TYPICAL CHARACTERISTICS
ON
PMSN-3DR-05-STANDARD-LV

PMI MODEL PMSN-3DR-05-STANDARD-LV IS A SINGLE POLE, THREE THROW REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH ISOLATION, HIGH POWER (1 WATT) AND WITH HIGH SPEED (40 nsec) INTEGRAL CMOS DRIVER DESIGNED FOR 1 GHz to 18 GHz OPERATION.

May 29, 2026

Designed by:

Engineering PMI

Tested and Reported by:

V. Vasquez

7309-A Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731
Email: sales@pmi-rf.com

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ON
PMSN-3DR-05-STANDARD-LV

PRODUCT FEATURE

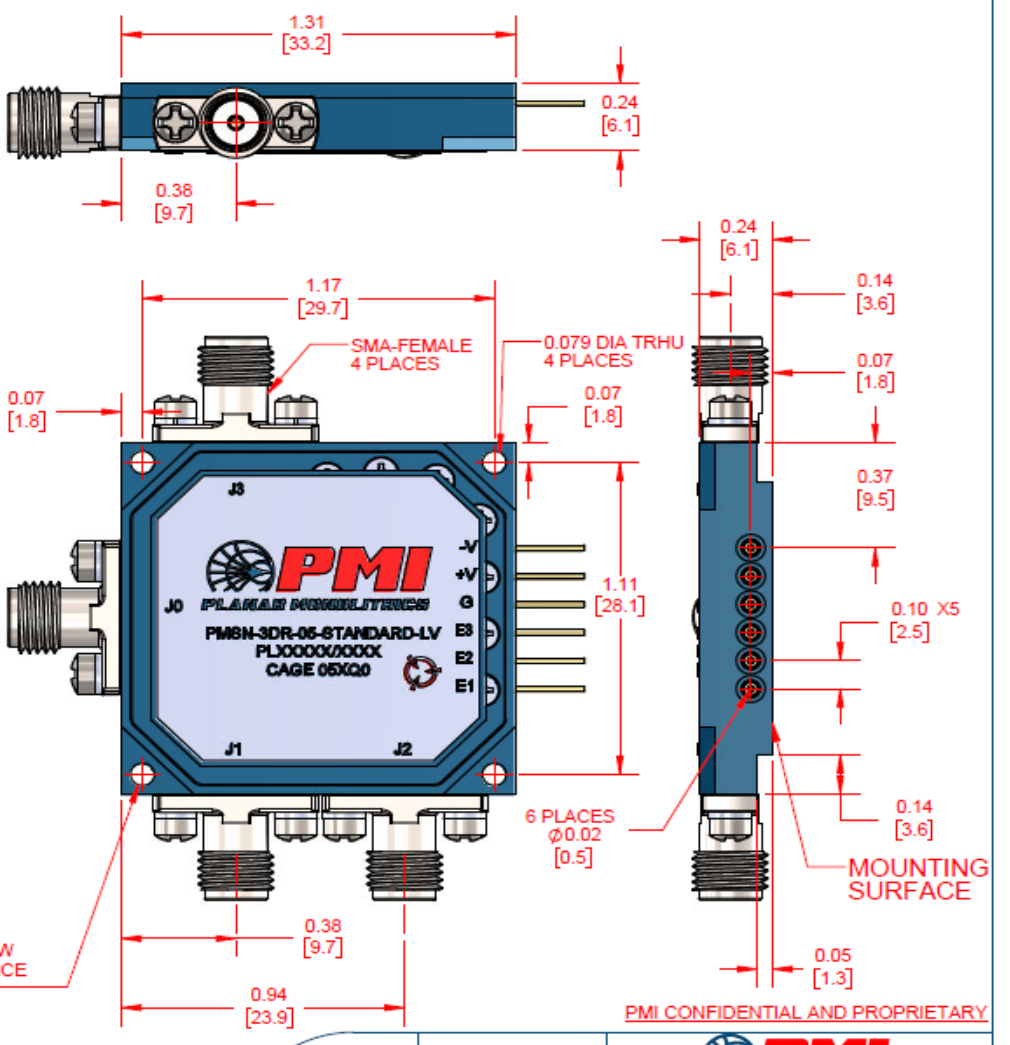
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A1	ORIGINAL RELEASE	09/27/2024	
	B1	ECN #26-0120	05/27/2026	

DESCRIPTION:
PMI MODEL PMSN-3DR-05-STANDARD-LV IS A SINGLE POLE THREE THROW REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH ISOLATION, HIGH POWER (1 WATT), AND WITH HIGH SPEED (25nsec) INTEGRAL CMOS DRIVER DESIGNED FOR 1 GHz TO 18 GHz OPERATION.

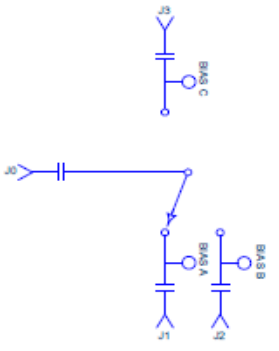
SPECIFICATIONS:

- FREQUENCY RANGE:..... 1.0-18.0 GHz
- INSERTION LOSS:..... 3.5 dB (MAXIMUM)
- VIDEO TRANSIENTS:..... 100mV P-P (MAXIMUM)
- ISOLATION:..... 60 dB (MINIMUM)
- VSWR:..... 1.75:1 @ 1.0-12.4 GHz (MAXIMUM)
  2.0:1 @ 12.4-18.0 GHz (MAXIMUM)
- POWER HANDLING:..... REFLECTIVE 1 WATT CW OR PEAK
  (WITHOUT PERFORMANCE DEGREDATION)
- SWITCHING SPEED:..... RISE TIME: 10nsec (MAXIMUM)
  FALL TIME: 10nsec (MAXIMUM)
  ON TIME: 25nsec (MAXIMUM)
  OFF TIME: 40nsec (MAXIMUM)
- SURVIVAL POWER:..... 20 WATTS PEAK (0.5usec MAXIMUM PULSE WIDTH, 0.1% DUTY CYCLE)
- POWER SUPPLY:..... +5V ±5%@75mA MAXIMUM
  -12V @ 30mA MAXIMUM
- CONTROL INPUT IMPEDENCE..... 3.3/5.0V CMOS LOGIC
- CONTROL LOGIC:..... "0"=ON @ 0V TO 1.2V
  "1"=OFF @ 3.3V TO 5.5V
- CONNECTOR:..... SMA FEMALE
- SIZE :..... 1.31 X 1.25 X 0.24
- WEIGHT:..... 1.50 OUNCE TYPICAL
- FINISH:..... PAINTED BLUE

TRUTH TABLE			
	J1	J2	J3
E1	0	1	1
E2	1	0	1
E3	1	1	0



BLOCK DIAGRAM



ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -65°C TO +85°C (OPERATING)
  -65°C TO +125°C (STORAGE)
- HUMIDITY:..... MIL-STD-202, METHOD 103 COND. B
- SHOCK:..... MIL-STD-202, METHOD 213 COND. B
- VIBRATION:..... MIL-STD-202, METHOD 204 COND. B
- ALTITUDE:..... MIL-STD-202, METHOD 105 COND. B
- TEMPERATURE CYCLE:..... MIL-STD-202, METHOD 107 COND. A

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

APPROVALS	DATE
DRAWN VP	09/27/2024
REDRAWN	
ISSUED	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± DECIMALS .XX ± 0.02 .XXX ± 0.01 ANGLES ±

PMI PLANAR MONOLITHICS
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WEB: WWW.QUANTICPMI.COM EMAIL: SALES@QUANTICPMI.COM
ISO 9001 CERTIFIED

TITLE: OUTLINE
PMSN-3DR-05-STANDARD-LV

SIZE	FSCM NO.	DWG NO.	REV.
B	05XQ0	27049600	B1

SCALE 2:1 SHEET 1 OF 1

PMI CONFIDENTIAL AND PROPRIETARY

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Technical Specifications

TEST ITEM NO.	PARAMETERS	SPECIFIED VALUE	TEST RESULTS		
			+25°C	-65°C	+85°C
1	Frequency Range:	1 - 18 GHz	1 - 18 GHz	1 - 18 GHz	1 - 18 GHz
2	Insertion Loss:	3.5 dB Max.	3.17 dB	2.72 dB	3.22 dB
			See Graph	See Graph	See Graph
3	Isolation:	60 dB Min	71.13 dB	72.6 dB	71.13 dB
			See Graph	See Graph	See Graph
4	VSWR Input	1.75:1 (1 to 12.4 GHz) Max. 2.0:1 (12.4 to 18 GHz) Max.	1.67 :1 (In)	1.71 :1 (In)	1.64 :1 (In)
			1.63 :1 (In)	1.7 :1 (In)	1.62 :1 (In)
			See Graph	See Graph	See Graph
	VSWR Output	1.75:1 (1 to 12.4 GHz) Max. 2.0:1 (12.4 to 18 GHz) Max.	1.67 :1 (Out)	1.71 :1 (Out)	1.66 :1 (Out)
			1.86 :1 (Out)	1.97 :1 (Out)	1.88 :1 (Out)
			See Graph	See Graph	See Graph
5	Power Handling	1 W CW Max	Pass 1 Watt CW See Graphs	Pass 1 Watt CW See Graphs	Pass 1 Watt CW See Graphs
6	Video Transients	100 mV Peak to Peak	22.5 mV Peak to Peak See Plot		
7	Switching Speed:	Rise Time: 10 ns Max. Fall Time: 10 ns Max. Speed ON: 25 ns Max: Speed OFF: 40 ns Max.	3.8 ns		
			7.3 ns		
			18.5 ns		
			37.4 ns		
			See Plots		
8	Survival Power	20 WATTS PEAK (0.5 µs PW, 0.1% Duty Cycle)	Pass 20 Watts Peak See Plot		
9	Control:	TTL Logic "0" = On TTL Logic "1" = Off	Pass		
10	DC Supply:	+5 VDC @ 75 mA Max. -12 VDC @ 30 mA Max	+5 VDC @ 25 mA -12 VDC @ 17 mA		

