MUSICAL FIDELITY

MX-Stream
Audiophile Bit-Perfect Streamer
Full Manual

The MX-Stream is a universal, transport-only network device that can take any online or network streaming service to your integrated amplifier or DAC. All you need is an existing USB Class 2.0 Audio input. The MX-Stream's digital audio circuitry is a complete custom design from scratch. We have separate power supplies and high-end voltage stabilization components for all the different PCB units. We have advanced re-clocking – even the main CPU is operated by an audio optimized clock, which is completely unheard in typical streaming solutions, as they typically run with standard CPU clocks like those in regular computers. Every incoming digital signal is cleaned up from the very beginning. All audio files that come in and out, are the best they can be by eliminating all unwanted noise that can be found in common streaming solutions. With an optimized software, we were able to push this high-tech hardware design to its absolute limits. All of this resulted in the first near-zero jitter streamer we have ever seen.

The MX-Stream is the perfect add-on for any integrated amplifier or DAC with USB B input. Not only is the technology inside the MX-Stream complete cutting-edge high-end, every analog circuit in integrated analog amps displays increased performance, when digital circuits and power supplies are kept separate from the analog circuitry. By squeezing in a lot of digital circuits, additional high frequency distortion across the entire system can be observed. Coming from the other direction, huge power supplies for pre and power amps with lots of magnetic radiation impact digital circuit performance negatively. By keeping streaming and amplification separate we can achieve our true high-end sound vision to greater effect and at a more affordable cost, while also guaranteeing the longest lifetime of our amplifiers and streamers.

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Safety instructions

Warning of a hazard for the user, the unit or possible misuse.

Important notice.

AC outlet voltages vary from country to country. Before connecting to the mains, make sure that the voltage in your area meets the voltage requirements printed on the power supply.

The power supply is used to connect/disconnect the unit from the mains. Make sure that the power supply is easily accessible at all times. Never handle the device, the power supply while your hands are wet or damp. Avoid letting liquids enter the device or the power supply. Never place any item containing liquid, such as a flower vase on or near the device. Never spill any liquid on the device or the power supply. Never place any naked flame sources, such as lighted candles on or near the device. The product shall not be used in damp or wet locations, next to a bathtub, sink, swimming pool or any other similar conditions.
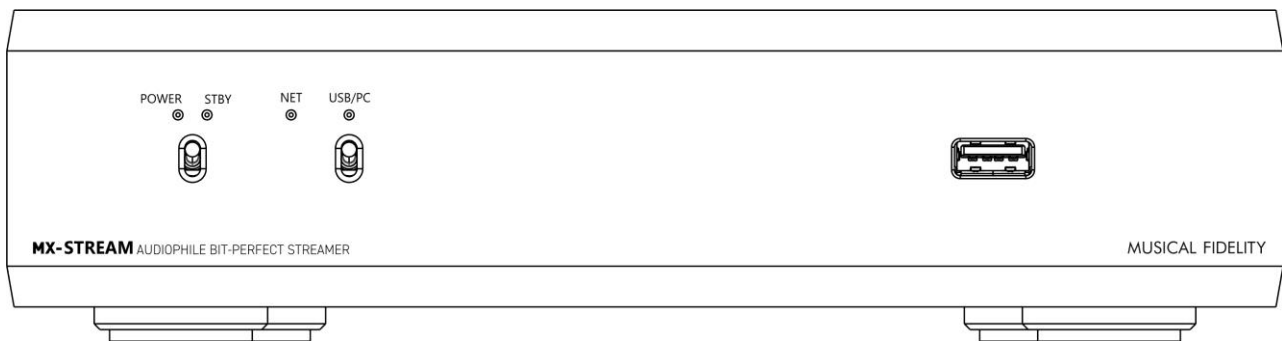
Make all connections whilst the unit is disconnected from the mains.

Never connect or disconnect power supply to or from the unit whilst the power supply is connected to the mains. Never use any other power supply than the one supplied with the unit.

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FRONT VIEW

POWER: lights up when unit is turned ON
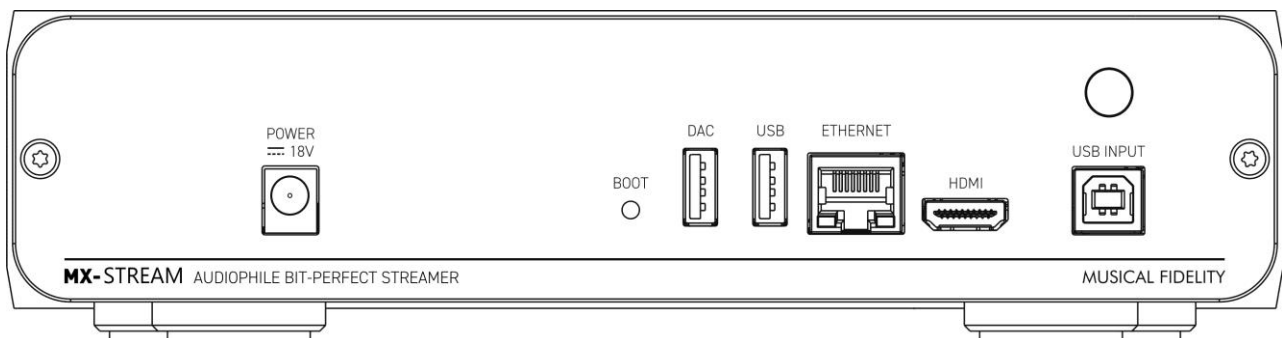**STBY:** lights up, when unit is tuned OFF
POWER/STBY Switch: turns the unit ON and OFF
NET: LED OFF – unit is off or booting up after power switch has been pressed; BLINKING ALTERNATELY – unit has successfully booted up/no network connection established; CONSTANTLY LIGHTING UP – unit has successfully booted up/ network connection established
USB/PC: indicates USB/PC bypass input is ON
USB A input: connect external hard drive, mouse, keyboard, touchscreen, USB turntable, USB CD drive, etc…

REAR VIEW

POWER 18V: connect included power supply
BOOT: puts MX Stream into bootloader mode (see full online manual)
DAC: connection for DAC
USB: connection for USB devices like: external hard drive/USB stick, mouse, keyboard, touchscreen, USB turntable, USB CD drive, etc…
ETHERNET: connect network cable
HDMI: connect HDMI cable for video output (audio output is only available on the DAC output)
USB INPUT: connect PC, laptop, phone etc. to bypass those devices to the DAC connected to the MX Stream
ANTENNA: connect the supplied WIFI/Bluetooth antenna

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Installation and first use

Setting up network connection

The unit can be connected to the network/internet via wired or wireless connection.

