the t.bone

Speech 100 M

conference system

th•mann
MUSIC IS OUR PASSION

user manual

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Table of contents

1 General information

This manual contains important instructions for the safe operation of the unit. Read and follow the safety instructions and all other instructions. Keep the manual for future reference. Make sure that it is available to all those using the device. If you sell the unit please make sure that the buyer also receives this manual.

Our products are subject to a process of continuous development. Thus, they are subject to change.

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.

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.

3 Features

the t.bone Speech 100 is a digital conference system. It consists of the control centre the t.bone Speech 100 M (438815), the presidential station the t.bone Speech 100 C (438819) as well as the delegate station the t.bone Speech 100 D (438820). Optionally, a control software and an Android app is available for the conference system that makes it easy to control the conference from a PC or smartphone / tablet.

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
- optional: Configuration via PC or App
- 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)
- 1 × mic in (XLR with phantom power)

- 1 × LAN
- 1 × RS485
- 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.

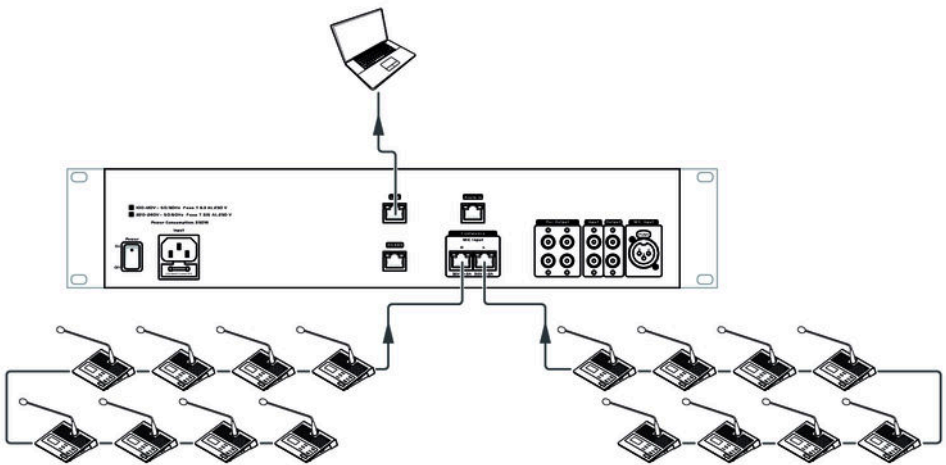
Only turn on phantom power when exclusively balanced XLR cables are connected.

Unpack and carefully check that there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the device 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.

Connection options



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

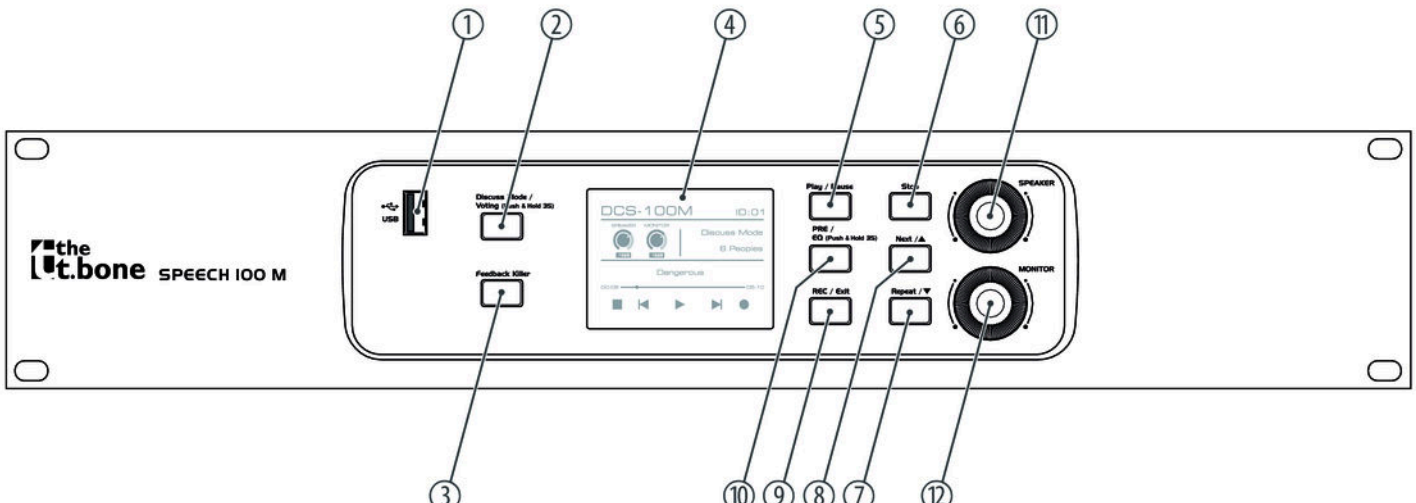
If control via (optionally available) software is desired, the connection to a PC is made via the PC connection over an Ethernet switch.