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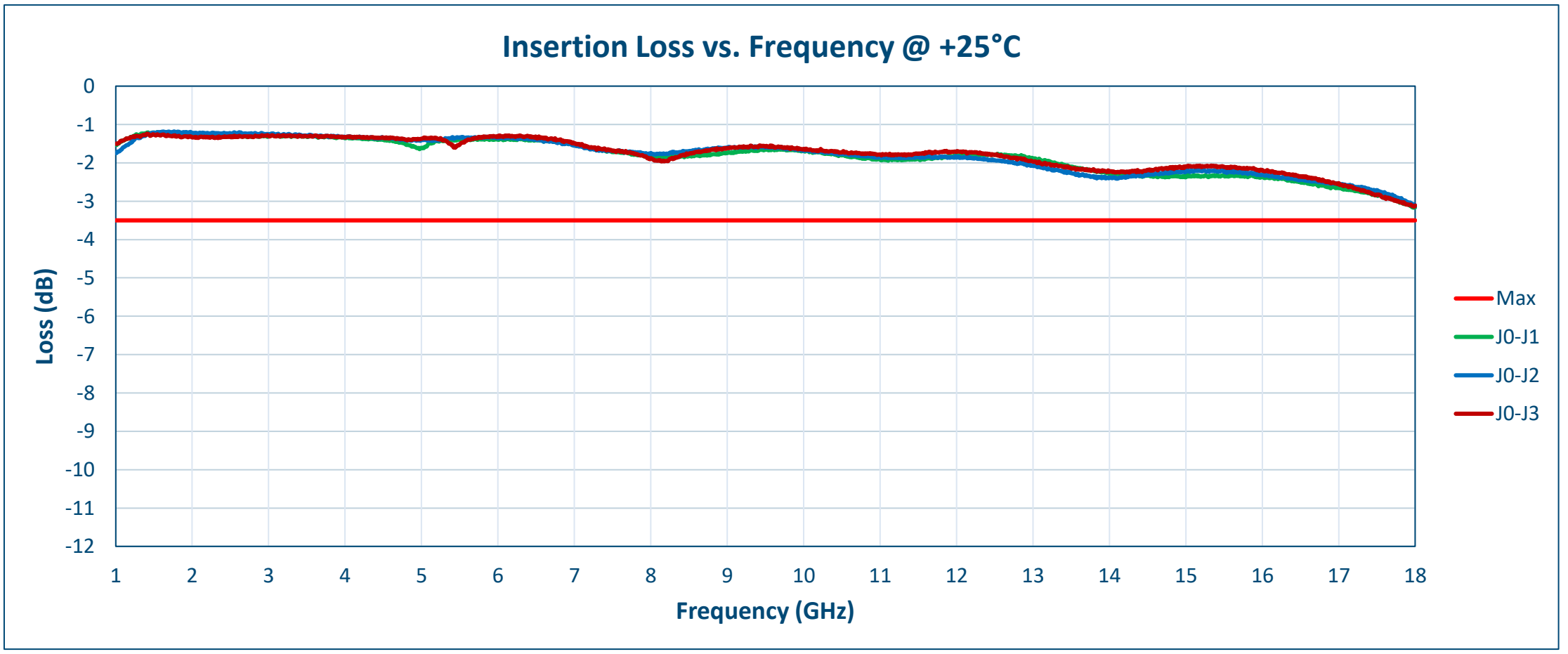

