

# PLE-SDT Plena Easy Line SD Tuner BGM source

www.boschsecurity.com



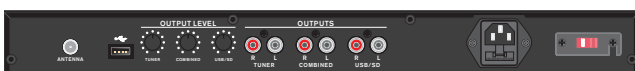
- ▶ MP3 playback from SD card and USB inputs
- ▶ FM tuner with RDS, presets and digital control
- ▶ Simultaneous operation of SD/USB-player and FM tuner
- ▶ Separate outputs for digital source and FM tuner

The PLE-SDT Plena Easy Line SD Tuner BGM source is the ideal high-quality source for background music (BGM) in public address systems. It provides hours of uninterrupted music for professional systems. Designed without moving parts, it can be used in systems that are on for long periods. It is designed to be used with non-volatile steady state flash memory.

## System Overview

The unit has a digital source side for MP3's stored on SD card and USB memory stick, and a side with an FM tuner. It is typically used in hotels, shops, supermarkets, restaurants, bars, canteens, gyms, showrooms, and other places where BGM creates the right atmosphere. It connects to any public address amplifier. The design follows the Plena Easy Line design and is part of the Advantage Line by Bosch.

## Functions



With an SD/USB capacity of up to 32 GB (up to 2000 tracks) and the option to connect the USB either on the front or rear panel, the digital player provides hours of high-quality, uninterrupted music playback

from a single source. It supports music organized on a disk in multiple folders. The player will automatically search and play all playable MP3's on a flash memory device, and has repeat and random play modes.

### Digital Source

It can play MP3's with bit-rates from 32 kbps to 320 kbps, mono / stereo / joint-stereo, and both constant bit-rates (CBR) and variable bit-rate (VBR) are supported.

### Tuner

The digitally controlled FM tuner uses a frequency synthesizer for accurate capture of radio stations and has presets for FM to store favorite radio stations.

### Outputs

Both the player and the tuner can operate simultaneously on different outputs. The output level of the outputs can be set via the rear panel. Next to the stereo analog outputs per side, there is a combined output that plays the digital content and automatically switches over to the FM tuner when the last track has been played.

## Certifications and Approvals

<b>Safety</b>	according to IEC/EN 60065
	CCC
	C-Tick
<b>CE</b>	EN 55013+A1+A2,
	EN 61000-3-2,
	EN 61000-3-3+A1
	2006/95/CE LVD Directive
	2004/108/CE EMC
	IEC EN 55020+A2+EC
	CE marking

## Installation/Configuration Notes

The PLE-SDT is a 19" rack-mount unit with detachable rack mount brackets for tabletop use. The unit comes with an IR remote control to control all sources. It is compatible with High Capacity Secure Digital (SDHC), MMC memory cards, Flash USB sticks and bus powered (2.5") hard disk drives (HDD). System connection cables are included.

## Parts Included

Quantity	Components
1	PLE-SDT Plena Easy Line SD Tuner BGM source
1	AC Power cord
1	Safety instructions
1	Set of 19" mounting brackets
1	Remote control
2	2-pair audio RCA cable (2.5 m)
1	SD card including free music and the instructions for use

## Technical Specifications

### Electrical

Mains power supply	
Voltage	115 - 230 VAC ±10%, 50/60 Hz
Power supply fuses	230 VAC 0.63 AT / 250 V
	120 VAC 1.25 AT / 250 V
Power consumption (typical)	10 W
Power consumption (Max.)	50 VA
FM tuner	
Distortion	< 1 %

Total harmonic distortion (1 kHz)	< 0.8 %
FM range	87.5 ÷ 108 MHz
Frequency response	50 Hz ÷ 12 kHz
Channel separation (1 kHz)	≥ 40 dB
Intermediate rejection	≥ 70 dB
Signal / noise ratio	≥ 50 dB
Intermediate frequency	10.7 MHz
Input sensitivity	6 µV e.m.f. (2 uV)
Automatic tuning sensitivity	≤ 50 µV
Antenna input	75 ohms (coaxial)
Audio output level	- 10 dBV

SD / USB audio player	
Maximum storage capacity	32 GB
Maximum number of tracks	2000
Frequency response	50 Hz ÷ 20 kHz
Signal / noise ratio	≥ 70 dB
Total harmonic distortion (1 kHz)	< 0.1 %
Stereo separation	≥ 60 dB
Audio output level	- 10 dBV

### Mechanical

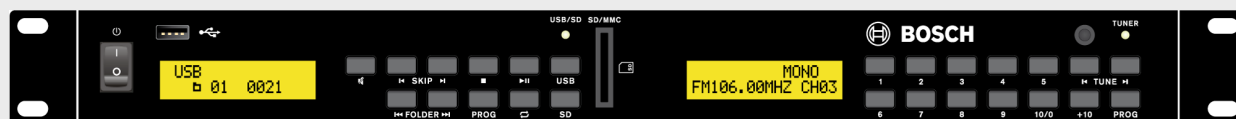
Dimensions (H x W x D)	44 x 444 x 250 mm (1.73 x 17.48 x 9.84 in)
Mounting	Stand-alone, 19" rack (19" wide, 1U high)
Color	Charcoal with silver printing
Weight	Approx. 3.6 kg

### Environmental

Operating temperature	-25 °C to +45 °C
Storage temperature	-40 °C to +70 °C
Relative humidity	< 90 % (non condensing)

## Ordering Information

**PLE-SDT Plena Easy Line SD Tuner BGM source**  
USB/SD MP3 player and FM tuner functions.  
Order number **PLE-SDT**



# Plena Easy Line SD Tuner BGM source

PLE-SDT



**BOSCH**

en Installation and Operation manual

# Table of Contents

<b>1</b>	<b>Safety</b>	<b>5</b>
<b>2</b>	<b>Short Information</b>	<b>6</b>
2.1	Purpose	6
2.2	Digital document	6
2.3	Intended audience	6
2.4	Alerts and notice signs	6
2.5	Conversion tables	7
<b>3</b>	<b>System Overview</b>	<b>8</b>
3.1	Application	8
3.2	Short description	8
3.3	Scope of delivery	8
3.4	The Plena Source Unit	8
3.5	Controls, connectors and indicators	9
3.5.1	Front view	9
3.5.2	Rear view	10
3.5.3	Remote control	11
<b>4</b>	<b>Planning information</b>	<b>13</b>
<b>5</b>	<b>Installation</b>	<b>14</b>
5.1	Source unit connections / settings	14
5.2	USB/SD	14
5.3	Remote control	14
<b>6</b>	<b>Connections</b>	<b>15</b>
6.1	Front side input sockets	15
6.1.1	USB	15
6.1.2	SD/MMC	15
6.2	Rear side input sockets	15
6.2.1	FM tuner antenna	15
6.2.2	USB	15
6.2.3	Mains power socket	16
6.3	Rear side audio output sockets	16
<b>7</b>	<b>Configuration</b>	<b>17</b>
7.1	FM tuner	17
7.1.1	Tuner audio output level control	17
7.1.2	Preset radio frequency programming	17
7.2	Combined audio output level control	18
7.3	USB/SD audio output level control	18

---

<b>8</b>	<b>Operation</b>	<b>19</b>
8.1	Remote control	19
8.2	USB/SD source	20
8.2.1	Replaying music tracks	20
8.2.2	Track selection	21
8.2.3	Repeat functions and random play	22
8.2.4	Making a playlist	22
8.2.5	Muting the output sound	23
8.3	FM tuner	24
8.3.1	Search a FM radio frequency	24
8.3.2	Preset FM radio frequency selection	24
8.3.3	Sequentially FM radio frequency preset selection	24
8.3.4	Manual selection of a FM radio frequency	25
8.3.5	Radio Data System (RDS)	25
8.3.6	Switch off timer	25
8.3.7	Stereo / mono output sound	26
8.3.8	Muting the output sound	26
<b>9</b>	<b>Troubleshooting</b>	<b>27</b>
<b>10</b>	<b>Maintenance</b>	<b>29</b>
10.1	Remote control	29
<b>11</b>	<b>Technical Data</b>	<b>30</b>
11.1	Electrical	30
11.1.1	Mains power supply	30
11.1.2	FM tuner	30
11.1.3	USB/SD source	30
11.2	Mechanical	31
11.3	Environmental	31

# 1 Safety

Prior to installing or operating this product, always read the Important Safety Instructions which are available as a separate document (F.01U.120.759). These instructions are supplied together with all equipment that can be connected to the mains supply.

