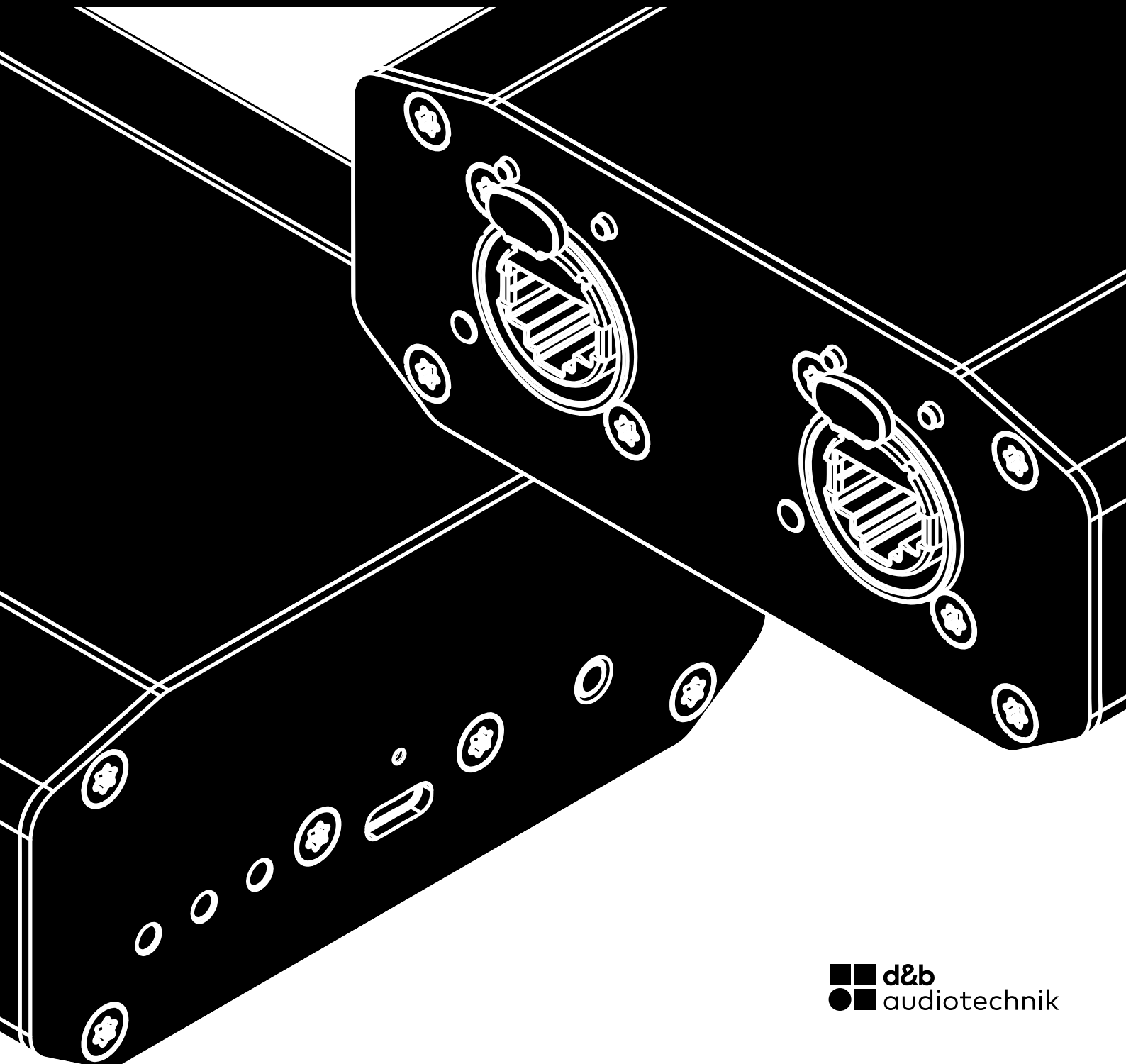
DS

DS1
Reference manual
1.2 en



d&b audiotechnik

Notes on document version
All previous versions of this document are hereby no longer valid.

Version 1.2:
Details on network driver installation added.

Refer to:
⇒ Chapter 3.2.1 “Network drivers” on page 7.

