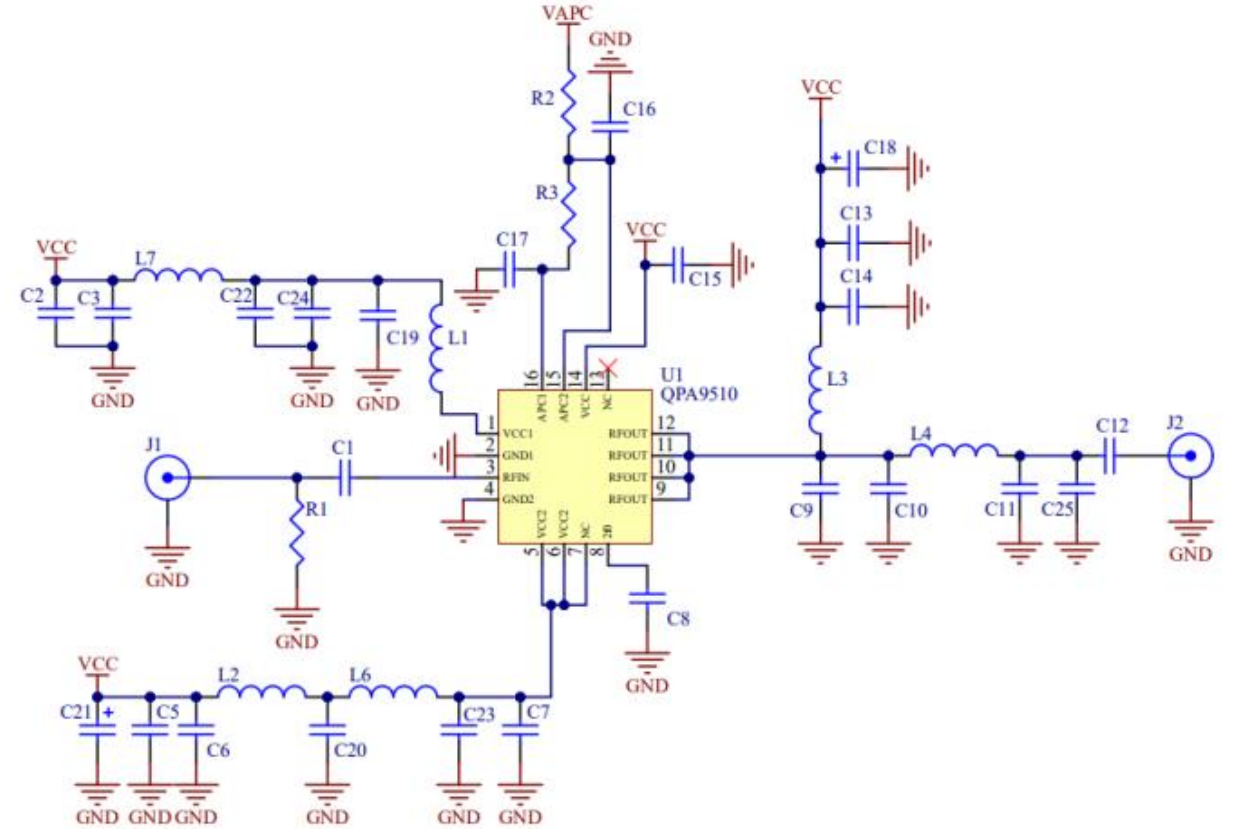
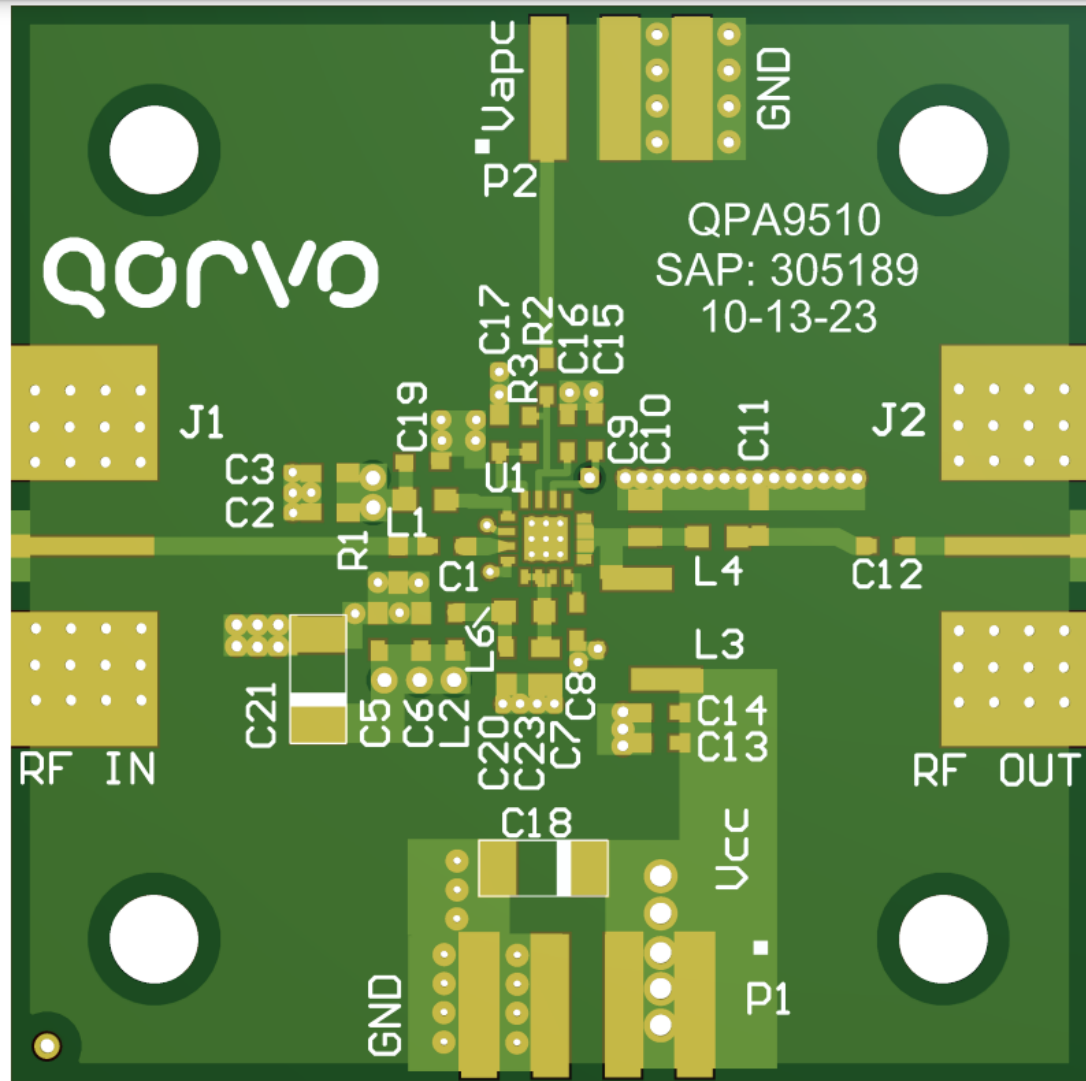


