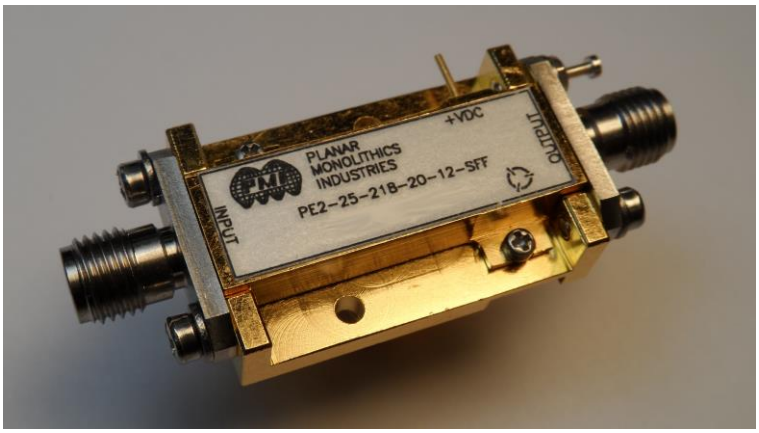
PL15717/1433

# Typical Characteristics
# On
# PE2-25-218-20-12-SFF

**PMI Model PE2-25-218-20-12-SFF is a 2.0 to 18.0GHz Low Noise Amplifier which provides 25dB of Gain with a OP1dB of +20dBm Minimum and a Noise Figure of 4.5dB. This amplifier operates on +12 to +15VDC and draws less than 350mA.**




August 28, 2014
Designed By: Kevin Mason
Tested By: Kevin Mason
Reported by: Kevin Mason



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ISO9001:2008 Certified

# Product Feature Drawing

## Description:

PMI Model Number: PE2-25-218-20-12-SFF is a 2 to 18 GHz low noise amplifier. This amplifier is supplied in our standard PE2 housing that can be used as a SMA connectorized or a surface mount component.

This model provides the following performance. Data is available upon request.

## Specifications:

| | |
|---|---|
| Frequency Range: | 2 to 18 GHz |
| Gain: | 25dB Min. |
| Gain Flatness: | +/- 1.5dB Max. |
| Noise Figure: | 4.5dB Typ, 5.5dB Max. |
| OP1dB: | +20dBm Min. |
| VSWR Input/Output: | 2.0:1 Max. |
| DC Voltage Supply: | +12 to +15VDC |
| DC Current Draw: | 350mA Max. |
| Connectors In/Out | SMA Female |

## Features:

Internal Voltage Regulation
Unconditional Stability

## Available Options:

Various Package types
Various Connector types
Temperature Compensation
Gain and Phase Matching
MIL-STD-883 Screening Available

## Environmental Ratings:

| | |
|---|---|
| Temperature: | -55°C to + 85°C (Operating) |
| | -65°C to +125°C (Storage) |
| Humidity: | MIL-STD-202F, METHOD 103B COND B. |
| Shock: | MIL-STD-202F, METHOD 213B COND B. |
| Altitude: | MIL-STD-202F, METHOD 105C COND B. |

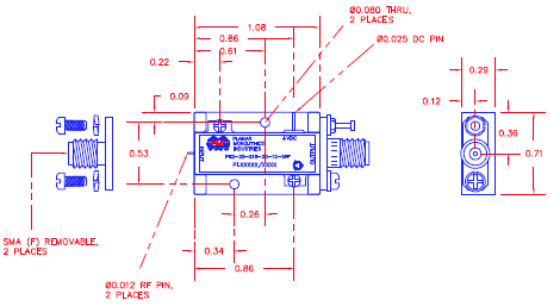
Temperature Cycle: MIL-STD-202F, METHOD 107D COND A

Note: The above specifications are subject to change or revision.

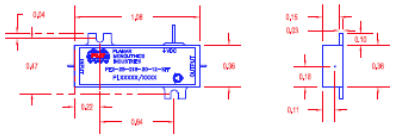
REVISIONS

| ZONE | REV. | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|---|
| | A | ORIGINAL RELEASE | 12/15/10 | |
| | B1 | ECN PENDING | 8/28/14 | |

PE2 HOUSING WITH CARRIER




PE2 HOUSING WITHOUT CARRIER (SURFACE MOUNT)



PMI CONFIDENTIAL AND PROPRIETARY

**PLANAR MONOLITHICS INDUSTRIES, INC.**
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WEBSITE: www.pmi-rf.com
E-MAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED

ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
X.XX ±0.010
X.XXX ±0.005

| APPROVALS | DATE |
|---|---|
| DRAWN sfk | 12/15/10 |
| CHECKED | |
| ISSUED | |

TITLE: PRODUCT FEATURE PE2-25-218-20-12-SFF

| SIZE | FSCM NO. | DWG NO. | REV. |
|---|---|---|---|
| A | 05XQ0 | 27004763 | B1 |

SCALE N: S SHEET 1 OF 1



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## Summary Test Data

| TEST. ITEM NO | PARAMETERS | SPECIFIED VALUE | TEST RESULTS | QA QC |
|---|---|---|---|---|
| 1 | Frequency Range: | 2 GHz – 18 GHz | **2 GHz – 18 GHz** | |
| 2 | Gain: | +25dB Min. | **26.83dB**<br>**See Plot** | |
| 3 | Gain Flatness: | ±1.5dB Max. | **± 1.17dB**<br>**See Plot** | |
| 4 | Noise Figure: | 4.5dB Typ.<br>5.5dB Max. | **2 GHz 4.23dB**<br>**8 GHz 2.31dB**<br>**12 GHz 2.57dB**<br>**18 GHz 3.82dB**<br>**See Plot** | |
| 5 | Pout @ 1dB Compression: | +20dBm Min. | **>+20dBm**<br>**See Plot** | |
| 6 | VSWR:<br>(Input/Output) | 2.0:1 Max | **Input 1.58:1**<br>**Output 1.65:1**<br>**See Plot** | |
| 7 | DC Supply: | +12 TO +15VDC<br>@ 350mA Max. | **331mA** | |

