- Independent 3 BGM source selection (per zone)
- Paging level control per zone
- Mute (all inputs and outputs)

Configuration features

- Input gain, HPF, +48 V
- Input PEQ (5 filters mic/line)
- Dynamic range compressor/limiting
- Crossover (HPF, LPF, up to 8th order)
- Output PEQ (7 filters per output)
- Output delay (up to 120 ms)

- Dynamic bass
- Output level control with phase inversion
- Call station, override and tones facility
- Ducking facility
- Security and user access control facility
- Auto Standby mode facility

PLM-4P125 and PLM-4P220 DSP Power Amplifiers

User features

- Bridgeable outputs (1-2/3-4)
- Separate dedicated 4 Ω/8 Ω/70 V/100 V on each output
- Level control of amplifier output channels
- Built-in DSP feature set/4-channel mixer
- Standby on/off (Auto Standby with motion detectors)

Configuration features

- Input mixer per channel
- Crossover
- EQ 8 Filters (PEQ, HPF, LPF, Shelf)
- Dynamic bass enhancement on/off
- 120 ms delay per channel

- Dynamic range compressor/limiting
- Output level control
- Auto Standby facility
- Override facility

PLM-8CS Call Station

Features

- Paging any combination of 8 zones
- Capacitive touch buttons
- Status LED indicators
- Label inserts printed from PC GUI
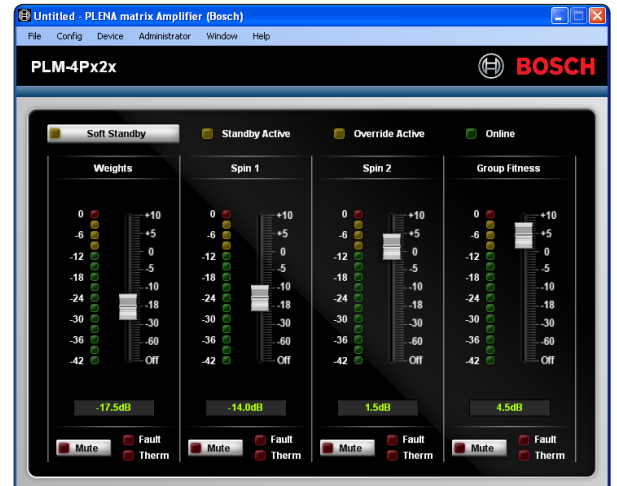- Powered via CAT5 from PLM-8M8
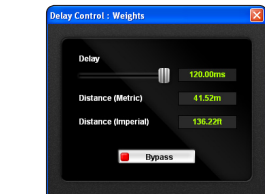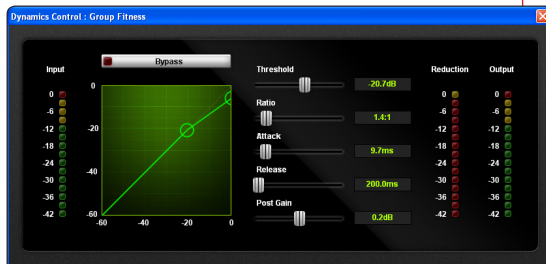- Daisy chained using CAT5

PLM-WCP Wall Control Panel

Features

- Individual zone control
- Volume/input source selection
- Status LED indicators
- Label inserts printed from PC GUI
- Powered via CAT5 from PLM-8M8
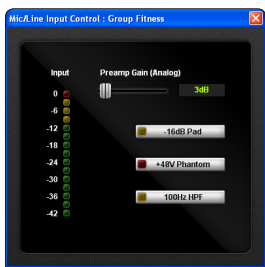- Daisy chained using CAT5

PLENA matrix PC GUI and iOS app

1 *PLM-8M8 DSP Matrix Mixer/Processor GUI offers extensive control*
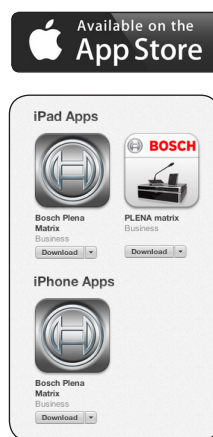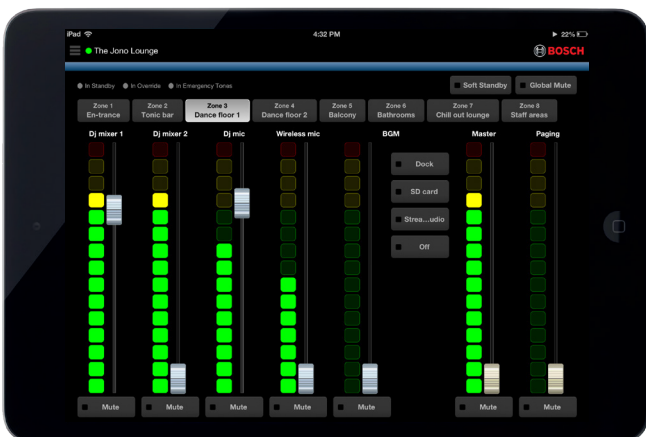
2 *The PLM-x2x DSP Power Amplifier GUI also features its own DSP configuration "tool box"*

3 *Selection of DSP configuration tools conveniently located in one window*

Hovering over a DSP "block" shows a preview window of its settings, allowing faster configuration and final checks

4 *iPad with the PLENA matrix app for complete and wireless system control. Also available for the iPhone.*

Using the PC GUI via wireless or Ethernet connection, or the iOS app for Apple mobile devices, the PLENA matrix software gives the integrator and the end user intuitive tools for seamless control.

Download the PLENA matrix PC GUI software at:
boschcommunications.com.au/plenamatrix
and see the extensive feature set for yourself.