NAD 7400 RECEIVER

Manufacturer's Specifications

FM Tuner Section

Usable Sensitivity: Mono, 10.3 dBf.
50-dB Quieting Sensitivity: Mono, 13 dBf; stereo, 35 dBf (25 dBf with NR on).
S/N: Mono, 80 dB; stereo, 75 dB at 65 dBf.
THD: Mono, 0.08% at 1 kHz, 0.2% at 100 Hz and 6 kHz; stereo, 0.08% at 1 kHz, 0.3% at 100 Hz and 6 kHz.
Frequency Response: 30 Hz to 15 kHz, ±0.5 dB.
Capture Ratio: 1.5 dB.
Alternate-Channel Selectivity: Wide, 75 dB; narrow, 80 dB.
Adjacent-Channel Selectivity: Wide, 7 dB; narrow, 20 dB.
AM Rejection: 65 dB.
Image Rejection: Greater than 90 dB.
I.f. Rejection: Greater than 100 dB.
SCA Rejection: 70 dB.
Subcarrier Suppression: 60 dB.
Separation: 50 dB at 1 kHz, 40 dB from 30 Hz to 10 kHz.

AM Tuner Section

Usable Sensitivity: 300 µV/m.
Selectivity: 35 dB.
Image Rejection: 50 dB.
I.f. Rejection: 50 dB.
S/N: 45 dB.
THD: 0.5%.

Amplifier Section

Power Output: 100 watts per channel, 8-ohm loads, 20 Hz to 20 kHz; bridged mode, 300 watts, 8 ohms, 20 Hz to 20 kHz.
THD: 0.03%.
Clipping Power: 130 watts per channel, 8 ohms.
IHF Dynamic Headroom: +5.7 dB.
Slew Factor: Greater than 50.
Slew Rate: Greater than 30 V/µS.
SMPTE IM: 0.03%.
CCIF IM: 0.03%.
Input Sensitivity: MM phono, 0.28 mV; MC phono, 0.02 mV; high level, 15 mV.
Phono Overload at 1 kHz: MM, 180 mV; MC, 13 mV.
S/N: MM and MC, 76 dB; high level, 96 dB.
Frequency Response: Phono, RIAA, ±0.5 dB; high level, 20 Hz to 20 kHz, ±0.3 dB.
Tone-Control Range: Bass, ±10 dB at 50, 120, or 250 Hz; treble, ±10 dB at 3, 6, or 12 kHz.
Bass EQ Action: +3 dB at 60 Hz, +6 dB at 36 Hz.
Infrasonic Filter: −3 dB at 12 Hz, 12 dB per octave.
Audio Muting: −20 dB.

General Specifications

Power Requirements: 110, 120, 220, or 240 V a.c., 50/60 Hz; 390 VA.
Dimensions: 17⅛ in. W × 4¾ in. H × 15¾ in. D (43.5 cm × 12.1 cm × 40.1 cm).
Weight: 26 lbs. (11.8 kg).
Price: $999.
Company Address: 575 University Ave., Norwood, Mass. 02062.
For literature, circle No. 90

It is always a pleasure to come across an audio component where the manufacturer takes the trouble to tell us exactly how the product measures up, using approved standards of measurement. It's an even greater pleasure to encounter a product which meets or exceeds virtually all of those published specifications. The powerful NAD 7400 receiver is just such a product. If you've glanced at NAD's published specs, above, you may feel that my calling this receiver "powerful" may be a bit of an overstatement. Believe me, it is not, for although the continuous power rating is 100 watts per channel, the "power envelope" circuitry, for which NAD is noted, can deliver short-term power peaks of 300 to 500 watts per channel, depending upon your speaker's impedance. It is also possible to operate this receiver in the bridged or mono mode, for a continuous power output of about 300 watts into an 8-ohm load. I doubt very much if most users of this product would want to do that, however, for it would be necessary to add a second amplifier of the same power-handling capability to drive the right-channel speaker. Seems to me most people opt for a receiver in order to minimize the number of components needed in the

system. Still, I guess it does no harm—and doesn't add much to the cost—to include this extra feature.

NAD has always had the knack of providing all the useful features most people want in an audio component, without going overboard on needless frills. Instead of those seldom-used features that some manufacturers insist upon giving us, NAD concentrates on providing a product in which performance levels are well balanced. In the Model 7400, we have superb FM tuner performance coupled with high-level and phono preamp audio stages that deliver excellent sound reproduction.

