

Quick Install Guide

 **Fehler beim Ausführen des Makros 'toc'**
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The scope of this document is to give a general introduction on the IP Former TPA400 helping the user to run a basic setup and have an audio stream playing out from the device.

1 Package Content

- IP Former TPA400 device
- Speaker Connector

The Barix IP Former TPA400 is an audio over IP decoder which includes an amplifier to drive a loudspeaker. All configurations for this device are done locally on an integrated web interface. The operational status of the device is indicated by two multicolour LEDs (red/green).

2 Installation

2.1 STEP 1 Connecting to Audio Equipment

The IP Former needs connection to the Speaker Equipment through the screw connector provided on the front panel of the device. The speaker output supports speaker impedance of 4 and 8 ohms (2 ohms is also possible but the output power of the amplifier is optimized and configurable to match 4 and 8 ohms speakers).

2.2 STEP 2 Connecting to a PoE switch

Connect your IP Former to the Network using a standard Ethernet cable (CAT5e or better). The network will need to provide standard PoE power supply IEEE 802.3af (15W per port) or higher. The class negotiated is Class 0, which will allow the switch to deliver up to the maximum capability per port (power available at PD for 802.3af <= 12.95W).

- The IP Former is configured to be a DHCP Client by default.
- System Status LED green solid: Device has started up and is running.
- Application Status LED green solid: Application has started and is running.

✔ Tips for a proper startup

1. Verify that your speaker is connected to the IP Former
2. Verify that your network cable is connected to a PoE Switch and a DHCP server is available within the network
3. During startup, the IP Former will acquire an IP address and announces it on the speaker output
4. By default the device will announce itself to a Syn-Apps server (and to an Informacast server if licensed), System Status LED and Application Status LED turn solid

The IP address of the IP Former is useful in order to do further configuration (e.g. configuring other sources etc) using its local web user interface via web browser.

3 Managing Sources and use of the IP Former

3.1 STEP 1 Login

1. Use your web browser to log into the IP Former Web Interface by typing the IP Address into your browser.
2. Use the user "admin" and the appropriate password provided on the sticker on the backside of the device (PW label)

3.2 STEP 2 Configure your Sources

For the configuration of your sources, the following source types are available:

- Syn-Apps → announces the IP Former as an audio device in a Syn-Apps system
- Informacast (if licensed) → announces the IP Former as an audio device in an Informacast system
- Barix Radio → plays Barix Radio as http stream without any further configuration
- RTP → configures the IP Former to receive an RTP stream
- HTTP(S) → configures the IP Former to receive an HTTP or HTTPS stream
- SIP → configures the IP Former to be a SIP client (peer to peer or Server mode)
- Local File → allows to play audio files which are locally stored on the IP Former

Please refer to the help description in the user interface in order to properly configure your sources.

Individual Volume can be set for every of the sources.

3.3 STEP 3 Prioritize your Sources

Multiple sources can be configured at the same time and are played according to their given priority.

- Priority 1: Highest priority
- Priority 5: Lowest priority

Management of priority means that a present stream will be played over another configured stream.



Example

Example of a Priority System

- Priority 3: HTTP Radio Stream playing Background music.
- Priority 2: RTP Streams playing ads over the background music. Background music will stop as soon as the RTP stream is present
- Priority 1: SIP call playing emergency calls. Background music or advertisements will be stopped as soon as SIP call is present.

3.4

STEP 4 Manage Local Files

Use the menu item "Audio Files" in order to manage your local files for the source type "Local Files".

The screenshot shows the 'Audio Files' section of the BARIX IP Speaker TPA400 web interface. The navigation menu includes 'Settings', 'Sources', 'Audio Files', 'Speaker Status', 'System Status', 'Logs', 'Defaults', 'Update', 'Reboot', and 'Remote Config'. The main content area has a header 'IP Speaker | TPA400' and a 'BARIX' logo. Below the header, there are sections for 'Audio files', 'Upload audio file', and 'Files on device: Internal'. The 'Files on device' section shows a list of files with checkboxes and a 'delete selected' button. A help sidebar on the right provides instructions on how to upload and play audio files.

- i** The device supports MP3, AAC, FLAC, AC3, DTS, OGG, WAV files.

The filenames should NOT contain special characters and must have maximum one space character in the name.

The limit of individual files to be uploaded is 16MB.

It is possible to upload .zip archives to upload multiple files at once.

Read the help side bar to know how to trigger the playback of the files on IP Former.

