INSTRUCTION MANUAL FOR

FREQUENCY RESPONSE-TESTER

MODEL 852

KIKUSUI ELECTRONICS CORPORATION

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1. GENERAL

Kikusui Model 852 Frequency Response Tester consists of a Sweep Generator (SPEC 711211), a Marker Generator (SPEC 710371), an AC Log Converter (SPEC 710381), an Alignment Scope (SPEC 711221), and an Attenuator (MODEL 984A).

The sweep generator, which acts as a signal source for the tester, provides a sweep frequency of any required frequency within a range of 20 Hz ~ 20 kHz. The tester displays directly in dB unit on its CRT screen graticule scale the frequency response characteristics of audio amplifiers, speakers, filters, etc.

Five marker points set as required within the range of 20 Hz ~ 20 kHz can be displayed on the CRT screen, contributing for convenience of measurement.

The Model 984A Attenuator provides a means for fine adjustment in measurement.

As above-described, the Model 852 Tester displays frequency characteristics of various audio devices directly on a large-screen alignment oscilloscope together with calibration points provided by the marker generator.

2. SPECIFICATIONS

Name:	Frequency Response Tester
Model No.:	852
Construction:	Sweep Generator (SPEC 711211) Marker Generator (SPEC 710371) AC Log Converter (SPEC 710381) Alignment Scope (SPEC 711221) Attenuator (MODEL 984A)
Measuring frequency range:	20 Hz ~ 20 kHz
Measuring level:	0 ~ 30 / 0 ~ 60 dB (selectable)
Marker points:	5 points Can be set as required within the range of 20 Hz ~ 20 kHz. ON/OFF switching also possible.
Blanking:	Marker generator blanking
Accessories:	Instruction-manual ..... 1 Hood for alignment scope ..... 1 Connection cables ..... 1 set

3. CONSTRUCTION

The standard construction of the Model 852 Frequency Response Tester is as illustrated below. Figs. 4-1 and 4-2 of Section 4 are written basing on this standard construction.

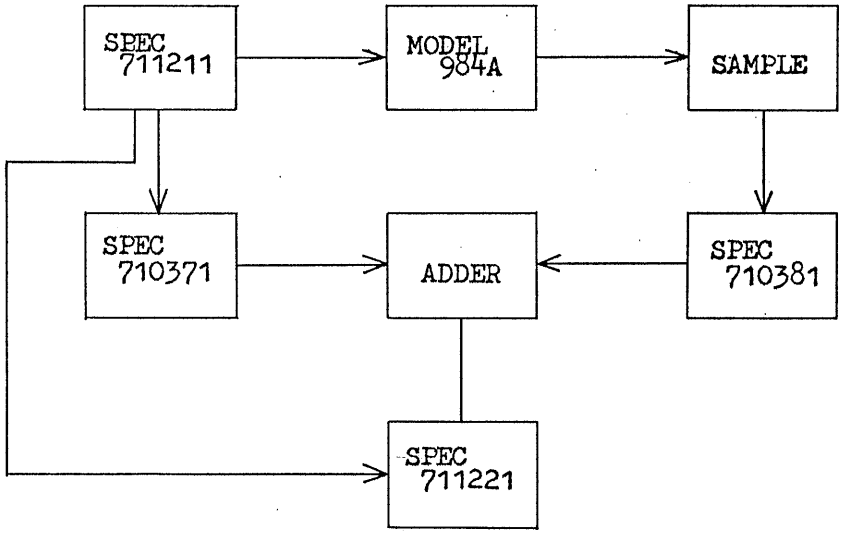

Fig. 3-1

The Adder is mounted in the lower [illegible] frame on the rack.

4. OPERATION METHOD

4.1 Description of Control Panel

The alignment scope, sweep generator, marker generator, AC log converter, and attenuator are housed in the control panel.

The standard operation procedure is as below. (Refer to Fig. 4-1.)

(1) Before turning on the power of the alignment scope, turn fully counterclockwise the intensity control knob of the alignment scope. Note that the CRT screen may be damaged (burned with the beam spot) if this instruction is not observed.

(2) After turning on the power switch in the preceding step (1), turn on the power switches of the componential units of the tester.

(3) Connect the attenuator output (terminal ②, shunted with a 600Ω dummy load) with the input of the AC log converter.

(4) Calibrated at first the vertical axis. Set the MODE switch of the sweep generator in the DIAL position, and set the dial in the 2 kHz position.

(5) Turn the output control knob of the sweep generator to the extremely clockwise position. Adjust the pointer of the level meter to the 0 dB position by adjusting the attenuator (984A) and the 0 dB reference adjusting knob. In this case, set the 0 dB reference adjusting pushbutton in a 1 - 10 V range position.

(6) So adjust the vertical axis sensitivity control knob and position control knob that, when attenuation is set for 0 dB and 60 dB by means of the leftiest knob (for 30 dB and 60 dB) of the attenuator, the spot is positioned at the 0 dB and -60 dB position on the graticule of the alignment scope.

