	Title:	Performance report for SiT3372, 160 MHz, LVDS		
	Type:	Performance report	Rev:	1.2
	Orig:		Date:	September 12, 2018

Performance report for SiT3372 - 160 MHz, LVDS

This performance report contains the following data:

- Phase noise
- Random phase jitter
- Output waveforms
- Pull range linearity
- Frequency stability over temperature
- Period jitter
- Duty cycle
- Rise/Fall time
- Amplitude
- Current consumption



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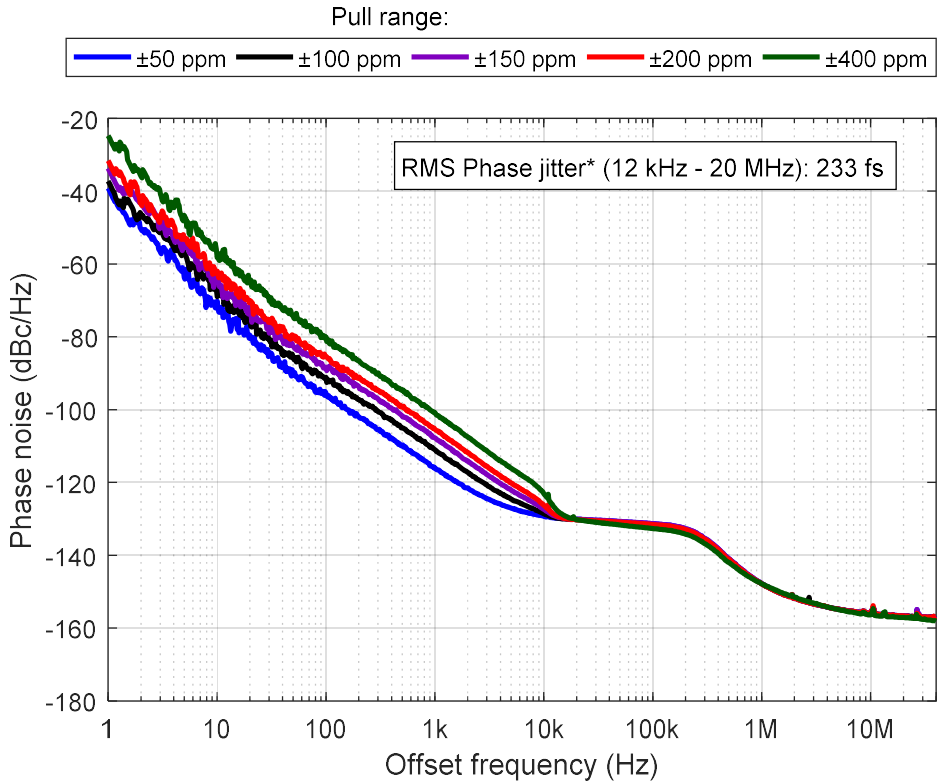


Figure 1: Phase noise, 3.3 V

**Integrated phase jitter value applies for ±50 ppm to ±400 ppm pull ranges*

Table 1: Phase noise

Phase noise dBc/Hz					
Frequency offset (Hz)	Pull range (ppm)				
	±50	±100	±150	±200	±400
1	-39.2	-37.2	-33.8	-31.6	-24.7
10	-70.2	-69.0	-62.4	-62.0	-58.2
100	-95.5	-91.1	-88.3	-85.4	-80.1
1 K	-116.0	-111.0	-107.8	-105.4	-100.8
10 K	-129.3	-128.6	-127.4	-126.3	-123.1
100 K	-131.3	-131.6	-131.3	-131.6	-132.7
1 M	-147.8	-147.8	-147.7	-147.9	-147.8
10 M	-156.0	-156.0	-156.0	-156.0	-156.4
40 M	-156.7	-156.8	-156.8	-156.9	-158.0


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	Orig:		Date:	September 12, 2018

Table 2: Integrated Phase jitter

Parameter	Units	Pull range (ppm)
		±50 to ±400
Integrated Phase jitter (1.875 MHz - 20 MHz)	fs, rms	100
Integrated Phase jitter (12 kHz - 20 MHz)	fs, rms	233

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Figure 2: Output waveform, 2.5 V



