Owner's Manual

M2150 / S2150
True Digital Amplifier

TacT
AUDIO

Blank Page

WARNING
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED PERSONNEL.

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

The lightning with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of "Dangerous Voltage" within the product's enclosure that maybe of sufficient magnitude to constitute a risk of electrical shock to a person.

1. Read these instructions entirely before installing or operating this equipment.
2. Keep these instructions.
3. Heed all warnings.
4. Do not use this equipment near water or allow it to become wet.
5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat,; doing so may damage the unit and present a fire hazard.
7. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. If the provided plug does not fit into your outlet, consult an electrician for replacement of the outlet to one that is polarized. To protect against electrical shock, match the wide blade of the polarized plug to the wide slot in the outlet and fully insert the plug.
8. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit the equipment. Do not use this unit with a damaged cord or plug.
9. Only use attachments/accessories specified by the manufacturer.
10. Unplug this equipment during lightning storms or when unused for long periods of time.
11. Refer all servicing to qualified service personnel.

1. Always unplug the unit from the electrical outlet before cleaning.
2. Do not use abrasive cleaners. Simply wipe the exterior with a clean soft cloth. A small amount of nonabrasive cleaner may be used on the cloth to remove excessive dirt or fingerprints.

Cleaning and Maintenance

The >note< symbol indicates information very useful or essential to daily operation.

"Note" symbol

Acknowledgments

Registration

IMPORTANT!

Please record your serial number here for future reference. You will need this for future upgrades or should you ever require service on your M/S 2150.

M/S 2150 serial number: _____

Optional modules installed:

        ADC analog input   :__

Table of contents

Unpacking the M/S 2150

Carefully remove the M/S2150 and accessory kit from the carton and check for shipping damage. Contact both the shipper and TacT Audio immediately if the unit shows any sign of damage from rough handling. All TacT Audio equipment is carefully inspected before leaving our factory.

KEEP SHIPPING CARTON AND PACKING MATERIALS for future use or in the unlikely event that the unit needs servicing. If this unit is shipped without the original packing, damage could occur and void the warranty.

Accessories

You should find the following items in the accessory kit:

- one AC mains cord
- RJ11 data cable
- RJ11-to-RS232 adapter
- 15' RS232 cable
- CD-rom with software
- remote control
- 2 AAA batteries
- one manual

Operating voltage

The 2150 amplifier is configured for either 110 or 220/240 volt operation. The operating voltage is clearly marked on the outside of the box and also on the rear panel beneath the AC mains connector.

BEFORE CONNECTING THE POWER, MAKE SURE THAT THE LABEL INDICATING THE VOLTAGE MATCHES THE VOLTAGE FOR YOUR COUNTRY

The 2150 has three operating modes:

- **OFF**   AC mains power is cut off, either via the front panel mains switch, or by unplugging the amplifier from the wall outlet.

- **STANDBY**   The unit is powered but all outputs are muted and the display is off. The amplifier uses very little current and is "idling" or "sleeping". Use the remote "STANDBY" button to toggle between ON and STANDBY.

- **ON**   Everything is powered and ready to use.

Introduction

Congratulations on your purchase of your M/S 2150. You have now acquired the most advanced stereo amplifier ever developed!

How does it work?

The digital input is taken to the central processor where it is reformatted into a pulse width modulated signal of extreme precision. The pulse rate is measured at precisely 384,000 pulses per second. Each pulse can have 256 different widths, with the narrowest pulse being a mere 10 nanoseconds wide. The clock frequency therefore is 98 MHz. The central processor uses proprietary patented algorithms (Equibit) to arrive at exactly the right combination of pulse widths produce a highly accurate waveform. This is the most fundamental departure from conventional amplifiers. TacT defines the waveform mathematically - we are not trying to follow or emulate a waveform by using feedback or feed-forward.

Once the decision of the duration of the pulse is made the central processor controls FET-switches at the output with extreme precision. Voltage and current are drawn from the power supply and fed to the speakers.

The level of playback is controlled by adjusting the voltage of the power supply. As this voltage is switched directly to the speakers, it is of paramount importance that the power supply be totally free of ripple and noise. For TacT digital amplifiers, a switch mode power supply of extreme precision with ripple rejection of more than 135 dB has been developed. At full volume (voltage) the TacT M/S2150 delivers 58 volts, equivalent to 150 Watts into 8 ohms. To reduce the volume the voltage of the power supply is reduced. This means that the volume control is no longer part of an active circuit.

Why hasn't anybody thought of it before?

Why has this not been done before? - Well, try to switch 58 volts DC 384,000 times per second without creating even a whisper of noise at a distance of 1" from the tweeter! Only in the past few years has it been possible to create a fully digital "amplifier".

Features:

- Ultra high precision DA conversion
- Upsampling to 384,000 Hz before conversion
- Full resolution at -30 dB
- Software upgradeable DSP section
- DSP-based 48 bit internal electronic crossover (in bi-amped mode)
- 192kHz/24bit AD converter
- Digital pre-amplification with 24-bit resolution at a playback level of -39 dB!
- Output of 2x300W into 4 Ohm load, with extreme load tolerance
- NO feedback or feedforward locally or globally is utilized in the signal path
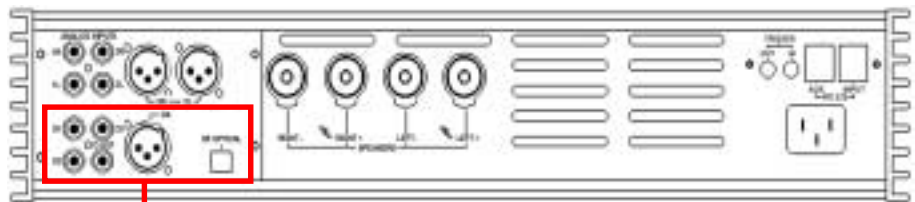
M/S 2150 Connections

Digital input

The 2150 amplifier has 5 digital inputs:

- three RCA (S/PDIF) (D1, D2, D3)
- one AES/EBU (XLR) (D4)
- one TosLink (S/PDIF) (D5)

All of the digital inputs support PCM audio data with sampling rates from 32kHz to 96kHz /16-24 bits, however, the **AES/EBU and RCA/coaxial inputs support up to 192kHz.**

Digital Input Section

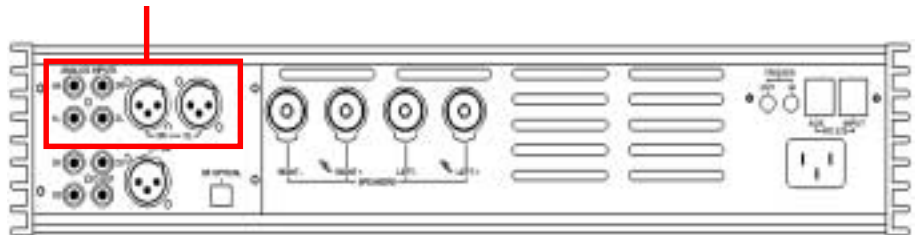**Analog input (optional ADC module)**

The 2150 amplifier has 3 stereo analog inputs whith the optional ADC module installed:

- two analog stereo single ended (RCA) (A1, A2)
- one analog stereo balanced (XLR) (A3)

NOTE: A/D conversion is always performed at 24-bits/192kHz.

