Parametric Equalizer Tool

USER MANUAL

(for software version 1.0)

REVISION HISTORY

Revision 1 (2009.02.26) – Initial revision

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1. INTRODUCTION

Real Sound Lab Parametric Equalizer Tool allows you to synthesize Target Curves (Equalization Curves) from parameters set. Maximum 12 parameter sets together may be combined to synthesize final curve.

Parametric Equalizer Tool may be used either standalone, or together with APEQ Communication Tool. Target curves created in the latter case may be applied directly to CONEQ Correction Filter files prior to their sending to APEQ-2pro device.

PRESETS functionality allows user to store set parameters for later recall.

1.1. ABOUT THIS MANUAL

All example pictures shown in this manual are made for Parametric Equalizer Tool running under Microsoft Windows XP SP3 with default theme installed. Application and its dialog window appearance may vary depending on operating system installed and its settings.

2. APPLICATION INSTALLATION AND START

2.1. APPLICATION VERSIONS

See file “PE1_history.txt” in application folder.

2.2. HARDWARE REQUIREMENTS

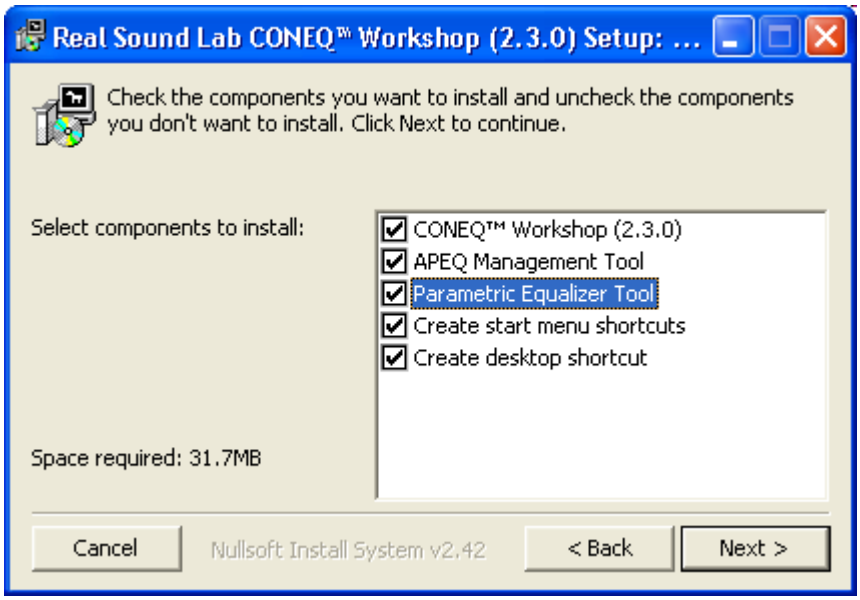
Hardware requirements are at the same level as hardware requirements for operating system used.

2.3. SOFTWARE REQUIREMENTS

Supported operating systems are: Microsoft Windows 2000, XP and Vista.

