This report contains sample performance data for SiT2020B-24.56MHz.

Conditions:

- Frequency 24.56 MHz
- Vdd 1.8V, 2.5V, 2.8V, 3.0V, 3.3V
- Temperature 25℃
- Termination:
  - No load for IDD
  - 50Ω to GND for phase noise
  - 15pF for other tests

Equipment:

- Agilent DSA90604 oscilloscope (6GHz, 20Gsps)
  - Period jitter, waveform, rise/fall time, duty cycle, amplitude
- Agilent E5052B Signal Source Analyzer
  - Phase noise, integrated phase jitter
- Power supply current
  - Agilent 34401A DMM

Data:

- Random Phase jitter, Period Jitter, Duty cycle, Rise/Fall time, Amplitude, Idd
- Output waveforms
- Frequency stability versus temperature

Table 1. Performance data

Parameter	Units	Voltage				
		1.8 V	2.5 V	2.8 V	3.0 V	3.3 V
Random Phase jitter (900kHz - 5MHz)	ps, rms	0.49	0.51	0.51	0.52	0.51
Random Phase jitter (12kHz - 5MHz)	ps, rms	1.31	1.31	1.30	1.30	1.29
Random Phase jitter (900kHz - 20MHz)*	ps, rms	0.78	0.81	0.80	0.81	0.81
Random Phase jitter (12kHz - 20MHz)*	ps, rms	1.44	1.45	1.44	1.44	1.44
Period jitter	ps, rms	1.49	1.36	1.31	1.32	1.31
Period jitter (10,000 cycles)	ps, pk-pk	11.5	10.7	10.4	10.8	10.6
Duty cycle	%	50.1	50.1	49.9	49.8	49.6
Rise time (20% - 80%)	ns	1.25	0.97	0.88	0.96	0.90
Fall time (80% - 20%)	ns	1.24	1.00	0.90	0.97	0.91
Amplitude	V	1.79	2.49	2.78	2.97	3.27
Current consumption (no load, output enabled)	mA	3.67	3.80	3.86	3.89	3.96
Current consumption (no load, output disabled)	mA	3.46	3.53	3.58	3.62	3.70

*Calculated by extending the noise floor of the phase noise from 5 MHz to 20 MHz

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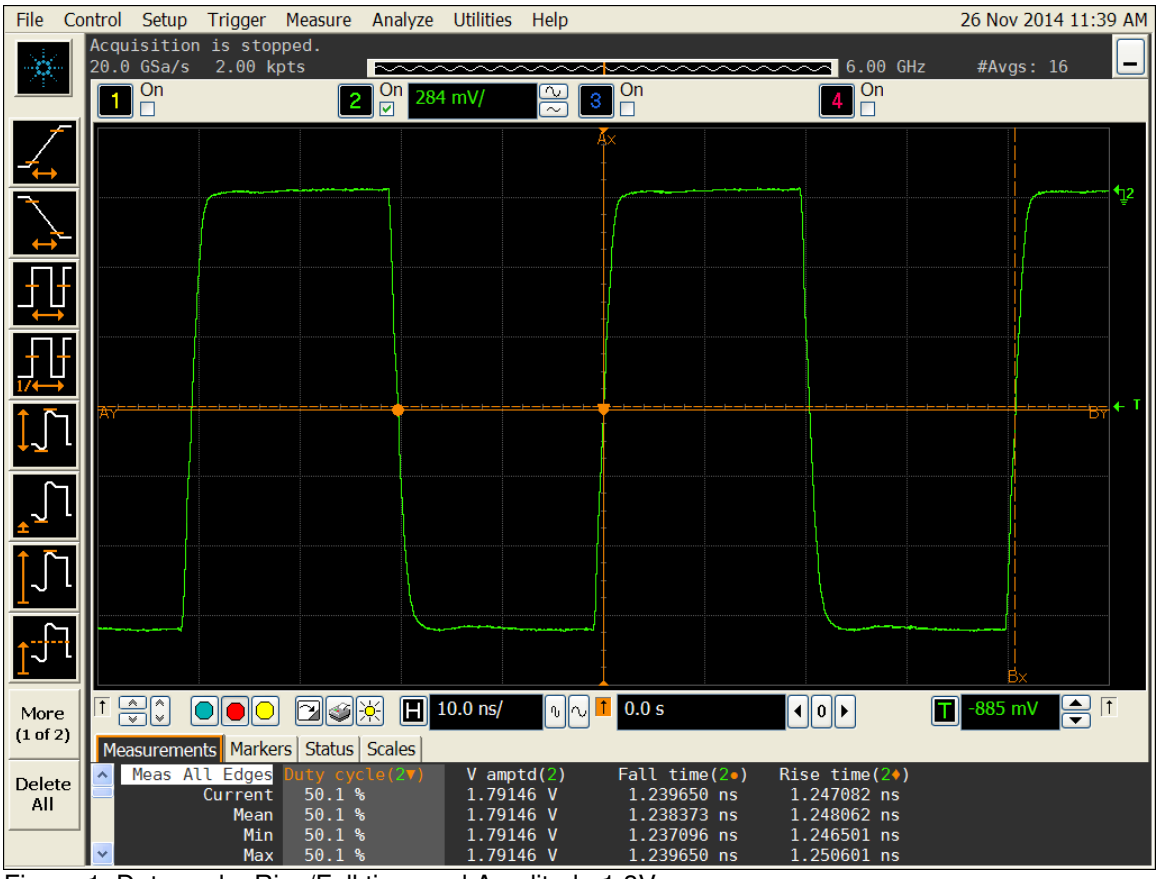

Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V

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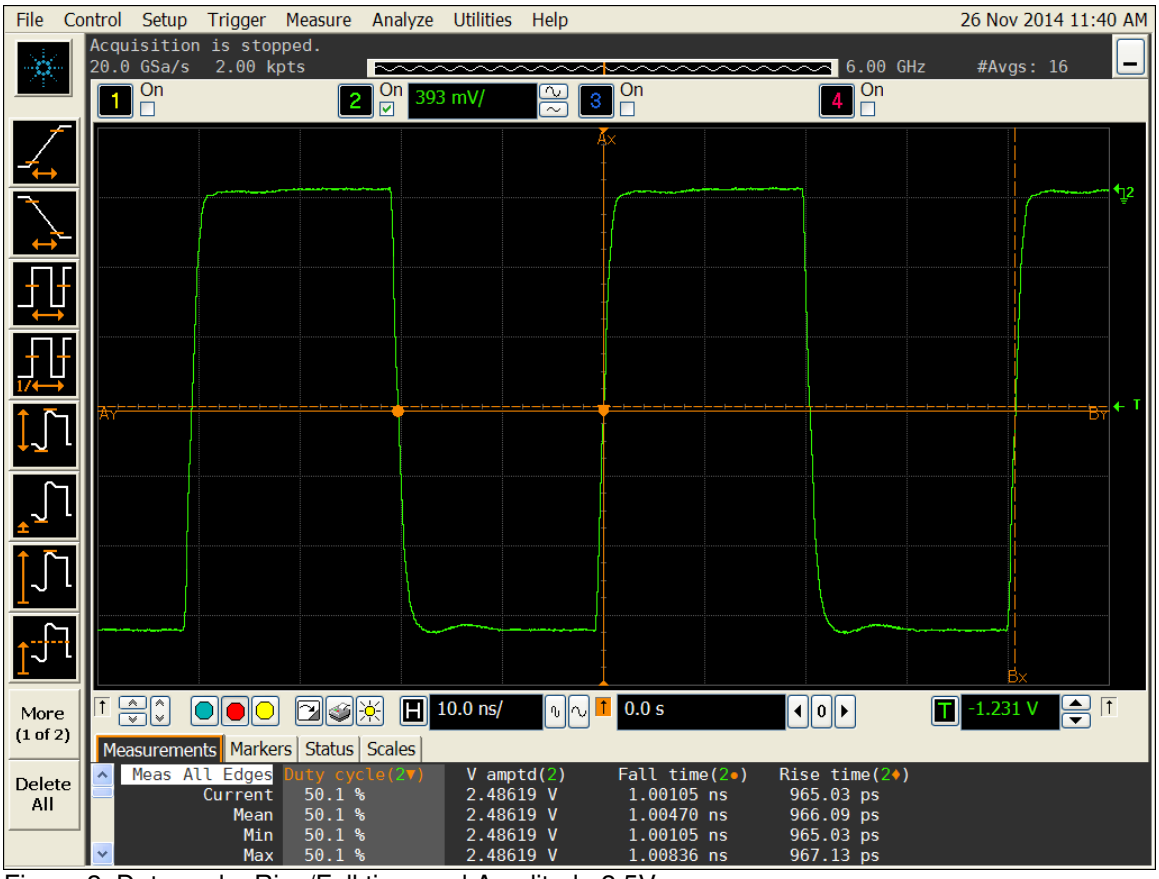

Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

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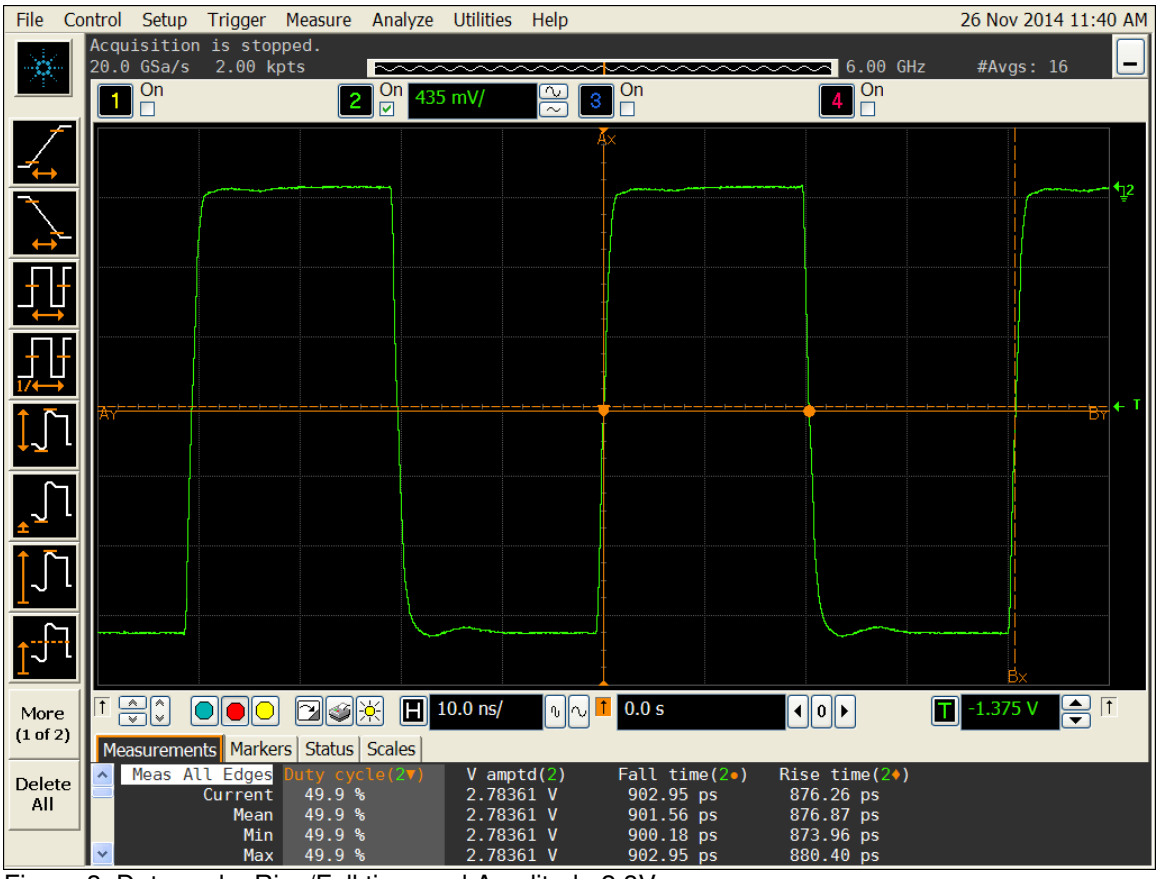

Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

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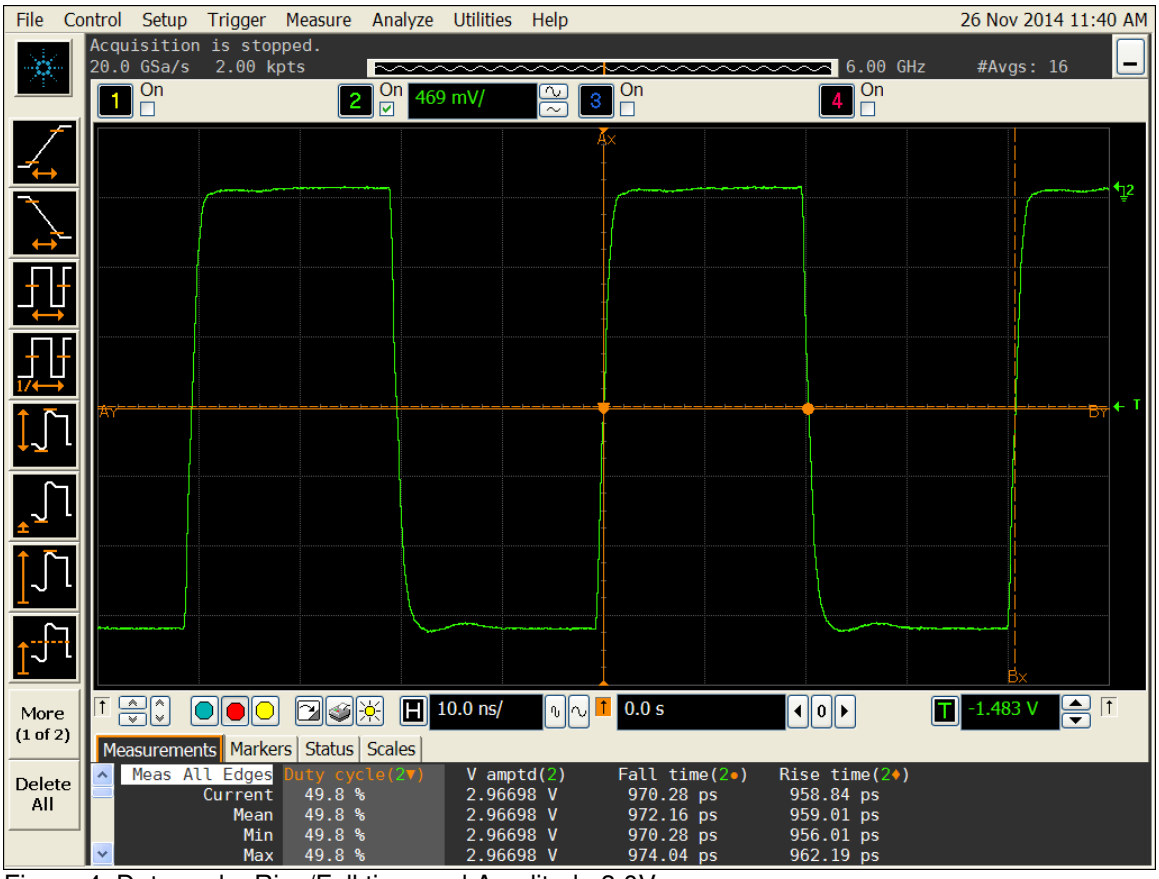

Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V

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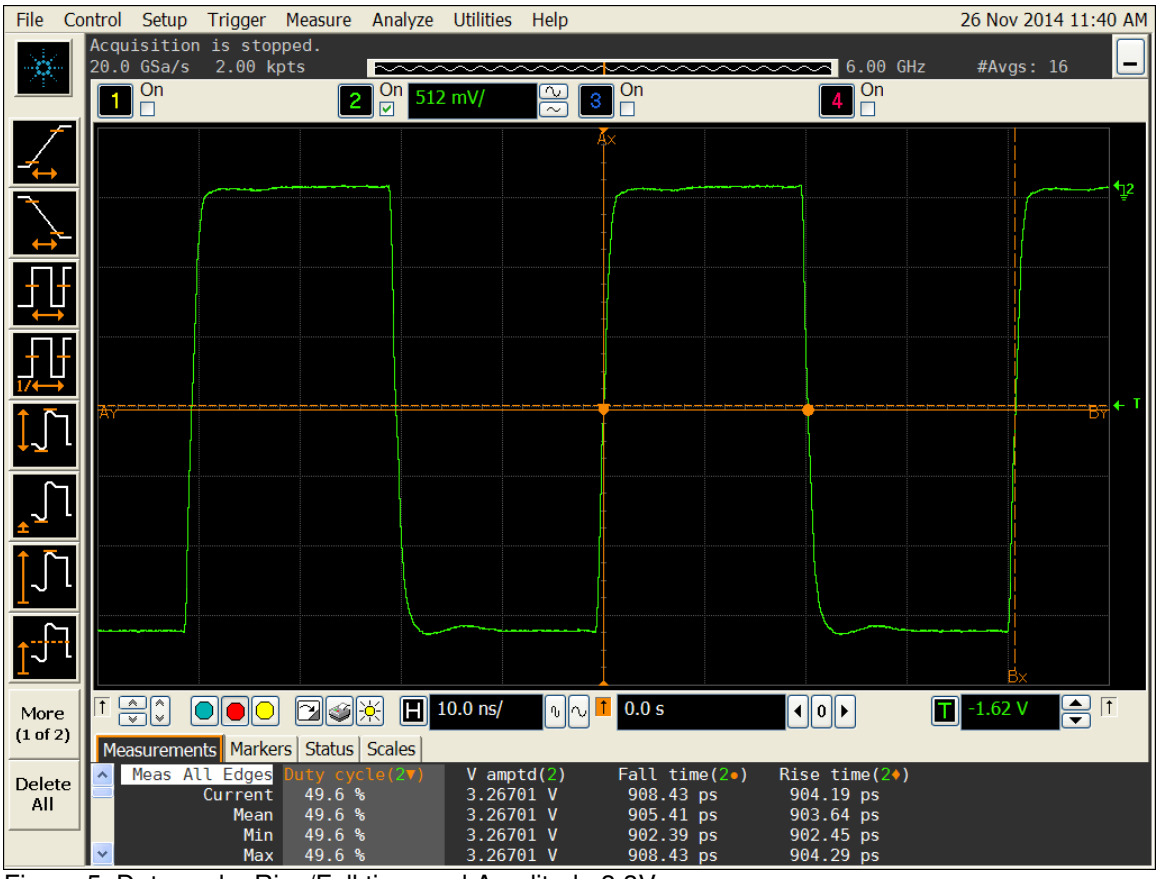

Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V

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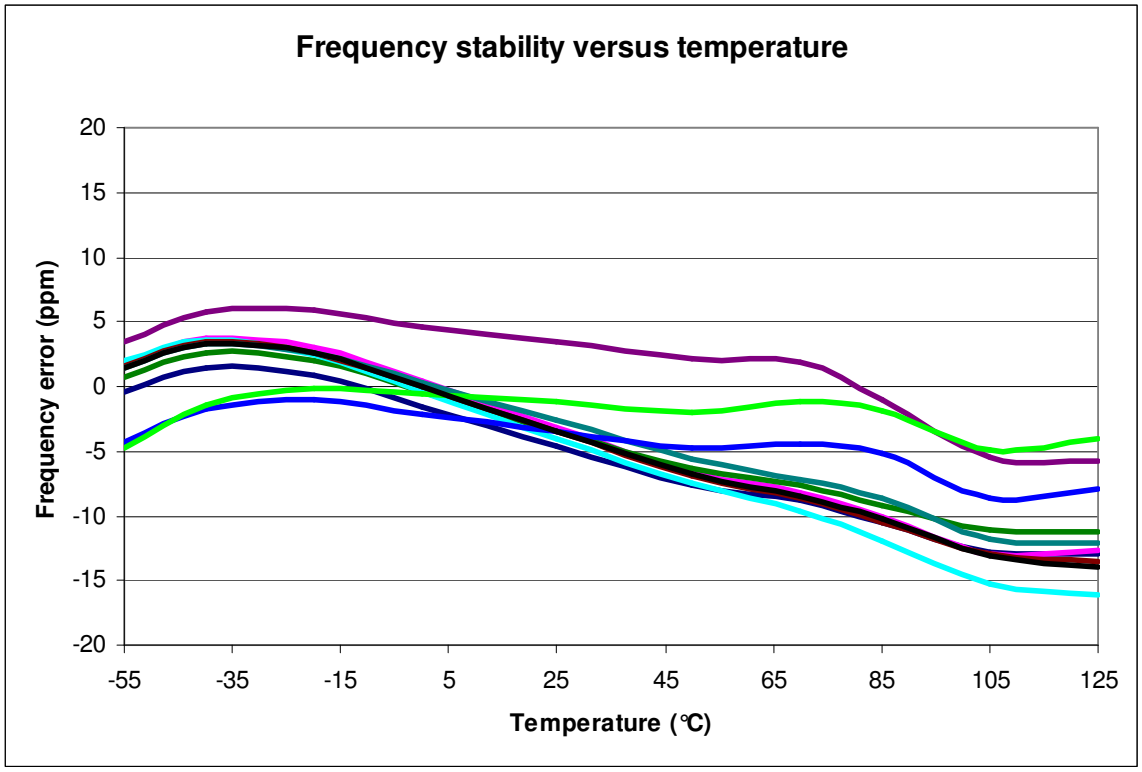

Figure 6. Frequency stability* versus temperature

*Please note that frequency stability in SiTime devices is not depended on output frequency.

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