**Click here to download S-Parameters**



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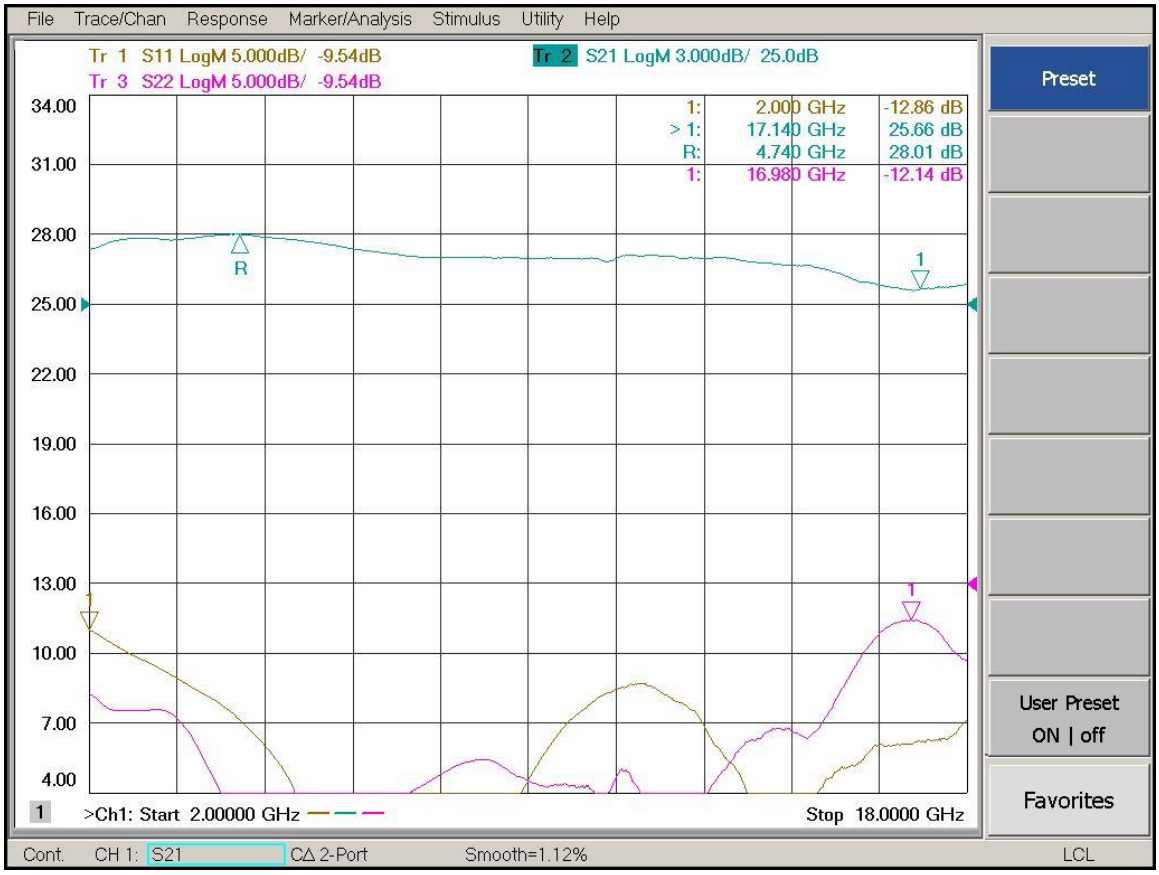
## Gain & Return Loss @ +25°C