2.4. SOFTWARE INSTALLATION

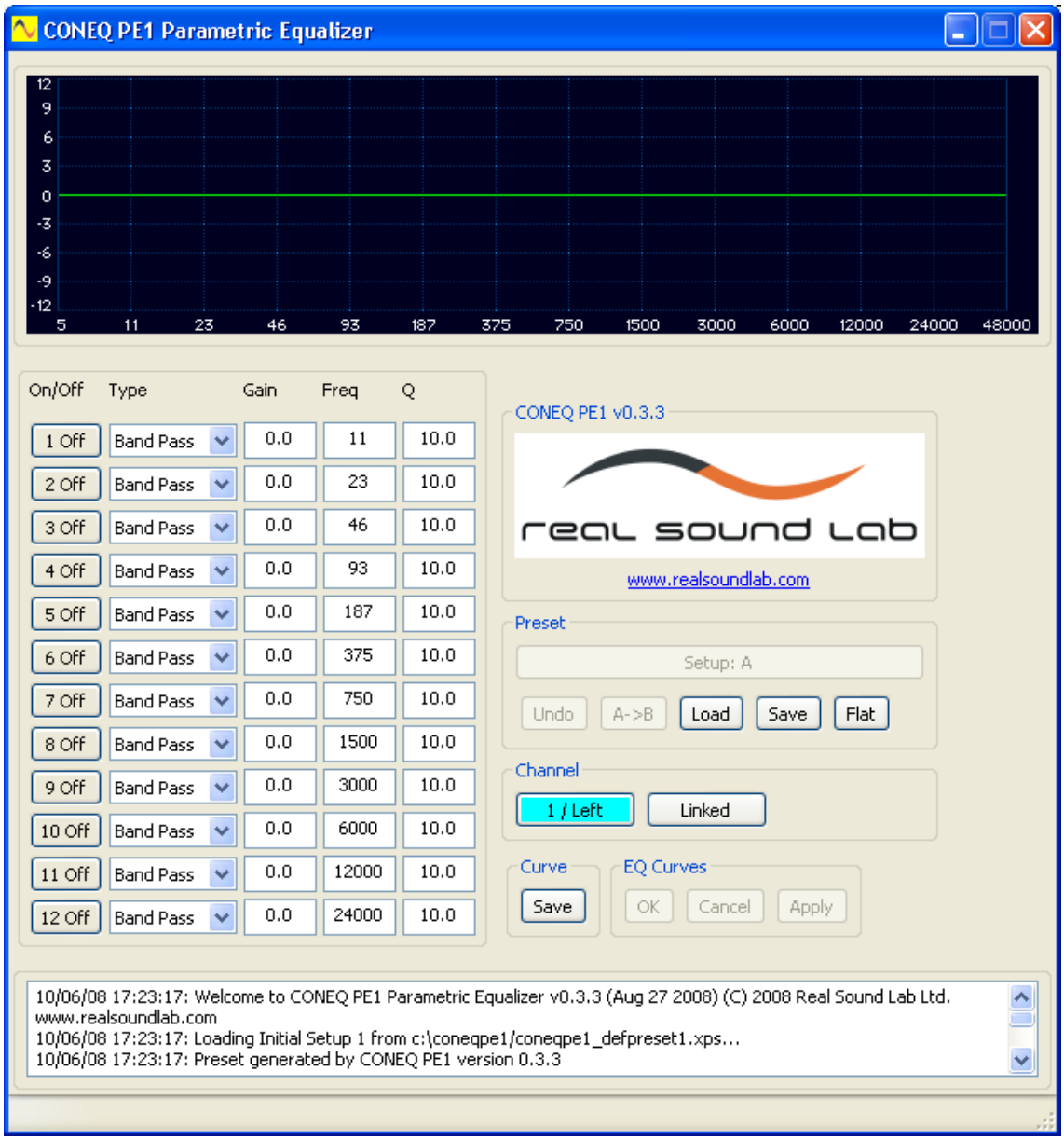
Parametric Equalizer Tool is installed by the CONEQ Workshop package installation. When installing CONEQ Workshop, select Parametric Equalizer Tool (default, see picture 2.4.1).



Picture 2.4.1. Selecting Parametric Equalizer Tool in the process of CONEQ Workshop installation

2.5. RUNNING PARAMETRIC EQUALIZER TOOL AS STAND-ALONE APPLICATION

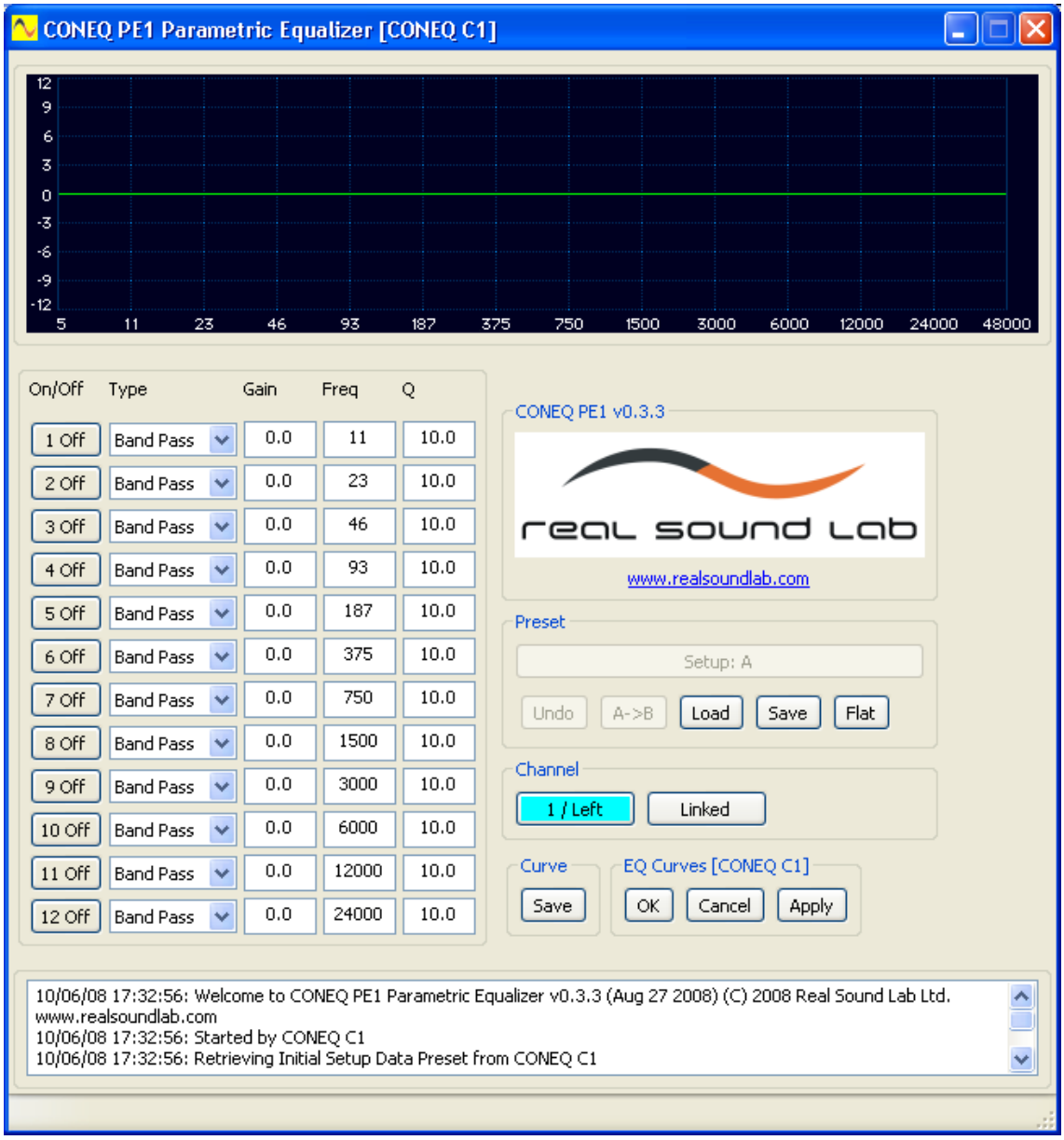
To start application standalone, run application executable or use Windows Start menu. At first, start application will automatically create all necessary folders and files. Buttons in “EQ Curves” field of the main window are not active in standalone mode.



