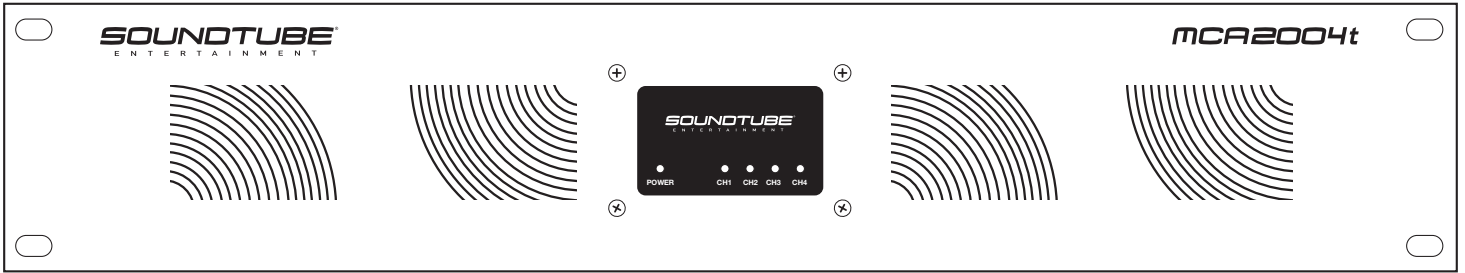




MCA2004t

Install Instructions For:
MCA2004t

MCA2004t, AUDIO DISTRIBUTION AMPLIFIER INSTALLATION MANUAL



FEATURES:

- 200W at 8 ohms direct or 70V, 100V constant voltage outputs
- 100W at 4 ohms direct or 25V constant voltage output
- 4 channel class D amplifier
- Matrix mixer connects inputs to outputs
- Selectable 70Hz high pass and low pass filtering
- 2 switchable subwoofer channels with 120Hz low pass and 120Hz selectable high pass filtering
- Euroblock balanced and unbalanced inputs
- Selectable auto signal sense and deep sleep trigger modes
- Peak-clipping limiter
- High current euroblock output connectors
- Forced air cooling with variable speed thermostatically controlled fan
- Overload, short circuit, DC offset, and thermal protection circuits
- Power/sleep, limiting and protection LED indicators
- Compact 2U rack space chassis
- Selectable amp status monitoring

DESCRIPTION:

The SOUNDTUBE MCA2004t audio distribution amplifier is a high-performance audio amplifier that is designed for continuous use in commercial and professional applications. The high efficiency Class “D” amplifier design offers high performance in a compact design.

Performance features of the SOUNDTUBE MCA2004t amplifier are flexible audio input connections for both balanced and unbalanced audio signals. The amplifier input uses two removable euroblock style connectors to interface with the input source. The amplifier’s input routing feature allows the distribution of the input signal to the selected output. This feature allows all connected speakers to be driven by a single or multiple sources.

The amplifier offers 70Hz switchable high pass filters to avoid over driven bass distortion and speaker line transformer saturation from low frequencies. “SUB” or subwoofer mode is another feature offered by the MCA2004t. This mode allows Channel 1 and Channel 2 to be switchable subwoofer outputs. This mode applies a 120Hz low pass filter to either, or both Channel 1 and Channel 2 and allows for a 120Hz high pass filter to the remaining channels. When this mode is selected for a particular channel, the output impedance will be automatically changed to 4 ohms.

This amplifier has auto signal sense or a deep sleep trigger, as well as an auxiliary port used to remotely monitor the health of the amplifier.

The SOUNDTUBE MCA2004t’s protection circuitry includes temperature, short circuit, DC offset, and current overload protection. This amplifier is designed to provide long term reliability of operation and includes several features to ensure many years of trouble-free operation.



Warning

SoundTube amplifiers must be installed by a professional audio installer/contractor. For safety and for optimum audio performance, installer must follow all directions issued by SoundTube Entertainment.

Warning

Do not spec or install amplifier near support beam, ventilation duct or other structure that may interfere with amplifier function or dispersion.

