



Certificate of Conformity

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| afp - 1776 | 12-Apr-2005 | Number 14 (Provisional) | Issue date 1-May-2020 | 30-Apr-2021 |

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Product designation

Bosch, Praesideo 2.x/3.x, digital public address and emergency sound system

(Refer to the Schedule/enclosures for further specified details)

Agent/distributor

Bosch Security Systems Pty Ltd
Level 2, 21 Solent Circuit, BAULKHAM HILLS, NSW, AUSTRALIA, 2153

Registrant

Bosch Security Systems Pty Ltd
Level 2, 21 Solent Circuit, BAULKHAM HILLS, NSW, AUSTRALIA, 2153

Producer

Bosch Security Systems B.V.
Building C1, Kapittelweg 10, BREDA, NETHERLANDS, 4827 HG

Conformance criteria and evaluation

The Bosch, Praesideo 2.x/3.x, digital public address and emergency sound system has been evaluated and verified as conforming with the relevant requirements of the following criteria.

1. Australian Standard AS 60849-2004, 'Sound systems for emergency purposes (IEC 60849:1998 MOD)'.

Limitations/conditions of conformance

Limitations/conditions of conformance, where identified on this certificate, are derived from qualifications from evaluation(s) for conformity and/or other related technical documentation. All details with respect to design, assembly and installation instructions and restrictions should be checked against the producer's current technical manual/data sheets and the requirements of the Authority having Jurisdiction.

Specified limitations/conditions, determined from the evaluation for conformity, include the following.

- i. It is connected to a back-up power supply system which is capable of fulfilling the requirements of a Secondary power supply requirements of Clause 5.6 of the reference criteria,

This certification is issued within the scope of CSIRO Verification Services – Rules governing ActivFire Scheme and is valid only for the product(s) as submitted for evaluation and verification of conformity, subject to the following conditions.

- Reference to details, limitations and requirements, where documented as a schedule/enclosure with this certificate.
- The Registrant is responsible for their attestation of conformity and ensuring that on-going production complies with the conformance criteria defined in this certificate.
- This certificate will not be valid if any changes or modifications are made to the product which have not been notified and validated by CSIRO Verification Services.
- This certificate is subject to periodical re-validation upon verification that all requirements, as determined by the conformity assessment body, continue to be satisfactorily met by the Registrant.
- This certificate may only be reproduced in its published form, without modification and inclusive of all schedules/enclosures.
- Any changes, errors or omissions, must be submitted in writing and if necessary or requested, substantiated with relevant evidence.
- Any representations, such as advertising or other marketing related activities or articles shall reflect the correct contents of this certificate and conform with all relevant trade practices and consumer protection legislation and regulations.
- Any terms or conditions of use as applicable to content and documentation as published or accessed through web sites administered by the CSIRO Verification Services.

Issued by

David Whittaker
Executive Officer – ActivFire Scheme



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Producer's description

The Bosch, Praesideo 2.x/3.x, digital public address and emergency sound system is a fully digital public address system. The processing and communication of both audio signals and control data is entirely in the digital domain. Digital signal processing allows significant improvements in audio quality to be achieved. This system is designed for configuration from a PC.

All audio processing is performed in the digital domain. Communication between the units is via plastic fibre or glass fibre cabling, depending on the distance between the units. The cabling uses the daisy chain principle. The system cabling is a closed loop, which allows redundancy to be achieved.

User-friendly software control

The system is supplied with user-friendly software for system configuration. This allows all system functions to be configured. The software is based on web technology, which gives authorized users full freedom of configuration in terms of time and location. The simplified and accurate organization of the programming features makes navigation highly user-friendly and fault-tolerant. The software also provides clear indication of any parameters, which have not been programmed before exiting from any stage of the configuration process.

Networked approach

The system architecture is based on daisy-chaining of the units. It is possible to add or remove equipment anywhere in the network without affecting the performance of other units, provided that the network connection is available. This makes the system expandable, without adding any additional electronics at the network controller unit. The system can be configured for redundant cabling using a ring cabling structure.

