RF ATTENUATION CLAMP
KEMA 801A

USER MANUAL

AMETEK®
COMPLIANCE TEST SOLUTIONS

TESEQ
Advanced Test Solutions for EMC

RF ATTENUATION CLAMP KEMA 801A

USER MANUAL

CONTENT

1. SAFETY ADVICE

The clamp can be part of a setup which works at dangerous voltages.

WARNING: Improper or careless handling can be fatal!
Use of the clamp is restricted to authorized and trained specialists

These operating instructions form an integral part of the equipment and must be available to the operating personnel at all times. All the safety instructions and advice notes are to be observed. Neither Teseq GmbH nor any of the subsidiary sales organizations or the manufacturer can accept any responsibility for personal, material or consequential injury, loss or damage that results from improper use of the equipment and accessories.

1.1. General

- Use of the clamp is restricted to authorized and trained specialists
- In the fault case dangerously high voltage may be on the housing of the EUT.
- Safety against voltage flashover between cable under test and clamp is on the responsibility of the test personnel. The use of sufficient isolation is strongly recommended.
- Operate the equipment only in dry surroundings. Allow any condensation that occurs to evaporate before putting the instrument into operation.
- Do not exceed the permissible ambient temperature, humidity or altitude.
- Only approved accessory items, connectors, adapters, etc. are to be used to ensure safe operation.
- Do not place the product on surfaces that for reasons of weight or stability are unsuitable for this purpose.

1.2. Installation

Never use the clamp if the isolation of cables is damaged or not used. Check the isolation on a regular basis to ensure that it is in proper operating condition.
The clamp is not protected against any over load. Avoid any over load with adequate arrangements.

1.3. Applicable safety standards

Development and manufacture of the instrument complies with ISO 9001. The product conforms with the requirements of the Low Voltage Directive (LVD) 2014/35/EU based on DIN EN 61010-1:2011.

2. UNPACKING, STORAGE AND TRANSPORT

2.1. General

Save all packing materials! They will be needed in order to safely package the equipment for calibration service or repair

Packaging materials

- Carton: Cardboard
- Padding: CFC-free polystyrene foam
- Plastic bags: Polyethylene

- Avoid the risk of condensation occurring! If a large temperature difference has been experienced, allow time for the temperature to stabilize. This may take several hours.

2.2. Storage and transport

- Do not stack, either packed or unpacked.
- Do not up-end, arrows on the packaging must always point upwards.
- Protect from dampness, heat, cold and rain
- Do not throw
- Do not sit or stand on the instrument and packaging.

2.3. Unpacking

- Is the packaging damaged? If YES ☎ transportation company
- Are all the packages present and correct? If NO ☎ transportation company
- Open the packaging, remove the accessories.
- Grip the instrument at the sides and lift it from the packaging.
- Are the instrument or accessories damaged? If YES ☎ transportation company
- Are the contents of the package complete? If NO ☎ sales outlet
- Keep the instruction manual with the instrument.
- Keep the packaging.

2.4. Scope of delivery and order information

Part number	Description
238526	KEMA 801A Attenuation Clamp, conform with IEC / EN 61000-4-6
97-235501	KEMA 801-TC Traceable calibration (ISO17025), order only with KEMA

3. APPLICATION AND STANDARD REQUIREMENTS

3.1. General

The KEMA 801A is recommended as an additional decoupling network (ferrite tube clamp) for immunity test according to IEC / EN 61000-4-6 when using the clamp injection method. It shall be inserted on all the cables between EUT and AE except the cable under test. The KEMA 801A prevents, that the test signal applied to the EUT affects other devices, equipment or systems, which are not under test and improves the reproducibility of the test results.
The clamp mechanism of the KEMA 801A makes possible a simple insertion in the test setup.
Other application: Prevention of unwanted RF- currents at cables during emission measurements.

3.2. Test set-up example

The following figure shows a test set-up example for testing in accordance with IEC 61000-4-6 (EN 61000-4-6).

