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|  | Title: | Performance Report SiT8918B, 24MHz | | | |
| | Type: | Performance report | Rev: | 1.0 | |
| | Orig: | | Date: | Nov 24, 2014 | |

This report contains sample performance data for SiT8918B-24MHz.

Conditions:

- Frequency 24 MHz
- Vdd 1.8V, 2.5V, 2.8V, 3.0V, 3.3V
- Temperature 25 °C
- Termination:
 - o No load for IDD
 - o 50Ω to GND for phase noise
 - o 15pF for other tests

Equipment:

- Agilent DSA90604 oscilloscope (6GHz, 20Gsps)
 - o Period jitter, waveform, rise/fall time, duty cycle, amplitude
- Agilent E5052B Signal Source Analyzer
 - o Phase noise, integrated phase jitter
- Power supply current
 - o 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 | 0.50 | 0.51 | 0.51 | 0.51 | 0.51 |
| Random Phase jitter (12kHz - 5MHz) | ps, rms | 1.34 | 1.32 | 1.32 | 1.32 | 1.33 |
| Random Phase jitter (900kHz - 20MHz)* | ps, rms | 0.77 | 0.81 | 0.80 | 0.80 | 0.81 |
| Random Phase jitter (12kHz - 20MHz)* | ps, rms | 1.46 | 1.46 | 1.46 | 1.46 | 1.47 |
| Period jitter | ps, rms | 1.96 | 1.65 | 1.43 | 1.47 | 1.46 |
| Period jitter (10,000 cycles) | ps, pk-pk | 15.3 | 12.2 | 11.6 | 11.5 | 11.6 |
| Duty cycle | % | 50.0 | 49.9 | 50.1 | 50.3 | 50.4 |
| Rise time (20% - 80%) | ns | 1.23 | 1.00 | 0.91 | 0.97 | 0.91 |
| Fall time (80% - 20%) | ns | 1.26 | 0.98 | 0.90 | 0.97 | 0.92 |
| Amplitude | V | 1.78 | 2.48 | 2.77 | 3.00 | 3.30 |
| Current consumption (no load, output enabled) | mA | 3.58 | 3.72 | 3.78 | 3.81 | 3.88 |
| Current consumption (no load, output disabled) | mA | 3.38 | 3.46 | 3.51 | 3.55 | 3.62 |

