



TR1300/1 VECTOR NETWORK ANALYZER

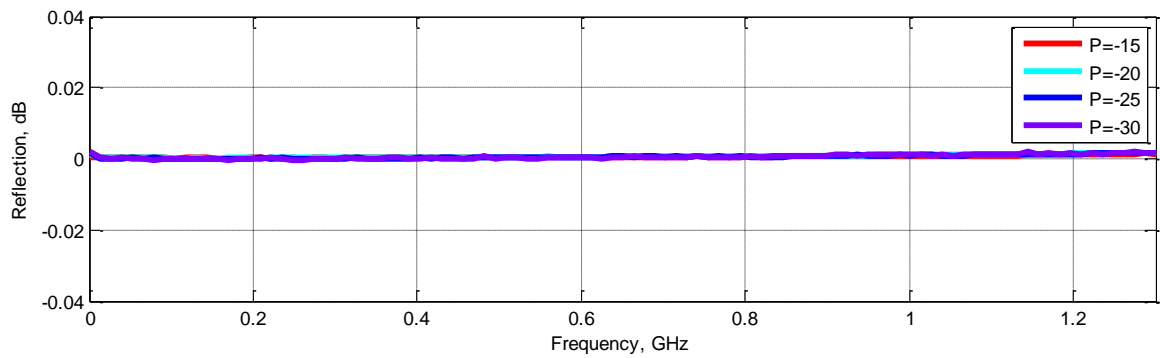
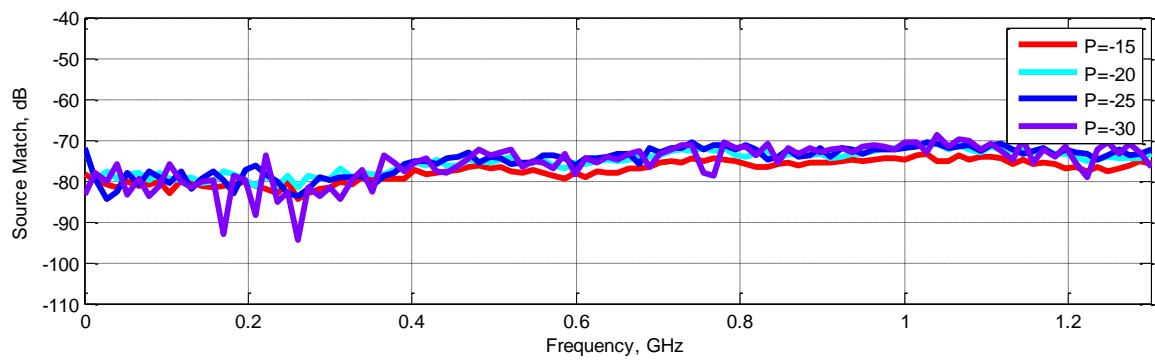
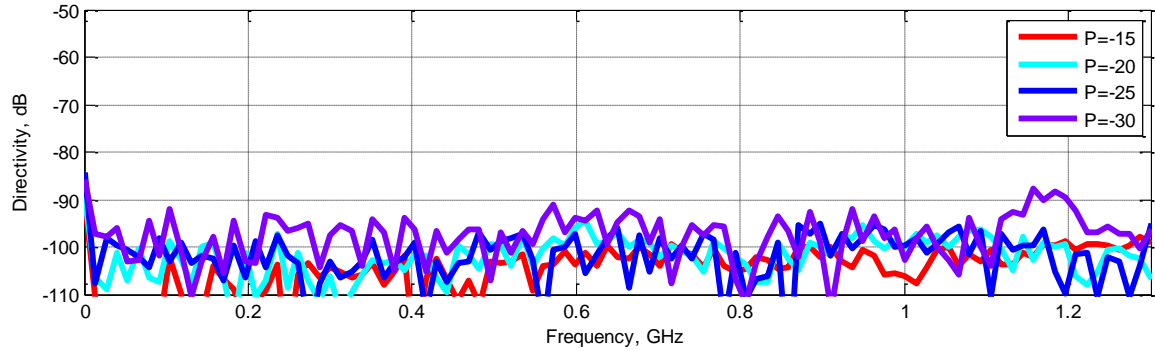
REPEATABILITY OF REFLECTION MEASUREMENTS AT DIFFERENT POWER LEVELS

ADDITIONAL UNCERTAINTY ANALYSIS

(Upon customer request)

