


|   |               |  |              |                     |  |
|---|---------------|--|--------------|---------------------|--|
|  | <b>Title:</b> | <b>Performance Report SiT8918B, 19.6608MHz</b> |              |                     |  |
|   | <b>Type:</b>  | <b>Performance report</b>                      | <b>Rev:</b>  | <b>1.0</b>          |  |
|   | <b>Orig:</b>  |  | <b>Date:</b> | <b>Nov 21, 2014</b> |  |

**This report contains sample performance data for SiT8918B-19.6608MHz.**

**Conditions:**

- Frequency 19.6608 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, 20Gpsps)
  - 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   | 0.51    | 0.53  | 0.51  | 0.51  | 0.52  |
| Random Phase jitter (12kHz - 5MHz)             | ps, rms   | 1.24    | 1.24  | 1.21  | 1.20  | 1.21  |
| Random Phase jitter (900kHz – 19.6608MHz)*     | ps, rms   | 0.82    | 0.86  | 0.84  | 0.84  | 0.85  |
| Random Phase jitter (12kHz – 19.6608MHz)*      | ps, rms   | 1.40    | 1.41  | 1.38  | 1.37  | 1.38  |
| Period jitter                                  | ps, rms   | 1.85    | 1.77  | 1.70  | 1.80  | 1.71  |
| Period jitter (10,000 cycles)                  | ps, pk-pk | 14.5    | 13.3  | 12.2  | 12.7  | 12.4  |
| Duty cycle                                     | %         | 50.0    | 49.9  | 50.1  | 50.2  | 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  | 0.89  | 0.97  | 0.91  |
| Amplitude                                      | V         | 1.78    | 2.48  | 2.77  | 3.02  | 3.30  |
| Current consumption (no load, output enabled)  | mA        | 3.60    | 3.72  | 3.77  | 3.79  | 3.85  |
| Current consumption (no load, output disabled) | mA        | 3.44    | 3.52  | 3.57  | 3.61  | 3.68  |

\*Calculated by extending the noise floor of the phase noise from 5 MHz to 19.6608 MHz

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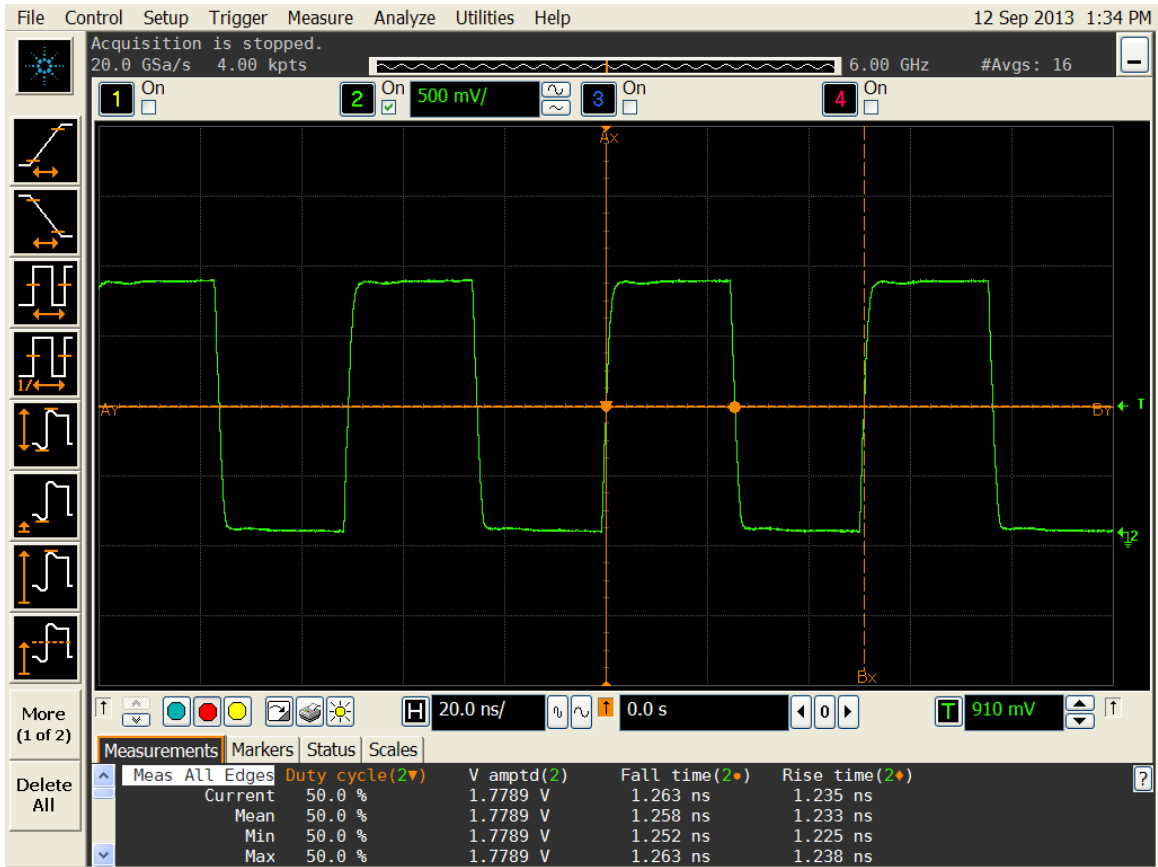



Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V

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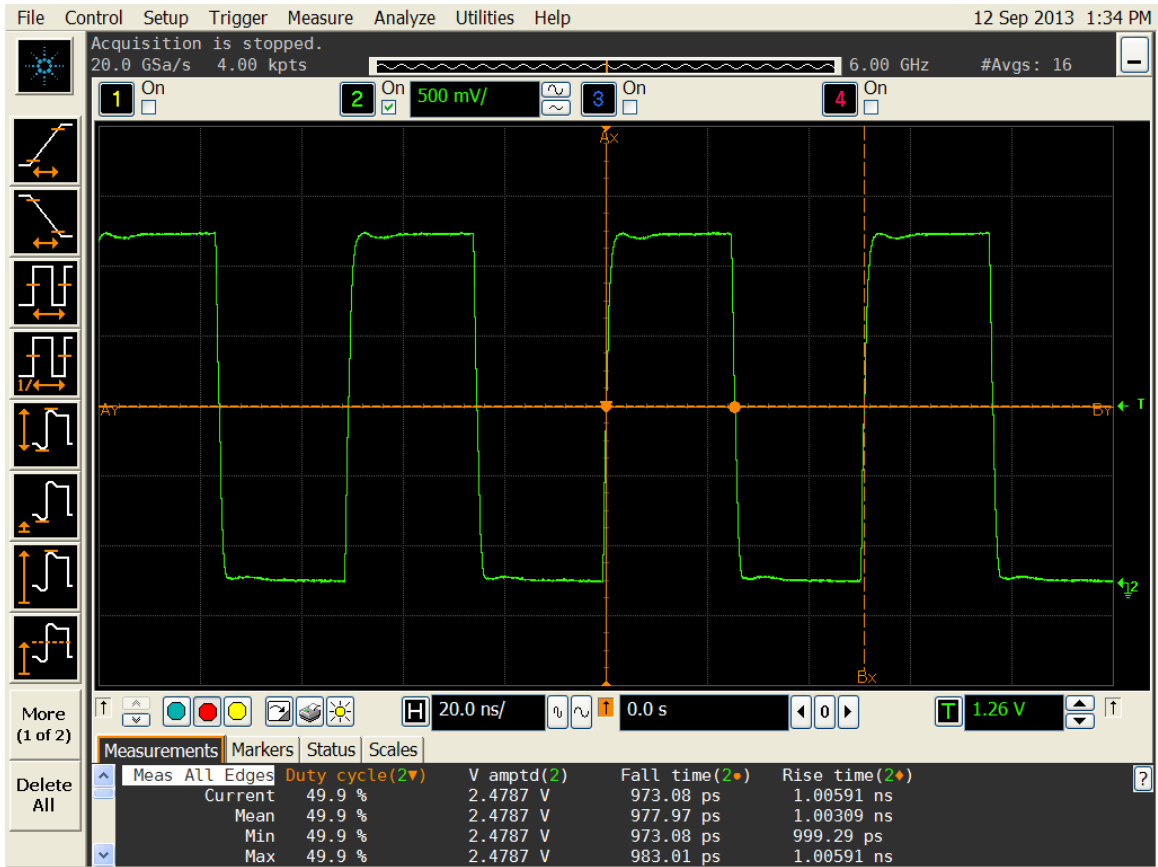



Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

|   |               |   |                           |
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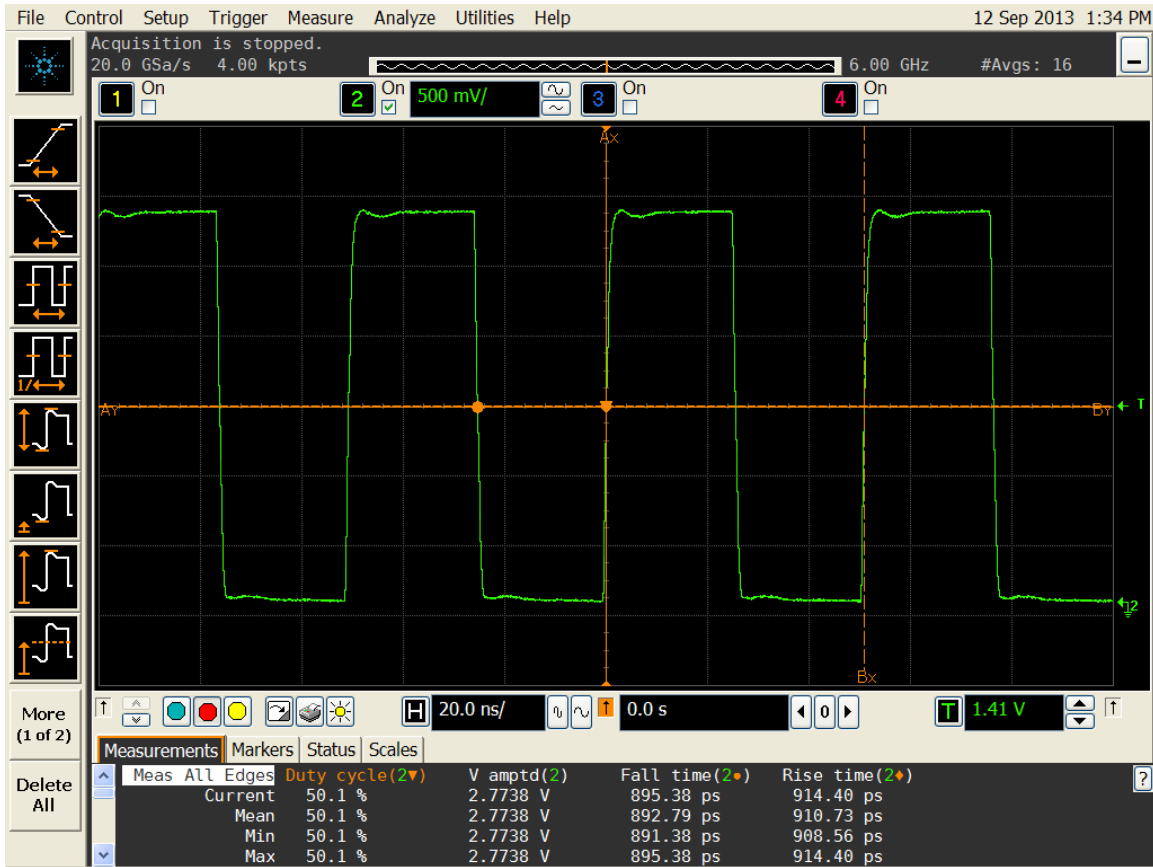



Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

|   |               |   |              |              |
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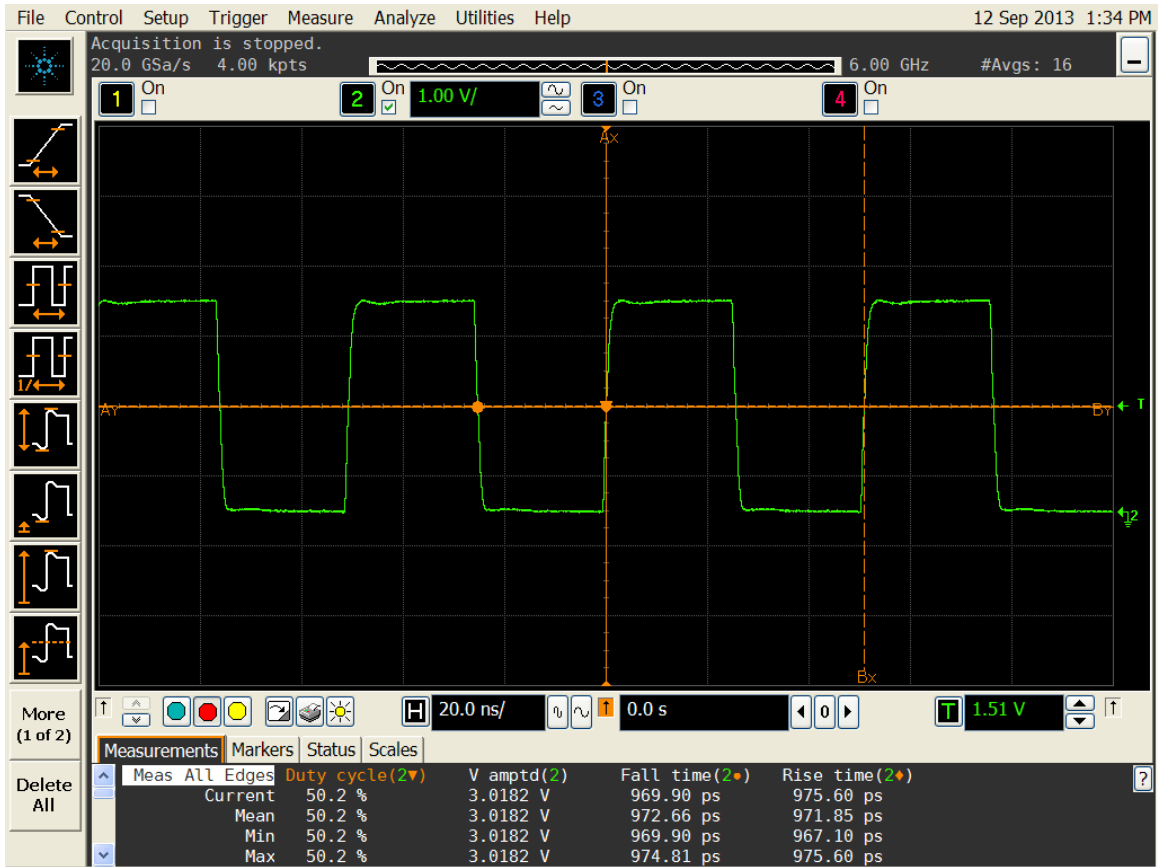



Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V

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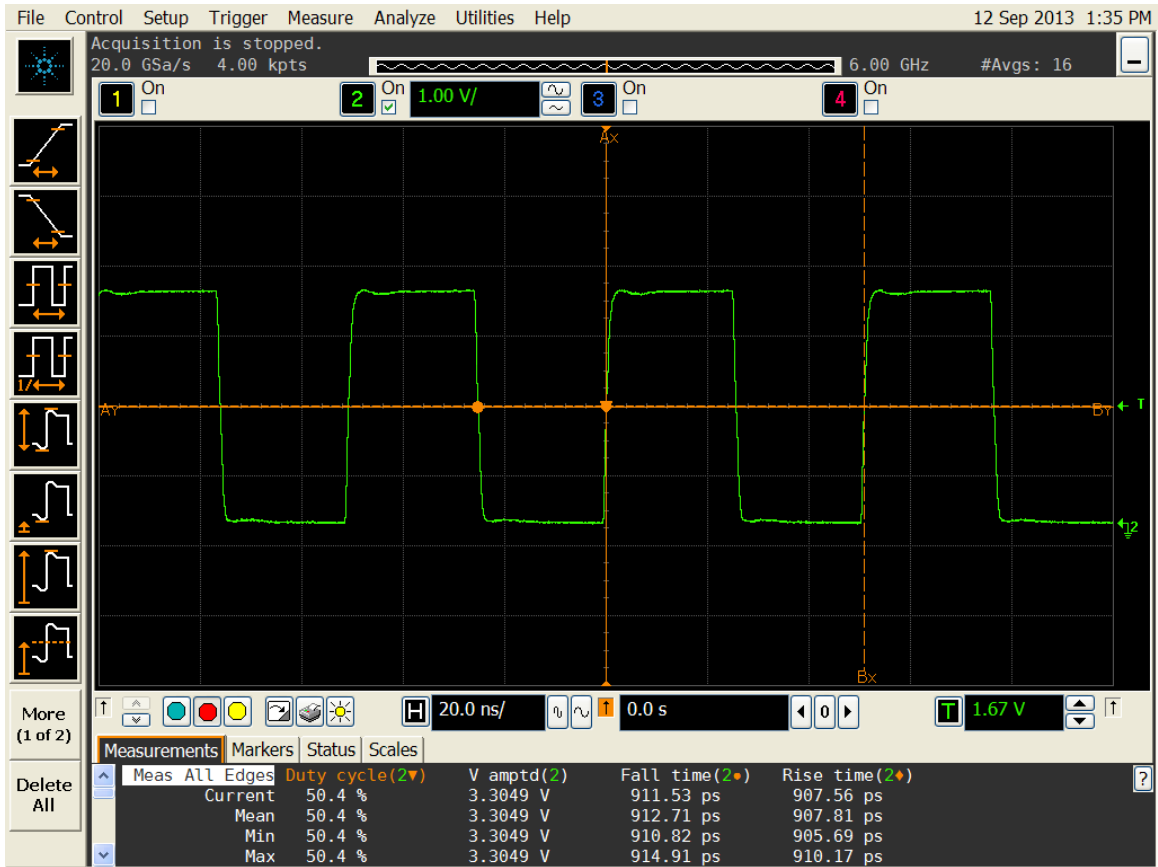


Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V


|   |               |   |              |              |
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Figure 6. Frequency stability\* versus temperature

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