1. W*ired connection*:
- Connect a LAN cable from your router to the socket **Ethernet** on the back panel.
- Make sure your mobile device, PC or laptop is on that same router's network.
- Open any web browser and type **musical-fidelity.local/** into the address bar. You can now control your MX-Stream.
- **ALTERNATIVELY,** you can download the "**MX-Stream" or "Volumio" App** (available for Android and iOS). Open the App and it will automatically find and connect to the MX-Stream. You can now control your MX-Stream.
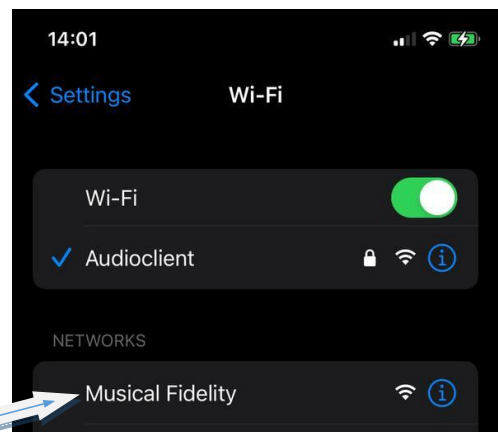
2. W*ireless connection*:

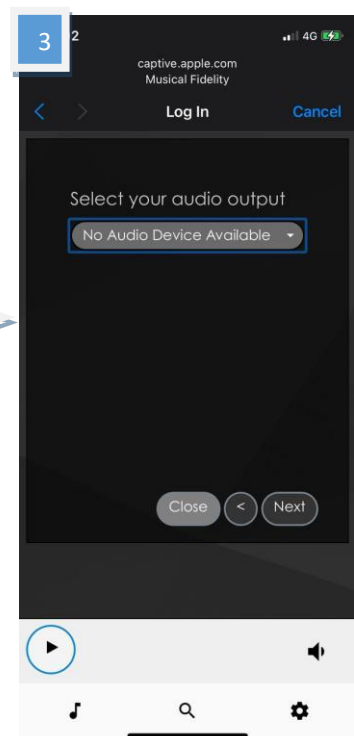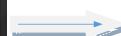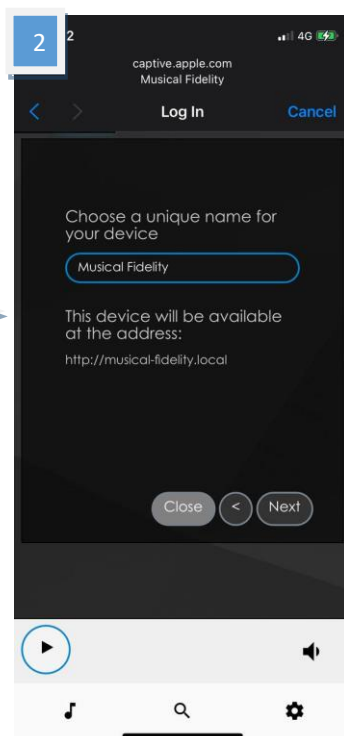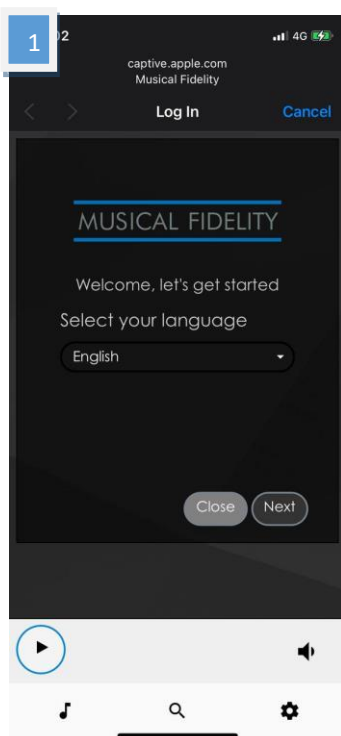👉 *Make sure the supplied antenna is mounted to its connector on the back panel*

- Turn the MX-Stream on and wait until the **NET** LED is blinking alternately in short intervals. This means the boot up sequence has been completed, but a network/internet connection is NOT established.

- Open the **Network Settings** on your mobile phone and you will now find a network called **Musical Fidelity**. Connect to that network and a welcome page will open automatically (similar like signing in to a hotel room WIFI).

👉 *Should you encounter problems at this step, for example if the signing in process isn't initiated automatically, we recommend trying with different devices (other phones, tablets or also laptops work). The sign-in typically opens automatically, but there are some background circumstances which could "confuse" your device, which won't make it open the sign-in automatically.*
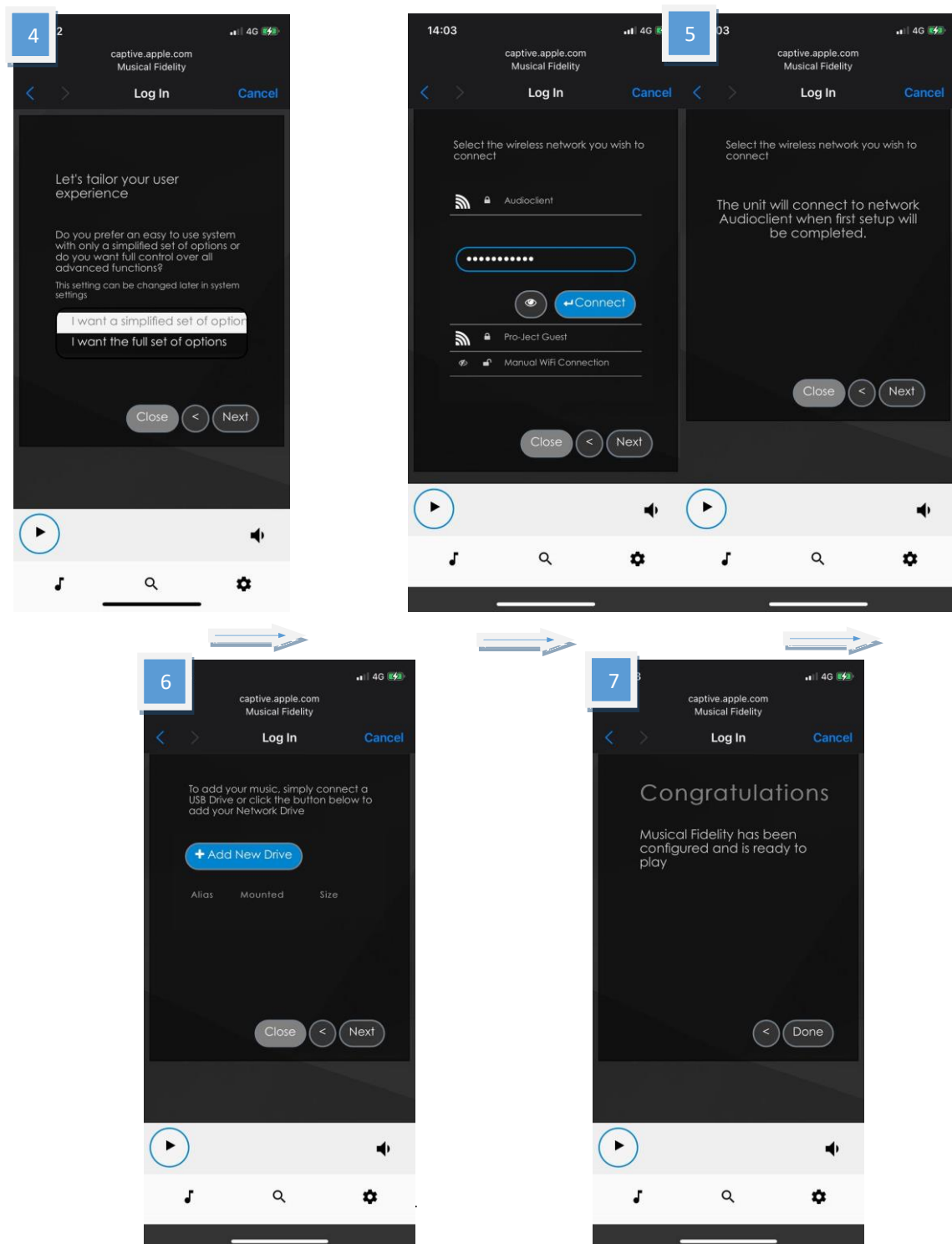
- Go through the **first config wizard**:

