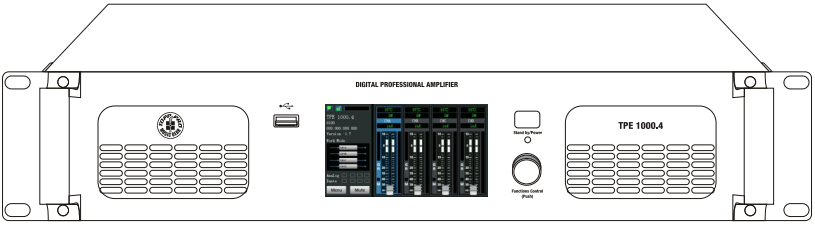
TPE-1000.4

User's Manual

Professional Digital Amplifier



Important Safety Instructions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

TO REDUCE THE RISK OF ELECTRIC SHOCK PLEASE DO NOT REMOVE THE COVER OR THE BACK PANEL OF THIS EQUIPMENT.
THERE ARE NO PARTS NEEDED BY USER INSIDE THE EQUIPMENT. FOR SERVICE, PLEASE CONTACT QUALIFIED SERVICE CENTERS.

This symbol, wherever used, alerts you to the resence of un-insulated and dangerous voltages in the product enclosure. These are voltages that may be sufficient to constitute the risk of electric shock or death.

This symbol, wherever used, alerts you to important operating and maintenance instructions. Please read.

Protective Ground Terminal

~ AC mains (Alternating Current)

Hazardous Live Terminal

ON: Denotes the product is turned on.

OFF: Denotes the product is turned off.

CAUTION
Describes precautions that should be observed to prevent damage to the product.

1. Read this Manual carefully before operation.
2. Keep this Manual in a safe place.
3. Be aware of all wamings reported with this symbol.
4. Keep this Equipment away from water and moisture.
5. Clean it only with dry doth. Do not use solvent or other chemicals.
6. Do not damp or cover any cooling opening. Install the equipment only in accordance with the Manufactu-rer's instructions.
7. Power Cords are designed for your safety. Do not remove Ground connections! If the plug does not fit your AC outlet, seek advice from a qualified electri-cian. Protect the power cord and plug from any physical stress to avoid risk of electric shock. Do ot place heavy objects on the power. This could cause electric shodk or fire.
8. Unplug this equipment when unused for long periods of time or during a storm.
9. Refer all service to qualified service personnel only. Do not perform any servicing other than those instruc-tions contained within the User's Manual.
10. To prevent fire and damage to the product, use only the recommended fuse type as indicated in this manual. Do not short-circuit the fuse holder.

WARNING
To reduce the risk of electric shock and fire, do not expose this equipment to moisture or rain.

Dispose of this product should not be placed in municipal waste and should be separate collection.

Before replacing the fuse, make sure that the product is OFF and disconnected from the AC outlet.

11. Move this Equipment only with a cart, stand, tripod, or bracket, specified by the manufacturer, or sold with the Equipment. When a cart is used, use caution when moving the cart/equipment combination to avoid possible injury from tip-over.

12. Permanent hearing loss may be caused by exposure to extremely high noise levels.
The US. Government's Occupational Safety and Health Administration (OSHA) has specified the permissible exposure to noise level.
These are shown in the following chart:

Hours x day	SPL	Example
8	90	Small gig
6	92	Train
4	95	Subway train
3	97	High level desktop monitors
2	100	Classic music concert
1.5	102	
1	105	
0.5	110	
0.25 or less	115	Rock Concert

According to OSHA, an exposure to high SPL in excess of these limits may result in the loss of heat. To avoid the potential damage of heat, it is recommended that Personnel exposed to equipment capable of generating high SPL use hearing protection while such equipment is under operation.

The apparatus shall be connected to a mains socket outlet with a protective earthing connection.

The mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.

CONTENTS

EMI CLASSIFICATION According to the standards EN 55032 and EN 55035 this equipment is designed and suitable to operate in class B electromagnetic environments. FCC CLASS B STATEMENT This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference,and (2) this device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio technician for help.

WARNING:
Make sure that the loudspeaker is securely installed in a stable position to avoid any injuries or damages to persons or properties. For safety reasons do not place one loudspeaker on top of another without proper fastening systems. Before hanging the loudspeaker check all the components for damages, deformations, missing or damaged parts that may compromise safety during installation. If you use the loudspeakers outdoor avoid spots exposed to bad weather conditions. Contact TOPP PRO for accessories to be used with speakers. TOPP PRO will not accept any responsibility for damages caused by inappropriate accessories or additional devices. Features, specification and appearance af products are subject to change without notice. TOPP PRO reserves the right to make changes or improvements in design or manufacturing without assuming any obligation to change or improve products previously manufactured.

