

Agilent Pulse Pattern Generators – Selection Guide

Frequency	50 MHz	80 MHz	120 MHz	165 MHz	330 MHz	330 MHz	400 MHz	660 MHz	3.35 GHz	7/12.5 Gb/s
Mainframe Model + Interface	81101A ✨	81104A ✨ + 81105A	81150A (001/002)	81110A + 81111A	81110A + 81112A	81160A (001/002)	81130A + 81131A	81130A + 81132A	81133A (81134A)	N4903B G07/G13
US Price (DDP) valid April 1st 2012 (2 Channel Version)	\$ 10.610	\$ 12.342 (\$ 17.289)	\$ 10.649 (\$ 15.700)	\$ 17.249 (\$ 23.652)	\$ 17.249 (\$ 23.652)	\$ 17.738 (\$ 20.887)	\$ 20.214 (\$ 24.679)	\$ 21.632 (\$ 27.515)	\$ 58.467 (\$ 76.799)	\$ 113.185 (\$ 134.408)
Number of Channels	1	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2	1
Amplitude (Vpp/50 Ohm)	100mV-10V		50mV-10V	100mV-10V	100mV-3.8V	50mV-5V	100mV-3.8V	100mV-2.5V	50mV-2V	0.1-1.8V
Transition Time (10/90)	3ns-200ms		2.5ns-1000s	2ns-200s	0.8ns or 1.6ns	1ns-1000s	0.8ns or 1.6ns	550ps typ.	< 90ps	< 25ps
Differential Out			Yes		Yes					
Triggerable	yes								Limited	Yes
PRBS (2n-1)		n = 7...14	n = 7...31	n = 7...14		n = 7...31	n = 7...15		n = 5...31	
Pattern Memory		16 kBit/Ch	Arb: 512kpts Pat: 16MBit	16 kBit/Channel		Arb: 256kpts Pat: 4MBit	64 kBit/Channel		12 Mbit/ch	32 MBit
Segm. Looping							4 Segments, 1 Level			4 Segments
Jitter Injection			Modulation			Modulation			Ctrl Delay Input	
LVDS Levels					Yes		Yes		Yes, Predefined	
Remote Control Interf.	GP-IB (IEEE 488.2)		GP-IB , LAN, USB	GP-IB (IEEE 488.2)		GP-IB , LAN, USB	GP-IB (IEEE 488.2)		GP-IB , LAN	GP-IB , LAN, USB
Remote Programming (Integration Info)	SCPI 1992.0, NI LabView		SCPI 1992.0, IVI-COM NI LabView Matlab Ag Wavef. Builder Pro	SCPI 1992.0, NI LabView		SCPI 1997.0, IVI-COM, NI LabView, Matlab, Ag. Wavef. Builder Pro	SCPI 1992.0,		SCPI 1992.0, IVI-COM NI LabView	SCPI 1992.0, IVI-COM
Notes	Complem. Function Generator: 33210A : 10 MHz Fct./Arb. 33220A: 20 MHz Fct./Arb. 33250A: 50 MHz Fct./Arb.				Compl. Multi-Ch. PatternGen ParBERT 81250A Series			Compl. Multi-Channel Pattern Generator: ParBERT 81250A Series		
✨ These products will soon be discontinued. Last order date: 11-30-2012			Pulse-, Pattern-, Fct.-, Arb.- Gen., Noise Source #PAT			Pulse-, Pattern-, Fct.-, Arb.- Gen., Noise Source #330,#660				Upgrade to Full BERT incl. Jitter
	Internal Channel-Add (Analog)						Internal Channel-Add (Digital)			