[SAFETY INSTRUCTIONS]

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
CAUTION: To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.		

Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of un-insulated "dangerous voltage: within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

- 1. Read Instructions** - All the safety and operating instructions should be read before the appliance is operated.
- 2. Retain Instructions** - The safety and operating instructions should be retained for future reference.
- 3. Heed Warnings** - All warnings on the appliance and in the operating instructions should be adhered to.
- 4. Follow Instructions** - All operating and other instructions should be followed.
- 5. Water and Moisture** - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- 6. Carts and Stands** - The appliance should be used only with a cart or stand that is recommended by the manufacturer.

PORTABLE CART WARNING



- 7. Wall or Ceiling Mounting** - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. Heat - The appliance should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.

10. Power Source - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed up or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

12. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.

13. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

14. Object and Liquid Entry - Care should be taken so that neither objects fall nor liquids spill into the inside of the appliance.

15. Damage Requiring Service - The application should be serviced by qualified service personnel when:

- a. the power supply cord or the plug has been damaged,
- b. objects have fallen onto or liquid has been spilled into the appliance,
- c. the appliance has been exposed to rain,
- d. the appliance does not appear to operate normally or exhibits a marked change in performance, or
- e. the appliance has been dropped or the cabinet damaged.

16. Servicing - The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

17. Grounding or Polarization - Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR USAGE

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, INSERT FULLY.

ATTENTION: POUR EVITER LES CHOCS ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRESE ET POUSSER JUSQU'AU FOND.

CONSIGNES DE SÉCURITÉ

1. Lisez les consignes de sécurité - Toutes les consignes de sécurité et de fonctionnement doivent être lues avant l'utilisation de l'appareil.
2. Conservez ces consignes de sécurité - Les consignes de sécurité et d'utilisation doivent être conservées pour référence ultérieure.
3. Respecter les alertes et avertissements - Toutes les alertes et avertissements de sécurité et de fonctionnement indiquées sur l'appareil et dans la notice d'utilisation doivent être respectées.
4. Suivez les instructions - Toutes les instructions fournies dans la notice d'utilisation et autres instructions doivent être respectées.
5. Eau et humidité - L'appareil ne doit pas être utilisé en présence d'eau ou dans un milieu humide - par exemple, près d'une baignoire, d'un lavabo, d'un évier, d'un bac à lessive, dans un sous-sol humide, près d'une piscine, etc.
6. Chariots de transport et supports - L'appareil doit être utilisé uniquement avec un chariot ou un support recommandé par le fabricant.



AVERTISSEMENT CONCERNANT LE CHARIOT DE TRANSPORT

7. Montage au mur ou au plafond - L'appareil doit être seulement monté au mur ou au plafond selon les consignes recommandées par le fabricant.
8. Ventilation - L'appareil doit être placé de telle sorte que son emplacement ou sa position ne gêne pas une ventilation adéquate. Par exemple, l'appareil ne doit pas être installé ou posé sur un lit, un canapé, un tapis ou une surface similaire qui pourrait bloquer les ouvertures de ventilation ; ou encastré, comme une bibliothèque ou un meuble, ce qui pourrait empêcher le flux d'air au travers des ouvertures de ventilation.
9. Chaleur - L'appareil doit être placé loin des sources de chaleur telles que des radiateurs, poêles ou autres appareils produisant de la chaleur.
10. Source d'alimentation - L'appareil doit être connecté à une source d'alimentation uniquement du type de celle décrite dans la notice d'utilisation de l'appareil ou tel qu'indiqué sur l'appareil.
11. Protection des cordons d'alimentation - Les cordons d'alimentation doivent être disposés de sorte qu'ils ne soient pas susceptibles d'être piétinés, ou écrasés par des objets placés contre ou à côté d'eux. Il est nécessaire d'accorder une attention particulière aux cordons au niveau des prises de courant murales, des réceptacles, et au point de sortie du cordon de l'appareil.
12. Nettoyage - L'appareil doit être nettoyé exclusivement selon les recommandations du fabricant.
13. Périodes de non-utilisation - Le cordon d'alimentation de l'appareil doit être débranché de la prise d'alimentation si l'appareil n'est pas utilisé pendant une longue période de temps.
14. Objets et liquides - Des précautions doivent être prises pour qu'aucun objet ne tombe ou liquide ne se renverse à l'intérieur de l'appareil.
15. Dommages nécessitant réparation - L'appareil doit être réparé par un personnel qualifié lorsque:
 - a. le cordon d'alimentation ou la prise a été endommagé,
 - b. des objets sont tombés sur, ou du liquide a été renversé dans l'appareil,
 - c. l'appareil a été exposé à la pluie,
 - d. l'appareil ne semble pas fonctionner normalement, ou présente un changement marqué dans sa performance, ou e. l'appareil est tombé, ou le boîtier est endommagé.
 - f. AVERTISSEMENT: La fiche d'alimentation (appareil coupleur) est utilisée comme dispositif de connexion, le dispositif de déconnexion doit rester facilement accessible.
16. Entretien régulier et réparation - L'utilisateur ne doit pas tenter d'intervenir sur l'appareil au-delà des conseils donnés dans la notice d'utilisation. Toute autre intervention doit être effectuée par un réparateur qualifié.
17. Borne de terre de protection. L'appareil doit être connecté à une prise secteur avec une prise de terre.