1 Introduction

The TPE 1000.4 professional digital amplifier is designed for professional use on stage.The high-quality components and the carefully designed circuits ensure excellent audio performance and an extremely linear frequency response. In fact, the switching technology offers, with an increased efficiency and a better control of heat dissipation than conventional power supply systems, small size and light weight is for easier carrying and installing. This amplifier guarantees total reliability and a trouble-free use even in the most demanding conditions. We believe it will provide a perfect performance, what you get is unprecedented experience at an incredibly attractive price.

2 Features

- High current switching power allowing high power output with low noise and low distortion
- Substantial protection circuitry like thermal, short circuit, power on/off muting
- Built-in limiter
- Balanced XLR-TRS combo input jack
- Speakon output connectors
- Built in high-performance DSP
- USB update data and PC software parameter adjustment
- Easy operation via touch LCD and encoder.

3 Useful Data

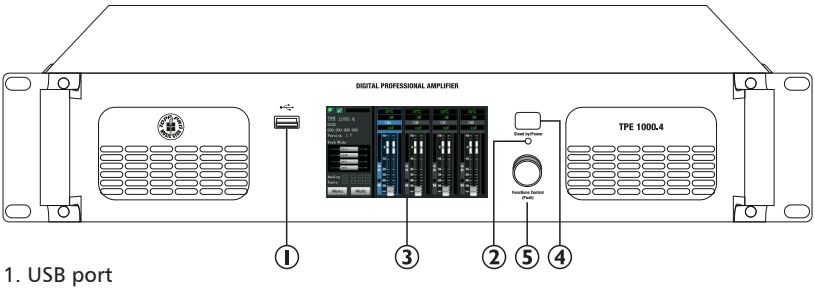
Please write your serial number here for future reference.

Serial Number:
Date of Purchase:
Purchased at:

CONTROL ELEMENTS

4

FRONT PANEL



1. USB port

   For FW/GUI updates. Preset import/export. Support USB 2.0 and above.

2. Indicator LED

   Red is standby working status

   Blue is power-on state

3. Touch LCD

   Multifunctional graphic LCD is to display & set audio signal level, system settings, EQ, preset

   and other setting menus.

4. Stand by/power

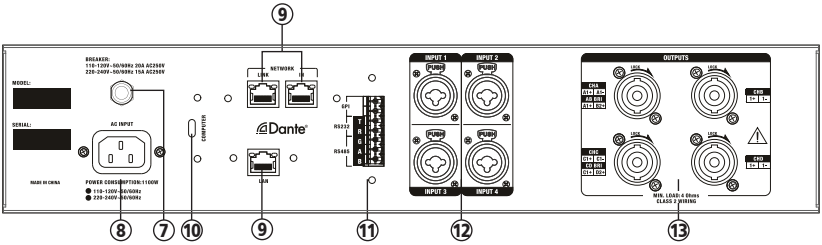
   Press to return to the default standby interface and standby function settings.

5. Function knob

   Combination encoder is to enter the editing menu and select & edit each menu.

4 CONTROL ELEMENTS

REAR PANEL



7. Fuse
   When the power consumption is excessively or power amp short-circuited, the fuse will automatically open.

8. AC Power
   External power

9. Digital network audio interface
   LAN audio transmission for multiple DANTE devices.

10. TYPE-C interface
    to connect PC software to control settings.

11. Control interface
    GPI: control output
    RS485: Control input.
    RS232: Control input.

12. XLR input
    Using a 3PIN XLR plug allows the XLR jack to accept balanced low-impedance linear XLR input. The wire of this plug is as follows:
    PIN1 (sleeve) = ground wire, PIN2 = signal +; PIN3 = signal -.

13. Speakon out
    Connect this amplifier to the speakers through these ports.

DSP SETUP OPERATIONS

5

Home screen

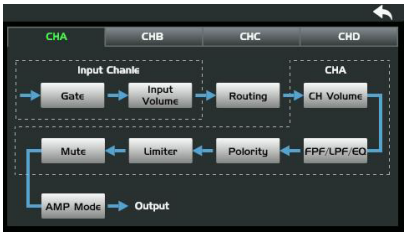
Turn on the amplifier, the start-up process interface will appear on the LCD screen.It will enter the standby interface when the boot is completed.

