



# Advanced Test Equipment Corp.

*Rentals • Sales • Calibration • Service*

V1.3

TBCP2-750



**TEKBOX**  
DIGITAL SOLUTIONS

## RF CURRENT MONITORING PROBE

### 1 Introduction

The TBCP2-750 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 850 MHz and is characterized and usable in the frequency range from 1kHz to 1 GHz.



Picture 1: TBCP2-750 RF current monitoring probe

The aperture of the RF current monitoring probe is 32 mm. Its transfer impedance is 20 dB Ohm with a 3 dB bandwidth from 1.5 MHz to 850 MHz.

## RF CURRENT MONITORING PROBE

### 2 Specification

Characterized frequency range: 1 kHz to 1 GHz  
Aperture diameter: 32 mm  
Outside diameter: 73 mm  
Height: 20 mm  
Weight: 320 g  
Connector type: N female  
Transfer impedance: 20 dBΩ in the flat region, typ.  
3 dB bandwidth: 1.5 MHz – 850 MHz, typ.  
Max. primary current (DC - 400 Hz): 80 A  
Max. primary current (RF): 3 A  
Max. core temperature: 125 °C



### 3 Transfer impedance

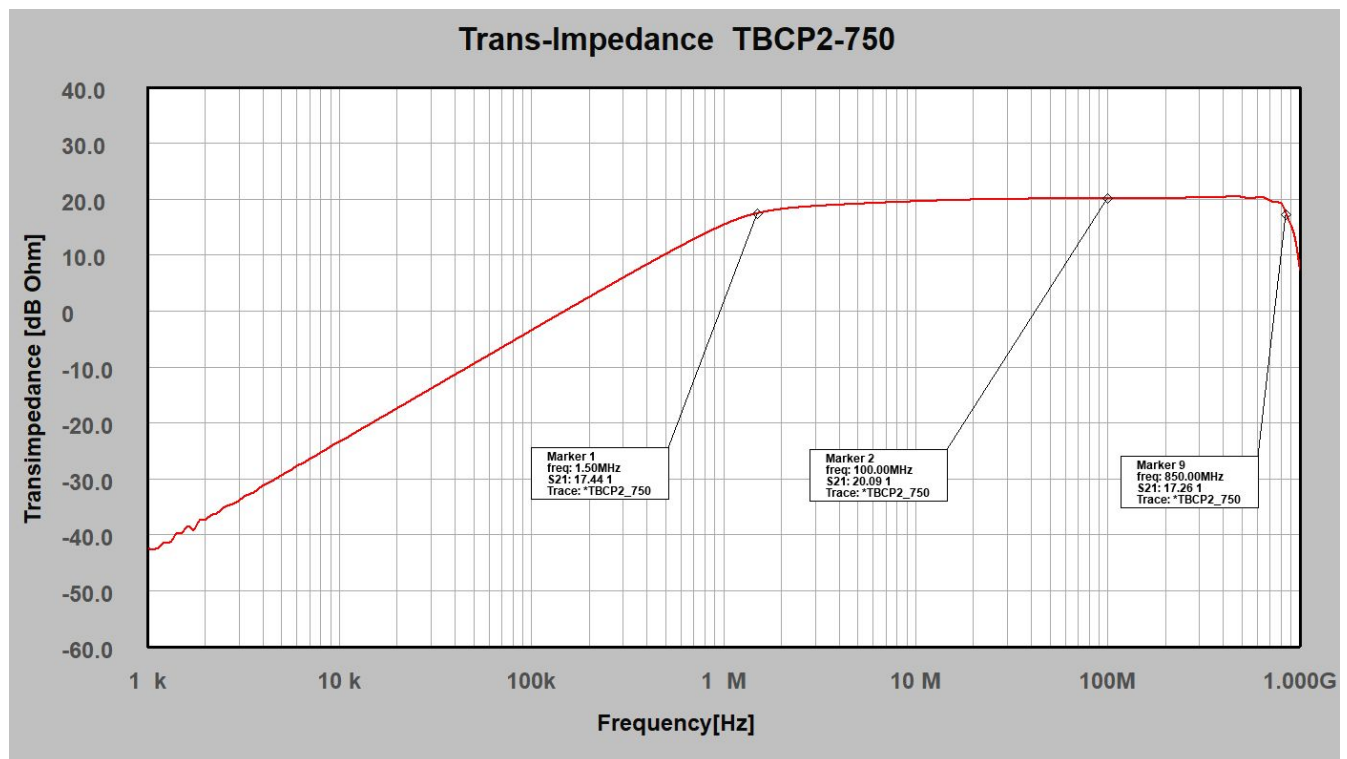


Figure1: typical transfer impedance: 1 kHz to 1 GHz

## RF CURRENT MONITORING PROBE

### 4 Typical transfer impedance table

The table below shows typical transfer impedance data of a TBCP2-750 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.

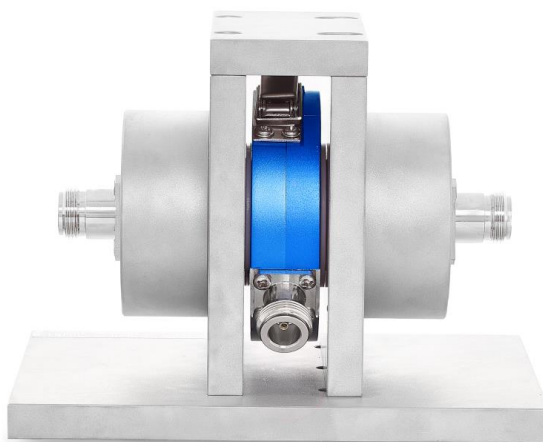
| Frequency [MHz] | Transfer impedance [dBΩ] | Frequency [MHz] | Transfer impedance [dBΩ] |
|-----------------|--------------------------|-----------------|--------------------------|
| 0.001           | -42,54                   | 325             | 20,30                    |
| 0.0025          | -35,22                   | 350             | 20,27                    |
| 0.005           | -29,42                   | 375             | 20,27                    |
| 0.0075          | -25,98                   | 400             | 20,32                    |
| 0.01            | -23,40                   | 425             | 20,42                    |
| 0.025           | -15,50                   | 450             | 20,48                    |
| 0.05            | -9,50                    | 475             | 20,44                    |
| 0.075           | -6,01                    | 500             | 20,31                    |
| 0.1             | -3,50                    | 525             | 20,16                    |
| 0.25            | 4,35                     | 550             | 20,09                    |
