

TYPICAL CHARACTERISTICS ON PMC-14D5G15D5G-SMA

QUANTIC PMI MODEL PMC-14D5G15D5G-SMA IS A MONOPULSE COMPARATOR OPERATING OVER THE 14.5 TO 15.5 GHz FREQUENCY RANGE. THIS MODEL OFFERS A TYPICAL 2.6 dB INSERTION LOSS WHILE MAINTAINING A MAXIMUM AMPLITUDE BALANCE OF ± 0.8 dB, A MAXIMUM PHASE BALANCE OF $\pm 10^\circ$ AND A MAXIMUM VSWR OF 1.6:1. THIS UNIT HAS SMA FEMALE CONNECTORS, AND THE HOUSING SIZE IS 3.12" x 3.12" x 0.43".



TESTED BY:

E. Kretz

REPORTED BY:

D. Hoschar

DATE:

Thursday, November 6, 2025

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OUTLINE DRAWING

DESCRIPTION:

QUANTIC PMI MODEL PMC-14D5G15D5G-SMA IS A MONOPULSE COMPARATOR OPERATING OVER THE 14.5 TO 15.5 GHz FREQUENCY RANGE. THIS MODEL OFFERS A MAXIMUM 2.6 dB INSERTION LOSS WHILE MAINTAINING A MAXIMUM AMPLITUDE BALANCE OF ±0.8 dB, A MAXIMUM PHASE BALANCE OF ±10° AND A MAXIMUM VSWR OF 1.60:1. THE UNIT HAS SMA FEMALE CONNECTORS, AND THE HOUSING SIZE IS 3.12" x 3.12" x 0.43".

SPECIFICATIONS:

- FREQUENCY RANGE:..... 14.5 GHz TO 15.5 GHz
- INSERTION LOSS:..... 8.62 dB MAX
- INSERTION LOSS WITHOUT 6.02 dB NOMINAL SPLIT: 2.6 dB MAX
- AMPLITUDE BALANCE:..... ±0.8 dB MAX @ 25°C
- AMPLITUDE BALANCE:..... ±1.0 dB MAX @ -40°C TO +85°C
- PHASE BALANCE:..... ±10° MAX
- ISOLATION:..... 18 dB MIN.
- VSWR:..... 1.6:1 MAX
- POWER HANDLING*:..... AVERAGE: 30 W MAX
- POWER HANDLING*:..... PEAK: 1 kW MAX
- IMPEDANCE:..... 50 Ω
- CONNECTORS:..... SMA FEMALE
- FINISH:..... PAINTED BLUE

*POWER HANDLING GUARANTEED WHEN LOAD'S VSWR WITHIN 1.50:1

TABLE 1: PHASE OFFSET FOR EACH PORT IN REFERENCE TO NORMALIZED A TO ΣAZ

INPUT	ΣAZ	ΔAZ	ΔQ	ΔEL
INPUT A	0°	90°	0°	90°
INPUT B	0°	90°	180°	-90°
INPUT C	0°	-90°	180°	90°
INPUT D	0°	-90°	0°	-90°

TABLE 2: OUTPUT MAGNITUDE WITH 4 IDENTICAL SIGNALS AT A, B, C AND D

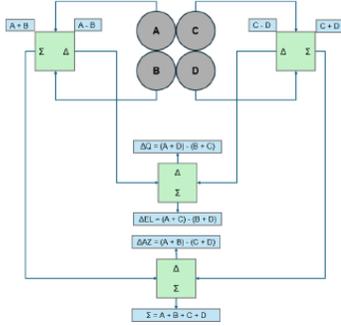
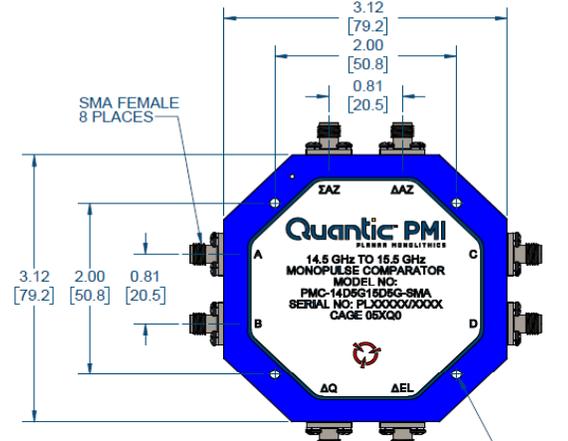
OUTPUT	VALUE	DESCRIPTION
ΣAZ	≤ 3 dB	A+B+C+D
ΔAZ	≥ 20 dB	(A+B) - (C+D)
ΔEL	≥ 20 dB	(A+C) - (B+D)
ΔQ	≥ 20 dB	(A+D) - (B+C)

ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -40°C TO +85°C (OPERATING)
- OPERATING HUMIDITY:..... UP TO 95%, NON-CONDENSING
- SHOCK:..... MIL-STD-202, METHOD 213B COND. B
- VIBRATION:..... MIL-STD-202, METHOD 204D COND. B
- ALTITUDE:..... MIL-STD-202, METHOD 105C COND. B
- TEMPERATURE CYCLE:..... MIL-STD-202, METHOD 107D COND. A

NOTE: SPECIFICATIONS WILL VARY OVER TEMPERATURE
 NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ZONE	REV.	DESCRIPTION	DATE	APPROVED
A1		ORIGINAL RELEASE	02/02/2014	
B1		ECN # 25-0264	11/10/2024	



PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS		DATE	FILE
DESIGNED	D. HOSCHAR	02/02/2014	OUTLINE
REVIEWED			

SCALE	1:1	FORM NO.	27052360	REV.	B1
MODEL	PMC-14D5G15D5G-SMA				
DATE	05/01/00				
SCALE	1:1				
					SHEET 1 OF 1

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TEST DATA

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	Test Results		
			+25°C	+85°C	-40°C
1	Frequency Range:	14.5 TO 15.5 GHz	14.5 TO 15.5 GHz		
2	Insertion Loss: (Without 6.02 dB Nominal Split)	2.6 dB Max.	2.07 dB	2.07 dB	2.16 dB
3	Amplitude Balance:	±0.8 dB Max. @ 25°C ±1.0 dB Max. @ -40°C to +85°C	±0.7 dB	±0.66 dB	±0.89 dB
4	Phase Balance:	±10° Max.	±4.09°	±4°	±9.88°
5	Isolation:	18 dB Min.	23 dB	23 dB	22 dB
6	VSWR:	1.6:1 Max.	1.38:1	1.38:1	1.4:1
7	Power Handling:	Average: 30 W Max. (Port A, B, C, & D) Peak: 1 kW Max.	Average: 30 W Max. (Port A, B, C, & D) Peak: 1 kW Max. *Designed to meet: Tested to 30W		

