

BRF MMIC Innovator

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[Classification] Application Note

[Date] 2013.03

[Revision No.] Rev.A

[Measuring Instruments]

- NA_Agilent 8753ES

- SA_Agilent E4404B

- SG_Agilent 4438C

- SG_IFR 3416

Wide Band Gain Block Amp BG14B

Application Note



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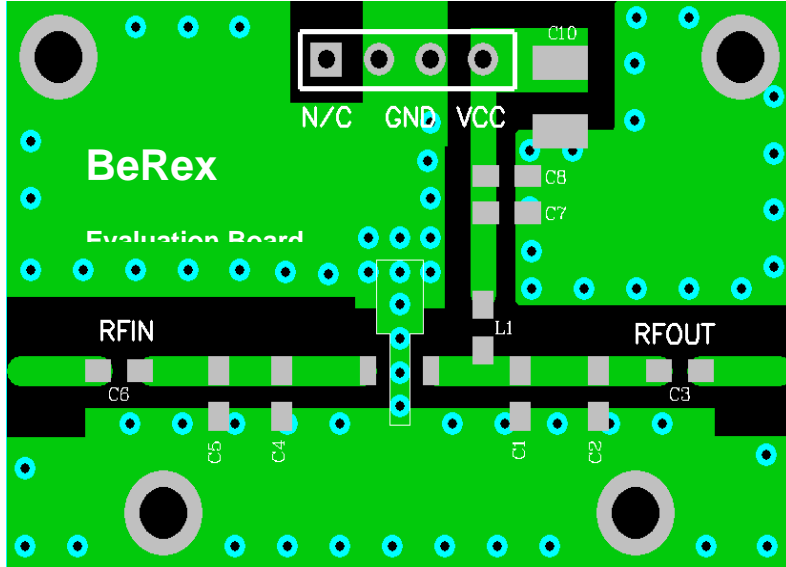
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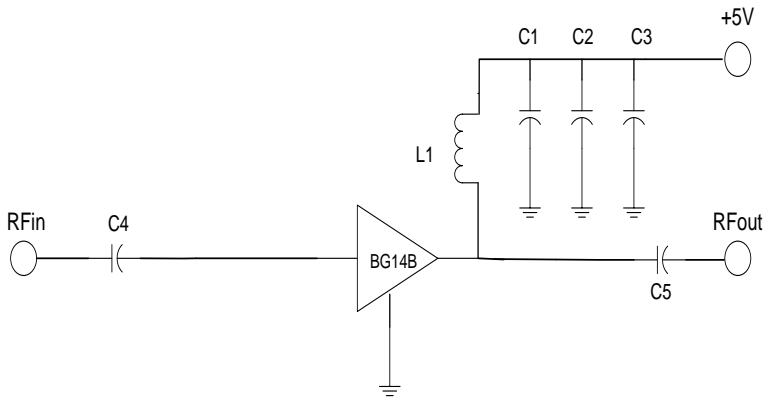
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1. BG14B_ 2600MHz Application Note



| Ref. Des. | Description/ Part Number | Values | Vendor |
|-----------|--------------------------|--------|----------|
| C1 | 0603 CAP | 100pF | Samsung |
| C2 | 604 CAP | 1000pF | Samsung |
| C3 | A3216 CAP | 10uF | AVX |
| C4 | 0603 CAP | 100pF | Samsung |
| C5 | 0603 CAP | 100pF | Samsung |
| C6 | 0603 CAP | NA | |
| C7 | 0603 CAP | NA | |
| C8 | 0603 CAP | NA | |
| C9 | 0603 CAP | NA | |
| C10 | 0603 CAP | NA | |
| C11 | 0603 CAP | NA | |
| C12 | 0603 CAP | NA | |
| L1 | 0603 IND | 20nH | Ceratech |
| L2 | 0603 IND | NZ | |
| L3 | 0603 IND | NA | |
| R1 | 0603 RES | NA | |
| U1 | SOT89 PKG | BG14B | BEREX |
| | | | |
| | | | |



Note:

