



**the
t.bone**

Speech 100 M
conference system

Musikhaus Thomann
Thomann GmbH
Hans-Thomann-Straße 1
96138 Burgebrach
Germany
Telephone: +49 (0) 9546 9223-0
E-mail: info@thomann.de
Internet: www.thomann.de

11.11.2019, ID: 438815 (V2)

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1 General information

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products and user manuals are subject to a process of continuous development. We therefore reserve the right to make changes without notice. Please refer to the latest version of the user manual which is ready for download under www.thomann.de.

1.1 Further information

On our website (www.thomann.de) you will find lots of further information and details on the following points:

Download	This manual is also available as PDF file for you to download.
Keyword search	Use the search function in the electronic version to find the topics of interest for you quickly.
Online guides	Our online guides provide detailed information on technical basics and terms.
Personal consultation	For personal consultation please contact our technical hotline.
Service	If you have any problems with the device the customer service will gladly assist you.

1.2 Notational conventions

This manual uses the following notational conventions:

Letterings

The letterings for connectors and controls are marked by square brackets and italics.

Examples: *[VOLUME]* control, *[Mono]* button.

Displays

Texts and values displayed on the device are marked by quotation marks and italics.

Examples: *'24ch'*, *'OFF'*.

Text input

Text inputs that are carried out on the device are indicated by typewriter font.

Example: 2323

Instructions



The individual steps of an instruction are numbered consecutively. The result of a step is indented and highlighted by an arrow.

Example:

1. ▶ Switch on the device.
2. ▶ Press *[Auto]*.
 - ⇒ Automatic operation is started.
3. ▶ Switch off the device.

1.3 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
CAUTION!	This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.
Warning signs	Type of danger
	Warning – high-voltage.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended for use as a digital conference system. The device is designed for professional use only and is not suitable for use in households. This device is meant for indoor use only.

Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Safety



DANGER!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.



DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

Do not use the device if covers, protectors or optical components are missing or damaged.



DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.



CAUTION!

Possible hearing damage

The use of headphones or earphones at high volume and for an extended period of time may result in permanent hearing impairment.

Set the volume of your audio device to a medium value and do not use the headphones or earphones for more than about an hour a day.



NOTICE!

Risk of fire

Do not block areas of ventilation. Do not install the device near any direct heat source. Keep the device away from naked flames.



NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

Only operate the device within the ambient conditions specified in the chapter 'Technical specifications' of this user manual. Avoid heavy temperature fluctuations and do not switch the device on immediately after it was exposed to temperature fluctuations (for example after transport at low outside temperatures).

Dust and dirt inside can damage the unit. When operated in harmful ambient conditions (dust, smoke, nicotine, fog, etc.), the unit should be maintained by qualified service personnel at regular intervals to prevent overheating and other malfunction.



NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.



NOTICE!

Possible damage due to installation of a wrong fuse

The use of different types of fuses can cause serious damage to the unit. Fire hazard!

Only fuses of the same type may be used.



NOTICE!

Possible staining

The plasticiser contained in the rubber feet of this product may possibly react with the coating of your parquet, linoleum, laminate or PVC floor and after some time cause permanent dark stains.

In case of doubt, do not put the rubber feet directly on the floor, but use felt-pad floor protectors or a carpet.

3 Features

the t.bone Speech 100 is a digital conference system. It consists of the control centre the t.bone Speech 100 M (item no. 438815), the chairman's unit the t.bone Speech 100 C (item no. 438819), and the delegate station the t.bone Speech 100 D (item no. 438820). For free download at www.thomann.de you will receive a software for the conference system, with which the conference can be comfortably controlled from the PC.

The control centre is characterized by the following features:

- 2 groups each for up to 16 call stations
- Feedback suppression
- USB interface for recording and playback
- Configuration via buttons and display on the unit or via PC
- 4 discussion modes (3, 6, 9 or all microphones can be activated at the same time)
- Voting mode
- 2 × stereo rec out (RCA)
- 1 × stereo out for PA (RCA)
- 1 × stereo in (RCA): Audio source in alarm mode
- 1 × Mic in (XLR with phantom power) (interpreters input)

- 1 × LAN
- 1 × RS485 (w/o function, for future purposes)
- 1 × terminal
- suitable for 19" rack mounting (2 RU)

4 Installation



NOTICE!

Danger of short circuit

Switching on phantom power will damage the device if unbalanced XLR cables are connected.

Only turn on phantom power when exclusively balanced XLR cables are connected.

