		Performance report for SiT9366, 25 MHz, HCSL		
S Time	Type:	Performance report	Rev:	1.0
	Orig:		Date:	April 16, 2018

Performance report for SiT9366 - 25 MHz, HCSL

Conditions:

- Frequency 25 MHz
- VDD: 2.5 V, 3.3 V
- Room temperature
- Termination:
 - $\circ~$ 30 Ω series and 50 Ω to GND.

Equipment:

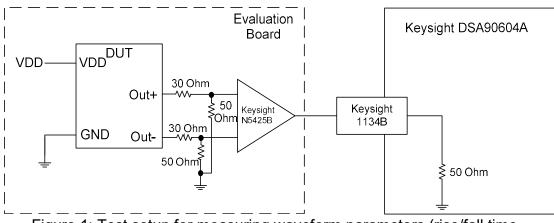
Model	Measurement / Purpose
Keysight DSA90604A (6 GHz,	Period jitter, differential voltage swing, rise/fall
20 Gsps)	time, duty cycle
Keysight 5052B Signal Source	Phase noise, integrated phase jitter
Analyzer	
Keysight 34980A	Power supply current
Keysight E3631A	Power supply
Keysight 53230A	Frequency

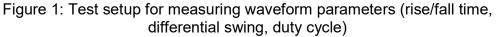
Test setup:

For waveform parameters measurement (rise/fall time, differential swing, duty cycle), both DUT outputs are terminated with 30 Ω series and 50 Ω to GND. Output signals are measured using Keysight 1134B active probe with Keysight N5425B probe head. All measurements are applied to the differential waveform. Figure 1 shows test setup diagram for waveform parameters measurement.

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For period jitter measurement output is terminated with 30 Ω series and 50 Ω to GND at the input of hi-speed comparator (ADCMP581). AC coupled comparator's output is connected to oscilloscope channel. Figure 2 shows test setup diagram for period jitter measurement.

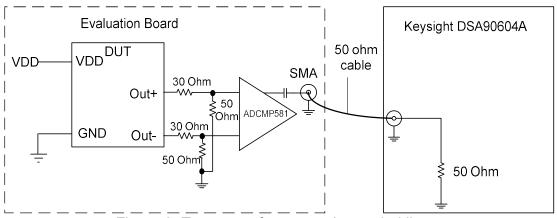


Figure 2: Test setup for measuring period jitter

For phase noise measurements, differential signal is converted to single-ended using impedance matching transformer. Transformer's output is connected to measurement instrument. Output is also terminated with 30 Ω series at the source side. Figure 3 shows test setup diagram for phase noise measurement.

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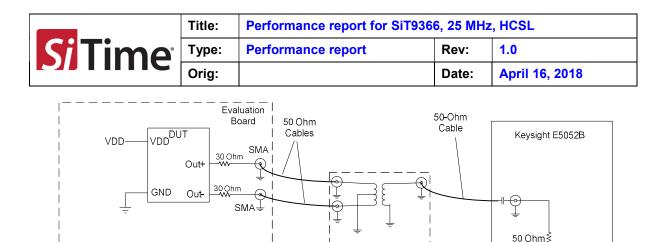


Figure 3: Test setup for measuring phase noise.

For IDD measurement device output is floating. For frequency measurement differential-to-single-ended converter is used.

Data:

- Phase noise
- Integrated phase jitter
- RMS period jitter
- Peak-to-peak period jitter
- Rise/fall time
- Duty cycle
- Differential output swing
- IDD
- Frequency stability over temperature

Parameter		Voltage	
		2.5 V	3.3 V
Integrated Phase jitter (1.875 MHz - 5 MHz)	fs, rms	88	86
Integrated Phase jitter (12 kHz - 5 MHz)	fs, rms	209	207
Period jitter	ps, rms	0.98	0.96
Period jitter (10,000 cycles)	ps, pk-pk	7.62	7.51
Duty cycle	%	50.0	50.0
Rise time (20% - 80%)	ps	374	370
Fall time (80% - 20%)	ps	378	375
Differential voltage swing	V	1.33	1.40
Current consumption (no load, output enabled)	mA	74.3	75.0
Current consumption (no load, output disabled)	mA	51.4	51.9

