

TA-3

High Definition Tuner Amplifier

The Audio/Video Nucleus

The Nakamichi TA-3 High Definition Tuner Amplifier is no mere receiver. It is the nucleus of an entire home entertainment system. With a quartz-locked tuner, inputs for up to three video sources, two audio decks, a CD player and phono, your choices are unusually extensive. And, with separate video record and monitor outputs and independent selector switches, you can view or listen to one program while recording another. The TA-3 is also a control nucleus and gives you armchair command of itself, two Nakamichi cassette decks and a CD player. TA-3 – The Audio/Video Nucleus from Nakamichi.

- STASIS Power Amplifiers • System Remote Control • Multi-Regulated Isolated-Ground Power Supply
- Nakamichi-Concept Tone Controls & Variable Loudness • Differential-FET Phono Preamp With Defeatable Subsonic Filter
- Independent Monitor & Record Selectors • Quartz PLL Tuner With 10 Presets & Auto-Seek Tuning



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Audio/Video Control — A System Approach

The Nakamichi TA-3 High Definition Tuner Amplifier is a true audio/video system with as much attention paid to video circuit design as to audio. There are three video inputs, (so you can connect a TV tuner, Laser Disc player and VCR), two video outputs (one for viewing, the other for recording) and separate record and monitor switching so you can view one program while recording another. Each video output is independently buffered for perfect viewing and no-loss dubbing, and an entire Nakamichi system — including up to two tape decks and a CD player — can be controlled from your armchair through the TA-3's custom remote control. Even tape-head azimuth can be adjusted while you listen if one of your decks is equipped with that feature!



Designing an audio/video control center such as this presents significant problems. With audio, video, FM and control signals in the same device, the chances for noise pickup grow by leaps and bounds. Fortunately, Nakamichi has considerable expertise in overcoming these problems.

Noise coupling occurs when common power supplies and ground systems are used. To avoid this, the TA-3 has separate power transformers, rectifiers and regulators for the display/logic and audio/video circuitry. The transformer powering the audio/video circuitry has three windings. Each feeds a separate rectifier and regulator. One powers the tuner, another the video amplifiers, and the third is used for the audio circuits. Thus, the power supplies and grounds of the four major areas are independent. To further ensure isolation, the FM tuner has special output buffers that provide a "floating ground" and prevent RF noise from contaminating the sound. In the audio circuit, local subregulators are used for the high level stages and function control to prevent coupling with the phono preamp. These subregulators use the Nakamichi "Isolated-Ground" topology to maintain a noise-free reference for each stage. As a result of its exotic power supply, the TA-3 produces a sound of unusual purity, depth and clarity — *The Sound of Nakamichi!*

STASIS Power Amplification

Let's face it. Most receivers sound the same! Despite attempts to distinguish among amplifiers on the basis of operating class or biasing scheme, most power amps function in the same way and rely on "global negative feedback" to correct problems. The exception is the STASIS design used in certain Nakamichi Tuner Amplifiers and Power Amplifiers.

STASIS uses two amplifiers to drive the speaker. One supplies "muscle"; the other supervises the first and applies minor corrections to eliminate distortion. Although the analogy limps, you can think of the high-current amplifier as the main rocket that boosts a satellite into near-orbit and the "STASIS" stage as the small thrusters that keep it precisely on target.

With the STASIS amplifier correcting distortion, there's no need for global negative feedback. Eliminating the feedback loop eliminates the problems that global feedback causes. A STASIS amplifier is *inherently stable* with any load — an NFB amplifier is not. STASIS has *uniform output impedance* — an NFB amplifier does not. And, with STASIS, frequency response and distortion are the same when driving a real speaker as they are on the test bench — which is to say, a STASIS amplifier sounds as good as it measures!



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Preamp And Controls Of Unusual Competence

The phono preamp uses an input pair of low-noise high-gain FETs and a precision equalizer to ensure high overload margin, low distortion and accurate response over the full audio range. The defeatable subsonic filter is part of the phono stage so it prevents tape overload when recording a warped disc as well as speaker overload when playing it. The filter uses Nakamichi's "gyrator" design to provide a very sharp rolloff below 20 Hz.

The TA-3's "Nakamichi-Concept" tone controls are useful — not flashy. The range is limited and restricted to the frequency extremes so you can make subtle corrections in the deep bass or high treble without altering the midrange. A defeat switch permits you to bypass the controls to check their effect and ensure absolutely flat response when desired.