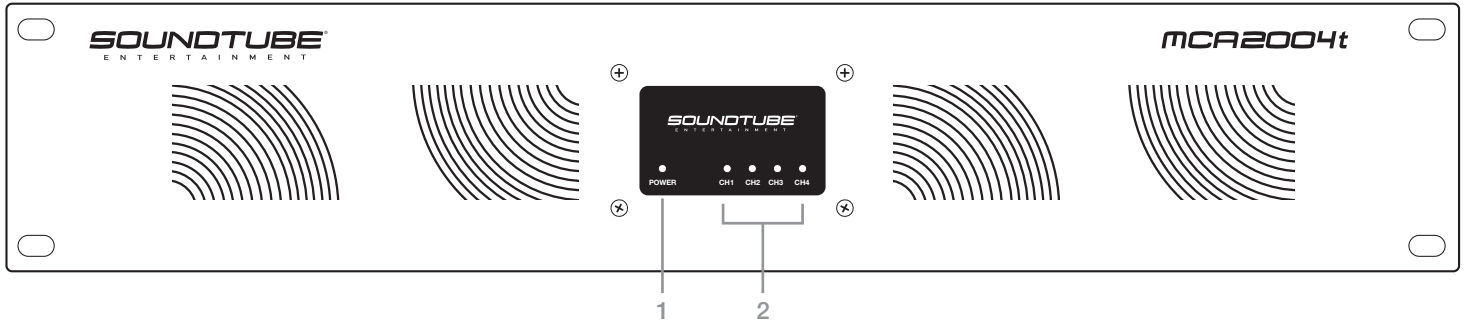
APPLICABLE FOR USA, CANADA OR WHERE APPROVED FOR USAGE

CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE PLUG TO WIDE SLOT, INSERT FULLY.

ATTENTION: POUR EVITER LES CHOCs ELECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRESE ET POUSSER JUSQU'AU FOND.