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1. **Language -** select your system language
2. **Name -** choose a unique name of the unit. We suggest to leave it at the default name **musical-fidelity**.
3. **Output -** select the connected DAC which you want to use
4. **Simple/Full Options -** choose between a simplified or the full options menu. Both options will set you off with bit-perfect playback quality. Beginners might find the simplified options easier to navigate, while expert users will benefit from all the control and digital playback transparency that the full set has on offer.
5. **Network -** here you can connect to a wireless network, a list of available WiFi networks is shown. Select your desired WiFi network, type in the password and tap on the "Connect" button. The unit will reconnect to selected WiFi network when first setup will be completed.
6. **Music -** manage all the network music locations, add NAS drives

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After the first setup assistant is complete the MX-Stream will connect to the specified WiFi network and close its internal **Musical Fidelity** network (the network you have just connected to for the WiFi setup in the previous step). Your MX-Stream is fully operational, once the **NET** LED on the front panel lights up constantly.

Your phone will automatically connect to your home WiFi again. To make sure, quickly check your phone's settings and see if it is correctly connected to your home WiFi. Open any web browser and type **musical-fidelity.local/** into the address bar. If you chose a different name during setup, then enter this name together with **.local/** into the address bar. You can now control your MX-Stream. You are now ready to control your MX-Stream.

Alternatively you can download the "**MX-Stream" or "Volumio" App** (available for Android and iOS), open the App and it will automatically find and connect to the MX-Stream. You are now ready to control your MX-Stream.

> 👉 *Once you have your MX-Stream up and running, make sure that one of the first things you do is to search for a new Firmware Update under Settings -> System -> System Update.*

BT Connection

Pairing with Android devices

Open **Settings** and tap on **BT.** Turn on BT and tap on **Scan.** All found devices will show up now, tap on *musical-fidelity* and confirm the connection.

BT pairing with Apple devices

Open **Settings** and tap on **BT**, turn on BT if it is not activated yet. Your device will automatically start searching for available devices. Tap on *musical-fidelity* and confirm "Pairing" on your Apple device.

Control the MX-Stream

The control screen is divided into three parts: **Browse, Playback and Queue**

Browse works as a home page. Here you can go to any of the following pages.

Music library - here you can find all the available Music in your network and connected directly to the streamer: USB or NAS. Your library will be created automatically and sorted using the available metadata. (Some of these options are shown only when available)

Web radio – here you have access to a list of available internet radio stations. You also have access to a list of selected internet radio stations under Pro-Ject Selection.

BT connection – enables the BT input. Play music from connected BT devices.

USB/PC – Activate the USB/PC bypass input. You can connect a PC/Laptop/Phone or other streaming devices with a USB audio output to the USB B input on the MX-Stream. The input will be detoxed and cleaned up by the MX-Stream and forwarded to your connected DAC.

Shairport-Sync – This option lets you connect to Apple devices using the Airplay protocol. You need to select this input first and then the MX-Stream will show up as an Airplay option on your Apple devices.

The following icons are shown after a successful login into the respective services under **Settings** > **Sources**

***Tidal** – gives you access to the Tidal streaming service*

***Spotify** – gives you access to the Spotify streaming service*

***Qobuz** – gives you access to the Spotify streaming service*

Playback: This page shows the currently playing music. You also see information about the Artist and the Album. Additionally, you will see the Album Cover, given it is available. Here you also have the option to add tracks to your Favourites or to a playlist and to change your playback volume. Changing volume is also possible with your phone's or tablet's volume buttons.

Queue: This page shows the list of tracks in the current queue. At the upper right corner you also have the options for playback (shuffle, repeat), also you can save the current queue as a playlist.

MUSICAL FIDELITY   *Musical Fidelity Logo - tap on this button to go back to the home page (Browse)*

Settings – gives you access to all general settings. The following menus are accessible here:

Sources: here you have access to all options for Network Drives and attached storages via USB. Also, you can enter your account information for the supported streaming services. Additional settings can be found for Album Art and Music Library. Under *Functionalities Control* you have the ability to enable or disable certain services. This is especially useful to enhance the performance of the unit.

Streaming services' icons appear on the home page (Browse) only after the login information is successfully entered

Playback Options: Here you have the option to choose your desired Output Device (USB DAC) and other settings for Playback, Volume and Audio Resampling. The default playback options ensure 1:1 bit-perfect playback.

Appearance: Here you can change the language of the unit, switch between background images or set your own images as background.

Network: Here you can find all information about your network. You can assign your unit a static IP address, pick a wireless network and activate/deactivate the hotspot function of the unit. You can also make settings on your DNS Server.

System: General settings can be made here. You can also enable/disable the video output via the HDMI socket. Under *System Updates* you can search for new software for the unit and download it. You can also set the unit

back to Factory Settings.

Alarm: Here you can set a time for an alarm clock. This function needs an already existing playlist.

Sleep: With the sleep timer you can set a time value after which the unit either turns off or stops the music.

Shutdown: Power off or reboot the unit.

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MX-Stream
Control Options Overview

The MX-Stream has a wide variety of control options. This doesn't only make it incredibly versatile but also extremely future proof and able to withstand technical difficulties or the constant changes in the IT landscape (downtime of Apple or Android App stores, no Internet connection, etc...). In fact, the MX-Stream can be entirely controlled without any internet access and without any App downloads! So, if you just want to play some local music from a USB Stick or hard drive or stream via Bluetooth, we will explain everything in this guide!