General information

DS1 Reference manual

Version: 1.2 en, 11/2026, DOC07890

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Keep this document with the product or in a safe place so that it is available for future reference.

We recommend you to regularly check the d&b website for the latest version of this document.

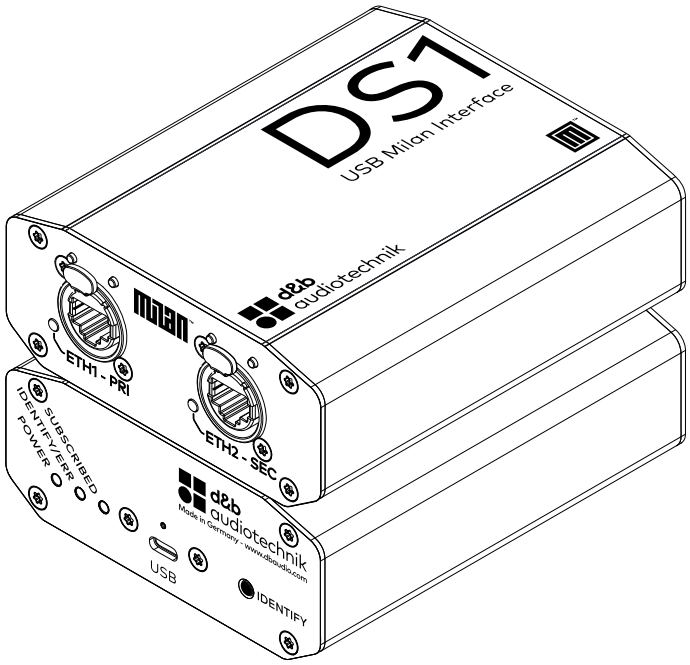
When reselling this product, hand over this document to the new owner.

If you supply d&b products, please draw the attention of your customers to this document. Enclose the relevant documents with the systems. If you require additional documents for this purpose, you can order them from d&b.

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1.1 Intended use

The d&b DS1 is used for playback and recording audio via a Milan™ audio network using a PC or a mobile device.

In parallel, it can be used as a regular Ethernet interface for control and configuration of network and Milan devices. It incorporates two external Ethernet interfaces with Neutrik etherCON® connectors. Each Ethernet port combines a Milan interface with a dedicated USB network interface to enable any standard IP communication in addition to Milan audio.

It converts up to 16 channels bidirectionally from USB to Milan™ and vice versa in order to connect a playback or recording PC to a Milan™ network. It provides seamless redundancy via its primary and secondary Ethernet ports.

NOTICE!

The device complies with the electromagnetic compatibility requirements of EN 55032:2019 (product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use) for the environment Class A.

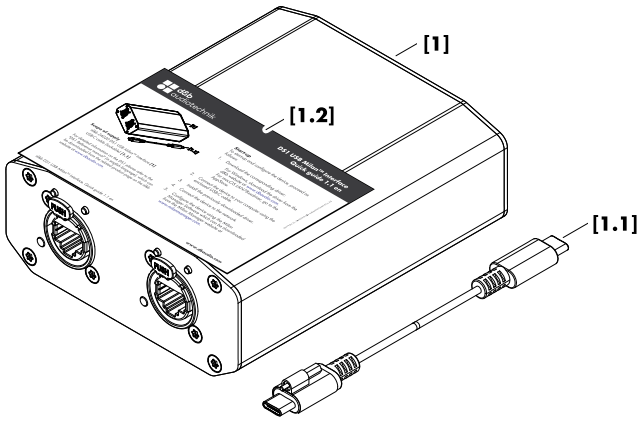
Acoustic interference and malfunctions may occur if the unit is operated in the immediate vicinity of high-frequency transmitters (e.g. wireless microphones, mobile phones, etc.). Damage to the device is unlikely, but cannot be excluded.

Only shielded network cables must be used!

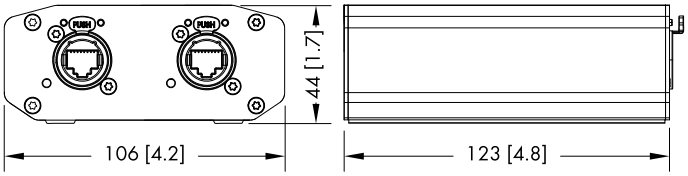
1.2 Scope of supply

Before starting up the device, please verify the shipment for completeness and proper condition of the items.

