



PL12090/1248

Typical Characteristics On PEC-40/25-218-21-12-SFF-TTLVG Rev. B



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TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	MEASURED VALUE	QA/QC
1	Frequency Range:	2 – 18 GHz	2 – 18 GHz	
2	Gain @ -25°C: Max. Gain Position Min. Gain Position	+42dB ± 2.0dB Max +27dB ± 2.0dB Max	41.94dB ± 1.82dB 26.80dB ± 1.52dB	
3	Gain @ +25°C: Max. Gain Position Min. Gain Position	+40dB ± 2.0dB Max +25dB ± 2.0dB Max	41.68dB ± 1.28dB 26.71dB ± 1.43dB	
4	Gain @ +75°C: Max. Gain Position Min. Gain Position	+37dB ± 2.0dB Max +22dB ± 2.0dB Max	40.94dB ± 1.47dB 25.98dB ± 1.41dB	
5	Pout @ 1dB Compression @ -25°C: Max. Gain Position Min. Gain Position	+21dBm Min. +20dBm Min.	Pass	
6	Pout @ 1dB Compression @ +25°C: Max. Gain Position Min. Gain Position	+21dBm Min. +20dBm Min.	Pass	
7	Pout @ 1dB Compression @ +75°C: Max. Gain Position Min. Gain Position	+20dBm Min. +20dBm Min.	Pass	
8	Saturated Output Power (Both Gains) Over Operating Temperature Range:	+26dBm. Max.	Pass	
9	Noise @ -25°C: Max. Gain Position Min. Gain Position	+3.8 dB Max. +6.0 dB Max.	+3.12 dB +3.48 dB	
10	Noise @ +25°C: Max. Gain Position Min. Gain Position	+4.5 dB Max. +7.0 dB Max.	+3.78 dB +4.31 dB	
11	Noise @ +75°C: Max. Gain Position Min. Gain Position	+5.0 dB Max. +8.0 dB Max.	+4.44 dB +4.96 dB	
12	VSWR In/Out:	2.0:1 Max.	Input 1.67:1dB Output 1.43:1dB	
12	Input/Output Impedance:	50Ω Nominal	Pass	
13	Input Power Without Damage	+20dBm CW Max	Pass	
14	In-Band Harmonics @ or below the 1dB Compression Point	-10dBc Min.	Pass	
15	Pulse Rise Time with Input Signals up to -20dBm	<5ns	Pass	
16	Pulse Overshoot with Input Signals up to -20dBm	<0.5dB	Pass	



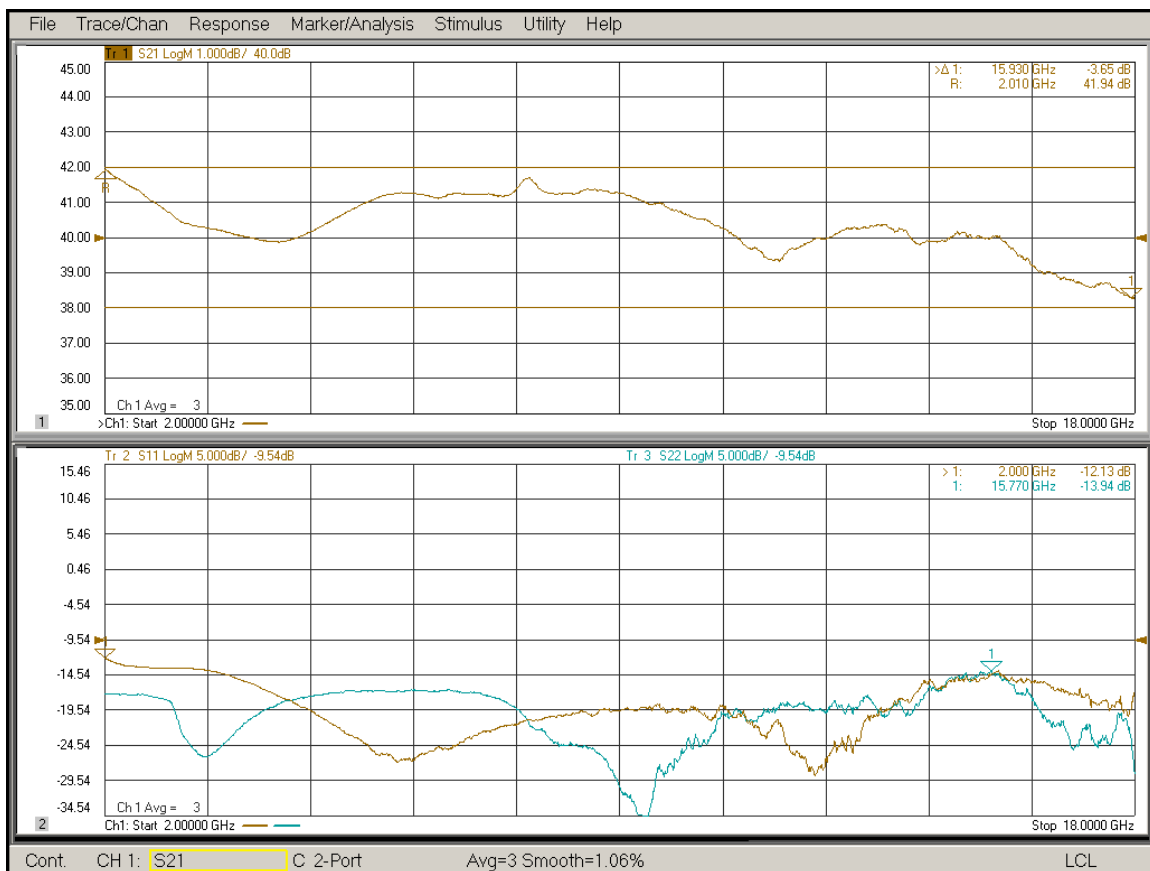
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17	Pulse Droop with pulses up to 250u in Duration and Input Signals up to -20dBm	<2.0dB	Pass	
18	Pulse Recovery Time with pulses up to 250u in Duration and Input Signals up to -20dBm	15ns	Pass	
19	Gain Switching Time	<500ns	Pass	
20	Gain Switch Control:	TTL High "1" - Max. Gain TTL Low "0" - Min. Gain	Pass	
21	DC Supply:	780mA Max@ +12V ±5% Max Gain Position. 610mA Max@ +12V ± 5% Min Gain Position.	332mA @ Max Gain Position. 332mA @ Min Gain Position.	