Parameters repeatability due to changing the output power level

Power range from -10 dBm to -30 dBm

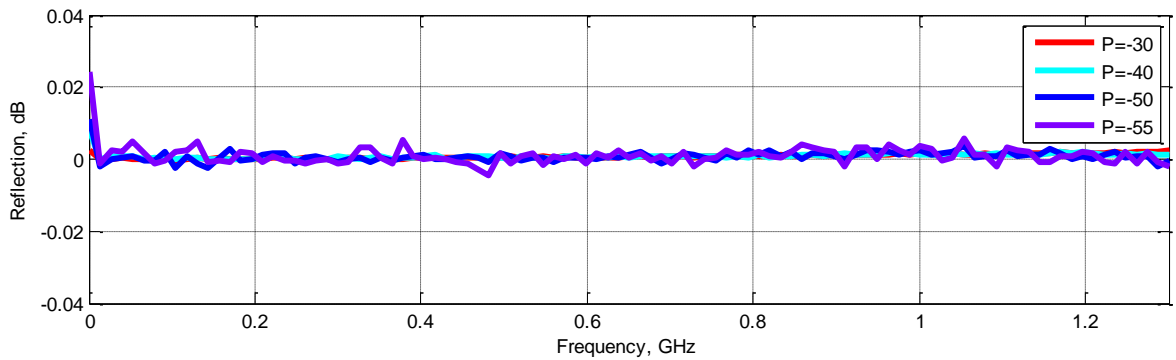
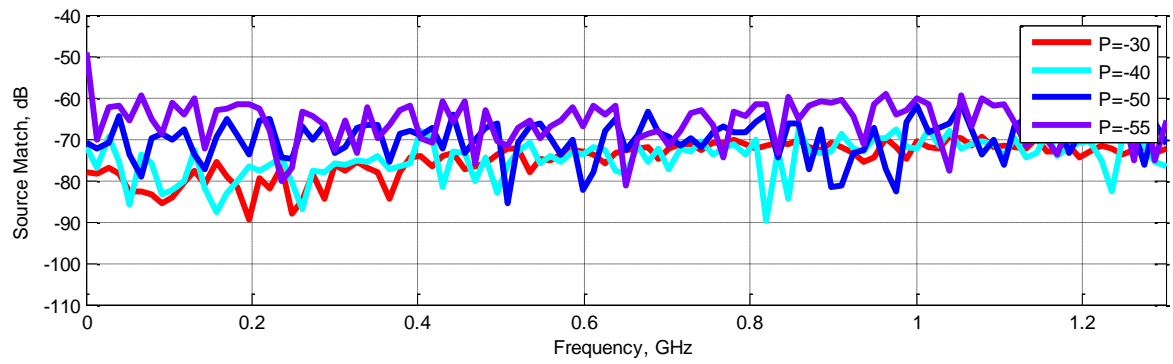
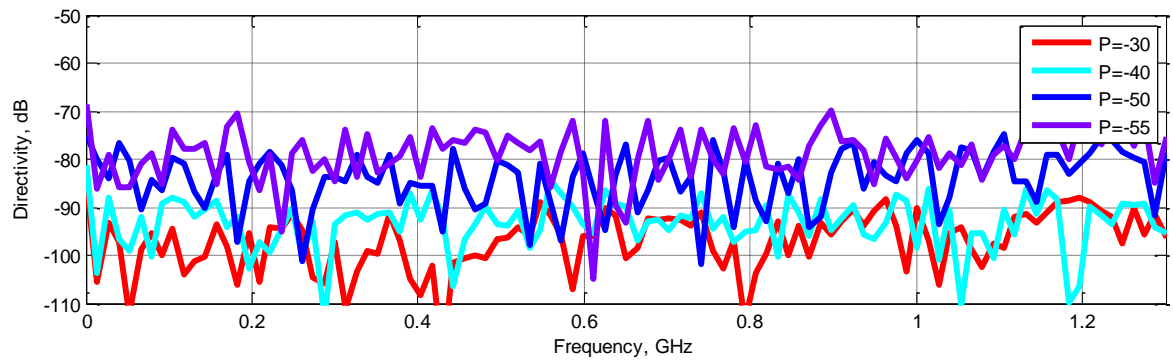


Parameters repeatability regarding -10 dBm

Parameter	Magnitude repeatability [dB], typical value	Magnitude repeatability [lin], typical value
Directivity	90	0.00003
Source match	70	0.00032
Reflection tracking	<0.005	0.00058

