

# CCI

## CAPACITIVE COUPLING CLAMP



### FOR TESTS ACCORDING TO ...

- > IEC 61000-4-4
- > EN 61000-4-4
- > IEC 61000-4-18
- > EN 61000-4-18

### CALIBRATION SET FOR CAPACITIVE COUPLING CLAMP VERIFICATION

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 recommends 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**

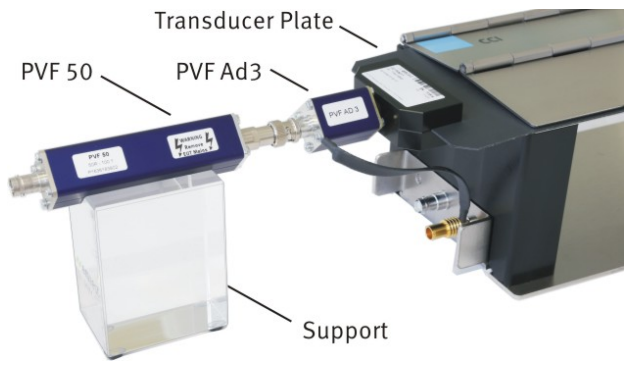
**CALIBRATION OF THE CAPACITIVE COUPLING CLAMP**

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**

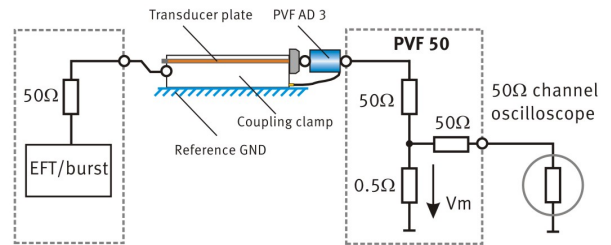
The calibration of the capacitive coupling plane is performed with the open circuit voltage setting at the EFT/burst generator (50 ohm output): 2,000 V

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

Measuring voltage  $V_m$ : 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

## TECHNICAL DATA CAPACITIVE COUPLING CLAMP

Max Voltage	7.0 kV
Dimension Coupling plate	140 mm x 1000 mm
Height	GND - Coupling plate, 100 mm
Connector	High voltage connector, coaxial
GND connection	4 mm plug, banana
EUT cable	up to 40 mm diameter
Weight	10.6 kg

## GENERAL DATA

## ENVIRONMENT

Temperature	10° C to 40° C
Rel. humidity	Max. 85 %, non condensing
Atmospheric pressure	86 kPa (860 mbar) to 106 kPa (1,060 mbar)

## OPTIONS

## CCI PVKIT 1 (KIT FOR CCI CALIBRATION)

Transducer plate	Insulated copper coil with 4 mm connection plug, Insulation: 1,100 mm x 130 mm, Copper foil: 1,050 mm x 120 mm
Acrylblock (support)	Support for measuring adapter PVF 50 on 100 mm level for capacitive coupling clamp verification
PVF AD3	Adapter 4 mm to coaxial SHF connector, (connection Load resistor to transducer plate)

## PVF BKIT 1 (KIT FOR BURST IMPULSE VERIFICATION)

PVF 50	Coaxial 50 ohm load resistor for EFT/Burst transient verification
PVF 1000	Coaxial 1,000 ohm load resistor for EFT/Burst transient verification
PVF AD 1	Adapter to match the 4mm/6mm EUT output to the PVF 50 load resistor, (connection Load resistor to EUT output)

# COMPETENCE WHEREVER YOU ARE



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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.