



beyertone® mp3 LAN



**Music-on-hold system
with LAN interface**

Installation guide

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- **What's included:**

- **beyertone® mp3 LAN appliance**
- RJ11 to RJ11 cable (for LINE connection to analogue ports)
- RJ11 to audio jack lead (alternative for jack sockets)
- Jack to RCA adapter (for RCA ports)
- RJ45-RJ45 LAN cable (grey)
- LAN crossover cable (coloured, for direct configuration)
- 6,0 volt mains adapter

- **Safety precautions:**

Set up the appliance in a dry location, never in damp or wet rooms.
The ambient temperature must not fall below 5°C or exceed 45°C.

To power the appliance, use only the mains adapter provided.

BEYERTONE provides no warranty for any damage to the appliance, or outages of PBX and IT systems connected to it, arising from improper operation, incorrect connection or the use of non-specified data.

When passing the appliance to a third party, always include full documentation.

The systems supplied are under constant development and improvement. Please note, therefore, that the programming interface on the appliance may exhibit changes compared with the information provided in this document. Such changes represent an improvement in functionality and do not constitute grounds for complaint.

- **CE declaration of conformity:**

The beyertone® mp3 complies with the EU directives 2004/108/EC and 2006/95/EC by fulfilling the requirements of the relevant provisions of EN 55022 / EN 55024 and EN 60950 (power supply).

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.



Contents

1. Function.....	4
2. Installation	4
3. Setup.....	6
3.1 Basic configuration.....	6
3.1.1 Network	6
3.1.2 Settings.....	7
3.2 Loading MP3 audio data	8
3.3 Automatic downloads.....	10
3.3.1 Download details	12
3.4 Service functions	12
3.4.1 Default IP.....	12
3.4.2 System reset.....	13
3.4.3 Updates and licence code	13
3.5 LED indications	14
4. Factory settings	14
5. Troubleshooting.....	15
6. Updates and royalty-free music files	15
7. Specifications	16



1. Function

The **beyertone® mp3 LAN** is a maintenance-free digital appliance for adding high-quality music and messages on hold to telephone systems that can easily and reliably be updated via the integral LAN interface using a web browser or by automatic http download from a server.

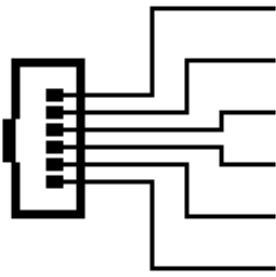
The music-on-hold function enables an on-hold loop to be added to a telephone system for callers to listen to during the call-routing process (e.g. call hold/forwarding). This takes the form of asynchronous audio and is heard simultaneously by all callers on hold at any one time.

The beyertone® mp3 LAN can be connected to any PBX with an audio port for external music on hold (MOH). For adding music the beyertone® mp3 LAN makes use of the widely known and accepted MP3 audio format.

2. Installation

The beyertone® mp3 LAN should be installed by the authorised telephone system service. Proceed as follows:

- Set up the external port for music on hold on the PBX. Connect the LINE port on the beyertone® mp3 LAN to the PBX's MOH port using one of the cables supplied. The pin assignment on the beyertone® appliance is as follows:



UAE 6/6 RJ 11/12	UAE 8/8 RJ 45	a/b or audio			function
1	2	-			a-wire HIC *
2	3	-			
3	4	a			a-wire / audio
4	5	b			b-wire / audio
5	6	-			
6	7	-			b-wire HIC *

* HIC = connection MoH to HiPath 4000 / Hicom 300 („SSC“-port)

The MOH input on the PBX can either be a voltage-free audio input (jack/RCA) or an analogue a/b port (with feed). Both options can be catered for by the beyertone® mp3 LAN without the need to switch.

- When connecting the music on hold to a HiPath 4000 (Hicom 300), please note the different pin configuration (see table). Depending on the sensitivity of the system's MOH port, it may also be necessary to switch the wires.
- Never* use the RJ11 cable to connect the PHONE output on the beyertone® mp3 LAN to an a/b port. BEYERTONE accepts *no* liability for any damage caused to the appliance as a result!

