



roger schult
german audio lab

W2393 TiltBaxxEQ
3 Band Filter-Combination
Baxandall / Niveau-Filter

Operating Manual
Quick Guide

W2393 TiltBaxxEQ Operating Manual for api ® 500 system Version 08.2022
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Table of Contents

| Page | |
|-------------|--|
| 2 | Table of Contents |
| 3 | Introduction Safety Notices |
| 4 | Product Details Function, functional components and their effect Functional components |
| 5 | Options to expand some functions of the W2393 TiltBaxxEQ Installation Installing the W2393 module in an api ® 500 system |
| 6 | Specifications |
| 7 | Box contents and compatibility Recycling |
| 8 | Manufacturer, contact and support |

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Dear customer, we sincerely thank you for purchasing our product.

Our W2393 TiltBaxxEQ module for the api@500 system was built to ensure and exceed the highest manufacturing standards possible. We are adhering to all European and national guidelines currently in effect. The EMV compatibility has been certified and the appropriate records are available in our office. Every unit which leaves our factory is in a perfect working condition and meets all designed factory specifications.

We have written this operating manual as a reference for you. It contains important notes for the correct operation and the handling of your new product. In order to maintain the factory specs and guarantee a safe operation in the future, we advise that you read the included operating manual as well as any further safety documents. (see below)

If you are passing the unit over to third parties, please make them aware of these documents. Any use outside of the applications described in this manual may cause damage to the product. The product must not be altered or modified. Any improper usage may cause multiple hazards such as electrical shorts, fire, electric shocks, and other hazards.

The enclosed safety and hazard notices refer to the installation and operation in an api@500 system. There may be relevant guidelines and regulations that affect the operation, even if they do not apply to our product directly. The installation and operation should therefore be carried out by trained personnel only.

Operation of the unit in adverse environmental conditions - such as moisture and / or excessive humidity, dust, gases, vapors or solvents - is not permitted.

Please contact our technical support team if you have any technical questions about this product. You can find the contact details in the appendix of this manual

Function, functional components and their effect

The **W2393 TiltBaxxEQ** is a combination of a **tilt filter** (level filter) and a **Baxandall tone control**. The tilt filter (sound balance) determines the turning point (tilt frequency) of the low and high frequencies around a switchable center frequency (500 Hz, 700 Hz, 1100 Hz). Simultaneously, the level components of the high and low frequencies are changed in opposite directions about up to 5 dB around a turning point. The shift in the tone balance is symbolically represented by the colored button. The red mark left represents the low-frequency range and the blue mark on the right represents the high-frequency range. When the red and blue line forms a horizontal line, the TiltEQ is in neutral position and has no effect on the frequency distribution. When rotated clockwise, the proportions of low frequencies increase and the high frequency decreases. The effect is reversed by turning the TiltEQ in the opposite direction, then the low-frequency components become smaller and the high-frequency components increase. This change also takes influence on the energy of the audio signal and can be compensated by adjusting the gain-pot (gain).

The **Baxandall tone control** consists of two faders that separately change the level components for the high frequency "HF" and low frequency "LF". The frequency of "HF" (2 kHz, 5 kHz) and "LF" (80 Hz, 110 Hz) can be preselected via toggle switch, too. In center position, the respective filter is deactivated (byp.). This bypass-function is used to quickly check the filter's effectiveness. Due to the historical circuit design, the two EQs influence each other and are part of the circuit.

An illuminated push button ("on") deactivates the entire filter and allows the user to check all set filter effects very quickly. Technically, this is a hardware bypass, using a relay to switch all the electronics out of the signal path.

Functional components

Tilt filter

- "tilt angle" - potentiometer with 5 dB control range
- 3 turning points at frequencies 500 Hz, 700 Hz or 1100 Hz
- "gain" - potentiometer with +/- 5 dB control range

Baxandall filter

- High-frequency "HF" adjustable via fader +/- 12 dB
- Switchable frequency range for "HF" band 2 kHz or 5 kHz
- Low-frequency "LF" adjustable by means of fader +/- 12 dB
- Switchable frequency range for low band 80 Hz or 110 Hz
- Separate bypass "byp." for "HF" and "LF" of the Baxandall filter
- Bypass "on" for the entire module

Options to expand some functions of the W2393 TiltBaxxEQ

Brightness of the "on" pushbutton switch

The brightness of the "on" button LED can be adjusted in three stages using jumper K6 and K11. These jumpers (bridges) can be removed by gently pulling upwards. If both jumpers are plugged, the LED lights up brightly, if only jumper K6 is plugged, the LED lights up with medium luminosity and if only jumper K11 is plugged in, the LED lights up with low luminosity.

