



# **APEQ™ Communication Tool (C2)**

## **USER'S GUIDE**

(for software version 2.1.0)

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## OVERVIEW

The APEQ™ Communication Tool (also known by a shorter name C2) makes it safe and easy to transfer correction files to the APEQ™ hardware devices, unaltered or with some modifications, as well as to backup files from the APEQ™ devices back to the PC. The PRESETS functionality allows loading and comparing different sets of filters as fast and easy as possible. The tool has simple filter modification tools – Gain Control, Delay, and Equalizer. The APEQ™ Communication Tool supports multiple APEQ™ devices connected to a single PC.

## ABOUT THIS MANUAL

All example pictures shown in this manual is made for APEQ™ Communication Tool, running under Microsoft Windows Vista. The appearance of the application and its dialogues may vary, depending on operating system and its settings. The functionality, however, is the same on all supported operating systems.

Most of the screen-shots show an APEQ-8pro DIO device connected. Some features are not available for APEQ-2pro and APEQ-2pro DIO devices. Such differences will be clearly described in the text.

## SYSTEM REQUIREMENTS

The APEQ™ Communication Tool works on the latest updates of the following operating systems:

- Windows XP SP3 (32/64 bit)
- Windows Vista (32/64 bit)
- Windows 7 (32/64 bit)
- Mac OS X 10.5
- Mac OS X 10.6
- Mac OS X 10.7

A USB port is required to access APEQ™ devices over USB. An Ethernet port or wireless connectivity is required to access APEQ-8pro DIO devices over network.

## QUICK START GUIDE

The following steps describe a simple scenario to start using the APEQ™ device as quickly as possible.

- Launch the APEQ™ Communication Tool

- Connect an APEQ™ device using a USB cable. The main window of the tool should look similar to the one in figure 1
- Select each channel of the device from the list of channels, click the **Browse...** button, and select a filter file to load into that channel. Filter files are the **.FIR** files created by CONEQ™ Workshop or CONEQ™ Starter applications. Alternatively, drag-and-drop each **.FIR** file onto the corresponding channel entry in the channel list.
- Toggle the **Bypass Filters** check-box (only for APEQ-8pro DIO) or press and hold for a moment the **Bypass** button on the front panel (only for APEQ-2pro) to hear the difference of filtered and non-filtered sound.
- The USB cable can be disconnected now and the APEQ™ device is ready for production work.