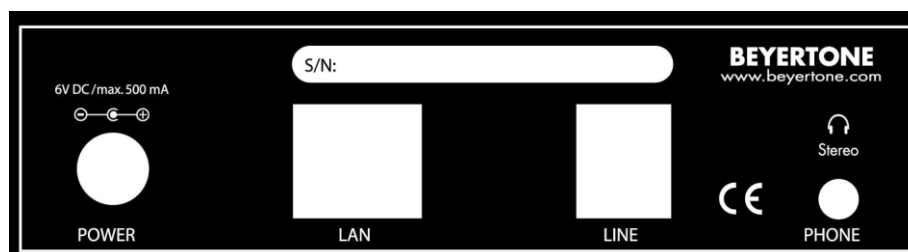


- Connect the LAN port of the beyertone® mp3 LAN to a free 10/100 Mbps port in the network that will be used to access the appliance and download audio updates. The green LAN socket LED means "connected", the yellow LED "data".
- Configuration and transfer/download of audio files is done exclusively via the LAN interface. When taking the appliance into operation you can assign a static IP address or you can have the network parameters (IP address, gateway address, plus, if applicable, DNS and NTP address) assigned automatically via DHCP (factory setting).
- Connect the mains adapter to the 'POWER' socket on the appliance and then plug the mains adapter into a socket outlet. The (green) 'POWER' LED lights up, indicating that the appliance is ready for use. Use only the mains adapter supplied.
- You can also connect headphones to the 'PHONE' port to check the music playback. Unlike the LINE output, however, the PHONE output is *not* galvanically isolated.
- Audio playback starts automatically on power up as long as the appliance contains valid MP3 audio files. The appliance is shipped with a royalty-free default track. The yellow 'PLAY' LED flashes evenly on playback of audio data. You should then check the music playback using the call hold function of the telephone system.
- To set the volume level of the music on hold and make other settings, you should use a browser via LAN (see Section 3.1).
- For information on the 'STATUS' LED indications (green/red) and the function of the 'UPDATE' button, please refer to Sections 3.3 and 3.5.

Front view of the beyertone® mp3 LAN



Rear view of the beyertone® mp3 LAN





3. Setup

The beyertone® mp3 LAN is set up using a web browser on a PC with access to the network to which the mp3 LAN appliance is attached. This is done by entering the IP address or the device name of the beyertone® mp3 LAN in the address bar of a suitable internet browser in order to access the device configuration and MP3 upload pages. DHCP is activated by default on shipment. If no DHCP server is found on power up (e.g. if the appliance is being configured straight from a PC/laptop using a LAN crossover cable), after a delay of about ten seconds the appliance will use a default IP address and subnet mask (see Section 4). The DHCP function remains active, however, and continues to make DHCP requests. Please see Section 3.4.1 for additional access options.

NOTE: The **default password** for entering the web configuration menu is '**mp3lan**'. Unless a custom device name has been entered, the **default device name** (required for entering the menu if an IP address was assigned automatically by DHCP and a DNS is available) is the same as the appliance **device id** ('Ser.-No.'), which is to be found on the rear of the appliance, e.g. '2009-1700-12345'.

3.1 Basic configuration

On entering the correct password in the browser login screen, you will be taken to the main configuration screen. Here you can access the various configuration sections for the beyertone® mp3 LAN via the left-hand menu bar.

The main appliance data and settings, e.g. the device id, the device name (relevant for DHCP), the firmware and hardware versions, any optional licences that have been activated, and the current network settings, are listed under the menu item 'System'.

3.1.1 Network

In the 'Network' section (see screenshot on following page), you can edit the IP addresses to be used by the appliance, the name of the appliance, and its location. The name of the appliance is used for the DHCP function, if this is active. If no name has been allocated (empty field), the device id indicated on the 'System' screen is used for DHCP.

The entry of a DNS server is required in order to access the URL entered in the 'Download' settings for the server to be used for downloading audio data. The download can be operated via a proxy server, if required.

The use of an NTP server also permits automatic setting of the appliance's internal clock, which is used to perform automatic downloads according to a schedule. Activating the NTP function or alternatively setting the internal clock manually is done in the 'Settings' section.

NOTE: Please note that the appliance has a power reserve of approx. 24 hours for the internal clock.



IMPORTANT: Changes made to settings in the 'Network' section do not become effective until the system has been rebooted. To do so, use the menu item 'Restart' and then log in again, using a different IP address if necessary.

Network configuration screen

The screenshot shows a web browser window titled "mp3 LAN - network - Microsoft Internet Explorer". The address bar shows "http://192.168.1.3/netcfg.htm". The page has a header with the "BEYERTONE" logo and "mp3 LAN" text. A navigation bar includes links for "Service", "Help", "Contact", and "Logout". A left sidebar contains a menu with "System", "Settings", "Network" (highlighted), "Memory", "Download", "Update", and "Restart". The main content area is divided into two sections: "Identification" and "Connections".