Parameters repeatability due to changing the output power level

Power range from -10 dBm to -55 dBm

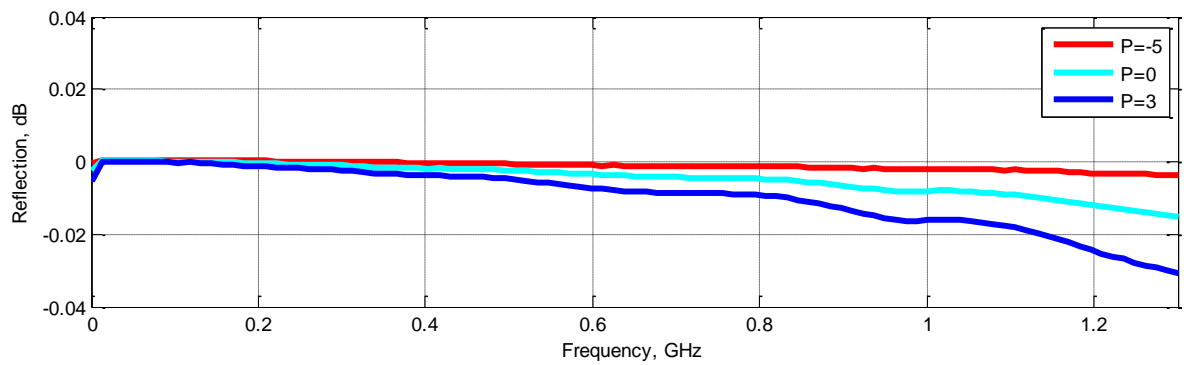
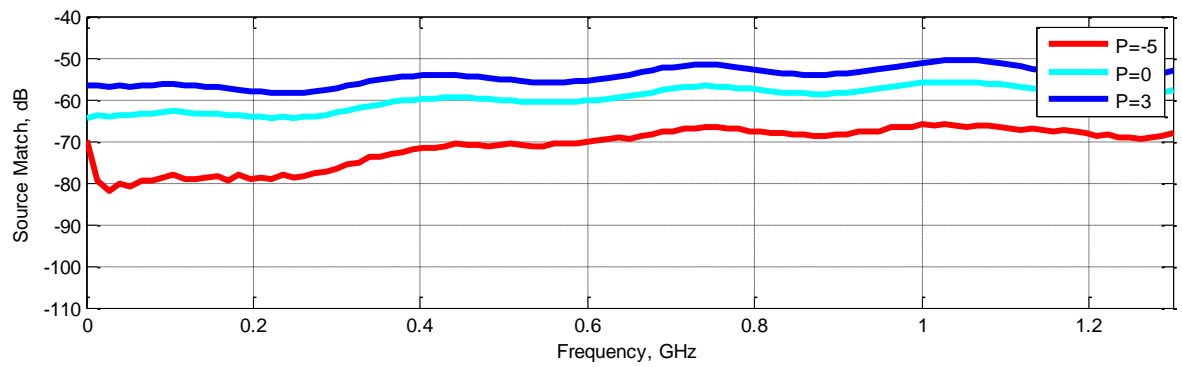
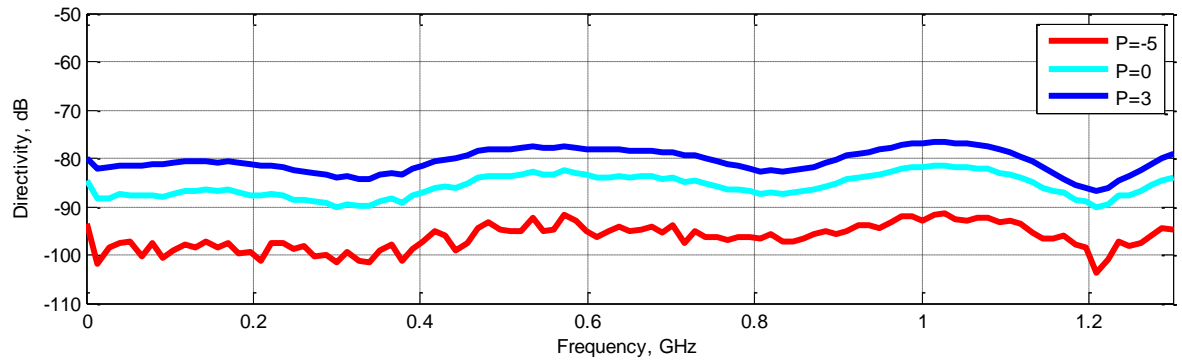