QPA9510 410-470MHz EVB Test Summary

June 30th, 2025

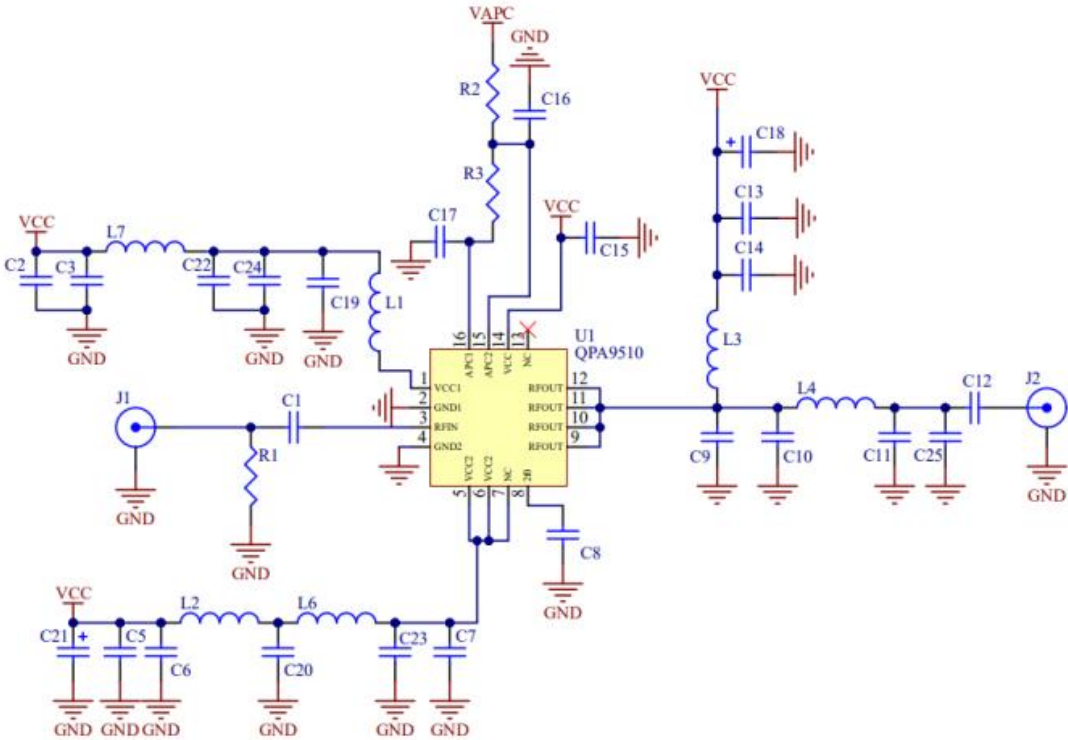


QPA9510 Evaluation Board and Schematic