Identification

Device name:
 Location:

Connections

DHCP: ☒ enabled ☐ disabled
 IP address:
 Subnet mask:
 Default gateway:
 DNS server:
 NTP server:
 Proxy server: ☐ enabled ☒ disabled
 IP address:
 HTTP-Port:

3.1.2 Settings

In the 'Settings' menu (see screenshot on following page) you can enter various settings for the appliance, such as the volume level of the LINE output, the internal clock time and date setting or the activation of the NTP functionality, a new password for the browser configuration, and the time after which an automatic logout from the browser configuration is performed without the need for further user intervention (you can also log out manually at any time using the 'Logout' link in the top menu bar). Please note that changes to settings do not become effective until the save symbol for the relevant item has been clicked.



Settings configuration screen

The screenshot shows the 'mp3 LAN - settings' page in a Microsoft Internet Explorer browser. The address bar shows 'http://192.168.1.3/syscfg.htm'. The page has a maroon header with the 'BEYERTONE mp3 LAN' logo and a navigation menu with links: Service, Help, Contact, and Logout. On the left, a vertical maroon sidebar contains a menu with options: System, Settings (highlighted), Network, Memory, Download, Update, and Restart. The main content area is divided into sections: Audio, Date / Time, User login, and Logout. The Audio section has a 'Volume' slider set to 70% and an 'apply' button. The Date / Time section includes a 'Local time zone' dropdown set to '(GMT +01:00) MEZ - Mitteleuropäische Zeit', 'System date' and 'System time' fields set to '25.10.2010' and '15:06:16' respectively, both with '(NTP)' labels. There are radio buttons for 'DST automatic' and 'NTP', both currently set to 'enabled'. A 'Synchronize at' field is set to '04:00' with '(hh:mm)' label. There are 'apply' and 'synchronize' buttons. The User login section has 'New password' and 'Confirm password' fields with an 'apply' button. The Logout section has a 'Time until logout' field set to '15' minutes with an 'apply' button.

3.2 Loading MP3 audio data

Once you have entered the basic configuration settings, you can start loading your own MP3 audio files into the system. This can be done straight from a browser or via automatic download from a URL (from a subfolder on a web server, see Section 3.3).

Audio data upload and management using a browser is done via the 'Memory' menu (see screenshot on following page).



Memory configuration screen

BEYERTONE
mp3 LAN

Service Help Contact Logout

System
Settings
Network
Memory
Download
Update
Restart

Statistics
Files uploaded: 1/100 Memory available: 98%

Memory location
Index: 01 upload delete change status

Summary
[1-20] [21-40] [41-60] [61-80] [81-100]

Index	File name	Status
1	Down the waterline	●
2	---	●
3	---	●
4	---	●
5	---	●
6	---	●
7	---	●
8	---	●
9	---	●
10	---	●
11	---	●
12	---	●

Of its total capacity the appliance has 100 memory locations that can be used for organising your music on hold. All active memory locations containing an audio file are played back in the order they were entered in the memory location list. Twenty memory locations are displayed per configuration screen. Individual files that have been loaded onto the appliance can also be disabled and then reactivated later. A file that is disabled while being played back (status flashing yellow) will continue to play until its end.

To upload an audio file, select the number of the memory location to be used and then transfer the desired MP3 file. On completion of the transfer the current memory location list is redisplayed automatically. To activate, disable or delete a memory location, select the number of the relevant location first.



NOTE: The appliance supports MP3 data rates from 96 to 192 Kbps, stereo or mono, at sampling rates up to 44.1 kHz. For optimum playback quality we recommend a data rate of 128 or 160 Kbps.

The beyertone® mp3 LAN can also play back encoded audio files with the extension 'mpm' or 'MPM'. These may be created only by authorised service providers. MPM files are transferred to the appliance in the same way as MP3 files (see description above).

3.3 Automatic downloads

The beyertone® mp3 LAN has an integrated download function which the system uses to download current audio files from a web server, either manually at the push of a button on the front panel or automatically according to a schedule entered by the user. To this end, the new audio files (MP3 and/or MPM, see 'NOTE' at the end of Section 3.2) must be made available in a named folder on a web server. They are then downloaded as specified via http protocol. If the same music selection is to be transferred to more than one appliance, the same web server folder can be specified on all these appliances. Otherwise create different folders on the web server for different selections.