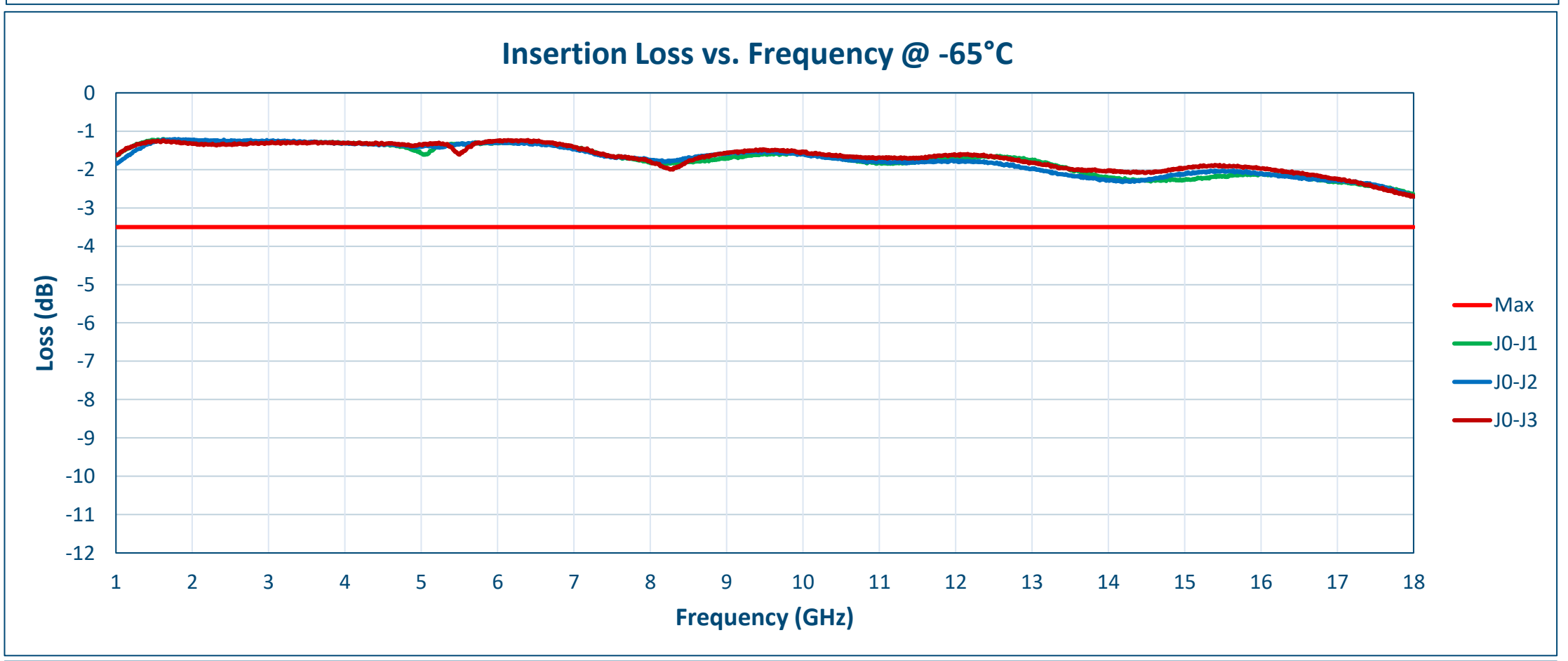

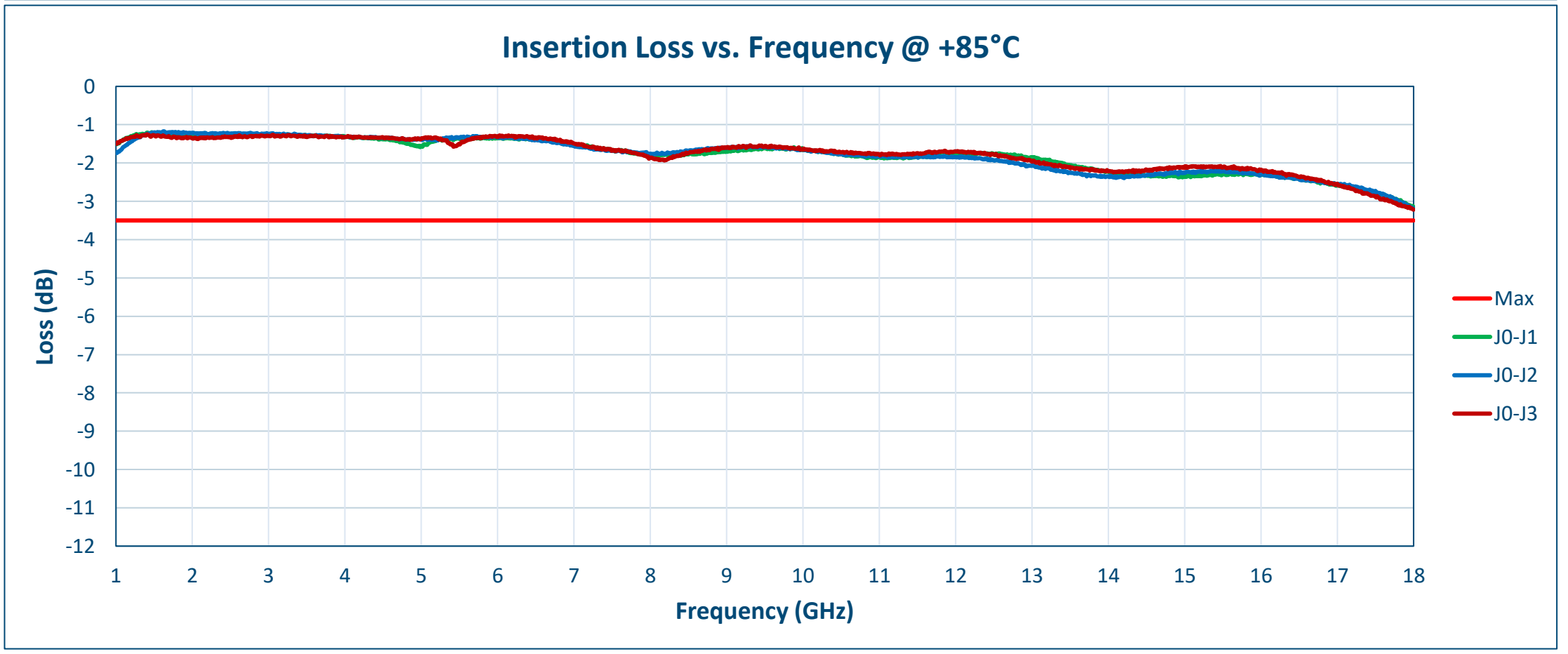

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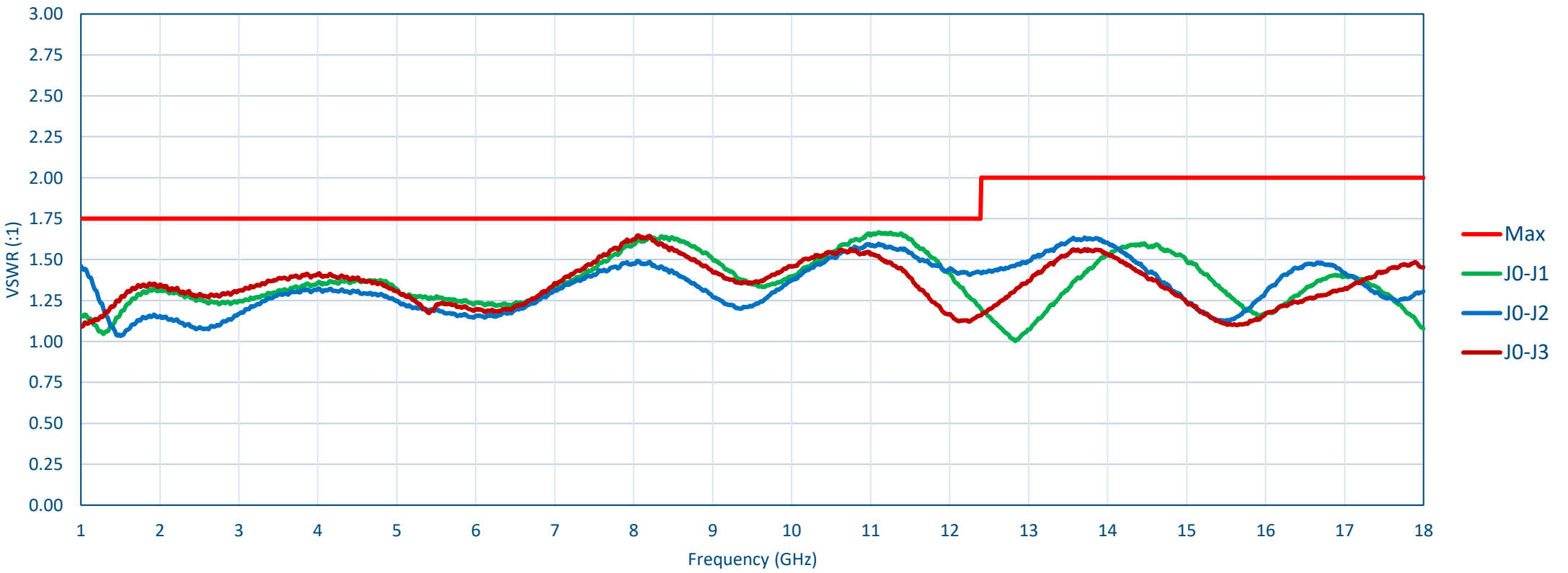
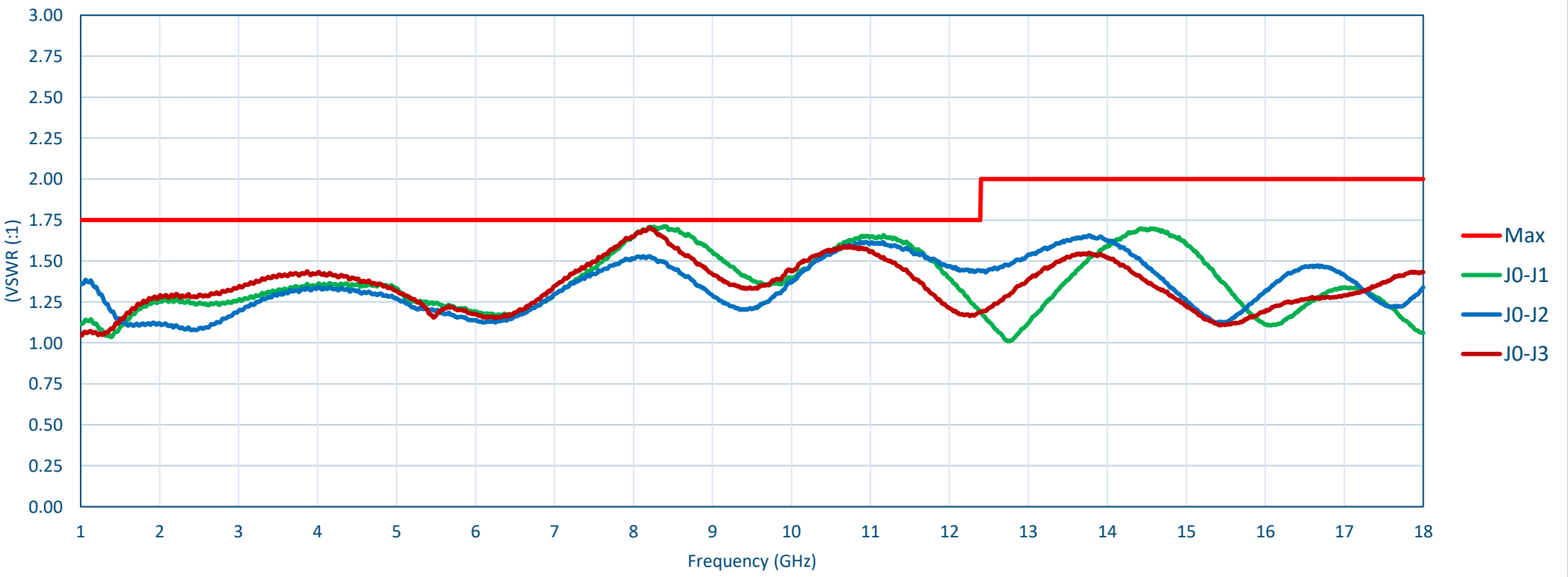
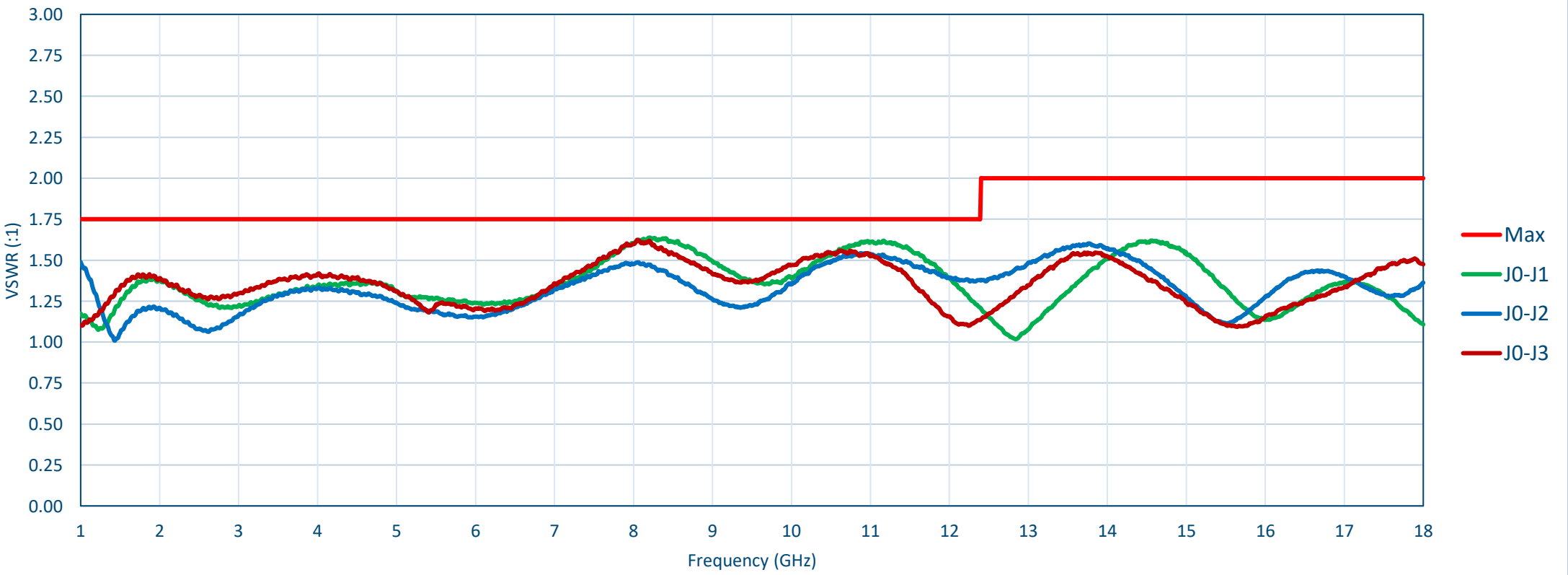
Input VSWR vs. Frequency @ +25°C



