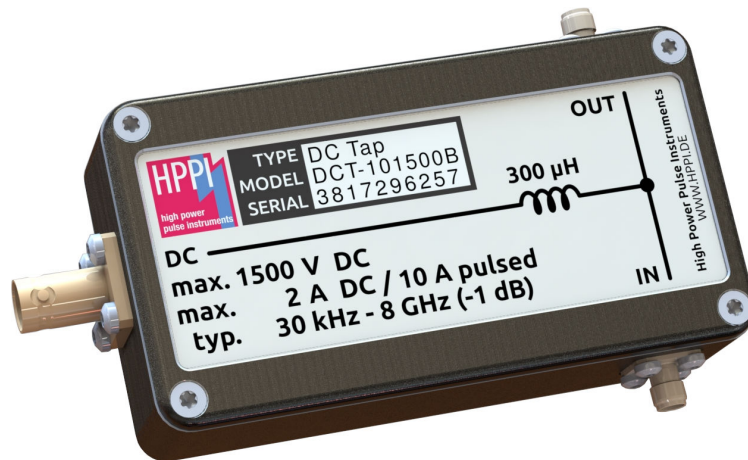


1.5 kV, 10 A, 30 kHz – 8 GHz DC Tap DCT-101500B

Advanced TLP/HMM/HBM Solutions



1 Features

- High voltage 30 kHz to 8 GHz (–1 dB S21) DC tap
- 1.5 kV DC bias voltage (limited by the SMA connector)
- DC input bias current: max. 2 A DC and max. 10 A pulsed at 100 ms pulse width and 1 % duty cycle
- Typ. 0.4 Ω DC resistance (port 3 to port 1,2)
- SMA 50 Ω thru
- BNC DC input
- Suitable for high voltage DC bias injection or tapping for measurements in the frequency domain (RF) or time domain (pulsed)
- Size: 130.6 mm x 77.6 mm x 31 mm
- Lab safety requirement: interlock operation above an operation voltage of 40V needed to avoid life-endangerment risks.

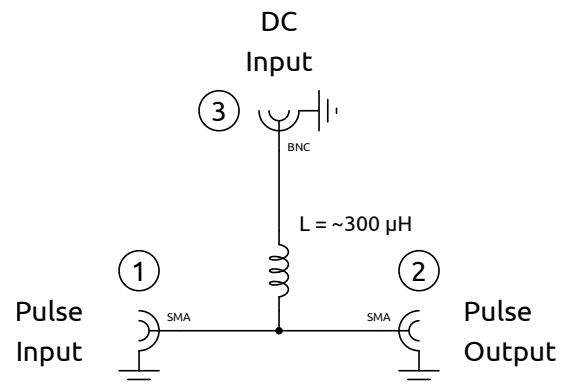


Figure 1: Simplified schematic diagram

2 Description

The DCT-101500B is used for DC biased measurements of high voltage or power devices in the time domain (pulsed) or frequency domain (RF). In contrast to standard bias tees the DCT-101500B has no built-in DC blocking capacitor in order to allow DC injection (DC tapping) into (of) 50 Ω high voltage RF or high speed data transmission lines. SMA port 1 (IN) to SMA port 2 (OUT) is a impedance matched 50 Ω thru transmission line. Port 1 and port 2 are equivalent and can be exchanged. The –1 dB S21 bandwidth is 30 kHz to >8 GHz. At port 3 (DC IN) a DC voltage can be injected to port 1 and 2 or tapped from port 1 and 2. The maximum current through the inductor must not exceed 2 A DC and max. 10 A pulsed (thermal limited by the inductor). Fig. 1 shows the simplified schematic diagram.

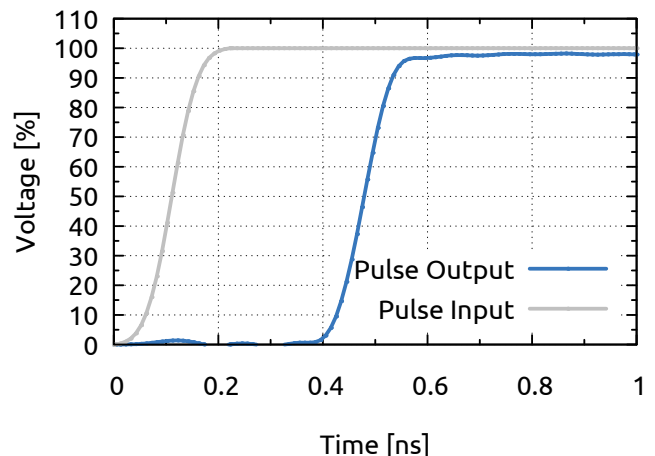


Figure 2: Step response at the pulse output (port 2) with input pulse rise time of 100 ps at the pulse input (port 1).

2.1 Electrical Characteristics

Fig. 2 shows the step response¹ from port 1 to port 2 at 100 ps input pulse rise time. The time delay of the output signal is about 0.4 ns. Fig. 3 shows the typical insertion loss from port 1 to port 2.

¹calculated based on measured S-parameters in the range from 300 kHz to 9 GHz and excitation input pulse rise-time of 100 ps.

