stage accompany

Stage Accompany

PPE 2410

Programmable

Parametric

Equaliser

User Manual

Software Version 1.2

stage accompany

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This manual is designed to provide information about the PPE 2410 equaliser. Every effort has been made to make this manual complete and as accurate as possible. But no warranty of suitability, purpose, or fitness is implied. The information is provided on an "as-is" basis. Stage Accompany shall have neither liability nor responsibility to any person or entity with respect to any loss or damages in connection with or arising from the information contained in this manual.

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1 Quick Introduction to the PPE 2410

If you have to start using the PPE straight away and do not have time to read the complete manual, make sure that you at least read the following:

- Ensure to have a reliable power source.
- Connect the PPE to the signal source via the <AUDIO IN> inputs. Connect it to other units via the <AUDIO OUT> outputs.
- If desired, connect the PPE via the <SAnet-IN> and <SAnet-OUT> to other SAnet compatible equipment.
- Switch the PPE on using the <POWER ON/OFF> switch.
- Adjust the level of the incoming signal (<INPUT LEVEL>) using the <UP> and <DOWN> keys. By pressing the <UP> and <DOWN> keys simultaneously, you can choose an extra input signal amplification of +10 dB or +20 dB.
- Two seconds after depressing the keys, the amplification factor will appear in the display. By keeping the keys depressed, the setting will cycle from 0 dB to +10 dB, then +20 dB, and then back to 0 dB. When the desired value appears, releas the keys.
- Adjust the level of the outgoing signal (<OUTPUT LEVEL>) using the <UP> and <DOWN> keys.
- Select the frequency band in which you want to make sound corrections using one of the four band selection keys (located above the <BYPASS> keys). If the <DUAL TRACK> key is activated (yellow LED indicator above the switch is on), both channels of the PPE will be adjusted simultaneously.

- Adjust the "center frequency" (center frequency: see paragraph 4.2.2 for further details) in your chosen band using the <FREQUENCY> <UP>/<DOWN> keys. The chosen center frequency will be shown in the <FREQUENCY> display.

- Set the bandwidth to be adjusted (see paragraph 4.2.2 for further details) using the <Q-FACTOR> <UP>/<DOWN> keys. A low Q-factor (e.g. 0.3) gives a wide adjustment range; a high Q-factor (e.g. 15.0) gives a narrow adjustment range.

- Set the amount of amplification or attenuation using the <BOOST/CUT> <UP>/<DOWN> keys.

- If the PPE cuts out during use, or is being switched off, the inputs will be connected directly through to the outputs. The electronic circuit is then lo longer active, but the incoming signal will be directly fed to the output. The unit is then in the so-called bypass mode. If the PPE is switched on again, the <OUTPUT LEVEL> always starts from OFF. After approximately 2 seconds, the PPE will automatically switch the output signal back to the last selected value via a gradual fade-in.

- If ground hum is present, it can be corrected using the <INPUT GROUND> and/or <OUTPUT GROUND> switches, the <SYSTEM GROUND> switch or the <SAnet GROUND> switch. These switches are located on the rear of the PPE.

- The use of presets is not directly necessary for the functioning of the PPE. For further information, see Chapter 4.

2 General Description

The facilities of the PPE 2410 can be divided into four main functions:

- Equaliser function
- "Leveller" function
- MIDI interface
- SAnet interface

The various functions will be described briefly in this chapter.

2.1 The Equaliser

Although the functioning of a parametric equaliser at first appears more complicated than that of a graphic equaliser, the clearly arranged front panel and range of functions available ensure that the PPE is easy to use. A parametric equaliser has the great advantage that sound corrections can be made much more accurately than with a graphic equaliser. Moreover, the chosen settings are displayed much more clearly by the PPE.

The Stage Accompany PPE 2410 is a 2-channel, 4-band analog, digitally controlled, programmable parametric equaliser. Both channels of the PPE can be programmed completely different. With the dual track function, the operation of both channels can be coupled, so that changes to the settings effect both channels.

Each channel has four bands or filter sections, each with its own bypass facility, band select key, and clip indication. The chosen settings can be stored in one of the 64 memory locations.

The amplification of the input signal can be set to 0 dB (unity gain), +10 dB or +20 dB. The PPE can therefore also be used as an interface to adjust home-recording and hi-fi equipment, which mostly works at a level of -10 dBm or -20 dBm, to professional equipment, which works at a level of 0 dBm or +4 dBm.

2.2 "Leveller" Function

The PPE 2410 features a "leveller" function. This function can be used to limit the sound level for specific applications. For further information, see paragraph 7.3.