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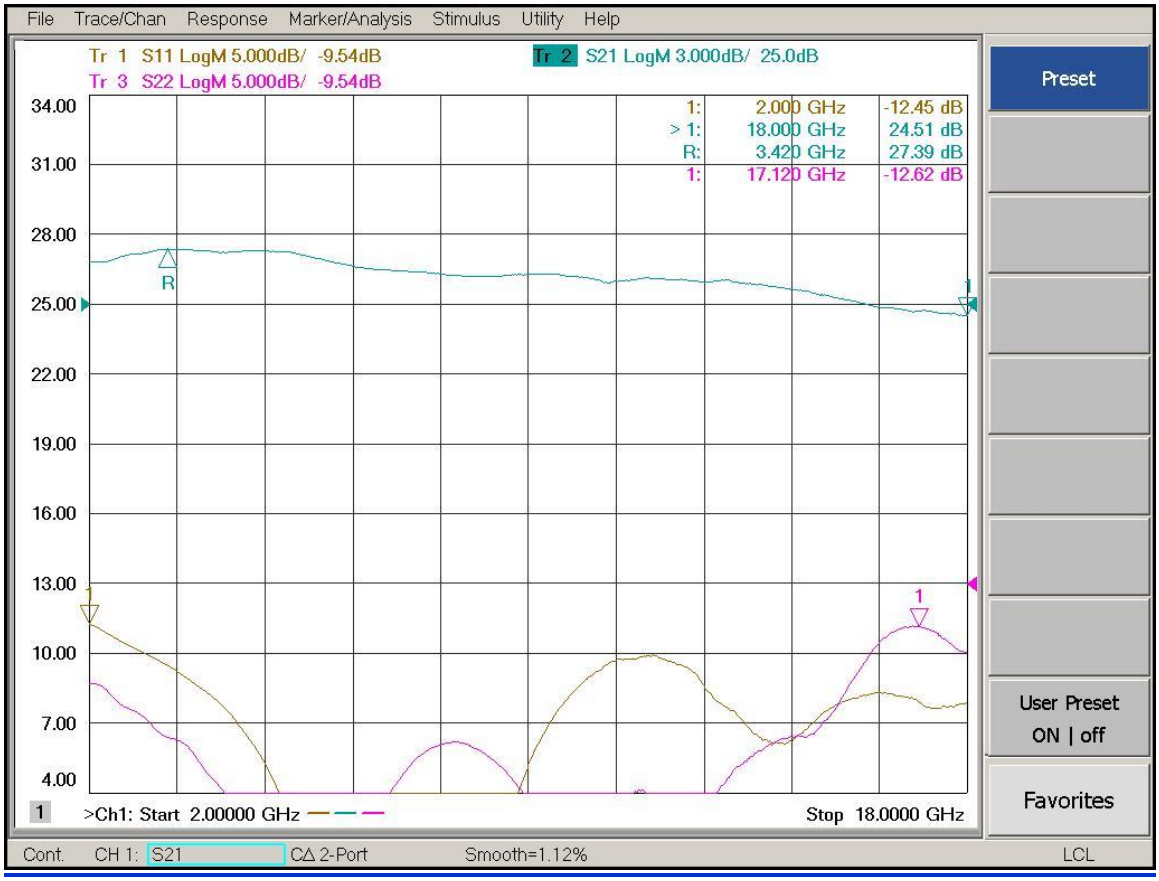
## Gain & Return Loss @ +85°C



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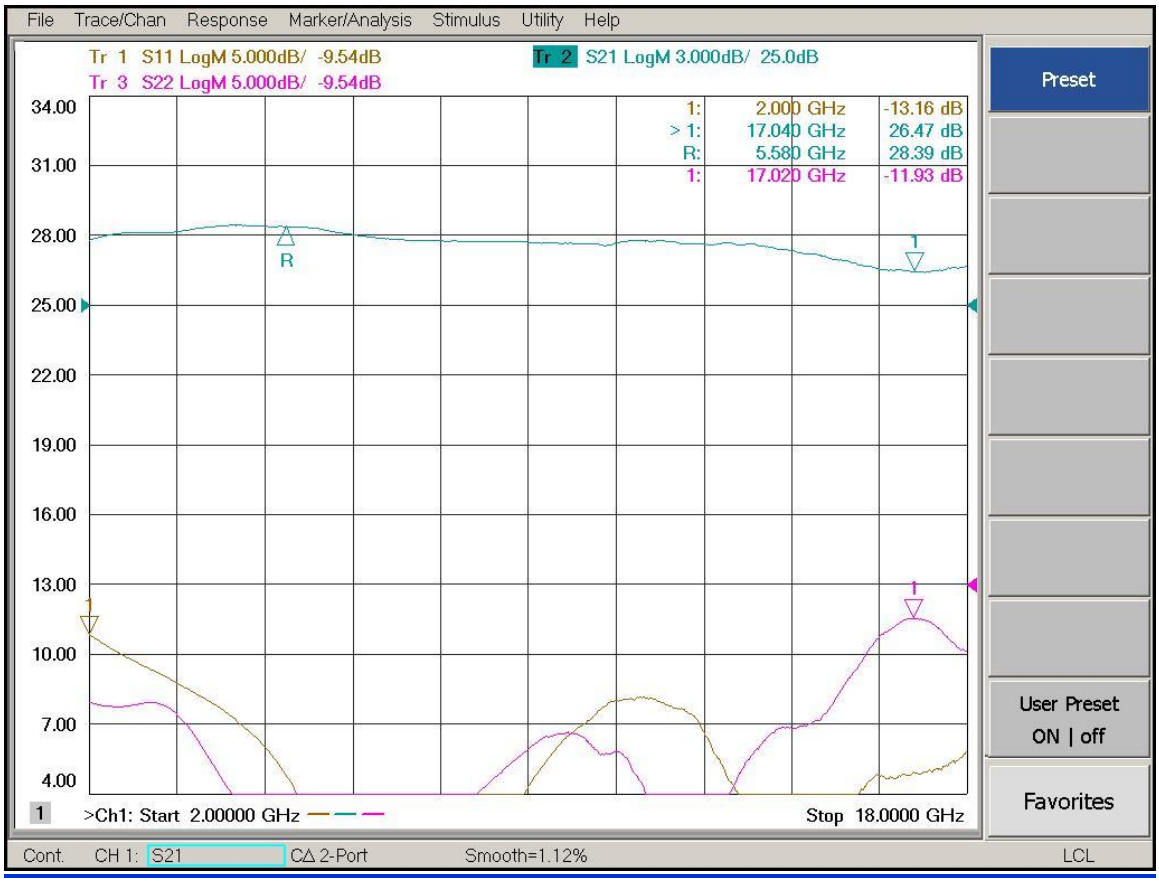
## Gain & Return Loss @ -54°C