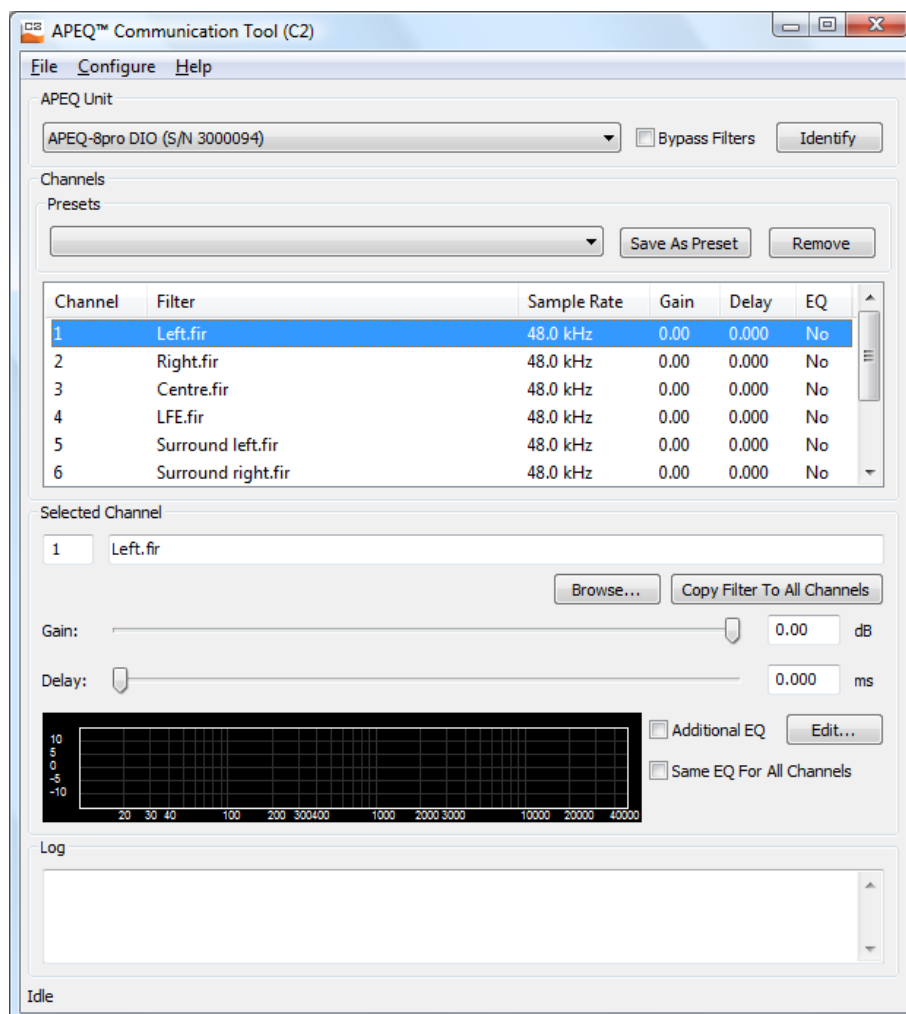


Figure 1: Main window of APEQ™ Communication Tool (C2) with a device connected.

## CONNECTING APEQ™ HARDWARE

This section describes the two ways to connect the APEQ™ devices so that they can be managed using the APEQ™ Communication Tool.

### CONNECTING USING USB

Connect a USB A-B cable to the socket on the APEQ™ device (back panel on the APEQ-2pro and APEQ-2pro DIO devices and front panel on APEQ-8pro) and to a free USB port on the PC. The APEQ™ Communication Tool will recognize the APEQ™ device within 5 seconds.

### CONNECTING USING NETWORK

#### Configuring the hardware

The APEQ-8pro DIO devices are equipped with an Ethernet port and can be accessed through network. To access an APEQ™ device over network it must be assigned an IP address, a port number, network mask, and a gateway. The default factory settings are:

- IP address: 192.168.200.135
- Port: 50000
- Subnet mask: 255.255.255.0
- Gateway: 192.168.200.1

The settings can be changed by first connecting the APEQ™ device using a USB cable and choosing **Configure**⇒**Selected APEQ Unit...**. A dialogue as shown in figure 2 will appear. Enter the needed values and click **OK**. If not sure, consult the network administrator to learn about what values to enter.

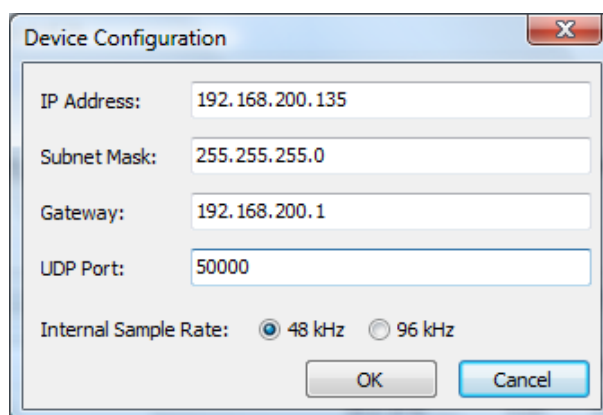


Figure 2: Network configuration settings of an APEQ™ device.

When the device is configured, the USB cable should be disconnected and the device connected to the network.

## Configuring the APEQ™ Communication Tool

Now the APEQ™ Communication Tool must be told where to look for the device. Choose **Configure**⇒**Ethernet Connections...**. A dialogue as shown in figure 3 will open, only it will not yet list any devices.

