Performance report for SiT3372 - 102.4 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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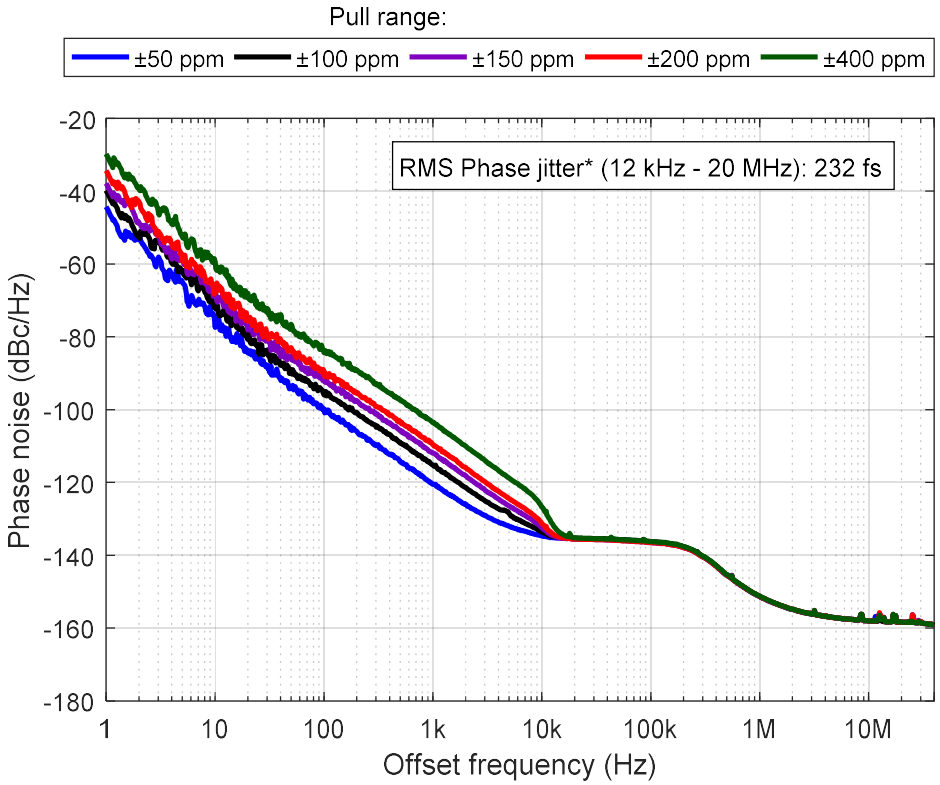

Figure 1: Phase noise, 3.3 V

**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	-44.2	-39.8	-37.9	-34.3	-29.8
10	-77.4	-71.2	-67.4	-66.6	-59.5
100	-99.8	-96.0	-91.3	-89.5	-84.4
1 K	-120.5	-115.2	-111.9	-109.7	-103.6
10 K	-134.7	-133.6	-132.4	-131.3	-126.7
100 K	-136.3	-136.3	-136.5	-136.5	-136.2
1 M	-151.4	-151.3	-151.3	-151.3	-151.2
10 M	-158.0	-158.0	-158.0	-158.0	-158.0
40 M	-159.1	-159.2	-159.1	-159.1	-159.1

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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	125
Integrated Phase jitter (12 kHz - 20 MHz)	fs, rms	232

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Figure 2: Output waveform, 2.5 V

Figure 3: Output waveform, 3.3 V

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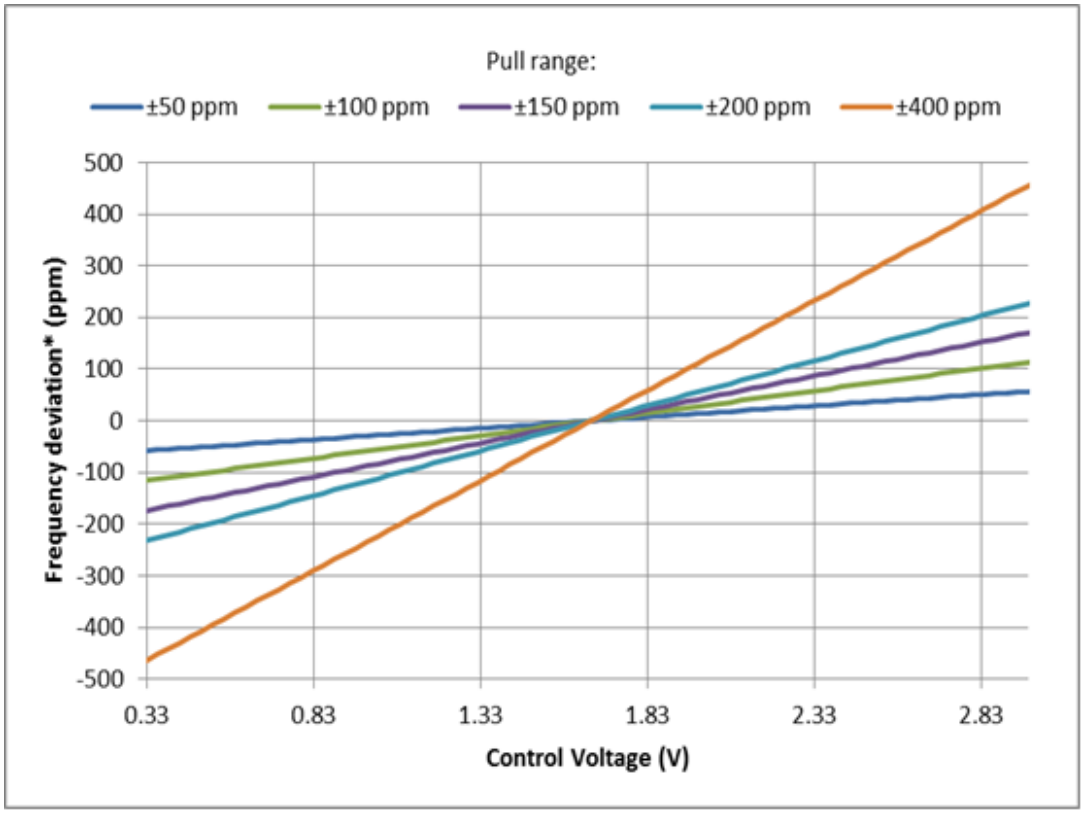

