

Congratulations on purchasing the Resolut processor! Our goal is to offer a product with uncompromising sound quality and extensive customization options. We are sure that during the operation of our processor you will fully experience all its advantages and get real pleasure.

Before installing and configuring the processor, please read this Manual carefully. This will help you easily and quickly connect the processor and understand all the variety of its settings.

The manufacturer reserves the right to make changes to the product and software without further notice in order to further improve them and improve consumer properties.

IN WHICH CARS CAN THE PROCESSOR BE USED

The processor is designed for installation in cars with a 12 Volt DC power supply system with a negative pole connected to the body. Connecting to a power supply with other characteristics (for example, with a voltage of 24 Volts or with a positive pole on the body of the car) can disable it.

Normal long-term operation of the processor is provided at a supply voltage of 10 to 16 Volts. Short-term drawdowns of the supply voltage (no more than 2-3 seconds) up to 6 Volts are allowed. This feature allows you to use Resolut processors, including in cars with a Start/Stop system.

HOW TO CHOOSE A PLACE TO INSTALL THE PROCESSOR

Install the processor only inside the passenger compartment or in the trunk of the car, where it is guaranteed not to be exposed to high humidity, dust and dirt or excessive heat.

Do not install the processor in the engine, cargo compartment or outside of the vehicle.

Try to avoid installing the processor in close proximity to the electronic components of the car, as they can affect its operation and give hints and noises.

The air around the processor must circulate freely to remove excess heat from the case.

The chosen location should exclude the possibility of mechanical damage to the housing and the connected cables.

Make sure that the installation of the processor will not affect the functioning of the mechanical and electrical components of the car, during the installation the pipelines of the brake and fuel systems of the car and other important elements will not be damaged.

The processor must be securely attached. Poor mounting can cause damage to it during operation, as well as damage to cables, audio system components or on-board electronics and cause serious damage to car passengers and other vehicles.



HOW TO PLAN THE PROCESSOR CONNECTION

Do not connect the processor power to the power wires of the standard units, because the standard circuits are not designed to power additional devices. The preferred option is to connect to a common audio system power distributor.

Plan your audio system configuration in advance, including sources, amplifiers, and speakers. We recommend taking a piece of paper and drawing a diagram of the future audio system in order to visually determine all the necessary connections and choose the best route for laying cables.

Try to avoid laying signal cables near the electronic components of the car, as they can give hints and noises.

Evaluate which cables and how long are needed to connect the processor (power, signal, to connect an optional control panel, etc.).

Choose the right cross-section of the supply wires. We recommend using wires with a cross section of at least 1.5 sq. mm. Optimally – 2.5 sq. mm.

Newly laid wires must be protected by fuses. When connecting to the distributor, use a fuse in the processor circuit corresponding to the cross section of the supply wires. When using 1.5-2.5 square mm wires, use a 15 Amp fuse.

All cables and wires newly laid to the processor must be securely fixed along the entire length, must not come into contact with moving mechanisms, sharp edges or heating elements. Provide the cables with proper mechanical protection along their entire length. Use special braids, bushings, etc. for this purpose. Do not lay cables outside the car.

INPUTS AND OUTPUTS OF PROCESSORS IN THE BASIC CONFIGURATION

The view of the processors in the basic version is shown in the following figures (view from the input and control connectors and view from the output connectors). Figure 1 shows the location of the inputs on the example of M-DSP, and Figure 2 on the example of H-DCP:

Fig. 1



Fig. 2



1. Coaxial. Plug for connecting a digital signal source SPDIF with coaxial output. This input supports digital stream in stereo format. Multi-channel signal playback (Dolby Digital, DTS) is not supported.

To connect sources to this input, use only high-quality specialized cables with RCA connectors designed for transmitting digital signals.

Attention! Do not connect the analog outputs of the source to this input, because it is intended exclusively for receiving signals in the SPDIF format.

2. Optical. Plug for connecting a digital signal source SPDIF with optical output (Toslink format). Digital stream in stereo format is supported. Multi-channel signal playback (Dolby Digital, DTS) is not supported.

To connect sources to this input, use only high-quality specialized Toslink optical cables designed for digital signal transmission.

3. USB. Plug for connecting a computer or laptop to configure the processor using the Resolut DSP Tool software.

Attention! This USB connector is not a USB Audio input! To organize the USB Audio input, you need to install the optional Resolut USB-IN HQ module. The procedure for installing and initializing it is given in this manual below.

4. Control. Plug for connecting an optional wired processor control panel and other optional control devices (volume control potentiometer, preset selector, etc.).

Attention! Do not connect devices other than those described in this manual to this plug and do not supply power to its contacts, because this may disable the processor.

5. Power. Plug for connecting the processor power supply, control wires for turning on/off the processor and controlling the on/off of amplifiers and other audio system devices.

Before starting work on connecting the processor, turn off the power to the audio system, and in cases where this is not possible, ensure proper protection against short circuits during installation work. Accidental short circuits can lead to failure of not only the processor and other components of the audio system, but also elements of the on-board electronics.

Attention! Be careful when connecting the supply wires, connect them strictly according to the marking on the processor case! The confused polarity of the power supply can disable the processor!

The wires are connected via a removable terminal block. Remove it from the connector, loosen the clamping screws with a thin flat screwdriver, insert the wires with stripped insulation into the appropriate slots and tighten the screws. The optimal length of the cleaned section of the wire is 7-8 mm.

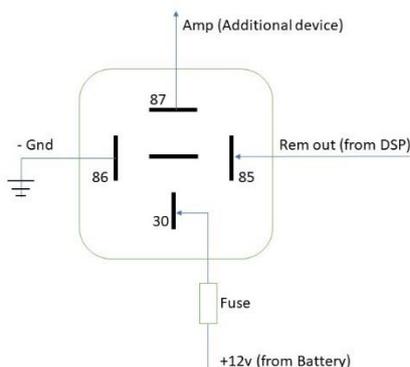


Purpose of the terminals of the power connection terminal:

- **+12 Volt** - the plus power cord of the processor.
- **GND** – negative processor power wire (mass).
- **Remote IN** – input for controlling the on and off of the processor. The processor turns on when a control voltage of 12 volts is applied to it and turns off when the power is removed from it (the minimum operating voltage is 5 Volts).
- **Remote OUT** – the output for controlling the on and off of the audio system amplifiers.

Attention! This output is not intended for powering amplifiers, it is a control, and is connected to the Remote IN terminals of the connected amplifiers.

This output can control the activation of several amplifiers at once. However, if you plan to use this output to control the activation of additional devices (cooling fans, lighting, etc.), use the decoupling relay by connecting it according to the scheme shown below.

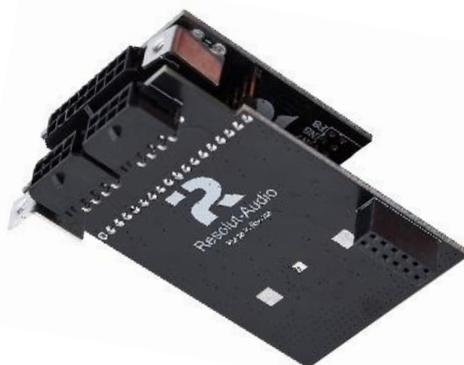


6. Outputs. Analog signal outputs of the processor for connecting amplifiers.

CONNECTING THE PROCESSOR TO AN ANALOG SIGNAL SOURCE

To organize analog inputs, you need to purchase an optional Resolute A-IN module. This module allows you to connect to the processor both sources with line outputs and sources without

line outputs, but with outputs to acoustic systems. The installation and initialization procedure are described later in this manual.



The Resolute A-IN module has the following characteristics:

- Number of analog inputs – 8 (linear or high-level)
- Maximum signal on line inputs – 3 V (RMS)
- Maximum signal on high-level inputs - 45 V (RMS)
- Dynamic range of analog-to-digital conversion – 112 dB

the input type is either high-level or linear, but not both at the same time! Combination is allowed – for some input channels, you can use a linear connection type, and for others – a high-level one.



CONNECTING THE PROCESSOR TO THE SOURCE VIA THE USB-AUDIO INTERFACE

To organize the possibility of connecting sources to the processor that have the ability to output an audio stream via the USB interface (specialized players, smartphones, computers, etc.), it is necessary to purchase and install an optional Resolut USB-IN HQ

module into the processor, as well as to carry out its initialization procedure.



The Resolut USB-IN module has the following characteristics:

- **USB Version** – USB 2.0
- **USB Connector type** – USB-B
- **The ability to charge the connected device** – no
- **The resolution of the received audio stream** - up to 32 bit / 320 kHz



INTEGRATION OF THE PROCESSOR INTO THE AUDIO SYSTEM VIA THE MOST BUS 25

The optional Resolut M25-IN module provides the ability to integrate the Resolut processor into standard audio systems running on the MOST bus 25. It must be purchased, installed in the processor and initialized according to the procedure described later in this manual.



The Resolut M25-IN module has the following characteristics:

- **Optical interface** – MOST BUS 25
- **Current consumption in the off state** – no more than 200mA
- **The maximum number of received channels** - 8
- **Maximum power consumption in working condition** – no more than 900 MW



PROCEDURE FOR INSTALLING OPTIONAL MODULES INTO THE PROCESSOR

In the basic equipment, Resolut processors are equipped with a coaxial digital input SPDIF and an optical digital input Toslink format.

If necessary, the processor equipment can be supplemented with analog inputs, inputs for direct connection to the MOST bus, USB-Audio input, etc. To do this, you need to purchase and install an appropriate optional module in the processor.

The number of optional modules available for purchase and installation in Resolut processors is constantly growing. The current list of available modules, their capabilities and technical parameters can always be found on the official website <https://resolut.ru> in the Accessories section.

Attention! Only original Resolut modules are compatible with Resolut processors! Do not use third-party boards and devices, it may damage the processor!

Step 1. To install an optional module of additional inputs into the processor, unscrew the screws on the top cover of the processor and remove the cover.



On the board you will see free space and contact "combs" for installing optional modules.

Attention! Only one module can be installed on each slot! Each module has only one correct installation option! Install the modules exclusively on the places designated for them, specified in the description for each of them! An attempt to install the module in the wrong place may cause damage and automatically removes the processor and the module from the warranty!