(7) When the level switch of the AC log converter is set in the 30 dB position, the only difference in operation procedure is to use 60 dB instead of 30 dB in the procedure of the preceding step (6).

The spot should be displayed on the CRT screen only when it is required for calibration. The spot intensity should be subdued.

(8) Next, calibrate the horizontal axis. So adjust the horizontal sensitivity control knob and position control knob that the spot is displayed at the 20 Hz position and 20 kHz position when the sweep generator dial is set in the 20 Hz position and 20 kHz position, respectively.

By the above procedure, both vertical and horizontal axes are calibrated.

(9) Connect the measured device between the attenuator (984A) and the AC log converter input.

(10) Adjust the input level to an appropriate level by means of the attenuator.

(11) Set the sweep generator dial at the lowew limit frequency of the sweep bandwidth and the sweep width control knob at the upper limit frequency.

(12) Set the MODE selector switch of the sweep generator in the SWEEP position. When this is done, the sweep operation is made for the frequency bandwidth set as above.

(13) The frequency response characteristics of the measured device are displayed on the CRT screen of the alignment scope. In order that the frequency response characteristics of the measured device are accurately displayed on the CRT screen, so adjust the sweep time knob that the waveforms for both ways of sweeps are overlapped.

(14) In the above procedure, special attention must be paid to protect the CRT screen against burning caused by the beam spot.

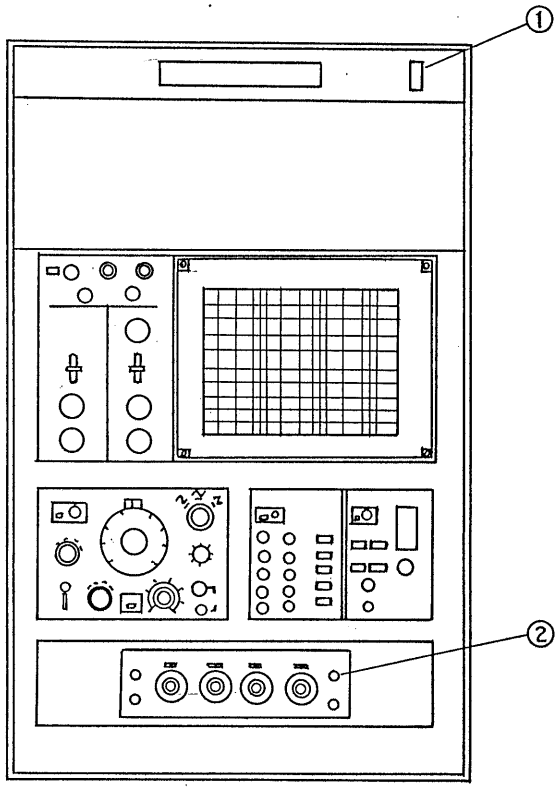

Fig. 4-1

(15) The tester incorporates a spot killer circuit in order to protect the CRT screen against spot burning. When the sweep generator is operated in the DIAL or other mode in which the spot becomes stationary, the spot killer circuit is automatically brought into effect to subdue the spot intensity. For adjustment of this feature, so adjust the marker adjustment trimmer that the intensity is high when the beam is being swept but it is low when the beam is stationary.

4.2 Description of Rear Panel (Refer to Fig. 4-2.)

To gain access to the rear panel, remove the rear board by turning 90 degrees the mounting-factener of the board.

(1) Marker blanking:

When the blanking switch located on the rear panel of the marker generator is set in the ON state, the markers for the sweep return periods are blanked out.

(2) The height of the markers displayed on the CRT screen is adjustable with the pulse height control knob located on the rear panel of the marker generator.

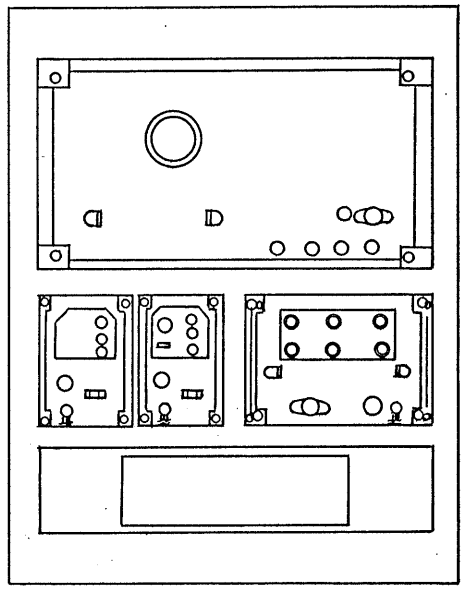

Fig. 4-2.

5. MAINTENANCE

To gain access to internal components for inspection, remove the rear board by turning 90 degrees the mounting-fastener of the rear board. Pay attention to connections of componential units. Each componential unit can be pull out to its front direction after undoing its clamping-screws. For inspection of each unit, remove its rack-mounting-panel. Be extremely careful in mounting the componential units to or removing them from the rack.