Input VSWR vs. Frequency @ -65°C



Input VSWR vs. Frequency @ +85°C



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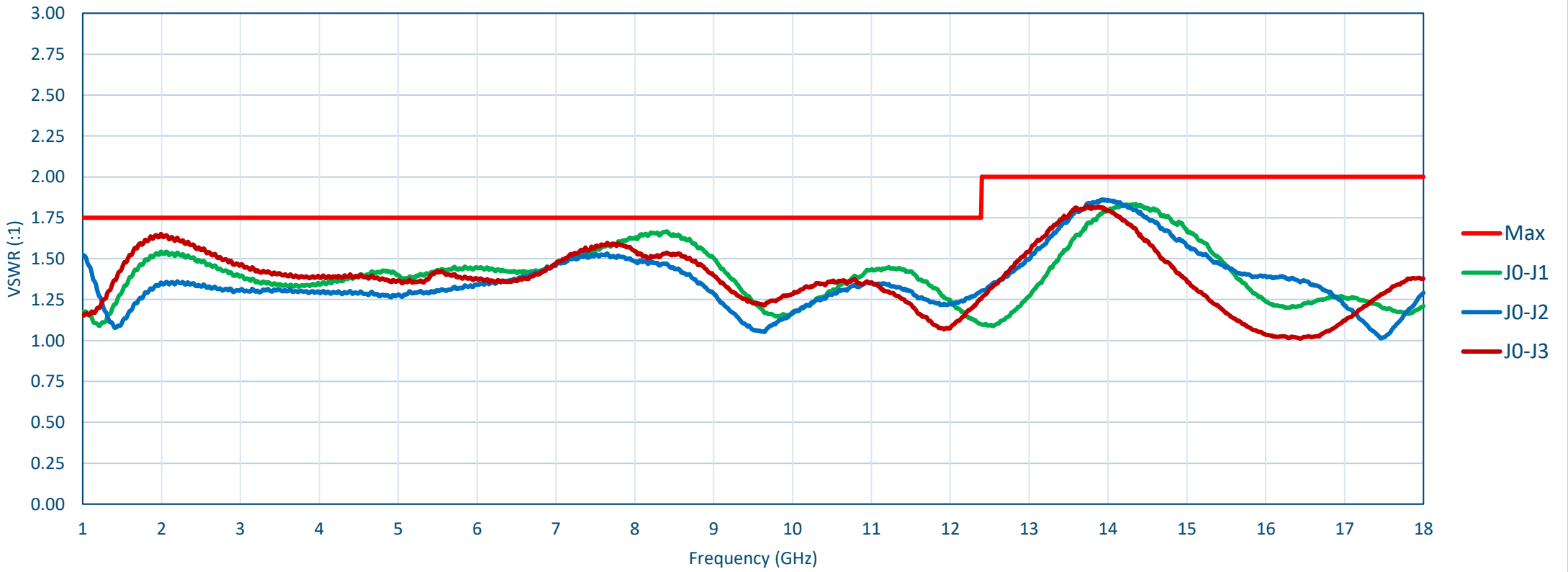
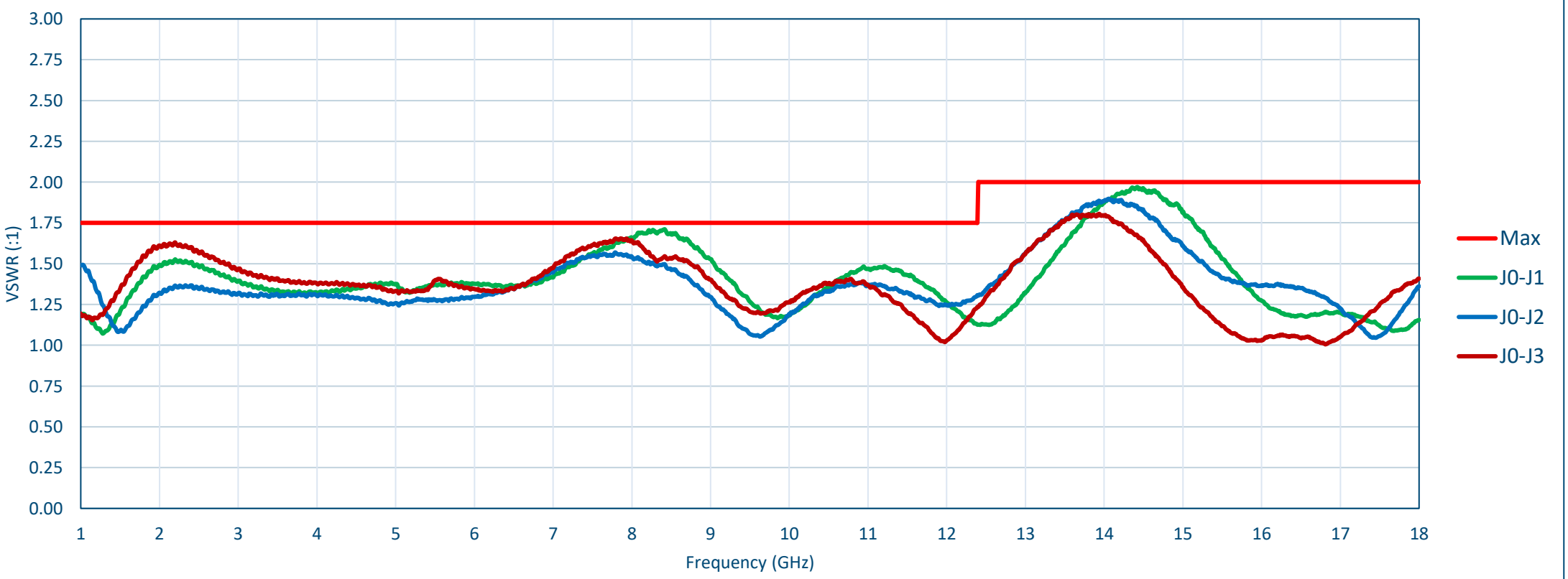
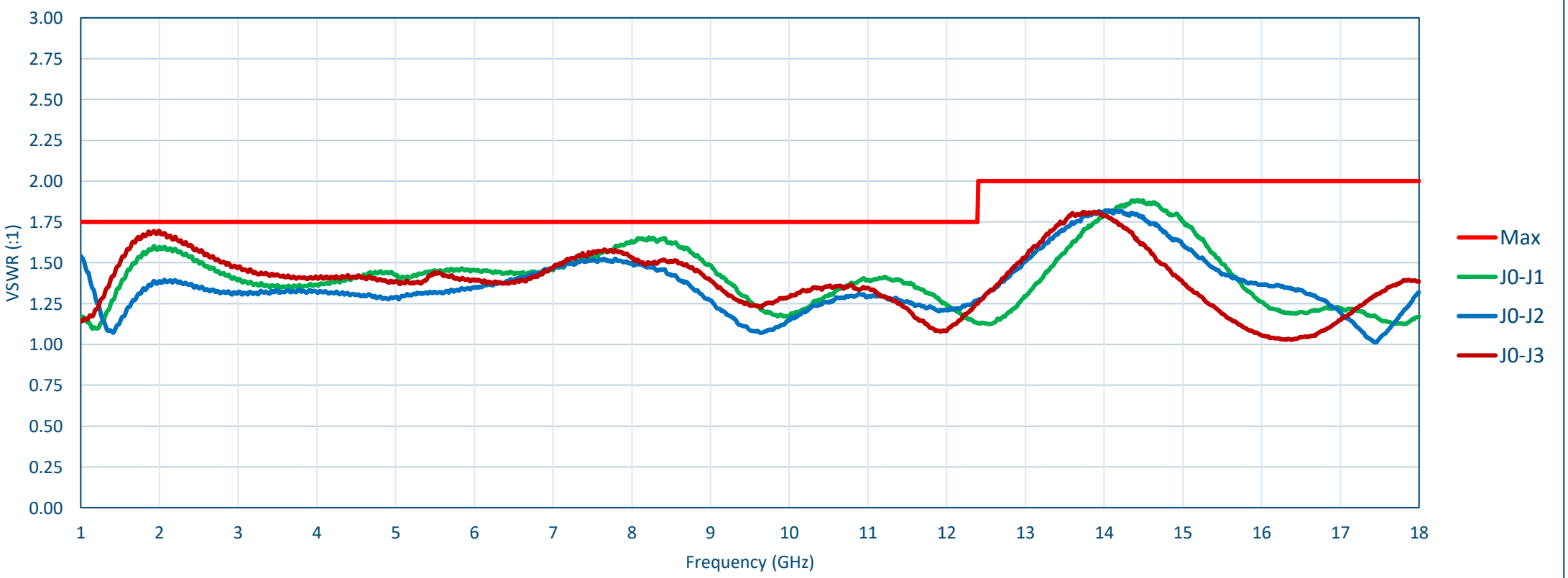
Output VSWR vs. Frequency @ +25°C



Output VSWR vs. Frequency @ -65°C



Output VSWR vs. Frequency @ +85°C



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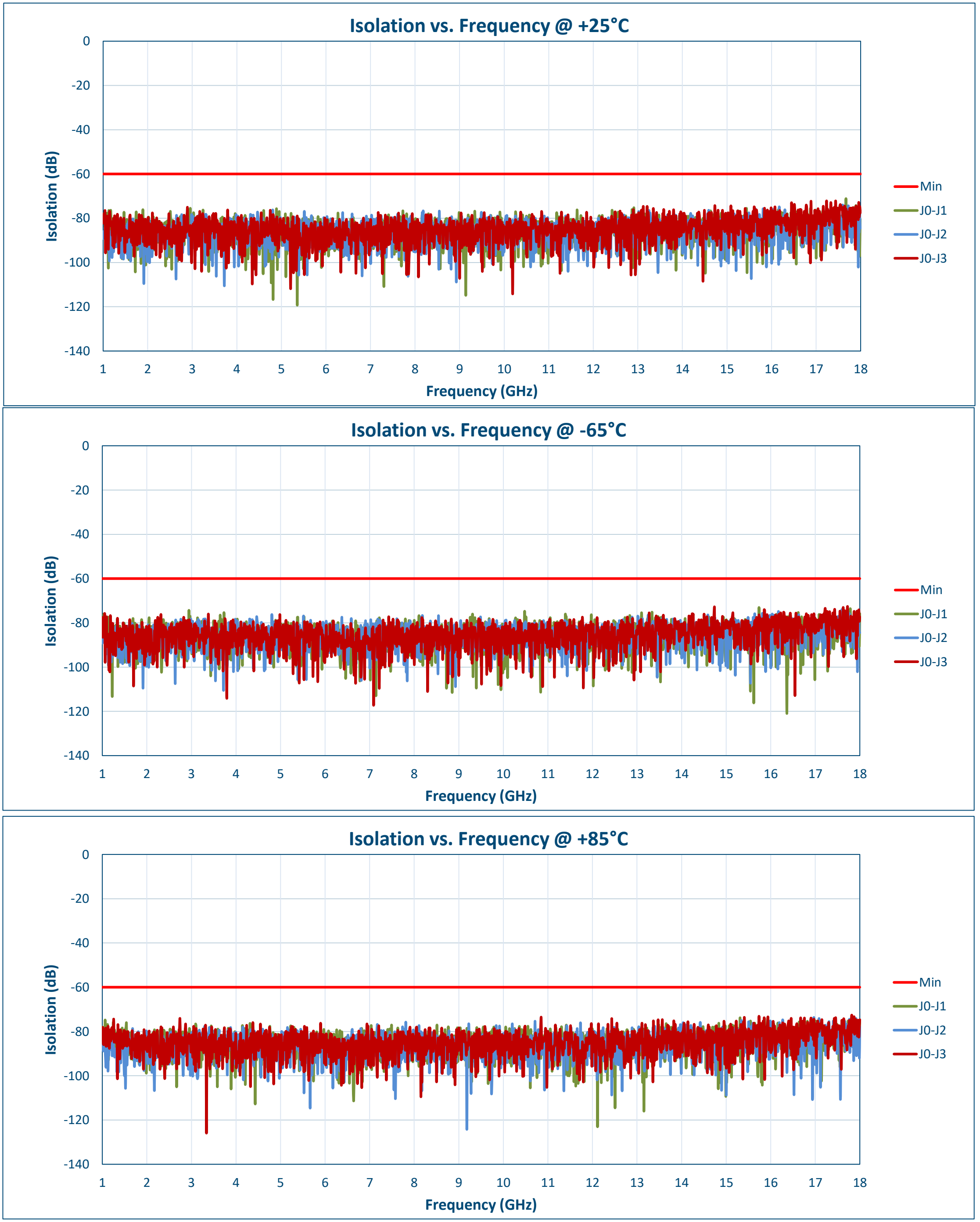

