

Broadband Coaxial T-Probe

Features

- **Broadband coaxial probe**
- **Frequency range: DC to 4GHz**
- **Small size device**
- **$P_{in} \leq 200W|_{2.4GHz}$**
- **Low return and insertion loss**
- **$S_{11}^{dB} = S_{22}^{dB} \leq -15dB$**
- **$S_{21}^{dB} \leq -0.3dB$**
- **$S_{33}^{dB} \leq -10dB$**
- **Ca. 40dB attenuation**
- **$S_{31}^{dB} = S_{32}^{dB}|_{1GHz} = -40dB$**
- **Robust design**

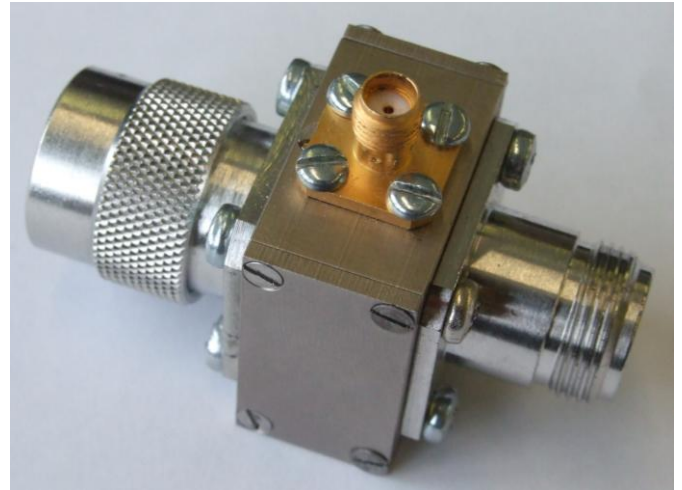


Fig. 1: Coaxial measurement T-Probe from HHF

Application

The **T-Probe** is perfectly suitable for broadband (DC to 4GHz) signal coupling. The power of the detecting signal may be up to 200W at a frequency of 2.4GHz.

The **T-Probes** replace large couplers.

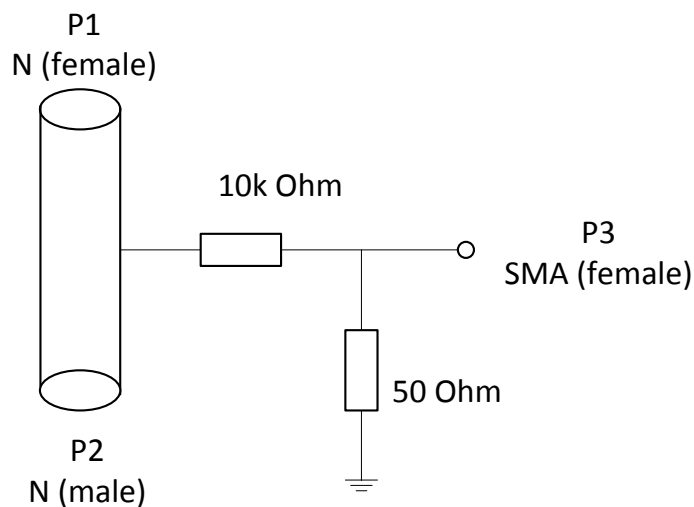


Fig. 2: T-Probe schematic and inner circuit (measurement port: P3)

Product Description

The **T-Probe** (model PR-T1) is a passive bidirectional broadband resistive coupling network in coaxial technique. It provides the sensing function over a wide frequency spectrum and is capable to handle a high through power. Insertion loss is comparable to the more complicated sensitive couplers.

This probe detects the voltage of the inner conductor of the coaxial transmission line. It can be used for wave-detection in combination with a matched termination, isolator or zirkulator.

Specifications T-probe model: PR-T1

Parameter	Min	Typ	Max	Unit	Remark
Frequency	DC		4	GHz	
Input power			53	dBm	testet at 2.4GHz with output matching
Insertion loss		0.1	0.3	dB	up to 3GHz
Insertion loss		≤ 0.3		dB	up to 4GHz
Return loss ports 1 - 2		-25	-15	dB	up to 3GHz
Return loss ports 1 - 2		≤ -15		dB	up to 4GHz
Return loss port 3		-20	-10	dB	up to 3GHz
Return loss port 3		≤ -10		dB	up to 4GHz
Coupling		-40		dB	at 1GHz

Physical Dimensions

Height x Width X Depth: 40mm x 60mm x 29mm

Weight: 110g

Typical performance

The plots shown below are presenting the measuring S-parameter results from different T-Probes up to 4GHz.

