

Draft CD for the validation procedure of ferrite clamps  
in the frequency range 30MHz to 1000MHz

## 5.XX Validation procedure for ferrite clamps

### 5.XX.1 Application of the ferrite clamps

The ferrite clamps are used according to CISPR 22 Amendment 1 during radiated emission measurement as cable terminations on the cables leaving the test setup. The basic aim of these cable terminations is to avoid uncontrollable influence of the unknown total common mode impedance at the point where the cable leaves the turntable.

Other applications of the same devices are:

- cable termination for radiated emission measurements in fully anechoic chambers
- cable termination for radiated immunity tests
- use as "secondary absorbing device" for the absorbing clamp measurement method

Note:

The verification and calibration of the absorbing clamp used for the interference power measurement is described in CISPR 16-1 clause 5.3 and Annex H.

### 5.XX.2 Test set up and procedure for the insertion loss measurement

The specification is given as insertion loss in a 50Ohm system.

The basic test setup is given in Fig YY(1) and Fig YY(2)

Note: If a network analyzer is used and if the calibration of the network analyzer includes the cables up to the connections of the test jig, the 10dB attenuators are not necessary.

As measurement equipment for the attenuation measurement the following instruments can be used:

- Network analyser
- Spectrum analyser with tracking generator
- Measurement receiver with tracking generator

The testjig can be realized in two ways: Fig YY(3)

- with one single sheet of metal adapted to the dimensions of the device under test.
- on a metal groundplane with two metal angles of appropriate dimensions

The dimensions of the testjig are given in Fig YY(4)

The test wire should have an outside diameter of 6 mm +/-0.5 mm.

Using the outside surface of a RG58 coaxial cable is a practical example of such a test wire.

Possible realisations of the test wire connection in the jig are shown in FigYY(5)

### 5.XX.3 Measurement procedure

The insertion loss measurement is the difference between the attenuation of the system including the device under test in the test jig (setup Fig YY(1)), minus the attenuation if the two 10dB attenuators are directly connected together (setup Fig YY(2)).

### 5.XX.4 Specification

The insertion loss should be higher than 15dB in the frequency range 30MHz to 1000MHz.