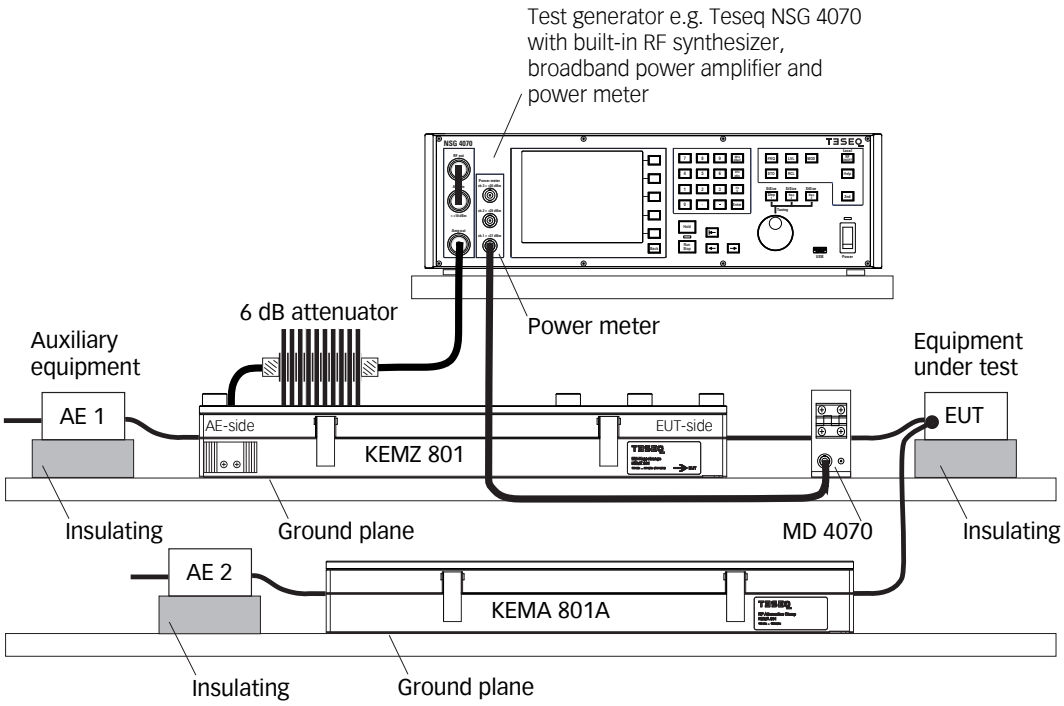


Figure 1: Test set-up with EUT according IEC / EN 61000-4-6 with EM clamp (KEMZ 801), RF attenuation clamp (KEMA 801A) and monitoring probe (MD 4070)

4. VERIFICATION OF THE INSERTION LOSS

The insertion loss is measured in a 50 Ω system with CAL KEMZ, 10 dB attenuators, network analyzer and cables. In a first step the measuring set-up is normalized with two connected impedance measurement adapters and 10 dB attenuators as shown in the figure below. The RF matching is improved by the 10 dB attenuators.

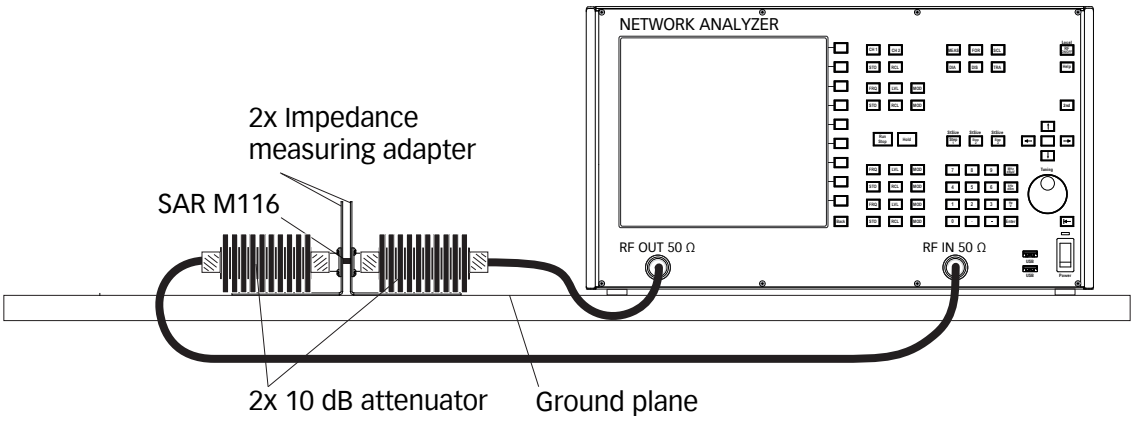


Figure 2: Normalization set-up

The insertion loss measurement is performed with the clamp clipped on a 4 mm tube which is connected to impedance measurement adapters. The clamp is positioned in the centre between both impedance measuring adapters. Place the 4 mm tube in the centre of the ferrite cores. The measuring set-up is shown in the figure below.

