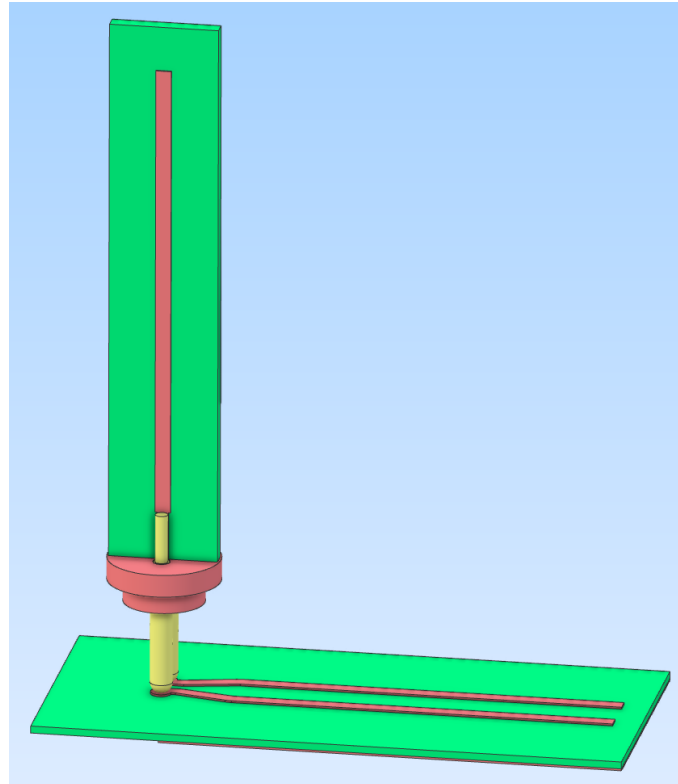




Signal Microwave

Customer Probe Models



July 8, 2026

Version 1



Signal Microwave

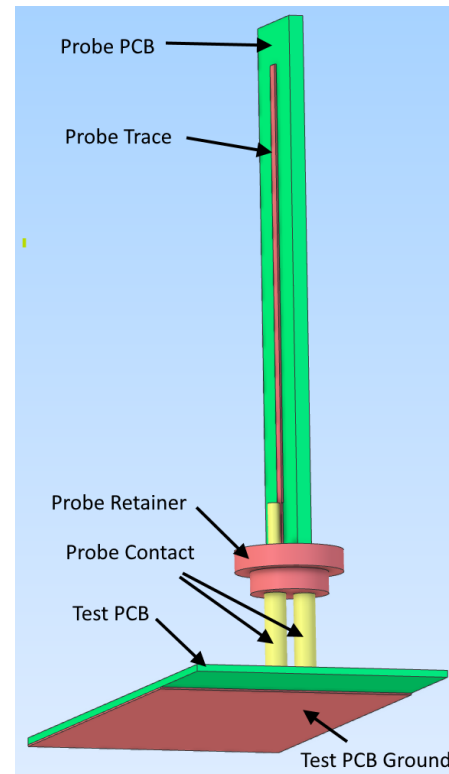
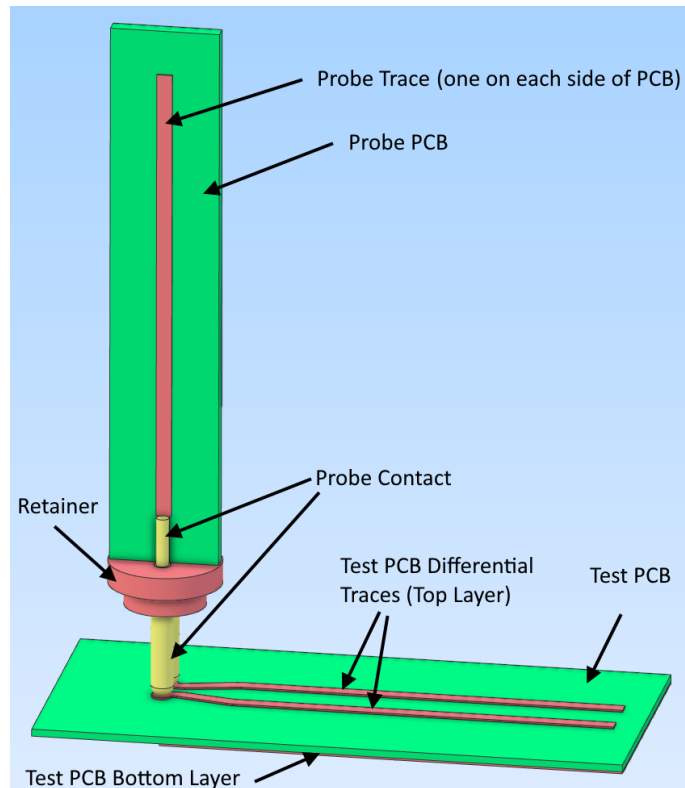
Customer Probe Models

