

**TYPICAL CHARACTERISTICS  
ON  
PS-90-6012-HS15NS-OPT7G**



**Thursday, September 28, 2023**

**Designed and Reported By: M. Laulis**

**Tested By:  
Eric Kertz**

# TYPICAL CHARACTERISTICS ON PS-90-6012-HS15NS-OPT7G

## Outline

**DESCRIPTION:**

PMI MODEL NUMBER PS-90-6012-HS15NS-OPT7G IS A HIGH SPEED, 0 OR 180 DEGREE, MINIATURE, BI-PHASE MODULATOR/PHASE SHIFTER WITH TTL CONTROL LOGIC (ECL LOGIC IS AVAILABLE) OPTIMIZED FOR 7 GHz.

**SPECIFICATIONS:**

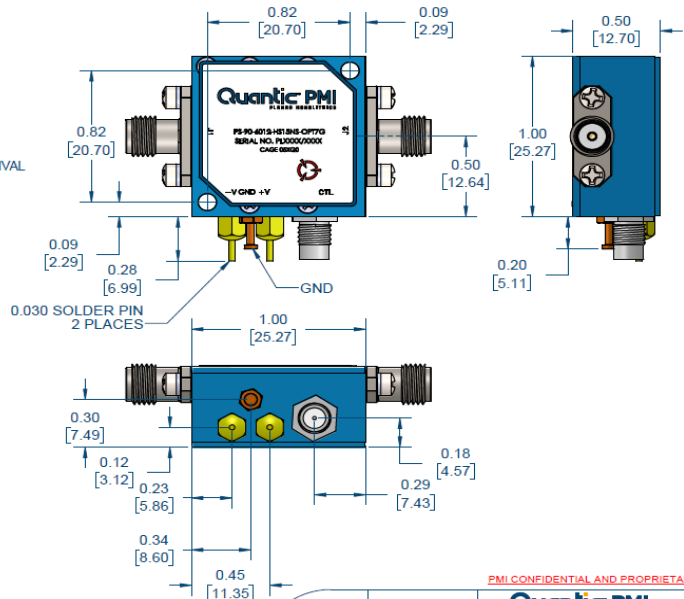
- FREQUENCY RANGE:..... 7 GHz
- INSERTION LOSS:..... 2.5 dB TYPICAL
- PHASE SHIFT ACCURACY(@ ROOM TEMP):..... ±0° GOAL ±1° MAX
- NOISE FIGURE:..... 5.0 dB TYPICAL
- MODULATION RATE:..... 1 MHz
- VSWR INPUT:..... 2.0:1 TYPICAL  
2.25:1 MAX
- OPERATING INPUT POWER:..... +20 dBm OPERATING
- SPEED:..... 15 ns TYPICAL ON/OFF
- MAXIMUM RF INPUT:..... 0.5 WATT CW, 1 usec PULSE WIDTH SURVIVAL
- CARRIER SUPPRESSION:..... 20 dB TYPICAL
- DC SUPPLY:..... +5 VDC @ 75 mA MAX  
-5 VDC @ 20 mA MAX
- SIZE:..... 1.0" X 1.0" X 0.5"
- WEIGHT:..... <2 OUNCES
- FINISH:..... PAINTED BLUE
- CONNECTOR:..... SMA(F)

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE:..... -55°C TO +85°C (OPERATING)  
-65°C TO +125°C (STORAGE)
- HUMIDITY:..... MIL-STD-202, METHOD 103B COND. B
- 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	8/16/2023	