## **Safety precautions**

The PLE-SDT Plena Easy Line SD Tuner BGM source is designed to be connected to the 115/230 Vac public distribution network.

To avoid any risk of electric shock, all interventions must be carried out with disconnected mains supply.

Interventions with the equipment switched on are authorized only when it is impossible to switch the equipment off. The operation must only be performed by qualified personnel.

## 2 Short Information

### 2.1 Purpose

The purpose of this manual is to provide information required for installing, configuring, operating and maintaining the PLE-SDT Plena Easy Line SD Tuner BGM source.

### 2.2 Digital document

This installation and operation manual is also available as a digital document in the Adobe Portable Document Format (PDF).

Refer to the product related information on [www.boschsecuritysystems.com](http://www.boschsecuritysystems.com).

Data and illustrations subject to change without notice.

### 2.3 Intended audience

These installation and operation instructions are intended for installers and users of a public address system.

### 2.4 Alerts and notice signs

Four types of alerts can be used in this manual. The alert type is closely related to the effect that may be caused if it is not observed. These alerts - from least severe effect to most severe effect - are:

**NOTICE!**

Alert containing additional information. Usually, not observing a 'notice' does not result in damage to the equipment or personal injuries.

---

**CAUTION!**

The equipment or the property can be damaged, or persons can be lightly injured if the alert is not observed.

---

**WARNING!**

The equipment or the property can be seriously damaged, or persons can be severely injured if the alert is not observed.

---

**DANGER!**

Not observing the alert can lead to severe injuries or death.

---

## 2.5 Conversion tables

In this manual, SI units are used to express lengths, masses, temperatures etc. These can be converted to non-metric units using the following information.

Imperial	Metric	Metric	Imperial
1 in =	25.4 mm	1 mm =	0.03937 in
1 in =	2.54 cm	1 cm =	0.3937 in
1 ft =	0.3048 m	1 m =	3.281 ft
1 mi =	1.609 km	1 km	0.622 mi

**Table 2.1** Conversion of units of length

Imperial	Metric	Metric	Imperial
1 lb =	0.4536 kg	1 kg =	2.2046 lb

**Table 2.2** Conversion of units of mass

Imperial	Metric	Metric	Imperial
1 psi =	68.95 hPa	1 hPa =	0.0145 psi

**Table 2.3** Conversion of units of pressure



### NOTICE!

1 hPa = 1mbar.

Fahrenheit	Celsius
$^{\circ}\text{F} = 9/5 (^{\circ}\text{C} + 32)$	$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32)$

**Table 2.4** Conversion of units of temperature



## 3 System Overview

### 3.1 Application

The PLE-SDT Plena Easy Line Source Unit is the ideal high-quality source for music in public address systems. It provides hours of uninterrupted music for professional systems. Designed without moving parts, it can be used in systems that are on for long periods of time. It is designed to be used with non-volatile steady state flash memory.

### 3.2 Short description

The Plena Easy Line Source Unit is divided in a **USB/SD** source part, for playing MP3's stored on USB flash memory device and SD/MMC card, and a **FM tuner** part. The source unit is typically used in hotels, shops, supermarkets, restaurants, bars, canteens, gyms, showrooms, and other places where background music (BGM) creates the right atmosphere. It connects to any public address amplifier. The design follows the Plena Easy Line design and is part of the Advantage Line by Bosch.

### 3.3 Scope of delivery

The PLE-SDT Plena Source Unit is packed with the following parts:

- 1x Mains power cord
- 1x Safety instructions
- 1x Set of 19" mounting brackets (mounted)
- 1x Remote control (Not included: 2x 1.5V, size AAA battery)
- 2x 2-pair audio RCA cable (2.0 m)
- 1x Antenna cord including connector
- 1x SD memory card including free music and this installation and operation manual

### 3.4 The Plena Source Unit

With an USB or SD card memory capacity of up to 32 GB (up to 2000 tracks), and the option to connect the USB flash memory device either on the front or rear side, the USB/SD source provides hours of high-quality, uninterrupted music playback from a single source. It supports MP3 music files organized in multiple folders. The USB/SD source will automatically search and play all playable MP3's on a flash memory device, and has repeat and random play modes.

#### **USB/SD source**

The USB/SD source can play MP3's with bit-rates from 32 kbps to 320 kbps, mono / stereo / joint-stereo, and both constant bit-rate (CBR) and variable bit-rate (VBR) are supported.

#### **FM tuner**

The digitally controlled FM tuner uses a frequency synthesizer for accurate capture of FM radio frequencies and has 30 presets to store your favorite radio stations.

#### **Outputs**

The USB/SD source and the FM tuner can operate simultaneously on different outputs. The audio output level of the outputs can be set with the controls on the rear side. Next to the stereo analog outputs for the USB/SD source and FM tuner, there is a combined output that plays the USB/SD source content and automatically switches over to the FM tuner when the last MP3 track has been played.