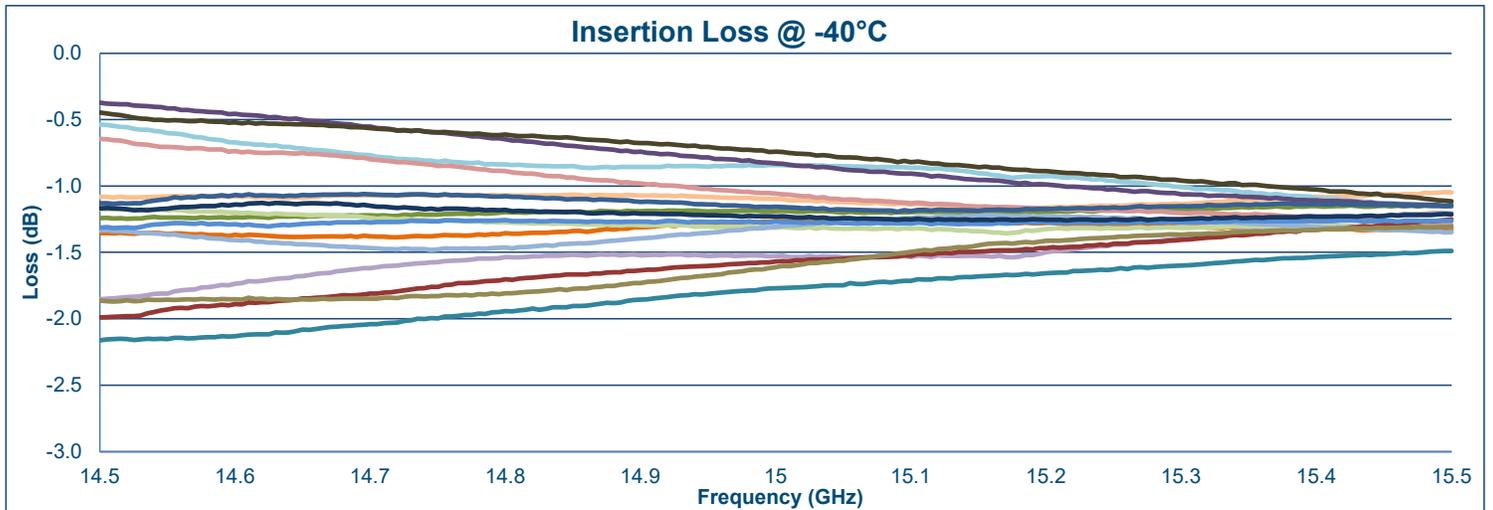
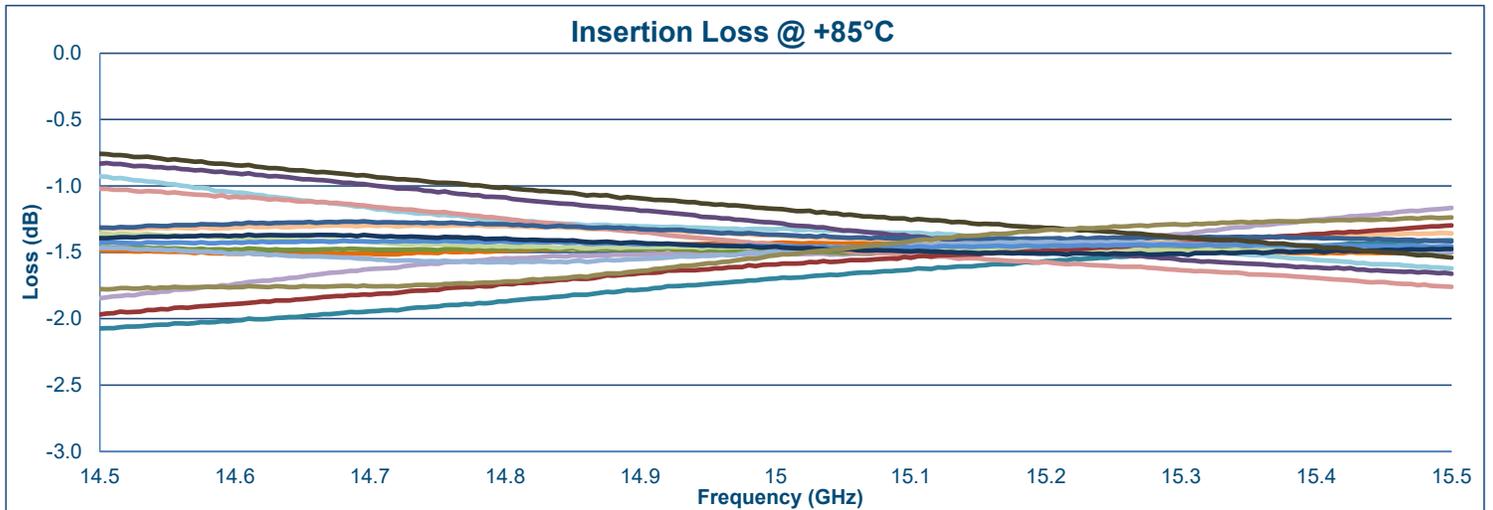
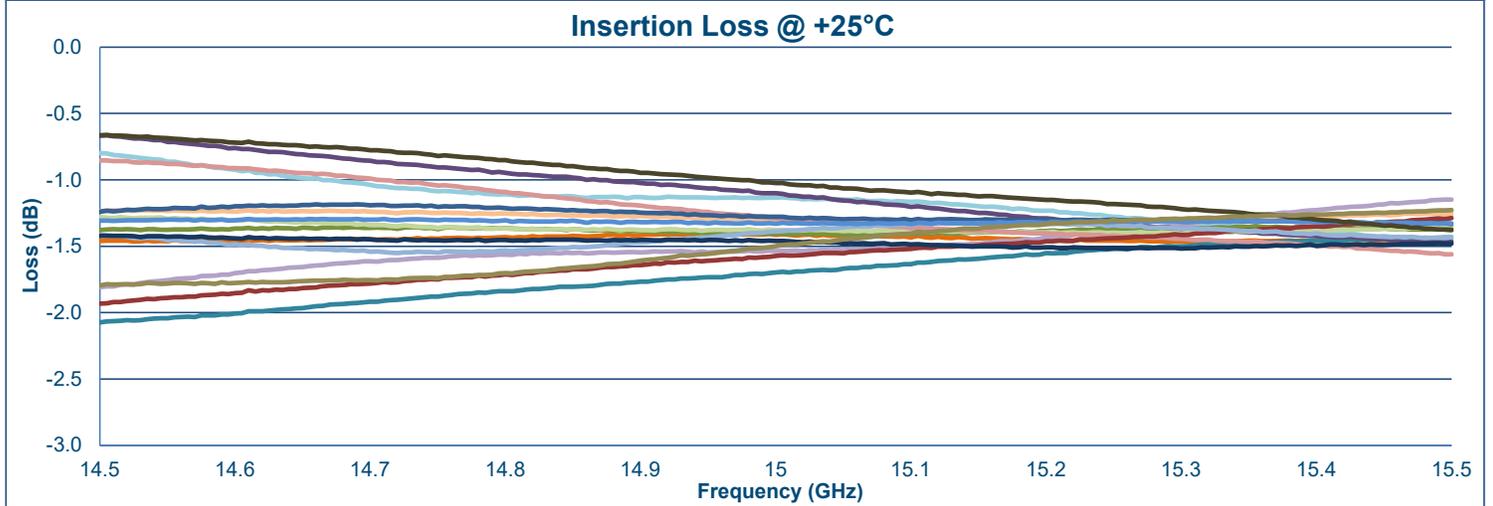
Phase Data Relative to A-ΣAZ @ +25°C		A	B	C	D	ΣAZ	ΔAZ	ΔQ	ΔEL
	A	-	Isolation	Isolation	Isolation	0°	89°	-4°	87°
	B	Isolation	-	Isolation	Isolation	1°	89°	176°	-93°
	C	Isolation	Isolation	-	Isolation	5°	-86°	-178°	93°
	D	Isolation	Isolation	Isolation	-	3°	-88°	-1°	-90°
	ΣAZ	0°	1°	5°	3°	-	Isolation	Isolation	Isolation
	ΔAZ	89°	89°	-86°	-88°	Isolation	-	Isolation	Isolation
	ΔQ	-4°	176°	-178°	-1°	Isolation	Isolation	-	Isolation
	ΔEL	87°	-93°	93°	-90°	Isolation	Isolation	Isolation	-

