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Introduction



A world-class recording solution for congresses and conferences

Recently updated, the new Bosch CCS 800 Ultro is a versatile, economical discussion system for small-to-medium meeting areas as well as an excellent base installation for medium to large-scale business and conference centers. With its unique built-in MP3 audio recording and playback feature that works with removable Secure Digital (SD) Cards, the system records proceedings digitally for reliable archiving, playback and general meeting management.

Using this compact, all-in-one system, participants can take part in proceedings by means of tabletop delegate and chairman units that feature built-in loudspeakers and microphones. The chairman unit features an additional attention tone and priority button. Removable Secure Digital Cards (SD Cards) ensure full reliability of recordings, while the patent-pending recording buffer guarantees that no speech is lost while switching SD Cards.

Delivering high quality speech intelligibility thanks to built-in digital acoustic feedback suppression (DAFS) technology, the CCS 800 Ultro is ideal for local government councils and courts of law, corporate meeting rooms, hotel conference rooms, local business venues and international congress centers.

Simple straight-forward installation

System installation is quick and easy, and requires no special training. The system includes a Control Unit that can handle up to 150 delegate units. Designed for flexibility, the CCS 800 Ultro includes a tailored number of delegate and chairman units linked to the Control Unit (CU), which is equipped with an icon-based LCD screen and an SD Card slot.

The language-independent LCD screen displays 5 soft-touch keys that control the menu: start, stop, pause recording, playback or change settings. Other items include date and time, file name, elapsed recording time, elapsed playback time, number of recorded tracks, used and remaining SD Card memory, SD Card availability status, menu icons, playback mode, and a setting menu.

Each delegate unit has an interconnection socket and a 2 m (6 ft 6 in) cable that terminates in a matching plug. During installation, the units are simply plugged into each other in a 'daisy chain'. Power and control are provided by plugging the first unit in the chain into the Control Unit.

Each Control Unit provides connection for 2 daisy chains of up to 25 units; these can control up to 150 units upon request. System interconnections are verified using the test mode feature, which is part of the Control Unit.

Easy and convenient to use

After installation is complete, set-up couldn't be simpler. Before the meeting begins, the desired microphone-operating mode is selected from one of the four available; other parameters, such as volume, are also chosen. The system is then ready for use: it does not require a specially designated operator. If necessary, however, system settings can be easily altered from the Control Unit.

To speak during meetings, delegates merely press the one-touch button to activate the microphone on their units. Microphones are mounted on flexible stems, which can be adjusted to individual preferences. In larger and noisier settings, users can plug in earphones to eliminate disturbing background noise. There is a double headphone socket for two users per microphone.

Future-proof extendibility

System longevity is part of the CCS 800 Ultro design. The system can be interfaced with a wide range of external equipment, providing numerous expansion capabilities that 'future-proof' the system. External wired or wireless microphones allow guest speakers or audience participation. Additionally, a public address system might be incorporated to broadcast proceedings to a wider audience. Delegates may participate remotely by telephone via a telephone coupler connected to the Control Unit. Doubling as a base for more complex discussion management systems, CCS 800 Ultro also offers various connectivity options including tele-conferencing and video conferencing, and interpretation and language distribution.

Digital acoustic feedback suppression

The CCS 800 Ultro features proprietary DAFS technology. Balancing sound pressure level and system gain above normal feedback limits, an additional chip contains proprietary digital signal processing. Basically, it lets users increase the volume above normal levels without disturbing feedback and microphone 'howling'. The result is excellent speech intelligibility under all conditions.

Operational modes and applications

The four operating modes are readily adapted to a variety of situations:

- For business events, between 1 and 4 microphones can be active at once, with the chairperson choosing speaker priority. Unused microphones are switched off automatically.
- In town council settings, wired or wireless microphones (hand-held or podium-style) are ideal.
- In the courtroom, MP3 audio recording or playback mode secures and replays testimony.
- For large, noisy environments, plug-in earphones eliminate background noise. Hearing aid users can connect Induction Loop Neckband headphones via these sockets.

Modern contemporary design

Besides excellent acoustic and component design, users can expect a stunning yet subtle aesthetic quality. Practical and intuitive, the CCS 800 Ultro's updated look complements practically any interior from highly modern architecture to classic town halls.



Fixed or temporary installations

The CCS 800 Ultro is ideal for both fixed and temporary installations. The delegate and chairman units, and Control Units, are designed for portable or fixed tabletop mounting. In permanent installations, the Control Unit can be flush-mounted to a desk, or installed in a 19-inch rack.

To facilitate transportation, there are two types of transport and storage suitcases, both of which are lightweight, rugged, and easy to carry and pack.

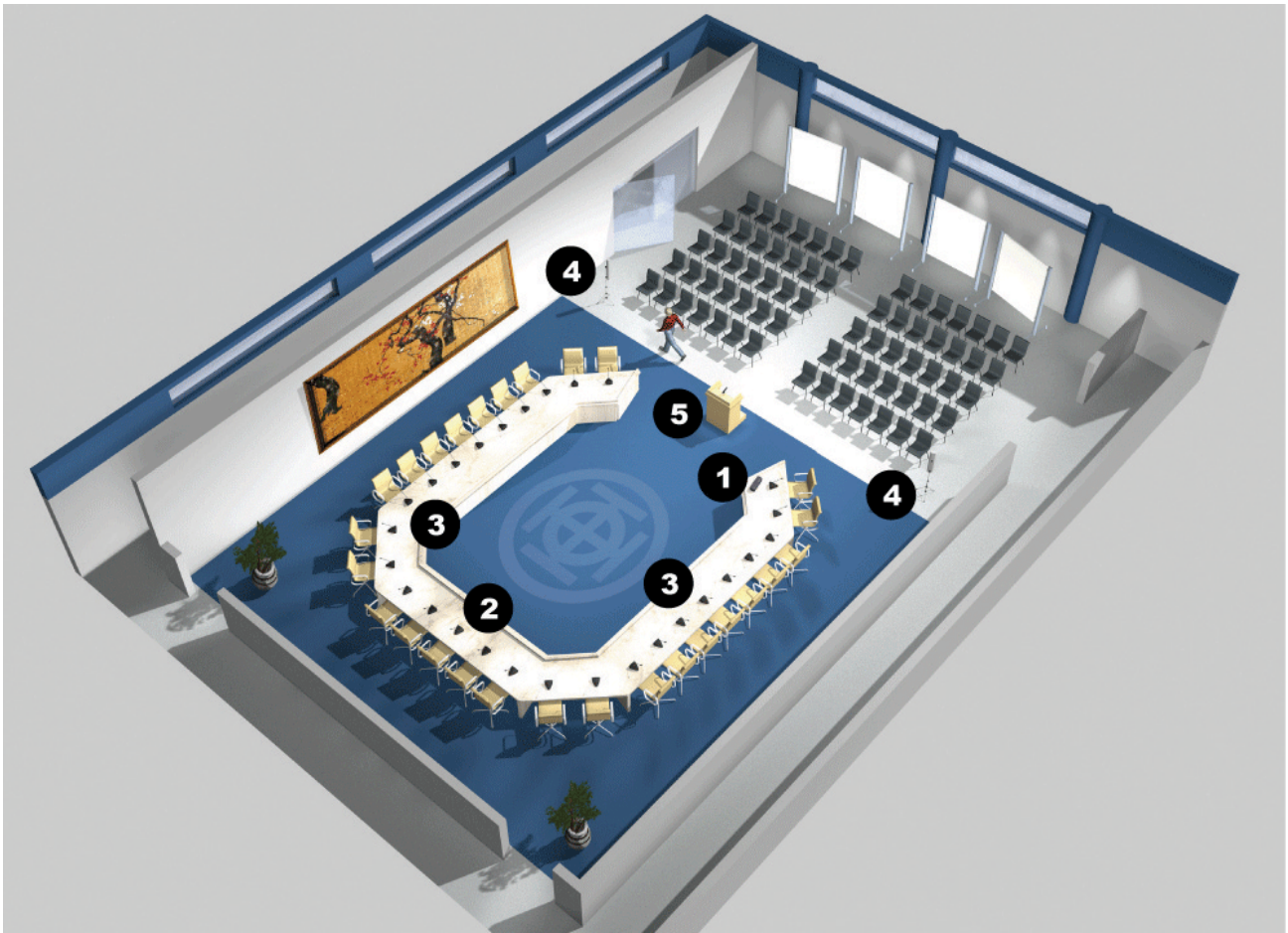
- The first accommodates 10 contribution units with standard microphone stem length.
- The second holds one Control Unit, six contribution units (with standard or extended microphone stem length), and extension cables.

