

JVC

SUPER DIGIFINE
HI-FI COMPONENTS



FX-1010TN COMPUTER-CONTROLLED DIGITAL SYNTHESIZER TUNER

Computer control at its most accurate and convenient

The primary function of a tuner is to bring in the station you want precisely and accurately, whether it's near or far. Using the latest circuit designs and devices, we've made our tuner from the SUPER DIGIFINE series, the FX-1010TN, more sensitive, selective and interference resistant than ever—the reason the tuner is able to provide wide dynamic range, low noise and low distortion, and wide frequency response. It's also extremely easy to use, thanks to the amazing power of an advanced microprocessor.

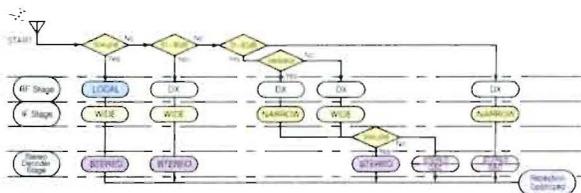
Reception servo for optimum reception

The reception servo in the FX-1010TN ensures the best reception from any station, almost anywhere. A built-in microprocessor detects the strength of a tuned station and compares it against the degree of interference from adjacent stations. Then, depending on the degree of interference, the microprocessor selects the optimum operation mode for front-end, IF and multiplex decoder stages (adjusting such parameters as RF gain, IF bandwidth, Quieting Slope Control and mono/stereo). Therefore, when interference is excessive, a narrow IF bandwidth is automatically chosen to prevent noise. And if there's no interference, then a wide IF bandwidth is automatically selected to give you remark-

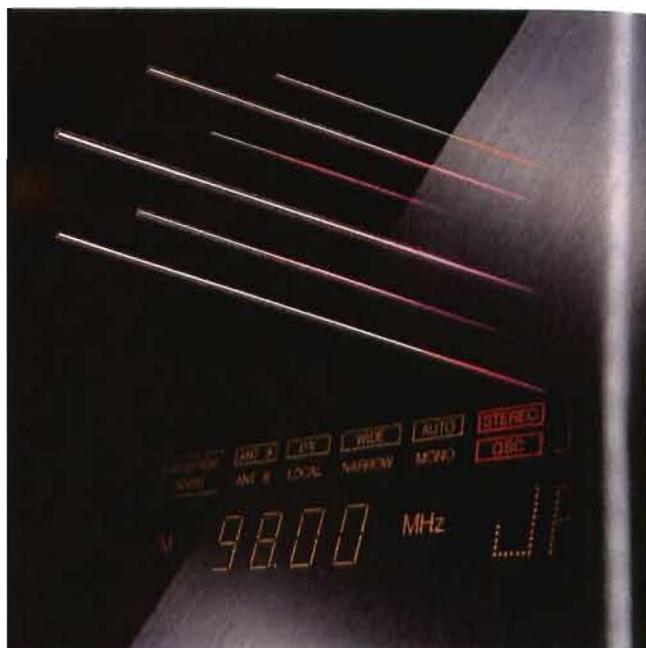
ably clear sound. When a signal level is overly strong, the RF gain is reduced to avoid saturation distortion; when it's weak, sensitivity is increased.

Moreover, the tuner is equipped with inputs to connect two antennas; each may be oriented for the best reception of stations in diametrical opposition to the other. Conveniently, the position of antennas, A or B, may be stored in memory station by station, which allows most precise reception from any station, without multipath distortion.

To add to convenience, the selected parameters are clearly indicated on a large fluorescent display, letting you quickly confirm tuning status.



Flowchart of Optimum Reception Servo System



Features for low noise and low distortion

JVC uses components and devices to ensure lowest possible noise and distortion and widest dynamic range from your favorite stations.

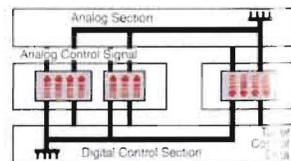
"Opticalink" system



The "Opticalink" system is one developed by JVC to ensure highest purity from your favorite stations. It uses eleven photocouplers (each consisting of a photoemitter and photosensor) to electrically decouple the analog from the digital section. As a result, interference between the two due to electric coupling is completely eliminated. This puts an end to digital noise and removes any trace of muddiness from the sound you hear.