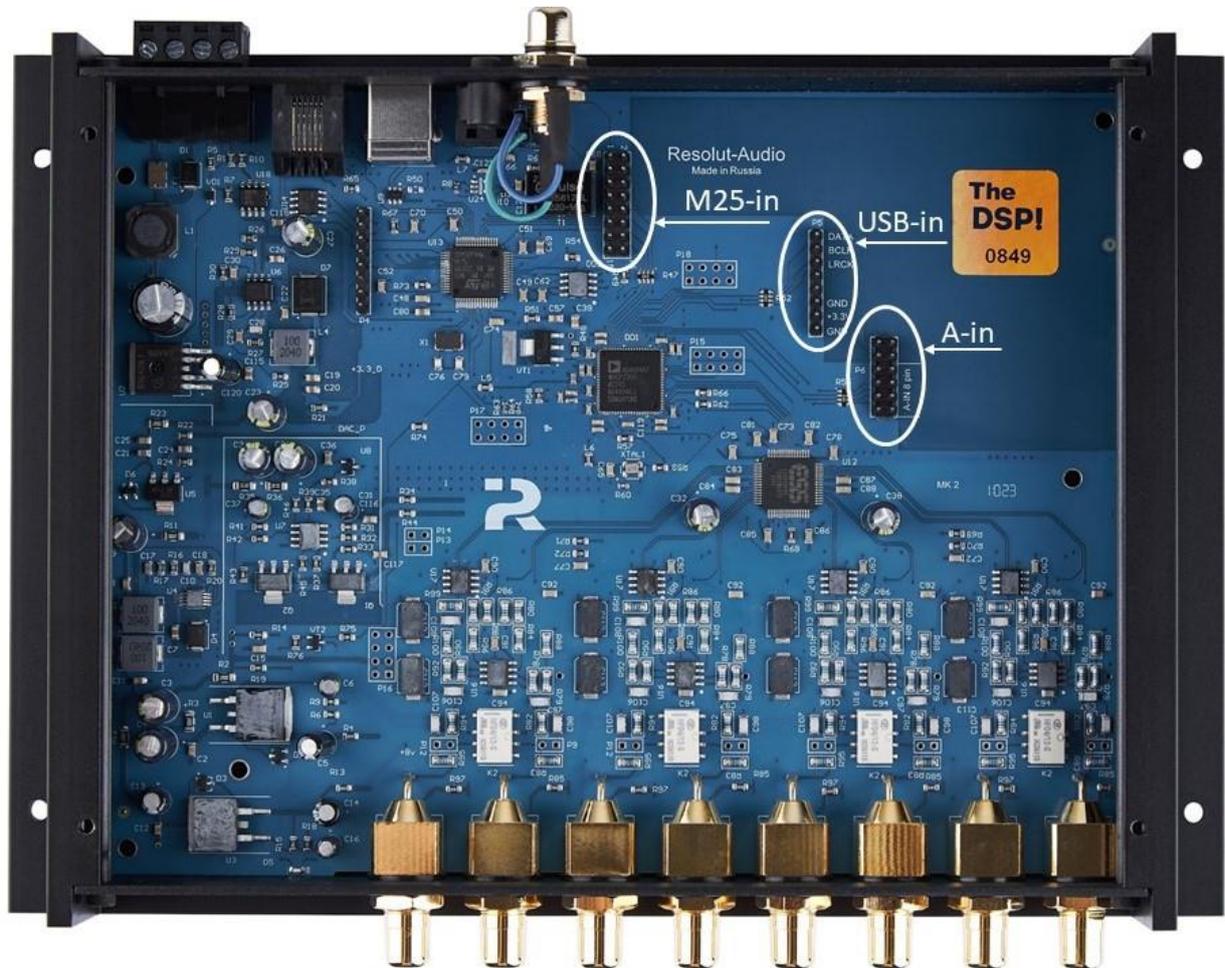
Step 2. Unscrew the screws holding the panel and gently pull it aside, taking care not to damage the connectors and wires attached to them.



Step 3. The processor panel has windows for the connectors of external connections of newly installed modules, which are closed with plugs in the initial state. When installing the module, it is necessary to carefully, trying not to damage the board and processor elements, break out the corresponding plug to free this window.



Step 4. Carefully, trying not to bend the contacts of the "comb", install the module in the appropriate slot. Make sure that all the contacts of the "comb" fall into place on the opposite part of the module.



Step 5. Return the panel to its place and secure it with screws. The external connectors of the module should be exactly in the panel window and in the same plane with the panel.

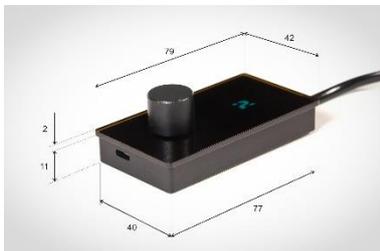


Make sure that the module is inserted tightly, all the contacts of the "comb" have completely entered their corresponding places on the module, and the connectors of the external connections of

the module are exactly in the panel window. Return the previously removed cover to the processor housing.

CONNECTING AN OPTIONAL WIRED REMOTE CONTROL RESOLUT SRC TO THE PROCESSOR

The Resolut SRC (Smart Remote Control) control panel is not in demand in every system, therefore it is not included in the basic configuration and is offered as an option. It is designed for operational control of the master volume in the audio system, source selection, selection of preset configurations (presets) stored in the processor, adjustment of the bass level, etc.



Resolut SRC is connected to the processor via the Control connector. To connect, use the cable that comes with the remote control. Do not use third-party cables for this.



Attention! The USB-C connector located on the side of the remote-control case is used only for service purposes! Do not connect any devices to it, this may cause damage to the remote!

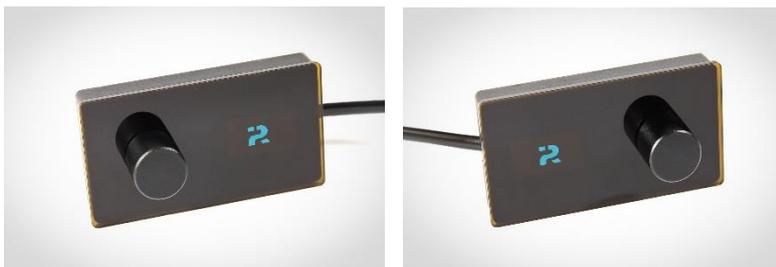


The Resolut SRC remote control can be installed both on the surface and by mortise mounting. For convenience, there are magnets on the back of the remote control, and a metal mounting plate is included. In the simplest case, you can fix the bar in any suitable place and fix the remote control on it with one movement.



When choosing a place for the remote control, use common sense and safety considerations. Operational control of the audio system should not cause inconvenience and distract from driving. We do not recommend installing the remote control in direct sunlight, near heating elements and in places where it may be exposed to moisture.

The remote control has the ability to select the orientation of the screen. Using it, you can choose the most convenient installation option – with the right or left position of the encoder. The screen orientation is changed via the Resolut DSP Tool software, the procedure is described later in this manual.



THE PRINCIPLE OF OPERATION WITH THE OPTIONAL RESOLUTE SRC REMOTE CONTROL

In the main mode of operation, the remote control displays the current master volume level, which can be quickly changed by rotating the encoder.



By clicking on the encoder, you can open the menu of functions that are controlled by the remote control. The photo below shows an example of such a menu. We are trying to improve our product, so its appearance and the set of supported functions may vary depending on the firmware version of the remote control and processor.



In the setup mode, by rotating the encoder, you can navigate through the menu items. After selecting the function, you want to perform (for example, adjust the subwoofer level, change the source or select a preset, etc.), confirm the action by pressing the encoder. By rotating the encoder and confirming the selection by clicking on it, set the necessary function values.



To return to the main mode, you can select Exit from the menu and press the encoder. This is an optional procedure, since the

function call menu is active only for a short time, sufficient for unhurried selection of a particular function. During a few seconds of inactivity, the remote-control switches to the main mode of operation automatically.

THE WAY TO ADJUST THE VOLUME WITHOUT USING THE REMOTE CONTROL RESOLUTE SRC

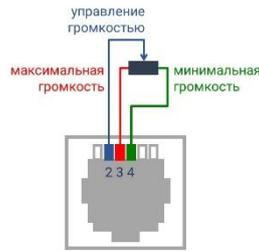
If it is necessary to adjust the overall volume in the system using processor tools (for example, if the source does not have volume control), we strongly recommend using the optional Resolut SRC wired remote control. In addition to volume control, it allows you to switch sources and tuning presets, adjust the bass level in the system (subwoofer level or using parametric adjustment), and also provides some other features.

However, in some cases, when the additional functions of the remote control are not in demand, and only volume control is required from it, you can do it in a simplified way – using a 10-22 kOhm potentiometer. To do this, you can use, for example, any suitable wired subwoofer level control panel, which some amplifiers are equipped with.



To connect to the Resolut processor, a flat "telephone" cable with at least three cores is used, terminated with an RJ11 connector. For reliable operation of the remote control, try to choose a high-quality cable with copper cores. Do not choose a cable with CSA (Copper Clad Aluminum) cores.

Attention! Before connecting, you must first check the pinout of the connector for compliance with the connection scheme to the Resolut processor. If there is a mismatch, soldering of the wires in the remote control is required!



INSTALLING THE RESOLUT DSP TOOL SOFTWARE TO CONFIGURE THE PROCESSOR

You can always download the most up-to-date version of Resolut DSP Tool on the official website <https://resolut.ru> in the Downloads section. Run the downloaded file and follow the on-screen instructions to install the software. After installation, the program is ready to work.

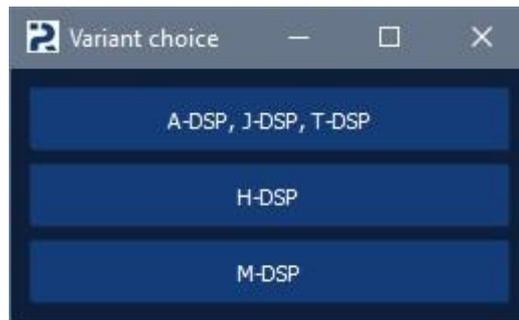
Useful advice. You can run the Resolut DSP Tool program offline, i.e., without connecting the processor to the computer. This is a good opportunity to get acquainted with its interface and capabilities in advance.

Useful advice: The autonomous launch of the Resolut DSP Tool program is convenient for pre-creating an audio system configuration. You can save the created configuration to a file on your computer, then connect the processor and load the created configuration into it.