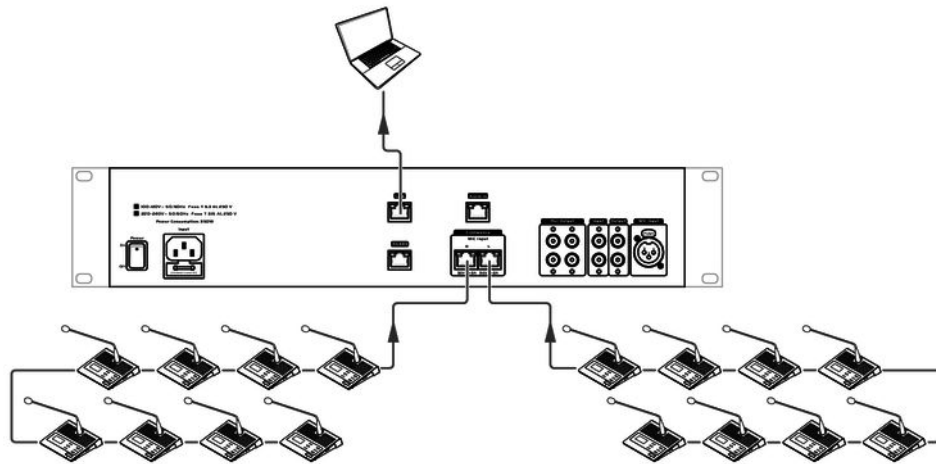
Unpack and check carefully there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the product against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

The conference system is a plug-and-play system designed for use in small and medium-sized conferences and events. The call stations are connected to each other as well as to the control centre via system cables. The system cables handle the transmission of the digital voice and status information as well as the power supply of the call stations. The control centre has a built-in power supply that can power up to 32 call stations.

Before use, check whether the current firmware is installed on all components and, if necessary, carry out an update (see the quick guide for firmware update). All components should have the same firmware version.

Connection options



2 lines with each up to 16 call stations can be connected to the control centre.

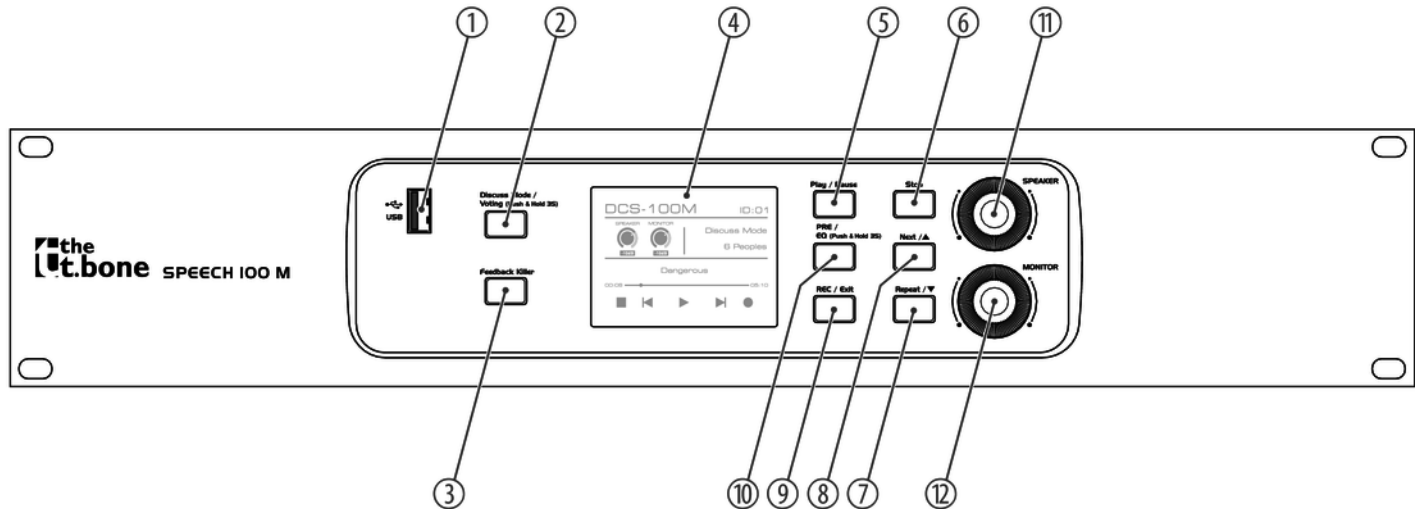
If control via software is desired (available for free at www.thomann.de), the connection to a PC is made via the PC connection over an Ethernet switch. The network connection defaults to DHCP. The DHCP server assigns a network address to the conferencing system. Subsequently, the assigned network address can be used to access the web interface of the device, where the network address and the subnet mask can be changed freely. It should be noted that the PC, the switch and the control centre must be in the same address range.

Rack mounting

The device has been designed for rack mounting in a standard 19-inch rack; it occupies two rack units.