Rather than a fixed loudness contour, the TA-3 has a Variable Loudness control that is used in conjunction with the Volume control. Set the Volume for maximum listening level and use the Loudness to lower it. As you do, the compensation "tracks" changes in hearing sensitivity over a 40-dB range.

Quartz PLL Synthesized Tuner

The TA-3's Quartz PLL Synthesized Tuner uses four sets of twin varicap diodes to provide accurate drift-free reception, 10 station presets and a choice of manual or auto-seek tuning.

Other Features

- Pre-Out/Main-In Loop
- Audio Mute
- Heavy-Duty Multi-Way Speaker Terminals
- Speaker Selector (OFF/A/B/A+B)
- 75-ohm Coax FM Antenna Input
- Detachable AM Loop Antenna
- Signal Strength Indicator
- Headphone Output
- Two Switched Convenience Outlets

TA-3 Specifications

Continuous Average Output Power	75 watts per channel into 8 ohms, both channels driven, 20–20,000 Hz at no greater than 0.1% THD
Dynamic Output Power	100 watts/channel (8 ohms), 125 watts/channel (4 ohms)
Frequency Response	20–20,000 Hz, +0, -0.5 dB; 5–75,000 Hz, +0, -3 dB
Power Amplifier S/N Ratio	> 100 dB re Filtered Power (A-Weight, Input Shorted)
Peak Output Current Capability	18 A per channel
Sensitivity/Impedance	Phono: 2.5 mV/47 k ohms; Other: 150 mV/20 k ohms
Phono Maximum Input Level (1 kHz)	180 mV
Phono THD (1 kHz, 1 V at Rec Out)	Less than 0.008 %
Phono S/N Ratio (IHF-A-202)	Better than 78 dB
Tone Controls	Bass: +10 dB at 20 Hz; Treble: +10 dB at 20 kHz
Loudness (at maximum attenuation)	20 Hz, +20 dB; 20 kHz, -6 dB
Subsonic Filter (Phono only)	20 Hz, 12 dB/octave
—FM—	
IHF Usable Sensitivity (Mono)	11.0 dBm/1.9 µV
50-dB Quieting Sensitivity	Mono: 14.7 dBm/3.0 µV; Stereo: 37.5 dBm/41.1 µV
Signal-to-Noise at 65 dB	Mono: > 79 dB; Stereo: > 74 dB
Frequency Response	20–15,000 Hz, -1 dB
Stereo Separation at 1 kHz	Better than 50 dB
THD at 1 kHz	Mono: < 0.07 %; Stereo: < 0.07 %
Capture Ratio	2.0 dB
Alternate Channel Selectivity	55 dB (± 400 kHz)
Spurious Response Rejection	Better than 90 dB
Image Rejection	Better than 75 dB
IF Rejection	Better than 80 dB
AM Suppression	Better than 60 dB
—AM—	
Sensitivity	53 dBµ/m
Signal-to-Noise Ratio	Better than 52 dB at 90 dBµ/m
Total Harmonic Distortion	Less than 0.5 % at 90 dBµ/m
Selectivity	Better than 20 dB (± 10 kHz)

General	
Power Source	120, 220, 240 or 110/120/220/240 V AC, 50/60 Hz (according to country of sale)
Maximum Power Consumption	350 W max.
Dimensions (excluding feet)	430 (W) x 100 (H) x 370 (D) mm 16-15/16 (W) x 3-15/16 (H) x 14-5/16 (D) inches
Approximate Weight	11.0 kg; 24 lb 4 oz.

*Specifications and appearance subject to change for further improvement without notice.
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NOTE: "A" & "E" Version Models

Nakamichi components are sold in more than 50 countries many of which have strict safety regulations to which Nakamichi products must comply. Models designated by an "A" have been produced for the United States and Canada and comply with Underwriters Laboratories (UL) and/or Canadian Standards Association (CSA) standards as well as with applicable state/provincial and federal safety requirements. Models designated by an "E" have been produced for Europe and comply with EEC Recommendation 82/499 as well as with applicable European safety standards. Models without an "A" or "E" have been produced for countries other than North America, Europe and Japan and comply with applicable safety standards. Nakamichi has authorized its local distributors to warrant only products which have been produced for their respective areas.