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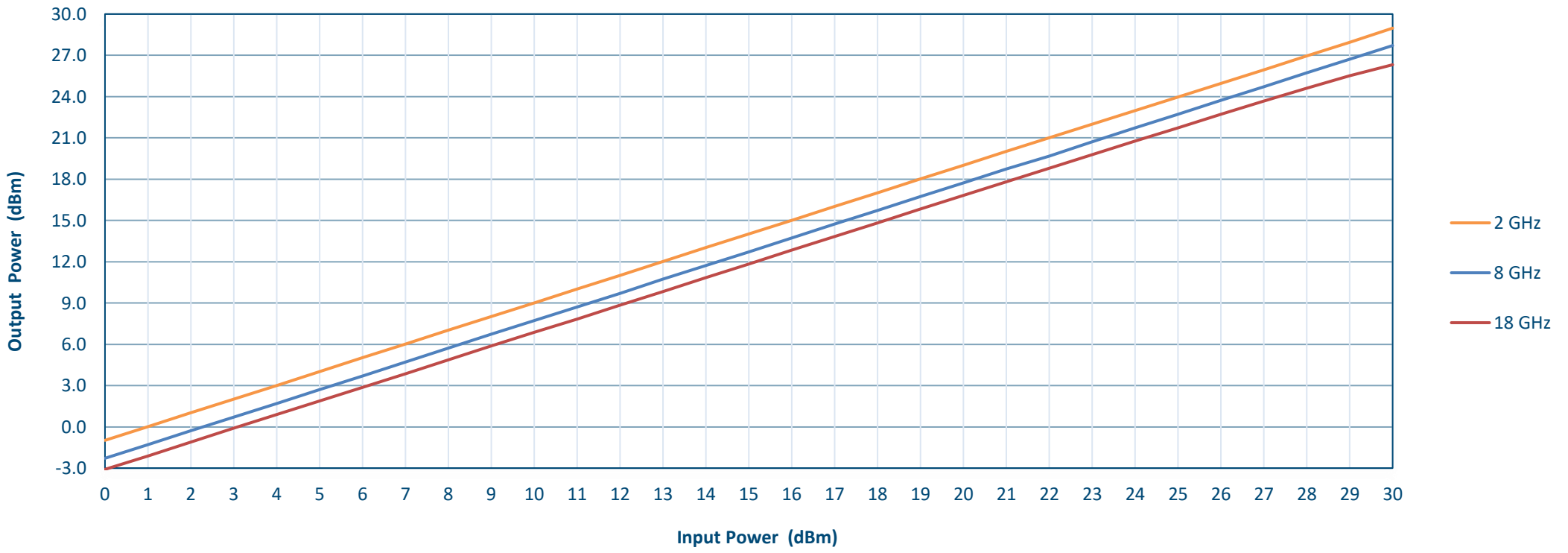
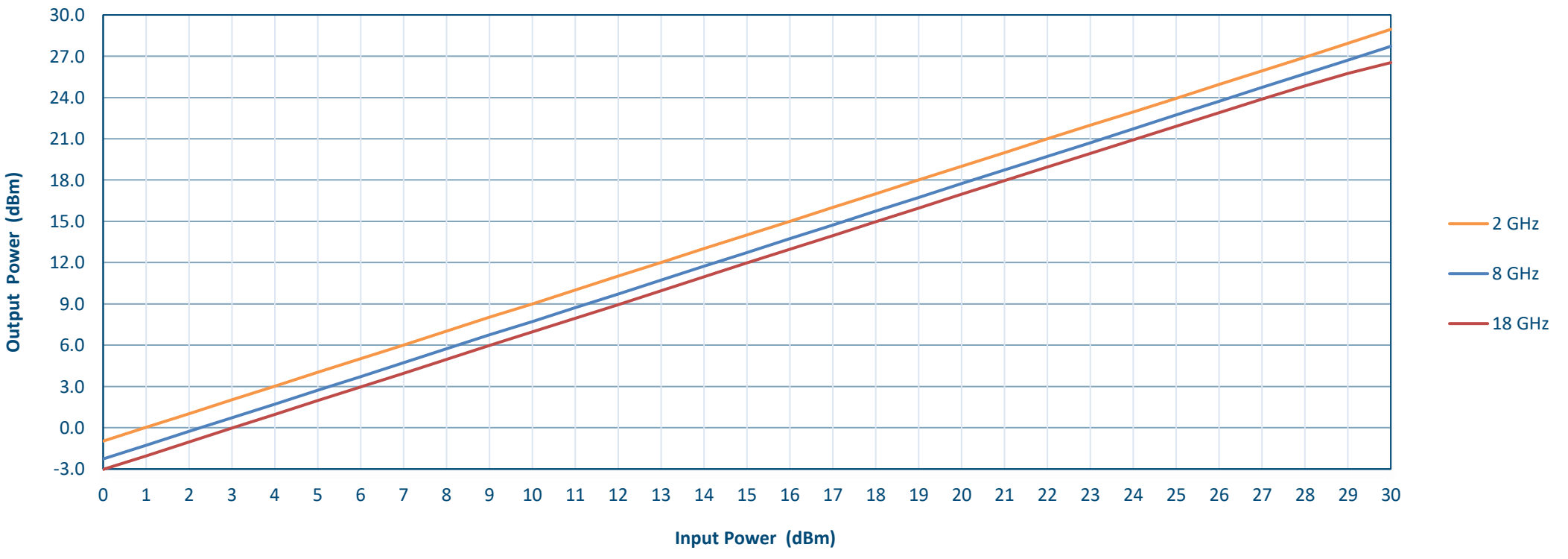
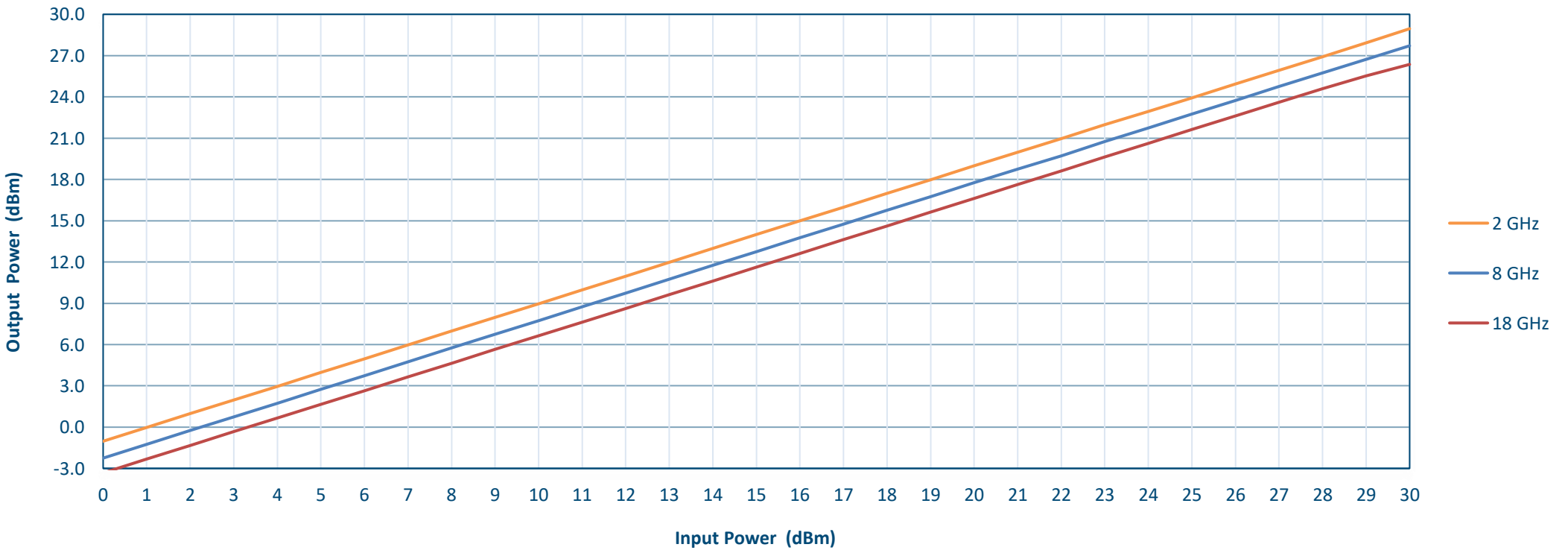
High Power Test @ +25° C



High Power Test @ -65° C



High Power Test @ +85° C



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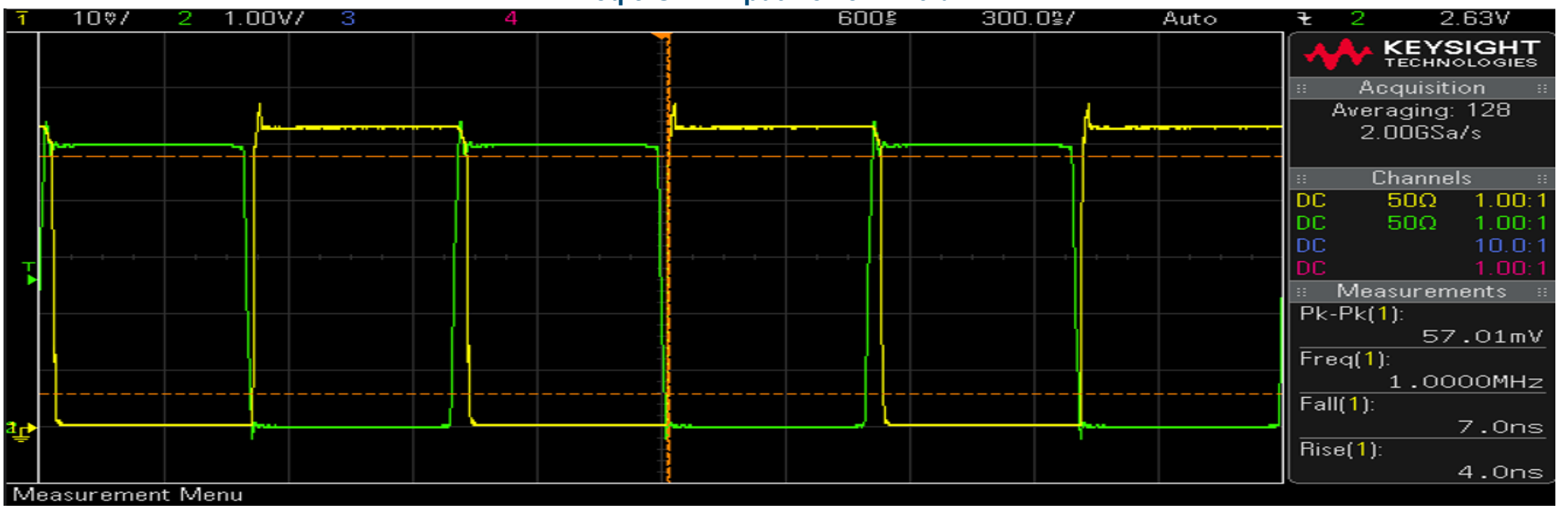
FULL PULSE

