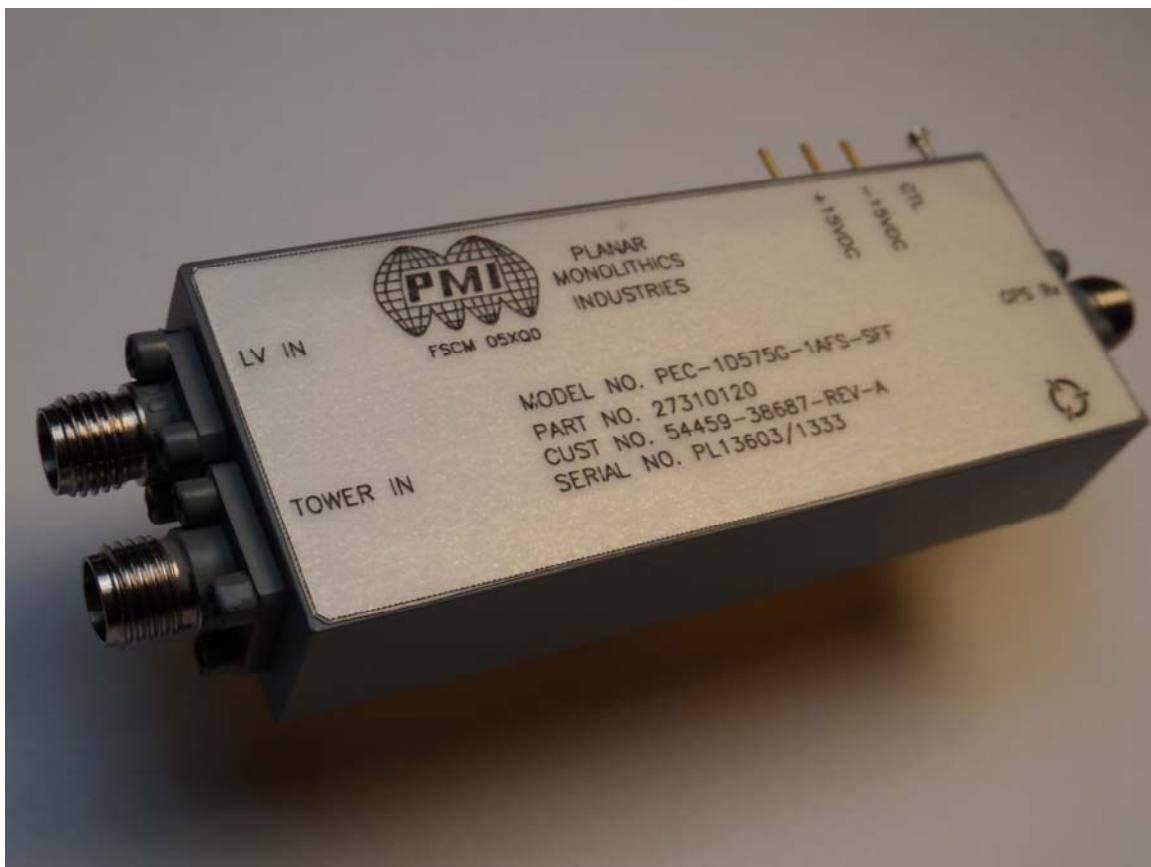




**Typical Characteristics  
On  
PEC-1D575G-1AFS-SFF**

PL13603/1333

**PMI MODEL NUMBER PEC-1D575G-1AFS-SFF IS A MULTI-FUNCTION MODULE THAT PROVIDES AMPLIFICATION AND FILTERING WITHIN THE GPS L1 FREQUENCY BAND OF 1575.42MHz. THIS MODEL PROVIDES TWO INPUT CHANNELS AND IS SWITCHABLE TO A COMMON OUTPUT. THIS MODULE WAS DESIGNED TO HANDLE EXPOSURE TO EXTREME ENVIRONMENTAL CONDITIONS INCLUDING AIRBORNE AND ROCKET ENVIRONMENTS.**



**July 30, 2013  
Designed By: Kevin Mason**

**Reported & Tested By  
Hugo Gonzales**

7311-F Grove Road Frederick, MD 21704 USA Phone: (301)662-5019 Fax: (301)662-1731  
Email: [sales@pmi-rf.com](mailto:sales@pmi-rf.com)



# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

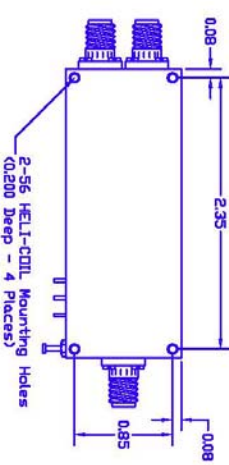
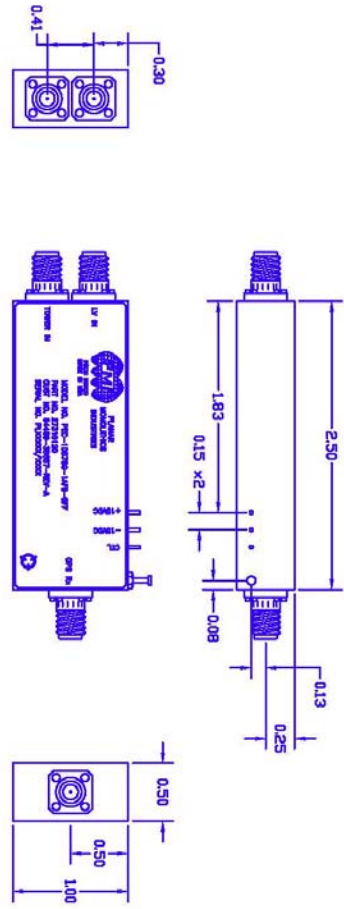
PMI MODEL NUMBER PEC-1D575G-1AFS-SFF IS A MULTI-FUNCTION MODULE THAT PROVIDES AMPLIFICATION AND FILTERING WITHIN THE GPS L1 FREQUENCY BAND OF 1575.42MHZ. THIS MODEL PROVIDES TWO INPUT CHANNELS AND IS SWITCHABLE TO A COMMON OUTPUT. THIS MODULE WAS DESIGNED TO HANDLE EXPOSURE TO EXTREME ENVIRONMENTAL CONDITIONS INCLUDING AIRBORNE AND ROCKET ENVIRONMENTS.

**SPECIFICATIONS:**

- OPERATION FREQUENCY:..... 1575.42MHZ
- SMALL SIGNAL GAIN ..... 0dB Nominal
- NOISE FIGURE..... 1.8dB Typ.
- INPUT POWER FOR 1dB COMPRESSION ..... -25dBm Typ.
- MAXIMUM INPUT POWER ..... 0dBm CW
- VSWR ..... 2.0:1 Max.
- FILTER REJECTION @ 1228MHZ & 1800MHZ .... -65dBc Min.
- PORT TO PORT SWITCH ISOLATION ..... 40dB Min.
- SWITCHING SPEED ..... 200 nsec Max.
- TTL CONTROL
  - "LOW" ..... LV ANTENNA TO Rx
  - "HIGH" ..... TOWER ANTENNA TO Rx
- DC POWER ..... 180 mA @ +15Vdc
- SEALING ..... HERMETIC
- FINISH ..... GRAY PAINT (BOTTOM GOLD PLATED)

**ENVIRONMENTAL RATINGS**

- TEMPERATURE ..... -65C TO +65C (OPERATING)
- ..... -65C TO +125C (STORAGE)
- HUMIDITY ..... MIL-STD-202F, METHOD 102B, COND. B
- VIBRATION ..... MIL-STD-883G, METHOD 2007, COND. A
- ACCELERATION ..... CONSTANT ACCELERATION 1g IN Y1 AXIS HOLDING FOR 1 MIN.
- TEMPERATURE CYCLE ..... MIL-STD-883G, METHOD 1010, COND. B
- BURN-IN ..... 80 HOURS @ +85C (DC POWER APPLIED)



ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
XXX .0100  
XXX .0170

REVISIONS			
ZONE	REV.	DESCRIPTION	DATE
	A1	ORIGINAL RELEASE	1/21/09
	B1	Updated To Cust. # 38687 Rev A	3/14/11
	C1	ECN # 13-0099	07/31/13

**PLANAR MONOLITHICS INDUSTRIES, INC.**  
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FREDERICK, MARYLAND 21704 USA  
TEL: 301-662-3819 FAX: 301-662-1731  
WEBSITE: [www.planarmonolithicsindustries.com](http://www.planarmonolithicsindustries.com)  
E-MAIL: [sales@planarmonolithics.com](mailto:sales@planarmonolithics.com)