### 3.5 Controls, connectors and indicators

#### 3.5.1 Front view

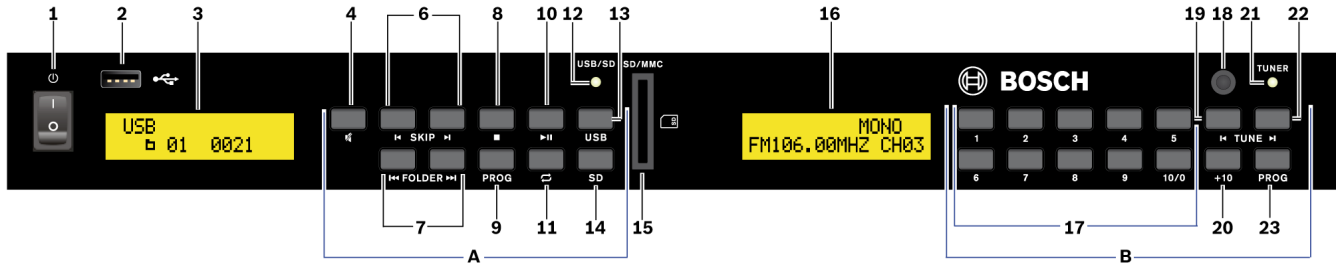


Figure 3.1 Front view

Number	Front view	Description
1		Mains power switch (On/Off). Refer to <i>Section 5.1 Source unit connections / settings</i> .
2		USB 2.0 4-pin socket. Refer to <i>Section 6 Connections</i> .
3	-	LCD (with backlight) for USB device or SD card operation.
A	-	Keypad for USB device or SD card operation. Refer to <i>Section 8 Operation</i> .
4		To mute the audio output level of USB or SD source. Refer to <i>Section 8.2.5 Muting the output sound</i> .
6	< - SKIP - >	Track selection and fast forward/reverse. Refer to <i>Section 8.2.2 Track selection</i> .
7	<< FOLDER >>	File selection. Refer to <i>Section Selection of folders and search for folders, page 22</i> .
8		To stop the track replay.
9	PROG	To switch to the programming mode to compile an individual MP3 track sequence. Refer to <i>Section 8.2.4 Making a playlist</i> .
10	>	To switch between track replay and pause.
11		To select the repeat and random replay functions. Refer to <i>Section 8.2.3 Repeat functions and random play</i> .
12	USB/SD	On/Off USB/SD source LED indicator. Refer to <i>Section 8.1 Remote control</i> .
13	USB	To select USB device operation. Refer to <i>Section 8.2 USB/SD source</i> .
14	SD	To select SD card operation. Refer to <i>Section 8.2 USB/SD source</i> .
15	SD/MMC	SD card socket. Refer to <i>Section 8.2 USB/SD source</i> .
16	-	LCD (with backlight) for FM tuner operation.
B	-	Keypad for FM tuner operation. Refer to <i>Section 7.1 FM tuner</i> and <i>Section 8.3 FM tuner</i> .
17	1-9, 10/0	Radio frequency (preset) selection. Refer to <i>Section 8.3 FM tuner</i> .

Number	Front view	Description
18	-	IR receiver lens (remote control). Refer to <i>Section 8.1 Remote control</i> .
19	<	Every time you press the button the tuning frequency goes down with 50 kHz. Press for two seconds to scan down to the next station. Refer to <i>Section 8.3 FM tuner</i> .
20	+10	Radio frequency preset selection (>10). Refer to <i>Section 8.3 FM tuner</i> .
21	TUNER	On/Off LED indicator FM tuner. Refer to <i>Section 8.1 Remote control</i> .
22	>	Every time you press the button the tuning frequency goes up with 50 kHz. Press for two seconds to scan up to the next station. Refer to <i>Section 8.3 FM tuner</i> .
23	PROG	To save the radio frequency presets. Refer to <i>Section 7.1.2 Preset radio frequency programming</i> .

### 3.5.2 Rear view

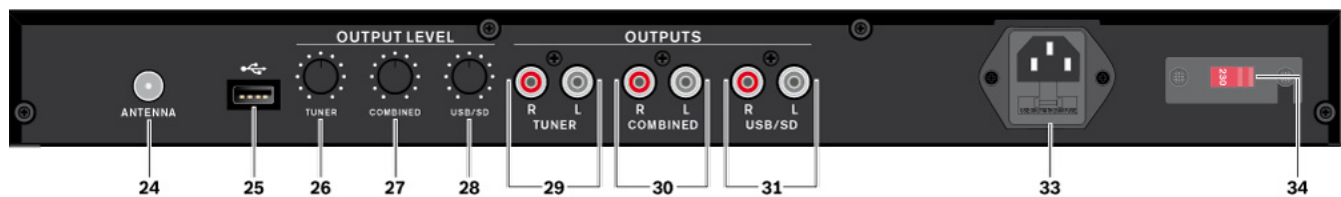

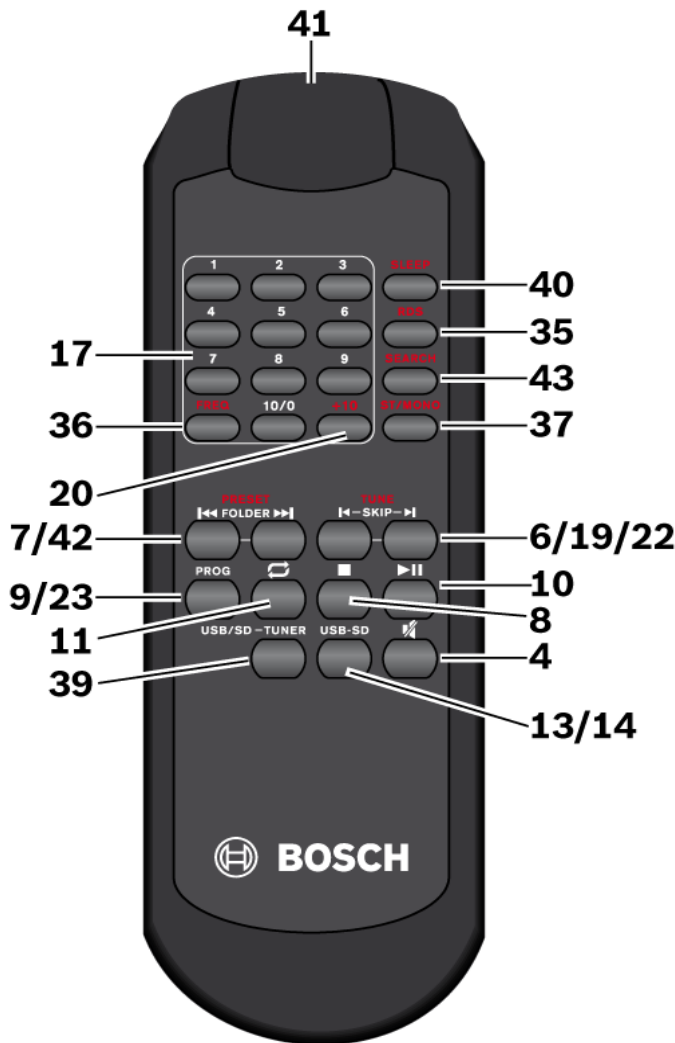


Figure 3.2 Rear view



Number	Rear view	Description
24	ANTENNA	FM tuner antenna input (75 Ohm) socket. Refer to <i>Section 6.2.1 FM tuner antenna</i> .
25		USB 2.0 4-pin socket. Refer to <i>Section 6 Connections</i> .
26	TUNER	Tuner audio output level control. Refer to <i>Section 7.1.1 Tuner audio output level control</i> .
27	COMBINED	Combined USB/SD and FM tuner audio output level control. Refer to <i>Section 7 Configuration</i> .
28	USB/SD	USB/SD audio output level control. Refer to <i>Section 7.1.1 Tuner audio output level control</i> .
29	TUNER R/L	Tuner output (right and left channel) sockets. Refer to <i>Section 6.3 Rear side audio output sockets</i> .
30	COMBINED R/L	Combined USB/SD and FM tuner output (right and left channel) sockets. Refer to <i>Section 6.3 Rear side audio output sockets</i> .
31	USB/SD R/L	USB/SD output (right and left channel) sockets. Refer to <i>Section 6.3 Rear side audio output sockets</i> .
33	-	Mains power inlet + fuse holder. (Fuse: 230V = 0.63AT/250V. Fuse: 115V = 1.25AT/250V). Refer to <i>Section 6.2.3 Mains power socket</i> .
34	-	Mains power selector (230V or 115V). Refer to <i>Section 5.1 Source unit connections / settings</i> .

### 3.5.3 Remote control



**Figure 3.3** Remote control (The numbers of the remote control and in the table, are identical to the numbers of the unit.)

