ENGLISH

NAD® T 163

AV Tuner Preamplifier

Owner's Manual

EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "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 the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

PRECAUTIONS

Read the Operating Instructions carefully and completely before operating the unit. Be sure to keep the Operating Instructions for future reference. All warnings and cautions in the Operating Instructions and on the unit should be strictly followed, as well as the safety suggestions below.

INSTALLATION

1 **Water and Moisture** - The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

2 **Heat** - Do not use this unit near sources of heat, including heating vents, stoves, or other appliances that generate heat. It also should not be placed in temperatures less than 5°C (41°F) or greater than 35°C (95°F).

3 **Mounting surface** - Place the unit on a flat, even surface.

4 **Ventilation** - The unit should be situated with adequate space around it so that proper ventilation is assured. allow 10 cm (4 in.) clearance from the rear and the top of the unit, and 5 cm (2 in.) from each side. - Do not place on a bed, rug, or similar surface that may block the ventilation openings. - Do not install the unit in a bookcase cabinet, or airtight rack where ventilation may be impeded.

5 **Objects and liquid entry** - Take care that objects or liquids do not get inside the unit through the ventilation openings.

6 **Carts and stands** - When placed or mounted on a stand or cart, the unit should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the unit and cart to overturn or fall.

7 **Wall or ceiling mounting** - The unit should not be mounted on a wall or ceiling, unless specified in the Operating Instructions.

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

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

This product is manufactured to comply with the radio interference requirements of EEC DIRECTIVE 89/366/EEC, 92/31/EC and 93/68/EEC

Microsoft, HDCD, and the HDCD logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic", and the double-D symbol are trademarks of Dolby Laboratories.

"DTS", "DTS-ES" and "Neo:6" are trademarks of Digital Theater Systems, Inc.

ELECTRIC POWER

1 **Power Sources** - Connect this unit only to power sources specified in the Operating Instructions, and as marked on the unit.

2 **Polarization** - As a safety feature, some units are equipped with polarized AC power plugs which can only be inserted one way into a power outlet. If it is difficult or impossible to insert the AC power plug into an outlet, turn the plug over and try again. If it still does not easily insert into the outlet, please call a qualified service technician to service or replace the outlet. To avoid defeating the safety feature of the polarized plug, do not force it into a power outlet.

3 **AC power cord** - When disconnecting the AC power cord, pull it out by the AC power plug. Do not pull the cord itself.
- Never handle the AC power plug with wet hands, as this could result in fire or shock.
- Power cords should be routed to avoid being severely bent, pinched, or walked upon. Pay particular attention to the cord from the unit to the power socket.
- Avoid overloading AC outlets and extension cords beyond their capacity, as this could result in fire or shock.

4 **Extension cord** - To help prevent electric shock, do not use a polarized AC power plug with an extension cord, receptacle, or other outlet unless the polarized plug can be completely inserted to prevent exposure of the blades of the plug.

5 **When not in use** - Unplug the AC power cord from the AC outlet if the unit will not be used for several months or more. When the cord is plugged in, a small amount of current continues to flow to the unit, even when the power is turned off.

CAUTION

Modifications or adjustments to this product, which are not expressly approved by the manufacturer, may void the user's right or authority to operate this product.

MAINTENANCE

Clean the unit only as recommended in the Operating Instructions.

DAMAGE REQUIRING SERVICE

Have the unit serviced by a qualified service technician if
- The AC power plug has been damaged.
- Foreign objects or liquid have gotten inside the unit.
- The unit has been exposed to rain or water - The unit does not seem to operate normally.
- The unit exhibits a marked change in performance.
- The unit has been dropped, or the cabinet has been damaged

DO NOT ATTEMPT TO SERVICE THE UNIT YOURSELF

OWNER'S RECORD

For your convenience, record the model number and serial number (you will find them on the rear of your set) in the space provided below. Please refer to them when you contact your dealer in case of difficulty.

Model No. : Serial No. :

TABLE OF CONTENTS

TABLE OF CONTENTS

ENGLISH

GETTING THE MOST FROM THE NAD T 163

Thank you for choosing NAD.

The T 163 A/V Tuner Preamplifier is a technologically advanced and highly capable product — yet we have invested great effort in making it simple and easy to use. The T 163 delivers a range of genuinely useful options for surround sound and stereo listening alike, using powerful digital signal processing and superbly accurate digital-audio circuitry. However, we have also been careful to ensure that the tuner preamplifier is as musically transparent and spatially accurate as possible, incorporating much of what we've learned from a quarter-century's experience designing audio and home-theater components. As with all our products, NAD's "Music First" design philosophy guided the T 163's design, such that it can confidently promise you both state-of-the-art surround home-theater and audiophile-quality music listening for years to come.

We encourage you to take a few minutes now to read right through this manual. Investing a little time here at the outset might save you a good deal of time later, and is by far the best way to ensure that you make the most of your investment in the NAD T 163, and get the most from this powerful and flexible home-theater component.

One more thing: We urge you to register your T 163 ownership on the NAD Worldwide Web site:

< http://NADelectronics.com/w/Registration.html >

For warranty information contact your local distributor.

UNPACKING AND SETUP

WHAT'S IN THE BOX

Packed with your T 163 tuner preamplifier you will find:

- An AM loop antenna
- A FM ribbon-wire antenna with balun
- A removable AC cable (if you wish, any IEC-standard AC cable of suitable wattage may be substituted).
- The HTR 2 remote control with 4 (four) AAA batteries.
- The ZR 2 zone remote control with 3V CR2025 battery.
- This owner's manual.

Save the packaging
Please save the box and all of the packaging in which your T 163 arrived. Should you move or otherwise need to transport your tuner preamplifier, this is by far the safest container in which to do so. We've seen too many otherwise perfect components damaged in transit for lack of a proper shipping carton, so please: Save that box!

CHOOSING A LOCATION

Choose a location that is well ventilated (with at least several inches to both sides and behind), and that will provide a clear line of sight, within 25 feet/8 meters, between the tuner preamplifier's front panel and your primary listening/viewing position—this will ensure reliable infrared remote control communications. The T 163 generates a modest amount of heat, but nothing that should trouble adjacent components. It is perfectly possible to stack the T 163 atop other components, but the reverse usually should be avoided. It is especially important that sufficient ventilation be provided; if you are contemplating locating the T 163 within a cabinet or other furniture, consult your NAD audio/video specialist for advice on providing adequate airflow.

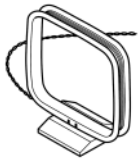
CONNECTING AM ANTENNA

ASSEMBLING THE AM LOOP ANTENNA

1 Rotate the outer frame of the antenna.

Insert into the groove

2 Insert the bottom edge of the outer frame into the groove on the stand.



3 Extend the antenna cord.

Though the T 163 is among the most technically sophisticated A/V tuner preamplifiers, we worked hard to make it one of the most musically transparent home-theater components available as well; this is what we mean by NAD's "Music First" design philosophy. Here are just a few examples:

- High-performance components used throughout the tuner preamplifier's analog audio circuits maximize quality from all sources, including multichannel analog sources such as DVD-Audio and SACD.
- Preamp output (all channels).
- Second Zone (MULTISOURCE) pre-amp and video feed with assignable 12 V DC trigger control.
- An RS-232 port for advanced zone control and software update through a Windows® compatible PC.
- Gold-surfaced connectors are employed throughout to ensure maximum signal integrity.

E.A.R.S., MATRIX AND DIGITAL SURROUND

A key element of the T 163's unique musical aptitude is NAD's proprietary Enhanced Ambience Recovery System (EARS). In sharp contrast to many "ambience-synthesis" music-surround modes, EARS exploits the T 163's substantial DSP power to route the ambient content that is "encrypted" in virtually all natural-acoustic recordings to the appropriate main, center and surround speakers, *without resorting to artificially generated reflections or regeneration*. EARS' natural ambience yields a subtle but exceptionally effective surround mode that naturally enhances the spatial presentation in a fashion suitable for serious music listening. The T 163 also incorporates a second proprietary surround mode, Matrix 7.1. This creates a full 6.1/7.1-channel environment from stereo and surround-encoded recordings, oftentimes with extraordinarily good results. Dolby ProLogic II Music and DTS Neo:6 Music modes can also create enjoyable experience from 2-channel sources.

On the digital side, the T 163 combines extraordinarily high-speed DSP processing employing one of the most advanced high-speed DSP "engines" available, with fully 24-bit, 192 kHz-sampling-capable D/A converters for all channels. A single, high-precision master clock synchronizes all digital circuits to eliminate the timing errors ("jitter") that otherwise compromise sonics. The result is legitimately state-of-the-art surround decoding from Dolby Digital and DTS sources, and 6.1/7.1-channel reproduction, with genuinely superior sound quality in all modes.

EASE OF USE

Despite the effort NAD has invested in the T 163 tuner preamplifier's sonic performance, we expended no less in making it powerfully easy to use. Its design is uniquely simple for so sophisticated a component, and the HTR 2 universal remote control is equally understandable, as are the T 163's own front-panel and on-screen displays. Its simple yet powerful system of "presets" permits you to fine-tune your listening setup for different conditions, sources, or listeners, and to recall these multiple parameters with a single keypress.

INTEGRATION

The T 163 tuner preamplifier offers extensive, flexible system-integration options through its configurable DC trigger outputs and input, and its standard-protocol IR communications links. The DC trigger outputs can be assigned to either Local and/or Zone locations.

SECOND ZONE (MULTISOURCE)

The T 163 tuner preamplifier is equipped with a full second Zone control through the ZR 2 remote and the use of Video and pre-amp level audio outputs. Complete access to volume, On/Off, all inputs including the local input is available.

RS-232

Flexible system configuration is possible with the RS-232 interface and NAD's proprietary Windows® compatible software. This interface allows complete remote control of the T 163 from any remote location via the PC. Complete remote control functionality is available to the user by interface software. See your NAD audio specialist for further information.

UPGRADABILITY

We have made the more likely scenario of software upgrades easy to accomplish via the high speed RS-232 port on the rear panel of the T 163. Owners who register their T 163 on our international web site www.NADelectronics.com will be advised of updates. Some of these may be free of charge, and some may require royalty payments depending on the type of upgrade. The advanced user will be able to perform these upgrades by downloading files from our web site via e-mail, and installing them by connecting the T 163 to a PC. Alternatively the dealer from whom you purchased your T 163 should be able to assist in performing these upgrades.

ABOUT THE HTR 2 SYSTEM REMOTE CONTROL

Packed with your T 163 is the NAD HTR 2 remote control, a full-system remote especially designed to be easy to use and easy to understand. Be sure to read the section "Using the HTR 2 Remote Control", to familiarize yourself with the remote's layout and operations before proceeding to setup your tuner preamplifier.

Chances are, you will want to use your HTR 2 as your primary way to command your entire A-V system. The HTR 2 can be employed to operate additional NAD or other-brand components such as a DVD/CD player, television, satellite/HDTV tuner, VCR, or virtually anything else that operates via standard infrared remote control.

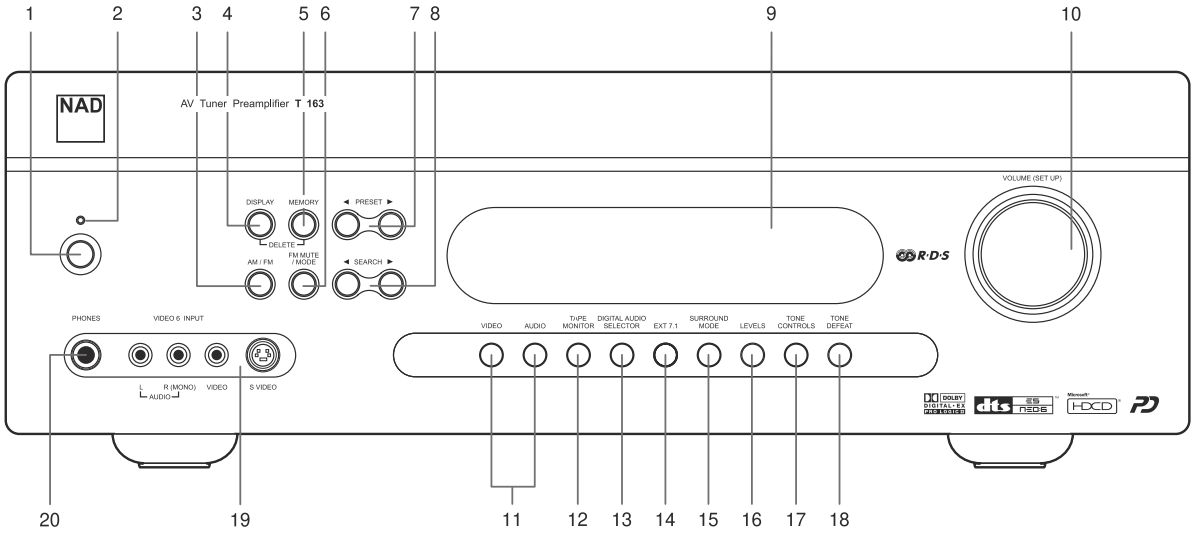
In case you simply cannot wait to experience the performance of your new NAD T 163 tuner preamplifier, we provide the following "Quickstart" instructions to get you underway. The steps below connect your DVD player and multi-channel amplifier to the T 163; be sure to read "Input Setup".