Figure 3: Output waveform, 3.3 V

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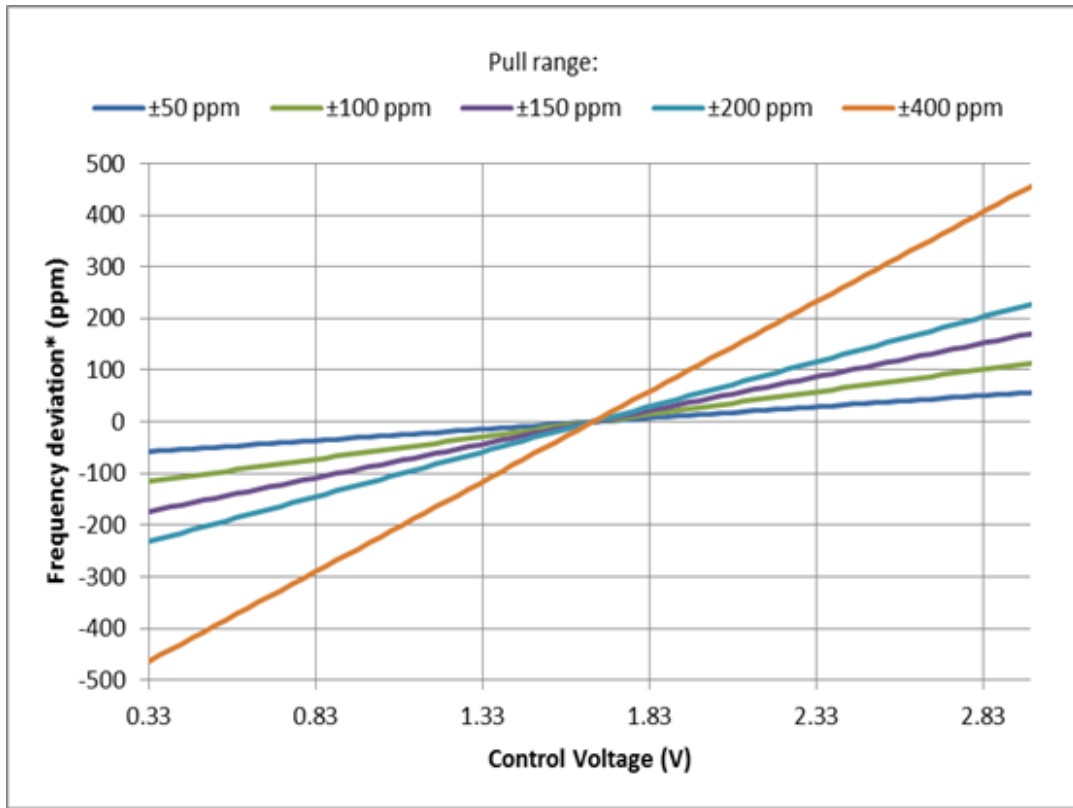


Figure 4: Frequency pull characteristic

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	Orig:		Date:	September 12, 2018

