



**Typical Characteristics
on
DTA-1G18G-60-CD-2**

PMI MODEL NUMBER DTA-1G18G-60-CD-2 IS A NON-REFLECTIVE 10 BIT PROGRAMMABLE 60 DB PIN DIODE ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.06 DB OVER THE FREQUENCY RANGE OF 1.0 TO 18.0 GHZ.



January 24, 2017
Designed By: PMI Engineering
Tested and Reported By: Kevin Mansfield



Typical Characteristics on DTA-1G18G-60-CD-2

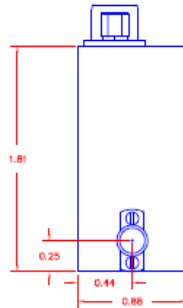
DESCRIPTION:

PMI MODEL NUMBER DTA-1G18G-60-CD-2 IS A NON-REFLECTIVE 10 BIT PROGRAMMABLE 60 dB PIN DIODE ATTENUATOR WITH STEP RESOLUTION AS LOW AS 0.06 dB OVER THE FREQUENCY RANGE OF 1.0 TO 18.0 GHz.

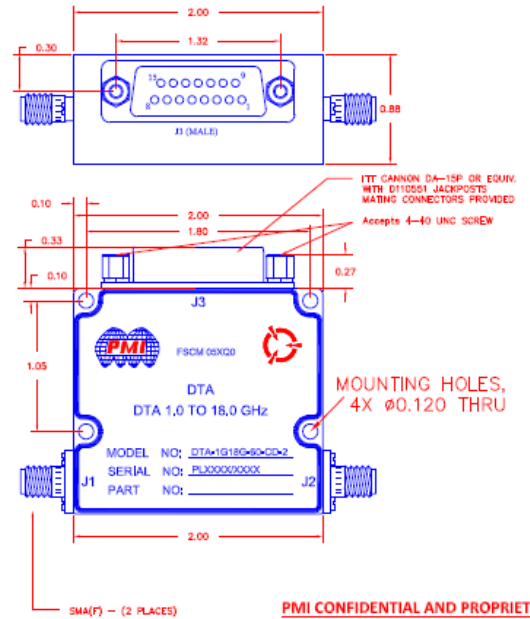
SPECIFICATIONS:

- FREQUENCY: _____ 1 GHz TO 18.0 GHz
- MEAN ATTENUATION RANGE _____ 60dB
- INSERTION LOSS _____ 4.8 dB MAX
- VSWR: _____ 2.0 :1 MAX
- FLATNESS UP TO
 - 20 dB _____ ±1.0 dB TYP
 - 40 dB _____ ±1.25 dB TYP
 - 60 dB _____ ±3.0 dB TYP
- ACCURACY OF ATTENUATION
 - 0 dB TO 20 dB _____ ±1.0 dB TYP
 - 20 dB TO 40 dB _____ ±1.5 dB TYP
 - 40 dB TO 60 dB _____ ±2.0 dB TYP
- MINIMUM ATTENUATION STEP _____ 0.06 dB
- SURVIVAL POWER: _____ 1W Average from -65C to +25C
- SWITCHING TIME
 - ON TIME _____ 1.0 uSEC MAX
 - OFF TIME _____ 0.5 uSEC MAX
- DC POWER SUPPLY _____ +15V @ 150mA MAX
 _____ -15V @ 0 mA (Not Internally connected)
- CONNECTORS _____ 2 SMA & 15 PIN D-SUB
 Shipped with Mating D-SUB
- WEIGHT _____ 3.0 oz (85 gm) Approximate
- FINISH _____ PAINTED GREY
- LOGIC INPUT
 - LOGIC "0" (BIT OFF) _____ -0.3 to +0.8V
 - LOGIC "1" (BIT ON) _____ +2.0 to +5.0V