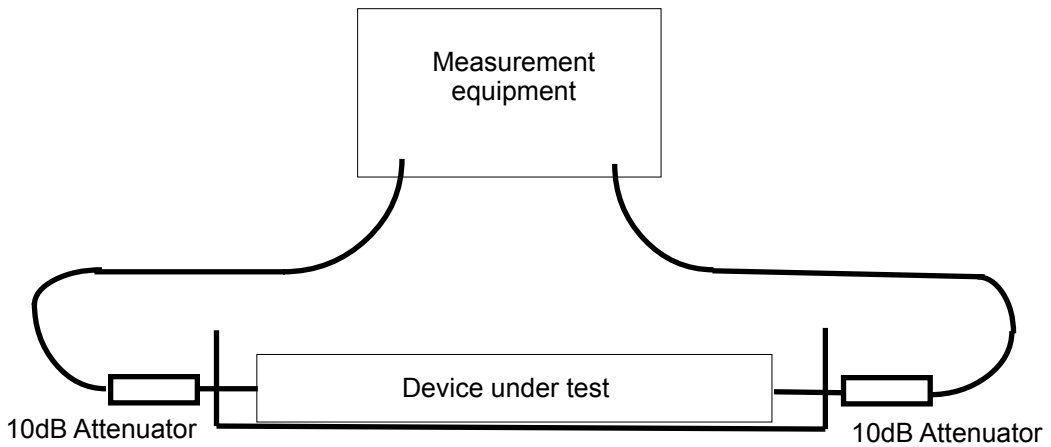


Fig. YY 1 Basic test setup for the insertion loss measurement in the testjig

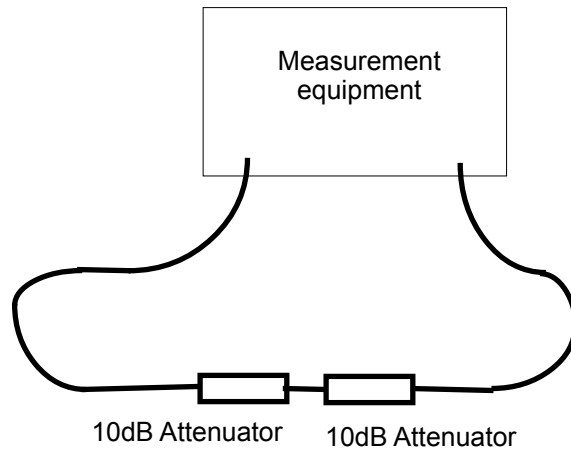


Fig. YY 2 Test setup for the reference measurement without Testjig

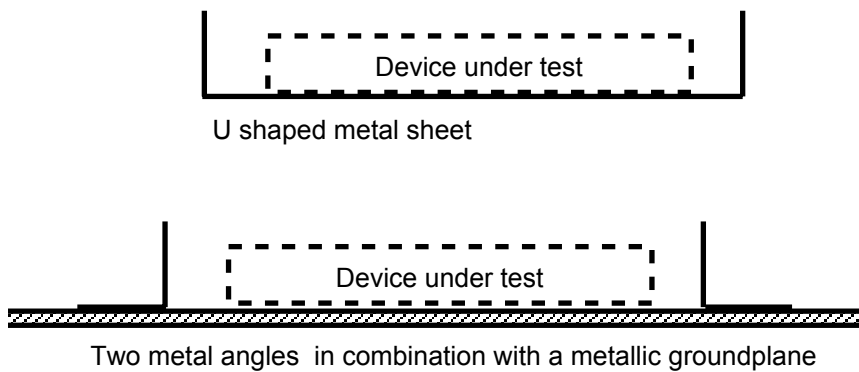
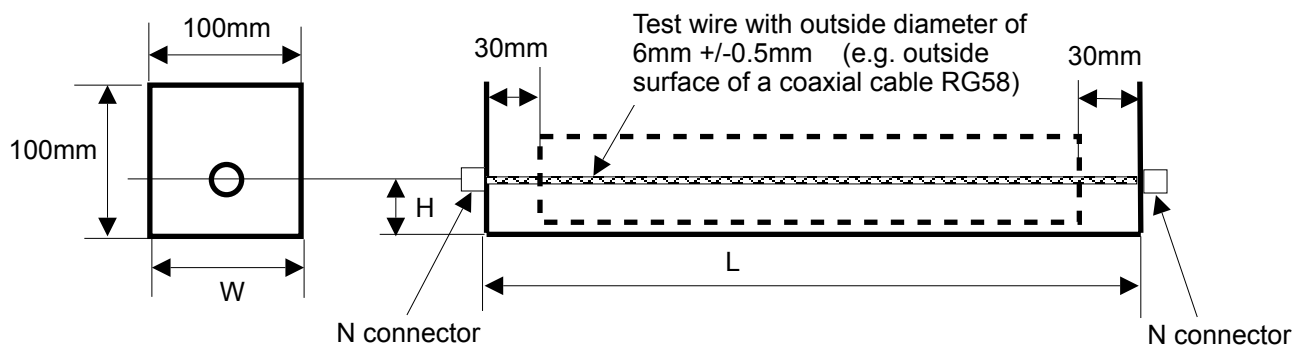


Fig. YY 3 Two possible realizations of the testjig



$L =$  length of the device under test +  $2 \times 30\text{mm}$

$H =$  height of the center in the device under test

$W =$  width of the ground plane inside the jig  $W \geq 100\text{mm}$

Fig. YY 4 Dimensions of the test jig

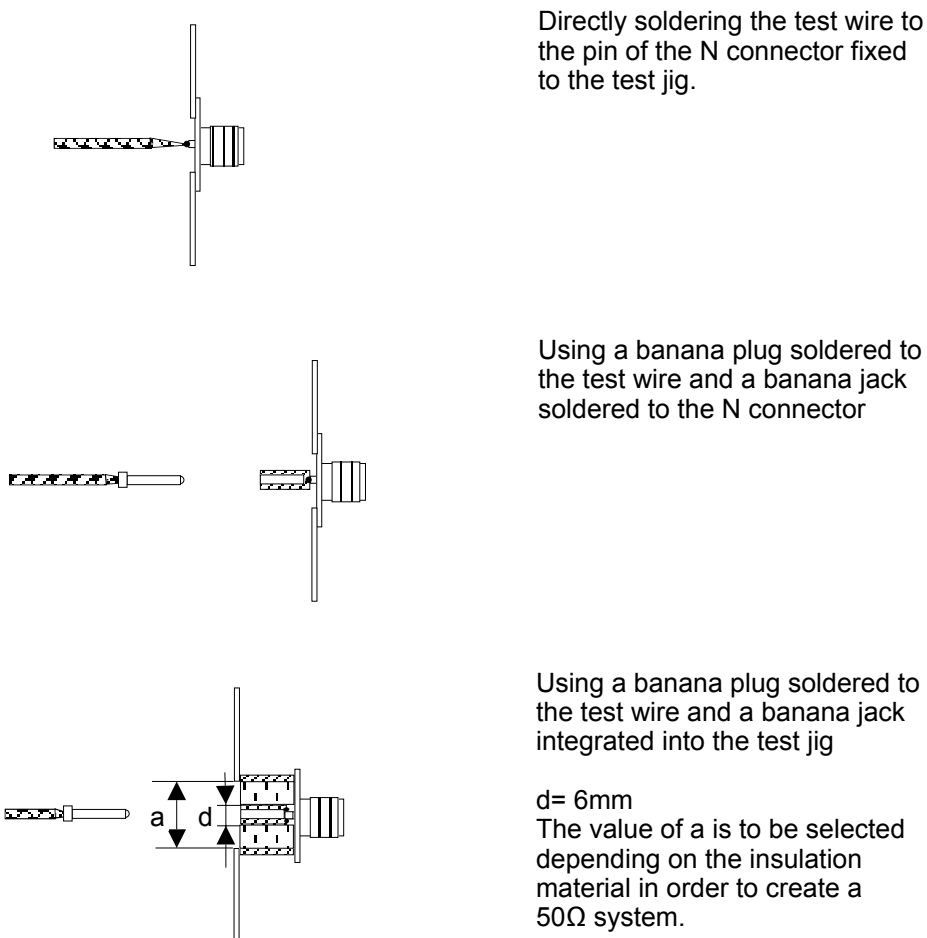


Fig. YY 5 Possible realizations of the testwire connection in the jig