Phase Data Relative to A-ΣAZ @ +85°C		A	B	C	D	ΣAZ	ΔAZ	ΔQ	ΔEL
	A	-	Isolation	Isolation	Isolation	0°	88°	-4°	87°
	B	Isolation	-	Isolation	Isolation	1°	89°	176°	-93°
	C	Isolation	Isolation	-	Isolation	6°	-88°	-180°	91°
	D	Isolation	Isolation	Isolation	-	3°	-89°	-2°	-92°
	ΣAZ	0°	1°	6°	3°	-	Isolation	Isolation	Isolation
	ΔAZ	88°	89°	-88°	-89°	Isolation	-	Isolation	Isolation
	ΔQ	-4°	176°	-180°	-2°	Isolation	Isolation	-	Isolation
	ΔEL	87°	-93°	91°	-92°	Isolation	Isolation	Isolation	-

Phase Data Relative to A-ΣAZ @ -40°C		A	B	C	D	ΣAZ	ΔAZ	ΔQ	ΔEL
	A	-	Isolation	Isolation	Isolation	0°	90°	1°	92°
	B	Isolation	-	Isolation	Isolation	3°	91°	184°	-88°
	C	Isolation	Isolation	-	Isolation	16°	-74°	199°	98°
	D	Isolation	Isolation	Isolation	-	12°	-79°	13°	-83°
	ΣAZ	0°	3°	16°	12°	-	Isolation	Isolation	Isolation
	ΔAZ	90°	91°	-74°	-79°	Isolation	-	Isolation	Isolation
	ΔQ	1°	184°	199°	13°	Isolation	Isolation	-	Isolation
	ΔEL	92°	-88°	98°	-83°	Isolation	Isolation	Isolation	-