Number	Function	Button	Description
17 / 20	TUNER, USB/SD	<b>1-9, 10/0, +10</b>	Radio frequency preset selection or track selection. Refer to <i>Section 8.3 FM tuner</i> or <i>Section 8.2.2 Track selection</i> .
36	TUNER	<b>FREQ</b>	Manual selection of FM radio frequency. Refer to <i>Section 8.3.4 Manual selection of a FM radio frequency</i> .
42	TUNER	<b> &lt;&lt; PRESET &gt;&gt; </b>	Scroll up/down radio frequency presets. Refer to <i>Section 8.3 FM tuner</i> .
7	USB/SD	<b> &lt;&lt; FOLDER &gt;&gt; </b>	Scroll up/down MP3 folder selection. Refer to <i>Section Selection of folders and search for folders, page 22</i> .
9	USB/SD	<b>PROG</b>	To switch to the programming mode to compile an individual track sequence. Refer to <i>Section 8.2.4 Making a playlist</i> .
23	TUNER	<b>PROG</b>	To save the selected radio frequency to a preset. Refer to <i>Section 7.1.2 Preset radio frequency programming</i> .
11	USB/SD		To select the repeat and random replay functions. Refer to <i>Section 8.2.3 Repeat functions and random play</i> .

Number	Function	Button	Description
39	USB/SD, TUNER	<b>USB/SD-TUNER</b>	To select USB/SD or FM tuner operation. Refer to <i>Section 8.1 Remote control</i> .
40	TUNER	<b>SLEEP</b>	To set the FM tuner switch-off timer. Refer to <i>Section 8.3.6 Switch off timer</i> .
35	TUNER	<b>RDS</b>	Radio Data System. To display FM radio frequency information. Refer to <i>Section 8.3.5 Radio Data System (RDS)</i> .
43	TUNER	<b>SEARCH</b>	To search for a radio frequency. Refer to <i>Section 8.3.1 Search a FM radio frequency</i> .
37	TUNER	<b>ST/MONO</b>	To switch between stereo or mono audio output signal. Refer to <i>Section 8.3.7 Stereo / mono output sound</i> .
19, 22	TUNER	<b> &lt; - TUNE - &gt; </b>	Every time you press one of the buttons the tuning frequency goes up or down with 50 kHz. Press for two seconds to scan up to the next station. Refer to <i>Section 8.3 FM tuner</i> .
6	USB/SD	<b> &lt; - SKIP - &gt; </b>	For track selection and fast forward/reverse. Refer to <i>Section 8.2.2 Track selection</i> .
10	USB/SD	<b>&gt;  </b>	To switch between track replay and pause. Refer to <i>Section 8.2 USB/SD source</i> .
8	USB/SD		To stop the track replay. Refer to <i>Section 8.2 USB/SD source</i> .
4	USB/SD, TUNER		To mute the audio output level of USB / SD source or FM Tuner. Refer to <i>Section 8.2.5 Muting the output sound of the USB/SD</i> . Refer to <i>Section 8.3.8 Muting the output sound of the FM Tuner</i> .
13, 14	USB/SD	<b>USB-SD</b>	To select USB device or SD card operation. Refer to <i>Section 8.2 USB/SD source</i> .
41	USB/SD, TUNER	-	IR transmitter lens. Refer to <i>Section 8.1 Remote control</i> .

## 4 Planning information

Make sure that:

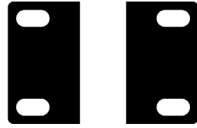
- No liquids can spill into or on the unit.
- The ventilation airflow is not obstructed.
- There is a mains power outlet of sufficient rating close to the intended location.

And:

- Leave at least 10 cm of free space at the rear of the unit for connectors and wiring.

## 5 Installation

The PLE-SDT Plena Easy Line SD Tuner BGM source is designed for installation into a 19" rack; however, it can also be used as a desktop unit. For 19" rack installation; use the 19" rack mounting brackets which come with the source unit.



**Figure 5.1** Set of 19" rack mounting brackets

### 5.1 Source unit connections / settings

1. Connect any additional equipment/wires. Refer to *Section 6 Connections*.
2. Check/set the configuration settings. Refer to *Section 7 Configuration*.



#### CAUTION!

1. Set the mains power switch (1) on the unit's front side to the Off position.
2. Make sure that the mains power selector (34) on the unit's rear side is correctly set for the local mains voltage.
3. Change the mains fuse into T1.25A/250V, when connected to 115 V mains voltage.
4. Insert the power cord in the mains power inlet (33) and connect it into the distribution network mains outlet.

### 5.2 USB/SD

Connect a USB flash memory device to the USB socket (2 or 25). The use of USB HDD is not recommended. And/or insert an SD/MMC memory card into the socket **SD/MMC** (15), the notched corner of the card facing up as indicated on the unit's front panel.

### 5.3 Remote control

To insert the batteries (2x 1,5V, size AAA):

1. Remove the battery compartment cover on the rear side of the remote control.
2. Insert the batteries as indicated in the battery compartment.
3. Close the battery compartment with the cover.



#### NOTICE!

If the remote control is not in use for a longer period of time, remove the batteries to prevent any damage due to battery leakage.



#### NOTICE!

Disposable batteries and battery packs at the end of their technical lives should be discarded with due care for the environment. When possible, take batteries to a local recycling station.

## 6 Connections

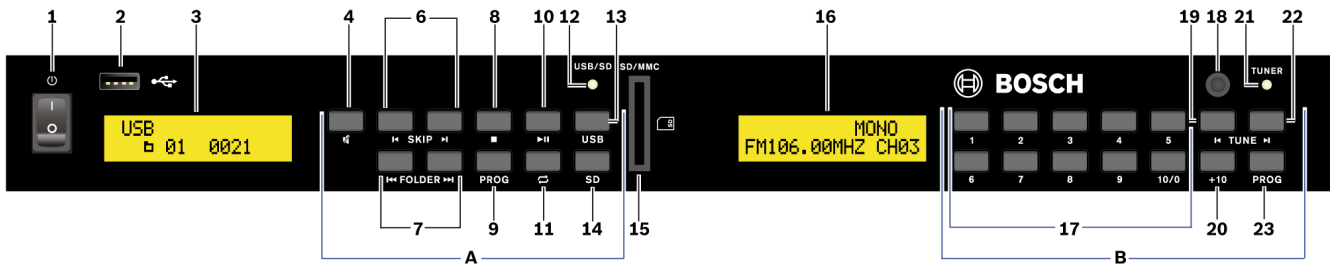


Figure 6.1 Front view

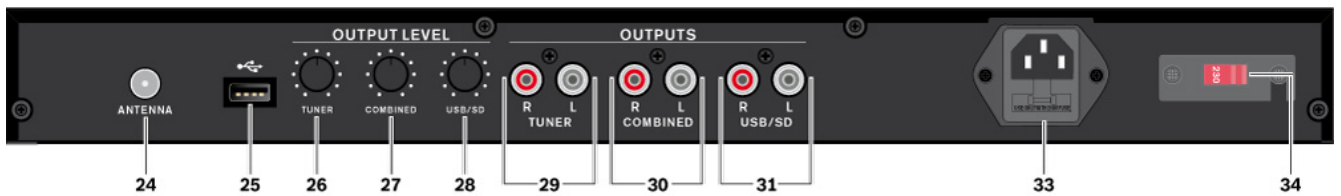


Figure 6.2 Rear view

### 6.1 Front side input sockets

#### 6.1.1 USB

Connect a USB flash memory device (maximum 32 GB), with MP3 file format stored, to the USB 2.0 4-pin socket (2). Refer to *Section 8.2 USB/SD source*.



**NOTICE!**

Connect only one USB flash memory device at the time. If a USB flash memory device is connected to the **rear** (25), the USB front socket (2) **cannot** be used.

#### 6.1.2 SD/MMC

Insert a SD/MMC memory card (maximum 32 GB), with MP3 file format stored, to the SD/MMC card socket (15). Refer to *Section 8.2 USB/SD source*.