Gain & Return Loss -25°C

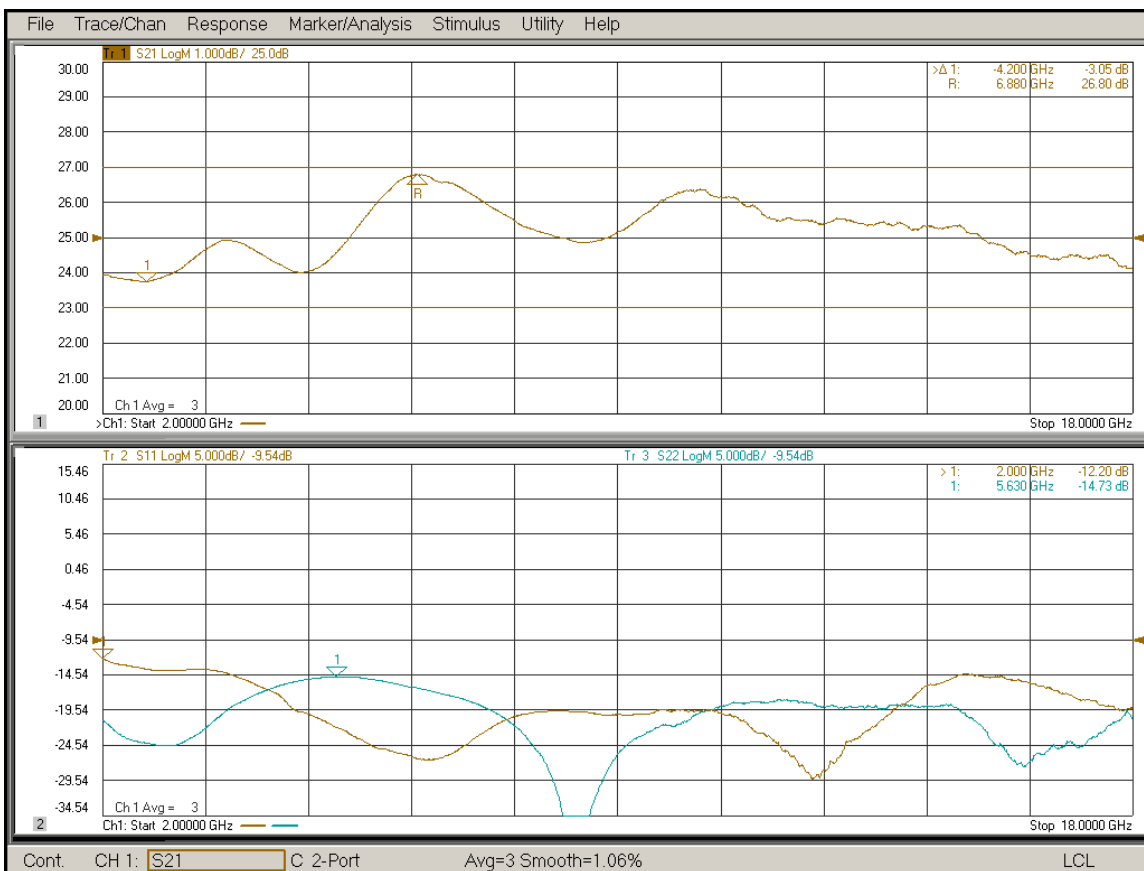
“TTL” = High (Max. Gain)





Gain & Return Loss -25°C

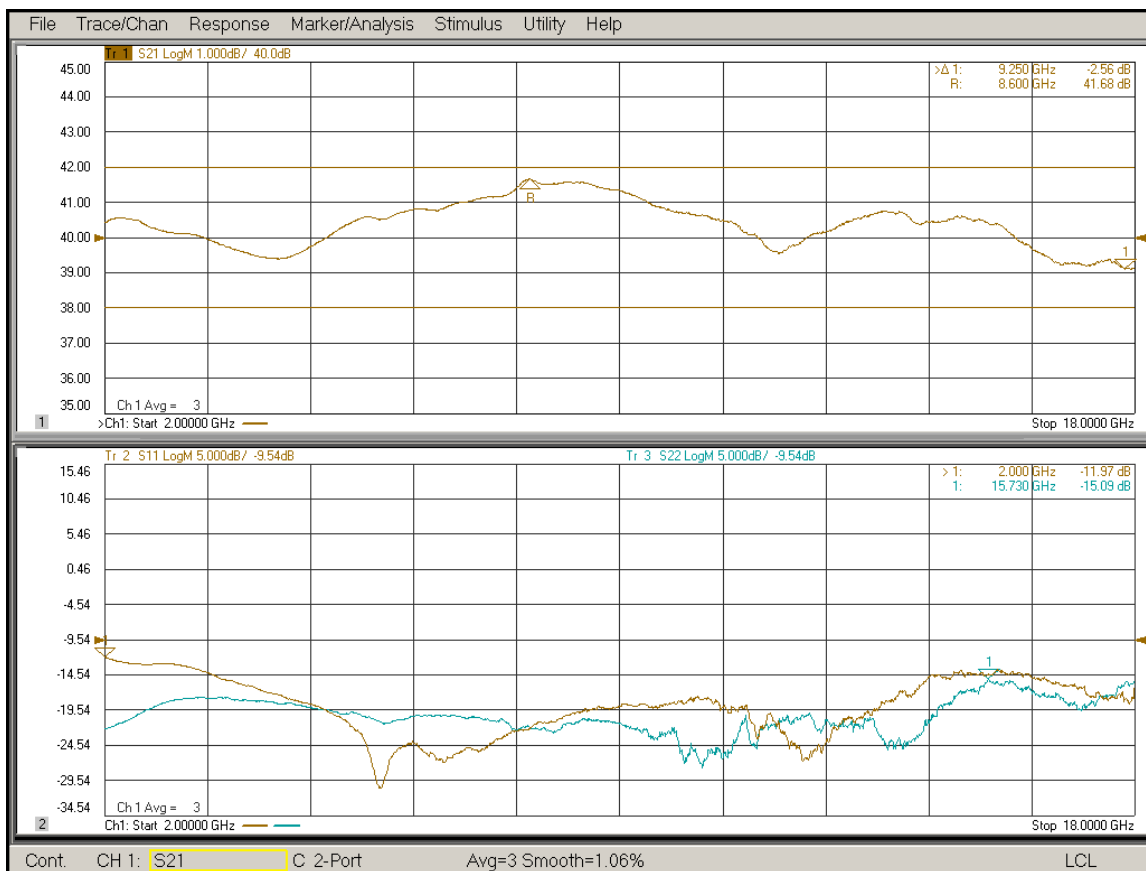
“TTL” = Low (Min. Gain)





Gain & Return Loss +25°C

“TTL” = High (Max. Gain)

