Audio Amplifiers
for Professional Applications.

Face Audio Owner's Manual
for TS Series Amplifiers
OWNER'S MANUAL

The information furnished in this manual does not include all of the details of design or variations of the equipment, nor does it cover every possible situation that may arise during installation, operation or maintenance.

This manual will familiarize you with features of your amplifier so we suggest you take time to read through it before operating your system to get the most out of your amplifier. For your safety read the sections on important precautions, input, output and power connections.

Keep this manual for future reference.

Each Face Audio™ amplifier is inspected before leaving the factory and should arrive damage-free. However, in the event damage did occur in transit notify the shipping company and point-of-purchase immediately. Be sure to save the carton and all packing material for any future shipping needs as they are specially designed to protect the amplifier during transit.

SAFETY PRECAUTIONS

Do's

- Keep this owner’s manual for future reference.
- Take careful notice of all markings on the chassis.
- Take care not to block blower intake or exhaust ports.
- Always operate the amplifier with the ground wire intact.
- Ensure the amplifier is always powered by an electrical system with a ground.
- Before powering the amplifier verify the voltage of the power source matches its rated voltage.
- Avoid operating the amplifier on surfaces which may interfere with normal flow of air around it, such as a carpeted floor, sofa, bed or other similar non-smooth surfaces.

Don’ts

- Do not ground any red terminal.
- Do not operate the amplifier while standing in water.
- Do not spill water or other liquids into or on the amplifier.
- Do not use the amplifier if the electrical cord is frayed or broken.
- Do not use the unit near stoves, radiators or other heat generating devices.
- Do not EVER connect the output of the amplifier to any other voltage source.
- Do not run the output of any amplifier channel back into another input channel.
- Do not parallel or series connect an amplifier output with any other amplifier output.
- Do not drive the inputs with a voltage greater than that required to drive the amplifier to full output.
OPERATING PRECAUTIONS

Voltage:
Make sure the AC mains voltage is correct and is the same as that printed on the rear of the amplifier. Damage caused by using improper voltage is not covered by warranty. Be sure to use high quality power outlets and strips that can withstand the power requirements of the amplifier.

Shock Hazard:
Face Audio™ amplifiers produce hazardous output voltages. The actual current draw an amplifier demands depends on many factors such as load, output level and the crest factor of programmed material. The power requirement of Face Audio™ amplifiers is rated under typical usage conditions with both channels driven so that peaks are just at the clipping point (maximum current draw for each amplifier is listed in the specifications section). To avoid electrical shock please:

- Make sure the power switch is off before making any input or output connections and before plugging in the amplifier.
- Do not touch any exposed speaker wiring while the amplifier is operating.
- Do not remove the top cover of the amplifier as there are no user serviceable parts inside.

Connectors & Cables:
Always use high quality speaker cable of the correct gauge for the application and only use shielded MIC wire for the inputs. Poor cabling will be the root cause for most of the problems you encounter.

Speaker/Driver Damage:
Only appropriately rated speakers/drivers should be used with Face Audio™ amplifiers to avoid damage to speakers/drivers. Tuning the gain controls all the way down before powering-up the amplifier is recommended to prevent speaker damage.

Face Audio™ will not be responsible for damaged speakers. If you are unsure about the capacity of your speakers please consult your speaker manufacturer.

Any harsh pops or cracking distortion may be an indication of the speaker voice coil striking the magnet assembly, if these symptoms should arise reduce power immediately. A single high-power crescendo can damage high-frequency drivers almost instantaneously while low-frequency drivers can usually withstand higher power levels for only a few seconds before they fail.

Face Audio™ recommends using amplifiers of this power range to achieve cleaner sound rather than solely for increased volume.

Interference:
This device may cause interference when placed in close proximity to radio tuners and television sets.

Mounting:
All Face Audio™ amplifiers will mount in a standard 19" rack, 4 front panel mounting holes are provided for this. Your amplifier uses a forced-air cooling system to maintain a low operating temperature. Air is drawn in through the front by a blower that is placed in the rear of the unit, do not cover the front or rear of the device as this may cause it to overheat. As the temperature inside the unit increases the blower kicks on automatically to cool it, if the temperature gets too high the amplifier will automatically shut down.
SWITCHES/INDICATORS/CONTROLS

Mode Select Switch:
The rear panel is equipped with a “mode select switch” which enables the user to switch between bridged, parallel and stereo modes. Do not operate the mode select switch while the amplifier is on. For more details please refer to the section on Bridge/Parallel/Stereo Operation.