81150A Pulse Function Arbitrary Noise Generator



81160A Pulse Function Arbitrary Noise Generator



81110A Pulse Pattern Generator



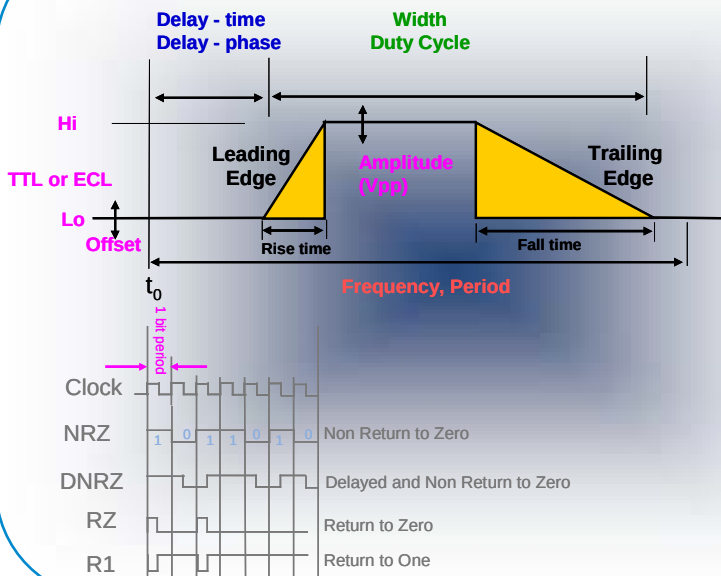
81134A Pulse Pattern Generator



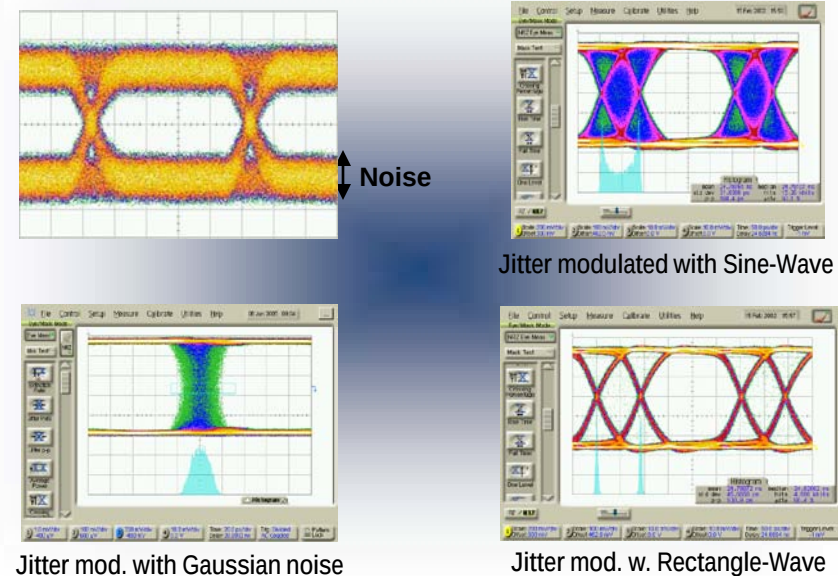
N4903B J-BERT Generator

Pulse and Data Generator Basics

Definitions on pulse & data shapes



Eye-Diagrams on distorted signals with noise and jitter



Choose the right Agilent oscilloscope to get the most out of your stimulus!

Pulse Pattern Generators		81104A	81110A	81110A	81130A	81130A	81133A	N4903A
		+81105A	+81111A	+81112A	+81131A	+81132A	81134A	G07/G13
		81150A		81160A				
		80 MHz	165 MHz	330MHz	400MHz	660MHz	3.35 GHz	7/13Gb/s
DCA-J	Bandwidth	80 GHz						
DSO/DSA 91000 Series	10 - 13 GHz							
DSO/DSA 90000 Series	4 - 8 GHz							
DSO/DSA 90254A	2.5 GHz							
D/MSO 6/710xA, 8/9104A	1 GHz							
D/MSO 8064A, 9064A	600 MHz							
D/MSO 505xA, 605xA, 705xA	5/600 MHz							
D/MSO 603xA, 703xA	300 MHz							
DSO 3000, D/MSO 601xA	< = 200 MHz							
D/MSO 501xA	100MHz							
		fit best fit fit						

Related literature

Pub Number	Name
5980-0489E	Pulse Pattern and Data Generators for Digital and Analog Testing
5980-1215E	Agilent 81100 Family of Pulse/ Pattern Generators; Techn. Specs
5989-6433EN	81150A and 81160A Pulse Function Arbitrary Noise Generators; Data Sheet
5988-5549EN	81133A and 81134A 3.35 GHz Pulse Pattern Generator; Data Sheet
5989-2899EN	J-BERT N4903B Data Sheet
<u>Application focused:</u>	
5989-7860EN	Agilent 81150A and 81160A Pulse Function Arbitrary Noise Generator Applications
5990-8822EN	81150A and 81160A Arbitrary Bit Shape Pattern Generator
5990-9346EN	Stressing 1 GbE Receivers on the Physical Layer
5990-3160EN	Physical Layer Receiver Test for FlexRay/CAN Devices
5989-9826EN	Agilent 15431A Filter Set for 81150A
5990-3233EN	PCI Express ® Revision 2.0 Receiver Testing with J-BERT N4903A and 81150A Pulse Function Arbitrary Noise Generator
5989-9364EN	Agilent 81150A Precision Digital Noise
5988-6219EN	USB 2.0 Pre-Compliance Testing
5988-7432EN	PCI Express R _x Design Validation
5989-8094EN	Flexible Signal Conditioning with the Help of the 81134A
5989-4709EN	Simulating Distorted Signals for Tolerance Testing with 81110A