1 DESCRIPTION

Signal Microwave Probe Models:

1. 70 GHz – 1.0 mm pitch
2. 110 GHz – 0.8 mm pitch
3. 110 GHz – 0.6 mm pitch

The probe models consist of the following parts (Image of 70 GHz probe):





Signal Microwave

Customer Probe Models

2 PROBE MODEL DESCRIPTION

2.1 Materials

		70 GHz – 1.0 mm	110 GHz – 0.8 mm	110 GHz – 0.6 mm
Probe PCB	Dielectric Constant	3.55	3	3
	Thickness	16.7 mil	14.6 mil	11.05 mil
	Trace Thickness	2.1 mil	2.0 mil	2.0 mil
Retainer	Dielectric Constant	2.3	2.3	2.3
Test PCB	Dielectric Constant	3.55	3	3
	Thickness	8 mil	5 mil	5 mil
	Trace Thickness	2.1 mil	2.0 mil	2.0 mil

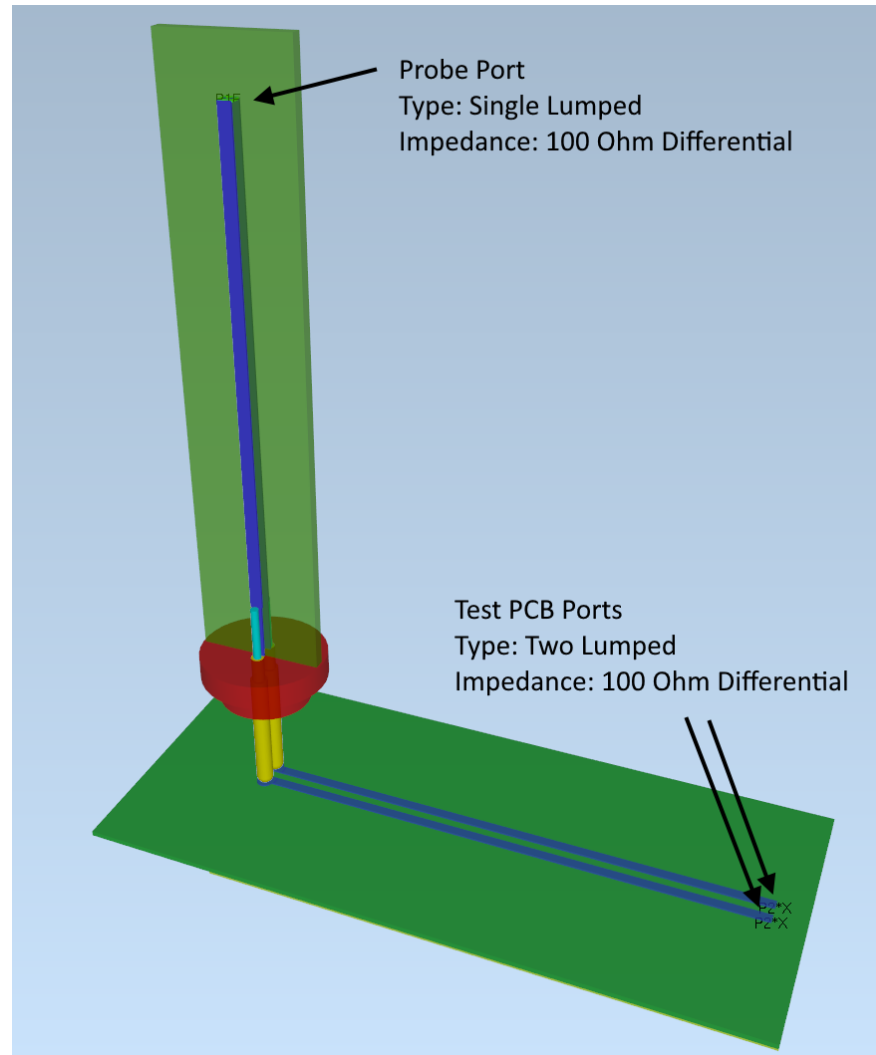
Probe contacts, PCB traces and PCB ground are conductors