PLAY A DVD MOVIE

- Connect the T 163's preamplifier outputs to your multi-channel amplifier. (cables not supplied)
- Connect the T 163's composite video or S-Video MONITOR OUT jack to your TV/monitor's corresponding input. (cables not supplied)
- Connect your DVD player's composite video or S-Video output to the T 163's corresponding DVD input. (cables not supplied)
- Connect the DVD player's optical digital output to the T 163's optical DIGITAL IN 1 input (Optical cable not supplied).
- Connect your left and right front speakers to the multi-channel amplifier's FRONT L and R outputs, being sure to connect red to red ("+") and black to black ("-"), with care to avoid stray wires or strands crossing between terminals. (Connect center, surround, and surround-back speakers as well, if you like). If your system includes a powered subwoofer, connect the T 163's AUDIO PRE-OUT SW1, 2 or both jacks to its line inputs.
- Press in the main power switch (black pushbutton) on the T 163's rear panel (this puts the T 163 into STANDBY mode and illuminates an amber LED to indicate it is ready to receive remote commands), then use the HTR 2's [ON] key to power up the tuner preamplifier. Be sure the multi-channel amplifier and TV/monitor is powered up, with the correct input selected.
- Start playback of the DVD player. Press the HTR 2 remote's [Amp] Device Selector key, and then its (red) DVD/numeric 1 key to select the DVD input. You should hear multichannel or stereo sound, and see an image on the TV/monitor. (If one or the other fails to appear, you may need to use the tuner preamplifier's on-screen menu system to check assignment of audio, video, and digital inputs; see "Setting Up the T 163".)

Enjoy the movie or music, but be sure to set aside time to read this manual thoroughly, and to set up, calibrate, and configure your T 163 carefully and completely.

FRONT PANEL



1 **STANDBY SWITCH**: Pressing this key, or the HTR 2 remote's [ON] button, will switch the tuner preamplifier on, making it operational, changing the amber Standby indicator to green and illuminating the VFL display.

2 **STANDBY LED**: Illuminates amber when the T 163 is in Standby mode; green when it is powered on; and flashes momentarily to indicate infrared commands received from the HTR 2 remote. This indicator will be steadily dark only when the main **POWER** switch (REAR PANEL No.6) is switched off (or the tuner preamplifier is unplugged from the AC supply).

3 **AM/FM**: Press to toggle between the tuner's AM and FM bands.

4 **DISPLAY**: Press to display the channel mode of the currently selected source (other than the internal AM/FM tuner), in the format "front/rear/LFE." For example, a Dolby Digital or DTS 5.1-channel source will display 3/2.1. Note that the display shows signal channels, not speakers; for example, a 2-channel analog or digital source (whether stereo or surround-encoded) will show 2/0.0, even though the tuner preamplifier's <Speaker Settings> may indeed be set up to use the subwoofer with all sources, and the current Listening Mode may employ center and surround speakers.

When the AM/FM tuner is the selected input, sequentially pressing DISPLAY shows the currently tuned station's RDS data, toggling between the current station's Radio Text and Station Name displays (see Listening to Radio, below).

5 **MEMORY**: Use to store tuned stations to the T 163's 40 preset-memory locations. (See "Listening to Radio," below.)

6 **FM MUTE/MODE**: In the normal Mute position, only the stations with a strong signal can be listened to, and the noise between stations is muted. Pressing the [FM Mute/Mode] button allows distant (and potentially noisy) stations to be received. (See "Listening to Radio," below.)

7 **PRESET ◄ ►**: Press to step up or down between radio presets; 30 FM and 10 AM station presets are available. Note that this function "wraps": Pressing ► will step from Preset 30 to Preset 1, or vice versa using the ◄ key. "Unused" presets are skipped over. (Note that Presets must previously have been stored; see "Listening to Radio," below.)

8 **SEARCH ◄ ►**: Press momentarily to step up or down between FM or AM frequencies. Press and hold SEARCH ◄ ► for more than 2 seconds to search up or down; the T 163's tuner will stop at the next sufficiently strong signal it encounters. Note that this function, too, "wraps," and will continue searching up or down from one end of the AM or FM band to the other.

Note that: SEARCH ◄ ► tunes the FM band by 0.05 MHz steps (twice the precision of most tuners and tuner preamplifiers). On the AM band, SEARCH ◄ ► moves by 10 kHz or 9 kHz steps. To change the step amount, hold in the FM MUTE/MODE and AM/FM keys simultaneously.

9 **VFL DISPLAY**: The Vacuum Fluorescent Display provides visual information on all of the T 163's important modes, settings, and functions for both MAIN and second ZONE locations.

10 **VOLUME (SETUP)**: Turn clockwise to increase the master-volume setting; counterclockwise to lower it. The VFL and on-screen displays show the setting, displayed in decibels between –74 and +18.

The **VOLUME (SETUP)** knob is also used to increment/decrement individual channel levels and other adjustable parameters.

11 **VIDEO**: Use to select a video input along with its assigned audio and digital inputs (see "Input Setup," below). Press repeatedly to step through the T 163's Video inputs.

AUDIO: Use to select analog audio input independently of video input. Press repeatedly to step through the T 163's audio inputs. See "Input Setup," below.

12 **TAPE MONITOR**: Press to engage the Tape Monitor loop. The signal present at the rear-panel TAPE MONITOR IN jacks will be heard. Press again to release and return to the previously selected input.

NOTE: Selecting any other input selection while Tape Monitor is engaged automatically releases it.

13 **DIGITAL AUDIO SELECTOR**: Use to select digital audio input independently of video input to cycle through the T 163's 6 digital audio inputs (OPT 1-2; Coaxial 3-6). Press repeatedly to step through the T 163's digital audio inputs. The digital inputs are shown collectively as Digital 1-6 in the VFL display's small corner readout. Any digital input can be assigned to any video input (DVD, SAT, VCR, VIDEO 4-5, CD). The chart below shows the default assignments; see "Input Setup," below.

Digital Input Jack	**Default Assignment**
OPT 1	DVD
OPT 2	SAT
Coax 3	VCR
Coax 4	VIDEO 4
Coax 5	VIDEO 5
Coax 6	CD

NOTE: Digital inputs take precedence: The T 163 will automatically play any active signal present at the selected digital input; if none is present, it will "fall back" to the analog audio input assigned to that Video input. Digital inputs can be selected OFF to listen to the analog input of a source with an assigned digital input.

NOTE: Changing the digital audio input via the Digital Audio Selector is a temporary setting that will be lost when the input is changed or the tuner preamplifier is cycled though Standby or OFF. (See the section "Input Setup" below to reassign digital inputs to video or audio inputs.)

14 **EXT 7.1**: Press to listen to the component connected to the T 163's 7.1 CH. INPUT jacks (typically, a DVD-Audio or SACD-Multichannel player). The HTR 2 remote's [Ext. 7.1/5.1] key ("10+") works similarly.

15 **SURROUND MODE**: Use to select the T 163's Listening Mode. Press repeatedly to step through the T 163's Listening Modes. See "About the T 163's Listening Modes," below.

NOTE: Depending on the format of the currently selected input (digital or analog; stereo or multichannel), different modes will be available. See "About the T 163's Listening Modes," below.

16 **LEVELS**: Press repeatedly to select the channel, and then use the VOLUME(SETUP) knob to adjust the levels of the T 163's 7 channels/pairs in turn: front-left, -center, –right; surround; surround back; subwoofer. The selected channel appears on the VFL and on-screen displays; use the VOLUME(SETUP) knob to adjust its level relative to the others over a range of ±12 dB. Channel levels may also be adjusted via the on-screen menus; see "Adjusting Channel Levels," below.

NOTE: The HTR 2 remote's [Surr.], [Center], and [Sub] ▲/▼ keys provide direct access to those channels' relative levels, saved in memory.

17 **TONE CONTROLS**: Press to adjust treble using the VOLUME (SETUP) knob over a ±10 dB range; press again to adjust bass, and a third time to exit tone-control adjustment.

18 **TONE DEFEAT**: Press to disable the tone controls; press again to re-enable them for instance, to compare a tone setting to unmodified sound.

NOTE: While TONE DEFEAT is engaged, the TONE CONTROLS key will have no effect.

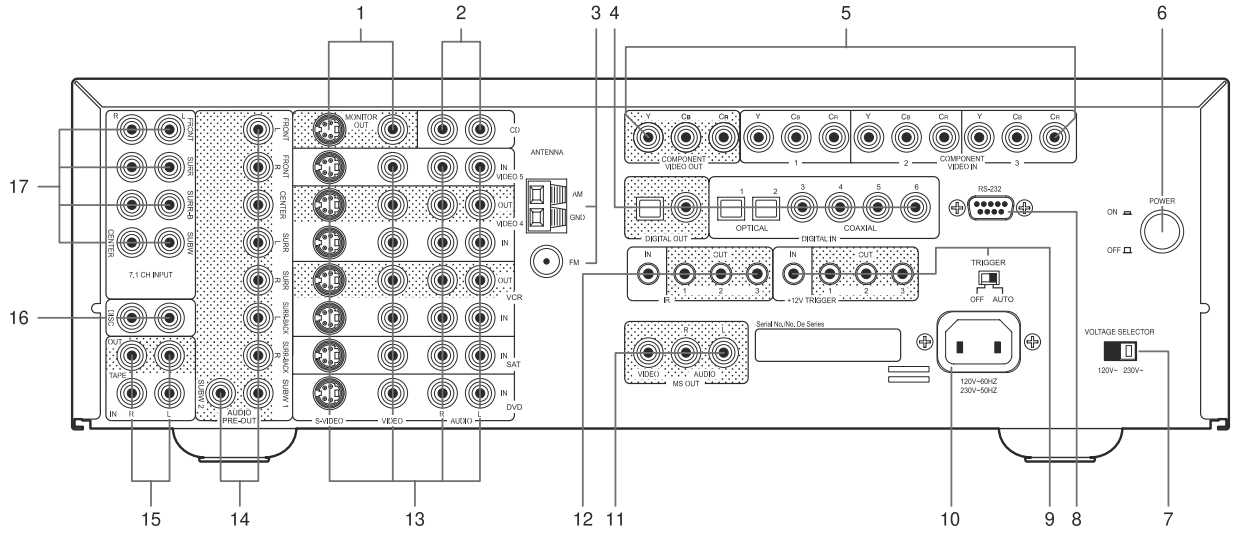
19 **VIDEO 6 INPUT**: Use these convenience jacks for occasional sources, such as a camcorder, portable MP3 or tape player, or a videogame console, or any other analog audio, or composite or S-Video video source. Select the Video 6 input using the HTR 2 remote, or the front-panel VIDEO key.

20 **PHONES**: Accepts stereo headphone using a standard 1/4-inch stereo phone plug (use a suitable adapter for headphones equipped with a smaller plug); set the Listening Mode to "Stereo" Plugging in headphones automatically mutes output from all channels' speaker and pre-out jacks (but not from the record-out jacks of TAPE, VCR, or VIDEO 4).

NOTE: For headphone listening the front left/right speakers must be set to "Large" on the OSD's Speaker Settings page, otherwise headphone bass response will be restricted.

NOTE: Plugging in headphones will automatically switch the T 163 to "Stereo" mode.

REAR PANEL



ATTENTION!

Please make all connections to your T 163 tuner preamplifier with the unit powered off or unplugged. (It is also advisable to power-down or unplug all associated components while making or breaking any signal or AC power connections.)

1 **MONITOR OUT**: Connect to video input of the monitor/television, using quality dual-RCA and/or S-Video cables designed for video signals. In general, the S-Video connection is superior and should be used if your TV/monitor provides the corresponding input.

2 **CD**: Connect the analog stereo audio output from a CD player or other line-level audio source to this input.

3 **FM & AM ANTENNA**: The supplied wire "dipole" FM antenna will connect to the FM connector using the supplied "balun" adapter. It will usually work best when mounted on a vertical surface such as a wall, with arms fully outstretched forming a horizontal "T" perpendicular to the origin point of the signal. Experiment with placement and orientation of to yield the clearest sound and lowest background noise. In areas of difficult FM reception an external FM antenna can yield dramatic gains in quality; consult your NAD audio specialist or a professional antenna installer.