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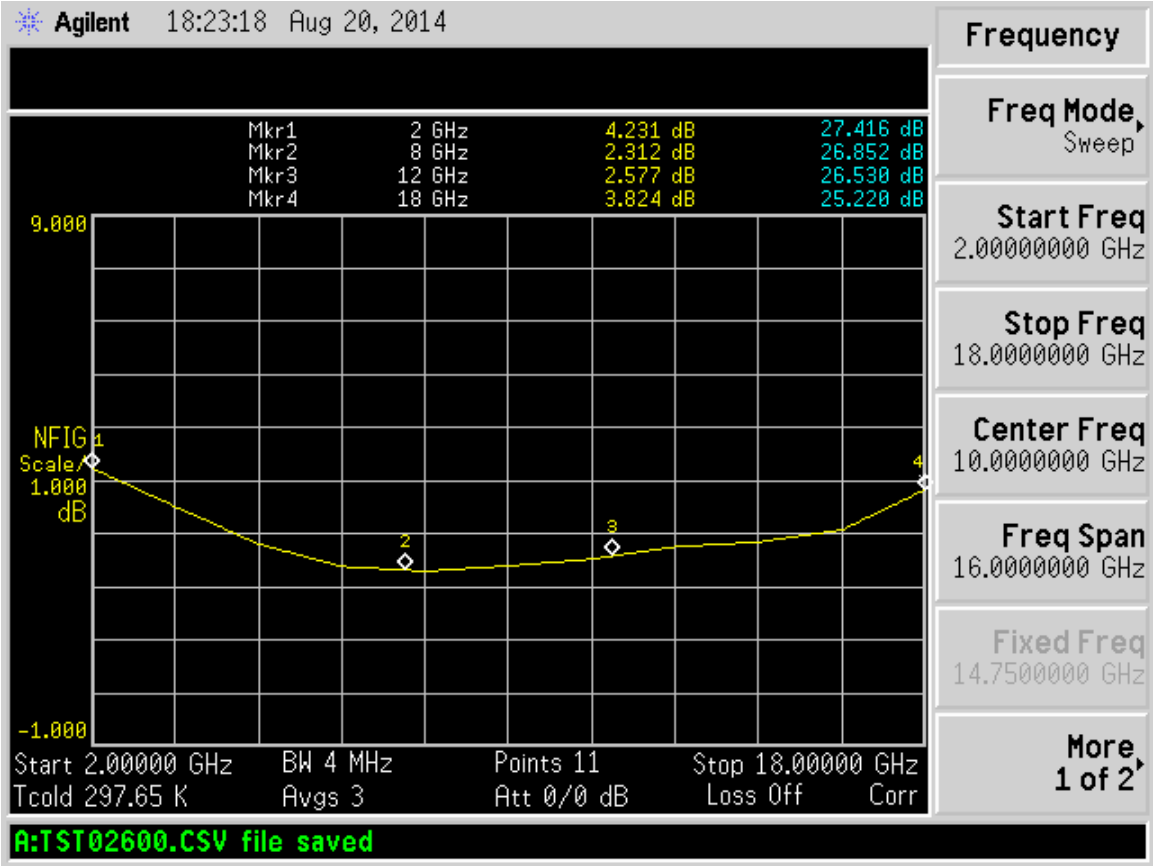
## Noise Figure Plot @ +25°C

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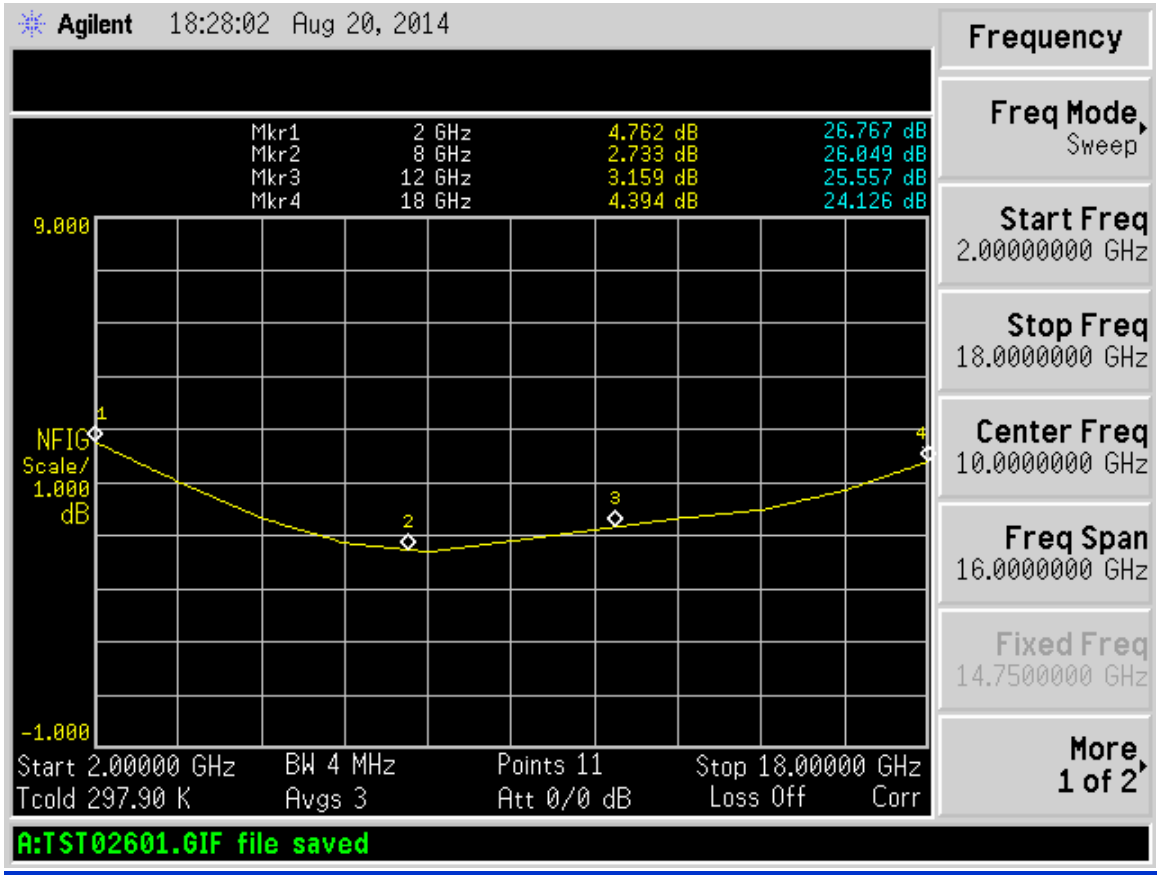
## Noise Figure Plot @ +85°C



