

Technics ST-8044

FM/AM Stereo Tuner



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The first requirement in an FM tuner that is designed to furnish high fidelity reception is accurate tuning.

If the tuning is off just a bit, there is an increase in distortion and decrease in stereo separation, two problems which can negate the virtues of even the best tuner designs.

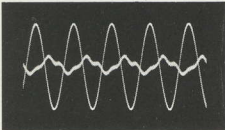
In the ST-8044, the problem of inaccurate tuning was solved quite simply. First, Technics designers removed all needle-type mechanical meters, which are usually used to indicate signal strength and center-of-channel tuning, and replaced them with responsive and easy-to-read LED's (light emitting diodes).

And once you've tuned in a station, the active servo lock will keep it from drifting despite temperature and humidity changes. In short, with the ST-8044, accurate tuning aids and the servo lock contribute directly to low distortion and stable stereo separation.

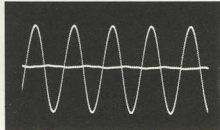
Active Servo Lock

One way to prevent frequency drift and its accompanying distortion is to "lock" the local oscillator. But with this approach, the IF stage and FM discriminator cannot respond to temperature changes, which occur as the tuner "warms up," and other varying conditions. However, the Active Servo Lock in this tuner maintains precise, center-of-channel tuning under these conditions by preventing frequency drift not only in the local oscillator but also in the IF stage and FM discriminator. The big merit is that even a careless or hasty setting of the dial is sufficient to tune in the station accurately with the ST-8044. Whereas you normally would have to position the center-tuning meter rather carefully for low distortion and good stereo separation,

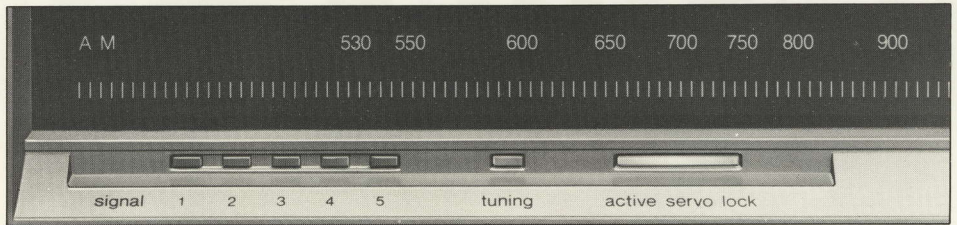
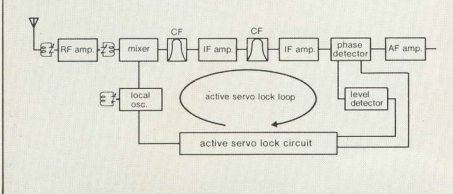
Increased crosstalk with Active Servo Lock OFF



Minimum crosstalk with Active Servo Lock ON



Active servo lock



with the active servo lock you can tune within ± 75 kHz on either side of the station's frequency. The active servo lock is then activated three seconds after the tuning LED's light up, and at the same time the "Servo Lock" indicator light goes on.

Just tune the ST-8044 to the general area of the station and the active servo lock will do the rest. If for any reason you want to defeat the servo lock, you can do so by pressing a switch.

5 LED's Indicate Signal Strength

The number of LED's lit indicate signal strength in a linear progression. One LED means that the signal is very weak and is barely being picked up by the tuner. Two LED's mean that the station is weak and the program material will be difficult to hear. Three LED's: the quality of the sound will not be very good, but speech can be readily understood and music will be listenable. Four LED's: the signal is strong enough for good musical fidelity. Five LED's: strong signal, best possible reception with this tuner.

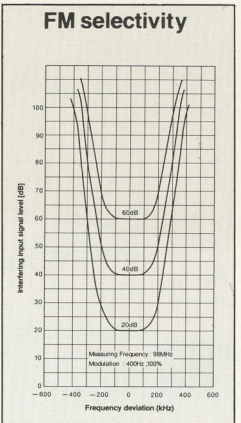
High-Sensitivity Front End

The RF stage benefits from, among other components, a junction FET for good selectivity, sensitivity, image and spurious rejection. Tuning is accomplished with a precision

3-ganged variable tuning capacitor, and the figures tell the story of the high-sensitivity of this tuner: usable sensitivity is $1.9\mu\text{V}$ (300 Ω). The more important 46 dB stereo quieting sensitivity is $2.5\mu\text{V}$ (75 Ω).

