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# LABORATORY REFERENCE SERIES

# 5T10

ACCUTOUCH CLL FM TUNER ; CUSTOMED BY LUX CORPORATION, JAPAN





ACCOUTOUCH CLL FM TUNER 5T10

### Our original C.L.L. system which has realized quite accurate and stable tuning condition

We employed our original Closed Loop Locked (C.L.L.) circuit (pat. pend.) in the 5T10 to realize extremely accurate and stable tuning conditions at all receiving FM frequencies. With the C.L.L. circuitry, total control is effected throughout all the stages, from the front end to the IF and detector circuits in accordance with the crystal controlled transmission frequency of a broadcasting station. Therefore, this may be called the ideal tuning system offering accurate and stable tuning conditions even if ambient conditions such as temperature fluctuate. Generally, in the case of quartz lock and synthesizer systems, only the local oscillator or front end is partially controlled by the P.L.L. circuitry. Therefore it is necessary to design the IF stage and the detector stage with additional stability.

In addition, C.L.L. circuitry, like the P.L.L. circuit, has the capture range near the center frequency of the broadcasting

position and the required lock range to achieve a stable reception. Thus, C.L.L. circuitry always provide the perfect receiving condition thanks to powerful feedback once the signal wave of an FM station is within the capture range and firmly locked at the lock range. Even if the receiving frequency drifts, feedback is applied to bring it back to follow the crystal controlled transmission frequency, and stable reception is always obtained.

In addition, the C.L.L. circuitry incorporates a lock-retaining circuit, and no new locking is needed when power is turned off and on once the station has been tuned in.

### The "ACCUTOUCH" System which makes the most of the C.L.L. Tuning System

The 5T10 employs the "ACCUTOUCH" system. This system makes it possible to tune in all the tuning circuits easily to the accurate center frequencies of broadcasting stations. To obtain more precise tuning, an extremely narrow capture range is set for the C.L.L. circuit of the 5T10. It would be hard for a conventional tuning method to obtain such a precise tuning point, since such tuning method requires observation of a center tuning meter, which is seldom accurate enough.

The "ACCUTOUCH" system detects the exact center tuning point utilizing a control voltage at the C.L.L. circuit, which triggers a mechanical lock on the tuning knob. This is a very unique system in which the tuning knob is temporarily locked with a positive response (for about 1 sec.) at the exact tune-in point as the knob is gradually turned to locate an FM station. Precise tuning to a station is possible with an incomparable accuracy compared with that of current visual tuning systems.

### IF Bandwidth Selector

In the IF stage, a 2-step bandwidth selector is provided to provide both excellent distortion and selectivity. In the "wide"

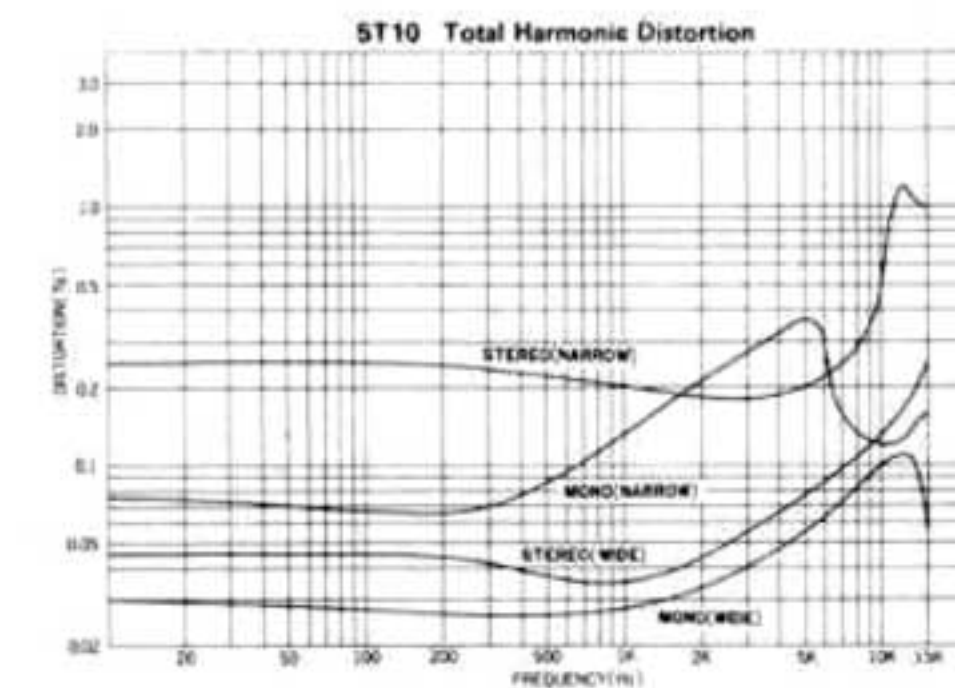
position, 2 pairs of wide-bandwidth block filters of good group-delay characteristics are employed to realize lower distortion, while in the "narrow" position an additional 2 pairs of narrow-bandwidth ceramic filters are added to offer high selectivity.