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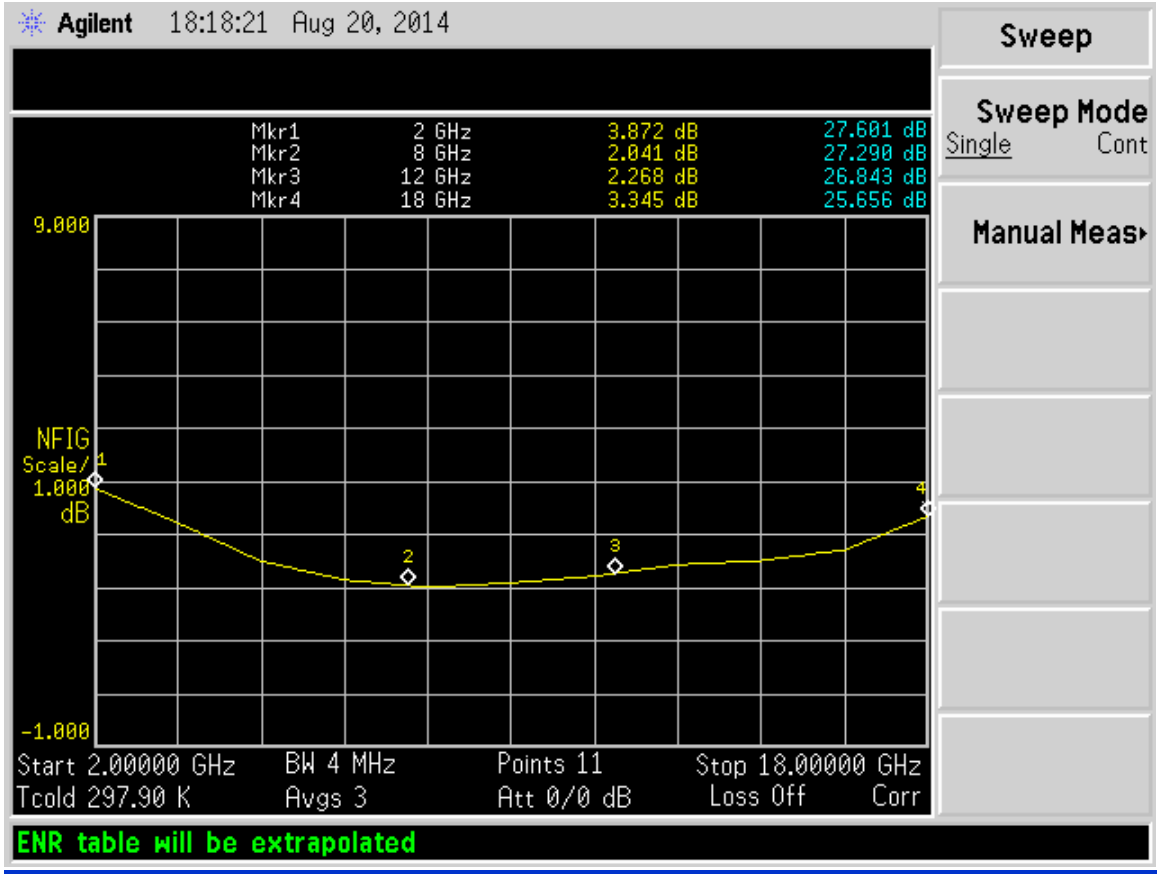
## Noise Figure Plot @ -54°C