PRF 1 MHz, Duty Cycle 50%

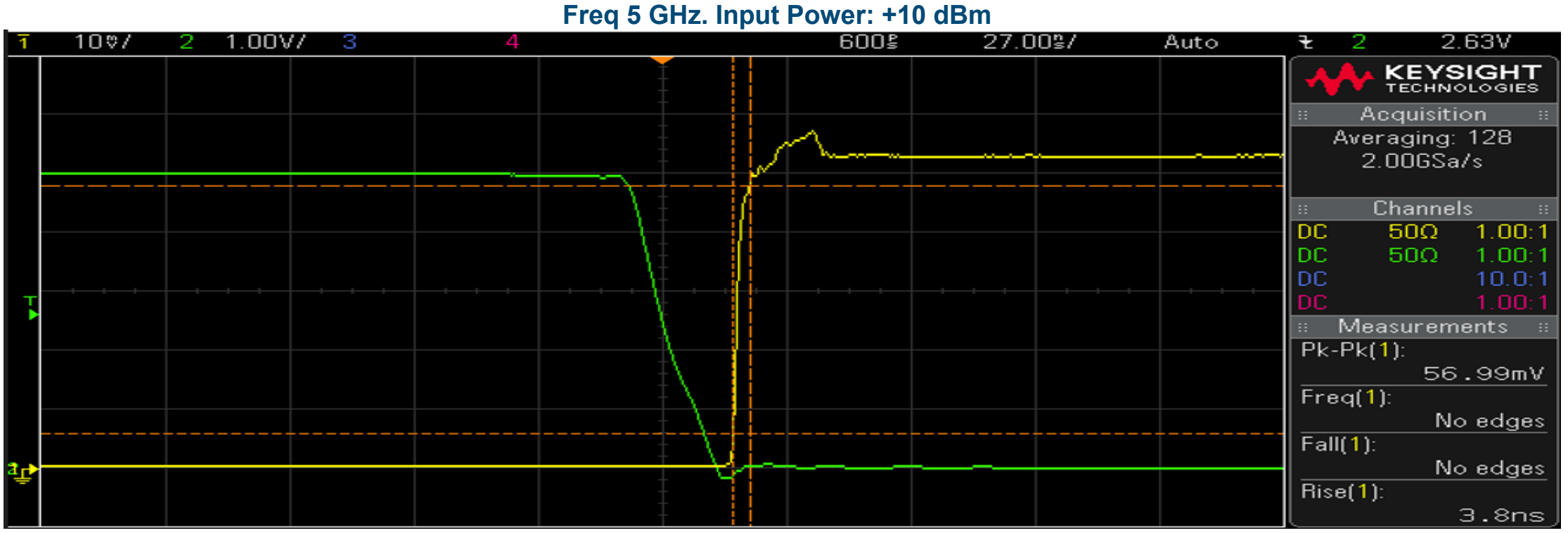
Freq 5 GHz. Input Power: +10 dBm



RISE TIME

PRF 1 MHz, Duty Cycle 50%

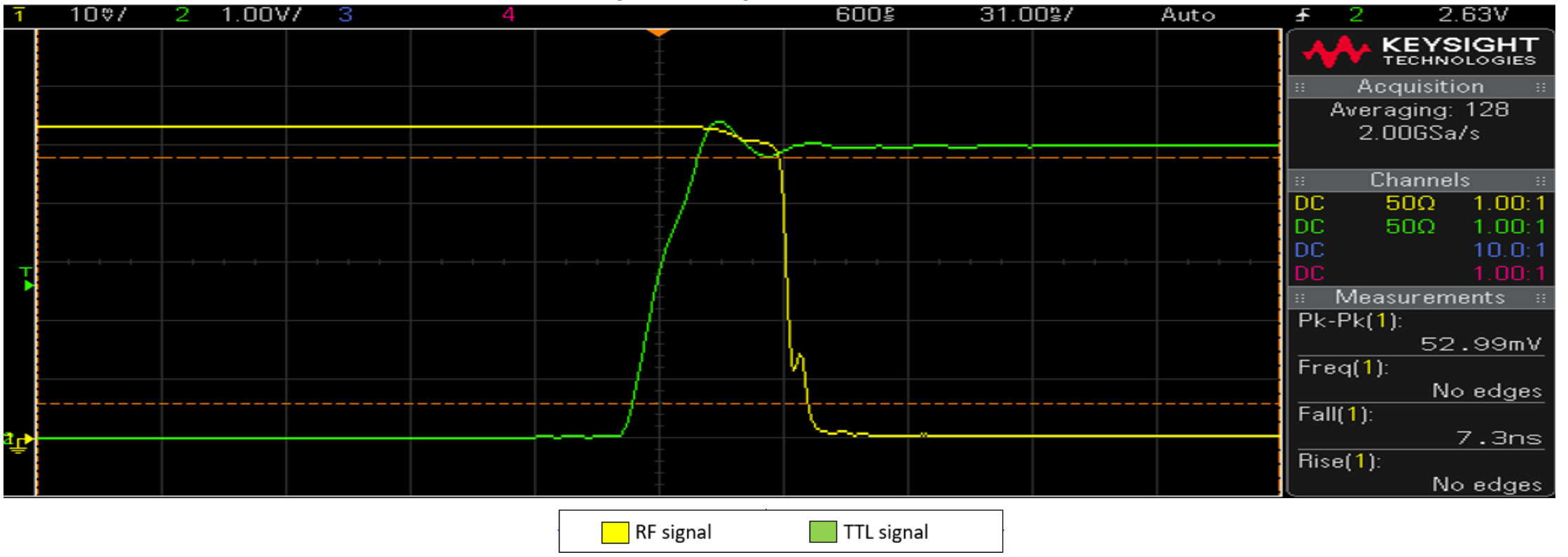
Freq 5 GHz. Input Power: +10 dBm



FALL TIME

PRF 1 MHz, Duty Cycle 50%

Freq 5 GHz. Input Power: +10 dBm



RF signal TTL signal

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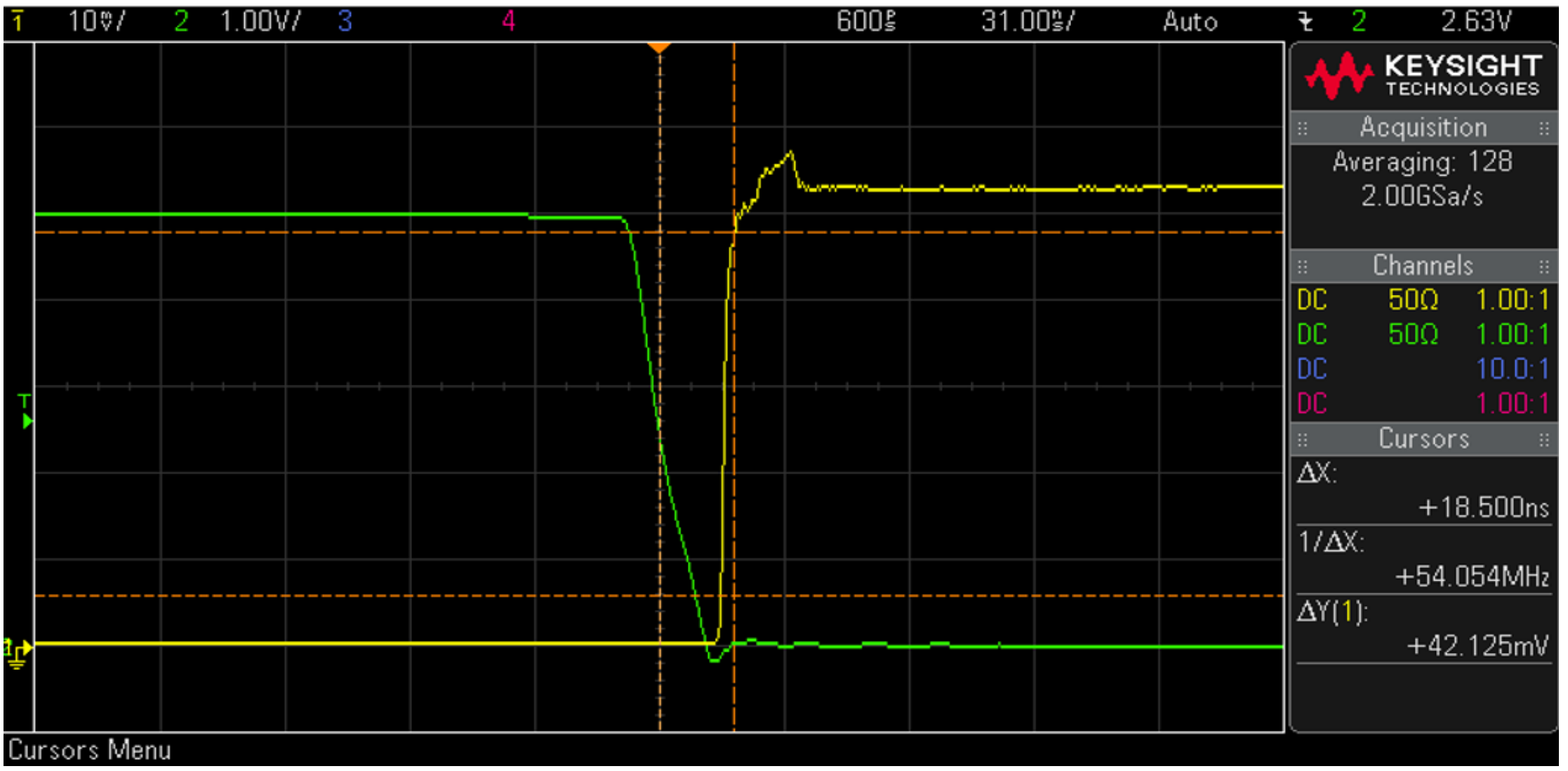