PIN NO:	J3 PIN FUNCTIONS
1	GND
2	Not Connected
3	0.13 dB
4	GND
5	0.25 dB
6	0.5 dB
7	1.0 dB
8	2.0 dB
9	4.0 dB
10	8.0 dB
11	16.0 dB
12	32.0 dB (MSB)
13	+V
14	-V (Not Internally connected)
15	0.06 dB (LSB)



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	10/12/13	
	A1	ECN # 16-0106	08/23/16	
	A2	ECN # 17-0005	01/13/17	
	A3	ECN # 23-0101	06/01/23	



ENVIRONMENTAL RATINGS:

- TEMPERATURE: _____ -50°C TO +100°C (OPERATING)
 _____ -65°C TO +125°C (STORAGE)
- HUMIDITY: _____ MIL-STD-202F, METHOD 103B COND. B
- SHOCK: _____ MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: _____ MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: _____ MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: _____ MIL-STD-202F, METHOD 107

NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ALL DIMENSIONS ARE IN INCHES
 TOLERANCES:
 X.XX ±0.020
 X.XXX ±0.005

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 E-MAIL: sales@pmi-rf.com
 ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE			REV.
DRAWN: <i>JMS</i>		10/12/13	PRODUCT FEATURE			
CHECKED:			DTA-1G18G-60-CD-2			
ISSUED:			SEE PFCM NO. A 05XQ0	DWG NO. 27021591	REV. A3	
SCALE: N:S			SHEET 1 OF 1			

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 email: sales@pmi-rf.com



Typical Characteristics on DTA-1G18G-60-CD-2

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range:	1.0 GHz – 18.0 GHz	1.0 GHz – 18.0 GHz See Plots	
2	Insertion Loss:	4.8 dB Max.	4.4 dB See Plot	
3	VSWR:	2.0:1 Max.	1.5:1 See Plots	
4	Flatness up to 20dB:	± 1.0 dB Typ.	±0.41 dB See Plot	
	Flatness up to 40dB:	± 1.25 dB Typ.	±1.21 dB See Plot	
	Flatness up to 60dB:	± 3.0 dB Typ.	±2.80 dB See Plot	
5	Accuracy of Attenuation 0 to 20 dB:	± 1.0 dB Typ.	±0.20 dB See Plot	
	Accuracy of Attenuation 20 to 40 dB:	± 1.5 dB Typ.	±0.16 dB See Plot	
	Accuracy of Attenuation 40 to 60 dB:	± 2.0 dB Typ.	±0.81 dB See Plot	
6	Switching Speed:	ON: 1.0 us MAX	0.31 us See Plot	
		OFF: 0.5 us MAX	0.06 us See Plot	
7	DC Supply:	+15VDC @ 100 mA	+15 VDC @ 100 mA	
		-15VDC @ 100 mA	-15 VDC @ 52 mA	



