TYPE 551 OSCILLOSCOPE

T E S T S P E C I F I C A T I O N S

All regulated voltages must be within ±2% of rated value.

The -150 v and 100 v regulated supplies must regulate between 103 vac line and 125 vac line. The 225 v, 350 v, 500 v and -1350 v supplies must regulate between 105 vac line and 125 vac line.

The symmetry of the SQUARE-WAVE CALIBRATOR voltage must be within 10%, i. e., the meter should read between 45 v and 55 v with the calibrator turned on and switched to 100 v.

The SQUARE-WAVE CALIBRATOR attenuator accuracy must be within ±2%.

Triggering requirements for each beam are as follows:

INTERNAL AC SLOW INTERNAL LF REJECT INTERNAL AUTOMATIC	With a 1 mm signal, the sweep must trigger on either +INT. or -INT. without adjusting the TRIGGERING LEVEL control.
INTERNAL DC	The sweep must trigger on a 2 mm signal when the trace is within ±2 mm of graticule center. With a 4 mm signal, the sweep must trigger on either +INT. or -INT. without adhusting the TRIGGERING LEVEL control.
EXTERNAL, ALL MODES EXCEPT H.F. SYNC.	The sweep must trigger on a 0.1 volt signal.
H.F. SYNC.	The sweep must synchronize on a 30 mc sine wave of 2 cm or less amplitude with a trace width no greater than 1 mm due to hum.

The EXT. SWEEP amplifier sensivity must be not less than .18 v/cm.

The sweep timing error must not exceed ±2% on any sweep speed.

The maximum sweep timing error caused by timing resistors must not be mre than 1.5%.

The sweep linearity error must not exceed 1% with the magnifier on.

Sweep Hold-off Specifications:

Sweep Rate		Approximate Holdoff	
.1, .2, and .5	usec/cm	5 to 8	usec
1, 2, and 5	usec/cm	25	usec
10, 20, and 50	usec/cm	25	usec
.1, .2, and .5	msec/cm	250	usec
1, 2, and 5	msec/cm	2	msec
10, 20, and 50	msec/cm	20	msec
100, 200, and 500	msec/cm	200	msec
1, 2, and 5	sec/cm	200	msec

The sweep lenght must not be less than 10.2 cm or more than 10.6 cm, the maximum lenght being allowed only in the absence of flare on the crt.

The vertical-position indicating neon bulbs must operate in the following manner:

> The up-indicating neon must be on and the down-indicating neon must be off when the trace reaches the top graticule line. The down-indicating neon must be off when the spot reaches the extreme left-hand graticule line. The right-indicating neon must be on and the left indicating neon must be off when the spot reaches the extreme right-hand graticule line.

Vertical compression or expansion must be limited to a total of 0.5 mm or less, i.e., you may have, (1) up to 0.25 mm compression up and 0.25 mm down (the same expansion), (2) up to 0.5 mm compression (or expansion) up and none down or vice-versa, or (3) up to 0.5 mm compression up and 0.5 mm expansion down or vice-versa.

There must be no vertical DC shift in either vertical amplifier.

Vertical Amplifier Balance (both amplifiers):

Stage	Allowable Unbalance
6DK6 DA	2 mm
6BQ7 CF	1 cm
12BY7 input Amp.	1 cm
Overall Amplifier Balance	1.5 cm

With GAIN control set at maximum, the gain in each vertical amplifier should be at least 10% more than the proper setting.

The vertical amplifier bandwidth must not be more than 3 db down at 25 mc for either amplifier.

There must not be more than 0.5 cm of vertical drift in either amplifier when the line voltage is changed from 105 v to 125 v.

There must be no microphonics of the ringing type in either vertical amplifier.

There must not be more than 0.25 cm of microphonic indication in either vertical amplifier when you strike the instrument on the top of the front panel with palm of hand.

CRT geometry limits for each gun as follows:

> With the crt properly aligned horizontally, a vertical trace positioned anywhere within the graticule musut not be more than 1° from true vertical (0.67 mm to left or right of a vertical graticule line when the bottom of the trace is aligned with the bottom of the graticule line).

With 4 cm of deflection, the vertical sensivity of either gun must not change more than 1 mm from the left side of the graticule to the right side.

Both beams must extinguish with the same setting of the INTENSITY control.

Both beams must be properly focused with the same setting of the FOCUS control.

With the INTENSITY set to usable minimum at the center of the graticule, the light output of the crt must still be usable anywhere in the ruled portion of the graticule.

Low frequency beam registration should be within 1/2 mm. 50 mc registration should be within 1 mm. This is accomplished by special LC network in upper beam V.A.

(Tektronix, Manual 551, 1959)