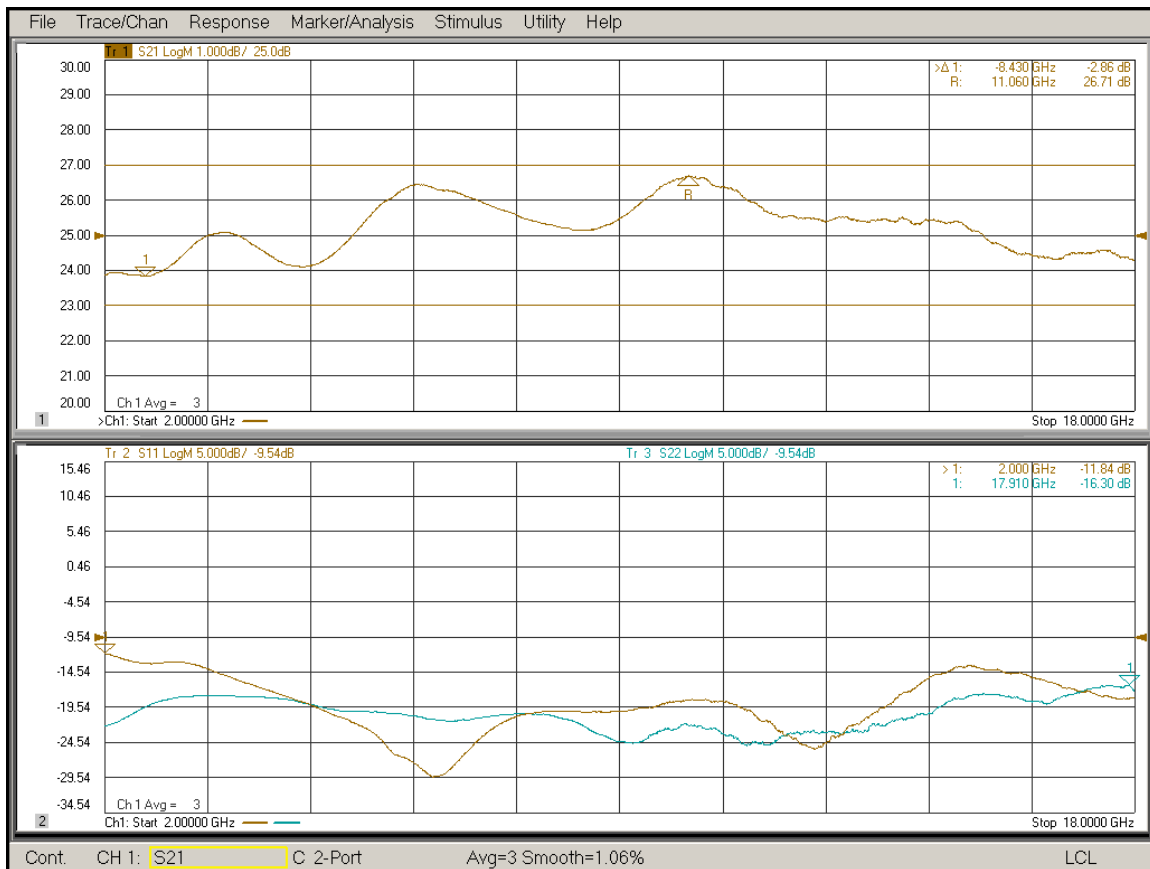




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Gain & Return Loss +25°C

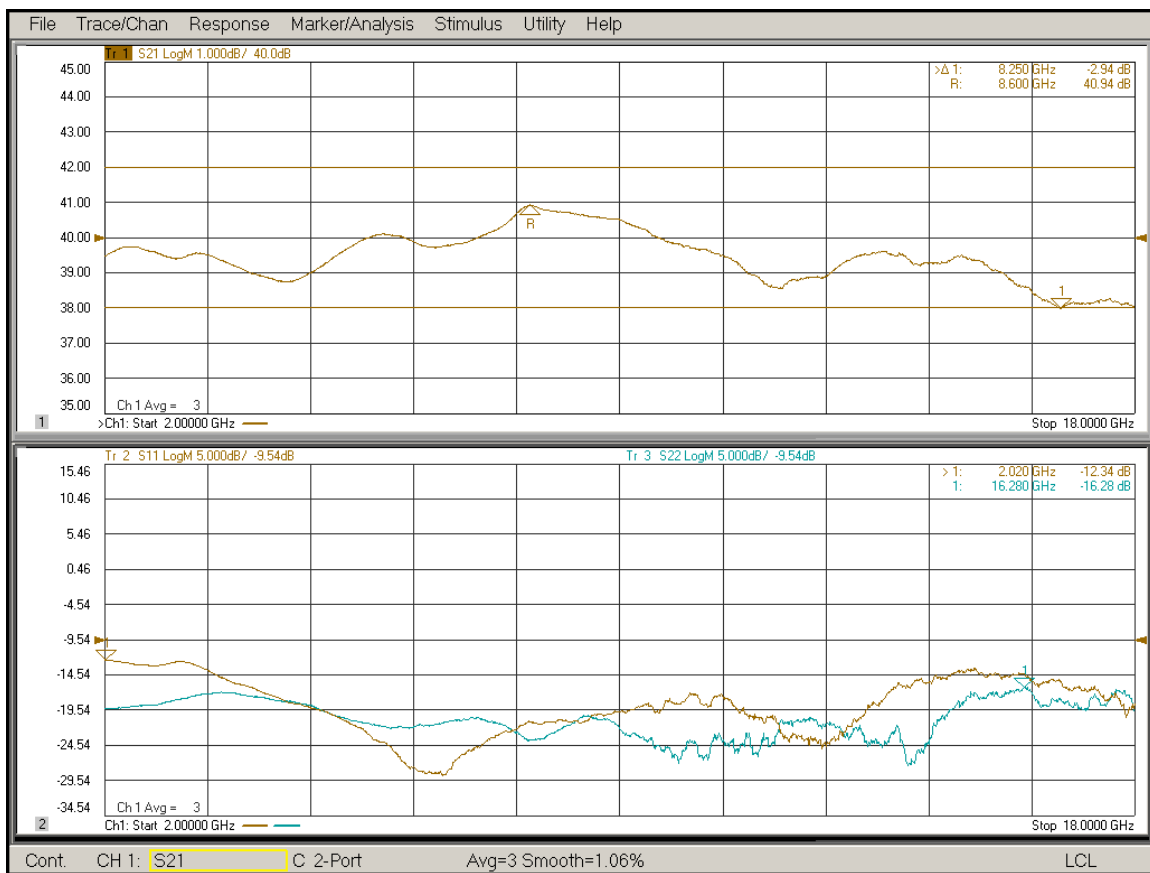
“TTL” = Low (Min. Gain)





Gain & Return Loss +75°C

“TTL” = High (Max. Gain)

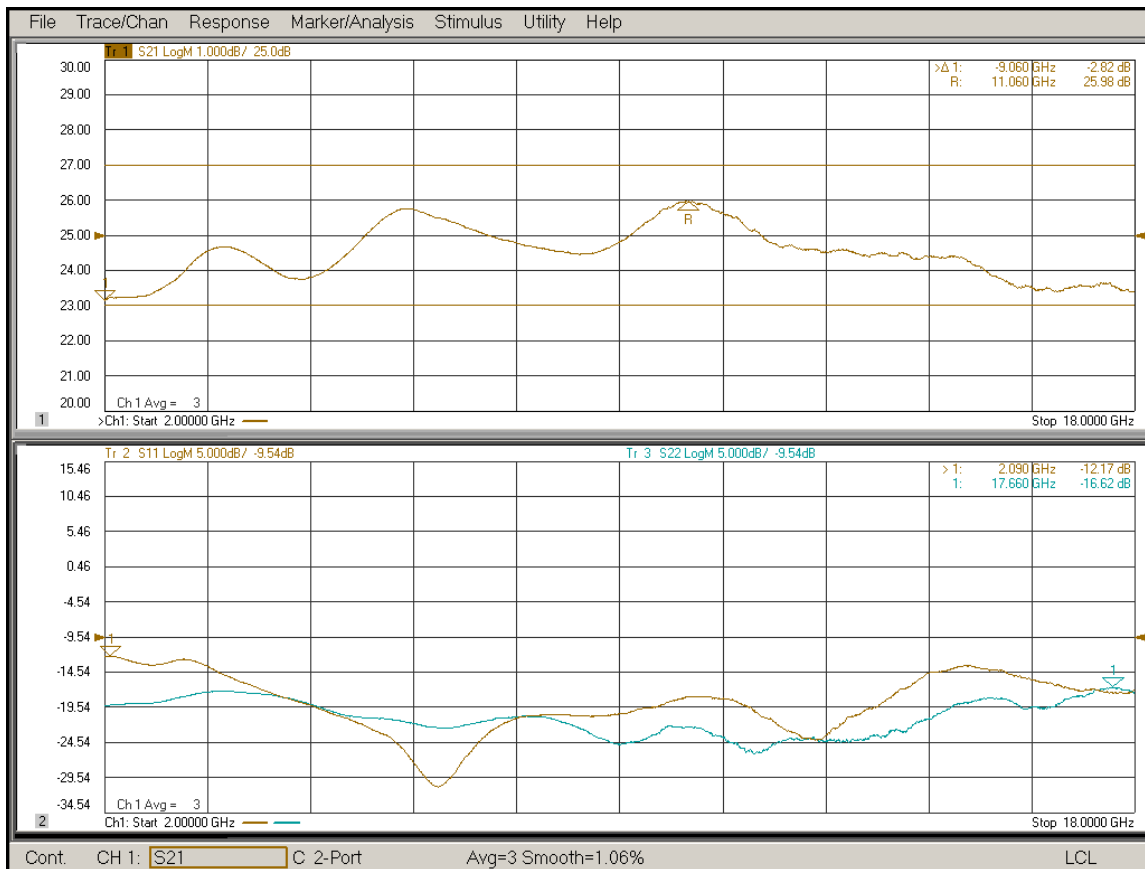




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Gain & Return Loss +75°C

“TTL” = Low (Min. Gain)