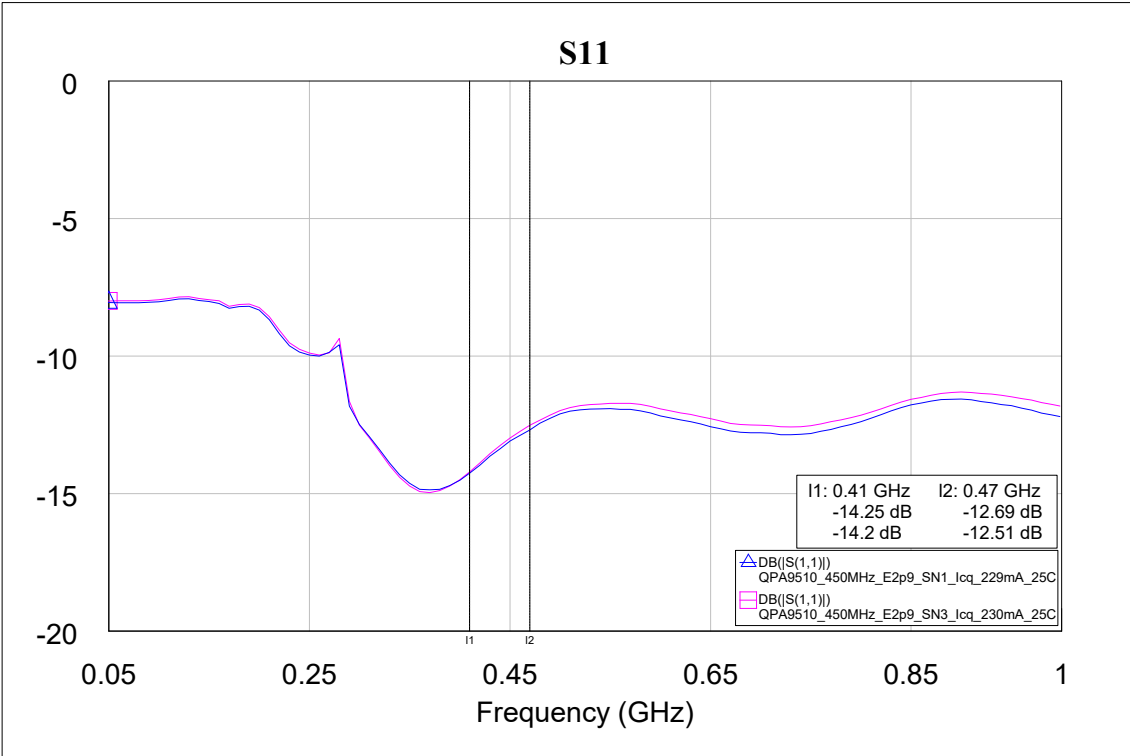
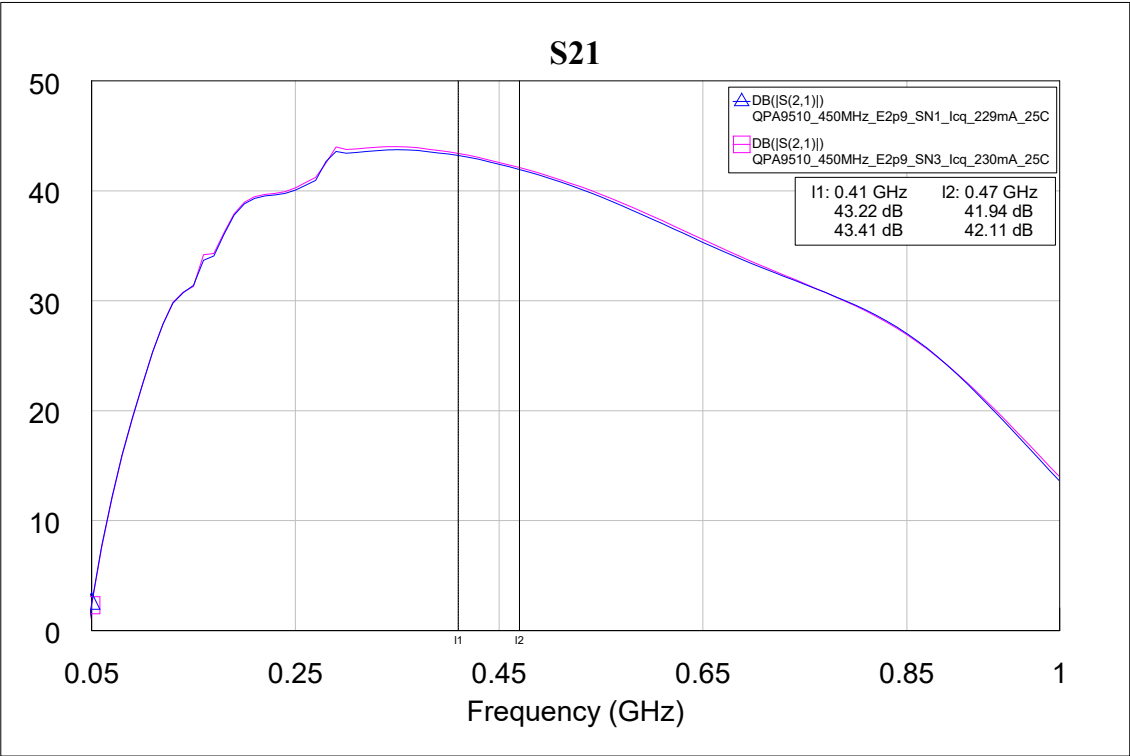
QPA9510 410-470MHz BOM and Schematic