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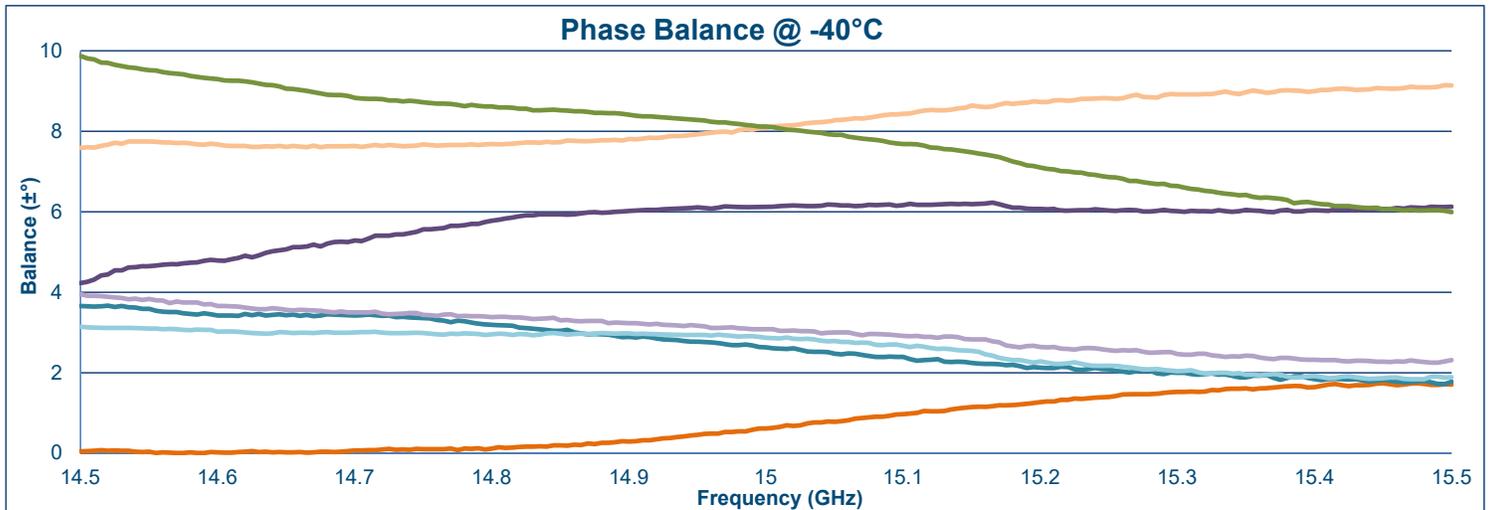
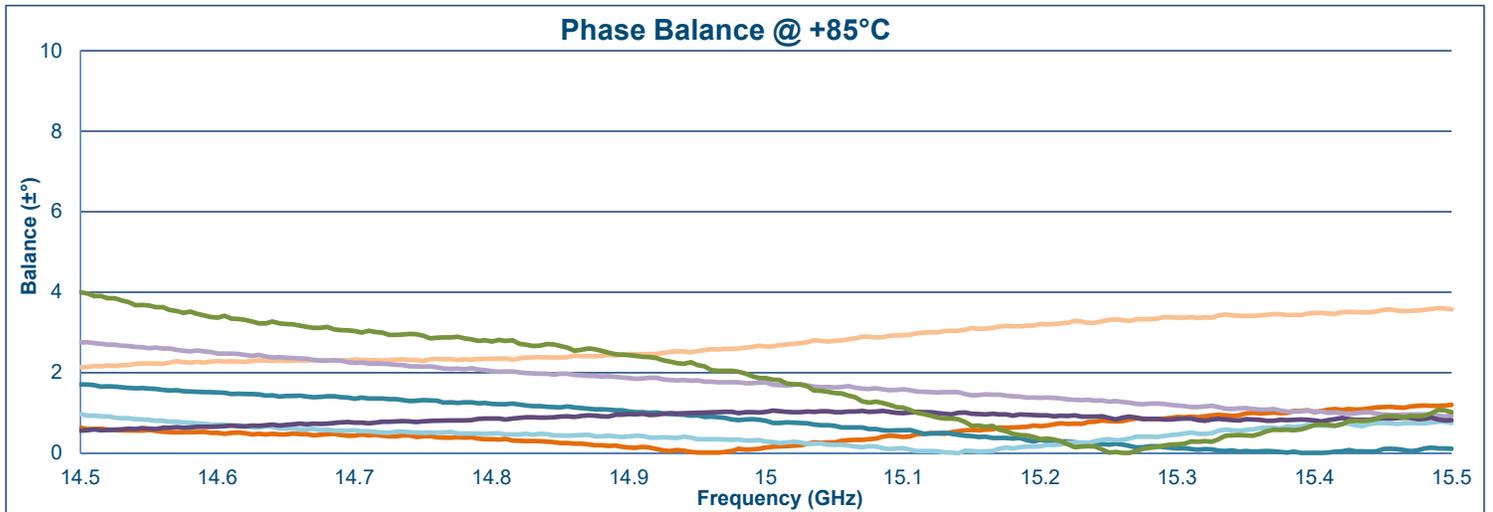
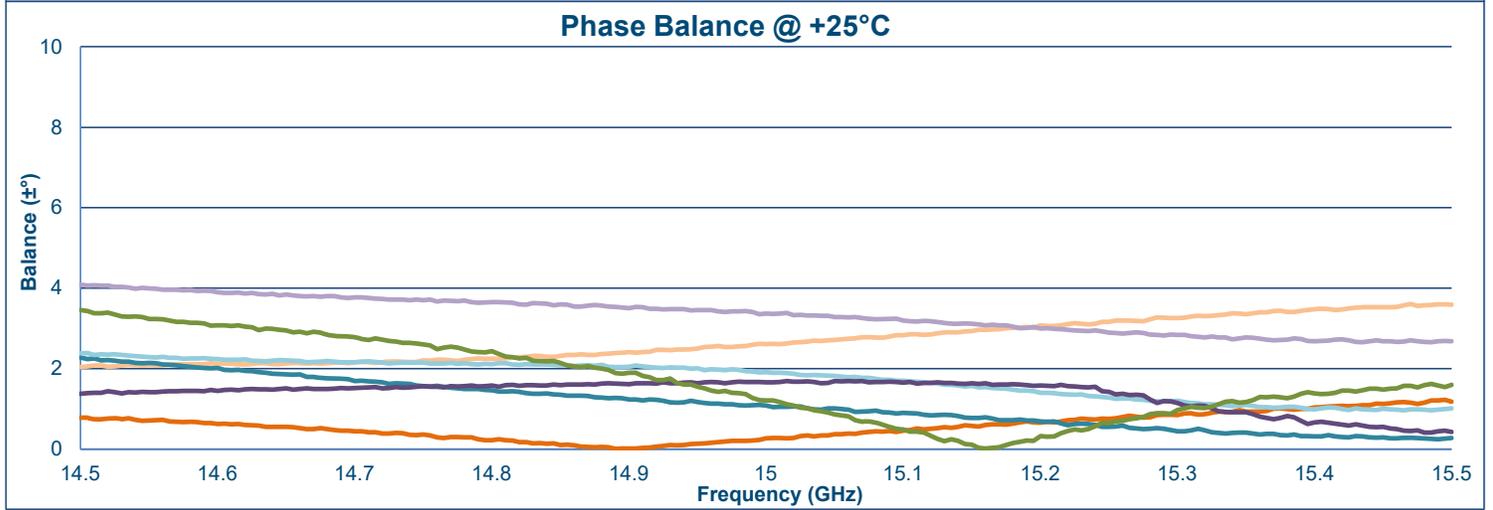
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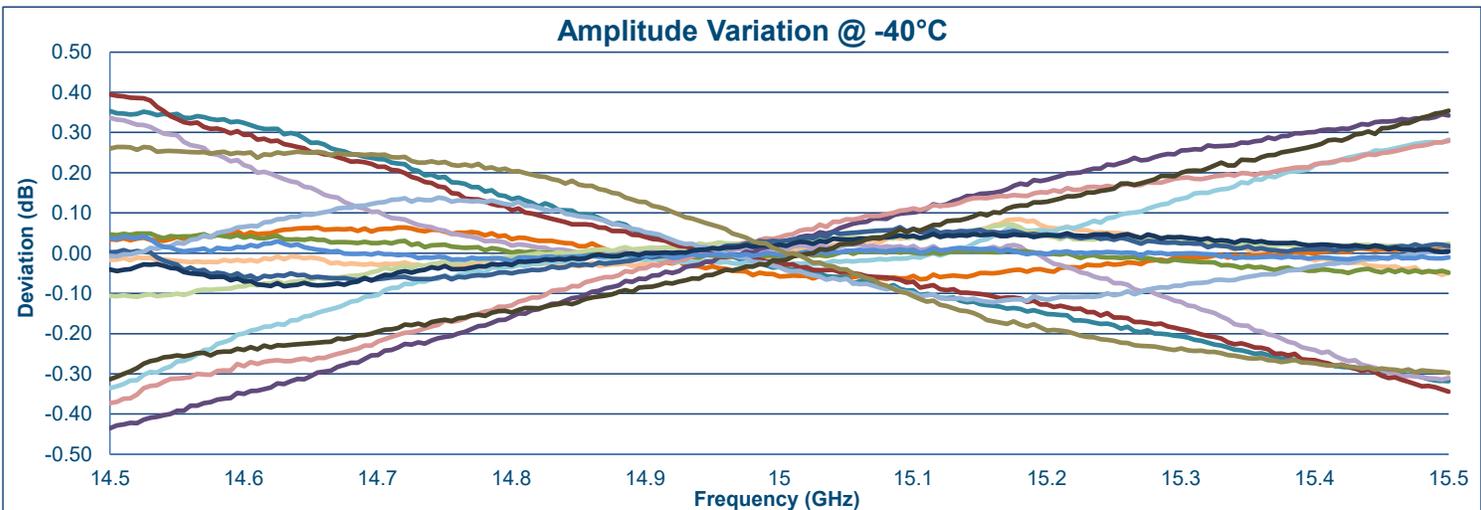
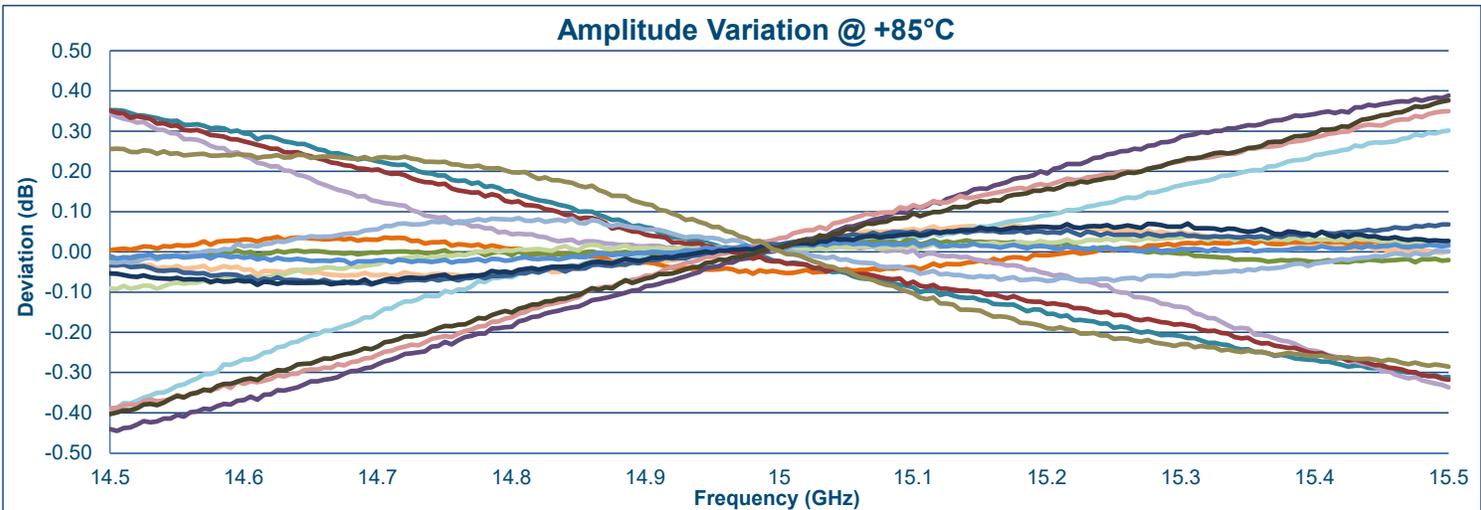
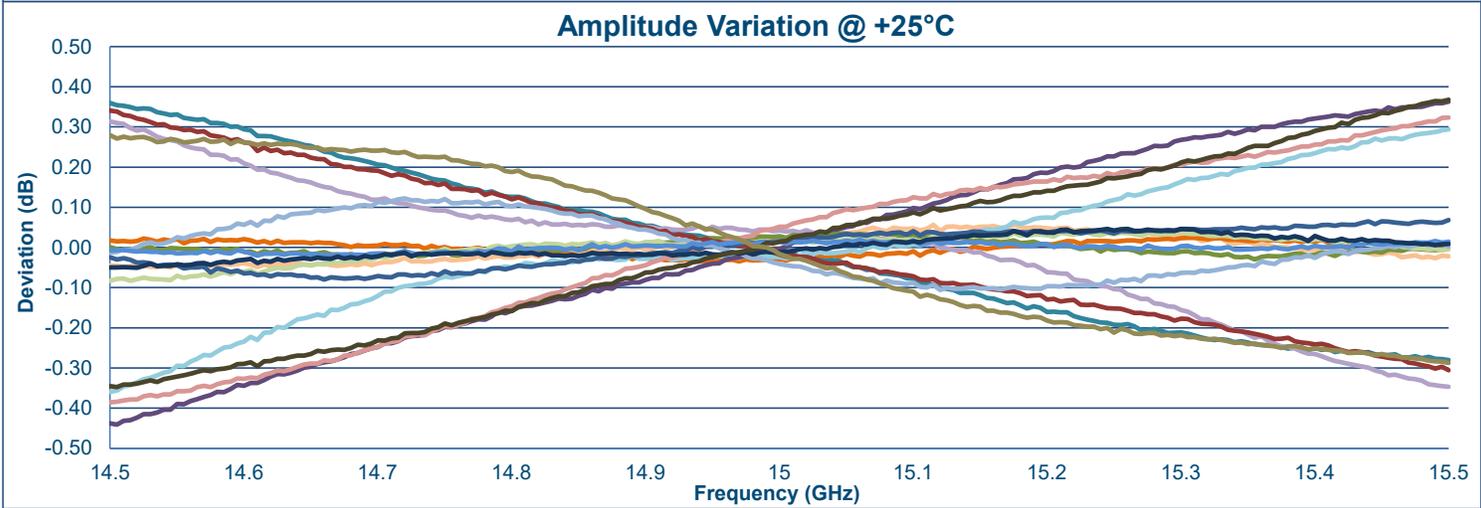
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- ΣAZ
- Left
- Right
- Bottom
- Top
- / Diagonal
- \ Diagonal

