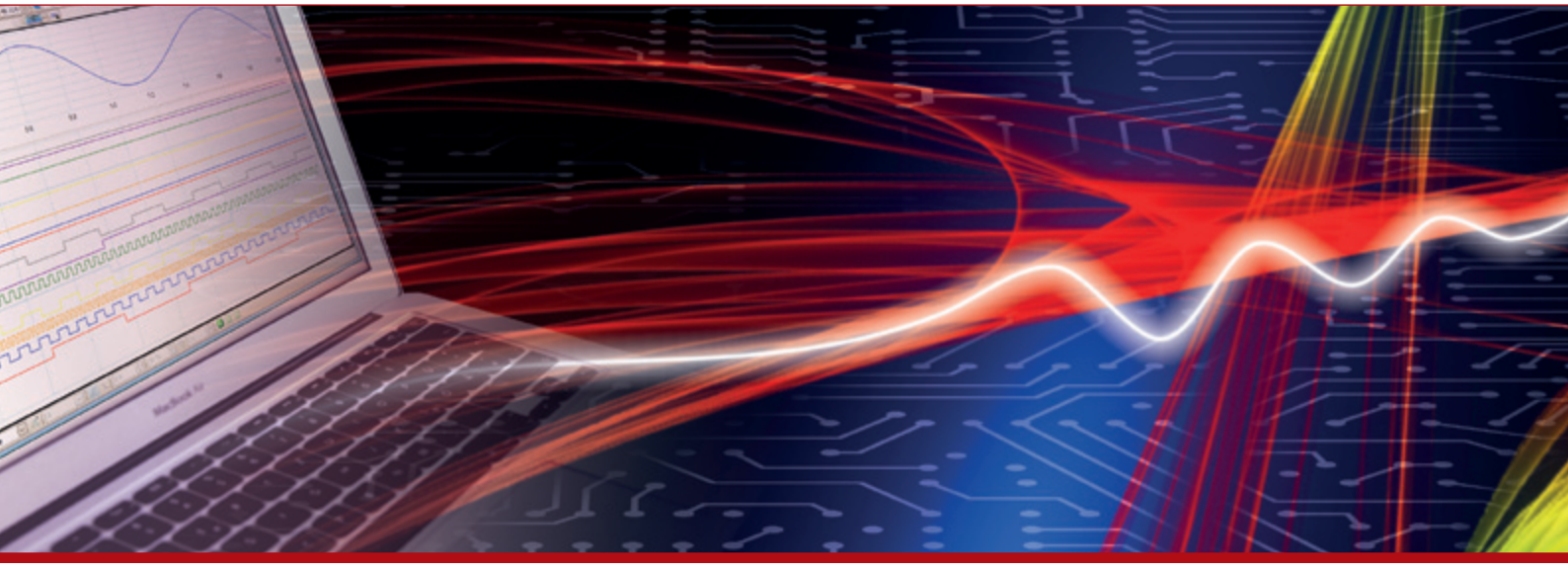
Product Datasheet - Technical Specifications



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RF CURRENT MONITORING PROBE

1 Introduction

The TBCP2-250 is a snap-on RF current monitoring probe, expanding the Tekbox product range of affordable EMC pre-compliance test equipment.
The probe has a very flat response with a 3dB bandwidth of 250 MHz and is characterized and usable over the frequency range from 10kHz to 250 MHz.

Picture 1: TBCP2-250 RF current monitoring probe

The aperture of the RF current monitoring probe is 32 mm. Its transfer impedance is > 13 dB Ohm in the range from 700 kHz to 250 MHz.