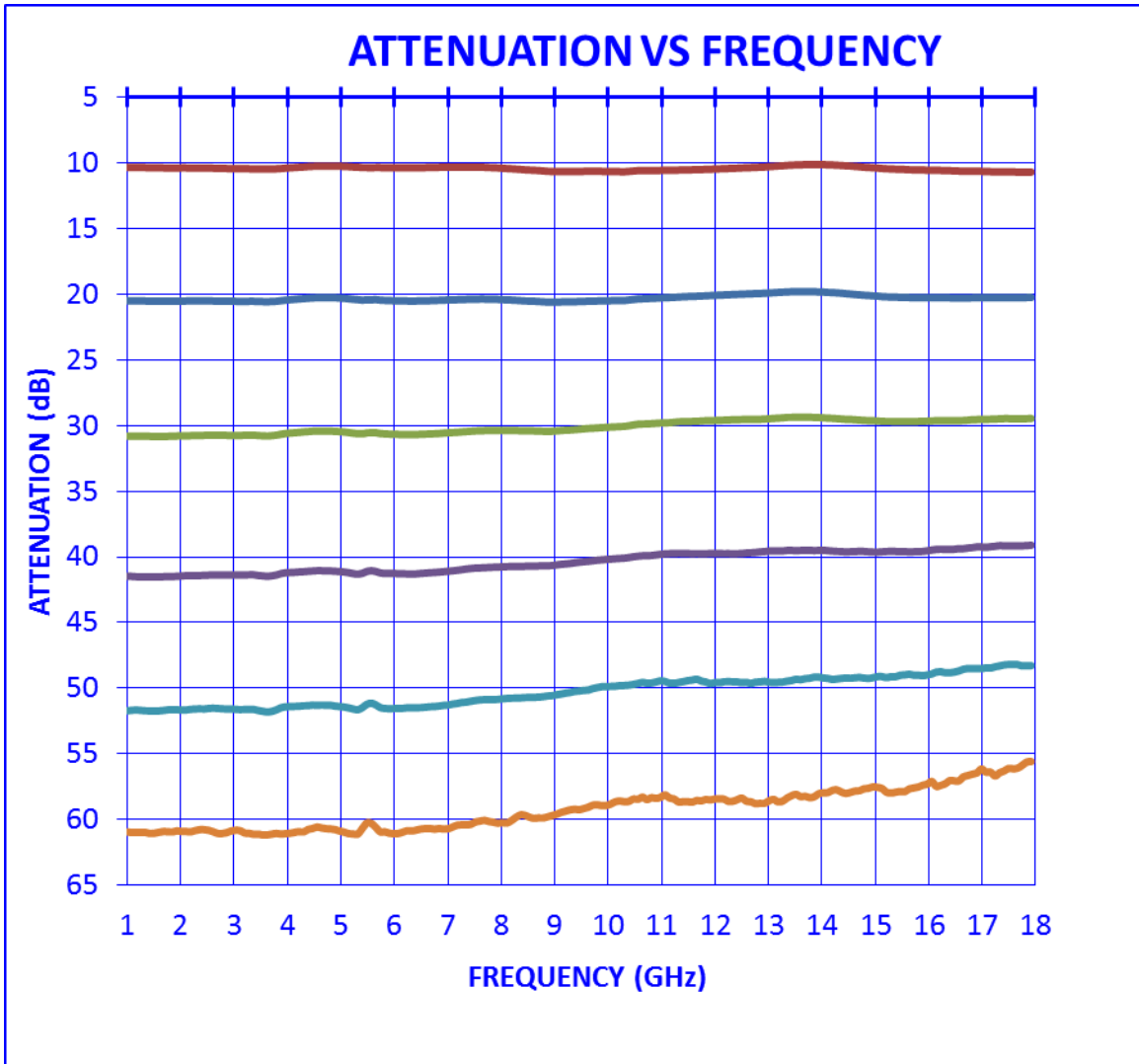
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Logic Table & Measured Values

B9	B8	B7	B6	B5	B4	B3	B2	B1	B0	Programmed Value	Measured Value	
0	0	0	0	0	0	0	0	0	1	0.06 dB	0.02 dB	
0	0	0	0	0	0	0	0	1	0	0.13 dB	0.05 dB	
0	0	0	0	0	0	0	1	0	0	0.25 dB	0.11 dB	
0	0	0	0	0	0	1	0	0	0	0.5 dB	0.24 dB	
0	0	0	0	0	1	0	0	0	0	1 dB	0.61 dB	
0	0	0	0	1	0	0	0	0	0	2 dB	1.71 dB	
0	0	0	1	0	0	0	0	0	0	4 dB	4.09 dB	
0	0	1	0	0	0	0	0	0	0	8 dB	8.30 dB	
0	1	0	0	0	0	0	0	0	0	16 dB	16.37 dB	
1	0	0	0	0	0	0	0	0	0	32 dB	32.13 dB	
0	0	0	1	0	1	0	0	0	0	5 dB	5.17 dB	Flatness
0	0	1	0	1	0	0	0	0	0	10 dB	10.40 dB	
0	0	1	1	1	1	0	0	0	0	15 dB	15.41 dB	
0	1	0	1	0	0	0	0	0	0	20 dB	20.19 dB	± 0.41 dB
0	1	1	0	0	1	0	0	0	0	25 dB	25.04 dB	
0	1	1	1	1	0	0	0	0	0	30 dB	30.09 dB	
1	0	0	0	1	1	0	0	0	0	35 dB	35.25 dB	
1	0	1	0	0	0	0	0	0	0	40 dB	40.32 dB	± 1.21 dB
1	0	1	1	0	1	0	0	0	0	45 dB	45.18 dB	
1	1	0	0	1	0	0	0	0	0	50dB	50.00 dB	
1	1	0	1	1	1	0	0	0	0	55 dB	55.29 dB	
1	1	1	1	0	0	0	0	0	0	60 dB	58.39 dB	± 2.80 dB
1	1	1	1	1	1	1	1	1	1	63.94 dB	61.37 dB	