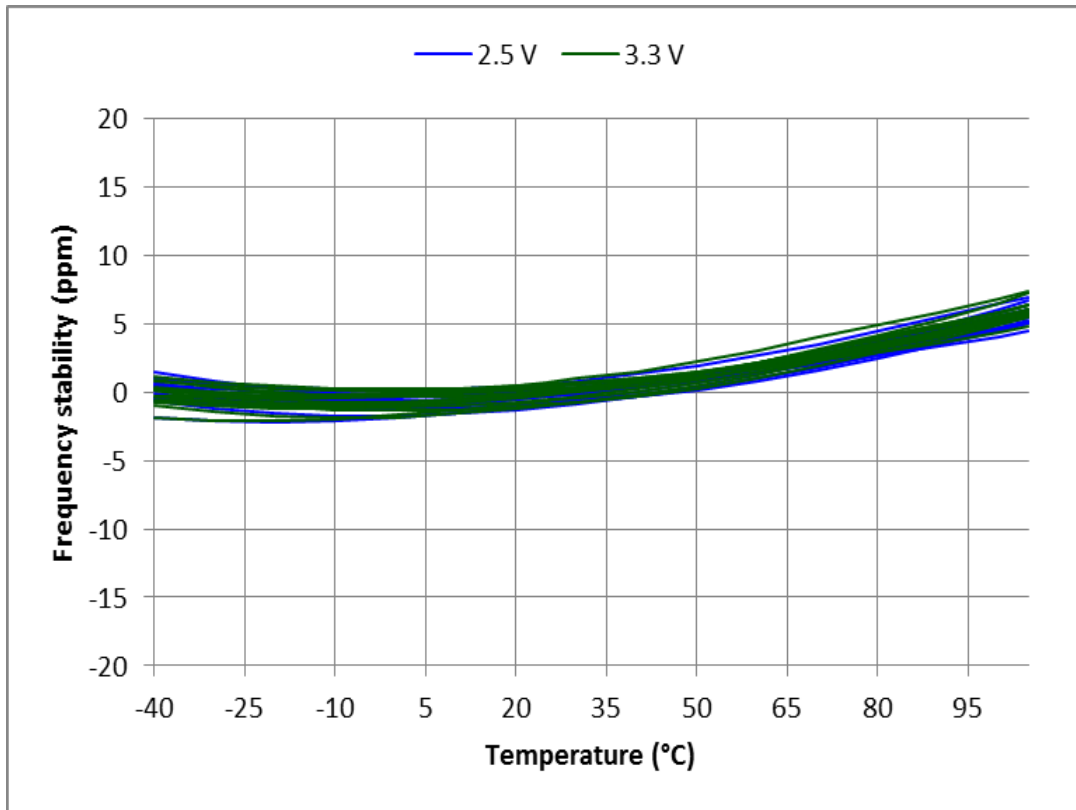


Figure 5: Frequency stability* over temperature, 2.5 V – 3.3 V, 30 devices

*SiT3372 frequency stability is independent of output frequency.

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	Type:	Performance report	Rev:	1.2
	Orig:		Date:	September 12, 2018

Table 3: Summary performance data

Parameter	Units	Voltage	
		2.5 V	3.3 V
Period jitter	ps, rms	0.70	0.76
Period jitter (simple size 10,000 cycles)	ps, pk-pk	5.41	5.38
Duty cycle	%	49.9	49.9
Rise time (20% - 80%)	ps	399	407
Fall time (80% - 20%)	ps	392	403
Differential voltage swing	V	0.82	0.84
Current consumption (no load, output enabled)	mA	75.6	75.7
Current consumption (no load, output disabled)	mA	57.9	57.9

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	Type:	Performance report	Rev:	1.2
	Orig:		Date:	September 12, 2018


Test description

Conditions:

- Frequency: 160 MHz
- VDD: 2.5 V, 3.3 V
- Pull range: ± 50 ppm, ± 100 ppm, ± 150 ppm, ± 200 ppm, ± 400 ppm
- Temperature: 25 °C

Equipment:

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

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	Orig:		Date:	September 12, 2018

Setup

Waveform

For waveform parameters measurement (rise/fall time, differential swing, duty cycle), both DUT outputs are terminated with 100 Ω differential. Output signals are measured using Keysight 1134B active probe with Keysight N5425B probe head. All measurements are applied to the differential waveform. Figure 6 shows test setup diagram for waveform parameters measurement.

