Performance report for SiT3372 - 81.802971 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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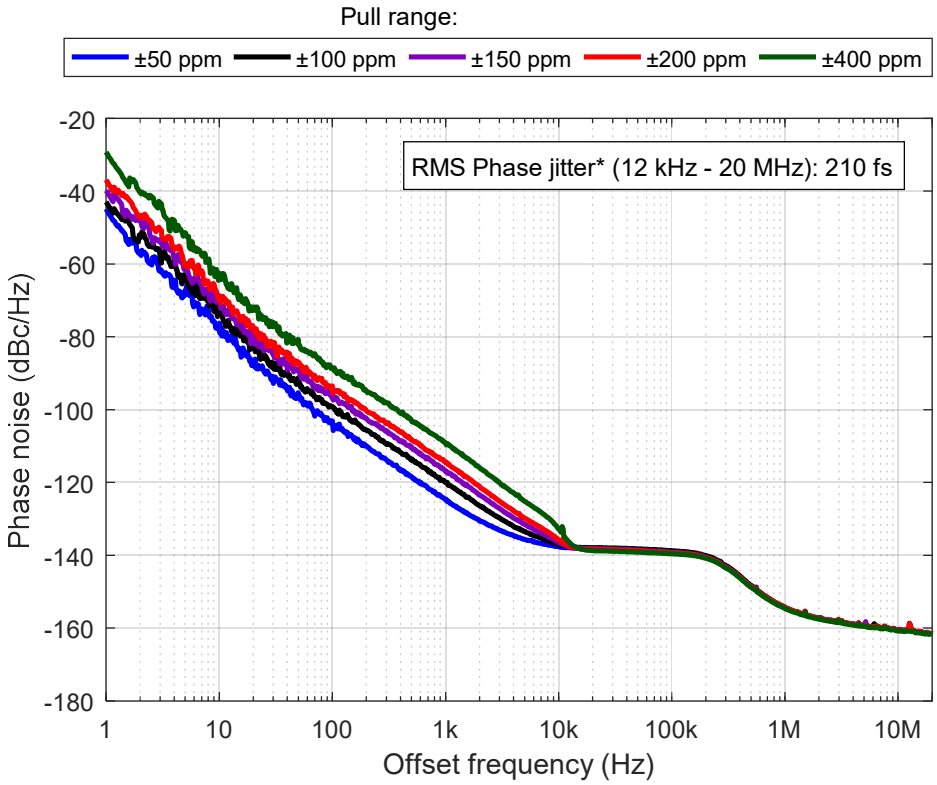

Figure 1: Phase noise, 3.3 V

**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	-44.9	-42.9	-39.8	-36.9	-29.3
10	-76.3	-73.4	-70.4	-68.7	-62.6
100	-103.1	-99.1	-96.8	-93.5	-88.7
1 K	-124.8	-119.9	-117.0	-114.4	-109.3
10 K	-137.7	-137.1	-136.5	-135.8	-132.8
100 K	-139.1	-138.8	-139.2	-139.3	-139.6
1 M	-154.4	-154.3	-154.4	-154.3	-154.6
10 M	-160.5	-160.5	-160.5	-160.6	-160.8
20 M	-161.6	-161.5	-161.5	-161.5	-161.8

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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	115
Integrated Phase jitter (12 kHz - 20 MHz)	fs, rms	210

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Figure 2: Output waveform, 2.5 V

Figure 3: Output waveform, 3.3 V

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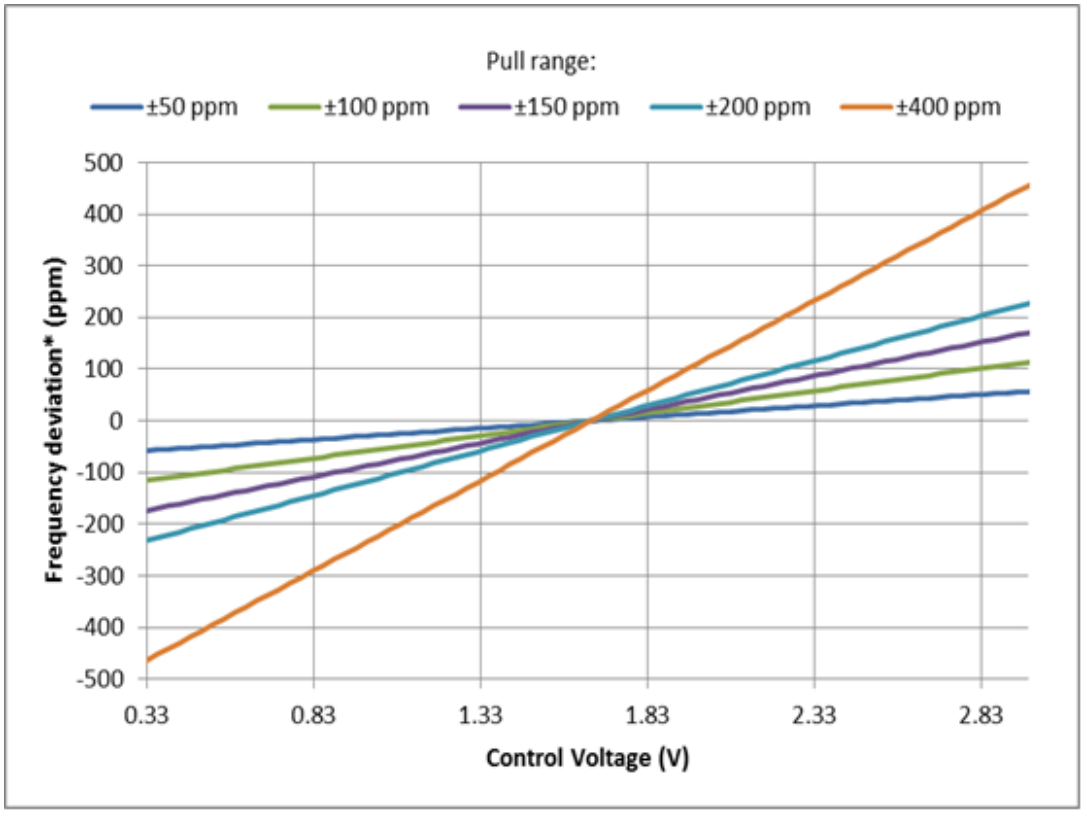