Signal Microwave

Customer Probe Models

2.2 Simulation Port Setup

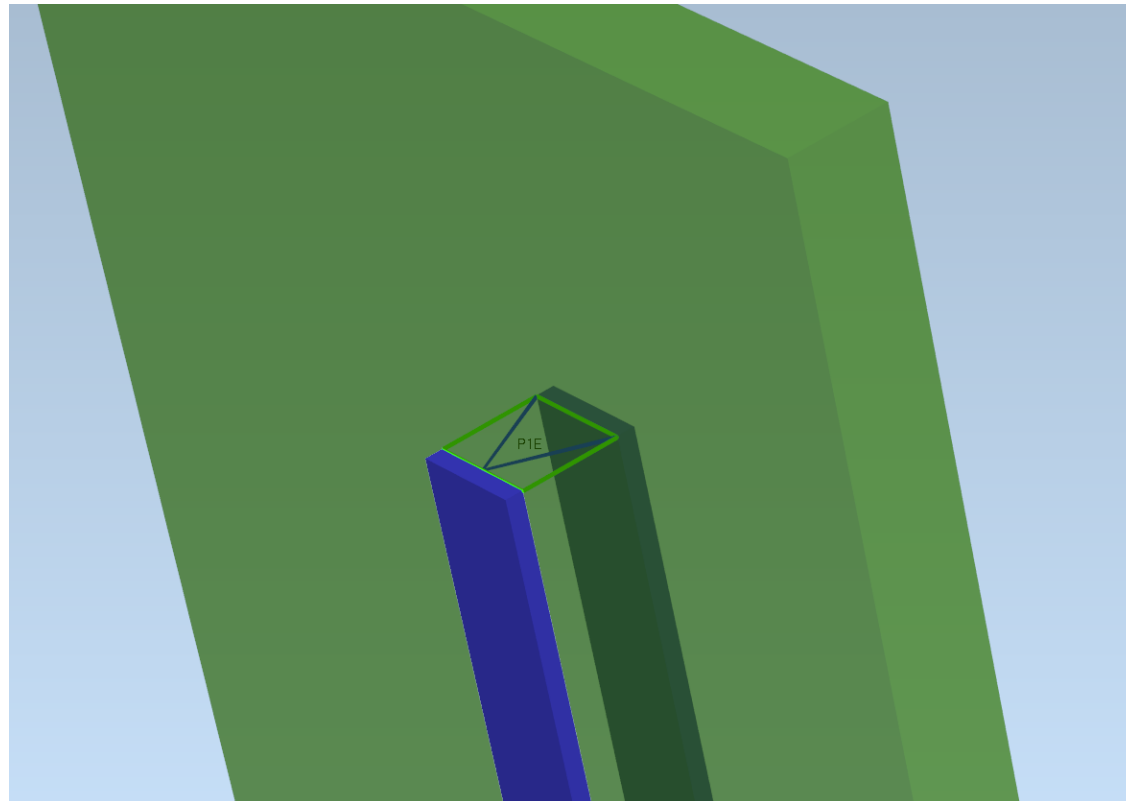




Signal Microwave

Customer Probe Models

- Probe Port
 - Setup with a single lumped port
 - The port uses a 100 ohm impedance
 - The port terminates between the ends of the two traces

