

# IMP40

## User Manual



#### **ADDITIONAL INFORMATION**

This manual is put together with much care, and is as complete as could be on the publication date. However, updates on the specifications, functionality or software may have occurred since publication. To obtain the latest version of both manual and software, please visit the Audac website @ [www.audac.eu](http://www.audac.eu).

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# Introduction

## SourceCon™ internet audio player module

The IMP40 is a professional internet radio player featuring SourceCon™ modular technology. This unique technology guarantees true plug & play implementation to any compatible device. When inserted to a supporting slot, the module is instantly installed, discovered and ready for operation without requiring any additional internal wiring or complex configuration.

The IMP40 features the unique Linum™ technology which eliminates any unwanted behaviour such as sudden channel hopping or music stops. When the connection is interrupted, automatic switching to inserted media carriers (USB drives) avoids unpleasant silences in background music applications. The audio stream will be automatically and seamlessly restored afterwards.

It synchronizes with the vTuner database which contains over 30.000 channels, allowing selection on different criteria such as genre, location, language, ... while custom streams can also be added to a preference list up to 100 entries.

The input connection is implemented by an RJ45 type connector with indicator LED's on its panel, allowing connection to any Ethernet network. The balanced stereo line output is connected through two 3-pin terminal block connections.

# Precautions

## READ FOLLOWING INSTRUCTIONS FOR YOUR OWN SAFETY

- ALWAYS KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE. NEVER THROW THEM AWAY
- ALWAYS HANDLE THIS UNIT WITH CARE
- HEED ALL WARNINGS AND FOLLOW ALL INSTRUCTIONS
- AVOID ELECTROSTATIC DISCHARGE BY TOUCHING GROUNDED POINT BEFORE REMOVING THE MODULES FROM THEIR PROTECTIVE BAG
- AVOID TOUCHING OF THE COMPONENTS ON THE CIRCUIT BOARD DIRECTLY
- NEVER EXPOSE THIS EQUIPMENT TO RAIN, MOISTURE, ANY DRIPPING OR SPLASHING LIQUID. NEVER PLACE AN OBJECT FILLED WITH LIQUID ON TOP OF THIS DEVICE
- DO NOT INSTALL THIS UNIT NEAR ANY HEAT SOURCES SUCH AS RADIATORS OR OTHER APPARATUS THAT PRODUCE HEAT
- DO NOT PLACE THIS UNIT IN ENVIRONMENTS WITH A HIGH LEVEL OF DUST, HEAT, MOISTURE OR VIBRATION
- THIS UNIT IS DEVELOPED FOR INDOOR USE ONLY. DO NOT USE IT OUTDOORS
- ONLY USE ATTACHMENTS & ACCESSORIES SPECIFIED BY THE MANUFACTURER.
- UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME
- CAREFULLY CHECK THE UNIT'S CONDITION AFTER UNPACKING. IF THERE IS ANY DAMAGE TO THE CARTON BOX OR THE UNIT ITSELF, INFORM YOUR VENDOR IMMEDIATELY.
- ONLY CONNECT THIS UNIT TO A MAINS SOCKET OUTLET WITH PROTECTIVE EARTHING CONNECTION
- THE INSTALLATION, CONNECTION AND CONFIGURATION OF THE DEVICE SHOULD BE DONE BY QUALIFIED TECHNICIANS

## POWER SUPPLY AND POWER CORD REQUIREMENTS

### **Power supply class I grounding requirements:**

For protection from fault currents, the equipment shall be connected to a grounding terminal. Plug the system power cord into an AC outlet that provides a ground connection. Substitute cords may not provide adequate fault protection. Only use the power cord supplied with this product or an authorized/equivalent replacement

### **Safety notices:**

#### **Denmark:**

Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.

#### **Finland:**

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan.

#### **Norway:**

Apparatet må tilkoples jordet stikkontakt.

#### **Sweden:**

Apparaten skall anslutas till jordat uttag.

## ATTENTION

The fuse (T500mA/250V) provides a safeguard function to the device. When replacing the fuse, make sure that the value of the replacement matches the value of the original fuse. Identification of a suitable replacement component or substitute shall be done by qualified technicians.



### CAUTION – SERVICING

This product contains no user serviceable parts. Refer all servicing to qualified service personnel. Do not perform any servicing (unless you are qualified to do so.)