5 Connections and controls

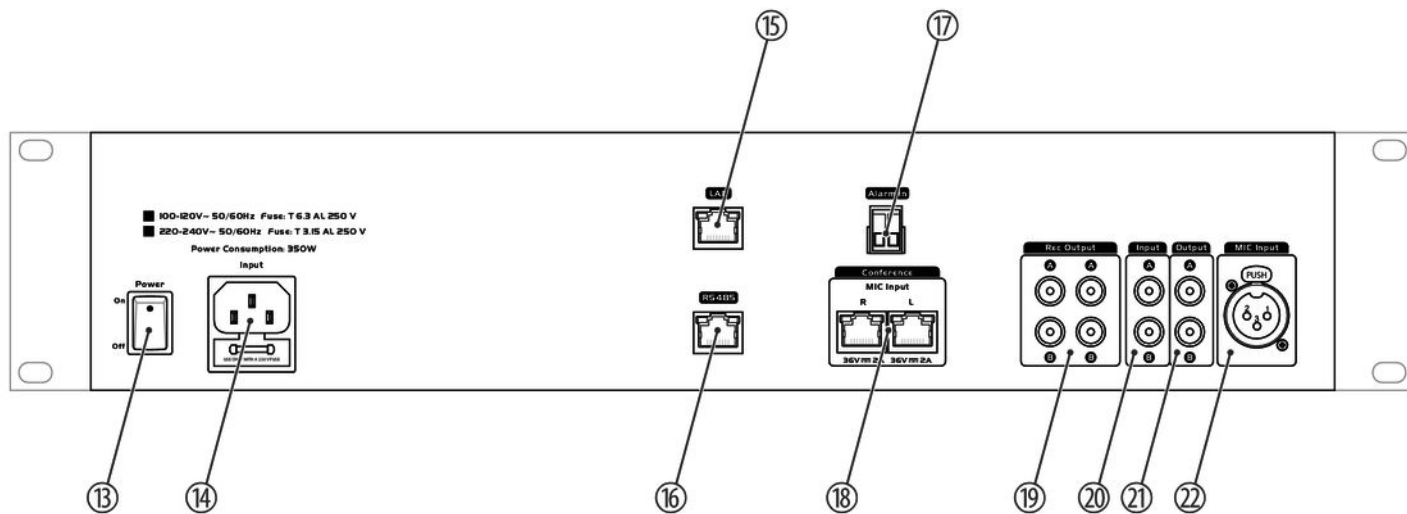
Front panel



1	USB port	Saving conference recordings to a USB storage device. Play back conference recordings or background music from a USB storage device.
2	<i>[Discuss Mode / Voting]</i>	Setting voting mode or discussion mode.
3	<i>[Feedback Killer]</i>	Enabling and disabling feedback suppression.
4	LCD display	Default setting: Information about volume, recording and discussion mode. Automatic return to default setting after about 20 seconds of inactivity.
5	<i>[Play / Pause]</i>	Starting / pausing a recording. Pressing <i>[Play / Pause]</i> bypasses all EQ high and low pass filters. Pressing <i>[Play / Pause]</i> again reactivates the set EQ settings.
6	<i>[Stop]</i>	Ends the recording of a conference and rewinds to the beginning. Enables or disables the alarm mode.
7	<i>[Repeat / ▼]</i>	Plays a recording repeatedly.
8	<i>[Next / ▲]</i>	Starts playback of the next recording.

9	<i>[REC / Exit]</i>	Starts recording a conference. Pressing <i>[REC / Exit]</i> again stops the recording.
10	<i>[PRE / EQ]</i>	Keystroke for approx. 3 seconds: Calls up the EQ settings. Short keystroke: Starts playback of the previously made recording.
11	<i>[Speaker]</i> Rotary control for volume control of the speakers	In default setting: Controls the output volume in the control unit and in the interface for the recording settings. When <i>[PRE EQ]</i> is enabled: Triggering the submenus in the EQ settings.
12	<i>[Monitor]</i> Rotary control for volume control of the call station units	In default setting: Controls the volume of the attenders stations. Controls the headphones volume in the control unit and in the interface for the recording settings. When <i>[PRE EQ]</i> is enabled: Column-wise navigation in the EQ settings.

Rear panel



Speech 100 M

13	<i>[POWER ON / OFF]</i>	Mains switch
14	<i>[Input]</i>	Connection socket for IEC connector with fuse holder
15	<i>[LAN]</i>	Connection socket for LAN network cable
16	<i>[RS485]</i>	RS485 interface (w/o function, for future purposes)
17	<i>[Alarm In]</i>	Terminal for external alarm system
18	<i>[Conference] / [MIC Input]</i>	Socket for connecting call station units
19	<i>[Rec Output]</i>	Audio output for connecting external recording devices
20	<i>[Input]</i>	Input for connecting external input devices with line level for alarm mode
21	<i>[Output]</i>	Main Out for connecting amplifiers or active speakers
22	<i>[MIC Input]</i>	Microphone input, XLR chassis socket for microphone connection with phantom power (interprester input)

6 Operating on the unit

Setting a password

You can lock the control centre of the conference system with a password. To unlock the system, press any button on the control panel. Then enter the password.