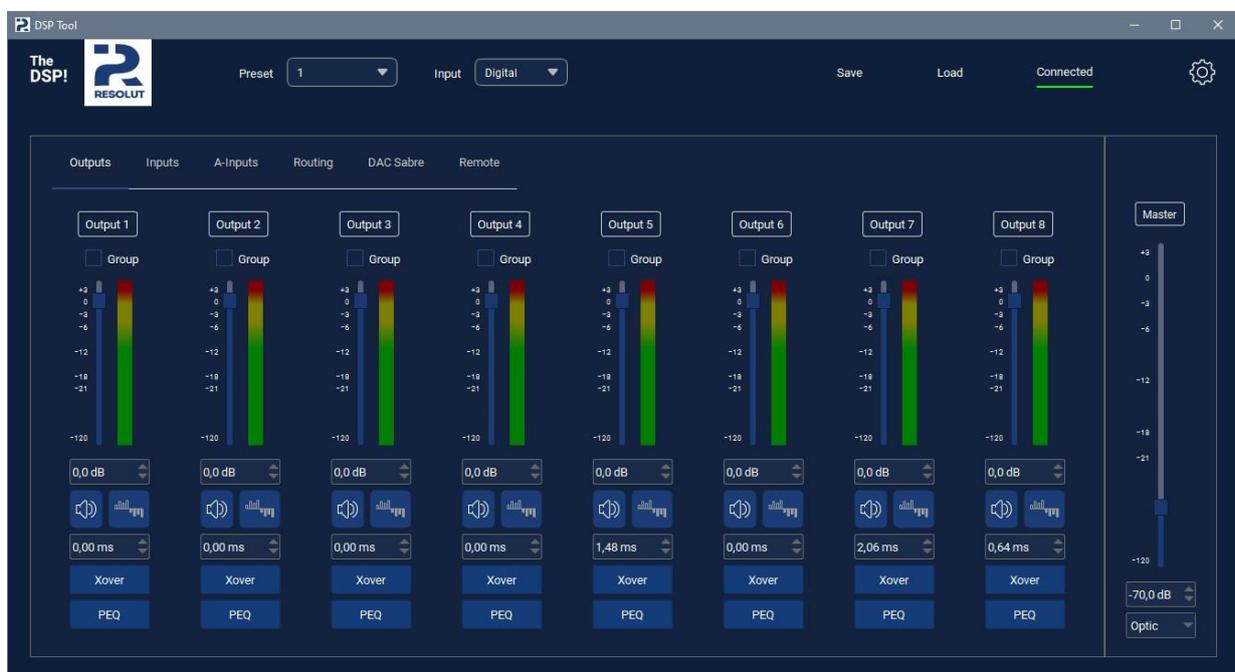
The procedures for setting up, saving the configuration in the processor memory and on the computer, as well as loading the configurations stored on the computer into the processor memory are described in this manual below.

LAUNCHING THE PROCESSOR SETUP PROGRAM AND ITS GENERAL APPEARANCE

When you run the **Resolut DSP Tool** program, you are prompted to select the processor model to be configured:



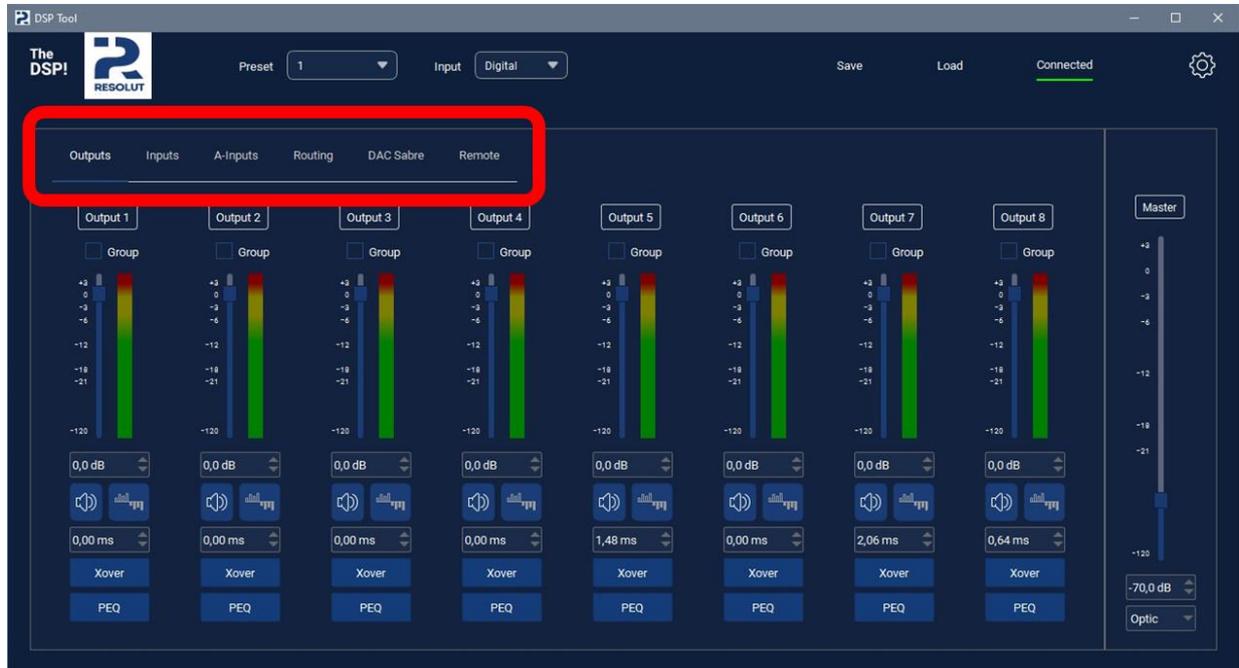
After that, the program goes to the main window, which looks like this. Below is an example window for an 8-channel Resolut T-DSP processor. For other processors, the program type has differences described later in this manual.



Useful advice: For convenience, you can rename the output channels by simply clicking on the name of the corresponding channel. The names are stored directly in the processor memory and are displayed in the program only when the processor is connected to the computer. When saving the configuration on the computer, this information is not saved.



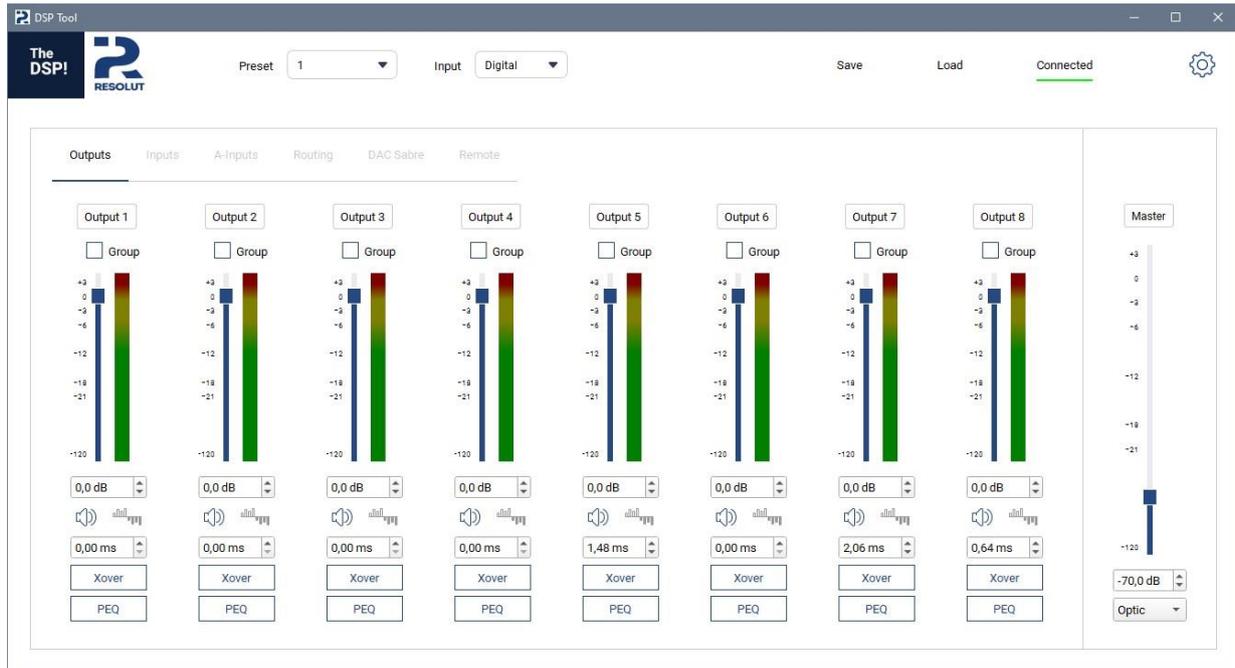
The main window of the program contains several tabs, navigating through which you get to the appropriate sections – input settings, channel routing, DAC settings, etc. To open the desired tab, simply click on its name (all available settings will be discussed later in this guide):



If desired, you can change the color scheme of the program from dark to light. To do this, click on the button with the gear icon in the upper right corner and uncheck the Dark Mode item in the drop-down list:



The program will take the following form:



Choose the color scheme that is most convenient for perception and comfortable for the eyes.

In addition, the following functions are available in the drop-down menu:

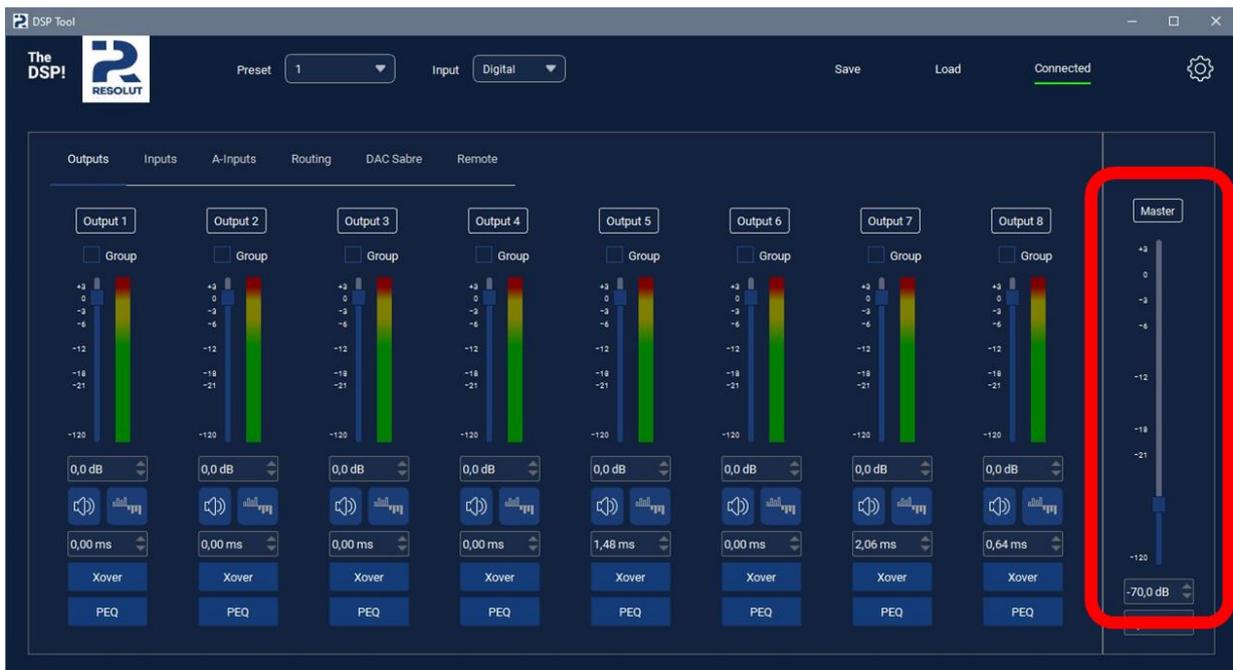
- **Read All** – read the current settings from the processor. If there are suspected temporary disconnections between the processor and the computer (for example, if the USB connector is accidentally touched, etc.), it is possible to read the current processor settings to resume their correct display in the control program.
- **Write Plugin** – updating the processor firmware or selecting the plug-in of the installed module in "manual" mode. Unlike the previous paragraph, it is suggested to select a file with a subroutine corresponding to the updated processor configuration.
- **Read Levels.** When this item is enabled, the indicator scales become active and begin to show the signal levels at the inputs and outputs of the processor in real time. This creates a small additional load for the processing power of the processor, so the function is disabled by default. But it can become a convenient and visual means of monitoring

signals during setup. You can enable it when you configure the processor configuration, and disable it when the configuration is complete.