Distributed control

The system is designed for distributed control of various system functions. The external interfaces which are control inputs and outputs can be located anywhere in the network. The processing of audio input and output signals is located in each unit. This allows the network controller to concentrate on other activities like routing of announcements and taking actions on control inputs, etc.

Combination of functions

This equipment has multiple functions combined in a single unit. Functions like audio processing, audio delay circuit, amplifier monitoring and automatic change over and speaker line monitoring receivers are provided in the power amplifier unit itself. The configuration software enables the user to configure all the functional parameters. No programming is required at the equipment end.

Evacuation compliance

The network controller is capable of monitoring all the units in the system, from the microphone capsule of the call station to the loudspeaker line. A built-in memory stores the last 200 fault messages. Any fault is reported back to the network controller. The system also meets emergency requirements for emergency call stations.

External interfaces

The interfaces to the system can be audio, control input or Ethernet. The Ethernet interface is provided at the network controller. The audio and control inputs can be anywhere in the system, for example at the power amplifier, audio expander or network controller. The system accepts even low-level signals via the control inputs. The configuration allows the user to configure the input to initiate the desired actions in the system.

System units

Network controller

The network controller is the heart of the system, and stores all control information. It also provides the Ethernet interface for connection to the PC to enable system configuration as well as diagnostic and logging functions. The network controller also stores the digital audio messages for automatic announcements. The controller monitors all the system components and reports any changes in status. The unit provides 4 audio inputs and 4 audio outputs, as well as 8 control inputs and 5 control outputs.

The control inputs can be used to trigger actions in the system. In the configuration software, the user can define the types of inputs. They can be programmed for momentary or toggle operation. Of course these functions are also available for other control inputs in the system. The control outputs can be used to initiate external actions, and can be linked to any of the input triggers. The network controller stores the configuration details and the last 200 fault messages. The availability of the digital audio messages, the alarm tones and alarm tone generator and the control inputs are continuously monitored.

Audio expander

The audio expander is used if the system requires additional audio inputs and outputs. The unit provides 4 audio inputs and 4 audio outputs, as well as 8 control inputs and 5 control outputs. The audio inputs can be configured for background music, microphone or line inputs. As for the network controller, the control inputs can be configured to initiate external actions.

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Network splitter

The network splitter allows the main network line to be split into branches. The branch lines are still monitored, but these do not have the redundant cabling of the main network line. The network splitter also has a provision to connect a 48V DC supply which can be used if additional power is required. The network splitter can also be used as a repeater to extend the cable with another 50 meters of plastic fibre.

Fibre interface

All the system units have plastic fibre optic interfaces. Plastic fibre is used to interconnect nodes which are less than 50 meters apart. For distances of more than 50 meters, glass fibre optic cable is used. A fibre interface is used to convert from plastic to glass fibre or vice versa. The fibre interface has a power supply input and two control inputs, and can also be used if extra power has to be added. The control inputs can be used to monitor power supplies connected to the fibre interface.

Call station basic

The call station basic has a direct network interface, one 'press to talk' key, a monitoring speaker and a headphone socket. The volume control on the front of the unit allows adjustment of the loudspeaker or headphone volume. The unit can be connected to up to 16 call station keypads. LEDs on the unit indicate system, call station and call status.

Call station keypad

The call station keypad has 8 selection keys and status indications. This unit is connected to a call station basic through a local interface. Each selection key has one 2-color LED which shows the status of the selection, allowing differentiation of whether the selected output/resource is occupied by a higher- or lower-priority announcement. It is possible to connect up to 16 Call station keypad units to a call station basic. The power supply for the call station keypad is taken from the call station. The interconnecting cable between the units handles both data communication and the power supply.

Call station kit

The call station kit has the same functions as the call station basic, and is intended for building into custom-made units. The kit is supplied without a housing for easy installation in a custom-made housing. It has a power supply input for both the call station itself and the call station keypad. The external power supply can be monitored by connecting its fault control output to the nearest control input.