Figure 4: Frequency pull characteristic

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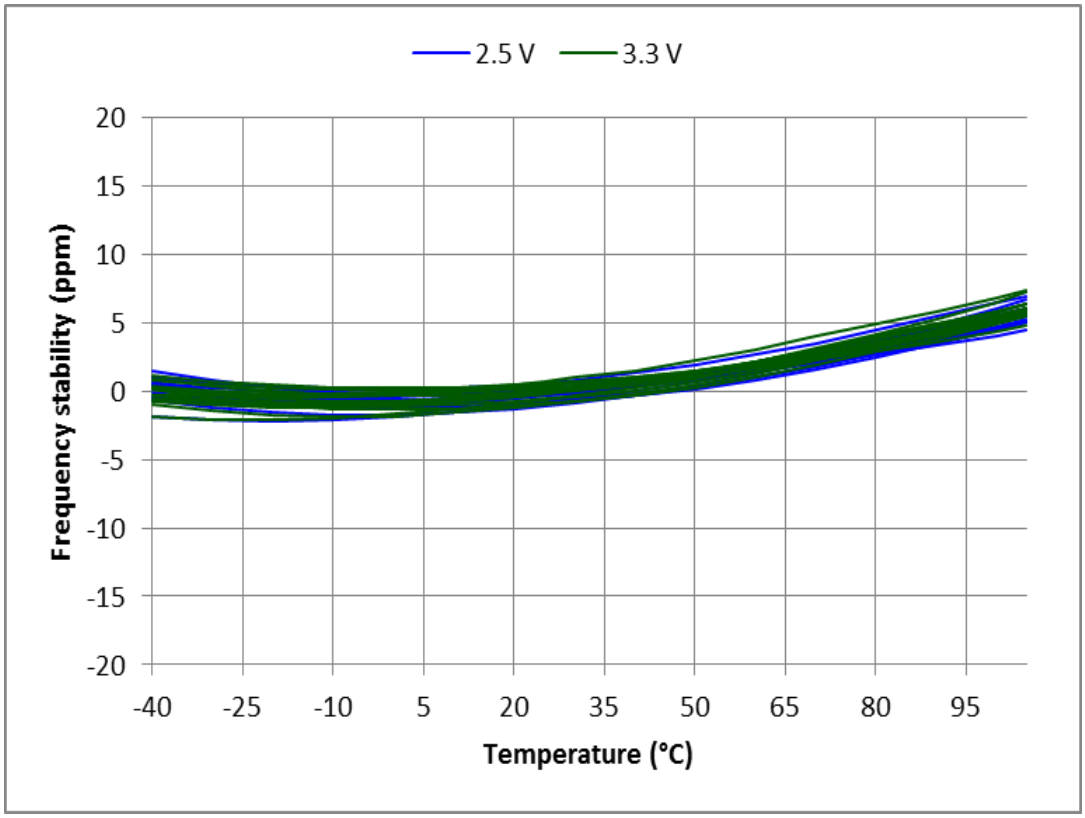

Figure 5: Frequency stability* over temperature, 2.5 V – 3.3 V, 30 devices

**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	0.77	0.79
Period jitter (sample size 10,000 cycles)	ps, pk-pk	5.81	5.99
Duty cycle	%	50.2	50.0
Rise time (20% - 80%)	ps	378	340
Fall time (80% - 20%)	ps	343	328
Differential voltage swing	V	0.74	0.70
Current consumption (no load, output enabled)	mA	74.5	74.7
Current consumption (no load, output disabled)	mA	57.7	57.8

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Test description

Conditions:

- Frequency: 102.4 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 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.