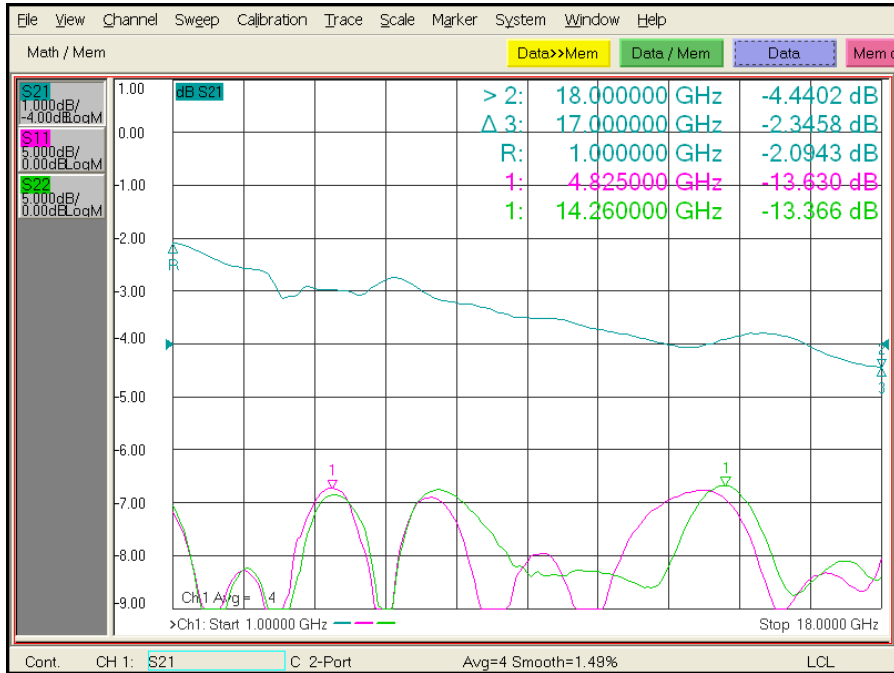
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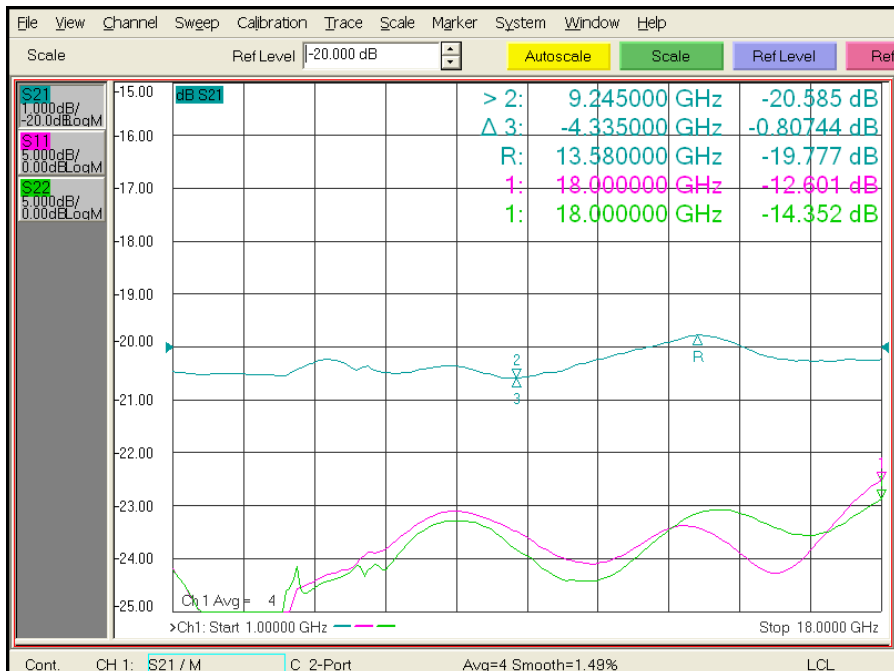