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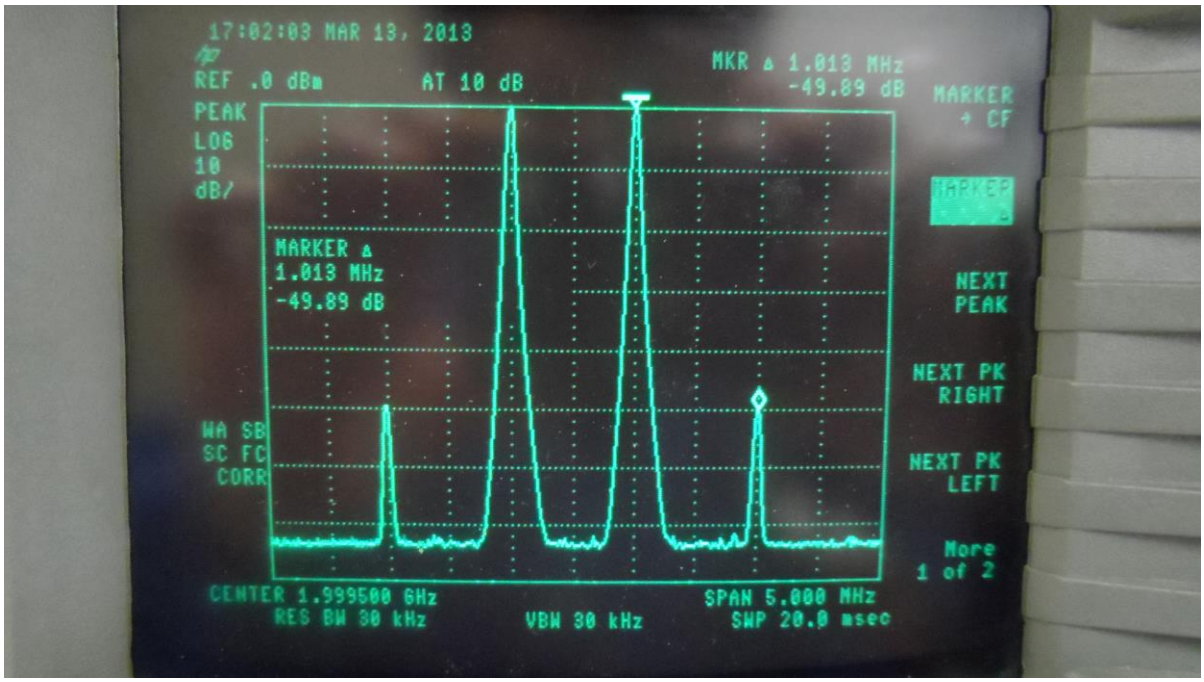
## OIP3 @ 2 GHz




OIP3 = Pout + dBc/2

+24.94dBm = 0 + (49.89/2)



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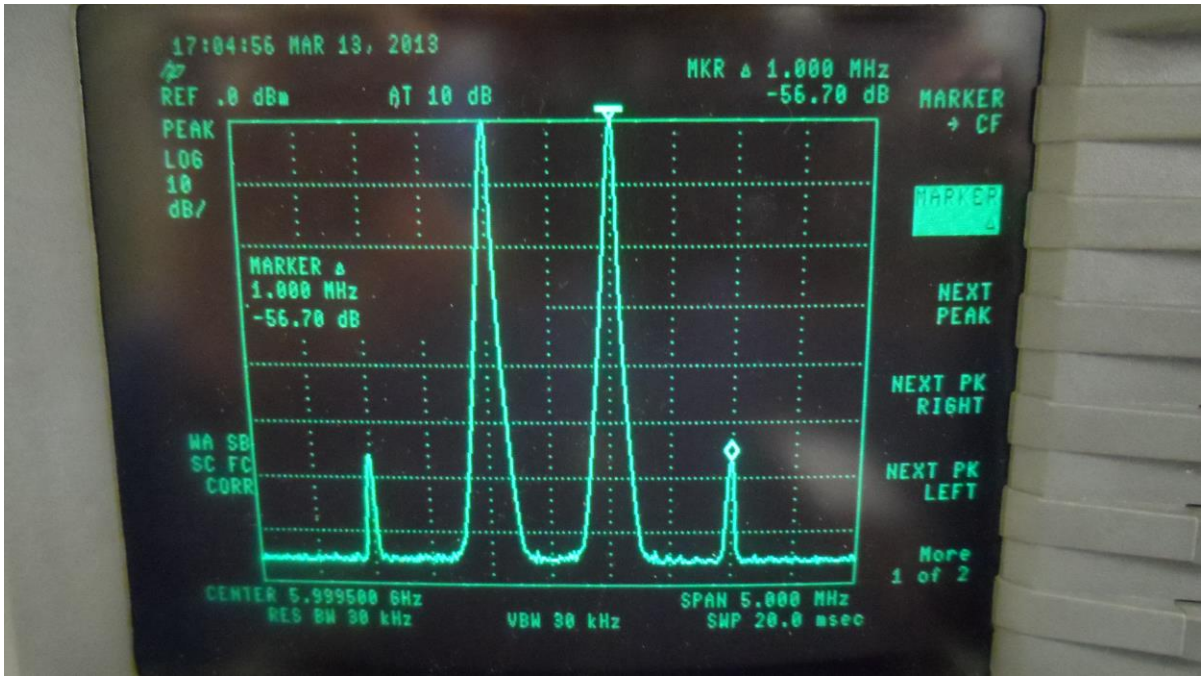
## OIP3 @ 6 GHz




OIP3 = Pout + dBc/2

+28.35dBm = 0 + (56.70/2)