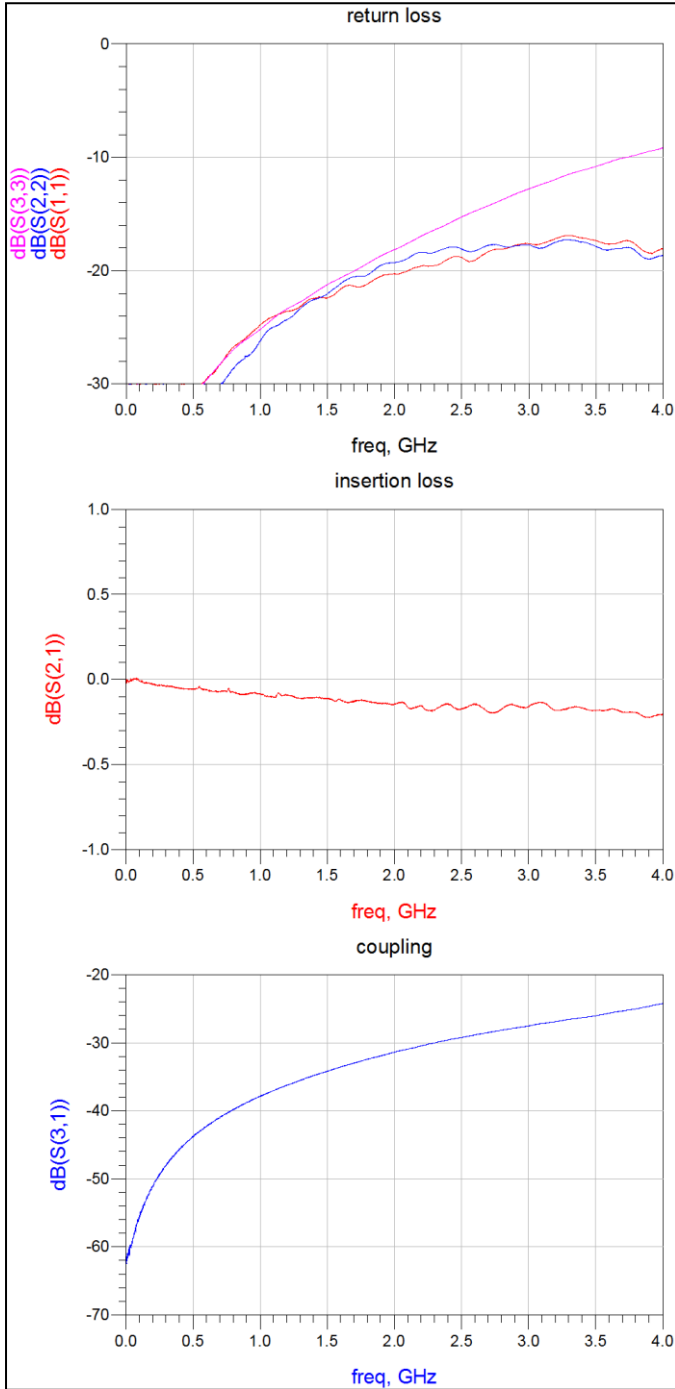


Fig. 3: T-Probe A

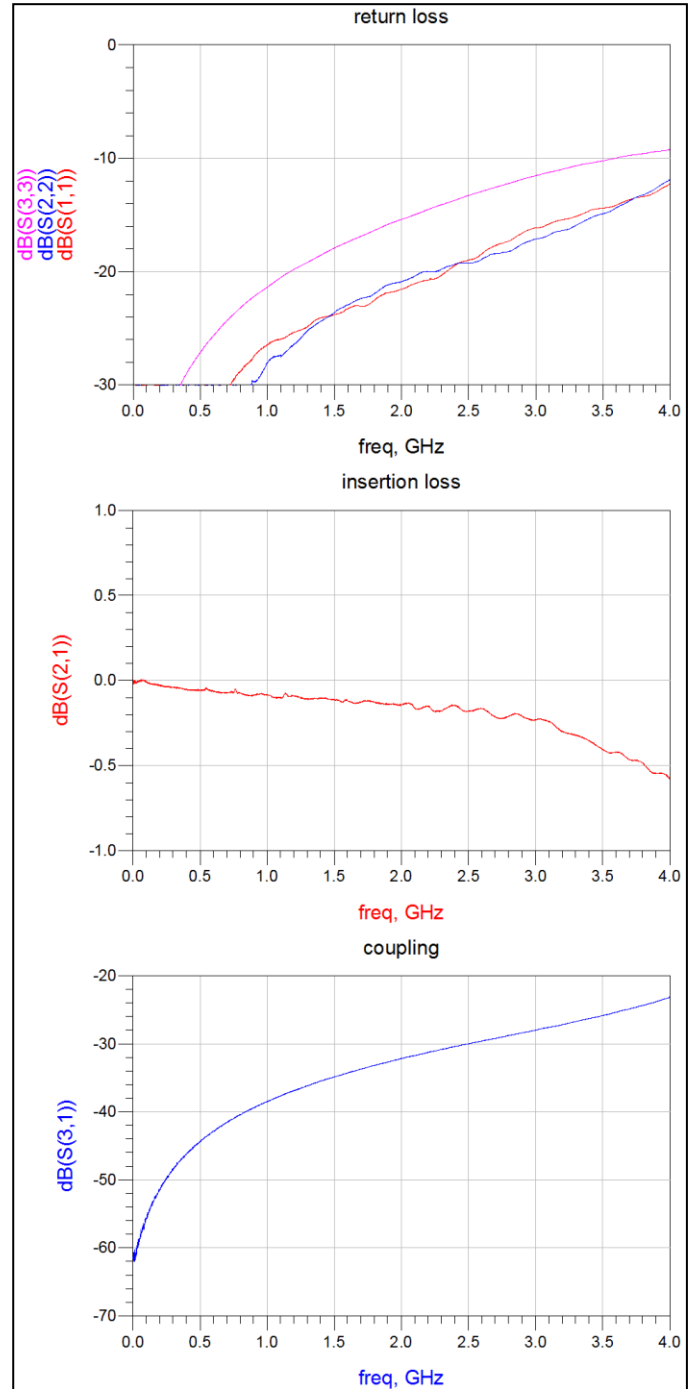


Fig. 4: T-Probe B

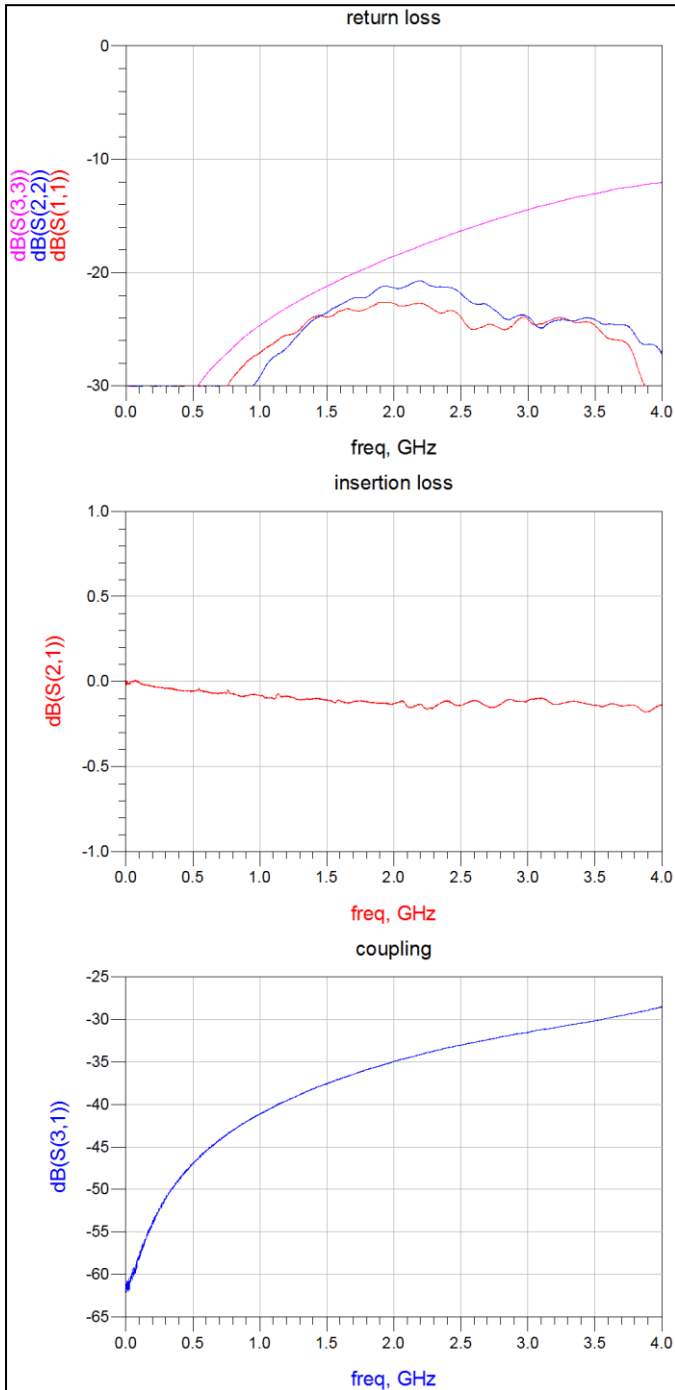


Fig. 5: T-Probe C

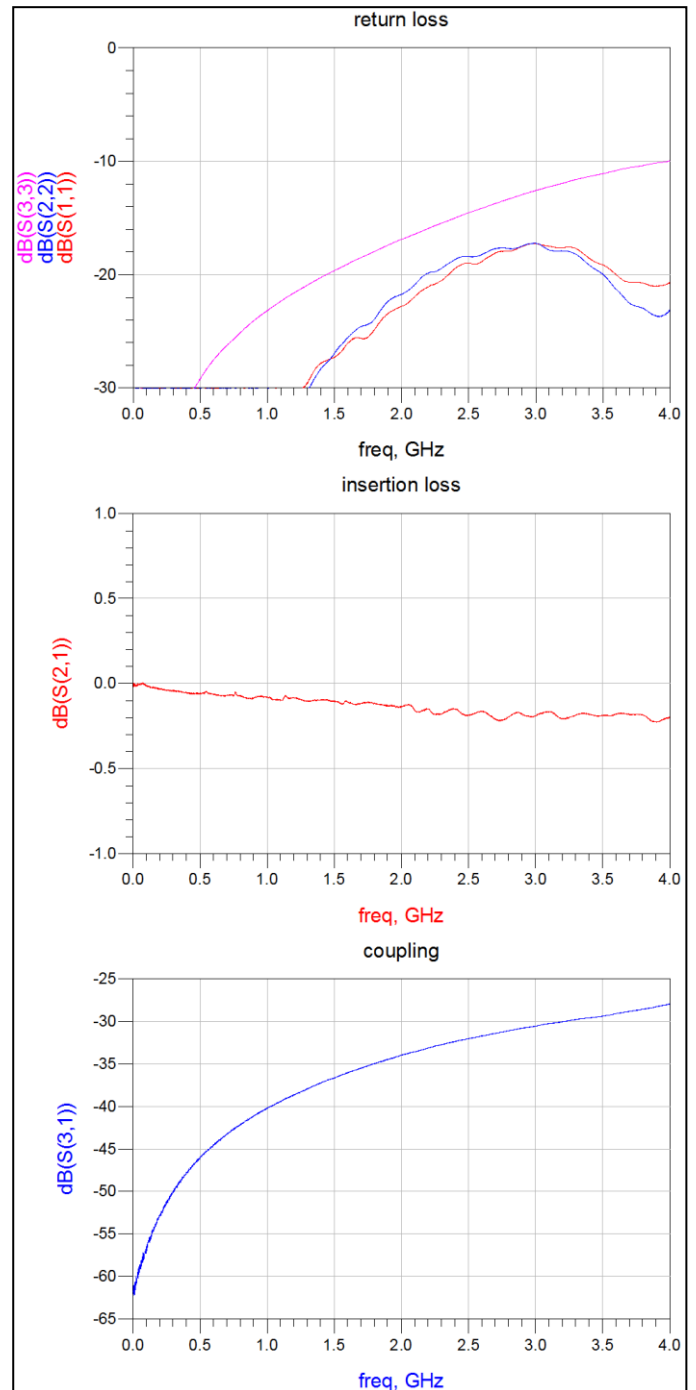