2.3 MIDI Interface

The PPE has MIDI IN, OUT and THRU connections. Program change commands can be given by an external MIDI controller (synthesizer, sequencer, etc.). In this case, the 64 memory locations of the PPE can be randomly coupled to the 128 program numbers (0 - 127) of the external MIDI controller. Furthermore, the channel number can be freely set between 1 and 16.

2.4 SAnet Interface

In addition to MIDI, the PPE 2410 has the SAnet interface, by which the unit can be controlled remotely. Equipment with the SAnet interface (PPE, Blue Box, PPA) can be connected to a personal computer, allowing remote control of all the equipment. All parameters of the individual units can be programmed and monitored from the PC. Furthermore, several units (such as multiple PPE 2410s) can be grouped together and operated groupwise. The maximum distance using the correct cabling is 500 meters.

SAnet is a data communication system: data can be transmitted and received using a single line. This is in contrast to MIDI, which is a synchronization system. MIDI has separate in, out and thru connections, and cabling in which communication occurs in one direction only.

NOTE: the PPE 2410 functions perfectly well without a PC and/or coupling with other equipment via SAnet. The SAnet interface is a standard provision that allows the possibility of remote control, but that does not have to be used.

For more information about operating PPEs using a PC via SAnet, contact your Stage Accompany dealer.

3 Connections

3.1 Mains Voltage and Fuses

Always be sure that you use a correctly grounded power supply. The PPE has an adjustable voltage input and is also provided with a filter. This filter reduces possible noise from the mains supply.

Before connecting the PPE to the power supply, ensure that the value on the voltage selector switch corresponds with the actual voltage of the power supply. The switch, which is provided with a fuse, can be set to 110 V, 220 V or 240 V.

NOTE: Only use the switch or fuse-holder if the PPE is disconnected from the power supply!

3.2 Audio Connections

The <INPUT> and <OUTPUT> connectors are located on the rear of the PPE and are of the standard 3-pin XLR type. The input impedance is 24 kOhms balanced and 30 kOhms unbalanced. The output impedance is 25 Ohms balanced and 50 Ohms unbalanced. The output stage is protected against short circuiting.

The balanced <INPUT> and <OUTPUT> XLR connectors are wired as follows:

pin 1 = ground (screening)
pin 2 = in phase (+ or "hot")
pin 3 = out phase (- or "cold")

The PPE automatically indicates whether a balanced or unbalanced connection has been made. If you want to input an unbalanced signal, connect the wiring as follows:

pin 1 = ground (screening)
pin 2 = in phase (+ or "hot")
pin 3 = connected to pin 1

An unbalanced signal can be supplied to the <INPUT>, while the rest of the signal path can be balanced. In this case, the PPE automatically converts the signal from unbalanced IN to balanced OUT.

If the PPE is not switched On, the inputs will be connected through directly to the outputs, in which case the whole electronic circuit will be bypassed. The signal path in which the PPE is connected thus remains intact if the PPE is switched off. If, in case of a malfunction, the PPE can unfortunately no longer be used, simply switch it off using the <POWER ON/OFF> switch and it will have no further effect on the signal.

3.3 MIDI Connections

MIDI connectors are of the 5-pin DIN type. MIDI leads are standard DIN leads of the sort that can be purchased in for example hi-fi shops. For MIDI applications, only pin 4, pin 5 and the screening (pin 2) are used. If you do not use standard DIN leads, first check that the connections are correct.

Connect the <MIDI IN> connector of the PPE with the <MIDI OUT> or <MIDI THRU> of your MIDI controller, synthesizer, etc. The <MIDI OUT> and/or <MIDI THRU> connections may be connected to the <MIDI IN> connection of another unit.

3.4 SAnet Connections

SAnet uses a symmetrical, two-wire connection. The advantage of a symmetrical connection is that "common mode" interference (= external interference such as power-up peaks from other equipment, radio interference and interference from light dimmers) has virtually no influence on the signal.

You are advised to use two-wire coaxial cable (known as "twinax") as connecting cable. If the system is not likely to be used under extreme circumstances, well screened microphone cable may suffice. The maximum cable length is approximately 500 m when using twinax and 250 m when using screened microphone cable.

The required connector is of the 4-pin XLR type, such as the Neutrik NC-4-FC (female) or NC-4-FRC (angled female) and the NC-4-MC (male) or NC-4-MRC (angled male). These connectors are mechanically very robust, currently popular and readily available at your local suppliers.