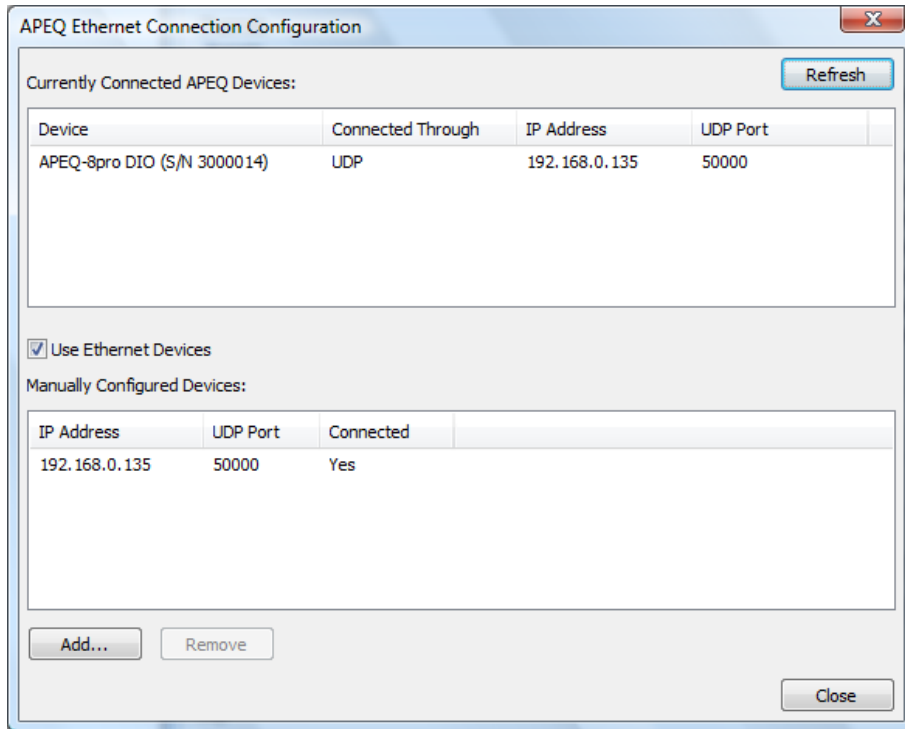


Figure 3: The network connection configuration dialogue.

First of all, make sure that the check-box **Use Ethernet Devices** is checked. This tells the APEQ™ Communication Tool to look for APEQ™ devices over network.

To tell the APEQ™ Communication Tool about the just configured APEQ™ device click on the **Add...** button. In the dialogue that opens (see figure 4), enter the same IP address and port as was used during configuration of the APEQ™ device and click **OK**.

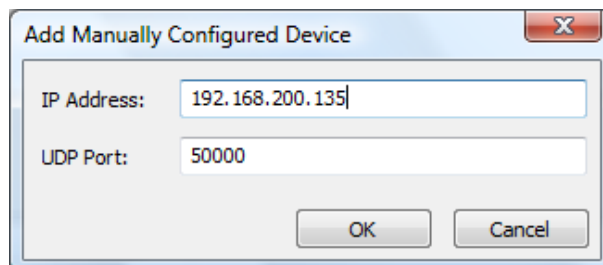


Figure 4: The parameters to use for searching for APEQ™ devices over network.

Click **Refresh** to re-scan the network for configured devices.

## MANAGING APEQ™ HARDWARE

### UPLOADING FILTERS

To upload a filter to a channel of the APEQ™ device, select the channel in the channel list and click the **Browse...** button. A file open dialogue will open and allow to select an **.FIR** file.

An alternative way to upload a filter is to drag it from the file system or from CONEQ™ Workshop and drop it onto the required channel in the channel list.

To load the filter of the currently selected channel to all other channels, click on the **Copy Filter To All Channels** button.

### MODIFYING FILTERS

There are cases when the loaded filters require adjustments (to account for the properties of the room, speaker distance, level). The APEQ™ Communication Tool provides several means to do such adjustments.

#### Gain

It is possible to attenuate each channel down to -12 dB. To do that, select the required channel and use the upper slider to adjust the level. Alternatively, enter a value in dB (in the range from -12 to 0) in the text field beside the slider.

#### Delay

It is possible to add a delay for each channel up to 5 ms. To do that, select the required channel and use the lower slider to add the delay. Alternatively, enter a value in milliseconds (in the range from 0 to 4.999) in the text field beside the slider.

### Additional equalization

It is possible to add additional equalization to each channel individually or a single equalization to all channels simultaneously. Applying an EQ is done by selecting a channel and clicking the **Edit...** button located beside the **Additional EQ** check-box on the main window.

