	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 2018

## Performance report for SiT3373 - 334.15 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



<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
<b>Orig:</b>		<b>Date:</b>	September 07, 2018

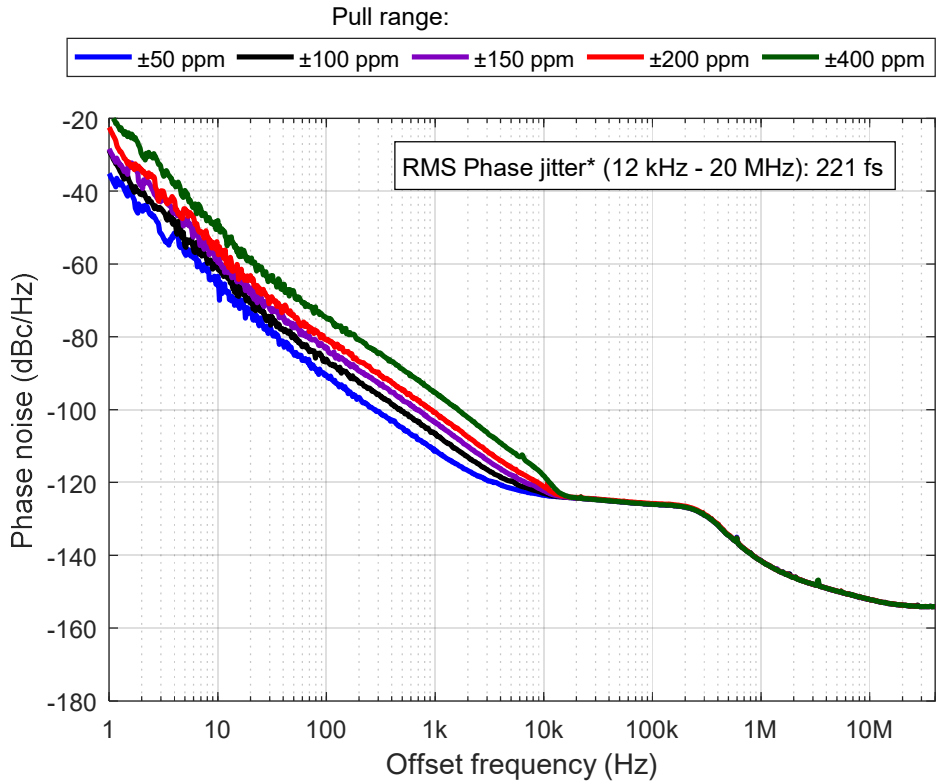


Figure 1: Phase noise, 3.3 V

*\*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	-35.2	-28.8	-28.4	-22.5	-17.7
10	-63.3	-60.1	-59.6	-56.6	-48.0
100	-90.7	-86.2	-83.1	-80.7	-74.9
1 K	-111.1	-106.4	-103.6	-100.7	-95.3
10 K	-123.5	-123.0	-122.3	-121.1	-118.1
100 K	-126.0	-126.0	-126.0	-125.8	-126.0
1 M	-141.5	-141.5	-141.5	-141.5	-141.5
10 M	-152.2	-152.2	-152.1	-152.1	-152.1
40 M	-154.1	-154.1	-154.1	-154.1	-154.1

**The information contained in this document is confidential and proprietary to SiTime Corporation. Unauthorized reproduction or distribution is prohibited.**


	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 2018

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	221


	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 2018



Figure 2: Output waveform, 2.5 V



Figure 3: Output waveform, 3.3 V

The information contained in this document is confidential and proprietary to SiTime Corporation. Unauthorized reproduction or distribution is prohibited.