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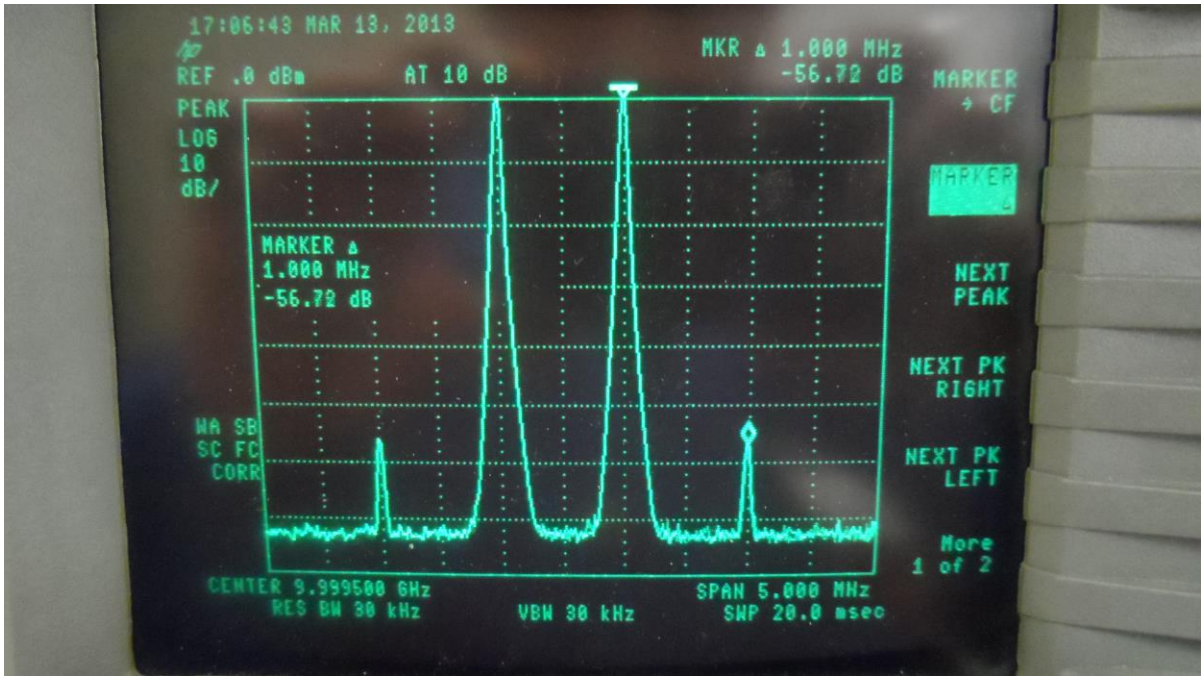
## OIP3 @ 10 GHz




OIP3 = Pout + dBc/2

+28.36dBm = 0 + (56.72/2)



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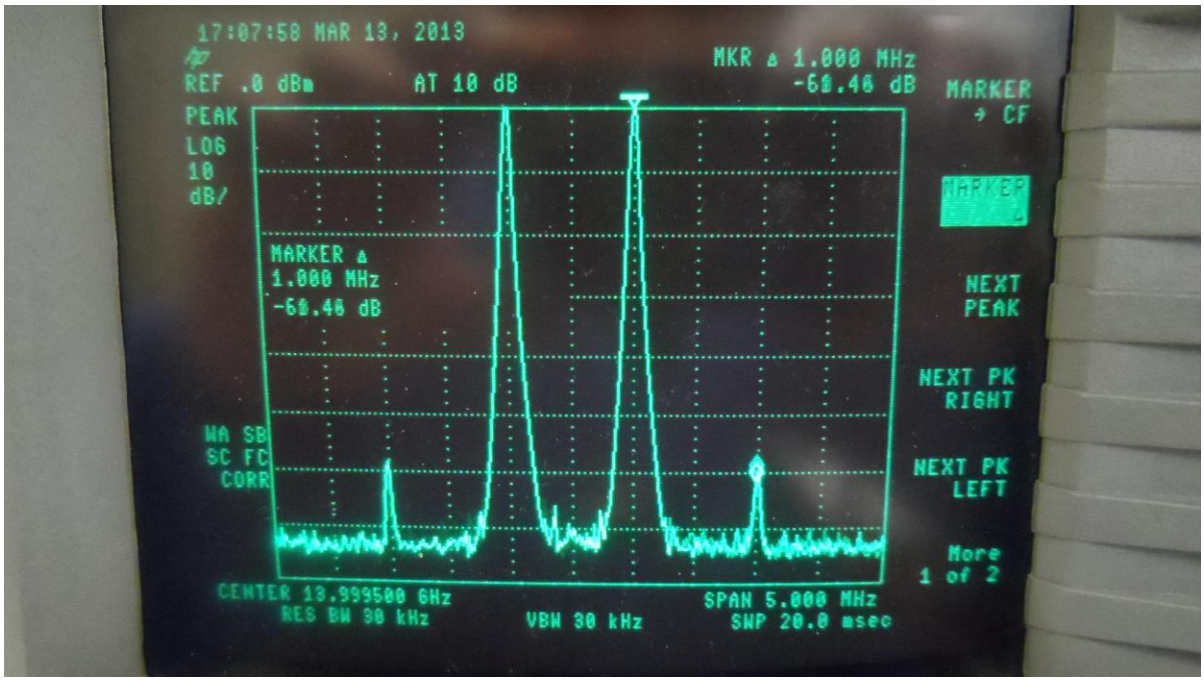
## OIP3 @ 14 GHz




OIP3 = Pout + dBc/2

+30.73dBm = 0 + (61.46/2)



