	Title:	Performance report for SiT3373, 320 MHz, LVPECL		
	Type:	Performance report	Rev:	1.2
	Orig:		Date:	September 07, 2018

Performance report for SiT3373 - 320 MHz, LVPECL

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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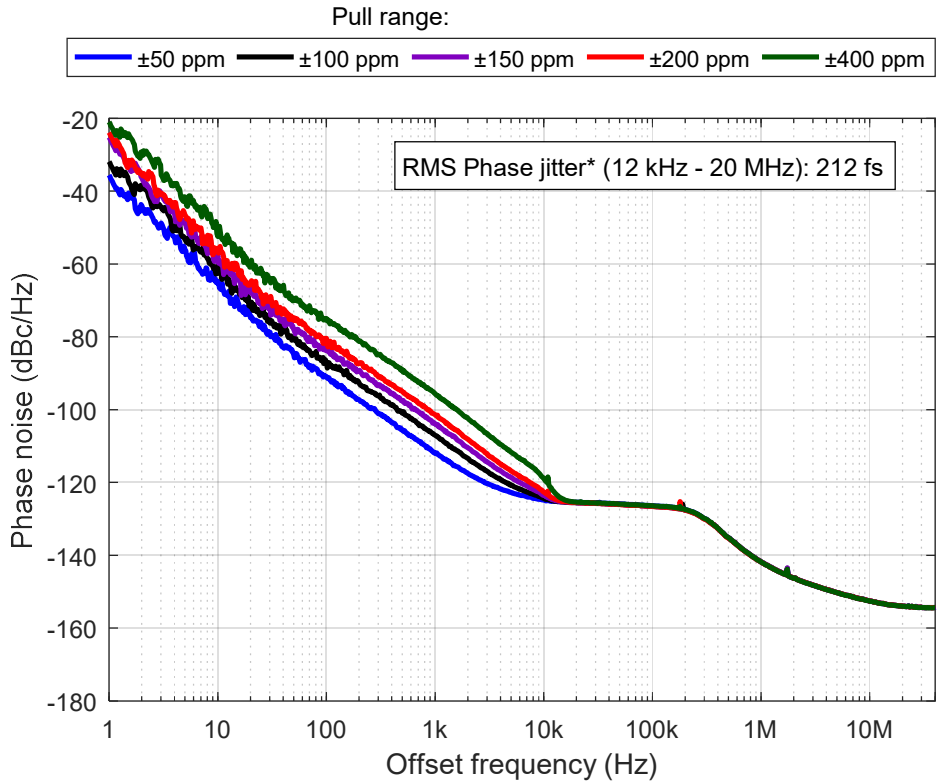


Figure 1: Phase noise, 3.3 V

**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	-35.6	-31.9	-25.2	-23.8	-21.0
10	-65.4	-60.2	-57.6	-56.1	-52.5
100	-90.8	-86.9	-83.5	-80.4	-75.0
1 K	-112.1	-107.0	-103.9	-101.4	-95.6
10 K	-124.8	-124.4	-123.5	-122.6	-119.0
100 K	-126.4	-126.6	-126.6	-126.6	-126.4
1 M	-141.9	-141.8	-141.8	-141.9	-141.8
10 M	-152.6	-152.6	-152.6	-152.6	-152.6
40 M	-154.3	-154.3	-154.3	-154.3	-154.3


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Table 2: Integrated Phase jitter

Parameter	Units	Pull range (ppm)
		±50 to ±400
Integrated Phase jitter (1.875 MHz - 20 MHz)	fs, rms	78
Integrated Phase jitter (12 kHz - 20 MHz)	fs, rms	212

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Figure 2: Output waveform, 2.5 V