- **Service** – a menu of service functions that are not used during operation, but may be needed during debugging of the processor (for example, restarting it).

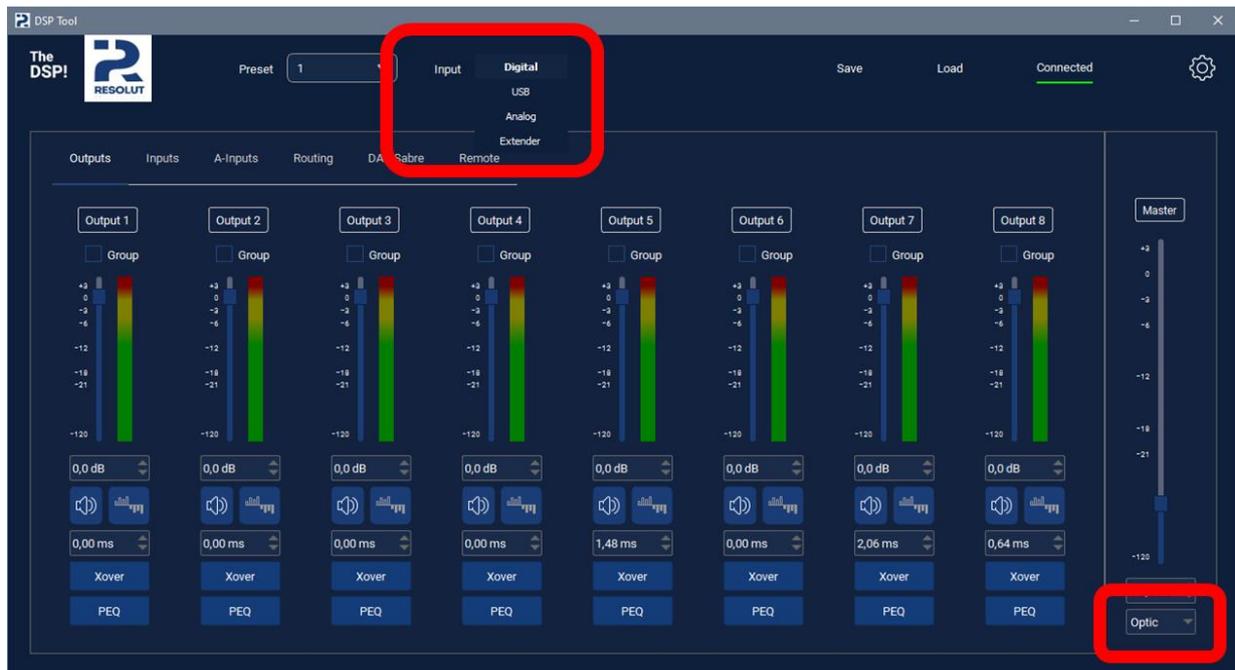
ADJUSTING THE OVERALL VOLUME FROM THE PROGRAM

When the setup program starts, it reads the current total volume level (master volume) from the processor memory and displays it on the screen. When the processor is disconnected from the computer, the current volume level is stored in its memory, and if the Resolut SRC control panel is connected to the processor, then after setting up, you can continue to adjust the volume from the remote.



SIGNAL SOURCE SELECTION

During the setup, you can quickly choose which of the inputs the signal should come from. The input is selected in the upper **Inputs** drop-down menu. If a digital input is selected, select its type in the lower drop-down menu - optical or coaxial:



A selection of the following inputs is available:

- **Digital optical**
- **Digital coaxial**
- **Analog** (only with Resolut A-IN expansion module)
- **USB-Audio** (only with Resolut USB-IN HQ expansion module)
- **MOST**, etc. (only with the Resolut expansion module installed in the Extender slot)

If the Resolut SRC control panel is connected to the processor, then after completing the setup program and disconnecting the processor from the computer, the source selection is available directly from the remote control.

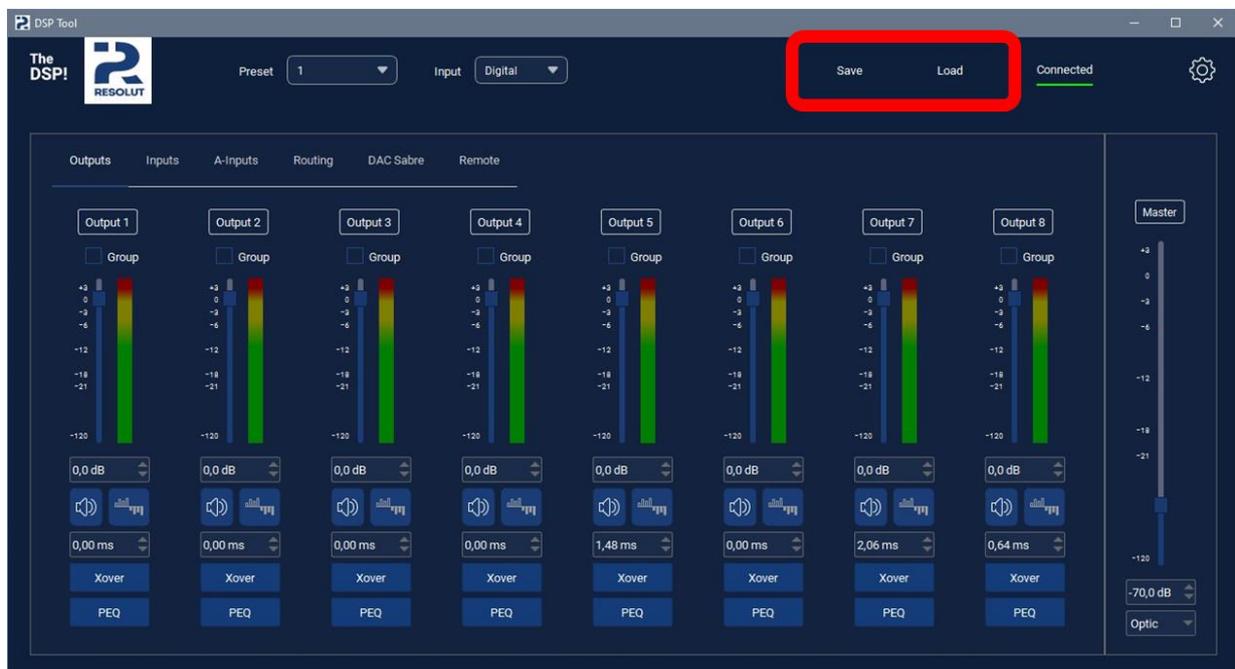
SAVING ON THE COMPUTER AND LOADING FROM THE COMPUTER INTO THE PROCESSOR MEMORY OF THE CONFIGURATION SETTINGS

You can save an unlimited number of configuration settings on your computer as files. This allows you to compare different configuration settings with each other, if necessary, return to previously created settings or, for example, share configuration settings with other users of Resolut processors. And for studios, this is a good opportunity to accumulate an archive of tuning

configurations for various cars, which will further accelerate the configuration of systems in similar cars built according to the same schemes.

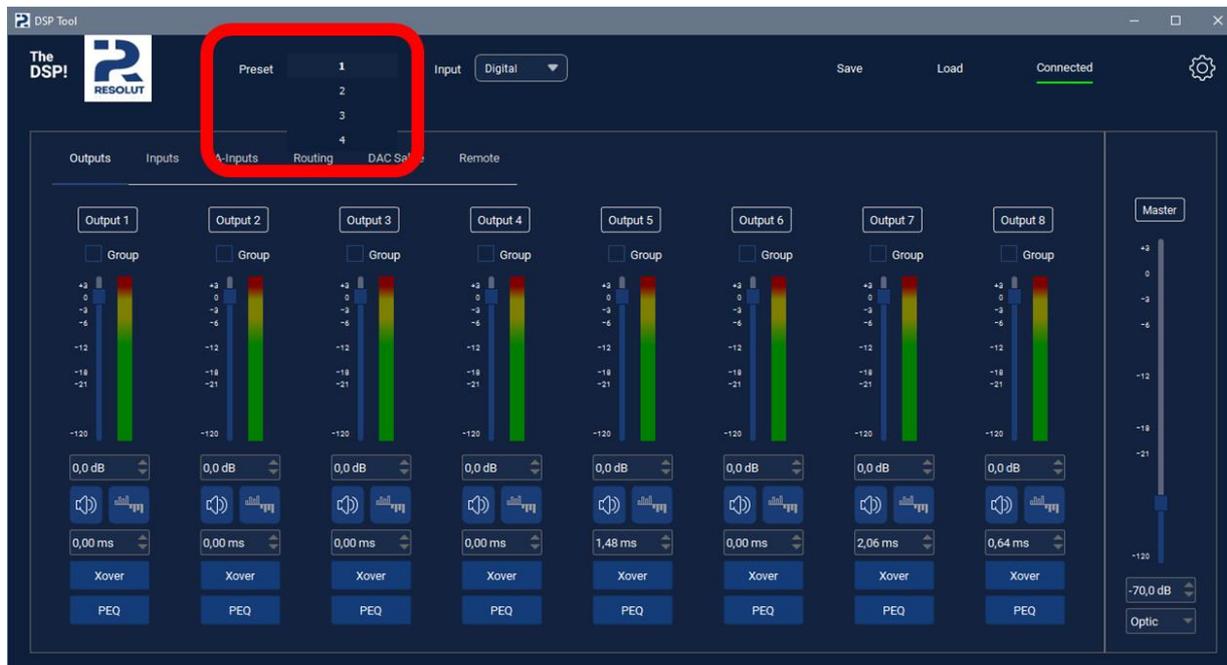
To save the current setup configuration, click **Save**, in the window that opens, specify the name under which the file will be saved, and save it.

To load the configuration previously saved on the computer, click **Load**, select the required file and open it. The previously saved states of filters, equalizers, delays, levels, polarity, channel muting, etc. will be loaded into the processor.



SELECTION OF A PRESET (A TUNING CONFIGURATION STORED IN THE PROCESSOR MEMORY)

You can store up to four presets (configured configurations) in the processor memory. The states of filters, equalizers, delays, levels, polarity, channel muting, etc. are stored in memory. Click on the preset selection window and select the desired one from the drop-down list.