### EC DECLARATION OF CONFORMITY

This product conforms to all the essential requirements and further relevant specifications described in following directives: 2014/30/EU (EMC) and 2014/35/EU (LVD)



### WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

The WEEE marking indicates that this product should not be disposed with regular household waste at the end of its product life. This regulation is created to protect both the environment and human health.

This product is developed and manufactured with high quality materials and components which can be recycled and/or reused. Please dispose of this product at your local collection point or recycling centre for electrical and electronic waste. Do this to make sure that the product is recycled in an environmental friendly way, and help to protect the environment in which we all live.

### CAUTION

The symbols shown are internationally recognized symbols that warn about potential hazards of electrical products. The lightning flash with arrow point in an equilateral triangle means that the unit contains dangerous voltages. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the users manual.



These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.



# Chapter 1

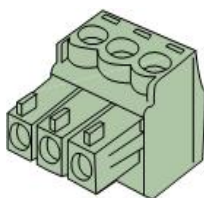
## Connections and connectors

### CONNECTION STANDARDS

The in- and output connections for AUDAC audio equipment are performed corresponding to international wiring standards for professional audio equipment.

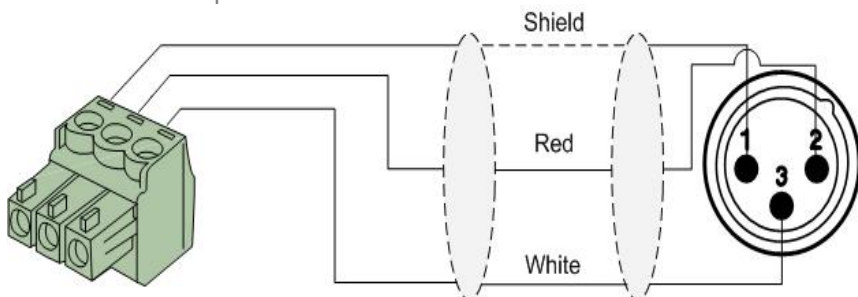
#### 3-Pin terminal block:

For balanced in & output connections

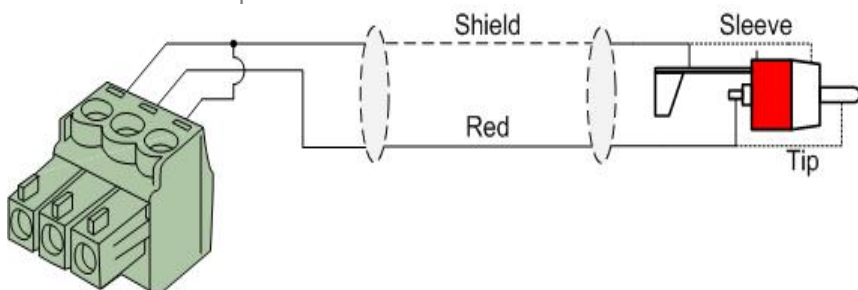


<b>Left:</b>	Signal –	(XLR Pin 3)
<b>Center:</b>	Signal +	(XLR Pin 2)
<b>Right:</b>	Ground	(XLR Pin 1)

For balanced line output connections:

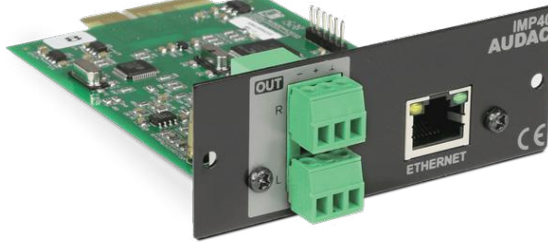


For unbalanced line output connections:



# Chapter 2

## Overview IMP40



The IMP40 is a SourceCon™ compatible module featuring an (internal) board–edge connector which carries all signals for getting it connected to any supporting main unit.

All external in & output connections shall be made using the available connectors on the panel.

### **1) Balanced stereo line output:**

The balanced stereo line output is implemented using two 3–pin terminal block connectors. The audio output available on this connector allows it to be fed to any amplifier or pre–amplifier.

### **2) Ethernet RJ45 connector:**

The Ethernet connection implemented using an RJ45 type connectors. This Ethernet connection works as the audio stream input of the IMP40. Hereby it shall get connected to any LAN network with internet access for reaching the database and audio streaming servers.