The home screen includes: amplifier name, ID information, IP information, software version, working mode, function menu options and channel gain status.

The GAIN and MUTE of the output channel can be set directly in this interface.

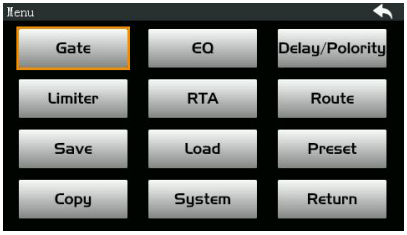
Press 3s the output channel A-D control interface to directly enter the corresponding channel interface, as shown in the figure.

For detailed function description, refer to Function Menu



Function menu

Press the [Function Menu] on the screen to enter the menu mode options.To select the operation through the function knob or click directly on the screen.



5 DSP SETUP OPERATIONS

System settings

Language selection

Customization: ID/network IP type/channel name Screen save time.

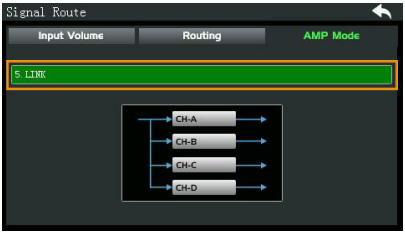
restore factory settings.

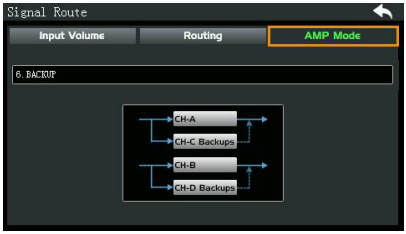
Signal routing

1 Working mode: 6 modes optional

2 Signal Generator: Sound sources that can be generated: pink noise/100HZ/ 500HZ/1KHZ/10KHZ and gain range adjustment from -10dB to 0dB.

3 Input signal selection: CHA-D Each input channel can choose Analog 1-4/DANTE 1-4/Signal Generator, each of the 9 signal sources can be used as input.





DSP SETUP OPERATIONS

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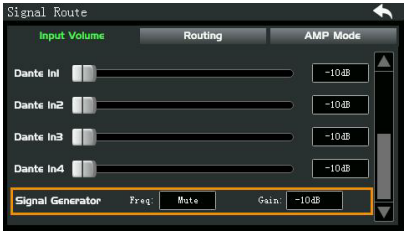
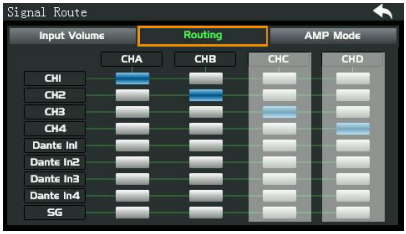
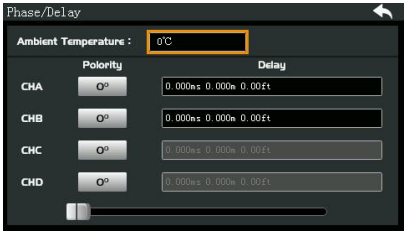




Phase/Delay

Phase selection: 0° or 180°

Delay range: 0-62.40ms



Equalizer

EQ High Pass Filters: These filters are used to remove unwanted high frequenciesof the signal spectrum to avoid any background noise due to multiple processing.

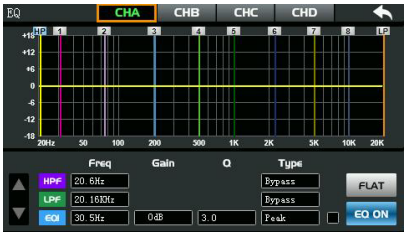
Filter type (21 options in total)

EQ Low Pass Filters: These filters are used to remove unwanted low frequencies of the signal spectrum to avoid any background noise due to multiple processing.

Filter type (21 options in total)

EQ settings

An equalizer is used to compensate or change the spectral characteristics of a signal to obtain the most flat frequency response. Here is a 8-band EQ.



5 DSP SETUP OPERATIONS

RTA

"Real-time audio analysis: all channels can observe 20～20KHz audio dynamics in RTA. By inputting any single frequency signal, such as 100hz, 1k, 10kHz, etc., to adjust the EQ value of the input frequency point to change the dynamic curve.

Noise gate/Compressor

The noise gate filters out background noise below a certain volume threshold.

By setting a noise gate threshold, when the audio signal volume falls below the threshold, the noise is automatically filtered out.