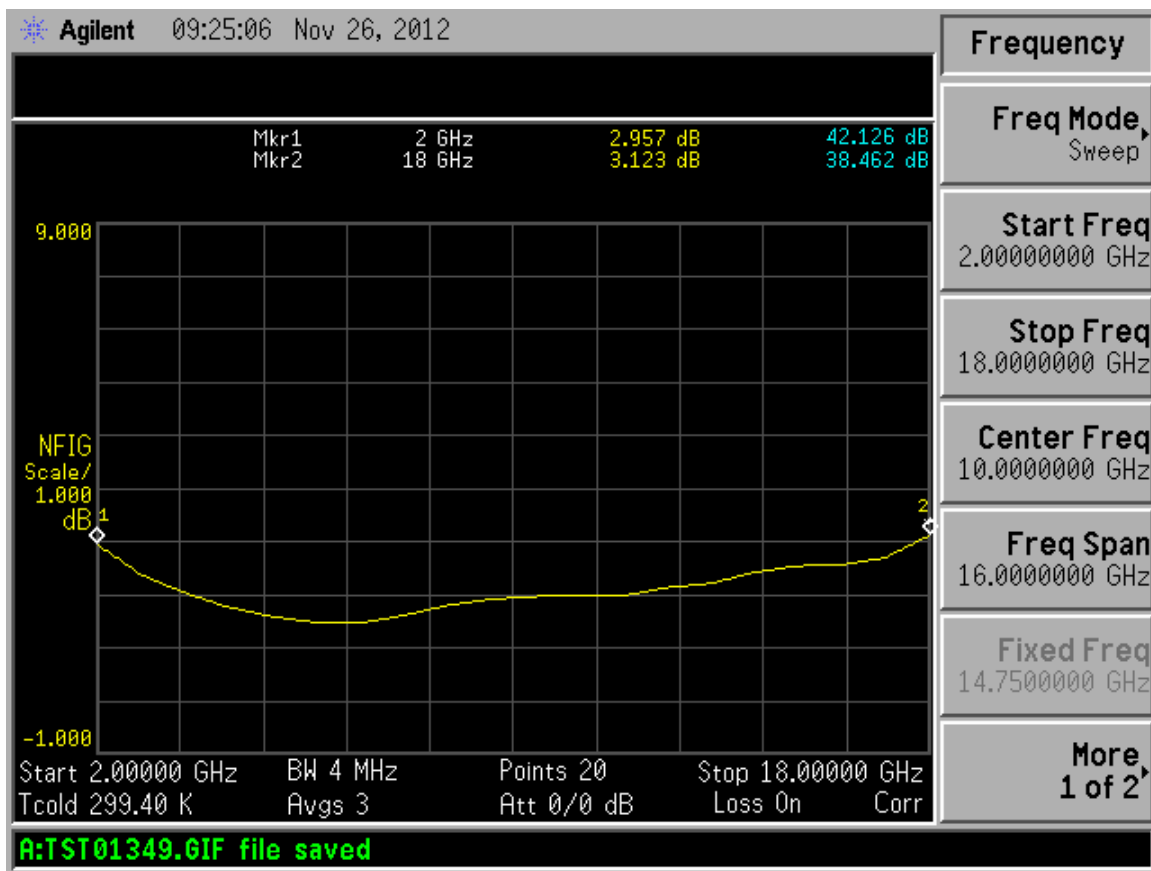




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Noise Figure Plot -25°C

“TTL” = High (Max. Gain)

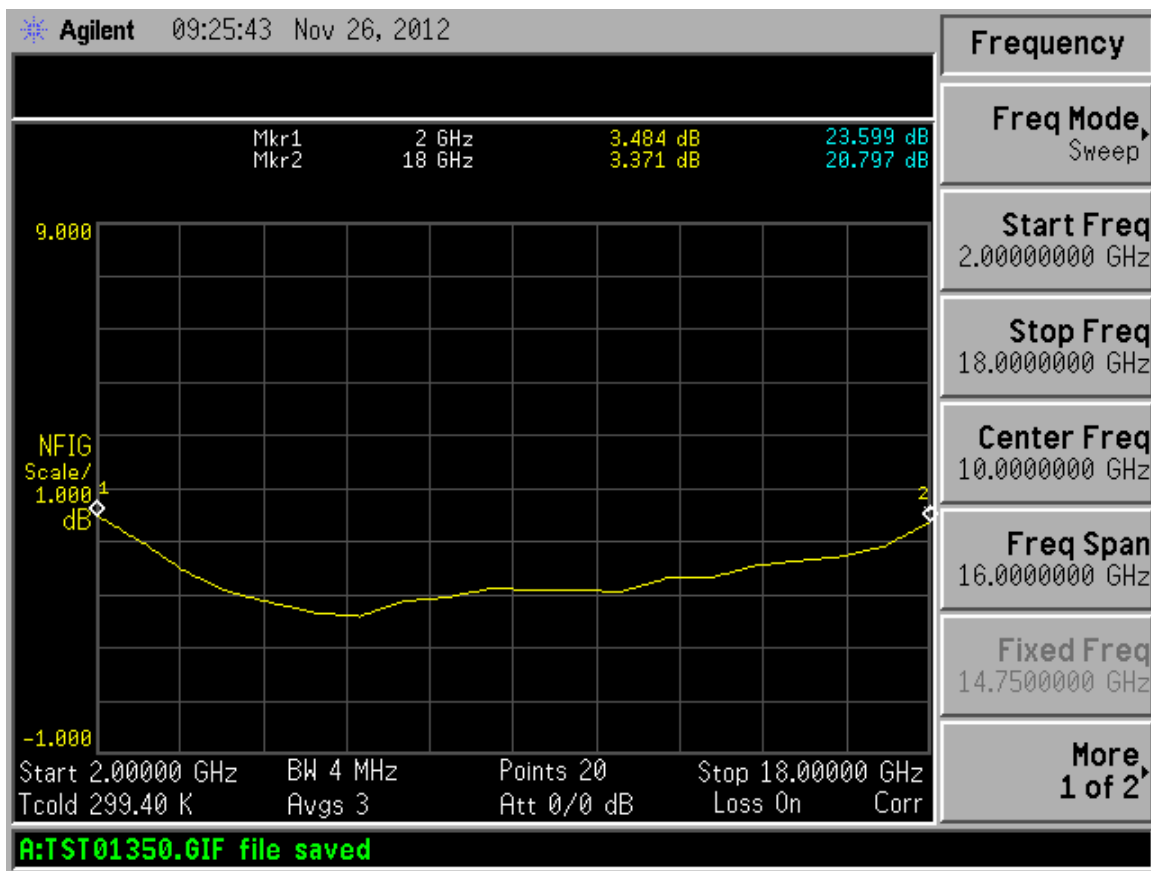




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Noise Figure Plot -25°C

“TTL” = Low (Min. Gain)

