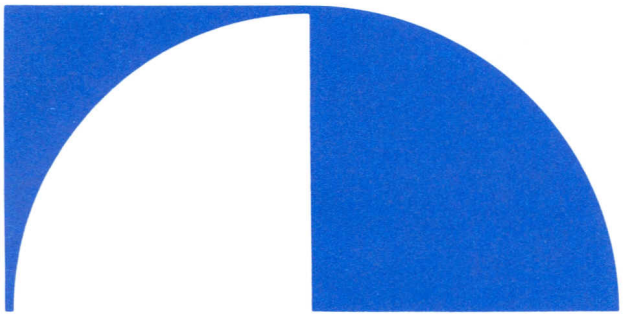

Nakamichi 630

FM Tuner Preamplifier Operating Instructions

WARNING – TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Please record the Model Number and Serial Number in the space provided below and retain these numbers.

Model Number and Serial Number are located on the rear panel of the unit.

Model Number : Nakamichi 630
Serial Number : _____

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Congratulations! You have purchased one of the finest electronic components available today.

The Nakamichi 630 FM Tuner Preamplifier combines a virtually flawless stereo preamplifier with one of the most advanced FM tuners ever developed. World famous Nakamichi engineering and quality assurance further guarantee long-term enjoyment and investment protection.

Although many of the 630's features are self-explanatory, we strongly suggest you take the time to read this manual in its entirety before attempting operation.

Thank you.

NAKAMICHI RESEARCH, INC.

Physical Layout

FUNCTION SELECTOR SWITCHES

Permits selection of phono, auxiliary or FM as source. Additional selector buttons for FM provide Dolby FM*, interstation muting, and choice of narrow or wide IF filter response (see page 6).

POWER SWITCH

MODE SWITCH

Provides a summed signal (L+R) for monaural operation (see page 7).

TAPE MONITOR/DUBBING SWITCHES

Selects source, tape 1, tape 2 and tape copy functions (see page 6).

CONTOUR CONTROL

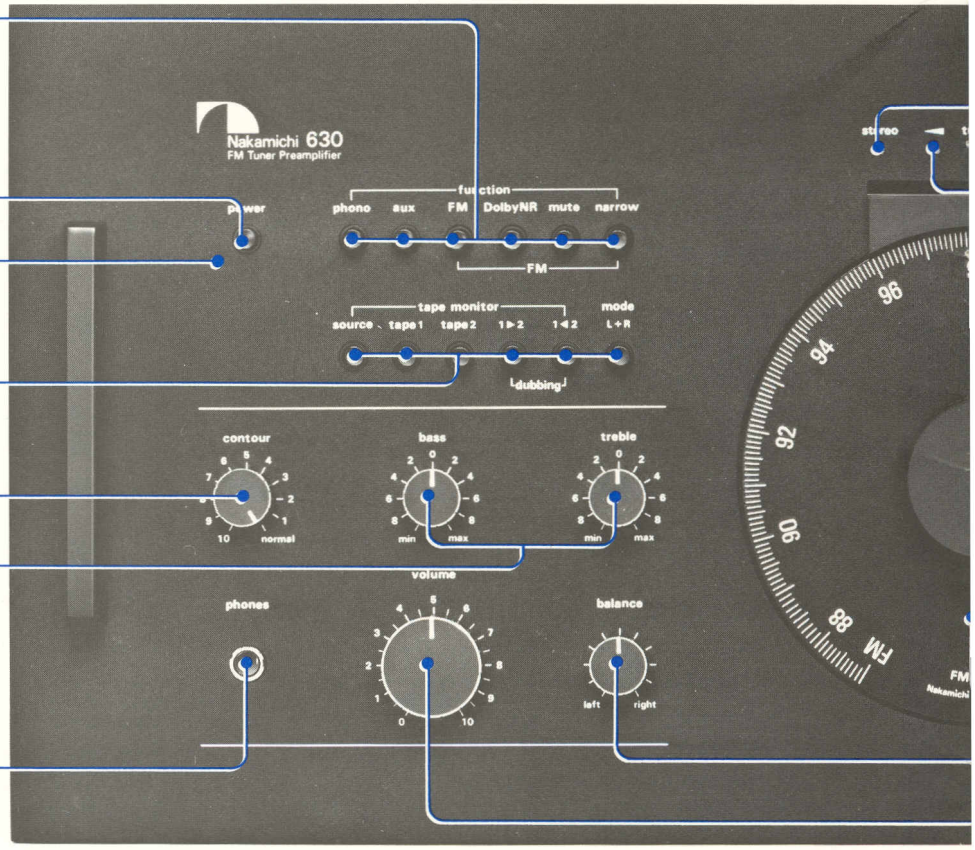
Provides low and high frequency loss compensation for low listening levels.

TONE CONTROLS

Bass — permits adjustment of low frequencies.
Treble — permits adjustment of high froquencies.

STEREO HEADPHONE JACK

Accepts stereo headphones in the impedance range of 8 to 200 ohms. The 630's preamplifier output is automatically deactivated when headphones are inserted into this jack.



300-OHM FM ANTENNA TERMINALS

For the connection of all antennas utilizing 300-ohm twin lead cable (balanced), including the provided dipole (T-shaped ribbon) antenna (see page 4).

75-OHM FM ANTENNA CONNECTOR

For the connection of an external antenna via a 75-ohm unbalanced coaxial cable. A mating connector is provided for custom installation (see page 4).

AC VOLTAGE SELECTOR SWITCH

A 2-position switch for AC voltage selection (100—120 V or 220—240 V).