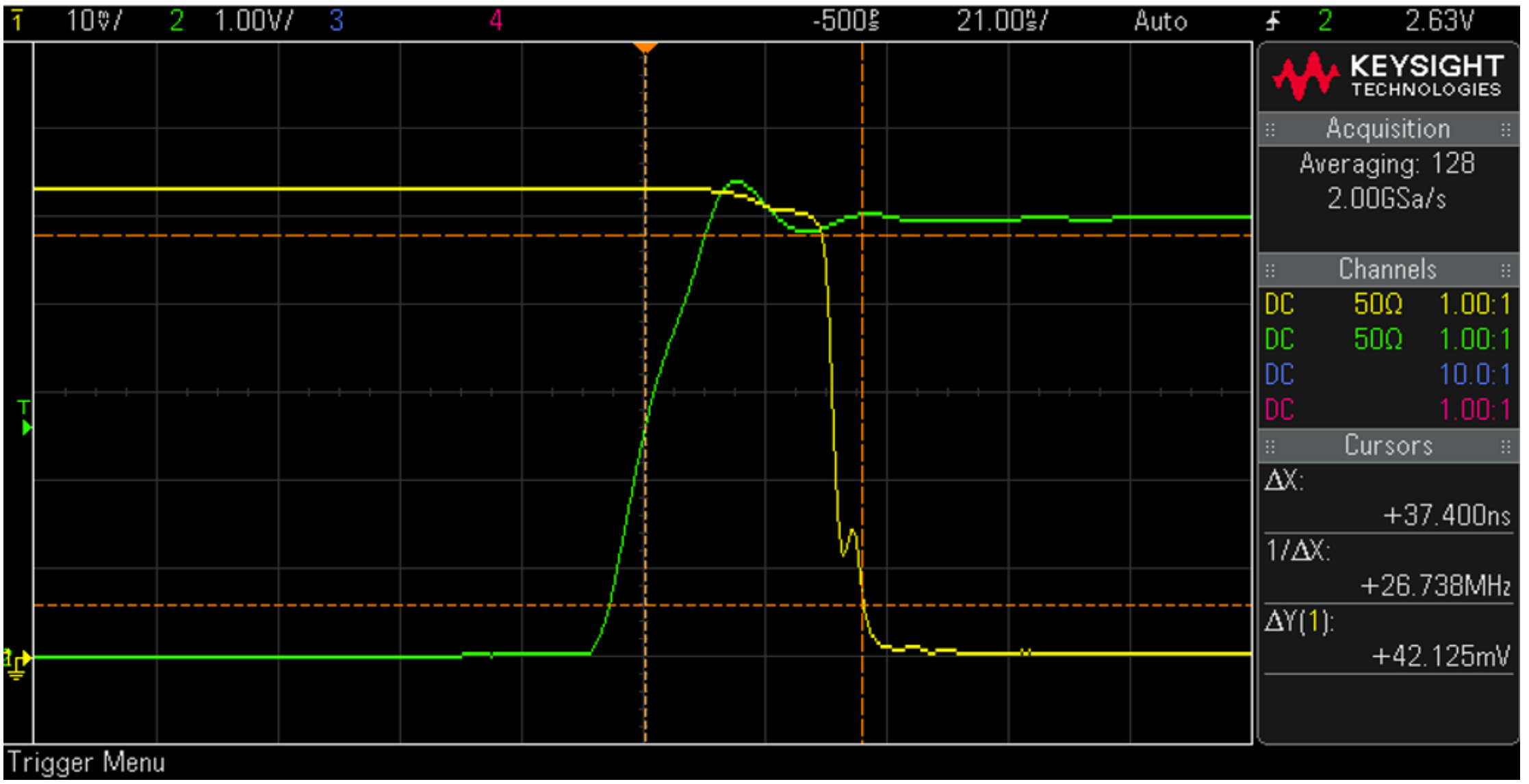
SPEED ON

PRF 1 MHz, Duty Cycle 50%
Freq 5 GHz. Input Power: +10 dBm



SPEED OFF

PRF 1 MHz, Duty Cycle 50%
Freq 5 GHz. Input Power: +10 dBm



RF signal TTL signal

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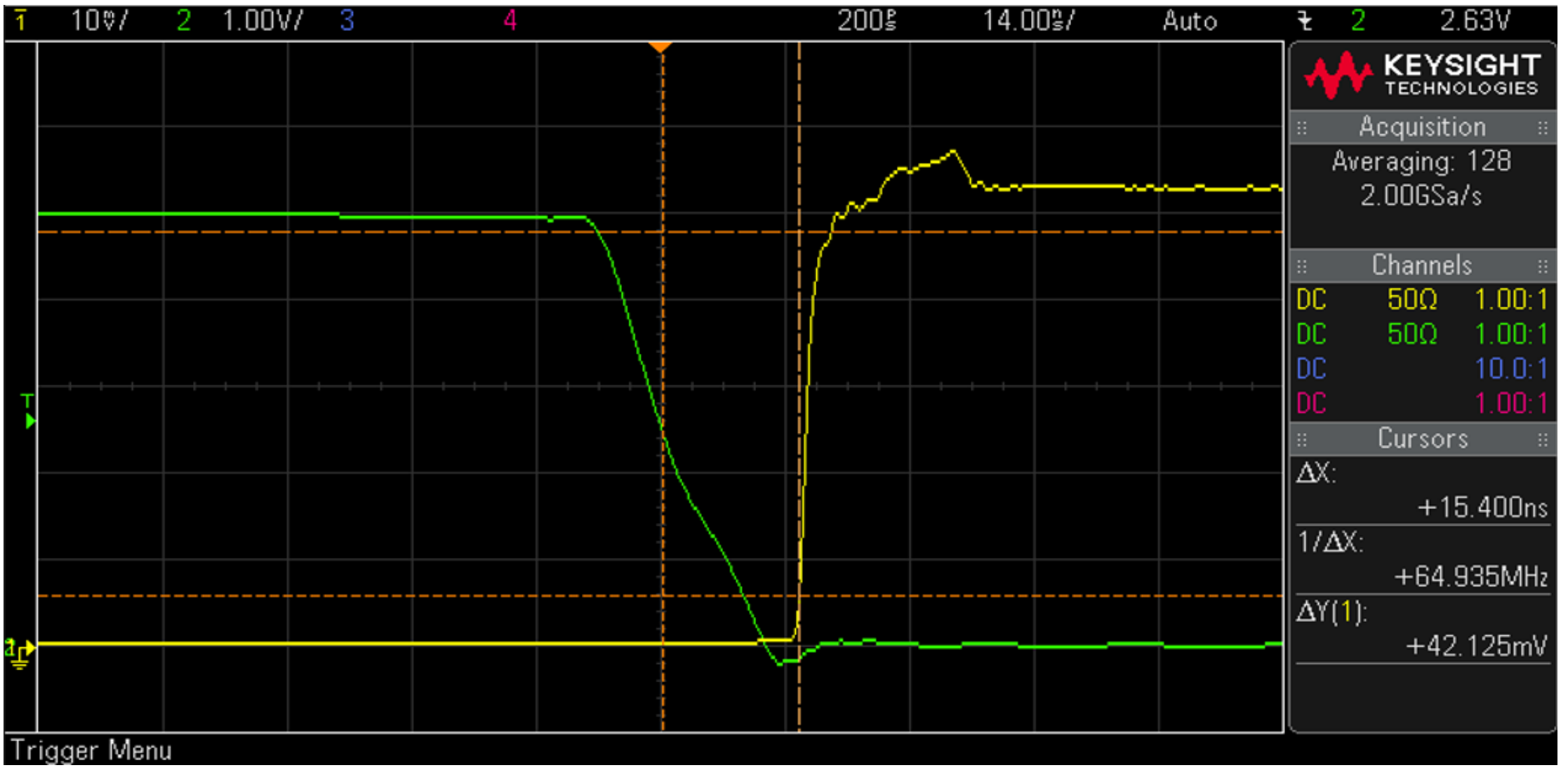
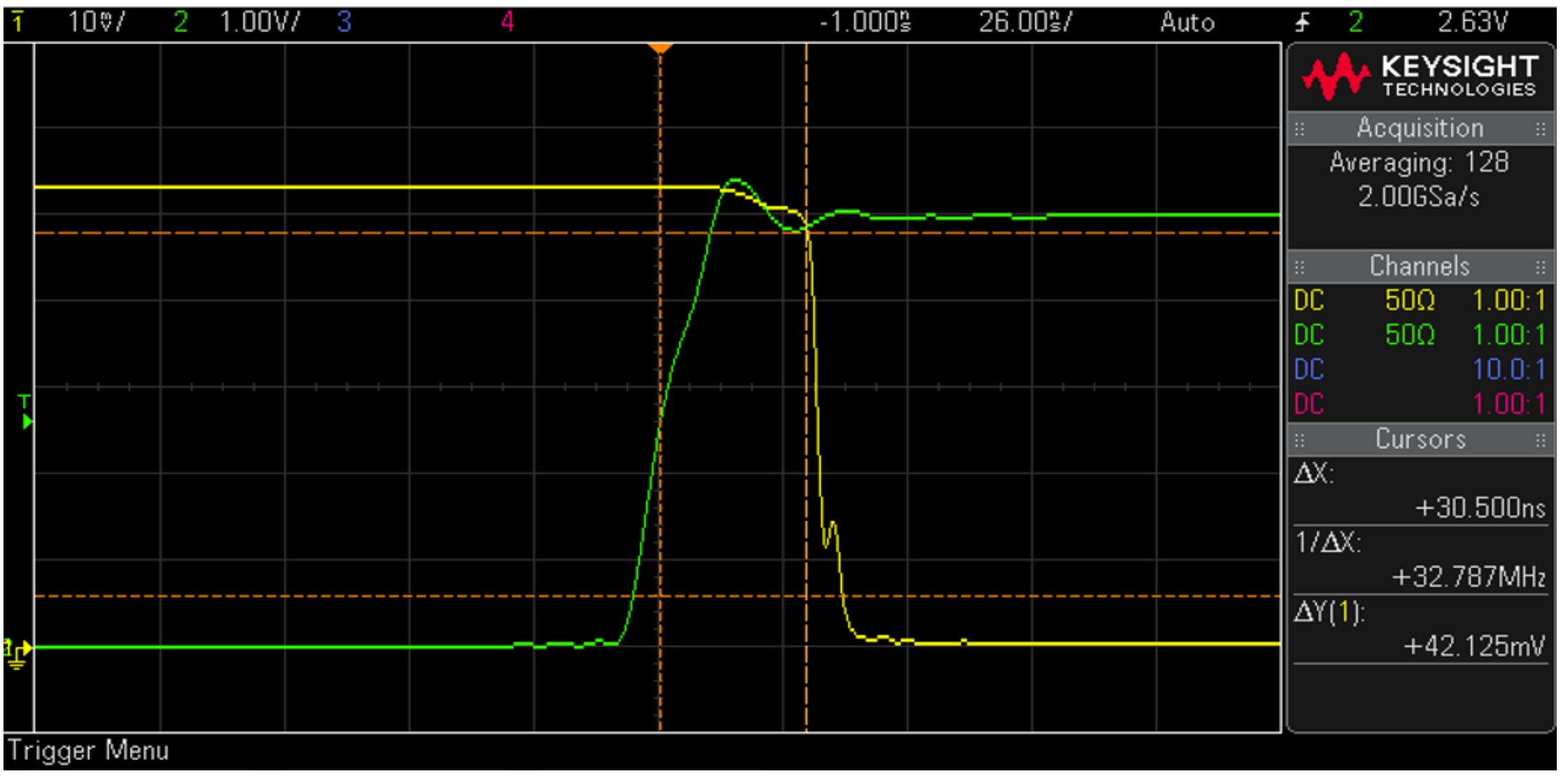
DELAY ON

