CERTIFICATE OF CALIBRATION

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This document certifies that the instrument described has been verified to comply with all published datasheet specifications using traceably calibrated equipment.

Instrument Description	2 GHz Transmission Line Probe
Model	AKL-PT1
Serial Number	0010

Calibration Performed By	A. Zonenberg	Date	2020-08-05 23:29
Test Conditions	21ºC, 42% RH	Cal Due	2021-08-05

Calibration Standards

Type	Manufacturer	Model	Serial	Cal due date
Multimeter	Rohde & Schwarz	HMC8012	36174847	2021-04-15
Vector Network Analyzer	Pico Technology	PicoVNA 106	09335	2021-04-17
SOLT Standard	Pico Technology	TA345	SF:296	2021-04-17
Oscilloscope	Teledyne LeCroy	WaveRunner 8404M-MS	LCRY4254N20447	2021-07-16
Pulse Generator*	Leo Bodnar	SMA Pulse Generator	P00718	2021-08-01

* Used as signal source only, not as measurement standard

Test Results

Unless otherwise specified measurements are of probe body only, with cable and fixture de-embedded.

Test	Minimum	Measured	Maximum	Unit	Result
DC resistance	449.75	450.30	450.75	Ω	PASS
S_{21} (1 MHz)	-20.48	-20.44	-20.42	dB	PASS
S_{21} (500 MHz)	-20.85	-20.44	-20.35	dB	PASS
S_{21} (1.0 GHz)	-21.10	-20.70	-20.35	dB	PASS
S_{21} (1.5 GHz)	-21.45	-21.06	-20.75	dB	PASS
S_{21} (2.0 GHz)	-21.60	-21.92	-22.45	dB	PASS
Bandwidth (-23.5 dB)	2.25	2.53	2.60	GHz	PASS
Rise time (20-80%) w/ cable	118	121	129	ps	PASS

Typical Waveform

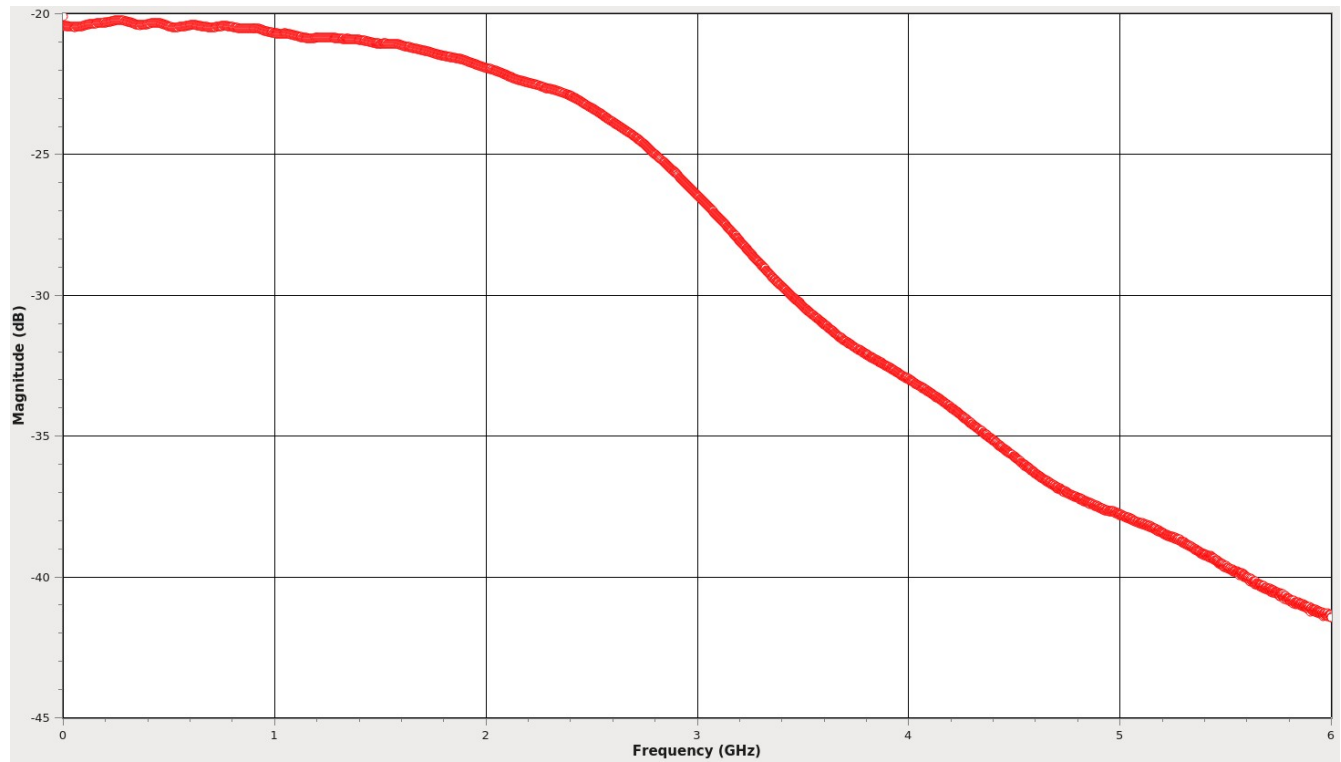Nominal 40 ps risetime pulse including the provided cable if applicable