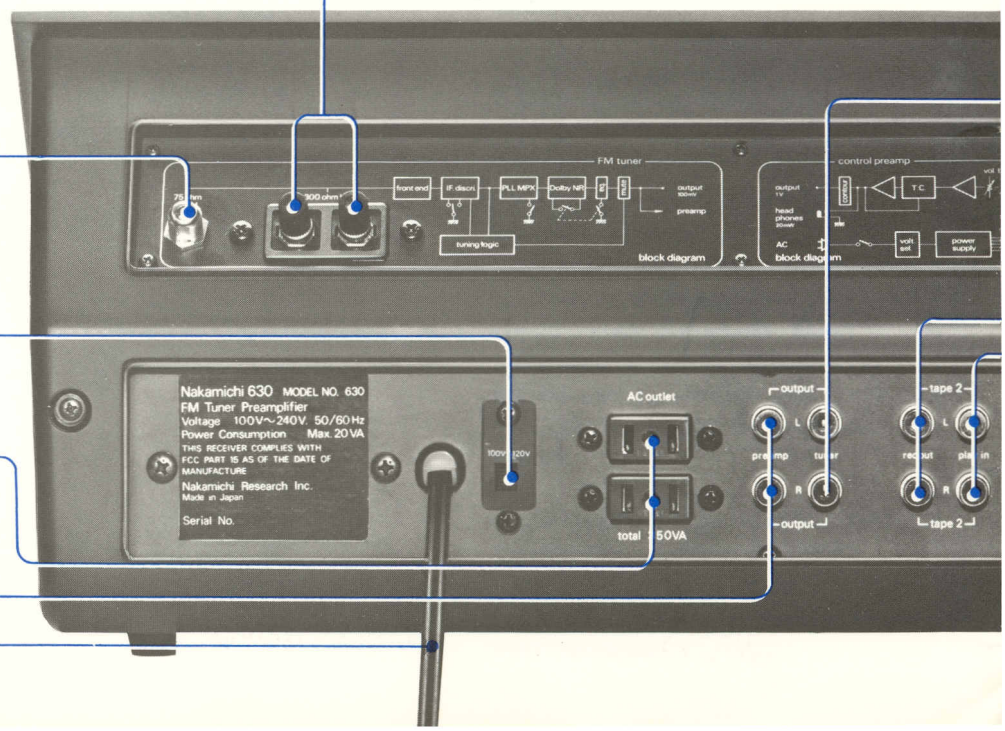
AUXILIARY AC OUTLETS

Switched power outlets rated at 350 VA total.

PREAMPLIFIER OUTPUT JACKS

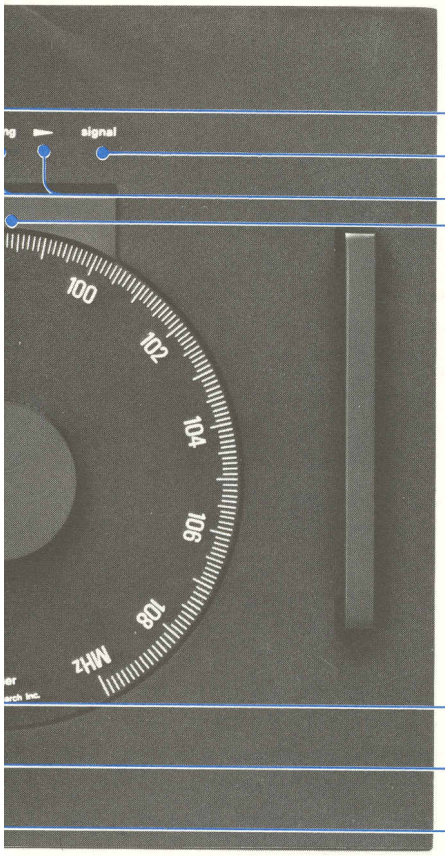
For connection to power amplifier.

AC LINE CORD



Precautions

tone controls



STEREO INDICATOR LAMP

SIGNAL STRENGTH INDICATOR LAMP

TUNING INDICATOR LAMPS

POWER INDICATOR LAMP

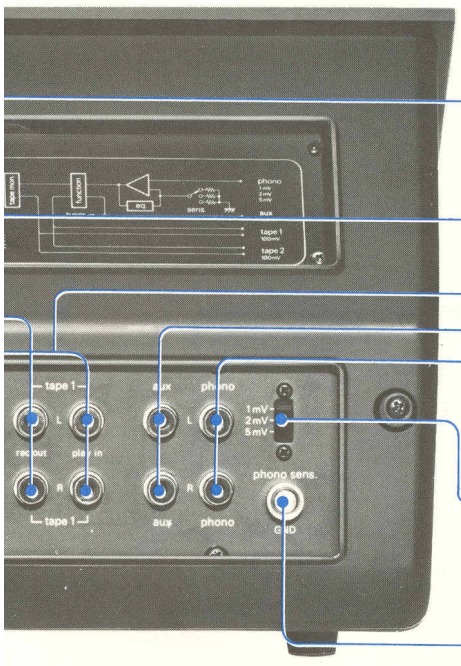
TUNING DIAL

BALANCE CONTROL

VOLUME CONTROL

1. Wait 10—15 seconds after turning the power to the 630 and the rest of your components on before turning the volume up. This will permit all circuits to stabilize, thus reducing the risk of damage.
2. Always make sure that the power to the 630 and your power amplifier is off before performing interconnections, especially loudspeaker and phono cartridge connections. You may otherwise cause serious damage to your amplifier and/or loudspeakers.
3. It is highly recommended that you reduce the volume to a low level before switching sources or changing stations, even with the interstation muting on. Sudden introduction of a loud signal source may damage your loudspeakers.
4. Never connect components, the total power consumption of which exceeds 350 VA, to the auxiliary AC outlets on the rear panel of the 630.

rear panel



TUNER OUTPUT JACKS

For connection of only the tuner section to another preamplifier.

TAPE RECORD OUTPUT JACKS

TAPE MONITOR (PLAYBACK) INPUT JACKS

AUXILIARY INPUT JACKS

PHONO INPUT JACKS

PHONO INPUT SENSITIVITY SELECTOR SWITCH

Three-position switch selects 1 mV, 2 mV, or 5 mV phono input sensitivity.

GROUND TERMINAL

Connections

Preamplifier Output

Connect the preamp output jacks of the 630 to the inputs of your power amplifier using a standard stereo shielded audio cable. Observe left and right indications. If you are using the 630 as a tuner only, the preamplifier outputs may be connected to the "tuner" or "aux" inputs of your separate preamplifier, although you may prefer to use the 630's Tuner Output for this purpose.

Tuner Output

The tuner section of the 630 may be directly and constantly accessed via the tuner output jacks. The tuner output is not affected by the function switches (phono, aux and FM), the tape monitor switches (source, tape 1, tape 2, and dubbing) nor the contour, tone, volume and balance controls. The tuner output is subject, however, to the effects of the Dolby FM*, mute, narrow and mode switches. When using the 630 in combination with a separate preamplifier, such as the Nakamichi 610 Control Preamplifier, the tuner output can be utilized to connect the 630 to the "aux" or "tuner" input of the preamplifier. The tuner output can also be connected directly to the inputs of a tape deck; since this output is constant and unaffected by the 630's preamp controls, it enables independent taping of FM broadcasts (you can, for example, listen to your record player while taping off the tuner section). Output level is 100 mV at 50% modulation.

