

montena

USER'S MANUAL

STRIPLINE 50 Ω 1GHz SR50/1000





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STRIPLINE 50 OHM 1 GHZ TYPE SR50/1000

1. Introduction

This stripline is designed for immunity tests on road vehicles according to ISO 11452-5 (1995) up to 1 GHz. Emission of devices can be also carried out with this stripline.

The stripline is easy to move and the table can be sloped vertically in order to reduce the width. It is also possible to divide the stripline in 2 parts for the storage or during the transport.

2. How to use the stripline - immunity test

WARNING

**TO AVOID DESTRUCTION DO NOT APPLY POWER EXCEEDING THE LIMITS GIVEN
IN THE SPECIFICATIONS.**

NEVER TOUCH THE PLATE DURING THE TESTS.

NEVER APPLY HEAVY LOADS ON THE CORNERS OF THE TABLE

- If necessary place the stripline in a shielded room (or better in an anechoic chamber). Mount the 2 separate parts of the structure. Fix the screws of the plate and close the locks of the frame.
- Put the equipment under test under the plate of the stripline.
- Connect the test generator or the output of the power amplifier through a directional coupler to the input of the stripline. The impedance of this equipment must be 50 Ω .
- Connect a 50 Ω power load to the opposite end of the stripline (output). The power of the load must be adapted to the amplifier used.
- Apply the required power without exceeding the power of the load.
- Never touch the plate of the stripline during the test (risk of severe RF burning!).
- The test set-up is ready.

Please note that external objects can influence the field distribution. Therefore it is recommended to avoid staying very close to the stripline during the tests.



Calculation of the field inside the stripline at the beginning of the line:

$$E = \sqrt{P_{inc}} * 47.14$$

With: E: field under the plate in [V/m]
Pinc: input power in the stripline [W]

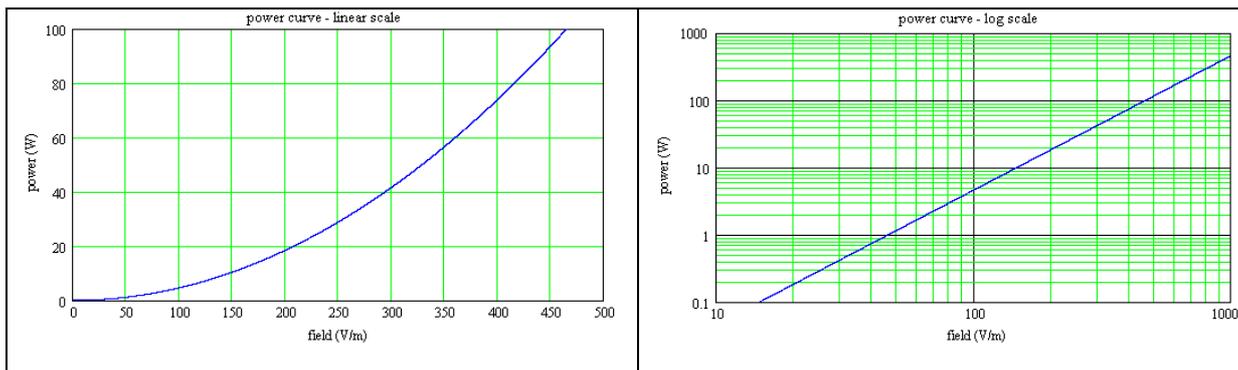


Figure 1: Diagram of the power requirement (calculation of the field inside the stripline at the beginning of the line)

The figure 2 gives the field distribution lines in the stripline. Note that external objects could influence this field distribution. It is recommended to avoid staying very close to the stripline during the tests.

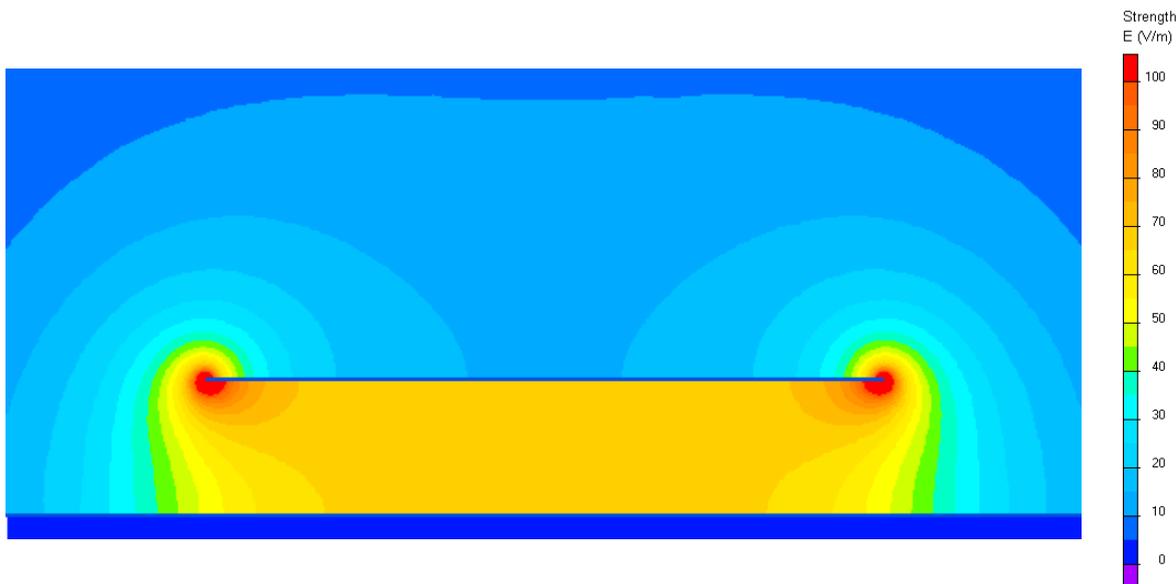


Figure 2: Field distribution in the stripline (10 V at the plate)