S-Parameter Data

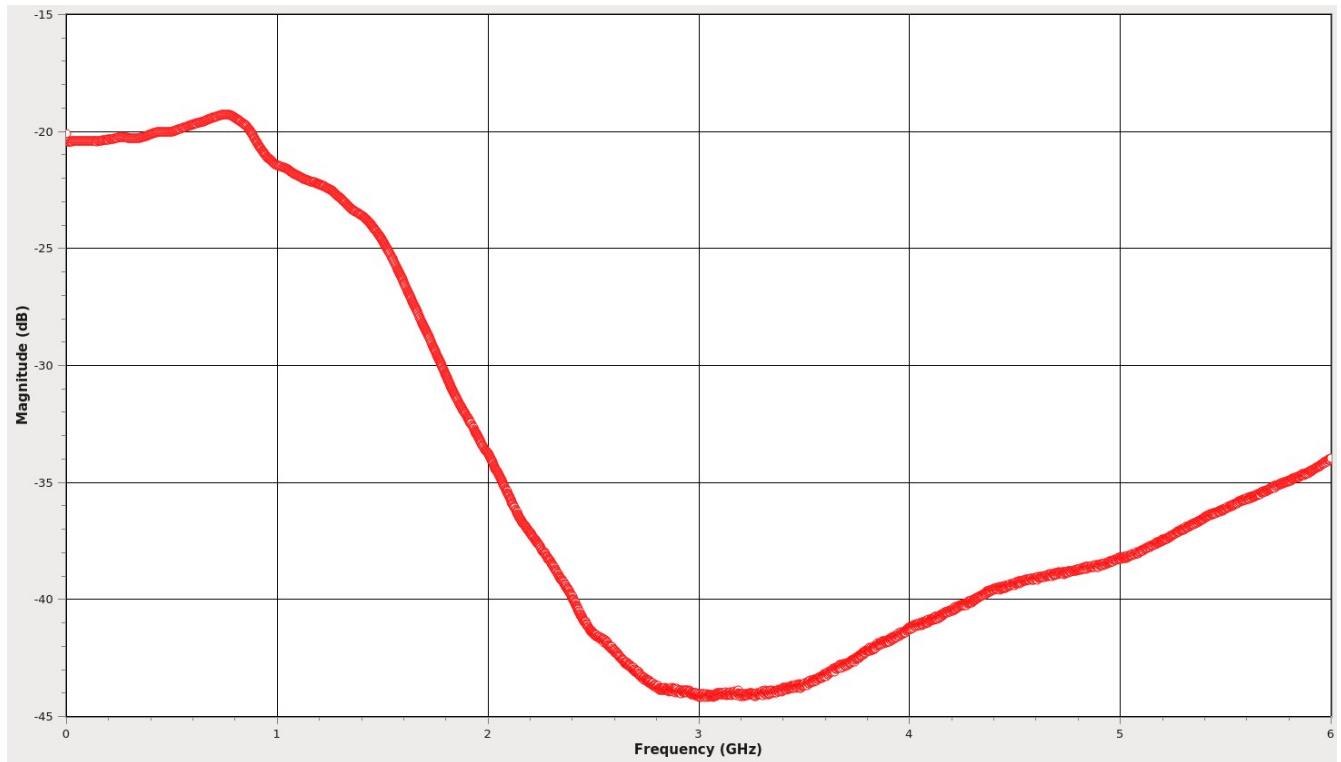Machine readable S2P files for de-embedding may be downloaded at:
https://www.antikernel.net/downloads/AKL-PT1/caldata/0007/