If there is any sign of obvious damage to the unit and/or the power cord, do not operate the unit and contact your local dealer from whom you received it.



Pos.	Qty.	d&b Code	Description
[1]	1	Z4020	d&b DS1 USB Milan™ Interface.
Including:			
[1.1]	1		USB-C cable 1 m (3 ft) - lockable.
[1.2]		D2779.EN .01	DS1 Quick guide.



DS1 dimensions in mm [inch]

Operating conditions

Power supply ..... USB C PD 5 V/7.5 W

Temperature range ..... 0 ... +60 °C (+32 ... +140 °F)

Connections

Host ..... USB-C

Network ..... 2x etherCON® (ETH1 - PRI/ETH2 - SEC)

I/O

Class compliant USB audio with ..... 16 x input/16x output

..... @ 48 and 96 kHz, 24 Bit

..... ASIO driver

Milan™

Milan™ stream ..... 2x Input stream, 2x Output stream

..... @ 48 and 96 kHz

Clock reference stream ..... Input or Output

Controls and indicators

IDENTIFY (Wink) ..... Push button

Status LEDs ..... Milan Primary and Milan Secondary/Port mode

..... POWER

..... SUBSCRIBED

..... IDENTIFY (Wink)/ERR

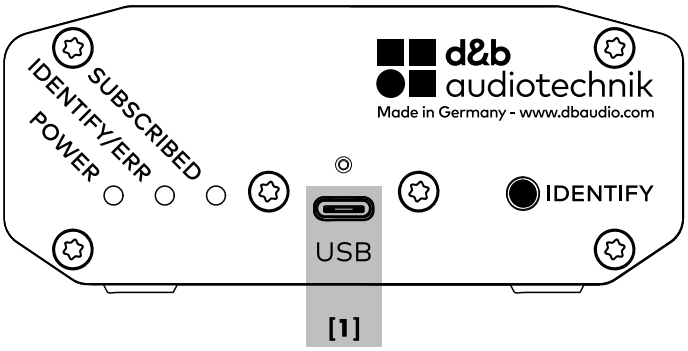
Operating systems (minimum requirements)

Windows 10 or higher, macOS Tahoe, iOS 26, iPadOS 26, Linux.

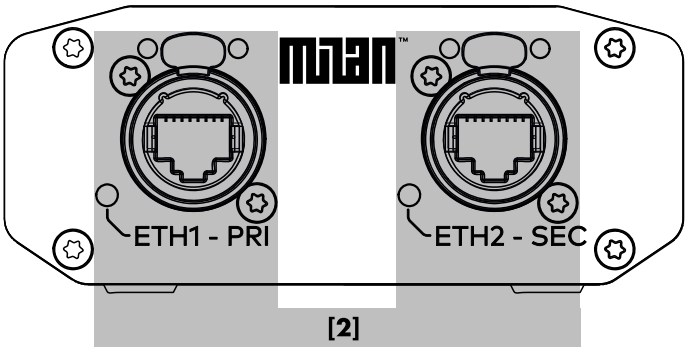
Dimensions and weight

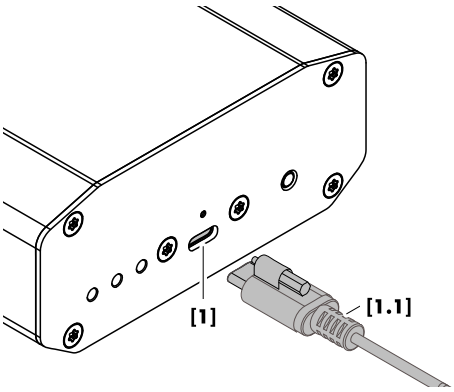
Width x height x depth ..... 106 x 44 x 123 mm (4.2 x 1.7 x 4.8 ")

Weight ..... 0.4 kg (1 lb)



3.1 Connections

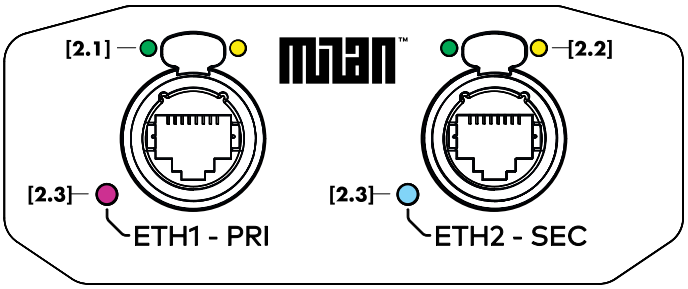




3.1.1 USB Host connection - Power supply

The DS1 is powered via its USB port **[1]** (USB 3.1 Power Delivery).
An appropriate lockable USB-C cable **[1.1]** is provided with the device.