Ref Designator	Value	Description
R1	180Ω	RES, 180 OHM, 0402, 5%, 1/16W
C1, C12	56pF	CAP, 56pF, 0402, 5%, 50V, C0G
L1	12nH	IND, 12nH, 0603, 5%, W/W
C10	27pF	CAP, 27pF, 0603, 1%, 50V, C0G
L4	2.7nH	IND, 2.7nH, 0402, 5%, W/W
C11	22pF	CAP, 22pF, 0402, 1%, 50V, C0G
C25	2pF	CAP, 2pF, 0402, 1%, 50V, C0G
C19, C20	330pF	CAP, 330pF, 0402, 5%, 50V, C0G
C8, C9, C23, C7, L7, C22, C24	DNP	-
L6	6.8nH	IND, 6.8nH, 0402, 5%, W/W
L2	0Ω	RES, 0 OHM, 0402, 1/10W
L3	1uH	IND, 1uH, 1606, 5%, W/W
C14	47pF	CAP, 47pF, 0402, 1%, 50V, C0G
C15	100pF	CAP, 100pF, 0402, 1%, 50V, C0G
C18, C21	3.3uF	CAP, 3.3uF, TANT-A, 20%, 25V
C3, C6, C13	1000pF	CAP, 1000pF, 0402, 5%, 50V, C0G
C2, C5, C16, C17	10000pF	CAP, 10000pF, 0402, 10%, 50V, X7R
R2, R3	0Ω	RES, 0 OHM, 0402, 1/10W



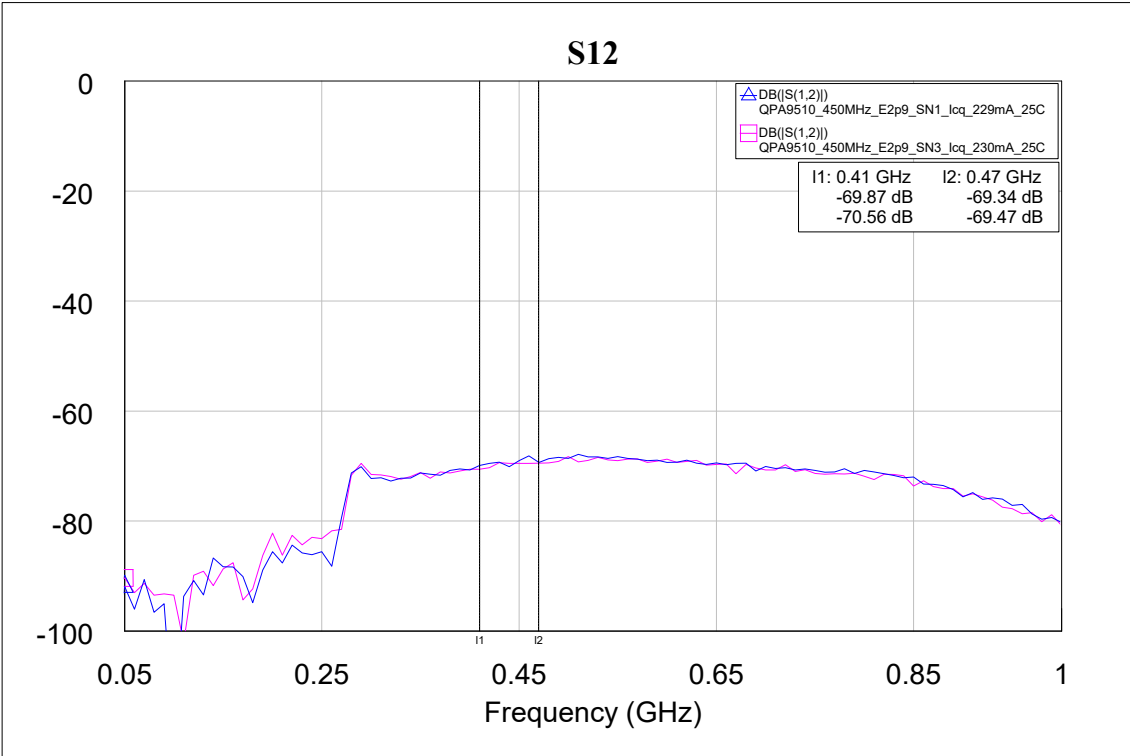
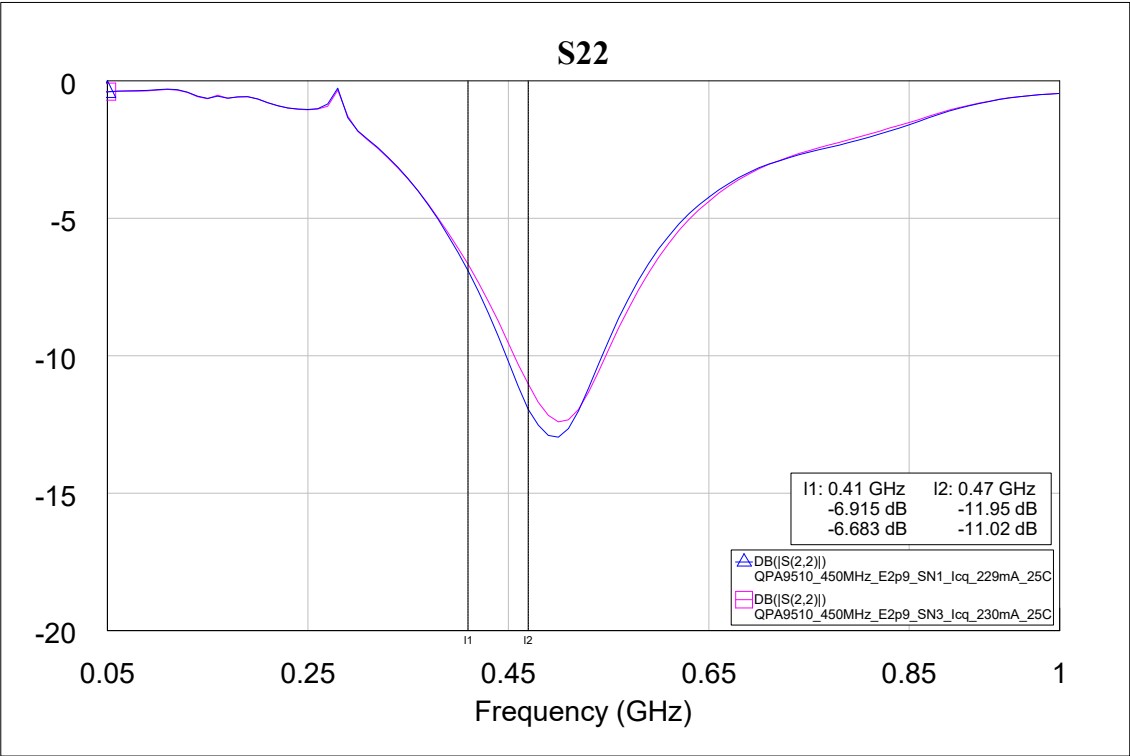
QPA9510 410-470MHz Tune - Gain and IRL at 25C

