

Supersedes:

None

**HP MODEL 5345A
A9 MAINGATE ASSEMBLY
TROUBLESHOOTING PROCEDURE**

This troubleshooting procedure is written specifically for A9 boards with part number 05345-60009, series 1516. Earlier series boards differed by not having a few dc biasing resistors; otherwise, the circuits are identical. The procedure contains two parts: the Scaler portion and the Turn-off Control Logic portion.

Before using the A9 troubleshooting procedure, there are a few points to keep in mind:

1. All IC's on A9 are EECL logic (H=0V; L=-0.6V). Use an oscilloscope, not a logic probe.
2. Most of the troubleshooting is written for the Ratio function. This mode makes troubleshooting the Time Scaler easier by substituting a 1 MHz channel B signal for the 500 MHz internal clock signal. **Do not attempt to troubleshoot any other function until ratio is working properly.**
3. The tabs of all IC's are connected to -5.2V. Should the oscilloscope probe ground one of these tabs, the front panel will display a constant lamp test. Turn the POWER switch to STANDBY for a few seconds to clear this condition.

NOTE

This procedure assumes the problem is on the A9 board.

RG/ka/WN

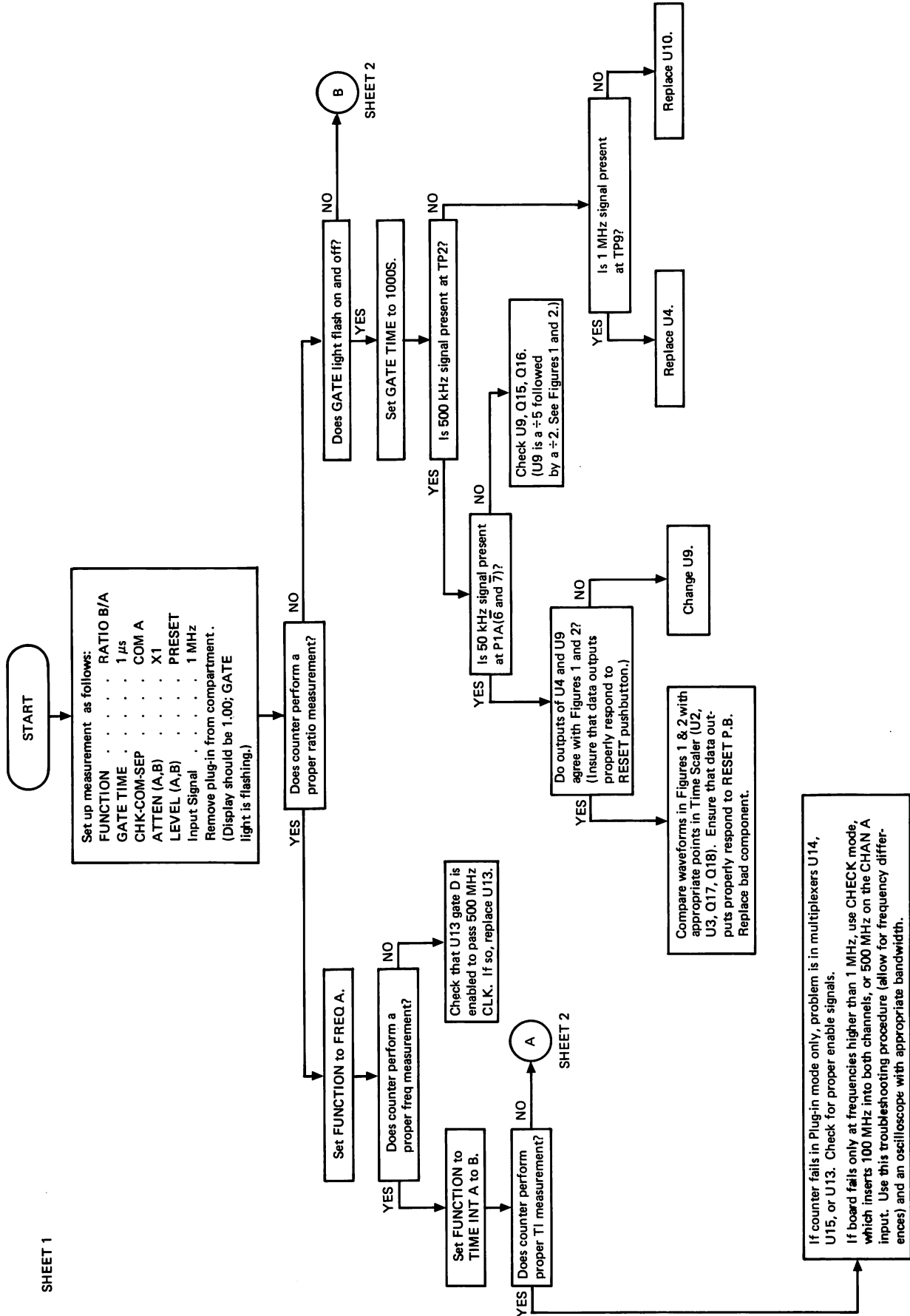
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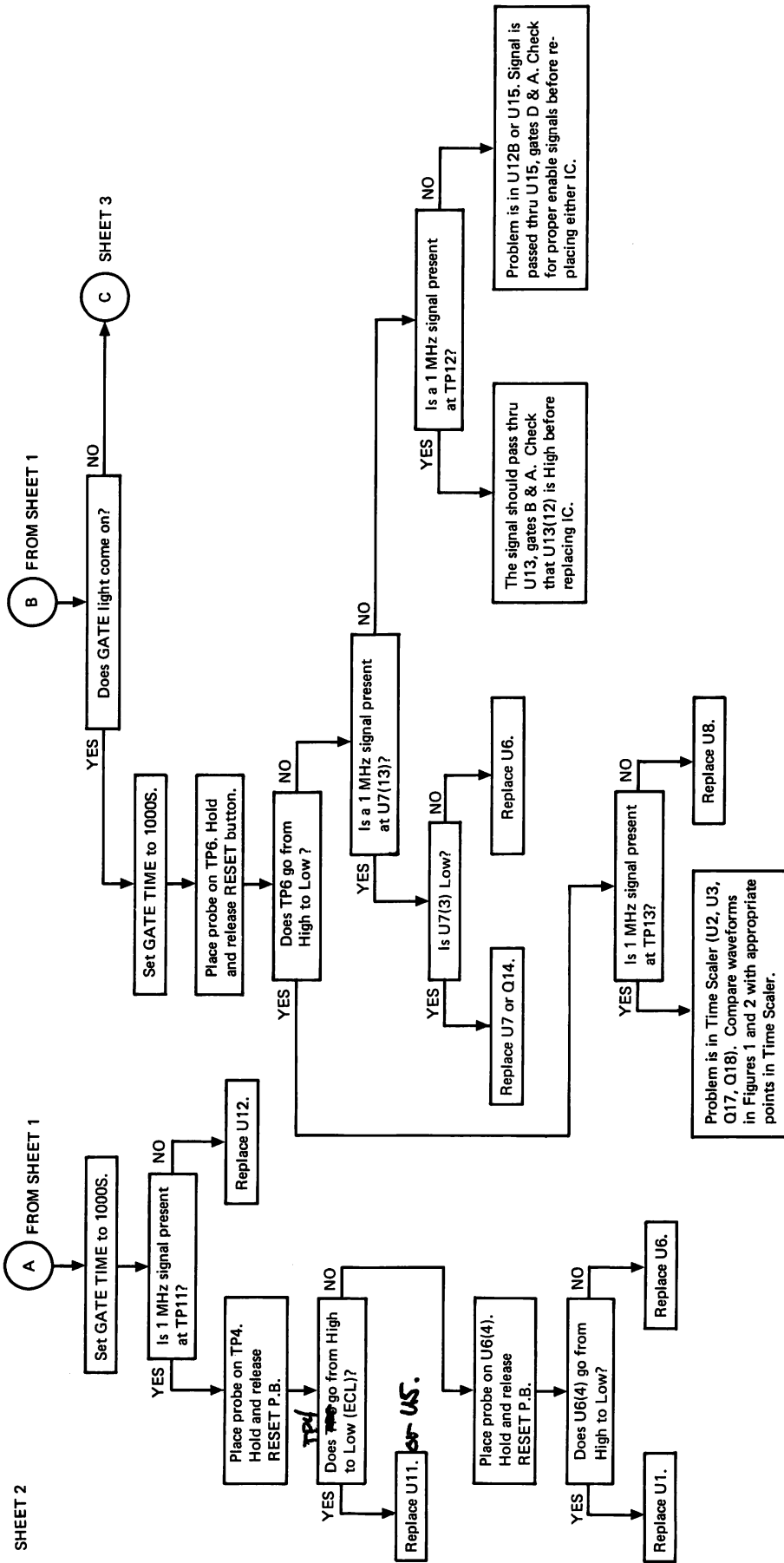
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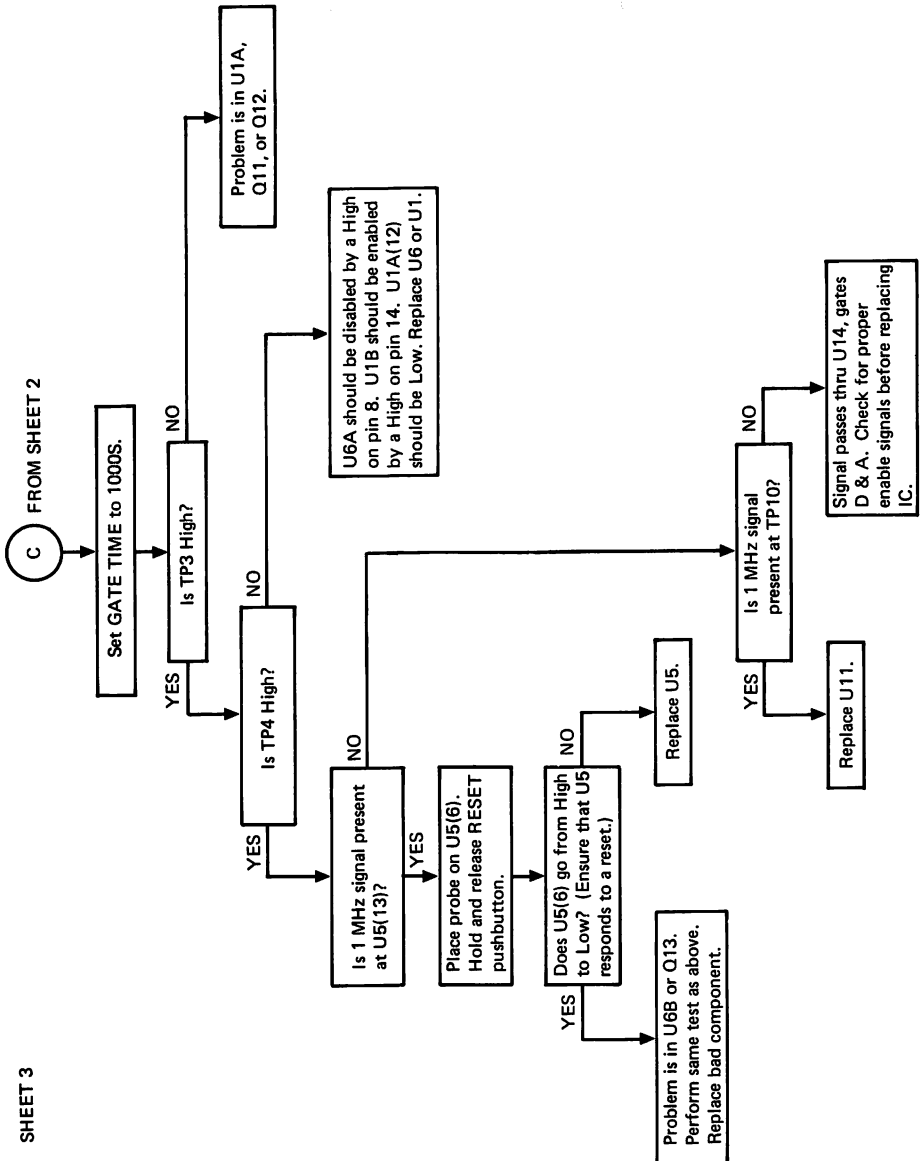
SHEET 1