A genuine Bosch product

The CCS 800 Ultro Discussion System forms part of the Bosch range of congress systems. The range includes the Digital Congress Network (DCN), DCN Discussion System and Integrus Digital infra-red Language Distribution System.

The name Bosch has been synonymous with innovation for over 100 years. As a manufacturer of original, innovative products, Bosch Security Systems have led the market for over 50 years. Like all Bosch products, the CCS 800 Ultro is backed by Bosch's renowned customer support and service commitment.

Example 1 – In the City Council



- 1: Control Unit with Recorder
- 2: Chairman Unit
- 3: Delegate Units
- 4: XLA 3200 Line Array Speakers 60W (x2)
- 5: Microphone

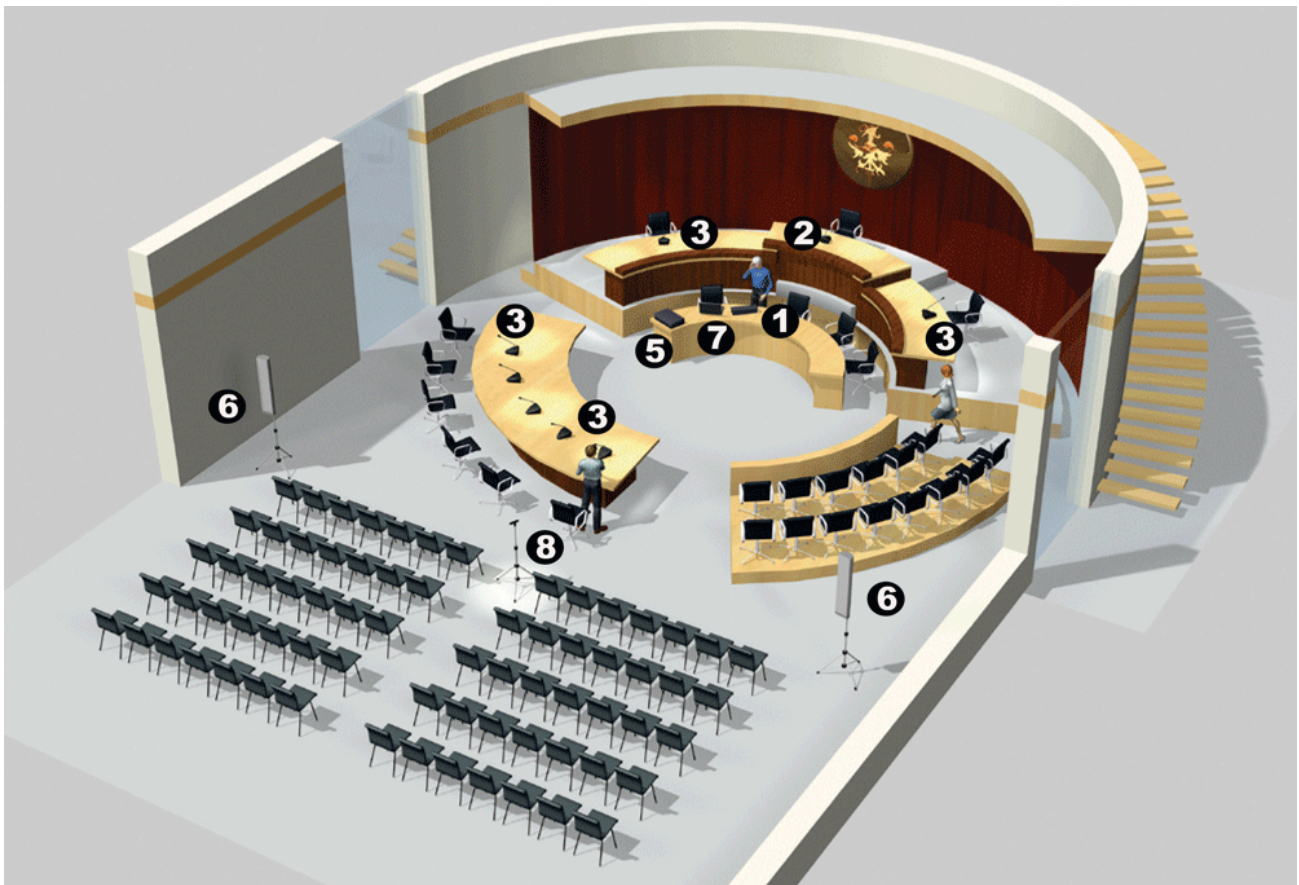
Excellent speech intelligibility and delegate management

Different discussions occur every day in small-to-medium-sized public spaces where the city council meets. A flexible solution for this type of venue, the CCS 800 Ultro, allows the chairperson to guide and record the proceedings while providing excellent speech intelligibility throughout the room.

The system can control up to 150 units. Via the chairman unit, the chairperson has access to a priority button with an attention tone to temporarily or permanently mute all delegate unit microphones. The system can easily handle most external equipment including separate microphones and a public address system for the audience.

The CCS 800 Ultro lets the chairperson manage and record the proceedings. The chairman unit has a priority button with attention tone to mute delegate microphones. Additional microphones and other equipment can be added as well. Thanks to DAFS, excellent speech intelligibility is guaranteed throughout the room.

Example 2 – In the Courtroom



- 1: Control Unit with Recorder
- 2: Chairman Unit
- 3: Delegate Units
- 5: Plena Mixer Amplifier 120W
- 6: XLA 3200 Line Array Speakers 60W (x2)
- 7: PC for archiving MP3 recordings
- 8: Microphone

MP3 recording and system expandability

In a typical courtroom, the CCS 800 Ultro system is a top performer, allowing people to participate directly in the hearing via table-top delegate units while the judge maintains order via the chairman unit.