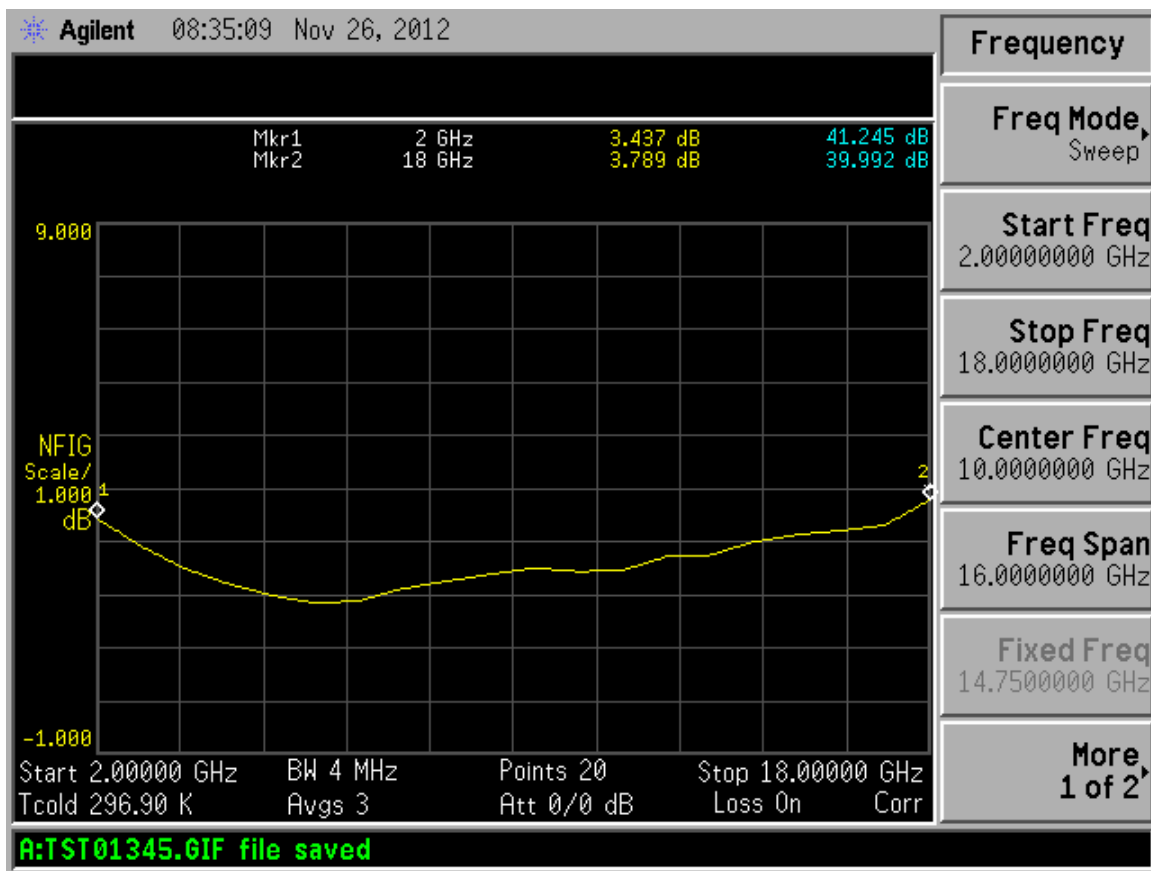




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Noise Figure Plot +25°C

“TTL” = High (Max. Gain)

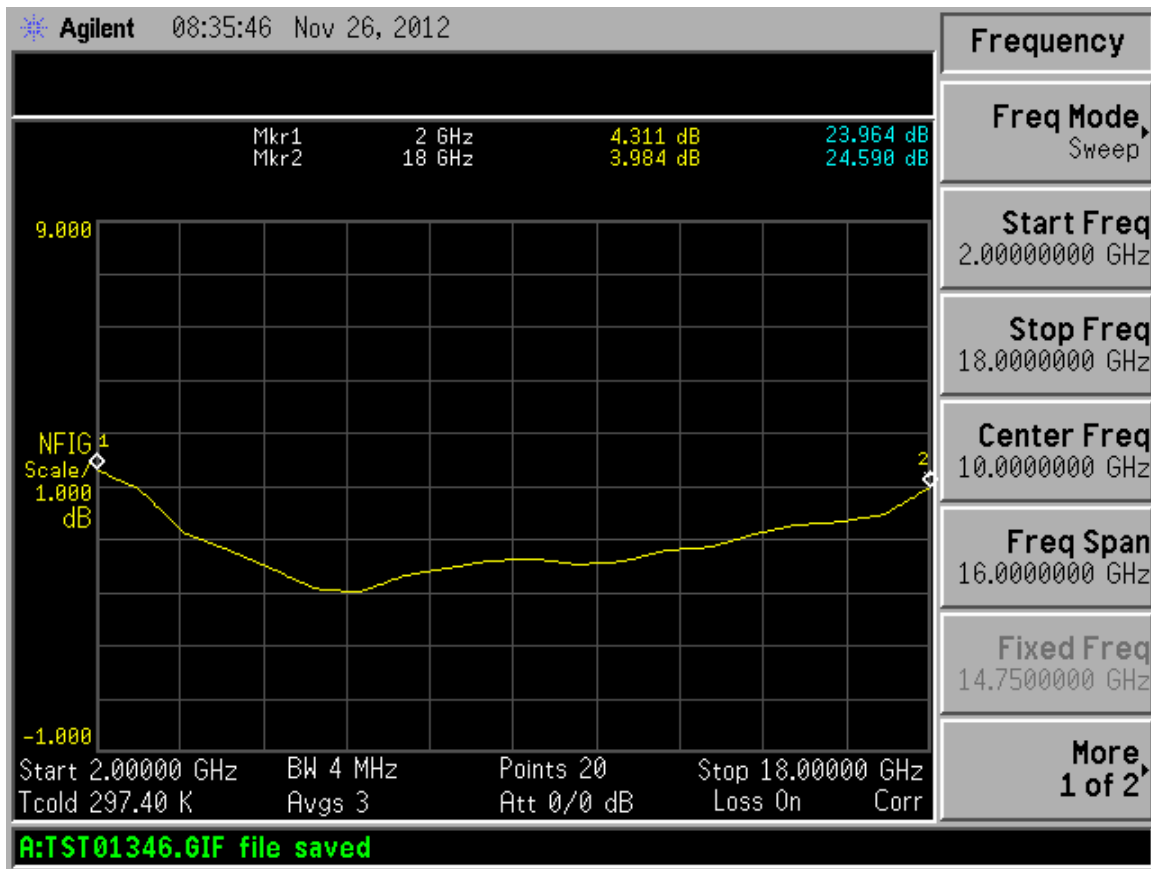




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Noise Figure Plot +25°C

“TTL” = Low (Min. Gain)