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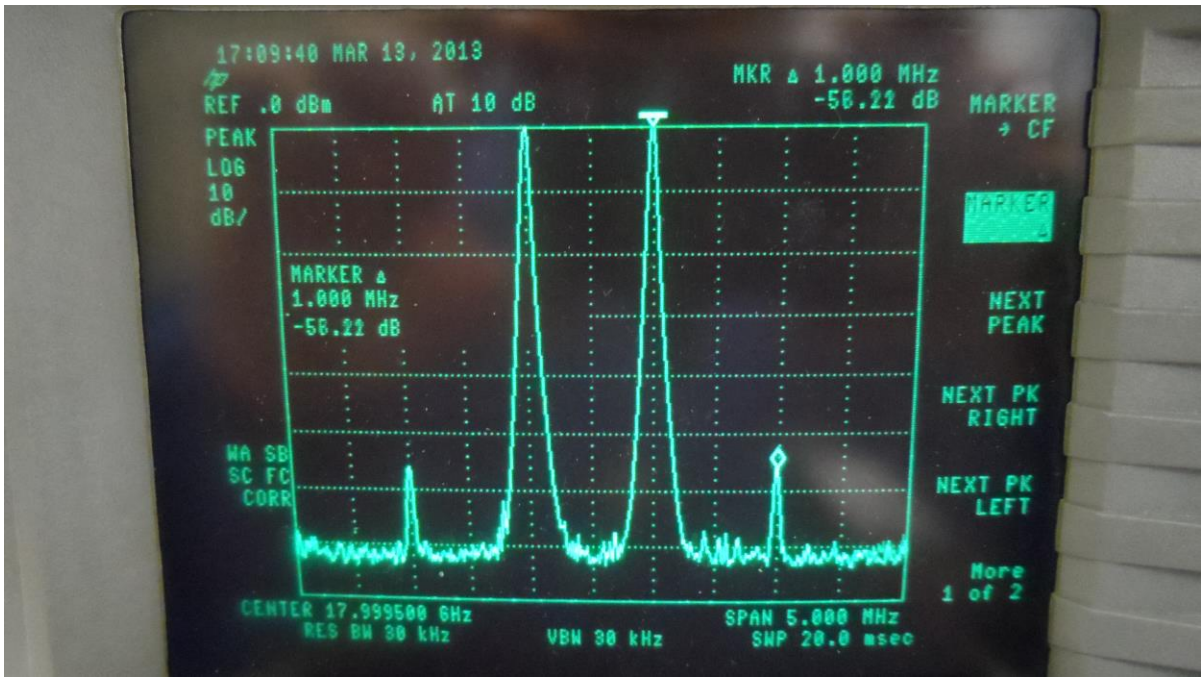
## OIP3 @ 18 GHz




OIP3 = Pout + dBc/2
+28.11dBm = 0 + (56.22/2)



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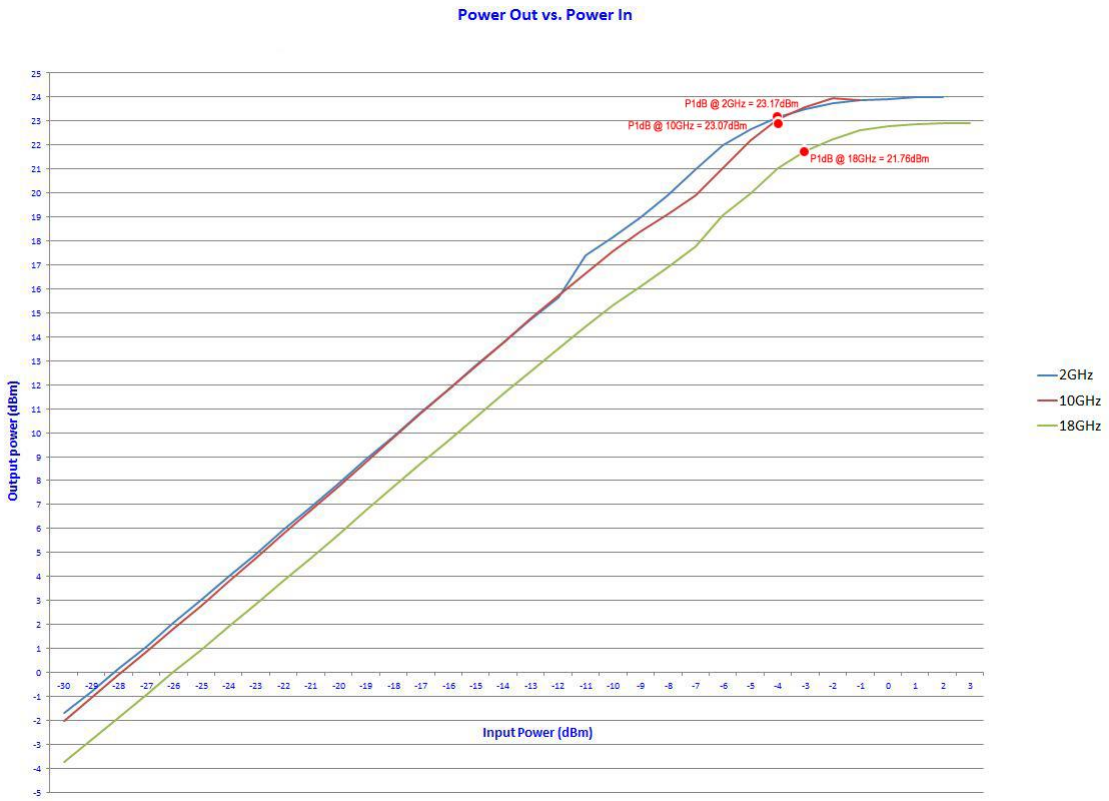
# Plot of Input Power versus Output Power




| Frequency (GHz) | Input Power (dBm) | Op1dB (dBm) |
|---|---|---|
| 2.0 | -4 | 23.17 |
| 10.0 | -4 | 23.07 |
| 18.0 | -3 | 21.76 |



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