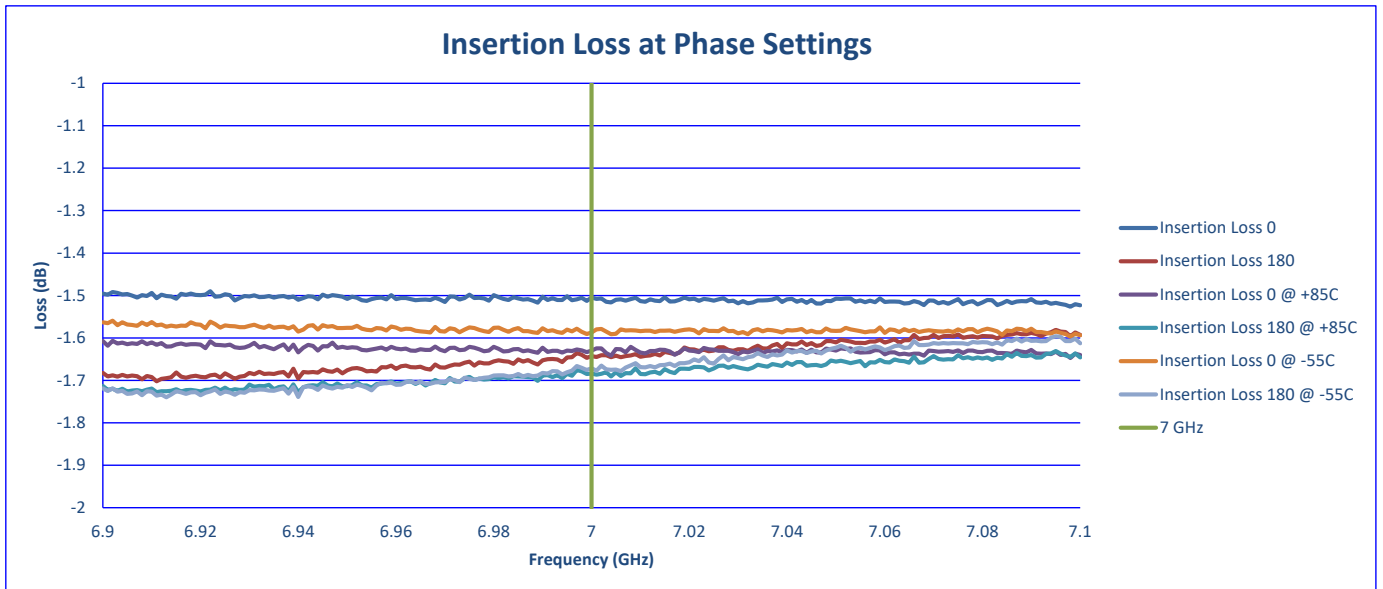


**PMI CONFIDENTIAL AND PROPRIETARY**

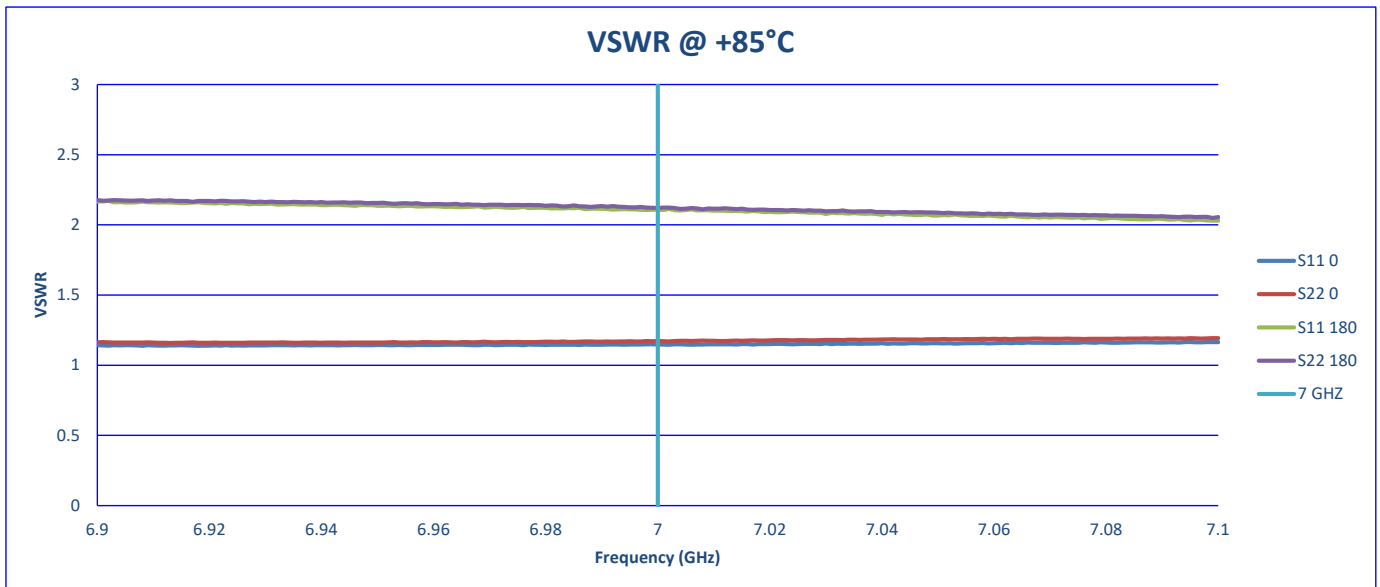
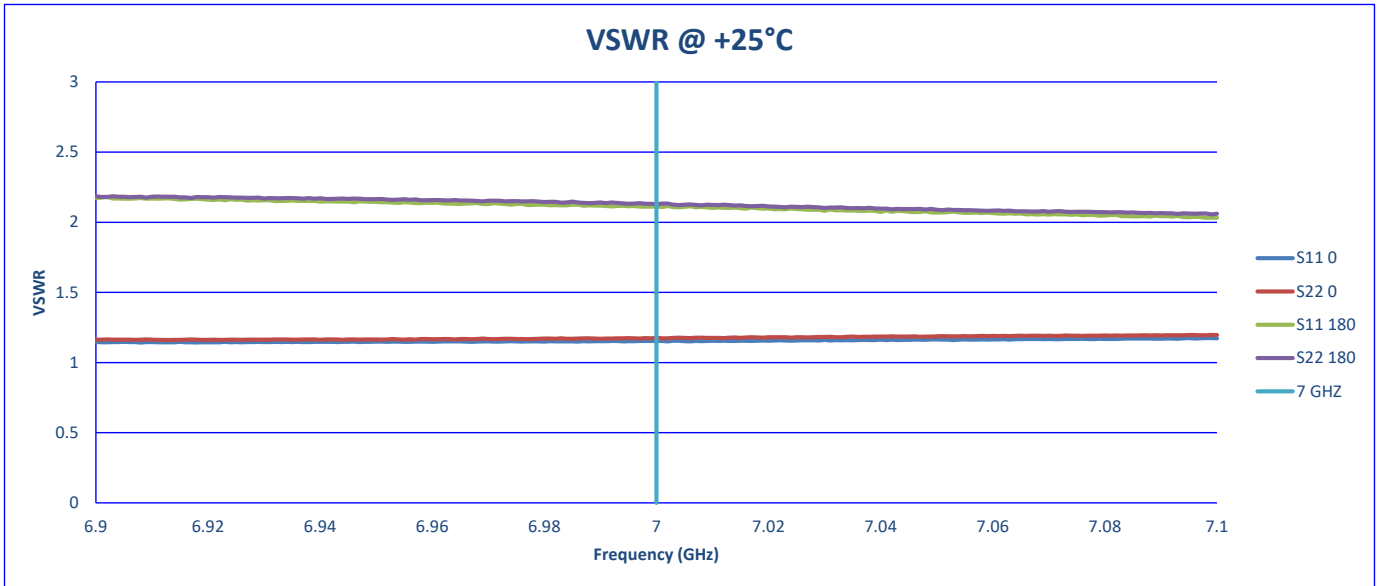
<b>Quantic PMI</b> PLANAR MONOLITHICS		<small>PMI-A 30000 GROVE ROAD FREDERICK, MARYLAND 21704 USA WEB: WWW.QUANTICPMI.COM EMAIL: SALES@QUANTICPMI.COM ISO 9001 CERTIFIED</small>	
APPROVALS	DATE	TITLE	REV
M. LAULIS	8/16/2023	FINAL ASSEMBLY	
DESIGNED		PS-90-6012-HS15NS-OPT7G	
		FORM NO: 27048340	A1
		SCALE: 2:1	SHEET 1 OF 1