For more information about the Ethernet configuration of this device, check ‘Chapter 4: User interface & Configuration’ and ‘Chapter 5: IP Basics’ of this user manual.

# Chapter 3

## Using the IMP40

Since the IMP40 is a SourceCon™ module, it can be combined with a variation of supporting main units. The operation and configuration interface might be different of the unit where installed, however the offered functionality is identical. Some devices will support control and configuration through a front panel graphical control interface on a display, while others are also supporting web–control.

This manual describes the control configuration possibilities using front panel control. For applications where more control possibilities are needed, check the instruction manual of the used main device for more instructions.

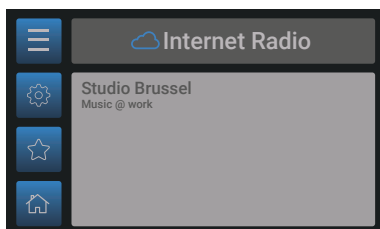
## Database updates

The IMP40 comes with the vTuner database pre–loaded. Since continuously new radio stations are being added, it is recommended to manually start the database update process when using it for the first time. How to start the manual update process is described in the Settings > DB info chapter of this instruction manual.

When operational, the IMP40 will regularly check with the database server whether a new update is available, and if so, automatically start the database update process without any noticeable consequences for the user / listener.

## Module screen

The module screen gives an overview of the IMP40's current operation mode. The name of the currently playing station including additional carried information such as track name, program name, ... will be indicated on this screen.



### Station selection:

The ☰ (station list) button gets you to the vTuner database overview where the radio station selection can be made by hand of various criteria, such as genre, location or stored favorites.

### Settings:

The ⚙️ (settings) button gets you to the settings menu of the IMP40 where all configurations can be made.

### Favourites:

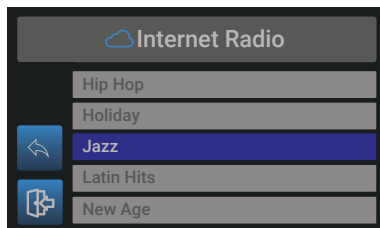
The ☆ (favourites) button stores the currently playing channel to the favourites list which can contain a maximum of up to 100 entries.

### Home:

The 🏠 (home) button gets you back to the main screen of the device where the IMP40 is installed to.

## Station selection

The station selection screen allows radio station selection through the vTuner database which includes over 30.000 channels. Selection of the radio station is done by hand of various criteria, such as favourites (includes the stored channels), location, genre, ...



When the main criteria is selected, the menu will guide you through the next step of selection criteria including all different continents, countries, genres, ... and so on.

Browsing through the menu structure is done by turning the function dial, while selections are made by pressing it. The ↶ button gets you one step back in the station selection overview.

Once the desired channel has been found, press the function dial for selection and the channel will start playing.

# USB Backup

The IMP40 features unique Linum™ plug USB backup technology, which automatically switches to USB playback when the internet audio stream is interrupted. A small internal buffer memory avoids audio silences for short streaming interrupts, while USB backup avoids silences when the streaming is interrupted for long periods.

When interrupted, the IMP40 continues to search for the streaming station for about 15 seconds. When the stream is not recovered during this period, it will automatically switch to playback from the inserted USB carrier (inserted to the corresponding USB slot on the front panel of the main unit). The USB backup remains repeating (repeat all) in an endless loop as long as the stream is interrupted.

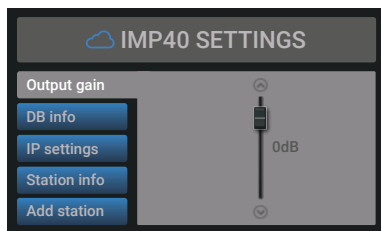
When the stream is recovered while playing from USB backup, it will automatically switch back to the internet audio stream. When interrupted again, it will continue to play the next available backup track.

## Settings screen

The settings menu for the IMP40 is loaded when pressing the ⚙️ (settings) button.

### Output gain:

The gain can be adjusted within a range of +8 dB and -92 dB, allowing optimization of the output level according to the input sensitivity of the connected amplifier or pre-amplifier. For adjusting the output gain, rotate the function dial until 'Gain' is highlighted and press it for proceeding to the gain settings. The level can be adjusted by rotating clockwise (tuning up) or counter-clockwise (tuning down). Press the rotary dial for confirming the currently set output level.



### DB info:

DB info gives the version information regarding the currently loaded vTuner database which contains all station information.