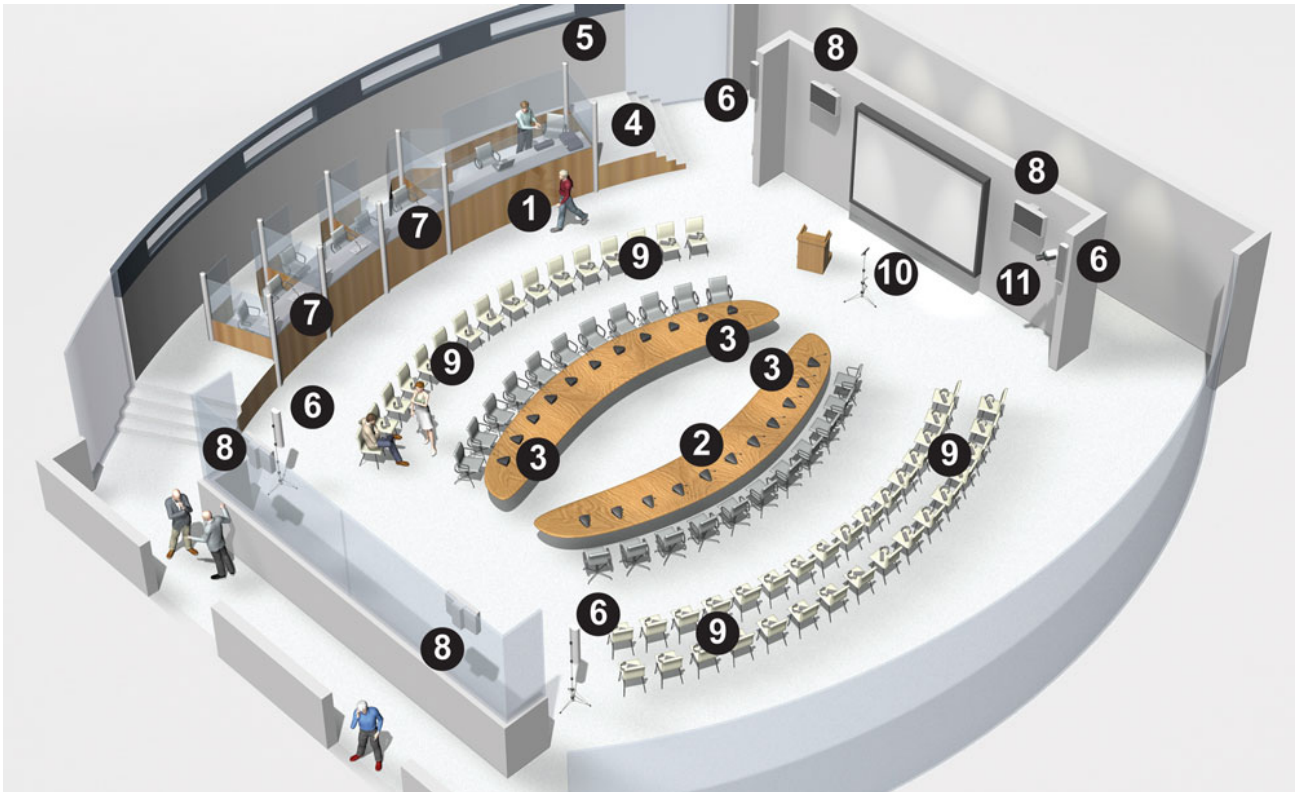
Best of all, the CCS 800 Ultro system can record the entire session or key segments on removable SD Cards – an easy and accurate method for archiving on a PC or separate storage device, and playing back previous testimony. The system automatically denotes vital information like date, time, and tracking numbers on its icon-based LCD screen.

Easily expandable, the CCS 800 Ultro features various connectivity options including headphone connections for the court clerks, additional external microphones and a Bosch Plena public address system for the public gallery as well as telephone conferencing, interpretation and videoconferencing possibilities.

The CCS 800 Ultro lets users record and archive MP3-compatible audio recordings on individual SD Cards*. The easy-to-use control unit LCD screen displays additional information such as the date and time, file name, elapsed recording time, number of recorded tracks, and memory status.

*not included

Example 3 - In the Business Conference Center



- 1: Control Unit with Recorder
- 2: Chairman Unit
- 3: Delegate Units
- 4: Telephone Coupler
- 5: Plena Mixer Amplifier 120W
- 6: XLA 3200 Line Array Speakers 60W (x2)
- 7: DCN Interpretation Desk
- 8: Integrus Radiator
- 9: Integrus Receiver
- 10: Wireless microphone & receiver
- 11: Videoconferencing system

Excellent base installation for dynamic business environments

The CCS 800 Ultro makes an excellent base installation for larger-scale international business and conference centers. The CCS 800 Ultro is easily integrated with interpretation systems like the Bosch Integrus digital infrared language distribution system. With language selection occurring on the wireless receiver itself, this solution gives delegates and audience members access to simultaneous interpretations generated by interpreters using Bosch interpreter desks.

Another option is to integrate a telephone link to allow individual delegates or even groups to participate from remote locations. On-site participants can use a Bosch Wireless Microphone to speak or give presentations. With a variety of other integration possibilities, including videoconferencing, it is easy to forget that the CCS 800 Ultro can also record an entire conference or event for accurate archiving or publication.

The CCS 800 Ultro system can handle a variety of external equipment such as an interpretation system, language distribution, a telephone coupler for teleconferences, a public address system and videoconferencing equipment. The auxiliary components can be plugged directly into the back of the control unit.

System Specifications

Features

- ▶ **Built-in MP3 recorder**
- ▶ **Up to 150 contribution units**
- ▶ **Easy to install and convenient to use**
- ▶ **High speech intelligibility is ideal for small to medium-sized meetings**
- ▶ **Digital acoustic feedback suppression**
- ▶ **Can be interfaced with a wide range of external equipment, providing numerous system expand capabilities**
- ▶ **Attractive and modern design**

Conforms to international standard IEC 60914, the international standard for conference systems.

Functions

- Two types of contribution unit (chairman and delegate)
- Delegate units enable participants to actively take part in a conference
- Control Unit controls and powers the microphones of contribution units and provides connections for audio inputs and outputs

Certifications and Approvals

Safety

according to EN 60065

according to CAN / CSA-E60065

according to USA / UL 6500

Electromagnetic compatibility

Emission EN 55103-1, FCC rules (part 15) class A

Immunity EN 50103-2

ESD

according to IEC 801-2 and 801-4

Mains harmonics

prepared to EN 61000-3-2 and EN 61000-3-3

Shock resistance, vibration resistance, bump and transport

according to IEC 68, 5G acceleration

Transport

UN-D 1400

Technical Specifications

Electrical

Contribution units

DC supply	24 V ± 1 V (current limited)
Typical frequency control	25 Hz to 12.5 kHz tolerances according to IEC 60914 standard

Total harmonic distortion

at nominal input level (85 dB SPL)	< 0.5 %
at maximum input level (110 dB SPL)	< 3 %

Auto microphone switch-off function (selectable on the Control Unit)

after 30 seconds without speech (sound level below 64 dB SPL), the microphone is switched off

Environmental

Temperature

Operating	+5°C to +45°C (+41°F to +113°F)
Storage and transport	-20°C to +70°C (-4°F to +158°F)

Humidity

Operating	20% to 95% RH
Storage	up to 99% RH

Air pressure 600 to 1100 mBar

System limits and cabling

Maximum number of contribution units connected to Control Unit	50 units, (can provide control for 150 units)
Maximum number of contribution units per trunk output	25 units, (2 trunk outputs per Control Unit)
Maximum trunk length using CCS 800 Ultro standard cabling	100 m
Maximum control	150 units (consult your dealer for more information)

LBB 3330 CCS Delegate Unit



Features

- ▶ **Microphone with flexible stem and light ring**
- ▶ **Built-in loudspeaker**
- ▶ **Two headphone sockets**
- ▶ **Built-in volume control for headphones**
- ▶ **Compact, attractive design**
- ▶ **Available with standard or extended length microphone stems**

The LBB 3330 CCS Delegate Units enable delegates to actively take part in the proceedings. A built-in microphone allows them to speak to the other delegates, and they can listen to the discussion using the built-in loudspeaker or (optional) personal headphones.

Functions

Microphone with flexible stem and light ring

The microphone is mounted on a flexible stem, which is easily adjustable to suit personal preferences. It also allows two people to use the same delegate unit as they can pull the microphone towards them when required to speak. Incorporated into the head of the microphone is a light ring which illuminates red to indicate when the microphone is on.

Built-in loudspeaker

Loudspeaker volume is set centrally at the Control Unit for all delegate units. To prevent acoustic feedback, the built-in loudspeaker is automatically muted when the microphone is on.

Two headphone sockets

Two 3.5 mm (0.14 in) stereo headphone sockets (wired for mono) allow two pairs of headphones to be connected so two delegates can simultaneously use the unit. It is also possible to connect a tape recorder to one headphone socket, and use the other headphone socket to listen to the proceedings.

Built-in volume control for headphones

The headphone volume level can be adjusted by means of a thumbwheel on the unit for maximum comfort.

Compact, attractive design

Featuring modern, unobtrusive styling and finished in charcoal gray these units make a valuable addition to any venue.

Standard or Extended Length Microphone Stems

The delegate units are available with standard 313 mm (12.3 in) or extended 488 mm (19.2 in) microphone stem lengths.