Analog Input Section

NOTE: The optional ADC module is required for analog inputs.

Digital output

The 2150 amplifier has a digital pass through. The digital input signal is passed to the digital output without processing or volume control. The sampling rate is the native sampling frequency of the input.

NOTE: that this output is not active when analog input is selected.
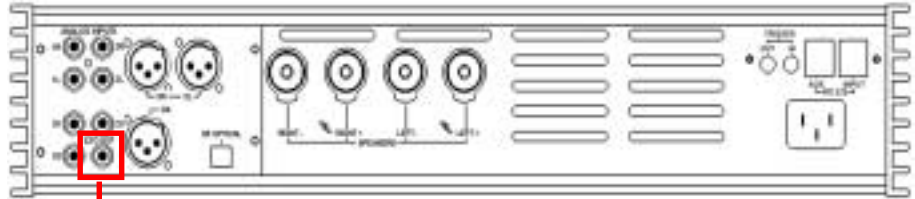
Digital Output

RS-232 interface ports

The M/S 2150 has two RS232 interface ports:

- INPUT
- AUX

Use the "**INPUT**" port for communication with your Tact master controller or Personal Computer.

Use the "**AUX**" port to connect to TacT digital amplifiers.

RS-232 Interface Ports

Trigger outputs

The M/S 2150 has a trigger "**IN**" and "**OUT**" to provide on and standby control from a trigger device and to pass the trigger signal to another device.
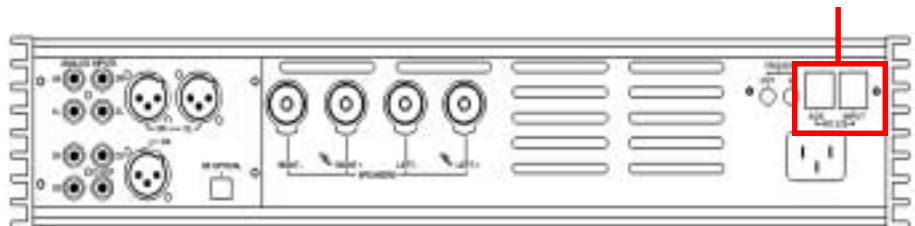
Trigger Connectors
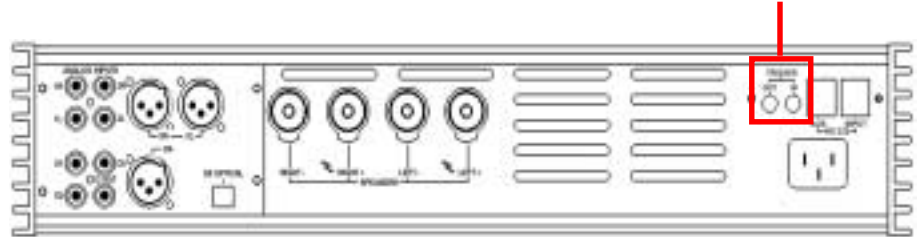
AC mains input

Connect the M/S 2150 to the AC mains wall socket.

CAUTION: Use the supplied IEC mains cable, or a 3-prong grounded cable only.
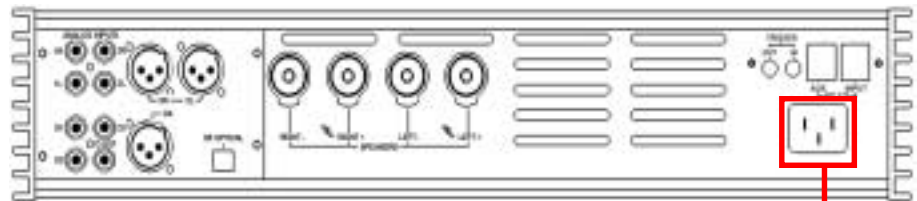
Digital Output

Speaker output (normal operation)

The 2150 amplifier has one pair of high quality WBT speaker terminals. These terminals will accept both spade- and banana-plugs. When connecting your speakers, please make sure that the RED/HOT terminal is connected to your speakers' POSITIVE terminal and the BLACK/COLD terminal is connected to your speakers' NEGATIVE terminal.
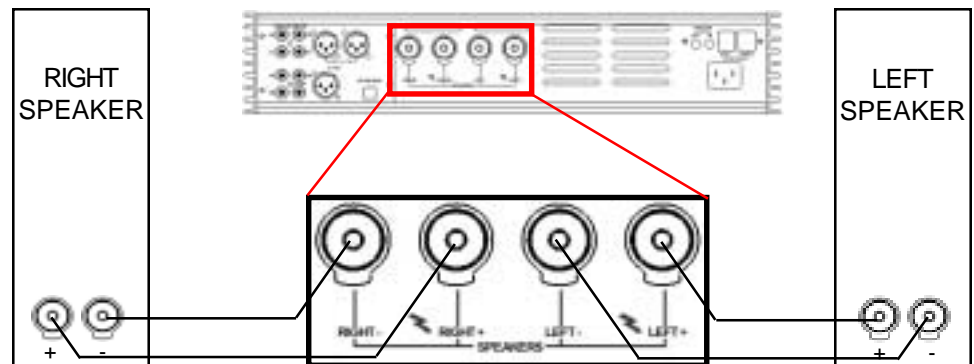
**Speaker output
(Biamped operation)**

If you are using two or more 2150 amplifiers, and your speakers allow for multi-amping, you can configure the system to run in biamped or even tri-amped mode etc. This type of setup allows for one amplifier channel to drive a specific driver or frequency region. The most commonly used setup is biamped (two channels to each speaker: high and low). The following are two examples of making a biamped connection:

Horizontal Biamping

LEFT
SPEAKER

HIGH

LOW

RIGHT
SPEAKER

HIGH

LOW

RIGHT
SPEAKER

HIGH

LOW

LEFT
SPEAKER

HIGH

LOW

Vertical Biamping

LEFT
SPEAKER

HIGH

LOW

RIGHT
SPEAKER

HIGH

LOW

RIGHT
SPEAKER

HIGH

+   -

LOW

+   -

LEFT
SPEAKER

HIGH

+   -

LOW

+   -

RIGHT-   RIGHT+   LEFT-   LEFT+
SPEAKERS

RIGHT-   RIGHT+   LEFT-   LEFT+
SPEAKERS
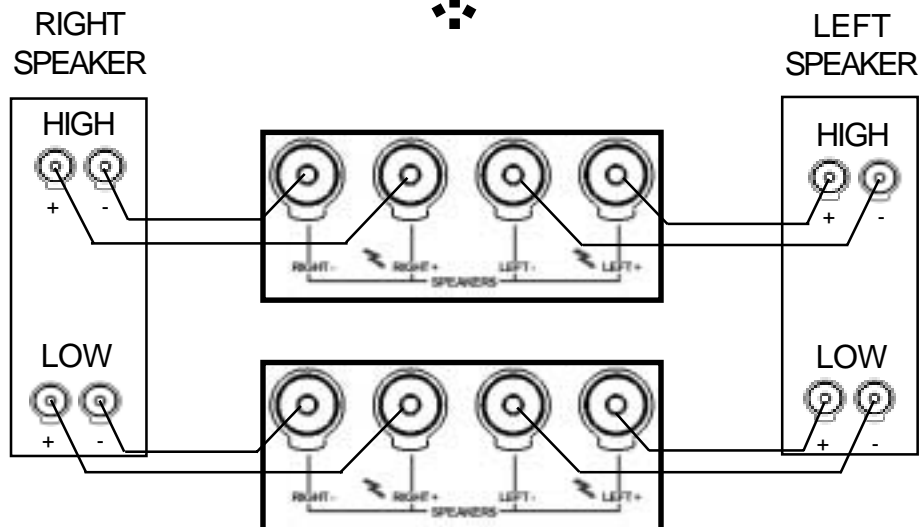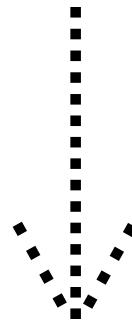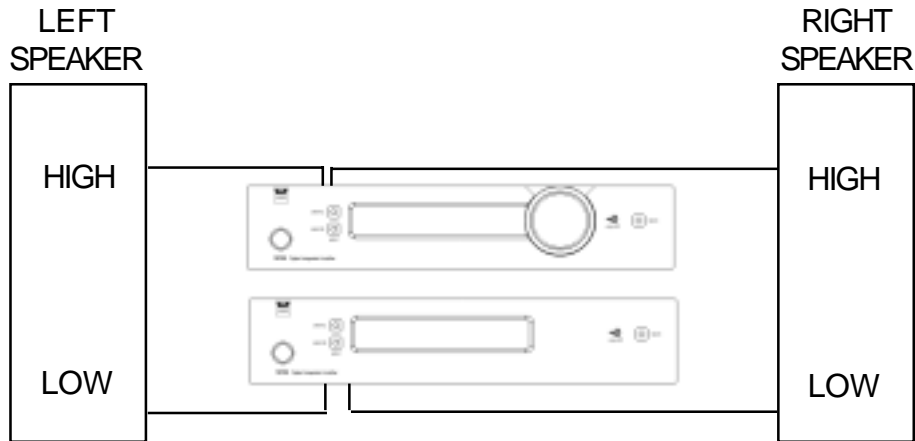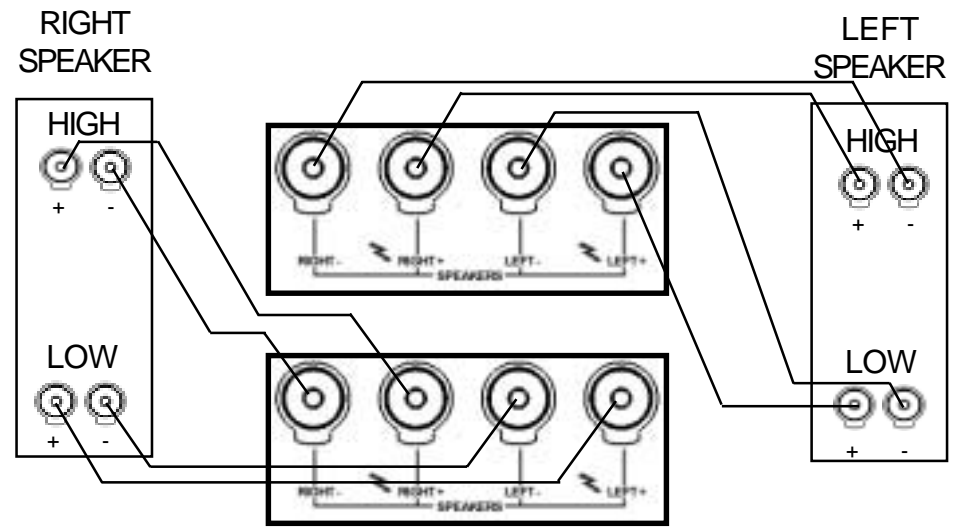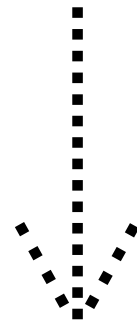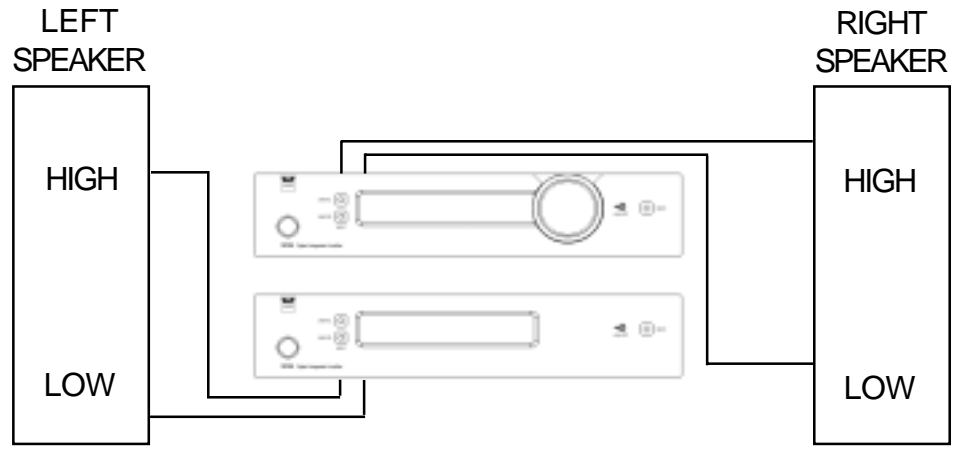
Biamping - continued

When two or more 2150 amplifiers are configured in a bi-/tri-amped setup, both the signal and the RS232 TacT System Bus must be daisy chained between the amplifiers.

The same signal flow is applicable for both horizontal and vertical bi-amping.