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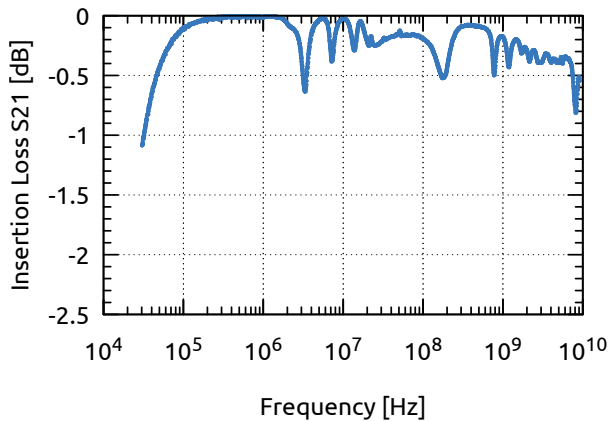


Figure 3: Measured insertion loss S21: pulse input to pulse output in [dB]. Measurement condition: DC input port 3 terminated with 50 Ω.

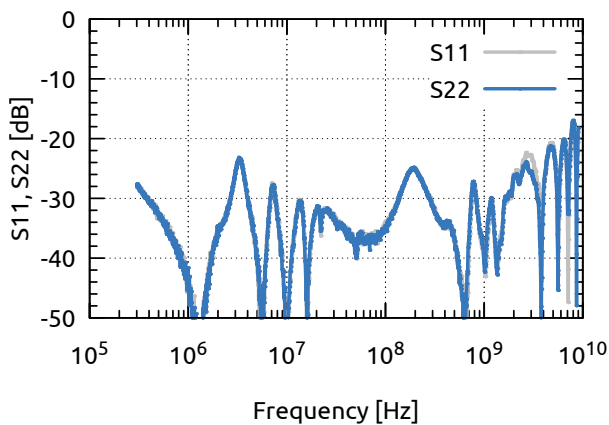


Figure 4: Measured reflection coefficients S11, S22: pulse input, pulse output in [dB]. Measurement condition: DC input port 3 terminated with 50 Ω.

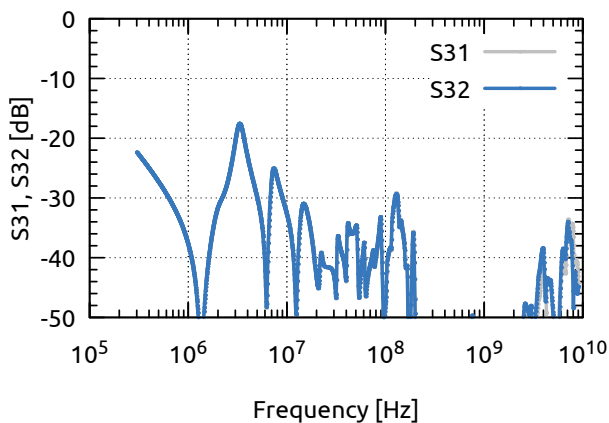


Figure 5: Measured isolation S31, S32: pulse input, pulse output to DC input in [dB]. Measurement condition: DC input port 3 terminated with 50 Ω.

2.2 Laboratory Safety Requirement

Interlock operation above an operation voltage of 40V needed to avoid life-endangerment risks.

3 Physical Dimensions

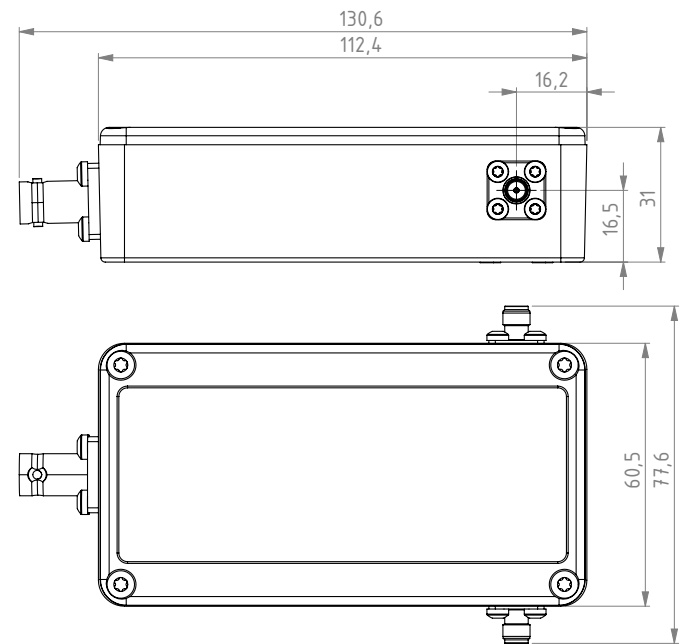


Figure 6: Physical dimensions of the DCT-101500B in [mm]

4 Ordering Information

Pos.	Description	Part No.
01	1.5 kV, 10 A, 30 kHz – 8 GHz DC Tap	DCT-101500B

General

The product data contained in this data-sheet is exclusively intended for technically trained staff. You and your technical departments will have to evaluate the suitability of the product for the intended application and the completeness of the product data with respect to such application. Our products are solely intended to be commercially used internally and should not be sold to consumers. This data-sheet is describing the specifications of our products for which a warranty is being granted by HPPI GmbH. Any such warranty is granted exclusively pursuant to the terms and conditions of the respective supply agreement. There will be no guarantee of any kind for the product and its specifications. For further information on technology, specific applications of our product, delivery terms, conditions and prices please contact HPPI:

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