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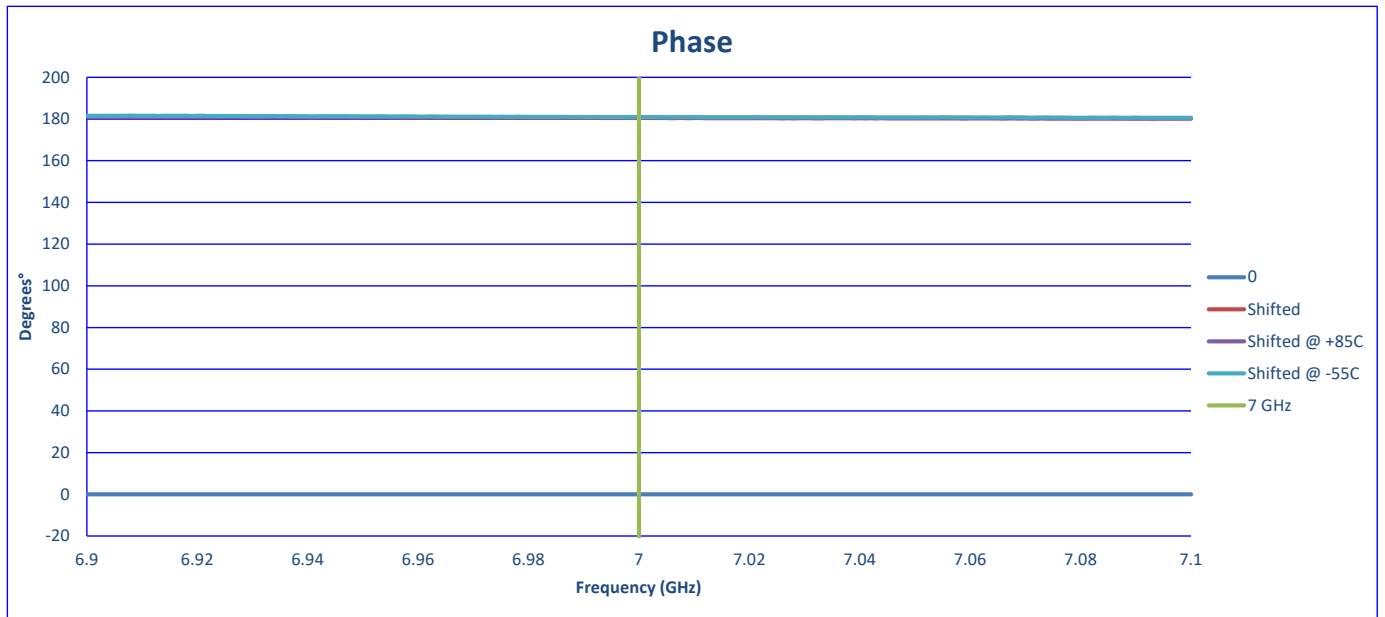
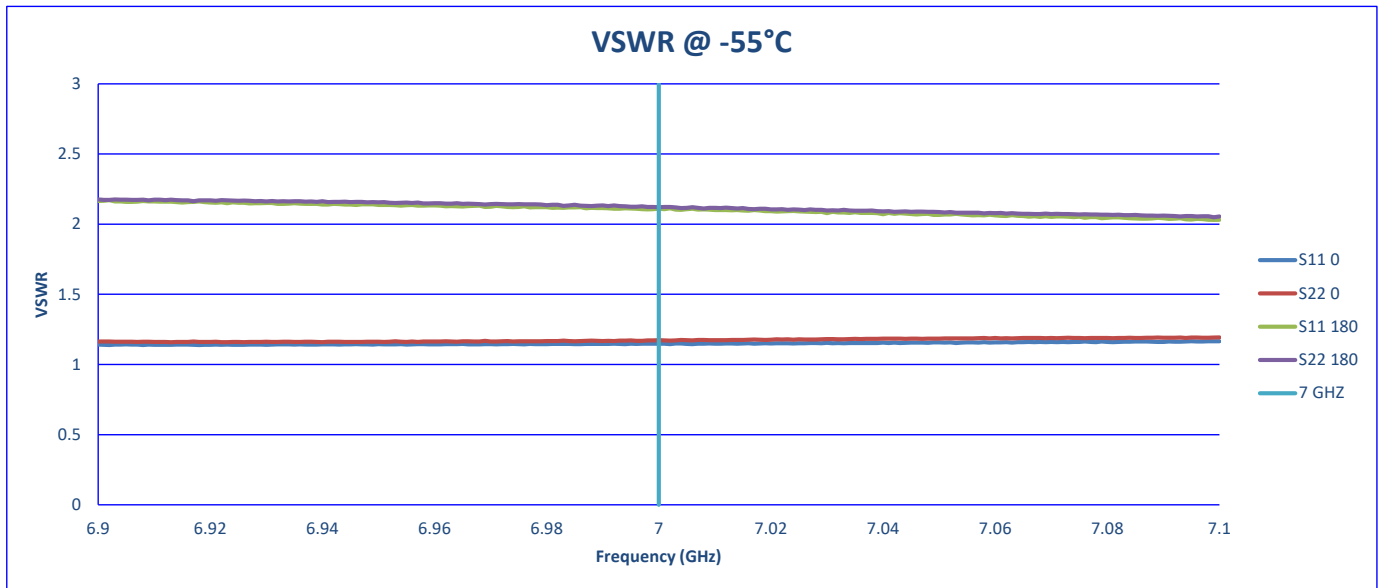
TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			QA QC
			+25°C	+85°C	-55°C	
1	Frequency:	7 GHz	<b>7 GHz</b>	<b>7 GHz</b>	<b>7 GHz</b>	
2	Insertion Loss:	2.5 dB Typ.	<b>1.6 dB</b> See Plot	<b>1.7 dB</b> See Plot	<b>1.7 dB</b> See Plot	
3	Phase Accuracy: (@ Room Temperature)	±0° Goal, ±1° Max.	<b>±0.51°</b> See Plot	<b>±0.78°</b> See Plot	<b>±0.9°</b> See Plot	
4	Modulation Rate:	1 MHz	<b>1 MHz</b>			
5	VSWR Input:	2.0:1 Typ. 2.25:1 Max.	<b>2.1:1</b> See Plot	<b>2.1:1</b> See Plot	<b>2.1:1</b> See Plot	
6	Operating Input Power:	+20 dBm Operating	<b>+20 dBm</b>			
7	Speed:	15 ns Typical On/Off	<b>15 ns</b>	<b>15 ns</b>	<b>15 ns</b>	
8	Maximum RF Input:	0.5 Watt CW, 1 µsec Pulse Width Survival	<b>0.5 Watt CW,</b> <b>1 µsec</b>	<b>0.5 Watt CW,</b> <b>1 µsec</b>	<b>0.5 Watt CW, 1</b> <b>µsec</b>	
9	Carrier Suppression:	20 dB Typical	<b>36.5 dB AVG</b>			
10	DC Supply:	+5 VDC @ 75 mA Max. -5 VDC @ 20 mA Max.	<b>+5 VDC @ 34 mA</b> <b>-5 VDC @ 11 mA</b>			