Threshold range: -80dB to -40dB

COMP: Thecompressor limits the dynamic range of a signal to a certain level.

When the signal exceeds the threshold, it will be compressed at a ratio >1.

Below the threshold, the input and output signals remain unchanged. By adjusting the ratio to max, the compressor converts into a limiter.

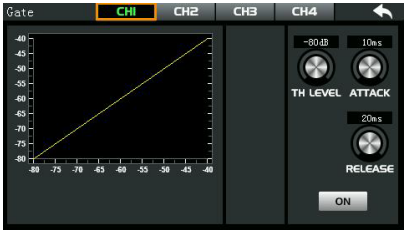
Threshold: from -30dB to +0dB.

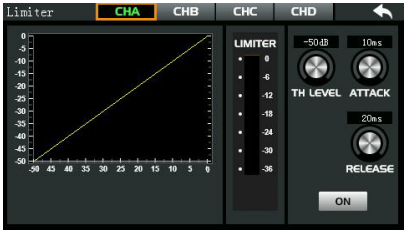
Ratio: can be set between 1-LIMIT

Attack: The compressor's reaction time when the signal exceeds a specified threshold, from 10 to 300ms.

Release: The compressor's reaction time when the signal falls below the specified threshold, from 20ms to 999ms.

Bypass: Press this button, the function of this area is invalid.





DSP SETUP OPERATIONS

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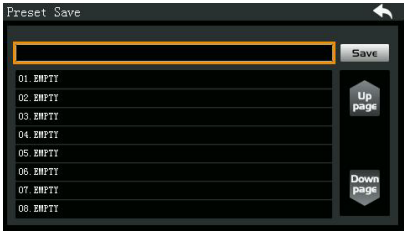
Preset loading

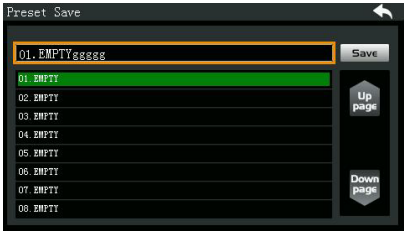
Import presets to the device (total 32 presets optional)

Preset save

Save presets to device (up to 32 presets can be saved)

Default name can be customized



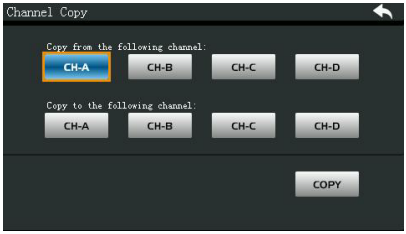


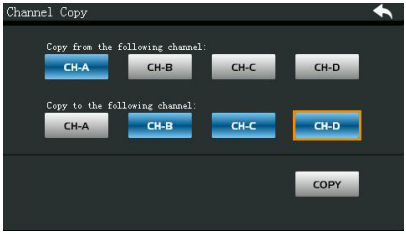
Channel copy

Select copy source channel

Select Copy to which channel

Copy channel data includes the source channel's EQ, COMP phase/delay, amplifier mode, and mute settings.





5 DSP SETUP OPERATIONS

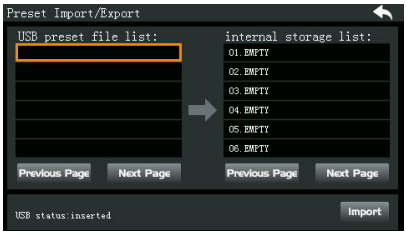
Preset Import/Export

Import presets

Insert the USB drive into the usb port on pane. The preset data in the USB drive will be read. Select the preset in the USB drive, and then select the storage list number. Finally, click Import. The selected preset in USB will be imported into the corresponding selected location in the device.

Preset Export

Insert the USB drive into usb port on the panel. The device will recognize and display that the USB drive. Select the corresponding device preset and click Export to complete the device preset export to the USB drive (up to 32 presets can be selected)