1. ▶ Press [*Monitor*] for about 3 seconds.
⇒ The password setting is called up.
2. ▶ Turn [*Speaker*] right or left to select the desired number for the first digit field.
3. ▶ Turn [*Monitor*] to the right to move to the next digit field.
4. ▶ Repeat steps 2 and 3 until you have entered the desired 4-digit password.
5. ▶ Press [*Speaker*] to confirm the password.
⇒ Your desired password is now set. The display returns to the starting position.

Setting the EQ

1. ▶ Press [*PRE / EQ*] for about 3 seconds.
⇒ The EQ settings table is called up.
2. ▶ With [*Monitor*] you move to the right or left within the table.

3. ➤ With *[Speaker]* , you can call up various EQ settings in a table field.
4. ➤ Use *[Next / ▲]* to move up within the table.
5. ➤ Use *[Repeat / ▼]* to move down within the table.
6. ➤ To exit the EQ settings table, press *[REC / Exit]*.

You can make the following settings in the table:

	Type	Freq	Q	Gain dB	Bypass
LPF	Bypass	19.7 ~ 20160	null	null	null
	But6		null	null	null
	Bes6		null	null	null
	But12		null	null	null
	Bes12		null	null	null
	Lin12		null	null	null

	Type	Freq	Q	Gain dB	Bypass
	But18		null	null	null
	Bes18		null	null	null
	But24		null	null	null
	Bes24		null	null	null
	Lin24		null	null	null
	But30		null	null	null
	Bes30		null	null	null
	But36		null	null	null
	Bes36		null	null	null
	Lin36		null	null	null
	But42		null	null	null
HPF	Bypass	19.7 ~ 20160	null	null	null
	But6		null	null	null

	Type	Freq	Q	Gain dB	Bypass
	Bes6		null	null	null
	But12		null	null	null
	Bes12		null	null	null
	Lin12		null	null	null
	But18		null	null	null
	Bes18		null	null	null
	But24		null	null	null
	Bes24		null	null	null
	Lin24		null	null	null
	But30		null	null	null
	Bes30		null	null	null
	But36		null	null	null
	Bes36		null	null	null

	Type	Freq	Q	Gain dB	Bypass
	Lin36		null	null	null
	But42		null	null	null
EQ1...EQ8	Peak	19.7 ~ 20160	0.4 ~ 128	-12 dB ~ +12 dB	ON / OFF
	LSF				ON / OFF
	HSF				ON / OFF

Setting discussion mode

You can set 5 different discussion modes. 1, 3, 6, 9 or all call station microphones can be activated at the same time.

1. ➤ Press *[Discuss Mode / Voting]* briefly on the transmitter.
 - ⇒ The discussion mode is called up.
2. ➤ Briefly press *[Discuss Mode / Voting]* several times in succession.
 - ⇒ The various discussion modes are activated.

An icon represents each call station in the control centre display. For participants with activated microphone the icon is red. The display shows the call station number.

Performing a vote

You can request all connected participants to vote.

- 1.** ▶ Press [*Discuss Mode / Voting*] for about 3 seconds.
 - ⇒ The voting mode is called up.
- 2.** ▶ The display shows '*Voting Ready! Press play to start voting!*' Press [*Play*].
 - ⇒ Voting begins. You can see the elapsed time in the lower right corner of the display. The voting decisions of the participants are displayed under "✓" (Yes), '—' (abstention), 'X' (No).
- 3.** ▶ To finish the vote press [*Stop*].
 - ⇒ The voting result is shown on the control centre display and on the displays of the call stations.
- 4.** ▶ To exit the voting mode, press [*REC / Exit*].

Enabling or disabling feedback suppression

The feedback suppression prevents possible noise (whistling) through the microphone.

1. ▶ Press [*Feedback Killer*] to engage the feedback suppression.
 - ⇒ [*Feedback Killer*] lights up blue. 'FBC' is displayed in the upper right corner of the display.
2. ▶ To disable the feedback suppression, press [*Feedback Killer*] again.

