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|---|---------------|---|--------------|---------------------|--|
|  | <b>Title:</b> | <b>Performance Report SiT8920B, 16MHz</b> |              |                     |  |
|   | <b>Type:</b>  | <b>Performance report</b>                 | <b>Rev:</b>  | <b>1.0</b>          |  |
|   | <b>Orig:</b>  |   | <b>Date:</b> | <b>Nov 24, 2014</b> |  |

**This report contains sample performance data for SiT8920B-16MHz.**

**Conditions:**

- Frequency 16 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   | 0.56    | 0.59  | 0.58  | 0.59  | 0.58  |
| Random Phase jitter (12kHz - 5MHz)             | ps, rms   | 1.42    | 1.41  | 1.39  | 1.39  | 1.37  |
| Random Phase jitter (900kHz – 16MHz)*          | ps, rms   | 0.84    | 0.88  | 0.87  | 0.88  | 0.88  |
| Random Phase jitter (12kHz – 16MHz)*           | ps, rms   | 1.55    | 1.56  | 1.53  | 1.53  | 1.52  |
| Period jitter                                  | ps, rms   | 2.17    | 1.63  | 1.57  | 1.56  | 1.48  |
| Period jitter (10,000 cycles)                  | ps, pk-pk | 14.7    | 12.5  | 11.9  | 12.1  | 11.8  |
| Duty cycle                                     | %         | 50.0    | 49.9  | 50.1  | 50.2  | 50.3  |
| Rise time (20% - 80%)                          | ns        | 1.24    | 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         | 1.79    | 2.48  | 2.78  | 3.02  | 3.30  |
| Current consumption (no load, output enabled)  | mA        | 3.51    | 3.61  | 3.66  | 3.68  | 3.74  |
| Current consumption (no load, output disabled) | mA        | 3.39    | 3.46  | 3.52  | 3.56  | 3.64  |

\*Calculated by extending the noise floor of the phase noise from 5 MHz to 16 MHz

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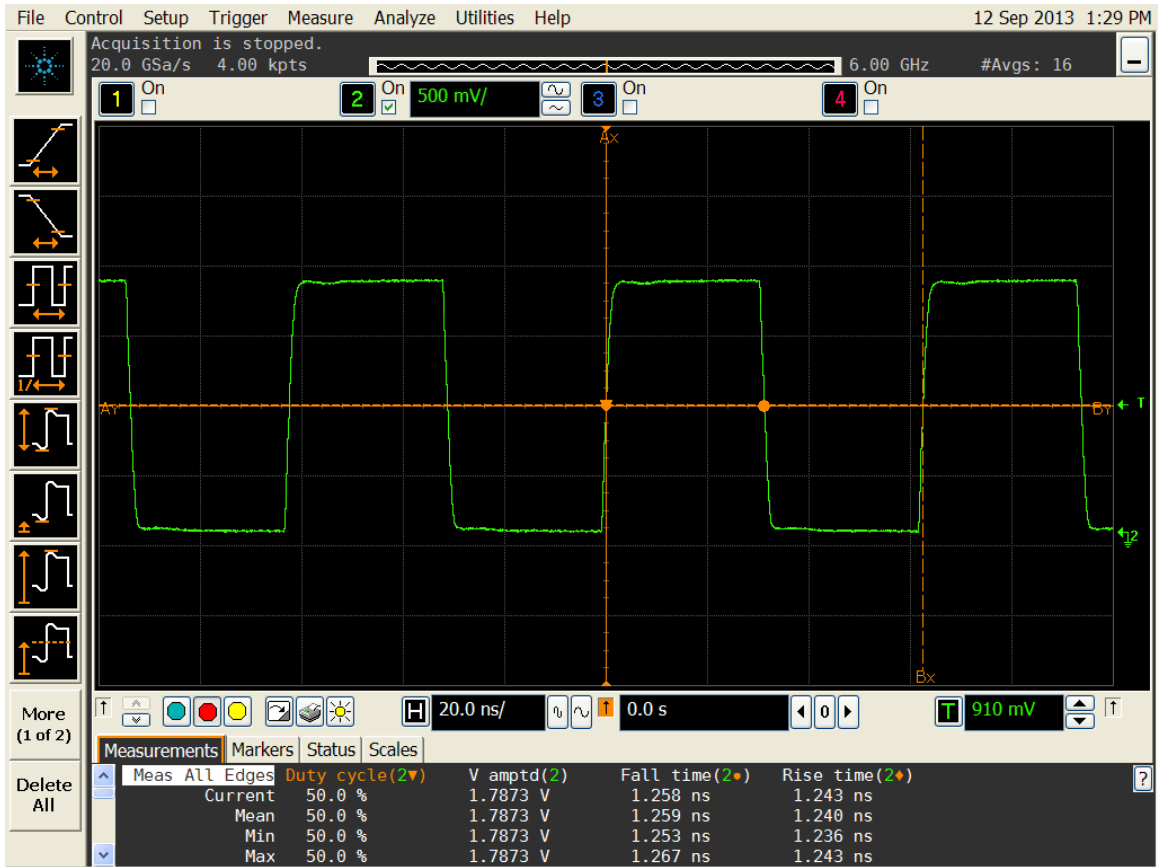



Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V

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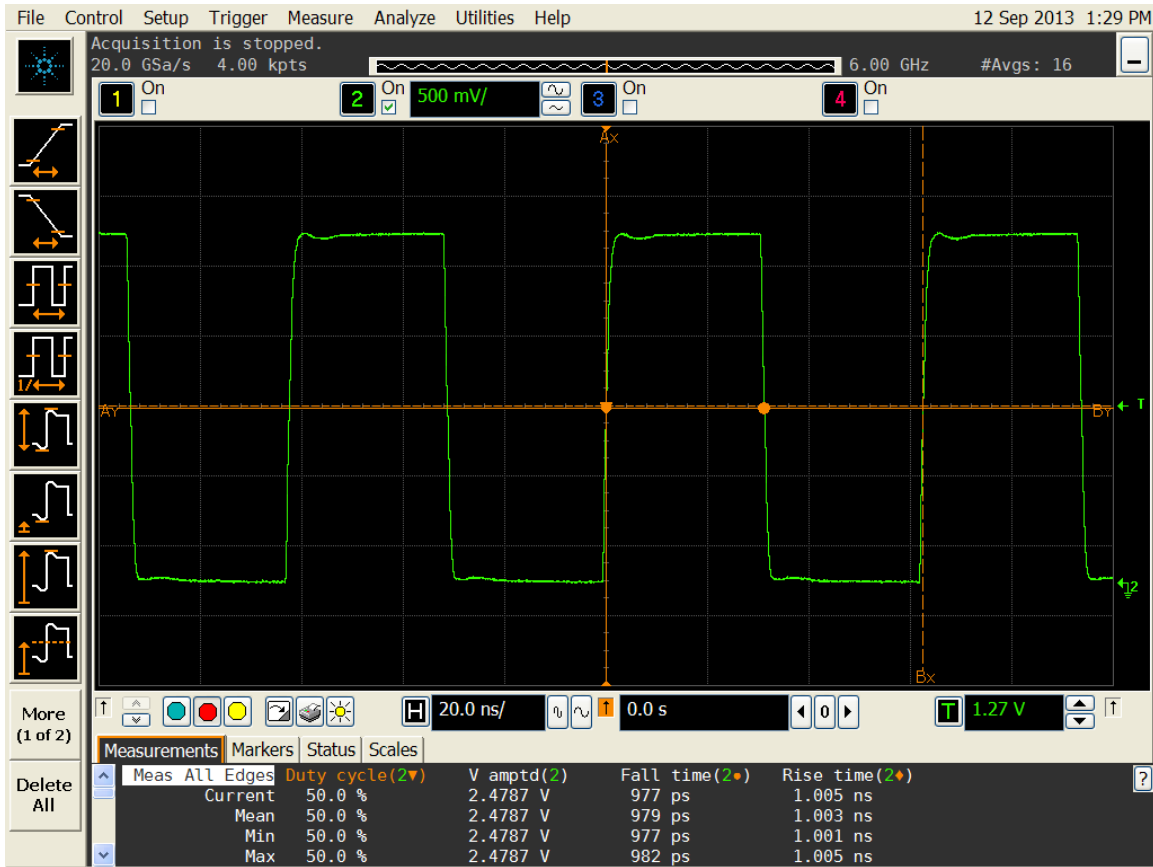



Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

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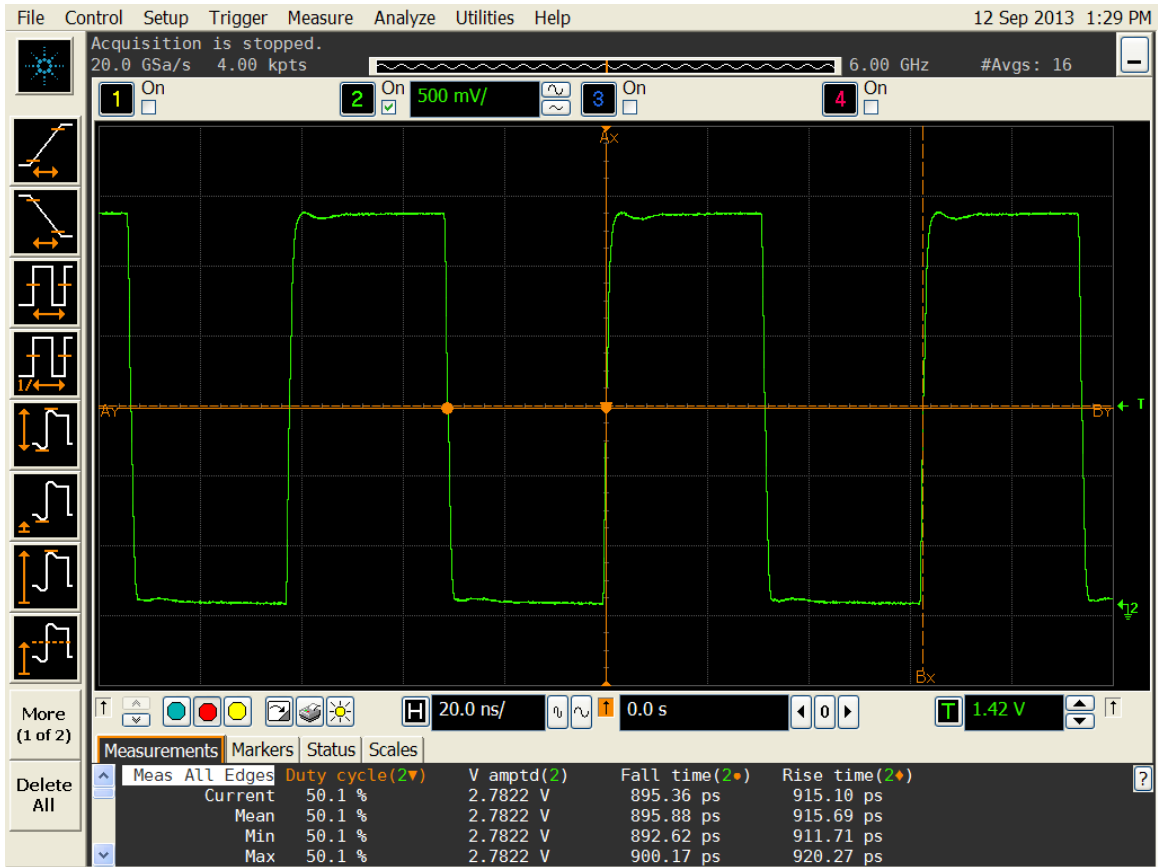



Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

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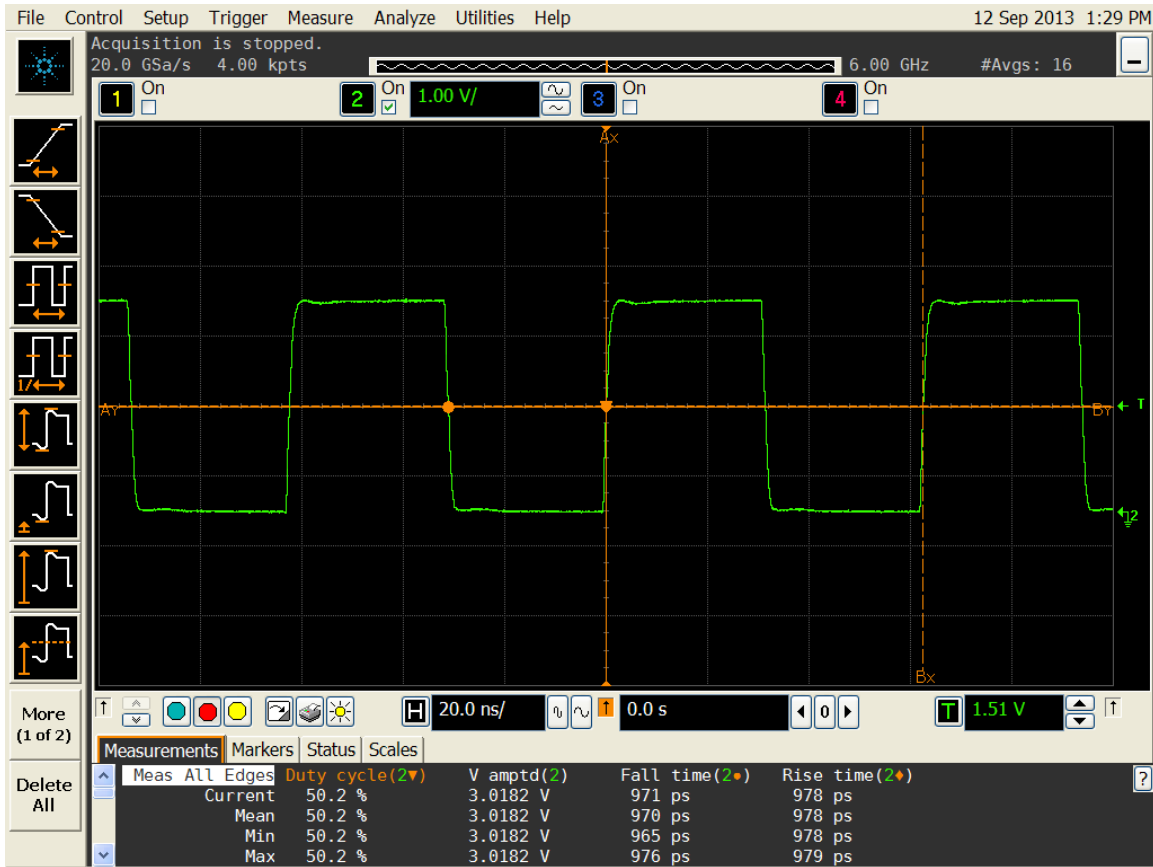



Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V

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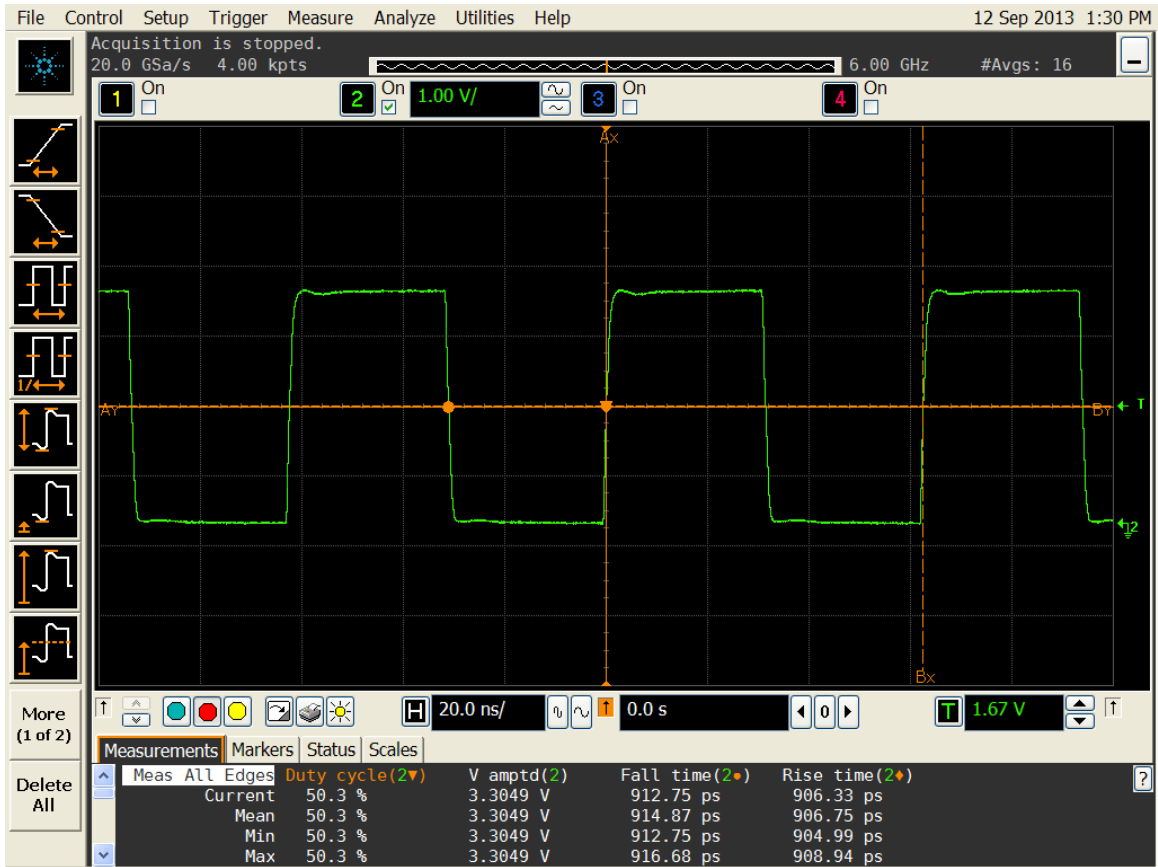


Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V

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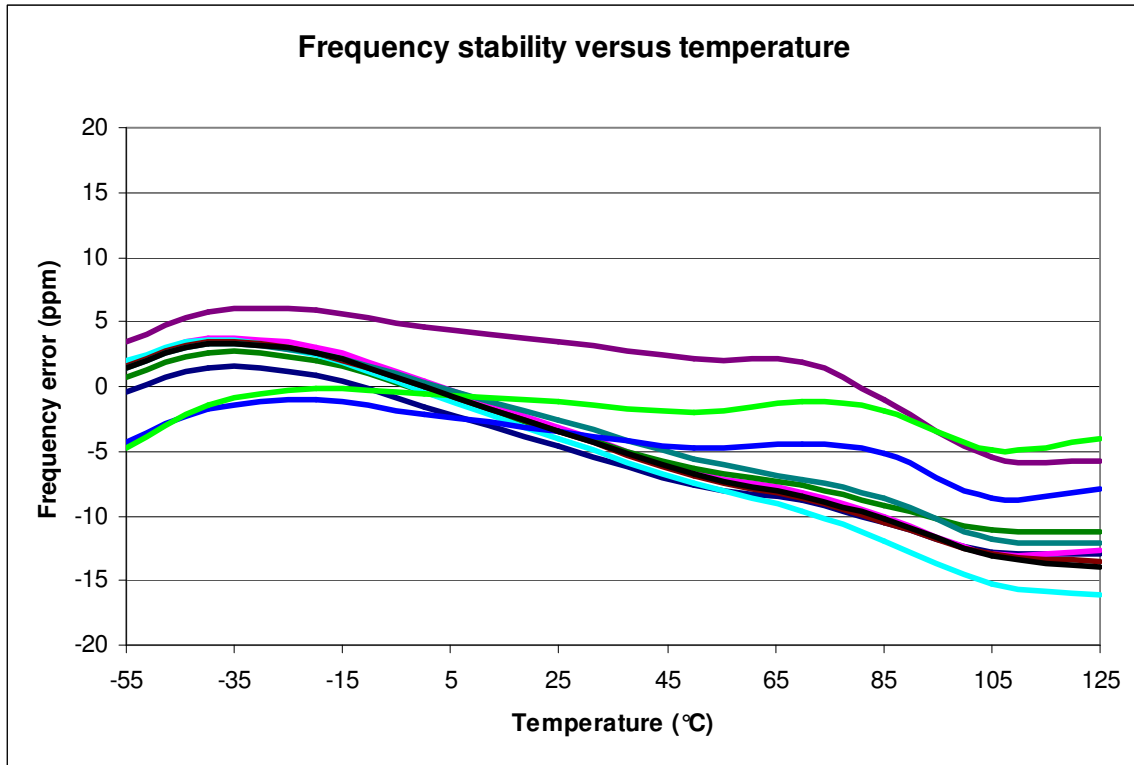


Figure 6. Frequency stability\* versus temperature

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