Auxiliary Input

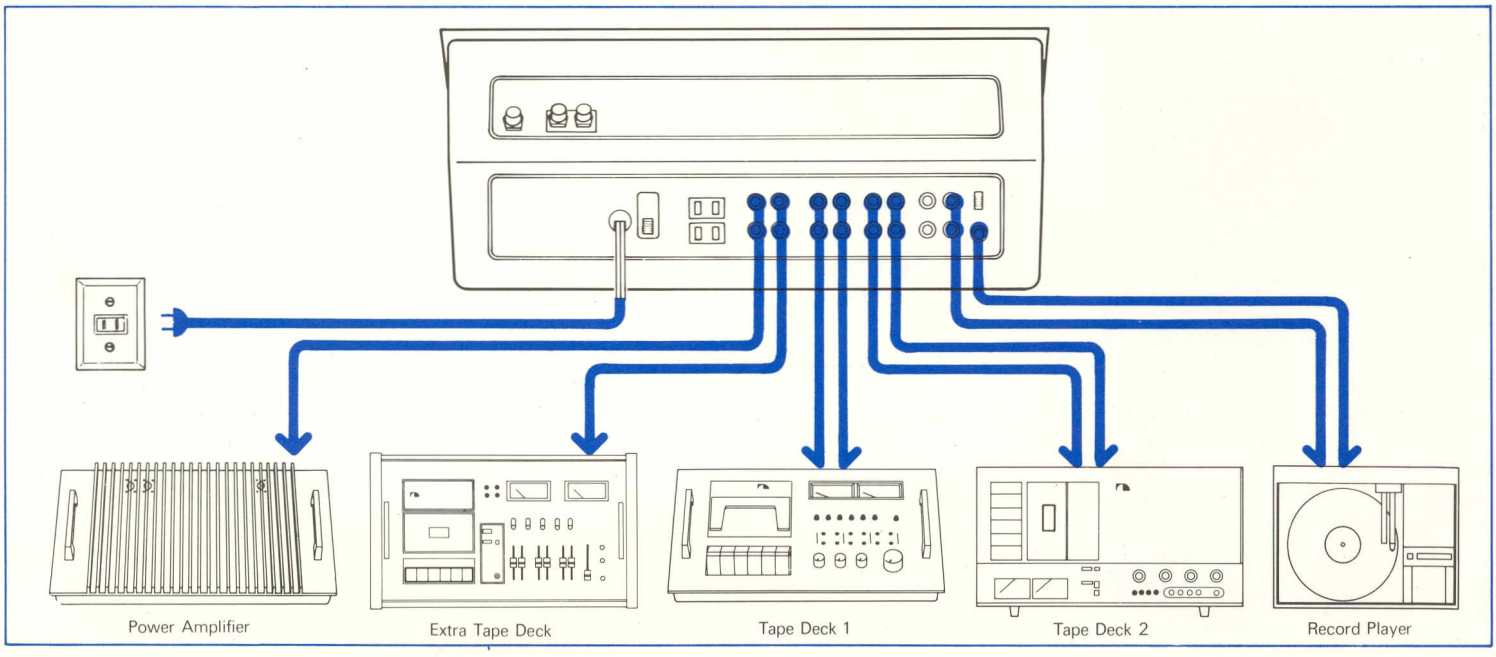
An extra set of high level inputs permits the use of one additional source, such as a tape player. The auxiliary input sensitivity is 100 mV, and the impedance is 100K Ohms.

Tape Deck

The 630 provides two sets of tape deck record and playback jacks. Connect the "rec out" jacks to the inputs of your tape deck(s). The "play in" jacks should be connected to the tape deck outputs. Use shielded audio cable for all connections, and observe left and right indications throughout. It is not necessary to reconnect the decks for tape copying as this can be accomplished by front panel switches.

Phono Input

Connect the turntable (record player) cables to the phono input jacks on the 630. Make sure that the channels are not reversed. Do not extend the turntable cables – keep them short to avoid hum and signal degradation. Also connect the ground wire from the turntable, if one is provided, to the ground terminal of the 630. The phono sensitivity selector switch located above the ground terminal should be set for the cartridge in use. High output magnetic cartridges should be used with the phono sensitivity at 5 mV. Less sensitive cartridges will require a 2 mV or 1 mV setting. Consult instructions provided with your cartridge. If you are unsure, start with the 5 mV position; switch to 2 mV or 1 mV if you do not get sufficient volume when playing a record. Moving coil pickups amplified by a booster (transformer or head amp) will generally require the 2 mV or 1 mV setting.



FM Antenna

The quality of FM reception will only be as good as the signal entering the tuner at the antenna terminals. Although there is little you can do if the FM station's broadcast quality is poor, you can ensure that the 630's FM section is performing at its best by selecting the proper FM antenna and installing it correctly. The following is intended as a guide. Your high fidelity dealer or local antenna specialist will be able to provide further information, if necessary.