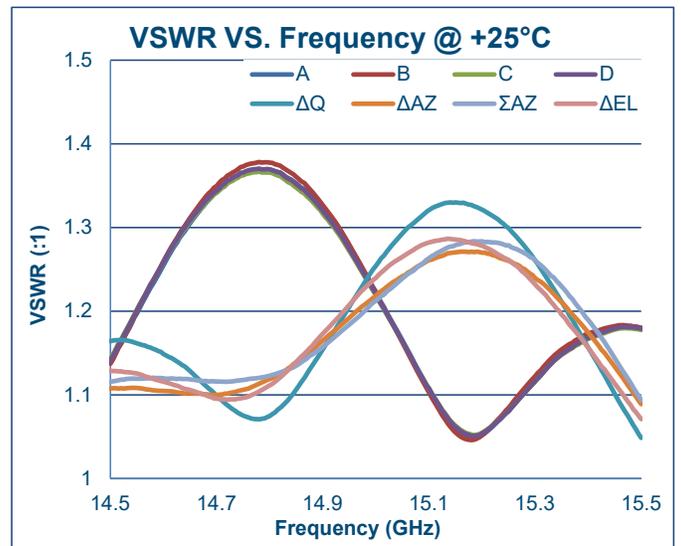
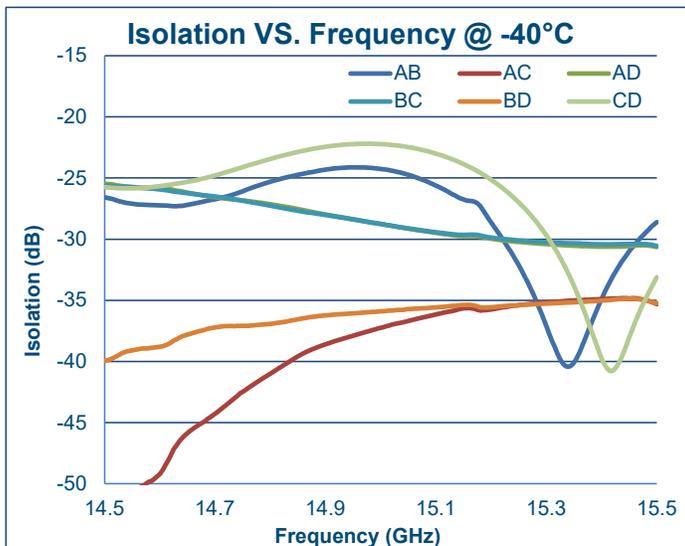
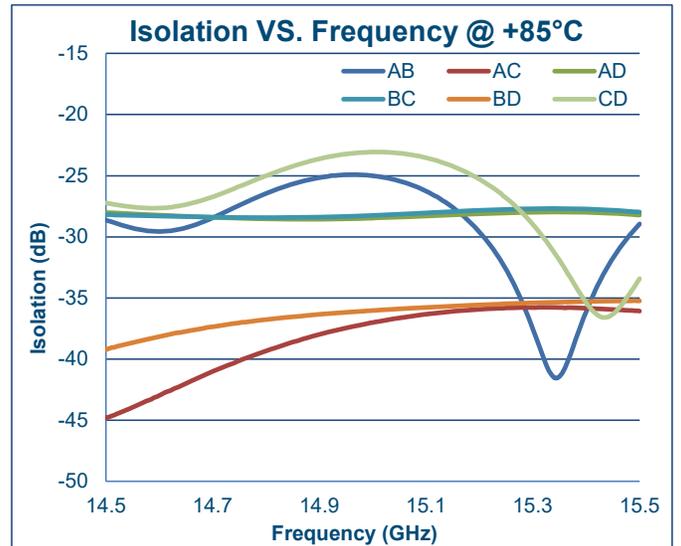
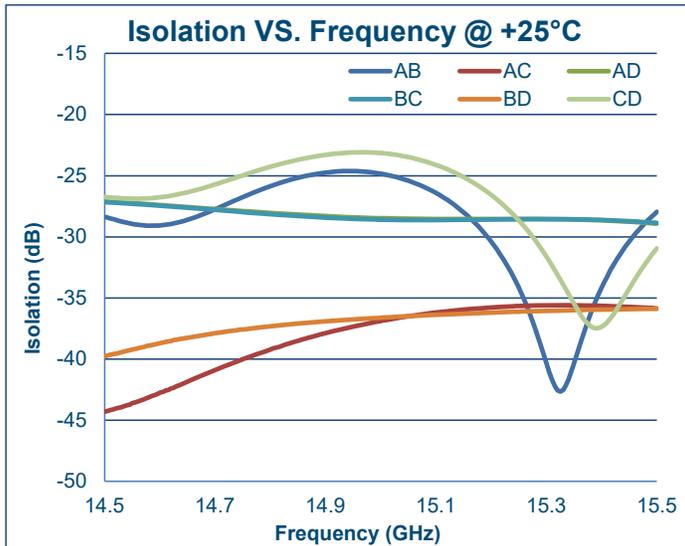
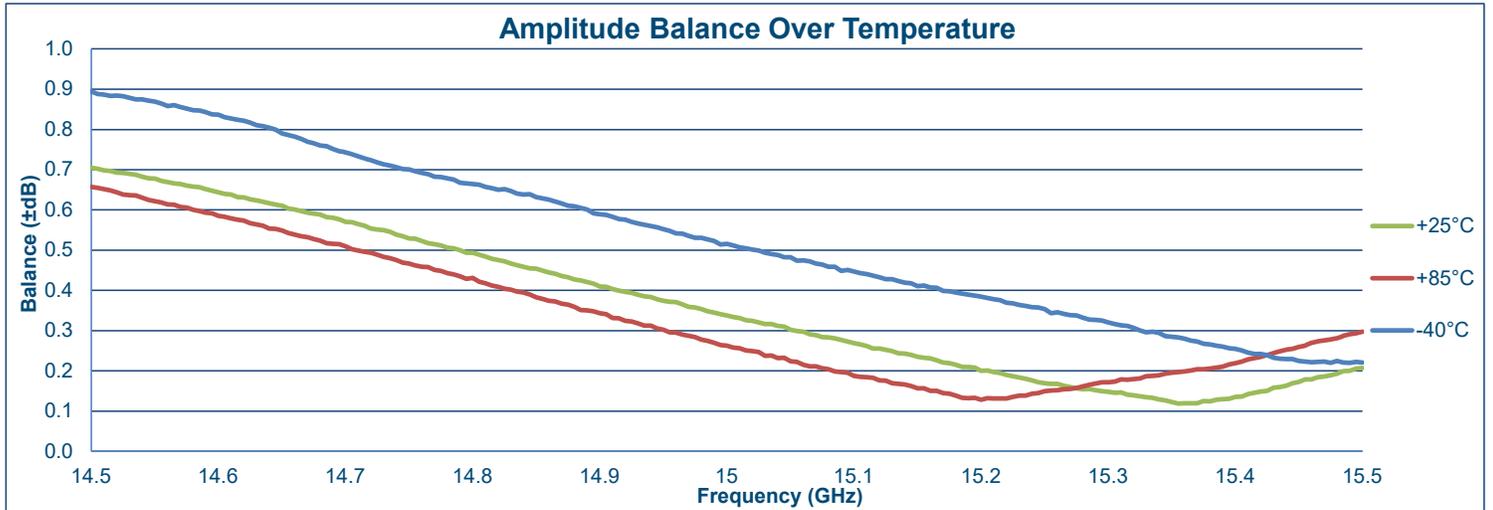