Call station keypad kit

The call station keypad kit is used in combination with the call station kit or call station basic. It has 8 logical inputs and 16 logical outputs. If the input is assigned to trigger specific functions, the corresponding outputs can be activated only for actions related to that particular input. The control output of the call station keypad kit can be programmed for various functions, for example indication of emergency status in a particular zone.

Power amplifier

There are four types of power amplifier units in this product range. These differ in the number of amplifier channels per frame and the power ratings of the individual amplifier channels. The types of power amplifiers are as follows:

- 1 x 500W Power amplifier LBB 4421/00
- 2 x 250W Power amplifier LBB 4422/00
- 4 x 125W Power amplifier LBB 4424/00
- 4 x 60W Power amplifier LBB 4426/00
- 8 x 60W Power amplifier LBB 4428/00

The power amplifiers can be selected for 100V, 70V and 50V output tapping. The Power amplifiers are equipped with amplifier monitoring and change-over relays. The amplifier provides short to ground and short-circuit detection functions. If an end-of-line supervision card is plugged in, the loudspeaker lines are also monitored for open circuits. The pilot tone for the monitoring is generated in the power amplifier itself. The power amplifiers are equipped with audio processing facilities for each amplifier channel. It is possible to have 3 parametric equaliser sections and 2 shelving equalisers. The power amplifiers can be connected to the network line directly. The power amplifier has a provision for connecting a 48V DC backup power supply. The 48V is protected against reverse polarity, and availability of the 48V supply is continuously monitored.

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Technical specification

The following details are a representative extract of the technical specification for the Bosch, Praesideo, digital public address and emergency sound system and may be subject to change. Complete and current details should be determined from the designated producer's technical manual/data sheets.

The modular design and expandability of the Bosch, Praesideo 2.x/3.x, digital public address and emergency sound system is designed to provide systems which are customised to the specific requirements of each installation. The full technical data for each the range of components and connectivity should be sourced from the relevant supplier's/manufacturer's technical manual/data sheets, including Praesidio 2.1, Installation and User Instructions (Bosch Security Systems | 2004-06 | 3122 475 21715en).

Schedule of components and/or assemblies

The following is a schedule of validated components and/or assemblies of the certified/listed equipment.