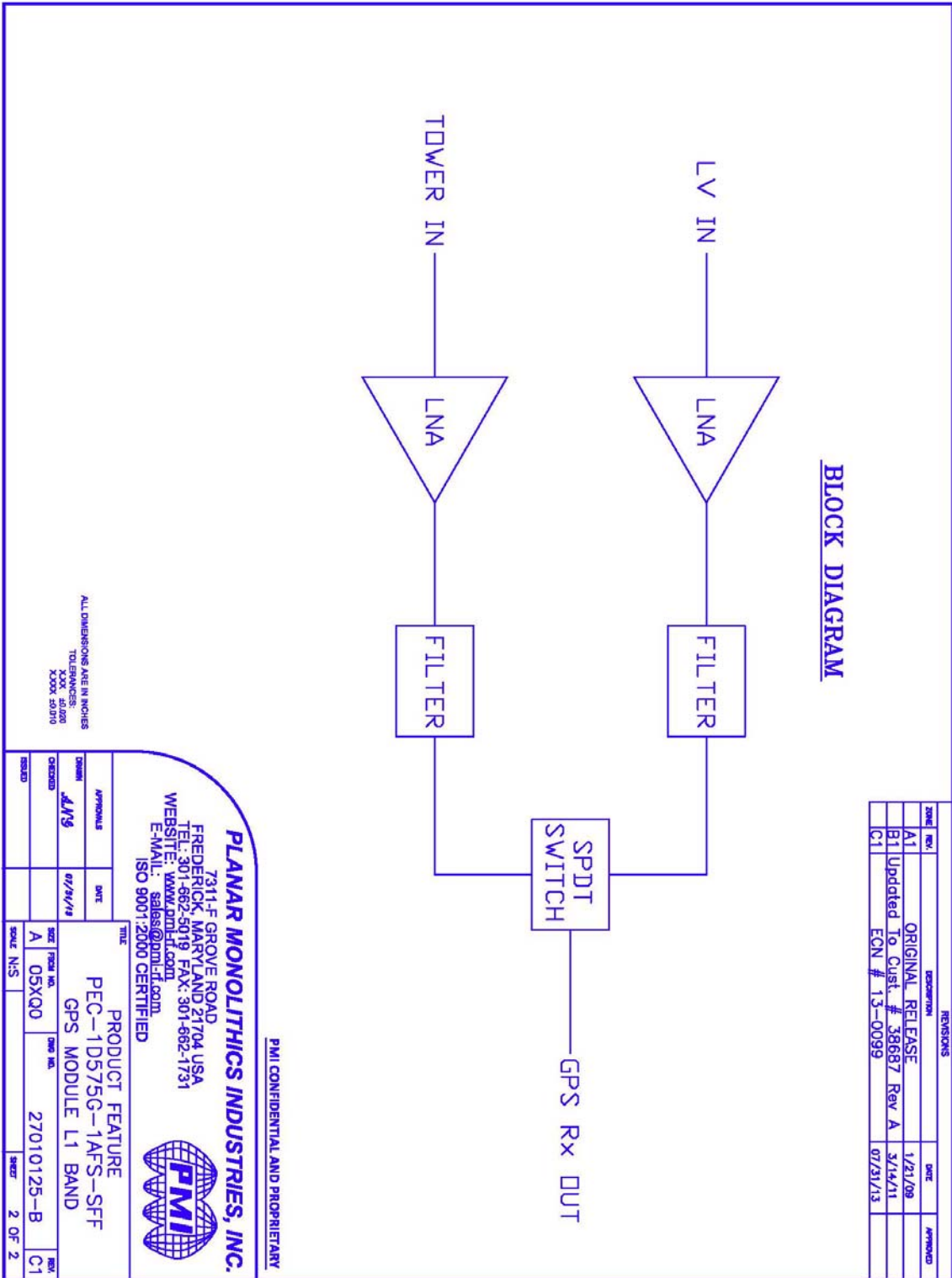
**PMI**  
PMI CONFIDENTIAL AND PROPRIETARY

APPROVALS	DATE	TITLE
<i>KAL</i>	1/21/09	PRODUCT FEATURE
DESIGNED	SIZE FROM INCH	PEC-1D575G-1AFS-SFF
CHECKED	SIZE FROM INCH	GPS MODULE L1 BAND
ISSUED	SCALE: N/S	27010125-B
		REV. C1
		SHEET 1 of 2



# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333





## Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

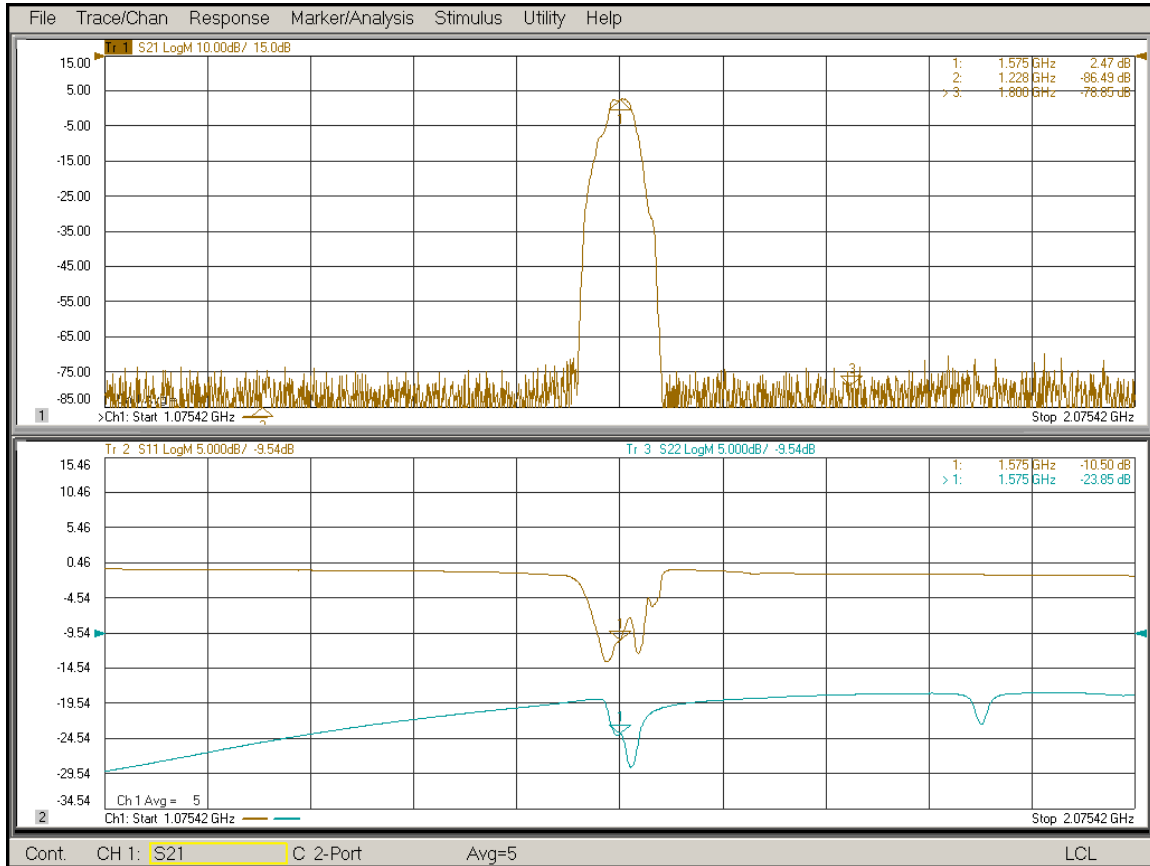
TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Operation Frequency:	1575.42 MHz	1575.42 MHz See Plots	
2	Small Signal Gain:	0 dB Nominal	2.58dB See Plots	
3	Noise Figure:	1.8 dB Typ.	3.16dB See Plots	
4	Input P1dB:	-25 dBm Typ.	-9 dBm Typ.	
5	Max Input Power:	0 dBm CW	0 dBm CW Pass	
6	VSWR:	2.0:1 Max	Input 1.85:1 Output 1.14:1 See Plots	
7	Filter Rejection @ 1228MHz and 1800 MHz	-65 dBc Min.	-78.85dB See Plots	
8	Port to Port Switch Isolation:	40 dB Min.	61.53dB See Plot	
9	Switching Speed:	200 ns Max	<50 ns See Plots	
10	TTL Control:	TTL "LO" – LV Ant. To Rx TTL "HIGH" – Tower Ant. To Rx	Pass	
11	DC Power:	160 mA @ +15 Vdc ±1Vdc Max.	13 mA @ +15 Vdc ±1Vdc Max.	
12	Sealing	Hermetic	Pass	



# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

## Swept Plot of LV Antenna to Rx Path

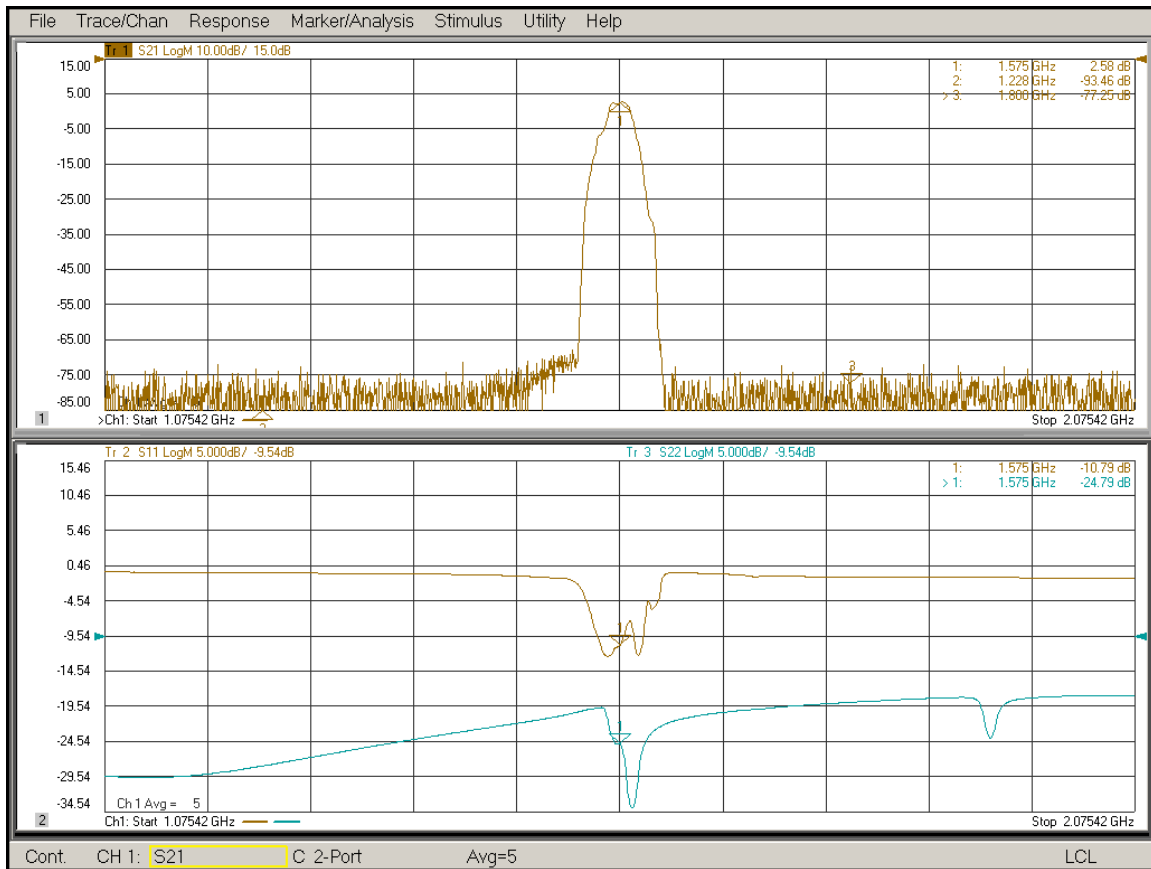




# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

## Swept Plot of Tower Antenna to Rx Path

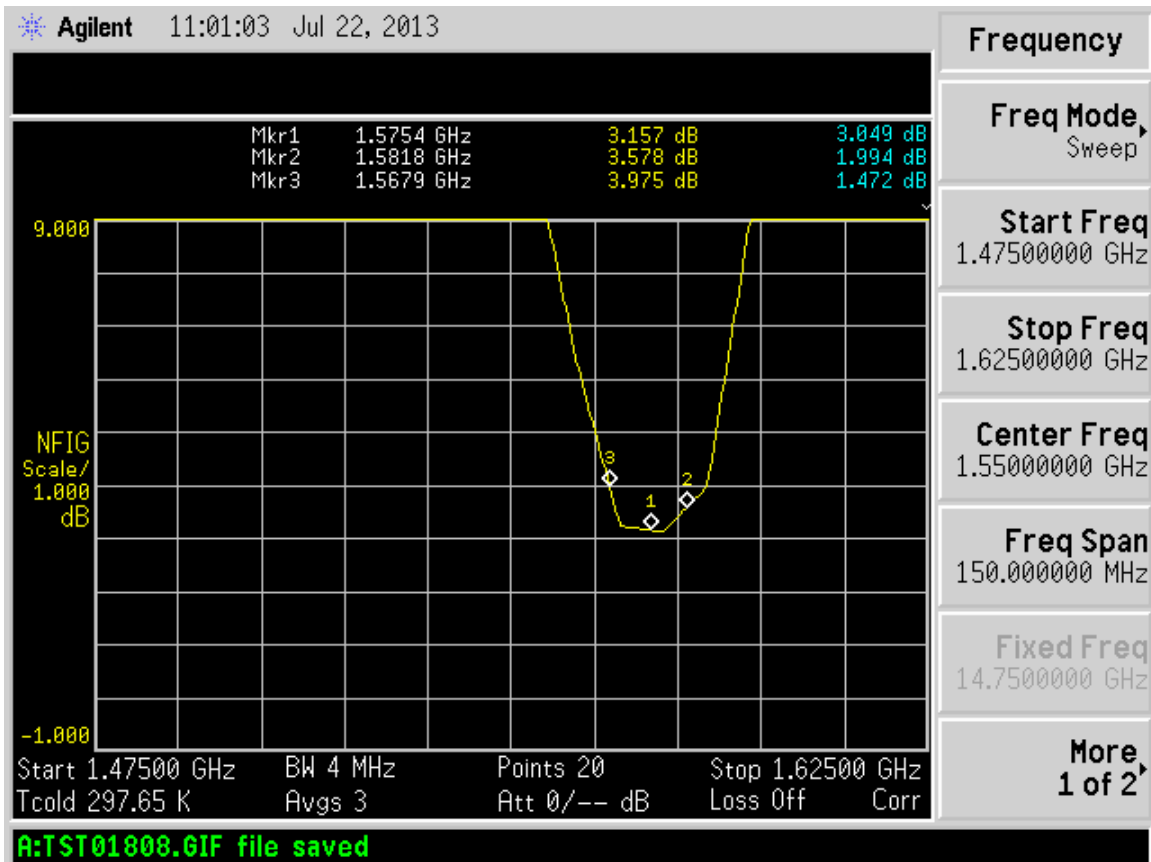




# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

## Swept Noise Figure of LV Antenna to Rx Path

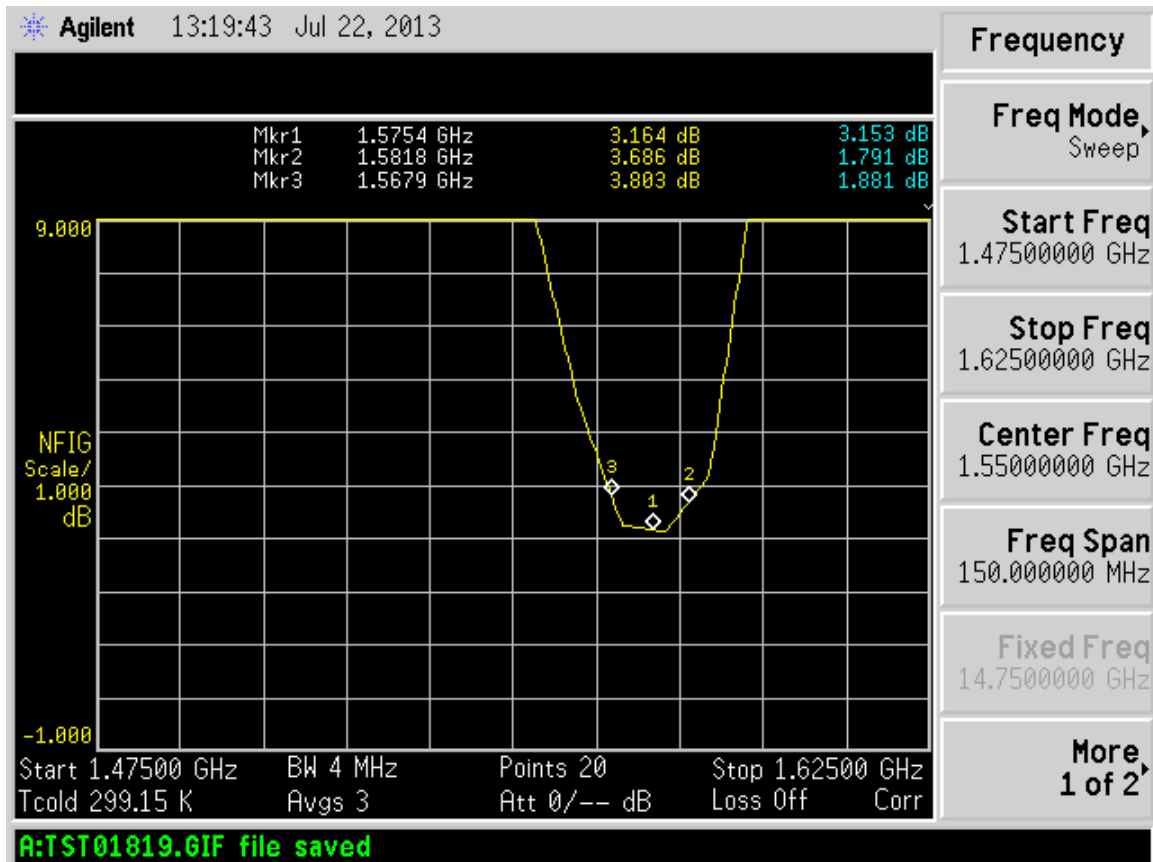




# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