Controls and Indicators

- Microphone on/off button
- Rotary volume control for adjusting headphone volume
- Loudspeaker, automatically muted when microphone is on and/or headphones are connected
- Microphone 'on' indicator (red LED)
- Light ring indicator on microphone stem, lights up red when microphone is on

Interconnections

- 1 x 2 m (78.7 in) cable terminated with a 7-pole male connector for loop-through connection to other delegate or chairman units, or to a Control Unit
- 1 x 7-pole circular female connector for loop-through connection to other delegate or chairman units
- 2 x 3.5 mm (0.14 in) stereo headphone sockets

Technical Specifications

Mechanical

Dimensions unit without microphone (H x W x D)	63 x 124 x 172 mm (2.5 x 4.9 x 6.8 in)	
Height with microphone in horizontal position	127 mm (5.0 in)	
Length of microphone from mounting surface	LBB 3330/00	LBB 3330/50
	313 mm (12.3 in)	488 mm (19.2 in)
Weight	approx. 1 kg (2.2 lb)	
Mounting	tabletop (portable or fixed)	
Material (top)	polymer	
Material (base)	painted metal	
Color (top)	charcoal (PH10736)	
Color (base)	black (PH80007)	

Ordering Information**LBB 3330/00 CCS Delegate Unit Short LBB3330/00****Microphone**microphone stem length 313 mm (12.3 inch)

LBB 3330/50 CCS Delegate Unit Long LBB3330/50**Microphone**

microphone stem length 488 mm (19.2 inch)

LBB 3331 CCS Chairman Unit



Features

- ▶ Incorporates all functions of the LBB 3330 CCS Delegate Units
- ▶ Priority button for chairman microphone
- ▶ Temporary or permanent muting of delegate microphones
- ▶ Optional chime tone facility for preceding chairman announcements
- ▶ Modern, unobtrusive styling to match the LBB 3330 CCS Delegate Units
- ▶ Available with standard or extended length microphone stems

The LBB 3331 CCS Chairman Units are equipped with enhanced functionality that enables the user to take the role of chairman in a conference or meeting.

Functions

Priority button for chairman microphone

In addition to the 'microphone on' button the chairman units feature a 'chairman priority' button. When pressed the priority button causes all currently active delegate microphones to be temporarily or permanently muted.

Temporary or permanent muting of delegate microphones

The 'chairman priority' button can be set to mute delegate microphones on a temporary or permanent basis. On the temporary setting, delegate microphones are muted only as-long as the chairman has the priority button pressed down. On the permanent setting delegates must reactivate their microphone after a 'chairman priority' announcement by pressing the 'microphone on' button on their delegate unit. Activation of the permanent mute option is carried out

by setting an internal switch, which can be accessed by removing a small plastic plate on the base of the chairman unit.

Optional chime tone facility for preceding chairman announcements

An optional chime tone can be selected to precede chairman priority calls. Activate the chime tone option by setting an internal switch; this can be accessed by removing a small plastic plate on the base of the chairman unit.

Standard or extended length microphone stems

The chairman units are available with standard 313 mm (12.3 in) or extended 488 mm (19.2 in) microphone stem lengths.

Controls and Indicators

- Microphone on/off button
- Chairman priority button
- Rotary volume control for adjusting headphone volume
- Loudspeaker, automatically muted when microphone is on and/or headphones are connected
- Internal switch for selection of chairman announcement chime tone
- Internal switch for temporary or permanent muting of delegate microphones when chairman priority button is pressed
- Microphone has 'on' indicator (red LED)
- Light ring indicator on microphone stem, lights up red when microphone is on

Interconnections

- 1 x 2 m (78.7 in) cable terminated with a molded 7-pole circular male connector, for loop-through interconnection to delegate unit or Control Unit
- 1 x 7-pole circular female connector for loop-through interconnection to delegate units
- 2 x 3.5 mm (0.14 in) stereo headphone sockets

Technical Specifications

Mechanical

Dimensions unit without microphone (H x W x D)	63 x 124 x 172 mm (2.5 x 4.9 x 6.8 in)	
Height with microphone in horizontal position	127 mm (5.0 in)	
Length of microphone from mounting surface	LBB 3331/00	LBB 3331/50
	313 mm (12.3 in)	488 mm (19.2 in)
Weight	approx. 1 kg (2.2 lb)	
Mounting	tabletop (portable or fixed)	
Material (top)	polymer	
Material (base)	painted metal	
Color (base)	charcoal (PH10736)	
Color (top)	black (PH80007)	

Ordering Information**LBB 3331/00 CCS Chairman Unit Short LBB3331/00****Microphone**microphone stem length 313 mm (12.3 inch)

LBB 3331/50 CCS Chairman Unit Long LBB3331/50**Microphone**

microphone stem length 488 mm (19.2 inch)

LBB 3312/00 CCS Suitcase for 10 Delegate Units



Technical Specifications

Mechanical

Dimensions (H x W x D)	560 x 795 x 235 mm (22.0 x 31.3 x 9.3 in)
Weight (empty)	6 kg (13.2 lb)
Material (body)	3 mm (0.12 in) ABS
Material (rim)	aluminum
Color (body)	black (RAL9004)
Color (rim)	silver

Ordering Information

LBB 3312/00 CCS Suitcase for 10 Delegate Units **LBB3312/00**

Features

- ▶ Can hold 10 contribution units and cables
- ▶ Attractive, yet sturdy construction
- ▶ Interior specially molded to securely hold system units
- ▶ Easy to transport and store
- ▶ Two separate locks for extra security

The LBB 3312/00 CCS Suitcase for 10 Delegate Units is used where CCS 800 Ultro contribution units will not be used in one fixed location and, therefore, have to be easily transportable. This is often the case in town halls, hotels, business centers, local government offices or smaller halls in major conference venues.

Functions

Capacity

The LBB 3312/00 is designed to accommodate ten contribution units with short-length microphones. Any combination of delegate/chairman units can be catered for.

Specially shaped interior

The suitcase interior has shaped foam packing to accommodate the discussion units. This gives ample protection and makes packing and unpacking easier.

Easy to transport and store

The suitcase is attractive but also extremely durable and practical. It has handles on the top and side with two wheels on the underside for easy transport. There are two separate locks for extra security.

LBB 3312/10 CCS Suitcase Control Unit and 6 Delegate



Easy to transport and store

The suitcase is attractive but also extremely durable and practical. It has handles on the top and side with two wheels on the underside for easy transport. There are two separate locks for extra security.

Technical Specifications

Mechanical

Dimensions (H x W x D)	560 x 795 x 235 mm (22.0 x 31.3 x 9.3 in)
Weight (empty)	6 kg (13.2 lb)
Material (body)	3 mm (0.12 in) ABS
Material (rim)	aluminum
Color (body)	black (RAL9004)
Color (rim)	silver

Ordering Information

LBB 3312/10 CCS Suitcase Control Unit and 6 Delegate **LBB3312/10**

Features

- ▶ Can hold CU and/or multiple contribution units and cables
- ▶ Attractive, yet sturdy construction
- ▶ Interior specially molded to securely hold system units
- ▶ Easy to transport and store
- ▶ Two separate locks for extra security

The LBB 3312/10 CCS Suitcase Control Unit and 6 Delegate is used where CCS 800 Ultra contribution units will not be used in one fixed location and, therefore, have to be easily transportable. This is often the case in town halls, hotels, business centers, local government offices or smaller halls in major conference venues.

Functions

Capacity

The LBB 3312/10 can accommodate one CU and up to six contribution units with standard or extended length microphones. Capacity for the storage of several extension cables is also provided.

Specially shaped interior

The suitcase interior has shaped foam packing to accommodate the units. This gives ample protection and makes packing and unpacking easier.