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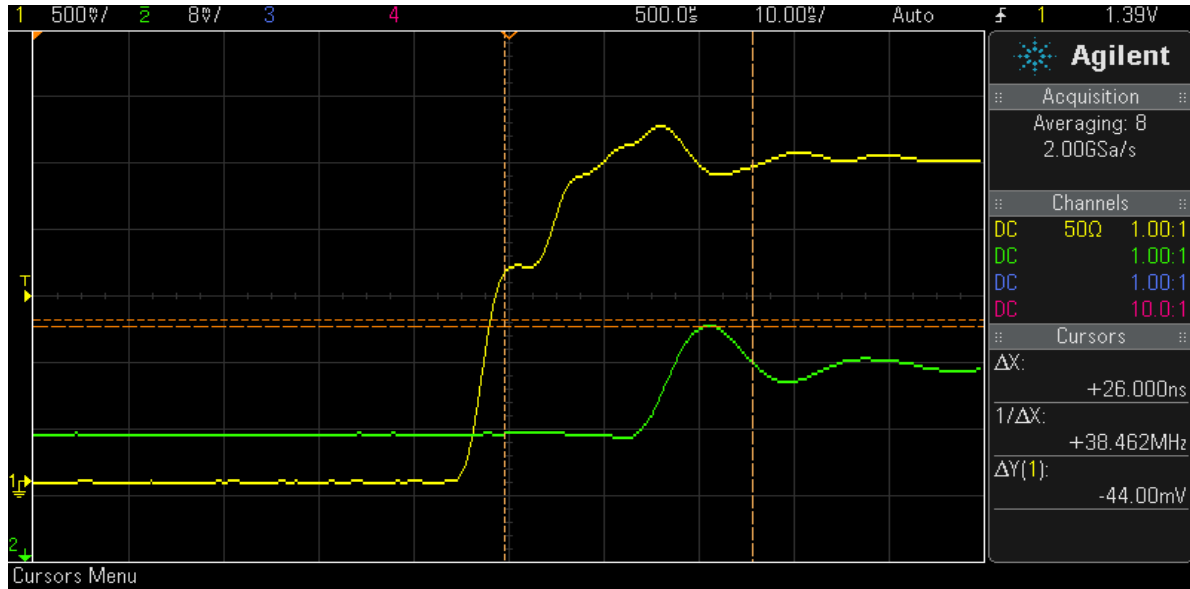
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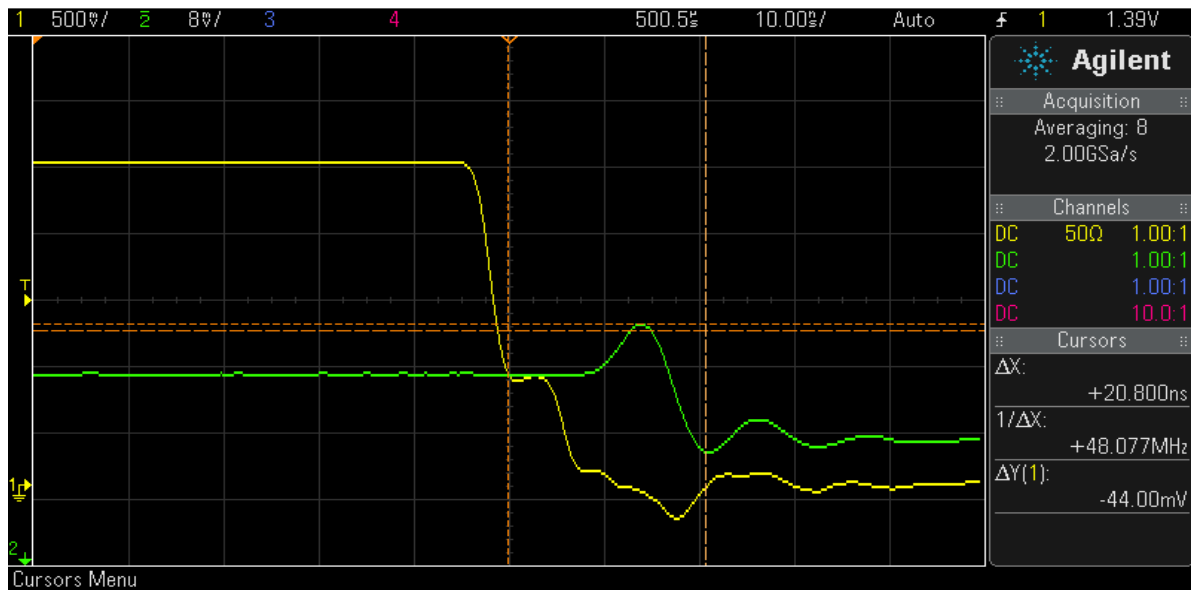
## Switching Speed