Dipole Antenna

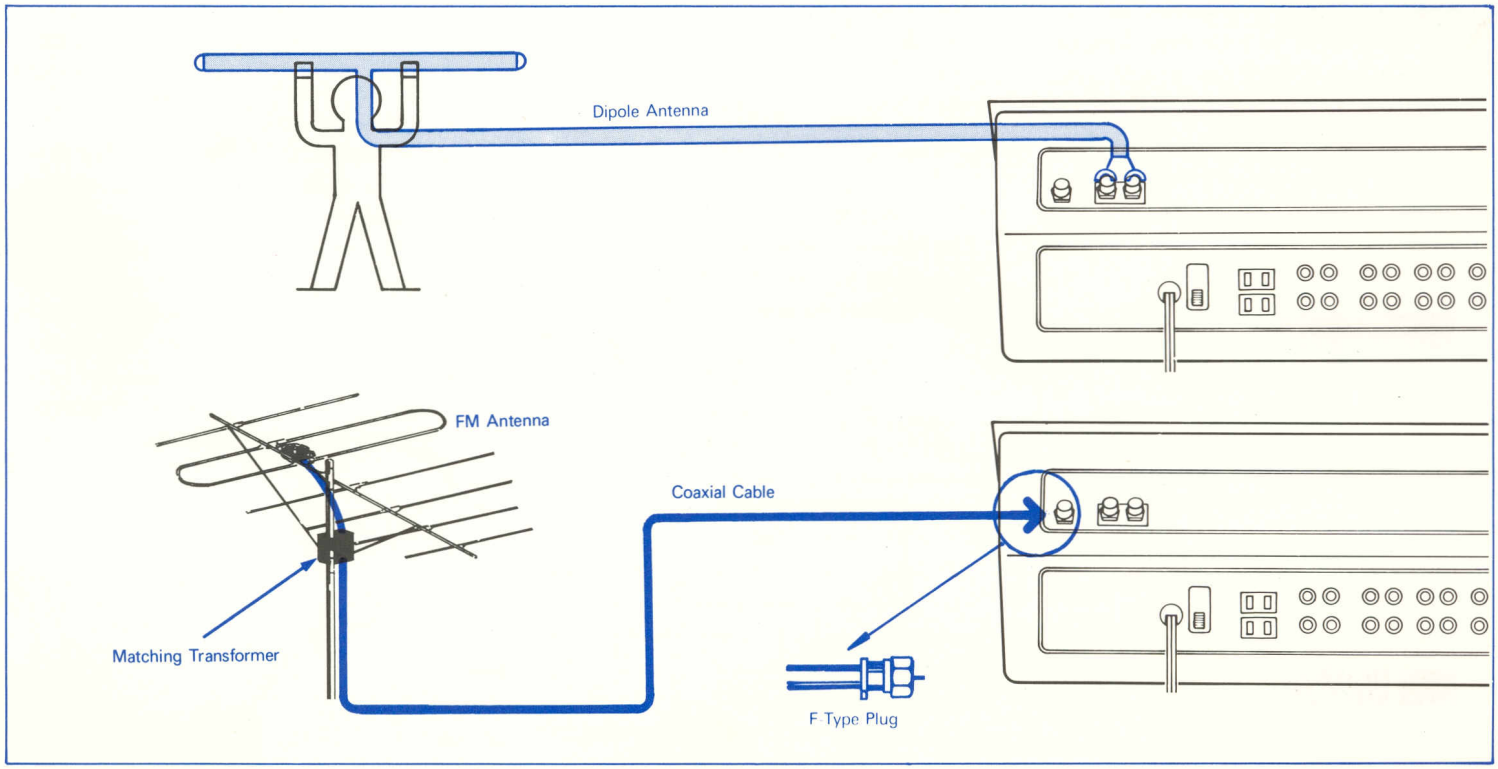
If you are located in a metropolitan area or otherwise close to the FM broadcasting stations to which you will be listening (i.e., within several miles), and if your immediate area is free of tall, obstructing structures, the dipole (T-shaped ribbon) antenna provided with the 630 will most likely be more than adequate for quality FM reception. Connect the dipole to the 300-ohm balanced terminals on the rear panel of the 630. Stretch the dipole into a "T" shape, and position it for best reception while listening to the broadcast. If the signal sounds weak and distorted, or if the 630's "signal" lamp fails to light with most stations, the use of a directional outdoor FM antenna will yield significant improvements. If you are receiving stations strongly, but the sound is distorted, this may be an indication of strong multipath reception (distortion caused by multiple arrivals of the same signal at the antenna terminals — tall structures nearby will cause multipath reception). In this case as well, the use of a directional outdoor antenna will improve reception quality.

Other Indoor Antennas

In some cases, a slight improvement in reception can be gained by using "rabbit ears" or other indoor FM/television antennas instead of the dipole. If you are in a weak signal area, however, any improvement with these indoor-type antennas is likely to be marginal at best.

Outdoor Antennas

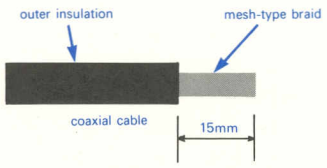
Outdoor antennas vary in gain and directionality. Generally, antennas with the greater number of elements will have higher gain. For FM, choose an antenna with 3 to 8 elements, depending on your distance from the broadcasting stations and other area conditions. Most outdoor FM antennas can be connected to the 630's 300-ohm balanced terminals using 300-ohm twin-lead antenna cable. Although this is preferable, some installations will require the use of coaxial cable because of noise sources, such as automobile engine ignition or high voltage power lines. For coaxial lines, utilize the 75-ohm unbalanced connector on the 630. Some antennas will require a matching transformer for 75-ohm operation. Consult an antenna specialist for specific recommendations.



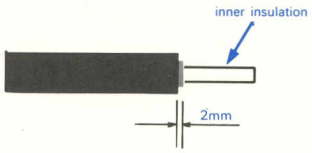
Installation of 75-Ohm Coaxial Connector

The F-type connector supplied with the 630 mates with the 75-ohm unbalanced antenna connector on the rear panel. If your antenna connection is via 75-ohm coaxial cable, you can install the provided connector onto the cable yourself with just a knife and pliers.

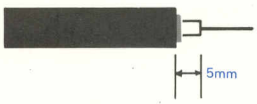
1. Cut and remove about 15mm of the outer insulation (cover).



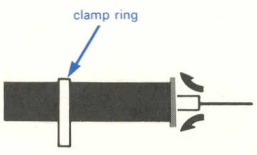
2. Cut and remove the mesh-type braid with the knife, but leave about 2mm at the base, right next to the edge of the outer insulation.



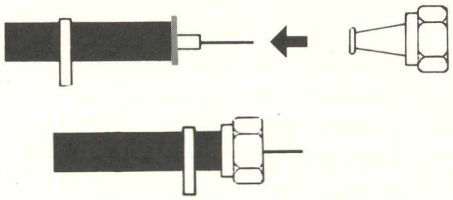
3. Cut and remove the inner insulation (cover), leaving about 5 mm from the edge of the outer insulation.



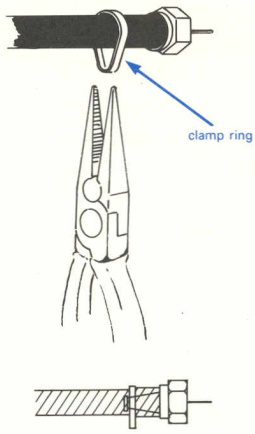
4. Pass the clamp ring over the cable, and spread the mesh-type braid with your fingers.



5. Push the pointed end of the connector into the cable, making sure it goes in between the braid and the inner insulation.



6. Press and crimp the clamp ring with the pliers to secure the connector.



The coaxial cable is now ready to be connected to the 75-ohm terminal on the rear panel of the 630.

Outdoor Antenna Installation Hints

1. If you are fairly close to FM broadcasting stations but find you have to use a directional outdoor antenna to reduce multipath, the signal strength may be sufficiently high to cause overloading of the 630's FM front end (heard as a severely distorted signal). In such instances, an antenna attenuator must be installed. Consult your local antenna specialist.
2. Since most outdoor FM antennas are highly directional, they must be "aimed" toward the desired station's broadcast antenna. If you live in an area where FM stations exist in several different directions, you may have to install a rotor system in order that you can remotely alter the direction of the antenna.
3. Always place outdoor antennas as far from highways and high power lines as possible. Follow your antenna dealer's recommendations for proper placement.
4. 300-ohm twin lead cable is superior to coaxial types in that there is very little transmission loss, even with relatively long lengths (the loss factor is approx. 0.04 dB/meter). The drawback of 300-ohm twin lead, however, is that it easily picks up noise. A 75-ohm coaxial cable system is much less susceptible to noise pick-up, but cable loss is not negligible (typically 0.12 dB/meter). If noise problems exist in a weak signal situation, special low-loss coaxial cables are available from most antenna dealers.