From source
Digital signal (coax/SPDIF)

From RCS2.0S, RCS2.2X or TCS mkII *Optional
RS232

AMP-1

Digital signal (coax/SPDIF)

RS232

AMP-2

Digital signal (coax/SPDIF)

RS232

AMP-3 - ONLY PRESENT IN TRI-AMPED SETUP
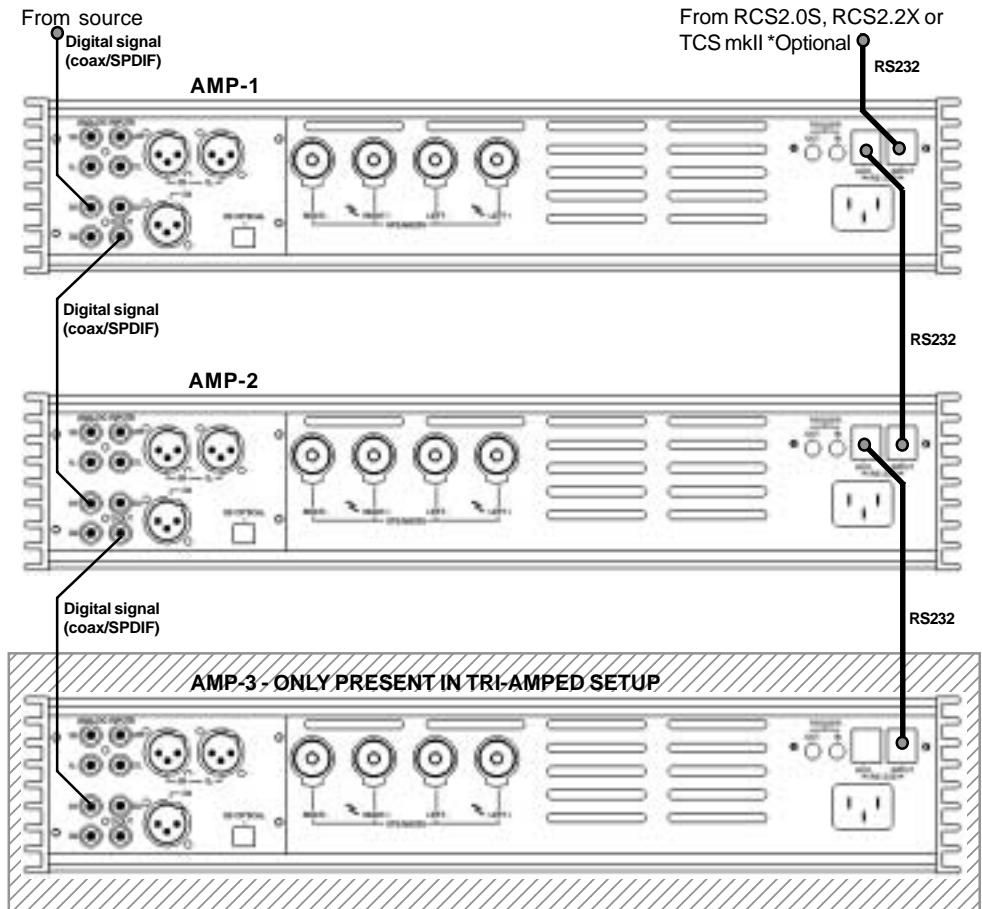
M2150 & S2150 Configurations

With its advanced DSP control, the M/S 2150 can enable digital crossovers (high-and low-pass) making it is possible to configure the 2150 amplifiers to virtually any system.

Examples of how a TacT active system can be configured:

1) Active two-way. The M2150 operates as master amp (control unit) and the S2150 operates as slave amp. M2150 has a DSP-based high-pass filter and drives the high-section of the 2-way loudspeaker. S2150 has a low-pass filter and drives the bass-section.

2) Active three-way. The Tact RCS operates as master pre-amp and the three S2150 operates as slave amps. The top S2150 has a DSP-controlled high-pass filter and drives the tweeter section. The middle S2150 has a High- and low-pass filter and drives the midrange section. The bottom S2150 has a low-pass filter and drives the bass section.

Front Panel Controls

The front panel controls on the 2150 amplifier will allow you to control all of the amplifiers main features. All secondary options are controlled with menus using the remote control or the supplied software. The exclusive "TacT wheel" is the master volume control. (The wheel is only available on the M2150)

Digital Input Selector   Analog Input Selector   Master Volume   Mute

ON/OFF Switch   Input Display   Display   Volume Level
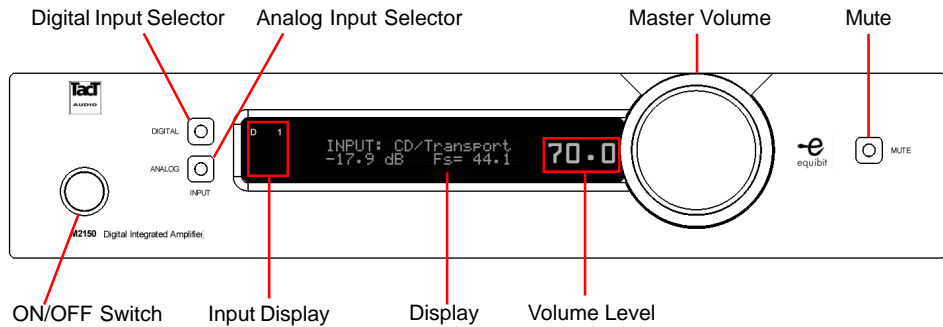
ON/OFF

Use the "ON/OFF" switch to toggle between ON and OFF operation.
(Standby mode can be only selected only through the remote control)

Master volume

The master volume is controlled by turning the large volume wheel. The green numbers on the left side of the wheel will change as you turn the wheel - this is your master volume level indicator. (The wheel sensitivity, maximum volume and other settings can be found in the "OPT" menu.)

Mute

Use the "MUTE" button to mute or un-mute during playback. The master level indicator will switch to "--" in Mute mode. You can still adjust the master volume while the unit is in Mute mode - the master level indicator will briefly indicate the level, then switch back to "--" mute indicator

Digital input selector

Press the "DIGITAL" button to select the digital input. This is a toggle switch, and pressing it multiple times will toggle through all of the five digital inputs. The selected input will be displayed in the input display portion of the display screen.

Analog input selector

Press the "ANALOG" button to select the ANALOG input. This is a toggle switch, and pressing it multiple times will toggle through all of the three analog inputs. The selected input will be displayed in the input display portion of the display screen.

NOTE: The optional ADC module is required for analog inputs.