Picture 2.5.1. Parametric Equalizer Tool main frame (Standalone)

2.6. RUNNING PARAMETRIC EQUALIZER TOOL FROM APEQ COMMUNICATION TOOL

Consult APEQ Communication Tool User Manual for information on how to start Parametric Equalizer Tool from it. After initialization, Parametric Equalizer Tool will request initial settings from host application and will open main frame (picture 2.6.1).



Picture 2.6.1. Parametric Equalizer Tool main frame (started from APEQ Communication Tool)

2.7. APPLICATION VERSION INFORMATION

Application version may be found next to Real Sound Lab`s logo in the main frame as well as in log message window (bottom of the main frame).

3. PARAMETRIC EQUALIZER

Parametric Equalizer allows user to synthesize correction curve using a few sets of parameters. Each parametric set is used to calculate its resulting AFR (Amplitude-Frequency Responce), and all of AFRs are combined together.

Parametric Equalizer Tool supports 12 parameter sets and 5 types of correction curves, which may be used in any combinations: Band Pass, Low Shelf, Hi Shelf, Low Pass and Hi Pass.

After combined AFR is calculated, it may be used either to generate Target Curve file (used, for example, by CONEQ Workshop software), or to directly apply AFR to APEQ-2pro Correction Filter files (using APEQ Communication Tool), thus correcting resulting AFR.

3.1. EQUALIZER DISPLAY

Equalizer display (top of the application frame) shows resulting curve of all 12 equalizer filter combinations, immediately after any active filter parameter change.

Channel combined AFRs are shown with different colors: Channel 1 with cyan, Channel 2 with green color. If both channel AFRs are equal (channels are linked, for example), combined AFR is shown in green.

Equalizer display scale is logarithmic and constrained with frequency range of 5 ... 48000 Hz and amplification range of -12 ... +12 dB.

3.2. EQUALIZER NAVIGATION AND CONTROL

To enable any of 12 parameter sets (filters) for current channel, click its “On/Off” button. Button will lighten with channel color (see chapter 3.1) displaying that the filter is On and active. To disable filter, click this button again.

After clicking button, it becomes a keyboard input focus and may be switched On/Off using “Space” key. “Tab” key will move keyboard focus to next Equalizer control, while key combination “Shift+Tab” will return it. Use these key combinations to navigate over all equalizer controls.

Using mouse or moving keyboard focus into and using arrow keys, select required filter type from drop-down menu.

Enter Gain, Frequency and Quality values (not all are needed for each filter type – see individual filter types chapters below) in appropriate fields. Each value change will be immediately displayed on Equalizer screen, if this filter is On.

Filter parameters may be also modified by placing mouse cursor inside the appropriate field, pressing left mouse button and moving mouse up-down (for Gain and Quality) or left-right (for Frequency) while keeping left mouse button down. Equalizer screen will update in real time on mouse move.