Parameters repeatability regarding -10 dBm

Parameter	Magnitude repeatability [dB], typical value	Magnitude repeatability [lin], typical value
Directivity	70	0.00032
Source match	60	0.00100
Reflection tracking	0.01	0.00115

Parameters repeatability due to changing the output power level

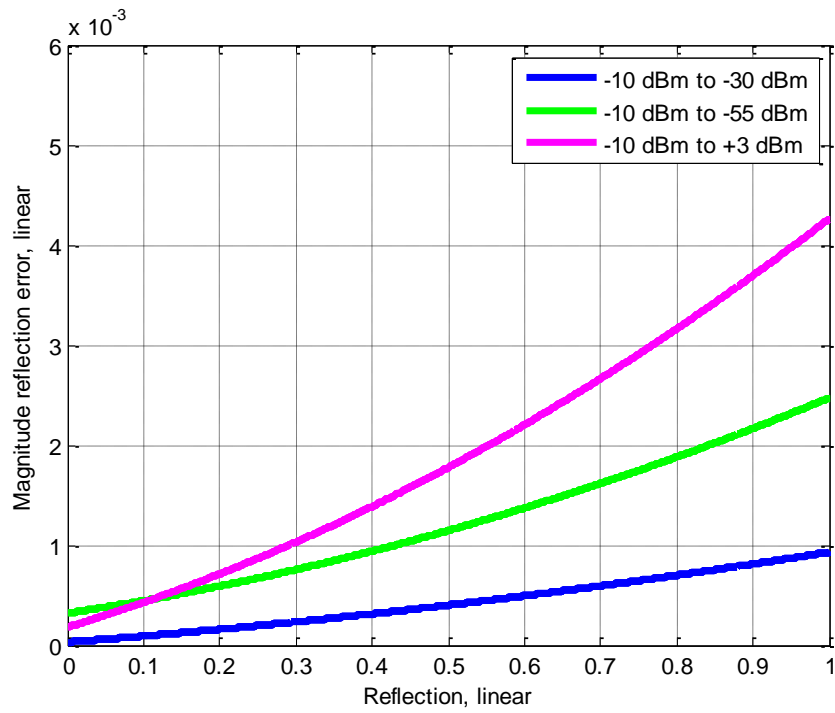
Power range from -10 dBm to +3 dBm



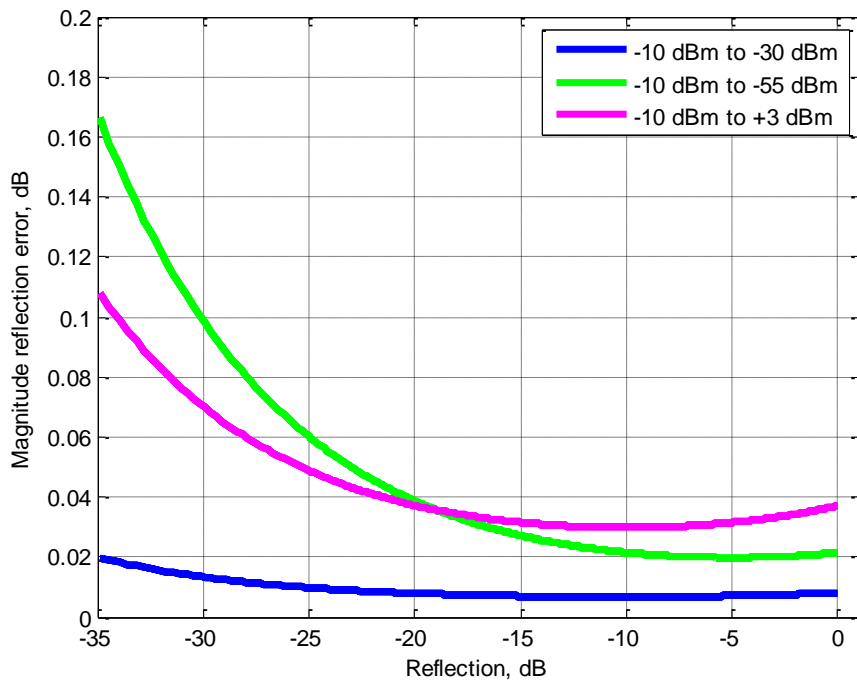
Parameters repeatability regarding -10 dBm