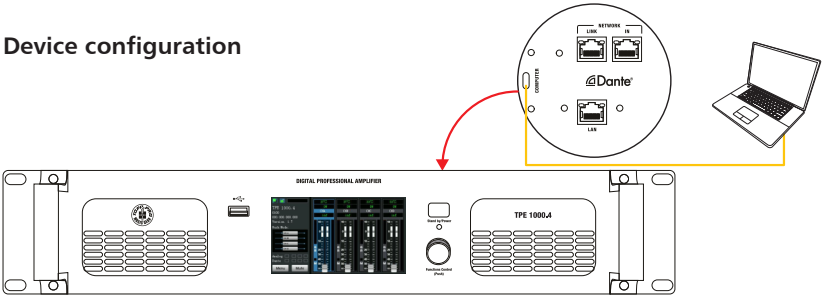


PC CONTROL SOFTWARE OPERATION

6

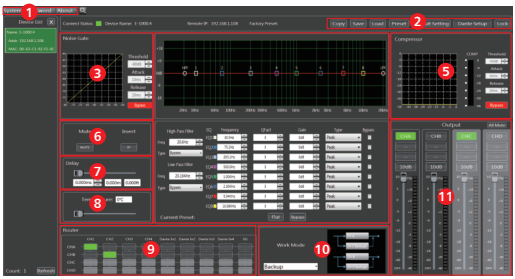
* The corresponding windows software, the latest version and operating instructions can be downloaded from www.seikaku.hk.

Device configuration

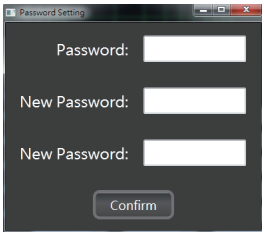


Operation steps

1 Refer to the configuration to connect the power amplifier to the computer.
2 Start the PC software.
3 Device search, click and connect.
4 Enter the DSP control page.

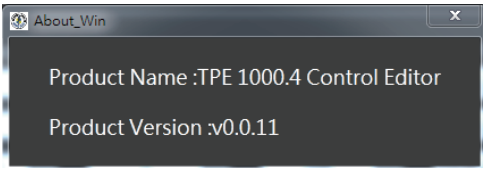


4.1 System settings
4.11 System: Click a to reselect the connection method. b Exit the software
4.12 Password setting: Enter the old password, and then enter twice new password, last to click the "Confirm" ,the new password will be generated.
Notes: Default password is 0000, super password is E104



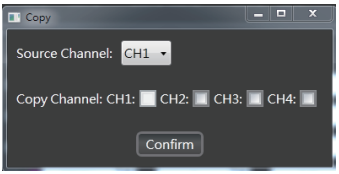
6 PC CONTROL SOFTWARE OPERATION

4.13 About:Display the name/version of the current software



4.2 Function area

4.21 Copy:Choose output CH01-04 or any channel of CH01-04 and copy it to any other channel. (Noise gate, EQ, compression, phase, delay, etc.)



4.22 Save: Save preset to PC

4.23 Load: Load presets from PC to device

4.24 Preset: under development

4.25 Default Setting :Restore default settings (Except device name/channel name/device password)

4.26 Dante Setup: under development

4.27 Lock:Password lock, lock/unlock with the device synchronously

4.3 Noise Gate:

The noise gate filters out background noise below a certain volume threshold. By setting a noise gate threshold, when the audio signal volume falls below the threshold, it will mute automatically to filter out unwanted noise

PC CONTROL SOFTWARE OPERATION

4.4 EQ settings

An equalizer is used to compensate or change the spectral characteristics of a signal to obtain the most flat frequency response. Here is a 8-band EQ.
8) EQ Low Pass Filters: These filters are used to remove unwanted low frequencies of the signal spectrum to avoid any background noise due to multiple processing. Filter type (21 options in total)

4.5 COMP: The compressor limits the dynamic range of a signal to a certain level. When the signal exceeds the threshold, it will be compressed at a ratio >1. Below the threshold, the input and output signals remain unchanged. By adjusting the ratio to max, the compressor converts into a limiter.

4.6 MUTE/INVERT

Mute: Click to mute the current output channel (CH1-CH4)
Invert: Click to set the current output channel phase to 0°/180° (CH1-CH4)

4.7 DELAY：Delay range: 0-62.40ms

4.8 TEMPERATURE

Temperature setting:0°-44°

4.9 Router

Input signal selection: Each input channel of CHA-D can be selected Analog 1-4/DANTE1-4

4.10 Work Mod

Work mode: 6 modes can be chosen.(Normai/AB BRI/CD BRI/AB&CD BRI/Link/Backup)

4.11 Output

For the CHA-CHD output channel,it can review the amplifier temperature/channel power consumption and adjust the output channel volume.

7 GUI/FW UPDATE

* The corresponding windows software, the latest version and operating instructions can be downloaded from www.seikaku.hk.