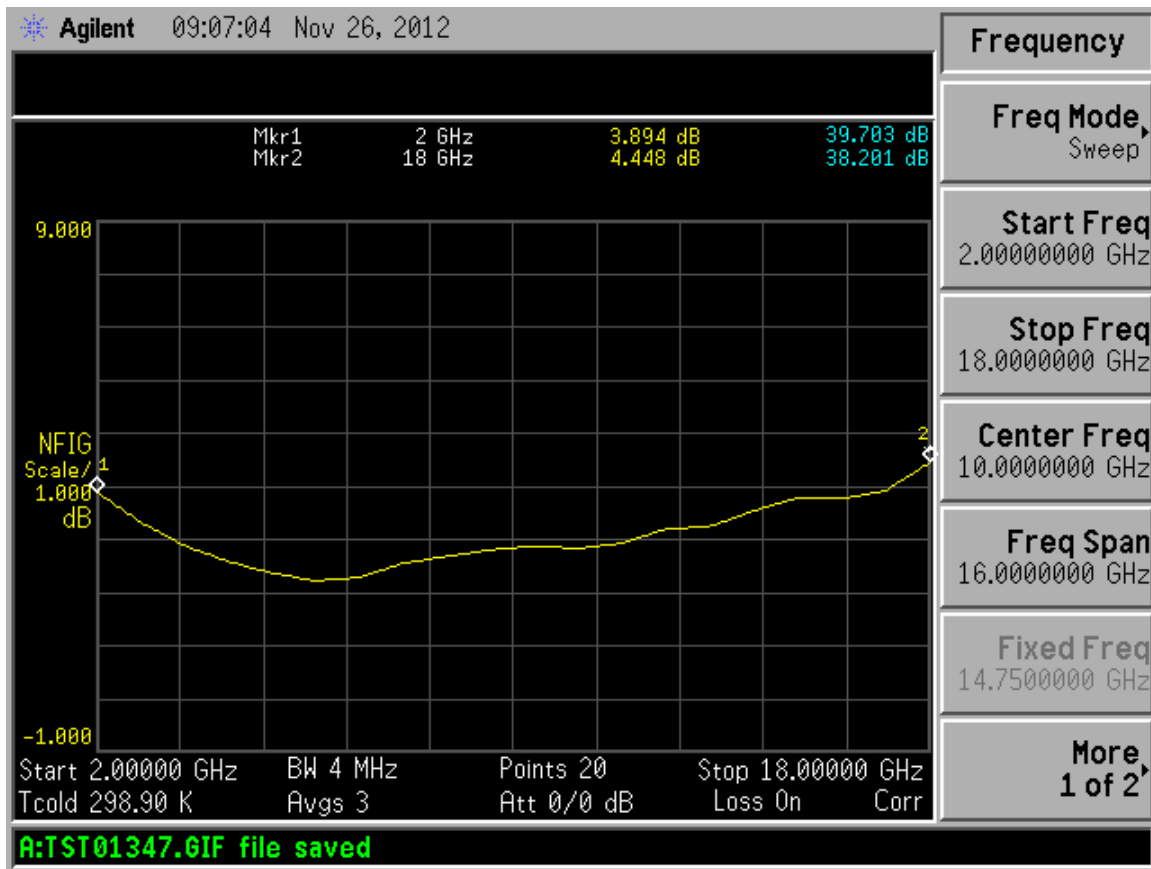




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Noise Figure Plot +75°C

“TTL” = High (Max. Gain)

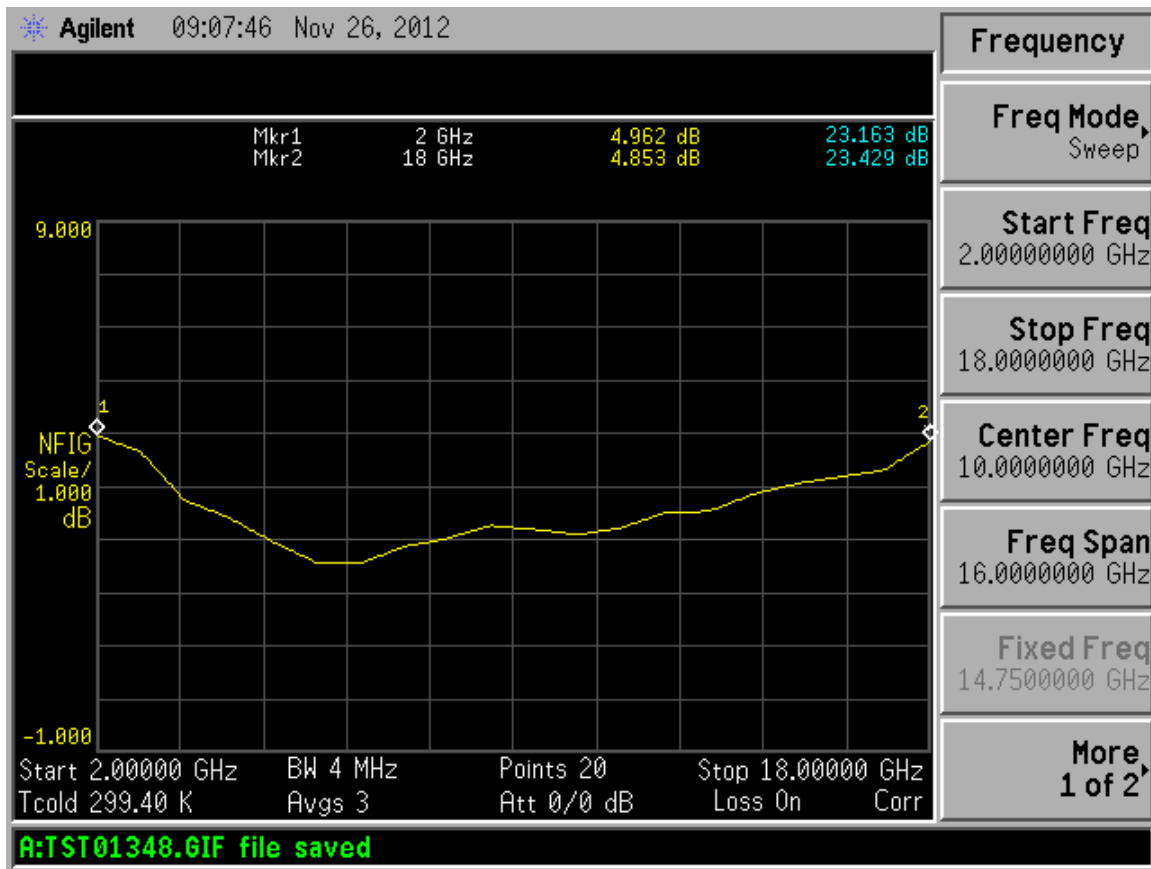




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Noise Figure Plot +75°C

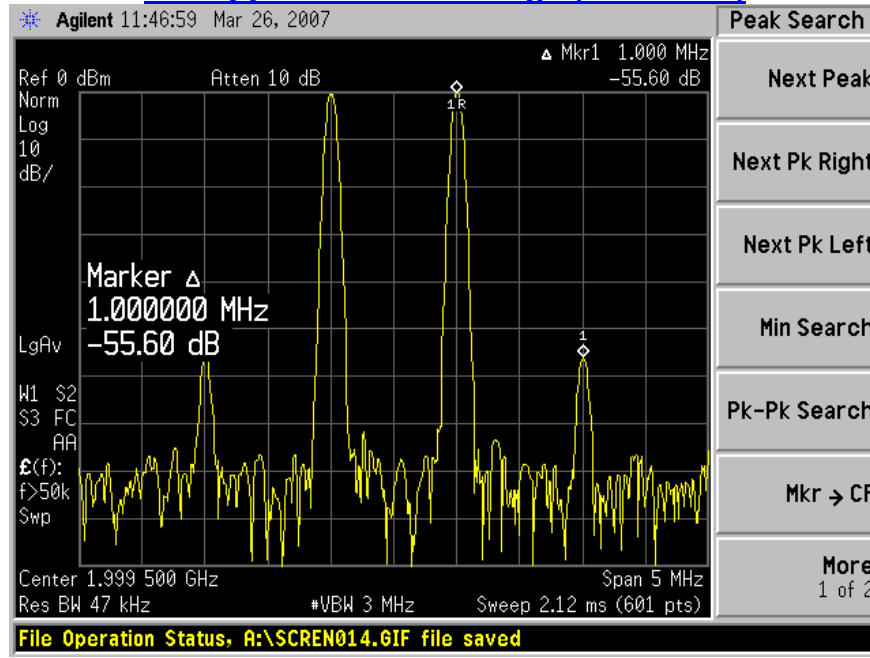
“TTL” = Low (Min. Gain)