3. How to use the stripline - emission test

**TO AVOID STATIC DISCHARGES FOR THE RECEIVING EQUIPMENT
NEVER TOUCH THE PLATE DURING THE TESTS.**

NEVER APPLY HEAVY LOADS ON THE CORNERS OF THE TABLE

- If possible place the stripline in a shielded room (or better in an anechoic chamber) to avoid the reception of external disturbances. Mount the 2 separate parts of the structure (2 persons are required for this operation). Fix the screws of the plate and the locks of the frame.
- Put the equipment under test under the plate of the stripline.
- Connect a receiver or a spectrum analyser to the input of the stripline.
- Connect a 50 Ω load to the opposite end of the stripline (output). A low power load can be used.
- The test set-up is ready.

4. Transport

It is recommended to put the stripline in the vertical position during the transport.

- Open the locks of the table (under the table).
- Rotate the table in the vertical position.
- Close the locks on the frame.

The stripline is ready to be moved.



Lock under the table



Stripline in vertical position



Stripline dismantled

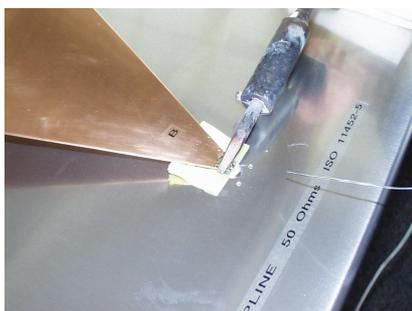


5. Maintenance and repair

This equipment requires no special periodical adjustment or maintenance.

If the control of the soldering between the copper plate and the N connector shows a fault, the soldering must be repaired like following:

- Remove the old soldering traces
- Place the soldering gauge under the copper plate near the N connector
- Solder with enough solder the plate with a soldering iron of about 150 W.



Repair of the soldering

6. Specifications

Standard	ISO 11452-5
Frequency range	0 to 1 GHz
Max. input power	1 kW long term
Impedance	50 Ω \pm 5 Ω
Return loss	better than 20 dB up to 1 GHz (see Figure 3)
Connector type	N 50 Ω
Max. field under the plate	approx. 1'500 V/m
Field homogeneity	see Figure 2
Height of the plate	15 cm over ground plane
Height of the table	95 cm
Size (L x l x H)	430 x 150 x 110 cm (service position) 2 * 215 x 85 x 165 cm (storage)
Weight	approx. 140 kg



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7. Service

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8. Typical measurement

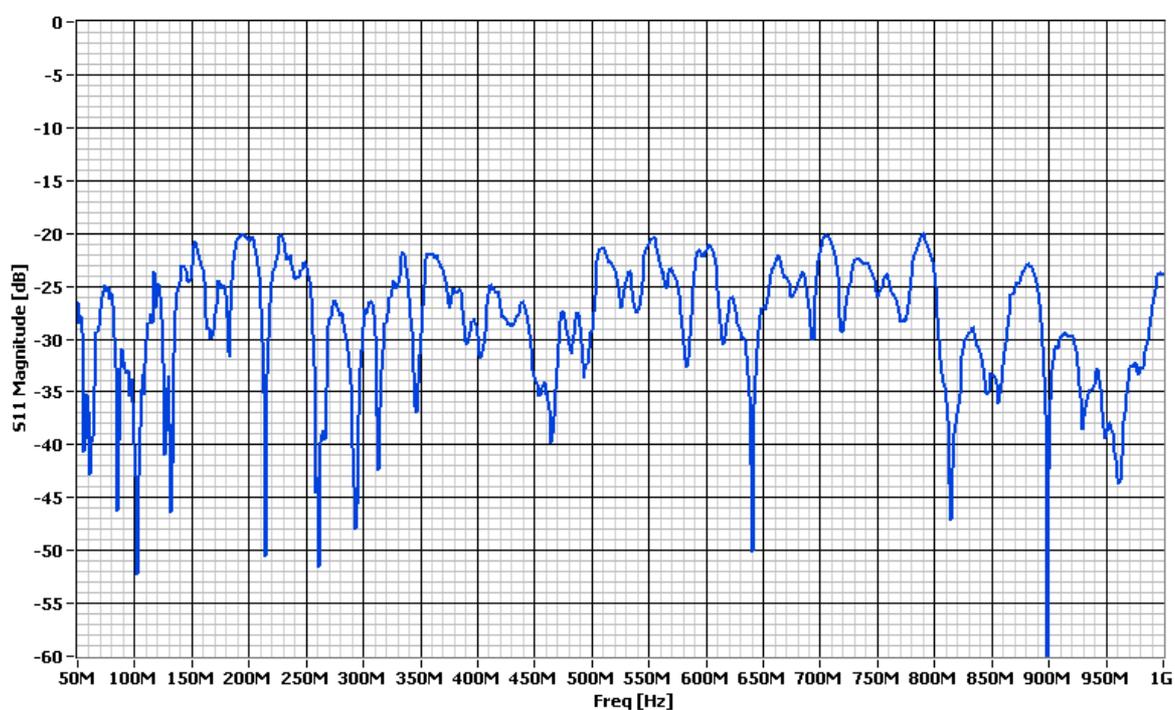


Figure 3: Reflection characteristics

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