The FM tuner section's 75-ohm coaxial antenna input is directly connected to the first stage of r.f. amplification, avoiding the use of—and the losses generated by—a 300-to-75-ohm balun transformer. The input circuit employs a dual-gate MOS-FET. A buffer stage precedes the i.f. circuitry, and a balanced quadrature detector is used for demodulation of the composite audio signal. That signal is then phase-compensated to make sure that the phase-locked-loop, multiplex-decoder circuit maintains high levels of stereo separation. There's a carefully designed "narrow" i.f. mode which increases adjacent-channel rejection to 20 dB—although I actually measured 21.5 dB!

NAD seems to have a habit of calling certain features by names which are not used by anyone else. For example, the partial FM-stereo blend circuit, useful when stereo signals are weak and noisy, is dubbed "FM NR" by NAD. By whatever name it's called, this circuit's net effect is to reduce noise at the expense of stereo separation. NAD makes sure the trade-off is worthwhile, however, by carefully controlling the amount of blend. The 7400 offers two "banks" of seven presets, and you can program any combination of AM and FM station frequencies into the resulting 14 memory preset locations. Though tuning is digital, as is the frequency display, the tuning knob offers the intuitive feel of an analog system, providing a sense of extreme accuracy and eliminating those manual up and down tuning buttons or rocker switches which are often awkward to use and yet are found on so many of today's tuners and receivers. With the NAD 7400, you can give the knob a quick spin to scan rapidly across the FM or AM band or turn the knob slowly for fine tuning.

NAD's "power envelope" amp circuitry provides extra power for several hundred mS—not just the 20 mS of dynamic headroom tests.

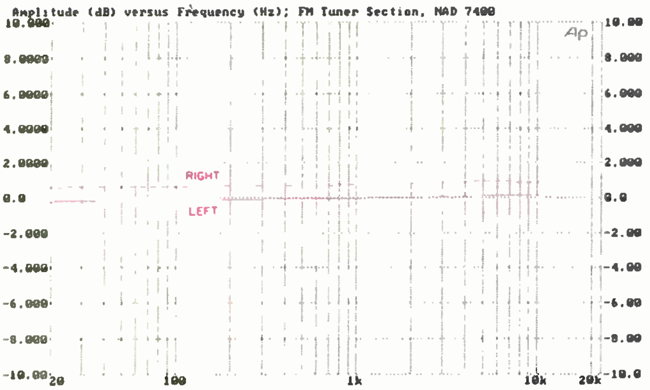

Fig. 1—Frequency response, FM tuner section.

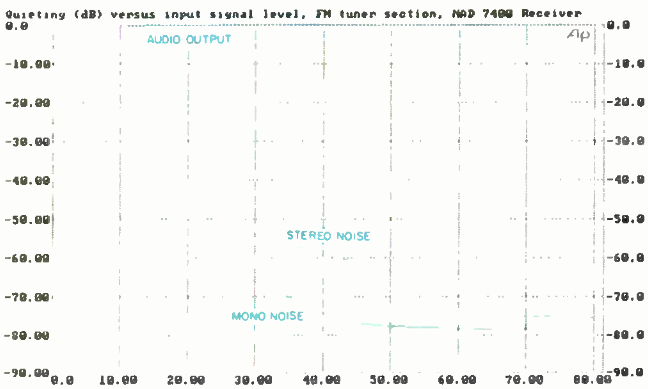

Fig. 2—FM quieting characteristics.

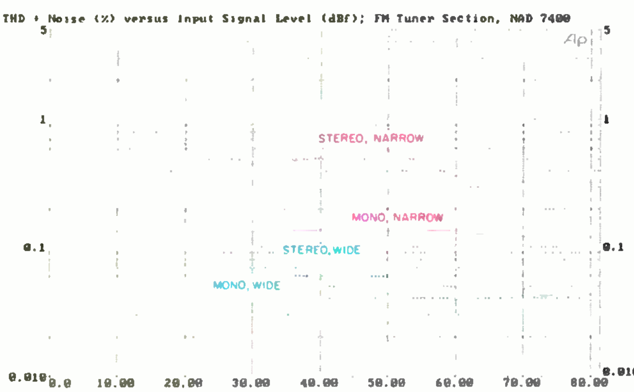

Fig. 3—THD + N vs. r.f. signal level for mono and stereo, in wide and narrow i.f. modes.

I have discussed NAD's "power envelope" circuitry in previous test reports of their receivers, but a quick review might be useful to those not familiar with this circuit. Essentially, two supply voltages are available for the amplifier's output stages. At moderate signal levels, the normal (lower) voltage supply provides all current. When the audio signal level rises above the rated power level, a controller turns on a "gate" transistor, so maximum current can flow from the alternate (higher) voltage supply. While the IHF Standard for dynamic headroom calls for measuring the ability of an amp to deliver levels in excess of its rated power for 20 mS, the NAD "power envelope" circuit provides this extra power for several hundred milliseconds. Of course, if constant, high power-output currents are called for—as, for example, during my bench tests—a second controller gradually shuts off the flow from the high-voltage supply to prevent overheating and possible damage to the amplifier. The Model 7400, according to NAD, can supply peak output current of up to 40 amperes.