The AM loop antenna supplied with the T 163 (or a suitable replacement) is required for AM reception. Open the clip terminal lever, insert the wire and close, ensuring that the lever locks the wire in place. Testing different positions for the antenna may improve reception; vertical orientation will usually produce the best results. Antenna proximity to large metal objects (appliances; radiators) may impair reception, as will attempts to lengthen the wire to the loop.

NOTE: An external AM antenna can improve long-distance reception substantially; consult your NAD audio specialist or a professional antenna installer. Do not connect anything other than a loop antenna to the AM ANTENNA terminal. Do not remove the AM loop antenna.

4 **DIGITAL IN OPT 1-2; COAX 3-6**: Connect to the coaxial S/PDIF-format digital outputs of sources such as CD or DVD players, HDTV or satellite tuners, or other components; connect DIGITAL IN OPT1-2 to optical S/PDIF-format digital outputs.

DIGITAL OUT: Connect the optical and/or coaxial DIGITAL OUT ports to the corresponding S/PDIF digital input of a recording component such as a CD recorder, DAT deck, or computer soundcard. See "Setting Up the T 163", below.

5 **COMPONENT VIDEO IN 1-3; OUT**: Connect the COMPONENT VIDEO IN 1, 2 and 3 inputs to component-video outputs from compatible source components, typically a DVD player and terrestrial or satellite HDTV tuner. Connect the T 163 COMPONENT VIDEO OUT to the component-video input of a compatible video monitor/TV. Be sure to observe consistency in connecting the Y/Cr/Cb jacks (some source and TV components label these Y/Pb/Pr) to the corresponding sources/inputs; do not rely purely on the color-coding of the jacks, which may not always be consistent among brands. The routing of the component-video inputs is fixed: COMPONENT VIDEO IN 1 is routed to the COMPONENT VIDEO OUT jacks when the DVD input is selected; COMPONENT VIDEO IN 2 is selected when the SAT input is active; COMPONENT VIDEO IN 3 is selected when the VCR input is active; the audio and digital inputs assigned to DVD, SAT and VCR will be used (see also, "Input Setup," below).

NOTE: The T 163's component-video inputs and outputs are fully wide-band, compatible with all HDTV formats. The T 163 does not display its on-screen menus on its component-video output. To use on-screen menus, you will need to make an S-Video or composite connection between the T 163 and the monitor/TV, and select it for menu display.

6 **POWER**: Press in to switch the tuner preamplifier to ON and OFF. Pressing any front panel button will also switch the tuner preamplifier on. Press the remote's [OFF] button to return to Standby. Pressing POWER again turns the unit OFF, recommended if you do not plan to use your tuner preamplifier for an extended period of time. It is usual (and perfectly acceptable) to leave the T 163 in Standby mode in between normal viewing and listening sessions.

7 **120V/230V VOLTAGE SELECTOR:** With the power cord disconnected from the wall outlet, select the appropriate mains voltage for your area.

8 **RS-232:** Connect this interface via RS-232 serial cable (not supplied) to any Windows® compatible PC to allow remote control of the T 163 through NAD's proprietary PC software. See your NAD audio specialist for more information.

9 **AUTO TRIGGER SWITCH:** When in the AUTO position, forces the T 163 to turn on only when a trigger signal is present at the trigger input. When in the OFF position, the trigger inputs are disabled.

10 **AC POWER INLET:** Connect to the supplied IEC-standard removable AC power cord or a compatible cord.

11 **MS OUT (MULTISOURCE OUT):** Connect this pre-amp and composite video output to other zones using high-quality patch cables to reduce noise pickup over long distance runs.

12 **IR**: These mini-jacks accept and output remote-control codes in electrical format, using industry-standard protocols, for use with "IR-repeater" and multi-room systems and related technologies. Consult your NAD audio specialist for more information.

13 **DVD, SAT, VCR, VIDEO 4, VIDEO 5**: These comprise the T 163's principal inputs. Connect S-Video, composite video, and analog stereo audio from source components such as DVD players and HDTV/satellite tuners (see "Input Setup," below). VCR and VIDEO 4 may be used with recording components such as videocassette or DVD-recorders; connect the T 163 S-Video/composite video OUT jacks to these components' record-inputs. (Note that VCR/VIDEO 4 may freely be used for play-only components, in which case their OUT jacks would remain unconnected.)

14 **PRE-OUTS/SUBWOOFER OUT:** Connect the T 163's pre-amplifiers to external power amplifiers for some or all channels.

Connect the SW output 1, 2 or both to powered ("active") subwoofers (or to power amplifier channels driving a passive system).

SURR-BACK-R jack will supply the same signal from the surround-back Left channel if the T 163 is so configured (see "Speaker Setup"). Either one or both channels are available mono or stereo as per "Speaker Setup". Connect to one or two channels of an appropriate external power amplifier or other amplified component to furnish amplification for one or two surround back speakers. Your NAD audio specialist will be happy to advise you.

15 **TAPE IN/OUT**: Connect the T 163's TAPE OUT jacks to the stereo analog audio inputs, of an audio recording component such as a cassette deck or CD recorder, or of an outboard analog audio processor such as a stereo equalizer; connect the tuner preamplifier's TAPE IN jacks to the component's corresponding outputs. The signals present at the TAPE IN jacks can be heard by selecting the front panel TAPE MONITOR button, or the HTR 2's [Tape] (zero) key.

NOTE: The signal present at the TAPE OUT jacks is determined by the source last selected via the front panel Video or Audio keys (or the HTR 2's input-select keys).

NOTE: Digital input signals are not available at the analog TAPE OUT jacks; they are only available at the DIGITAL OUT jacks.

16 **DISC**: Connect the analog stereo audio output from a second CD player or other line-level audio source to this input.

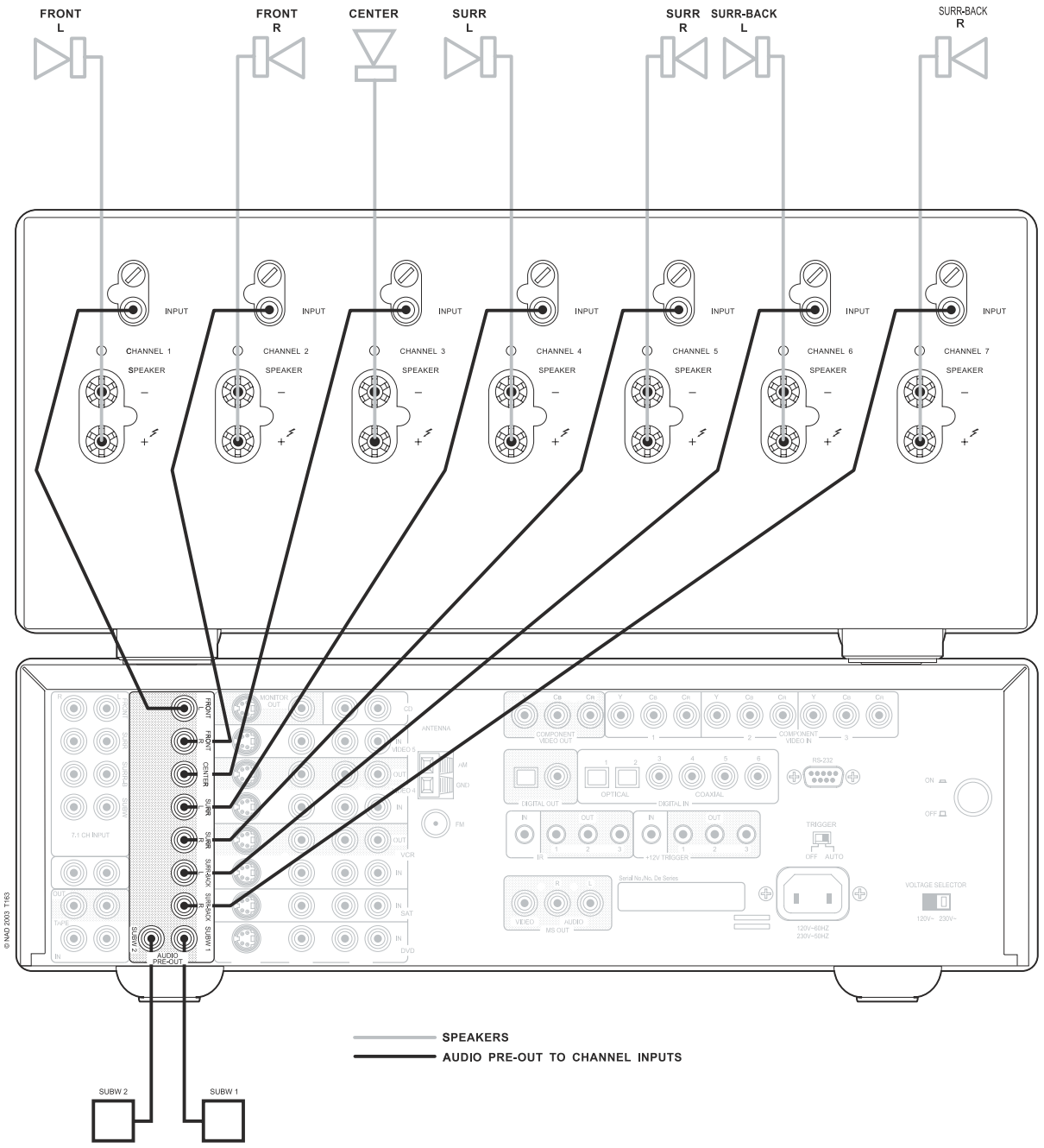
NOTE: Connecting a phonograph turntable to the T 163 requires an outboard magnetic phono-preamp component such as the NAD PP2; you cannot connect turntable directly to the DISC inputs.

17 **7.1 CH. INPUT**: Connect to the corresponding analog audio outputs of a multichannel source component such as a DVD-Audio or multichannel-SACD player, or external multichannel decoder. Typically, these sources will produce 5.1-channel output, in which case the SURROUND BACK jacks are left unconnected. The signals present at these jacks may be heard by selecting the front-panel **EXT. 7.1** key or the HTR 2's [Ext 7.1/5.1] button. See "Selecting Sources," below.

NOTE: There is no bass-management or other processing (other than master-volume control) available to this 7.1 CH. INPUT. While the multi-channel audio outputs of a DVD-Video player can be connected to these jacks, using the T 163's own Dolby Digital and DTS decoding and digital-analog converters, via a digital connection, will usually produce superior results.

CONNECTING THE T 163 TO A MULTI-CHANNEL AMPLIFIER

Below is an example of the T 163 and a multi-channel amplifier configuration.



GETTING STARTED

Before you make the first connection to your T 163, you should have the arrangement of your listening room/home theater components and furniture mapped out, at least initially. Unfortunately, a discussion of the vital questions of loudspeaker placement and listening/viewing positions is beyond our scope here. Suffice it to say that these two questions will influence your system's ultimate performance every bit as powerfully as your selection of electronics and speakers. Your NAD audio specialist dealer will be happy to advise you, and to recommend reference materials.

NOTE: You will need the HTR 2 remote handset to configure your T 163. See "Using the HTR 2 Remote", below.

DEALING WITH HUM AND NOISE

Hum and noise sometimes prove a challenge in complex, multichannel audio systems. Note these considerations to help prevent hum and noise problems:

- Power all your system's audio component from AC outlets originating from the same circuit of your house wiring. As far as possible, power all audio components from the same outlet, or adjacent outlets on the same circuit. It may be useful to power video displays (and computers!) from outlets on another circuit, especially if that circuit is supplied from the other "leg" of the house wiring.

- Do not bundle analog audio cables with AC power cables, or with coaxial digital-audio cables. It is best if they cross at right angles if they must be in close proximity.

- Employ high-quality, well-shielded audio cable throughout, and ensure that all connections are secure.

- A pencil-eraser can be used to burnish copper- and gold-plated contacts to ensure good, low-resistance contact; specialized contact-cleaners can also be useful. Avoid unnecessary unplugging and re-plugging, since the gold (or copper) contact plating of typical cable connectors, even very high-quality ones, is very thin and easily worn.

Track down hum/noise problems one component at a time, working backwards from the tuner preamplifier. That is: Connect the speakers to the multichannel amplifier only, and check for hum. Then connect one component only (a CD player, for example) alone, with no other components connected and check for hum. Connect additional components, one at a time, to the tuner preamplifier and check for hum. At each stage, if hum/noise appears, examine the audio cabling and AC-power routing of the new component. In some cases, moving the new component's AC cord to a different outlet, or installing a ground-lift (3-to-2-prong adapter) on its power cord, will eliminate the hum.