Remote Control

The remote control is used to access the front panel display controls and menus.
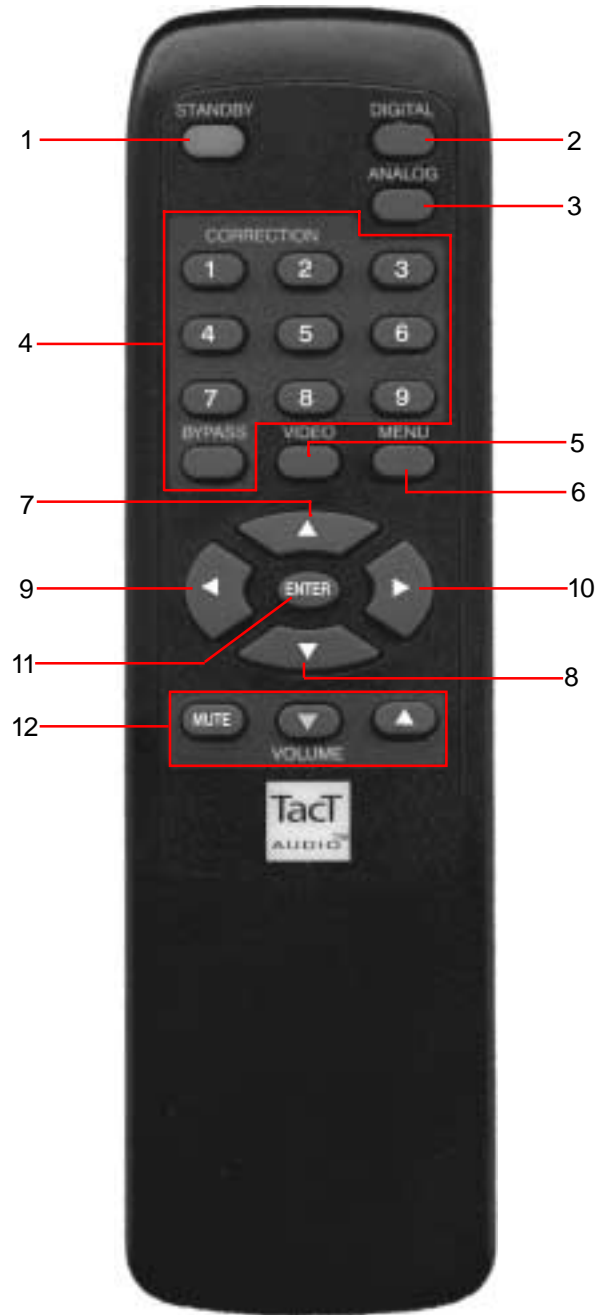
1 - STANDBY
The STANDBY button will turn the M/S 2150 "**ON**" or it will place it into "**STANDBY**" mode. When in standby mode, the unit is placed into a low power "idiling" state. The standby button is also used to save changes that were made in the menu editing parameters. By placing the unit into standby the current settings are saved.

2 - DIGITAL
The DIGITAL button will scroll sequentially, allowing the selection of one of the 5 digital inputs.

3 - ANALOG
The ANALOG button will scroll sequentially, allowing the selection of one of the 3 analog inputs.

4 - CORRECTION block
The CORRECTION block buttons are inactive with this unit.

5 - MENU
The MENU button will switch the front panel display from the status screen to the main menu screen.

6. VIDEO
The VIDEO button is inactive with this unit.

7. UP
The UP navigational button is used to select menu options and/or change their values.

8. DOWN
The DOWN navigational button is used to select menu options and/or change their values.

9. LEFT
The LEFT navigational button is used to select menu options and/or change their values.

10. RIGHT
The RIGHT navigational button is used to select menu options and/or change their values.

11. ENTER
The ENTER button will select the menu option currently marked by the blinking cursor or is used to enter an edited parameter.

12. VOLUME Block
The VOLUME block consists of three buttons.
The "**MUTE**" button will mute/un-mute all enabled channels.
The "**UP**" button will increase the master volume level
The "**DOWN**" button will decrease the master volume level.
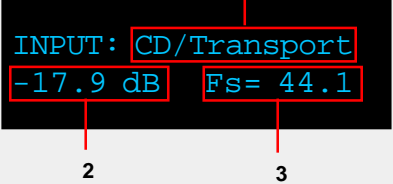
Front Panel Display

Main screen

When the 2150 amplifier is turned ON and the system loading sequence has completed, the amplifier will display the normal operating main screen.

Main Screen :

1

```
INPUT: CD/Transport
-17.9 dB    Fs= 44.1
```

2   **3**
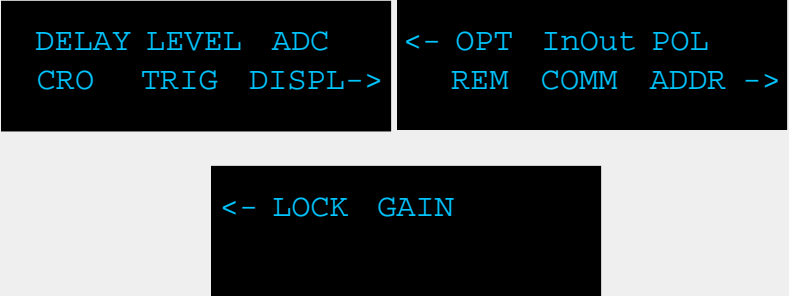
1 - Name for input selection
2 - Master level in dB
3 - Input sampling frequency indicator.

MAIN menu

The Main menu of the M/S 2150 has three pages of general menu selections.

Main Menu :

```
DELAY LEVEL  ADC      <- OPT  InOut POL
CRO    TRIG DISPL->      REM  COMM  ADDR ->
```

```
<- LOCK  GAIN
```

The remote control is needed to enter the amplifiers Menu selection pages. Press the "**MENU**" button to enter the amplifiers menu section. Use the "**LEFT**" and "**RIGHT**" navigational buttons to highlight an option with the selection cursor and to proceed to a new page. To enter a highlighted option press the "**ENTER**" button. Once you are in a menu option Use the "**MENU**" button to go back one step (from sub-menus) or to return to the main operating screen.

Saving Menu Settings

Custom settings that are made to any of the menu selections may be saved by placing the M/S 2150 into standby mode. If you make changes to any of the menu items and turn the unit off before placing it into standby mode all settings will be lost. To place the M/S 2150 into standby mode press the red "**STANDBY**" button on the remote control.

DELAY menu

The Delay menu controls the system's time alignment. The system's time alignment can be adjusted by changing the delay time for the left and right outputs independently.

Delay Menu :

```
LEFT  RIGHT
0.00   0.00  msec
```

1
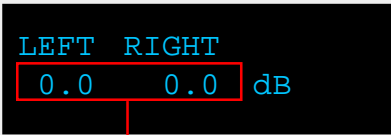
1 - Left and Right channel independent delay time settings.

Use the "**LEFT**" and "**RIGHT**" navigational buttons to highlight an option and use the "**UP**" and "**Down**" buttons to change its value .

LEVEL menu

The Level menu controls channel balancing. You can adjust the system's balance by changing the attenuation for the left and right output signals independently.

Level Menu :

```
LEFT  RIGHT
0.0    0.0  dB
```

1

1 - Independent Left and Right channel level settings.
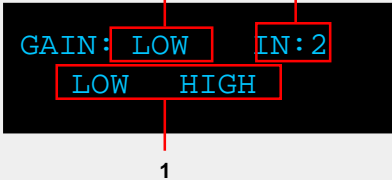
Use the "**LEFT**" and "**RIGHT**" navigational buttons to highlight an option and use the "**UP**" and "**Down**" buttons to change its value .

ADC menu
(ADC module optional)

The M/S 2150 may be equipped with an optional state of the art Analog to Digital Converter. To further enhance the converter's performance, the system offers two selectable gain values for the ADC input stage. These two values may be assigned to each input independently.