The volume control of the 7400 is part of a feedback loop which varies preamplifier gain. As a result, when volume is turned down from maximum, residual circuit noise is also reduced proportionately. When the volume up and down buttons on the supplied remote control are used, a miniature motor inside the receiver actually turns the volume control, avoiding the noise and distortion which sometimes occur with all-electronic level control circuits.

With three distinct crossover frequencies for both the bass and treble controls, the tone-control flexibility of this receiver approaches that of a parametric equalizer. Rather than provide a loudness control, NAD chose to incorporate a "Bass EQ" circuit. Instead of a loudness circuit's volume-dependent boost of the low and upper bass, NAD's circuit simply boosts the lowest bass frequencies by a fixed amount. At the same time, a sharp infrasonic filter is switched in, to avoid boosting or amplifying signals below the audible range. The 7400 has input/output circuits for two tape decks and allows dubbing in either direction. In short, this receiver offers most of the essential conveniences found in separate power amplifiers, preamplifiers, and tuners—all on a single, well-designed chassis.

Control Layout

The power switch and a stereo 'phones jack are at the extreme left of the matte-black front panel. Speaker selector pushbuttons "A" and "B" and the "Bass EQ" button are to the right of the 'phones jack. Further to the right are the bass and treble controls, a pair of three-position lever switches that select bass or treble turnover frequencies, a pushbutton that bypasses the tone controls altogether, and a "Copy" lever switch with positions for copying from tape 2 to tape 1, and vice versa. Next are the two tape-monitor selector buttons; the "Phono," "Video," and "CD" input selectors; a button marked "Low Level," usually called muting, which reduces volume by about 20 dB; a rotary balance control, and a rotary volume control. All the button switches are of the push-on/push-off type and are surmounted by indicator lights so you can tell which are activated. Along the upper half of the front panel are seven numbered buttons for the preset radio station frequencies, as well as a

The FM frequency response was considerably better than claimed, deviating by no more than 0.15 dB across its bandwidth.

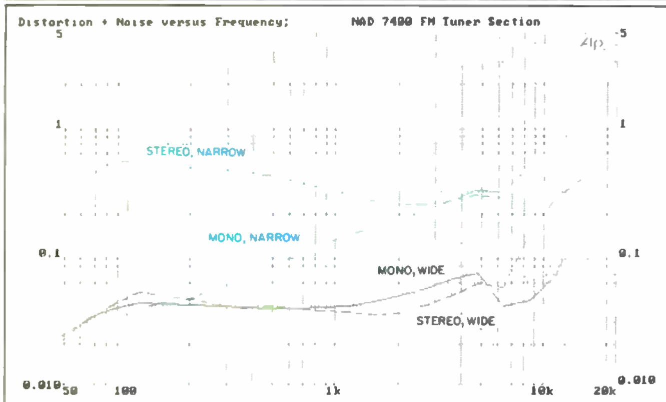

Fig. 4—THD + N vs. frequency.

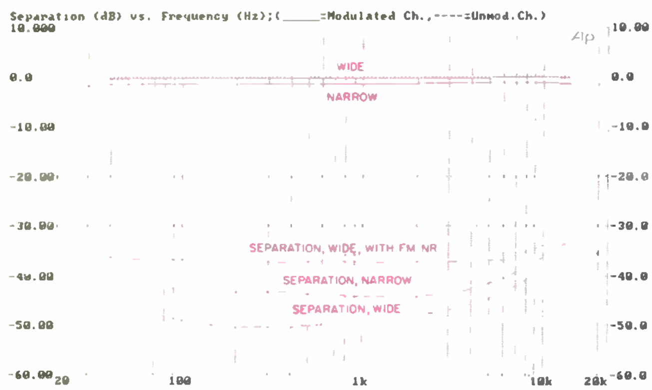

Fig. 5—Frequency response (solid curves) and separation in both wide and narrow i.f. modes, and with "FM NR" in wide mode.

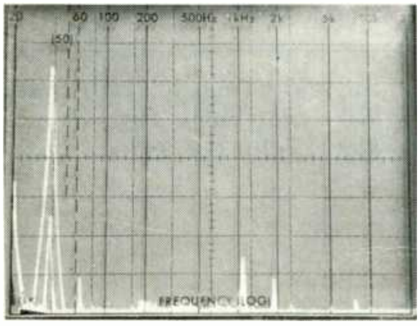

Fig. 6—Separation and crosstalk components for a 5-kHz modulating signal.