The USB port of the powering device (e.g. computer) must be capable of providing 5 V and 1.5 A (⇒ 7.5 W).
If the powering device is not capable to power the DS1, an appropriate USB hub with an external power supply can be used.



3.1.2 Network connections - ETH1 - PRI/ETH2 - SEC

Two etherCON® (ETH1 - PRI/ETH2 - SEC) connectors **[2]** are provided.
Each connector provides the following LED indicators:

[2.1] Ethernet link/activity indicator (green - ●).

[2.2] Ethernet Gigabit indicator (yellow - ●).

[2.3] Sync LED for either Milan™ PRImary (Magenta - ●) or SECondary (Cyan - ●) network.

3.2 Software and drivers

The DS1 can be used and configured as any usual audio interface plus Ethernet interface on PC, Mac and mobile devices. For Milan™, we recommend the Milan Manager Software which can be downloaded from the Milan Manager website at www.milanmanager.com.

3.2.1 Network drivers

Windows

On Windows 10 or higher, the driver is included with the operating system.

The following performance optimization is recommended:

1. Go to the «**Properties**» of the two network interfaces representing the DS1 individually.
2. Set «**Energy Efficient Ethernet**» (EEE) to «**Off**».
3. Set «**Selective Suspend**» to «**Off**», if entry is present.
   ↳ This must be set for both interfaces seperatly.

macOS

On macOS, an additional driver from Microchip is required from the App Store:
https://apps.apple.com/pl/app/lan78xx-driver-application/id1586760275

⇒ Download and install the LAN78xx device driver application.
↳ Make sure that the device is not plugged in.

As the driver is a system extension, MacOS will raise a dialog box asking you to allow this system extension during installation, or it will say «**System Extension Blocked**».

In the latter case...

1. Go to Login ⇒ Items & Extensions ⇒ Extensions ⇒ Driver Extensions ⇒ LAN 7800 Driver.
2. Click on the «**i**» symbol next to it.
3. Click «**Allow**».

Linux

On Linux devices, the driver is integrated.

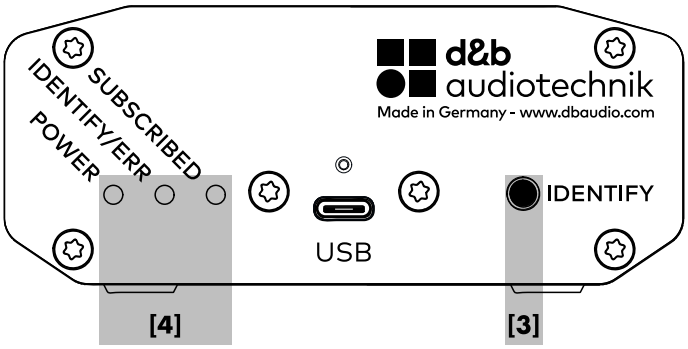
3.2.2 Audio driver

The DS1 is USB Audio Class 2 (UAC2) compliant and therefore does not require a dedicated driver.

For Windows, an optional ASIO driver is provided to improve low-latency operation and enable professional audio software that requires ASIO.

In iOS and iPadOS the volume is fixed, so you can be sure you always have 0 dBFS/100% output volume to Milan™ and adjust the listener only.