VCC = VCC1 = VCC2 = +3.6 V and VAPC = +2.8V, Icq=220mA



QPA9510 410-470MHz Tune - ORL and Forward Isolation at 25C

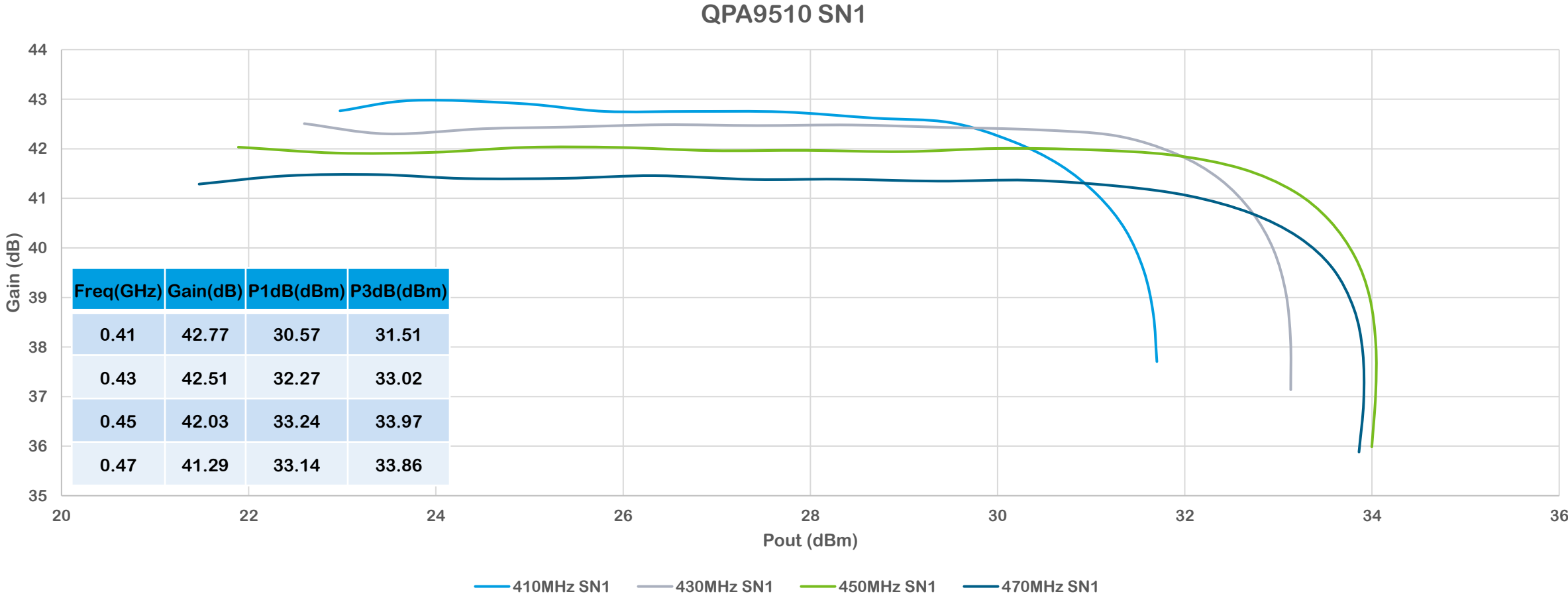
VCC = VCC1 = VCC2 = +3.6 V and VAPC = +2.8V, Icq=220mA