RF CURRENT MONITORING PROBE

2 Specification

Characterized frequency range: 10 kHz to 250 MHz
Aperture diameter: 32 mm
Outside diameter: 73 mm
Height: 20 mm
Weight: 320 g
Connector type: N female
Transfer impedance: 0 to 16 dBΩ between 100 kHz and 250 MHz
Max. primary current (DC - 400 Hz): 80 A
Max. primary current (RF): 3 A
Max. core temperature: 125 °C

3 Transfer impedance

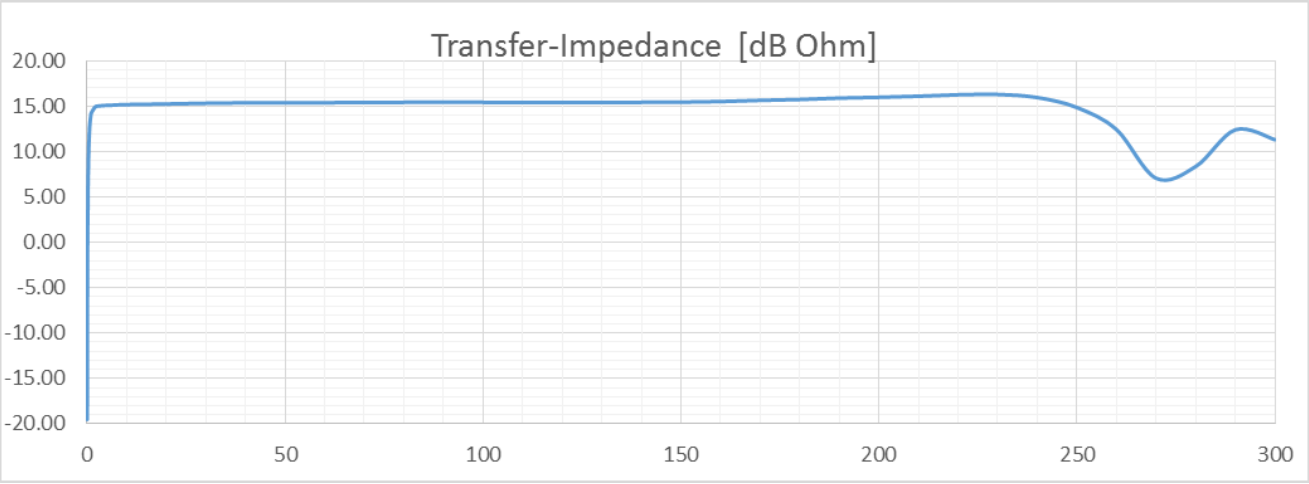


Figure1: typical transfer impedance: 10 kHz to 300 MHz, linear

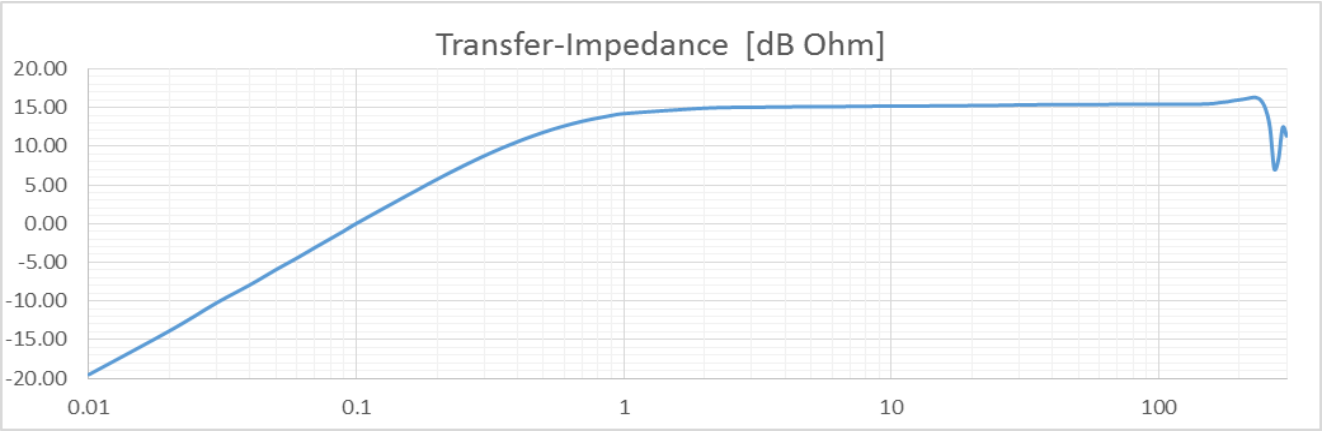


Figure2: typical transfer impedance: 10 kHz to 300 MHz, logarithmic

4 Typical transfer impedance table

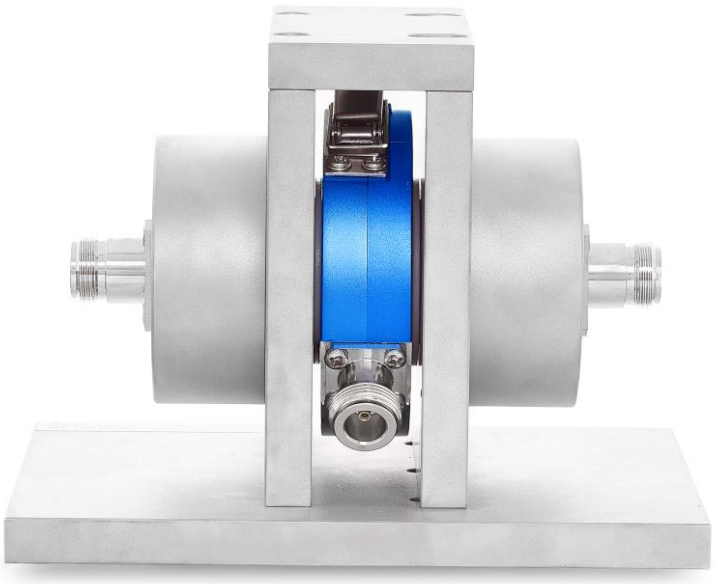
The table below shows typical transfer impedance data of a TBCP2-250 current probe. Each current probe is delivered with its corresponding measurement protocol. This data can be used for the creation of a correction file for EMCview or similar EMC measurement software. The transfer impedance in dBΩ subtracted from the analyzer reading in dBµV gives the corrected reading in dBµA.
Refer to the application notes of EMCview on how to create a current probe correction file.