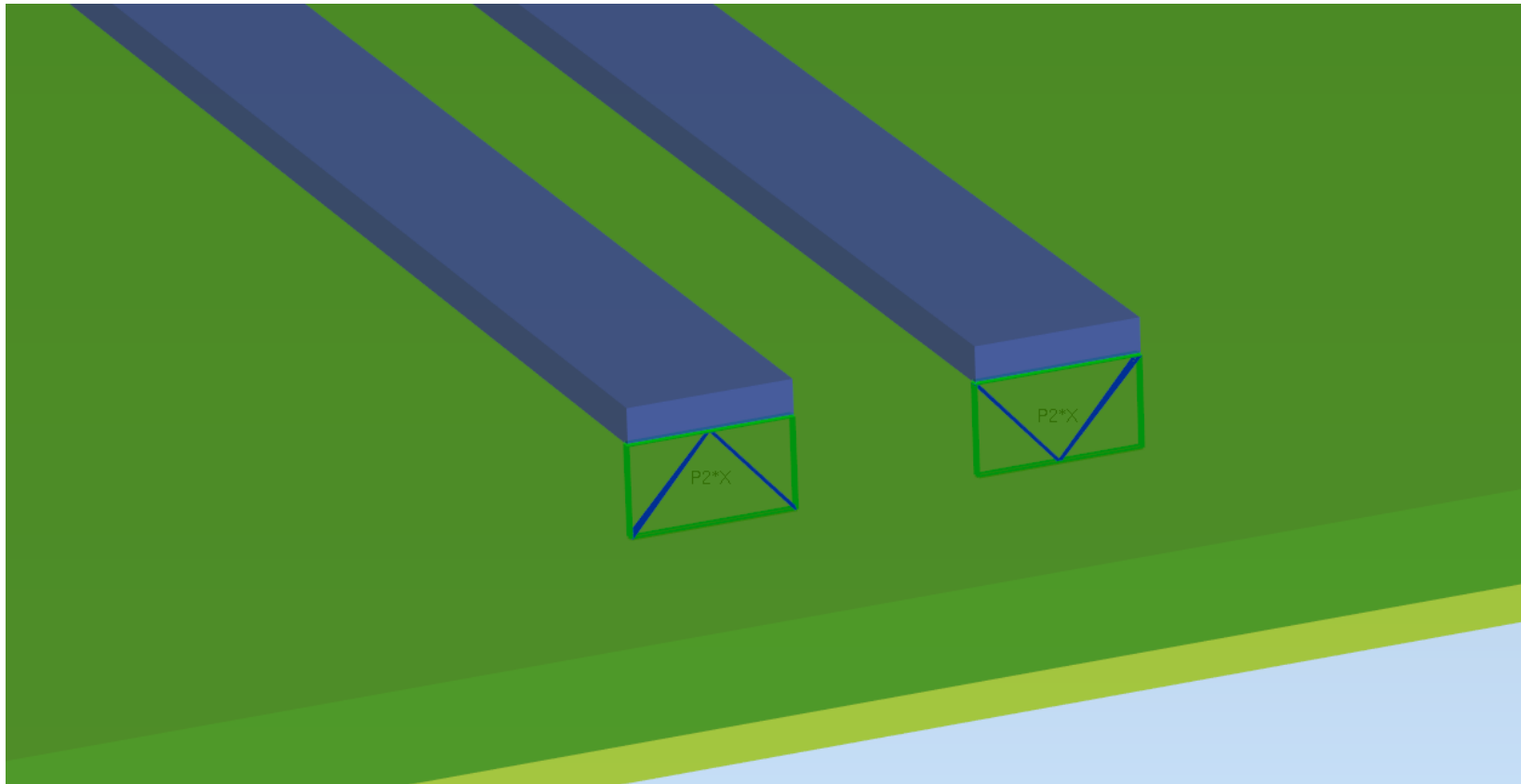




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Customer Probe Models

- Test PCB Ports
 - Setup two lumped ports
 - The ports terminate between the end of the trace and PCB ground
 - Each port has a 50 ohm impedance (but add up to 100 ohms differentially)
 - The ports must be configured for a 100 ohm differential impedance



