

INTEGRUS



Security Systems

Installation and User Instructions
en Integrus
Language Distribution
System

LBB 3222/04
6-Channel Interpreter
Desk with Loudspeaker

LBB 3422/20 Integrus
Audio Input and
Interpreters Module

BOSCH

Important Safeguards

Prior to installing or operating this product always read the Safety Instructions which are available as a separate document.

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1 6-Channel interpreter desk with loudspeaker (LBB 3222/04)

1.1 Introduction

The LBB 3222/04 6-channel interpreter desk provides listening and speaking facilities for interpreters using the CCS 800, CCS 400 or non-BOSCH discussion systems. Up to 12 desks can be connected to an Integrus transmitter using the Integrus audio input and interpreters module (LBB 3422/20). It can distribute up to 6 outgoing languages. An 'auto-floor'-feature is incorporated for relay interpretation. This allows a less well-known floor language to be translated by one interpreter into a language familiar to all other interpreters and relayed as the auto-floor.

The LBB 3222/04 has an integral loudspeaker and is supplied with a microphone incorporating an illuminated status ring to warn everyone in the booth that the microphone is active. Two outgoing channels are provided, A and B, switchable by means of a channel select key.



Note: Flashing indicators warn that the language channel occupied by this desk is also being used by one or more other desks.

1.2 Front panel controls

The desk has the following front-panel controls and indicators (see figure 1.1):

Figure 1.1:

- Microphone activating key** - 2-position toggle switch for activating the microphone. An interlock facility can be enabled (using the under-panel controls) that prevents the microphone being activated if the desk's outgoing language distribution channel is occupied by another desk.
- Microphone status indicators** - Two red LEDs to indicate that the microphone is active.
- Microphone mute key** - A non-locking push-button to temporarily mute the microphone. When pressed, the status indicators and status ring are 'off', but the outgoing language distribution channel remains occupied by the desk.
- Microphone** - Gooseneck microphone with integral status indicator ring.