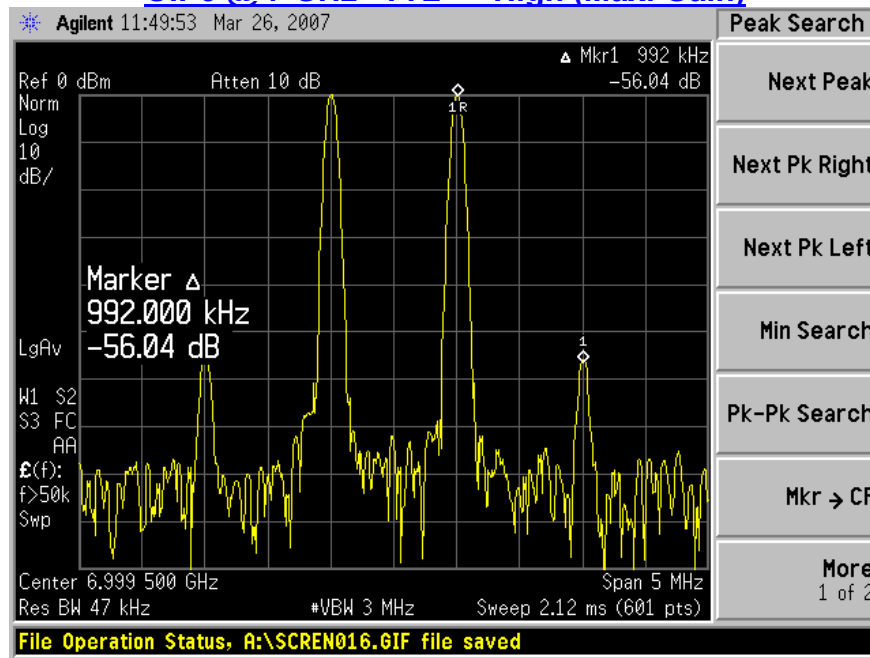
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OIP3 @ 2 GHz "TTL" = High (Max. Gain)



$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ +27.80\text{dBm} &= 0 + (55.60/2) \end{aligned}$$

OIP3 @ 7 GHz "TTL" = High (Max. Gain)

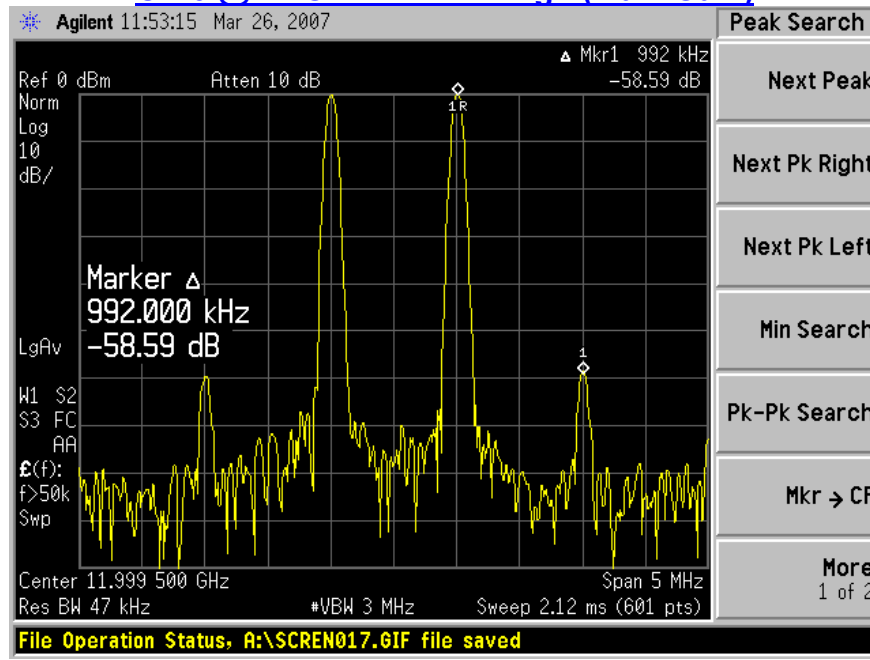


$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ +28.02\text{dBm} &= 0 + (56.04/2) \end{aligned}$$



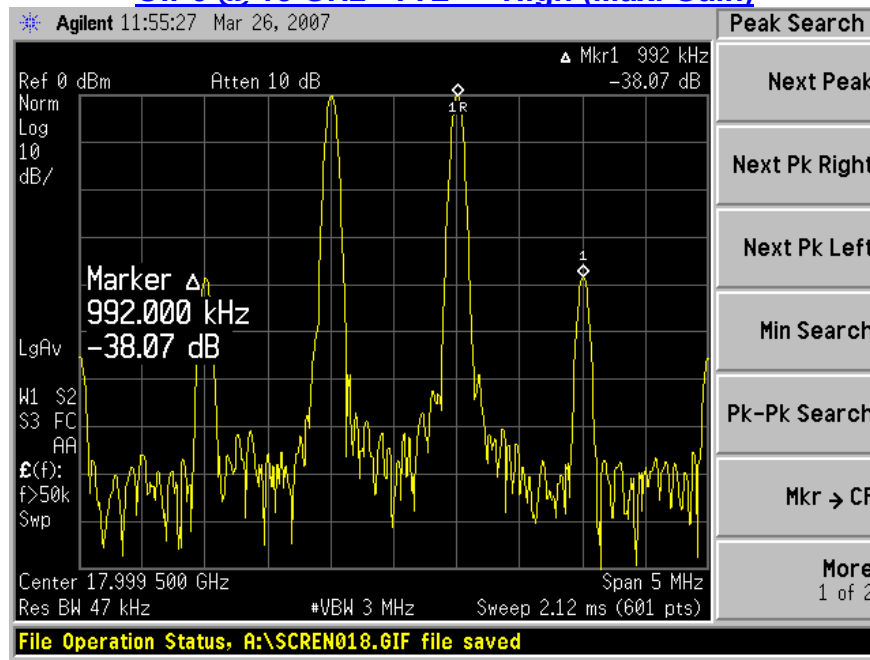
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OIP3 @ 12 GHz "TTL" = High (Max. Gain)



$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ &+29.29\text{dBm} = 0 + (58.59/2) \end{aligned}$$

OIP3 @ 18 GHz "TTL" = High (Max. Gain)