Before you start, you need to either connect your MX-Stream to your home network via WiFi or cabled ethernet. You do this without the need of any app or any extra downloads! Please refer to the Quick Start manual.
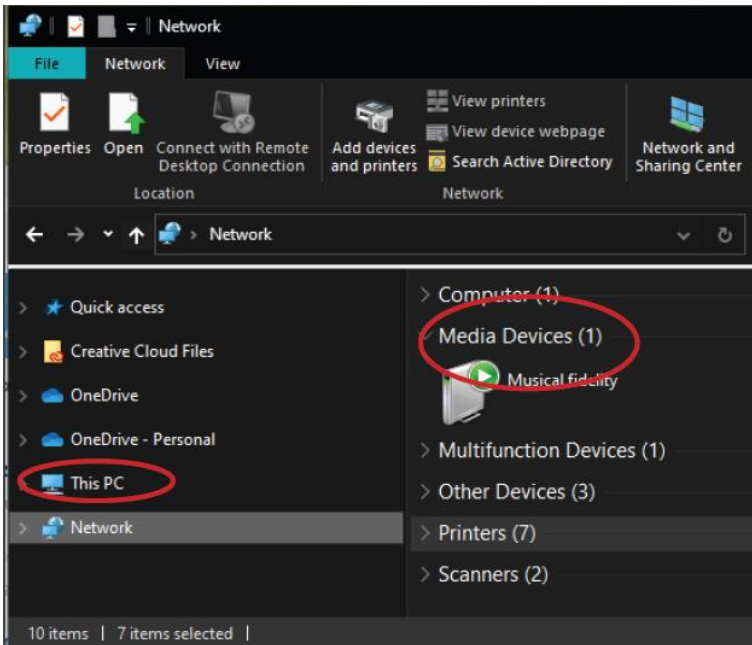
And still very important to stress is that cabled ethernet is still vastly superior to WiFi connections even in the year 2022! Realtime audio applications, such as the MX-Stream with high-resolution audio, benefit from stable cabled ethernet connections like you wouldn't believe. For regular HTTP web applications, like the internet, Web2.0 or 3.0, the quality of your connection rarely matters. Your phone may show you full bars for your WiFi quality, but this does not say anything about packet loss and drop-outs caused by WiFi all the time. Don't worry, all of that is insignificant for websites or social media. You are not relying on data reaching its destination within the correct timeframe and without and degradation or loss. Modern web protocols will just request missing or faulty packets again or in some cases it even doesn't matter if all packets are transmitted. Websites, social media or video streaming will work even under all those circumstances! Quality is not their concern! The protocols for streaming realtime audio in an audiophile lossless way are completely different to the modern YouTubes, Facebooks and Instagrams of our time! With this in mind, enjoy music streaming on your MX-Stream on the highest level possible!

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1) Webbrowser

Probably the most useful and flexible way to control your MX-Stream. Absolutely platform agnostic, you can access your MX-Stream from your favourite webbrowser on any device which has a webbrowser. On Windows this is very easy. Once your MX-Stream is on the same network as your computer, it will automatically show up in your Windows Explorer (make sure network detection is ON).
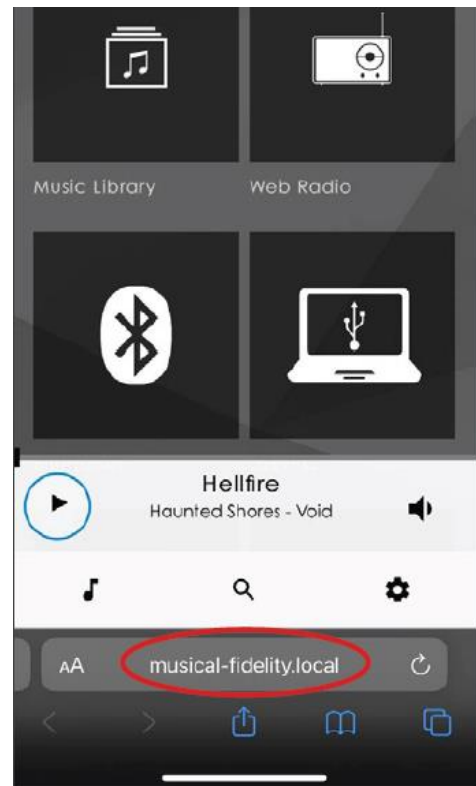

Double click on the Musical Fidelity Icon in your network view, to open the MX-Stream web-interface. By right clicking and properties, you can see other useful information like the MX-Stream's IP address and MAC address.

The web-interface gives you the exact same options, features and controls like our Android/iOS Apps. In fact the Apps does just the same thing: open the MX-Stream's web-interface. This means all actions and playback commands are executed on the MX-Stream hardware, meaning it is totally independent on the Apps or different methods of interacting with it. This makes it very easy to mix and match webbrowser, App or other control options and your MX-Stream will keep playing uninterruptedly, even if your phone (and certainly as a further consequence you yourself) is struck by lightning!

For webbrowsers on **iOS devices and MAC computers** just type „**musical-fidelity.local**" into the address bar of the webbrowser.

For webbrowsers on **Windows computers or Android phones** just type „**musical-fidelity.local/**" into the address bar of the webbrowser.

2) Official Musical Fidelity MX-Stream Apps

Our official App, MX-Stream, is available for Android and iOS and can be downloaded from their respective stores. Should you live in a country or region where you don't have access to these stores or there are technical difficulties with these stores, there are plenty of other options for accessing your MX-Stream. Important: all the streaming services and platforms as they are implemented in our own app, are the preferred way to listen when it comes to quality, as we have direct access and control over our implementations. This means we can program the Tidal or Qobuz access on our own and make sure the quality is top of the line as it should be. If you use services like TIDAL Connect, you obviously introduce yet another middle man (or middle software) and therefore we cannot guarantee best playback quality as this responsibility is in those cases handed off to the streaming platform providers themselves.

👉 *If you cannot find the **MX-Stream** App try our alternative "**Volumio**". **Volumio** is a functional identical alternative!*

3.1) 3rd Party Apps

You can play music on your MX-Stream with a wealth of different playback apps. One of the more important features is to use the MX-Stream with the native Apps for Music Streaming Platform providers (for example Spotify Connect).