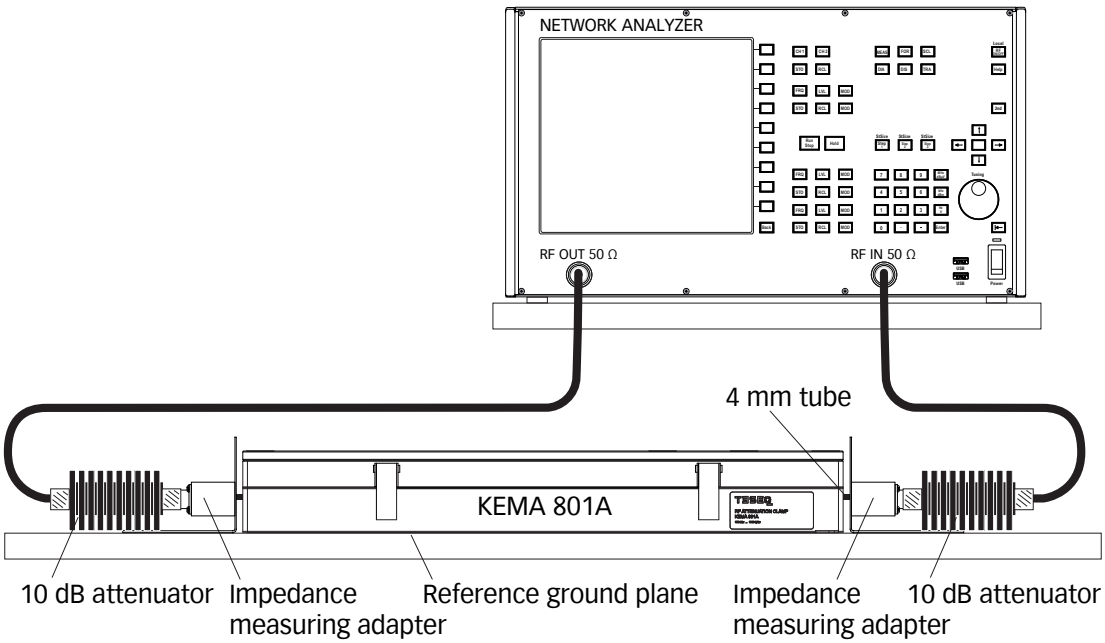


Figure 3: Set-up for measuring the insertion loss

5. CONSTRUCTION OF THE PRODUCT

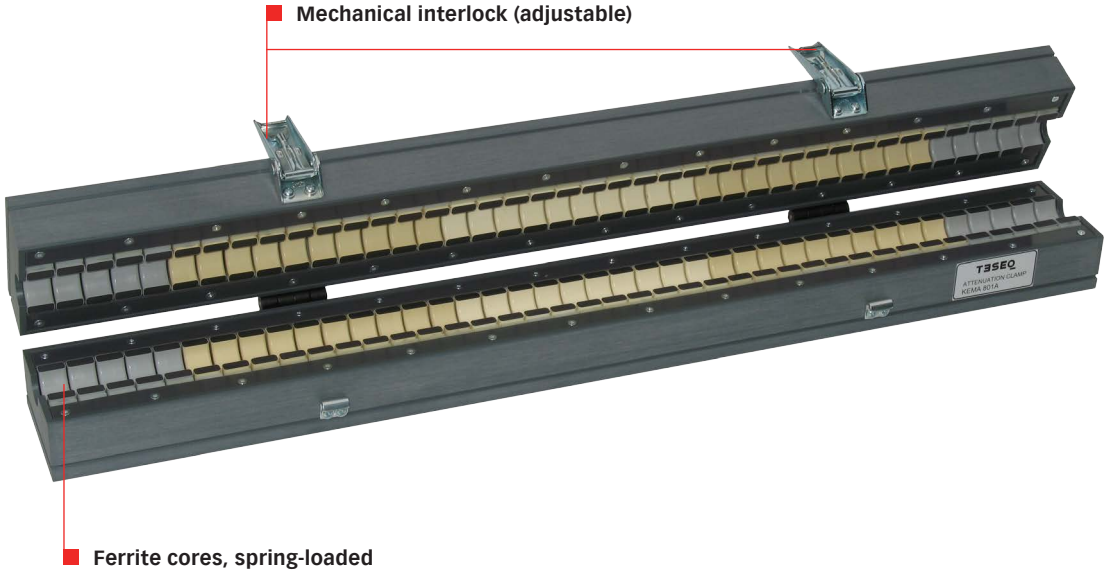


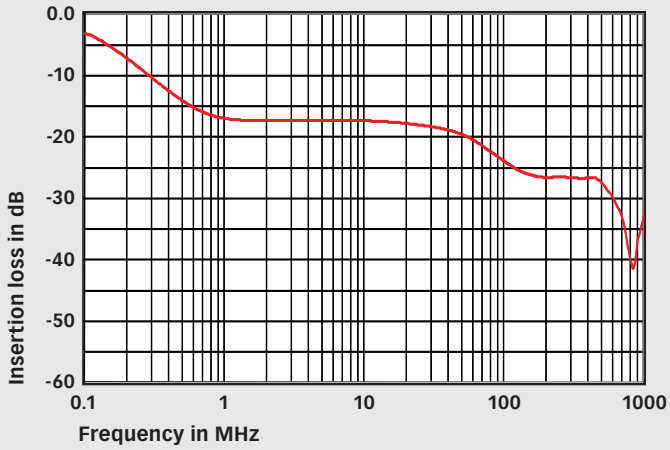
Figure 4: View to the opened KEMA 801A

Figure 5: Side view

6. TECHNICAL SPECIFICATION

Frequency range:	150 kHz to 1000 MHz
Insertion loss:	see graph
Maximum cable diameter:	20 mm
Dimension (LxWxH):	670 mm x 100 mm x 79 mm
Weight:	approx. 5.5 kg
Environmental classification:	Indoor use only
Operating temperature:	+5°C to +40 °C
Relative humidity:	up to 80%

Typical insertion loss in 50 Ω system



7. MAINTENANCE

7.1. General

The KEMA 801A needs no special maintenance. The maintenance is limited to the cleaning of the ferrite contacts.

No modifications are to be carried out on the KEMA 801A and accessories by the user.

7.2. Cleaning

The cleaning shall be done with dry cloth. If a wed cleaning would become necessary, make sure that no humidity gets inside the unit and clean the instrument housing with a damp cloth using a little mild, nonabrasive household cleanser if necessary.

Chemicals must not be used for cleaning purposes.