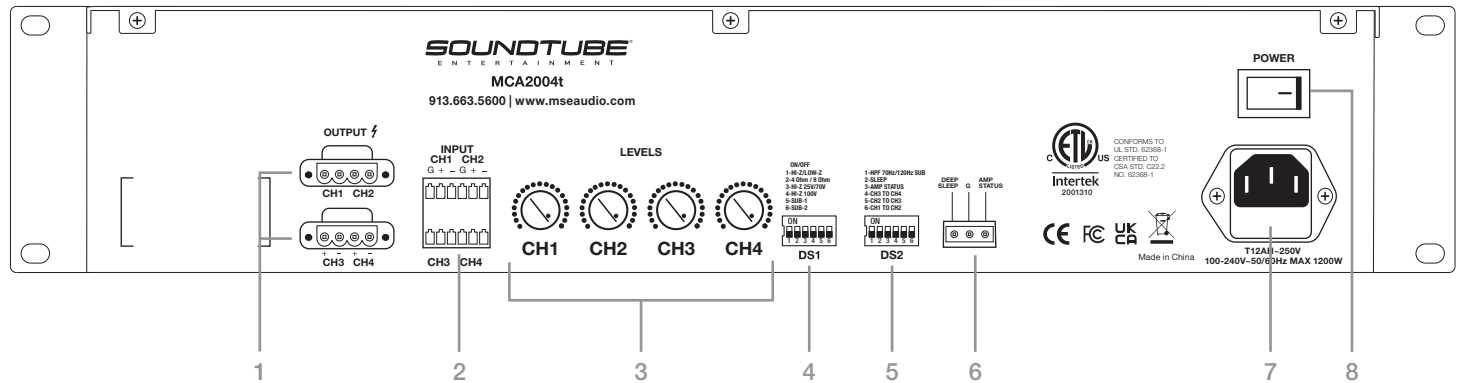
USER INTERFACE

Front Panel



1. Power Indicator LED – GREEN LED indicates amplifier POWER ON. While in auto sense sleep mode, RED LED indicates amplifier in “STANDBY”. LED OFF indicates amplifier POWER OFF, or while in deep sleep trigger mode, LED OFF also indicates amplifier in “STANDBY”.
2. Channel Status LED – LED is normally OFF. GREEN LED indicates signal input. RED LED indicates amplifier limiting.
 - a. Amplifier Protection Error – In the event of thermal or over current protection, ORANGE LED will illuminate for the channel in protection. The amplifier output will shut off for the respective channel until protection is no longer needed.

Rear Panel



1. Speaker Output – This removable euroblock type of connector is used to connect the amplifier output section to a loudspeaker using a direct or constant voltage connection. Speakers with an impedance of 4 – 8 ohms and constant voltage 25/70/100v may be connected to these terminals. (Note: make sure dip switch selection is set for the proper load). Please be certain to check the polarity of your speaker connections. A removable 4 pole euroblock style connector is provided for the speaker connection and will accept up to a 12-gauge wire. Strip the ends of your wires about ¼” from the end. Loosen the screws in the connector and insert the stripped ends into the respective + and – sides of the terminal block. Tighten the screws down to clamp the wire in place.
2. Audio Line Input – This is a removable euroblock type of connector that is used for balanced and unbalanced audio input signals. For balanced input connection, connect the positive signal wire to the positive (+) input pin, connect the negative signal wire to the negative (-) input pin, and connect the ground wire to the ground input pin. For an unbalanced input connection, connect the signal wire of the audio cable into the positive (+) input pin and connect the ground wire of the audio cable to the negative (-) ground input pin.
3. Input Levels – gain adjustment control for setting the amplifier volume.
4. Dip Switch One (DS1) – Please refer to the operation section of the manual for further information.
5. Dip Switch Two (DS2) – Please refer to the operation section of the manual for further information.
6. Deep Sleep Trigger (Low Energy Mode) and Amp Status Auxiliary Port – This is a removable euroblock type of connector that is used to remotely control the on/deep sleep function and monitor the Amp Status features. Please refer to the operation section of this manual for further information.
7. Line Cord Power Socket – This is a standard IEC style 3 pin power connector socket to connect the approved provided power cord from the amplifier to the wall outlet. Use only the correct power cord for the country in which the amplifier is to be used or damage to the amplifier may occur.
8. Main Power Off and On switch.

