

Agilent

Clock Synthesizer 13.5 GHz (TG1C1-A)

Data Sheet



Applications

- Designed to extend the operation of the N4962A serial BERT 12.5 Gb/s (TG1B1-A) for continuous operation from 500 Mbps to 13.5 Gbps.
- XAUI BERT tester using four N4962A serial BERT 12.5 Gb/s (TG1B1-A) and the N4963A clock synthesizer 13.5 GHz (TG1C1-A) to enable a synchronous four lane BER tester at a fraction of the cost from competitors.
- Stand alone lab clock source for general purpose use.

Features

- Small compact size
- Wide tune range 500 MHz to 13.5 GHz square wave generator
- Jitter injection capability from 1 Hz to 100 MHz
- Six pairs of differential outputs, 3 pairs (6 single-ended connectors) jittered and 3 pairs (6 single-ended connectors) unjittered
- One set of differential outputs offer independent delay adjustment relative to the other outputs
- Wide range of amplitude (600 to 2000 mV)
- DC offset adjustable for driving different logic types (-2.0 to 2.0 V)
- All GPIB controllable for automated use
- Very low jitter typically < 1 ps rms



Key parameters

	Units	Typical min	Typical max
Outputs			
Frequency of operation	GHz	0.500	13.5
Rise/Fall times 20/80	pS	–	40
Jitter (TJ)			
• 0.5 to 2.5 GHz	pS	–	2.0
• 2.5 to 13.5 GHz	pS	–	1.0
Amplitude range (single ended front outputs)			
• 0.5 to 7.5 GHz	V	0.6	2.0
• 7.5 to 13.5 GHz	V	0.6	1.5
Offset range (V cm)	V	–2.0	2.0
Output voltage step size (V amp & V cm)	mV	10	–
Reference phase adjust (Clock > 500 MHz)	Degrees	0	360
Phase step size	Degrees	2	–
Amplitude range (single ended rear outputs AC coupled)			
• 0.5 to 7.5 GHz	V	0.2	0.8
• 7.5 to 13.5 GHz	V	0.2	0.6
Source impedance return loss (10 GHz)	dB	–10	–
Jitter injection N4963A-101			
External/Internal jitter generator frequency	MHz	0	100
Maximum phase deviation for jitter			
• 0 to 75 kHz	UI	–	32
• 75 kHz to 2.4 MHz	UI	–	16 to 1.0
• 2.4 MHz to 100 MHz	UI	–	0.6
Timebase			
Stability (internal 20 MHz oscillator)	ppm	3.0	–
Aging @ 40 °C	ppm/yr	1.0	–
External input (10 MHz ±)	ppm	-10	+10
External input levels (1 kΩ)	mVpp	500	2000
Reference output 10 MHz sine into 50 Ω	mVpp	500	–
Temperature range	Deg C	10	55
Weight	lbs	–	7.5
Dimension	inches	–	10 x 10 x 2.5

Key parameters (Continued)

Description	
General and mechanical parameters	
Operating temperature	+10 °C to +40 °C
Storage temperature	-40 °C to +70 °C
Power requirements	42 W external AC adaptor (included) 85 to 265 V AC, 47 to 63 Hz
Physical dimensions	Width: 254 mm, Height: 63.5 mm, Depth: 254 mm
Weight	7.5 lbs
Regulatory standards	
EMC	
Complies with European EMC Directive 2004/108/EC	IEC/EN 61326-1 CISPR Pub 11 Group 1, class A AS/NZS CISPR 11 ICES/NMB-001 This ISM device complies with Canadian ICES-001. Cet appareil ISM est conforme a la norme NMB-001 du Canada.