### 6.2 Rear side input sockets

#### 6.2.1 FM tuner antenna

The FM tuner antenna socket (24) must be connected to an antenna or cable network with a COAX cable of 75 Ohm. A antenna cord with connector comes with the unit.

#### 6.2.2 USB

Connect a USB flash memory device (maximum 32 GB), with MP3 file format stored, to the USB 2.0 4-pin socket (25). Refer to *Section 8.2 USB/SD source*.



**NOTICE!**

Connect only one USB flash memory device at the time. If a USB flash memory device is connected to the **front** (2), the USB rear socket (25) **cannot** be used.



### 6.2.3 Mains power socket

**CAUTION!**

Before applying mains power, the first time, check the mains power selector (34) and the correct fuse value (33) on the unit's rear side.

Insert the power cord connector to the mains power inlet (33) and plug it into the distribution network mains outlet socket.

**Important for U.K. customers**

The wires of the supplied mains lead are colored in accordance with the following code:

- Green/yellow = earth
- Blue = neutral
- Brown = live

As the colors of the wires in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

1. The wire which is colored green and yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol, or colored green or green and yellow.
2. The wire which is colored blue must be connected to the terminal which is marked with the letter N or colored black.
3. The wire which is colored brown must be connected to the terminal which is marked with the letter L or colored red.

### 6.3 Rear side audio output sockets

The USB/SD source and the FM tuner can operate simultaneously on different outputs:

1. Connect the outputs (R = Right channel, L = Left channel) of the source **USB/SD** (31) and **TUNER** (29) via cables, with RCA connectors, to the inputs, e.g. on a audio mixer / amplifier.

Next to the stereo analog outputs for the USB/SD and FM tuner, there is a **COMBINED** (30) output that plays the USB/SD content and automatically switches over to the FM tuner when the last MP3 track has been played:

1. Connect the outputs (R = Right channel, L = Left channel) via a cable with RCA connectors to the inputs, e.g. on a audio mixer / amplifier.

The audio output level of the three outputs can be set with the controls (26, 27 and 28) on the rear side of the source unit.

1. Refer to section *Section 7 Configuration*.

## 7 Configuration

Switch on the unit with the POWER switch (1).

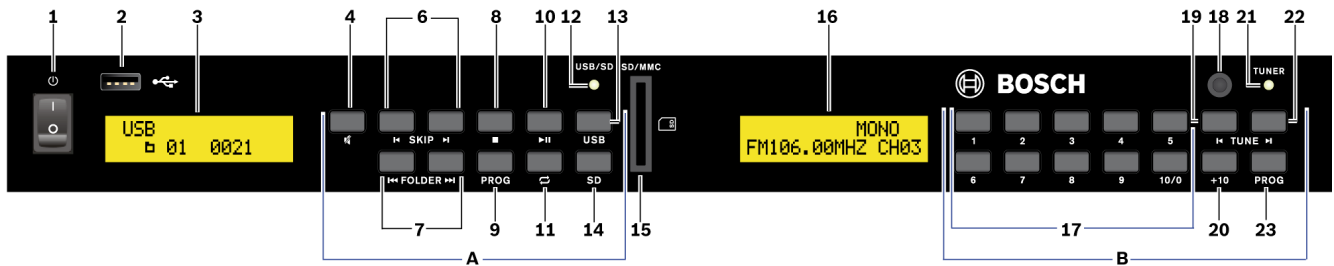


Figure 7.1 Front view

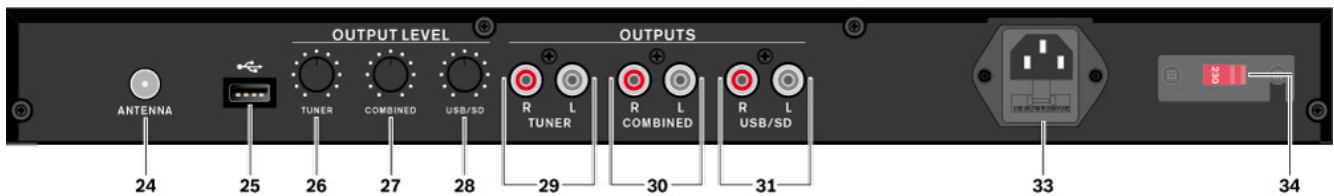


Figure 7.2 Rear view

### 7.1 FM tuner

#### 7.1.1 Tuner audio output level control

- Set the **TUNER** (26) audio output level control to the required amplifier input level.
  - The audio output level could be set between mute and 1.5 Vrms.
  - It is advised to set the control in the upper mid position, at start.
- Refer to *Section 11 Technical Data* for audio output level.

#### 7.1.2 Preset radio frequency programming

- Select the FM tuner source with the remote control button **USB/SD-TUNER** (39).
  - The green LED **TUNER** (21) will light up.
- Select the required FM radio frequency with the buttons **<** (19) and **>** (22).
- Press the button **PROG** (23).
  - The FM tuner LCD (16) shows the preset number (CHxx) flashing during this process.
  - Maximum 30 presets could be stored.
- Press a button **1** to **10/0** (17) for preset position 1 to 10. Or:
- Press the button **1** to **10/0** (17) following by the button **+10** (20) for preset positions 11 to 30.
  - 1st actuation of button **+10**: Preset 11 up to 19.
  - 2nd actuation of button **+10**: Preset 20 up to 30.
- Press the button **PROG** (23) again to store the selected FM radio frequency as a preset.
- Refer to *Section 8.3.2 Preset FM radio frequency selection*.

## 7.2 Combined audio output level control

The **COMBINED** (30) output plays the USB/SD content and automatically switches over to the FM tuner when the last MP3 track has been played:

1. Set the **COMBINED** (27) audio output level control to the required amplifier input level.
  - The audio output level could be set between mute and 1.5 Vrms.
  - It is advised is to set the control in the upper mid position, at start.
2. Refer to *Section 11 Technical Data* for output level.

## 7.3 USB/SD audio output level control

1. Set the **USB/SD** (28) audio output level control to the required amplifier input level:
  - The audio output level could be set between mute and 1.5 Vrms.
  - It is advised is to set the control in the upper mid position, at start.
2. Refer to *Section 11 Technical Data* for output level.

## 8 Operation

Switch on the source unit with the POWER switch (1). The **USB/SD** LCD (3) will show “**Version x.x**” and the FM tuner LCD (16) will show the last used FM radio frequency and or preset radio frequency. First the **USB/SD** source will read the USB flash memory on the front (2) and rear (25). If no USB flash memory device has been connected, the **USB/SD** source LCD (3) will show “**NO USB**” and it will continue to read the **SD/MMC** (15) memory. If no SD memory card has been inserted, the **USB/SD** source LCD will show “**NO CARD**”.



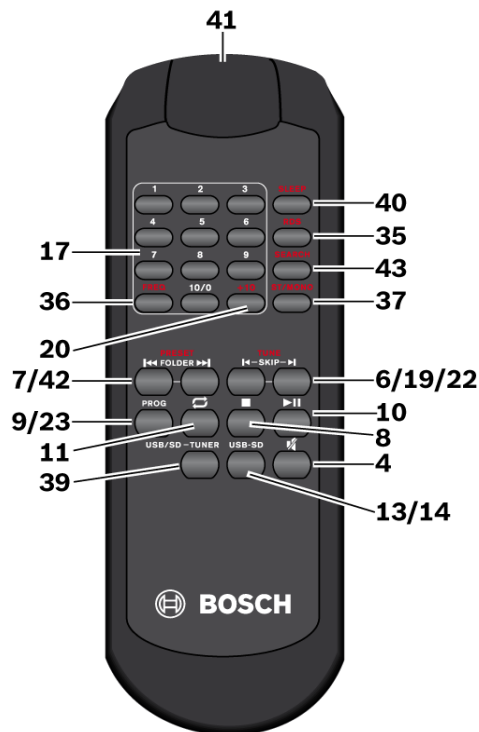
### NOTICE!