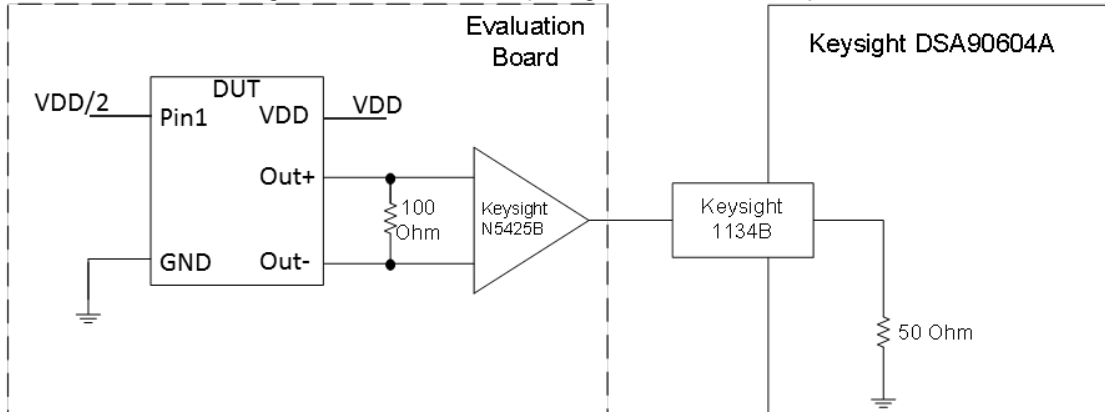


Figure 6. Test setup for measuring waveform parameters (rise/fall time, differential swing, duty cycle)

Period Jitter

For period jitter measurement outputs are connected through AC-coupling capacitors to the oscilloscope channels. Signals are subtracted inside the oscilloscope. All measurements applied to differential waveform. Figure 7 shows test setup diagram for period jitter measurement.

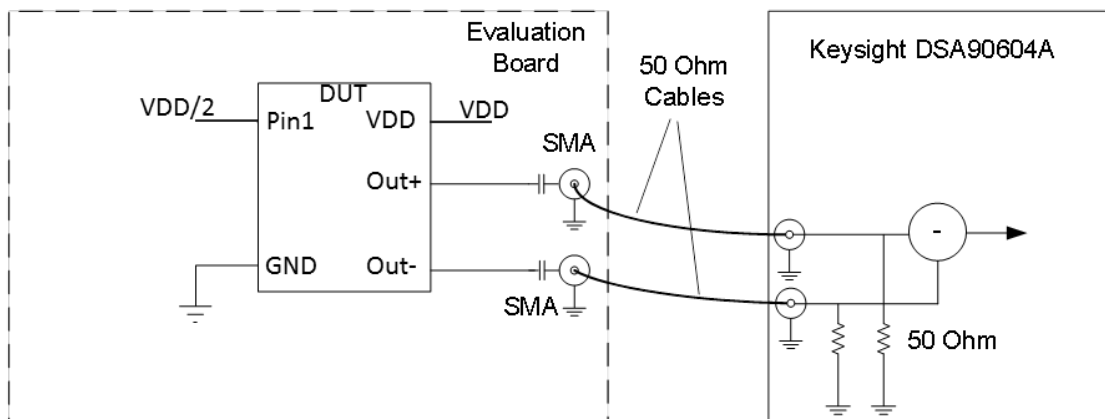



Figure 7. Test setup for measuring period jitter

	Title:	Performance report for SiT3372, 160 MHz, LVDS		
	Type:	Performance report	Rev:	1.2
	Orig:		Date:	September 12, 2018

Phase noise

For phase noise measurements, differential signal is converted to single-ended using impedance matching transformer. Transformer's output is connected to measurement instrument. Figure 8 shows test setup diagram for phase noise measurement.

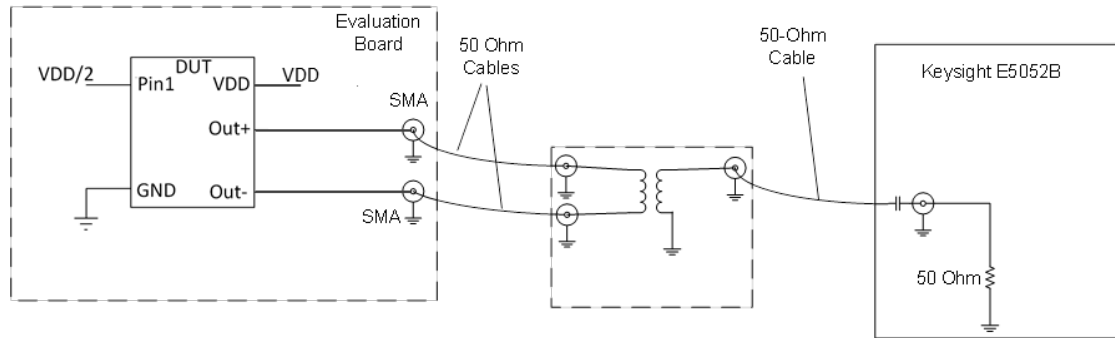


Figure 8. Test setup for measuring phase noise.

Current consumption

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