5T1A

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5T1A CALIBRATION OUTLINE

PRESETS	
SWEEP TIME/CM:	10 NS
VARIABLE:	Calibrated
SWEEP MODE:	Normal
TIME EXPANDER:	X1
TIME POSITION:	Clockwise
SOURCE:	EXTERNAL
RECOVERY TIME:	Minimum
DOT/CM:	100
THRESHOLD:	0 volts
-TRIG ~~RECOVERY~~ T.D. BIAS (R35)	CW *
+TRIG ~~RECOVERY~~ T.D. BIAS (R55)	CW *
CALIBRATOR	Off

* IF SINE WAVE TRIG MOD HAS BEEN INSTALLED, REVERSE THESE, USE R25 & R45 IN PLACE OF R35 & R55.

* 1. -TRIG RECOG T.D. BIAS (R25):
Freerun at 0 ± 10°
Turnoff within 2°

Probe Q84 Base and observe holdoff multi waveform

± TRIG RECOVERY POTS CW.

* 2. +TRIG RECOG T.D. BIAS (R45):
Freerun at 0 ± 10°
Turnoff within 2°

3. OUTPUT T.D. BIAS (R65):

Probe Q73 emitter and adjust R65 for stable display while rotating RECOVERY TIME + and - trigger.

4. RECOVERY ADJ (C146B):
9.5 - 10.5 µsec/cycle
7.5 - 10 cycles variable

Check + and - triggers for 100KC rep rate ± 5%. (Maximum)
Check RECOVERY TIME for control.

5. SWEEP LENGTH (R345): 10.5 cm

Adjustable from 9.5 - 11.5 cm

PRESETS (IF needed)		
SWEEP TIME/CM:	0.2 µs	
STAIRCASE DC LEVEL (R381):	CCW	
DELAY ZERO (R220):	CW	
RAMP RECOVERY (R254):	CCW	
COMPARATOR LEVEL (R275):	CCW	
AMPL/TIME CAL:	1000 mv	1 µsec

6. COMPARATOR LEVEL (R275):

~~Observe cal waveform. Adjust CW until trgee freeruns, back off for continuous dots. Use 5X magnifier.~~
WITH METER, ADJ. FOR ZERO VOLTS ACROSS D276 (BACK DIODE)

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7. RAMP RECOVERY (R254): Adjust for minimum noise on leading edge of waveform (3° clockwise from CCW) ALSO ADJUSTED FOR LINEARITY ON 1NSEC/CM.

8. INVERTER INPUT ZERO (R225): ~~(Adjust max CW, then back off to remove vertical hash.)~~ Zero volts at Q223 Base.

~~PRESET~~

~~SWEEP TIME 1 µs~~

1000 DOTS/CM. ADJ. TO START AT 0V. USE ~~BOT~~ SCOPE DC COUPLED ON VARI. TIME/CM COAX.

9. STAIRCASE DC LEVEL (R381): ~~Remove vertical hash at 5ns sweep speed.~~

10. DELAY ZERO (R220): (TIME POSITION CW) Adjust so leading edge of pulse waveform always moves to left when TIME/CM is rotated CCW from 10 ns.

11. SWEEP CAL (R267): 1 µsec/cm

12. 10 NS ADJ (C260F): (100 mc input)

13. 1 NS ADJ (C263): (1000 mc input) Retouch RAMP RECOVERY for linearity

14. TIMING ACCURACY : ±2% Check TIME EXPANDER and MAGNIFIER

15. TIMING LINEARITY: ±2% Check over useable range of TIME POSITION control

16. TIME POSITION: Set TIME POSITION CCW and check for minimum delay range

SWEEP SPEED	180 OUTPUT	TIME EXP	DELAY RANGE
10 ns	10 mc	X1, X2	100 ns
10 ns	10 mc	X5	200 ns
100 ns	10 mc	X1	100 ns
100 ns	10 mc	X2	500 ns
100 ns	1 mc	X5	1000 ns

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17. SAMPLES/cm — 50 mc input, 1 μs/cm

SAMPLES/cm	ROWS OF DOTS	X OVERS or cycles	ADJ
5	1	(Adjust for min)	R304
10	1	2.5 cycles	C358D
20	2	5 X overs	C358F
50	1	2.5 cycles	C358H
100	2	5 X overs	C358K

18. SAMPLES/cm STABILITY: ±1% — 50 cps to 100KC trigger rates

19. TIMED MODE (R357) — Three 5 sec markers in 2 cm

20. EXT TRIG OPERATION — SENSITIVITY: 5 mv; JITTER: 200 ps @ 5 mv, 30 ps @ 30 mv; KICKOUT: 5 mv

(Turn calibrator off)

21. INT TRIG OPERATION — SENSITIVITY: 50 mv; JITTER: 200 ps @ 50 mv, 30 ps @ 300 mv, 250 ps @ 100 mc @ (100mv)

100mc 1v LESS THAN 70 PSEC JITTER
" 100mv " " 300 PSEC "

22. .01 μsec/cycle (C916 of 661) ±1%

23. 100 mc CAL AMPL (C920) ±5%

24. HORIZ SIGNAL OUTPUT: ±1% — 200 mv/cm