OPERATION

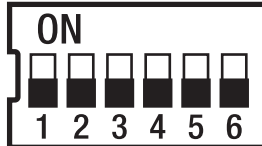
DIP SWITCH OPERATION

X = EITHER ON OR OFF

ON/OFF

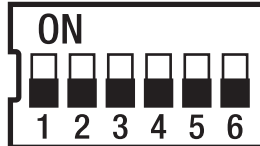
- 1-HI-Z/LOW-Z
- 2-4 Ohm / 8 Ohm
- 3-HI-Z 25V/70V
- 4-HI-Z 100V
- 5-SUB-1
- 6-SUB-2

- 1-HPF 70Hz/120Hz SUB
- 2- SLEEP
- 3-AMP STATUS
- 4-CH3 TO CH4
- 5-CH2 TO CH3
- 6-CH1 TO CH2



DS1

DIP SWITCH ONE



DS2

DIP SWITCH TWO

OUTPUT MODE 8 Ohm/4 Ohm/25V/70V/100V SELECTION				
	DS1-SW 1	DS1-SW 2	DS1-SW 3	DS1-SW 4
8 Ohm	OFF	OFF	X	X
4 Ohm	OFF	ON	X	X
25V	ON	X	ON	OFF
70V	ON	X	OFF	OFF
100V	ON	X	X	ON

SUB MODE AND FILTERING SELECTION			
	DS1-SW 5	DS1-SW 6	DS2-SW 1
70Hz High Pass Filter on All Channels	OFF	OFF	ON
Channel 1 SUB Mode* (120Hz Low Pass Filter on Channel 1)	ON	OFF	OFF
Channel 1 and 2 SUB Mode* (120Hz Low Pass Filter on Channel 1 and 2)	ON	ON	OFF
Channel 1 and 2 SUB Mode* & 120Hz High Pass Filter on Channel 3 and 4	ON	ON	ON

*DS1 – Switch 5 and DS1 – Switch 6 enable SUB mode for channels 1 and 2. When SUB mode is enabled, the selected channel will switch to 4 Ohm direct mode and apply a 120Hz low pass filter to the output. If DS2 - Switch 1 is enabled while SUB mode is enabled for channel 1 and 2, a 120Hz high pass filter will be applied to the output of channels 3 and 4.

SLEEP MODE SELECTION	
	DS2-SW 2
Auto Signal Sense Sleep Mode: System will auto detect signal, if no signal in 15 minutes, the system will enter "STANDBY" Mode.	ON
Deep Sleep Trigger Mode: If the deep sleep trigger and ground pin of auxiliary port are closed, the system will enter "STANDBY". If the deep sleep trigger and ground pin of auxiliary port is open, the system will return to normal operation.	OFF

AMP STATUS SELECTION	
	DS2-SW 3
Heartbeat: The AMP STATUS pin of the auxiliary port will output a 1Hz 5V square wave signal while there is no amplifier fault. If amplifier has a fault occur, the voltage on the AMP STATUS pin will drop to 0V output.	ON
5V DC Mode: The AMP STATUS pin of the auxiliary port will output a stable 5V DC signal while there is no amplifier fault. If amplifier has a fault occur, the voltage on the AMP STATUS pin will drop to 0V output.	OFF

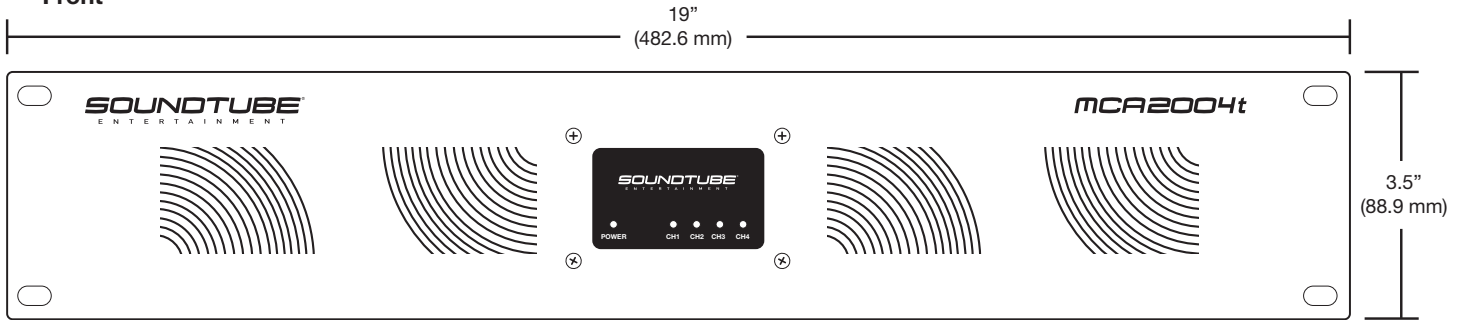
CHANNEL ROUTING						
OUTPUT 1	OUTPUT 2	OUTPUT 3	OUTPUT 4	DS2-SW 4	DS2-SW 5	DS2-SW 6
INPUT 1	INPUT 2	INPUT 3	INPUT 4	OFF	OFF	OFF
INPUT 1	INPUT 1	INPUT 3	INPUT 4	OFF	OFF	ON
INPUT 1	INPUT 2	INPUT 2	INPUT 4	OFF	ON	OFF
INPUT 1	INPUT 1	INPUT 1	INPUT 4	OFF	ON	ON
INPUT 1	INPUT 2	INPUT 3	INPUT 3	ON	OFF	OFF
INPUT 1	INPUT 1	INPUT 3	INPUT 3	ON	OFF	ON
INPUT 1	INPUT 2	INPUT 2	INPUT 2	ON	ON	OFF
INPUT 1	INPUT 1	INPUT 1	INPUT 1	ON	ON	ON

