

# CERTIFICATE OF CALIBRATION

Antikernel Labs  
PO Box 4665  
10355 NE Valley Rd  
Rollingbay, WA 98061-0665  
<https://www.antikernel.net/>  
[sales@antikernel.net](mailto:sales@antikernel.net)

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                  0011

Calibration Performed By      A. Zonenberg                              Date                      2020-08-05 23:33  
Test Conditions                  21°C, 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

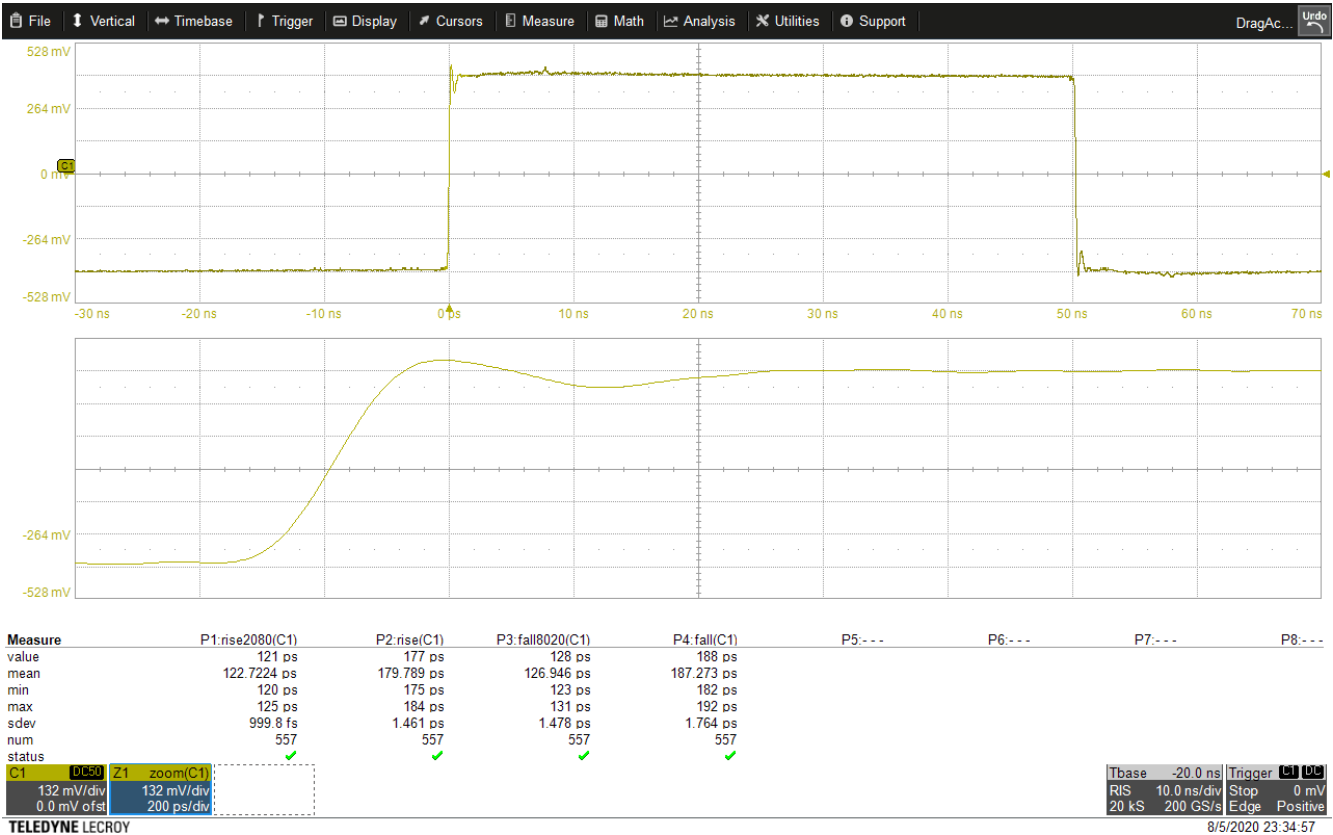
## Test Results

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	450.35	450.75	$\Omega$	PASS
S <sub>21</sub> (1 MHz)	-20.48	-20.44	-20.42	dB	PASS
S <sub>21</sub> (500 MHz)	-20.85	-20.54	-20.35	dB	PASS
S <sub>21</sub> (1.0 GHz)	-21.10	-20.73	-20.35	dB	PASS
S <sub>21</sub> (1.5 GHz)	-21.45	-20.92	-20.75	dB	PASS
S <sub>21</sub> (2.0 GHz)	-21.60	-21.81	-22.45	dB	PASS
Bandwidth (-23.5 dB)	2.25	2.46	2.60	GHz	PASS
Rise time (20-80%) w/ cable	118	123	129	ps	PASS