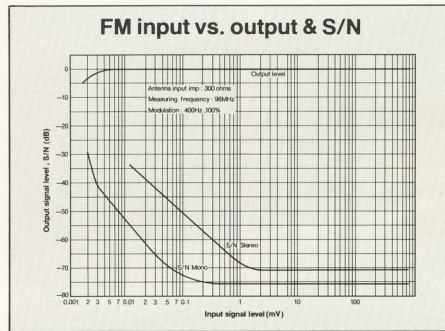
High S/N Ratio and Wide, Stable Separation

In the IF stage, you'll find three flat-group-delay ceramic filters for high selectivity and a five-stage differential amplifier with excellent limiting characteristics. Selectivity is 75 dB; the signal-to-noise ratio is 75 dB (IHF), and separation is a wide 45 dB at 1 kHz. MPX decoding is accomplished with a PLL (phase locked loop) circuit incorporated into a single IC.



Other Features

- Quadrature detector with outstanding characteristics contributing to a wide, flat frequency response and low distortion.
- Easy-to-read 220 mm dial scale. The tuning knob's "positive" feel is enhanced by an oil-less sleeve and a dial rope coated with fluoro-resin.
- Special muting circuit to reduce pop noise when detuning.
- FM Auto/Mono switch and FM muting to eliminate inter-station noise when tuning between stations.
- High-quality AM section with 2-ganged variable capacitor and ceramic filter.



Technical Specifications (DIN 45 500)

FM TUNER SECTION

Frequency range	88~108 MHz
Sensitivity	$1.9\mu\text{V}$ (300 Ω)
S/N 30 dB	$1.3\mu\text{V}$ (75 Ω)
S/N 26 dB	$1.7\mu\text{V}$ (300 Ω)
S/N 20 dB	$1.5\mu\text{V}$ (300 Ω)
IHF usable sensitivity	$0.9\mu\text{V}$ (75 Ω)
IHF S/N 46 dB stereo quieting sensitivity	$1.9\mu\text{V}$ (IHF '58)
	$25\mu\text{V}$ (75 Ω)

Total harmonic distortion

1 kHz	0.15% (mono)
	0.3% (stereo)
S/N	MONO 68 dB (75 dB, IHF)
	STEREO 65 dB (70 dB, IHF)
Frequency response	20 Hz~15 kHz, +0.5 dB, -1.5 dB
Alternate channel selectivity	75 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	55 dB
IF rejection at 98 MHz	85 dB
Spurious response rejection at 98 MHz	80 dB
AM suppression	55 dB

Stereo separation

1 kHz	45 dB
10 kHz	35 dB
Carrier leak	19 kHz -35 dB (-40 dB, IHF)
	38 kHz -48 dB (-40 dB, IHF)
Channel balance	250 Hz~6300 Hz ± 1.5 dB
Limiting point	1.2 μV
Bandwidth	IF amplifier 180 kHz
	FM demodulator 1000 kHz
Antenna terminals	300 Ω (balanced)
	75 Ω (unbalanced)

AM TUNER SECTION

Frequency range	525~1605 kHz
Sensitivity S/N 20 dB	$30\mu\text{V}$, 250 $\mu\text{V}/\text{m}$
Selectivity	30 dB
Image rejection at 1000 kHz	50 dB
IF rejection at 1000 kHz	40 dB

GENERAL

Output voltage	0.6V (fixed)
Power consumption	16W
Power supply	AC 110/120/220/240V, 50/60 Hz
Dimensions (W×H×D)	430×142×254 mm (16-15/16"×5-19/32"×10")
Weight	4.2 kg (9.3 lb)

Technics
Matsushita Electric