<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
<b>Orig:</b>		<b>Date:</b>	September 07, 2018

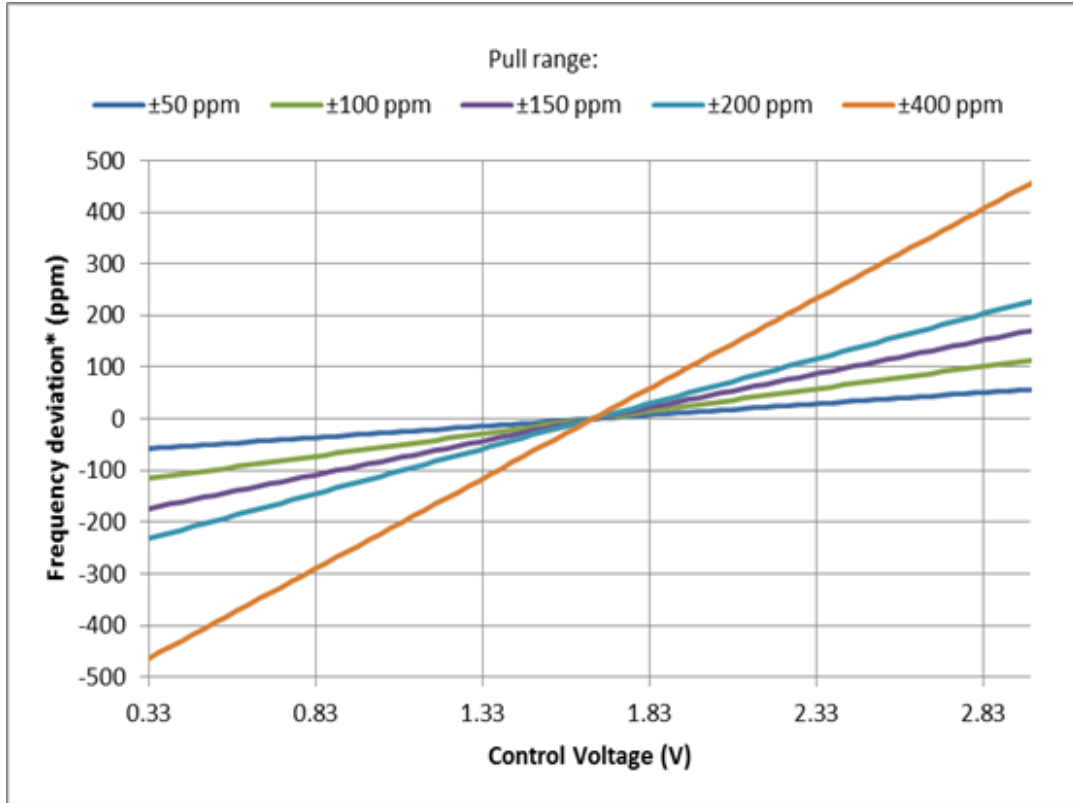


Figure 4: Frequency pull characteristic

<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
<b>Orig:</b>		<b>Date:</b>	September 07, 2018