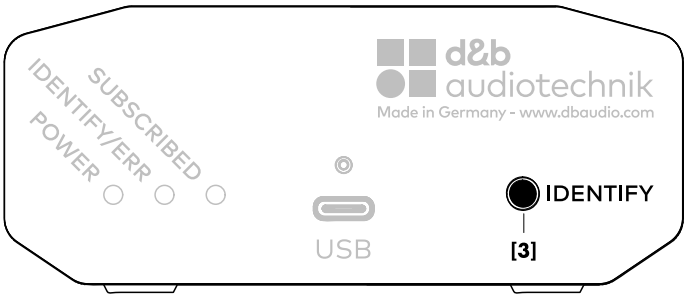
3.3 Controls and indicators

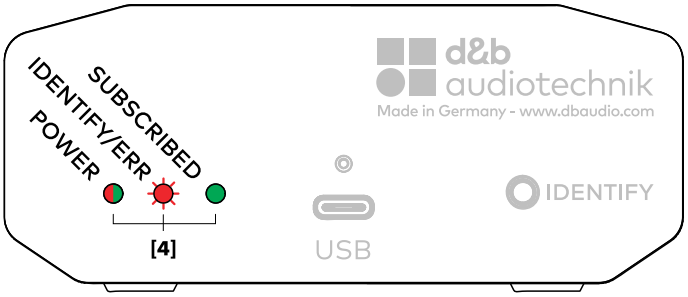


3.3.1 IDENTIFY push button

⇒ To identify a specific device on the network, push the «IDENTIFY» button **[3]** briefly.

↳ This triggers the identify feature and the device is highlighted in the Milan Manager or any other Controller software.





3.3.2 LED indicators

In addition to the Sync (ETH1 - PRI/ETH2 - SEC) and Port mode LEDs of the two network connectors, the following status LED indicators **[4]** are provided:

POWER LED (◐)

Indicates the status of the power supply:

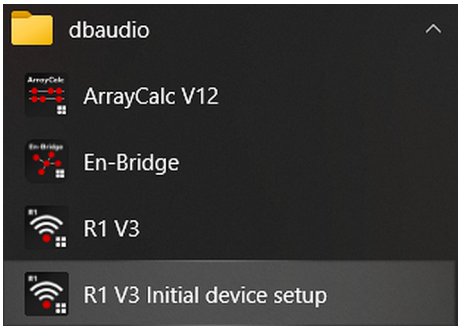
- **Red:** < 4.5 W ⇒ Audio only.
- **Green:** > 4.5 W ⇒ Audio and 2x USB network interface.

IDENTIFY/ERR LED (☼)

Flashes red when the identify feature is triggered via the device's «IDENTIFY» button or a Milan ATDECC Controller.

SUBSCRIBED LED (●)

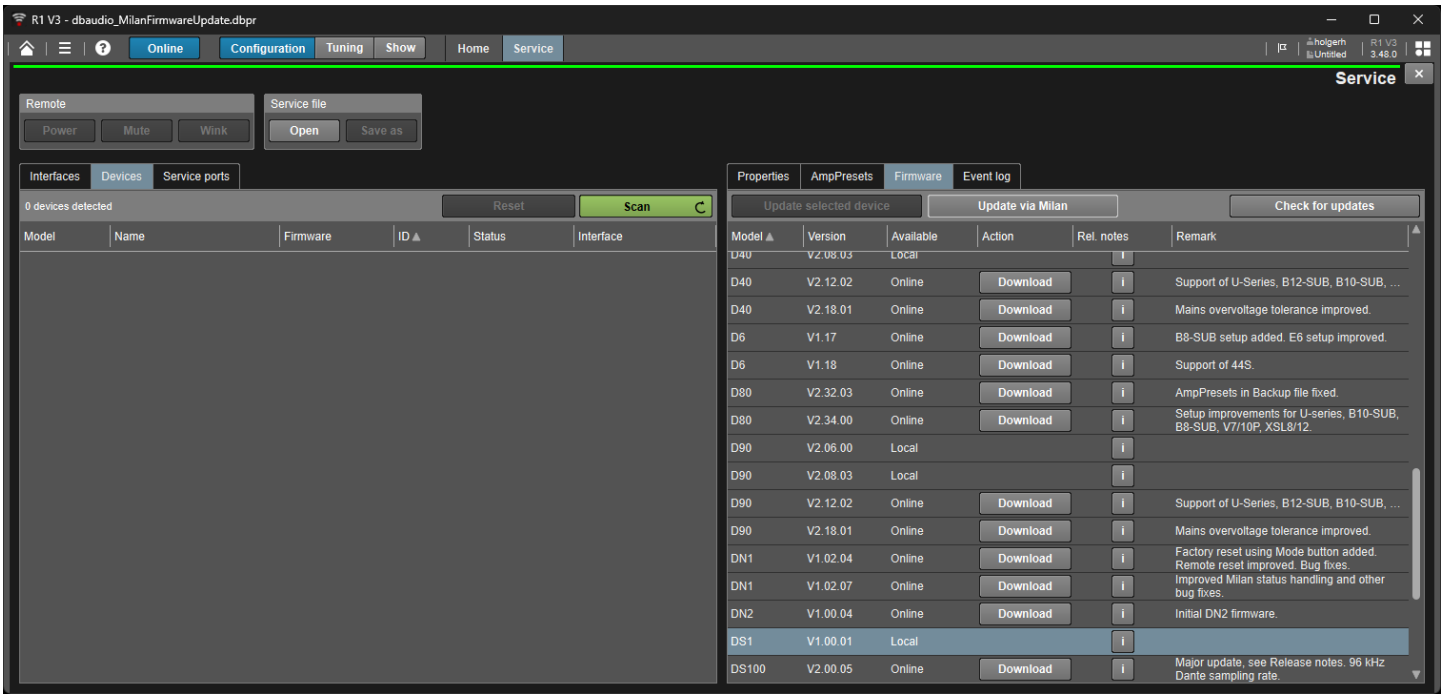
Illuminates green when the DS1 is subscribed to a Milan stream.



