


|   |               |   |              |                     |  |
|---|---------------|---|--------------|---------------------|--|
|  | <b>Title:</b> | <b>Performance Report SiT2001B, 75MHz</b> |              |                     |  |
|   | <b>Type:</b>  | <b>Performance report</b>                 | <b>Rev:</b>  | <b>1.0</b>          |  |
|   | <b>Orig:</b>  |   | <b>Date:</b> | <b>Mar 31, 2014</b> |  |

**This report contains sample performance data for SiT2001B-75MHz.**

**Conditions:**

- Frequency 75 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 - 20MHz)           | ps, rms   | 0.56    | 0.61  | 0.61  | 0.62  | 0.63  |
| Random Phase jitter (12kHz - 20MHz)            | ps, rms   | 1.34    | 1.33  | 1.35  | 1.39  | 1.40  |
| Period jitter                                  | ps, rms   | 1.76    | 1.65  | 1.63  | 1.60  | 1.60  |
| Period jitter (10,000 cycles)                  | ps, pk-pk | 13.1    | 11.7  | 11.9  | 11.7  | 11.3  |
| Duty cycle                                     | %         | 49.9    | 49.6  | 50.2  | 50.8  | 51.1  |
| Rise time (20% - 80%)                          | ns        | 1.24    | 1.05  | 0.96  | 1.01  | 0.97  |
| Fall time (80% - 20%)                          | ns        | 1.25    | 1.01  | 0.93  | 0.99  | 0.95  |
| Amplitude                                      | V         | 1.77    | 2.48  | 2.77  | 2.98  | 3.30  |
| Current consumption (no load, output enabled)  | mA        | 4.26    | 4.58  | 4.74  | 4.80  | 4.97  |
| Current consumption (no load, output disabled) | mA        | 3.50    | 3.56  | 3.62  | 3.66  | 3.73  |

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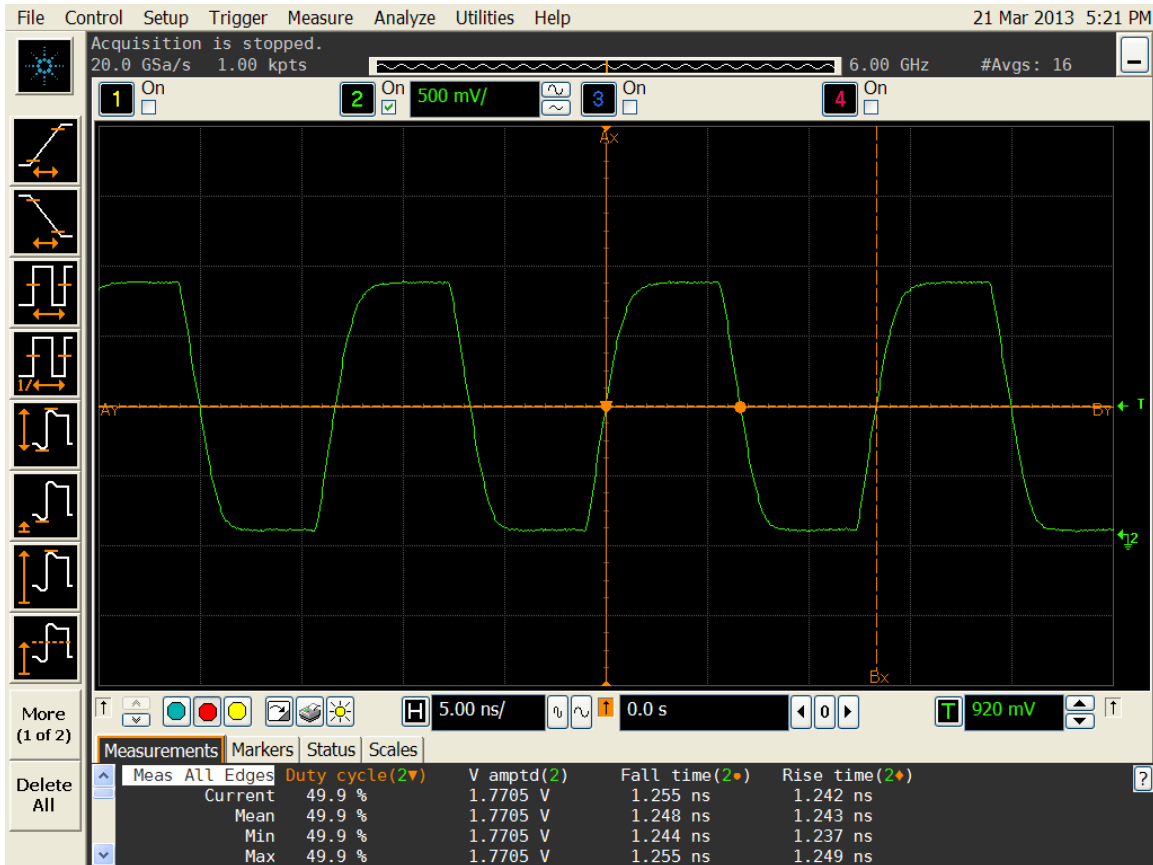



Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V

|   |               |                                    |              |              |
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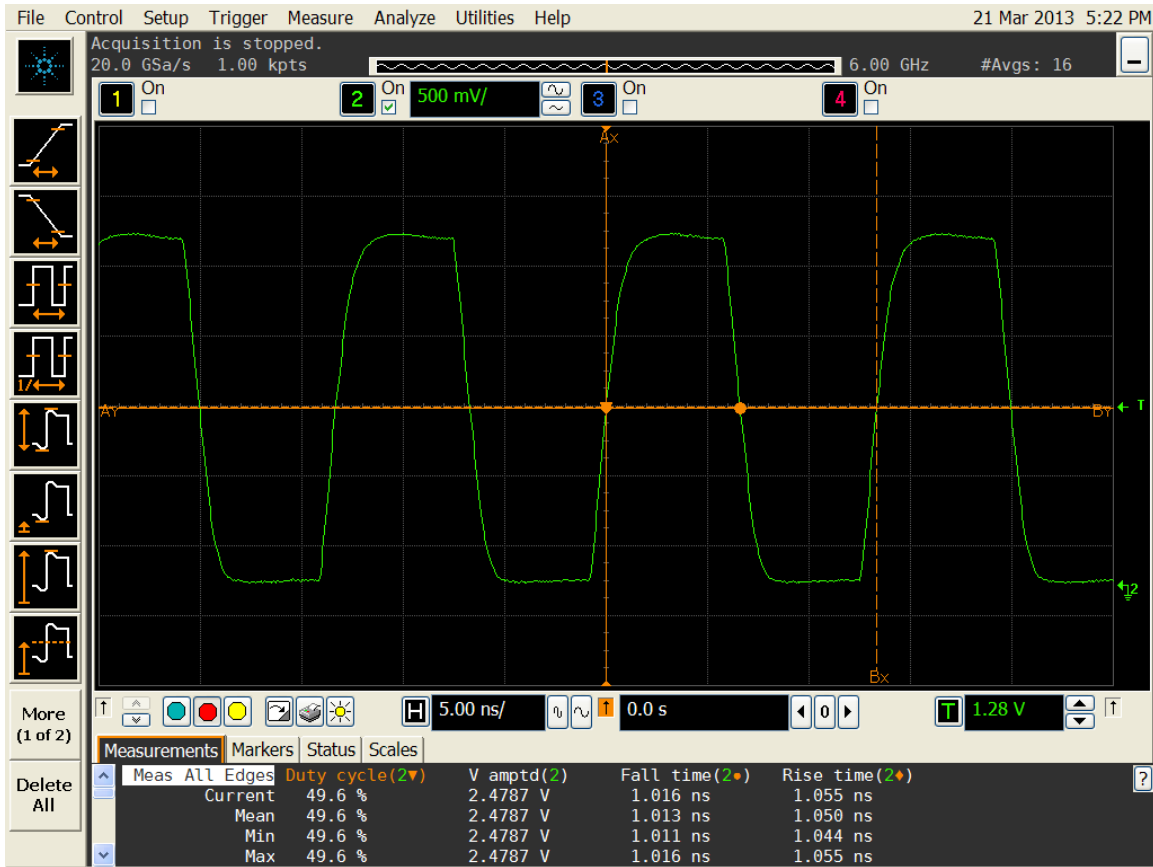



Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

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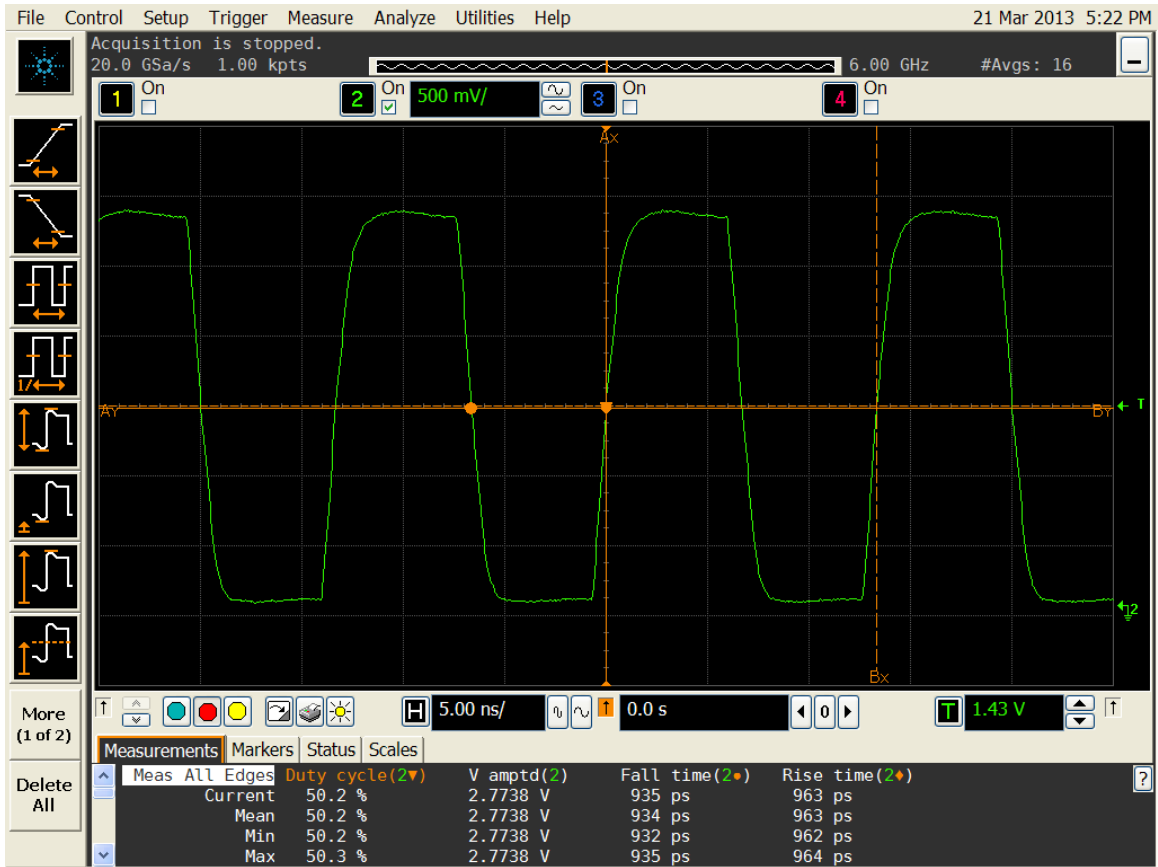


Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

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

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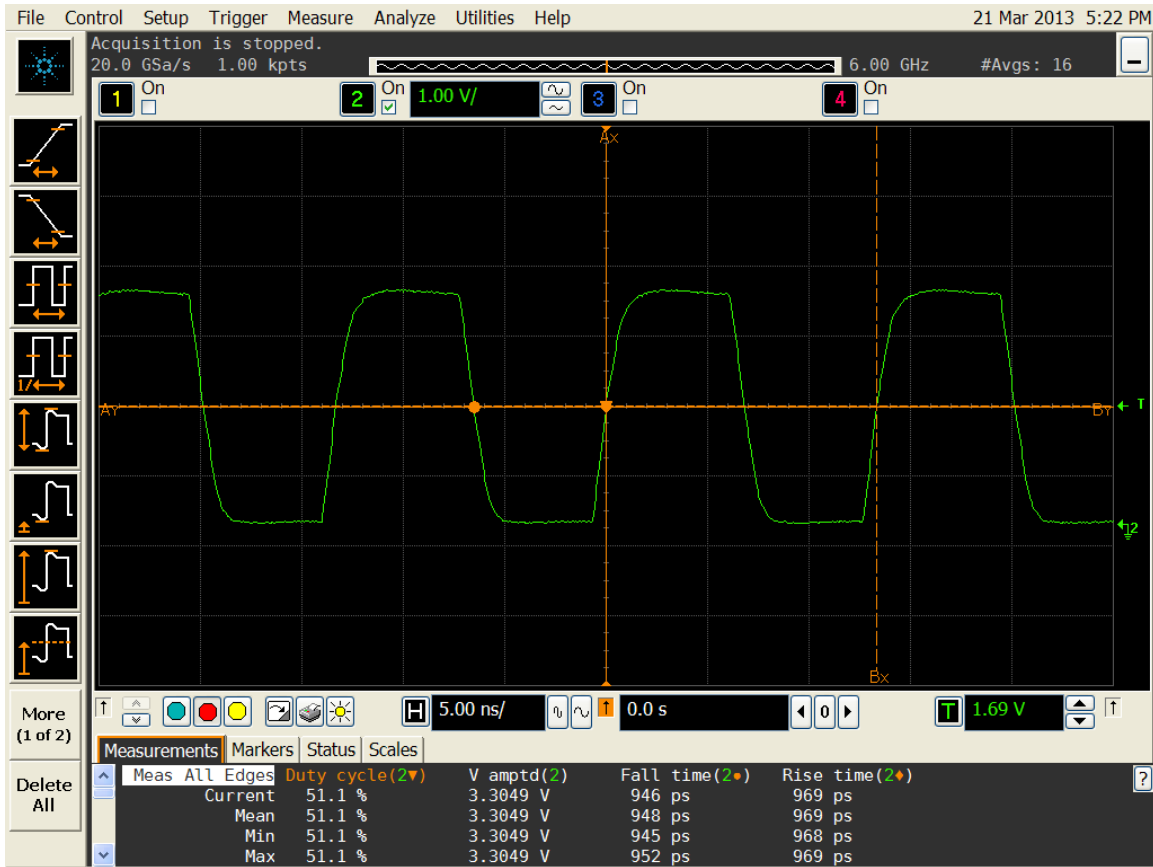


Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V

|                |               |   |                           |
|----------------|---------------|---|---------------------------|
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Figure 6. Frequency stability\* versus temperature, 1.8 V

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

|                |               |   |              |                     |
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Figure 7. Frequency stability versus temperature, 2.5 V

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Figure 8. Frequency stability versus temperature, 2.8 V

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Figure 9. Frequency stability versus temperature, 3.0 V

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Figure 10. Frequency stability versus temperature, 3.3 V

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