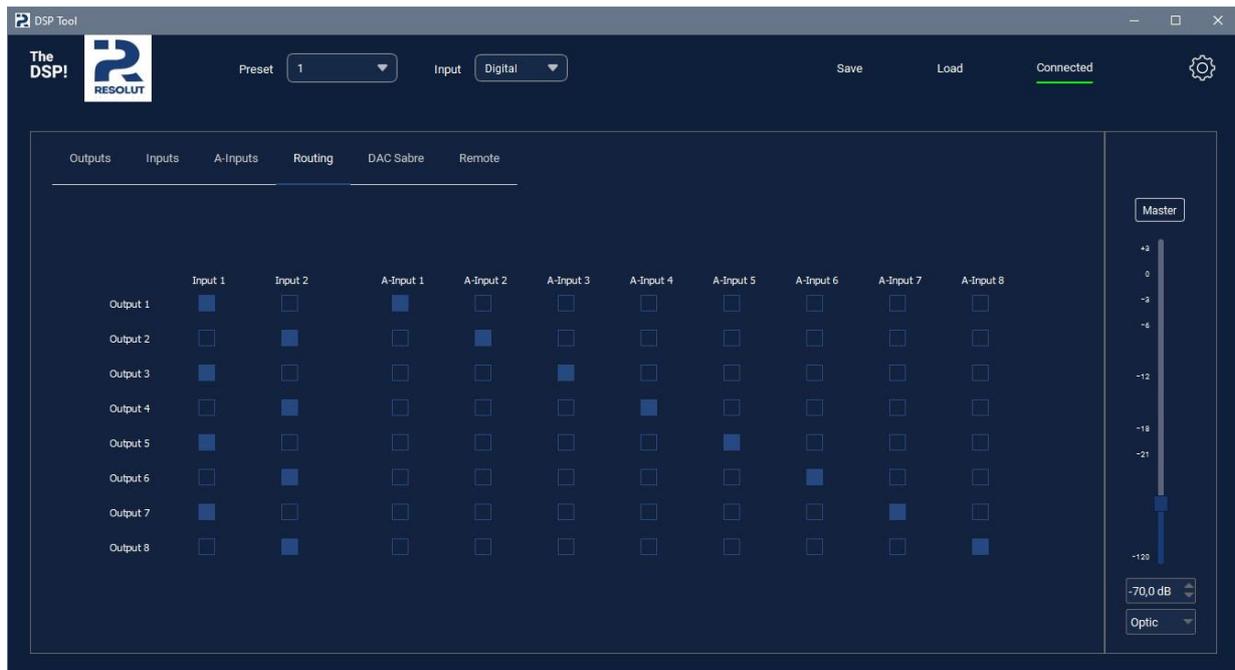


Useful advice. If you decide to create and save several tuning configurations in the processor, it is not necessary to start configuring each new preset from scratch. Save the current configuration to the computer as a file, change the preset in the processor and upload the saved configuration to the processor again. This way you will already have a "framework" in which you can make changes. This significantly reduces the setup time.

If the Resolut SRC control panel is connected to the processor, then after completing the setup program and disconnecting the processor from the computer, the preset selection is available directly from the remote.

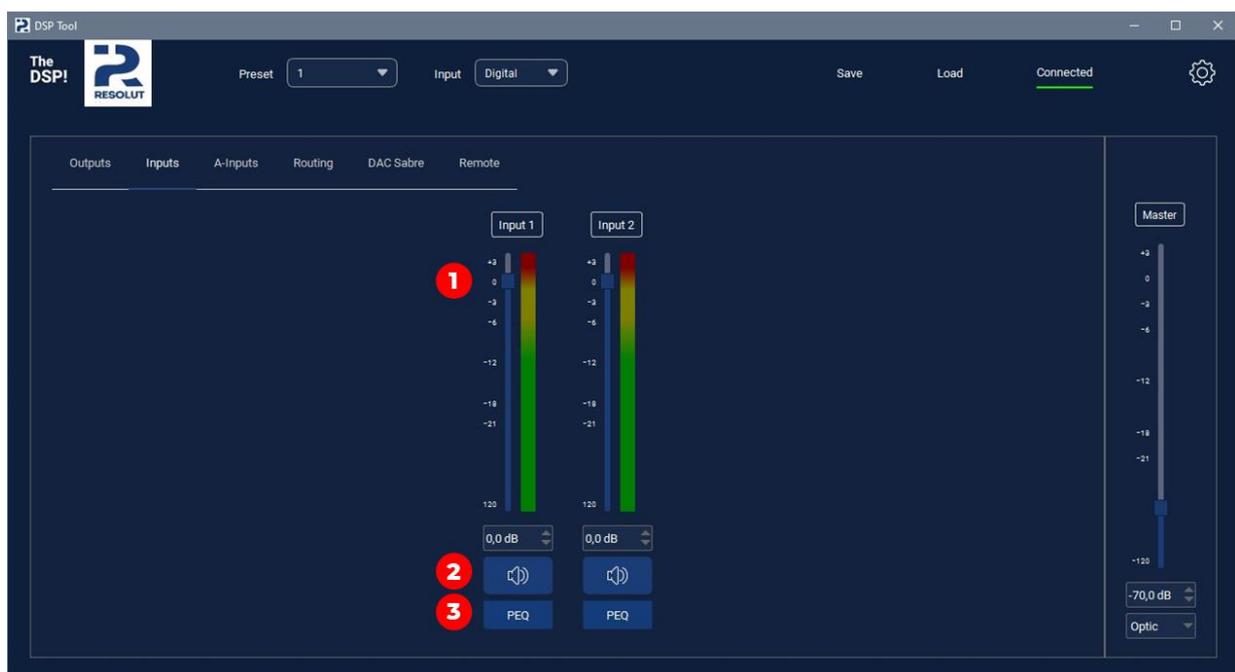
CHANNEL ROUTING

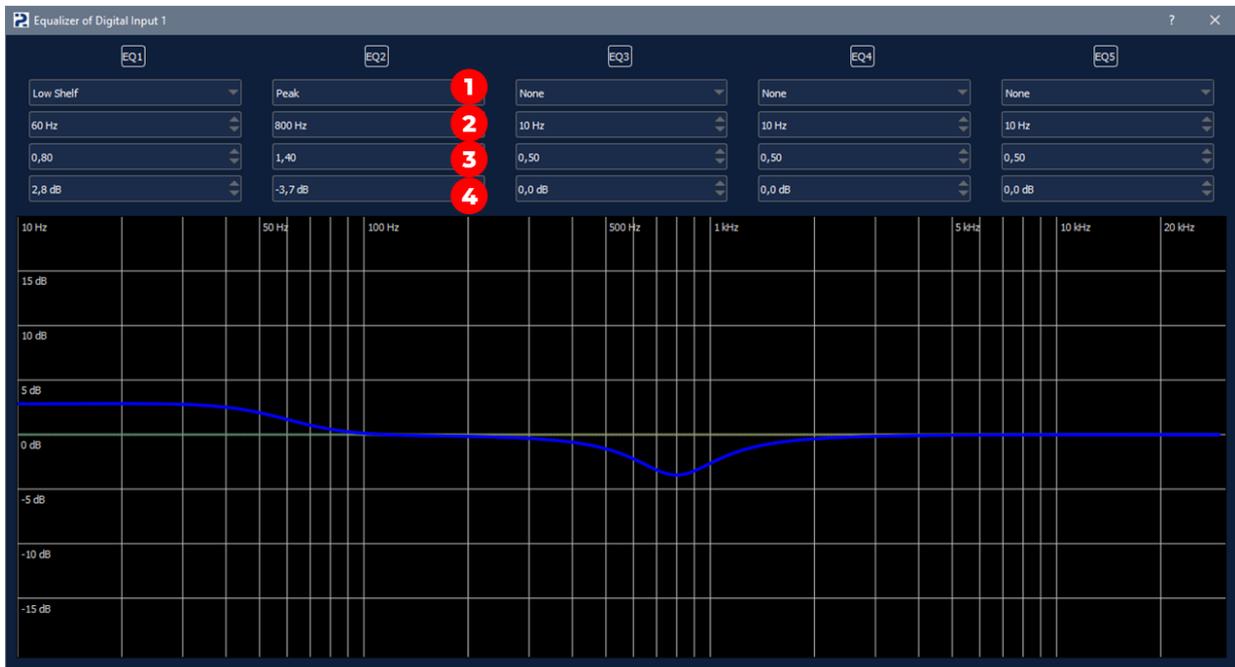
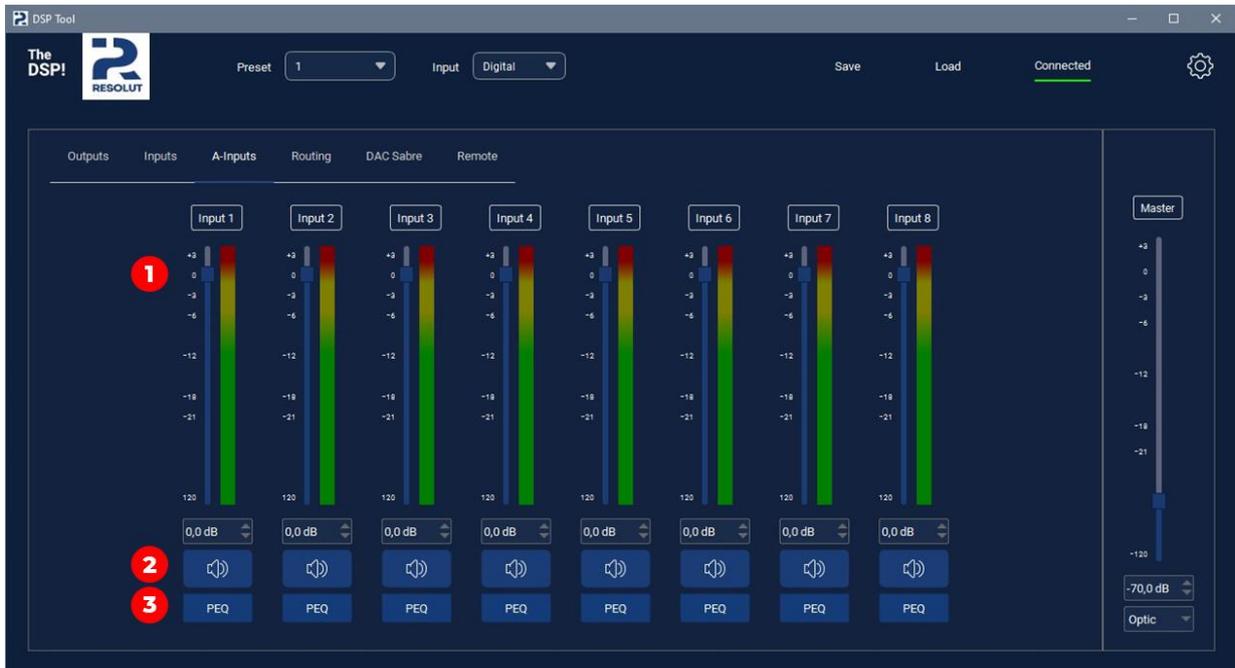
When you go to the Routing tab, the program displays the signal routing window. Here you can specify from which inputs to which outputs the signal will be received. The appearance and content of this window may depend on the processor model and the type of installed modules. Below is an example of a tab for the Resolut T-DSP processor:



SETTING UP INPUT CHANNELS

When you go to the **Inputs** tab, access to the input channel settings opens. The appearance of the tabs depends on the availability of installed modules, but the principle remains common to all Resolut processors in various configurations. The illustrations below show the view of the digital inputs and analog inputs tab for the Resolut T-DSP processor:





1. Choosing the type of signal correction:

- **Low Shelf and High Shelf** – adjustment of the frequency response by a "step".
- **Peak** – traditional equalization in a narrow frequency band.
- **All Pass 180** and **All Pass 360** are phase (all-permissive) filters.
- **Low Pass 12dB** and **High Pass 12dB** are additional low and high pass filters.