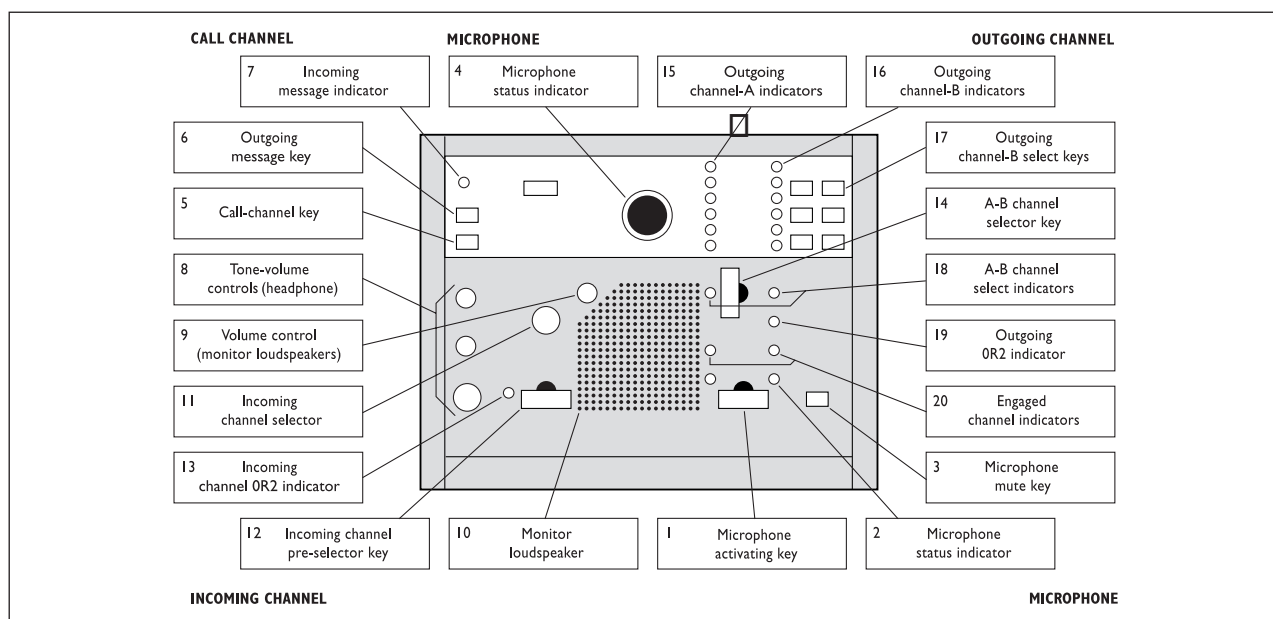


Figure 1.1 LBB 3222/04 6-channel interpreter desk

5. **Call-channel key** - Non-locking push-button to route the microphone to the call channel for one-way communication with the operator (with priority over the A/B channel). The microphone status indicators and status ring are 'on' when the call-channel key is pressed. The outgoing language distribution channel remains occupied by the desk. Not applicable for use with CCS 800 discussion systems.
6. **Outgoing message key** - Non-locking push-button to be used for signalling purposes. When pressed, contacts are closed. This switch is connected to the 6-pole DIN connector for custom wiring.
7. **Incoming message indicator** - A yellow LED with 1 k W series resistor connected to the 6-pole DIN connector. To be used for custom signalling purposes.
8. **Tone/volume controls** - Rotary volume, bass and treble controls for the headphone.
9. **Volume control** - Rotary volume control for built-in loudspeaker.
10. **Monitor loudspeaker** - Built-in loudspeaker for monitoring without headphones. The speaker is only active when the microphone is off.
11. **Incoming channel selector** - 8-position rotary switch to select either OR, OR2 or channels 1 to 6 for monitoring as incoming language. This switch is only active if the incoming channel pre-selector key is in the 'up'-position.
12. **Incoming channel pre-selector key** - 2-position toggle switch to select either OR when in the 'down'-position, or the channel selected by the incoming channel selector knob when in the 'up'-position. If OR is selected and OR2 is activated using the auto-floor-feature, the desk automatically receives OR2 for monitoring.
13. **Incoming channel OR2 indicator** - Green LED to indicate that OR2 is active instead of OR during relay interpretation.
14. **A-B channel selector key** - 2-position toggle switch for selecting either A or B. If use of channel B is inhibited, the outgoing channel will be the one pre-set for the desk by the under-panel A select control. If channel B is enabled, the outgoing channel can be selected with the channel-B select keys.
15. **Outgoing channel-A indicators** - 6 green LEDs to indicate which outgoing channel is assigned to the desk for channel A using the under-panel controls.
16. **Outgoing channel-B indicators** - 6 green LEDs to indicate which outgoing channel is assigned to the desk for channel B using the outgoing channel-B select keys.
17. **Outgoing channel-B select keys** - 6-way interlocking push-button array to select the outgoing channel when channel B is selected.
18. **A-B channel select indicators** - 2 red LEDs to indicate which channel, A or B, is selected.
19. **Outgoing OR2 indicator** - Green LED to indicate that the desk is enabled for relaying OR2 to other desks (using under-panel controls).
20. **Engaged channel indicators** - 2 yellow LEDs, one each for A and B, to indicate that the outgoing channel selected is occupied by one or more desks. A flashing LED indicates that the outgoing channel occupied by the desk is also being used by one or more other desks.



Note: For a full explanation of terms OR and OR2, see section 1.6.

1.3 Rear panel controls

The rear panel of the interpreter desk contains the following controls and connectors (see figure 1.2).

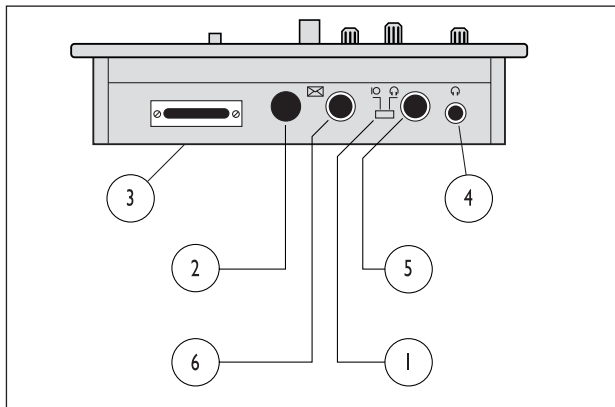


Figure 1.2 Rear view of LBB 3222/04

Figure 1.2:

1. **Headset switch** - 2-position slide switch to select either the headset's microphone or the built-in gooseneck microphone.
2. **System cable** - 3 m long cable terminated with a 25-pole male D-type connector for connecting the desk to the preceding desk or to the central.
3. **System connector** - 25-pole female D-type connector (lockable) for connecting to the next desk.
4. **Headphone connector** - 6.3 mm jack socket for connecting the headphone.
5. **Headset connector** - 5-pole female 180° DIN connector for connecting a headset (in accordance with IEC 268-1 1).
6. **Message connector** - 6-pole female DIN connector for message function (if required).