Figure 4: Frequency pull characteristic

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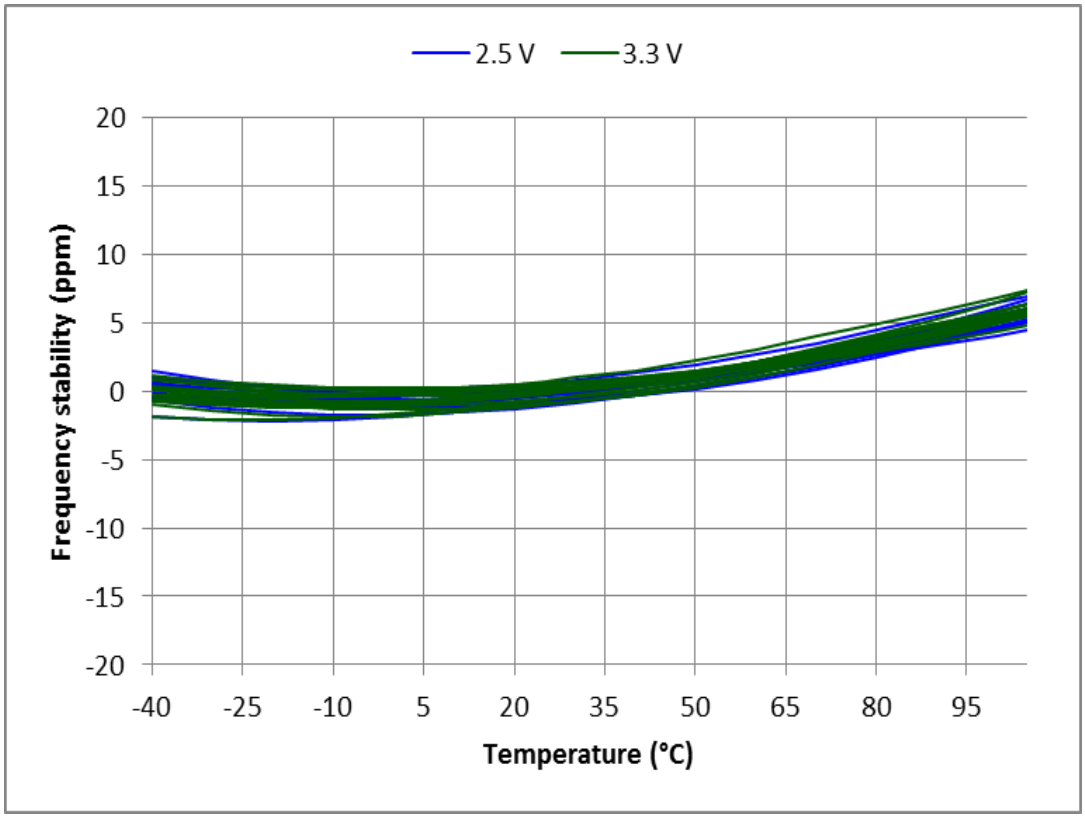

Figure 5: Frequency stability* over temperature, 2.5 V – 3.3 V, 30 devices

**SiT3372 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	0.97	0.96
Period jitter (sample size 10,000 cycles)	ps, pk-pk	7.59	7.43
Duty cycle	%	50.1	50.1
Rise time (20% - 80%)	ps	211	200
Fall time (80% - 20%)	ps	207	197
Differential voltage swing	V	1.61	1.59
Current consumption (no load, output enabled)	mA	82.3	82.7
Current consumption (no load, output disabled)	mA	56.4	56.4

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Test description

Conditions:

- Frequency: 81.802971 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.