"Bank" button which selects between two banks of presets and an "Enter" button used for memorizing the frequencies selected. Pushbuttons for "Mono," "AM," and "FM" come next, and near them are the buttons for selecting the narrow i.f. mode and "FM NR." Pressing this last button reduces weak-signal FM stereo noise by moderately "blending" left- and right-channel signals. The digital frequency display, in addition to showing the tuned-to frequency, also has five LEDs below the numerals that show relative signal strength and a single LED that illuminates when center tuning has been achieved. Above the display are three more LEDs; these light in the presence of an FM stereo signal, when the "Soft Clipping" switch on the rear panel has been activated, or when protection circuitry has been triggered.

A pivotable AM loopstick is on the rear panel, adjacent to the 75-ohm F-type FM antenna connector and the spring-loaded terminals used for hooking up an external AM antenna. Further to the right are two pairs of color-coded speaker-cable binding posts and two convenience a.c. outlets, one switched and one unswitched. Under the speaker terminals are slide switches for optimizing the speaker impedance match, for mono bridging, and for activating the infrasonic filter, plus a "Soft Clipping" switch for altering the way in which clipping occurs when amplifier overload is reached. The "Impedance" and "Bridging" switches are normally locked in their preferred positions by means of small plastic strips which must be unscrewed in order to alter those switch settings. "Preamp Out" and "Main Amp In" jacks are centered beneath the two sets of speaker terminals. At the lower left, beneath the loopstick and the other antenna terminals, are the various phono and high-level inputs, a switch that selects MM or MC cartridge preamplification, and a ground terminal.

Tuner Measurements

Figure 1 shows the frequency response of the FM tuner section, measured across the speaker loads, with tone controls bypassed. Response was considerably better than claimed, never deviating by more than 0.15 dB. The right-channel response has been deliberately offset for clarity. Actual channel balance was virtually perfect at the volume setting used in this test.

Figure 2 shows how noise decreased with increasing signal strength for mono and stereo FM signals. At 65 dBf, S/N measured 78 dB in mono and 73 dB in stereo—just 2 dB short of the claimed 80 and 75 dB, but still excellent results for any tuner section. In mono, 50-dB quieting required only 14 dBf of signal input. This level is also the point at which stereo threshold occurs; to reach 50 dB of quieting in stereo, a signal level of only 23 dBf was needed. This result is all the more impressive since the "FM NR" circuit was not used when obtaining this measurement. There was an improvement of about 2 dB in S/N when I switched to the narrow i.f. mode. However, since the shape of the quieting curves—and of the audio output, represented by the top curve in Fig. 2—remained essentially the same, I did not plot a second graph for this operating condition.

In measuring THD, on the other hand, choosing the narrow i.f. setting made a substantial difference compared with operation in the normal (wide) i.f. mode, so THD + N versus

Phono-input response did not deviate from the RIAA curve by more than 0.13 dB. You can't ask for equalization more accurate than that.

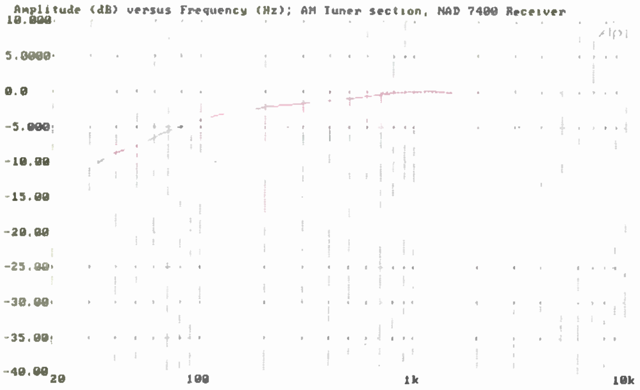

Fig. 7—AM frequency response.

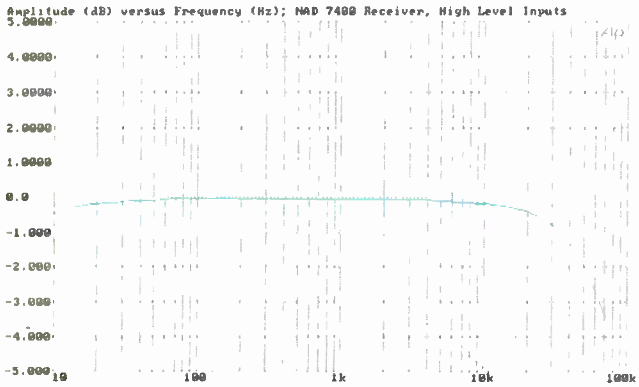

Fig. 8—Frequency response, preamp and amp sections, via high-level inputs.