Insertion Loss (tip ground, across 50Ω termination)

tipground.s2p S_{21}

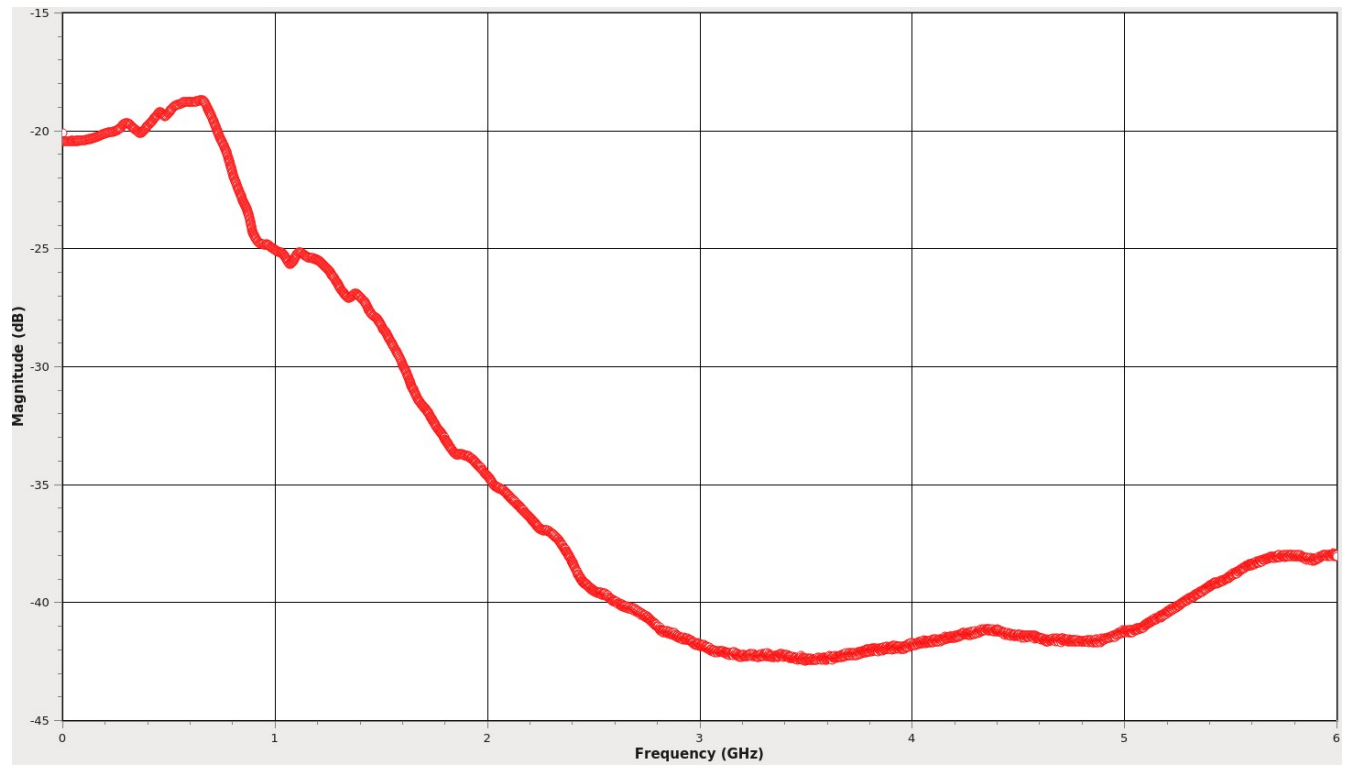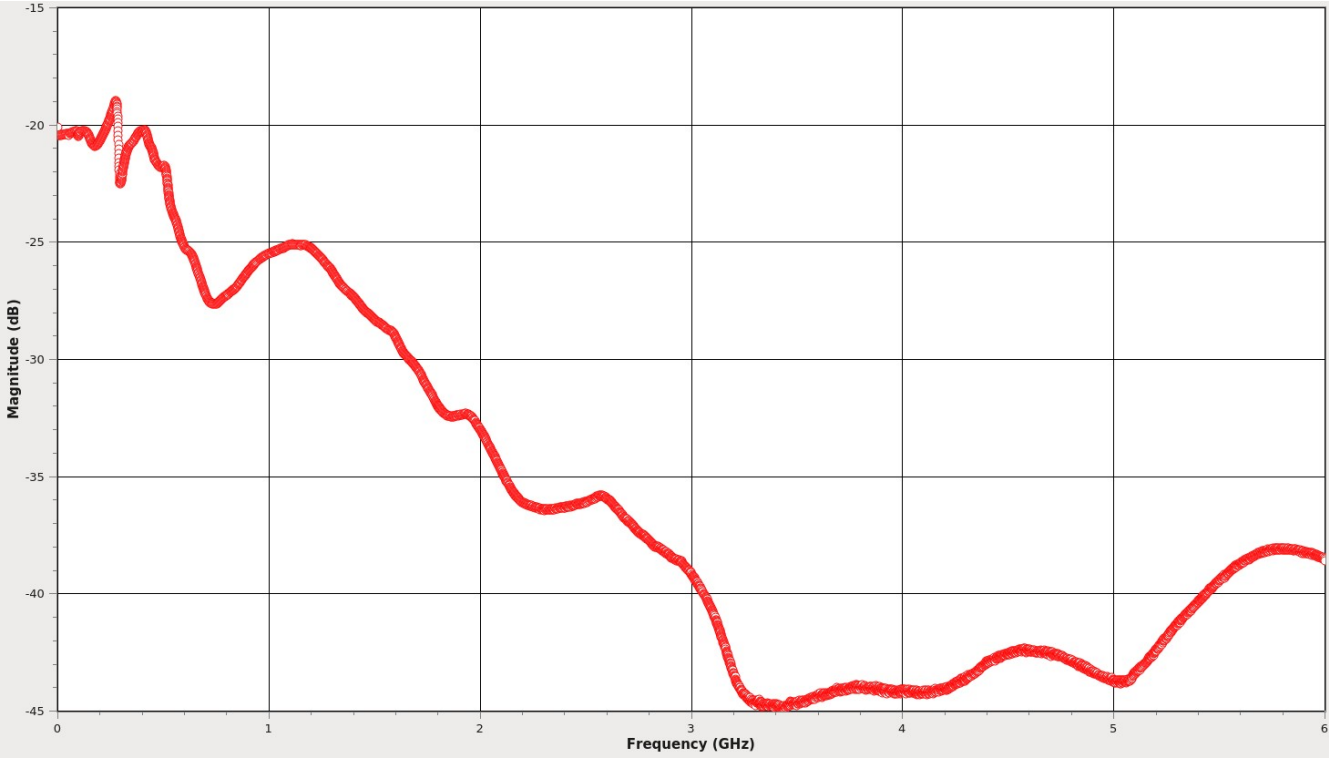# Insertion Loss (leaf ground, across 50Ω termination)

leafground.s2p S_{21}

Insertion Loss (Z-ground, across 50Ω termination)

zground.s2p S_{21}

Insertion Loss (flex ground, across 50Ω termination)

flexground.s2p S_{21}

Return Loss (tip ground, across open circuit)

zin.s2p S_{11}