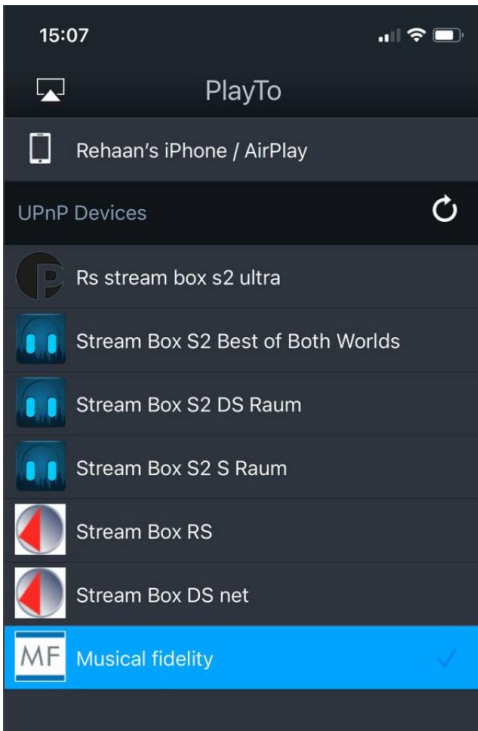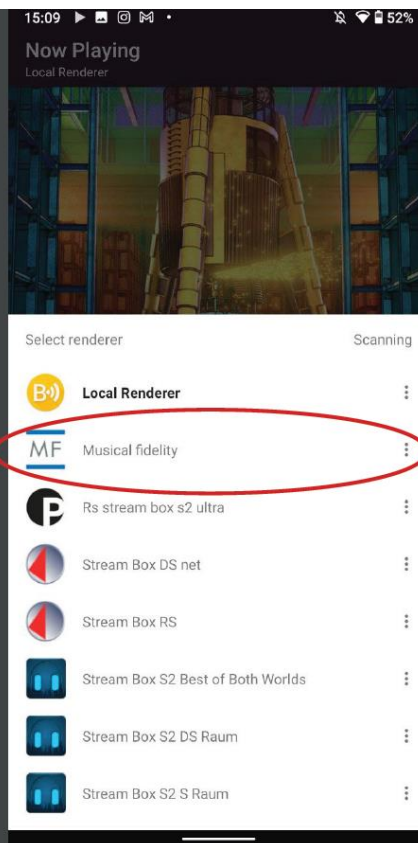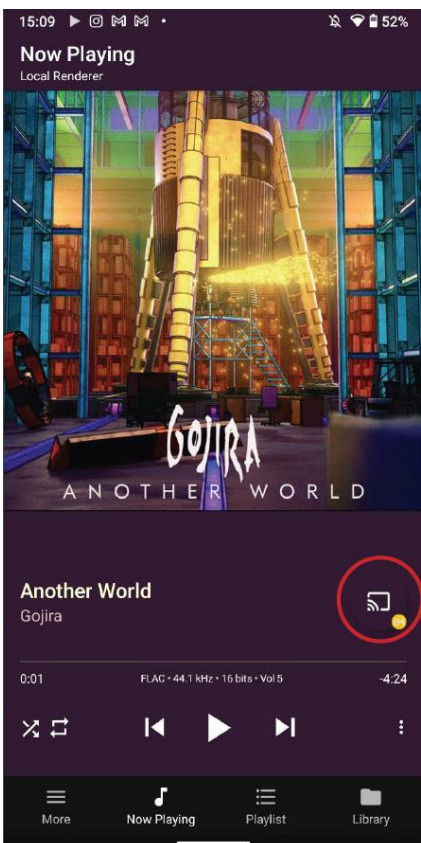Choose your Spotify Connect device here within the Spotify App.

3.2) UPNP Apps

UPNP Apps are a great way of adding functionalities and services to your MX-Stream. UPNP is a completely lossless way of transmitting audio data via your LAN network (in fact Apple based their Airplay protocol on the free alternative UPNP). However, UPNP is in many aspects superior to Airplay as with UPNP you can freely transmit any sample rate and avoid resampling (note: Airplay resamples everything to 48kHz!).

To use UPNP: open your favorite UPNP capable App or software on your phone/tablet/PC/laptop, make sure your device is on the same network as the MX-Stream and select the MX-Stream as the output renderer:
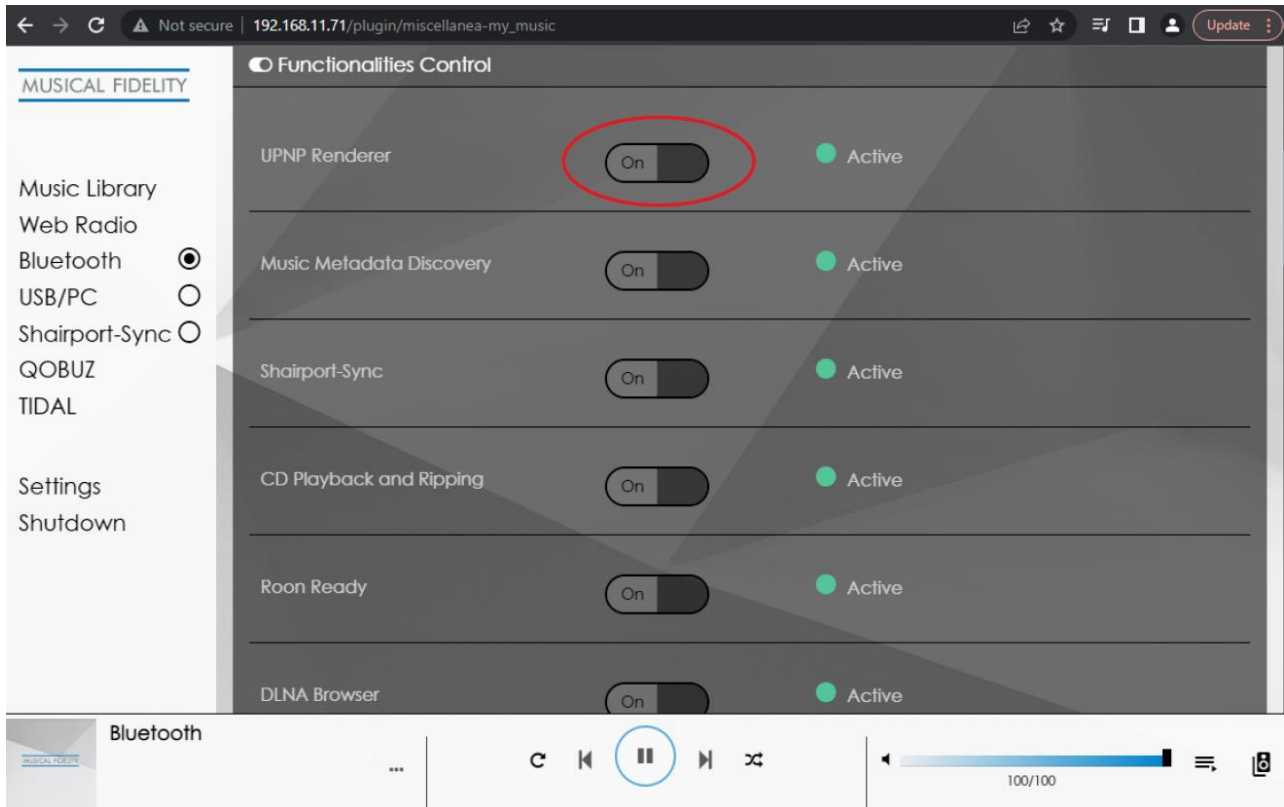