1.4 Interpretation procedures

The original floor language spoken by a delegate is distributed throughout the conference area, either via a PA system, or via built-in loudspeaker units on the delegates microphone units (both methods may also be used simultaneously).

This floor language is also distributed to all interpreters desks, where through their headphone sets the interpreters can listen to the floor language to base their interpretations.

The 6-channel interpretation system is operated completely independently from the system operator, and is operated as a stand-alone system only.

The procedures used for interpreting the original floor language is understood by all interpreters, and where the floor language is not so well known, two different operational procedures can be used: normal operational mode and relay interpretation mode.

- In the normal operational mode, where the original floor language is familiar to all interpreters, the interpreters will listen via their headphone or headset to the original floor language. The translations are then fed to the appropriate channels on the delegate's program selector units or receivers.
- In a situation where interpreters are unfamiliar with the floor language (and therefore unable to translate it), the CCS 800 system has a relay interpretation facility. This facility allows for an interpreter who is familiar with the floor language to relay his translation to other interpreters to which they can base their own translations.

1.5 Configuring the interpreter's system

The configuration of the 6-channel interpreter's system is carried out independently of the CCS 800 system. The controls located under the removable panel on the desk must be pre-set before putting the system into operation. To gain access to the controls, remove the plastic protection cover and text plate located at the top of the unit. This is achieved by inserting a small pointed implement into the holes at either side of the cover and carefully pushing forward to lever it off (see figure 1.3).

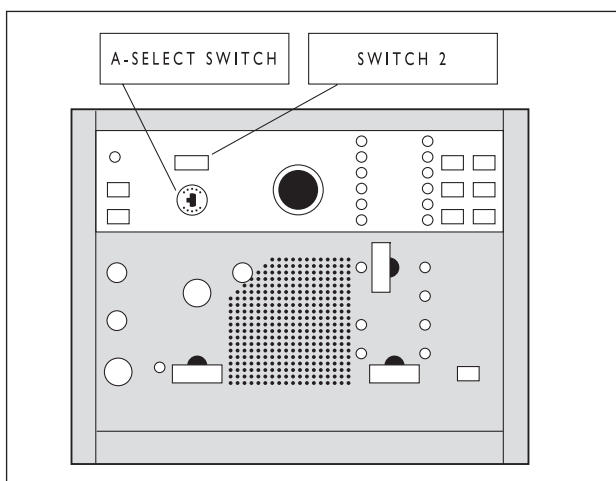


Figure 1.3 Under-panel controls on the LBB 3222/04 interpreter desk

A-select switch

The outgoing language distribution channel assigned to each desk must be pre-set using the A-select 6-position rotary switch. Each booth should be assigned a different channel (1 to 6). The language assigned to each channel can be written on the removable panel in the spaces provided alongside the outgoing channel A indicators. The appropriate LED will illuminate to indicate which language is assigned to a particular desk. Factory setting: channel 1.

Set-up selector DIL switch 2

Switch	On	Off
1	Channel B disable	Channel B enable
2	Mic. OR2 disable	Mic. OR2 enable
3	Interlock enable	Interlock disable
4	Slave	Master
5	Loudspeaker OR2 disable	Loudspeaker OR2 enable
6, 7, 8	Not used	