Table 1: Summary performance data

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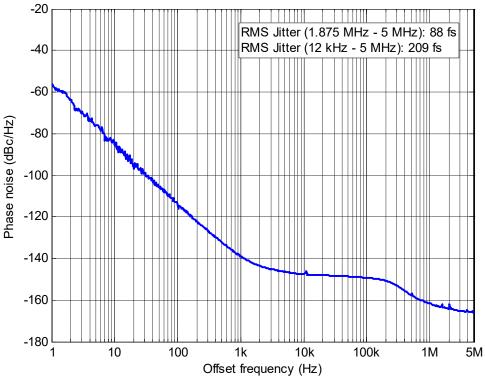
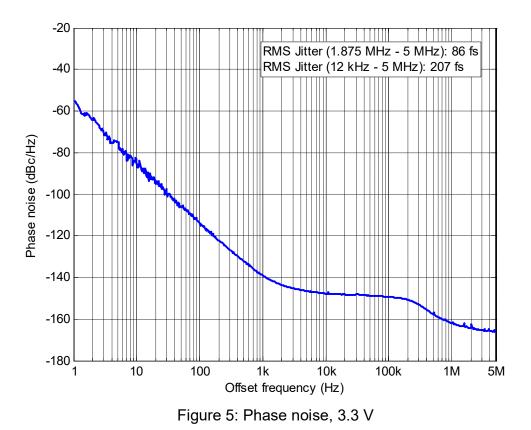


Figure 4: Phase noise, 2.5 V

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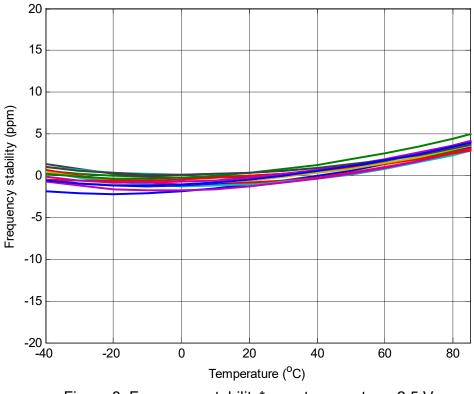
Figure 6: Output waveform, 2.5 V

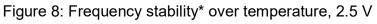
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Results (Mea	asure All Edges)								
Measurement	Current	Mean	Min 50.0 %	Max	Range (Max-Mi				
Duty cycle(4) V amptd(4)	50.0 % 1.39952 V	50.0 % 1.39960 V	50.0 % 1.39952 V	50.0 % 1.40795 V	20 m% 8.43 mV	3 m% 798 µV	444 222		
Fall time(4)	376.54 ps	374.784 ps	369.44 ps	385.18 ps	15.73 ps	1.654 ps	444		
Rise time(4)	371.45 ps	369.875 ps	361.96 ps	374.92 ps	12.97 ps	1.554 ps	666		

Figure 7: Output waveform, 3.3 V

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*SiT9366 frequency stability is independent of output frequency.

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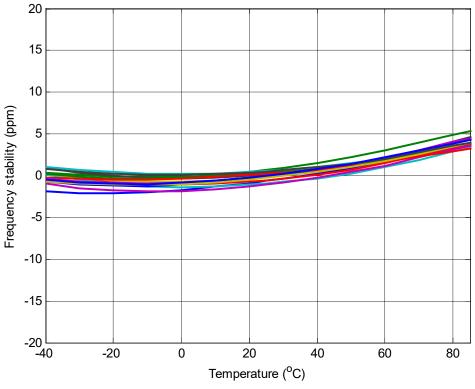


Figure 9: Frequency stability over temperature, 3.3 V

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