mConnect Lite - iOS

Bubble UPNP - Android

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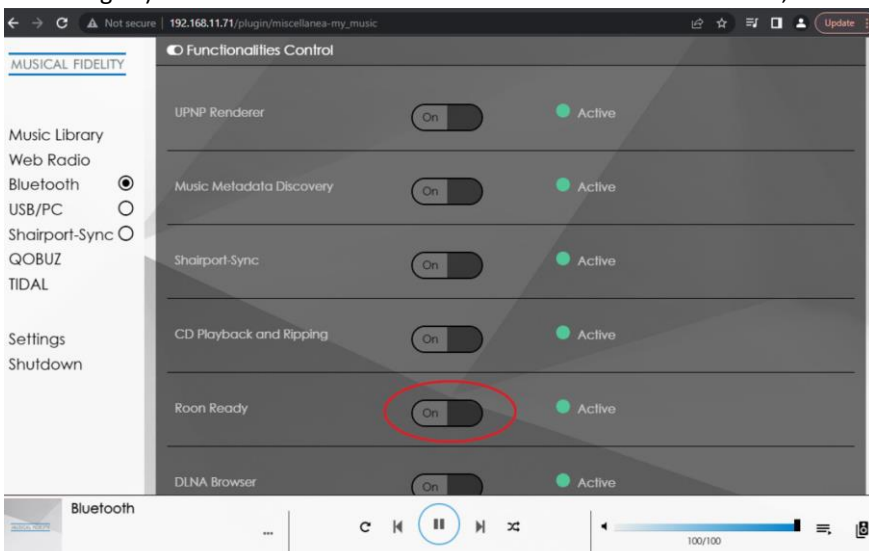**MX-Stream Audiophile Bit-Perfect Streamer**

☞ *If you cannot find the MX-Stream as a UPNP renderer, then check if UPNP Render is enabled or turn UPNP Renderer off and on again under Settings -> Sources -> Functionalities Control in the web-interface.*

4) Roon

Roon is one of the most advanced music playback software solutions out there. It handles big music libraries extremely well, organizes your music collections across different streaming providers and your own local or network music storage. It is extremely transparent in showing you all details about your playback chain and is definitely something to try out for any serious music listener.
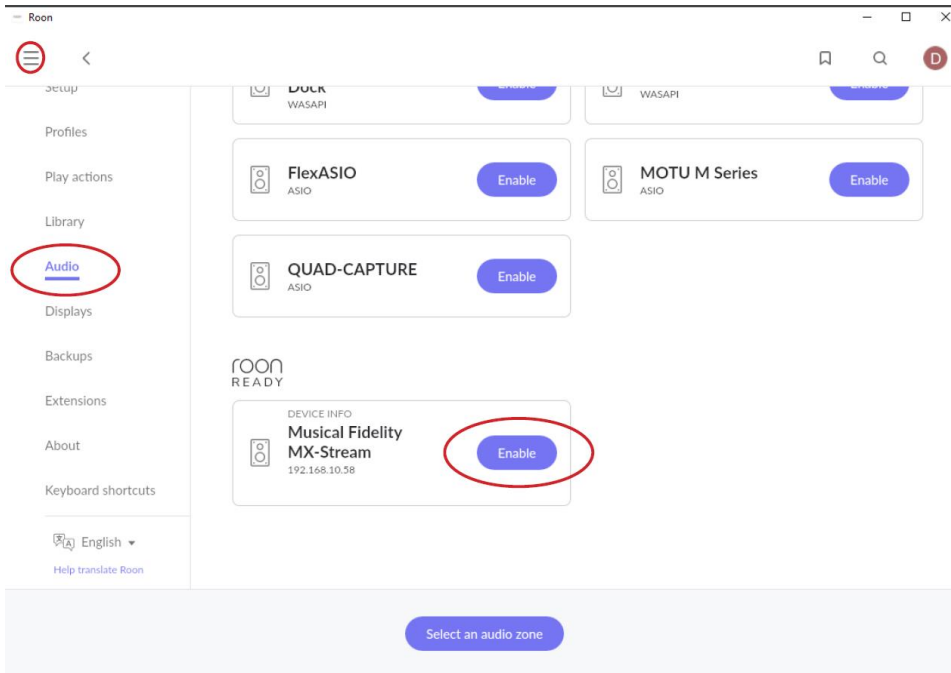
For the MX-Stream, make sure that Roon is active in the Functionalities Control settings (if necessary try turning it off and on again) and that a DAC is connected. If there is no DAC connected, the MX-Stream won't show up in Roon!

Check on the MX-Stream in the Functionalities Control that Roon is active.

