

# TX-20

**SERVO-LOCKED TUNER AMPLIFIER**

**Slim, Powerful Tuner Amplifier with Servo-Locked  
Touch-Sensor Tuning, Auto-Hi-Blend Circuit,  
and Hidden Control Panel**

**SERVO  
LOCKED**

© beim Hersteller  
Archiv Michael Otto  
HiFi-Classic.de



SERVO-LOCKED TUNER AMPLIFIER

# TX-20

## Designed to be the Heart of a with the Emphasis on FM Stereo

Introducing the first receiver that starts with receiving FM.  
Our new TX-20 lets you build a complete state-of-the-art audio system  
that gives you amazingly clean FM stereo reproduction.

### Some Significant Advances in FM Tuning

The TX-20 is first and last a receiver. It has complete power amp and preamp circuitry with selectors and tone controls. But here the resemblance to conventional receivers ends. Because we developed the TX-20 as a means to the best FM reproduction and FM tuning convenience that you can imagine. And precisely because it is more difficult to obtain excellent fidelity from FM than it is from other audio sources, we had to equip this unit with exceptionally high quality circuitry throughout. To achieve the high FM stereo signal-to-noise ratio of 66dB (72dB FM mono) the TX-20 employs our newly

developed auto-hi-blend and noise-amp-equipped automatic interference muting circuits. Two dual-gate MOS FETs in the RF stage, along with a 4-ganged variable capacitor for frequency-linear tuning, help reduce distortion and ensure clean FM reproduction. You'll find the TX-20 exciting to operate. Those controls that you rarely need to adjust are hidden away, yet easily accessible. The touch-sensor, servo-locked tuning system and soft-touch switches respond instantly and accurately.

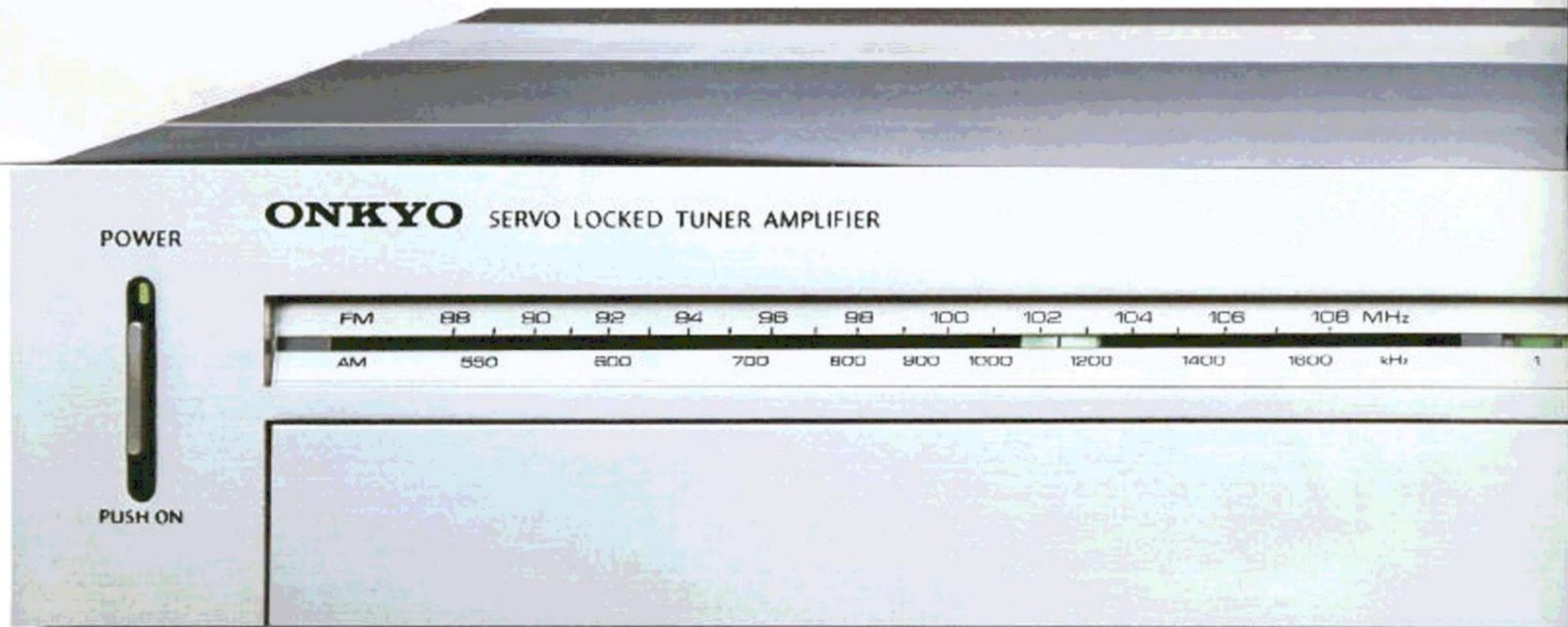
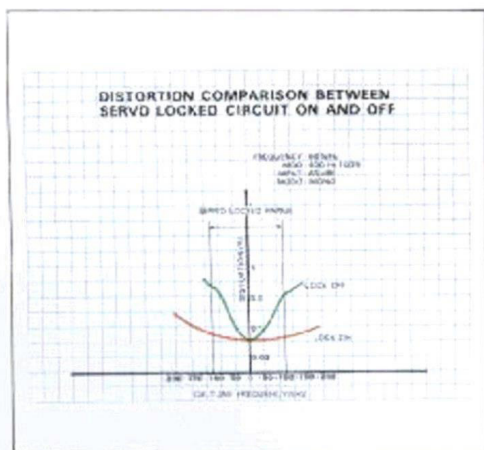
# SERVO LOCKED