Frequency [MHz]	transfer impedance [dBΩ]	Frequency [MHz]	transfer impedance [dBΩ]
0.01	-19.50	30	15.34
0.02	-13.86	40	15.39
0.03	-10.24	50	15.37
0.04	-7.91	60	15.40
0.05	-5.95	70	15.43
0.06	-4.43	80	15.44
0.07	-3.08	90	15.45
0.08	-1.94	100	15.44
0.09	-0.93	110	15.42
0.1	0.03	120	15.41
0.2	5.73	130	15.42
0.3	8.75	140	15.44
0.4	10.59	150	15.46
0.5	11.81	160	15.53
0.6	12.65	170	15.66
0.7	13.24	180	15.75
0.8	13.66	190	15.91
0.9	13.99	200	16.00
1	14.23	210	16.12
2	14.93	220	16.27
3	15.04	230	16.31
4	15.09	240	15.97
5	15.11	250	14.87
6	15.12	260	12.44
7	15.15	270	7.07
8	15.17	280	8.37
9	15.19	290	12.42
10	15.19	300	11.33
20	15.26		

Table1: Transfer impedance: 10 kHz to 300 MHz

5 Accessory

Tekbox supplies a calibrator corresponding with the TBCP2 series of snap on current probes:



Picture 2: TBCP2-CAL RF current probe calibration fixture

6 Ordering Information

Part Number	Description
TBCP2-250	Snap on RF current monitoring probe, beech-wood box, calibration protocol
TBCP2-CAL	Calibration fixture for TBCP2 current probe series

7 History

Version	Date	Author	Changes
V 1.0	7.12.2020	Mayerhofer	Creation of the preliminary document
V 1.1	28.1.2021	Mayerhofer	Photo update