CCS-CU Control Unit



Features

- ▶ **Built-in MP3 recording and playback with graphical display**
- ▶ **Patent-pending recording buffer**
- ▶ **Digital Acoustic Feedback Suppression**
- ▶ **Discussion control without operator**
- ▶ **Controls up to 150 contribution devices**
- ▶ **Built-in monitor loudspeaker**

The Control Unit (CU) is the heart of the CCS 800 Ultra Discussion System and supplies the power for all delegate and chairman units in the system. The unit also controls the chairman and delegate unit microphones, as well as providing connections for audio inputs and outputs.

Functions

Built-in MP3 recording and playback with graphical display

The CU has a built-in recorder to digitally record a discussion to an SD Card. The graphical display shows the status of the recorder and the accompanying buttons can be used to configure the recorder. As an option, the recording is only active when a microphone is active.

The SD card can be removed from the CU and processed on a PC for transcription purposes; the recordings can also be retrieved by connecting a PC to the CU's USB. The recordings can be played back to the monitor loudspeaker or to delegate's loudspeakers. An audible beep and a flashing LED indicate when the SD Card is almost full and the user needs to replace it with a new card.

Patent-pending recording buffer

A card can be replaced by an empty card while recording is running. When the full card is removed, the recording is continued to a patent-pending recording buffer. When a new card is inserted into the CU, the buffered recording is written onto the new card and the recording continues normally. This gives seamless recording without the loss of any audio while an SD Card is exchanged.

Digital acoustic feedback suppression

The digital acoustic feedback suppression facility automatically eliminates acoustic feedback (also known as 'howling' or 'Larson effect'). This gives better speech intelligibility by allowing the speaker volume to be turned up as loud as required without any risk of feedback.

Discussion control without operator

The CU can be setup to operate standalone without the need for an operator. The following 5 modes can be chosen using a rotary control on the unit's top panel:

- Open mode – allows selection of one to four microphones (excluded chairman microphones) which can be simultaneously active
- Open mode with auto-switch-off – allows selection of one to four microphones (excluded chairman microphones) which can be simultaneously active. If the delegate does not speak for 30 seconds, microphones are automatically switched off
- Override mode – delegates can override each other simply by activating their microphones. Only one microphone can be active at any one time. (Note: In override mode, delegates cannot override chairmen)
- Chairman only mode – only chairmen can speak. Delegate microphones cannot be activated, even when a chairman is not speaking
- Test mode – checks if system connections are correct. All microphone light rings and contribution unit LEDs light up to indicate that units are properly connected

Supplies power for up to 50 contribution units

The CU has two trunk outputs for the loop-through connection of contribution units. It is possible to connect 25 contribution units to each trunk output, with a maximum system cable length of 100 m (109.3 yards).

Provides control for up to 150 contribution units

Up to 3 CUs can be used together in a discussion system to power and control a maximum of 150 contribution units. In this configuration a single CU acts as a master controller for the entire system.

Built-in monitor loudspeaker

The built-in monitor loudspeaker and headphone socket allow the conference to be monitored.

Interfaces the system with external equipment

The following equipment can be interfaced to the CCS 800 Ultra Discussion System through the CU:

- External wired or wireless microphone – for guest speakers or audience participation. (Note: The external microphone is muted when the priority button on a chairman unit is pressed, and when the system is operating in 'chairman only' mode)
- External PA system – for transmitting the proceedings to an audience in the same room or an adjacent room

- Tape recorder – for external recording and playing back meetings and discussions
- Audio equipment – for providing background music
- Telephone coupler – to allow a remote delegate to participate via telephone
- External audio processing – an insertion connector is provided

Controls and Indicators

Top

- Mains on/off switch
- Graphical display for status information
- 5 soft buttons for configuration and control of the built-in MP3 recorder
- Loudspeaker volume control, for setting output level of loudspeakers of contribution units. This control also determines the maximum level for the headphone outputs of the contribution units and the CU.
- Microphone mode rotary switch, for setting the number of simultaneously active microphones, and selecting one of the four operation modes (plus test mode)
- Power on LED

Back

- On/off switch for digital acoustic feedback suppression facility
- Microphone input gain adjustment (at rear of unit)
- Recorder input gain adjustment (at rear of unit)
- Insertion connector bypass switch (at rear of unit)

Interconnections

Top

- 1 x 3.5 mm (0.14 inch) stereo headphone socket

Back

- 1 x AC input
- 2 x 7-pole circular female connectors, trunk in/out loop through interconnection
- 1 x 3-pole female XLR connector, microphone input (can be used as line input by included 50dB attenuator)
- 2 x Cinch connector pairs (R/L channel), recorder input/output
- 1 x Cinch connector pair, line input/output
- 1 x Cinch connector pair, telephone input/output
- 1 x Cinch insertion input/output
- USB interface

Parts Included

Quant.	Component
1	Control Unit
1	50 dB Attenuator
1	User manual
1	Power cord

Technical Specifications

Electrical

Mains voltage	100 to 240 VAC $\pm$ 10 %
Current consumption	maximum 0.9 A (100 VAC) to 0.3 A (240 VAC)
DC supply to contribution units	24 V $\pm$ 1 V (current limited)
Loudspeaker volume control	mute (50 dB att.) + 10 steps of 1.9 dB
Limiter threshold level to unit	10 dB above nominal level loudspeaker / headphone
Gain reduction due to number of open microphones (NOM)	$\div$ NOM $\pm$ 1 dB
Total harmonics	
Nominal input (85 dB SPL)	< 0.5
Max. input (110 dB SPL)	< 0.5

Sample frequency

Recording	32 kHz
Playback	32, 44.1, 48 kHz

Bit rate

Recording	64, 96, 128, 192, 256 KBit/sec
Playback	any bitrate

Compatible conform ID3V2 mp3-tags

Memory card	Any SD Card up to 2 Gb (high speed cards advised)
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Recording capacity

	Card size		
Bit rate	512 MB	1 GB	2 GB
64	17 h : 14 m	34 h : 28 m	64 h : 56 m
96	11 h : 29 m	22 h : 59 m	45 h : 58 m
128	08 h : 37 m	17 h : 14 m	34 h : 28 m
192	05 h : 44 m	11 h : 29 m	22 h : 58 m
256	04 h : 18 m	08 h : 37 m	17 h : 14 m

Mechanical

Dimensions including feet (H x W x D)	84 x 361 x 143 mm (3.4 x 14.2 x 5.6 in)
Height of feet	5.5 mm (0.22 in)
Mounting	tabletop (portable or fixed) 19-inch rack flush mounting
Weight	1.5 kg (3.3 lb)
Material (top)	polymer
Material (base)	painted metal
Color (top)	charcoal (PH10736)
Color (base)	black (PH80007)

Ordering Information

CCS-CU Control Unit	CCS-CU
CCS-CUR Control Unit with Recorder	CCS-CUR
CCS-CUD Control Unit with DAFS	CCS-CUD
CCS-CURD Control Unit with Recorder and DAFS	CCS-CURD
CCS-CU-JP Control Unit (JP) special version for Japanese market	CCS-CU-JP
CCS-CUR-JP Control Unit with Recorder (JP) special version for Japanese market	CCS-CUR-JP
CCS-CUD-JP Control Unit with DAFS (JP) special version for Japanese market	CCS-CUD-JP
CCS-CURD-JP Control Unit with Recorder and DAFS (JP) special version for Japanese market	CCS-CURD-JP

LBB 3311/00 CCS Rack Mounting Set



The LBB 3311/00 19-inch rack mounting set is a set of brackets and other necessary fixings to mount a Control Unit into a 19-inch rack system.

Technical Specifications**Mechanical**

Material	metal
Color	charcoal (PH10736)

Ordering Information

LBB 3311/00 CCS Rack Mounting Set	LBB3311/00
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LBB 3316/00 CCS Installation Cable 100m



A 100 m (328 ft) length of installation cable plus 10 connector sets (5 male and 5 female).