Parameter	Magnitude repeatability [dB], typical value	Magnitude repeatability [lin], typical value
Directivity	75	0.00018
Source match	55	0.00178
Reflection tracking	0.02	0.00230

Repeatability of reflection measurements in dependence on output power level

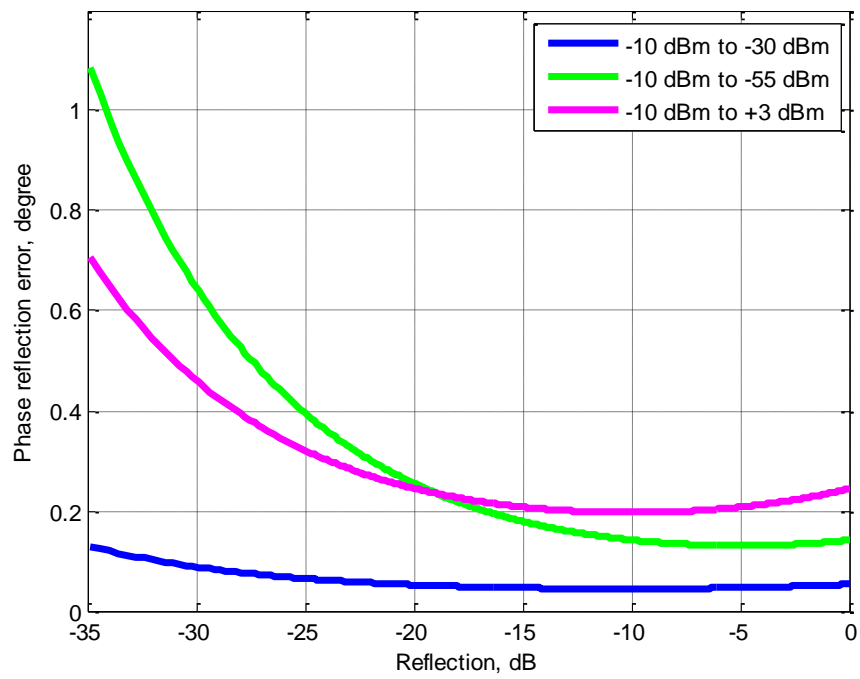


Magnitude error due to changing the output power level (linear scale)



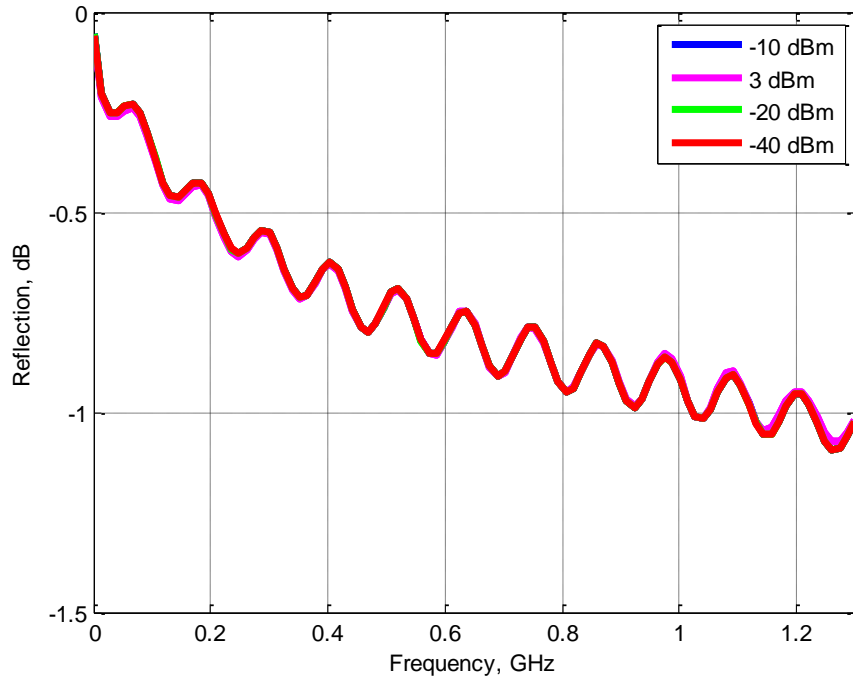
Magnitude error due to changing the output power level (log scale)

