## Nordic and KEK module comparison

### Modules with ASICs from the same wafer

<table>
<thead>
<tr>
<th>Nordic</th>
<th>ASIC wafer</th>
<th>S-curves</th>
</tr>
</thead>
<tbody>
<tr>
<td>202203800006</td>
<td>Z39993-W08[80,125]</td>
<td>Large osc</td>
</tr>
<tr>
<td>202203800007</td>
<td>Z40617-W03[49,92]</td>
<td>Small osc.</td>
</tr>
<tr>
<td>202203800009</td>
<td>Z40617-W03[153,192]</td>
<td>Large osc.</td>
</tr>
<tr>
<td>202203800010</td>
<td>Z40615-W23[73,90]</td>
<td>Small osc.</td>
</tr>
<tr>
<td>202203800013</td>
<td>Z40860-W04[68,139]</td>
<td>Small osc.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KEK</th>
<th>ASIC wafer</th>
<th>S-curves</th>
</tr>
</thead>
<tbody>
<tr>
<td>20220170200057</td>
<td>Z39993-W08[51,79]</td>
<td>M00 small osc.</td>
</tr>
<tr>
<td>20220170200061</td>
<td>Z39993-W08[201,227]</td>
<td>Small osc. in Link1</td>
</tr>
<tr>
<td>20220170200210</td>
<td>Z40615-W23[28,68]</td>
<td>Small osc. in Link1</td>
</tr>
<tr>
<td>20220170200219</td>
<td>other+Z40860-W04[16,58]</td>
<td>No osc.</td>
</tr>
</tbody>
</table>
## Nordic and KEK module comparison

### Another look of S-curves

<table>
<thead>
<tr>
<th>ASIC wafer</th>
<th>Nordic</th>
<th>KEK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z39993-W08</td>
<td>Large osc.</td>
<td>M00 or Link1 small osc.</td>
</tr>
<tr>
<td>Z40617-W03</td>
<td>Large and small osc.</td>
<td>No</td>
</tr>
<tr>
<td>Z40615-W23</td>
<td>Small osc.</td>
<td>Link1 small osc.</td>
</tr>
<tr>
<td>Z40860-W04</td>
<td>Small osc.</td>
<td>No</td>
</tr>
</tbody>
</table>

### Observations

1. KEK has seen 50% coincidence in the oscillation/instability

2. Trigger of the oscillation/instability is the chip, see M00 in 20220170200057. If the trigger chip is in the link1 (towards the end of chip chain), it may trigger full chips in the link1.

3. Although the chance is 50%, there may be something in the Nordic testing setup (or module assembling)... Obviously need further investigation.
ATLAS SCT Module Test - Sat Aug 24 02:42:26 2002 - KEK - Module 20220170200057mDaqLT
Run 3919 Scan 65 Module 0 Link 0 - THRESHOLD (mV) from 0.00mV to 200.00mV in 2.50mV steps, total 81 points
ATLAS SCT Module Test - Wed Jun 26 10:37:38 2002 - KEK - Module 20220170200061mDaqLT
Run 3511 Scan 65 Module 0 Link 1 - THRESHOLD (mV) from 0.00mV to 200.00mV in 2.50mV steps, total 81 points

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scurves cal3
scurves cal3
scurves cal3
scurves cal3
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Chip 0
Chip 1
Chip 2
Chip 3
Chip 4
Chip 5
Run 4606 Scan 65 Module 0 Link 0 - THRESHOLD (mV) from 0.000mV to 200.000mV in 2.500mV steps, total 81 points
Run 4684 Scan 65 Module 0 Link 0 - THRESHOLD (mV) from 0.00mV to 200.00mV in 2.50mV steps, total 81 points
Run 4725 Scan 65 Module 0 Link 0 - THRESHOLD (mV) from 0.00mV to 200.00mV in 2.50mV steps, total 81 points
Run 4725 Scan 65 Module 0 Link 1 - THRESHOLD (mV) from 0.00mV to 200.00mV in 2.50mV steps, total 81 points