The EQ Editor (see figure 5) allows to create the equalization curve from up to 12 parameter sets. The created EQ curve is used to modify the CONEQ™ correction filter that is loaded in the APEQ™ device. The EQ curve can also be saved in a file and re-used for other projects as well as used in the CONEQ™ Workshop application.

If **Same EQ for All Channels** is checked then the same EQ will be applied to all channels.

If **Apply Immediately** is checked then every change is processed and sent to the APEQ™ device immediately.

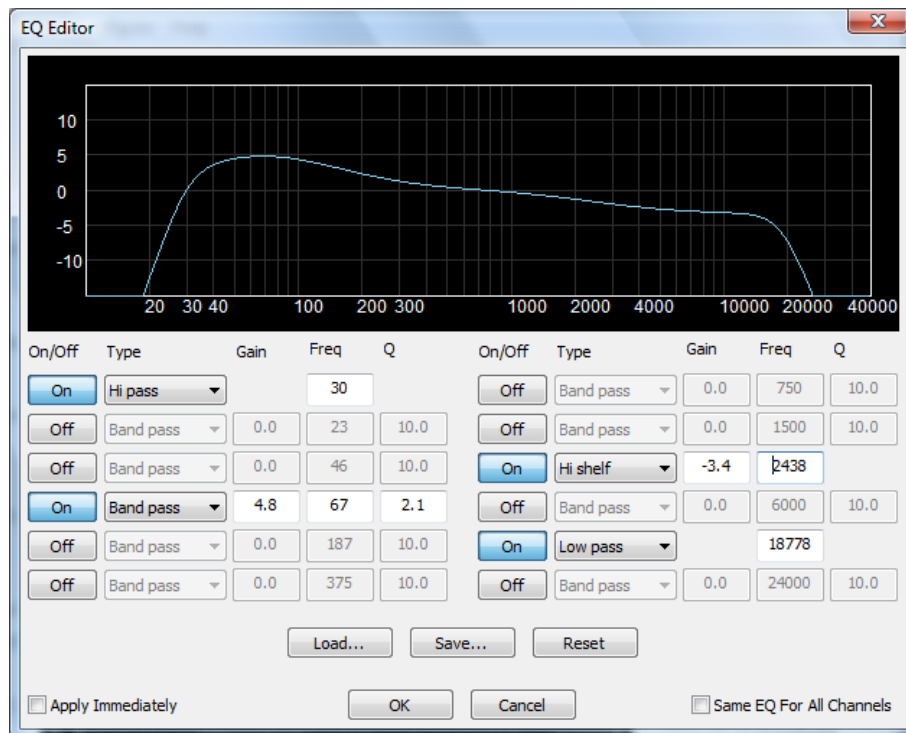


Figure 5: The EQ Editor window.

## PRESETS

Presets in APEQ™ Communication Tool are named sets of filters and their modifications. They can be used to quickly bring the connected APEQ™ unit to a saved state. A preset includes the filters for each channel and current modifications to each filter (the gain, delay and EQ). Presets are stored locally on your computer.

### Saving current state as a preset

To create a new preset, open the APEQ™ Communication Tool, bring the APEQ™ device to the desired state and click the **Save As Preset** button. The dialogue will be opened that allows to enter the name of the new preset. If an existing preset is selected from the list then it will be overwritten with the new data.

### Applying a preset to connected device

To apply an existing preset to the connected device, select the preset from the list of presets.

### Deleting a preset

Press the **Remove** button. A dialogue will open that allows selecting one or more presets to remove.

## SETTING APEQ™ SAMPLE RATE

The CONEQ™ filtering engine of the APEQ-8pro device can operate at four sample rates: 44.1, 48, 88.2, and 96 kHz, when an external Word Clock generator is connected to the APEQ™ device. When no Word Clock generator is connected, the CONEQ™ engine in APEQ-8pro can operate at either 48 or 96 kHz. To change the CONEQ™ engine sample rate, choose **Configure**⇒**Selected APEQ Unit...** The dialogue as on figure 2 will open. Select the desired CONEQ Sample Rate and click **OK**.

**IMPORTANT!** Please note that the sample rate of the loaded filters must match that of the CONEQ™ engine. Otherwise the APEQ™ device will not perform filtering.

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