*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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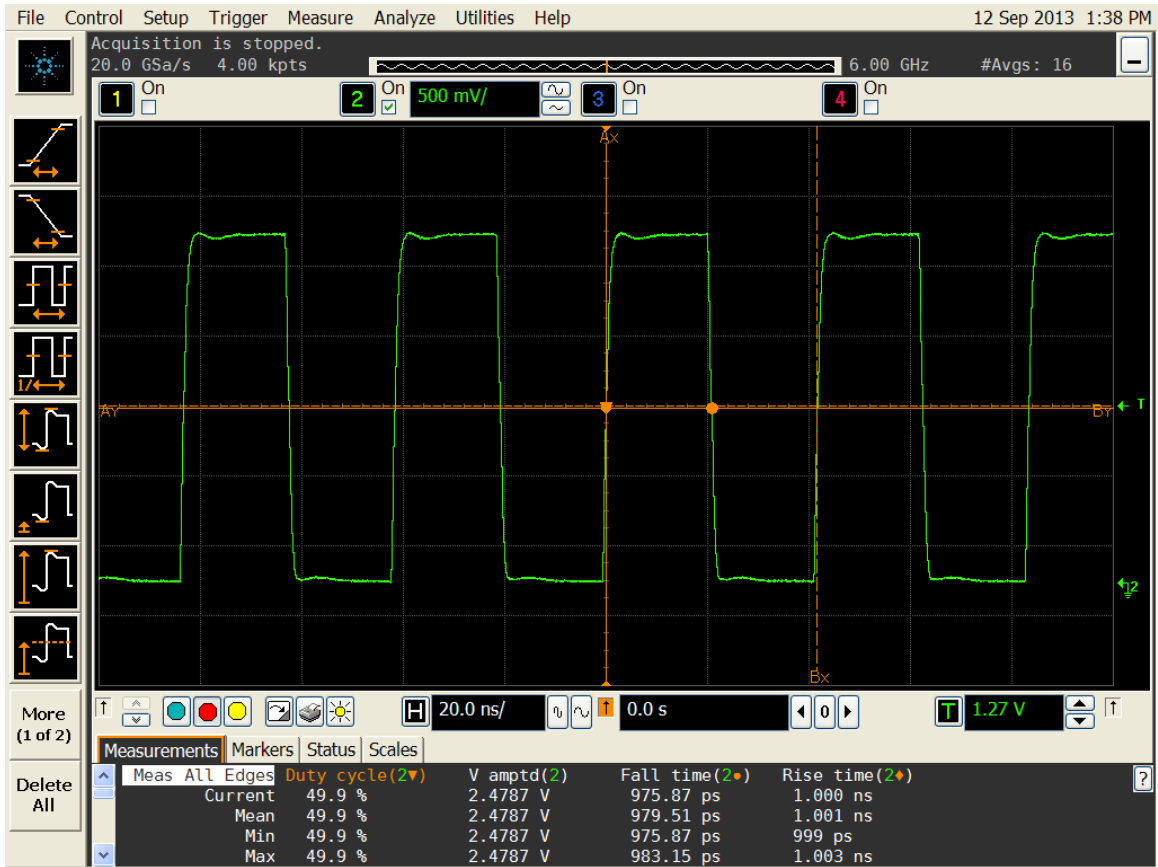



Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

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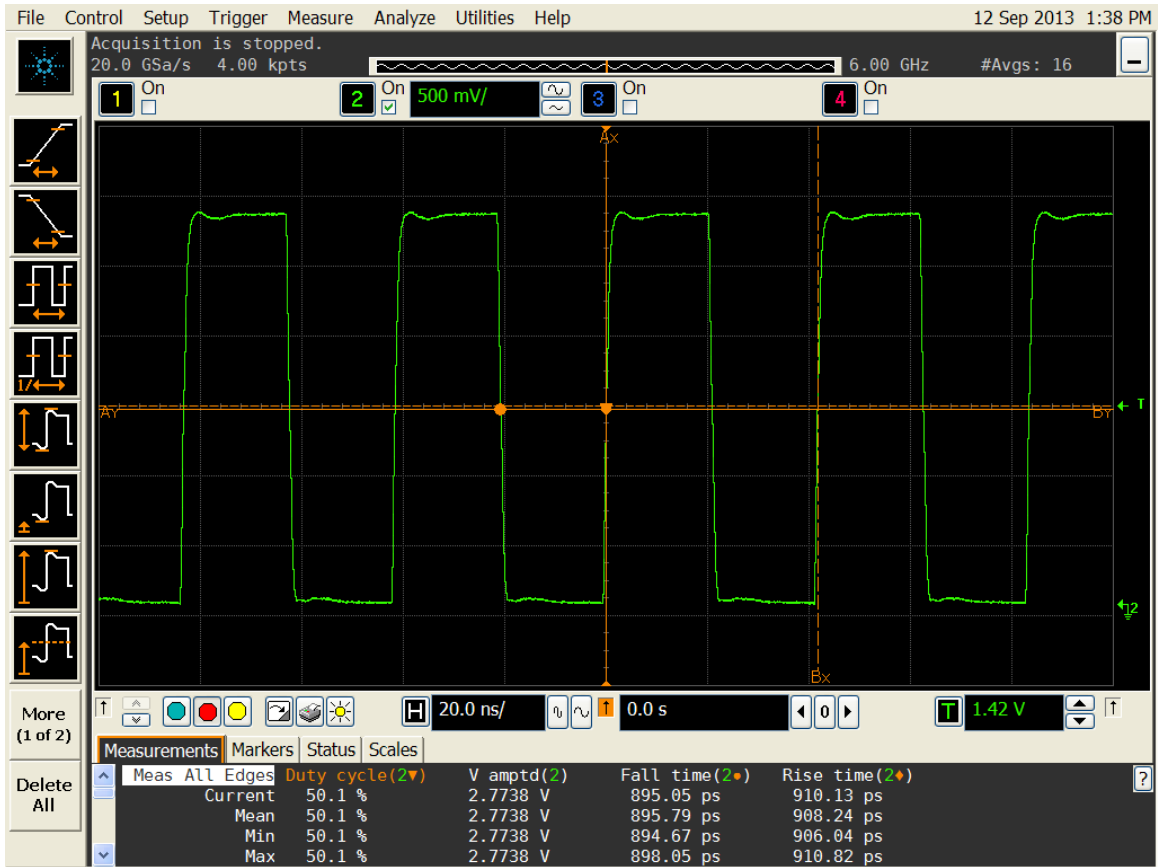



Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

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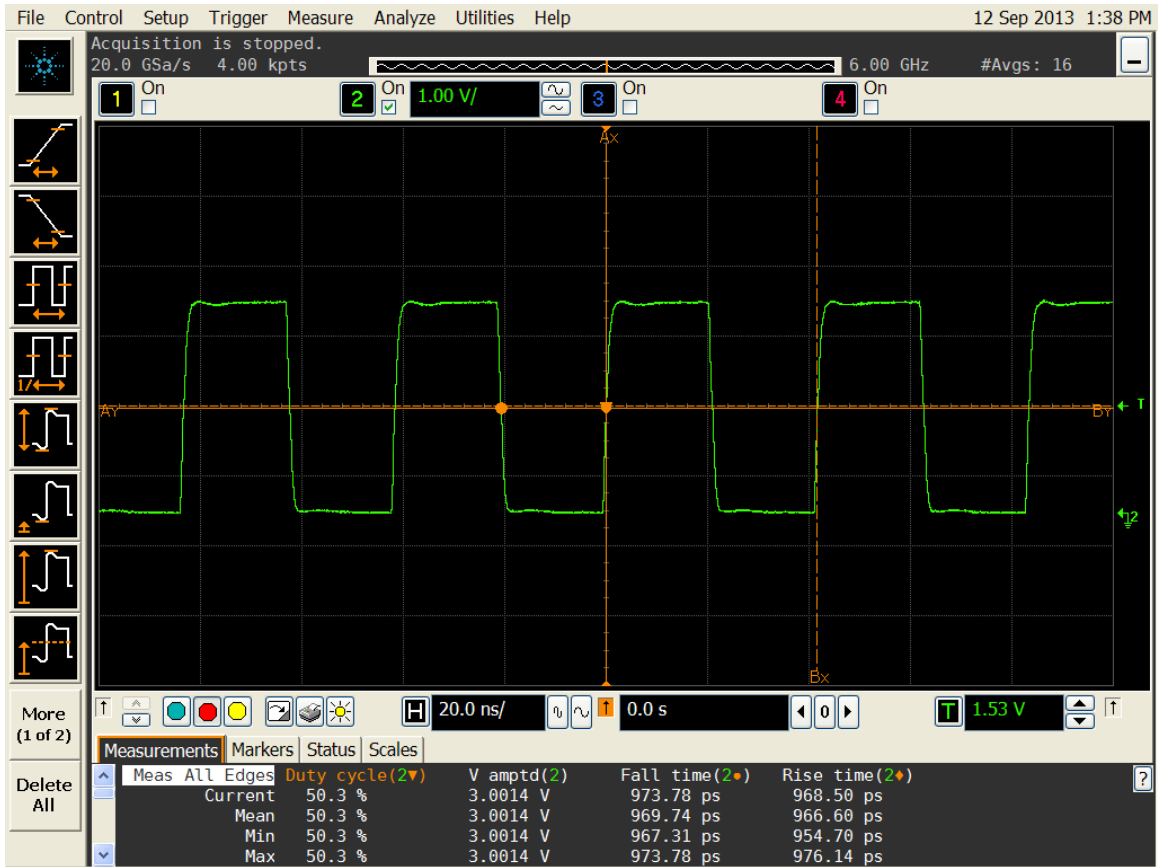



Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V

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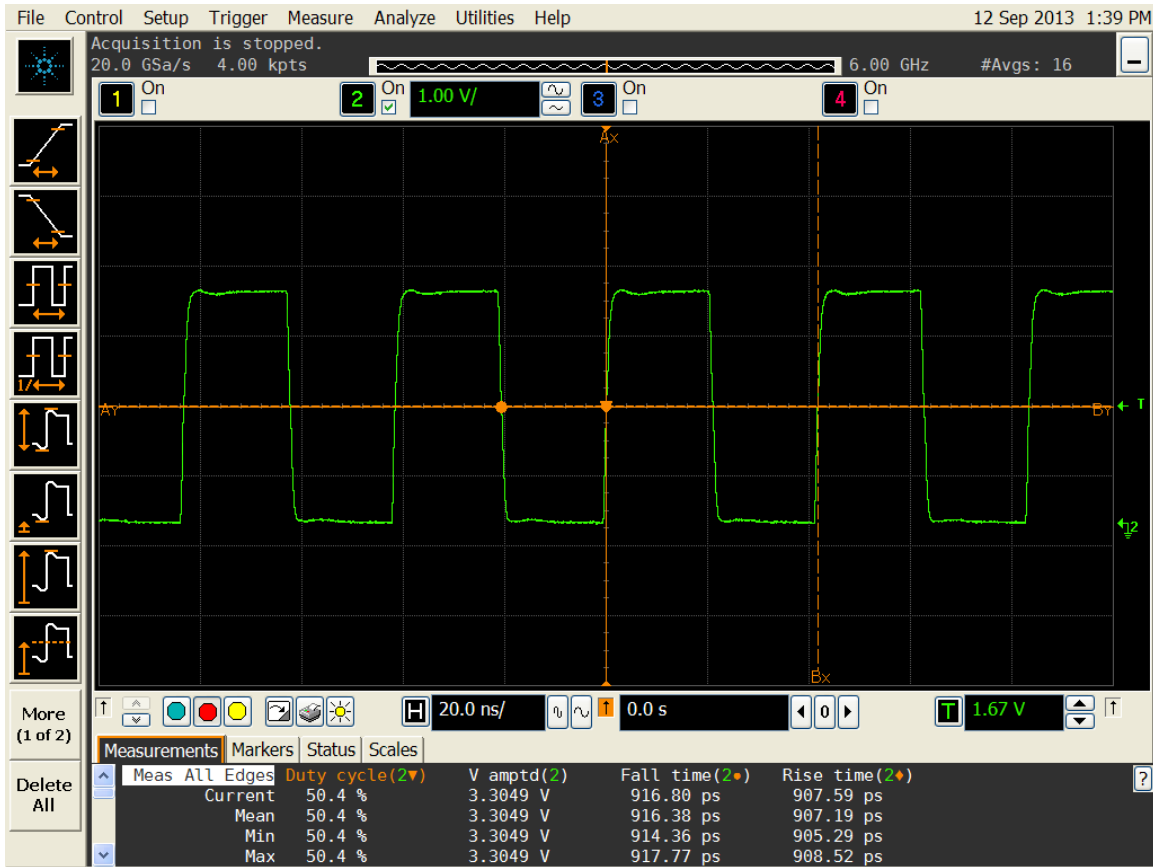


Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V

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Figure 6. Frequency stability* versus temperature

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