Parts Included

Quantity	Component
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1x	Installation cable, length 100 m (328 ft)
5x	Connector sets, male and female

Technical Specifications

Mechanical

Length	100 m (328 ft)
Diameter	5.9 ± 0.3 mm (0.23 ± 0.01 in)
Insulation material	PVC
Color	grey

Ordering Information

LBB 3316/00 CCS Installation Cable 100m	LBB3316/00
100 m (328 ft), includes 5 male and 5 female connector sets	

LBB 3316 CCS Extension Cable



Extension cables for contribution unit / Control Unit interconnection. These cables provide additional system flexibility in larger application sites.

Functions

Interconnections

- 1 x 7-pole male DIN connector
- 1 x 7-pole female DIN connector

Technical Specifications

Mechanical

	LBB 3316/05	LBB 3316/10
Length	5 m (16.4 ft)	10 m (32.8 ft)
Diameter	5.9 ± 0.3 mm (0.23 ± 0.01 in)	
Material	PVC	
Color	grey	
Connector material	molded plastic	
Connector color	grey	

Ordering Information

LBB 3316/05 CCS Extension Cable 5m 5 m (16.4 ft), 7-pole male and female DIN connectors	LBB3316/05
LBB 3316/10 CCS Extension Cable 10m 10 m (32.8 ft), 7-pole male and female DIN connectors	LBB3316/10

LBB 4117/00 DCN Cable Locking Clamp (25 pcs)



Matching clamps for male/female cable connectors such as those on the DCN Extension Cable (LBB 4416). One clamp per male/ female connector required.

Ordering Information

LBB 4117/00 DCN Cable Locking Clamp (25 pcs) set of 25	LBB4117/00
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LBB 3442/00 Single Earphone



Features

- ▶ **Lightweight single earphone**
- ▶ **Left or right ear use**

Functions

Interconnections

- 1.2 m (4 ft) cable terminated with 3.5 mm (0.14 in) jack plug

Certifications and Approvals

Region	Certification
Europe	CE

Technical Specifications

Electrical

Impedance	32 ohm
Audio frequency response	100 Hz to 5 kHz (-10 dB)
Power handling capacity	5 mW
Sensitivity (1 kHz)	114 dB SPL/earpiece at 1 mW/earpiece

Mechanical

Weight	25 g (0.06 lb)
Color	Dark grey

Ordering Information

LBB 3442/00 Single Earphone	LBB3442/00
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LBB 3441/10 Under the Chin Headphones



Ordering Information

LBB 3441/10 Under the Chin Headphones	LBB3441/10
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Accessories

LBB 3441/50 Ear Tips for LBB 3441 (500 pairs)	LBB3441/50
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Features

- ▶ Lightweight stereo headphones
- ▶ Ergonomic design for use under the chin
- ▶ Replaceable ear tips
- ▶ Right-angled, gold-plated jack plug

Functions

Interconnections

- 1.2 m (4 ft) cable terminated with 3.5 mm (0.14 in) right-angled stereo jack plug

Certifications and Approvals

Region	Certification
--------	---------------

Europe	CE
--------	----

Technical Specifications

Electrical

Impedance	150 ohm per earpiece
Audio frequency response	50 Hz to 5 kHz (-10 dB)
Power handling capacity	60 mW
Sensitivity (1 kHz)	107 dB SPL/earpiece at 1 mW/earpiece

Mechanical

Weight	33 g (0.07 lb)
Color	Black

LBB 3015/04 High Quality Dynamic Headphones



Features

- Durable, dynamic headphones
- Replaceable ear pads
- High-quality sound reproduction
- Gold-plated stereo jack plug

Functions

Interconnections

- 1.5 m (5 ft) cable terminated with a 3.5 mm (0.14 in) stereo jack plug

Technical Specifications

Electrical

Impedance	720 ohm per earpiece
Audio frequency response	250 Hz to 13 kHz (-10 dB)
Power handling capacity	200 mW
Sensitivity (1 kHz)	
97 dB SPL/earpiece at 0 dBV/system	
96 dB SPL/earpiece at 1 mW/earpiece	

Mechanical

Weight	110 g (0.24 lb)
Color	Dark grey

Ordering Information

LBB 3015/04 High Quality Dynamic Headphones	LBB3015/04
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Accessories

LBB 9095/50 Ear pads for LBB 3015 LBB 9095 (25 pairs)	LBB9095/50
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LBB 3443 Lightweight Headphones



Features

- ▶ Lightweight with high quality sound reproduction
- ▶ Replaceable ear pads
- ▶ Available with normal or durable cable
- ▶ Separate available solid washable ear pads

Functions

These headphones can be fitted with an optional set of washable ear pads.



Washable ear pads

Interconnections

- 1.3 m (4.25 ft) cable terminated with gold-plated 3.5 mm (0.14 in) angled stereo jack plug

Technical Specifications

Electrical

Impedance	32 ohm per earpiece
Audio frequency response	50 Hz to 20 kHz (-10 dB)
Power handling capacity	50 mW
Sensitivity (1 kHz)	98 dB SPL/earpiece at 1 mW/earpiece

Mechanical

Weight	70 g (0.16 lb)
Finish	Charcoal (PH 10736) with silver

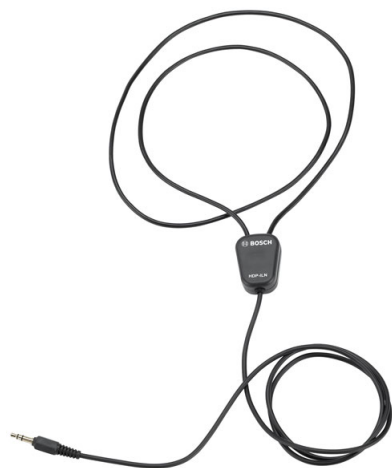
Ordering Information

LBB 3443/00 Lightweight Headphones	LBB3443/00
LBB 3443/10 Lightweight Headphones Durable Cable	LBB3443/10

Accessories

LBB 3443/50 Foam Ear Pads for LBB 3443 (50 pairs) replacement foam ear pads	LBB3443/50
HDP-LWSP Solid Ear Pads for LBB 3443 (50 pairs) washable replacement ear pads	HDP-LWSP

HDP-ILN Induction Loop Neckband



Features

- ▶ **Lightweight**
- ▶ **Used with ‘T-coil’ hearing aids**

Functions

This induction loop neckband can be used with:

- Integrus receivers
- CCS800 unit
- DCN unit

The neckband magnetically couples the sound signal from the headphone output to a ‘T-coil’ hearing aid.

Interconnections

- 0.9 m (3ft) cable terminated with a 3.5 mm (0.14 in) gold-plated plug

Technical Specifications

Mechanical

Weight	45 g (0.10 lb)
Color	Charcoal with silver

Ordering Information

HDP-ILN Induction Loop Neckband	HDP-ILN
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LBB 9600/20 Condenser Handheld Microphone



Features

- ▶ **Condenser transducer**
- ▶ **Unidirectional**
- ▶ **High speech intelligibility**
- ▶ **Low sensitivity to case noise and vibrations**
- ▶ **Phantom powered**
- ▶ **Rugged construction**
- ▶ **Modern non-reflecting matt black finish**

This condenser microphone is based on an electric transducer element in a sturdy housing with shielding against wind and wind bursts (pops). It is intended for public address and sound reinforcement applications, such as in churches, theaters, and congress centers.

Functions

The handheld LBB 9600/20 is an excellent microphone with almost frequency independent, unidirectional directivity. Its low equivalent input noise level and insensitivity to stray electrostatic and electromagnetic fields keep the audio signal free from spurious noise.

The microphone has an on/off slide-switch and a 3-pin, lockable XLR plug. It uses a phantom power supply, which is available on all microphone inputs on Bosch public address amplifiers.

It comes with a push-on clip with a Whitworth-threaded screw fitting, and a multi-thread adaptor (3/8", 1/2", and 5/8") for mounting. The supplied 7 m (23 ft) connection cable has 3-pin, lockable male and female XLR connectors.