Typical Characteristics on DTA-1G18G-60-CD-2

Insertion Loss and VSWR @ 0dB Attenuation



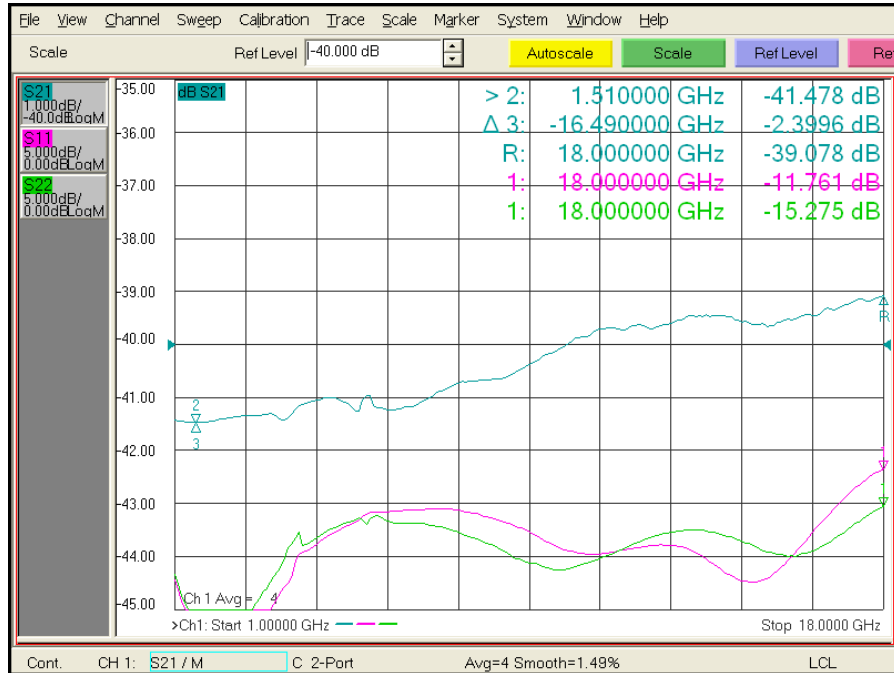
20dB Attenuation



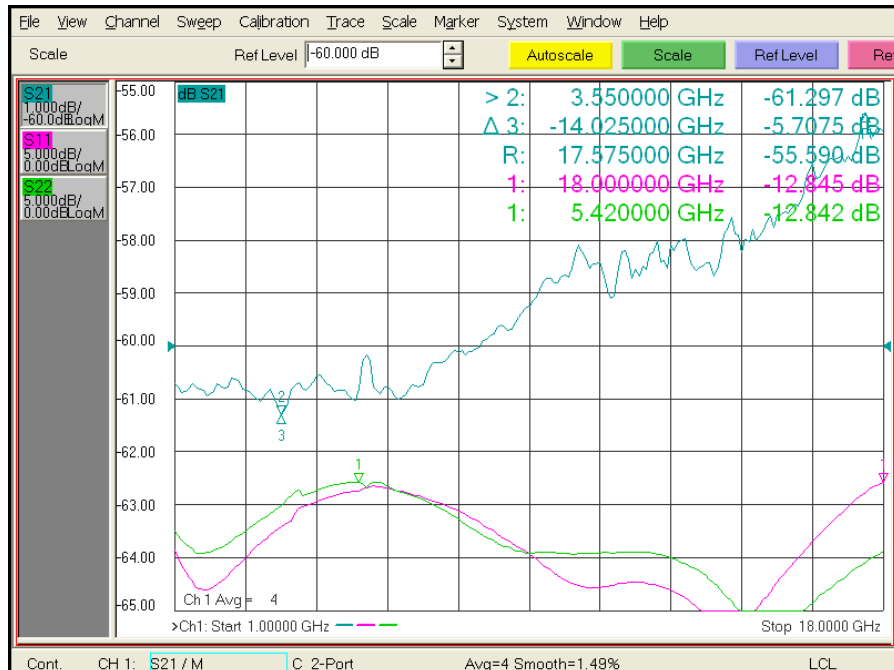


Typical Characteristics on DTA-1G18G-60-CD-2

40dB Attenuation



