The CCI is used to couple EFT/burst pulses to I/O lines as required in different European and international standards for immunity testing.

The coupling of the Electrical Fast Transients EFT/burst to signal lines can usually not be achieved by discrete capacitive coupling without interfering with the signal flow. It is often impossible to contact the required circuit (direct), e.g. coaxial or shielded cables. In this case the coupling is realized by the capacitive coupling clamp. The interference simulator can be connected on both sides of the coupling clamp.

The IEC 61000-4-4 Ed 3.0 published 2012 recomends the calibration of the capacitive coupling clamp into a 50ohm coaxial load with the normative calibration kit CCI PVKIT 1.

**HIGHLIGHTS**

- Construction as per IEC 61000-4-4 Ed.3
- EFT/Burst testing of signal- and datalines
- Active coupling length 1 m
- Permissible burst voltage 7 kV
- For cable diameter up to 40 mm

**APPLICATION AREAS**

- INDUSTRY
- TELECOM
- MEDICAL
- RESIDENTIAL
- BROADCAST
TECHNICAL DETAILS

CCI PVKIT 1 CALIBRATION SE-TUP

CALIBRATION OF THE CAPACITIVE COUPLING CLAMP

The standard IEC 61000-4-4 Ed 3.0 recommends a new calibration of the capacitive coupling clamp. EM Test developed for the calibration, the CCI PVKIT 1 set.

Components required for carry out the calibration:
CCI PVKIT 1: Consisting of transducer-plate and support
PVF 50: Load resistor 50ohm
PVF AD 3: Adapter 4 mm for connect the transducer-plate to the coaxial SHF connector of PVF 50

Calibration set-up
The transducer plate shall be placed into the capacitive coupling clamp such that the end with the connection is aligned with the end of the coupling plate. The connecting adapter PVF AD 3 is bond with a low impedance connection band to ground reference plane for grounding of the 50ohm coaxial measurement terminator/attenuator. The load resistor PVF 50 is connected to the PVF AD 3 adapter. An acrylic support places the PVF 50 to the same 100 mm height as the coupling clamp is distant from the reference ground. The distance between the transducer plate and the PVF 50 measurement terminator/attenuator shall not exceed 0,1m. A setup example is given in figures on this datasheet.

COUPLING CLAMP CALIBRATION

The calibration of the capacitive coupling plane is performed with the open circuit voltage setting at the EFT/burst generator (50 ohm output): 2,000 V

Resulting output voltage across the PVF 50 (50ohm matching resistor): 1,000 V.

Measuring voltage Vm: 10 V

Measured voltage considering the 50 ohm input impedance of the oscilloscope: 5 V

Resulting attenuation (theoretical): 400:1
## TECHNICAL DETAILS

### CCI CAPACITIVE COUPLING CLAMP

<table>
<thead>
<tr>
<th><strong>TECHNICAL DATA CAPACITIVE COUPLING CLAMP</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Max Voltage</strong></td>
<td>7.0 kV</td>
</tr>
<tr>
<td><strong>Dimension Coupling plate</strong></td>
<td>140 mm x 1000 mm</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>GND - Coupling plate, 100 mm</td>
</tr>
<tr>
<td><strong>Connector</strong></td>
<td>High voltage connector, coaxial</td>
</tr>
<tr>
<td><strong>GND connection</strong></td>
<td>4 mm plug, banana</td>
</tr>
<tr>
<td><strong>EUT cable</strong></td>
<td>up to 40 mm diameter</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>10.6 kg</td>
</tr>
</tbody>
</table>