Repeatability of reflection measurements in dependence on output power level

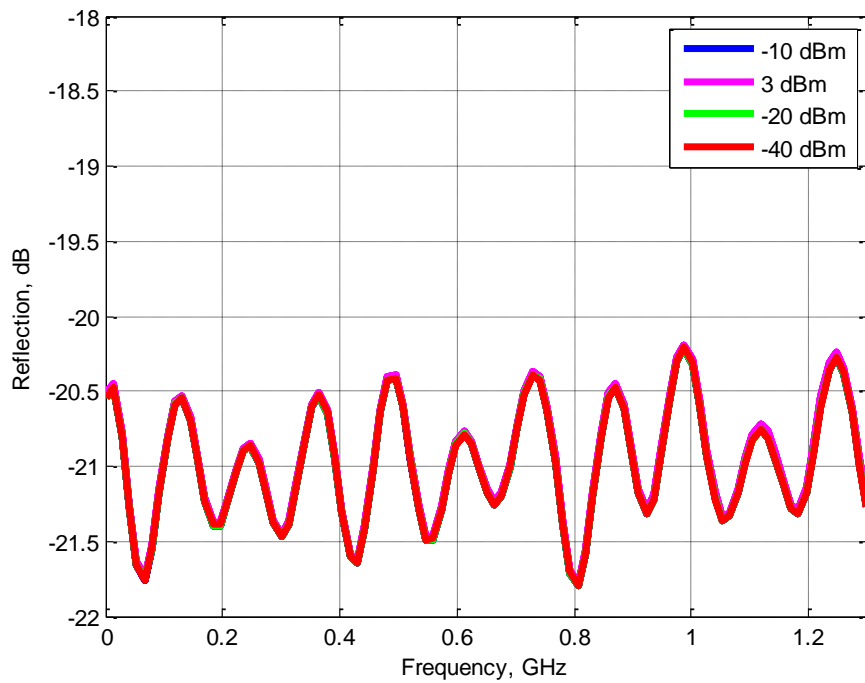


Phase error due to changing the output power level

Reflection measurement results at different output power levels



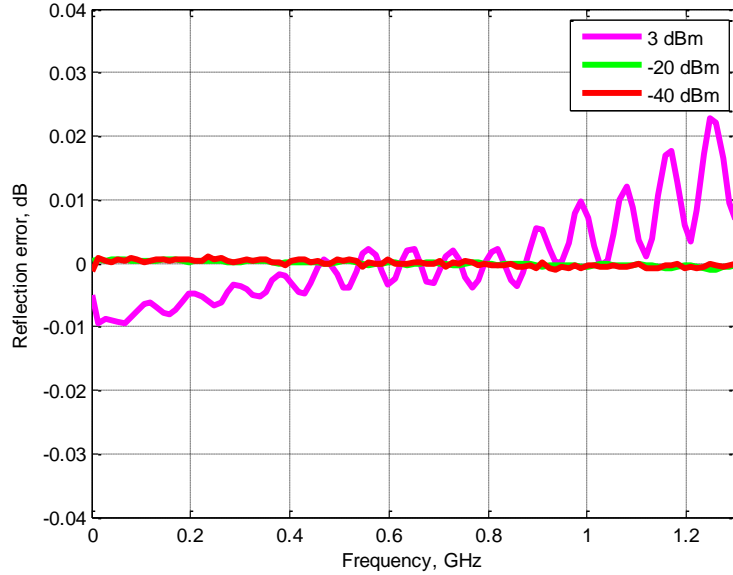
RF cable with short standard connected to the free port



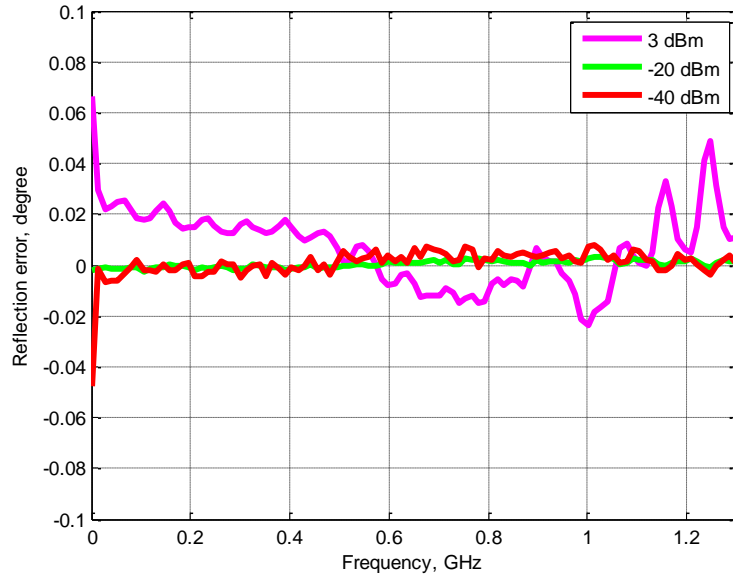
RF cable with mismatch load connected to the free port