In the FX-1010TN, each of the analog/tuner, digital control and "Opticalink" sections is mounted on its own PC board to shut out

mutual interference and noise. And the digital control section, which can be a source of noise generation, is fully shielded to contain noise.



MOS FET



The front end MOS FET w varicaps, m selective ar interference an elaborat capacitor. T noise ratio i rejection ca

Low-distort

The IF secti features cel with a disto for better pl distortion.

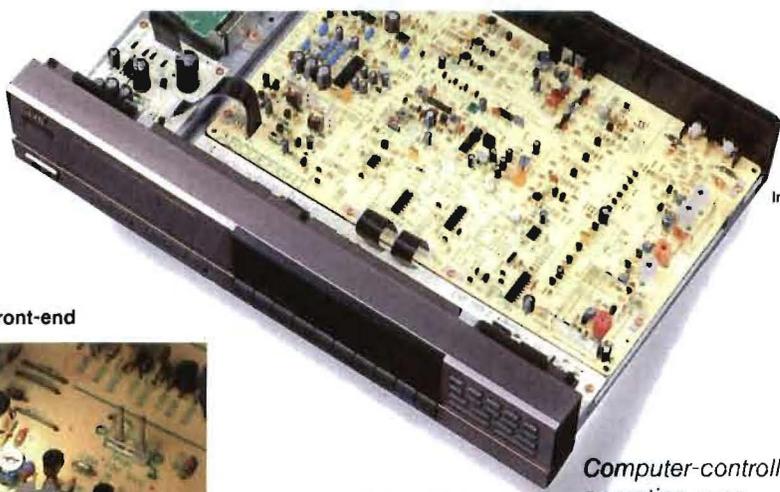
PLL detect

A PLL dete- distortion ai ratio for dyr sound.

Beatless P

The FX-101 multiplex ci filters out b





Inside view of the FX-1010TN

MOS FET front-end



The front end employs a dual-gate MOS FET which, along with high-Q varicaps, makes it as sensitive, selective and resistant to interference as a front end using an elaborate 5-ganged tuning capacitor. Therefore, the signal-to-noise ratio and interference-rejection capability are outstanding.

Low-distortion IF section

The IF section of the FX-1010TN features ceramic filters coupled with a distortion reduction circuit for better phase response and low distortion.

PLL detector

A PLL detector combines low distortion and high signal-to-noise ratio for dynamic and wide-range sound.

Beatless PLL multiplex circuit

The FX-1010TN uses a new PLL multiplex circuit that electrically filters out beat noise—noise

resulting from two or more frequencies interfering with one another. In a conventional CR-type MPX circuit using a VCO (Voltage-Controlled Oscillator), however, a device called an "anti-birdie filter" is used to remove beat noise, but the coils in the circuit tend to degrade signal quality. In our beatless multiplex circuit, moreover, a pilot canceller is featured to suppress the leakage of the pilot signal, thus obviating the need for a 19kHz filter, another component that would harm sound quality.

Active filter

To prevent leakage of the 38kHz subcarrier contained in a stereo broadcast, an LC filter built from coils and capacitors is commonly used, but, due to the magnetic distortion the core of the coil causes, this system tends to degrade sound quality. In the FX-1010TN, however, an active filter has replaced the passive LC filter; with coils eliminated, it provides better high-frequency response, wider separation and higher signal-to-noise ratio.

Computer-controlled operating ease

With the help of powerful microcomputers, we've also improved tuning ease of the FX-1010TN tremendously.



Station name display

You can assign up to six alphanumeric characters to each preset station in the memory—"JAZZ-8," for instance.

Auto memory

All 40 FM/AM stations can be automatically tuned in sequence and committed to memory as presets.

Random preset memory

You can preset as many as 40 FM/AM stations in random order. There's a numeric keypad that allows direct access to any of 40 stations.