The unit will play FAT32 formatted SDHC card and USB sticks. Some rare occurring partition tables will not be played despite FAT32 formatting. Most standard available USB flash memory and SD card will be played. If a card is not played, please check with a different type of card whether the unit is faulty or whether a non compliant format is used.

### 8.1 Remote control

When you press a button on the remote control, always direct the remote control IR transmitter lens (41) towards the IR receiver lens (18) of the source unit. There must be no obstacles between the remote control and the IR receiver lens.

The button functions of the remote control are identical to the buttons on the source unit front side. Refer to *Section 3.5.3 Remote control* and the following sections.



**Figure 8.1** Remote control

1. First select the source to be controlled by the remote control with the button **USB/SD/-TUNER** (39):
  - The green LED **USB/SD** (12) or **TUNER** (21) will light up of the selected unit source.
2. Continue with *Section 8.2 USB/SD source* or with *Section 8.3 FM tuner*.



### NOTICE!

If the range of the remote control decreases, the batteries are exhausted and must be replaced. Refer to *Section 5.3 Remote control*.

## 8.2 USB/SD source

The USB/SD source support MP3 audio file format, stored on a USB flash memory device (FAT32) and SD memory card.

1. Be sure that a USB flash memory device is connected to the USB socket (2 or 25) and or an SD memory card is inserted into the socket **SD/MMC** (15).
2. Press the button **USB/SD-TUNER** (39) of the remote control to select and operate the USB/SD source, if required.
  - The green LED **USB/SD** (12) will light up.

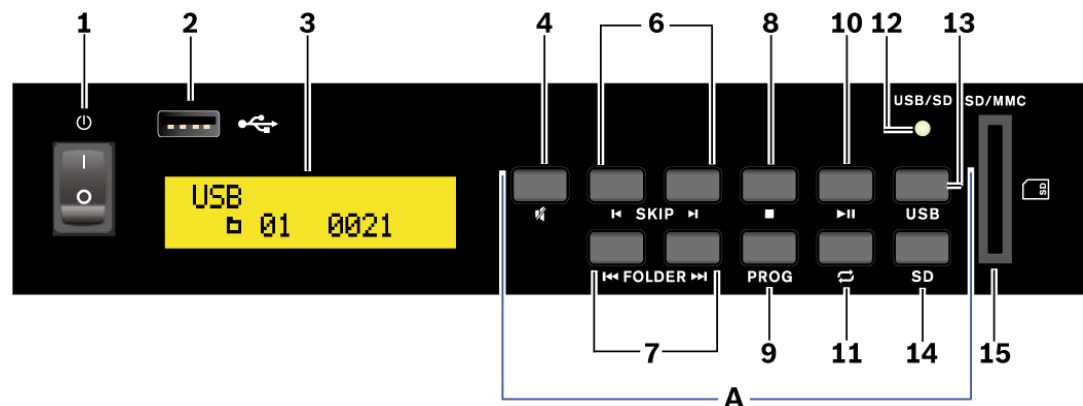


Figure 8.2 USB/SD source front view



### NOTICE!

For configuration settings, refer to *Section 7.3 USB/SD audio output level control*.

### 8.2.1

#### Replaying music tracks

1. Select the source (USB device or SD/MMC) with the button **USB** (13) or **SD** (14), if necessary:
  - After USB device or SD/MMC reading, the lower line of the LCD (3) will show the number of folders (left hand side) and the number of tracks (right hand side). The LCD (3) upper line (left corner) will show the selected source "**USB**" or "**CARD**".
2. Start replay the first track with the button **>||** (10). To select another track, refer to section *Section 8.2.2 Track selection*.
  - The following additional information will scroll in the LCD upper line:  
**File - < name >, Track - < name >, Artist - < name >, Album - < name >**  
*Remark: If an information is not available, the LCD will show "NONE" instead of a name.*
  - The LCD lower line will show from left to right:  
TRxxx (track number (maximum 2000 tracks)), mm:ss (track playing time), MP3 (audio file format).
3. Press the button **>||** (10) to switch between replay and pause:
  - In the pause mode, the pause symbol (||) will be shown in the upper line and the time indication will flash in the LCD.
  - In the replay mode, the replay symbol (>) will be shown in the upper line of the LCD.
4. To stop the replay, press the button **□** (8):
  - The lower line of the LCD (3) will default show the number of folders (left hand side) and the number of tracks (right hand side).

## 8.2.2

### Track selection

The following track selections could be made:

- Section *Manual selection of the track number*, page 21
- Section *Skipping tracks in forward/reverse direction*, page 21
- Section *Fast forward/reverse*, page 21
- Section *Selection of folders and search for folders*, page 22

#### Manual selection of the track number

1. Select the source (USB device or SD/MMC card) with the button **USB** (13) or **SD** (14), if necessary.
2. Enter the track number with the numerical buttons (17, 20) on the remote control.
3. Press the button **>||** (10), to replay the track.

Examples:

Track number	Press the buttons
4	4 + >
27	2 + 7 + >
135	1 + 3 + 5 + >

#### NOTICE!



The player will arrange the tracks as follows:

1. All tracks without folder in the ROOT directory.
2. All tracks with folders in the ROOT directory.
3. All tracks in sub folders, etc.

The tracks and folders will not be arranged in alphabetical order.

#### Skipping tracks in forward/reverse direction

1. Select the source (USB device or SD/MMC card) with the button **USB** (13) or **SD** (14), if necessary.
2. To skip one track or several tracks in forward or reverse direction, press the skip button **|<** or **>|** (6) repeatedly:
  - Button **>|**: To skip to the next track.
  - Button **|<**: To return to the beginning of the track currently playing.
  - Each time the button **|<** is pressed again, the unit will go back one track at a time.

#### Fast forward/reverse


1. Select the source (USB device or SD/MMC card) with the button **USB** (13) or **SD** (14), if necessary.
2. For fast forward, keep the button **>|** (6) pressed.
3. For fast reverse, keep the button **|<** (6) pressed.



#### NOTICE!


With MP3 files, fast forward/reverse will only be possible within a track. You will be able to trace it by means of the time indication on the LCD (3), not acoustically.

### Selection of folders and search for folders

1. Select the source (USB device or SD/MMC card) with the button **USB** (13) or **SD** (14), if necessary.
2. With files in several folders (file directories), press the button **FOLDER** (7) during the replay to go to the first track of the next folder (**>>|**) or to the first track of the previous folder (**|<<**).
3. If you stop the replay with the button  (8) first and then press the button **FOLDER** **|<<** or **>>|**:
  - The upper line of the LCD (3) will show the folder name and the lower line will show the folder number behind the directory symbol.