Value change limits for all filter types are:

Gain: -20 ... +20 dB

Frequency: 5 ... 48000 Hz

Quality: 0.1 ... 100

NOTE *Use combination of few filters with the same Frequency and Quality parameters to reach gain over +/-20 dB*

Use “Flat” button in “Preset” field of the main application frame to completely reset all filters.

3.3. BAND PASS FILTER

Band Pass filter amplifies or rejects defined band.

This filter is used as a default choice at application start.

Picture 3.3.1. Band Pass filter

By using mouse, enter or modify Gain, Frequency and Quality values in the respective fields (see chapter "Equalizer navigation and control" for control description). If you enter value manually, move cursor focus to another place (clicking to another control or using TAB key) to apply value.

3.4. LOW SHELF FILTER

Low Shelf filter amplifies or rejects low frequency region of resulting AFR.

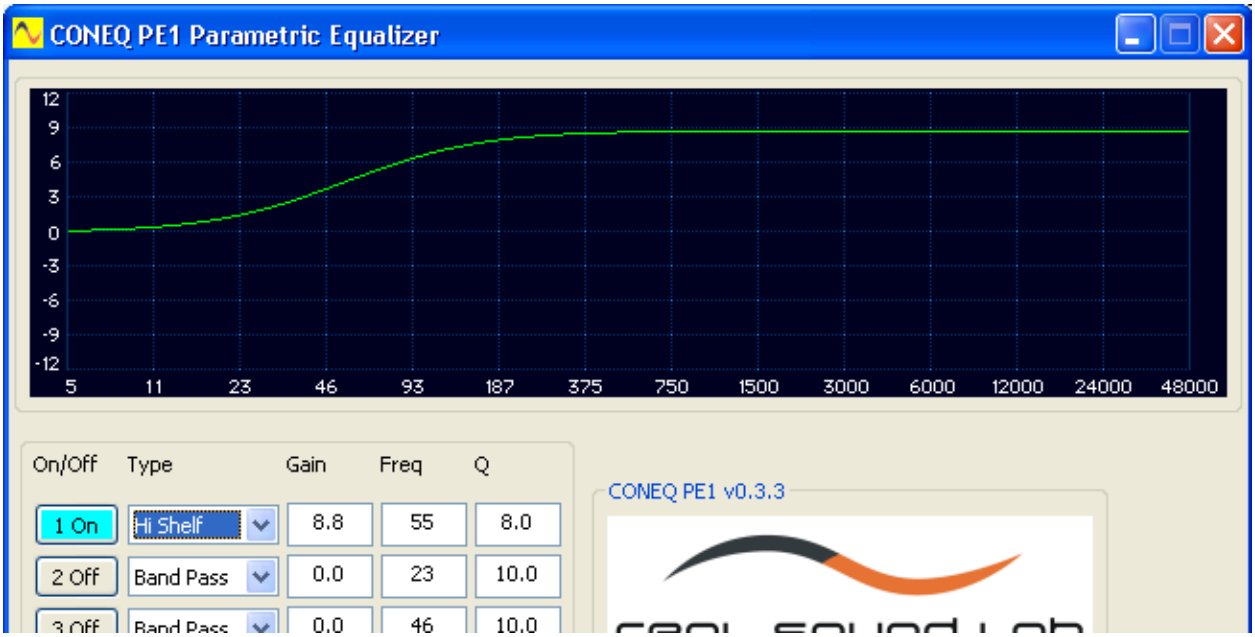
Picture 3.4.1. Low Shelf filter

By using mouse, enter or modify Gain and Frequency values in the respective fields (see chapter “Equalizer navigation and control” for control description). If you enter value manually, move cursor focus to another place (clicking to another control, or using TAB key) to apply value.

Quality value is ignored for this filter type.

3.5. HI SHELF FILTER

Hi Shelf filter amplifies or rejects high frequency region of resulting AFR.