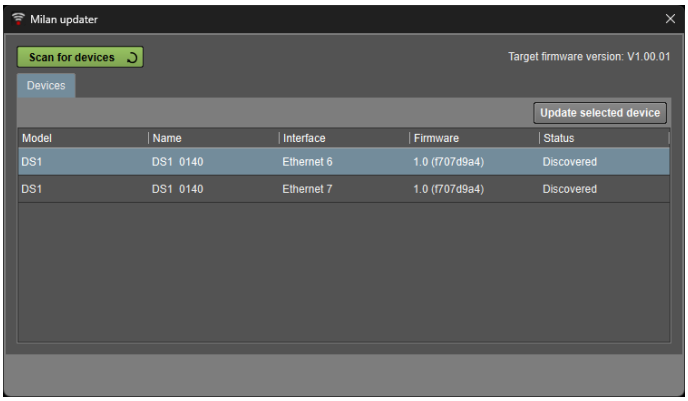
A firmware update is performed using the d&b R1 Remote control software.

Provided R1 is already installed and the device has been connected via its USB port, proceed as follows:

1. From the startup menu, choose the «**R1 V3 Initial device setup**» entry.
   ↳ **R1** is launched and automatically switches to «**Online**» mode and the «**Service**» view is displayed.
2. On the right pane, select the «**Firmware**» tab.
3. ▪ Select the latest DS1 firmware from the list.
   ▪ Select «Download» if needed.



4. Select «**Update via Milan**».
   ↳ The «**Milan updater**» dialog will show up.
5. Select a device from the list.
   ▪ As the DS1 incorporates two Ethernet interfaces two list entries will be displayed.
   ▪ To execute the update, simply select one list entry, no matter which.
6. Select «**Update selected device**».



5.1 Declaration of Conformity

This declaration applies to:

d&b Z4020 DS1 USB Milan™ Interface

by d&b audiotechnik GmbH & Co. KG.

All product variants are included, provided they correspond to the original technical version and have not been subject to any later design or electromechanical modifications.

We herewith declare that said products are in conformity with the provisions of the respective directives including all applicable amendments.

Detailed and applicable declarations are available on request and can be ordered from d&b or downloaded from the d&b website at www.dbaudio.com.

5.2 WEEE Declaration (Disposal)



Electrical and electronic equipment must be disposed of separately from normal waste at the end of its operational lifetime.

Please dispose of this product according to the respective national regulations or contractual agreements. If there are any further questions concerning the disposal of this product, please contact d&b audiotechnik.

WEEE-Reg.-Nr. DE: 13421928

5.3 Licenses and patents

This device uses a number of third-party libraries to provide certain features. These libraries are supplied along with the firmware of this device.

The licenses and patents information are provided in a separate document which can be downloaded from the related product page on the d&b website at www.dbaudio.com.

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