# Typical Waveform

Nominal 40 ps risetime pulse including the provided cable if applicable



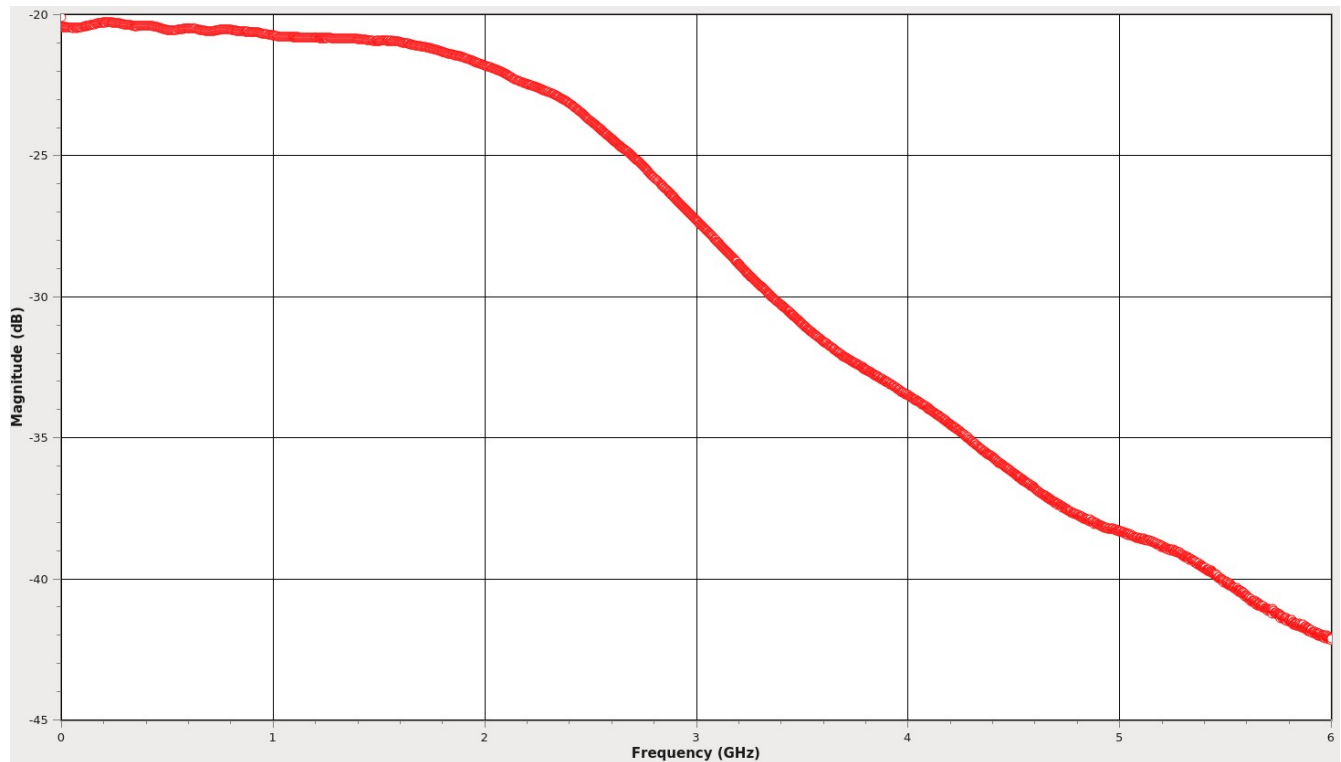
## S-Parameter Data

Machine readable S2P files for de-embedding may be downloaded at:

<https://www.antikernel.net/downloads/AKL-PT1/caldata/0011/>

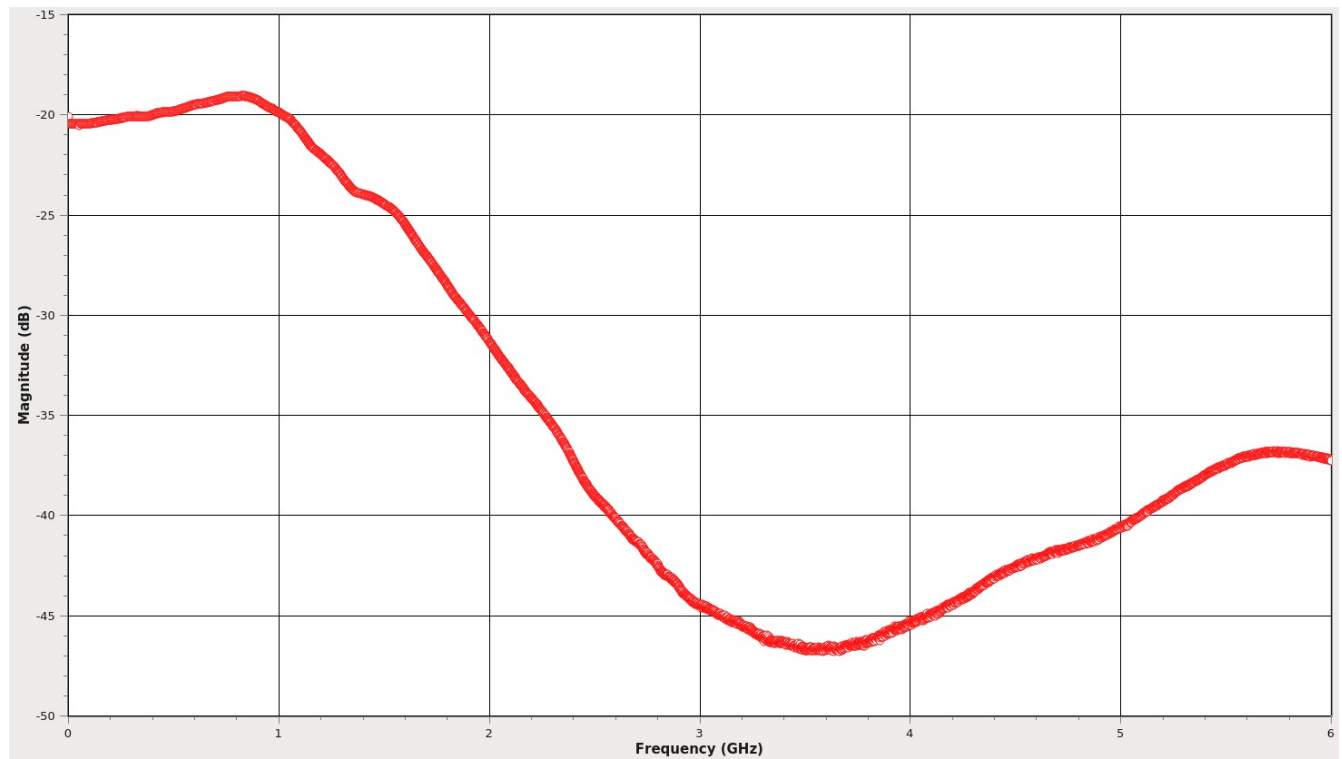
## Insertion Loss (tip ground, across 50 $\Omega$ termination)

tipground.s2p S<sub>21</sub>



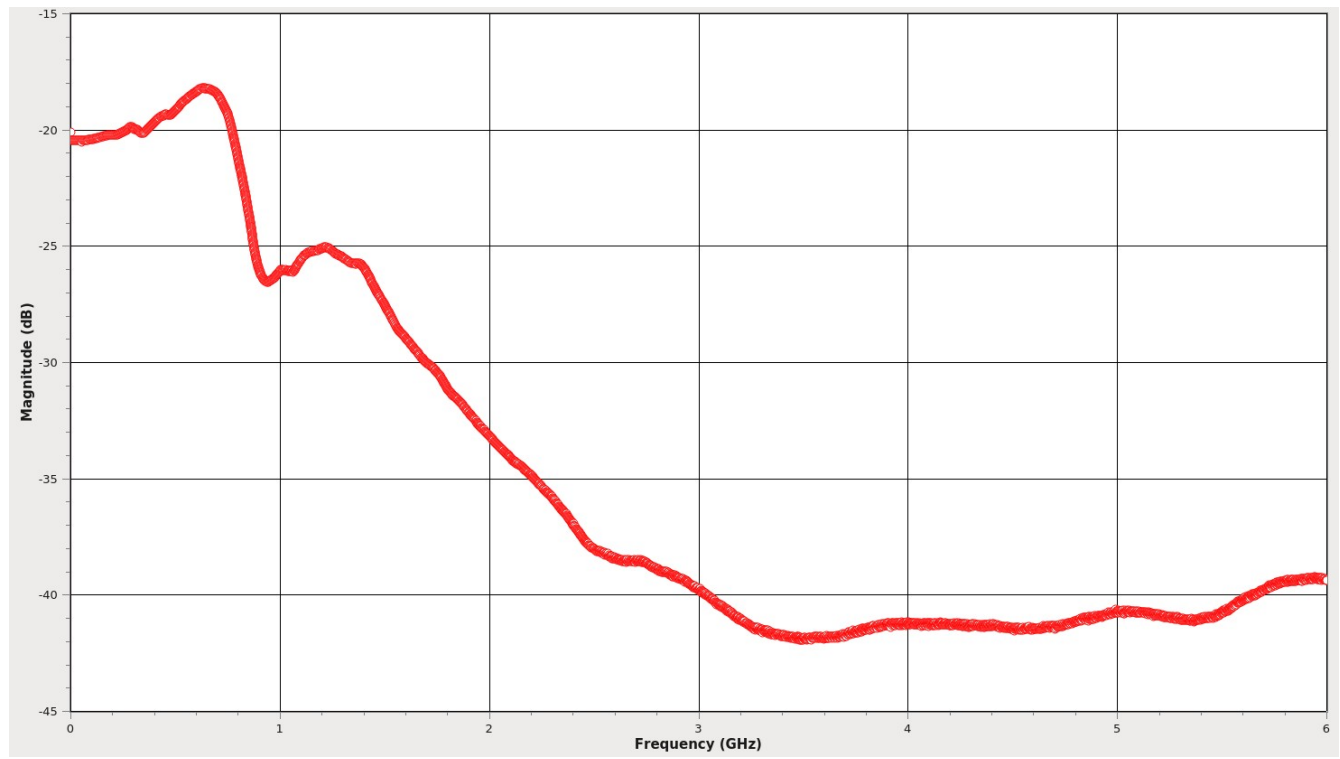
## Insertion Loss (leaf ground, across 50 $\Omega$ termination)