Control Options Overview
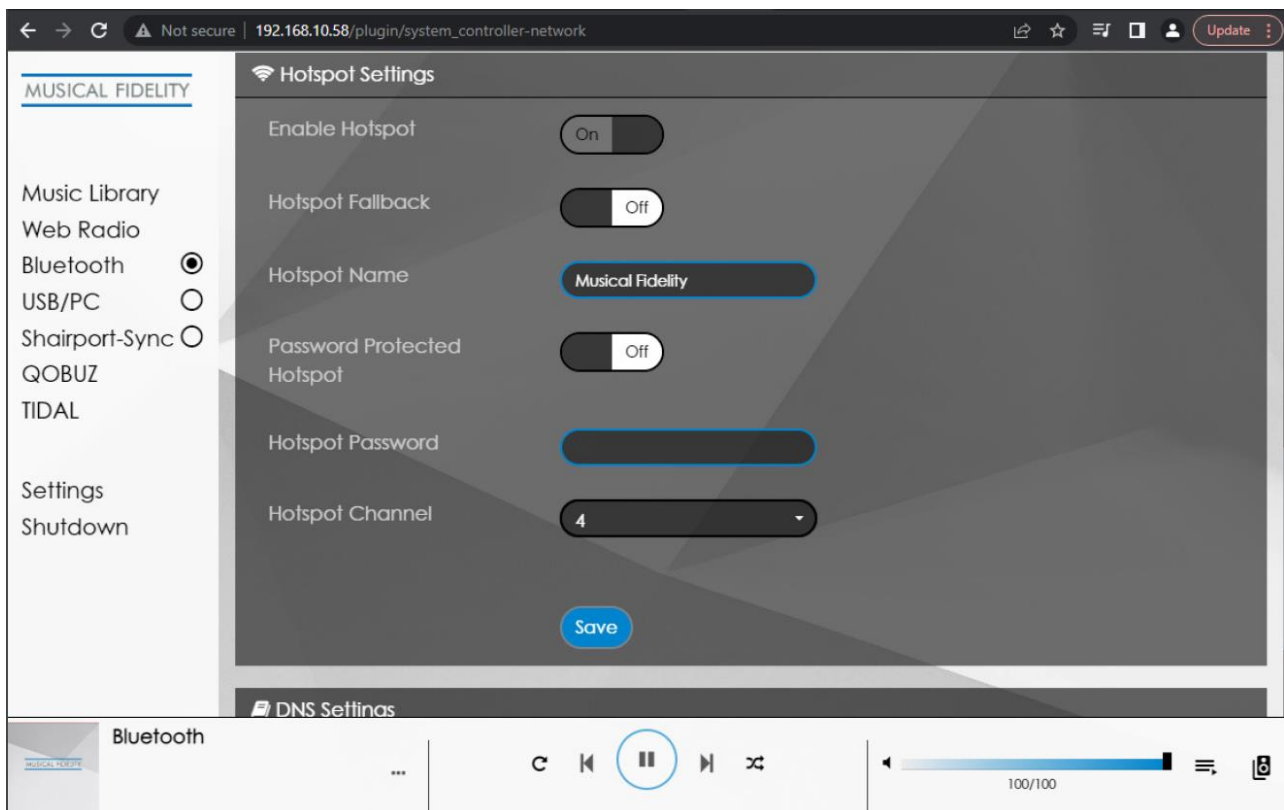
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In Roon itself, add the MX-Stream as an audio output.
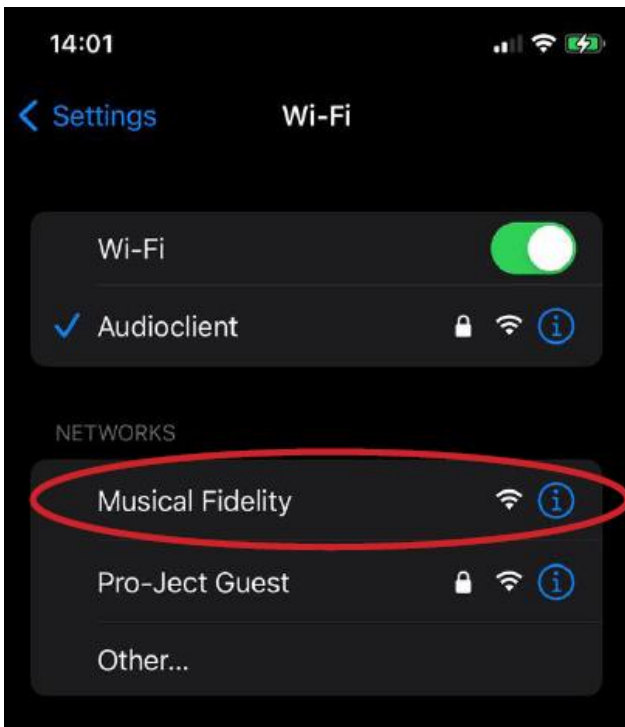
5) Offline Control: App and Webinterface

Controlling the MX-Stream without any network or internet access is actually doable! This is done by simply connecting your phone or laptop to the built in Hotspot of the MX-Stream. The Hotspot is enabled by default after first unpacking, and can also be enabled any time after first setup from the network settings menu:
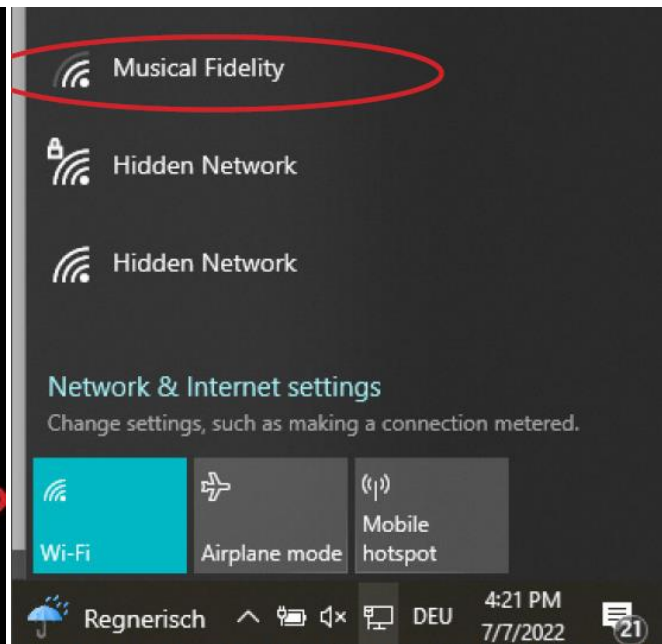

On your phone or laptop go to your WiFi settings menu and connect to the MX-Stream Hotspot:

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Phone WiFi settings   Laptop WiFi settings

After connecting the first setup assistance will open, you can simply press „Close" on the first screen to leave the first setup and control the MX-Stream. You can then play local music or files from a connected USB or HDD drive. Alternatively, once you are connected to the MX-Stream Hotspot simply use our APPs or Webbrowser control options (see option 1 and 2 of this guide) to access your MX-Stream.

☞ *In some situations it can help to disable your phone's mobile internet. This is because the MX-Stream Hotspot does not provide Internet access to your phone. Some phones then simply ignore this WiFi option and use your mobile internet instead to search for your MX-Stream, because the purpose of your phone in our modern times is to access the internet. Disabling mobile internet will force your phone to look for the MX-Stream identifier or IP address on the local WiFi connection.*

6) Offline Control: HDMI output, touchscreen, USB mouse + keyboard

The MX-Stream by default outputs its control interface (video only, no audio) via HDMI. You can simply connect any HDMI monitor, TV or screen to integrate it into your living room or other places.

By using a HDMI monitor that is also capable of touch-input via USB, you are able to build yourself a seamless touch integration for your MX-Stream. In addition to the HDMI connection, simply connect the touch capable monitor to any of the available USB inputs on the MX-Stream.

Another option is to connect a USB mouse and keyboard to the available USB inputs of the MX-Stream.

☞ *Should you ever encounter difficulties of setting up WiFi or lose access to your configured WiFi, this is a great method of troubleshooting the MX-Stream.*

Warranty

The manufacturer accepts no responsibility for damage caused by not adhering to these instructions for use. Modification or changes to any part of the product by unauthorized persons release the manufacturer from any liability over and above the lawful rights of the customer.

Should a problem be encountered which cannot be identified or resolved, please contact point of purchase/dealer for further advice. Only if the problem cannot be resolved there, the unit should be sent to the responsible distributor in your country. Warranty is valid in *country of purchase and for original purchaser only* and is not internationally nor personally transferable.