3.5 STEP 5 Control the IP Former

Once the sources are configured, the IP Former will start playing them accordingly. Master Volume of the IP Former can be controlled on the "Settings" page of the web interface.

The screenshot shows the 'Settings' page of the BARIX IP Speaker TPA400 web interface. The navigation menu includes 'Settings', 'Sources', 'Audio Files', 'Speaker Status', 'System Status', 'Logs', 'Defaults', 'Update', 'Reboot', and 'Remote Config'. The main content area has a header 'IP Speaker | TPA400' and a 'BARIX' logo. Below the header, there are sections for 'Device Alias', 'Master Volume', and a list of expandable settings: '+ Network Settings', '+ Time Settings', '+ Security Settings', and '+ Output Amplifier Level & Speaker Settings'. A help sidebar on the right provides instructions on how to define a device alias and adjust the master volume.

3.6 STEP 6 Monitor the IP Former

The "Speaker Status" page on the web interface will show you the actual status of the sources of the IP Former. Every source status also includes a counter indicating how many times the actual source has been played.

The screenshot shows the "Speaker Status" page for an IP Speaker TPA400. The page is divided into two main sections: "Speaker Status" and "Help".

Speaker Status

Source	Registered	Playing	Play count
Informacast InformaCast	n/a	nothing	0
Synapps Syn-Apps	No	nothing	0
SIP Emergency call SIP	No		0
Local Files Trigger Local file			0
Barix Radio Barix Radio			1

Help

Speaker Status

Shows the current status of the enabled sources. Sorted by priority, showing what is being heard, what is receiving data and what is not receiving data.

Note: Some of the less priority enabled sources may not be displayed, as they are not relevant.

4 Remote Configuration Tool

Any IP Former device present in the network has a tab called "Remote Config" exposed in the web UI. The configuration tool lists all the devices automatically discovered in the network and allow bulk or individual configuration of them to make a system-wise configuration and maintenance fast.

Settings Sources Audio Files Speaker Status System Status Logs Defaults Update Reboot Remote Config										IP Speaker MAC 00:08:E1:08:54:47 FW 2.6.0	
IP Speaker TPA400										BARIX	
Total devices discovered: 60											
Filter Restaurant											
Read All Save All Cancel changes											
Name	Pub	Settings	Prio 1	Prio 2	Prio 3	Prio 4	Prio 5	Audio Files	System	Control	Copy / Push
Spkr 1	Lobby	192.168.8.112	SIP	Synapps	Local Files	Web Radio	Barix Radio	0 Files	62:42:4d:d2:b2:99	🔊 🔄 🗑️	Copy Push
Spkr 2	Lobby	192.168.8.152	SIP	Synapps	Local Files	Web Radio	Barix Radio	0 Files	06:fe:43:bb:c8:1f	🔊 🔄 🗑️	Copy Push
Spkr 3	Lobby	192.168.8.150	SIP	Synapps	Local Files	Web Radio	Barix Radio	0 Files	6e:17:68:85:8a:e6	🔊 🔄 🗑️	Copy Push
Spkr 4	Lobby	192.168.8.163	SIP	Synapps	Local Files	Web Radio	Barix Radio	0 Files	22:ad:0f:e9:71:e4	🔊 🔄 🗑️	Copy Push
Spkr 5	Pool	192.168.8.133	Informacast	Synapps	SIP	RTP Multicast	Barix Radio	0 Files	aa:c4:7b:5b:d9:15	🔊 🔄 🗑️	Copy Push
Spkr 6	Pool	192.168.8.153	Informacast	Synapps	SIP	RTP Multicast	Barix Radio	0 Files	0a:b2:b2:e2:ed:04	🔊 🔄 🗑️	Copy Push
Spkr 7	Pool	192.168.8.210	Informacast	Synapps	SIP	RTP Multicast	Barix Radio	0 Files	00:08:e1:08:54:47	🔊 🔄 🗑️	Copy Push
Spkr 8	Pool	192.168.8.211	Informacast	Synapps	SIP	RTP Multicast	Barix Radio	0 Files	00:08:e1:07:6c:1a	🔊 🔄 🗑️	Copy Push
Spkr 9	Restaurant	192.168.8.142	Informacast	RTP	Barix Radio	SIP	RTP Multicast	0 Files	6e:20:c3:c8:e2:c3	🔊 🔄 🗑️	Copy Push
Spkr 10	Restaurant	192.168.8.117	Informacast	RTP	Barix Radio	SIP	RTP Multicast	0 Files	de:92:60:e9:36:ca	🔊 🔄 🗑️	Copy Push
Spkr 11	Restaurant	192.168.8.114	Informacast	RTP	Barix Radio	SIP	RTP Multicast	0 Files	92:d1:4f:74:67:31	🔊 🔄 🗑️	Copy Push
Spkr 12	Restaurant	192.168.8.136	Informacast	RTP	Barix Radio	SIP	RTP Multicast	0 Files	3a:b9:0f:30:55:91	🔊 🔄 🗑️	Copy Push
Spkr 13	Restaurant	192.168.8.111	Informacast	RTP	Barix Radio	SIP	RTP Multicast	0 Files	3e:88:52:bc:4e:a1	🔊 🔄 🗑️	Copy Push