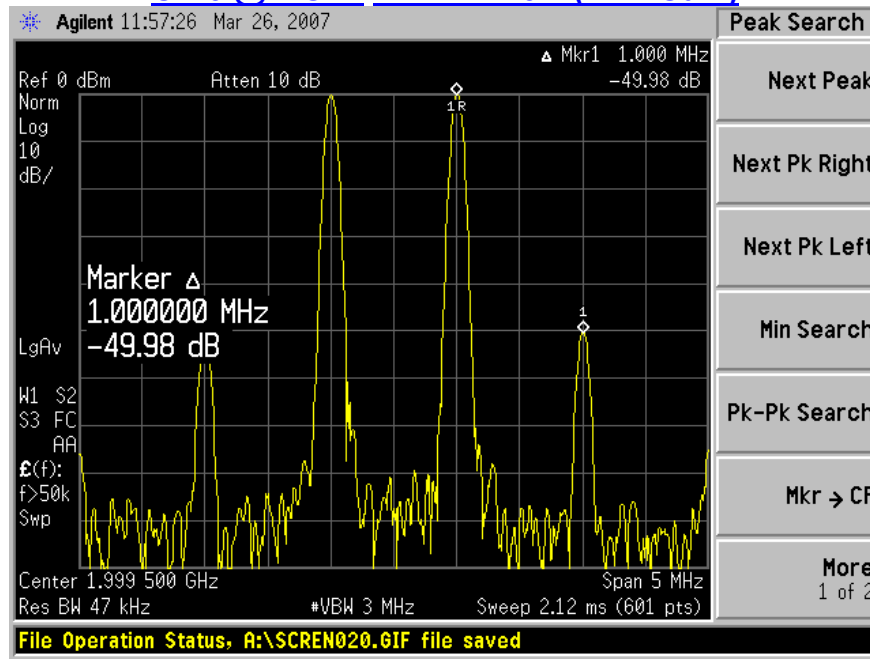


$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ &+19.03\text{dBm} = 0 + (38.07/2) \end{aligned}$$



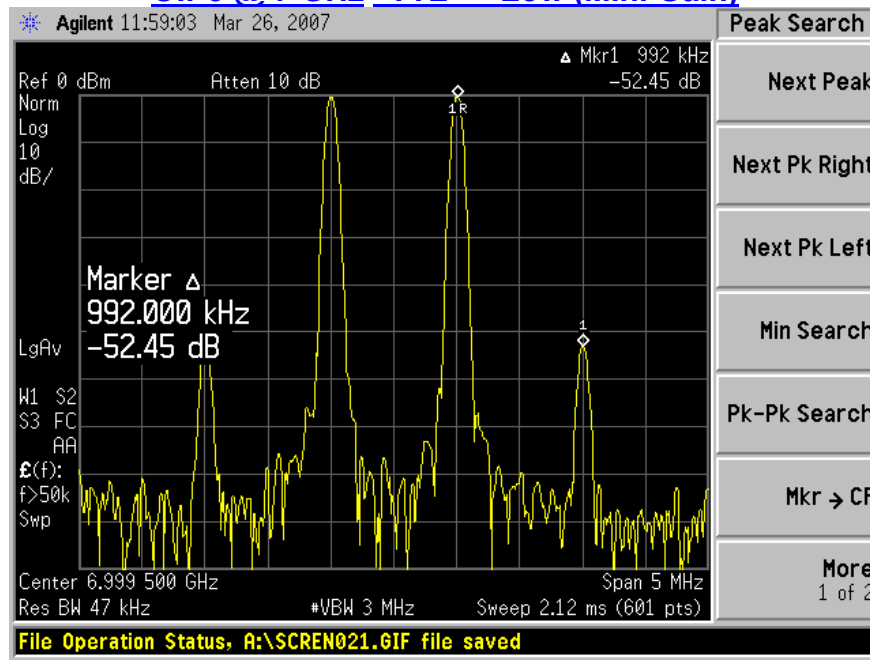
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OIP3 @ 2 GHz "TTL" = Low (Min. Gain)



$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ +24.99\text{dBm} &= 0 + (49.98/2) \end{aligned}$$

OIP3 @ 7 GHz "TTL" = Low (Min. Gain)

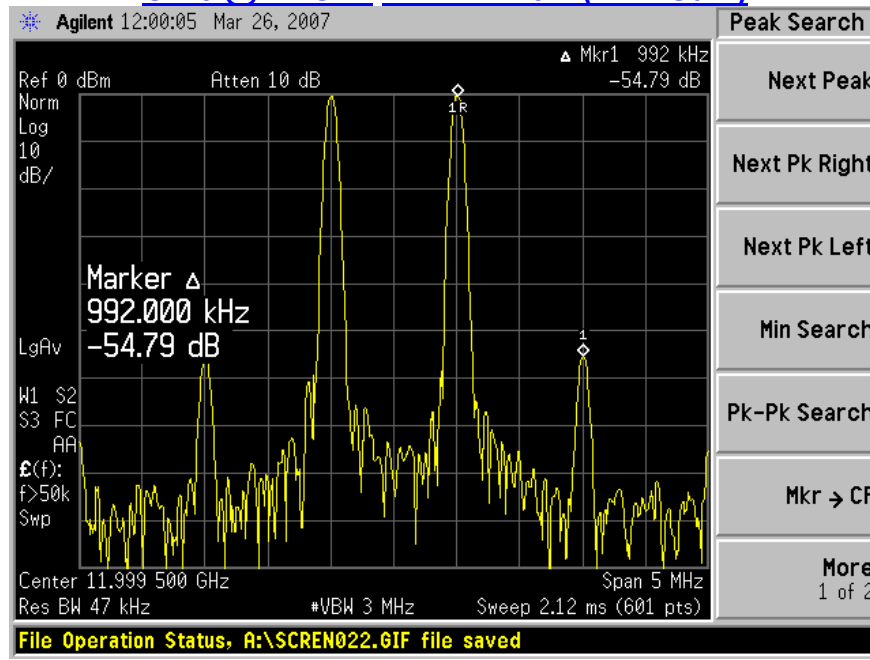


$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ +26.22\text{dBm} &= 0 + (52.45/2) \end{aligned}$$



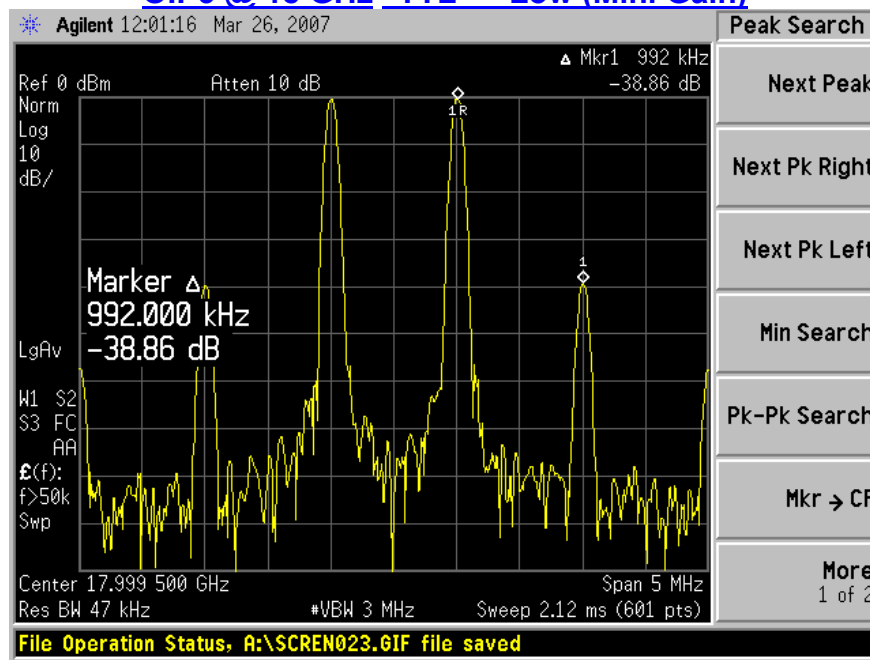
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OIP3 @ 12 GHz "TTL" = Low (Min. Gain)



$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ +27.39\text{dBm} &= 0 + (54.79/2) \end{aligned}$$

OIP3 @ 18 GHz "TTL" = Low (Min. Gain)



$$\begin{aligned} \text{OIP3} &= \text{Pout} + \text{dBc}/2 \\ +19.43\text{dBm} &= 0 + (38.86/2) \end{aligned}$$