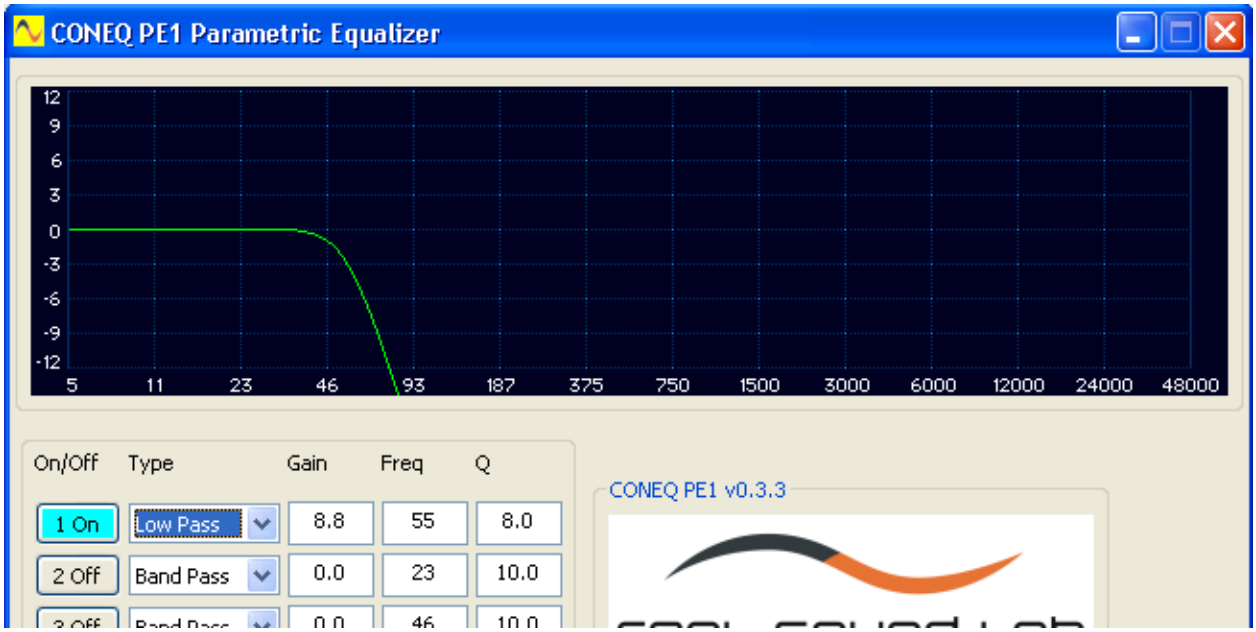
Picture 3.5.1. Hi Shelf filter

By using mouse, enter or modify Gain and Frequency values in the respective fields (see chapter “Equalizer navigation and control” for control description). If you enter value manually, move cursor focus to another place (clicking to another control, or using TAB key) to apply value.

Quality value is ignored for this filter type.

3.6. LOW PASS FILTER

Low Pass filter effectively rejects high frequency region of resulting AFR.



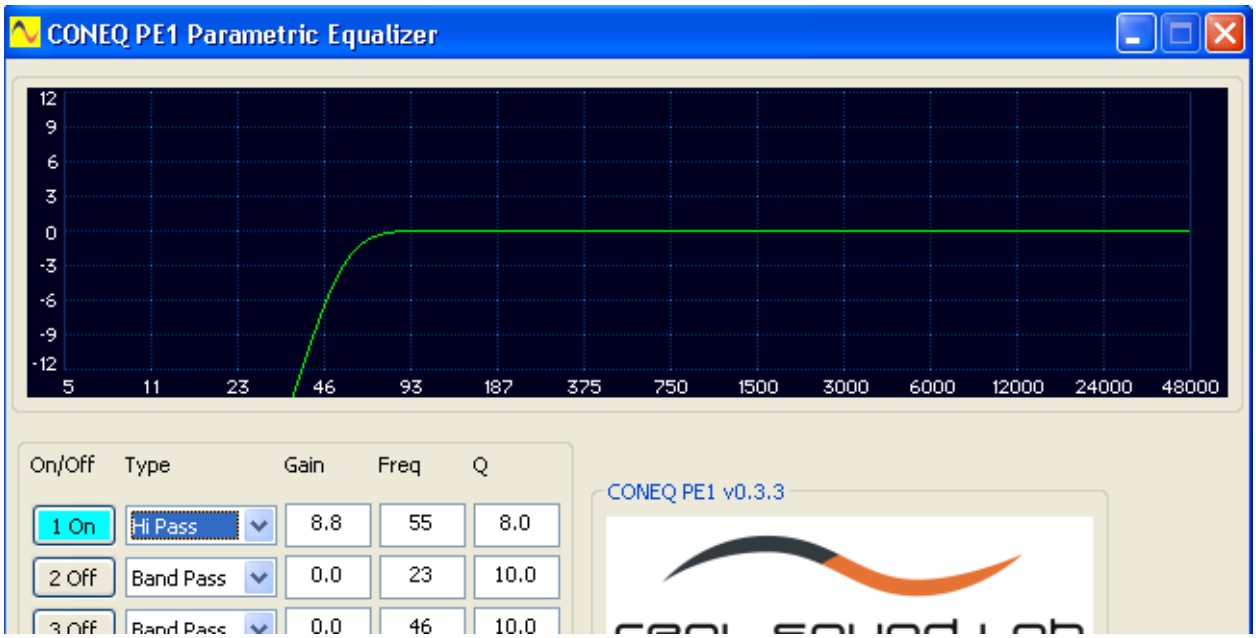
Picture 3.6.1. Low Pass filter

By using mouse, enter or modify Frequency value (see chapter "Equalizer navigation and control" for control description). If you enter value manually, move cursor focus to another place (clicking to another control, or using TAB key) to apply value.