- **Subwoofer** – setting the frequency response correction to adjust the bass level using the optional Resolut SRC remote control with the Parametric mode selected. The operation of such a correction will be discussed further in the section settings of the wired remote control Resolut SRC.

2. Selection of the frequency at which the signal correction is performed

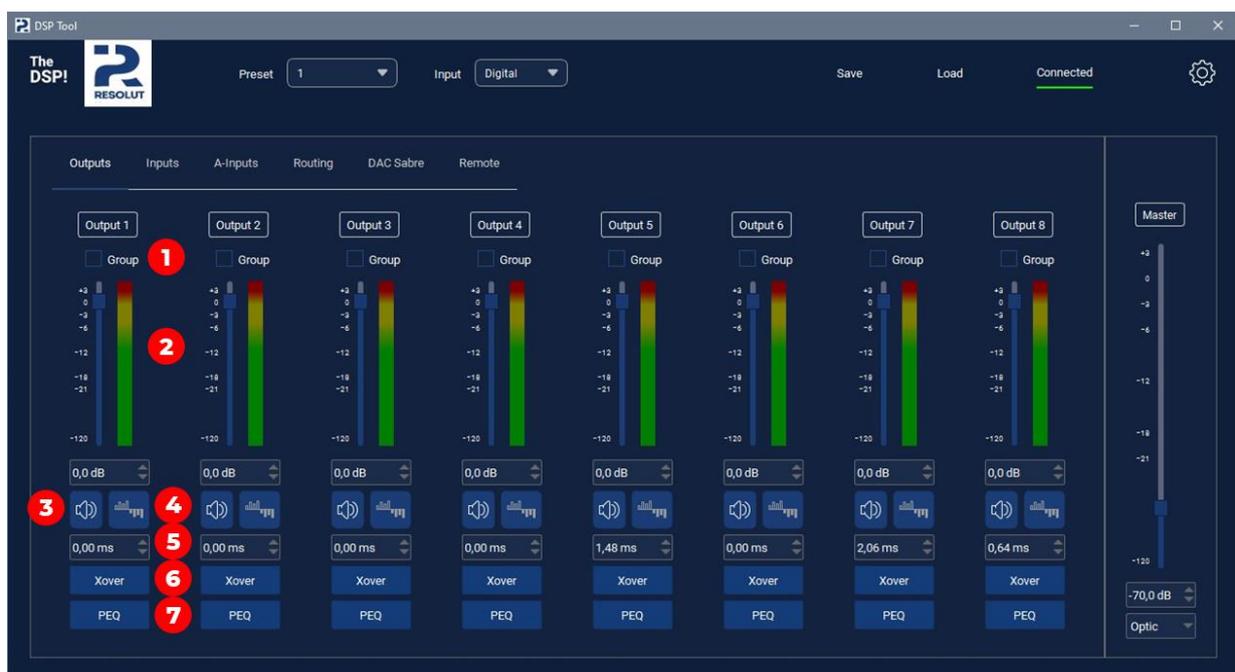
3. Q factor selection (correction band width)

4. Selection of the correction value

Useful advice: To reduce the computational load on the processor, use only the required number of lanes. In the remaining bands, leave the value None in the equalization type selection window.

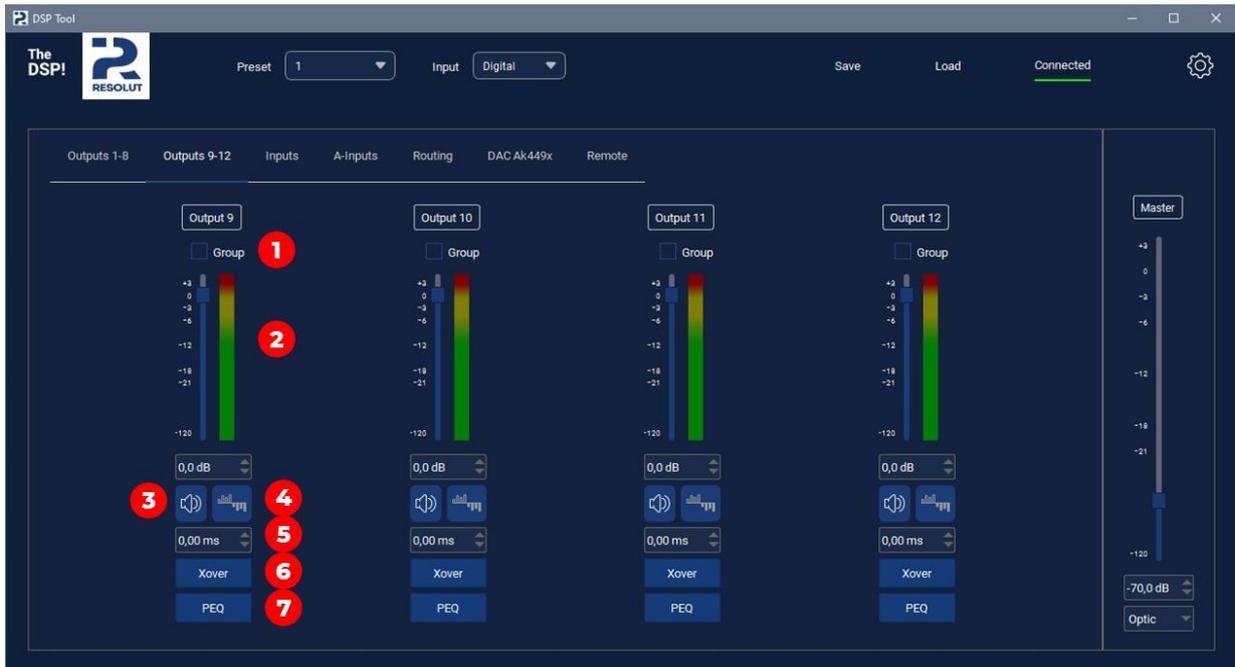
SETTING UP OUTPUT CHANNELS

The processor has the ability to independently configure each output channel. The adjustments are accessed through the main program window (Outputs tab). Below is an example window for an 8-channel Resolut T-DSP processor:



For DSP and DSP processors, there is an additional tab for channels 9-12 and 9-16, respectively. Below is an example of the

appearance of such an additional tab for a 12-channel Resolut H-DCP processor:



1. You can combine individual channels into groups (link) to jointly adjust levels, delays, polarity and mute. Grouping does not affect the filter and equalizer settings; they are in any case configured individually for each channel.

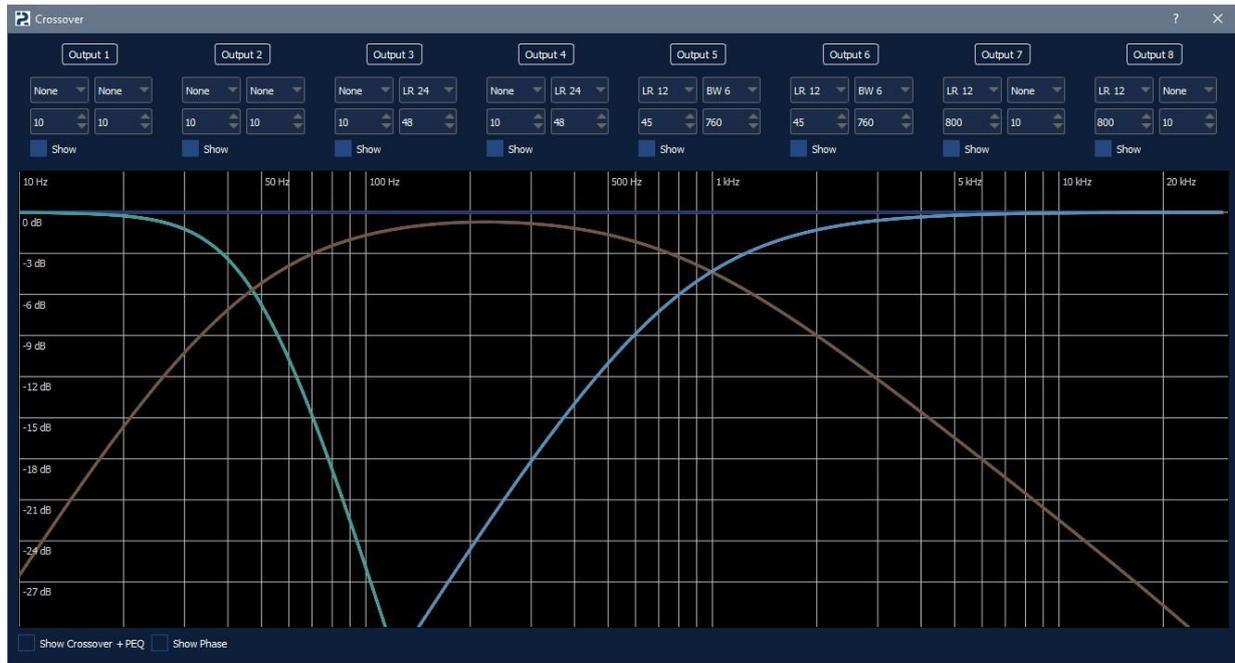
2. Correction of the signal level in the output channel.