ADC Menu :

```
              3           2

   GAIN: LOW    IN:2
        LOW   HIGH

              1
```

1 - Assignable gain values.
2 - Input channel currently selected.
3 - Active gain setting for selected input channel.
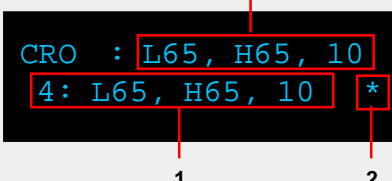
LOW = -6.0dB in reference to 0.0dB. Input sensitivity: 2.2 volt
HIGH = 0.0dB in reference to 0.0dB. Input sensitivity: 4.4 volt

Use the "**UP**" and "**DOWN**" navigational buttons to scroll through the available options and press the "**ENTER**" button to activate the currently displayed selection. To select an analog Input (2) use the "**ANALOG**" selector button found on the M/S 2150 front panel or on the remote control to scroll to the input you would like to edit.

CRO menu

The M/S 2150 can apply user selectable crossovers to the outputs. The default setting is set to "**OFF**" with no crossovers applied. For your convenience there are a total of 10 default crossover selections pre-loaded for use with most biamped systems. If a different crossover is desired, there are other options using the P.C. software included with the unit.

CRO Menu :

```
                          3

   CRO  :L65, H65, 10
   4: L65, H65, 10    *

              1           2
```

1 - Crossover selections.
2 - Active Crossover selection.
3 - Active Crossover selection.

Example : Option #4 - 10th order lowpass @ 65Hz + 10 highpass @ 65Hz
(See the "InOut" menu for more information about output settings used with crossover   configuration)

Use the "**UP**" and "**DOWN**" navigational buttons to scroll through the available options and press the "**ENTER**" button to activate the currently displayed selection.

TRIG menu

The trigger menu is used to control the behavior of the 2150 amplifier when a trigger signal is detected. When the input trigger is set to "**ON**" and a trigger signal is detected the amplifier will turn ON. The amplifier will stay in or switch to "**STANDBY**" mode if there is no trigger signal detected. When the input trigger is set to "**OFF**" the unit will not respond to a trigger signal however, the trigger signal will still be passed through the Trigger OUT terminal on the rear panel.
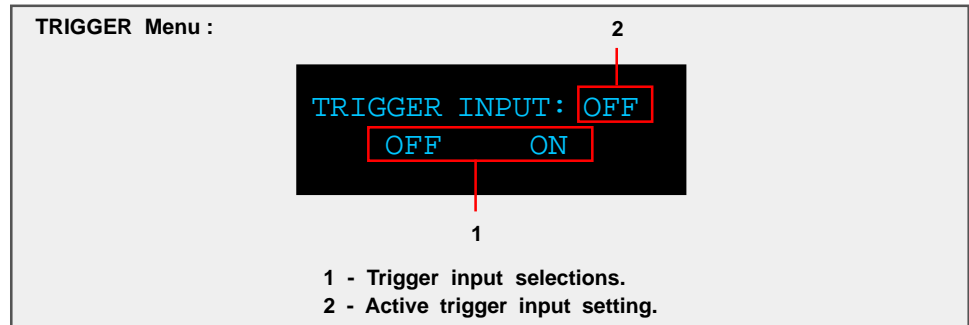
TRIGGER Menu :   **2**

TRIGGER INPUT: OFF
     OFF   ON

1

1 - Trigger input selections.
2 - Active trigger input setting.

Use the "**LEFT**" and "**RIGHT**" buttons to highlight the desired option and select it by pressing the "**ENTER**" button.

DISPL menu
(Display)

The display menu controls the display Time-Out feature. This option is used to turn the front panel display "**ON**" or "**OFF**". When this option is set to "**ON**" the front panel timer will turn the front display off when the front panel has   not been accessed for 10 seconds. When this option is set to "**OFF**" the display will remain lit whenever the unit is on. To wake the display, simply turn the wheel or push any button on   either the front panel or the remote control.
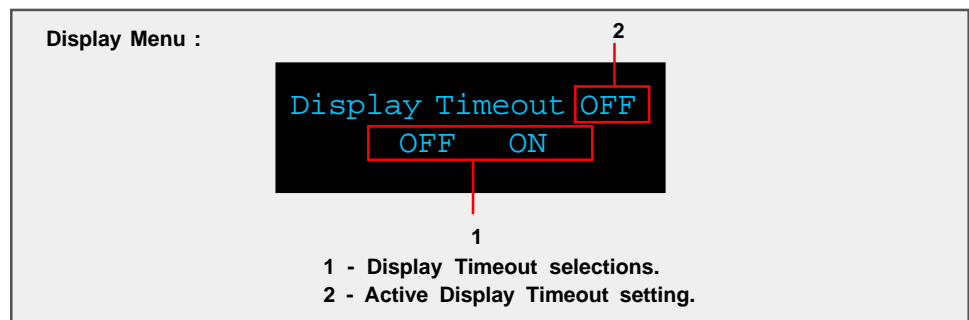
Display Menu :   **2**

Display Timeout OFF
     OFF   ON

1
1 - Display Timeout selections.
2 - Active Display Timeout setting.

Use the "**LEFT**" and "**RIGHT**" buttons to highlight the desired option and select it by pressing the "**ENTER**" button.

**OPT menu
(Options)**

The options menu is designed to control the systems maximum signal level "**MAXLEV**", signal detection threshold "**DTHR**" and wheel speed "**WH**".
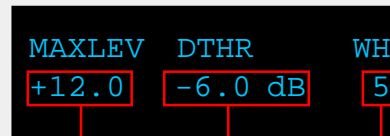
NOTE: Wheel speed is only available on the M2150.

Options Menu :

```
MAXLEV  DTHR      WH
+12.0   -6.0 dB    5
```

```
  1        2        3
```

1 - Maximum Level setting.
2 - Detection setting.
3 - Wheel speed setting.

- **Max Level** controls the system's maximum signal level.
  For example: if this option is set to -3.0 dB, the volume control
  and output can not go above -3.0 dB.

- **Detection** sets the signal detection threshold. If the absolute
  value of the Left or the Right channel signal goes above this
  threshold the red signaling dot will be displayed on the front
  panel bellow the master volume display. This feature can be used
  to indicate signal presence on either channel or to indicate near
  clipping condition. To use it as signal presence indicator set **Detec-
  tion** to a value close to -90.0 dB. To use it as near clipping indicator
  set **Detection** to a value close to 0.0 dB.

- **Wheel** option sets the wheel sensitivity. The maximum speed is 10 and
  minimum speed is 1. For example if the speed is set to 1, the volume increase is
  slower than if set to 10. To turn the wheel off, set the speed setting to "OFF".
  This setting is located one step below "1" the minimum speed.

To select/highlight an option use the "**LEFT**" or "**RIGHT**" buttons. To modify a se-
lected option use the "**UP**" and "**DOWN**" buttons.

INOUT menu

This InOut menu is used to set the channel output configuration for the M/S 2150.

NOTE: For vertical Biamping, the source menu option should be set to "L"+"L" for the amplifier that drives the LEFT speaker, and "R"+"R" for the amplifier that drives the RIGHT speaker.

InOut Menu :

```
                                    2
            OUTPUT:   L    R
            SOURCE:   L    R   *

                      1        3
```

1 - Source selections for output.
2 - Fixed output speaker posts.
3 - Active source setting.

Scroll through the available options with the "**UP**" and "**DOWN**" buttons and select it with the "**ENTER**" button.