Rear view of N4963A clock synthesizer 13.5 GHz (TG1C1-A)



Figure 1. Rear view

Block diagram

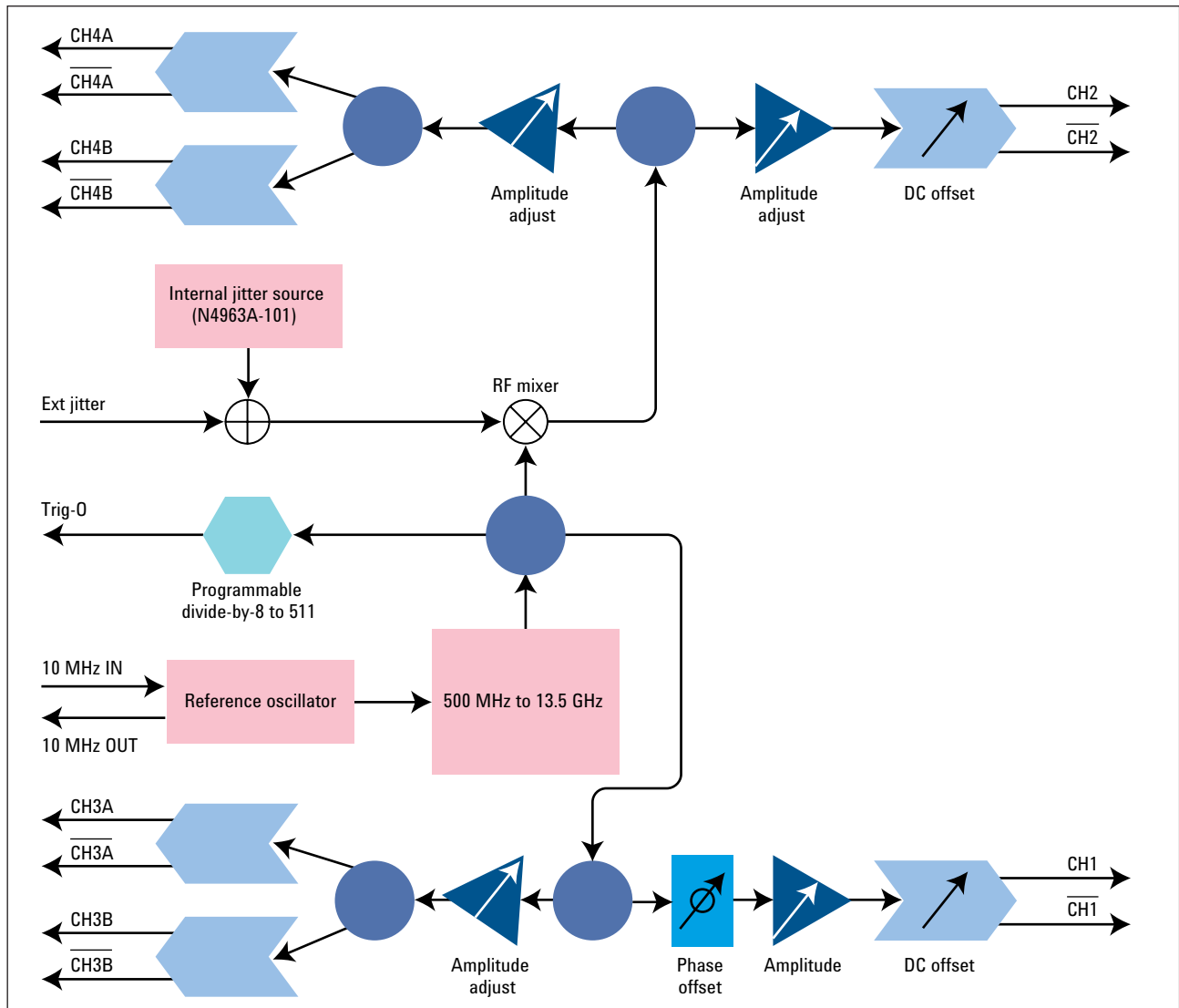


Figure 2. Block diagram

Ordering Information

N4963A clock synthesizer 13.5 GHz (TG1C1-A) (500 MHz to 13.5 GHz), includes standard 1-year warranty

Warranty and calibration service

For warranty and calibration service information, contact your local authorized Agilent distributor or Agilent sales department.



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