Signal Ground Lift Jumper:
There is a jumper switch located on the rear panel which electrically connects the signal ground to the chassis/AC ground. When the jumper switch is moved to the “up” position the signal ground is lifted and completely isolated from the chassis/AC ground. Do not use the amplifier with the jumper in the “up” position if it and the signal source equipment are not on the same AC ground. In a properly designed system the amplifier should receive its ground from the line cord; whenever possible the signal source should share the same AC ground as the amplifier.

Fault LED:
The Fault LED is red and may be an indication of short circuit, open circuit, DC voltage or overheating.

Clip LED:
The Clip LED is orange and indicates clipping. It will light dimly at the onset of clipping and increase in brilliance as clipping becomes more severe. The LED will continue to illuminate until clipping ceases. If the LED’s are flashing quickly and intermittently, the channel is sitting at clip threshold, while a steady, bright glow means the amplifier is clip limiting, or reducing gain to prevent severely clipped waveforms from reaching the speakers.

Signal LED:
There are two blue signal LED’s per channel. When an LED’s corresponding channel produces an output signal of ~4 volts RMS or more the LED will illuminate. It is useful in determining whether a signal is being amplified by the amplifier.

Active / Power LED:
The Active LED is blue and illuminates when the power is turned on.

Input attenuators:
These are the knobs located on the front panel for controlling gain to their respective channels in stereo mode. In bridged mode only channel A’s knob controls gain while channel B’s does not function.
1. Front panel channel LEDs: Fault, Clip, Signal & Active (power).
2. Combination circuit breaker & power switch.
3. Air intake grill.
4. Channel attenuators (knobs).

5. Power cord.
6. Power fuse.
7. Five-way binding post output connectors.
8. Signal ground lift barrier strip.
11. Limiter (disable at your own risk).
MAKING CONNECTIONS

Input Connections:
Face Audio™ amplifiers come with built-in phono jacks and/or XLR3F inputs, depending on the model.

Phono Connectors:
The amplifier's built-in ¼ inch input phono connectors can be wired for balanced, unbalanced, floating or ground-referenced sources. The connectors have a standard tip ring sleeve (TRS) configuration.

- Sleeve is ground (gnd).
- Tip is positive (+).
- Ring is negative (-).

Please refer to the image below:

XLR3 Connectors:
The amplifier's built-in XLR3 connector pinout configuration is as follows:

- Pin 1 is ground (gnd).
- Pin 2 is positive (+).
- Pin 3 is negative (-).

Please refer to the image below:

Output Connections:
Speakers can be connected to the binding posts on the rear of the amplifier using banana plugs, spade lugs or bare wire. Consult a wire gauge chart to determine the suitable wire gauge and length for the required load of your particular set up.

The red binding posts are for connecting to the positive poles of the speaker and are considered “hot”, these connections should only be made after the amplifier has been powered off. The black posts are at signal ground and for connecting to the negative poles of the speaker.

Never connect a hot output to a ground or another hot output! Always turn off the amplifier before making connections!
**BRIDGE/PARALLEL/STEREO OPERATION**

**Bridge Mode:**
Both amplifier channels can be bridged together to make a very powerful single channel monaural amplifier. When the mode switch is set to the “bridge” position the built in power amplifiers operate in “push-pull” mode. The doubled output voltage from channel A and B appears on the positive (red) terminals on both channels. In Bridge mode the phases of channels A & B are 180 degrees out of phase, so you do not use the individual output connectors. Follow the steps below to use this mode properly and safely. Use extreme caution when operating the amplifier in bridged mode.

To bridge the amplifier follow these steps:

1. Turn off the amplifier. Never adjust bridge mono to stereo while the amp is on.
2. Toggle the mode selector switch to the “Bridge” position.
3. Attach speaker to the red posts (not black).
4. Input signal into Ch. A, turn both front controls down.
5. Turn amplifier on.
6. Slowly turn up Ch. A front control until desired signal level is reached.
7. Check that the amplifier is running properly and not showing Clip or Fault LED’s.

Please refer to the image below:

![Diagram of amplifier](image.png)

Never connect a hot output to a ground or another hot output!

The TS series amplifier’s on/off switch located on the front panel is also a circuit breaker. Should the switch shut off during normal use, push it back to the “on” position one time only, if it will not stay on there may be a short in the audio system somewhere or the amplifier may need servicing.

Never hold the power switch in the “on” position if it won’t stay there itself!
Parallel Mode:
While the mode selector switch is in the parallel position the input connectors for both channels are wired directly in parallel (Ch. A input will drive Ch. A & B output). The output volumes can still be controlled individually by adjusting the front dials as in normal operation.