### Servo-Locked for Reliable and Precise FM Tuning

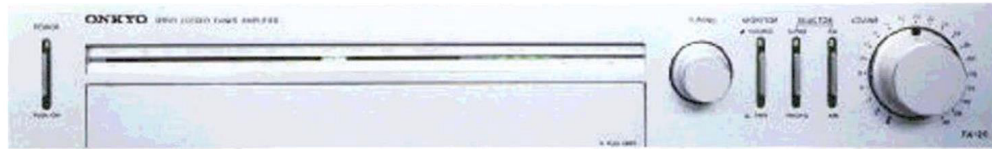
To tune, turn the tuning knob towards your station, as you near the station one of the two arrows will light, then both of the red blocks will light, then if you release the knob, the green center spot will light, this means that the servo-lock is holding on to your station. The tuning knob is sensitive to your touch, so when you touch the knob you are automatically switching off the servo circuitry until you let go of the knob again.

### We Put More Into the TX-20

- Powerful output: 30W + 30W both channels driven into 8ohms, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.
- Servo-Locked Touch-Sensor tuning for easier, more precise, drift-free FM reception.
- Auto-hi-Blend Circuit for FM stereo gives you the highest signal-to-noise ratio, regardless of reception conditions.
- Two dual-gate MOS FETs in the RF stage prevent overload and assure wide dynamic range with minimum noise.
- 4-Ganged variable capacitor FM tuning system features frequency-linear response characteristics.
- LED signal strength indicator, stereo indicator, and tuned/locked indicator.
- 127mm linear dial.
- Professional amplifier volume control knob with 41-step click-stop attenuation.
- Transient killer and speaker protection circuitry in power amp section.
- Bass, treble, and balance controls, speaker A/B system selector, loudness switch, muting/lock(stereo/mono) switch, function (tuner/phono and aux) switch and headphone jack are all located behind a discrete, attractively finished panel cover.