8. DISPOSAL

The unit is constructed that it can be dismantles right down to the component level.

Manufacturer
Teseq GmbH
12623 Berlin, Germany
Landsberger Str. 255
T +49 30 5659 8835
F +49 30 5659 8834
deinfo.teseq@ametek.com
www.teseq.com

China
AMETEK Commercial Enterprise (Shanghai) Co., Ltd. Beijing Branch)
T +8610 8526 2111
F +8610 8526 2141
chinasales@teseq.com

Germany
Teseq GmbH
T +49 30 5659 8835
F +49 30 5659 8834
deinfo.teseq@ametek.com

Singapore
AMETEK Singapore Pte Ltd
T +65 6484 2388
F +65 6481 6588
singaporesales.cts@ametek.com

Taiwan
Teseq Ltd.
T +886 2 2917 8080
F +886 2 2917 2626
taiwansales.cts@ametek.com

USA
AMETEK Compliance Test Solutions
T +1 732 417 0501
F +1 732 417 0511
Toll free +1 888 417 0501
usasales.cts@ametek.com

France
AMETEK SAS
T +33 1 30 68 89 00
F +33 1 30 68 89 99
info.france@ametek.com

Japan
AMETEK Co., Ltd. Nagoya Office
T +81 52 709 5501
F +81 52 709 5502
cts-japan.sales@ametek.co.jp

Switzerland
Teseq AG
T +41 32 681 40 50
F +41 32 681 40 48
chsales.teseq@ametek.com

UK
Teseq Ltd.
T +44 845 074 0660
F +44 845 074 0656
uksales@teseq.com

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