POL menu (Polarity)

The polarity menu is used to set the polarity independently for each channel. Each channel can be set to + (0) or - (inverted).

Polarity Menu :

```
            LEFT        RIGHT
             +            +

             1            2
```
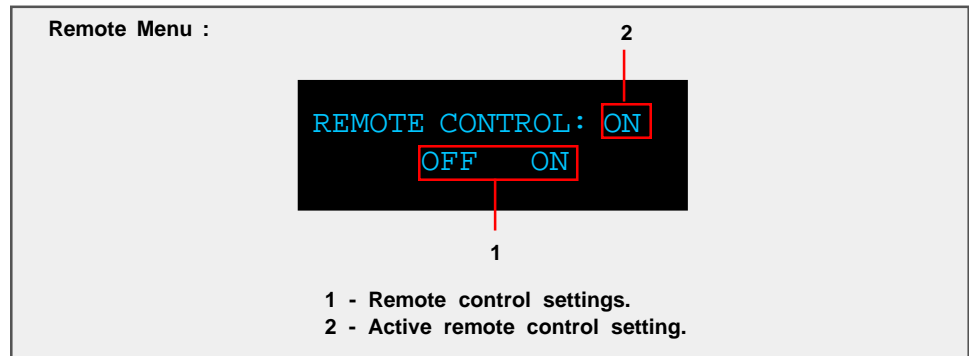
1 - Left channel polarity setting.
2 - Right channel polarity setting.

To select/highlight an option use the "**LEFT**" or "**RIGHT**" buttons. To modify a selected option use the "**UP**" and "**DOWN**" buttons.

**REM menu
(Remote)**

The remote menu allows for disabling or enabling the remote control. Once the remote control is disabled the unit can only be controlled from the front panel of the unit. An alternate way to enable or disable the remote control is to press the front panel "**ANALOG**" and "**DIGITAL**" button simultaneously - this can be used to change the remote control state without entering the REM menu.
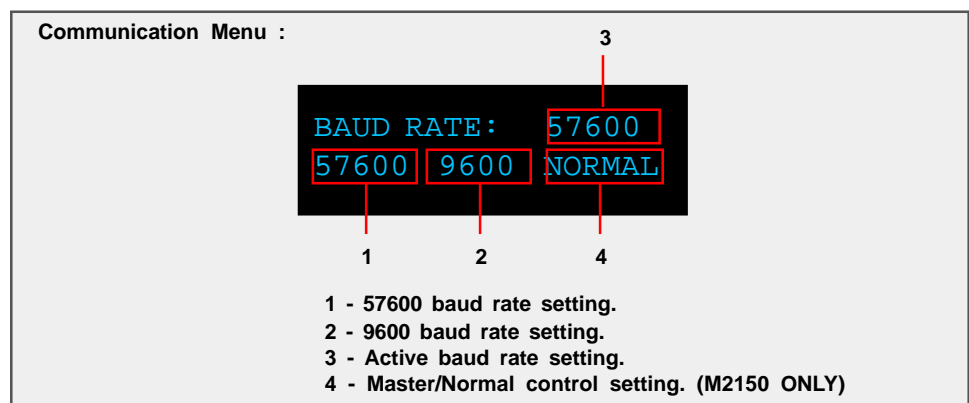
Remote Menu :   2

REMOTE CONTROL: ON
              OFF   ON

                      1

1 - Remote control settings.
2 - Active remote control setting.

Use the "**LEFT**" and "**RIGHT**" buttons to highlight the desired option and select it with the "**ENTER**" button.

**COMM menu
(Communication)**

The communication menu allows for RS232 baud rate selection. By default the 2150 amplifier is set to a baud rate of 57600. However, some remote control systems may require a baud rate of 9600. The menu also contains the option to set the M2150 as a master controller for a system with multiple 2150 amplifiers.

NOTE: MASTER control is only available on the M2150.

Communication Menu :   3

BAUD RATE: 57600
57600   9600   NORMAL

        1   2   4

1 - 57600 baud rate setting.
2 - 9600 baud rate setting.
3 - Active baud rate setting.
4 - Master/Normal control setting. (M2150 ONLY)

Use the "**LEFT**" and "**RIGHT**" buttons to highlight the desired option and select it with the "**ENTER**" button.
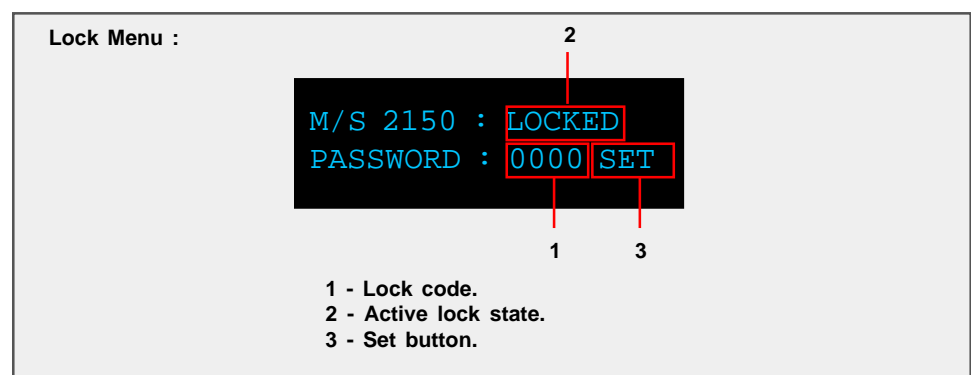
**ADDR menu
(Address)**

The address menu allows for the setting of the "address" for the unit. The default address setting is "001". If multiple amplifiers are used together, different addresses will allow individual control of each amplifier.

```
Address Menu :                                              2

              CURRENT ADDRESS: 001
              ADDRESS: 001

                            1
              1 - Address settings.
              2 - Active address setting.
```
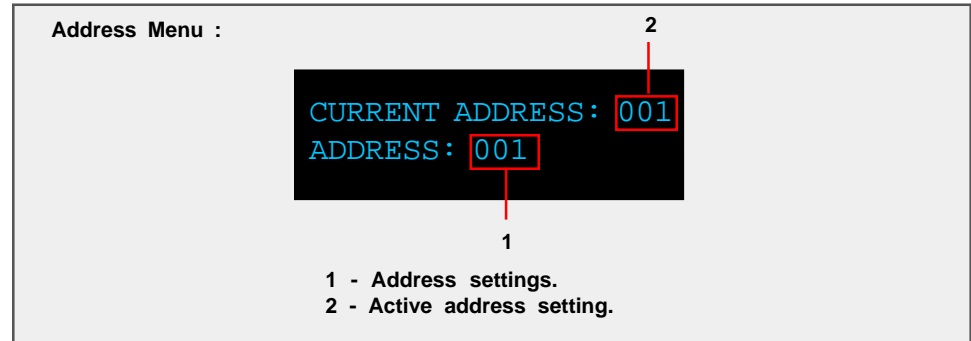
Use the "**UP**" and "**DOWN**" navigational buttons to select the desired system address and then press the "**ENTER**" button to select it.