ABOUT THE ON-SCREEN DISPLAYS (OSD) AND FRONT-PANEL READOUT

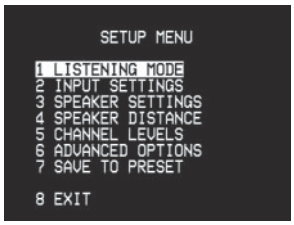
The T 163 tuner preamplifier employs a simple, self-explanatory system of on-screen display "menus" that will appear on the connected video monitor/TV. These are required during the setup process (and are useful in day-to-day operation), so be sure to connect the monitor/TV before proceeding with setup.

NOTE: The on-screen displays are carried on both the S-Video and composite MONITOR OUT jacks, but are not incorporated into the component-video output.

DISPLAY THE OSD

Press any of the HTR 2 remote's central cursor keys ([◀], [▲], [▶], [▼], and [Enter]) to display the T 163's main <Setup> menu on your video monitor/TV. If the OSD does not appear, check your MONITOR OUT connections.

NOTE: The OSD does not appear on the T 163's component-video output, nor does it appear on the VIDEO 3 and 4 record-outputs; these are for recording, not monitoring.



NAVIGATING THE OSD AND MAKING CHANGES

Use the HTR 2 remote's [▲ / ▼] keys to move up or down among the Setup menu's list of items; use [Enter] to select a menu item, and use [◀ / ▶] to change the parameter-value (setting) of any item. Selecting the <Save and Exit> returns "up" to the <Setup> menu while saving any parameter-value changes to the T 163's memory; selecting <Do Not Save and Exit> also returns to the main <Setup> menu, but abandons any changes made on the previous menu. Selecting <Exit> from the main Setup menu exits the OSD altogether, retaining parameter-value changes, if any, made previously.

INPUT SETUP

The T 163 is equipped with nine configurable and nameable inputs: six audio-video inputs labeled DVD, SAT, VCR, and VIDEO 4-6 (including VIDEO 6 on the front panel), and three audio-only inputs labeled CD, DISC and EXT 7.1. These are flexibly configurable and nameable: For each labeled video input-jack position (DVD, SAT, VCR, VIDEO 4-6) as displayed on the <Video In> line of the <Input Settings> menu, you may freely assign: an analog audio input selected on the <Audio In> line; and a digital input selected on the <Digital In> line. These will become active whenever that input is selected.

NOTE: An incoming digital signal present at the assigned digital input will always take precedence over the assigned analog-audio input, even if both are present. The digital signal can be temporarily selected "OFF" using the front panel DIGITAL AUDIO SELECTOR button.

NOTE: The analog input for any audio-video inputs may be set to OFF in the OSD if only Digital inputs are used.

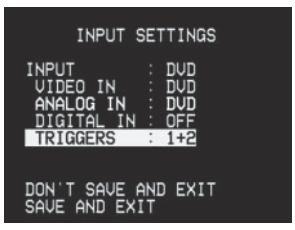
INPUT SETTINGS

From the main <Setup> menu, select the <Input settings> menu item using the HTR 2 remote's [▲ / ▼], and [Enter] keys. Using the [◀ / ▶] keys select the video input (DVD, SAT, VCR, VIDEO 1-6) you wish to configure. Use the [▲ / ▼] keys to move to the <Audio In> line, and then use the [◀ / ▶] keys to select the analog audio input you wish to be linked to that input (usually, this will be the same, i.e., "DVD" with "DVD," "Video 4" with "Video 4," and so on).

NOTE: It is not necessary to have an analog audio input connected for every video input you employ. In fact, in some cases—for example for a DVD player—it may be preferable to make only a coaxial or optical digital audio link to the T 163 for audio playback. This avoids possible confusion, and ensures that the T 163's high-performance surround and digital audio circuitry will always be employed.

Now use the [▲ / ▼] keys to move to the <Digital In> line and select the digital input ("Opt 1-2," "Coax 1-4") you wish linked to that input. You may also select Analog OFF for this audio-video input so that only the digital input is active.

If you set <Digital In> to "Off," no incoming digital signal will be selected by that input. (Set an input's <Digital in> to "Off" only if you wish to ensure that that input will not play an incoming digital bitstream, even if one is present.). At this point you may wish to fine adjust the analog input gain; for each audio-video input from -12 dB to + 12 dB of adjustment



NOTE: The <Trigger Out:> line of the <Input Settings> menu is used to configure the T 163's 12-volt trigger. See "Trigger Setup," below.

The component-video inputs are not configurable. Selecting the DVD input routes the COMPONENT VIDEO IN 1 to the COMPONENT VIDEO OUT jacks; selecting VCR routes the COMPONENT VIDEO IN 3 to the COMPONENT VIDEO OUT jacks. Note that the OSD does not appear on the component-video output.

NOTE THAT: The combination of analog-audio input and digital input assigned above will always be recalled whenever that input is selected via the front-panel VIDEO key, or the HTR 2 remote's input-select keys, or by recalling a Preset;

The digital and analog audio inputs assigned to a video input can be overridden by using the front-panel AUDIO and DIGITAL AUDIO SELECTOR keys; however, the assigned input will return whenever that video input is reselected, either via the front panel VIDEO key or using the HTR 2's input-select keys (or a Preset);

The TAPE MONITOR loop is not configurable, and will not appear in the rotation;
Any audio input and any digital input may be configured with any video input, and the same analog and/or digital inputs may be assigned to multiple video inputs;

The analog audio input selected on the <Audio In> line is also routed to the TAPE OUT jacks.

NOTE: That signals from digital inputs are not available on the analog TAPE OUT jacks.

SPEAKER SETUP

Every surround-sound system requires "bass-management" to direct low-frequency content from any or all channels to the speakers best able to reproduce it. For this function to operate correctly, it is important that you correctly identify your speakers' capabilities.
We use the terms "Small" and "Large" (and "Off"), but note that physical size may be irrelevant.

- A "Small" speaker is any model, regardless of physical size, that lacks significant deep-bass response, that is, below about 80 Hz.
- A "Large" speaker is any full-range model, that is, one with deep-bass response
- An "Off" speaker is one that is not present in your system. For example, you might not have any surround-back speakers installed; in that case, you would set the <Surr Back> setup item to "OFF".

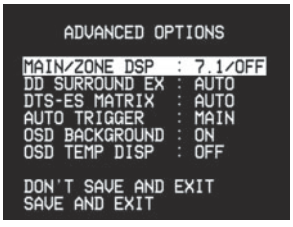
Depending on the relationship between speakers, the possible selections for each speaker are as follows:

Front L/R	Center	Surr. L/R	Surr. Back	Subwoofer
LARGE	LARGE	LARGE	LARGE	ON or OFF
			SMALL	
			OFF	
		SMALL	LARGE	
			SMALL	
			OFF	
		OFF	OFF	
	SMALL	LARGE	LARGE	
			SMALL	
			OFF	
		SMALL	LARGE	
			SMALL	
			OFF	
		OFF	OFF	
	OFF	LARGE	LARGE	
			SMALL	
			OFF	
		SMALL	LARGE	
			SMALL	
			OFF	
		OFF	OFF	
SMALL	SMALL	SMALL	SMALL	ON
			OFF	
		OFF	OFF	
	OFF	SMALL	SMALL	
			OFF	
		OFF	OFF	

SPEAKER SETTINGS

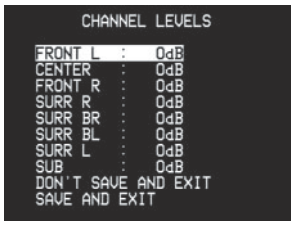
From the OSD's main <Setup> menu select the <Speaker Settings> line using the HTR 2 remote's [▲ / ▼], and [Enter] keys. Using the [◀ / ▶] keys, set <Front:> to "Large" or "Small" as your main-front speakers require according to the guidelines noted above. Similarly, set <Center:>, <Surround:>, and <Surr Back:> to "Large," "Small," or "None" as your system's loudspeakers require. Set <Sub:> to "On" or "Off," selecting "On" only if you have a subwoofer connected to the T 163's SUB analog output jack.

NOTE: The Speaker Settings configuration is "global"; that is, it remains in force with all inputs and in all listening modes. However, speaker settings are part of the T 163's Preset system; consequently, multiple speaker settings can be stored for easy recall as different types of recordings or listening modes require. See "Creating and Using Presets," below.
NOTE: You can set Subwoofer to "On" even with "Large" front speakers, in which case bass content from any channels set to "Small" will be routed to both the subwoofer and to the front speakers; LFE-channel signal will pass only to the sub. In most subwoofer-equipped systems, setting front speakers to "Small" is usually the better option.
From the OSD's main <Setup> menu select <Advanced Options> line using the HTR 2 remote's [▲ / ▼], and [Enter] keys. Using the [◀ / ▶] keys select main and zone listening for 5.1/2.0 or 7.1/OFF.
NOTE: If 7.1 input is selected then the zone output is switched off.



LISTENING MODE

From the OSD's main <Setup> menu select the <Listening Mode> line using the HTR 2 remote's [▲ / ▼], and [Enter] keys. Using the [▲ / ▼] and [◀ / ▶] keys you can select mode variations, and adjust various parameters, depending on the current Listening Mode. For more information, see "About the T 163's Listening Modes," below.
NOTE: Listening Mode is part of the T 163's Preset system. See "Creating and Using Presets," below;
NOTE: The Listening Mode used the last time a given input was selected will be recalled the next time that input is selected, unless overridden by a Dolby Digital or DTS signal, which will automatically invoke their native Listening Modes.



CHANNEL-BALANCE (TEST) SETUP

Adjusting the relative balance of your system's loudspeakers ensures that surround-sound recordings, whether music or film, will present the balance of effects, music, and dialog that the artists intended. Additionally, if your system incorporates a subwoofer it establishes a correct relationship between the volume of the subwoofer and the other speakers, and thus of low-frequencies (bass) to other sonic elements.

USING AN SPL METER

It is quite practical to perform the T 163 Level setup routines "by ear," and careful work will produce acceptably accurate results. However, the use of an inexpensive sound-pressure level (SPL) meter, such as Radio Shack part number 33-2050, makes this task easier, more accurate and more repeatable. Ownership of such a meter could prove a valuable audio tool; your NAD audio specialist may be able to help you with temporary use of a meter.

The SPL meter should be placed at the primary listening position, at approximately the height of the seated listener's head. A tripod is helpful, but with a little duct tape almost anything — a pole lamp, music-stand, or ladder-backed chair, for example — can do as well. Just be sure that no large acoustically reflective surfaces obstruct or are near the microphone element. Orient the meter with its microphone (usually at one end) pointing straight up toward the ceiling (not forward toward the speakers) and ensure that its "C" weighting scale is selected. Set the meter to display 75 dB SPL. (On Radio Shack meters this necessitates either setting the meter to its 80 dB range and taking your readings at the -5 point, or selecting the 70 dB range and reading at the +5 point.)

SETTING CHANNEL BALANCE

Press the HTR 2 remote's [Test] key, activating the T 163's channel-balancing test signal and displaying the <Channel Levels> menu on the OSD. You will hear a "surf" sound that cycles through your speakers, beginning with the left-front. (If you do not hear the test signal, check your speaker connections (above), and your <Speaker settings> OSD menu settings, (above.)

As the test signal cycles around the speakers, the OSD (and the VFL front panel display) will highlight the currently playing channel. Now use the remote's [◀ / ▶] keys to adjust the loudness of the noise output from the currently playing channel to the required level (it's usually simplest to begin with the left-front). The "level offset" reading on the right will change by 1 dB increments; ±12 dB adjustment is available.
NOTE: If you are balancing levels "by ear", choose one speaker—usually the center—as a reference and adjust each of the others in turn to "sound as loud" as the reference. Be sure that you remain in the primary listening position while balancing all channels.

Using the remote's [▲ / ▼] and [◀ / ▶] keys adjust each speaker to produce the same SPL meter reading (or subjective loudness). Note that:

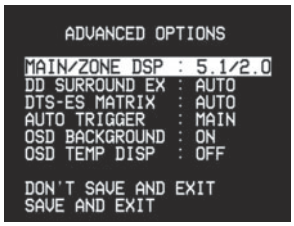
- All speakers must be in their final locations before level-setting.
- Your subwoofer (if any) should be set with its integral crossover defeated, or if undefeatable, set to its highest-possible frequency if you are using the T 163's SUBWOOFER output. Final subwoofer-level adjustment "by-ear," using music and film sound material, is frequently useful.
- Due to the effects of room acoustics, matched-pair speakers (front; surround; back) will not always calibrate to exactly the same level offset readings.