## 8.2.3

### Repeat functions and random play

1. Select the source (USB device or SD/MMC card) with the button **USB** (13) or **SD** (14), if necessary.
2. Press the button  (11) to activate one of the repeat functions and the replay of the tracks in random order:
  - **Basic setting** (PLAY ALL): All tracks of the sound carrier or of a programmed track sequence will be replayed once, then the replay will stop.
  - **1st actuation of button** (PLAY ALL RANDOM): The tracks will be replayed once in random order.
  - **2nd actuation of button** (REPEAT TRACK): The track selected will be repeated continuously.
  - **3th actuation of button** (REPEAT FOLDER): All tracks in the folder selected will be repeated continuously.
  - **4th actuation of button** (REPEAT ALL): All tracks will be repeated continuously.
  - **5th actuation of button** (RANDOM REPEAT): All tracks will be replayed continuously in random order.
  - **6th actuation of button** (PLAY ALL): Return to basic setting.




#### NOTICE!



At random play, the LCD (3) upper line will show **RDM** (left hand side) including the selected random function symbol (right hand side). At repeat play, the LCD upper line will show the selected repeat function symbol (right hand side).

## 8.2.4

### Making a playlist


For replaying a selection of tracks in a certain order, a sequence (playlist) of up to 64 tracks can be programmed. For this purpose the arrangement of the folders should be known to you. Refer to the previous *Section Selection of folders and search for folders*, as it will be necessary to enter the corresponding number of each track to be programmed.

1. Select the source (USB device or SD/MMC card) with the button **USB** (13) or **SD** (14), if necessary.
2. Stop the playing track by pressing the button  (8).
3. Activate the programming mode with the button **PROG** (9).
  - Press all other buttons within 15 seconds otherwise you will exit the programming mode. In this case press the button **PROG** once again.
  - The LCD (3) will show: "**PROGRAM**" in the upper line and "**P-01 000 0000**" in the lower line.
4. Select the number of the folder (xxx) containing the first track desired for the track sequence with the buttons **|< – SKIP – >|** (6) or enter it with the remote control numerical

- keys (17, 20) (This is also necessary when all the files are in the ROOT directory without folder).
- In this example, enter 1 as the folder number.
5. To memorize press the button **PROG** (9):
    - The LCD (3) will show the track number (xxxx) flashing.
  6. Select the number of the first track (xxxx) of the track sequence with the buttons **|< - SKIP - >|** (6) or enter it with the remote control numerical keys (17, 20).
    - For MP3 files in folders, please note that these files are not arranged consecutively but that the first file in each folder is always number 1.
  7. To memorize press the button **PROG** (9):
    - The LCD (3) will show the next memory location number, e.g. "**P-02**".
  8. Repeat the steps 3 up to 7 for all further tracks desired until the entire track sequence has been programmed.
  9. To start the track sequence, press the button **>||** (10):
    - The upper line of the LCD will show "**MEM**" (memory) and the track sequence will be replayed.
  10. Press the buttons **|< - SKIP - >|** (6) to select any track of the track sequence or keep the corresponding button pressed to activate the fast forward/reverse function within a track.
  11. The replay will stop after the track sequence has been replayed or when you press the button  (8).
  12. To restart the track sequence, first press the button  (8), then press the button **PROG** (9) and then the button **>||** (10).





A track sequence will be not stored when:

- you change from source (USB / SD / TUNER).
- you press the button  (8) in the programming mode.
- you switch off the source unit (button 1).

### 8.2.5

#### Muting the output sound

To mute the audio output sound (outputs: 30, 31) of the track during replay:

1. Press the button  (4):
  - The LCD lower line will show **MUTE** flashing continuously when the mute function is activated.
2. To reactivate the sound, press the button  (4) once again:
  - The LCD (3) upper line will show "**MUTE OFF**" for 3 seconds.



## 8.3 FM tuner

- Press the button **USB/SD-TUNER** (39) of the remote control to select and operate the FM tuner.
  - The green LED **TUNER** (21) will light up.

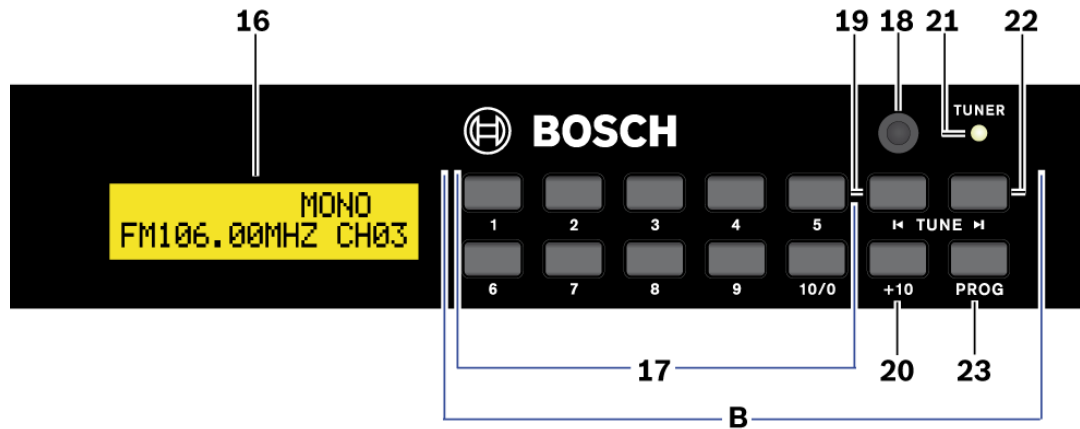


Figure 8.3 FM tuner front view

### 8.3.1 Search a FM radio frequency

Use the buttons **TUNE** |< (19) or >| (22) to search for a FM radio frequency:

- Press the button |< or >| once to fine tune. Or,
- Press and hold ( $\pm 1$  second) the button |< or >| to search for (strong) FM radio frequencies automatically. Or,

Use the button **SEARCH** (43) of the remote control to search for a (strong) FM radio frequency automatically:

- Press the button **SEARCH** for approx. 2 seconds to start the searching.

### 8.3.2 Preset FM radio frequency selection

Stored FM radio frequency presets (maximum 30) are selected by pressing:

- The button **1** to **10/0** (17) for presets 1 to 10. Or,
- The button **1** to **10/0** (17) following by the button **+10** (20) for preset positions 11 to 30:
  - 1st actuation of button **+10**: Preset 11 up to 19.
  - 2nd actuation of button **+10**: Preset 20 up to 30.



#### NOTICE!

For FM tuner preset programming, refer to *Section 7.1 FM tuner*.

### 8.3.3 Sequentially FM radio frequency preset selection

- Press the buttons |<< PRESET >>| (42) of the remote control to scroll up/down between the stored presets.

### 8.3.4 Manual selection of a FM radio frequency

1. Press the button **FREQ** (36) of the remote control, followed by its 4 or 5 number FM radio frequency digit, with the numerical buttons (17).
  - The FM radio frequency is set/activated after about two seconds.
  - The FM radio frequency range can be set between: 87.50 MHz and 108.00 MHz.

Examples:

FM frequency	Press the buttons
87.50 MHz	<b>FREQ</b> + 8 + 7 + 5 + 0
108.00 MHz	<b>FREQ</b> + 1 + 0 + 8 + 0 + 0



#### NOTICE!

Entering a non existing FM radio frequency will result in the LCD message: ERROR, result in a time out and return to the default radio frequency screen.

### 8.3.5 Radio Data System (RDS)

The Radio Data System button **RDS** (35) of the remote control is used to display FM radio frequency information, if it is broadcasted (for example; the time, radio station and or programme information):

1. Select the FM tuner source with the remote control button **USB/SD/-TUNER** (39).
  - The green LED **TUNER** (12) will light up.
2. Press the button **RDS** (35).
  - The lower line of the LCD (16) will show the FM radio frequency broadcast information, if available.
3. Press the button **RDS** (35) again to switch off the RDS function, if required.