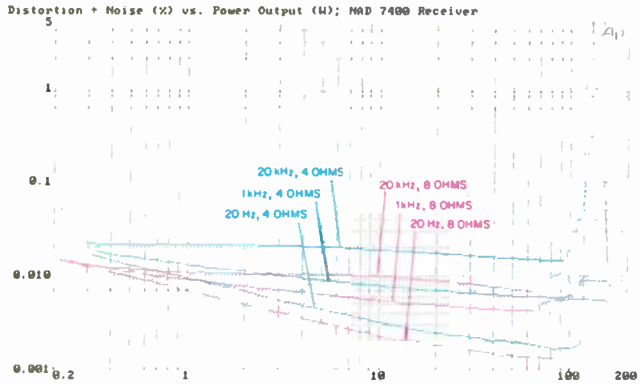

Fig. 9—THD + N vs. power output for 8- and 4-ohm loads.

signal level for 1-kHz signals modulated 100% was plotted for both modes (Fig. 3). Usable sensitivity for mono—the point at which THD + N rises to 3%—measured exactly 10 dBf in the wide i.f. mode and about 12 dBf in the narrow. At the strong-signal reference level of 65 dBf, THD + N in the wide i.f. mode decreased to 0.045% for mono and an even lower 0.04% for stereo. The effect of narrowing the i.f. bandwidth is clearly evident; THD + N rose to 0.13% for mono and 0.32% for stereo. While these figures are significantly higher than those obtained in the wide i.f. mode, they are nevertheless quite low, considering the benefits obtained when this mode is needed for rejecting adjacent-channel interference.

Figure 4 shows THD + N versus frequency for strong (65-dBf) signals in both the wide and narrow i.f. modes. Here, THD + N in the wide mode hovered around the 0.04% mark at 1 kHz for both mono and stereo. At 100 Hz, it measured 0.04% in mono and 0.046% in stereo; at 6 kHz, the wide-mode results were 0.045% in mono and just a bit below 0.06% in stereo. When the narrow i.f. reception mode was used, THD + N in mono remained low, reading only 0.033% at 100 Hz, and increasing to about 0.13% at 1 kHz and just over 0.3% at 6 kHz. Stereo THD + N in the narrow mode measured 0.5% at 100 Hz, 0.3% at 1 kHz, and just under 0.3% at 6 kHz. The minor differences between the readings at 1 kHz and 65 dBf, in Figs. 3 and 4, are possibly caused by very slight detuning of either the generator or the tuner between readings. When THD levels are this low, it is extremely difficult to take two successive plots and obtain absolutely identical results. The important conclusions that can be drawn, however, are that this tuner section provides remarkably low distortion plus noise when operated in the wide i.f. mode and offers tolerably low THD levels even when it becomes necessary to employ the narrow i.f. mode.

In Fig. 5, I plotted FM stereo separation for three conditions. The bottom dashed curve represents the best separation, using the wide i.f. setting and no blend—or, as NAD calls it, "FM NR." Under these conditions, separation came close to 50 dB at 1 kHz. Even more remarkably, it measured about 37.5 dB at 10 kHz and 48.5 dB at 100 Hz. Next, I repeated the test, this time using the narrow setting. Separation remained high—about 42.5 dB at 1 kHz, 41 dB at 100 Hz, and 34.5 dB at 10 kHz. Finally, I returned to the wide i.f. mode but turned on the "FM NR" circuit. Unlike with other blending arrangements, which usually degrade separation levels down to 10, 15, or at best 20 dB, I still obtained about 37 dB of separation at 1 kHz, 36.5 dB at 100 Hz, and 33 dB at 10 kHz with this circuit activated.

Figure 6 is a spectrum analysis, from 0 to 50 kHz, showing a 5-kHz output on the left channel (the tall spike near the left end of the sweep) as well as crosstalk products and noise appearing at the output of the unmodulated channel. A small amount of second-harmonic distortion also can be seen (the first major peak to the right of the main peak), but the only other significant crosstalk products evident are small sideband components near the 38-kHz subcarrier frequency—well outside the audio range.

The NAD 7400's SCA rejection was an excellent 72 dB. Alternate-channel rejection in the narrow i.f. mode measured 85 dB, while in the wide mode it was still a relatively

Noise was incredibly low: Better than −94 dB for the high-level inputs, down 90.4 dB for MM phono, and at least −76 dB for MC!