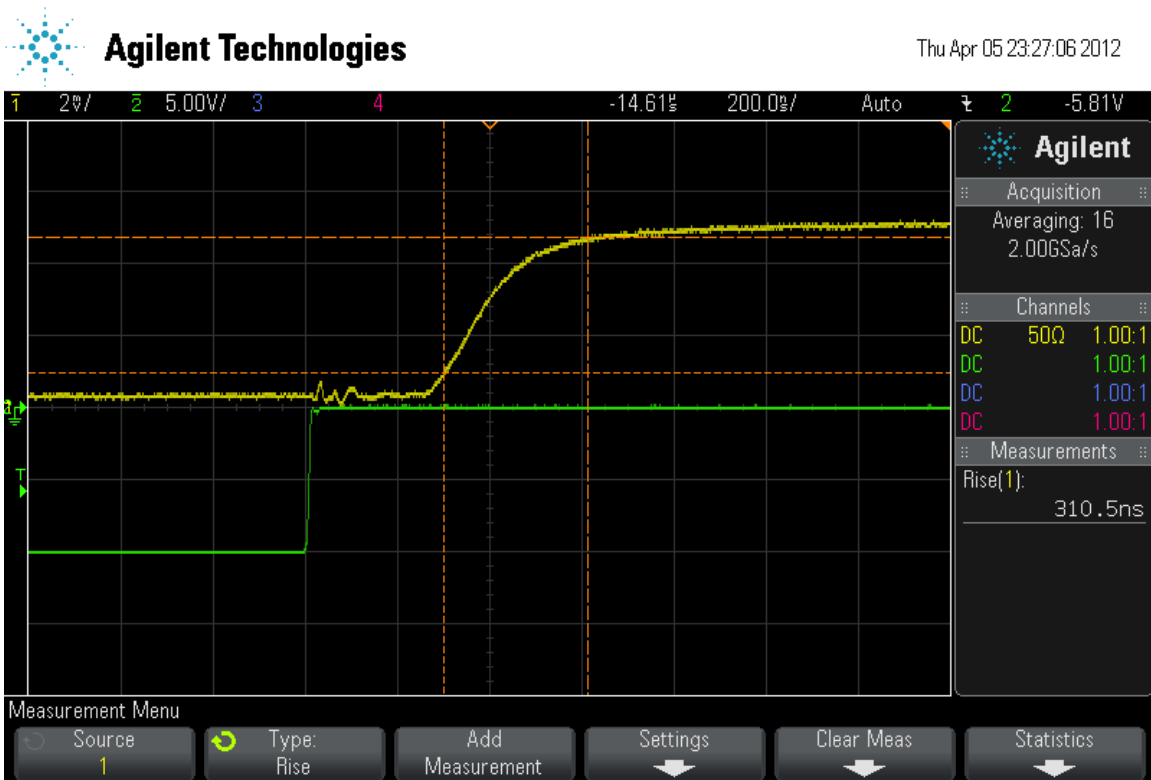
60dB Attenuation





Typical Characteristics on DTA-1G18G-60-CD-2

Delay On Measured with a Tunnel Diode @ 10GHz Power Level +5dBm



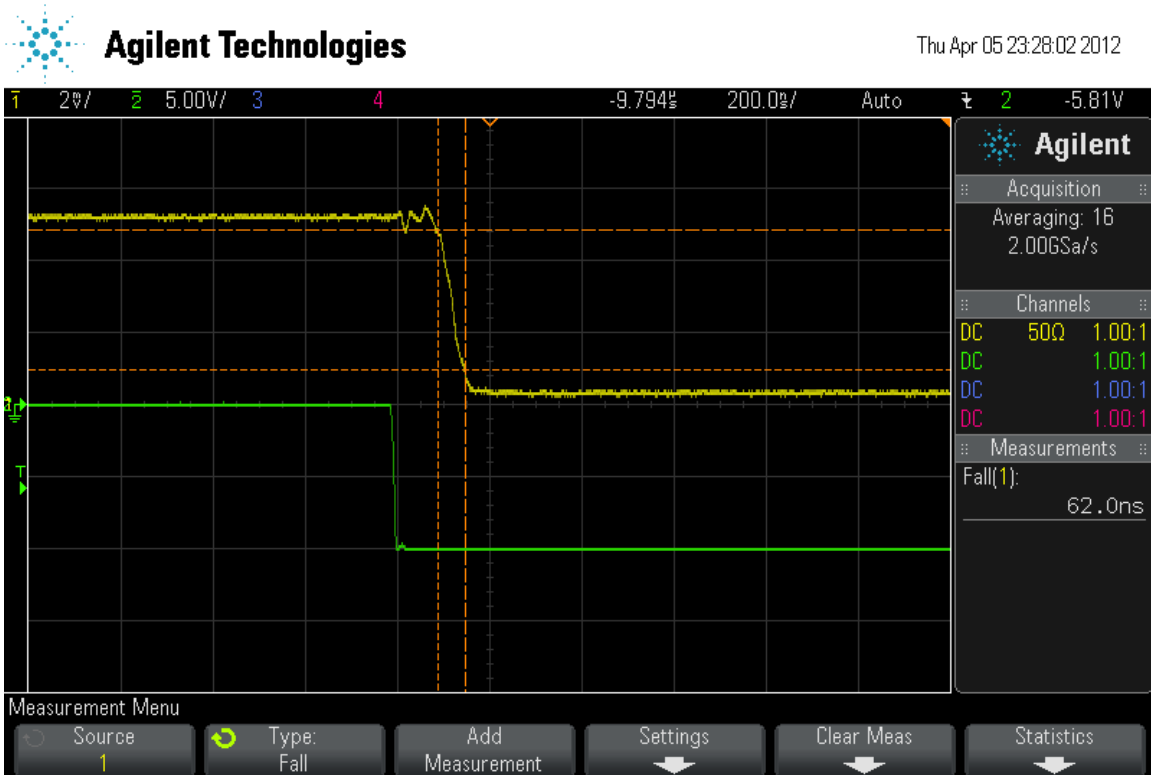
Channel 1 (Yellow): Tunnel Diode output

Channel 2 (Green): TTL Input from Signal Generator



Typical Characteristics on DTA-1G18G-60-CD-2

Delay Off
Measured with a Tunnel Diode @ 10GHz
Power Level +5dBm



Channel 1 (Yellow): Tunnel Diode output

Channel 2 (Green): TTL Input from Signal Generator