The auto update function allows automatic updating of the database. When enabled, the IMP40 automatically synchronizes with the database server whether a new update becomes available, and if so, automatically start the database update process without any noticeable consequences for the user / listener. Auto update is standard configured as ON but can be disabled (switched to OFF).

Manual database updating can be started by selecting 'Start Database Update'. When selected, the currently stored database will be removed and the latest version is retrieved from the server. The database update process can take a few minutes before completed.

### IP settings:

When highlighting the IP settings button, an overview of the currently configured network settings is given on the right screen side. When selected, a separate IP settings menu will be loaded where all network settings can be customized.

#### DEFAULT NETWORK SETTINGS

---

DHCP:	<b>Assigned by DHCP</b>
IP address:	<b>Assigned by DHCP</b>
Subnet mask:	<b>Assigned by DHCP</b>
Gateway:	<b>Assigned by DHCP</b>
DNS 1:	<b>Assigned by DHCP</b>
DNS 2:	<b>Assigned by DHCP</b>

### IP Settings > DHCP:

In default configuration, the DHCP function for the IMP40 is enabled whereby the IP address and other network settings are automatically assigned through the DHCP server in your network.

Since the IMP40 doesn't support any control commands from other devices over TCP/IP in contrast to other TCP/IP control supporting devices, the IMP40 doesn't need to have a 'fixed' for being reachable through other devices.

### IP settings > IP address:

The IP address for the system can be configured in this window. Each section of the IP address can be individually adjusted by turning the rotary dial (clockwise for up, and counter-clockwise for down). The currently adjusting section will be indicated in blue colour. Once the correct number for the current section is selected, proceed to the next section by pressing the rotary dial.

### **IP settings > Other network settings:**

All other network settings such as subnet mask, Gateway, DNS 1 and DNS 2 can be configured in this window. The default configuration is set to DHCP, in case of special network restrictions or requirements, consult your network administrator for more details on the network settings.

All additional network settings can be modified in a similar way as the IP address, allowing adjustments by turning and pressing of the rotary dial.

### **Station info:**

Gives additional information about the currently playing station. Displayed information includes station name, category, country, city, sample rate, bitrate, connections, playtime, ...

### **Add station:**

Custom audio streams (not included in the vTuner database) can be manually added to the IMP40 stations list. This feature allows specific broadcast streams from corporate headquarters to various branch offices, or specific audio streams which are not public accessible to be added to the system.

For adding specific audio streams, the corresponding URL shall get entered to the system, and a specific stream name shall be given. Entering this data is done by selection of the characters through turning the function dial, while selections are made by pressing it.

Once the URL is entered, select save to proceed to the stream name. When both are entered, select save again to confirm stream details and go back to the settings screen. The entered stream is now added to the favourites list.

### **Factory reset:**

Factory reset will recall all settings to factory defaults and all previously made settings and configurations will be lost. After selecting factory reset, a confirmation will be asked whether all settings definitely need to be reset to factory defaults. When confirmed, all settings will be lost.

### **Back:**

Returning to the module screen is done by selecting 'Back'.

# Chapter 4

## Installing the IMP40

### CAUTION



Before installing the IMP40 to any SourceCon™ compatible device, make sure the power is switched off. Malfunctions or electrical shocks may occur otherwise.

### Step 1:

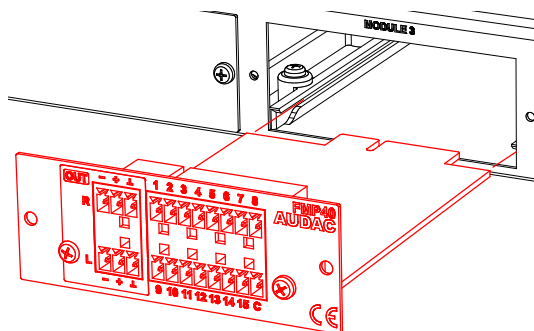
Make sure that the slot where the module should be installed is open and ready for installation. Depending on the main unit, some module slots will be covered by blind panels when delivered. The corresponding blind panels should be removed by releasing the screws on both ends.

### Step 2:

Before removing the modules from their protective bag, we recommend touching a grounded metal chassis (or any other grounded point) to prevent electrostatic discharges affecting the sensitive electronic components. It is recommended to always hold the module card by the metal connection panel and avoid touching of the components on the circuit board directly.