The XLR connectors of the SAnet connectors are wired as follows:

Pin 1 = ground (screening)
Pin 2 = +5 V for (future use of remote control)
Pin 3 = SAnet in phase (+ or "hot")
Pin 4 = SAnet out phase (- or "hot")

A maximum of 250 units such as PPE 2410s, Blue Boxes, PPA 1200 amplifiers and/or other units with an SAnet interface can be connected simultaneously to an SAnet.

SAnet and other communication systems such as MIDI are NOT compatible. Therefore, never make a connection between SAnet and MIDI equipment. If you do, it can result in serious damage to your equipment.

NOTE: All units that are part of a sound system can be connected with each other via SAnet. No differentiation is made between peripheral apparatus (PPE), amplifiers (PPA) and integrated systems (Blue Box). The concept of "left" and "right" in a stereo set-up is also of no importance. SAnet is a communication network, functioning apart from the audio signal route and therefore has no influence on the sound and/or stereo image.The SAnet connection is a symmetrical, two-wire connection.

3.5 Ground Loops

To prevent ground loops, every input and output connector is provided with a <GROUNDLIFT> switch. Using this switch, the connection between the signal ground and system ground can be broken (lifted). Using the <SYSTEM GROUNDLIFT> switch, the connection between the system ground and mains ground can be broken. Finally, using the <SAnet GROUNDLIFT> switch, the connection between the SAnet ground and system ground can be broken. The diagram on the next page illustrates the various ground connections.

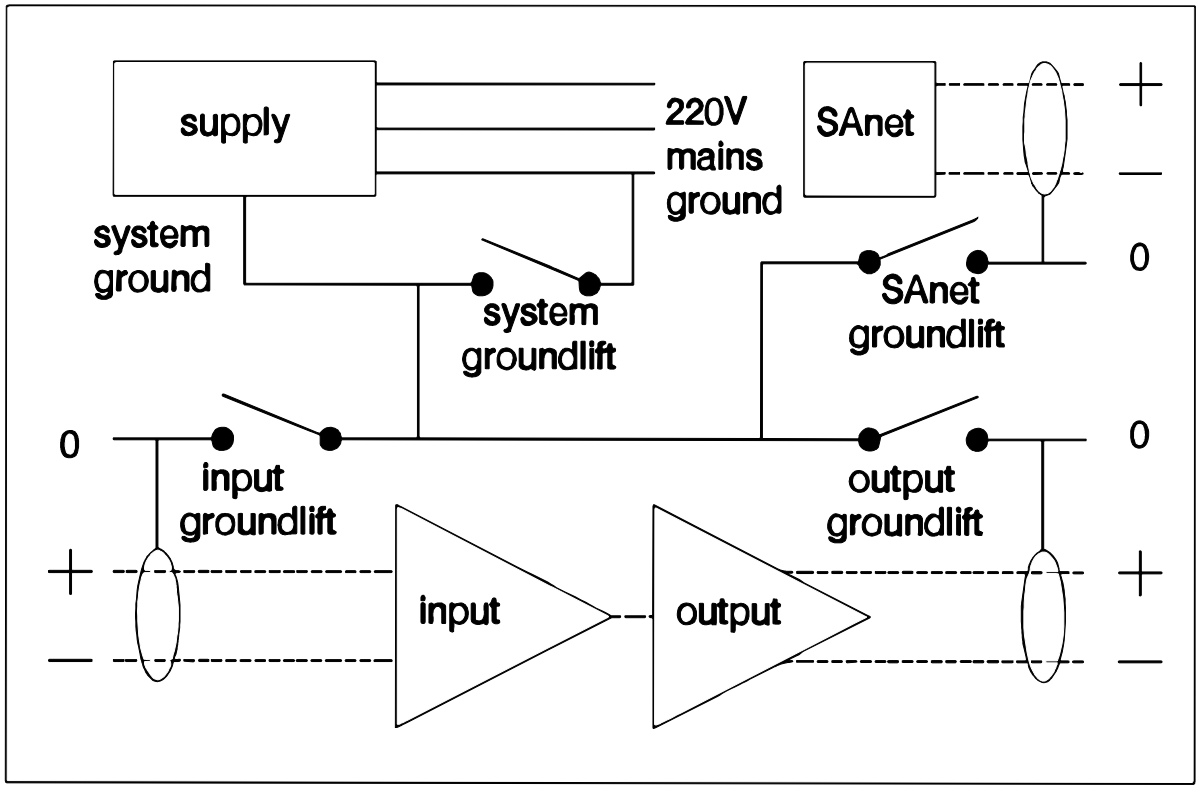

Figure 3-1 The various ground connections of the PPE 2410.