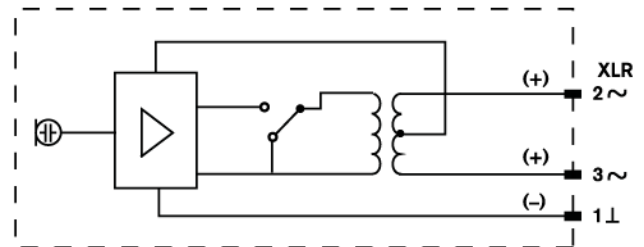
Accessories

A number of accessories, such as extension cables, table stands and floor stands are also available. See the separate microphone accessories data sheet.

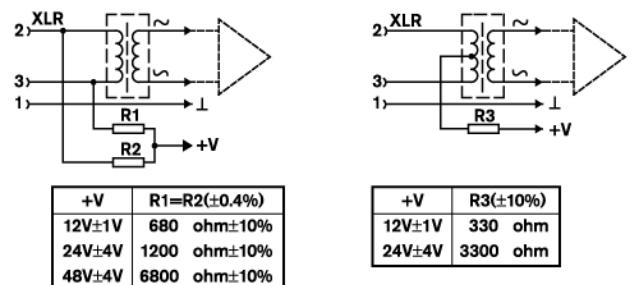
Certifications and Approvals

Region	Certification
Europe	CE Declaration of Conformity

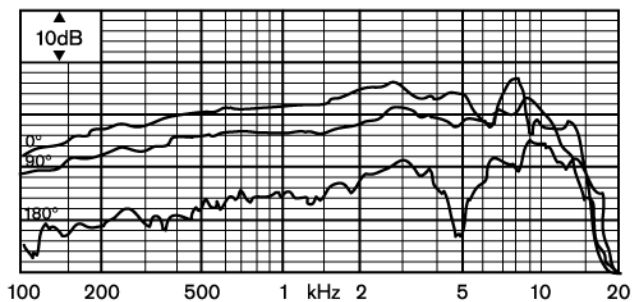
Installation/Configuration Notes



Circuit diagram



Circuit diagram



Frequency response

Technical Specifications

Electrical*

Phantom power supply

Voltage range	11 V to 52 V (acc. to DIN 45596 and IEC 268-15A)
Current consumption	<1.5 mA

Performance

Polar pattern	Unidirectional
Frequency range	100 Hz to 16 kHz
Sensitivity	2 mV/Pa +/-3 dB (-54 dB rel. to 1 V/Pa)
Rated output impedance	200 ohm
Equivalent input noise level	26 dB (A)

* Technical performance data acc. to IEC 60268-4

Mechanical

Dimensions (D x L)	54 x 170 mm (2.13 x 6.69 in)
Weight	245 g (8.64 oz)
Color	Black
Switch	On/off slide
Cable type	
Cable length	7 m (23 ft)
Connector	3-pin XLR (male)

Environmental

Operating temperature	-20 °C to +55 °C (-4 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	<95%

Ordering Information

LBB 9600/20 Condenser Handheld Microphone	LBB9600/20
7 m (23 ft) cable, 3-pin lockable male and female XLR connectors	

Accessories

LBC 1221/01 Floor Stand	LBC1221/01
three folding legs, adjustable length with twist clamp	
LBC 1226/01 Adjustable Boom	LBC1226/01
maximum reach of 670 mm (2.12 ft); length 840 mm (2.76 ft)	
LBC 1227/01 Table Stand	LBC1227/01
with 3/8" Whitworth stud; 130 mm (5.12 in) diameter	

LBC 1226/01 Adjustable Boom



Features

- ▶ Adjustable in reach and angle (quick-release screw clamp)
- ▶ Maximum reach of 670 mm (2.12 ft)
- ▶ Fits onto 3/8" Whitworth thread

Technical Specifications

Mechanical

Length	840 mm (2.76 ft)
Weight	700 g (1.88 lb)
Color	matt black

Ordering Information

LBC 1226/01 Adjustable Boom	LBC1226/01
maximum reach of 670 mm (2.12 ft); length 840 mm (2.76 ft)	

Accessories

LBC 1221/01 Floor Stand	LBC1221/01
three folding legs, adjustable length with twist clamp	

LBC 1221/01 Floor Stand



Features

- ▶ Adjustable from 850 to 1600 mm (2.79 to 5.25 ft) with twist clamp
- ▶ Three folding legs (360 mm; 1.18 ft) for stability
- ▶ Column terminates in male 3/8" Whitworth thread

Technical Specifications

Mechanical

Dimensions (folded)	850 x 110 mm (33.46 x 5.25 in)
Weight	2.4 kg (6.43 lb)
Color	matt black

Ordering Information

LBC 1221/01 Floor Stand	LBC1221/01
three folding legs, adjustable length with twist clamp	

Accessories

LBC 1226/01 Adjustable Boom	LBC1226/01
maximum reach of 670 mm (2.12 ft); length 840 mm (2.76 ft)	

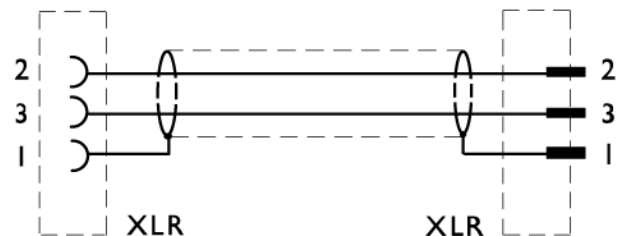
LBC 1208/40 Microphone Cable



Features

- ▶ 10 m (32.8 ft) extension cable
- ▶ Twin-core screened cable
- ▶ Three-pole lockable male and female XLR connectors (metal)

System Overview



LBC 1208/40 (10 m)

Technical Specifications

Mechanical

Length	10 m (32.8 ft)
Weight	420 g (1.13 lb)
Color	black

Ordering Information

LBC 1208/40 Microphone Cable	LBC1208/40
3-pin XLR; 10 m (32.8 ft)	

LBC 1227/01 Table Stand



Features

- ▶ Heavy-duty table stand
- ▶ 3/8" Whitworth stud
- ▶ Shock-absorbing under surface

Technical Specifications

Mechanical

Diameter	130 mm (5.12 in)
Weight	995 g (2.66 lb)
Color	matt black

Ordering Information

LBC 1227/01 Table Stand	LBC1227/01
with 3/8" Whitworth stud; 130 mm (5.12 in) diameter	

Architect and Engineering Specifications

1. CONTROL EQUIPMENT

Control Unit with recording and digital acoustic feedback suppression

The CU shall have a built-in recorder to digitally record a discussion to any type of SD Card. The graphical display shall show the status of the recorder and the accompanying buttons shall be used to configure the recorder. As an option, the recording shall only be active when a microphone is active.

The SD Card shall be removable from the CU and shall be possible to process on a PC for transcription purposes; the recordings shall also be retrievable by connecting a PC to the CU's USB. The recordings shall be playable back to the monitor loudspeaker or to delegate's loudspeakers. An audible beep and a flashing LED shall indicate when the SD Card is almost full and the user needs to replace it with a new card.

During recording it shall be possible to exchange an SD card without the loss of any recorded audio.

The Control Unit (CU) shall have an incorporated digital acoustic feedback suppression facility based on pre-active algorithms (feedback is not heard). Other included features for managing the number of active microphones and determining the operating mode, without the need for a central operator, should be available.

