Facts Sheet Interlaboratory Comparison
ILC- HF S-Parameters 10 MHz to 26.5 GHz

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Information about the standards (devices) to be circulated:

Seven standards are included in the comparison, each of which is a commercially available artefact. These devices also provide a broad range of characteristics. Unsupported coaxial devices (such as unsupported reference air lines) have not been included in this comparison exercise since the mechanical stability of such devices has been found previously [1] to be suspect compared with supported coaxial devices.

<table>
<thead>
<tr>
<th>ID</th>
<th>Standard</th>
<th>Nominal value</th>
<th>Connector description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID01</td>
<td>Adapter</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[S][11] &lt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>[S][12] ~ 1.0 (0 dB)</td>
<td>Male(2)-Female(1)</td>
<td></td>
</tr>
<tr>
<td>ID02</td>
<td>Attenuator</td>
<td>[S][21] &lt; 0.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[S][22] ~ 0.1 (20 dB)</td>
<td>Male(2)-Female(1)</td>
<td></td>
</tr>
<tr>
<td>ID03</td>
<td>Attenuator</td>
<td>[S][21] &lt; 0.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[S][22] ~ 0.1 (40 dB)</td>
<td>Male(2)-Female(1)</td>
<td></td>
</tr>
<tr>
<td>ID04</td>
<td>Matched termination</td>
<td>[S][11] &lt; 0.1</td>
<td>Female</td>
</tr>
<tr>
<td>ID05</td>
<td>Matched termination</td>
<td>[S][11] &lt; 0.1</td>
<td>Male</td>
</tr>
<tr>
<td>ID06</td>
<td>Offset short termination</td>
<td>[S][11] ~ 1.0</td>
<td>Female</td>
</tr>
<tr>
<td>ID07</td>
<td>Offset short termination</td>
<td>[S][11] ~ 1.0</td>
<td>Male</td>
</tr>
</tbody>
</table>


Measurement parameters:
The measurand(s) for each device are as follows:

- For each of the three attenuators (ID01, ID02, ID03): all four complex-valued S-parameters (S11, S12, S21 and S22);
- For each of the four terminations, i.e. two matches and two mismatches (ID04, ID05, ID06, ID07): the complex-valued voltage reflection coefficient (S11).

All measured pin-depth values (metric units) of the travelling standards and the used test-ports have to be reported. Test-port inner conductor should be in recession and no protrusion is allowed on any connector.

Measurement frequencies:
Each device will be measured from 100 MHz to 26.5 GHz (inclusive) in 100 MHz steps. However, the list of comparison frequency points is therefore as follows:

- 50 MHz, 6.0 GHz, 12.4 GHz, 18.0 GHz and 26.5 GHz

Reference laboratory:
VSL, the Dutch National Metrology institute (traceability of the reference values is guaranteed)
Requirement 5.9 ISO/IEC 17025:
Assuring quality of testing and calibration results: The laboratory will have quality control procedures for monitoring test validity and calibrations undertaken. This monitoring will be planned and validated and may include the following: participation in interlaboratory comparisons or proficiency-testing programmes.
Registration for Interlaboratory Comparison
HF S-Parameters 100 MHz to 26.5 GHz

Organisation/Laboratory: 

Contact person
Title: 
Name: 
E-mail: 
Tel: 
Fax: 

Correspondence address
Street / P.O. Box: 
Postal code: 
City: 
State / Province: 
Country: 

Delivery Address
Street: (do NOT use a P.O. box here)
Postal code: 
City: 
State / Province: 
Country: 

Invoice Address
Street / P.O. Box: 
Postal code: 
City: 
State / Province: 
Country: 

Participation in:
☐ ILC: HF - S parameters round 2 € 1950.00

Purchase Order number: 

Registration until 1 August 2015, minimum: 5 participants, maximum: 10 participants!

Note:
- VSL reserves the right to cancel the ILC in case the number of participants is smaller than anticipated
- No refunds will be given for failure to take part in the ILC
- Upon receipt of payment, the report will be published.
- General Terms and Conditions of VSL B.V. are applicable
- Prices (EUR) are exclusive VAT and shipping costs

Signature: _____________________________ Date: ____________________________

Please return form to:
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Fax +31 15 261 2971 or E-Mail to ComPass@vsl.nl