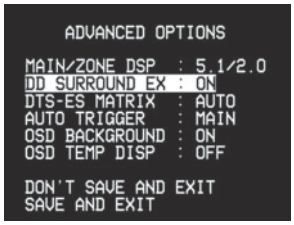
SPEAKER DISTANCE

Your system's speaker distance settings are a subtle but important refinement of your setup. Informing the T 163 of the loudspeaker-to-listener dimensions of each speaker automatically imposes the correct delays, optimizing imaging, intelligibility, and surround-sound ambience. Enter your dimensions with precision within about 1 foot (30 cm).

SETTING SPEAKER DISTANCE

From the OSD's main <Setup> menu, select the <Speaker Distance> item using the remote's [▲ / ▼] and [Enter] keys. Using the [◀ / ▶] keys, set <Front> and <Center:> to the distance measuring from your principal listening position to the front surface of the front and center loudspeakers. Using the same remote keys, set <Surround> to the distance of the nearest surround-channel speaker.
NOTE: Distance can be displayed as feet or meters selectable by the <DISTANCE> item in the Speaker Distance menu.





ADVANCED OPTIONS

The T 163 allows for setting of special listening and system options. These are usually one-time options settings and once set do not need to be changed.

Main/Zone DSP Decoding
From the OSD's main <Setup> menu, select the DSP decoding options. There are two options, 5.1 and 7.1 decoding. With 7.1 decoding, the Zone output will be switched off.

Dolby Digital Surround EX Decoding
Select either Auto or On. If On is selected, the Surround EX decoding will be forced on thus Dolby Digital 5.1 will become 6.1 matrix.

DTS-ES Matrix
Select either Auto or On. If On is selected, the ES Matrix will be forced on thus DTS 5.1 will become 6.1 matrix.

BACKGROUND to "ON" or "OFF"
When "ON" is selected, on-screen menus will appear against a black background, obscuring the current video program (if any), when "OFF" is selected menus will appear in white text superimposed upon the current video program (if any).

TEMP OSD
TEMP OSD. When "ON" is selected, the temporary OSD such as volume, and speaker levels are displayed. When "OFF" no temporary OSD will be displayed.

CREATING AND USING PRESETS

The T 163's simple but powerfully flexible system of "Presets" allows you to customize virtually every aspect of your audio-video playback, and recall them with a single key-press. Every parameter of T 163 operation that is available from the main <Setup> menu — input settings, level settings, delay settings, speaker settings, and listening mode selection and adjustments — is stored, together, as a single Preset. You might create one Preset optimized for pop music and another for classical, or Presets that recall each family member's favorite setup, or one for fully cinematic home-theater playback and another for late-night movies, with each Preset's surround mode, channel levels, and speaker-setup fine-tuned to a particular scenario or preference.

CREATING PRESETS

Creating a Preset consists simply of storing a complete set of all settings accessible from the main <Setup> menu, including Tone Control settings. To save a collection of settings to a Preset, use the HTR 2 remote's [▲/▼] keys to scroll to the to main <Save to Preset> item. Use [▲/▼] to scroll to the desired Preset's line [1-5]; <Stored> will be flashing. Now press the HTR 2's [Enter] to store the Preset; <Stored> will be stop flashing, confirming that the Preset has been stored.

NOTE: The selected Preset remains in force until you select a different Preset.

NOTE: It is strongly recommended to leave Preset 1 "empty"; that is, memorized with no changes at all made to the calibrated values you have entered on all of the <Setup> menu lines. This will make returning to your calibrated setup defaults easy.

RECALLING PRESETS

You may recall a Preset at any time; the newly recalled Preset will replace the previous Preset (if any). Presets can only be recalled using the HTR 2 remote:
Press the HTR 2's square [A/V Preset] key (red dot), then press the numeric key 1-5 corresponding to the desired preset.

NOTE: The [A/V Preset] key works as a momentary "shift" key: You must press it every time before invoking a Preset via a numeric key.

You may operate the T 163 tuner preamplifier from its front panel or via the HTR 2 remote control. Since the remote will be the primary controller for most cases, we will focus on remote-controlled operations. Be sure also to read the section, "Front Panel" above.

SELECTING SOURCES

With the HTR 2's remote's [Amp] device selected, the remote's numeric-key section directly selects the tuner preamplifier's inputs, plus the internal tuner ([Tuner), Tape Monitor ([Tape]), and multichannel input ([Ext. 7.1/5.1]) refer to the red labels directly above each key.

- When an audio-only source (CD, DISC, TUNER) is selected, the most recently-selected video signal remains selected, until another audio-video input is selected
- When you change sources, the VFL will display the new input in its primary display.
- A newly selected input's listening mode (Stereo, EARS, Pro Logic II, etc.) will revert to the mode to which it is configured on the <Input Settings> line of the setup menu, unless the incoming signal is a Dolby Digital or DTS source, in which case the input will be set automatically to the appropriate decoding mode.

ADJUSTING THE VOLUME

Use the HTR 2 remote's <Volume up/down> keys to adjust the "master volume" of the T 163, raising or lower all channels together. Note that:

- A momentary keypress will change the master volume by 1 dB increments; if you hold down <Volume up/down> the master-volume change will "run-on" until the key is released.
- The T 163's OSD will show the volume setting as a line graphic with a numeric display above in dB relative to the reference level.

Since recordings vary considerably in overall average level, there is no imperative to listen at any particular master-volume setting. A setting of -20 may sound "as loud" from one CD or DVD as -10 does from another.

- If muting has been activated (below), adjusting master-volume via the HTR 2 remote or the front-panel knob automatically releases the mute function.
- The T 163 will power-up from Standby mode at whatever master volume setting was last used; however, if the prior setting was greater than -20 dB the T 163 will power up to -20 dB. This prevents inadvertently beginning a session at excessive volume.

MUTING THE SOUND

Use the HTR 2 remote's <Mute> key to silence all channels completely. Muting is always available, regardless of source or listening mode selections. Note that:

- Cycling through Standby or powering off does not release muting; the T 163 will return from Standby with muting on if Standby was invoked with muting on.
- Changing input or listening-mode selections does not release muting.
- Adjusting the master-volume upward via the HTR 2 or the front-panel knob automatically releases the mute function.

LISTENING TO RADIO

The T 163's internal AM/FM tuner offers very high quality sound from radio broadcasts. Note that reception and sound quality will always be dependent to a degree on the type of antenna(s) used, as well as proximity to the broadcast origin, geography, and weather conditions.

ABOUT ANTENNAS

The supplied ribbon-wire FM antenna can be connected to the rear-panel FM-antenna input using the 'balun' included adapter, and should be fully extended to form a "T". This folded-dipole antenna will usually work best oriented vertically, with the arms of its "T" full outstretched and arranged perpendicular to the origin of the desired broadcast. There are no 'rules,' however, and experimenting freely with antenna placement and orientation may yield the clearest sound and lowest background noise. In areas of poor FM reception, an exterior FM antenna can improve performance dramatically. If radio listening is important to you, consider consulting an antenna installation professional to optimize your system.

The supplied AM 'loop' antenna will usually provide adequate reception. However, an exterior AM antenna can be used to improve reception; consult an antenna professional for more information.

SELECTING THE RADIO

Press the AM/FM key on the T 163 front panel, the HTR 2's orange [TUNER] (the numeric 9 key), or the yellow [AM] and [FM] keys to select the tuner preamplifier's radio mode. Each subsequent press of either key will toggle the unit between its FM and AM bands.

TUNING STATIONS

Press SEARCH ◀ ▶ on the front panel momentarily to step up or down between FM or AM frequencies. Press and hold SEARCH ◀ ▶ for more than 2 seconds to search up or down; the T 163's tuner will stop at the next sufficiently strong signal it encounters. See "Front Panel," above. Pressing the SEARCH ◀ ▶ keys momentarily during the search process will stop the search.

After first pressing amber [TUNER] mode-select key on the HTR 2 to set the remote to control radio functions, press [TUNE DOWN] or [TUNE UP] on the HTR 2 (yellow lettering); hold in to perform slow manual search, press momentarily to automatically search (see above).

SETTING RADIO PRESETS

The T 163 can store as many as 40 of your favorite radio stations for immediate recall; 30 FM stations and 10 AM. To store a radio preset, first tune the desired frequency (see above), then press the front panel MEMORY key. Press the PRESET ◀ ▶ key to select the preset number to be assigned. Then press the MEMORY key once again. The STORED message will appear in the VFL Display.

NOTE: The Radio Presets must be stored from the front panel; this setup function is not accessible from the HTR 2 remote.

NOTE: The T 163's Radio Presets are distinct from its "global" Presets that can be used to manage listening and setup modes and levels. See "Using Presets," above.

SELECTING RADIO PRESETS

Press PRESET ◀ ▶ on the front panel to step up or down between presets; press and hold PRESET ◀ ▶ to "scroll" continuously up or down. The HTR 2 remote's [PRESET ▲/▼] keys work similarly.

CHOOSING THE FM MUTE / MODE

The front-panel FM MUTE/Mode key is a dual-purpose control. First, it "toggles" the T 163 between stereo mute and unmated stereo reception (assuming that a multiplex-stereo station of sufficient strength is tuned). FM Mute eliminates noise from "empty" FM frequencies but also mutes very weak or distant stations; it also causes the search function to skip them. Toggling off the FM Mute will result in reduced noise if the FM station signal level is less than the FM Stereo threshold (since mono FM is inherently less noise-prone), though at the sacrifice of the stereo effect.

NOTE: The one can store the same channel in two preset locations; one with FM Mute On, and with FM Mute Off.

NOTE: Toggling between FM Mute on or off also defeats the T 163's FM muting circuit. If you wish to listen to a particularly weak or distant broadcast, toggle off the FM Mute and tune it manually.

ABOUT RDS

The Radio Data System (RDS) permits compatible FM tuners to display text determined by the broadcaster. The T 163 supports two RDS modes, station-name (PS mode) and radio-text (RT mode). However, not every FM station incorporates RDS in its broadcast signal; in most areas you will find from one to several RDS-enabled stations, but it is by no means impossible that your favorite stations will not be broadcasting RDS data.

VIEW RDS TEXT

When an RDS-enabled FM broadcast is tuned, after a brief delay the "RDS" symbol will light in the T 163's front-panel readout and the readout's character section will show its station-name (PS) text: "ROCK101," for example. Press the front-panel DISPLAY key to toggle the readout between this and the station's radio-text (RT) readout, if any, which might scroll song- or artist-name, or any other text of the station's choosing.

ABOUT USER NAMES

You can assign an eight character "User Name" to each radio preset, which will show in the front-panel readout whenever that preset is recalled.

ENTERING USER NAMES

For example, to name a radio preset "NEWS": recall the desired radio preset, and then press the front-panel MEMORY key once, then within five (5) seconds, press the front-panel DISPLAY key; the readout shows a blinking box. Use the SEARCH ◀ ▶ keys to select the first character of the name ("N" from the alphabetic list; press either PRESET ◀ ▶ key to select the character and move to the next position. Repeat this process for each character in sequence; press the MEMORY key again to store the User Name and exit the text-entry mode.

ABOUT DTS AND DOLBY DIGITAL SURROUND MODES

DTS DIGITAL SURROUND

The Digital Theater System Digital Surround (simply called DTS) is a multichannel digital signal format that can process higher data rates than with Dolby Digital. Although both Dolby Digital and DTS are 5.1 channel media formats, discs bearing the "DTS" symbol are thought to provide better sound quality due to the lower audio compression required.
It also offers a broader dynamic, producing magnificent sound quality.

DTS-ES EXPANDED SURROUND ™ (DTS ES)

This is a new multichannel digital format which greatly improves the 360° spatial sensation of the Surround impression thanks to the greater space expansion of the surround signals, providing high compatibility with the conventional DTS format.

In addition to the 5.1 channels, the expanded DTS-ES Surround also offers the back surround (also sometimes called the "surround centre") in reproduction, providing a total of 6.1 channels. The expanded DTS-ES Surround includes two formats, with two different methods of surround signal recording, as follows:

DTS-ES™ DISCRETE 6.1

Since the signals of the 6.1 Surround channels (including the back channel) are completely independent, it is possible to achieve the sensation that the acoustic image is moving about freely among the background sounds, 360 degrees surrounding the listener.

Although maximum quality is achieved with sound tracks recorded using this system and reproduced using the DTS-ES decoder, when played with a conventional DTS decoder, the back surround channel is automatically downmixed in the surround right and surround left channels of the surround system, in such a way that none of the signal components are lost.

DTS-ES™ MATRIX 6.1

In this format, the additional signals of the back channel receive a matrix encoding and are inputted into the right and left surround channels. During reproduction they are decoded to the right, left and back surround channels.

