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Agilent 8110A / Agilent 81110A compatibility

The Agilent 81110A pulse/pattern generator replaces its predecessor, the Agilent 8110A. As the following table shows, the new instrument performs better. Thus, in general there should be no replacement issues. However, while care has been taken to ensure compatibility, some deviations could not be avoided. These are summarized in the subsequent table.

Improved Agilent 81110A Performance

Specification	8110A with 81103A and 81106A	81110A with 81111A	81110A with 81112A
Maximum frequency	150 MHz	165 MHz	330 MHz
PLL accuracy	0.1%	0.01%	
Timing glitches	Decade range changes	No glitches for intervals <100 ms. No glitches when consecutive values are between one-half and twice the previous value.	
Timing resolution	3 digits, 10 ps best case	3.5 digits, 5 ps best case	
Timing accuracy	5% + constant	3% + constant, 0.5% + constant after selfcal	
Timing jitter, rms	0.03/0.05% +25 ps	0.01% +15 ps	
Minimum transitions: 50 ohm into 50 ohm 1kohm into 50 ohm Channel add, 50/50 Channel add, 1k/50	 2.5 ns 7.5 ns typ 2.5/7.5 ns typ 30 ns typ	 2ns 5 ns typ 2 ns/5 ns typ 20 ns typ	 800 ps N/A N/A N/A
Output voltage window 1 kohm into 50 ohm	 +/- 19 V	 +/- 20 V	 -2.1 V/+3.8 V
Channel-add source	48 ohm	50 ohm	N/A
Min ext trigger width	3.3 ns	1.6 ns	
Propagation times: Trig out -> channel out Clk in -> Trig out Ext in -> Trig out	 34 ns typ 22 ns typ 18.5 ns typ	 14 ns typ. 12 ns typ 12 ns typ	 10 ns typ. 12 ns typ 12 ns typ
Min ext trig width	3.3 ns	1.6 ns	
Memory depth	4 k	16 k	

Important Differences

Specification	8110A with 81103A and 81106A	81110A with 81111A	81110A with 81112A
Max ext voltage	+/-25 V	+/-24 V	
Deskew	81107A	No	
Depth (front to rear)	17.5"	20.5" (but height and width identical)	
HP-IB programming time: One parameter Recall setting 4k pattern transfer 16 k pattern transfer	 5 to 60 ms <250 ms 70 ms N/A	 30 ms typ 250 ms typ 600 ms typ	