TECHNICAL SPECIFICATIONS

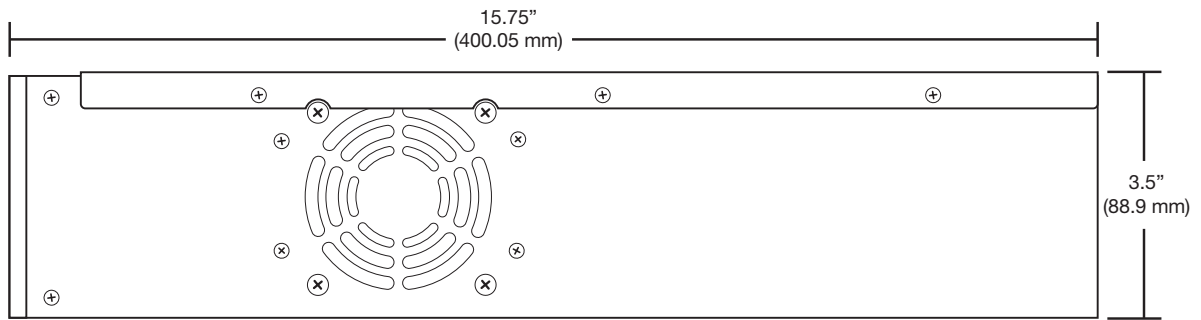
Description	MCA2004t Class-D Power Amplifier
Amplifier Power	100 Watts RMS < 0.06 % THD @ 4 Ohms 200 Watts RMS < 0.05 % THD @ 8 Ohms 100 Watts <0.1%THD @ 25 V 200 Watts <0.05%THD @ 70.7 V 200 Watts <1%THD @ 100 V
HP Filter – Switchable	70 Hz - 120Hz
Frequency Response	20Hz - 20KHz +/-3dB Direct
Inputs	single euroblock balanced / unbalanced
Maximum Input Sensitivity	1.4V for full output
THD+ Noise	<1% , 20-20KHz
S/N	>85 dB un-weighted
Damping Factor	>32
Input Impedance	8.6K unbalanced, 8.6K balanced
Protection Features	Soft Clipping Limiter Short Circuit Overload, DC offset protection Thermostatic variable speed fan cooling Thermal overload protection Over current protection
Front Panel Indicators	POWER / Sleep, Clipping, Signal, protection LEDs
Current Consumption 120V	10.5 A @8 Ohm , 6.5 A @4 Ohm / Full Power
Operating Voltage	Full range 100-240VAC, 50/60Hz, MAX 1200W
Dimensions (Overall)	19"x15.75"x3.5"
Weight	17.4lbs
Approvals	FCC, ETL, CE, CB, UKCA

DIMENSIONS

Front



Side



Top