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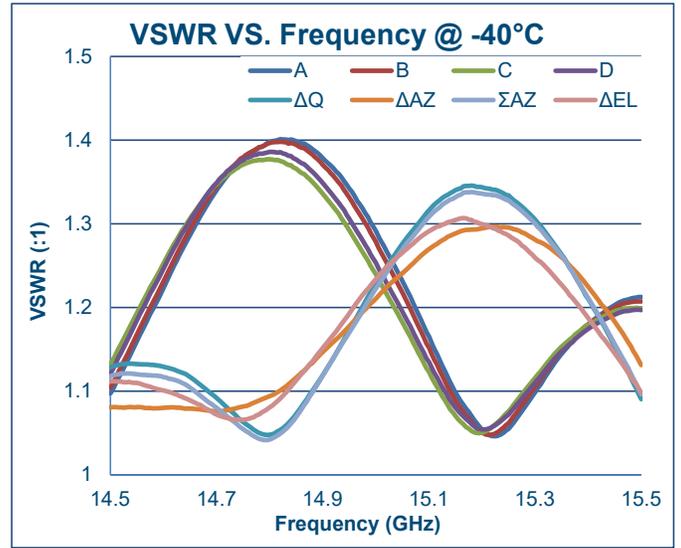
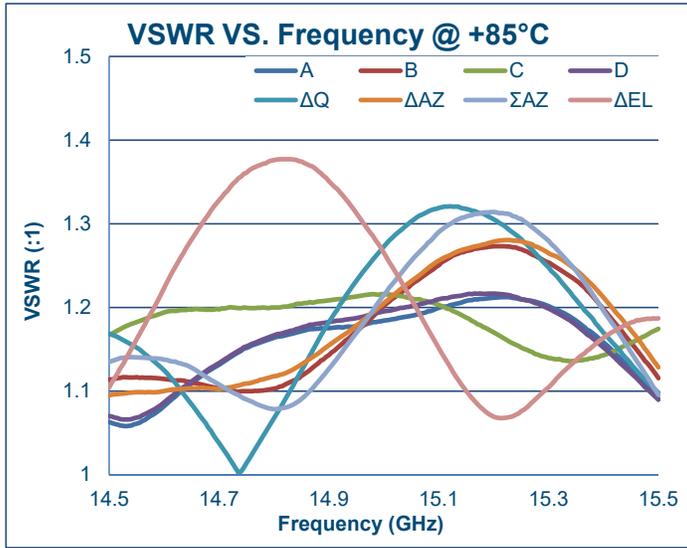
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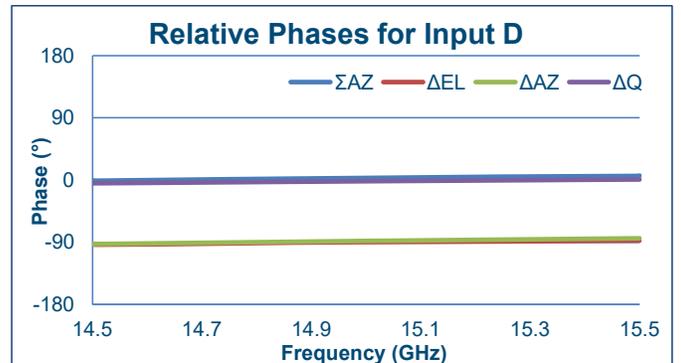
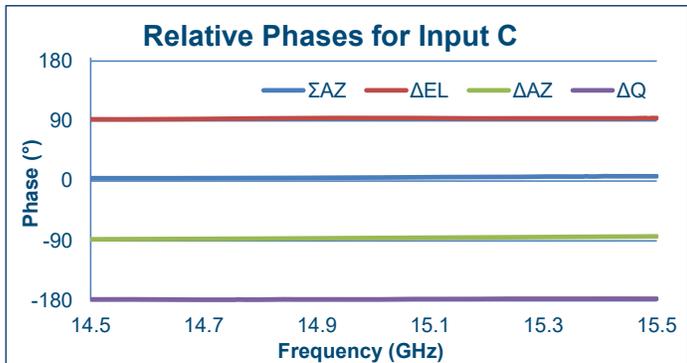
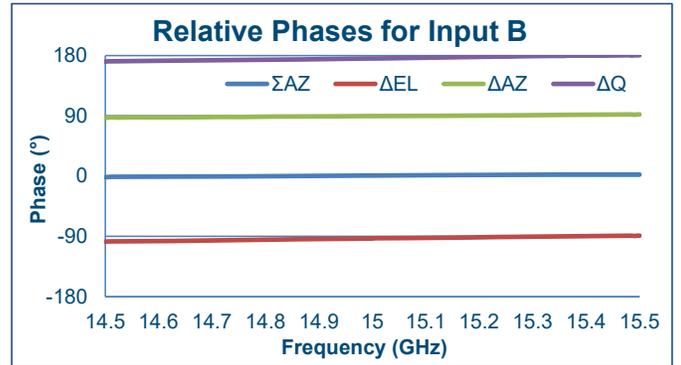
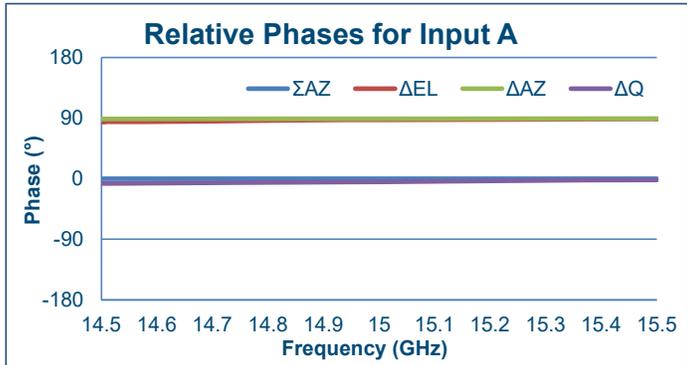
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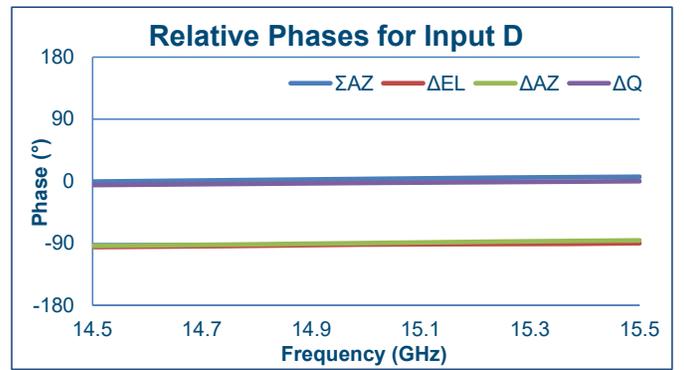
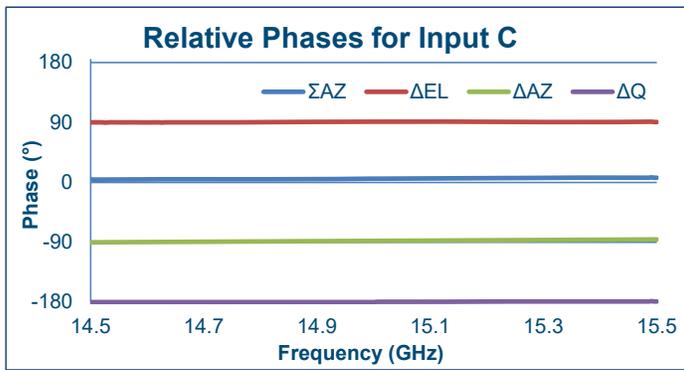
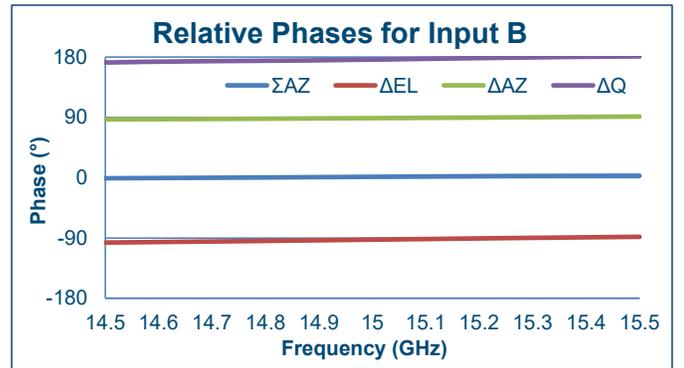
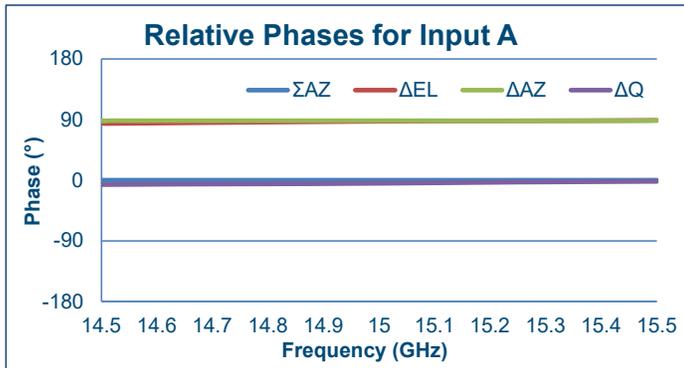