Connecting an external alarm system

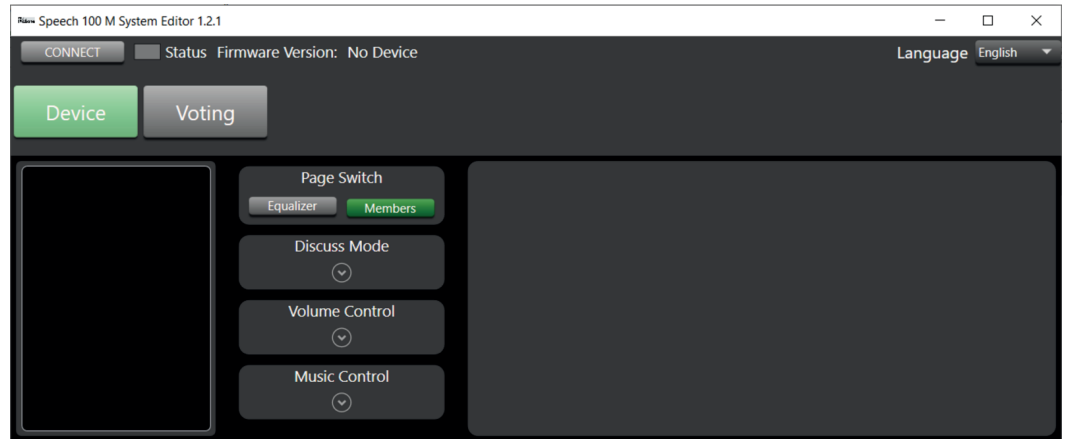
At the [*Alarm in*] terminal on the rear of the device, an external alarm system can be connected.

- ▶ Press [*Stop*] for 10 seconds to enable or disable the alarm mode.

When the contact on the terminal block is complete, the control centre automatically mutes all microphone inputs and the RCA input signal is output at full volume on all outputs. The display shows '*Alarm input*'. When the contact is opened, the conference system returns to normal operating mode.

7 Operating on the computer

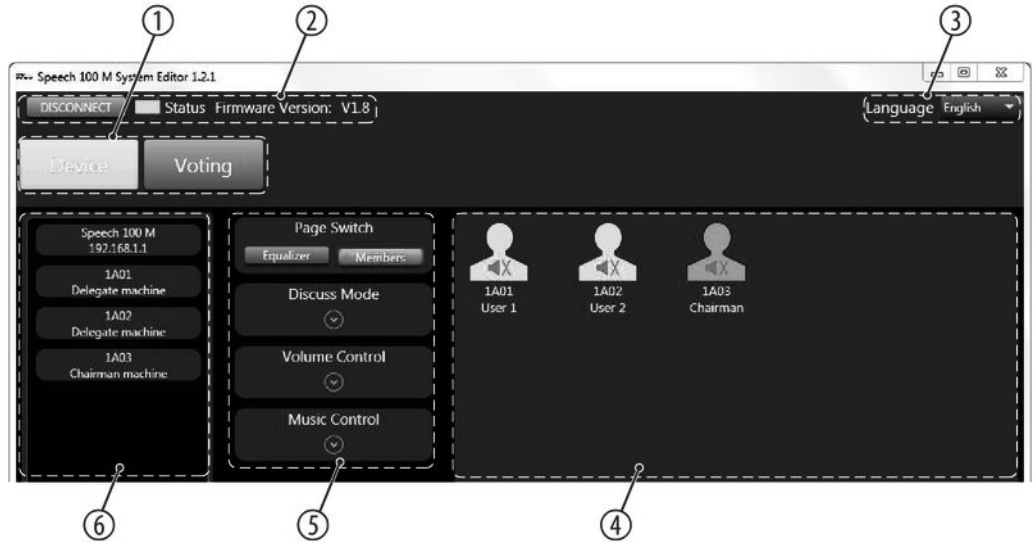
Connecting devices



Status Firmware Version: No Device

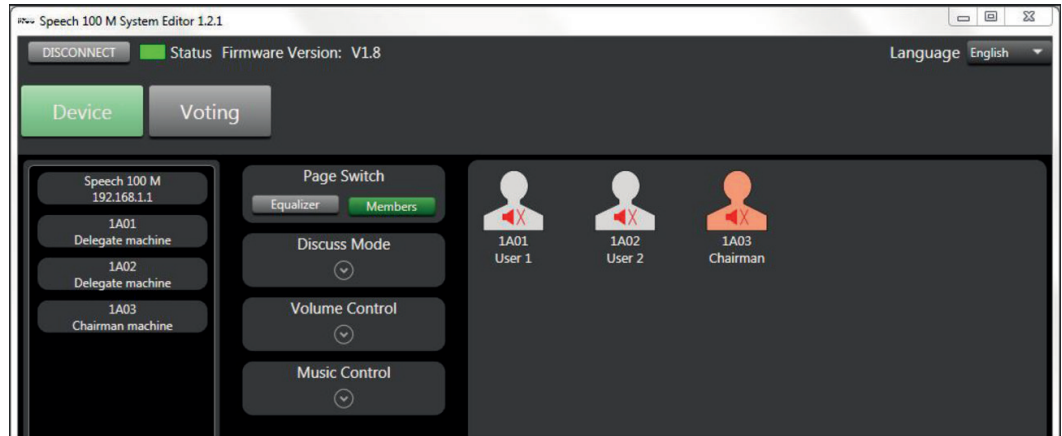
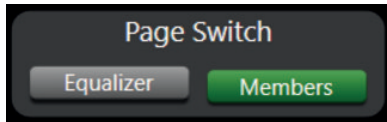
1. ➤ Click to locate the conferencing system on the LAN and connect to your PC.
2. ➤ If the device is not found for a while, the search is stopped. Try using again to connect the devices.