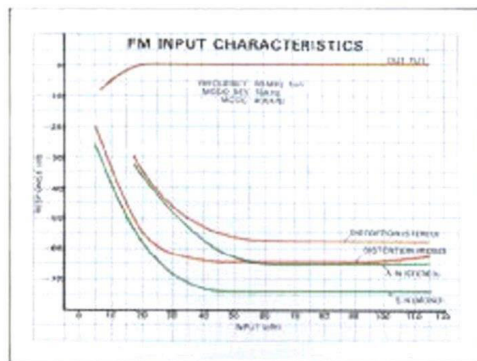


# New Kind of Audio System, Stereo Listening.



## New Auto-Hi-Blend Circuitry Optimizes S/N Ratio

You don't have to accept FM noise anymore. We have developed a new type of hi-blend circuit that automatically detects weak broadcast signals and stops noise by opposite phase cancelling in the left and right stereo channels. Since the noise components are cancelled, your signal-to-noise ratio improves dramatically. And remember, this is with weaker signals, the very ones that used to be such a problem.



## Making FM a Real High Fidelity Signal Source

Radio stations use the best professional equipment to broadcast FM stereo

signals. So we went to a lot of trouble to make those signals come alive in your listening room.

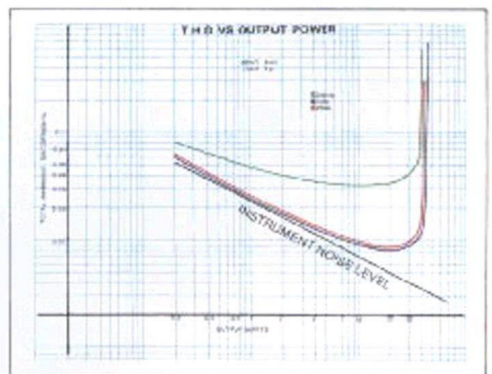
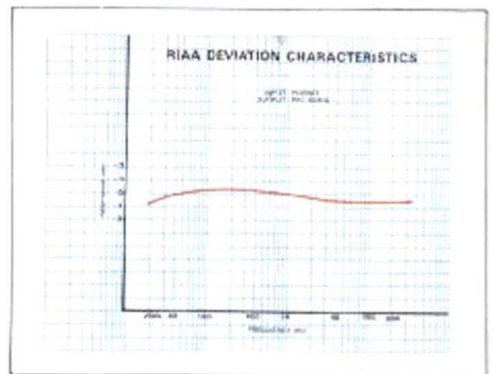
You get 40dB stereo separation, thanks to our special MPX circuitry. Strict low-pass filter parameters prevent distortion in the FM detector. Two dual-MOS FETs in the RF stage assure wide dynamic range and minimum noise. Single-double tuning in the front-end, with a 4-ganged tuning capacitor, gives you high sensitivity of 1.9 $\mu$ V (10.8dBf), image rejection ratio of 70dB, and spurious rejection of 90dB.

The IF-stage filters feature superb group-delay characteristics, and our newly developed multi-element ceramic filters offer fantastic phase linearity. The result is spectacularly linear response: selectivity is 55dB, distortion is a mere 0.3%, and S/N is a high 66dB in stereo! Even the widest dynamic range is no problem for the TX-20. We designed the FM circuitry to be able to handle the most highly modulated music broadcasts. Listen.

**Power with a Punch. No more than 0.08% THD at continuous 30W + 30W both channels driven, into 8ohms, from 20Hz to 20,000Hz!**

We borrowed heavily from the highly

rated technology employed in our separate component amplifiers in order to give you these amazing specifications. Listen to the clean, refreshingly natural sound quality you get from any audio source, not just FM. Crashing cymbals crash from your speakers, the first violinist stands for a solo, it's a live performance and you're there! You forget about everything except for the music.



# TX-20



## SPECIFICATIONS

### Amplifier Section

#### Power Output

**30 watts per channel, min. RMS, at 8 ohms both channels driven, from 20Hz to 20,000Hz, with no more than 0.08% total harmonic distortion.**