Since this bit-stream format is 100% compatible with conventional DTS signals, the DTS-ES Matrix 6.1 format effect can also be achieved from sources with DTS-ES 5.1 signals.
Naturally, it is also possible to reproduce from a DTS 5.1 channel decoder, signals recorded in DTS-ES 6.1.
When a DTS-ES decoder processes decodes a discrete DTS-ES 6.1 or in Matrix 6.1, these formats are automatically detected and the Optimum Surround mode is selected.
However, some DTS-ES Matrix 6.1 sources may be detected as DTS. In this case the DTS-ES Matrix mode should be selected manually in order to reproduce them.

DTS NEO: 6™ SURROUND

This mode applies the conventional 2-channel signals such as digital PCM or analog stereo signals to the high precision digital matrix decoder used for DTS-ES Matrix 6.1, to achieve 6.1-channel surround playback.
DTS Neo: 6 surround includes two modes for selecting the optimum decoding of the signal sources:

DTS NEO: 6 CINEMA

This method is ideal for the reproduction of movies. The decoding takes place by emphasising the separation in order to achieve the same atmosphere with 2-channel, as with 6.1-channel sources.

DTS NEO: 6 MUSIC

Mainly recommended for music reproduction. The right and left front channels do not pass through the decoder and are reproduced directly so there is no loss in sound quality, and the effects of the right surround, left surround, central and back surround channels add a natural sensation of expansion of the sound field.

DOLBY DIGITAL

Dolby Digital is the multi-channel digital signal format developed in the Dolby laboratories. Discs bearing the "DOLBY/Digital" symbol were recorded with up to 5.1 channels of digital signals, reproducing a much better sound quality, with dynamic and spatial sound sensations that are much better than in the previous Dolby Surround.

DOLBY DIGITAL EX

Using a Matrix decoder this method creates the back channel (sometimes also called the "surround center") by means of signals on the left and right surround channels recorded in Dolby Digital 5.1, reproduction being provided in Surround 6.1. This method should be selected with sources bearing the "DOLBY/Digital -EX" symbol, recorded in Dolby Digital Surround EX. With this additional channel you will experience improved dynamics and a better sensation of movement within the sound field.
If media sources recorded in Dolby Digital EX are decoded with a Digital EX decoder, the format is detected automatically, and the Dolby Digital EX mode is selected.
However, some media sources recorded in Dolby Digital EX can be detected as simple Dolby Digital media sources. In this case Dolby Digital EX should be selected manually.

DOLBY PRO LOGIC

Dolby Pro Logic is a surround format consisting of four channels (front right, centre, front left and surround. Media sources with the "Dolby Surround" feature produce a theatre–like surround sound. The surround channel is monophonic, but it is reproduced in both surround speakers.

DOLBY PRO LOGIC II SURROUND

This mode applies conventional 2-channel signals such as digital PCM or analog stereo signals as well as Dolby Surround signals, etc. to surround processing which offers improvements over conventional Dolby Pro Logic circuits. Dolby Pro Logic II surround has two decoding modes:

DOLBY PRO LOGIC II MOVIE

Designed for the cinema, this method highlights the cinematic sound quality by adding a process that emphasises the special effects of action scenes.

DOLBY PRO LOGIC II MUSIC

Designed for music, this method highlights the sound quality of music by adding a process that emphasises the musical effects.

ABOUT THE T 163'S LISTENING MODES

The T 163 tuner preamplifier offers nine distinct listening modes, tailored for different types of recordings or program material. The table below lists which modes are available to what input signals.
With a two-channel (STEREO) source the following listening modes can be selected:

- **Stereo**
- **Downmix**
  All output is directed to the left/right-front channels; low frequencies are directed to the subwoofer if one is present in the Speaker settings. Select Stereo when you wish to listen to a stereo (or monaural) production, such as a music CD or FM broadcast, without surround enhancement. Stereo recordings, whether in PCM/digital or analog form and whether surround-encoded or not encoded, are reproduced as recorded; multichannel digital recordings (Dolby Digital and DTS) are reproduced in "Downmix" mode via the left- and right-front channels only, as Lt/Rt (left/right-total) signals.

- **Dolby Pro Logic**
- **Dolby Pro Logic II (PLII)**
  Two-channel recordings, whether stereo or surround-encoded, are reproduced with Dolby Pro Logic, or ProLogic II surround processing, yielding output to left-, center-, and right-front channels, and discrete left/right surround channels (assuming these are present in the current <Speakers Setup>. PLII does not employ the surround back speakers (if any).

  NOTE: ProLogic II is a more recent evolution of the original Dolby ProLogic surround processing that yields more stable imaging and full bandwidth sound to the rear channels in Movie mode, offering sound that is more similar to Dolby Digital decoding.
  The T 163 provides two PLII variations: MOVIE and MUSIC. See "Adjusting Listening Modes," below.

- **DTS Neo:6**
  Two-channel recordings, whether stereo or surround-encoded, are reproduced with Neo:6 surround with output to left, center-, and right-front channels and discrete left/right surround channels (assuming these are present in the current <Speakers Setup>).
  The T 163 provides two DTS Neo:6 variations: CINEMA and MUSIC. See "Adjusting Listening Modes," below.

- **EARS**
  Two-channel recordings, whether stereo or surround-encoded, are reproduced with proprietary NAD surround processing with signals output to the left, center-, and right-front channels and discrete left/right surround channels, plus subwoofer (assuming these are present in the current <Speakers Setup>); EARS does not employ the surround back speakers (if any). EARS extracts the natural ambience present in nearly all well-produced stereo recordings. It does not synthesize any ambience or other sonic elements and thus remains truer to the sound of the original musical performance than most other music-surround options.
  Select EARS for listening to stereo music recordings and broadcasts. EARS produces a subtle but highly natural and believable ambience from nearly all "natural-acoustic" stereo recordings; typically, these include classical, jazz, and folk genres as well as numerous examples from others. It's virtues include a realistic, stable "front-stage" sonic imaging and spacious but unexaggerated ambient "virtual acoustics" that remain faithful to the original recording.

- **Matrix 7.1**
  Two-channel recordings, whether stereo or surround-encoded, are reproduced with proprietary surround processing via the full suite of front, surround, and one or two surround back speakers (if these are present in the current Speaker Settings setup), plus subwoofer (if any). Matrix 7.1 can produce a very natural, cohesive all-channels surround from high-quality recordings, both for stereo music and for surround-encoded music or movie programs.

- **Enhanced-Stereo 1 (ST1)**
  All recordings reproduced in stereo via the maximum speaker complement configured in the current <Speakers Setup>. ST1 can be useful for maximum volume from all channels, or for multi-speaker background music (cocktail party) listening.

- **Enhanced-Stereo 2 (ST2)**
  All recordings reproduced in stereo via the surround speakers only (plus subwoofer, if any), assuming these are configured in the current <Speakers Setup>. ST2 can prove useful in certain late-night or very low-volume listening situations.

The following Surround Sound Modes require a specially encoded signal that must be present in digital format to be decoded by the T 163. These modes are automatically switched on when the appropriate data stream is detected selected in the setup menu of the source media.

- **Dolby Digital**
- **Dolby Digital EX**
- **Dolby Digital Surround Sound EX**
- **DTS**
- **DTS ES Matrix**
- **DTS ES 6.1**

Digital recordings in Dolby Digital or DTS formats are reproduced via the channels employed in the original recording (up to the maximum channels present in the current <Speaker Settings> setup).

NOTE: The DVD player must be sending a Dolby Digital or DTS bit-stream from its digital output. Your DVD player probably includes its own setup menu that (among other things) lets you select the default bit-stream format, and usually includes an "Auto" setting that directs the player to choose the Dolby Digital/ DTS signal whenever these are available. In a few cases, you may have to set the player's bit-stream manually to "DD/DTS" or an equivalent. In the case of DVDs that carry both Dolby Digital and DTS, you will select one or the other from the disc's (not the player's) main menu.

Note also that while most Dolby Digital recordings are 5.1-channel surround productions, older examples may be multichannel, 2-channel, or even monaural; the T 163 will automatically reproduce the Dolby Digital signal with the maximum number of channels available.

Both Dolby Digital/EX and DTS/ES 6.1-channel recordings are reproduced using the surround back channel, if present in the current Speaker Settings setup; additionally, the T 163 creates surround-back signal from non-EX/ES, 5.1-channel Dolby Digital and DTS recordings.

Dolby Digital EX creates six full-bandwidth output channels from any 5.1-channel Dolby Digital recordings. The very best results occur with movies or other programs bearing the Dolby Digital Surround EX mark, which are produced to take full advantage of this playback mode.

The table below indicates which listening modes are available with the two types of audio signal sources: digital- or analog-input 2-channel (whether the actual signal is monaural, stereo or surround-encoded), and digital-multichannel (Dolby Digital or DTS). Where a listening mode is not available to a given signal source, it will not appear in the <Listening Mode> selection rotation.

2-ch analog or PCM	**Multi-ch. (DD/DTS)**
Stereo	Downmix
EARS	--
--	Dolby Digital/EX or DTS/ES
Dolby Pro Logic II	--
DTS Neo:6	--
Matrix 7.1	--
Enhanced Stereo I	--
Enhanced Stereo II	--

DISPLAYING THE SIGNAL MODE

Keying the front panel's DISPLAY or HTR 2 remote's [DISP] key will display on the VFL the channel-mode of the currently selected input signal, in the format "front / surround subwoofer" (see "4 DISPLAY" in the "Front Panel" section).
The following table shows examples of displays seen with various signal types:

Source	**Readout/OSD**
Analog	Analog
Digital PCM/HDCD	Digital PCM/HDCD
Multichannel (Dolby Digital)	Dolby D 3/2/.1 (full surround)
	Dolby D 3/1/.1
	Dolby D 2/0
	etc.
Multichannel (DTS)	dts 3/2/.1 (full surround)
	dts 3/1/.1
	dts 2/0
	etc.

SELECTING LISTENING MODES

Keying the HTR 2 remote's [SURR MODE] button steps through each of the T 163's Listening Modes available to the current input signal. It also momentarily displays the Listening Mode in the OSD.

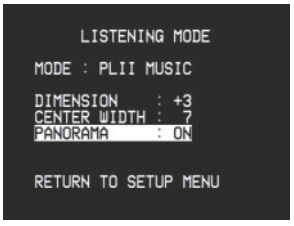
NOTE: Changing the type of input signal may automatically change the Listening Mode: If the new signal is a Dolby Digital or DTS recording, it will automatically invoke its native mode. The reverse is also true if Dolby Digital or DTS was previously selected.

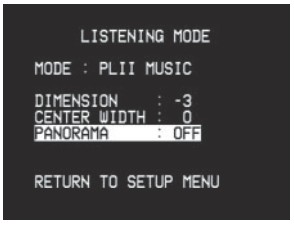
ADJUSTING LISTENING MODES

Several of the T 163's listening modes have one or more selectable variations and adjustable parameters you can modify to suit you system, the recording, or your personal preferences.

Use the HTR 2 remote's [Surr. Mode] key, or the front panel SURROUND MODE key, to select the Listening Mode you wish to display and listen to; this will display on the T 163's VFL Display. One can also select variations using the HTR 2 [◀ / ▶] cursor keys on the <MODE:> line of the OSD. Use the HTR 2's [▲ / ▼] and [◀ / ▶] cursor keys to navigate among and modify that mode's adjustable parameters (if any).

NOTE: Listening Mode parameter changes are maintained when you change listening modes. You may also save a modified Listening Mode for easy recall by saving it to a Preset (see "Using Presets", above.)





Dolby Pro Logic II (PLII)
PLII MOVIE is optimized for film soundtracks.
PLII MUSIC for music recordings.

DIMENSION (-3 to +3): Adjusts front-rear emphasis of the surround effect independently from the relative channel levels.

CENTER WIDTH (0 to 7): Modifies the "hard-centeredness" of the center image, by gradually mixing mono-center content to the front-left/right speakers as well; a setting of 0 retains the center-channel-only default, while a setting of 7 yields a fully phantom center channel.

PANORAMA (ON/OFF): Adds a "wraparound" effect by extending some stereo content into the surround channels.

DTS Neo:6
Neo: 6 CINEMA is optimized for film soundtracks, Neo:6 MUSIC for music recordings.

CENTER GAIN (0 to 0.5): Adjust for better center image in relation to the surround sound channels.