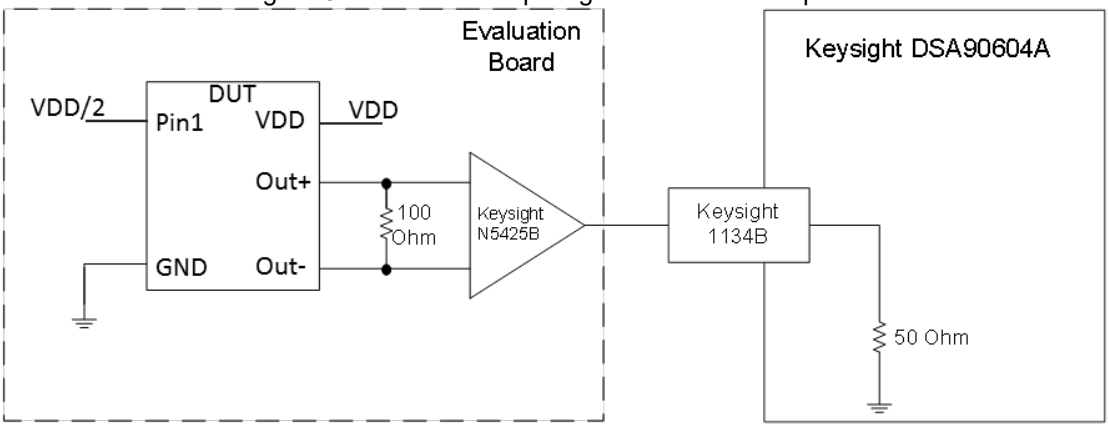

Figure 6. Test setup for measuring waveform parameters (rise/fall time, differential swing, duty cycle)

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.

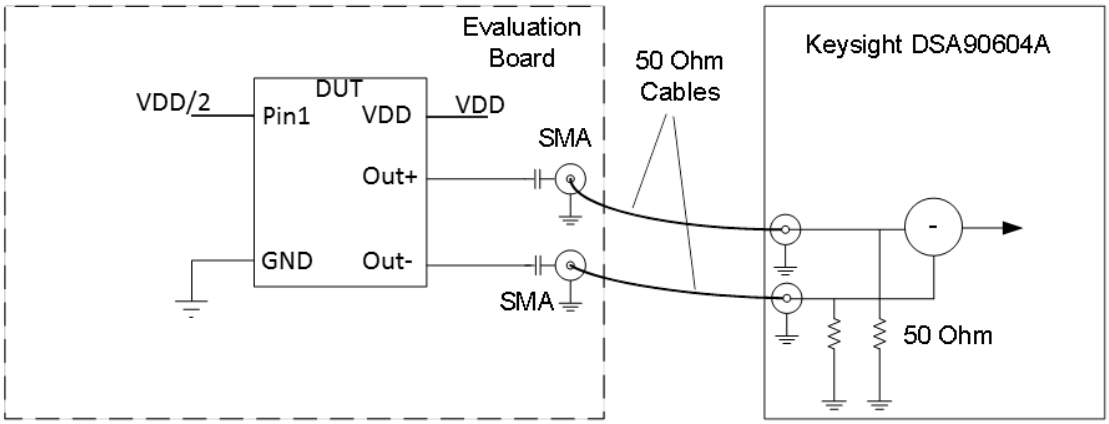

Figure 7. Test setup for measuring period jitter

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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.

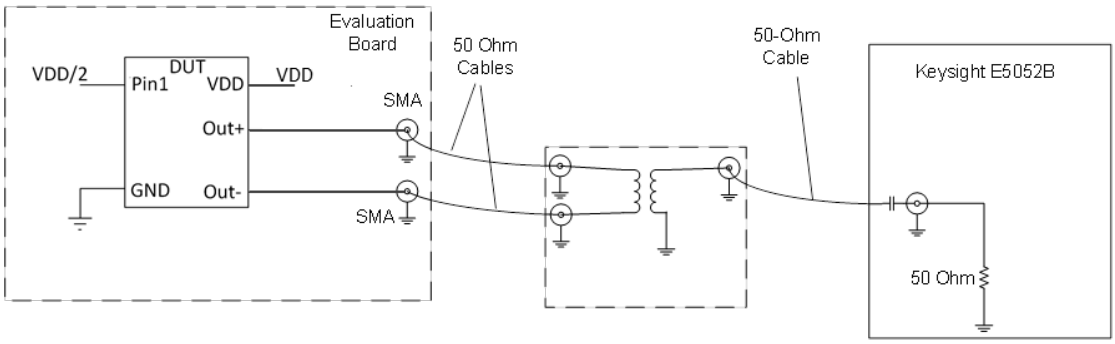

Figure 8. Test setup for measuring phase noise.

Current consumption

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

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