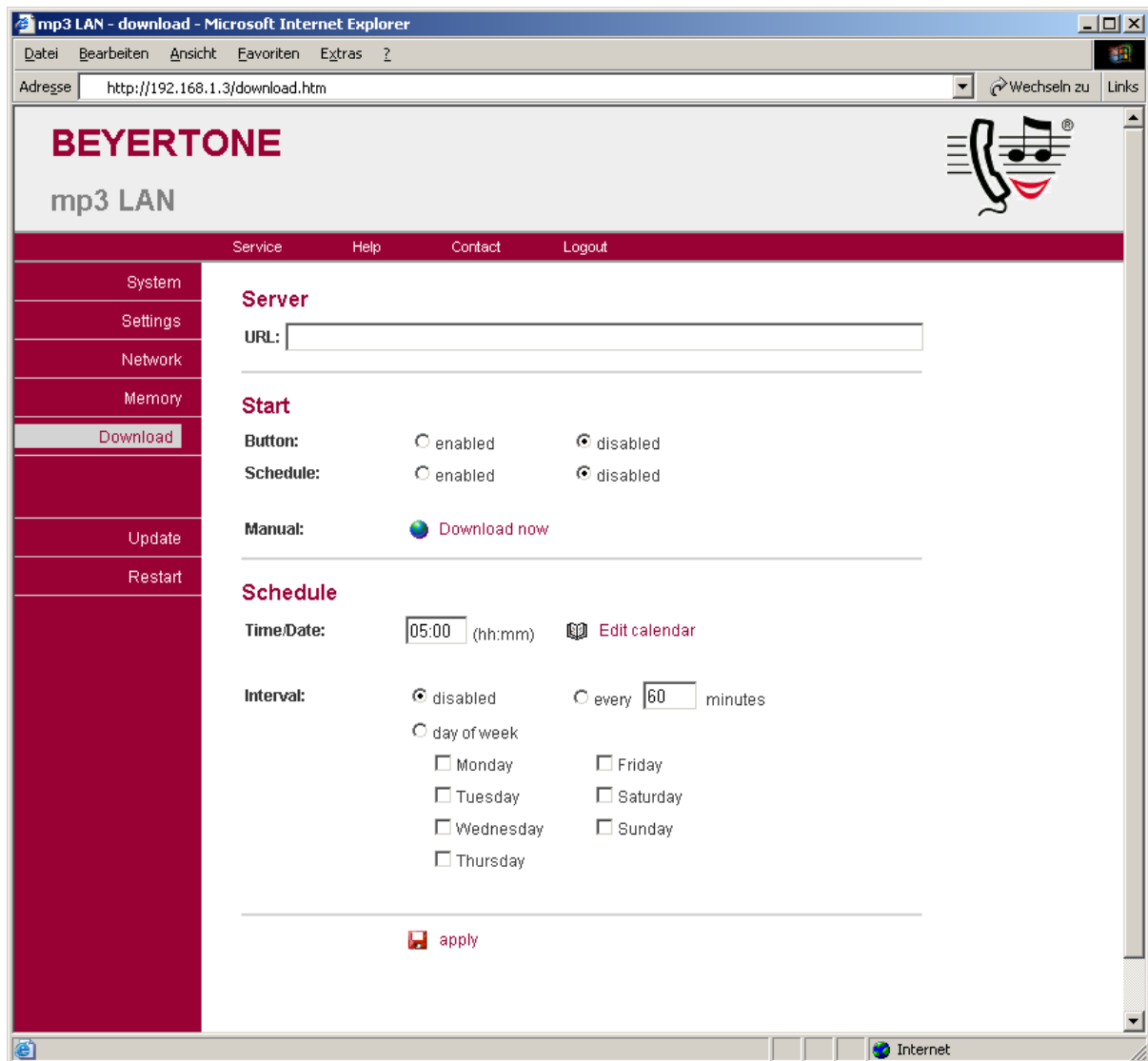
IMPORTANT: On using the download function the current music selection is determined solely by the content of the specified web server folder, i.e. all audio files previously loaded onto the appliance are deleted and all valid files on the web server are downloaded and automatically activated. Downloaded files are not deleted from the web server. This allows you to choose which music is played back simply by adding or removing audio files on the web server, as after the next download the content of the appliance memory corresponds exactly to that of the web server folder. If you do not change any files, your selection will remain the same even after a download.