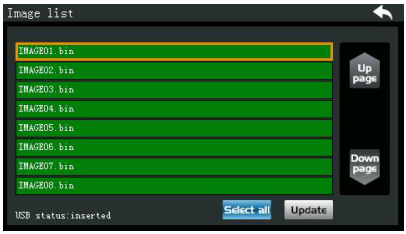
GUI update

1 Prepare and copy the file to the root directory of the USB drive.

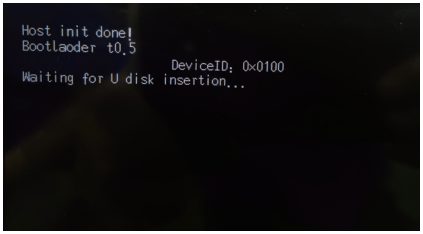
2 Insert the USB drive into the USB port on panel.

3 Select [Function Menu] in the display → select [Update Firmware] → select [Update Picture] then, the amplifier will read the U disk picture list information

4 Select [Select All] or select a single picture that needs to be updated. The file will become selected → then click [Update]



5 The LCD interface jumps out and the bootloader version information can be read.

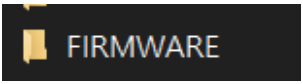


6 The device is automatically entered update mode and complete the update, then restart.

GUI/FW UPDATE

7

FW updation

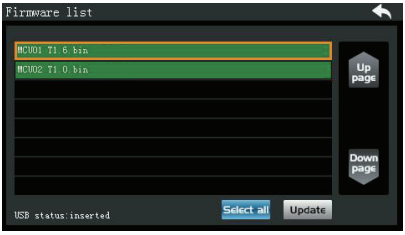


1 Prepare and copy the file to the root directory of the USB drive.

2 Insert the USB drive into the USB port on panel.

3 Select [Function Menu] in the display → select [Update Firmware] → select [FW Update] then, the amplifier will read the U disk FW list information

4 Select [Select All] and the file will become selected → then click [Update]



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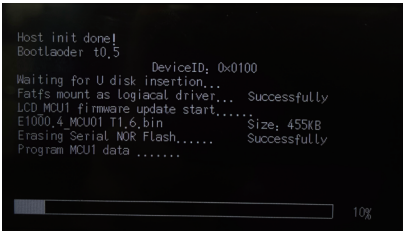

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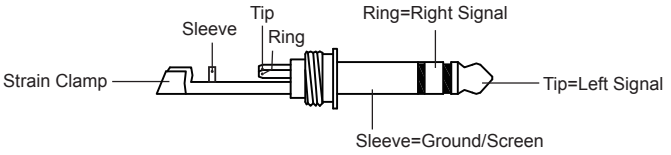
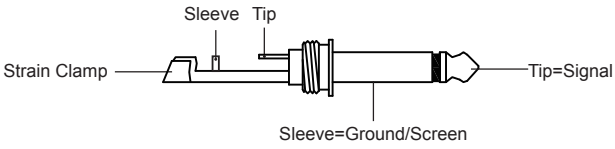
8 WIRING CONNECTIONS



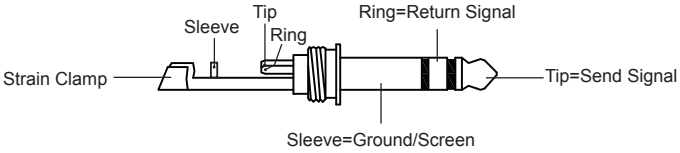
Use for Headphone

1/4" Stereo (TRS) Jack Plug



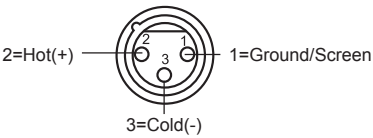
Use for Mono Line In, Mono 1/4"Jack Plugs

1/4" Mono (TS) Jack Plug



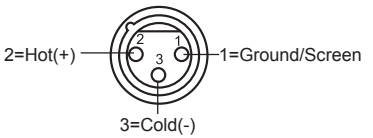
Use for Inserts Points

1/4" Stereo (TRS) Jack Plug



Use for Balanced Mic Inputs
(For unbalanced use, connect pin 1 to 3)

3-pin XLR Male Plug
(seen from soldering side)

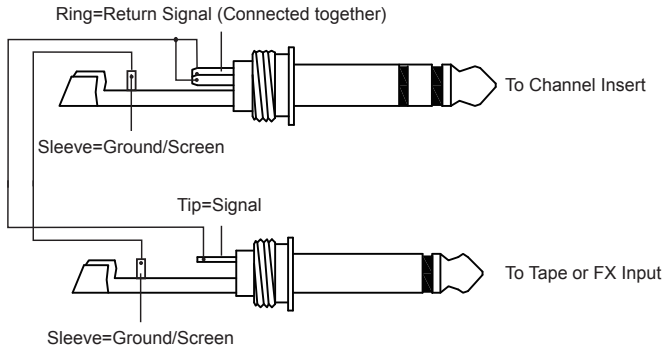


Use for Main output
(For unbalanced use, leave pin 3 unconnected)