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

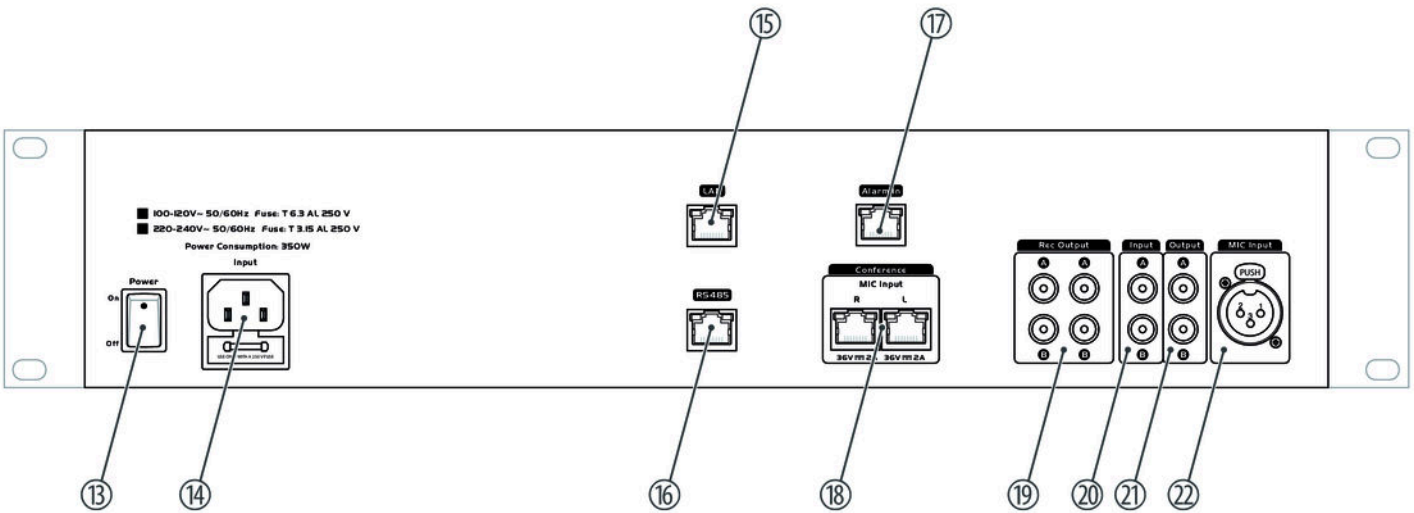
Front panel



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	*[Discuss Mode / Voting]*	Setting voting mode or discussion mode.
3	*[Feedback Killer]*	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	*[Play / Pause]*	Starting / pausing a recording. Pressing *[Play / Pause]* bypasses all EQ high and low pass filters. Pressing *[Play / Pause]* again reactivates the set EQ settings.
6	*[Stop]*	Ends the recording of a conference and rewinds to the beginning.
7	*[Repeat q]*	Plays a recording repeatedly.
8	*[Next p]*	Starts playback of the next recording.

9	*[REC / Exit]*	Starts recording a conference. Pressing *[REC / Exit]* again stops the recording.
10	*[PRE / EQ]*	Keystroke for approx. 3 seconds: Calls up the EQ settings. Short keystroke: Starts playback of the previously made recording.
11	*[Speaker]* 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 *[PRE EQ]* is enabled: Triggering the submenus in the EQ settings.
12	*[Monitor]* 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 *[PRE EQ]* is enabled: Column-wise navigation in the EQ settings.

Rear panel


15
17
100-120V~ 50/60Hz Fuse: T 6.3 AL 250 V
220-240V~ 50/60Hz Fuse: T 3.15 AL 250 V
Power Consumption: 350W
Input
Power
On
Off
LAN
Alarm In
RS485
Conference
MIC Input
R
L
Rec Output
Input
Output
MIC Input
PUSH
13
14
16
18
19
20
21
22

Rear panel		
13	*[POWER ON / OFF]*	Mains switch
14	Connection socket for IEC connector	
15	Connection socket for LAN network cable	
16	RS485: Camera tracking interface	
17	Connection for external alarm system	
18	Socket for connecting call station units	
19	*[Rec Output]*	Audio output for connecting external recording devices
20	*[Input]*	Input for connecting external input devices with line level
21	*[Output]*	Main Out for connecting amplifiers or active speakers
22	Microphone input, XLR panel socket for microphone connection with phantom power	

6 Operating

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. With *[Next p]* , you move up within the table.
5. With *[Repeat q]* , you move down within the table.