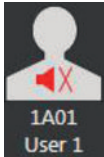
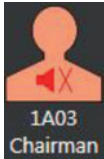
Overview






1	<i>[Device] / [Voting]</i>	Toggles the view. By default, <i>[Device]</i> view is selected. Under <i>[Voting]</i> , voting can be done.
2	<i>[CONNECT] / [DISCONNECT]</i>	When the conferencing system is connected to the PC, <i>[DISCONNECT]</i> appears to disconnect, the display panel lights up green and the current firmware version is displayed.
3	<i>[Language]</i>	Selects the displayed language. English and Chinese are available.
4	Delegates panel	Display of delegate stations of the conference and their status.
5	<i>[Page Switch]</i>	Selection of <i>[Members]</i> (selected by default) to display delegate stations or <i>[Equalizer]</i> to display or adjust the sound.
6	Device overview	Display of all connected devices that can be selected to make settings. By default, the host is selected.

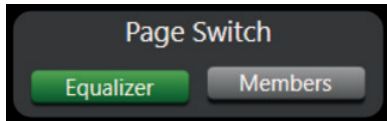
Stations settings





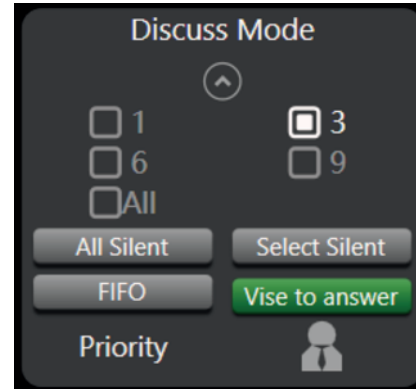
1. Under **Members**, double-click the station icon in the right window area to change the station name.
2. You can set three options for each station:
 - : Microphone muted
 - : Microphone on
 - : Microphone switched off
3. The station of the conference chairman is displayed in red.
4. The delegate stations are displayed in white.


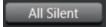
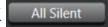
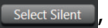
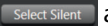
Setting the EQ



➔ Under **Equalizer** you can make settings for the entire system in the right window area.

Discussion mode



1. Click  to open the panel.
2. In this section, select the number of microphones to be set.
3. Use  to switch off all stations except the chairman's station. Click  again to cancel the shutdown.
4. Click , and then click one of the delegate stations to the right except the chairman's station to turn it off. Click that delegate station again to cancel the shutdown. Click  again to exit this mode.

5. Click **FIFO** to enable the FiFo mode (First in – First out).
6. Click **Vise to answer** to change the talk mode to 'Answering'.
7. Use **Priority** to mute all microphones but the chairman's.

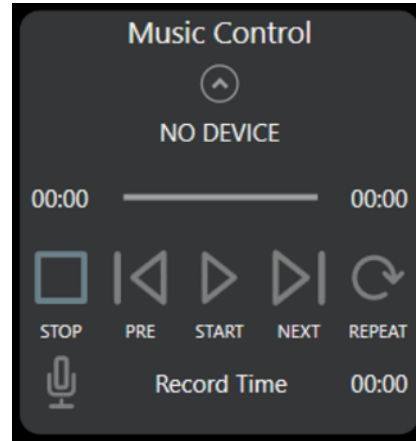
Adjusting the volume




1. Click **Volume Control** to open the panel.
2. Adjust the volume in this area.
3. Use the left control to set the speaker volume.

4. Use the right control to set the microphone level.

Playing / recording MP3 files



1. Click  to open the panel.
2. When a mobile storage device is attached to the host, the host will recognize the device and play MP3 files stored on it.

3. ▶ When you click the record button , playback stops and recording starts.



If the storage medium is not detected, the power supply may be insufficient. Please replace the storage medium.

If the device is blocked, check if the storage device contains files other than MP3 and if the media is too full. It is recommended to save the MP3 files to be played to an empty storage medium.