### Delay 0 to 180 Deg.



Green Trace: RF Signal  
Yellow Trace: TTL Signal

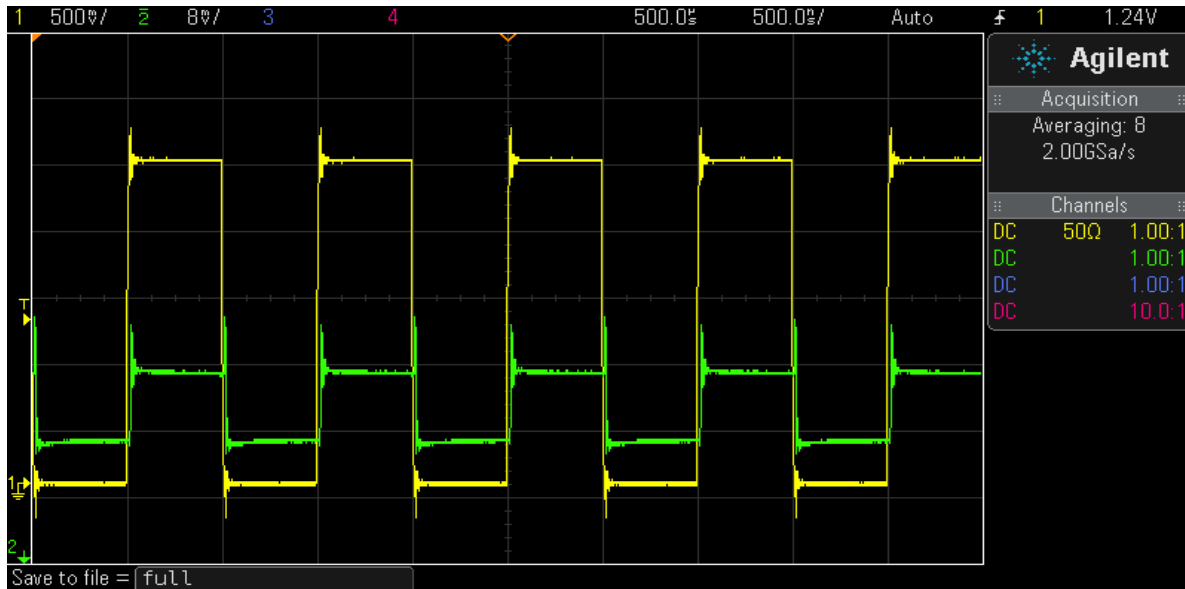
### Delay 180 to 0 Deg.