HP A first-order high-pass can be activated to limit impact noise with a filter effect of -3 dB at 38 Hz by pulling jumper K4.

(Detailed information on these functions is available on our homepage under downloads <https://www.rogerschult.com/downloads.php>).

Installation in an api ® 500 system

Instructions for installing the W2393 TiltBaxxEQ filter module

Please note that electric potential differences and electrostatic discharges (ESD) can destroy your api ® 500 system and the W2393 TiltBaxxEQ module. Please make sure to discharge any potential electrostatic charges by touching a plumbing pipe, heating pipe or any other piece of metal connected to earth before installing the W2393 TiltBaxxEQ module. Neutral electric potential is a prerequisite to any installation or reconfiguration of electronics modules and their interconnections.

Turn off your api ® 500 rack or console and all connected devices. Remove any blank panels that might cover the slot you have chosen for installation of the module.

Center the module between the two threaded mounting holes and evenly insert the module into the free slot without applying brute force. Secure the W2393 module with both screws. The module is ready for operation once the appropriate connections in the rear of the api ® box have been taken care of.

Specifications

Tentative spec sheet, 08/2022

| | |
|------------------------------------|---|
| Low band EQ, adjustable frequency | 80 Hz / filter bypass / 110 Hz via switch |
| Gain, continuously variable | +/- 12 dB range via fader |
| Ti-EQ / Niveau Filter | |
| Gain, continuously variable | +/- 5 dB range via rotary control |
| Frequency, 3-position switch | 500 Hz / 700 Hz / 1100 Hz |
| High band EQ, adjustable frequency | 2.0 kHz / filter bypass / 5.0 kHz |
| Gain, continuously variable | +/- 12 dB range via fader |
| on - switch | enable / disable filter module |
| | hard-bypass |

Input - electronically balanced

| | |
|-----------------------|---------|
| Reference input level | +6 dBu |
| Maximum input level | +22 dBu |
| Input impedance | 10 kOhm |

Output - electronically balanced

| | |
|----------------------------------|--------------------------------|
| Reference output level | +6 dBu |
| Maximum output level | +24 dBu / (0.002% THD+N) |
| Output impedance | 40 Ohm |
| Gain at linear setting | 0 dB at 1 kHz (+/- 0.2 dB) |
| Signal-to-noise ratio (UWTD) | 88 dB |
| Signal-to-noise ratio (WTD) | 95 dB |
| Harmonic distortion | THD+N / 0 dBu 0.0026% |
| | THD+N / 6 dBu 0.0015% |
| Frequency range | 20 Hz - 40 kHz (+/- 0.1 dB) |
| Delay time of hard bypass relais | max. 3 ms |
| Power supply | +/- 16 V via api ® - System |
| | + max. 90 mA / -16V max. 40 mA |

| | |
|----------------------|---|
| Module dimensions | 115 mm x 172 mm (HxT) |
| Faceplate dimensions | 19" / 3 RU, 1.5" x 5.25" (width x height) |
| Faceplate finish | aluminium, black anodized |
| Weight | 0.305 kg |

Box contents and compatibility

Box contents

- W2393 TiltBaxxEQ module in api ® 500 system
- Quick start guide in German
- Quick start guide in English

Compatibility

The compatibility certification records for this product are available upon request from the manufacturer.

As all Roger Schult products, the W2393 is hand-crafted and precision-engineered in Germany.

Recycling

Please stay eco-friendly and dispose of all defective and obsolete devices at a certified collection facility according to local laws and regulations.



The crossed out wheeled bin label that can be found on your product indicates that this product should not be disposed of via the normal household waste stream. To prevent possible harm to the environment or human health please separate this product from other waste streams to ensure that it can be recycled in an environmentally sound manner. For more details on available collection facilities please contact your local movement Office or the retailer where you purchased this product.

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