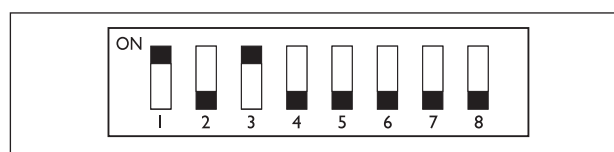


Figure 1.4 Factory setting of DIL switch 2

- SW 2-1 **B-enable** - If desks are not to make use of the B output, the B-enable switch must be switched 'on'. The outgoing language distribution channel for each desk will then be determined by the A-select switch only (regardless of the position of the A-B channel selector key on the front panel).
- SW 2-2 **OR2 enable** - To configure an auto-floor system, the desk from which the transfer interpretation will be made must have the OR2 function enabled. The outgoing channel OR2 indicator will illuminate on this desk. The B-enable switch must be 'off' for this desk.
- SW 2-3 **Interlock** - To prevent two or more desks using the same outgoing channel, the interlock feature can be enabled. When this switch is 'on', the microphone will remain inactive if an occupied outgoing channel is selected.
- SW 2-4 **Master / slave** - If more than one desk is installed in a booth, the additional desks must be set with this switch in the 'on'-position. The first desk in a booth (that nearest to the IR transmitter) must have this switch in the 'off'-position. If only one desk is installed in the booth, this switch must also be 'off'.

SW 2-5 **OR-only** - When the OR-only switch is in the 'on'-position, the loudspeaker will always monitor the floor channel. When the OR-only switch is in the 'off'-position, the loudspeaker will automatically switch over to the OR2 channel when this channel is available.

1.6 Auto floor function

To cater for circumstances where the original floor language is either well known or less well known, two different operational procedures can be utilised.

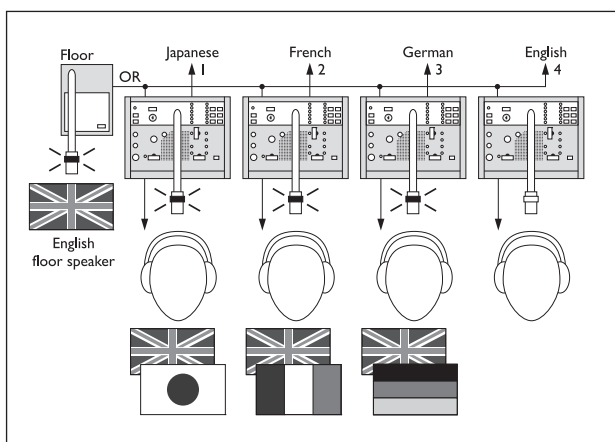


Figure 1.5 Normal operation (OR1 active)

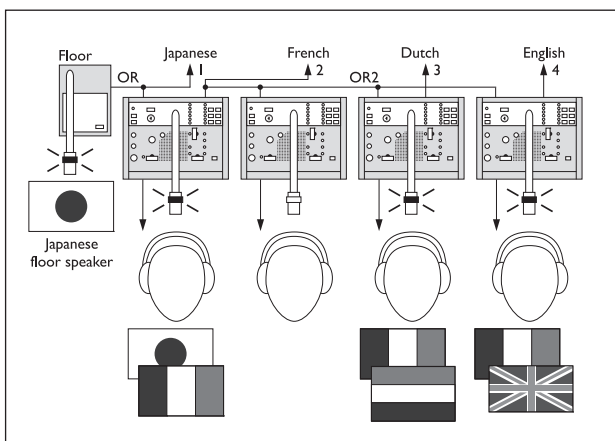


Figure 1.6 Relay interpretation using the auto-floor feature (OR2 active)

In the normal operational mode (shown in figure 1.5), where the original floor language (OR) is familiar to all interpreters, they will listen to the original floor language for interpretation. The translations are then fed to the appropriate language distribution channels. In a situation where interpreters are unfamiliar with the floor language and therefore unable to interpret it, the system offers an automated relay interpretation facility ('auto floor' - see figure 1.6).

An interpreter assigned to translate the floor language, translates it into another language easily understood by other interpreters.

The floor language (OR) on all interpreters' desks will be replaced by this transfer interpretation. This transfer interpretation or 'auto floor' (OR2) is then used as a base for further translations.

In the example in figure 1.6, Japanese is the OR and the auto-floor facility is enabled on the Japanese interpreter desk using the set-up selector DIL switch under the removable panel (the outgoing OR2 indicator is illuminated on this desk). This interpreter selects outgoing channel B and automatically relays a French translation as OR2 to all other desks for interpretation and also feeds the French language distribution channel. The incoming channel OR2 indicator shows on all other desks that auto floor is active.