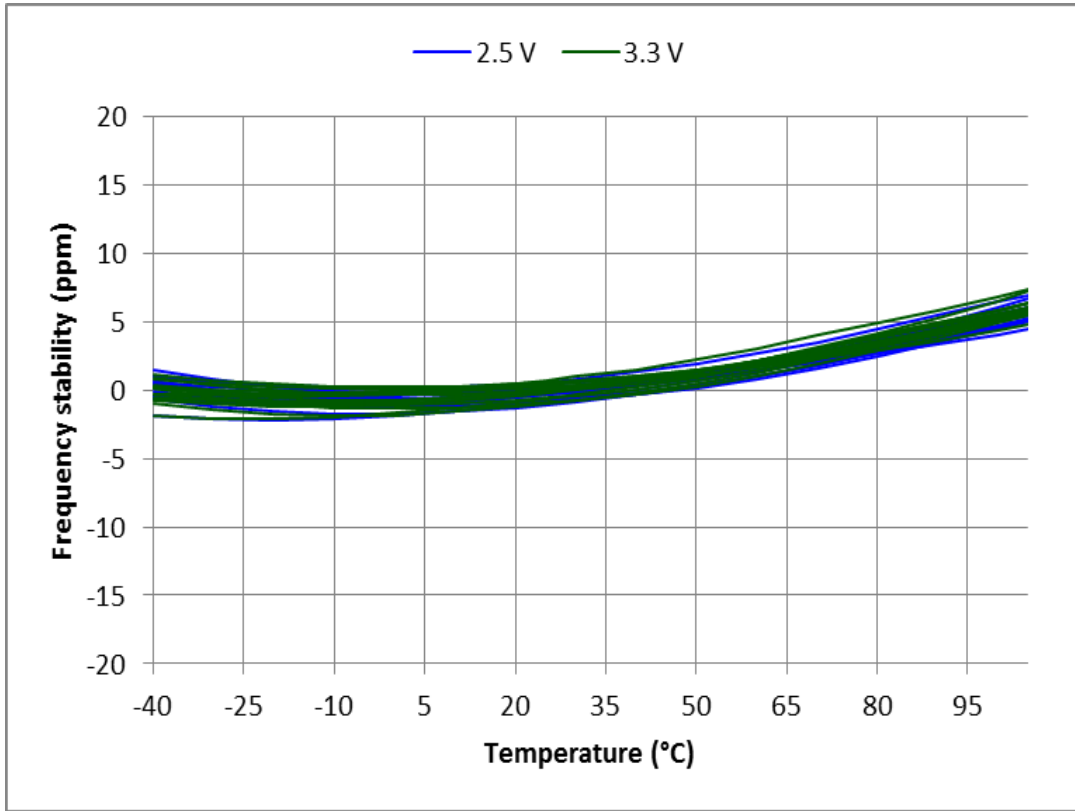


Figure 5: Frequency stability\* over temperature, 2.5 V – 3.3 V, 30 devices

*\*SiT3373 frequency stability is independent of output frequency.*



	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 2018

Table 3: Summary performance data

Parameter	Units	Voltage	
		2.5 V	3.3 V
Period jitter	ps, rms	0.98	0.96
Period jitter (sample size 10,000 cycles)	ps, pk-pk	7.44	7.28
Duty cycle	%	50.1	50.2
Rise time (20% - 80%)	ps	217	208
Fall time (80% - 20%)	ps	213	206
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	55.8

	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 2018

## Test description


### Conditions:

- Frequency: 334.15 MHz
- VDD: 2.5 V, 3.3 V
- Pull range:  $\pm 50$  ppm,  $\pm 100$  ppm,  $\pm 150$  ppm,  $\pm 200$  ppm,  $\pm 400$  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



	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 2018

## Setup

### Waveform

For waveform parameters measurement (rise/fall time, differential swing, duty cycle), both DUT outputs are terminated with 50  $\Omega$  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.

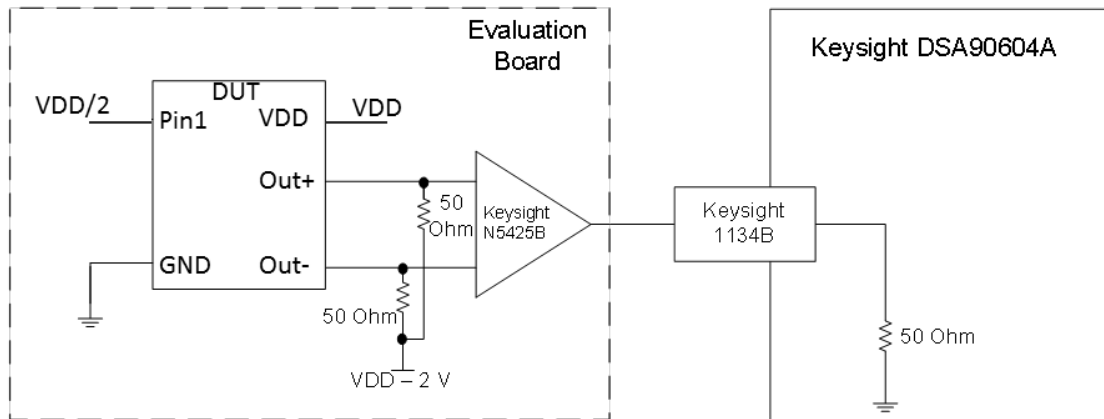


Figure 6. Test setup for measuring waveform parameters (rise/fall time, differential swing, duty cycle)