Figure 3: Output waveform, 3.3 V

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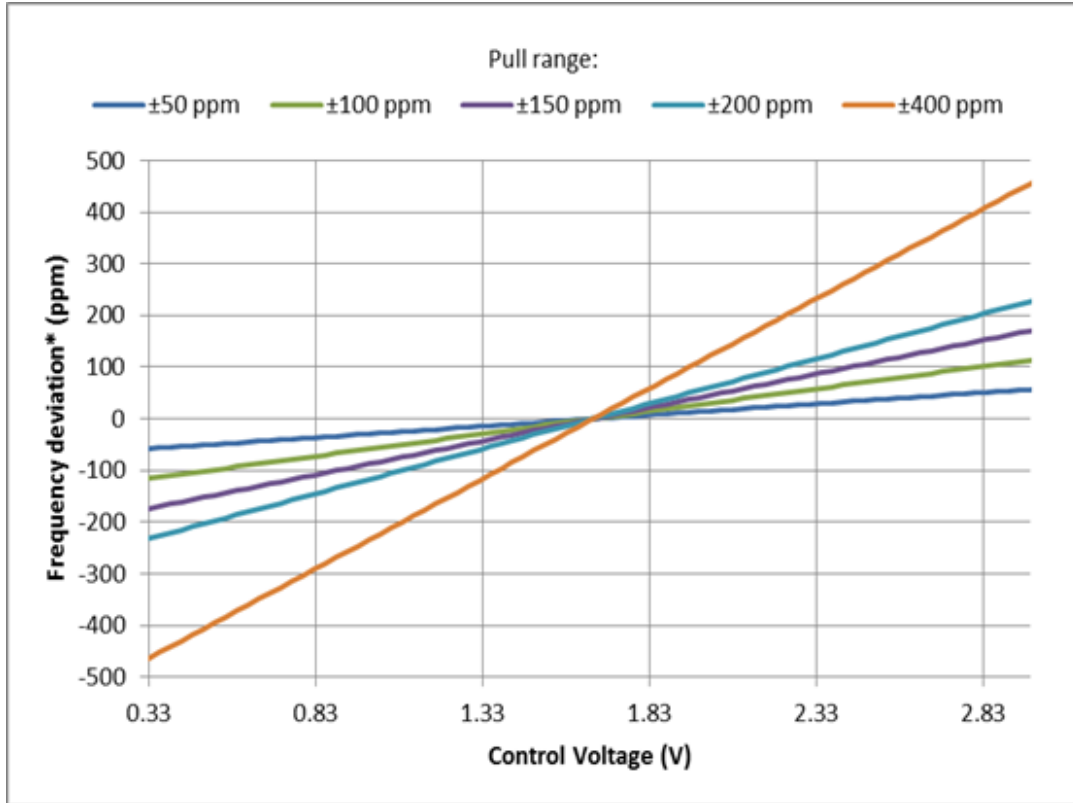


Figure 4: Frequency pull characteristic

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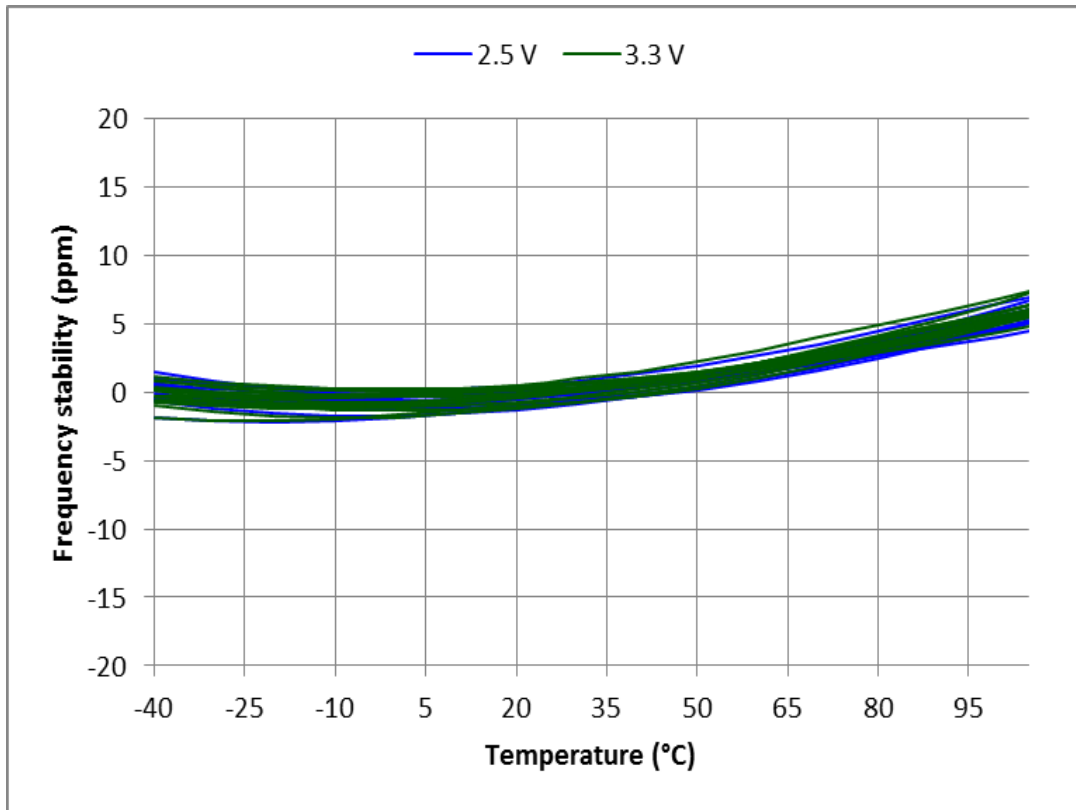


Figure 5: Frequency stability* over temperature, 2.5 V – 3.3 V, 30 devices

*SiT3373 frequency stability is independent of output frequency.

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Table 3: Summary performance data

Parameter	Units	Voltage	
		2.5 V	3.3 V
Period jitter	ps, rms	0.96	0.94
Period jitter (sample size 10,000 cycles)	ps, pk-pk	7.81	7.68
Duty cycle	%	50.3	50.3
Rise time (20% - 80%)	ps	215	206
Fall time (80% - 20%)	ps	216	205
Differential voltage swing	V	1.46	1.45
Current consumption (no load, output enabled)	mA	79.6	80.0
Current consumption (no load, output disabled)	mA	55.7	55.9

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Test description

Conditions:

- Frequency: 320 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 Gsps)	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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Setup

Waveform

For waveform parameters measurement (rise/fall time, differential swing, duty cycle), both DUT outputs are terminated with 50 Ω to VDD - 2 V. 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.

