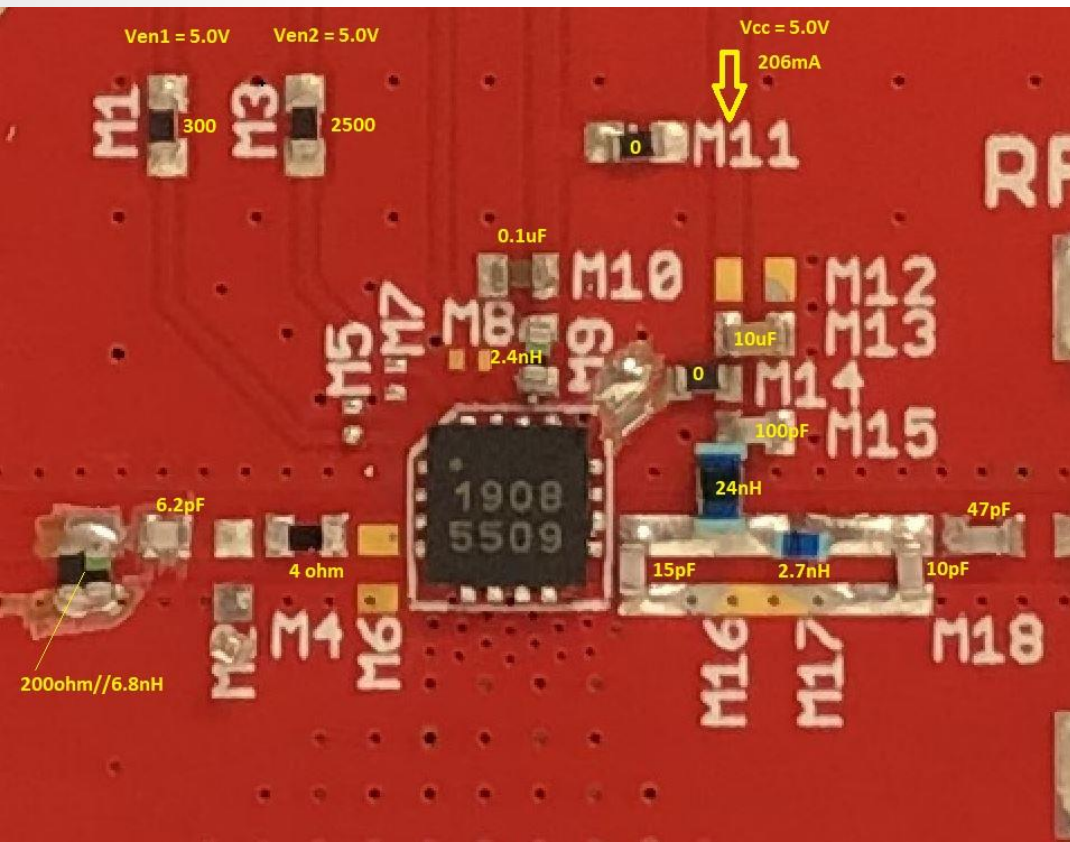




GRF5509 #179 689-719 MHz vs. Temperature

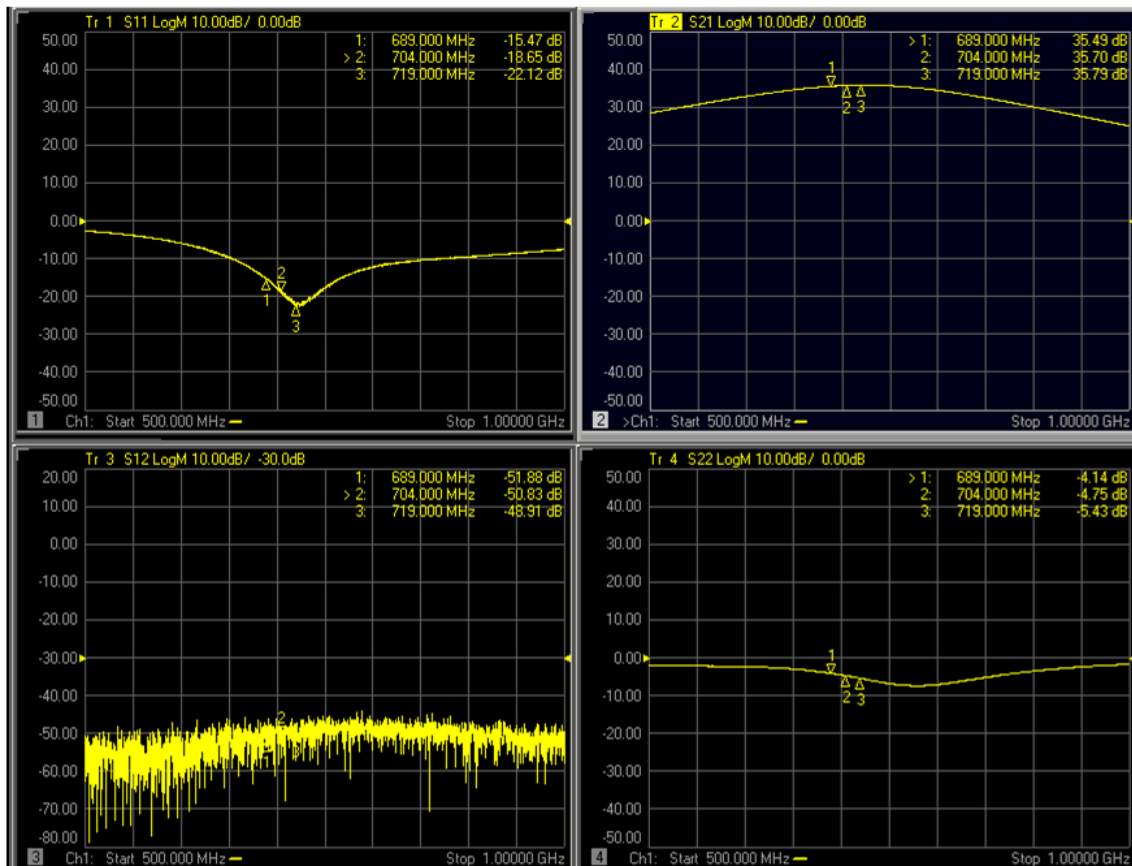
Schematic:



15pF at device input pin is critical to IP3/IMD/P1dB linearity.

It should be placed as close as possible to device.

Response:

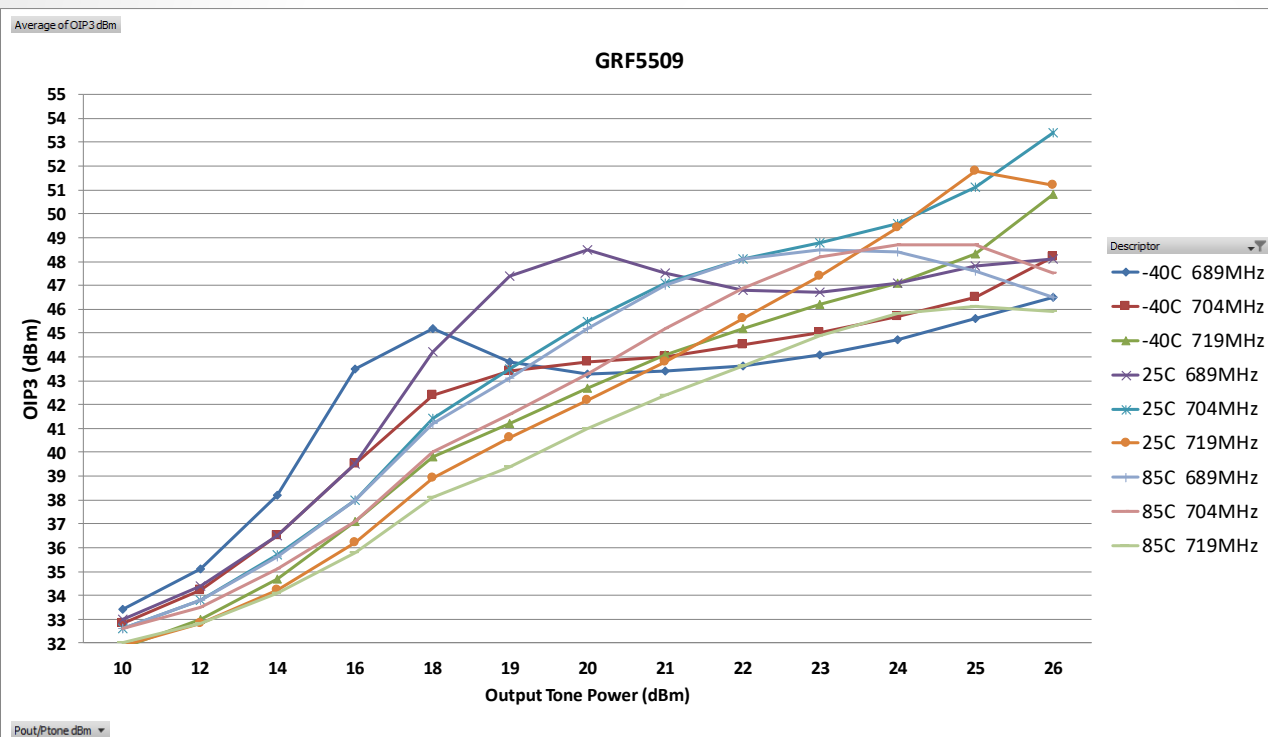


Standard Data:

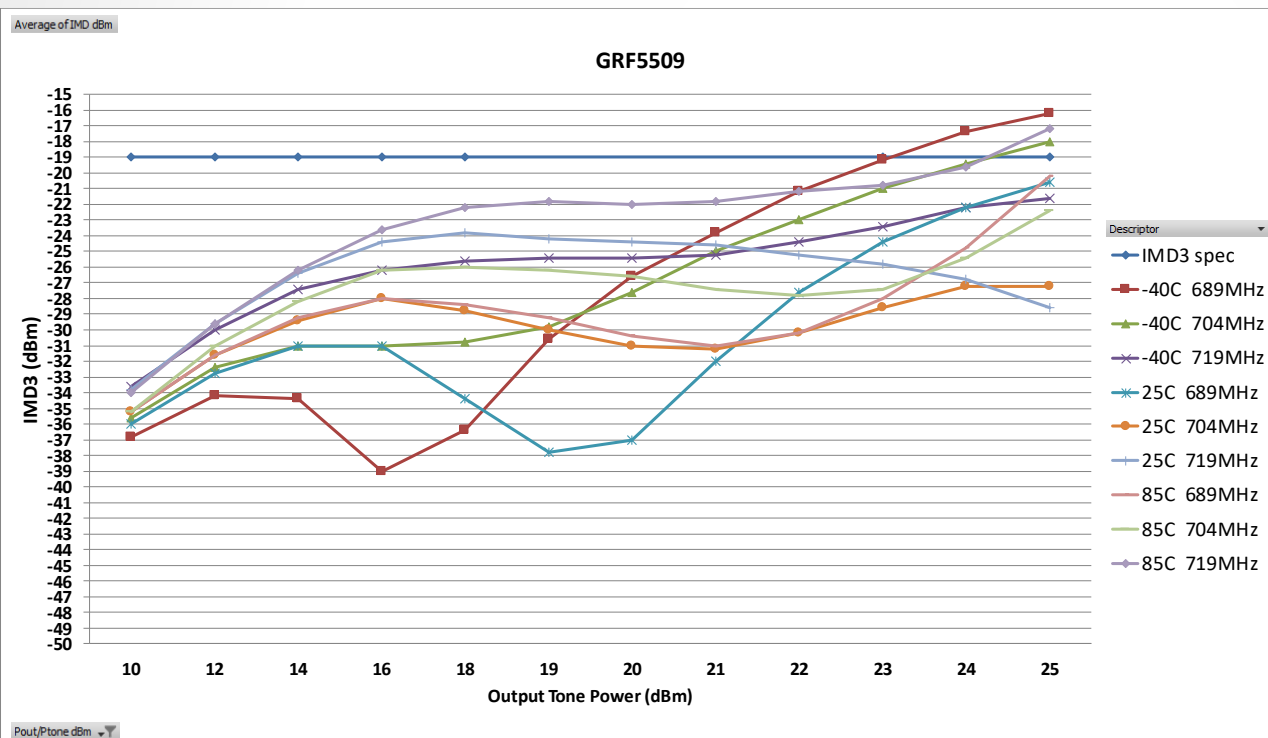
25C data shows NF.