| Module designation | Component ident. | Rev. | PCB (sh. 110) | | Tech. drawing (sh. 130) | | SMD-assembly |
|-------------------------|------------------|-------|----------------|------|-------------------------|------|----------------|
| | | | Num. | Rev. | Num. | Rev. | Num. |
| Network Controller | LBB4401/00 | 15/05 | 3922 156 23352 | 2 | 3922 156 23352 | 2 | 3922 156 23366 |
| | | | 3922 156 24122 | 2 | 3922 156 24122 | 2 | 3922 156 24133 |
| | | | 3922 156 24611 | 1 | 3922 156 24611 | 1 | 3922 156 24625 |
| Analogue Audio Expander | LBB4402/00 | 15/04 | 3922 156 23472 | 2 | 3922 156 23472 | 2 | 3922 156 23483 |
| | | | 3922 156 25012 | 2 | 3922 156 25012 | 2 | 3922 156 25022 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| CobraNet Interface | LBB4404/00 | 01/01 | 3922 156 28801 | 1 | 3922 156 28801 | 1 | 3922 156 28812 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| Network Splitter | LBB4410/00 | 01/10 | 3922 156 25881 | 1 | 3922 156 25881 | 1 | 3922 156 25894 |
| Fiber Interface | LBB4414/00 | 02/02 | 3922 156 24881 | 1 | 3922 156 24881 | 1 | 3922 156 24894 |
| Power Amplifier 1x500W | LBB4421/00 | 01/28 | 3922 156 24831 | 1 | 3922 156 24831 | 1 | 3922 156 24083 |
| | | | 3922 156 24861 | 1 | 3922 156 24861 | 1 | 3922 156 24656 |
| | | | 3922 156 24031 | 1 | 3922 156 24031 | 1 | 3922 156 24043 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| Power Amplifier 2x250W | LBB4422/00 | 01/30 | 3922 156 24071 | 1 | 3922 156 24071 | 1 | 3922 156 24083 |
| | | | 3922 156 24641 | 1 | 3922 156 24641 | 1 | 3922 156 24656 |
| | | | 3922 156 24031 | 1 | 3922 156 24031 | 1 | 3922 156 24043 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| Power Amplifier 4x125W | LBB4424/00 | 01/30 | 3922 156 24821 | 1 | 3922 156 24821 | 1 | 3922 156 24083 |
| | | | 3922 156 24051 | 1 | 3922 156 24051 | 1 | 3922 156 24063 |
| | | | 3922 156 24641 | 1 | 3922 156 24641 | 1 | 3922 156 24656 |
| | | | 3922 156 24031 | 1 | 3922 156 24031 | 1 | 3922 156 24043 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| Power Amplifier 4x60W | LBB4426/00 | 01/18 | 3922 156 27041 | 1 | 3922 156 27041 | 1 | 3922 156 24083 |
| | | | 3922 156 24051 | 1 | 3922 156 24051 | 1 | 3922 156 24063 |
| | | | 3922 156 24641 | 1 | 3922 156 24641 | 1 | 3922 156 24656 |
| | | | 3922 156 24031 | 1 | 3922 156 24031 | 1 | 3922 156 24043 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| Power Amplifier 8x60W | LBB4428/00 | 01/02 | 3922 156 25971 | 1 | 3922 156 25971 | 1 | 3922 156 25981 |
| | | | 3922 156 25991 | 1 | 3922 156 25991 | 1 | 3922 156 26002 |
| | | | 3922 156 25291 | 1 | 3922 156 25291 | 1 | 3922 156 25284 |
| Call Station Basic | LBB4430/00 | 06/04 | 3922 156 24591 | 1 | 3922 156 24591 | 1 | 3922 156 26803 |
| Call Station Keypad | LBB4432/00 | 01/09 | 3922 156 24721 | 1 | 3922 156 24721 | 1 | 3922 156 24735 |
| Call Station Kit | LBB4433/00 | 07/04 | 3922 156 26012 | 2 | 3922 156 26012 | 2 | 3922 156 26023 |
| Call Station Keypad Kit | LBB4434/00 | 01/05 | 3922 156 26151 | 1 | 3922 156 26151 | 1 | 3922 156 26164 |
| Line Supervision Set | LBB4442/00 | 01/06 | 3922 156 24331 | 1 | 3922 156 24331 | 1 | 3922 156 24343 |

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| Module designation | Component ident. | Rev. | PCB (sh. 110) | | Tech. drawing (sh. 130) | | SMD-assembly |
|---|------------------|------|---------------|------|-------------------------|------|--------------|
| | | | Num. | Rev. | Num. | Rev. | Num. |
| Network Cable 100m | LBB4416/00 | - | - | - | - | - | - |
| Network Cable Assy 0.5m | LBB4416/01 | - | - | - | - | - | - |
| Network Cable Assy 2m | LBB4416/02 | - | - | - | - | - | - |
| Network Cable Assy 5m | LBB4416/05 | - | - | - | - | - | - |
| Network Cable Assy 10m | LBB4416/10 | - | - | - | - | - | - |
| Network Cable Assy 20m | LBB4416/20 | - | - | - | - | - | - |
| Network Cable Assy 50m | LBB4416/50 | - | - | - | - | - | - |
| Praesideo Configuration/ Diagnostic/Logging SW | LBB4470/00 | 2.1 | - | - | - | - | - |

Supplementary information

Schedule of relevant articles

The following schedule is an extract of articles significant and/or related as evidence of conformity.

| Reference | | Title / description | Date issued (or date validated) | Source |
|---------------|-----------|---|------------------------------------|---|
| Ident. type | Ident. | | | |
| Report number | XF2136/R1 | Compliance assessment report: Bosch Praesideo digital public address and emergency sound system to AS 60849-2004 | 12-Sep-2005 | CSIRO, Manufacturing and Infrastructure Technology |