


|                                                                                   |               |                                             |              |                     |  |
|-----------------------------------------------------------------------------------|---------------|---------------------------------------------|--------------|---------------------|--|
|  | <b>Title:</b> | <b>Performance Report SiT2001B, 40.5MHz</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-40.5MHz.**

**Conditions:**

- Frequency 40.5 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   | 0.61    | 0.63  | 0.63  | 0.63  | 0.63  |
| Random Phase jitter (12kHz - 20MHz)            | ps, rms   | 1.30    | 1.30  | 1.30  | 1.31  | 1.30  |
| Period jitter                                  | ps, rms   | 1.79    | 1.57  | 1.56  | 1.54  | 1.54  |
| Period jitter (10,000 cycles)                  | ps, pk-pk | 14.4    | 12.2  | 12.0  | 11.5  | 11.9  |
| Duty cycle                                     | %         | 49.9    | 49.8  | 50.1  | 50.4  | 50.7  |
| Rise time (20% - 80%)                          | ns        | 1.24    | 1.03  | 0.93  | 0.97  | 0.92  |
| Fall time (80% - 20%)                          | ns        | 1.24    | 0.98  | 0.89  | 0.95  | 0.91  |
| Amplitude                                      | V         | 1.77    | 2.46  | 2.72  | 2.95  | 3.25  |
| Current consumption (no load, output enabled)  | mA        | 3.81    | 4.00  | 4.09  | 4.13  | 4.23  |
| Current consumption (no load, output disabled) | mA        | 3.42    | 3.49  | 3.55  | 3.59  | 3.66  |

|                                                                                   |               |                                      |              |              |
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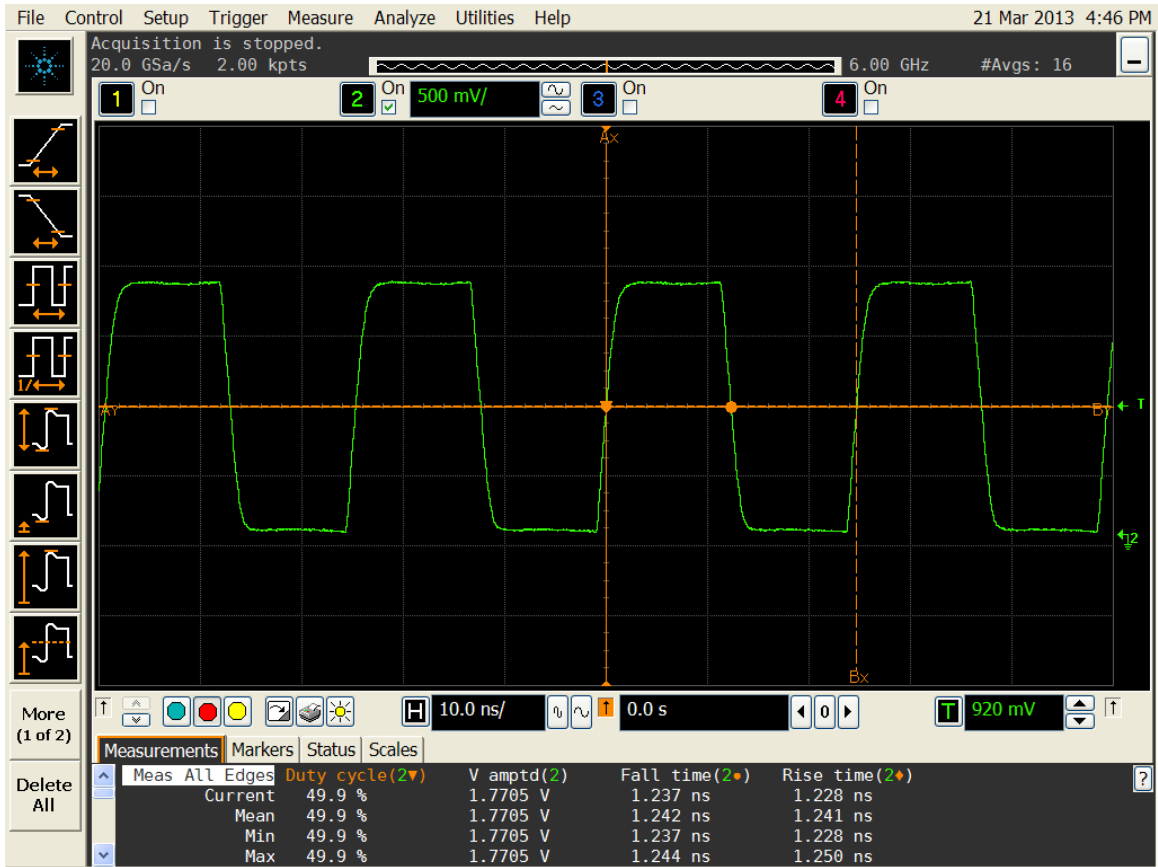



Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V

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|                                                                                   | <b>Orig:</b>  |                                      | <b>Date:</b> Mar 31, 2014 |

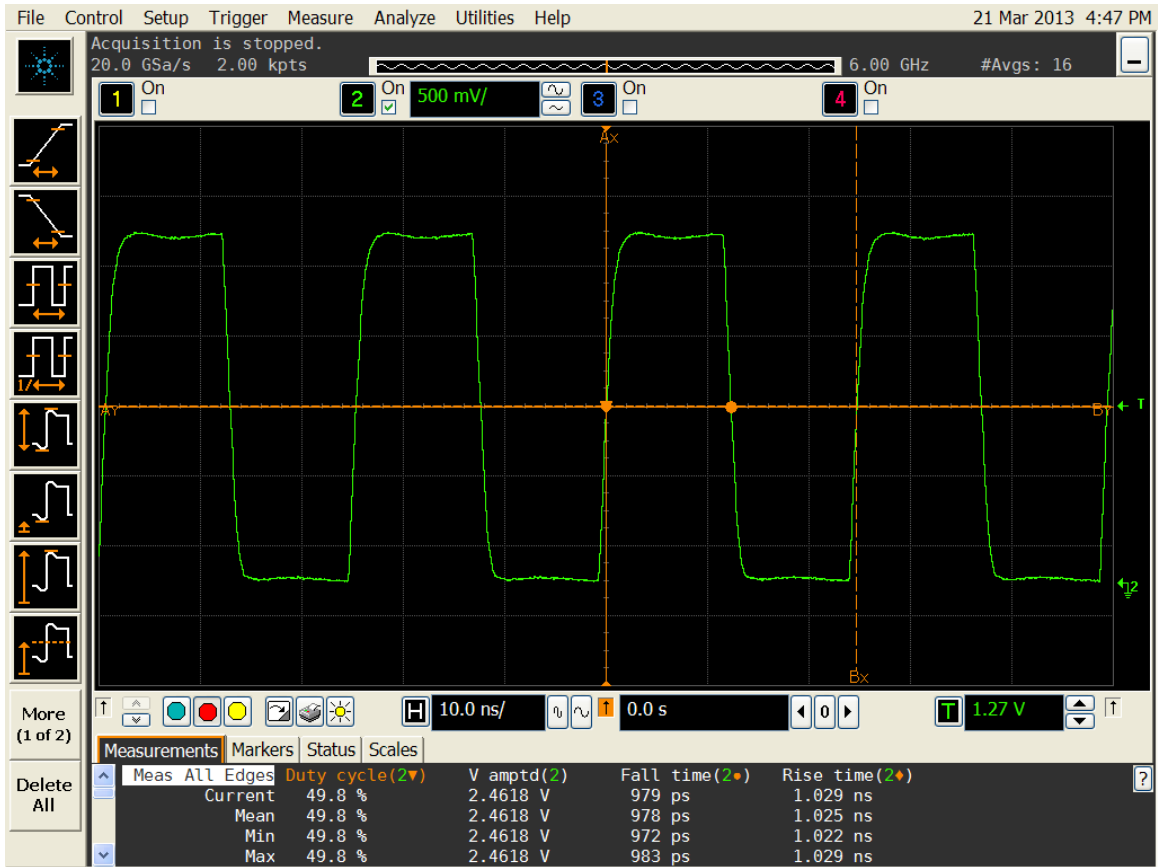



Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V