Gain and Quality values are ignored for this filter type.

3.7. HI PASS FILTER

Hi Pass filter effectively rejects low frequency region of resulting AFR.



Picture 3.7.1. Hi Pass filter

By using mouse, enter or modify Frequency value (see chapter “Equalizer navigation and control” for control description). If you enter value manually, move cursor focus to another place (clicking to another control, or using TAB key) to apply value.

Gain and Quality values are ignored for this filter type.

3.8. EQUALIZER CHANNELS

Equalizer supports 2 channels and has 2 channel control modes – Linked and Unlinked. Linked mode is used by default – in this mode both channel parameters are changed simultaneously. Unlinked mode allows to modify each channel`s parameters separately.

Linked mode may be switched On/Off by clicking button “Linked”/”Unlinked”.

Channel may be selected by clicking button “1/Left” / “2/Right” in “Channel” field of the main application.

NOTE *At Unlinked --> Linked mode all changed parameters of currently selected channel will be copied to complementary channel, thus both channel equalizer settings becoming equal.*

“Channel” and “Linked” button labels are always shown as active channel and mode.

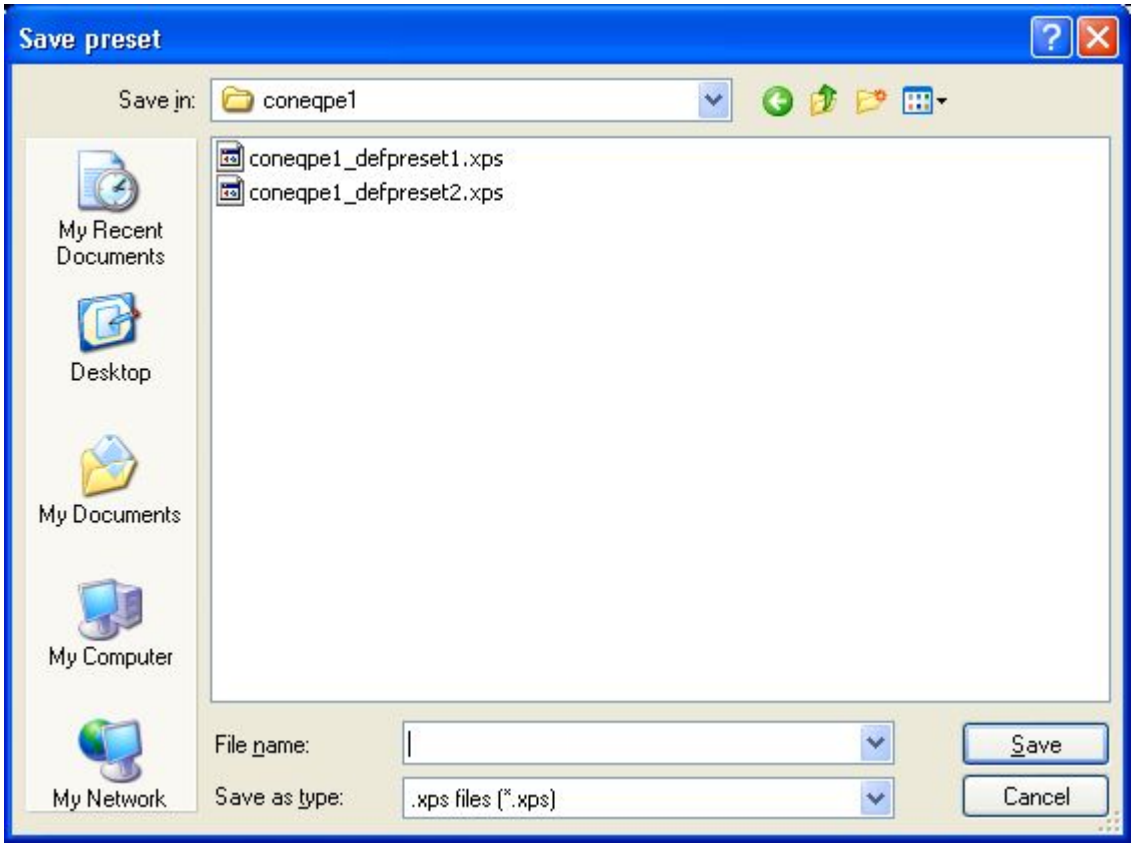
Channel button also will be colored by channel color – the same as used by equalizer display (see chapter 3.1).