Reflection errors due to changing the output power level

RF cable with short standard connected
-10 dBm normalization performed



Magnitude error

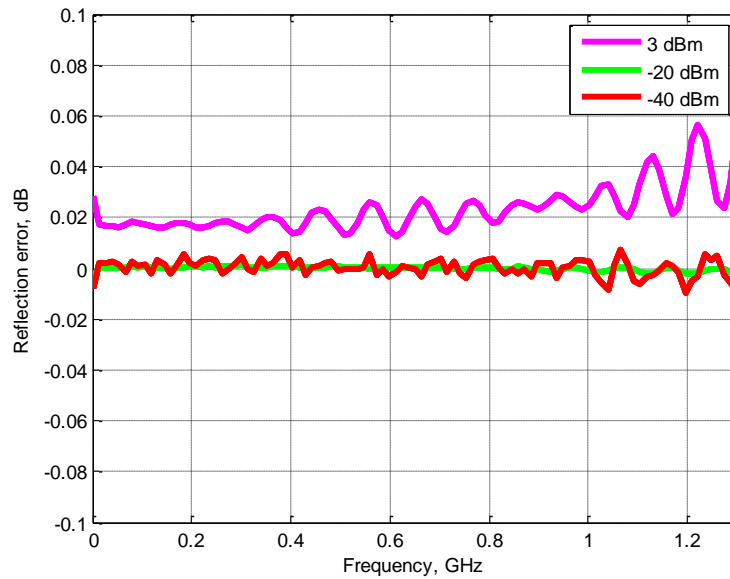


Phase error

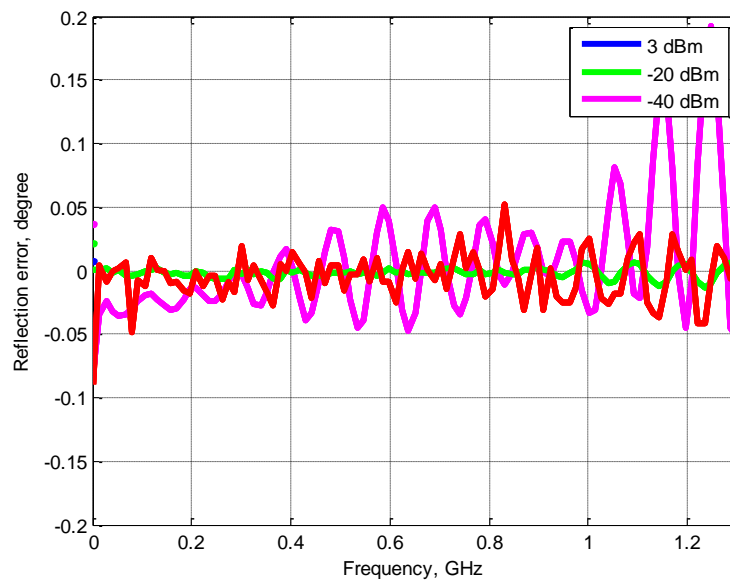
Parameter	Measurement result 0 dB reflection	Calculated limit in according with typical values presented
Magnitude / phase		
-40 dBm	<0.005 dB / <0.05	0.02 dB / 0.15°
-20 dBm	<0.005 dB / <0.05	0.01 dB / 0.05°
+3 dBm	<0.025 dB / <0.10	0.035 dB / 0.25°

Reflection error due to changing the output power level

RF cable with mismatch load connected
-10 dBm normalization performed



Magnitude error



Phase error

Parameter	Measurement result -20 dB reflection	Calculated limit in according with typical values presented
Magnitude / phase		
-40 dBm	0.01 dB / 0.1°	0.04 dB / 0.25°
-20 dBm	<0.01 dB / <0.05°	0.01 dB / 0.05°
+3 dBm	0.05 dB / 0.20°	0.04 dB / 0.25°