PRF 1 MHz, Duty Cycle 50%
Freq 5 GHz. Input Power: +10 dBm



DELAY OFF

PRF 1 MHz, Duty Cycle 50%
Freq 5 GHz. Input Power: +10 dBm



RF signal TTL signal

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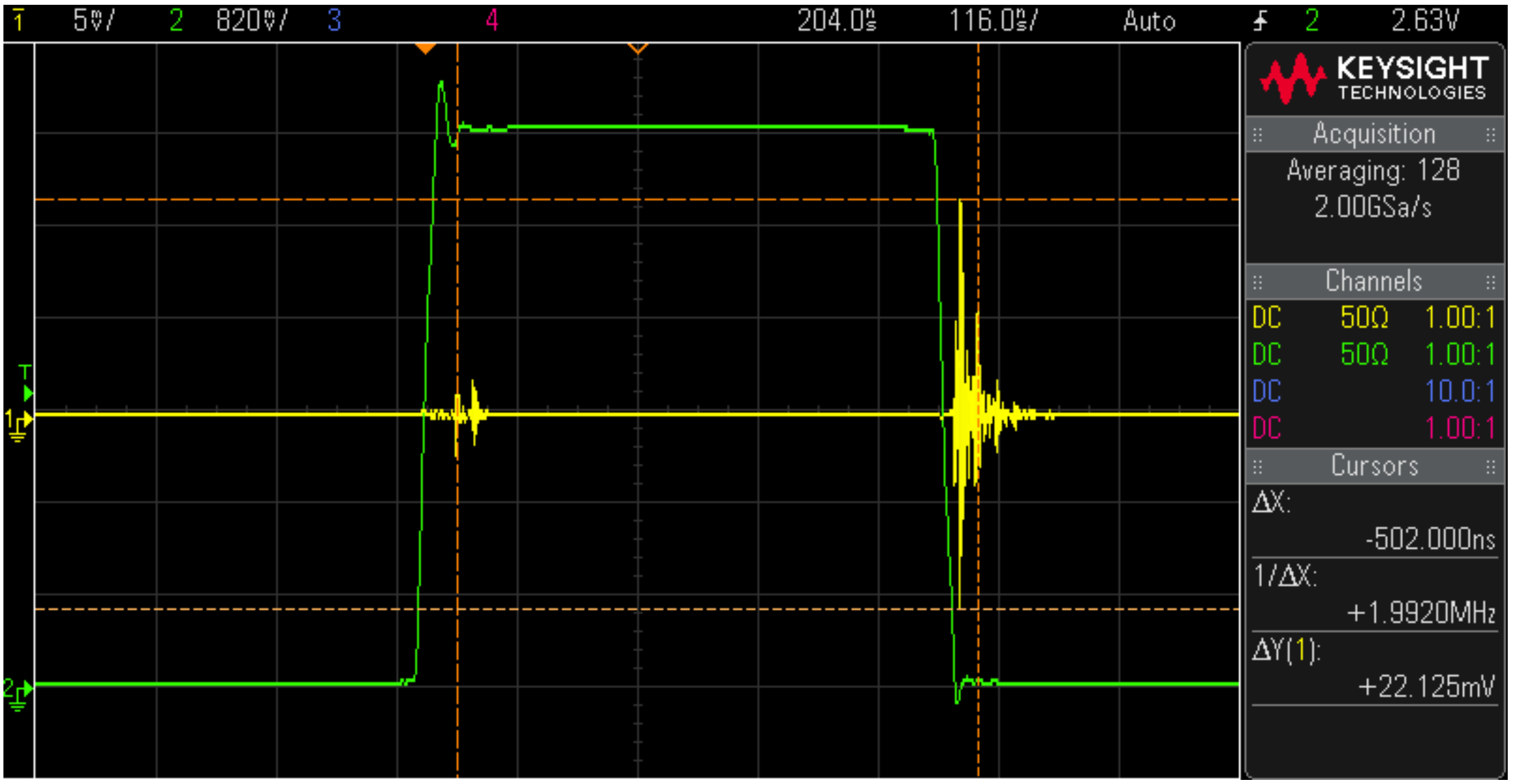
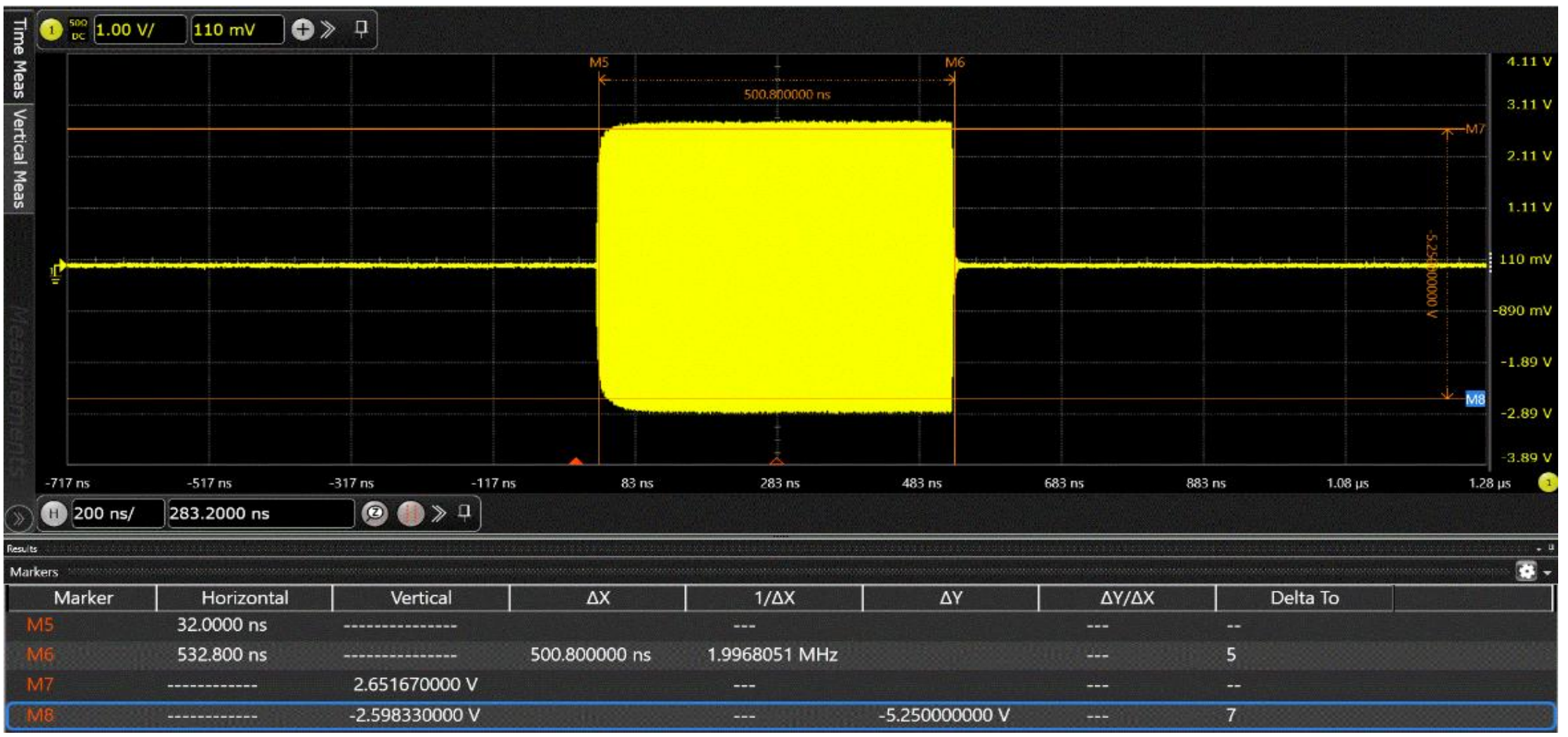
VIDEO TRANSIENTS
RATE TTL 1 MHz Duty Cycle 50%



PW 0.5 µs Duty Cycle 0.1% - Freq 2 GHz. Input Power: +43 dBm (20 Watts)



Marker	Horizontal	Vertical	ΔX	1/ΔX	ΔY	ΔY/ΔX	Delta To
M5	32.0000 ns	----------		---		---	--
M6	532.800 ns	----------	500.800000 ns	1.9968051 MHz		---	5
M7	----------	2.651670000 V		---		---	--
M8	----------	-2.598330000 V		---	-5.250000000 V	---	7

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