### 8.3.6 Switch off timer

1. Press the button **SLEEP** (40) of the remote control to automatically switch off the FM tuner by the build-in timer function. The LCD (16) upper line shows "**SLEEP**" if the switch off timer is set between 90-10 minutes.

The switch off timer can be set between: Off, 90-10 minutes:

- **Basic setting:** Switch off timer off.
  - **1st actuation of button:** Sets the switch off timer to 90 minutes.
  - **2nd actuation of button:** Sets the switch off timer to 80 minutes.
  - **3th actuation of button:** Sets the switch off timer to 70 minutes.
  - **4th actuation of button:** Sets the switch off timer to 60 minutes.
  - **5th actuation of button:** Sets the switch off timer to 50 minutes.
  - **6th actuation of button:** Sets the switch off timer to 40 minutes.
  - **7th actuation of button:** Sets the switch off timer to 30 minutes.
  - **8th actuation of button:** Sets the switch off timer to 20 minutes.
  - **9th actuation of button:** Sets the switch off timer to 10 minutes.
  - **10th actuation of button:** Return to basic setting.
2. To change the switch off setting, press the button **SLEEP** (40) of the remote control again.

### 8.3.7

#### Stereo / mono output sound

To switch between stereo and mono audio output sound (output 29) of the FM tuner:

1. Press the button **ST/MONO** (37) of the remote control:
  - The LCD (16) upper line will show "**STEREO**" when stereo is set or "**MONO**" when mono is set.
2. Press the button **ST/MONO** (37) again to switch between mono and stereo.



#### NOTICE!



Sometimes a stereo FM radio frequency produce unwanted output noise. In that case, get a good public antenna connection or set the FM tuner in the mono mode.

---

### 8.3.8

#### Muting the output sound

To mute the audio output sound (output: 29) of the FM tuner:

1. Press the button  (4) of the remote control:
  - The LCD lower line will show **MUTE** flashing continuously when the mute function is activated.
2. To reactivate the sound, press the button  (4) once again.

## 9 Troubleshooting

Problem	Possible cause	Possible solution
The unit does not work.	Power (plug) disconnected, the unit is switched off or the mains fuse is broken.	Insert power cord and switch on the unit. Check the mains fuse.
USB/SD storage device not detected.	Device does not comply with USB mass storage.	Use a device complying with USB mass storage class (some portable audio players included in the class of image devices are not supported. Also, some flash card readers cannot be detected)
	USB hub in use.	Some USB hubs will not operate properly. Try a different USB hub, or connect the storage device directly to the USB port. Also, if multiple USB storage devices are connected through a USB hub, only one of the devices will be recognized.
	Format not supported.	Use only FAT32 format.
	The connection with the unit has been terminated because an electrical current stronger than allowable was applied to the unit's USB1 or USB2 port.	Wait several minutes. The rating (allowable current) for this unit is 500 mA or less per USB port. Use USB storage devices that meet these standards. If you have a USB storage device connected through a bus-powered USB hub, connect the USB storage device directly to this unit port. If shorted a long time the USB port will become defective.
	Partitioning of SD card is wrong. Apart from SD, SDHC and class of SD cards, it is also possible that the card has a different partition table than expected.	Reformat the USB or SD card with a PC that has been known to give good results.
Can't play MP3 or AAC tracks	Format not supported.	Refer to section 3.4 on supported formats. Basically MP3's are supported up to 320 kbps.
	Files are copy-protected.	Cannot be used on this unit.

<b>Problem</b>	<b>Possible cause</b>	<b>Possible solution</b>
No audio output sound.	The audio output cable has come loose or has not been properly plugged in.	Plug in audio cable properly.
	The audio output control is not working properly.	Check the output control setting on the rear panel.
	The audio output connectors or plugs are dirty.	Wipe away dust or dirt and reinsert the plug.
	The selected source is currently in the pause or mute mode.	Press the play/mute button.
The audio output sound is distorted or full of noise.	The audio output cable has not been properly plugged in.	Connect the audio cable to the line input of the amplifier.
	Connectors or plugs are dirty.	Wipe away dust or dirt and reinsert the plug.

## 10 Maintenance

The PLE-SDT Plena Easy Line SD Tuner BGM source has been designed to function without problems for a long period of time with a minimum of maintenance.

In order to guarantee trouble-free operation:

- Clean the unit with a damp lint free cloth; never use water or chemicals.
- Base the interval on the actual situation and dust build up, start with an interval of at least once a year.
- Periodically check the connectors for corrosion and the screw terminals to make sure that they have not become loosened.

### 10.1 Remote control

If the range of the remote control decreases, the batteries are exhausted and must be replaced (2x 1,5V, size AAA). Refer to *Section 5.3 Remote control*.

**NOTICE!**

If the remote control is not in use for a longer period of time, remove the batteries to prevent any damage due to battery leakage.

**NOTICE!**

Disposable batteries and battery packs at the end of their technical lives should be discarded with due care for the environment. When possible, take batteries to a local recycling station.

---

## 11 Technical Data

### 11.1 Electrical

#### 11.1.1 Mains power supply

Voltage:	115 - 230 VAC, $\pm 10\%$ , 50/60 Hz
Power supply fuses:	230 Vac = 0.63 AT / 250 V 115 Vac = 1.25 AT / 250 V
Power consumption:	
- Typical	10 W
- Maximum	50 VA

#### 11.1.2 FM tuner

The output performance \* is valid for the TUNER and COMBINED output.

Distortion *:	< 1 %
Total harmonic distortion (1 kHz) *:	< 0.8 %
FM frequency range:	87.5 MHz - 108 MHz
Frequency response:	50 Hz - 12 kHz
Channel separation (1 kHz) *:	$\geq 40$ dB
Intermediate rejection *:	$\geq 70$ dB
Signal / noise ratio *:	$\geq 50$ dB
Intermediate frequency *:	10.7 MHz
FM Input sensitivity:	6 $\mu$ V e.m.f. (2 $\mu$ V)
Automatic tuning sensitivity:	$\leq 50$ $\mu$ V
Antenna input:	75 ohms (coaxial)
Audio output level *:	1.5 Vrms +/- 1 dB

#### 11.1.3 USB/SD source

Frequency response:	50 Hz - 20 kHz
Signal / noise ratio:	$\geq 70$ dB
Total harmonic distortion (1 kHz):	< 0.1 %
Stereo separation:	$\geq 60$ dB
Audio output level:	1.5 Vrms +/- 1 dB
Maximum USB current:	500 mA
Maximum USB or SD card size:	32 GB
Supported USB or SD MMC:	FAT32 (32 bit File Allocation Table) or SD, SDHC

## 11.2

### Mechanical

Unit dimensions (H x W x D):	
- With brackets:	44 x 482 x 250 mm (1.73 x 18.97 x 9.84 in)
- Without brackets:	42 x 430 x 250 mm (1.65 x 16.93 x 9.84 in)
Unit mounting:	Stand-alone, 19" rack (19" wide, 1U high)
Unit color:	Charcoal with silver printing
Unit weight:	Approx. 3.6 kg
Remote control dimensions (H x W x D):	20 x 52 x 156 mm (0.80 x 2.05 x 6.14 in)
Remote control color:	Charcoal with silver printing
Remote control weight: (without batteries)	120 g

## 11.3

### Environmental

Operating temperature:	0 °C to +45 °C
Storage temperature:	-40 °C to +70 °C
Relative humidity:	< 90 % (non condensing)