Fig. 6: T-Probe D

Typical Application

A typical application for the T-Probe is measuring a RF-signal, even for high power signals up to 200W. Fig. 7 illustrates a test-set to measure the incident wave at *Out1* and the reflected wave at *Out2*.

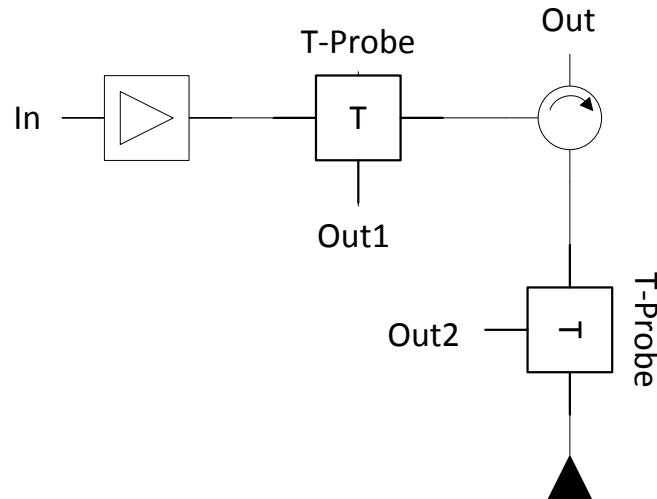


Fig. 7: Typical application for the T-Probes in a PA-front-end

Warranty

2 years warranty from date of shipment.

Contact information

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