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
	But18		null	null	null

	Type	Freq	Q	Gain dB	Bypass
	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
	Bes6		null	null	null

	Type	Freq	Q	Gain dB	Bypass
	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
	Lin36		null	null	null

	Type	Freq	Q	Gain dB	Bypass
	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.

⇨ The discussion mode is called up.

2. Briefly press *[Discuss Mode / Voting]* repeatedly 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 connection *[Alarm in]* on the back of the device, an external alarm system can be connected via network cable. If this port receives a continuous alarm signal from the external alarm system, the control centre automatically mutes all microphone inputs and turns on the alarm transmission input. The alarm system then emits the alarm at maximum volume. The display shows *'Alarm input'* . When the continuous alarm signal is interrupted, the conference system returns to the normal operating state.

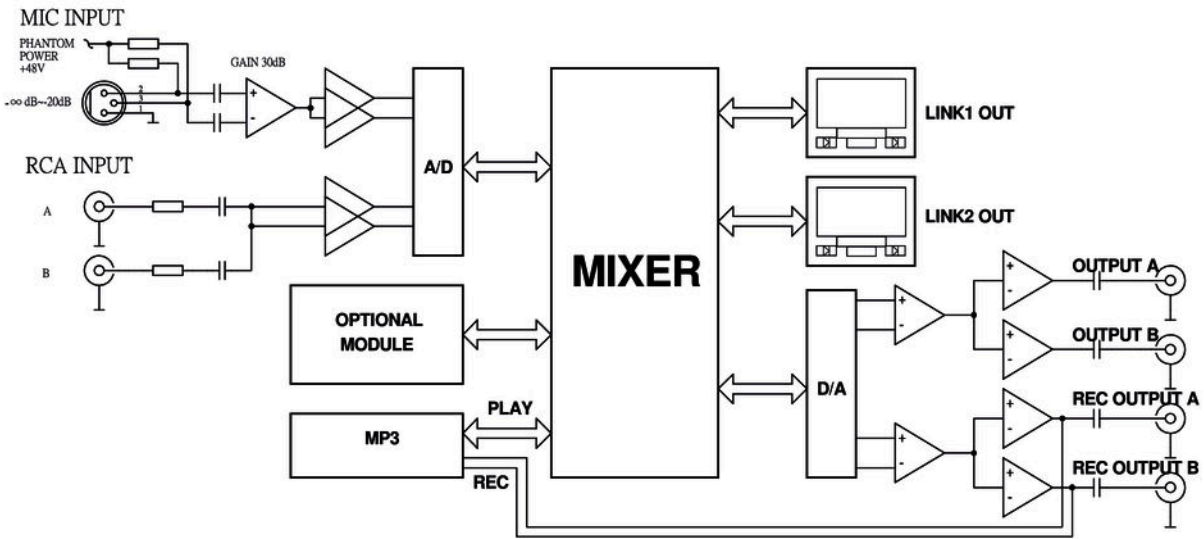
7 Technical specifications

Microphone input	balanced
Frequency response	200 Hz ~ 6 kHz at 0 dBu ±1.5 dB optimized for speech Frequency range extension possible by software update
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	unbalanced
Frequency response	200 Hz ~ 6 kHz at 0 dBu ±1.5 dB optimized for speech Frequency range extension possible by software update

Total harmonic distortion (THD)	< 0.01 % at 0 dBu 1 kHz
Max. input level (gain at 0 dBu	+10 dBu
MP3 input	balanced
Frequency response	200 Hz ~ 6 kHz at 0 dBu ±1.5 dB optimized for speech Frequency range extension possible by software update
Total harmonic distortion (THD)	< 0.01 % at 0 dBu 1 kHz
Maximum input level	+10 dBu
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 ~ 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)	58.3 × 41.9 × 69.2 cm
Weight	5.5 kg

Block diagram



8 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.

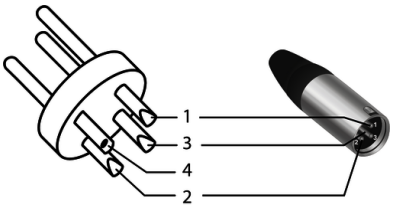
1/4" TS phone plug (mono, unbalanced)

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)

9 Cleaning

Fan grids

The fan grids of the device must be cleaned on a regular basis to remove dust and dirt. Before cleaning, switch off the device and disconnect AC-powered devices from the mains. Use a lint-free damp cloth for cleaning. Never use solvents or alcohol for cleaning.

10 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.

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