QPA9510 410-470MHz Tune - Power Sweeps at 25C

SN1, VCC = VCC1 = VCC2 = +3.6 V and VAPC = +2.8V, Icq=220mA

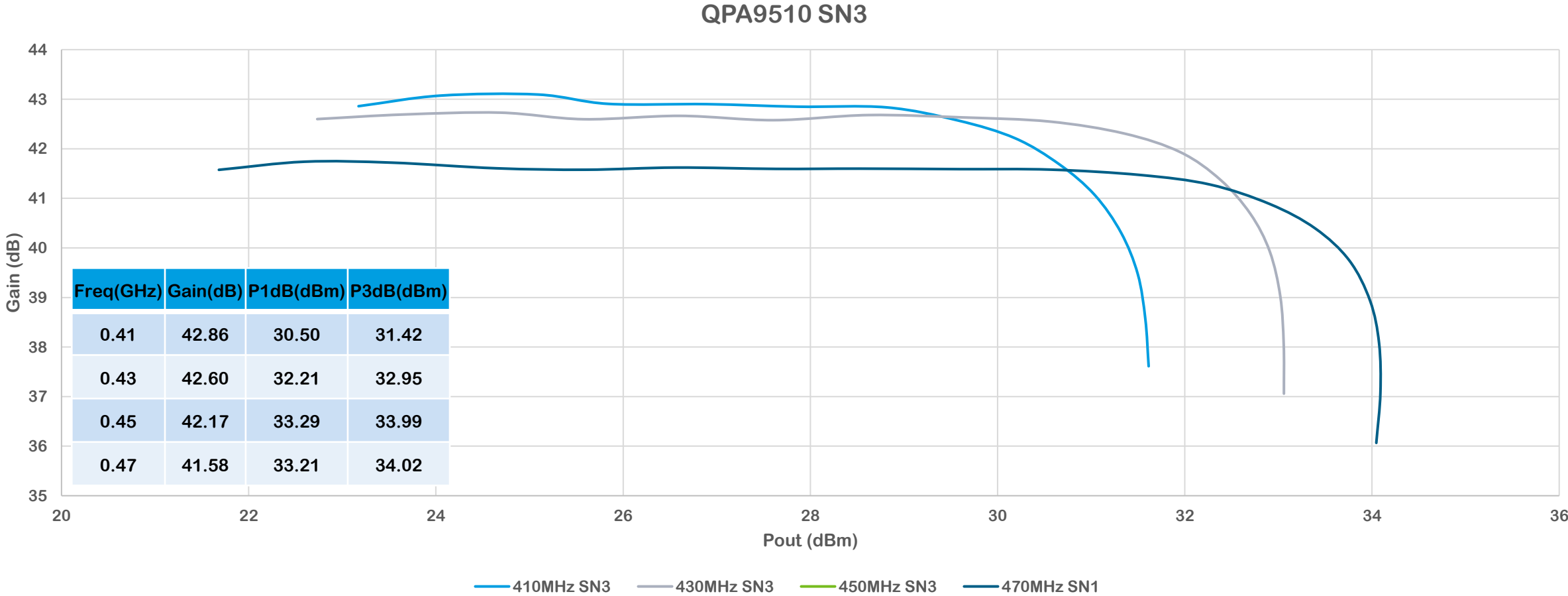
Signal: CW



QPA9510 410-470MHz Tune - Power Sweeps at 25C

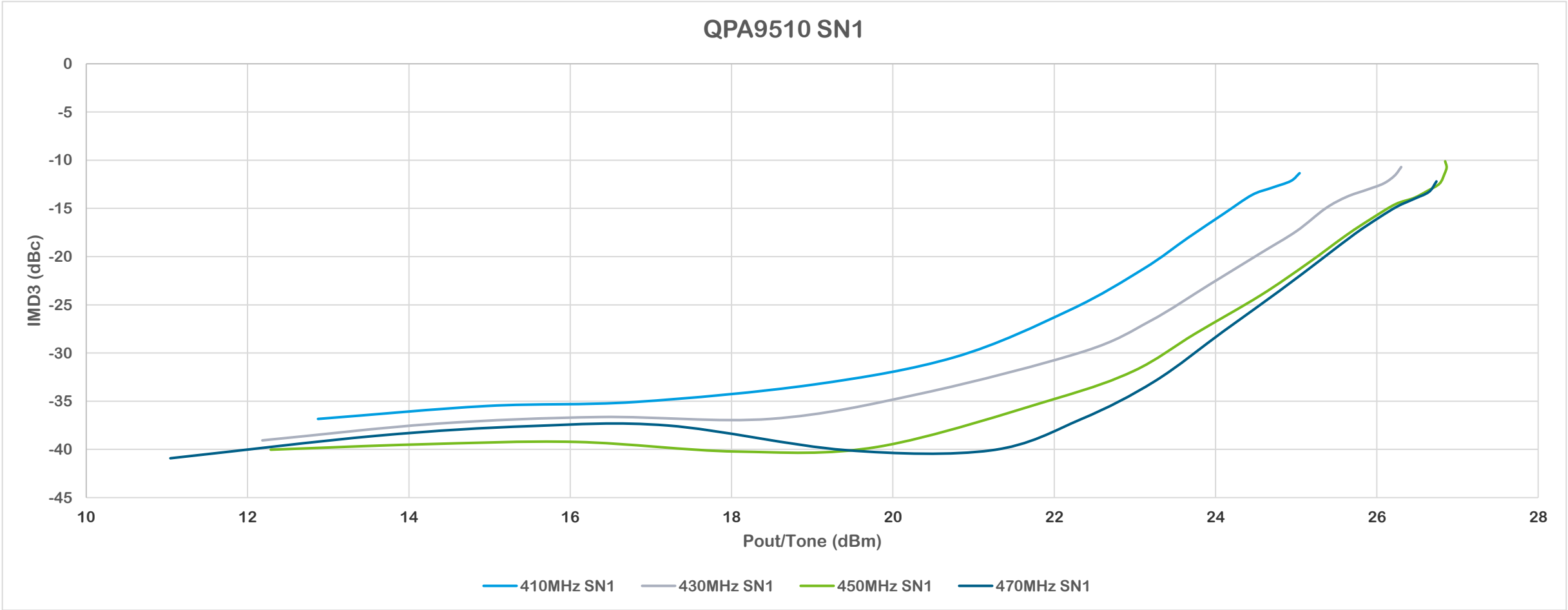
SN3, VCC = VCC1 = VCC2 = +3.6 V and VAPC = +2.8V, Icq=220mA