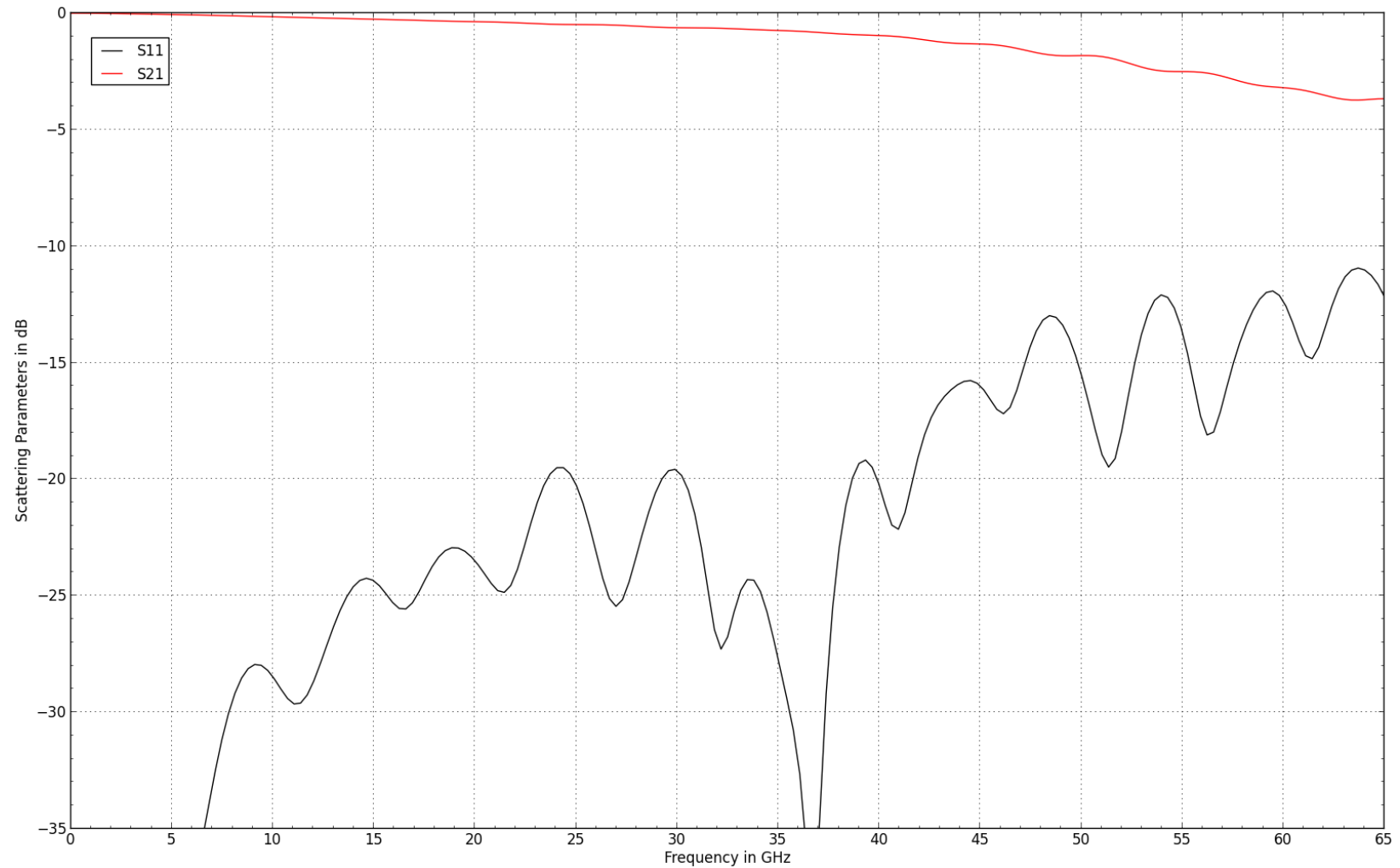


Signal Microwave

Customer Probe Models

3 SIMULATED RESULTS

S-parameters – 70 GHz – 1.0 mm pitch (Simulated with lossless conductor and dielectric losses)

