

Supersedes:  
None

**HP MODEL 5345A ELECTRONIC COUNTER**  
**A13 Boards with Series 1820 and 1912**  
**MISCOUNTING CAUSED BY NOISE ON REG CLK LINE**

Beginning with board series 1820, many IC's on the A13 Adder/Subtractor assembly were changed from standard TTL to low power Schottky (LS) devices. This same type of change was done on the A14 boards (05395-60044) and A15 boards (05345-60045), also changing to an 1820 series number.

Noise on the REG CLK line can cause miscounting when the low power Schottky U6 IC is inserted on the A13 board. Beginning with series 1912 a capacitor was added to prevent this miscounting. It was discovered that heat may reduce the noise margin of the new LS U6 D-FF and still cause miscounting to occur. For U6 only, production has reverted to the standard TTL device starting with series 2004.

Note that this miscounting is noticed under two conditions: 1) when a series 1820 or 1912 board is placed on an extender board, 2) when a Series 1820 or 1912 A13 board is placed in an instrument with older A14 and A15 circuitry (i.e. standard TTL circuitry).

*Summary — A13 board series and U6 devices.*

A13 SERIES NUMBER	DEVICE
All series up to 1820	U6 Standard TTL HP P/N 1820-0077
1820	U6 low power Schottky HP P/N 1820-1112
1912	U6 low power Schottky and added C4 100pF 20% 200V HP P/N 0160-3877
2004 and later	U6 Standard TTL HP P/N 1820-0077

If any miscounting occurs due to noise on the register clock line when low power Schottky U6 is installed, (board series 1820 and 1912) replace with standard TTL U6 — HP P/N 1820-0077. For board series 1912, C4 — HP P/N 0160-3877, will also have to be removed. It is connected between pins 7 and 11 of U6 (REG CLK line and ground).

DD/lh/WO

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