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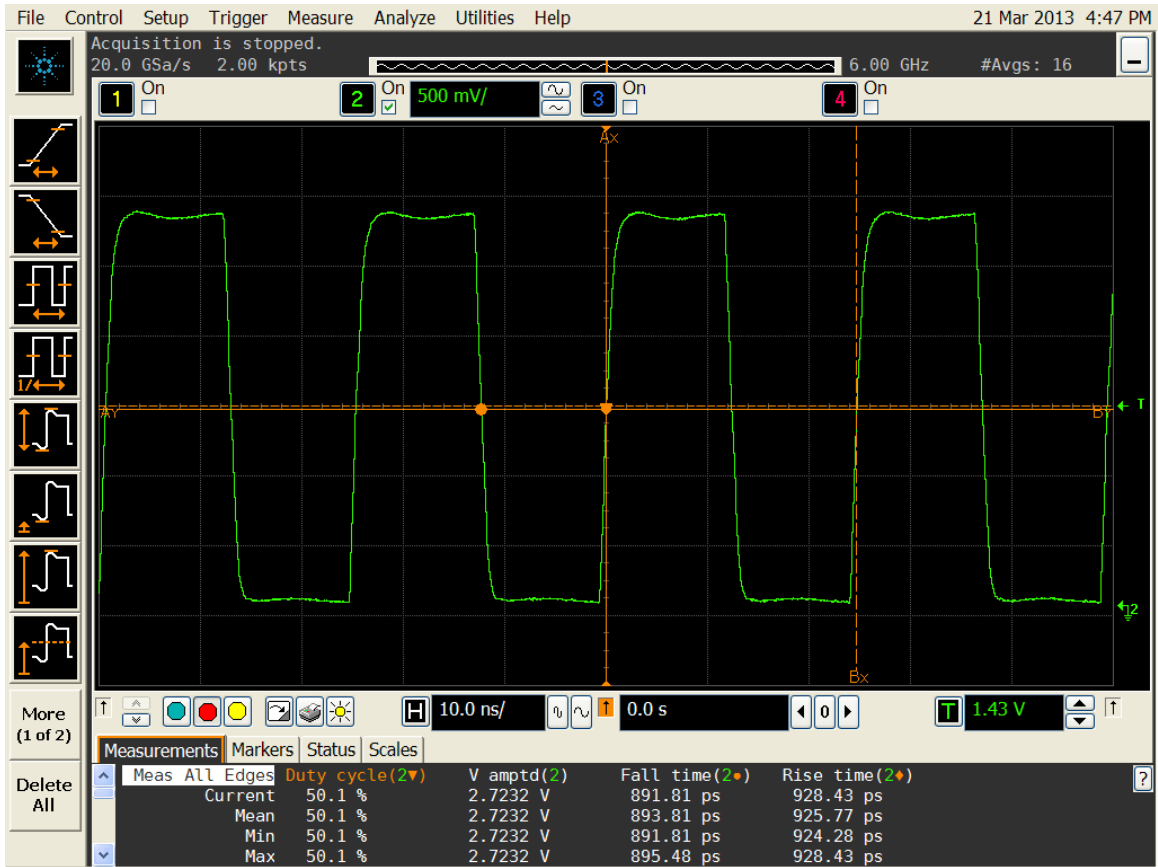



Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V

|                                                                                   |               |                                      |              |              |
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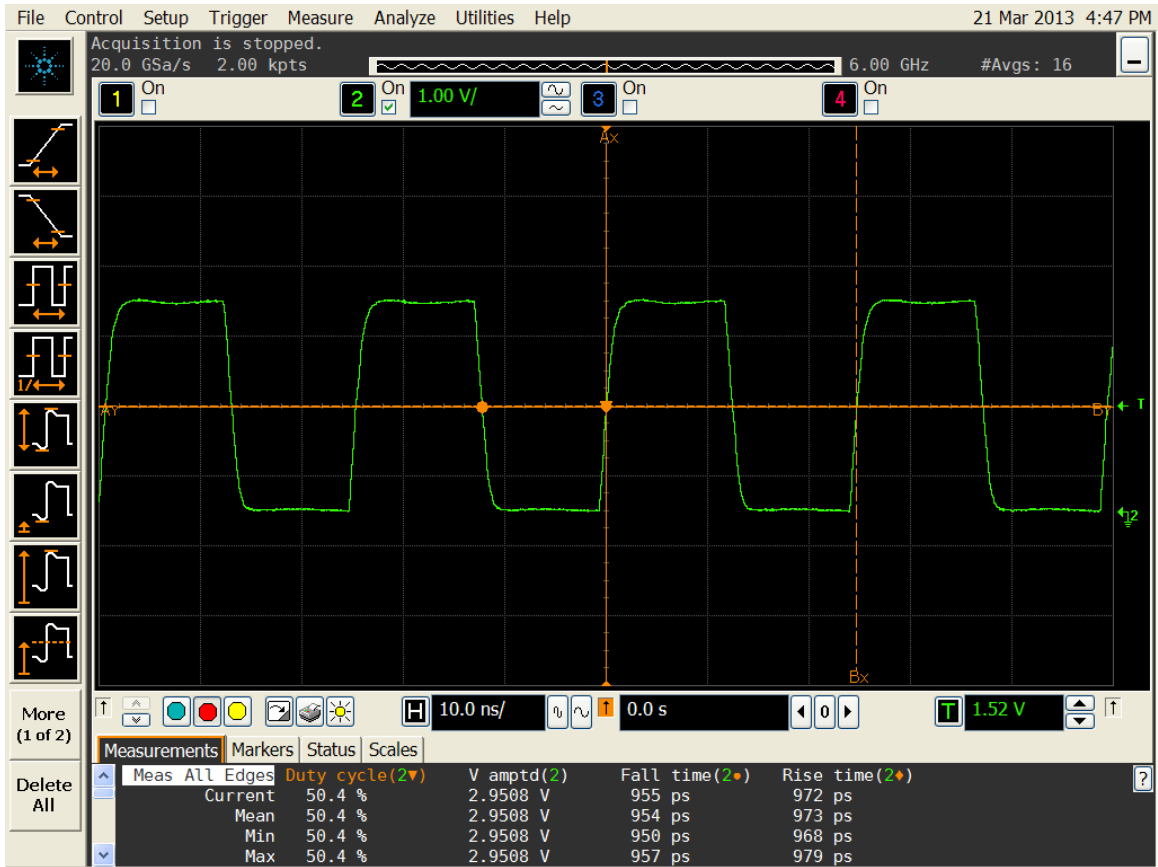



Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V

|                                                                                   |               |                                      |              |              |
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|                                                                                   | <b>Orig:</b>  |                                      | <b>Date:</b> | Mar 31, 2014 |

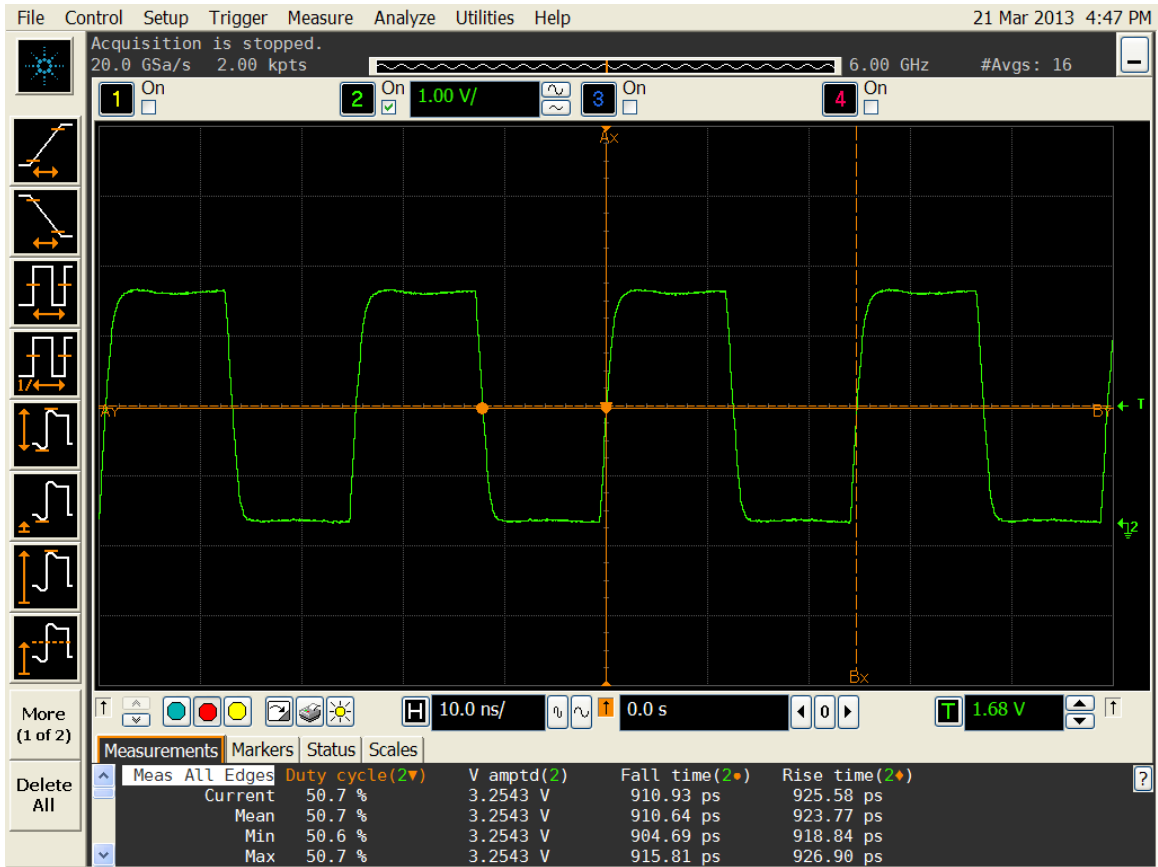


Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V

|                |               |                                             |                           |
|----------------|---------------|---------------------------------------------|---------------------------|
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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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|                                                                                   |               |                                      |                           |
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Figure 8. Frequency stability versus temperature, 2.8 V

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|                                                                                   |               |                                      |                           |
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Figure 9. Frequency stability versus temperature, 3.0 V

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|                |               |                                             |              |                     |
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Figure 10. Frequency stability versus temperature, 3.3 V

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