Preset scan

All preset FM/AM stations can be automatically sampled one by one for approximately 5 seconds each.

Preset cancel

Use this feature to skip undesired preset stations during preset scan.

Program memory

Up to eight "events" (broadcasts) can be programmed for sequential recall under the control of an optional timer.

Auto QSC

The Auto Quieting Slope Control circuit automatically goes into action to reduce noise when a station signal is weak.

dB-referenced signal strength indicator

Read off the signal strength of a tuned station accurately down to 1dB—a convenience when orienting antennas.

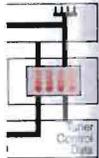
Variable stop level

Adjust FM/AM muting threshold in 5dB steps over a range during auto tuning. The variable stop level feature lets you adjust the threshold from 20dB to 60dB for FM, and from 60dB to 90dB for AM. When you use a higher level, you'll receive only powerful, clear-sounding stations, with weak stations muted out. Or, when you choose a low level, all receivable stations are tuned in.

Record calibration signal generator

Record calibration signal generator outputs a standard 400Hz signal for recording level adjustment. So, you can easily set the recording level for different broadcasts or types of tape.

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COMPU LINK Component



AX-Z1010TN Amplifier

CIRCUITRY	
Phono Pre-Amp	ICL MM/MC equalizer with EL-FETs in its initial stage
Power Amp	Digital Pure-A II/Opt Super-A power amplifier with GM Circuit
Power Supply	"Clean & Dynamic" power system for power amplifying stage
OVERALL CHARACTERISTICS	
Output Power	100 watts per channel, min. RMS, both channels driven into 8 ohms from 20Hz to 20kHz, with no more than 0.004% total harmonic distortion
	105 watts per channel, min. RMS, into 8 ohms at 1kHz, with no more than 0.002%* total harmonic distortion
Dynamic Power**	320 watts/230 watts/135 watts
2 ohms/8 ohms/8 ohms	
Total Harmonic Distortion	0.004%* at 100 watt output, 8 ohms, 20Hz to 20kHz
AUX/REC OUT	0.002%* at 105 watt output, 8 ohms, 1kHz
PHONO SP OUT	0.009% at 100 watt output, 8 ohms, 20Hz to 20kHz, -20dB volume
Intermodulation Distortion (60Hz, 4:1)	0.004% at 100 watt output, 8 ohms
Switching Distortion	0
Transient Intermodulation Distortion	0 (LPF fc=100kHz)
Power Bandwidth	5Hz to 60kHz (BPF, both channels driven, 8 ohms, 0.03% total harmonic distortion)
Frequency Response (8 ohms)	5Hz to 100kHz +0dB, -3dB
TUNER/AUX/CD/TAPE	
Damping Factor (1kHz, 8 ohms)	200
REC Output Level/Impedance	300mV/1k ohms
	2.0V/1k ohms (DIGITAL)

Input Sensitivity/Impedance (1kHz)	
PHONO MM	4mV/47k ohms
PHONO MC	300µV/470 ohms
TUNER/AUX/CD/TAPE	300mV/30k ohms
Signal-to-Noise Ratio (*66 IHF/78 IHF)	
PHONO MM	89dB/82dB (REC OUT)
PHONO MC	71dB (250µV input)/73dB (REC OUT)
TUNER/AUX/CD/TAPE	112dB/86dB
Loudness (-30dB Volume)	+5dB at 50Hz
PHONO EQUALIZER SECTION	
Phono Overload (1kHz)	MM 100mV (0.02% total harmonic distortion)
	MC 7mV (0.03% total harmonic distortion)
RIAA Phono Equalization	MM ±0.2dB (20Hz to 20kHz)
	MC ±0.2dB (20Hz to 20kHz)
D/A CONVERTER SECTION	
Sampling Frequencies (Auto Selection)	32k, 44.1k, 48kHz
Total Harmonic Distortion (1kHz)	0.0035%
Dynamic Range (1kHz)	98dB
Signal-to-Noise Ratio	107dB
Digital Input/Output Terminals	
OPTICAL	-23 — -14dBm
COAXIAL	0.5Vp-p/75 ohms
Dimensions (W×H×D)	17-3/16×6-13/16×18-1/8 inches
	435×173×459mm
Weight	37.1 lbs (16.8 kg)

*Measured by IEC Audio Analysis System.
**EIA Dynamic Test Signal.