3. Mute the sound in the output channel.

4. Change the polarity of the signal in the output channel.

5. Introduction of signal delay in the output channel. Set in milliseconds.

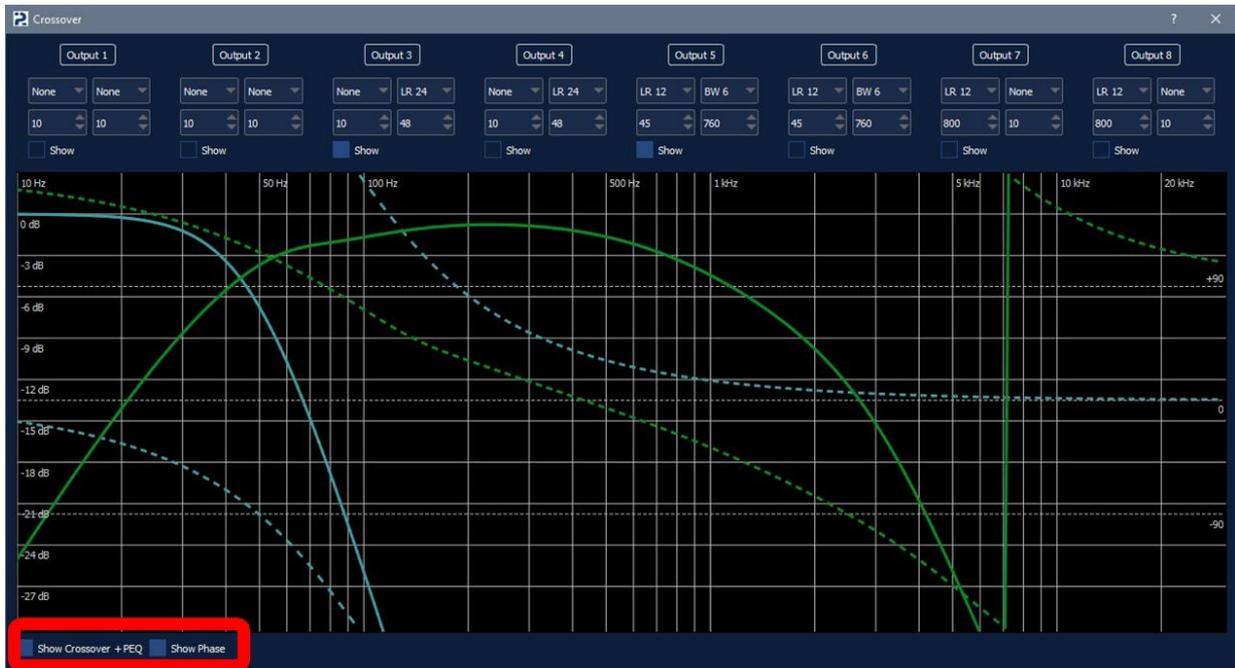
6. Setting up frequency filters in the output channel. When you click on the button, a separate window opens in which you can display the frequency response of the output electrical signal of one or more channels:



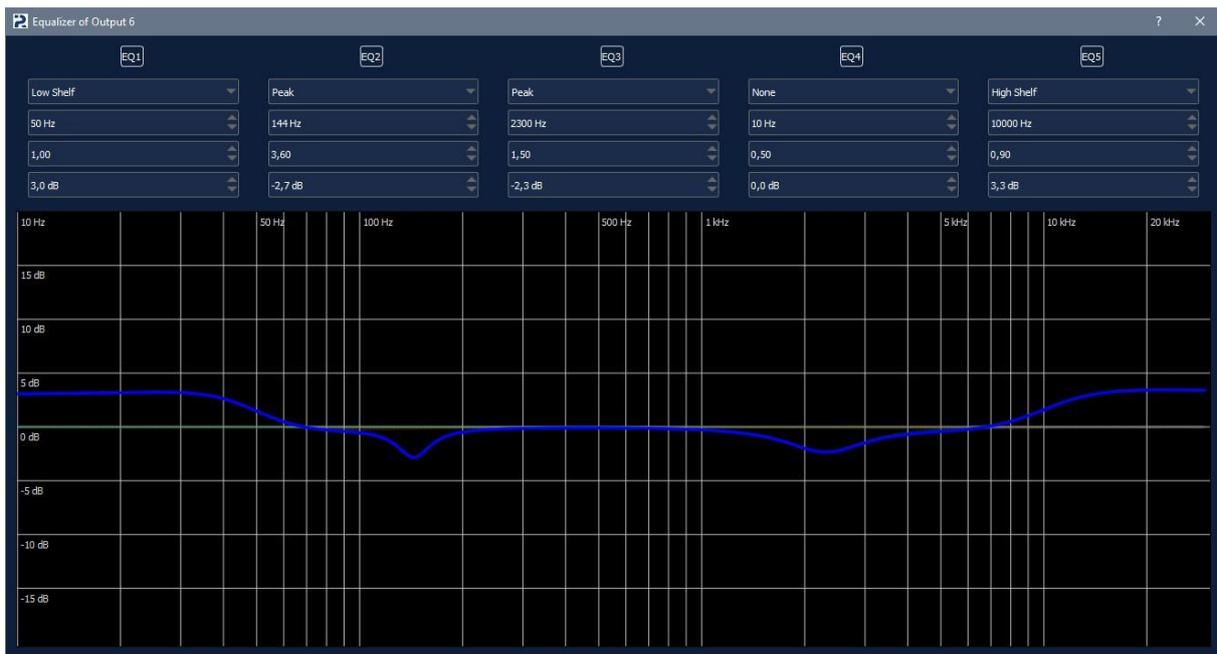
Independent high-frequency and low-frequency filters are available for each channel with a choice of cutoff frequencies, steepness and type of each filter:

- BW6 – 6 dB/octave, Butterworth characteristic
- BW12 – 12 dB/octave, Butterworth characteristic
- BW18 – 18 dB/octave, Butterworth characteristic
- BW24 – 24 dB/octave, Butterworth characteristic
- LR12 – 12 dB/octave, Linkwitz-Riley characteristic
- LR24 – 24 dB/octave, Linkwitz-Riley characteristic
- CH12 – 12 dB/octave, Chebyshev characteristic
- CH24 – 24 dB/octave, Chebyshev characteristic
- BS12 – 12 dB/octave, Bessel characteristic
- BS24 – 24 dB/octave, Bessel characteristic

The Show **Crossover+EQ** checkbox in the lower left corner of the window allows you to display the frequency response of filters, taking into account the equalization in the corresponding channels. The Show Phase checkbox allows you to display the phase of the electrical signal in each output channel, which may be useful for experienced users.:



7. Setting the parametric equalizer in the output channel. When you click on the button, a separate window opens:



Setting the parametric equalizer of the output channels is similar to the settings of the equalizer of the input channels. The following types of signal correction are available:

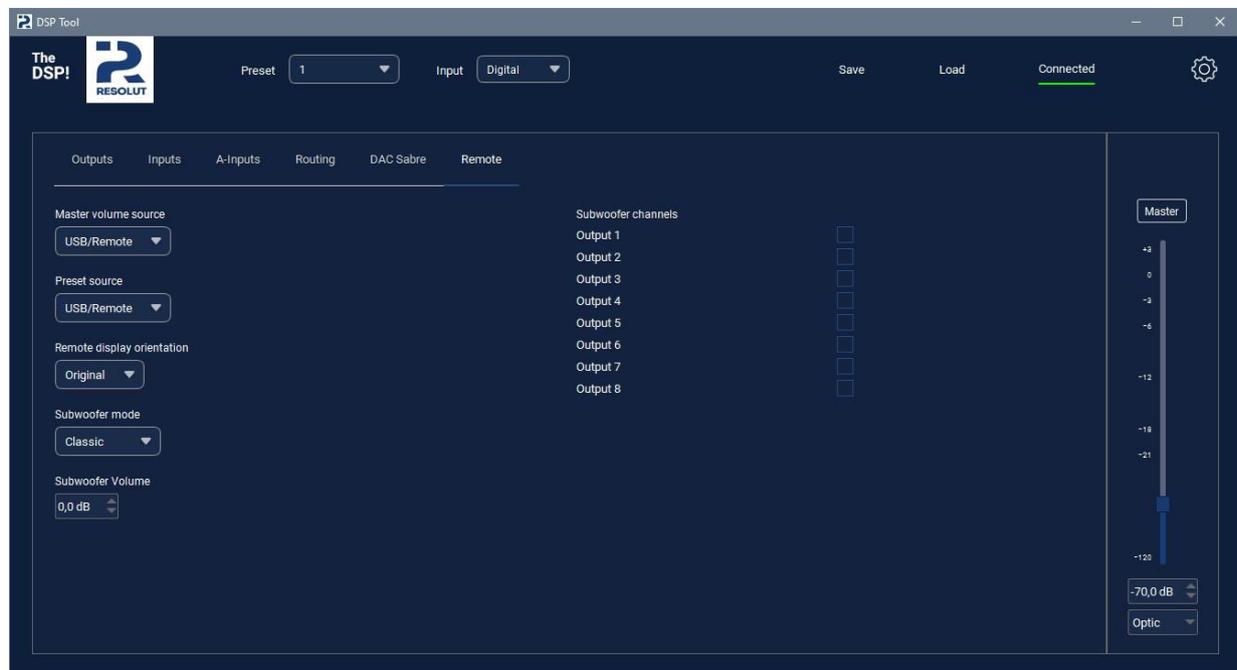
- **Low Shelf** and **High Shelf** – adjustment of the frequency response by a "step".
- **Peak** – traditional equalization in a narrow frequency band.

- **All Pass 180** and **All Pass 360** are phase (all-permissive) filters.
- **Low Pass 12dB** and **High Pass 12dB** are additional low and high pass filters.

For each correction point, a choice of center frequency, Q-factor (correction bandwidth) and correction value are available.

OPTIONS FOR CONFIGURING THE OPTIONAL RESOLUTE SRC REMOTE CONTROL

When connecting an optional Resolut SRC remote control to the processor, you can configure its functionality in the Remote tab.



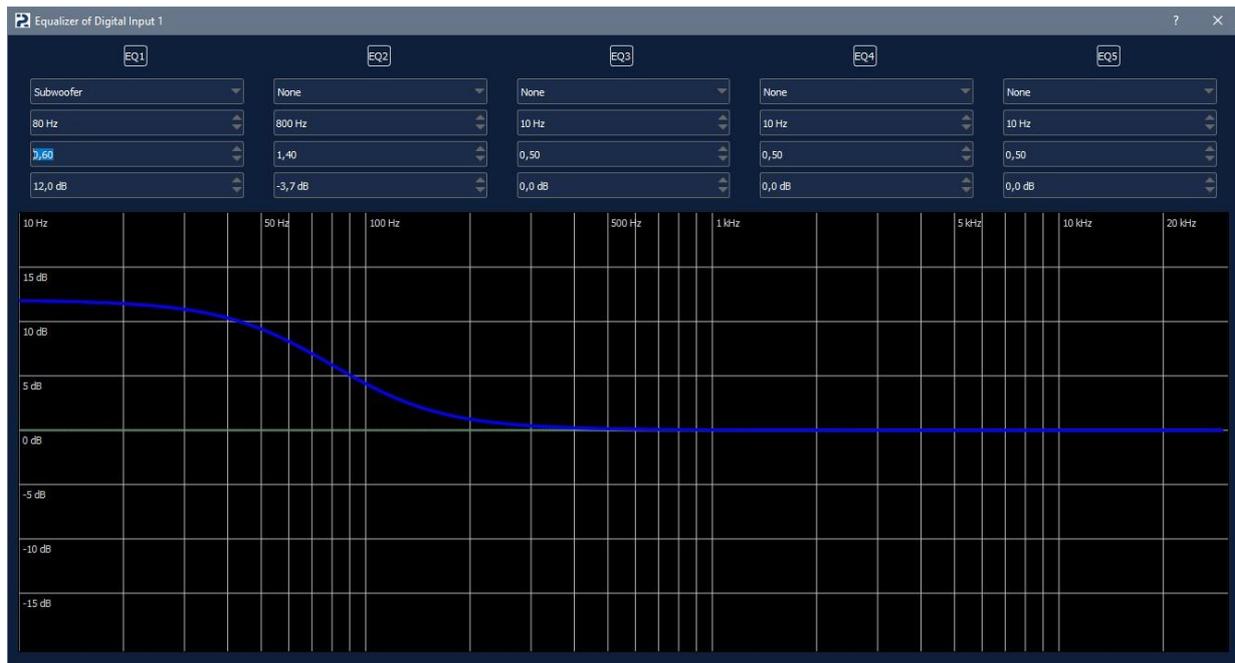
- **Master volume source** – selection of a means for volume control (optional Resolut SRC remote control connected to the Control connector potentiometer or adjustment from a standard source connected via the MOST interface).
- **Preset source** – selection of a means for switching presets (optional Resolut SRC remote control or a switch connected to the Control connector)
- **Remote display orientation** – select the orientation of the image on the screen of the optional Resolut SRC remote control. Allows you to install the remote control in two versions – with the right or left position of the encoder.