leafground.s2p S<sub>21</sub>



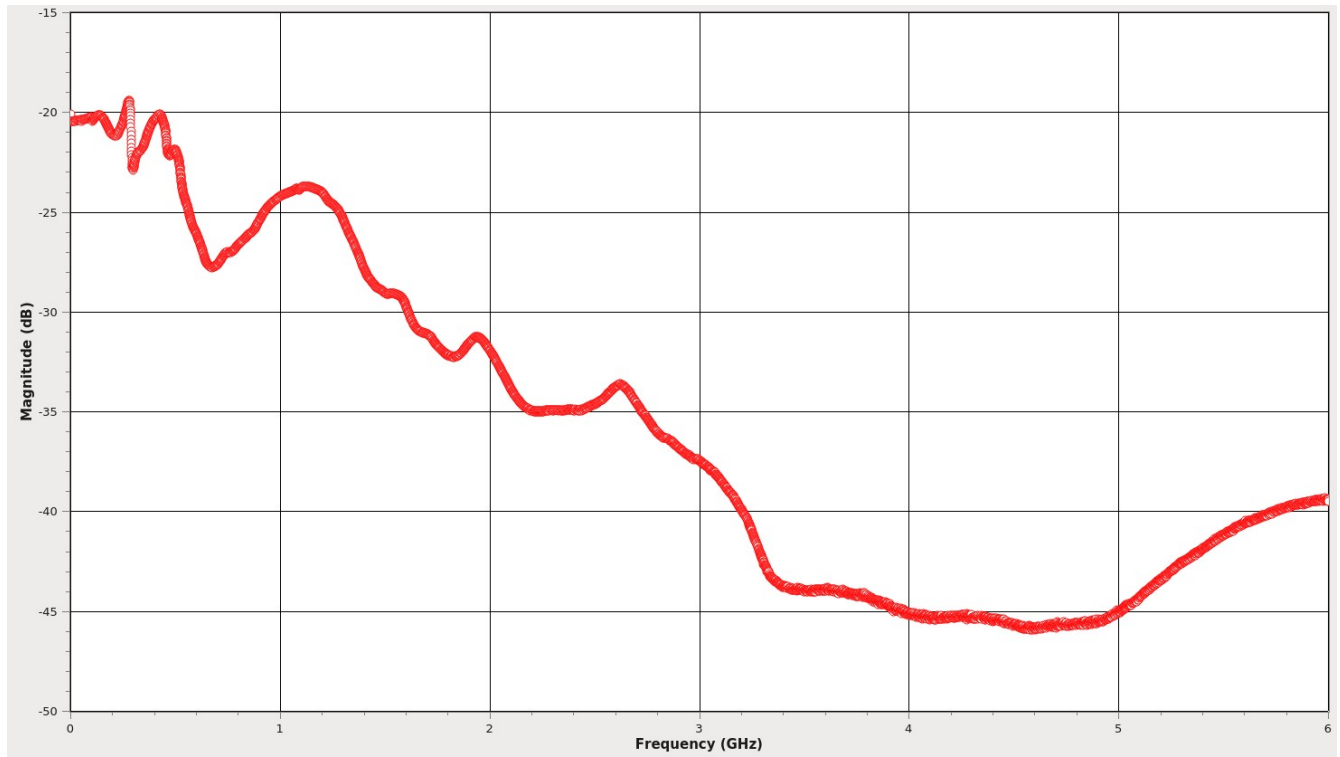
## Insertion Loss (Z-ground, across 50 $\Omega$ termination)

zground.s2p S<sub>21</sub>



## Insertion Loss (flex ground, across 50 $\Omega$ termination)

flexground.s2p S<sub>21</sub>



# Return Loss (tip ground, across open circuit)

zin.s2p S<sub>11</sub>