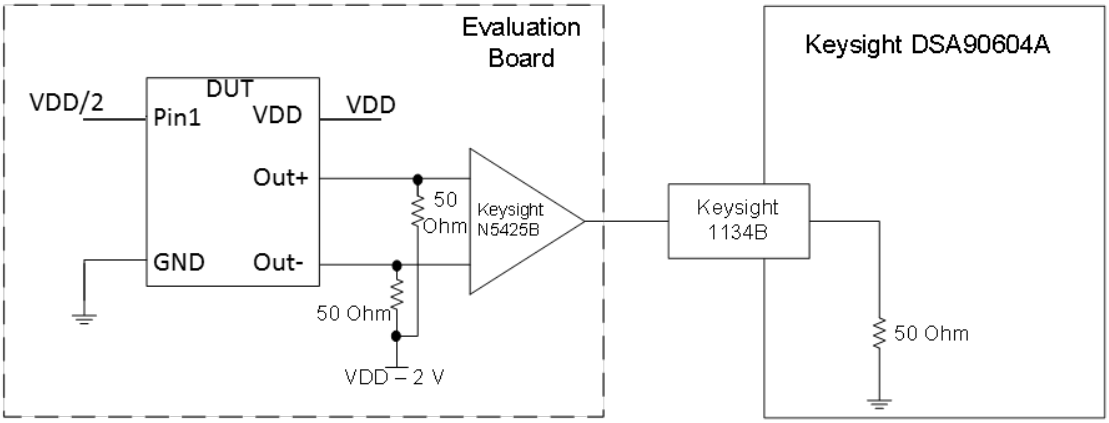

Figure 6. Test setup for measuring waveform parameters (rise/fall time, differential swing, duty cycle)

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.

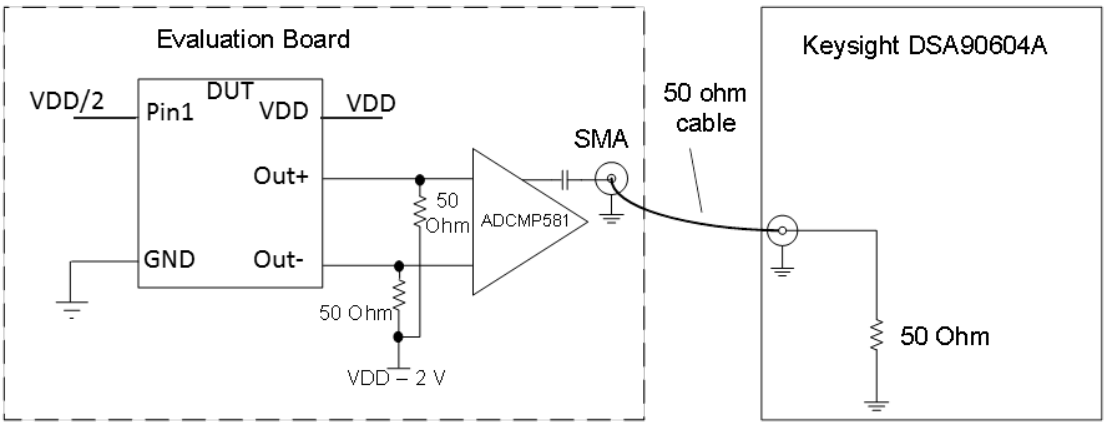

Figure 7. Test setup for measuring period jitter

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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.

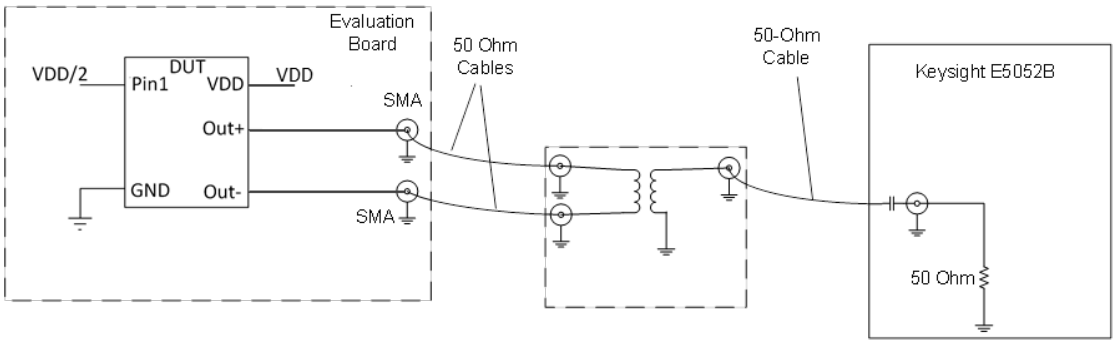

Figure 8. Test setup for measuring phase noise.

Current consumption

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

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