The Remote Configuration tool allows to:

- copy the configuration of one device to others
- save changes on device's configuration individually or in bulk
- group devices per zone and copy the configurations from one device to all in the same zone or to all zones
- sort and filter devices easily by their: names, zone, IP, MAC, source configuration.
- edit the device name
- change the device settings
- change the sources configuration and the playback priority
- reload all device's configurations or cancel the changes done
- open the webUI of another device
- perform a sound-test of a device
- Immediately view how many devices are in the network
- See which source the device is playing (green cells)

For more details on how to use the tool read the help side bar accessible clicking on the  in the right upper side of the page.

5 Security Settings

These settings are among the most important in the Settings page of the IP Former. In this section it is possible to Enable/Disable key functionalities:

1. Reboot: enable or disable the soft reboot from web user interface (button grayed out)
2. Reset Factory Default: enable or disable the possibility to reset the device to factory defaults from web user interface (button grayed out)
3. Update Function: enable or disable the possibility to update the device from web user interface (button grayed out)

6 Network Settings

In the IP Former Settings page there are parameters used to configure your device with the desired network settings. To set the network settings:

1. Wire your IP Former to a network where a DHCP server is available and switch it on, hear the IP announced over the audio output (SonicIP® function) and connect to its web browser
2. Locate the Network Settings in the "Settings" menu
3. Once settings are configured as desired click on Submit at the bottom of the page, the device will restart and if the IP is changed you must input the new address in the top bar

The screenshot shows the 'Settings' page for an IP Speaker (TPA400). The 'Network Settings' section is expanded, showing options for Avahi announce, SonicIP, SonicIP Volume, Web Protocol, DHCP, IP Address, Netmask, Gateway IP Address, Primary DNS, and Alternative DNS. There are also expandable sections for Time Settings, Security Settings, and Output Amplifier Level & Speaker Settings. A 'Submit' button is visible at the bottom right of the settings area.

7 Update the Firmware of IP Former

It is always good practice to run the latest firmware on the IP Former. Latest Firmwares includes improvements and bug fixes. The firmware on the IP Former can be updated using the local web interface.

To update the firmware from the web user interface you need first to download the TAR package from the Barix website: www.barix.com/downloads (Firmware is under Products → Decoder → IP Former) or simply type: IP Former in the search bar in the same page. In this page are available only the latest firmware from Barix.

The screenshot shows the 'Update' page for an IP Speaker (TPA400). It displays instructions for updating the firmware, including a link to start the update. It also shows the 'Currently Loaded Version' information, such as Firmware version 2.6.0, Root File System, System WEB UI, Kernel Details, and Bootloader Details. A 'Help' section provides additional instructions and a note about clearing the cache.

Once the package is downloaded:

1. Connect to the IP Former's web user interface
2. Navigate to UPDATE from the top bar
3. Click on "[Please click here to start the update](#)"
4. In the following page click on "Browse", locate the TAR package you just downloaded on your PC and open it
5. Click on "Upload" - Wait few minutes while the process moves forward. Do not switch off the device while the process is ongoing
6. When finished the message "Update completed" appears
7. The device automatically reboots, wait for the boot to complete and then click on the home button and refresh the page (empty the cache of your browser to display correctly the new application)

i IMPORTANT: After an update is good practice to empty and reload the page of your browser to clear eventual cached settings and values. Check how to do that in your web browser settings.