Signal: CW



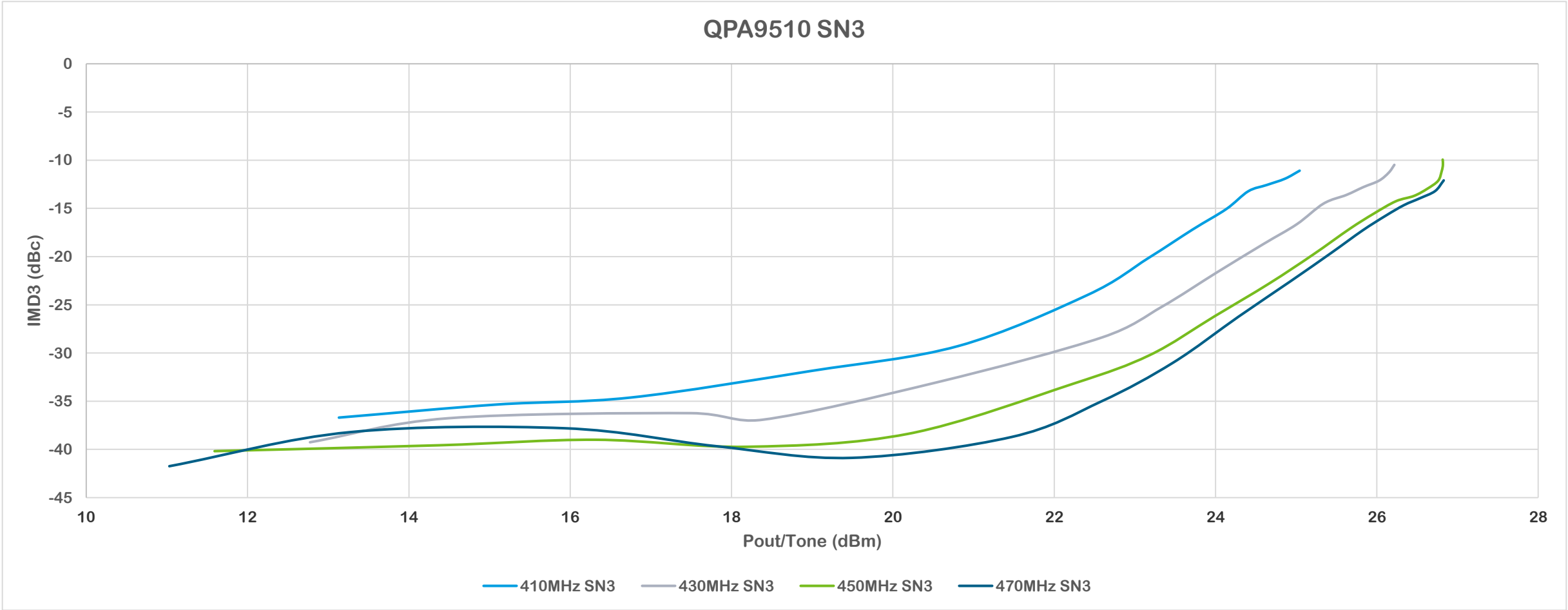
QPA9510 410-470MHz Tune - IMD3 at 25C

SN1, VCC = VCC1 = VCC2 = +3.6 V and VAPC = +2.8V, Icq=220mA



QPA9510 410-470MHz Tune - IMD3 at 25C

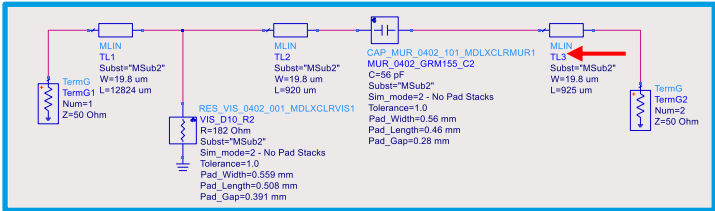
SN3, VCC = VCC1 = VCC2 = +3.6 V and VAPC = +2.8V, Icq=220mA