Preamplifier Section

Operation of the 630's preamplifier section is quite straightforward. Playing any source other than tape is a simple matter of selecting the appropriate function (phono, aux or FM), making sure the "source" button is depressed, and turning up the volume control. Tape playback or copying merely requires selection of the appropriate tape monitor/dubbing switch. Bass, treble and contour can be adjusted as desired. Each of the preamplifier controls are described in detail below.

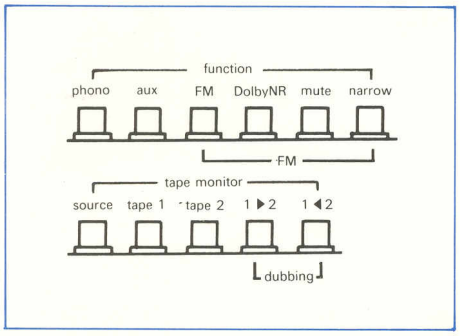
1. Function Selector Buttons

Phono - Selects disc source. If, upon turning up the volume, the phono level is too loud or soft, relative to other sources (such as FM), a different phono input sensitivity should be selected with the rear panel switch (see Connections – Phono Input).

Aux - Selects high level source plugged into the 630's auxiliary input.

FM - Switches in FM Tuner section of the 630.

Dolby FM
Mute
Narrow
– see FM Tuner Section operating instructions



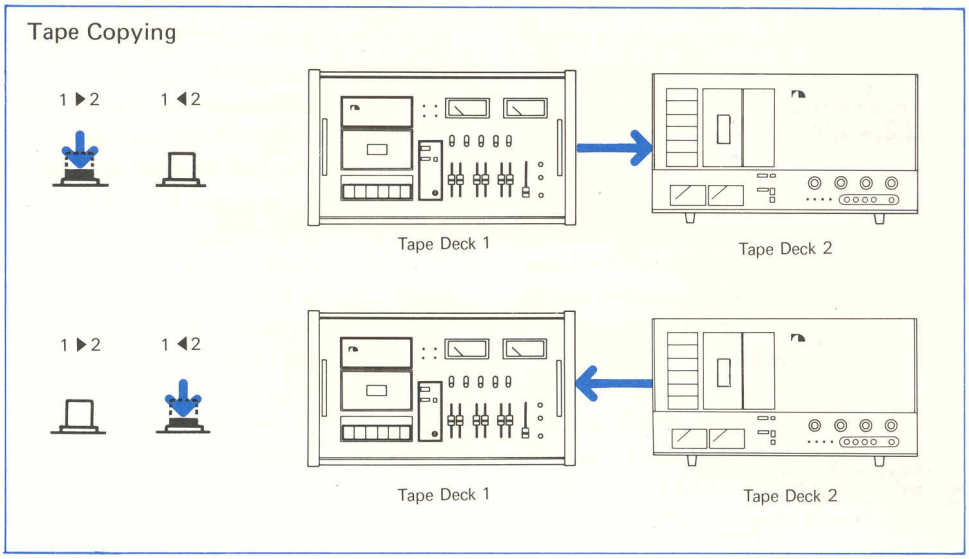
2. Tape Monitor Selector Buttons

Source - Must be depressed to listen to phono, aux or FM.

Tape 1 - Selects tape deck 1 for playback or for monitoring during record.

Tape 2 - Selects tape deck 2 for playback or for monitoring during record.

Dubbing - Permits tape copying from tape deck 1 to tape deck 2 and vice versa. 1 ▶ 2 switch programs deck 1 for playback and deck 2 for record. 1 ◀ 2 switch programs deck 2 for playback and deck 1 for record.



Notes on Tape Recording:

(i) The source selected by the function switch (phono, aux or FM) is always present at the tape "rec out" jacks. The signal at the "rec out" jacks is unaffected by the volume, balance or contour controls. Tape 1 or Tape 2 may be monitored during record by depressing the appropriate tape monitor button.

(ii) If more than one of the first three tape monitor buttons (source, tape 1, tape 2) are depressed at the same time, only the left-most one will be functional. Care should be taken to ensure that only one of these three are depressed at one time.

(iii) When either of the dubbing switches are depressed, the "rec out" signal to the deck programmed for playback is blocked to prevent feedback oscillation. Make sure, therefore, that both dubbing switches are off (up) before attempting to record one of the sources (phono, aux or FM).

(iv) Since the dubbing switches operate independently, tape copying can be performed while you listen to one of the sources (phono, aux or FM).

3. Mode Switch

For normal stereo operation, leave this switch in the "off" position, i.e. out. When the switch is depressed, the "pre-amp out" jacks will deliver the identical signal to both channels of the power amplifier. This signal will be the sum of the left and right channels (mixed) of the source (phono, aux, FM or tape playback). This same monaural signal will be present at the "rec out" jacks if the mode switch is depressed while "source" button is down. There are several applications of the mode switch:

(a) To play a monaural signal source, such as television sound, over both stereo loudspeakers, or to record the same on both channels of a stereo tape deck;

(b) To blend both channels of a stereo signal source for recording on a monaural tape deck;

(c) To improve the listenability of a weak FM stereo station or a scratchy monaural disc; in both cases, switching to monaural with the mode switch will cause cancellation of some of the background noise.

Note: The "rec out" jacks are affected by the mode switch only if the "source" switch is depressed.

4. Controls

Contour - The normal position for this control is fully clockwise. The contour control provides automatic compensation for the human ears' disproportionate decrease in sensitivity to the extreme low and high frequencies at low listening levels. To use the contour control, first turn it fully clockwise. Turn up the volume control to normal maximum listening levels. Then turn the listening level down with the contour control instead of the volume control. Loudness compensation will take place automatically.

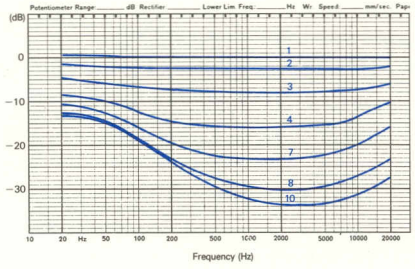
Bass - Permits boosting and attenuating of lower frequencies within ± 9 dB at 20 Hz.

Treble - Permits boosting and attenuating of higher frequencies within ± 9 dB at 20 kHz.

Volume - Controls overall listening level.

Balance - Permits correction of channel imbalance.