| 0.5             | 10,13                    | 575             | 20,15                    |
| 0.75            | 13,33                    | 600             | 20,29                    |
| 1               | 15,36                    | 625             | 20,35                    |
| 2.5             | 18,52                    | 650             | 20,24                    |
| 5               | 19,13                    | 675             | 19,97                    |
| 7.5             | 19,40                    | 700             | 19,64                    |
| 10              | 19,56                    | 725             | 19,44                    |
| 25              | 19,94                    | 750             | 19,38                    |
| 50              | 20,06                    | 775             | 19,35                    |
| 75              | 20,07                    | 800             | 19,13                    |
| 100             | 20,09                    | 825             | 18,41                    |
| 125             | 20,11                    | 850             | 17,26                    |
| 150             | 20,13                    | 875             | 16,12                    |
| 175             | 20,12                    | 900             | 15,20                    |
| 200             | 20,11                    | 925             | 14,10                    |
| 225             | 20,14                    | 950             | 12,36                    |
| 250             | 20,19                    | 975             | 9,99                     |
| 275             | 20,26                    | 1000            | 7,30                     |
| 300             | 20,30                    |                 |                          |

Table1: Transfer impedance: 1 kHz to 1 GHz, typical data

## RF CURRENT MONITORING PROBE

### 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                                                                         |
|-------------|-------------------------------------------------------------------------------------|
| TBCP2-750   | Snap on RF current monitoring probe, wooden box, calibration protocol 1 kHz – 1 GHz |
| 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                              |
| V 1.2   | 2.6.2021  | Mayerhofer | Data update after mechanical modification |
| V 1.3   | 26.3.2024 | Mayerhofer | Extended data to 1 kHz – 1 GHz            |

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