2 Integrus audio input and interpreters module (LBB 3422/20)

2.1 Introduction

An Integrus audio input and interpreters module is required when an Integrus transmitter is to be used for direct connection of interpreters desks LBB 3222/04 (in combination with e.g. the CCS 800 system) or with analogue conference systems (such as the CCS 400). The interface module must be mounted in the transmitter housing.

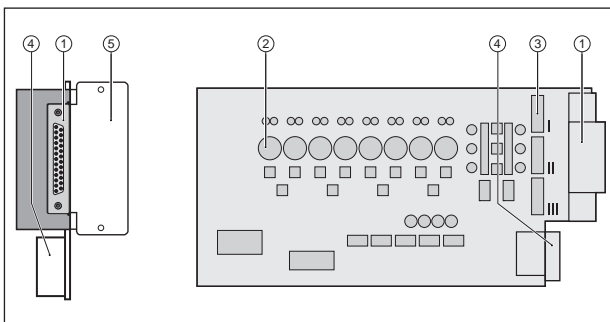


Figure 2.1 Integrus audio input and interpreters module, rear view and PCB layout

Figure 2.1:

1. **Interface connector** – A 25-pole sub-D female connector for direct connection of up to 12 LBB 3222/04 interpreters desks or analogue conference systems with interpretation.
2. **Positions for input transformers** – Eight input transformers can be mounted for galvanic separation of source and electronics inputs. The eight Integrus audio inputs at the 25-pole D-type plug can be isolated by adding eight audio transformers (Beyer type TR/BV3) in these positions.
3. **Function switches** – Three DIL switches for determining module functionality.
4. **PCB connector** - A 55-pins connector that connects the module to the Integrus transmitter's main PCB.
5. **Mounting plate.**

2.2 Configuration

Before using the Integrus audio input and interpreters module, the operation mode must be chosen by setting the DIL function switches on the module's circuit board:

- Select the mode in which the module must operate:
 1. As an interface to one or more LBB 3222/04 interpreters desks.
 2. As an interface to other audio sources.
- Select if floor distribution (see section 1.6) should be enabled.
 1. Enable floor distribution when LBB 3222/04 interpreters desks are directly connected
 2. Disable floor distribution when LBB 3222/04 interpreters desks are connected via a CCS 400 system.
- Select the channels on which the module's signals will be distributed.

The table below lists all the settings.



Notes:

- If floor distribution is enabled (DIL switch III-4 off), the floor audio signal will be distributed on those channels where the interpretation microphone is switched off.
- When interfacing between more than one LBB 3222/04 interpreter desk and the infra-red system, or interfacing between the CCS 400 power supply and the infra-red system, the floor distribution should be disabled (DIL switch III-4 on).
- Do not use a CCS 400 power supply in combination with direct connection to LBB 3222/04 interpreter desks, as this will cause a fuse to blow.
- When the Integrus audio input and interpreters module is used in combination with audio signals connected to the cinch inputs of the Integrus transmitter, the signals on corresponding channels are mixed.
- Check the positions of the DIL-switches before mounting the LBB 3422/20 Integrus audio input and interpreters module in an Integrus transmitter.

DIL	Switch	Function	On	Off
I	1,2,3,4,5,6,7,8	Interpretation	Direct connection to LBB 3222/04 interpreters desks	Connection to other audio sources
II	1,2,3,4,5,6,7,8	Interpretation	Direct connection to LBB 3222/04 interpreters desks	Connection to other audio sources
III	1,2,3	Interpretation	Direct connection to LBB 3222/04 interpreters desks	Connection to other audio sources
III	4	Floor distribution	Disabled	Enabled
III	5	Channel selection	Channels 8-15	Channels 0-7
III	6,7,8	Not used		

3 Connecting to an Integrus transmitter

3.1 Connecting interpreters desks LBB 3222/04 directly

An Integrus transmitter requires the LBB 3422/20 Integrus audio input and interpreters module to directly interface with one or more LBB 3222/04 interpreter desks. This module must be mounted in the transmitter housing (see the Integrus installation manual).

Up to 12 interpreter desks can be loop-through connected to the module. The system cable of the first interpreter desk is connected to the 25-pole sub-D connector on the Integrus audio input and interpreters module. The system cables of the next desks are loop-through connected to the system input plugs on the preceding desks.

The floor signal for the interpreters desk is connected to the Aux-Left input of the Integrus transmitter with an XLR connector. The floor signal can come from a CCS 800 analogue conference system (i.e. the line output cinch connector, see the CCS 800 installation manual) or from an external audio source, such as an audio mixer.

