Frequency Response function of Cable_Model

![Frequency Response](image)

Fig:1 Frequency Response function of Cable_Model

Signal Analysis at the generation point

Analog Parameters on CLOCK channel
○ Jitter Values on CLOCK

<table>
<thead>
<tr>
<th>Maximum Measured Data Jitter</th>
<th>TJ(BER=1.000e-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.66214e-11 (s)</td>
<td>4.53247e-11 (s)</td>
</tr>
</tbody>
</table>

○ Jitter Components on CLOCK

<table>
<thead>
<tr>
<th>TJ</th>
<th>DJ</th>
<th>RJ</th>
<th>Qber_r</th>
<th>Qber_l</th>
<th>A_r</th>
<th>A_l</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5325e-11 (s)</td>
<td>2.4776e-12 (s)</td>
<td>3.0642e-12 (s)</td>
<td>6.9990e-00</td>
<td>6.9848e+00</td>
<td>9.6236e-01</td>
<td>1.0376e+00</td>
</tr>
</tbody>
</table>

Q-scale --> TJ(1.0e-12) = 4.532e-11

$\sigma = 3.064e-12$
$\mu = 2.477e-12$

$\mu_r = 1.070e-12$
$\sigma_r = 3.126e-12$
$A_r = 2.579e+00$
$we_r = 9.624e-01$

Fig:2 CLOCK Jitter PDF
Fig:3 CLOCK Eye Diagram

- **Analog Signal Analysis CLOCK**

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Measured Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHIGH - Differential</td>
<td>6.067e-01 (V)</td>
</tr>
<tr>
<td>VLOW - Differential</td>
<td>-5.893e-01 (V)</td>
</tr>
<tr>
<td>Minimum &quot;1&quot;</td>
<td>6.067e-01 (V)</td>
</tr>
<tr>
<td>Minimum &quot;0&quot;</td>
<td>-5.893e-01 (V)</td>
</tr>
<tr>
<td>Minimum Rise Time</td>
<td>7.929e-11 (s)</td>
</tr>
</tbody>
</table>

**Analog Parameters on DATA channel**

- **Jitter Values on DATA**

<table>
<thead>
<tr>
<th>Maximum Measured Data Jitter</th>
<th>TJ(BER=1.000e-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.65850e-11 (s)</td>
<td>7.92166e-11 (s)</td>
</tr>
</tbody>
</table>

- **Jitter Components on DATA**

<table>
<thead>
<tr>
<th>TJ</th>
<th>DJ</th>
<th>RJ</th>
<th>Qber_r</th>
<th>Qber_l</th>
<th>A_r</th>
<th>A_l</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.9217e-11 (s)</td>
<td>2.3716e-11 (s)</td>
<td>4.0099e-12 (s)</td>
<td>6.9200e+00</td>
<td>6.9206e+00</td>
<td>8.6579e-01</td>
<td>1.1342e+00</td>
</tr>
</tbody>
</table>
Oscilloscope Measures

Fig: 4 DATA Jitter PDF

Fig: 5 DATA Eye Diagram

○ Analog Signal Analysis DATA

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Measured Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHIGH - Differential</td>
<td>6.680e-01 (V)</td>
</tr>
<tr>
<td>VLOW - Differential</td>
<td>-6.499e-01 (V)</td>
</tr>
</tbody>
</table>
Signal Analysis After Cable

Analog Parameters on CLOCK channel

- **Jitter Values on CLOCK**

<table>
<thead>
<tr>
<th>Maximum Measured Data Jitter</th>
<th>TJ(BER=1.000e-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.86113e-11 (s)</td>
<td>4.82624e-11 (s)</td>
</tr>
</tbody>
</table>

- **Jitter Components on CLOCK**

<table>
<thead>
<tr>
<th>TJ</th>
<th>DJ</th>
<th>RJ</th>
<th>Qber_r</th>
<th>Qber_l</th>
<th>A_r</th>
<th>A_l</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8262e-11 (s)</td>
<td>3.9641e-12 (s)</td>
<td>3.1755e-12 (s)</td>
<td>6.9788e-00</td>
<td>6.9712e+00</td>
<td>1.0008e+00</td>
<td>9.9919e-01</td>
</tr>
</tbody>
</table>

Q-scale --> TJ(1.0e-12) = 4.826e-11

\[ \sigma = 3.175e-12 \]
\[ \mu = 3.964e-12 \]

\[ \mu_i = -2.076e-12 \]
\[ \sigma_i = 3.144e-12 \]
\[ A_i = 3.142e+00 \]
\[ \text{we}_i = 9.992e-01 \]

\[ \mu_r = 1.888e-12 \]
\[ \sigma_r = 3.206e-12 \]
\[ A_r = 2.978e+00 \]
\[ \text{we}_r = 1.001e+00 \]
Fig: 7 CLOCK Eye Diagram

○ Analog Signal Analysis CLOCK

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Measured Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHIGH - Differential</td>
<td>6.067e-01 (V)</td>
</tr>
<tr>
<td>VLOW - Differential</td>
<td>-5.893e-01 (V)</td>
</tr>
<tr>
<td>Minimum &quot;1&quot;</td>
<td>6.067e-01 (V)</td>
</tr>
<tr>
<td>Minimum &quot;0&quot;</td>
<td>-5.893e-01 (V)</td>
</tr>
<tr>
<td>Minimum Rise Time</td>
<td>2.826e-10 (s)</td>
</tr>
</tbody>
</table>

Analog Parameters on DATA channel

○ Jitter Values on DATA

<table>
<thead>
<tr>
<th>Maximum Measured Data Jitter</th>
<th>TJ(BER=1.000e-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.40325e-11 (s)</td>
<td>7.73819e-11 (s)</td>
</tr>
</tbody>
</table>

○ Jitter Components on DATA

<table>
<thead>
<tr>
<th>TJ</th>
<th>DJ</th>
<th>RJ</th>
<th>Qber_r</th>
<th>Qber_l</th>
<th>A_r</th>
<th>A_l</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.7382e-11 (s)</td>
<td>2.1032e-11 (s)</td>
<td>4.0836e-12 (s)</td>
<td>6.8989e+00</td>
<td>6.9002e+00</td>
<td>1.0481e+00</td>
<td>9.5192e-01</td>
</tr>
</tbody>
</table>
**Fig: 8 DATA Jitter PDF**

- $\sigma = 4.084 \times 10^{-12}$
- $\mu = 2.103 \times 10^{-11}$
- $\mu_l = 1.036 \times 10^{-11}$
- $\sigma_l = 4.112 \times 10^{-12}$
- $A_l = 5.194 \times 10^0$
- $w_e = 9.519 \times 10^{-1}$
- $\mu_r = 1.067 \times 10^{-11}$
- $\sigma_r = 4.058 \times 10^{-12}$
- $A_r = 5.241 \times 10^0$
- $w_e = 1.048 \times 10^1$

**Fig: 9 DATA Eye Diagram**

**Analog Signal Analysis DATA**

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Measured Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHIGH - Differential</td>
<td>5.294e-01 (V)</td>
</tr>
<tr>
<td>VLOW - Differential</td>
<td>-5.123e-01 (V)</td>
</tr>
<tr>
<td>Minimum &quot;1&quot;</td>
<td>3.900e-01 (V)</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Minimum &quot;0&quot;</td>
<td>-3.727e-01 (V)</td>
</tr>
<tr>
<td>Minimum Rise Time</td>
<td>1.319e-10 (s)</td>
</tr>
<tr>
<td>Minimum Fall Time</td>
<td>1.339e-10 (s)</td>
</tr>
</tbody>
</table>