Phase Relative to A-ΣAZ @ 25°C

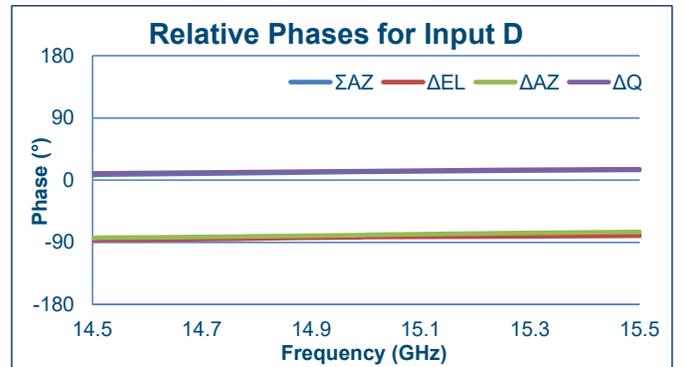
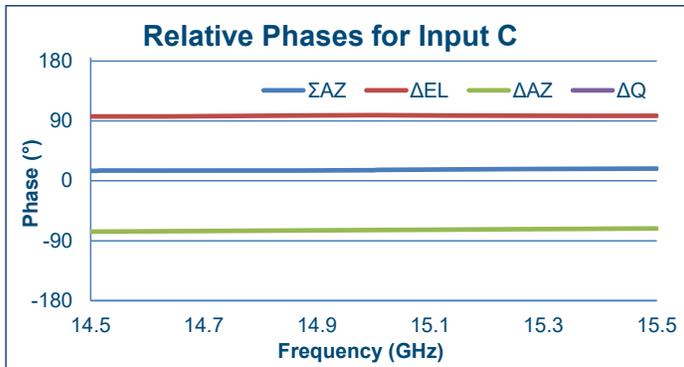
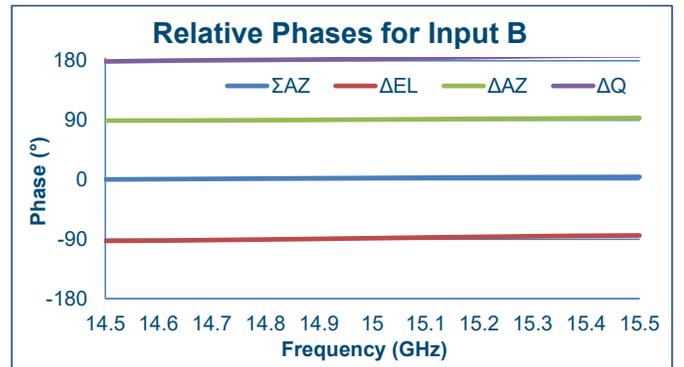
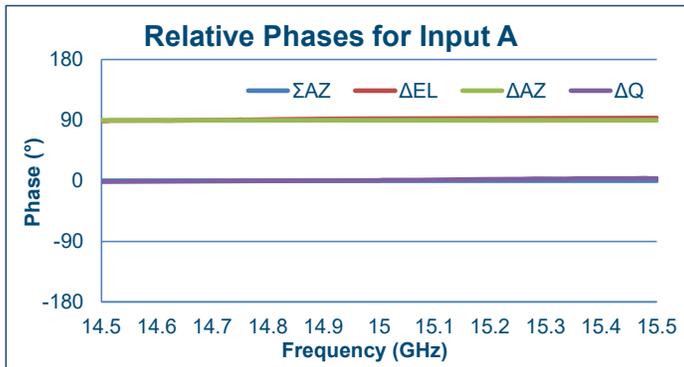