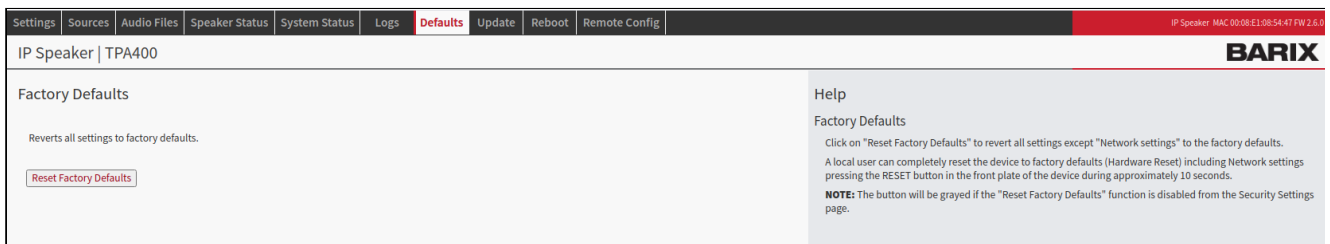
For Chrome: Press F12 (this will open developer tools) → Right click on the RELOAD button → Select "Empty Cache and Hard Reload"

8 Restore factory defaults

Sometimes it's useful to restore factory defaults. In example if a device acts weirdly or it's not reachable anymore from the network because of wrong settings. There 2 reset methods available on the IP Former:

1. Soft reset from web user interface
2. Hard reset from the front Reset button on the device

Soft Reset from web user interface



1. Connect to the web user interface of the IP Former and navigate to the DEFAULTS tab
2. Click on Reset Factory Defaults to perform a reset of the device

i A soft reset restore all parameters except network settings. To reset completely the device including network settings perform a Hard Reset

Hard Reset

A hard reset restore **all** values and settings on the IP Former. To perform a hard reset:

1. Switch on the IP Former
2. Press the reset button located in the front panel of the device and keep it pressed for approximately 10 seconds. Help yourself with a pointy tool.
3. The green LED blinks fast for 3 times meaning it started the reset operation
4. Wait until the process is completed, the device reboots, you can see it from the front LED becoming red and then green again
5. Network settings have been restored, the IP address might be changed, listen to the SonicIP® announced over the audio output

9 Hardware functionality

Front view

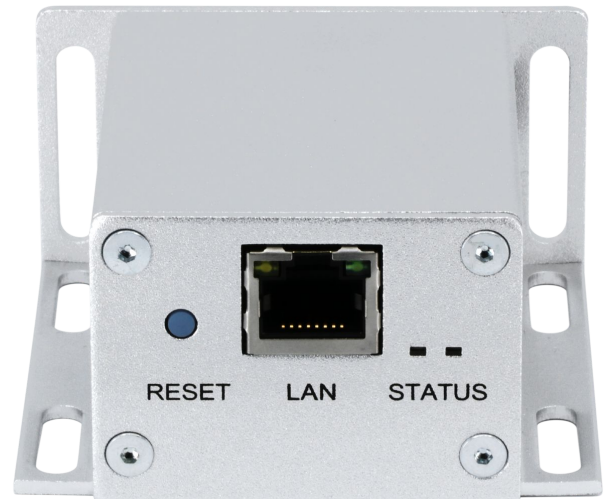


MIC / SPKR

Pin	Description
1	MIC IN
2	AGND
3	SPKR -
4	SPKR +

Please note that the MIC Input is for further use and does not have any functionality with the current Firmware.

Rear view



RESET Button

A brief press of the button (3 seconds) will reboot the device. Holding the reset button pressed for approximately 10 seconds will reset the device and restore the factory default settings when the button is released.

LAN - Ethernet (RJ45)

Pin	Description
1	TX + (Transmit data) V+ mode A
2	TX - (Transmit data) V+ mode A
3	RX + (Receive data) V- mode A
4, 5	V+ mode B
6	RX - (Receive data) V- mode A
7, 8	V- mode B
Left LED Yellow	Activity
Left LED Green	Link / Speed (Blinking)

SYSTEM STATUS LED

Dual Color green/red System Status LED.

1. Red blinking fast: early startup
2. Red blinking slow: system booting
3. Yellow blinking: System in Rescue Mode
4. Orange / Yellow blinking: Downloading / Installing Firmware
5. Green solid: system ready

APPLICATION STATUS LED

Dual Color green/red Application Status LED.

1. Red solid: application not running
2. Green solid: application running

10 Compliance Information

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Safety and precaution recommendations apply. Find them in the download section at www.barix.com



[Find your distributor on this list](#) for more hardware.

For questions that are extending the documentation, feel free to contact us on:

International: [+41 434 33 22 22](tel:+41434332222)

USA: [+1 866 815 0866](tel:+18668150866)

Email: support@barix.com

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