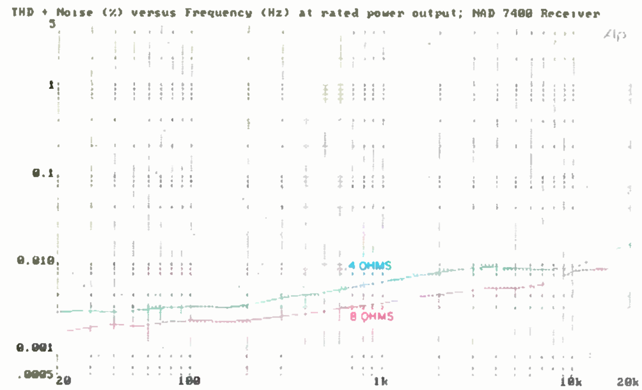

Fig. 10—THD + N vs. frequency at rated output (100 watts per channel) into 8 ohms and at 100 watts per channel into 4 ohms; see text.

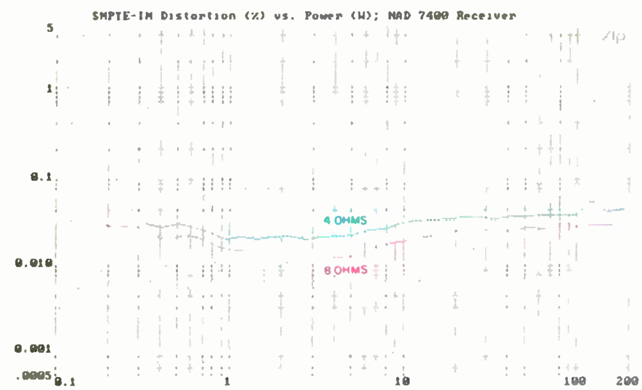

Fig. 11—SMPTE-IM distortion vs. power output.

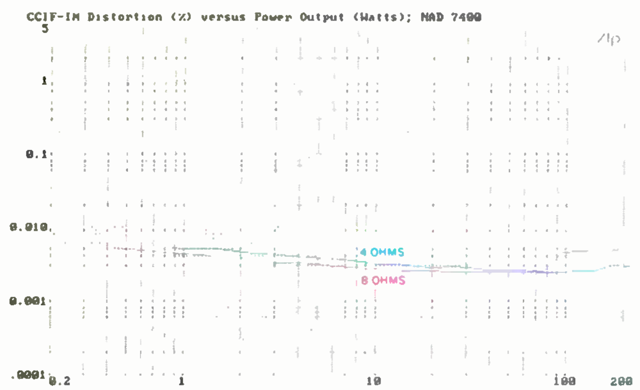

Fig. 12—CCIF-IM (twin-tone) distortion vs. power output.

high 75 dB. Image rejection and i.f. rejection both measured in excess of 100 dB; capture ratio measured 1.4 dB at 45 dBf, and AM rejection was 65 dB, exactly as specified.

In their descriptive brochure, NAD maintains that the AM section has "unusually wide audio bandwidth . . . that is in striking contrast to the muffled AM reception that many tuners provide." Well, I suspect that judgment is relative, because my sample, at least, didn't do all that well in the audio bandwidth department, as shown by Fig. 7. Response was down 6 dB at 65 Hz and 3.5 kHz. Some of the other claims made for this AM circuit did seem justified, however. The AM tuner section appeared less susceptible to noise than most, and did have lower THD—about 0.45% for a 400-Hz signal, 30% modulated, at an r.f. level of 50 mV.

Amplifier Measurements

Frequency response of the preamp/amp section is shown in Fig. 8. Here, I configured my Audio Precision System One test gear to sweep from 10 Hz to 100 kHz. Response was off by about −0.25 dB at 20 kHz and about −0.15 dB at 20 Hz. The −3 dB point occurred at a frequency of 68 kHz.

The curves in Fig. 9 represent plots of THD versus power output, using 8- and 4-ohm loads for 20 Hz, 1 kHz, and 20 kHz. With 8-ohm loads, the rated THD of 0.03% at 20 Hz was reached for a power output level just short of the 100 watts per channel rating, but the amplifier easily delivered far more than 100 watts per channel of power at 1 and 20 kHz. In fact, at 1 kHz, clipping did not begin until the power level reached 160 watts per channel! While no official continuous power rating is provided by NAD for operation with 4-ohm loads, it is obvious from these curves that, at 1 kHz, power output was around 150 watts per channel before significant levels of THD were reached. And with 4-ohm loads, the 20-Hz signal produced a power level of around 120 watts per channel. It was the 20-kHz test signal that proved to be the limiting factor in trying to establish a continuous power rating for 4-ohm operation. At this frequency, the amplifier began to show increased distortion for levels not much above 100 watts per channel.