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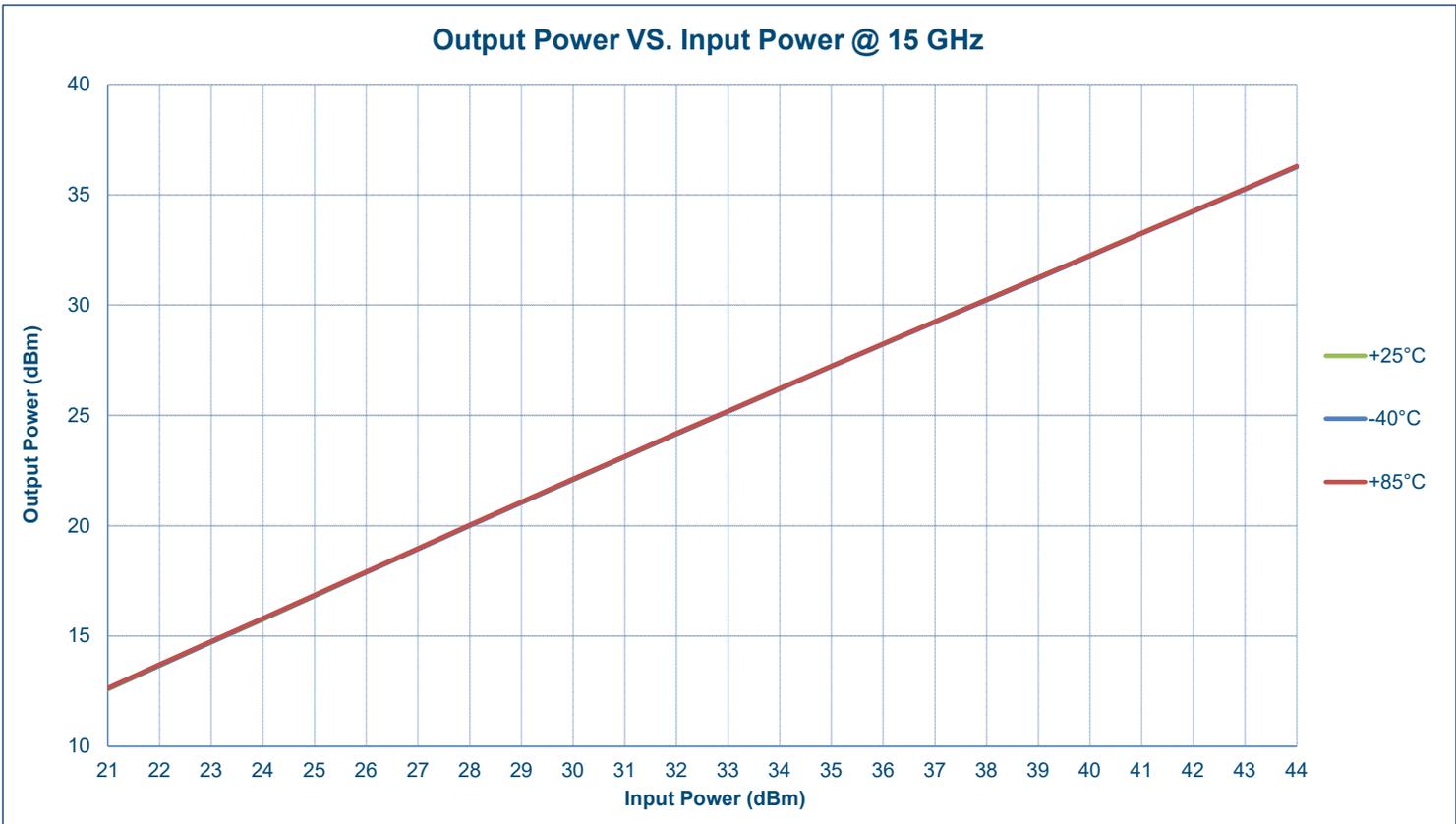
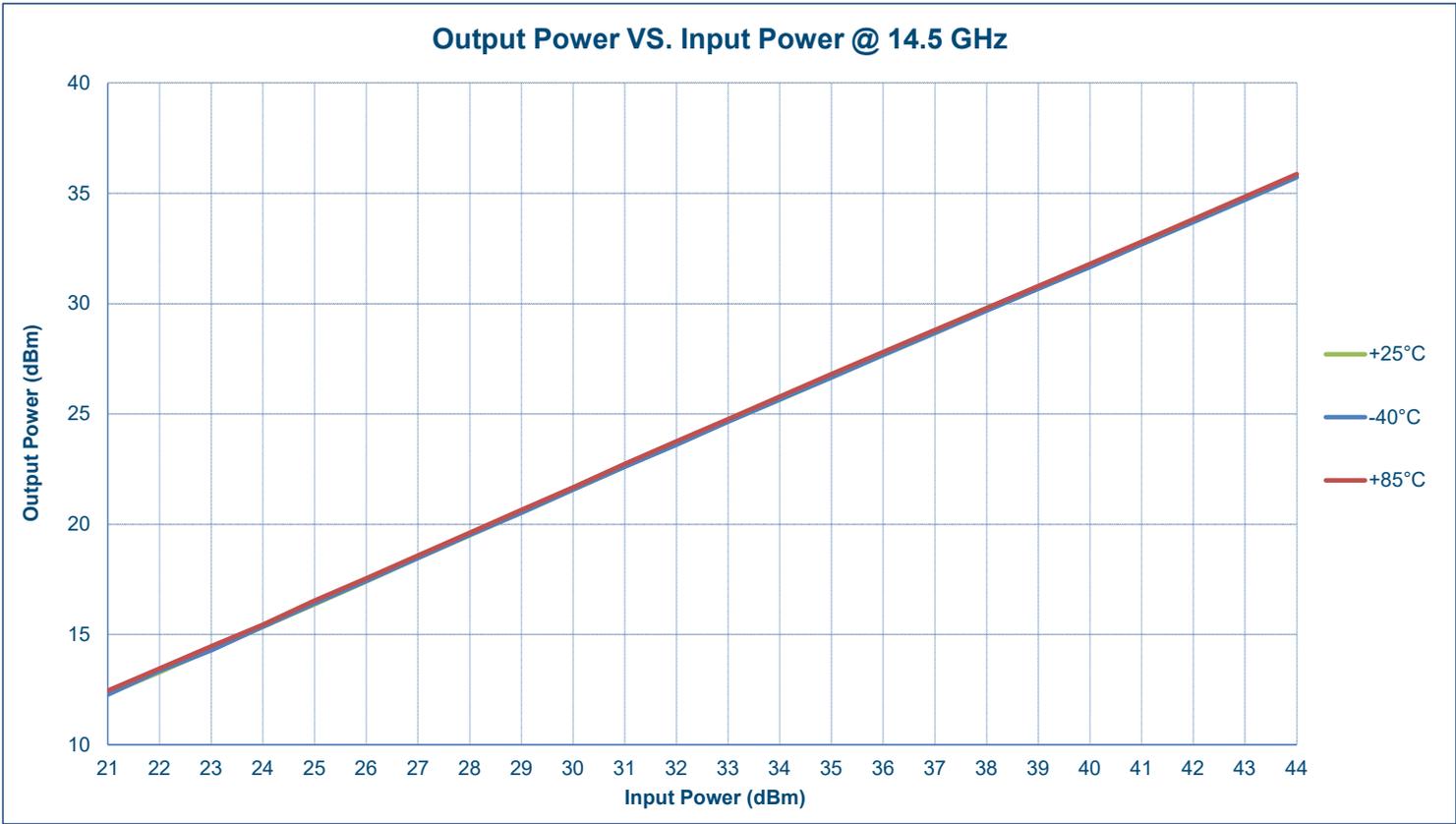
Phase Relative to A-ΣAZ @ +85°C



Phase Relative to A-ΣAZ @ -40°C



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