4. PRESETS

Full parameter set for all channels may be saved to a single file as preset and called back later.

4.1. SAVE PRESET

To save preset, click “Save” button in “Preset” field of the main application frame.
“Save preset” dialogue window will open.

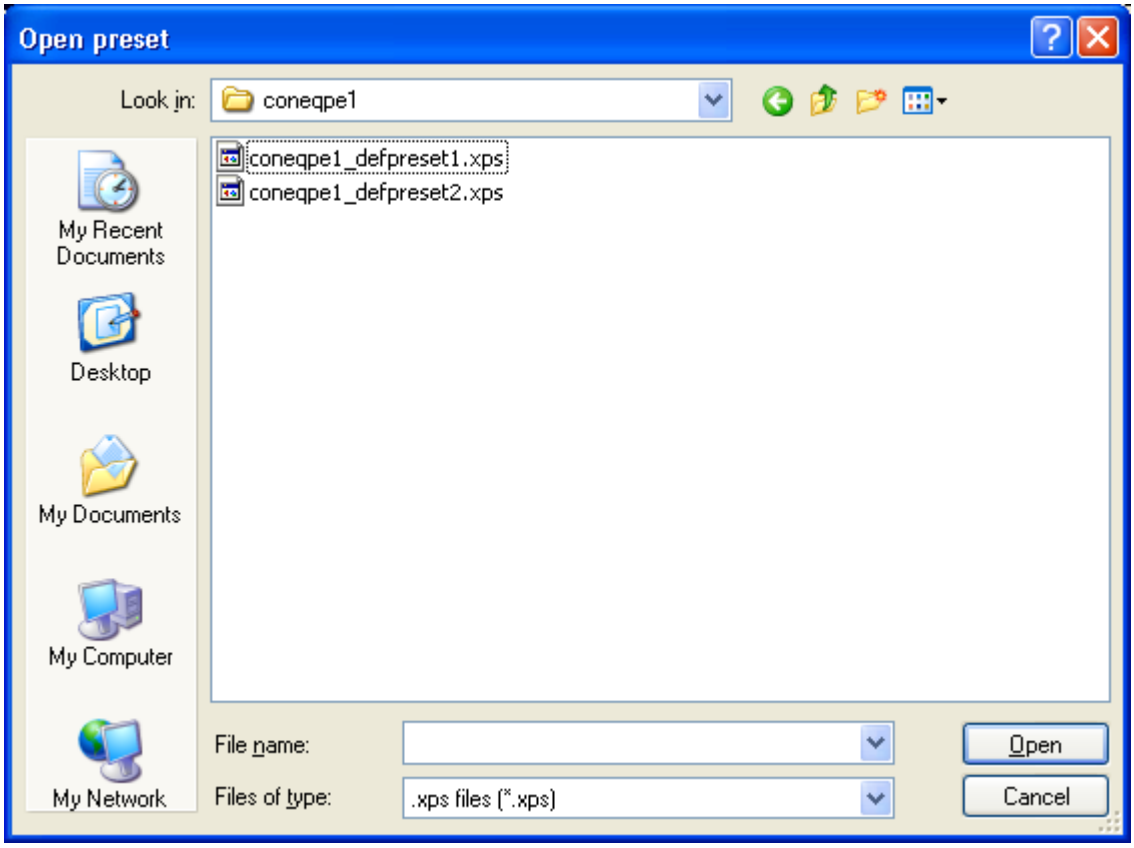


Picture 4.1.1. “Save preset” dialogue window

Enter path for preset file or browse it and click “Save” button.
Click “Cancel” button to cancel saving.

4.2. LOAD PRESET

To load preset, click “Load” button in “Preset” field of the main application frame.
“Open preset” dialogue window will open.



4.2.1. "Open preset" dialogue window

Enter preset file path or browse it. Click "Open" button.

Click "Cancel" button to cancel preset loading.

WARNING *Loaded preset parameters will overwrite current parameters.*

Preset files created by some industry-standard tools may be directly imported by Parametric Equalizer Tool software.