Accordingly, when I plotted THD + N versus frequency for *rated* output (Fig. 10), I regulated the input signal so that a constant 100 watts per channel was maintained for both 8- and 4-ohm loads. Figure 11 shows how SMPTE-IM distortion varied with increasing equivalent power output levels. At 100 watts per channel, SMPTE IM measured only 0.026% and 0.037% for 8- and 4-ohm loads, respectively. Since NAD is one of the few companies to quote IHF-IM distortion—also referred to as CCIF IM—I measured this type of distortion as well (Fig. 12). I plotted CCIF IM, using twin tones of 19 and 20 kHz, against power output levels. For 8-ohm loads, CCIF IM was a very low 0.0045% at rated output, while for 4-ohm loads, at 100 watts per channel, CCIF IM was even a bit lower, reading 0.0025%. Dynamic headroom, measured in accordance with the IHF Amplifier Standard, was just short of 5 dB. In power terms, this means that for at least 20 mS, this amp can deliver more than 300 watts per channel into 8-ohm loads, if called upon to do so.

High-level input sensitivity, referred to 1 watt output, was 16 mV. The A-weighted S/N ratio for the high-level inputs, referred to 0.5-V input with the volume control adjusted to

The NAD 7400 makes it very easy to relate directly to the music, with smooth controls and no audible hum or noise.

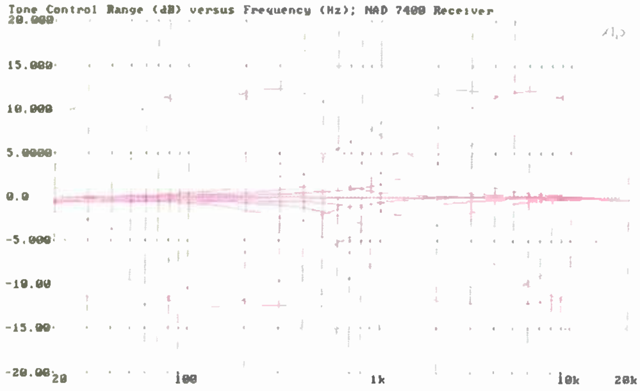

Fig. 13—Bass and treble control range. Note the effects of switching turnover frequencies.

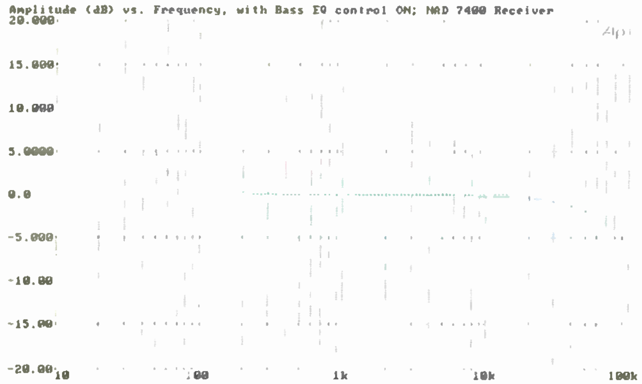

Fig. 14—Amplifier response, with measurement extended from 10 Hz to 100 kHz and "Bass EQ" on. Note the steep roll-off at 20 Hz, caused by the infrasonic filter incorporated in the "Bass EQ" circuit.

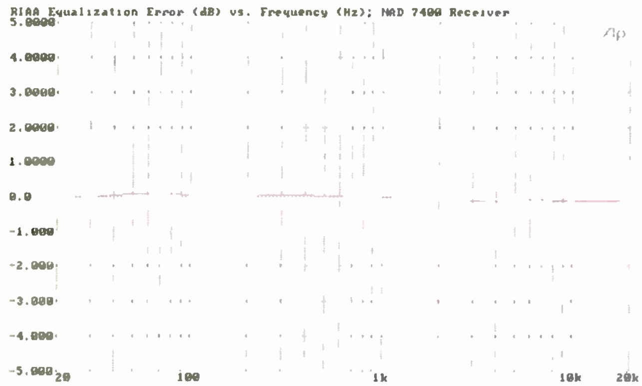

Fig. 15—Deviation from RIAA equalization.

produce 1 watt output into 8-ohm loads, measured an incredibly high 94.6 dB for the left channel and 94.2 dB for the right. I suspect that NAD's method of including the volume control in a feedback loop paid off in terms of S/N.

Next, I measured the maximum boost and cut characteristics of the tone controls. As mentioned earlier, both the bass and treble control can be adjusted for one of three turnover frequencies. As a result, the flexibility of these tone controls approaches that of a parametric equalizer. It took 12 successive response sweeps to plot the curves shown in Fig. 13. Center frequencies, at which maximum boost or cut occurs, came quite close to the nominal values listed by NAD (50, 120, or 250 Hz for the bass control and 3, 6, or 12 kHz for the treble). The response of the amplifier when the "Bass EQ" switch was pressed is plotted in Fig. 14. Maximum boost occurred at around 35 Hz and amounted to about +6 dB, but response rolled off rapidly below that frequency because of the action of the infrasonic filter incorporated in this bass-enhancement circuit.