Stereo
HDCD (stereo PCM)
Downmix
Dolby Digital
Dolby Digital EX
Enhanced-Stereo 1 (ST1)
Enhanced-Stereo 2 (ST2)

DYN. RANGE (25, 50, 75, 100PCT): You can select the effective dynamic range (subjective range from soft to loud) for playback of Dolby Digital soundtracks. For fully cinematic effect, always select 100PCT, the default. Settings of 75, 50, and 25PCT progressively reduce dynamic range, making soft sounds comparatively louder while limiting the peak loudness of loud ones; the 25PCT setting will yield the least dynamic range and is best for late-night sessions or other times when you wish to retain maximum dialog intelligibility while minimizing overall volume levels.

SURROUND SOUND CHANNEL CHART

The following table shows which channels work when a particular mode is selected:

MODE	INPUT NUMBER OF CHANNELS	FRONT LEFT	CENTER	FRONT RIGHT	SURR RIGHT	SURR LEFT	SURR BACK RIGHT OR CENTER	SURR BACK LEFT	SUBWOOFER SPEAKER SETTING	
									ANY SMALL	ALL LARGE
Dolby Digital	1	--	X*	–	--	--	–	--	X*	–
Dolby Digital	2	X	–	X	--	--	–	--	X*	–
Dolby Digital	5	X	X*	X	X*	X*	–	--	X*	LFE
Dolby ProLogic II	2	X	X*	X	X*	X*	–	--	X*	–
Dolby EX	5	X	X*	X	X*	X*	X**	X*	X*	LFE
DTS	5	X	X*	X	X*	X*	–	--	X*	LFE
DTS ES	6	X	X*	X	X*	X*	X**	X*	X*	LFE
DTS Neo:6	2	X	X*	X	X*	X*	X*	X*	X*	LFE
EARS	2	X	X**	X	X**	X**	–	--	X*	X
Matrix 7.1	2	X	X**	X	X**	X**	X**	X**	X*	X
Enhanced-Stereo 1 (ST1)	2	X	–	X	X*	X*	X***	X*	X*	–
Enhanced-Stereo 2 (ST2)	2	--	–	–	X	X	–	--	X*	–
Stereo	2	X	–	X	--	--	–	--	X*	–

X = Speaker channel available.
X* Only if selected in Speaker Setup Menu.
X** Must be selected to access this Mode.
X*** Must have both Back Surround speakers selected.
LFE Low Frequency Effects are not present on all films.

Finally, make sure all the speaker terminals are tightened particularly if using banana plugs.

ADJUSTING CHANNEL LEVELS "ON THE FLY"

You can make changes to the relative levels of center, surround, and subwoofer outputs. This may prove useful in a number of circumstances; for example, to increase (or tone down) a film's dialog level by raising (lowering) the center channel, or to reduce excessive deep bass (or enhance deep bass) by lowering (raising) the subwoofer level without having to go into the CHANNEL LEVELS OSD menu.

TO ADJUST CHANNEL LEVELS

Use the HTR 2 remote's [Surr.], [Center], and [Sub] [▲ / ▼] keys for direct-access level adjustment of these channels, over a range of ±12 dB. You can also adjust all channel levels using the front panel's Levels key (see "Front Panel," above), or via the <Channel Levels> line of the main <Setup> menu.

NOTE THAT: The surround back channels (if any) adjust in lockstep with the surround channels;

Channel Level changes made via the HTR 2 are retained even if you cycle the tuner preamplifier through Standby.

Channel Levels are part of the T 163's Preset system. See "Creating and Using Presets," below.

Level settings are added/subtracted to the setup levels established by the T 163 level-calibration routine, invoked by the HTR 2 [Test] key. However, selecting any Preset will revert channel levels to those stored in the preset.

ADJUSTING THE TONE CONTROLS

The T 163 bass and treble controls are adjusted using the front panel's TONE CONTROLS (and TONE DEFEAT) buttons; see "Front Panel," above.

NOTE: Bass/treble settings affect only the front left/right channels, and are active in all listening modes. Bass/treble settings are part of a Preset: Bass/treble settings in effect when a Preset is stored will be reinstated whenever that Preset is recalled.

SPECIFICATIONS

- **Controls up to 8 devices.**
- **44 function keys.**
- **Learns up to 352 commands.**
- **Records up to 44 macros with a maximum of 64 commands each.**
- **Configurable punch-through.**
- **Key illumination with programmable timeout.**
- **Upgradable.**
- **Contains pre-programmed library of NAD remote codes.**

The NAD HTR 2 is ready to operate the T 163 tuner preamplifier right out of the box, but it is really eight remotes in one. Each of the 8 Device Selector keys at the top of the handset can call up a new "page" of remote-control codes to be transmitted by the remaining 44 keys. You may "teach" codes from any infrared-remote-controlled component, regardless of brand, to any or all of these. Obviously, the most logical system is that you teach the codes from your DVD player to the [DVD] Device Selector "page," your television's codes to the [TV] "page," and so on, but there is no required scheme: You may load any commands to any key on any page (see "Learning Codes From Other Remotes," below).

The HTR 2 is already preprogrammed with a full complement of commands for the T 163 tuner preamplifier on its [AMP] Device Selector page, and as well as with library commands to operate most NAD-brand DVD, CD, or TAPE components on the corresponding Device Selector "pages." These default commands are permanent: Even if you teach the HTR 2 new commands to take their place, the underlying library commands remain in place and can easily be recalled should you add an NAD component to your system later (see "Delete Mode", below).

NOTE: For use with the T 163, it should not be necessary to re-program any keys on the HTR 2 [AMP] page. However, in order for the HTR 2 to control your specific NAD-brand components you may need to load one or more different code-libraries; see "Loading Code Libraries," below.

CONTROLLING THE T 163

The HTR 2 is divided into two main sections. Eight Device Selector keys at the top—[AMP], [DVD,] [TV,] and so on—set the handset's remaining keys to a "page" of commands to control a particular component. A Device Select key determines only what component the HTR 2 will command; it does not perform any function on the tuner preamplifier. All of the remaining keys are function keys that can "learn" control codes from virtually any infrared remote controller, allowing you to teach the codes of your equipment, regardless of brand, to the HTR 2.

However, the HTR 2 is already preprogrammed to operate the T 163. All of the function keys on the [AMP] Device Selector "page" perform T 163 functions. (The HTR 2 can also command many other NAD components, from its [DVD,] [CD,] [TUNER,] and [TAPE] pages.)

It is important to note that certain HTR 2 keys perform different functions depending on the selected Device Selector "page." The color of the Device Selector key-labeling corresponds to the labeling of the function keys. Most centrally, the red [AMP] Device Selector "page" corresponds to the red input-select labeling adjacent to the numeric keys: When the HTR 2's [AMP] Device Selector page is active, these keys select the tuner preamplifier inputs. Similarly, the purple [DVD] Device Selector "page" corresponds to several purple labels, the green [TV] page to green labels, and so on.

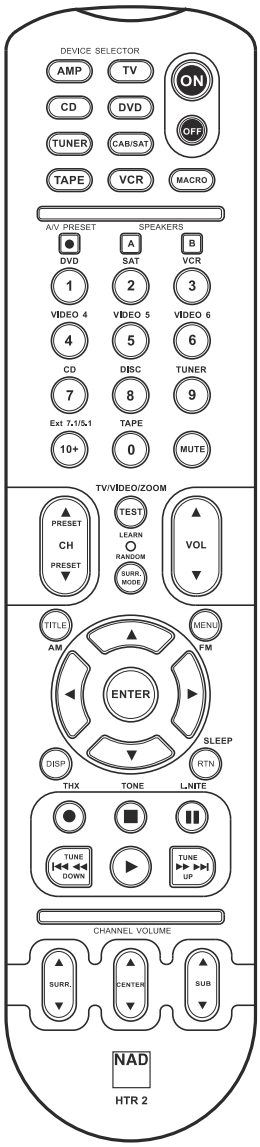
LEARNING CODES FROM OTHER REMOTES

Begin by positioning the HTR 2 "nose-to-nose" with the source remote so the two devices' infrared windows are about 2 inches apart.

- Enter Learning Mode: On the HTR 2, simultaneously press-and-hold for 3 seconds both a Device Selector key and the [•] "record" key (just below the [DISP] key), until the Learn LED at the center of the HTR 2 turns steady green.
- Press the HTR 2's function key you wish to teach a command; the Learn LED will turn amber.
- Press-and-hold the function key on the source remote: The HTR 2's Learn LED will flicker amber for a second or two, then turn solid green. The command is learned.
- Press the HTR 2's Device Selector key again to exit the learning mode.

If the Learn LED does not flicker amber you may need to vary the distance between the remotes.
If the Learn LED turns red rather than green, that particular command of that source remote command could not be learned.
Cancel Operation:
You can cancel configuring a key, by pressing the active Device Selector key before the learn is complete; the Learn LED will turn red.

Example: Learning "DVD Pause":
Position the HTR 2 and your DVD player's remote as described above.
- On the HTR 2, simultaneously press-and-hold [DVD] and [•]; the Learn LED turns steady green.
- Press the HTR 2's [❚❚] (pause) key; the Learn LED turns amber.
- Press-and-hold the DVD player's remote's pause key; the HTR 2's Learn LED flickers amber and then turns solid green. The command is learned.
- Press [DVD] again to exit the learning mode.



PUNCH-THROUGH

The HTR 2's "punch-through" function allows you to retain a function key from one Device Select "page" on another, so that, for example, the AMP [SURR MODE] function might still control the T 163 when the DVD Device Selector page is active

NOTE: The HTR 2's [VOL] keys are pre-programmed as "punched-through" for all Device Select pages: [VOL] will operate the T 163's master-volume regardless of the currently selected device. The [SURR.] [CENTER,] and [SUB] Channel Volume controls similarly are pre-programmed as punched-through.

To set a punch through, after entering the Learning Mode, and pressing the desired key to be punched-through, simply press the device key twice of the device to punch through to. The status LED will turn green; press the Device Selector key again to exit Learning Mode.

Example: Punch-through the from the DVD "page" to the AMP [SURR MODE] key:
- On the HTR 2, simultaneously press-and-hold [DVD] and [•] (record); the Learn LED turns steady green.
- Press [SURR MODE]; the Learn LED turns amber.
- Press [AMP] twice; the Learn LED turns green.
- Press [DVD] again to exit the learning mode.

COPY A COMMAND FROM ANOTHER KEY

You may copy a command from any HTR 2 key to any other. To copy a key function, after entering the Learning Mode, and pressing the desired key to be copied to, simply press the device key from which you wish to copy, having first pressed its Device Selector key if it resides on another "page." The status LED will turn green; press the Device Selector key again to exit Learning Mode.

Example: Copy the Pause command from the CD page to the AMP [❙❙] key:
- On the HTR 2, simultaneously press-and-hold [AMP] and [•] (record); the Learn LED turns steady green.
- Press [❙❙] (pause); the Learn LED turns amber.
- Press [CD]; press [❙❙] (pause); the Learn LED turns green.
- Press [AMP] again to exit the learning mode.

NOTE: The copy and punch-through functions are similar. However, if you copy a command and then subsequently delete, or over-write the original (source-key) command , the copied-to key's command remains unchanged. If you punch-through to a command and then delete or over-write the original key, the punched-through functions also change accordingly.

MACRO COMMANDS

A "macro" command is a series of two or more remote codes issued automatically from a single keypress. You might use a macro to automate a simple command sequence, such as, "Turn on the DVD player and then press 'play.'" Or you might compose an elaborate macro to power up an entire system, select a source, choose a Listening Mode, and begin playback—again, all from a single keypress. The HTR 2 can store one macro on each of its function keys (these exclude the Device Selector keys).

NOTE: Macros are independent of the currently selected device.

RECORDING MACROS

To record a macro, simultaneously press-and-hold for 3 seconds both the [MACRO] key and the HTR 2 function key to which you wish to assign the macro, until the status LED turns green. The macro button will also light up. Press the sequence of function keys to be recorded into the macro, being sure to first press the requisite Device Selector key for each function (you may switch devices while recording the macro as many times as necessary), allowing you to create macro containing commands from more than one Device Selector "page." When you have finished entering the desired command sequence, press [MACRO] again to store the macro; the Learn LED and [MACRO] key illumination will turn off.

NOTE: Each macro can store a maximum of 64 command steps. If you exceed this number, the macro will be stored automatically after the 64th command is added.

Example: Record a Macro to the [0] key to Turn on the T 163, Select the DVD Input, and Commence Playback:
- On the HTR 2, simultaneously press-and-hold [MACRO] and [0] (numeric zero); the Learn LED turns steady green.
- Press [AMP]; press [ON]; press [1] (red "DVD"); press [DVD]; press [play] (the Learn LED blinks as each step is added).
- Press [MACRO] again to exit the macro-record mode.

To clear a macro, perform the above steps without entering any functions.