Copyright, trademarks

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Technical specifications

Internal Memory	16 GB
Audio Formats	PCM 32bit/352.8kHz, DSD256
Internet Radio	TuneIn
Streaming Services	TIDAL, Spotify, Qobuz, HIGHRESAUDIO
Supported data protocols	RAAT (Roon), Shairport, DLNA, UPNP
Inputs	2 x USB A (maximum combined current draw 1A), USB B (PC-Detox), Network (Ethernet, WiFi), BT
Supported WiFi standards	802.11 b/g/n/d/e/h/i
BT	BT Classic + EDR v2.1, v3.0, v4.0 and Low Energy
Outputs	Audio optimized USB A, HDMI (video)
Outboard Power supply	18V/1A DC (included)
Accessories	Wi-Fi antenna
Dimensions W x H x D (D with sockets)	220 x 56 x 215 (223) mm
Weight (without power supply):	1910g without power supply

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Musical Fidelity reserves the right to make improvements which may result in specification or feature changes without notice. E+OE.

CE

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DISPOSAL

The crossed out wheeled bin label that appears on the back panel of the product indicates that the product must not be disposed of as normal household waste. To prevent possible harm to the environment please separate the product from other waste to ensure that it can be recycled in an environmentally safe manner. Please contact local government office or retailer for available collection facilities.

DISPOSITION

La poubelle sur roulettes barrées X, qui apparaît en logo sur le panneau arrière du produit, indique que celui-ci ne doit pas être traité comme un déchet domestique commun. Afin de protéger l'environnement, ce produit électronique devra être géré séparément et donc recyclé selon les nouvelles normes Européennes Rohs concernant les déchets d'appareils électroniques. Prière de contacter les services concernés gouvernementaux ou votre point de vente pour l'élimination et l'enlèvement de déchets électroniques équipés de composants électroniques.

DISPOSAL

La etiqueta cruzada hacia fuera del compartimiento que aparece en el panel trasero del producto indica que el producto no se debe reciclarse como basura normal de la casa. Para prevenir daños posible al ambiente separe por favor el producto de otras basura para asegurarse de que puede ser reciclada de una manera ambientalmente segura. Entre en contacto por favor a su oficina gubernamental local o a su minorista para las instalaciones disponibles de la colección.

RIFIUTI

L'etichetta del cassonetto barrato riportato sul retro dell'apparecchio indica che il prodotto non deve essere smaltito tramite la procedura normale di smaltimento dei rifiuti domestici. Per evitare eventuali danni all'ambiente, separare questo prodotto da altri rifiuti domestici in modo che possa venire riciclato in base alle procedure di rispetto ambientale. Per maggiori dettagli sulle aree di raccolta disponibili, contattate l'ufficio govenativo locale od il rivenditore del prodotto.

FACHGERECHTE ENTSORGUNG:

Das auf der Geräterückseite angebrachte Label deutet darauf hin, dass das Produkt nicht mit konventionellem Hauskehricht entsorgt werden darf. Um Schäden und Verschmutzungen an Umwelt und Mensch zu vermeiden, muss das Produkt fachgerecht entsorgt und von anderem Abfall getrennt werden. Wenden Sie sich bei Fragen hierzu an Ihren Fachhändler oder an eine öffentliche Informationsstelle.

AFVAL

Het label op de achterzijde van dit apparaat, een afvalbak op wielen met een kruis doorgehaald, geeft aan dat dit apparaat niet samen met gewoon huishoudafval mag worden weggegooid. Om mogelijke schade aan onze leefomgeving te voorkomen dient dit apparaat, gescheiden van gewoon huishoudelijk afval, te worden afgevoerd zodat het op een milieuvriendelijke manier kan worden gerecycled. Neem voor beschikbare inzamelplaatsen contact op met uw gemeentelijke reinigingsdienst of met uw elektronica leverancier.

HÄVITTÄMINEN

Yliruksattua jäteastiaa kuvaava tarra tuotteen takalevyssä kertoo, että tuotetta ei saa käsitellä normaalina talousjätteenä. Ympäristön suojelemiseksi on tuote pidettävä erillään muusta jätteestä ja se on kierrätettävä ekologisesti kestävällä tavalla. Ota yhteyttä laitteen myyjään tai Pirkanmaan Ympäristökeskukseen lähimmän kierrätyskeskuksen löytämiseksi.

AFSKAFNING

Logoet med en skraldespand med kryds over på bagsiden af apparatet indikerer at dette produkt ikke må kasseres som normal husholdningsaffald. For at forebygge mulig skade på miljøet, bedes De separere dette produkt fra andet affald, og sikre at det bliver genbrugt på en miljørigtig måde. Kontakt venligst de lokale myndigheder eller din forhandler for oplysning om nærmeste tilgængelige opsamlingssted for elektronikaffald.

ΔΙΑΔΙΚΑΣΙΑ ΑΠΟΡΡΙΨΗΣ

ΤΟ ΣΗΜΑ ΜΕ ΤΟΝ ΔΙΑΓΕΓΡΑΜΜΕΝΟ ΤΡΟΧΗΛΑΤΟ ΚΑΔΟ ΑΠΟΡΡΙΜΑΤΩΝ ΣΤΗΝ ΠΙΣΩ ΟΨΗ ΤΟΥ ΜΗΧΑΝΗΜΑΤΟΣ ΔΗΛΩΝΕΙ ΟΤΙ ΤΟ ΠΡΟΙΟΝ ΑΥΤΟ ΔΕΝ ΠΡΕΠΕΙ ΝΑ ΔΙΑΧΕΙΡΙΣΘΕΙ ΣΑΝ ΣΥΝΗΘΙΣΜΕΝΟ ΟΙΚΙΑΚΟ ΑΠΟΒΛΗΤΟ. ΠΡΟΣ ΑΠΟΦΥΓΗ ΕΝΔΕΧΟΜΕΝΗΣ ΕΠΙΒΑΡΥΝΣΗΣ ΤΟΥ ΠΕΡΙΒΑΛΛΟΝΤΟΣ, ΞΕΧΩΡΙΣΤΕ ΤΟ ΠΡΟΙΟΝ ΑΠΟ ΤΑ ΑΛΛΑ ΑΠΟΡΡΙΜΑΤΑ ΩΣΤΕ ΝΑ ΕΞΑΣΦΑΛΙΣΘΕΙ Η ΑΝΑΚΥΚΛΩΣΗ ΤΟΥ ΜΕ ΤΟΝ ΠΡΕΠΟΝΤΑ ΤΡΟΠΟ. ΠΑΡΑΚΑΛΟΥΜΕ ΝΑ ΕΠΙΚΟΙΝΩΝΗΣΕΤΕ ΜΕ ΤΗΝ ΤΟΠΙΚΗ ΥΠΗΡΕΣΙΑ ΑΝΑΚΥΚΛΩΣΗΣ Η ΜΕ ΤΟ ΚΑΤΑΣΤΗΜΑ ΑΓΟΡΑΣ ΓΙΑ ΠΕΡΙΣΣΟΤΕΡΕΣ ΛΕΠΤΟΜΕΡΕΙΕΣ.