I turned to the phono circuits next and was pleased to see that deviation from perfect RIAA playback equalization, over the range from 20 Hz to 20 kHz, never exceeded 0.13 dB. You can hardly ask for a more accurate equalization circuit than that. Moving-magnet input sensitivity for 1 watt output was 0.27 mV, while the MC input required only 33 µV for the same output level. Phono overload via the MM inputs measured 200 mV for a 1-kHz signal, while the MC inputs were able to handle signal levels up to 21 mV at that same test frequency.

Perhaps the most remarkable aspect of the NAD 7400's phono section was its S/N ratio. NAD quotes a figure of 76 dB, referred to 5 mV input, with the volume control adjusted so that 1 watt is developed across the speaker loads. However, they qualify this specification by saying it is that good with a cartridge connected. In fact, what little noise and/or hum occurs under these conditions actually comes from the cartridge and its cables. The IHF Standard calls for the inputs to be shorted for a true measurement of preamp S/N. Under those conditions, I measured the highest S/N I have ever encountered for *any* phono preamp—whether a separate component or part of an integrated amp or receiver. This remarkable preamp circuit, measured with shorting plugs connected to the MM phono inputs, yielded an S/N ratio of 90.4 dB for either channel! If you are going to play records through this receiver, I would strongly suggest that you choose a cartridge that's sufficiently well shielded to take advantage of this incredible S/N ratio. Even the MC inputs yielded a much better S/N ratio than most other MC preamps I have measured. Referred to 0.5 mV input, with the volume control again set for 1 watt output, the S/N ratio was 77.8 dB for the left channel and 76.0 dB for the right.

Use and Listening Tests

The most impressive thing about this receiver is its ability to handle the dynamic peaks that occur so often in CD and DAT recordings. I recently had the good fortune of being able to record a ive performance of a local professional chamber music group, and several of the selections on the program that evening included piano trios and quartets. You don't realize how dynamic the piano can be until you are

A receiver like this could convert even confirmed fans of audio separates to the ranks of all-in-one receiver enthusiasts.

called upon to record its sound without any compression, as was the case at this concert. Even driving my low-efficiency KEF 105.2 reference speakers, the NAD 7400 had no trouble delivering clean peaks on even the most dynamic and percussive moments of the DAT recording—at levels I judged to be the same as those I heard during the performance, while seated only a few feet from the piano.

I also played a few of my newest CDs through the high-level inputs of this receiver. Among them were two recent Telarc releases. One featured music of Gabrieli, performed by the Empire Brass and augmented by additional trumpets, horns, trombones, and tubas (CD-80204). What a glorious sound that combination produced, and how totally clean the sound was, as reproduced by this sterling combination of components! The second new disc, which did equally well when played through the NAD 7400, was the Brahms Piano Concerto No. 2 (CD-80197). The piano soloist was Horacio Gutierrez, with André Previn conducting the Royal Philharmonic Orchestra.

Listening to this kind of music, you tend to forget there is all that electronic equipment between you and the music, and the NAD 7400 makes it particularly easy to do so. Its controls work smoothly. There are no clicks or pops when switching from one program source to another. There is no audible background hum or noise, even when pushing the amp section to its limits of power.

Of course, I must not forget to comment favorably about the FM section, the operating parameters of which are set so perfectly that, even when receiving relatively weak signals, I was still able to enjoy good stereo imaging with the "FM NR" circuit activated. Every once in a while, I become worried about the calibration of my FM generator because so few tuners and receivers are able to meet their usable sensitivity figures these days. However, the FM tuner in this NAD receiver not only met but actually exceeded its sensitivity rating. This means that at 10 dBf, an input voltage of only 0.87 mV across a 75-ohm impedance was all that was needed to reach the 3% THD + N level that defines usable sensitivity. I can't remember the last time I came across a tuner—let alone the tuner section of a receiver—which was that sensitive. It goes without saying that I was able to log as many stations (57, to be exact) as I have ever been able to receive in my location, using my rotatable outdoor antenna. Furthermore, at least a half-dozen of these were only 200 kHz away from their neighbors and yet, with the aid of my directional antenna and the NAD 7400's narrow i.f. setting, I was able to listen to them. A receiver such as this, if auditioned by dyed-in-the-wool adherents to the separate components approach, may actually convert a few to the all-in-one school. NAD has always offered components that deliver a lot of value for their price. The NAD 7400 continues this worthwhile tradition. *Leonard Feldman*