The DIL switches on the Integrus audio input and interpreters module must be set to 'Direct connection to LBB 3222/04 interpreter desks' (see section 2.2). The 'Aux. Input' mode of the Integrus transmitter must be set to 'Emergency/Mono' (see the Integrus installation manual).



Note: To connect the floor signal, a cable with a male XLR connector and a male cinch connector must be made. See figure 3.1 and figure 3.2 for the wiring.

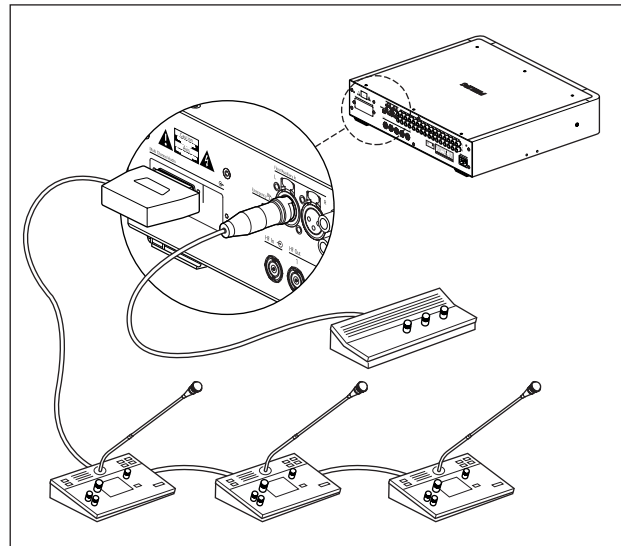


Figure 3.1 Connecting one or more LBB 3222/04 interpreter desks directly to the modular IR transmitter

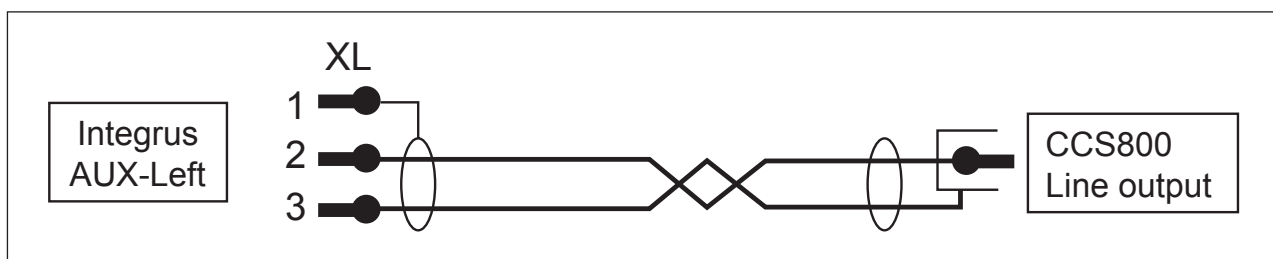


Figure 3.2 Wiring of the cinch to XLR connecting cable

3.1.1 Maximum cable length for connecting interpreters desks LBB 3222/04

The maximum length of the cables to connect the interpreters desks to the Integrus transmitter depends on the number of interpreters desks. A leader cable connects the first interpreters desk to the transmitter. An extension cable may be needed between the interpreters desks. The table below shows the maximum extension cable length (additional to the standard 3 m cable) that can be used with different numbers of interpreters desks.

Number of interpreters desks LBB 3222/04		2	4	6	8	10	12
Additional leader cable length between first interpreter desk and transmitter	meter	100	50	35	15	5	0
Additional extension cable lengths between interpreters desks	meter	34	8	2.9	2.4	1.8	1
Number of interpreters desks LBB 3222/04		2	4	6	8	10	12
Additional leader cable length between first interpreter desk and transmitter	feet	328	164	115	49	16	0
Additional extension cable lengths between interpreters desks	feet	112	26	9.5	7.9	6.0	3.3

3.1.2 Recording the audio channels

To record the audio channels, a connection box can be inserted between the interpreters desks LBB 3222/04 and the Integrus audio input and interpreters module LBB 3422/20. Such a connection box should be locally made. See figure 3.3 for the wiring.