### Step 3:

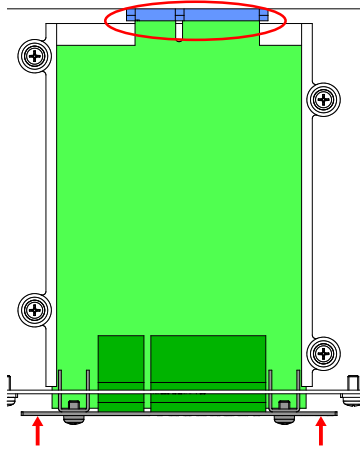
Align both edges of the module with the guide rails inside the slot and carefully insert the module into the slot. It should slide into the slot without any considerable resistance when well positioned into the guide rail.





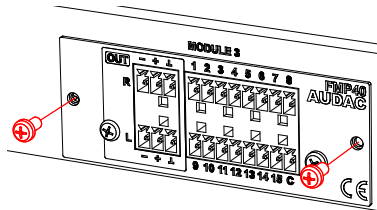
#### Step 4:

Some resistance might occur when the module's board edge connector reaches the connection counterpart on the main board. Gently push the module all the way into the slot to ensure that the contacts are correctly inserted. The module is well inserted when its connection panel touches the metal chassis of the main device where inserted to.



#### Step 5:

Fasten the module into the slot using the included screws. Be aware that damage or malfunctions may occur if the module is not correctly fastened.



#### Step 6:

Once the module is correctly installed, the system can be powered-on and the module functionality will be automatically discovered.

# Chapter 5

## Additional information

### IP Basics

Many AUDAC products are controllable by Ethernet. The Ethernet connection which is used on the AUDAC products is TCP/IP based, like 99% of the computer networks. There are some basics which you need to know to successfully make a TCP/IP Ethernet connection.

The data in TCP/IP networks is always sent in packages, all these packages must be delivered at a unique address, just like the mailman delivers mail at your home mailbox. In TCP/IP networks, this address is called the “IP address”. The IP address is always a number in the following format “192.168.000.001”. As you can see, this address consists of 4 separate numbers ranging from “000” to “255”.

In simple terms, only the latest number of an IP address can be different within a network, so there is a maximum of 254 unique addresses within a network, ranging from “xxx.xxx.xxx.001” to “xxx.xxx.xxx.254”. The first three numbers must be the same to make communication between several devices possible, else the devices can not communicate with each other.

#### Example:

Device 1:	IP address:	192.168.000.001
Device 2:	IP address:	192.168.000.002
Device 3:	IP address:	192.168.001.003

In this example, Device 1 can communicate with Device 2, but not with Device 3, because the first three numbers must be the same. These first three parts are called the “IP range”, so the devices must be in the same “IP range” to communicate with each other.

The “IP range” of home and office networks are defined by the network administrator, this means that the IP range of your home or office network can be different from another network. AUDAC products have the following IP address as default: “192.168.0.xxx”, this means the standard IP range of AUDAC products is “192.168.0.xxx”. If your network is using a different IP range, the AUDAC products will not be accessible from your network. You can change the IP address of the AUDAC products to make them work properly in your network. This can be done in the settings menu, and is described extensively in the “Settings” chapter of this user manual.

Ask your network administrator for help if you are not familiar with networks.

<b>Summary</b>
<ul style="list-style-type: none"><li>– All devices must have a unique IP address</li><li>– All devices must be within the same IP range</li></ul>

# Technical specifications

Connection		SourceCon™ interface card slot
Inputs		RJ45 (Ethernet)
Supported filetypes	Streaming	MP3
		WMA
		AAC
Compatible media	Playback	MP3
	Playback	USB memory
		USB HDD
Compatible file systems	Playback	FAT16
		FAT32
Outputs	Type	Balanced stereo line outputs
	Level	+8 dB ~ -92 dB
Frequency Response	(± 3 dB)	20 Hz – 20 kHz
Crosstalk	@ 1 kHz	80 dB
THD+N	@ 1 kHz	< 0.07%
Power	Consumption	1.5 W
Dimensions	W x H x D	87 x 34.5 x 114 mm
Weight		0.070 Kg
Packaging		Carton box
Shipping weight & Volume		1.08 Kg – 0.028 Cbm
Compatible devices		XMP44 Modular audio system

# Notes