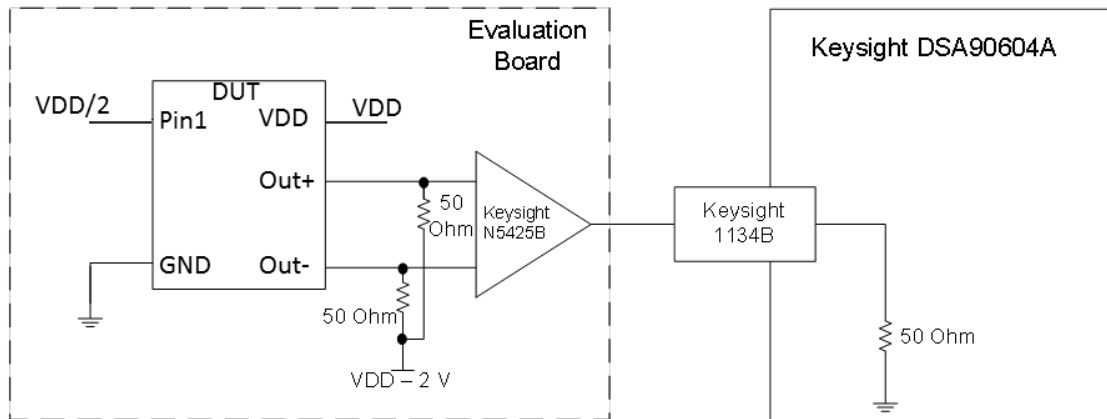


Figure 6. Test setup for measuring waveform parameters (rise/fall time, differential swing, duty cycle)

Period Jitter

For period jitter measurement output is terminated with 50 Ω to VDD - 2 V at the input of hi-speed comparator (ADCMP581). AC coupled comparator's output is connected to oscilloscope channel. Figure 7 shows test setup diagram for period jitter measurement.

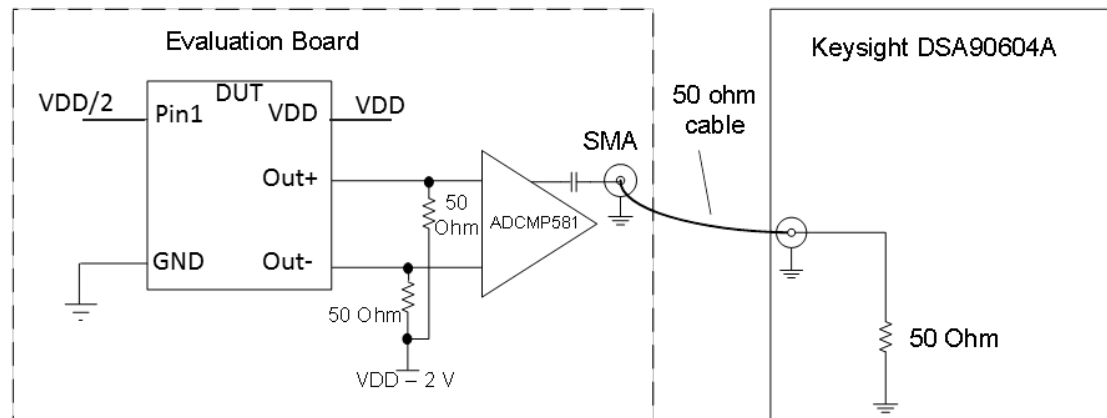



Figure 7. Test setup for measuring period jitter

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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.

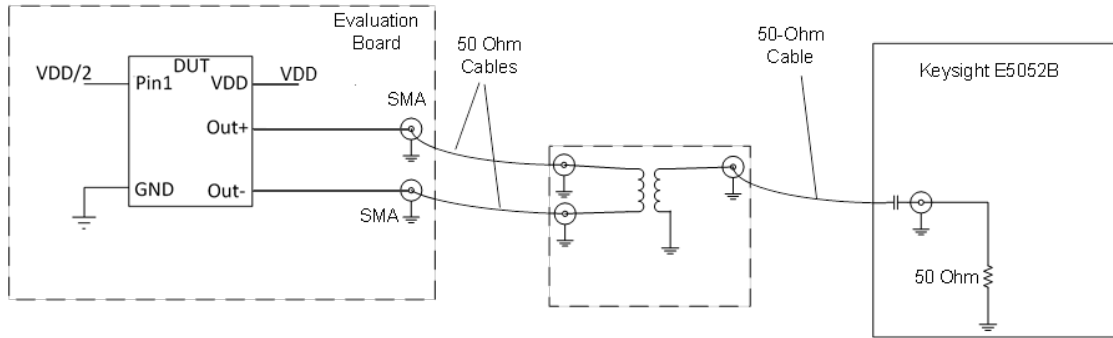


Figure 8. Test setup for measuring phase noise.

Current consumption

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

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