Setting an individual station

Speech 100 M System Editor 1.2.1

DISCONNECT Status Firmware Version: V1.8 Language English

Device Voting

Speech 100 M
192.168.2.1

1A01
Chairman machine

1A02
Delegate machine

1A03
Delegate machine

Threshold Ratio
0dB 1:1
Attack Release
10ms 100ms
Boost Volume
1 0dB

Flat Bypass
Save Load

Frequency Qfact Gain Type

EQ1 186Hz LSF 0dB Low

EQ2 500Hz 1,0 0dB Peak

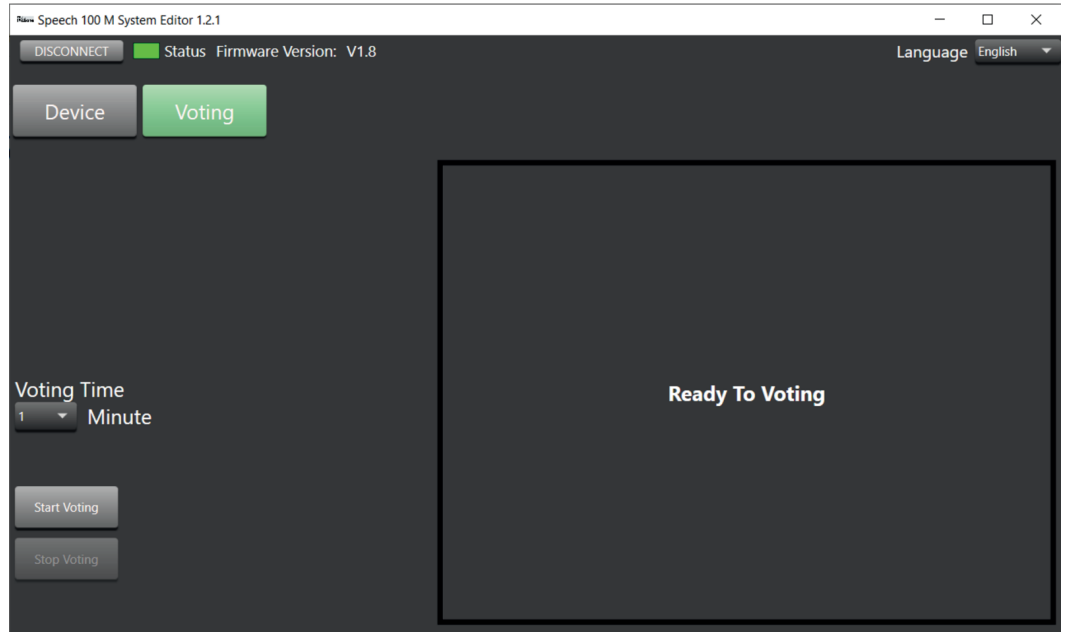
EQ3 1000Hz 1,0 0dB Peak





EQ4 2000Hz HSF 0dB High

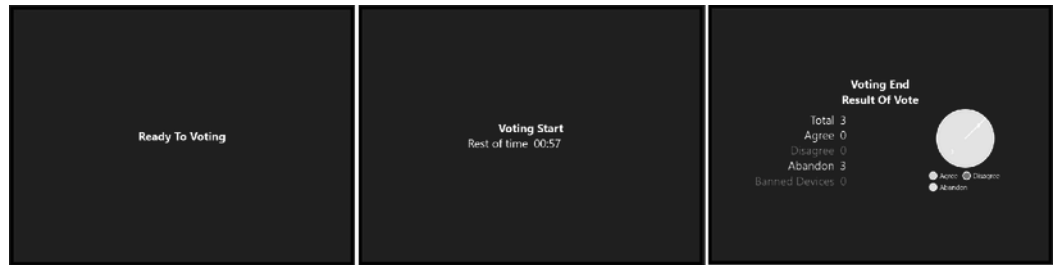
Flat Bypass Save Load

- 1.** ▶ Select one of the stations in the device list.
 - ⇒ Two compression and equalizer panels are displayed on the right.
- 2.** ▶ You can make and save the respective settings and load presets.

Voting mode



1. Click  and switch to Voting view.
2. Use  to set how long the voting should last.
3. Use  to start the voting process.
4. Use  to end the voting process.



5. The right window area shows the progress of the voting process.



Voting is only possible when the conferencing system is connected.

During voting, you can not switch to setting mode.

There can be no voting when all delegate stations are turned off.

When the conference system is disconnected from the PC, the voting can not be ended and the view is switched. Reconnect the devices.