Simulated Input and Output Impedance

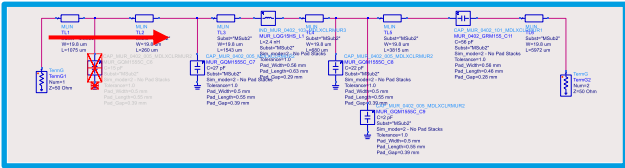
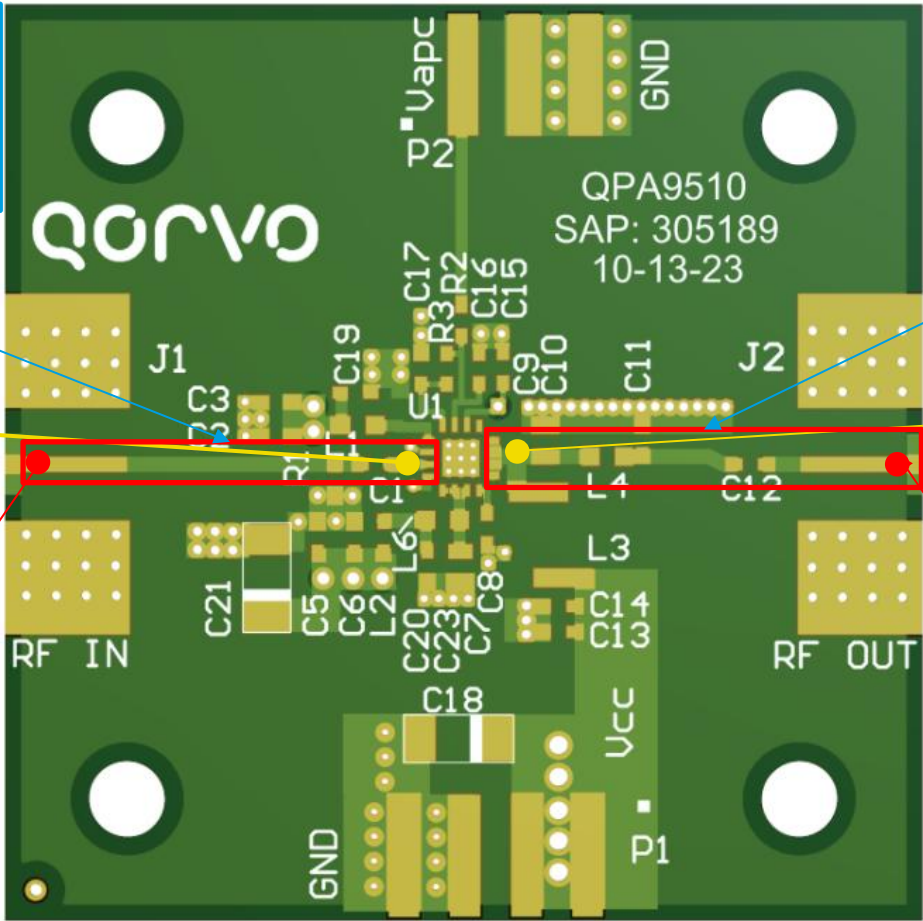
Impedance Simulation - Setup

QPA9510



Source impedance presented at input of the RF in pad into the input matching network.

Terminated with 50-Ohms



Load impedance presented at output of the RF out pad into the output matching network.

Terminated with 50-Ohms

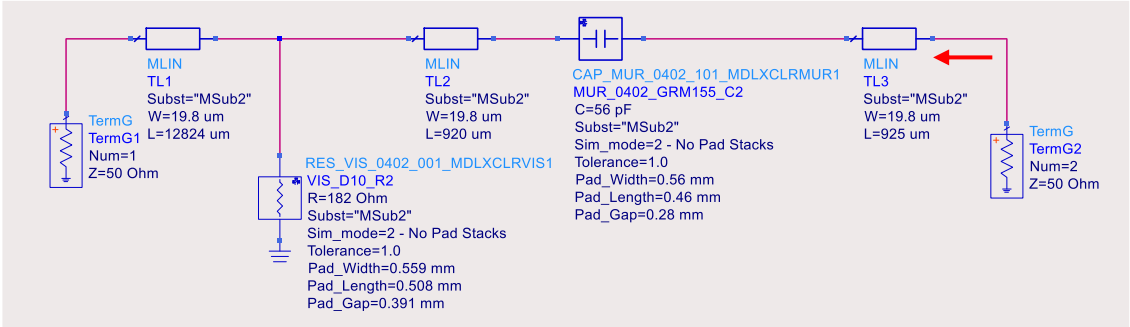


Simulated Impedances

QPA95910, Normalized to 50Ω

- Input Source Impedance
 - Source impedance presented at input of the RF in pad into the input matching network:

Freq (MHz)	Impedance (Ω)
430	48.345 + j26.202
450	48.699 + j27.739
470	49.063 + j29.261



- Output Load Impedance
 - Load impedance presented at output of the RF out pad into the output matching network:

Freq (MHz)	Impedance (Ω)
430	4.471 + j0.645
450	4.863 + j1.624
470	5.437 + j2.663