Bias Point	Freq MHz	Vdd V	Ven1V	Ven2V	Iddq mA	Pout/Ptone dBm	gain dB	tone spacing MHz	OIP3 dBm	OP1dB dBm	EVB NF dB
-40	689	5.0	5.0	5.0	191.7	25.0	37.1	0.6	45.6	34.7	x
-40	704	5.0	5.0	5.0	191.7	25.0	37.2	0.6	46.7	34.9	x
-40	719	5.0	5.0	5.0	191.7	25.0	37.2	0.6	48.6	34.8	x
25	689	5.0	5.0	5.0	206.2	25.0	36.0	0.6	47.5	34.5	9.7
25	704	5.0	5.0	5.0	206.2	25.0	36.0	0.6	50.8	34.7	9.5
25	719	5.0	5.0	5.0	206.2	25.0	35.9	0.6	52.0	34.6	9.3
85	689	5.0	5.0	5.0	218.7	25.0	34.6	0.6	47.9	33.9	x
85	704	5.0	5.0	5.0	218.7	25.0	34.6	0.6	48.7	34.1	x
85	719	5.0	5.0	5.0	218.7	25.0	34.4	0.6	46.1	33.6	x

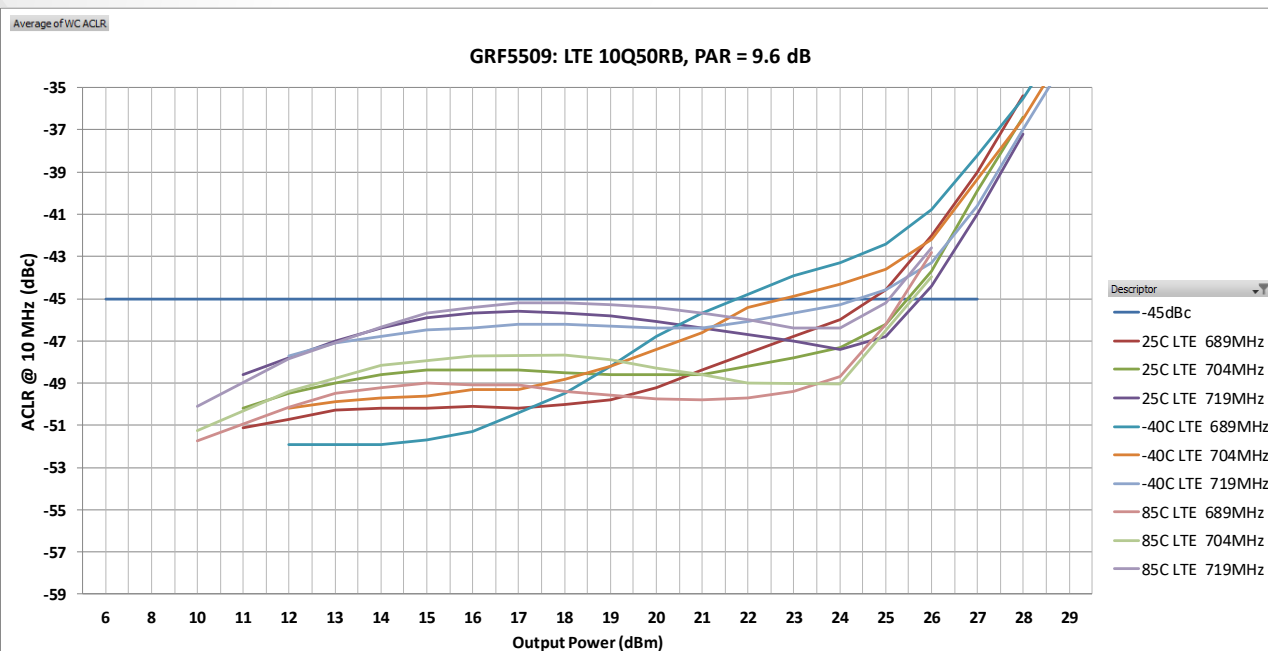
OIP3 vs. Tone Power:



IMD3 vs. Tone Power:

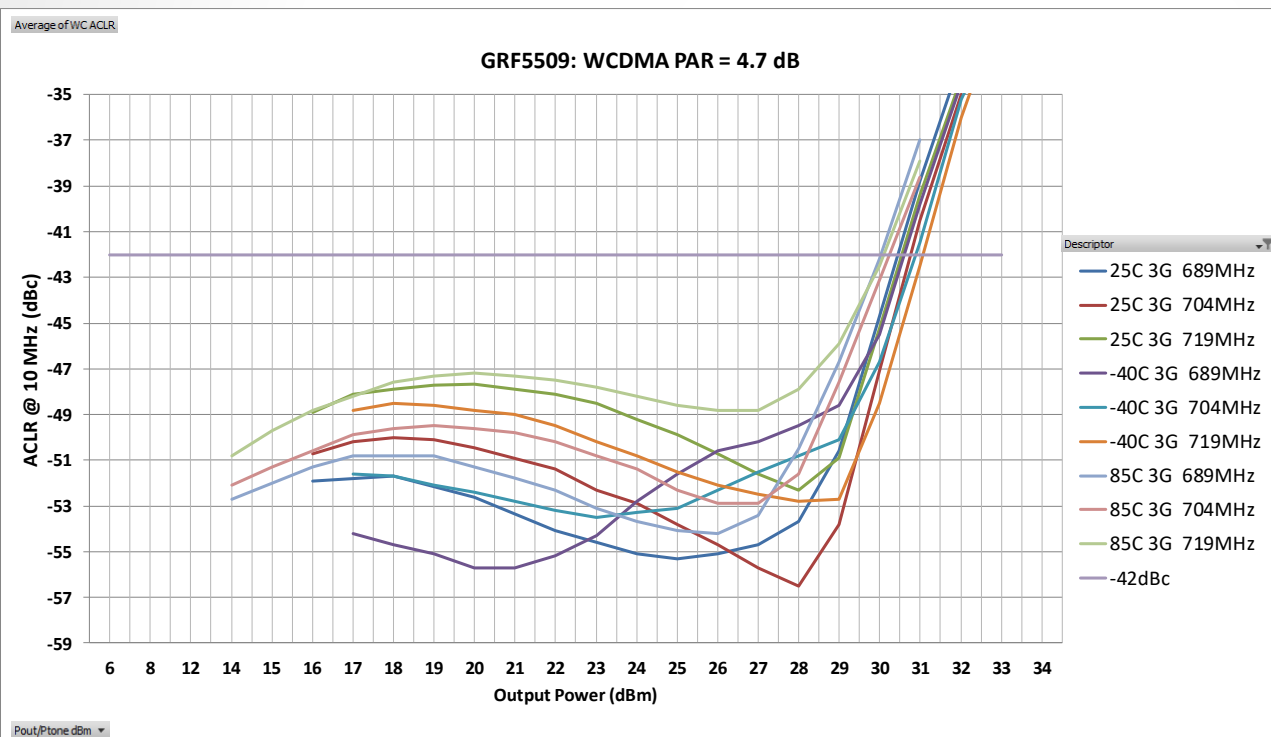


LTE PAR = 9.6dB ACLR:

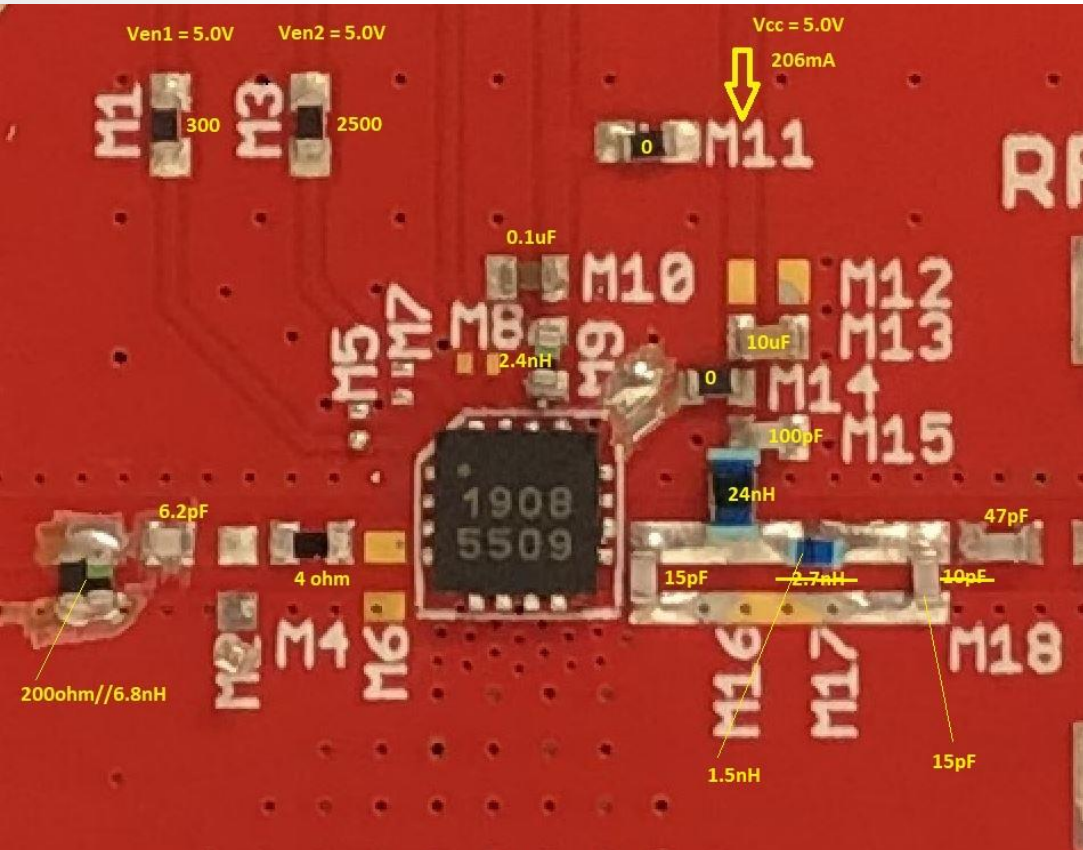


WCDMA (QPSK) PAR = 4.7dB ACLR:

-42dBc compliance vs. temperature at 30dBm.



B at the expense of OIP3:

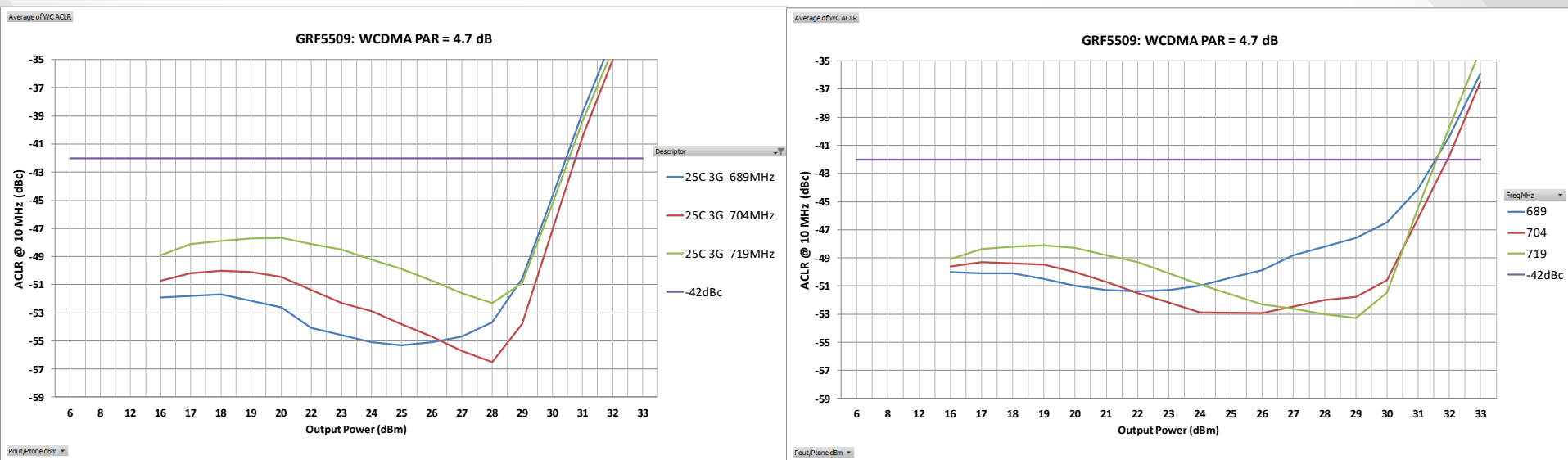


New match shows higher OP1dB and lower OIP3:

Match	Freq MHz	Vdd V	Ven1 V	Ven2 V	Iddq mA	Pout/Ptone dBm	gain dB	tone spacing MHz	OIP3 dBm	OP1dB dBm	EVN NF dB
Match for higher OP1dB	689	5.0	5.0	5.0	205.9	25.0	36.8	0.6	44.8	36.3	9.7
Match for higher OP1dB	704	5.0	5.0	5.0	205.9	25.0	36.9	0.6	46.1	36.1	9.5
Match for higher OP1dB	719	5.0	5.0	5.0	205.9	25.0	37.1	0.6	46.6	35.6	9.3

New match (on right) WCDMA ACLR shows better -42dBc power vs. original match (on left) (25C).

30.5dBm (original match) vs. 31.5dBm (new match).





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