### DC amp configuration is employed at the Audio Output Stage. The basic design theme is Sonic Excellence

A 5-gang variable capacitor exclusively designed for FM reception is adopted at the front end to make the most of the excellent characteristics realized after the IF stage. Also superb interference rejection characteristic is obtained by improving the selectivity at each RF amplifying circuit.

The IF stage is so designed as to be inherently low in distortion, but to make it perfect, a quadrature wide-bandwidth detector circuit is combined with it, which not only realizes low distortion but high S/N ratio as well.

Of course, a pilot canceller circuit is provided in the multiplex circuit, but further the phase characteristic of the low-pass filter is improved. A DC amp configuration is employed at the audio output stage. All of these circuit features are specially considered in terms of good sonic quality.



### Specifications

- Receiving Frequency: 87.5MHz - 108MHz
- 50dB Quieting Sensitivity: 16.0dBf (3.3μV)
- IHF Usable Sensitivity: 10.3dBf (1.8μV)
- Signal-to-Noise Ratio: 80dB
- Frequency Response: 20Hz - 17,000Hz (-0.5dB, mono & stereo)
- Total Harmonic Distortion:
 

	(mono)	(stereo)
100Hz:	0.05% (wide)	0.07% (wide)
1kHz:	0.05% (wide)	0.06% (wide)
6kHz:	0.07% (wide)	0.1% (wide)
1kHz:	0.2% (narrow)	0.5% (narrow)
- Capture Ratio: 0.8dB (wide), 2dB (narrow)
- Adjacent Channel Selectivity: 12dB (narrow, ±200kHz)
- Alternate Channel Selectivity: 90dB (narrow, ±400kHz), 30dB (wide, ±400kHz)
- Spurious Response Ratio: 100dB
- IF Response Ratio: 100dB
- Image Response Ratio: 100dB
- AM Suppression Ratio: 62dB

- Stereo Separation:
- Muting Threshold:
- Output Impedance:
- Output Voltage:
- Additional Features:

- 45dB (wide, 100Hz), 50dB (wide, 1kHz)
- 45dB (wide, 10kHz), 30dB (narrow, 1kHz)
- 30μV - 500μV (variable)
- 100 ohms (fixed), 100 ohms - 1.25k ohms (variable)
- 1V (fixed), 0 - 1V (variable)
- Tuning Lock System, IF Bandwidth Selector, Center Indicator, Signal Strength Indicator, Multipath Check Circuit, Recording Test Tone Circuit, FM Muting Circuit, Muting Level Adjuster, Time-delay Muting, Output Level Control, 75-ohm Coaxial Connector

- Power Consumption: 20W
- Dimensions: 442(W) x 400(D) x 101(H) mm (17-13/32" x 15-3/4" x 4") (including legs and rear fins)
- Weight: Net: 7.0kgs (15.4 lbs.) Gross: 8.5kgs (18.7 lbs.)

Specifications and appearance design subject to change without notice.

Printed in Japan