### OPTIONS

<table>
<thead>
<tr>
<th><strong>CCI PVKIT 1 (KIT FOR CCI CALIBRATION)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transducer plate</strong></td>
<td>Insulated copper foil with 4 mm connection plug, Insulation: 1,100 mm x 130 mm, Copper foil: 1,050 mm x 120 mm</td>
</tr>
<tr>
<td><strong>Acrylblock (support)</strong></td>
<td>Support for measuring adapter PVF 50 on 100 mm level for capacitive coupling clamp verification</td>
</tr>
<tr>
<td><strong>PVF AD3</strong></td>
<td>Adapter 4 mm to coaxial SHF connector, (connection Load resistor to transducer plate)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>PVF BKIT 1 (KIT FOR BURST IMPULSE VERIFICATION)</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PVF 50</strong></td>
<td>Coaxial 50 ohm load resistor for EFT/Burst transient verification</td>
</tr>
<tr>
<td><strong>PVF 1000</strong></td>
<td>Coaxial 1,000 ohm load resistor for EFT/Burst transient verification</td>
</tr>
<tr>
<td><strong>PVF AD 1</strong></td>
<td>Adapter to match the 4mm/6mm EUT output to the PVF 50 load resistor, (connection Load resistor to EUT output)</td>
</tr>
</tbody>
</table>

### GENERAL DATA

<table>
<thead>
<tr>
<th><strong>ENVIRONMENT</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temperature</strong></td>
<td>10° C to 40° C</td>
</tr>
<tr>
<td><strong>Rel. humidity</strong></td>
<td>Max. 85 %, non condensing</td>
</tr>
<tr>
<td><strong>Atmospheric pressure</strong></td>
<td>86 kPa (860 mbar) to 106 kPa (1,060 mbar)</td>
</tr>
</tbody>
</table>
COMPETENCE WHEREVER YOU ARE

Contact EM Test Directly:

**Switzerland**
AMETEK CTS GmbH > Sternenhofstraße 15 > 4153 Reinach > Switzerland
Phone +41 (0)61 204 41 11 > Fax +41 (0)61 204 41 00
Internet: www.ametek-cts.com > E-mail: sales.conducted.cts@ametek.com

**Germany**
AMETEK CTS Europe GmbH > Customer Care Center EMEA > Lünener Straße 211 > 59174 Kamen > Germany
Phone +49 (0) 2307 26070-0 > Fax +49 (0) 2307 17050
Internet: www.ametek-cts.com > E-mail: info.cts.de@ametek.com

**Poland**
AMETEK CTS Europe GmbH > Biuro w Polsce > ul. Twarda 44 > 00-831 Warsaw > Poland
Phone +48 (0) 518 643 12
Internet: www.ametek-cts.com > E-mail: Infopolska.cts@ametek.com

**USA / Canada**
AMETEK CTS US > 52 Mayfield Ave > Edison > NJ 08837 > USA
Phone +1 732 417 0501
Internet: www.ametek-cts.com > E-mail: usasales.cts@ametek.com

**P.R. China**
AMETEK Commercial Enterprise (Shanghai) Co. Ltd. > Beijing Branch
Western Section, 2nd floor Jing Dong Fang Building (B10) > Chaoyang District > Beijing, China, 100015
Phone +86 10 8526 2111 > Fax +86 (0)10 82 67 62 38
Internet: www.ametek-cts.com > E-mail: chinasales@ametek.com

**Republic of Korea**
EM TEST Korea Limited > #605 > WooYeon Plaza > #986-8 > YoungDeok-dong > Giheung-gu > Yongin-si > Gyeonggi-do > Korea
Phone +82 (31) 216 8616 > Fax +82 (31) 216 8616
Internet: www.emtest.co.kr > E-mail: sales@emtest.co.kr

**Singapore**
AMETEK Singapore Pte. Ltd. > No 43 Changi South Avenue 2 > 04-01 Singapore 48164
Internet: www.ametek-cts.com > E-mail: singaporesales.cts@ametek.com

**Great Britain**
AMETEK GB > 5 Ashville Way > Molly Millars Lane > Wokingham > Berkshire RG41 2 PL > Great Britain
Phone +44 845 074 0660
Internet: www.ametek-cts.com

Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Subject to change without further notice.