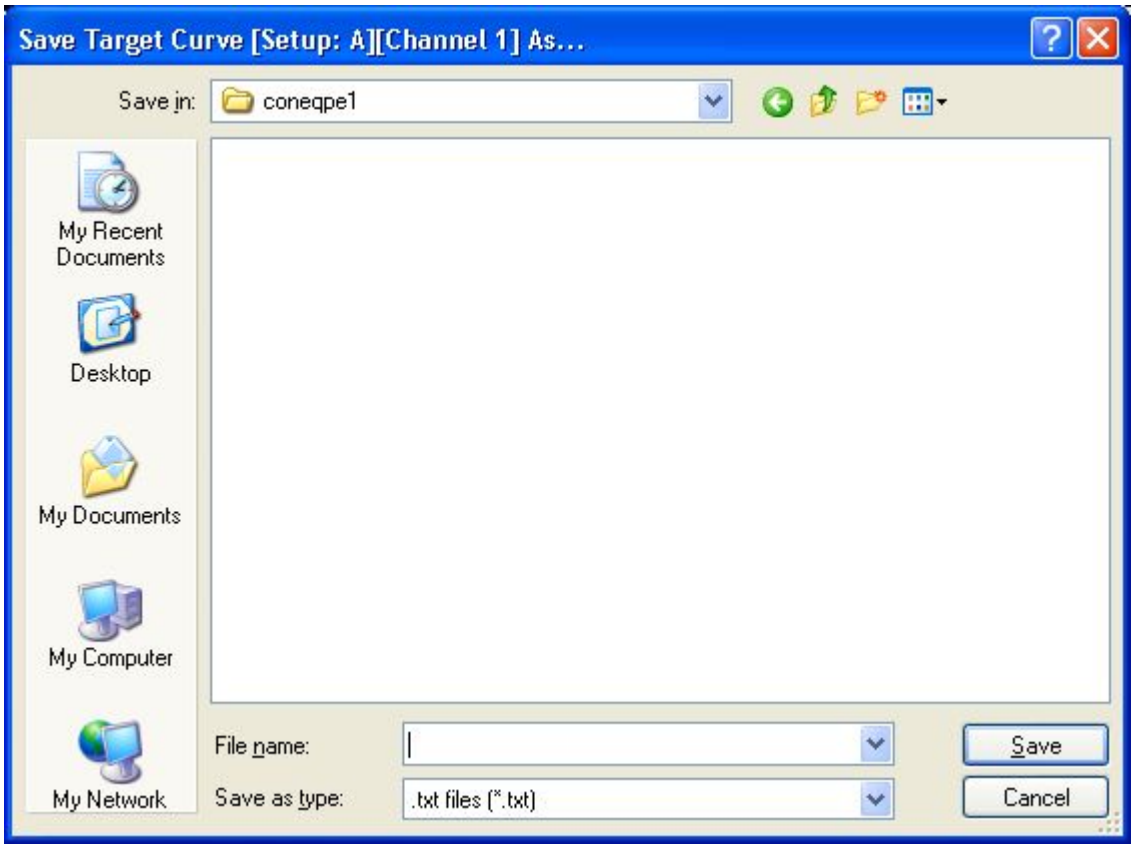
5. RESULTING CURVE

After all Equalizer parameters are set up as needed, resulting curve may be either saved to text-format ("Target Curve") file, or applied to CONEQ Correction Filter files with the help of the APEQ Communication Tool.

5.1. SAVE EQUALIZER CURVE

To save resulting equalizer curve ("Target Curve") for currently selected channel to the file, click "Save" button in "Curve" field of the main application frame.

"Save Target Curve" dialogue window will open.



Picture 5.1.1. "Save Target Curve" dialogue

Enter target curve file path or browse to it and click "Save" button. High-resolution curve will be calculated using current parameter sets and will be saved as text file.

Click "Cancel" button to cancel Target Curve saving.

Saved file has simple text format and can be imported by many industry-standard software tools including Real Sound Lab`s CONEQ Workshop software.

5.2. APPLY EQUALIZER CURVE TO CONEQ CORRECTION FILTER FILES

To Apply equalizer curves (for all channels) to the APEQ Communication Tool transferring Correction Filter files, click "Apply" button in "EQ Curves" field of the main application frame.

Click "OK" button in the same field to apply curve and immediately close Parametric Equalizer Tool application.

Click "Cancel" to cancel curve apply and close Parametric Equalizer Tool.

NOTE *Buttons in "EQ Curves" field are active, only if Parametric Equalizer Tool application was started by the APEQ Communication Tool.*

After applying, high-resolution curve will be calculated and sent to the hosting application - APEQ Communication Tool. Latter tool applies Target Curve to the currently selected Filter files for the both channels, and uploads corrected files to APEQ device automatically.

WARNING *If communication between APEQ Communication Tool and APEQ-2pro device is lost, Equalizer curve application process will exit with error.*

6. EXITING APPLICATION

To exit Parametric Equalizer Tool, simply close the application window.

Current settings are saved and later used at next application start.

Parametric Equalizer Tool started from APEQ Communication Tool will close automatically, if later application is closed or if user clicks buttons “OK”, “Cancel” in “EQ Curves” field of Parametric Equalizer Tool main frame.

7. UNINSTALLING APPLICATION

Application can be removed by the CONEQ™ Workshop uninstaller tool.