This report contains sample performance data for SiT8008B-33MHz.

Conditions:
- Frequency 33 MHz
- Vdd 1.8V, 2.5V, 2.8V, 3.0V, 3.3V
- Temperature 25°C
- Termination:
  - No load for IDD
  - 50Ω to GND for phase noise
  - 15pF for other tests

Equipment:
- Agilent DSA90604 oscilloscope (6GHz, 20Gsps)
  - Period jitter, waveform, rise/fall time, duty cycle, amplitude
- Agilent E5052B Signal Source Analyzer
  - Phase noise, integrated phase jitter
- Power supply current
  - 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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>1.8 V</th>
<th>2.5 V</th>
<th>2.8 V</th>
<th>3.0 V</th>
<th>3.3 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Random Phase jitter (900kHz - 5MHz)</td>
<td>ps, rms</td>
<td>0.45</td>
<td>0.47</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
</tr>
<tr>
<td>Random Phase jitter (12kHz - 5MHz)</td>
<td>ps, rms</td>
<td>1.19</td>
<td>1.19</td>
<td>1.19</td>
<td>1.20</td>
<td>1.19</td>
</tr>
<tr>
<td>Random Phase jitter (900kHz - 20MHz)*</td>
<td>ps, rms</td>
<td>0.70</td>
<td>0.74</td>
<td>0.74</td>
<td>0.75</td>
<td>0.75</td>
</tr>
<tr>
<td>Random Phase jitter (12kHz - 20MHz)*</td>
<td>ps, rms</td>
<td>1.31</td>
<td>1.33</td>
<td>1.32</td>
<td>1.33</td>
<td>1.32</td>
</tr>
<tr>
<td>Period jitter</td>
<td>ps, pk-pk</td>
<td>13.9</td>
<td>12.5</td>
<td>12.3</td>
<td>12.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Period jitter (10,000 cycles)</td>
<td>ps, pk-pk</td>
<td>49.9</td>
<td>49.8</td>
<td>50.1</td>
<td>50.3</td>
<td>50.5</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>%</td>
<td>1.24</td>
<td>1.03</td>
<td>0.94</td>
<td>1.00</td>
<td>0.94</td>
</tr>
<tr>
<td>Rise time (20% - 80%)</td>
<td>ns</td>
<td>1.24</td>
<td>0.98</td>
<td>0.90</td>
<td>0.97</td>
<td>0.92</td>
</tr>
<tr>
<td>Fall time (80% - 20%)</td>
<td>ns</td>
<td>1.76</td>
<td>2.46</td>
<td>2.76</td>
<td>3.00</td>
<td>3.29</td>
</tr>
<tr>
<td>Amplitude</td>
<td>V</td>
<td>3.73</td>
<td>3.89</td>
<td>3.97</td>
<td>4.01</td>
<td>4.09</td>
</tr>
<tr>
<td>Current consumption (no load, output enabled)</td>
<td>mA</td>
<td>3.43</td>
<td>3.49</td>
<td>3.55</td>
<td>3.59</td>
<td>3.66</td>
</tr>
<tr>
<td>Current consumption (no load, output disabled)</td>
<td>mA</td>
<td>3.73</td>
<td>3.89</td>
<td>3.97</td>
<td>4.01</td>
<td>4.09</td>
</tr>
</tbody>
</table>

*Calculated by extending the noise floor of the phase noise from 5 MHz to 20 MHz
Figure 1. Duty cycle, Rise/Fall time and Amplitude 1.8V
Figure 2. Duty cycle, Rise/Fall time and Amplitude 2.5V
Figure 3. Duty cycle, Rise/Fall time and Amplitude 2.8V
Figure 4. Duty cycle, Rise/Fall time and Amplitude 3.0V
Figure 5. Duty cycle, Rise/Fall time and Amplitude 3.3V
Frequency stability versus temperature, 1.8 V

Figure 6. Frequency stability* versus temperature, 1.8 V

*Please note that frequency stability in SiTime devices is not depended on output frequency.
Figure 7. Frequency stability versus temperature, 2.5 V
Figure 8. Frequency stability versus temperature, 2.8 V
Figure 9. Frequency stability versus temperature, 3.0 V
Figure 10. Frequency stability versus temperature, 3.3 V