EXECUTING MACROS

To execute a macro, press and release [MACRO]; its key illumination lights for 5 seconds. While it remains lit, press an HTR 2 key to which a macro has previously been stored. The corresponding macro will run; as each step executes, its "parent" Device Selector's key flashes lights briefly; when execution is finished, the [MACRO] key illumination goes out. Pressing any other HTR 2 key while a macro is executing will abort the macro. Remember that you must hold the HTR 2 so that its infrared emitter can activate the target components.

NOTE: When a macro executes, a 1 second delay is automatically inserted between its commands. If you need more than a 1 second delay between particular commands—for example, to permit a component to power up completely—you can record "empty" steps into the macro by changing Device Selector "pages" without entering actual command functions.

KEY-ILLUMINATION TIMEOUT

The HTR 2's key-illumination can be set to remain lit for 0-9 seconds. The default value is 2 seconds.

To set the illumination timeout, simultaneously press-and-hold for 3 seconds both the HTR 2's [DISP] and the [0-9] key, with the digit corresponding to the desired timeout duration; the Learn LED will flash twice to confirm the new setting. When set to zero, the illumination will not turn on at all.

NOTE: Key illumination is the biggest drain on the HTR-2's batteries. A short key-illumination timeout will extend battery life appreciably; turning it off altogether (set it to 0 seconds) will lengthen it still further.

FACTORY RESET

The HTR-2 can be reset to its factory state, deleting all learned commands, copied and punched-through keys, macros, and other setup information, reverting all keys to their pre-programmed library commands. To perform a factory reset simultaneously press-and-hold for 10 seconds the HTR 2's [ON] and [RTN] keys; the Learn LED will start to flash green. Release [ON] and [RTN] before the second flash is complete; the Learn LED will turn red, indicate the remote has been reset.

NOTE: You must release [ON] and [RTN] before the second flash goes out, otherwise the unit will not reset; should this occur, repeat the full procedure.

DELETE MODE

The HTR 2 can store learned, copied, and "default library" commands on any single key. (The default library commands are the pre-programmed NAD codes, such as the native T 163 commands on the [AMP] "page.") You can delete commands by layers back "down" to the default library command on any key, removing learned commands, punched-through functions, and copied keys.

NOTE: The default library commands cannot be deleted, so you need not worry that using Delete Mode might cause irreparable changes.

To enter Delete Mode, simultaneously press-and-hold for 3 seconds both the desired key's Device Selector key and the [RTN] key, until the Learn LED turns green. Press the function key whose command you wish to delete; the Learn LED flashes; the number of times indicates which type of function has become active—see the table below. Press the active Device Selector key again to exit Delete Mode.

NOTE: You may delete multiple function-key commands on the same Device Selector "page," but to delete from more than one Device Selector page you must exit Delete Mode and then re-enter it on the required page.

Flashes	Command Type
1	Default Library Command
2	Copied Library Command
3	Learned Command

LOADING CODE-LIBRARIES

The HTR 2 can store a different library of default NAD codes for each of its Device Selector "pages." If the original default library does not control your NAD CD player, tape deck, DVD player, or other component, follow the procedure below to change the code-library.

Begin by ensuring that the component you wish the HTR 2 to control is plugged in and powered-up ("on," not merely in standby). To enter the HTR 2's Library Mode, simultaneously press-and-hold for 3 seconds both the desired Device Selector key and the [A/V PRESET] key, until the Learn LED turns green. While keeping the HTR 2 pointed toward the component, enter the first appropriate three-digit code-library number from the table below. If the component turns off, press [ENTER] to accept that code-library number and exit the Library Mode. If the component does not turn off, enter the next three-digit code-library number from the table. When you enter the correct number the component will turn off; press [ENTER] to accept that code-library number and exit the Library Mode.

NAD-brand component	HTR 2 code-library numbers
CD	
CD Player (new)	200
CD Player (old)	201
TAPE	
Tape Deck B	400
Tape Deck A	401
DVD	
T562	600
T550, L55	601
T512, T531, T532	602
T571, T572	602
L56	604
T513, T533	605

Search Mode
If none of the codes from the table, when entered, turns on the component, and if you are quite sure you have followed the above procedure completely and carefully, you may want to try the "search" method as follows:

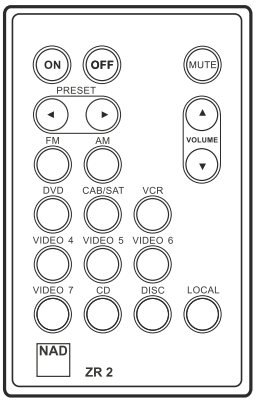
Enter Library Mode by simultaneously pressing-and-holding for 3 seconds both the desired Device Selector key and the [A/V PRESET] key, until the Learn LED turns green. Now press-and-hold the HTR 2's [▲] (or [▼]) key; the remote will step through all the available codes at a rate of approximately 1 per second. When the component turns off, immediately release the cursor key; press [ENTER] to accept that code-library and exit the Library Mode. Try a few commands; should you prove to have stepped past the needed code-library, re-enter the Library Mode and use the cursor key to step back to it.

NOTE: It is possible that search mode will find code-libraries that operate, at least partially, some other-brand (non-NAD) components. You may certainly exploit such capabilities as you find them. However, since we can only ensure the completeness or accuracy of NAD code-libraries, we cannot support the HTR 2's operation with other-brand components.

Checking Code-Library Number
You can check the current code-library on any Device Selector key as follows. Enter Library Mode by simultaneously pressing-and-holding for 3 seconds both the desired component's Device Selector key and the [A/V PRESET] key, until the Learn LED turns green. Press the [DISP] key; the HTR 2 indicates the current code-library by flashing its [TAPE], [VCR], and [MACRO] keys. For example, to indicate code-library #501 the HTR 2 will flash [TAPE] 5 times, pause, and then flash [MACRO] once. You might wish to make a note of your components' code-library numbers.

SUMMARY OF HTR 2 MODES

Mode	Keys To Press (for 3 seconds)
Learn/Copy/Punch Through	Device Key + Record Key
Delete Mode	Device Key + Return Key
Macro Record	Macro Key + Function Key
Library Mode	Device Key + Preset Key
Back Light Timeout	Display Key + Digit Key
Factory Reset	(see "Factory Reset," above)



USING THE ZR 2 REMOTE CONTROL

The ZR 2 remote control is a discrete compact remote for controlling the T 163 from various rooms other than the main room. The ZR 2 remote allows full separate control of the source selection irrespective to the main room. This means the zone input may be completely different, audio and video, from the main input and thus corresponding volume levels as well. If one wishes to enjoy the same source, as the main room the ZR 2 remote has a [LOCAL] button to allow simultaneous listening, but with full separate volume levels.

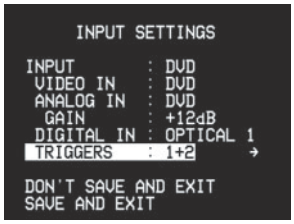
The T 163's front florescent display will show activity of the zone control so that main room occupants are aware of the zone remote activity. Furthermore if there is no main room activity, only the zone indicator will be active in the T 163's fluorescent display.

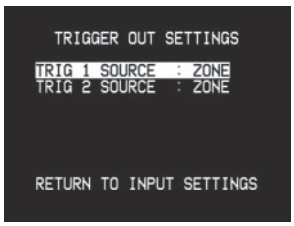
TRIGGER SETUP

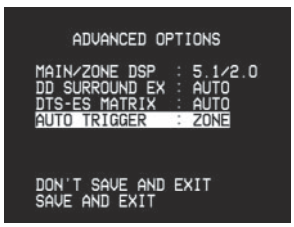
The T 163's rear-panel TRIGGER output can be assigned to any of its six AV inputs: DVD, SAT, VCR, VIDEO 4-6. Whenever the assigned input is selected, either manually or by recalling a Preset, the TRIGGER output will produce +12 V DC, which can be used to activate a connected component or system. See your NAD audio specialist for more information.

ASSIGNING THE TRIGGER OUTPUT

From the OSD's main <Setup> menu, select the <Input Settings> item using the remote's [▲/▼] and [◀ / ▶] keys; use the same keys to toggle the <Trigger 1 or 2, 1 +2, MAIN, or ZONE> line. One can select the video input (DVD, SAT, VCR, or VIDEO 4-6) you wish to assign to the TRIGGER 1 output. Furthermore the selected Trigger 1 or 2 can be assigned to the main room, zone, or both locations. See ADVANCED OPTIONS to assign MAIN and/or ZONE control. Select <Save and Exit> to store the trigger assignment.







CONDITION	POSSIBLE CAUSE(S)	POSSIBLE SOLUTIONS(S)
NO SOUND FROM ALL CHANNELS	• AC power unplugged • Power not switched on • Outlet is unpowered • Tape Monitor is engaged	• Check AC cable, connection, and outlet • Disengage Tape Monitor
NO SOUND FROM SOME CHANNELS	• Faulty/missing cables • <Speaker Settings> channel (s) set to "None" • Power-amp or speaker-connections faulty	• Check cables • Check <Speaker Settings> menu • Check power amp, cabling, and speakers
NO SOUND FROM SURROUND CHANNELS	• No surround listening mode is engaged • Surround-channels set to "None" on <Speaker Settings> menu • Surround-channels level set too low on <Channel Levels> menu	• Select appropriate listening mode • Correct <Speakers Settings> or <Channel Levels> settings
NO SOUND FROM SUBWOOFER	• Subwoofer is off, unpowered, or improperly connected • Subwoofer set to "OFF" on <Speaker Settings> menu • Sub level set too low on <Channel Levels> menu	• Power-up subwoofer, check sub's AC outlet, or check connections • Correct <Speakers Settings> or <Levels setup> settings
NO SOUND FROM CENTER CHANNEL	• Source is a 2/0 (etc.) Dolby Digital or DTS recording without center channel; • Center set to "OFF" on <Speaker Settings> menu • Center level set too low on <Channel Levels> menu	• Play a known 5.1-channel recording or select Dolby Pro Logic or Mono mode • Correct <Speakers Settings> or <Channel Levels> settings • Change Main/Zone DSP Decoding from 7.1/OFF to 5.1/2.0
NO DOLBY DIGITAL/DTS	• Source's digital output is not connected to a T 163 digital input • Source component not configured for multi channel digital output	• Check connections • Check source component setup • Change Main/Zone DSP Decoding from 7.1/OFF to 5.1/2.0
T 163 DOES NOT RESPOND TO HTR 2 REMOTE	• Batteries are flat or incorrectly inserted • IR transmitter window on remote, or IR tuner preamplifier window on T 163 is obstructed • T 163 front panel is in very bright sunlight or ambient light	• Check batteries • Check IR windows and ensure clear line-of-sight from remote to T 163 • Reduce sunlight/room lighting
T 163 DOES NOT RESPOND TO FRONT-PANEL COMMANDS OR REMOTE CONTROL	• Microprocessor error • T 163 may have over heated • 12V TRIGGER IN/OUT is set to AUTO or in position	• Power-down the T 163 via the front-panel Power button **and unplug it from the AC outlet** • Wait five minutes, re-connect and power up • Switch to OFF position

SPECIFICATIONS

AV TUNER PREAMPLIFIER	**T 163**
Decoding Formats	**Dolby Digital, Dolby Pro Logic II, DTS-ES, NEO:6, Dolby EX**
Sampling Rates	**32 kHz, 44.1 kHz, 48 kHz, 96 kHz (PCM)**
PRE-AMP SECTION	
Input sensitivity and impedance	400mV / 50k ohms
IM distortion	0.08%
Total harmonic distortion	0.08%
Frequency response	5 to 20,000 Hz ±0.8dB
Signal/noise ratio; ref to 2V output	> 90dB
Signal/noise ratio; ref 500mV Input / 500mV output	> 80dB
Remote Control	HTR 2 / ZR 2
Maximum output level	> 5V RMS
Output Impedance	< 100Ω (PRE OUT)
TUNER SECTION	
Input sensitivity Mono	16.1dBf
50dB Stereo:	36.1dBf
Harmonic Distortion; FM Mono	0.25%
Harmonic Distortion; FM Stereo	0.5%
Signal / noise; Mono	60dB
Signal / noise; Stereo	55dB
Stereo separation at 1kHz	40dB
Frequency Response; ± 1.5dB	30Hz - 15kHz
PHYSICAL SPECIFICATIONS	
Dimensions (W x H x D)	17-1/8 x 5-15/16 x 15-3/8" (435 x 150 x 399 mm)
Net Weight	17.6 lbs (8 kg)
Shipping Weight	22.4 lbs (10.2 kg)

Specifications are subject to change without notice. For updated documentation and features please log onto **www.nadelectronics.com** for the latest information about your T 163.

www.NADelectronics.com

T 163 Manual GB 09/03 China