Contour characteristics



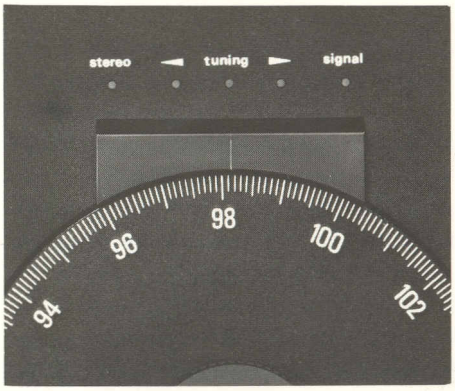
5. Headphone

Plugging a headphone into the front panel jack provided automatically cuts off the signal from the preamplifier output to the power amplifier. Always turn the volume control down before plugging in or unplugging headphones.

Note: The contour control has no effect on headphone listening.

FM Tuner Section

The highly unconventional tuning dial of the Nakamichi 630 was designed to greatly simplify FM station selection. Instead of the usual tuning meters, the 630 utilizes a series of indicator lamps for precise tuning indication.



1. Indicator Lamps

Stereo - lights to indicate FM multiplex stereo reception.

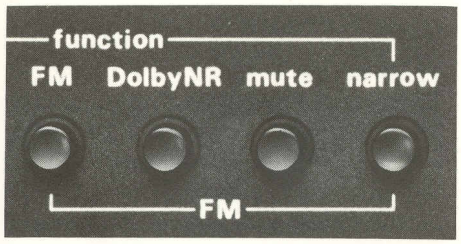
Tuning - the three lamps in the center of the group are for station selection; if one of the green lamps are on, the tuner is slightly off-station, and you should turn the dial in the direction indicated by the arrow above the lamp; the red lamp lights to indicate that the tuner is centered and "locked in" to the desired station.

Signal - indicates the strength of the signal from the antenna; when the signal lamp is glowing brightly, there is sufficient signal strength for optimum tuner performance. The antenna should be adjusted for maximum brightness.

Note: Some stations will be too far away (or too weak simply because of low transmitter power) to activate the signal lamp. Many such stations nevertheless, will be sufficiently strong for normal listening purposes.

CAUTION: Avoid spinning the tuning dial so that it "hits" either end of the scale. Rough treatment of this nature may cause damage.

2. FM Function Switches



Dolby FM* - switches in the 25 microsecond de-emphasis required for proper Dolby FM reception and activates the built-in B-type Dolby Noise Reduction decoding circuitry. See full explanation of Dolby FM below.

Mute - normally left on (in) to eliminate interstation noise; should be turned off when tuning in a very weak station because the muting circuit cuts out such stations with the noise.

Note: It is recommended that you turn down the volume when changing stations, whether the mute switch is on or off.

Narrow - the 630's IF stage provides two selectivities, narrow and wide (80 dB and 40 dB) this switch is normally left in the "wide" position (out) since this yields the best distortion and separation performance. The "narrow" position should be used when the presence of many stations, crowded close together on the dial, makes precise tuning difficult or impossible.

Note: The FM Function Switches are always effective at the 630's tuner output. They affect the preamplifier output, only if FM is selected as the source.

A Brief Explanation of Dolby FM*

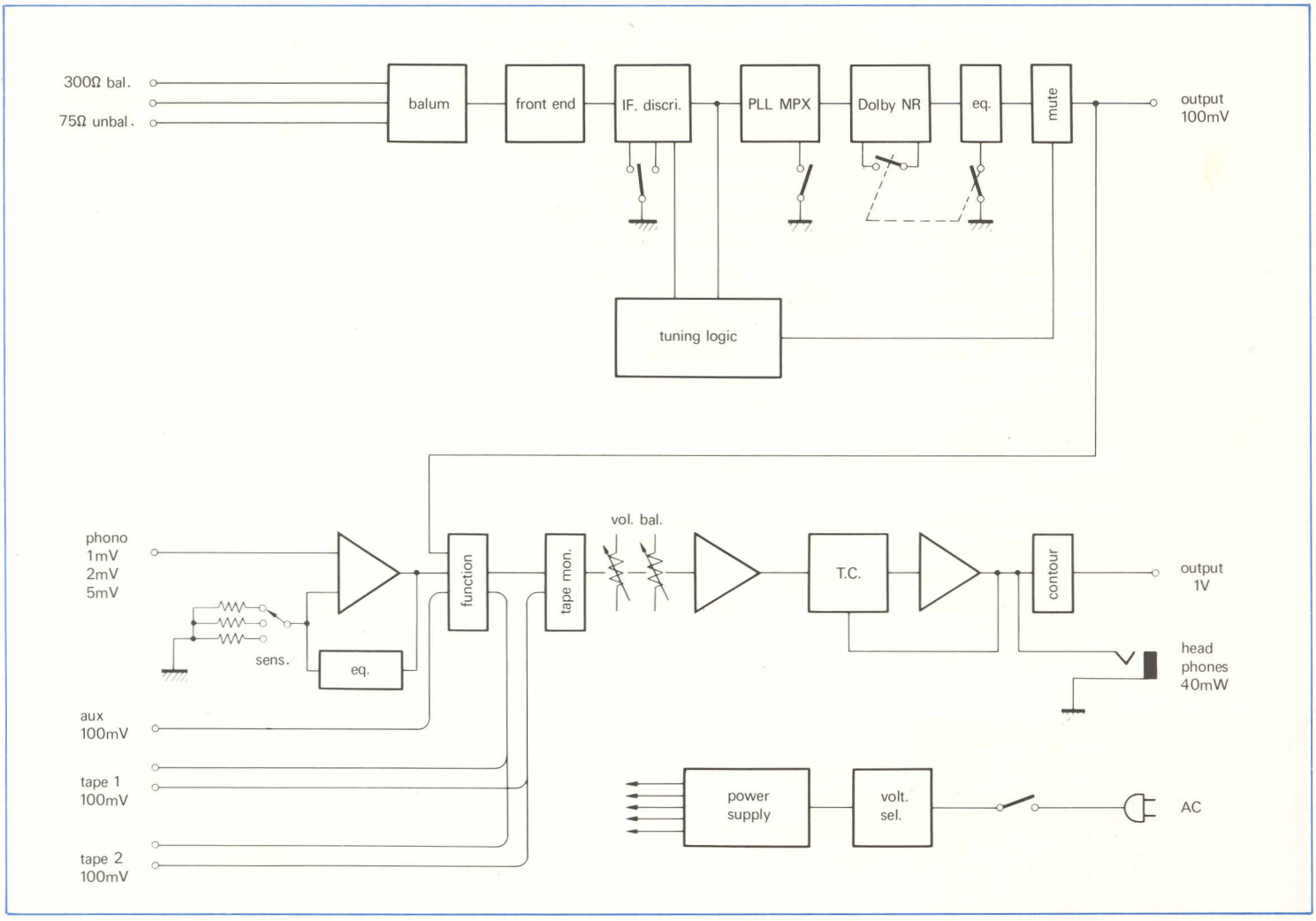
The Nakamichi 630 incorporates B-type Dolby Noise Reduction decoding circuitry to take advantage of the fact that there are now many stations (in the United States) broadcasting Dolby FM. FM stereo has always been a relatively noisy medium, requiring a rather sharp pre-emphasis (boosting of high frequencies) at the transmitter and a complementary de-emphasis (restoration of pre-boosted highs) at the tuner or receiver to achieve a reasonable semblance of noise-free performance. The 75 microsecond time constant (50 microseconds in most European countries) defines the standard pre-emphasis curves currently being used by non-Dolbyized FM stations. The drawback of so much pre-emphasis is that stations must utilize large amounts of high frequency limiting to prevent over-modulation, or else modulate at an overall lower level and end up with what the pre-emphasis was supposed to counter in the first place: poor signal-to-noise ratio. This is why even the best of FM broadcasts have lacked the dynamic range of today's better quality LP discs, especially at the higher frequencies. Dolby FM improves the quality of reception in two basic ways (assuming the station is broadcasting Dolby FM):