Download settings can be entered in the 'Download' menu (see screenshot on following page). Start by entering under 'URL' the web address corresponding to the folder on the web server from which audio files are to be downloaded (e.g. www.myserver.com/moh). Next, specify how the download is to be started: manually via the 'UPDATE' button on the front panel of the appliance (is otherwise locked) and/or automatically according to a set schedule.

For the schedule, you can either specify an interval in minutes for your automatic downloads or select specific weekdays for a download, which then takes place at the time set under 'Time'. You can also use the 'Calendar' function to additionally enter certain days of the year on which a download should take place. These calendar days are then repeated every year. Example: set a download for 2 o'clock every Sunday morning, plus on any day directly preceding a national holiday to allow for an additional update.



Download configuration screen



The green/red 'STATUS' LED on the front panel of the appliance indicates the current download or network connection status:

STATUS LED	Meaning
● Green	Last download OK
● Red	Last download not OK
●/● Flashing	Downloading
LED flashes	Network connection not OK / no IP address, With DHCP: obtaining IP address
LED off	No network



3.3.1 Download details

Please note the following **INFORMATION** on using the download function:

- When downloading audio files you can, if you wish, assign music tracks to a particular memory location simply by starting the name of the MP3 files to be downloaded with a two-digit number followed by an underscore, e.g. '05_music.mp3' for memory location 5; all other files will then be assigned to free or unused memory locations in sequence.
- To download files, the beyertone® mp3 LAN makes exclusive use of the hypertext transfer protocol (HTTP) commonly used for displaying websites; no FTP access is required, i.e. no data is used for user login, etc.
- The beyertone® mp3 LAN downloads files only from the URL entered in the download settings (e.g. 'www.myserver.com/moh'); it will *not* access any other addresses nor, in particular, will it transfer any files from the appliance to the URL or delete files under the URL.
- For the download function to work the web server used must be able to perform a directory listing on request, at least for the directory entered under 'URL'. Please check these web server settings. A simple way of activating this function is to create a file called '.htaccess' (with nothing in front of the dot!) in this folder and using a text editor add a line containing the text 'Options +Indexes'.
- The download function of the beyertone® mp3 LAN can be used to transfer not only audio files but also updates for the appliance, e.g. *.bin files for updating the firmware on the appliance (files of this type and information on their availability can be obtained on the website indicated in Section 6). Please note that for updates where several files are made available as a zip archive, for example, this archive must first be unzipped and the files it contains then made available for download under the URL.
- Please note that apart from the '.htaccess' file, the folder specified under 'URL' may contain only mp3 or mpm files plus any update files made available by BEYERTONE. In particular, the folder may *not* contain any files with the names 'index.htm', 'start.htm' or 'default.htm', etc.

3.4 Service functions

3.4.1 Default IP

To gain access to the mp3 web configuration menu, in particular if an unknown static IP address has been assigned, switch off the appliance and hold down the 'UPDATE' button for approx. 3 to 5 seconds when you switch it back on (until the LEDs flash once). The appliance will then be reachable under the default IP specified in Section 4 and *no* DHCP requests will be sent for the time being, even if 'DHCP' is active. Once the appliance has been switched off and back on again (without holding down the button), the specified IP address and DHCP (if active) will be back in use.



3.4.2 System reset

If necessary, the appliance can be rebooted via the 'Restart' menu. Here, you have the choice between rebooting the appliance using the current configuration data or resetting it to the default factory settings (see Section 4). On restarting, the appliance will be reachable again under the entered IP address after approx. ten seconds. You will then have to log back into the browser configuration menu. With restarting the unit, also the language of the configuration menu screens can be changed.

You can also reset the appliance to the factory settings (see Section 4) without using a browser by first switching it off and then back on, holding down the 'UPDATE' button on the front panel for 10 seconds as you do so (until the LEDs flash once and then three times). The LEDs on the front panel flashing three times (see Section 3.5) indicate a successful reset.

NOTE: If you change the network parameters, you have to reboot the appliance for the new settings to become effective. To access the appliance via a browser after rebooting, you will, of course, have to use the new IP address, where this has changed. If you choose to reset all your settings when rebooting, the appliance will return to the factory settings (see Section 4).

NOTE: When resetting the appliance to the factory settings, the date/time settings, the user password and any licence codes stored will NOT be reset. The contents of the memory also remain intact. You should therefore erase the memory locations in use separately, if necessary.