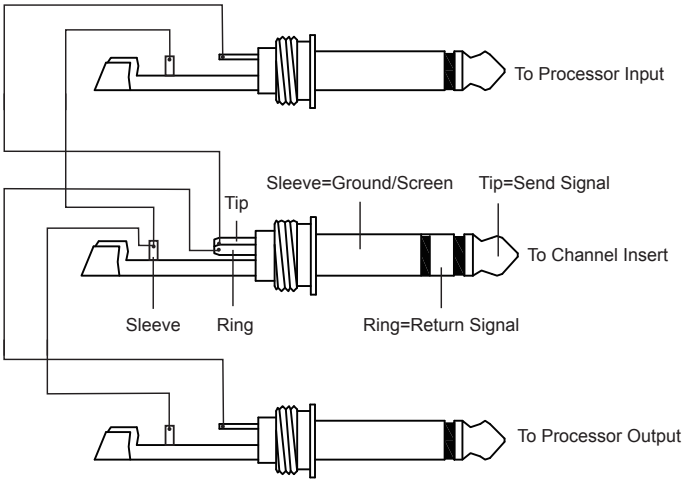
3-pin XLR Line Socket
(seen from soldering side)

WIRING CONNECTIONS

8



'Tapped' Connection Direct Output Lead
(Enables the Insert to be used as a Direct Output
while maintaining the channel signal flow)



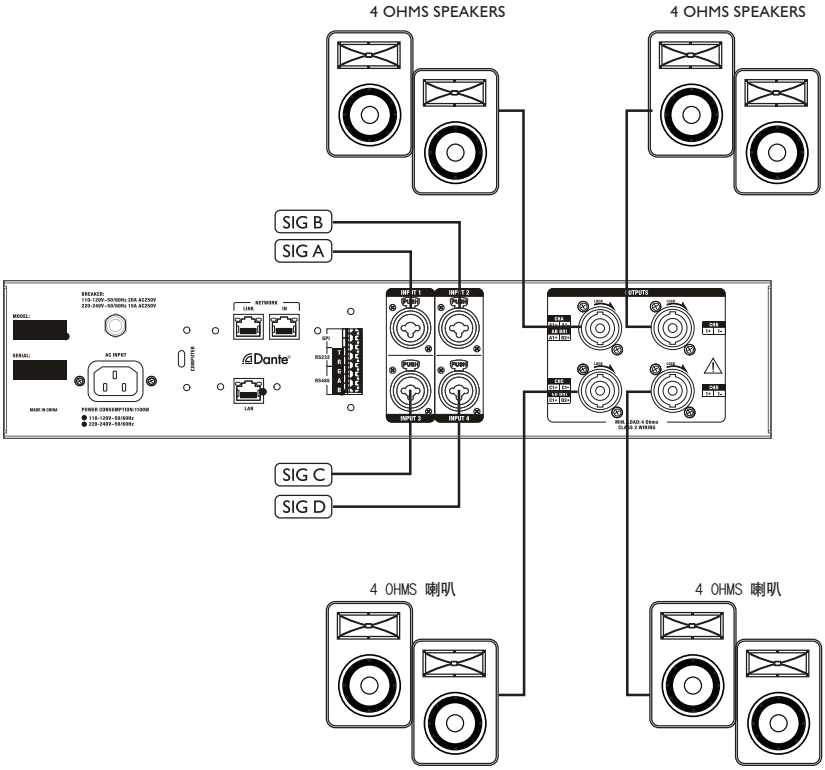
Y-Stereo lead for insert Connection
(To be used when the processor does not employ a
single jack connection for the In/Out Connections)