a) better signal-to-noise ratio, especially in weak signal areas;
b) full recovery of high frequency dynamic range in any reception area.

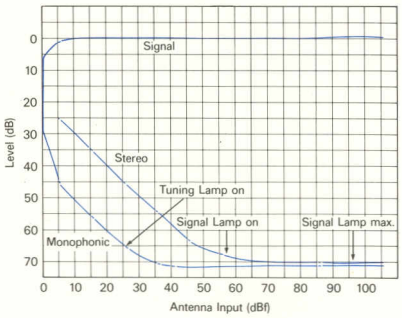
The increase in signal-to-noise is the result of the well-known properties of the Dolby Noise Reduction System. Dolby FM utilizes the same B-type Dolby circuitry found today on numerous cassette tape recorders. The increase in high frequency dynamic range can be attributed to a new FM time constant, 25 microseconds. FM stations broadcasting Dolby FM utilize this new time constant which reduces pre-emphasis to an optimum level. High frequency over-modulation and the need for drastic limiting are eliminated. Depressing the Dolby FM switch on the Nakamichi 630 changes the de-emphasis time constant from 75 microseconds as well as activating the built-in Dolby Noise Reduction System. If stations in your area are broadcasting a high quality Dolby FM signal, you will notice a distinct improvement in reception quality when you switch to Dolby FM on your 630.

Note: When recording a Dolby FM broadcast on your tape deck, depress the Dolby FM switch on the 630. Set levels and record the broadcast as you would any other program source (with the deck's Dolby System on, if provided).

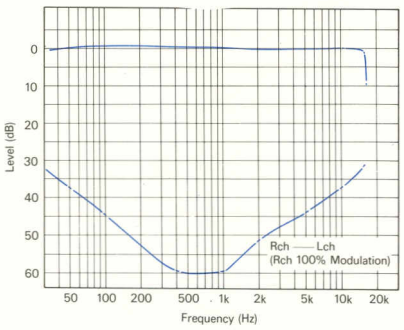
Block Diagram



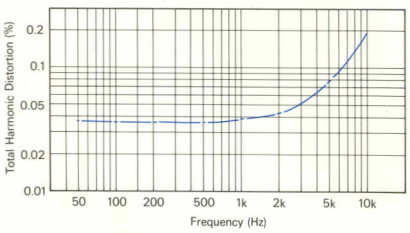
Performance Data



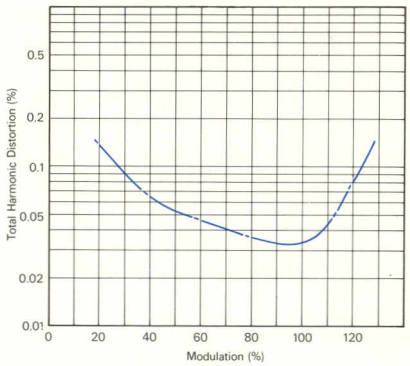
Input vs. Noise Level



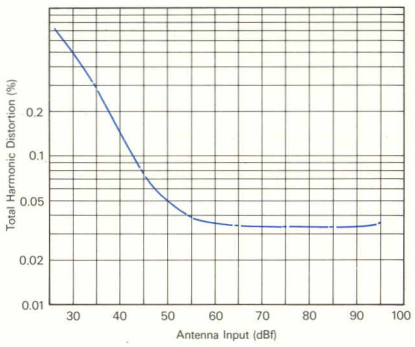
Stereo Separation
Antenna Input: 98MHz, 65dBf, 1mV, 300ohm
IF: Normal



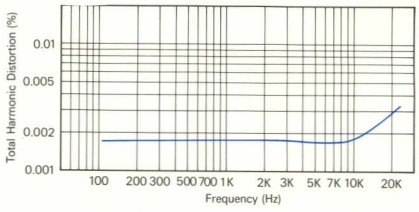
Frequency vs. Total Harmonic Distortion (Stereo)
Antenna Input: 98MHz, 65dBf, 1mV, 300ohm
Modulation: main 45.5%
sub-carrier 45.5%
pilot 9%



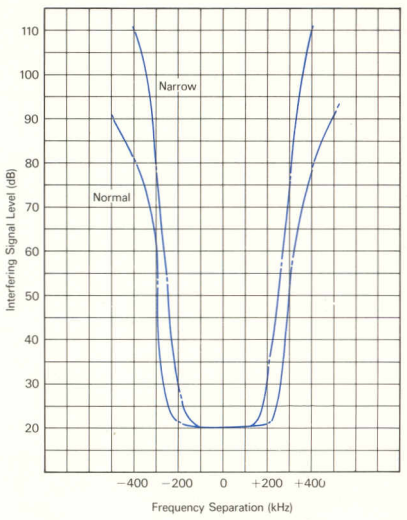
Modulation vs. Total Harmonic Distortion
Modulation: main 45.5%
sub-carrier 45.5%
pilot 9%
Frequency: 1kHz
Antenna Input: 98MHz, 65dBf, 1mV, 300ohm



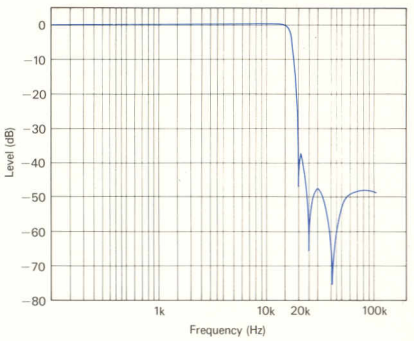
Input vs. Total Harmonic Distortion (Stereo)
Modulation: main 45.5%
sub-carrier 45.5%
pilot 9%