- **Subwoofer mode** – select the way to adjust the bass level. Classic implies the usual adjustment of the subwoofer level relative to the other channels, and Parametric – adjustment of the low-pass level in all input channels according to a predetermined frequency response. The features of these modes are discussed below.
- **Subwoofer volume** – the signal level in the subwoofer channel (in Classic mode) or the bass gain level according to the specified frequency response (in Parametric mode).
- **Subwoofer channels** – select channels to adjust the subwoofer level in Classic mode.

Subwoofer mode Classic – it`s a traditional way to adjust the bass. It consists in correcting the signal level in the subwoofer channels relative to the other channels. The main drawback of this method is the violation of the consistency of the bands with significant level adjustments.

Subwoofer mode Parametric eliminates the problem of the traditional way of adjusting the bass level. In this mode, the signal level is not corrected in individual subwoofer channels, but the frequency response is corrected in all output channels. Compared to the traditional method, this does not violate the alignment of the bands and allows you to preserve the general character of the sound of the woofer range.

To set the maximum frequency response of bass level adjustment in Parametric mode, go to the Inputs or A-Inputs tab and press the PEQ button in the corresponding input channel. In the window that opens, select the type of Subwoofer equalization and set the necessary frequency response correction curve by setting the frequency, Q-factor and maximum gain.

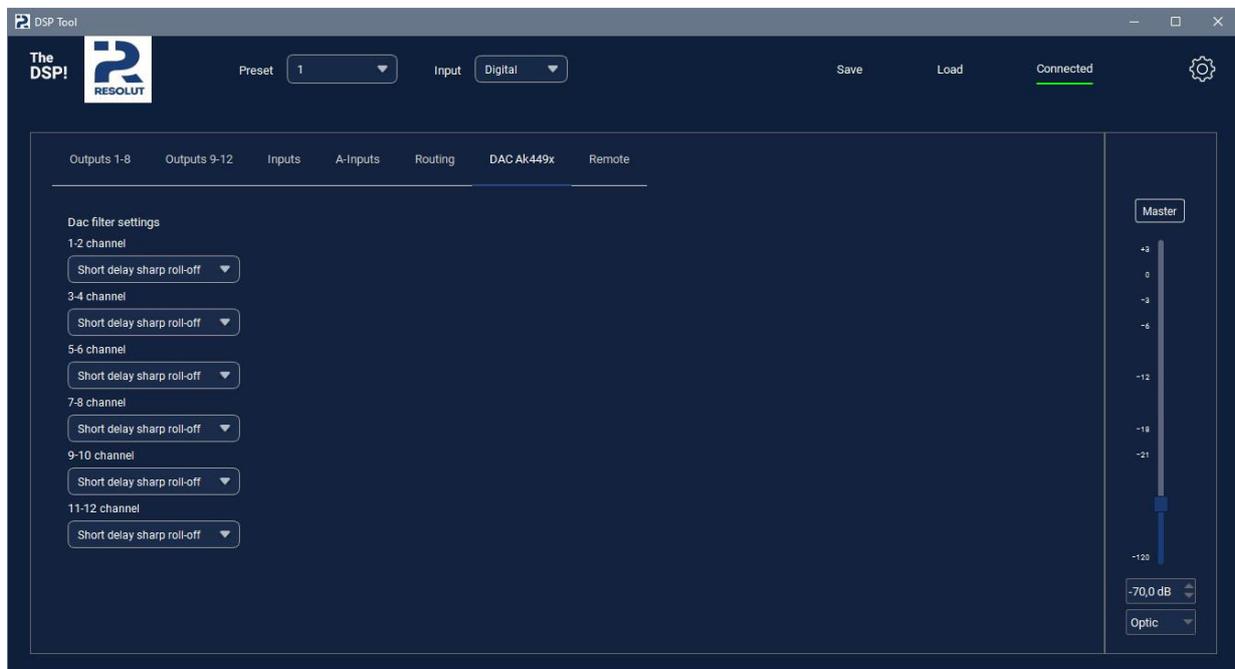
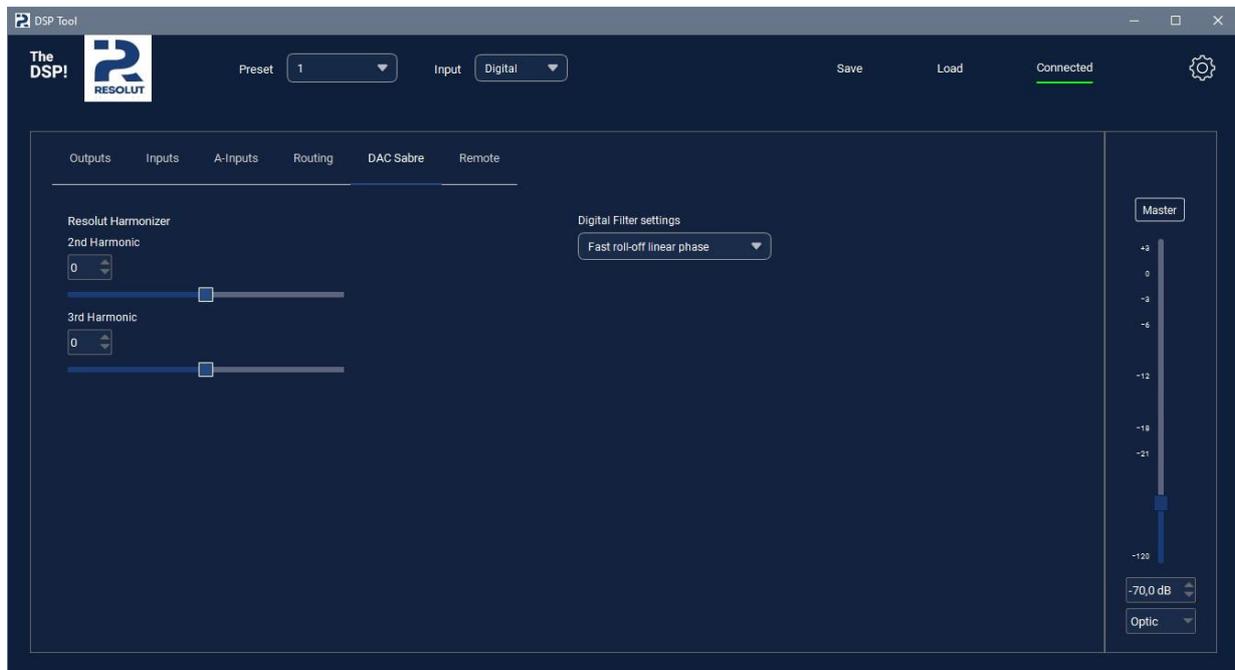


Now you can adjust the bass level via the connected optional Resolut SRC remote control (or set it in the control and settings program in the Remote tab). Correction of the signal will be made according to the specified characteristic.

ADVANCED DAC CONFIGURATION OPTIONS (DIGITAL-TO-ANALOG CONVERSION)

We are pleased to offer you more features than most automotive processors on the market provide. In Resolut processors, in addition to the basic settings, digital-to-analog converter operation modes are controlled.

When connected to the processor, an additional DAC tab appears in the control window. Its contents depend on the processor model, in particular, on the DAC used. For example, below is the appearance of tabs for Resolut processors on Sabre and Asahi Kasei DACs:



Selecting the operation mode of the digital filter at the output of the digital-to-analog converter. The principle of operation of any DAC is to decode a binary digital sequence (a stream of "zeros" and "ones") with the restoration of a continuous analog signal at the output. During this transformation, the samples are first restored – a sequence of pulses following with a certain frequency and having a variable amplitude. Then it passes through a filter that cuts off the high-frequency component of the signal, and at the output we get a continuous analog signal.

As a rule, developers of digital-to-analog converters implement several types of such filters in their chips, differing in their characteristics and parameters. The type of filter chosen greatly affects the nature of the sound – it can be more "spacious" or more "collected", more "dry" or more "musical". However, not all manufacturers of audio equipment (and automotive processors, in particular) use this potential, as a rule, preferring only one type of filter.

Our task is to provide you with the maximum and uncompromising system configuration capabilities, therefore, in Resolut processors we have implemented the choice of the output filter mode. The software allows you to quickly change the type of digital filter right while the processor is running and choose the one that provides the most comfortable sound specifically in your audio system.

Tuning the character of harmonics in accordance with the original technology of Resolut Harmonizer (for Resolut processors built using Sabre DAC). Using the potential of digital-to-analog converters together with the original audio signal processing algorithms developed by us make it possible to fine-tune the nature of the sound. Adjusting the levels of the second and third harmonics allows you to make the sound more "soft" and "warm" or «sharper», emphasizing the high attack speed. In a sense, the settings provided are an alternative to the physical replacement of operational amplifiers at the output of the DAC.

Please note that thanks to special phase transformations of the signal, the harmonic level can be adjusted not only in "plus", but also in "minus". Thus, it becomes possible not only to give the desired sound character to the processor itself, but also to compensate to a certain extent for the features of the other components of the audio path, achieving the most correct and comfortable sound of the entire audio system as a whole.

Technical Data:

RESOLUT DSP					
	A-DSP mk2	J-DSP	T-DSP mk2	H-DSP	M-DSP
Channels	8	8	8	12	16
Digital-to-analog conversion					
Chip	AK449X, 32bit	ES9028PRO Sabre	ES9038PRO Sabre	6xAK4490R, 32bit	2xES9038PRO Sabre
Frequency range	2Hz-55kHz	2Hz-65kHz	2Hz-65kHz	2Hz-55kHz	2Hz-65kHz
Dynamic range	122db	129db	130db	122db	130db
Digital processing					
Main chip	ADAU1466	ADAU1466	ADAU1467	2xADAU1452	2xADAU1467
Digital processing of the signal	192kHz/64bit	192kHz/64bit	192kHz/64bit	192kHz/64bit	192kHz/64bit
Ratio signal/noise, digital input	144db	144db	160db	144db	160db
Dimensions and weight					
Dimensions	235x152x45mm	235x152x45mm	235x152x45mm	235x152x45mm	235x152x55mm
Weight	0,95kg	1.6kg	1.6kg	1.45kg	1.9kg
Additional modules					
A-in	Yes	Yes	Yes	Yes	Yes
M25-in	Yes	Yes	Yes	Yes	Yes
USB-in	Yes	Yes	Yes	Yes	Yes
SRC	Yes	Yes	Yes	Yes	Yes
Resolut Harmonizer					
	no	yes	yes	no	yes