3.4.3 Updates and licence code

You can load new firmware on the appliance from the 'Update' menu. Please use only files released by BEYERTONE for the beyertone® mp3 LAN. Where updates are provided in the form of several files in a zip archive, please be sure to unzip the archive and then transfer the files to the appliance one by one.

An update of the firmware can also be done via download from a separate URL. To do this, just enter the URL under „Server“ in the „Update“ tab and start the update directly from here or - if enabled here - by pressing the 'UPDATE' button for 10 seconds during normal operation of the device. Information on the availability of updates can be found in Section 6.

Some optional appliance functions may not be available as standard and need to be enabled via a licence code. If you have purchased or received such a licence code, you can enter and activate it on the 'Update' page. The appliance and all its basic functions are fully operational without a licence code.



3.5 LED indications

The LEDs on the front panel of the beyertone® mp3 LAN indicate the following statuses (see Section 3.3 for details with respect to downloads):

LED indication	Meaning
PLAY LED is flashing	Audio playback is in progress
STATUS LED is lit	Network connection OK
STATUS LED is flashing	Network connection not OK / no IP address
STATUS LED is off	No network
LEDs flash once alternately	Appliance is reachable under default IP (below)
LEDs flash three times alt.	Appliance has been reset to factory status
LEDs flash simultaneously	Internal device error

4. Factory settings

Unless agreed otherwise, the beyertone® mp3 LAN is shipped with the following basic settings:

- Password:** "mp3lan"
- Location / name:** - blank - / - blank -
- DHCP name:** = device id (e.g. "2009-1700-12345")
- DHCP:** enabled (see *)
- IP address:** * DHCP (otherwise **default: 192.168.1.3**)
- Subnet mask:** * DHCP (otherwise default: 255.255.255.0)
- Standard gateway:** * DHCP (default: - blank -)
- DNS server:** * DHCP (default: - blank -)
- Proxy (port):** disabled (80)
- NTP:** enabled
- NTP server:** * DHCP (default: - blank -)
- Time zone:** CET (GMT + 01:00), automatic daylight saving enabled
- Auto logout:** 15 minutes
- Volume:** 70%
- Track:** Memory location 1 "Down the waterline" (royalty-free)
- Download:** disabled / no URL entered
- Licence code:** - blank - (= default appliance functionality active)



5. Troubleshooting

If the appliance shows signs of a malfunction, please check the LED indication (see Section 3.5) and run through the following points:

- Has everything been connected according to the installation instructions?
- Has the MOH port on the PBX been set up correctly?
- Is the LINE port pin assignment correct?
- Is the volume on the appliance set high enough?
- Have valid MP3 audio files been loaded on the appliance (see Sect. 3.2)?
- Have valid IP addresses been entered/is DHCP supported?
- Have you tried to connect to the LAN using the default IP address (see Sect. 3.4.1)?
- Is Java-script activated in the browser used for configuration?

Should you require any technical assistance when taking your beyertone® mp3 LAN into operation, please contact the BEYERTONE customer service hotline:

Customer service hotline: +49 (0)2103 24 80 20
or **support@beyertone.com**

6. Updates and royalty-free music files

BEYERTONE have a selection of royalty-free music tracks available for the beyertone® mp3 LAN. You can also download installation guides in various languages and software updates, where available. To do so, please go to the following website:

www.beyertone.com/mp3lan

NOTE: Should you add any non-royalty-free tracks of your own, please note any charges that may apply.



7. Specifications

- Appliance

Operating voltage	DC 6.0 V (optional supply via PoE)
Power consumption	max. 500 mA (max. 3 W with PoE)
Internal fuse	500 mA (self-clearing)
LINE output	Impedance 600 ohms, galvanically isolated nominal level - 6dBm at 300 - 3400 Hz
PHONE output	3.5mm stereo jack socket, for headphones from 30 ohms
Memory capacity	Internal capacity approx. 10 hours (with 128 Kbps stereo MP3 files)
MP3 data formats	MPEG 2-Layer 3 compression (files with no additional header data only) 96 to 192 Kbps, stereo/mono, up to 44.1 kHz
LAN port	Ethernet 10 Mbps
Supported protocols	DHCP, DNS, HTTP, NTP
Power reserve of int. clock	24 hours
Ambient temperature	5° to 45°C
Dimensions	130 x 130 x 42 mm
Weight	Approx. 250 g

- Mains adapter

Input voltage	100-240V AC, 50/60 Hz
Output voltage	6.0 V DC / max. 500 mA
Weight	Approx. 120 g

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