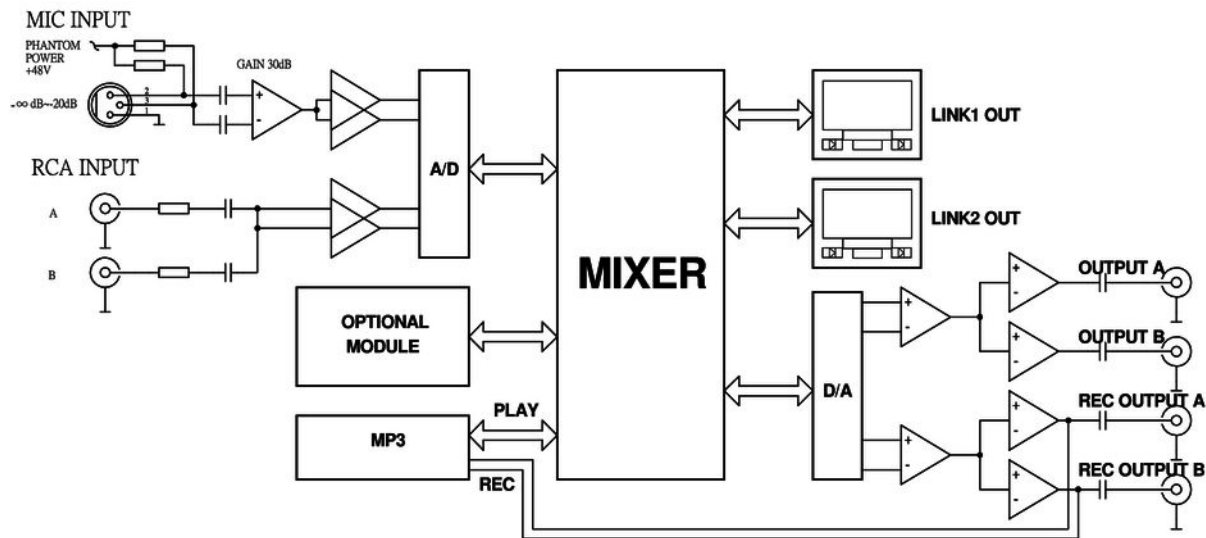
8 Technical specifications

Microphone input	XLR chassis socket, balanced
Frequency response	200 Hz ~ 6 kHz at 0 dBu ±1.5 dB Speech-optimised
Total harmonic distortion (THD)	< 0.01 % at 0 dBu 1 kHz
Signal-to-noise ratio	97 dB
Maximum input level	-20 dBu
Phantom power	+48 V
Line input	RCA sockets, unbalanced
Frequency response	200 Hz ~ 6 kHz at 0 dBu ±1.5 dB Speech-optimised
Total harmonic distortion (THD)	< 0.01 % at 0 dBu 1 kHz
Max. input level (gain at 0 dBu)	+10 dBu

MP3 input	USB
Output A / B	
Max. output level	+10 dBu
RCA output A / B	
Max. output level	+10 dBu
MP3 playback	
Max. output level	-3 dBu
Equalizer	Lows (low pass or low shelf) 21 Hz...19,2 kHz, ± 24 dB
	Low mids: 21 Hz...19,2 kHz, ± 24 dB
	Treble (high pass or high shelf): 21 Hz...19,2 kHz, ± 24 dB
	Treble (high pass or high shelf): 21 Hz...19,2 kHz, ± 24 dB
Internal processor	32 bit, floating point
Bit depth, AD / DA converter	32 bit
Operating supply voltage	100 – 240 V \sim 50/60 Hz

Fuse	at 110 V: 5 mm × 20 mm, 6.3 A, 250 V, slow-blow at 230 V: 5 mm × 20 mm, 3.15 A, 250 V, slow-blow	
Power consumption	350 W	
Dimensions (W × H × D)	583 mm × 419 mm × 692 mm	
Weight	5.5 kg	
Ambient conditions	Temperature range	0 °C...40 °C
	Relative humidity	50 %, non-condensing

Block diagram



9 Plug and connection assignment

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment in such a way that a perfect sound experience is ensured.

Please note these advices, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into the socket, an incorrect connection may result in a destroyed power amp, a short circuit or 'just' in poor transmission quality!

Balanced and unbalanced transmission

Unbalanced transmission is mainly used in semi-professional environment and in hifi use. Instrument cables with two conductors (one core plus shielding) are typical representatives of the unbalanced transmission. One conductor is ground and shielding while the signal is transmitted through the core.

Unbalanced transmission is susceptible to electromagnetic interference, especially at low levels, such as microphone signals and when using long cables.

In a professional environment, therefore, the balanced transmission is preferred, because this enables an undisturbed transmission of signals over long distances. In addition to the conductors 'Ground' and 'Signal', in a balanced transmission a second core is added. This also transfers the signal, but phase-shifted by 180°.

Since the interference affects both cores equally, by subtracting the phase-shifted signals, the interfering signal is completely neutralized. The result is a pure signal without any noise interference.

1/4" TS phone plug (mono, unbalanced)



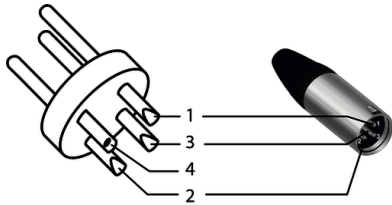
1	Signal
2	Ground, shielding

1/4" TRS phone plug (mono, balanced)



1	Signal (in phase, +)
2	Signal (out of phase, -)
3	Ground

XLR plug (balanced)



1	Ground, shielding
2	Signal (in phase, +)
3	Signal (out of phase, -)
4	Shielding on plug housing (option)

10 Cleaning

Housing

Use only pH-neutral, solvent-free and non-abrasive cleaning agents. Clean the unit with a slightly damp lint-free cloth.

11 Protecting the environment

Disposal of the packaging material



For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

Disposal of your old device



This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE) in its currently valid version. Do not dispose with your normal household waste.

Dispose of this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.