LOCK menu

The lock menu allows a lock to be set to prevent entering the M/S 2150 editing menus and the changing of the selected input without unlocking the 2150 with the lock code. By default the 2150 is unlocked and all menus can be accessed and inputs can be changed without entering a lock code. When the unit is locked, the only menu option that can be entered is the "**LOCK**" menu to unlock the unit. Once the lock code is entered you will be able to use the 2150 menus until the lock code is entered again to lock the 2150.

```
Lock Menu :                                                2

              M/S 2150 : LOCKED
              PASSWORD : 0000 SET

                          1        3
              1 - Lock code.
              2 - Active lock state.
              3 - Set button.
```

To lock or unlock the M/S 2150 enter the lock code "**1-2-3-4**" by using the "**LEFT**" and "**RIGHT**" remote control buttons to select each digit and use the "**UP**" and "**DOWN**" buttons to select the desired number from 0 to 9 . Once the code is entered select the "**SET**" option and then press the "**ENTER**" button to unlock or lock the unit. The active lock state will be displayed in the active lock state portion of the screen.

GAIN menu

The gain menu allows for an increase in the overall volume level of the amplifier. There are four gain settings that are available: 0dB, 6dB, 12dB, and 18dB.

The amplifier will increase its overall gain by the amount set in the "**Gain**" setting. For example if "**0dB**" is selected the amplifier will output +0dB at maximum volume (99), if "**18dB**" is selected the amplifier will output +18dB at maximum volume (99).

Gain Menu :

Gain
12 dB

1

1 - Active gain setting.
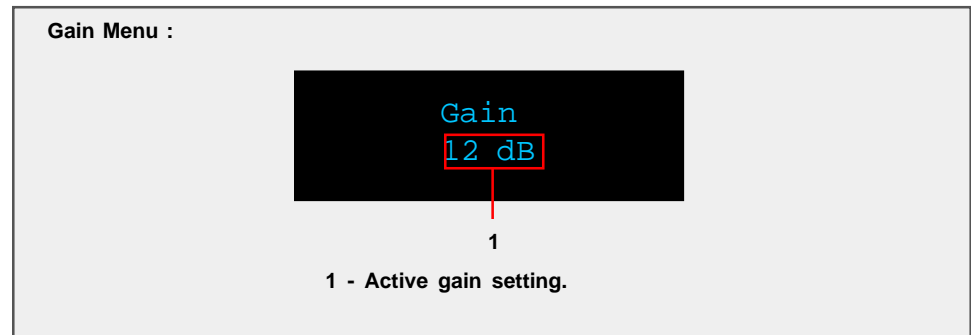
To edit the "**Gain**" setting use the "**UP**" and "**DOWN**" buttons to select the desired gain level setting 0dB, 6dB, 12dB, and 18dB. The gain setting that is displayed is the active gain setting.

TacT M/S2150 Software

The M/S2150 is more than just an amplifier. With powerful features such as level balancing, time alignment, and assignable electronic crossovers, you can customize and build the amplifier system that you need, whether your system is biamped, triamped or more. Each of Tact's amplifiers employ an RS232 in and out connection for control from a Tact master controller. Complete instructions for using the 2150 software can be found in the online help available in the software.

System requirements

Your computer system must meet the following requirements:

- An IBM compatible PC with Pentium 100 MHz, 64 MB Ram & 100 MB free hard disk space or better
- Microsoft Windows 98, ME, 2000 or XP
- Operating system regional setting must be set to "English(United States)"
- Microsoft Windows-compatible graphics-card and monitor with screen resolution 800x600 or better
- CD-ROM drive
- Microsoft windows compatible 2- or 3- button mouse
- Standard RS-232 serial port with DB-9 connectors

Software Installation

Follow the steps below to install the M/S2150 Room Correction Software:

1 - Start windows and insert the TacT software CD into your CD-ROM drive.
2 - Double-click on the "**My Computer**" icon on the desktop.
3 - Double-click on the CD icon to launch the CD browser.
4 - Double-click on "**Tact 2150 vx.x.exe**" and follow the instructions.

After the installation you will have the option to launch the M/S2150 software. If you would like to launch the program at this time when prompted, select "**Launch TacT-2150**" and the software will start. You should now see the M/S2150 System main-screen.

Start The M/S2150 software

To start the software go to the Windows "**Start**" menu, select "**Programs**" then "**TacT-2150**" and click on the "**TacT-2150**" icon. You should now see the M/S2150 System main screen.

**Connect your
M/S2150 to your
Computer**

Your M/S2150 must be connected to your computers serial port in order for it to communicate with your computer when you run the M/S2150 software. Please follow the steps below to connect your M/S2150 to your computer.

1 - Connect the RS 232 "**Input**" jack on the back of the M/S2150 to your computers serial port using the supplied cables and adapters. Your computer must have a standard RS 232 serial port with a DB 9 connector.

NOTE: If you have any other Tact digital amplifiers please disconnect their RS232 connection at this time.

2 - Turn on your M/S2150.

3 - Turn on your computer and start the M/S2150 System Software.

NOTE: You may receive a communication error message. Please close the message window and proceed to the next step.

4 - Select the "**Com**" button on the main software screen to open the communication window.

5 - Under the Operating Mode select "**Connect**".

6 - Under the COM Port section select "**COM1**". If you receive an "**invalid port number**" message please try selecting each of the port selections until you do not receive this message. If you receive this message on all COM ports you may not have a COM port installed on your computer. Please refer to your computer manufactures documentation for help to install a COM port.

7 - To verify that M/S2150 is properly connected to the host computer click on the "**Start**" button to perform the communication test. If everything is functioning properly you should see the results below. Press the "**Stop**" button after about 15 seconds to stop the test.

   Rx Buf should display "**0**".
   Count should have counted in increments of 100.
   Err Count should be "**0**".

If the results are as above select the "**Close**" button to close the communication window. Your M/S2150 is now connected to your computer.

If the results are not as above please go back to step number **6** and select another COM port. Then repeat step 7.

NOTE: If you are still are not passing the communication test you may not have a COM port installed on your computer or you may have another device such as a modem or hand held PC that may be sharing the COM port on your computer. If you have a other Tact equipment attached it may be set to the same address. The M/S2150 requires a valid COM port that is not being used by any other devices.

NOTE: You will only have to select the communication port once. The next time you run the M/S2150 correction software it will remember your settings.

Specifications

Power (RMS. per channel) 8 ohm	2 x 150W
Power (RMS. per channel) 4 ohm	2 x 300W
Output current (peak, per channel)	>50 A
Signal-to-noise ratio (A-weighted)	>110dB
Dynamic range (20 Hz - 20 kHz)	>130dB
THD+N (all power levels 20Hz-20kHz)	<0.01%
Digital resolution	16-24 bit
Linearity (-120dB)	+- 0,2dB
Dimensions (WxHxD)	450x140x420 mm
	17.7x5.5x16.5 in.
Weight (shipping)	18 kg / 37 lbs