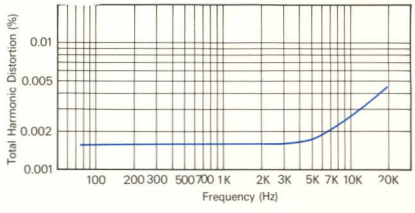
Frequency vs Total Harmonic Distortion
Phono Input Output: 2V constant
Input: 2mV



Selectivity
Impedance: 300ohm
Interfering Signal: 1kHz, 100% Modulation
Interference Output Level: −30dB
Desired Signal: unmodulated



MPX Filter Characteristics



Frequency vs Total Harmonic Distortion
Aux Input Output: 2V constant

Troubleshooting Chart

Trouble	Probable Cause	Remedy
No sound	1. No function switches depressed. 2. Source switch not depressed. 3. Incorrect or loose cable connections.	1. One function must be selected (phono, aux or FM) 2. Depress source switch (tape switch for tape playback). 3. Check all cable connections.
Distortion, hum, noise.	1. Faulty cables or cable connections. 2. Poor ground connection. 3. Improper or loose phono cartridge installation.	1. Check cables and replace if necessary. 2. Check ground wire from record player. 3. Check cartridge and tonearm connections.
One channel dead, channels reversed or no stereo separation.	1. Input/output connections loose or reversed. 2. Balance control not centered. 3. Mode switch on.	1. Check all cable connections. 2. Adjust balance control. 3. Release mode switch.
No record output.	Dubbing switches depressed.	Check both dubbing switches (both must be up).
No FM.	Antenna disconnected.	Check all antenna wiring and connections (turn off mute switch).

SERVICE INFORMATION

Although it is unlikely that your Nakamichi 630 will require repair, should servicing ever become necessary, please consult your Nakamichi dealer or the Nakamichi dealer closest to you. As there are no user serviceable parts inside the unit, please do not attempt your own repairs.

Please read all accompanying Warranty Cards and/or notices very carefully.

Thank you for your confidence in Nakamichi products.

Specifications

Nakamichi 630 Specifications

Power Requirements··· 100–120/220–240 VAC, 50/60 Hz
Power Consumption ··· 20 VA

Preamplifier Section

Input Sensitivity/Impedance
- phono ····· 1 mV, 2 mV, 5 mV/100k ohms
- aux ····· 100 mV/50k ohms
- tape monitor 1, 2··· 100 mV/50k ohms

Maximum Input Levels
- phono ····· 250 mV (1 kHz, 5 mV position)

Output Levels/Output Impedance/Load Impedance
- Preamplifier output 1 V/500 ohms/10k ohms
- rec out ····· 100 mV/1k ohms/50k ohms
- headphone ····· 40 mW/4.5 ohms/8 ohms

Maximum Output at Clipping
- preamplifier output 5 V into 50k ohms
- rec out ····· 4 V into 50k ohms
- headphone ····· 300 mW into 8 ohms

Frequency Response
- phono RIAA
  - deviation ····· within ±0.3 dB
- aux ····· 20–50,000 Hz +0, -1.5 dB
- tape monitor ····· 20–50,000 Hz +0, -1.5 dB

Signal-to-Noise Ratio (IHF-A)/Equivalent Input Noise
- phono ····· Better than 80 dB (ref. 1 mV)/-140 dB
- aux, tape monitor Better than 102 dB/-122 dB

Residual Noise Level (IHF-A)
- headphone ····· 8 microvolts or less (8 ohms)
- preamplifier output 4 microvolts or less (VR @ min.)

Distortion
- phono ····· Less than 0.003% (all freq. up to 10 kHz)
- aux, tape monitor Less than 0.004%

Tone Control
- bass ····· ±9 dB at 20 Hz
- treble ····· ±9 dB at 20 kHz

Contour (control @ "8")
-30 dB @ 3 kHz
-15 dB @ 20 Hz
-24 dB @ 20 kHz

Tuner Section

Frequency Band ····· 88 MHz – 108 MHz
Usable Sensitivity (for 30 dB quieting)
- mono ····· 2.5 μV (300 ohms), 13 dBf
- stereo ····· 25 μV (300 ohms), 33 dBf

Sensitivity for 50 dB quieting
- mono ····· 5 μV (300 ohms), 19 dBf
- stereo ····· 50 μV (300 ohms), 39 dBf

Sensitivity for 3% Total Noise and Distortion (Stereo)
····· 35 dBf

Signal-to-Noise Ratio (@ 65 dBf)
- Dolby NR out mono··· better than 70 dB
- stereo··· better than 68 dB
- Dolby NR in mono··· better than 75 dB
- stereo··· better than 73 dB

Muting Threshold ····· 17 μV (300 ohms), 30 dBf (tuning lamp "on")
Frequency Response··· 30–15,000 Hz +0.3 dB, -1.5 dB
Distortion (@ 65 dBf, 100% modulation)
- 100 Hz and 1 kHz
  - wide mono less than 0.05%
  - stereo less than 0.08%
  - narrow mono less than 0.15%
  - stereo less than 0.5%
- 6 kHz
  - wide mono less than 0.1%
  - stereo less than 0.15%
  - narrow mono less than 0.3%
  - stereo less than 0.8%

Capture Ratio ····· 1 dB (wide)
Alternate Channel Selectivity
- wide ····· better than 40 dB
- narrow ····· better than 80 dB

Stereo Separation
- wide 100 Hz ··· better than 40 dB
- 1 kHz ····· better than 50 dB
- 10 kHz ··· better than 35 dB
- narrow 100 Hz ··· better than 30 dB
- 1 kHz ····· better than 30 dB
- 10 kHz ··· better than 30 dB

Spurious Response Rejection ····· better than 100 dB
Image Rejection ····· better than 100 dB @ 98 MHz
IF Rejection ····· better than 100 dB
AM Suppression ····· better than 60 dB
SCA Rejection ····· better than 75 dB
Frequency Drift ····· less than 30 kHz, -10° to 60°C
MPX Filter ····· -70 dB @ 19 kHz
Antenna ····· 300 ohms balanced
75 ohms unbalanced
Tuner Output ····· 0.1 V (50% modulation)
Dimensions ····· 16(W) x 6-11/16(H) x 9-5/16(D) inches
400(W) x 170(H) x 237(D) m/m
Weight ····· 15-1/2 lb. (approx.)
7 kg.

- Specifications and appearance design are subject to change for further improvement without notice.
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