### Period Jitter

For period jitter measurement output is terminated with 50  $\Omega$  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.

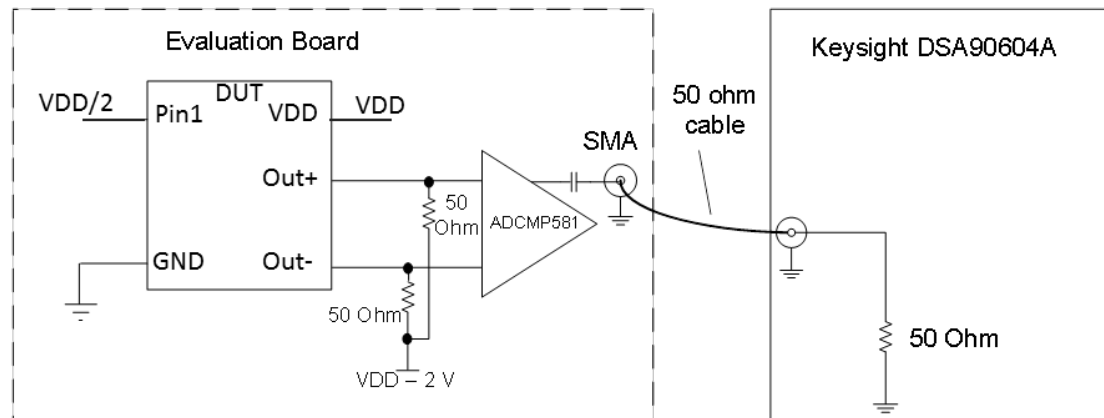


Figure 7. Test setup for measuring period jitter

<b>SiTime</b>	<b>Title:</b>	Performance report for SiT3373, 334.15 MHz, LVPECL		
	<b>Type:</b>	Performance report	<b>Rev:</b>	1.2
	<b>Orig:</b>		<b>Date:</b>	September 07, 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.

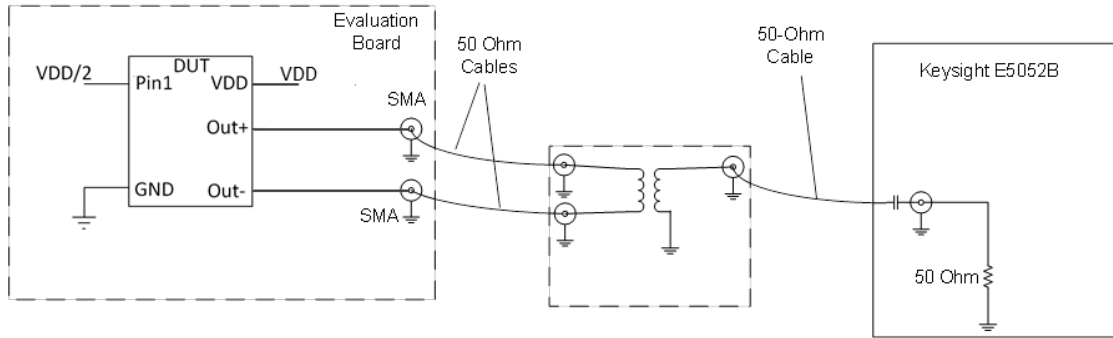


Figure 8. Test setup for measuring phase noise.

**Current consumption**

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