FX-1010TN Tuner

FM TUNER SECTION (IHF)	
Usable Sensitivity	10.3dBf (0.9µV/75 ohms)
50dB Quiet Sensitivity	
MONO	14.8dBf (1.5µV/75 ohms)
STEREO	38.1dBf (22µV/75 ohms)
Signal-to-Noise Ratio (IHF-A Weighted)	
MONO (PREQ. at 85dBf)	94dB/88dB
Total Harmonic Distortion (1kHz)	
MONO (PREQ.)	0.009%/0.02% (WIDE)
Capture Ratio	12dB
Selectivity (400kHz)	25dB (WIDE)/75dB (NARROW)
IF Response Ratio	110dB
AM Suppression Ratio	65dB
Stereo Separation (1kHz)	60dB (WIDE)
Frequency Response	20Hz — 15kHz (+0.3, -0.5dB)

Antenna Input Impedance	75 ohms unbalanced×2
Output Signal Level	600mV (2.2k ohms)
REC CAL Output Level	Equivalent to 50% FM modulation
AM TUNER SECTION	
Usable Sensitivity	250µV/m (Loop antenna)
Total Harmonic Distortion	0.3%
Signal-to-Noise Ratio	50dB
Selectivity (±10kHz)	35dB
Image Response Ratio	40dB
IF Response Ratio	60dB
Dimensions (W×H×D)	17-3/16×3-15/16×11-3/4 inches
	435×100×298mm
Weight	8.2 lbs (3.7kg)

TD-V1010TN Cassette Deck

Frequency Response	
At -20dB	
Music	10 — 22,000Hz
	(15 — 20,000Hz ±3dB)
SA (Crome Tape)	10 — 20,000Hz
	(15 — 18,000Hz ±3dB)
Normal Tape	10 — 20,000Hz
	(15 — 18,000Hz ±3dB)
Signal-to-Noise Ratio	61dB (Metal)
Wow and Flutter	0.022% (WRMS)
Crosstalk (1kHz)	85dB
Channel Separation (1kHz)	40dB
Harmonic Distortion	
Total (1kHz)	1.0% (Metal)
K3 (0.5kHz)	0.5% (Metal)

Heads: Record/Playback	Discrete 3-head configuration, fine amorphous heads for recording and playback
Erase	Two-gap ferrite head
Motors	Pulse Servo direct-drive motor, DC motor×2
Input Sensitivity/Impedance	
Line Input	80mV/50k ohms (Direct input×2)
Output Level/Impedance	
Line Output	300mV/600 ohms
Headphones	0 — 1mW/8 ohms (Matching impedance: 8 — 1k ohms)
Dimensions (W×H×D)	17-3/16×5-9/16×13-1/4 inches
	435×140×336mm
Weight	22.7 lbs (10.3kg)

*Measured at peak level, weighted, without NR. The S/N is improved by about 15dB at 500Hz and by about 20dB above 1kHz with Dolby-C NR on, and by 5dB at 1kHz and by 10dB above 5kHz with ANRS/Dolby-B NR on.

SX-911WD Speaker System

Type	3-way, acoustic suspension
Speakers	
Woofer	12" (30.5cm), cloth carbon cone
Midrange	4-1/2" (11.5cm), cloth carbon cone
Tweeter	1" (2.5cm), amorphous-diamond coated dome
Power Handling Capacity	150 watts
	300 watts (Music)

Impedance	8 ohms
Sensitivity (1m on axis)	91dB/W
Frequency Range	40 — 50,000Hz
Crossover Frequencies	500Hz, 4kHz
Dimensions (W×H×D)	15×26-3/16×13-7/8 inches
	380×665×351mm
Weight	62.8 lbs (28.5kg)