To use parallel mode follow these steps:
1. Turn off the amplifier.
2. Toggle the mode selector switch to the “Parallel” position.
3. Input signal into Ch. A or B, turn both front controls down.
4. Attach speakers into the NL4 connectors, both A & B if desired.
5. Turn amplifier on.
6. Slowly turn up Ch. A & B front controls until desired signal level is reached.
7. Check that amplifier is running properly (not showing Clip / Fault LED’s).

Please refer to the image below:

Stereo Mode:
While the mode selector switch is in Stereo mode the amplifier is a binaural amplifier. Both input and output channels amplify independent of each other.

To use stereo mode follow these steps:
1. Turn off the amplifier.
2. Toggle the mode selector switch to the “Stereo” position.
3. Attach speakers into the NL4 connectors (both A & B if desired).
4. Input signal into channel A & B, turn both front controls down.
5. Turn amplifier on.
6. Slowly turn up Ch. A & B front controls until desired signal level is reached.
7. Check that amplifier is running properly (not showing Clip / Fault LED’s).

Please refer to the image below:
PROTECTION FEATURES

General Protection:
Each Face Audio™ amplifier incorporates special circuitry to protect the amplifier and attached speakers under most circumstances. Face Audio™ has tried to make the amplifier as fail-safe as possible by making it resistant to short and open circuits, DC voltage and overheating.

When certain problems occur that cause a channel to enter Fault mode, the Fault mode LED for that channel will illuminate. Occurrences of DC voltage at output, excessive subsonic frequencies and thermal overloads will cause the channel's output relay to disconnect the speaker load until the problem is corrected or the amplifier cools down.

Thermal Protection:
Face Audio™ amplifiers utilize a continuous variable speed blower to assist in cooling. The blower will change speed in response to the amplifier's cooling needs. This way the amplifier maintains an internal temperature within the required range for continued operation under normal working conditions. If a channel's heat-sink reaches 90°C the channel will disconnect its load and the Fault LED will illuminate. Normal operation will resume once the temperature cools down to 80°C. Should this occur it may be an indication of obstructed airflow due to poor placement of the amplifier, a clogged air filter or excessive dust build-up on the inside of the unit.

Short Circuit:
A short circuit protection system safeguards the amplifier's output transistors, in the event of short circuit or other stressful loads the channel will protect itself by automatically disconnecting the load. In case of short circuit the Fault LED will illuminate, power -off the amplifier to reset it.

DC Voltage Protection:
If the amplifier detects DC voltage on a channel at its output, it will fault to protect the speakers. Should this happen the Fault LED will illuminate.

Subsonic Frequencies:
Face Audio™ amplifiers have a built-in subsonic frequency protection circuit for each channel which enables the amplifier to automatically disconnect the speakers when excessively high frequency energy occurs at the output.

Power-on/Power-off Muting:
The amplifier outputs are muted for approximately 4 seconds after power-on and immediately after power-off to prevent thumps or pops from being heard.

Speaker Protection:
All Face Audio™ amplifiers inherently protect speakers from DC voltages, subsonic signals and excessively high frequency signals. However, it is very important that users are aware of the application limits of their speakers and be sure that the amplifier does not exceed the speaker's power capabilities. Face Audio™ will not be responsible for damaged speakers.

Limiter:
Face Audio™ amplifiers come with built-in limiters to prevent inadvertent damage to it or equipment attached to it by less experienced users. It is highly recommended that the limiter never be disabled as you can damage the amplifier and other equipment if you push the amp too hard. If the limiter is disabled the amplifier will no longer be covered under warranty.
MAINTENANCE & SERVICE

Cleaning:
Disconnect the amplifier from the AC main source before performing any type of cleaning. A damp cloth and mild non-abrasive cleaning solution may be used to clean the faceplate and chassis.

Dust Removal:
If operating in a dusty environment the heat sinks may clog with dust after prolonged use, this will interfere with cooling and may pose a fire hazard. Compressed air should be used to blow the inside of the unit out. In extreme cases, such situations where the lid needs to be removed to free buildup, the amplifier should be referred to a qualified technician for a thorough cleaning. Do not remove the lid by yourself.

Servicing:
Servicing your amplifier requires a trained technician. There are no user serviceable components inside your unit and the danger of electrical shock exists if you remove the cover. Additionally, some of the components are exclusive to Face Audio™ and require Face Audio™ replacements.

Technical Assistance:
If you suspect your amplifier is faulty, first check your system configuration and amplifier settings to determine the origin of the problem is not incorrect audio interfacing, poor cabling or other system level problems. After the above variables have been eliminated as the root cause of the problem you should call Face Audio™ for technical assistance at (801) 501-0804. We have trained staff available on weekdays from 9AM to 5PM MST.