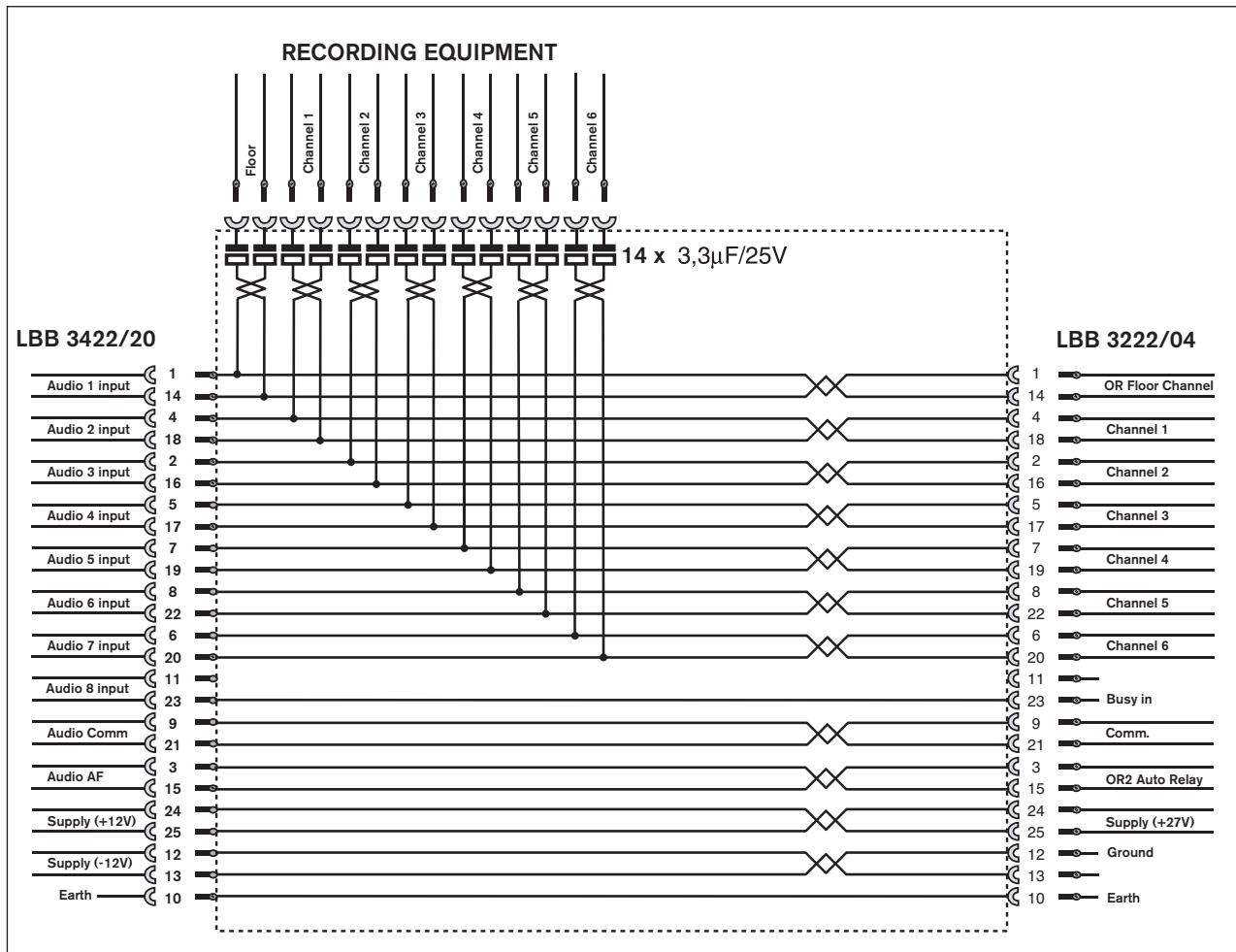


Figure 3.3 Connection box for recording audio and language channels

3.2 Connecting interpreters desks LBB 3222/04 via the CCS 400 system

An Integrus transmitter requires the LBB 3422/20 Integrus audio input and interpreters module to interface with the CCS 400 discussion and interpretation system. This module must be mounted in the transmitter housing (see the Integrus installation manual).

The CCS 400 system is connected to the Integrus audio input and interpreters module by means of a 25-pole sub-D connecting cable. The interpreters desks and the floor signal are connected to the CCS 400 system. See the CCS 400 installation manual for more information.