It shall be possible to connect external equipment to extend the system capabilities. There shall be a built-in loudspeaker and headphone connector to allow the conference to be monitored by, for example, a stenographer. It shall interface the following equipment to the discussion system:

- Tape recorder - for recording and playing back meetings and discussions
- External PA system - for transmitting the proceedings to an audience in the same room or an adjacent room
- External wired or wireless microphone - for use by guest speakers or for audience participation. Note: The external microphone shall be muted when the priority button on a chairman unit is pressed, and when the system is operating in 'chairman only' mode
- Audio equipment - for providing background music
- Telephone coupler - for allowing a remote delegate to take part via telephone

The following five modes shall be selectable using a rotary control on the unit's front panel:

- Open mode with auto-switch-off - shall allow selection of the number of microphones, from one to four, which can be simultaneously active. If the delegate does not speak for 30 seconds, the microphone shall automatically be switched off. It shall also be possible to switch microphones off manually

- Open mode without auto-switch-off - shall allow selection of the number of microphones, from one to four, which can be simultaneously active
- Override mode - shall allow delegates to override each other simply by activating their microphones. It shall only be possible for one microphone to be active at any one time. Note: In override mode, delegates shall not be able to override chairmen
- Chairman only mode - shall only allow chairmen to speak. It shall not be possible to activate delegates' microphones, even if no chairman is speaking
- Test mode - shall be used to check that the system connections have been made correctly. All microphone ring and contribution unit LEDs shall light up if the unit is properly connected

The CU shall have the following controls and indicators:

- Mains on/off switch
- Microphone-mode switch for selecting one of four modes (plus test mode)
- Rotary loudspeaker volume control for setting the output level of loudspeakers of contribution units. This control shall also determine the maximum level for the headphone outputs of contribution units and CU
- Monitoring volume control of CPSU loudspeaker or headphones
- 'Power on' green LED indicator

It shall provide the following facilities:

- Control for 150 units
- Mains input connection
- Two trunk outputs for loop-through connection of contribution units. It shall be possible to connect 25 contribution units to each output. The maximum cable length shall be not less than 100 m (109.3 yards). 150 contribution units can be connected in one system
- Microphone input with gain adjustment for connecting an external microphone
- Recorder input and output with gain control
- Line input and output for connecting a PA system or background music source
- Telephone coupler input and output for connecting a telephone line. The input signal shall be isolated from the output to prevent echoing
- Insertion connector (with by-pass switch) for connecting external audio processors
- One 3.5 mm (0.1 in) stereo headphone socket
- On/off switch for digital acoustic feedback suppression facility

It shall be suitable for use in portable or fixed mountings. It shall be 84 mm (3.4 in) high, 361 mm (14.2 in) wide and 143 mm (5.6 in) deep.

Control Unit with recording

This unit is identical but without digital acoustic feedback suppression facility.

Control Unit with digital acoustic feedback suppression

This unit is identical but without recording.

Control Unit

This unit is identical but without recording and without digital acoustic feedback suppression facility.

19-Inch Rack-Mounting Set

This set shall consist of brackets and other necessary fixings to enable the CU to be mounted in a 19-inch rack system. Flush mounting of the CU shall be possible by using a custom-made bracket.

2. CONTRIBUTION EQUIPMENT

Delegate Unit

The Delegate Unit shall enable delegates to speak and listen to the proceedings via a loudspeaker or headphones. The unit shall include a microphone with a red indicator ring, which shall illuminate when the microphone is on. To prevent acoustic feedback, the built-in loudspeaker shall be muted when the microphone is on, and/or the headphones are connected. Two 3.5 mm stereo headphone sockets (wired for mono) shall allow two pairs of headphones to be connected, enabling two delegates to simultaneously use the unit. The headphone volume level shall be adjustable on the unit for maximum comfort. It shall also be possible to connect a tape recorder to one headphone socket, and use the other headphone socket to listen to the proceedings. The unit shall have the following controls and indicators:

- Microphone with light-ring indicator which illuminates when the microphone is on
- Microphone on/off button
- 'Microphone on' indicator (red LED)
- Rotary volume control for adjusting headphone volume
- Loudspeaker, automatically muted when microphone is on and/or headphones are connected

Each unit shall have a 2 m (78.7 in) cable terminated with a molded 7-pole circular connector, and a 7-pole circular socket for loop-through connections. There shall be two 3.5 mm (0.1 in) stereo jack headphone sockets. The front panel shall be 63 mm (2.5 in) high and 124 mm (4.9 in) wide, and the unit footprint shall be 63 mm (2.5 in) x 172 mm (6.8 in). The weight of the unit shall be approximately 0.9 kg (2.0 lb). The stem length of the microphone shall be 313 mm (12.3 in) or 488 mm (19.2 in).

Chairman Unit

The Chairman Unit shall enable the user to function as chairman of a conference or meeting. It shall be similar in appearance to the Delegate Unit, and shall also include a 'chairman priority' button. When pressed, the priority button shall cause all currently active delegate microphones to be temporarily or permanently muted, allowing the chairman to take control of the meeting. To prevent acoustic feedback, the built-in loudspeaker shall be muted when the microphone is on, and/or the headphones are connected. An optional chime shall be selectable to precede chairman priority calls. The unit shall have the following controls and indicators:

- Chairman priority button
- Microphone on/off button
- Rotary volume control for adjusting headphone volume
- Microphone with light-ring indicator which illuminates when the microphone is on
- 'Microphone on' indicator (red LED)
- Internal chime selection switch (see Note)

- Internal switch (see Note) for temporary or permanent muting of delegate microphones when chairman priority key is pressed
- Loudspeaker, automatically muted when microphone is on and/or headphones are connected

Note

Both internal switches shall be accessible by first removing a small plastic plate on the bottom of the Chairman Unit. If any Delegate Unit is permanently muted on activation of a 'microphone priority' key, it shall be possible to reactivate it using the 'microphone on' button on the Delegate Unit.

Each unit shall have a 2 m (78.7 in) cable terminated with a molded 7-pole circular connector, and a 7-pole circular socket for loop-through connections. There shall be two 3.5 mm (0.1 in) stereo jack headphone sockets. The front panel shall be 63 mm (2.5 in) high and 124 mm (4.9 in) wide, and the unit footprint shall be 63 mm (2.5 in) x 172 mm (6.8 in). The weight of the unit shall be approximately 0.9 kg (2.0 lb). The stem length of the microphone shall be 313 mm (12.3 in) or 488 mm (19.2 in).

Suitcase for 10 contribution units

The transport and storage suitcase shall be used to protect contribution units in transit or while in storage. It shall have the capacity to hold 10 contribution units with standard-length microphones. Any combination of delegate/chairman units shall be catered for. The inside of the suitcase shall have specially molded packing to accommodate the discussion units, which shall give ample protection, while making packing and unpacking easier. The suitcase shall have handles on the top and side, and two wheels on the underside for ease of transportation. There shall be two separate locks for extra security. The suitcase shall be 560 mm (22.0 in) high, 795 mm (31.3 in) wide and 235 mm (9.2 in) deep. The weight of the empty suitcase shall be 6 kg (13.2 lb). The material used shall be 3 mm (0.12 in) thick ABS. The color shall be RAL 9004 (black).

Suitcase for CU and 6 contribution units

This suitcase shall be functionally identical to the Transport and Storage Suitcase for 10 contribution units, except that it shall have the capacity to hold one CU and six contribution units with either standard or extended microphone stems, and some extension cables. The suitcase shall be 560 mm (22.0 in) high, 795 mm (31.3 in) wide and 235 mm (9.2 in) deep. The weight of the suitcase shall be 6 kg (13.2 lb). The material used shall be 3 mm (0.12 in) thick ABS. The color shall be RAL 9004 (black).

Extension Cable Assembly

The extension cable assembly shall consist of 5 m (197 in) and 10 m (394 in) of 6 mm (0.24 in) diameter cable terminated at one end with a molded 7-pole male circular connector, and at the other end with a molded 7-pole female circular connector. The installation cable shall consist of 100 m (3940 in) of 6 mm (0.24 in) diameter cable plus 5 connector sets, male & female (7-pole circular).

Set of 25 Cable Locking Clamps

A set of Cable Locking Clamps shall match male and female cable connectors, such as those on Extension Cable Assemblies. Each male/female connector shall require one clamp.

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