Product Return Guidelines:
In the event your Face Audio™ product is defective please follow the guidelines below to return it to us for repair or replacement:

1. Pack the product well for protection during shipping. It is preferable the unit be put back in its original packing.
2. Include the following:
   a. A copy of the sales receipt.
   b. Your name.
   c. The return address.
   d. A phone number where you can be contacted.
   e. And a detailed description of the defect.
3. Call the Face Audio™ technical hotline and provide us with a tracking number for the package.
4. Ship the product prepaid to the following address:
   Face Audio™, LLC
   8675 South Sandy Parkway
   Building 110
   Sandy, Utah 84070
WARRANTY

Please refer to our website for the latest warranty information and product registration: www.faceaudio.com.
## AMPLIFIER POWER RATINGS SPECIFICATION

<table>
<thead>
<tr>
<th>SPECIFICATION</th>
<th>F250TS</th>
<th>F500TS</th>
<th>F700TS</th>
<th>F1200TS</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 ohm Stereo Power (RMS)</td>
<td>180Wx2</td>
<td>330Wx2</td>
<td>450Wx2</td>
<td>650Wx2</td>
</tr>
<tr>
<td>8 ohm Bridged Power (RMS)</td>
<td>400W</td>
<td>700W</td>
<td>1200W</td>
<td>2000W</td>
</tr>
<tr>
<td>Frequency response</td>
<td>20Hz - 20kHz: 0.1% - 3dB (1W/8Ω)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>THD into 4Ω, 1kHz</td>
<td>&lt;0.05% @ 250W</td>
<td>&lt;0.05% @ 500W</td>
<td>&lt;0.05% @ 700W</td>
<td>&lt;0.05% @ 2000W</td>
</tr>
<tr>
<td>IMD-SMPTE</td>
<td>&lt;0.01% @ 100W into (60kHz/kHz)</td>
<td>&lt;0.01% @ 300W into (60kHz/kHz)</td>
<td>&lt;0.01% @ 450W into (60kHz/kHz)</td>
<td>&lt;0.01% @ 650W into (60kHz/kHz)</td>
</tr>
<tr>
<td>Slew Rate</td>
<td>40V/μs</td>
<td>40V/μs</td>
<td>40V/μs</td>
<td>40V/μs</td>
</tr>
<tr>
<td>Damping Factor</td>
<td>300:1, 1kHz</td>
<td>300:1, 1kHz</td>
<td>300:1, 1kHz</td>
<td>500:1, 1kHz</td>
</tr>
<tr>
<td>Voltage Gain</td>
<td>50% standard</td>
<td>61% standard</td>
<td>76% standard</td>
<td>97% standard</td>
</tr>
<tr>
<td>Input Sensitivity (4Ω)</td>
<td>0.775V for rated power</td>
<td>0.775V for rated power</td>
<td>0.775V for rated power</td>
<td>0.775V for rated power</td>
</tr>
<tr>
<td>Input Impedance</td>
<td>20K Ohms, balanced</td>
<td>20K Ohms, balanced</td>
<td>20K Ohms, balanced</td>
<td>20K Ohms, balanced</td>
</tr>
<tr>
<td>Signal to Noise</td>
<td>-103dB</td>
<td>-103dB</td>
<td>-103dB</td>
<td>-103dB</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>&lt;60dB</td>
<td>&lt;60dB</td>
<td>&lt;60dB</td>
<td>&lt;60dB</td>
</tr>
<tr>
<td>Connectors (per channel)</td>
<td>Female XLR (pin 1), 1/4” jack, 5-way output binding posts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>115V/50Hz-60Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Current Draw 200V</td>
<td>6A</td>
<td>8A</td>
<td>8A</td>
<td>15A</td>
</tr>
<tr>
<td>Cooling</td>
<td>Two (2) variable speed DC fans</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Controls</td>
<td>2 front panel attenuators, rear panel signal ground lift jumper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators (per channel)</td>
<td>Four LED, Clio LED, Signal LED, Power LED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection</td>
<td>Temperature, DC, sub/ultra, sonic short circuit, IGSM, output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>3.4&quot; x 19&quot; x 15&quot;</td>
<td>3.4&quot; x 19&quot; x 15&quot;</td>
<td>3.4&quot; x 19&quot; x 15&quot;</td>
<td>3.4&quot; x 19&quot; x 15&quot;</td>
</tr>
<tr>
<td>Gross Weight</td>
<td>17kg</td>
<td>18kg</td>
<td>20kg</td>
<td>22.2kg</td>
</tr>
<tr>
<td>Net Weight</td>
<td>18kg</td>
<td>18kg</td>
<td>20kg</td>
<td>23.2kg</td>
</tr>
</tbody>
</table>

**NOTE:** Face audio® is continually researching and developing, for this reason specifications may change without notice.