If counter fails in Plug-in mode only, problem is in multiplexers U14, U15, or U13. Check for proper enable signals.
If board fails only at frequencies higher than 1 MHz, use CHECK mode, which inserts 100 MHz into both channels, or 500 MHz on the CHAN A input. Use this troubleshooting procedure (allow for frequency differences) and an oscilloscope with appropriate bandwidth.

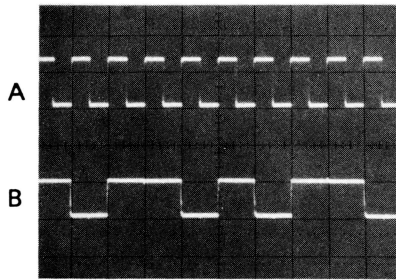
SHEET 2





SHEET 3

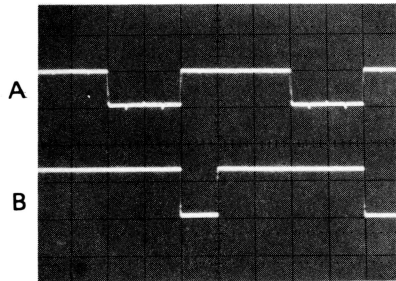
FIGURE 1



.05V/DIV, 2 μ S/DIV +SLOPE

EVENTS SCALER		TIME SCALER	
A = TP2 (U4 Pin 6)		A = TP7 (U2 Pin 6)	
B = U9(14)		B = U3(14)	

FIGURE 2



.05V/DIV, 2 μ S/DIV +SLOPE

EVENTS SCALER		TIME SCALER	
A = U9(1)		A = U3(1)	
B = TP1 (U9 Pin 2)		B = TP8 (U3 Pin 2)	

TURN-OFF CONTROL LOGIC

- a. 500 MHz OFF. The 500 MHz OFF line will be Low ($\approx -1.5V$) when FUNCTION switch is set to PLUG-IN, RATIO B/A, START, or STOP. It will be High ($\approx +2V$) otherwise.
- b. The turn-off control for the input amplifiers is controlled by lines from a plug-in. The EXT AB line into A9 goes High to force the INP LEVEL A&B lines High (+5V) to bias off the input amplifiers.