Note: Before connecting the CCS 400 analogue conference systems, the DIL switches on the Integrus audio input and interpreters module must be set to 'Connection to other audio sources'. For details of the required settings, see section 2.2.

3.3 Connecting other analogue conference systems

An Integrus transmitter requires the LBB 3422/20 Integrus audio input and interpreters module to interface with other analogue conference systems. This module must be mounted in the transmitter housing (see the Integrus installation manual).

The analogue conference systems are connected directly to the Integrus audio input and interpreters module by means of a 25-pole sub-D connecting cable. For pinning information see chapter 4.

It is also possible to connect a conference system directly to the Integrus audio cinch inputs of an Integrus transmitter. In that case the interface module is not necessary.



Notes:

- Before connecting other analogue conference systems, the DIL switches on the Integrus audio input and interpreters module must be set to 'Connection to other audio sources'. For details of the required settings, see section 2.2.
- If galvanic separation is required, add Beyer type TR/BV3 audio transformers on the module's PCB (see section 2.1).

4 Technical data

4.1 LBB 3222/04 6-Channel interpreter desk with loudspeaker

4.1.1 Physical characteristics

Mounting	Table top or flush mounting
Dimensions (H _{front} x H _{rear} x W x D)	20-58 x 250 x 189 mm (0.79–2.28 x 9.84 x 7.44 inch)
Weight	1.75 kg (3.85 lb)
Finish	Light gray

4.1.2 Electrical characteristics

Frequency response	125 Hz (-10 dB) to 12.5 kHz (-2 dB)
Rated equivalent sound pressure due to inherent noise	< 32 dB
Total harmonic distortion at overload	< 5%
Cross talk attenuation	> 66 dB

4.2 LBB 3422/20 Integrus audio input and interpreters module

4.2.1 Physical characteristics

Mounting	Mounting plate and two screws included
Dimensions (H x W x D)	100 x 45 x 231 mm (39 x 21 x 91 inch)
Weight	188 g (0.41 lb)

4.2.2 Electrical characteristics

Audio input level with AGC	-16.5 dBV (150 mVeff) to +3.5 dBV (1500 mVeff)
Audio input level without AGC	-4.4 dBV (600 mVeff)
Asymmetric input impedance	≥ 10 kOhm
DC input impedance	≥ 200 kOhm

4.3 Connection details

System cable	A 3 m long cable terminated with a 25-pole male D-type connector	
	Pin nr.	Function
	1, 14	Floor line (OR)
	2, 16	Outgoing language distribution channel 2
	3, 15	Auto floor (OR2)
	4, 18	Outgoing language distribution channel 1
	5, 17	Outgoing language distribution channel 3
	6, 20	Outgoing language distribution channel 6
	7, 19	Outgoing language distribution channel 4
	8, 22	Outgoing language distribution channel 5
	9, 21	Call channel
	10	Ground reference
	12, 13	Supply ground
	23	Status line
	24, 25	Positive supply voltage

System connector	25-pole female D-type connector	
	Pin nr.	Function
	1, 14	Floor line (OR)
	2, 16	Outgoing language distribution channel 2
	3, 15	Auto floor (OR2)
	4, 18	Outgoing language distribution channel 1
	5, 17	Outgoing language distribution channel 3
	6, 20	Outgoing language distribution channel 6
	7, 19	Outgoing language distribution channel 4
	8, 22	Outgoing language distribution channel 5
	9, 21	Call channel
	10	Ground reference
	12, 13	Supply ground
	23	Status line
	24, 25	Positive supply voltage

Headphone connector	6.3 mm jack socket	
	Contact	Function
	Tip	Audio out
	Fling	Audio out
	Sleeve	Return

Headset connector	5-pole female 180° DIN connector in accordance with IEC 268-11	
	Pin nr.	Function
	1	Mic. live
	2	Mic. return
	3	Left-hand headphone
	4	Return both headphones
	5	Right-hand headphone

Message connector	6-pole female DIN connector	
	Pin nr.	Function
	1	Connected to outgoing message key
	2	-
	3	Connected to outgoing message key
	4	Connected via internal series resistor to incoming message indicator LED (anode)
	5	Connected to incoming message indicator LED (cathode)

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