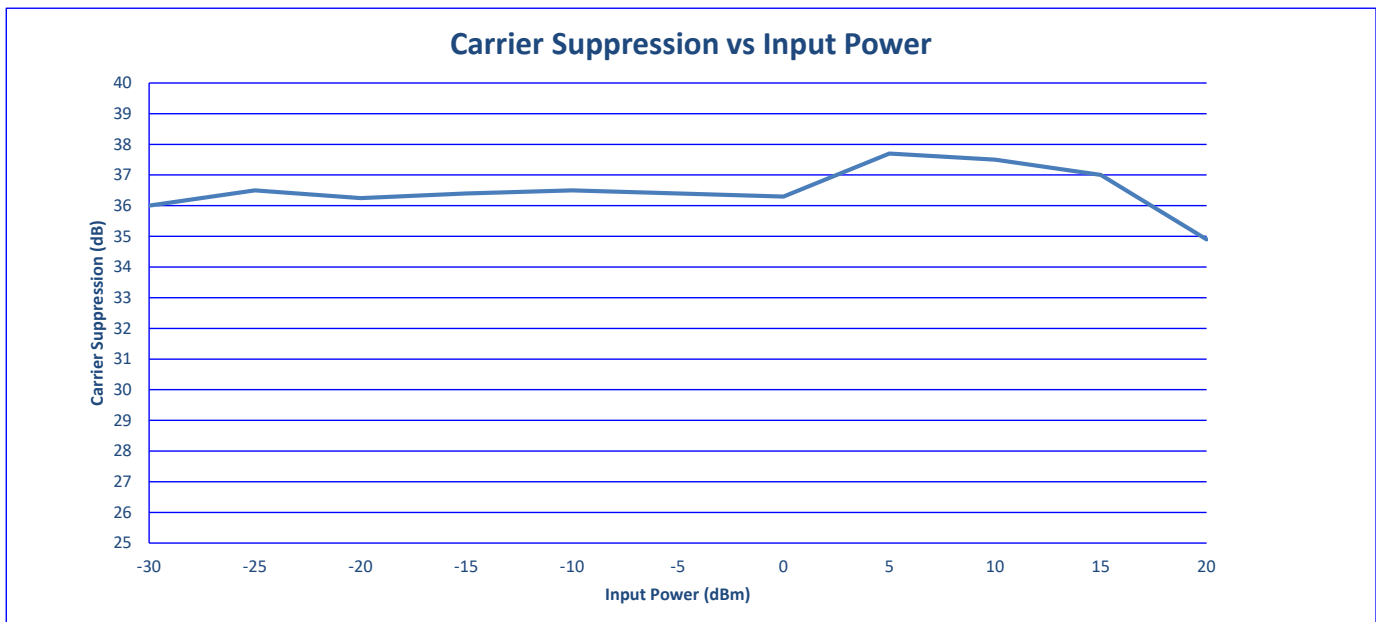
Green Trace: RF Signal  
Yellow Trace: TTL Signal

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Full Pulse



Green Trace: RF Signal  
Yellow Trace: TTL Signal



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