Total Harmonic Distortion	0.08% at rated power
IM Distortion	0.04% at 1 watt output
Damping Factor	40 at 8 $\Omega$
Frequency Response	20-20,000Hz $\pm$ 1.0dB
RIAA Deviation	20-20,000Hz $\pm$ 0.8dB
Sensitivity and Impedance	PHONO: 3mV, 50k $\Omega$ TAPE PLAY: 150mV, 50k $\Omega$ TAPE REC: 150mV, 2.2k $\Omega$ (PHONO)
Phono Overload	200mV RMS at 1kHz, 0.08% THD
Signal to Noise Ratio	PHONO: 82dB (at 10mV input IHF A NETWORK) 65dB (IHF C NETWORK) TAPE: 95dB (IHF A NETWORK) 90dB (IHF C NETWORK)
Tone Controls	BASS: $\pm$ 9dB TREBLE: $\pm$ 9dB
High Filter	6kHz, 6dB/Oct
Loudness	+6dB at 70 Hz +5dB at 10 kHz

### Tuner Section

Tuning Range	FM: 88-108 MHz AM: 525-1605kHz
Usable Sensitivity	FM mono: 10.8dB $\mu$ , 1.9 $\mu$ V AM 25 $\mu$ V FM stereo: 17.2dB $\mu$ , 4 $\mu$ V
50dB Quieting Sensitivity	FM mono: 16.0dB $\mu$ , 3.5 $\mu$ V FM stereo: 36.0dB $\mu$ , 35 $\mu$ V
Intermediate Frequency	FM: 10.7MHz AM: 455kHz
Capture Ratio	FM: 1.5dB
Image Rejection Ratio	FM 70dB AM 45dB

IF Rejection Ratio	FM 85dB AM: 30dB
Spurious Rejection	FM 1/2 IF: 90dB
Signal to Noise Ratio	FM mono: 72dB AM: 40dB FM stereo: 66dB FM 55dB
Alternate Channel Attenuation	FM: 50dB
AM Suppression Ratio	FM mono: 0.12% AM, 0.8%
Total Harmonic Distortion	FM stereo: 0.3%
Frequency Response	FM 30-15,000Hz $\pm$ 1.5dB
Stereo Separation	FM 40dB at 1kHz 30dB at 100-10,000Hz
Muting Level	FM 14.7dB $\mu$ , 3 $\mu$ V
Stereo Threshold	FM 14.7dB $\mu$ , 3 $\mu$ V
Locked Level	FM 14.7dB $\mu$ , 3 $\mu$ V

### General

Power Supply Rating	AC 120volts, 60Hz
Controls	POWER SPEAKERS (A B) BASS, TREBLE, BALANCE TUNING, VOLUME HIGH FILTER, FM MUTING/LOCK/MODE SWITCH LOUDNESS FUNCTION (TUNER-PHONO/AUX) TAPE MONITOR, SELECTOR (TUNER/PHONO, FM/AM)
Antennas	FM: 300 $\Omega$ balanced AM: built in ferrite core antenna and external terminal
Outputs	SPEAKER A & B, HEADPHONES TAPE REC OUT AC OUTLET (SWITCHED, UNSWITCHED)
Inputs	PHONO, AUX, TAPE PLAY FM & AM ANTENNA
Semiconductors	6 ICs, 3 FETs, 19 transistors, 27 Diodes
Dimensions (WxHxD)	16-9/16" x 2-15/16" x 13-7/16" 418 x 75 x 340mm
Weight	15.8 lbs. 7.2kg

• Specifications and design are subject to change without notice

## ONKYO U.S.A. CORPORATION

**Eastern Office:**  
42-07 20th Ave., Long Island City, N.Y. 11105, Tel. 212-728-4639, Telex: (ITWX) 7105825459  
**Midwest Office:**  
935 Silver Drive, Wood Dale, Ill. 60191, Tel. 312-595-2970  
**West Coast Distribution Center:**  
Danmark Industries, Inc., 20800 Nordhoff Street, Chatsworth, Calif. 91311, Tel. 213-998-6501  
**Canada:**  
Sole Distributor, Tri-Tel Associates, Ltd., 105 Sparks Ave., Willowdale, Ontario, Canada M2H 2S5,  
Tel. 416-499-5044

### ONKYO CORPORATION

International Division, No. 24 Mori Bldg., 23-5, 3-chome, Nishi-Shinjyashi, Minato-ku, Tokyo, Japan  
Tel. 03-432-6981, Telex: 242 3551 ONKYO J