## Swept Noise Figure of Tower Antenna to Rx Path



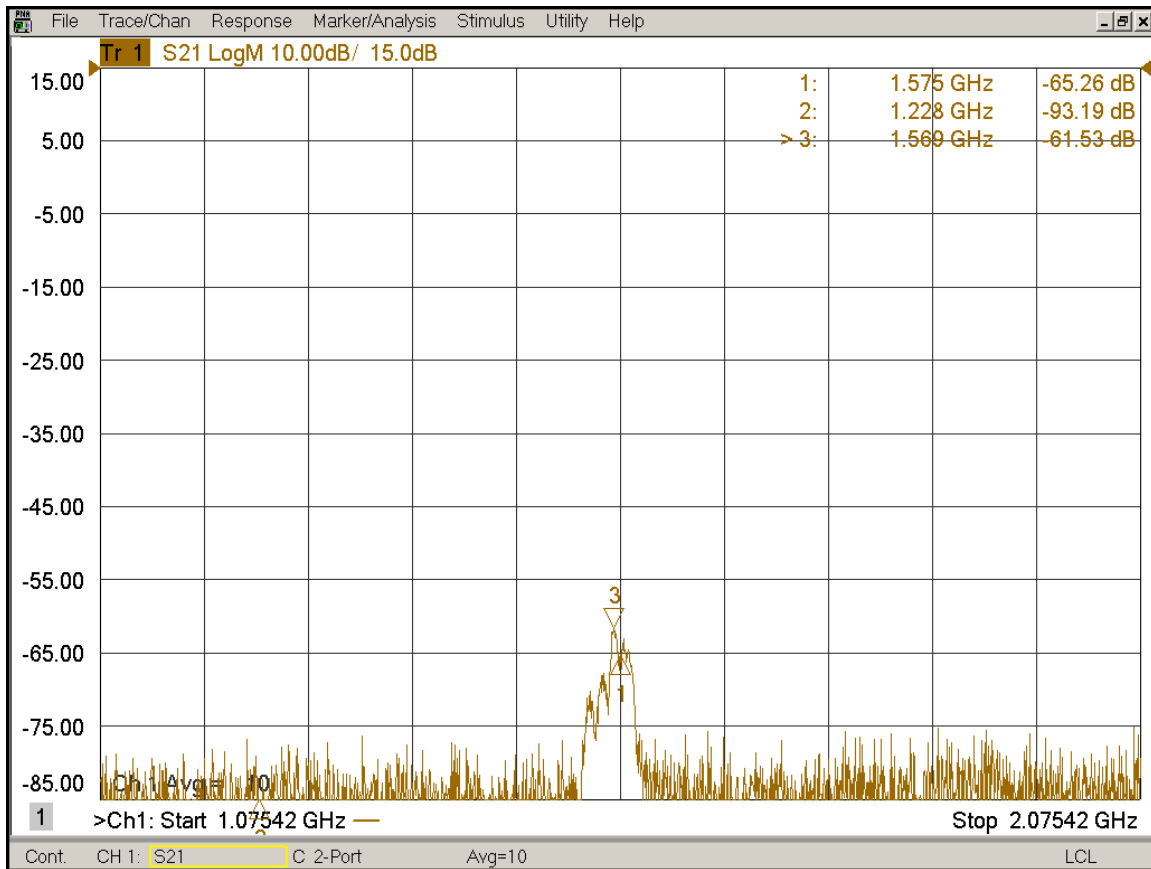




# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

## Switch Isolation Port to Port

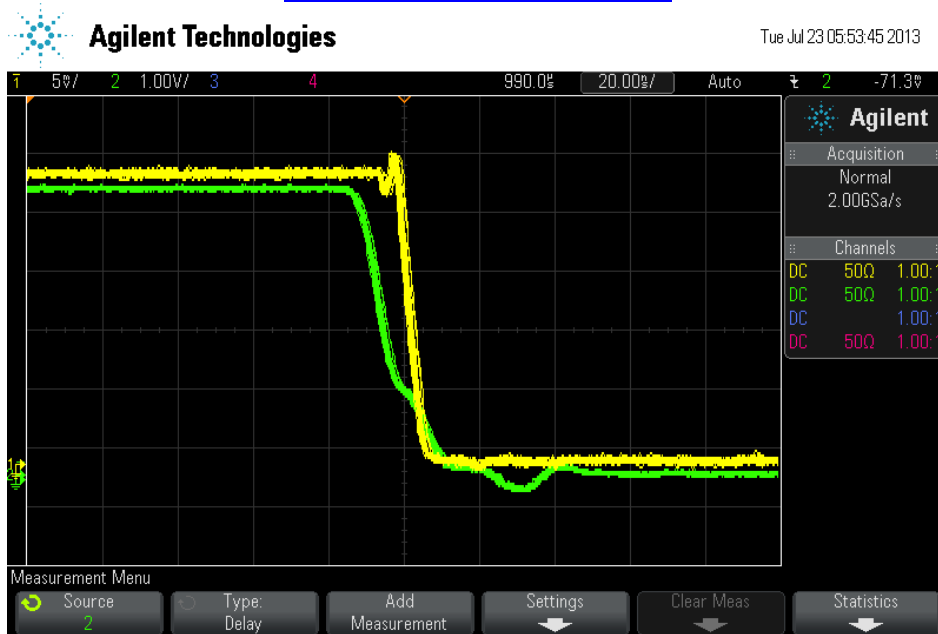




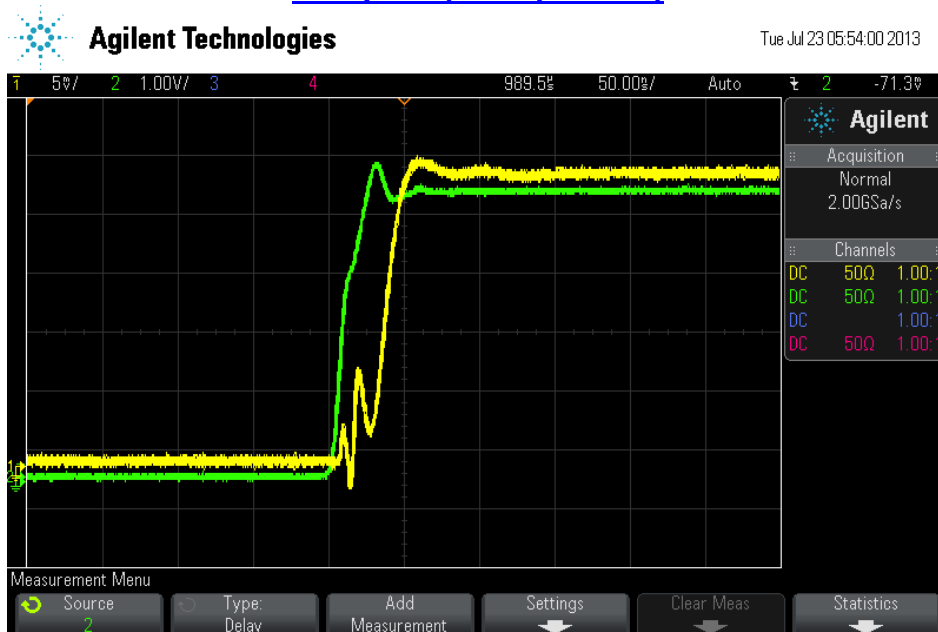
# Typical Characteristics On PEC-1D575G-1AFS-SFF

PL13603/1333

## Switching Speed Delay OFF (20ns per Div.)



## Delay ON (50ns per Div.)



GREEN TRACE: TTL SIGNAL  
YELLOW TRACE: RF SIGNAL

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