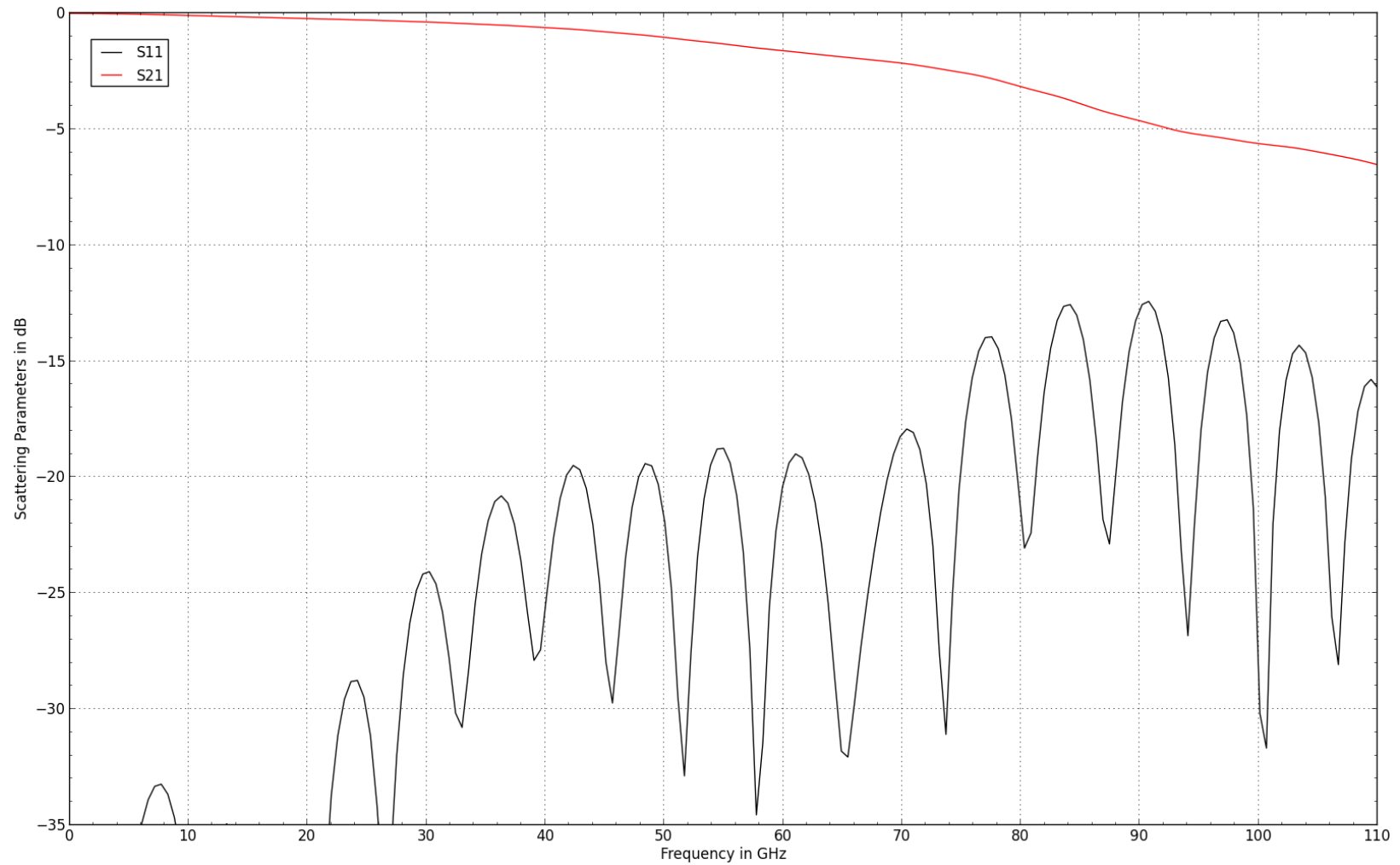




Signal Microwave

Customer Probe Models

S-parameters – 110 GHz – 0.8 mm pitch (Simulated with lossless conductor and dielectric losses)





Signal Microwave

Customer Probe Models

S-parameters – 110 GHz – 0.6 mm pitch (Simulated with lossless conductor and dielectric losses)