9 System Configuration Diagram

Stereo Operation

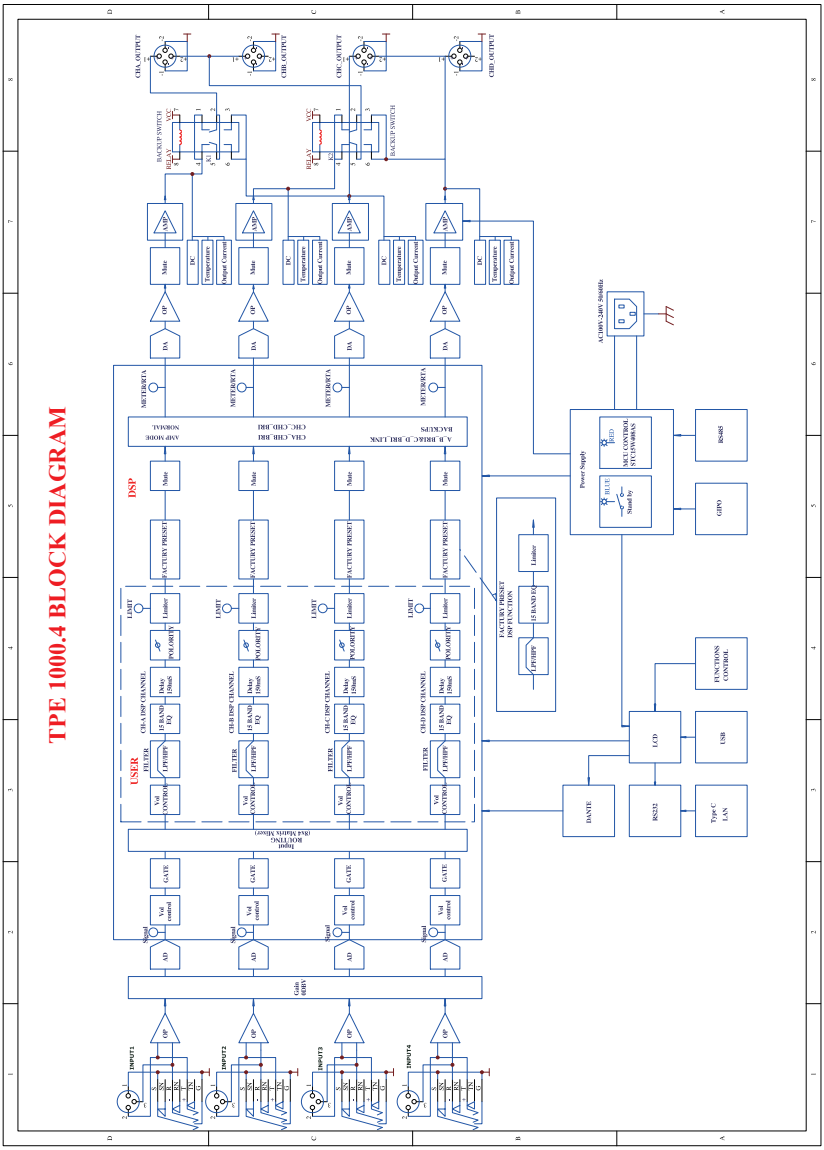
TPE 1000.4 can be used in the stereo mode as two separate 1100 watt units; each capable of driving loads down to 4 ohms. Each channel operates independently and has its own input connectors, sensitivity level controls, automatic limiter, fault protection circuitry, power amp, and speaker outputs.

The default settings of the mode is stereo mode. This approach provides a more accurate reproduction of the live performance.



BLOCK DIAGRAM

10



11 TECHNICAL SPECIFICATIONS

Power Specifications(tolerance +/-5%)		
Stereo Mode (Both Channels Drive)	4 ohms(RMS)	1000W*4
	8 ohms(RMS)	500W*2
Bridge Mono Mode	8 ohms(RMS)	2000W*2

Electrical Specification	
Input Sensitivity (Limit Off)	0.9-1.1V(0+/-1dBv)
Input Impedance	20k ohms balanced or 10k Ohms unbalanced
Frequency Response (at 10dB Rated Output Power 8)	20Hz～20KHz(+0/-1dB)
THD+N (Ref.1K 1/8 Rated Power,A-Weighted)	<0.05%
S/N rate (Ref. Rated Power, A-Weighted)	>95dB
Crosstalk (Below Rated Power)	>70dB
Power/Output Circuitry	Switching Power Class D

TECHNICAL SPECIFICATIONS

11

Specification	
Protection	Disconnect, mute, overload voltage, short circuit, open circuit, overheating, ultrasonic and RF protection
Control	Potentiometer
Display	LED display
Connector	Input: Dynamic balanced XLR Output: Speakon sockets
Power supply	110V-120V / 220V-240V AC 50/60Hz ± 10%
Size(W*H*L)	483(D)*88.1（H）*447.9（W）
weight	10.77kg

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TPE 1000.4

NF06115-1.0