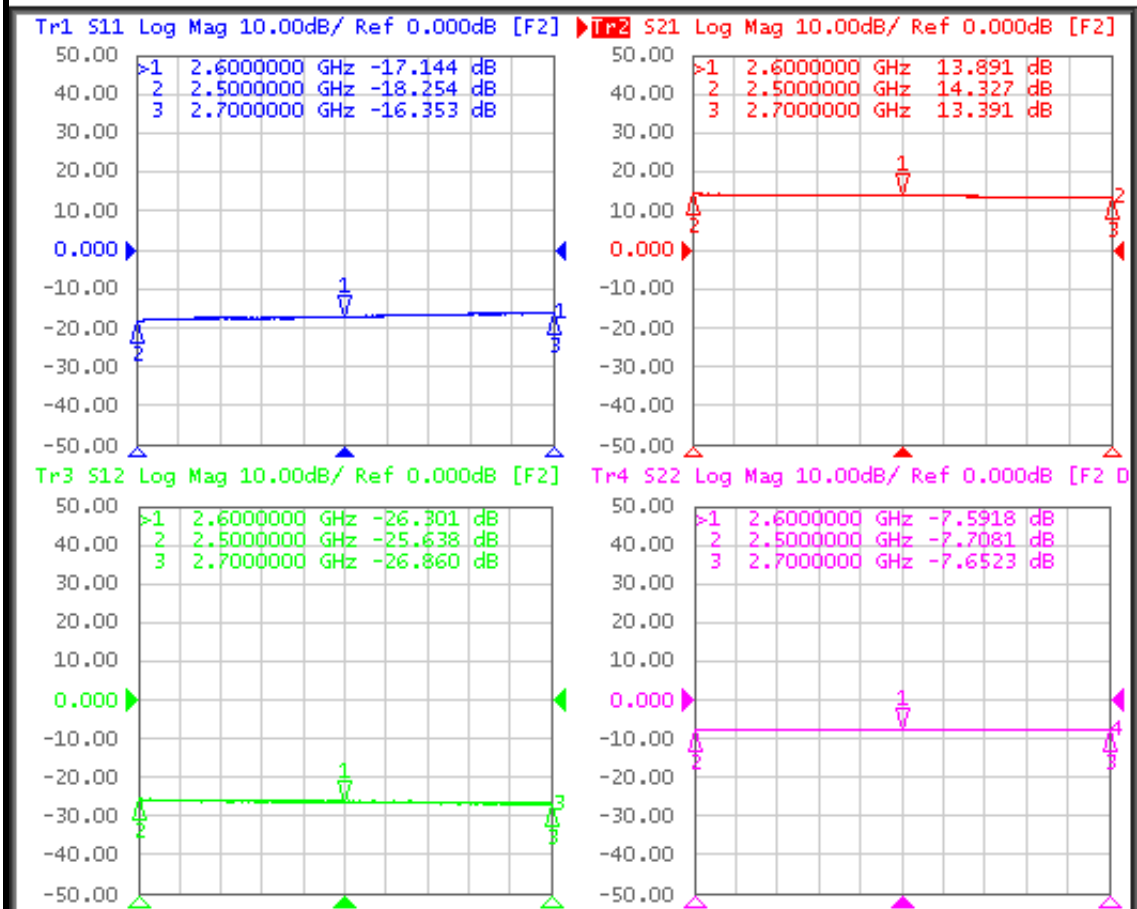
1. PCB: 31mil thick FR4

| | |
|------------------------|----------|
| TITLE | |
| BG14B Evaluation Board | |
| (2600MHz) | |
| Drawing Number | Rev. |
| Date | Drawn By |
| FILE NAME | SHEET |
| | |

1.1 BG14B_2600MHz Test Result

| SN | Freq [MHz] | Vcc [V] | Icc [mA] | Gain [dB] | OIP3 [dBm] ⁽¹⁾ | P1dB [dBm] | IRL [dB] | ORL [dB] | NF [dB] |
|----|------------|---------|----------|-----------|---------------------------|------------|----------|----------|---------|
| - | 2500 | 5 | 72 | 14.3 | 31.5 | 18.4 | -18.2 | -7.7 | 5.6 |
| - | 2600 | 5 | 72 | 13.9 | 31.2 | 18.3 | -17.1 | -7.5 | 5.6 |
| - | 2700 | 5 | 72 | 13.4 | 31 | 18.1 | -16.3 | -7.6 | 5.6 |

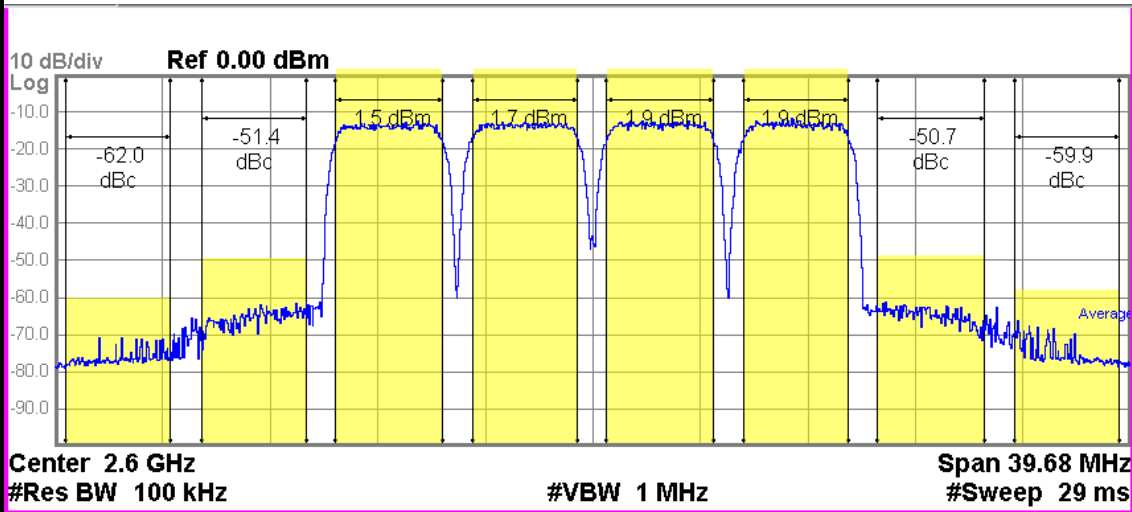
(1) OIP3 was tested @Pout=9dBm/tone 1MHz offset



1-1. WCDMA 4FA_ ACLR Test Result

Out Power : 7.75 dBm

WCDMA 4FA : 2600 -50dBc



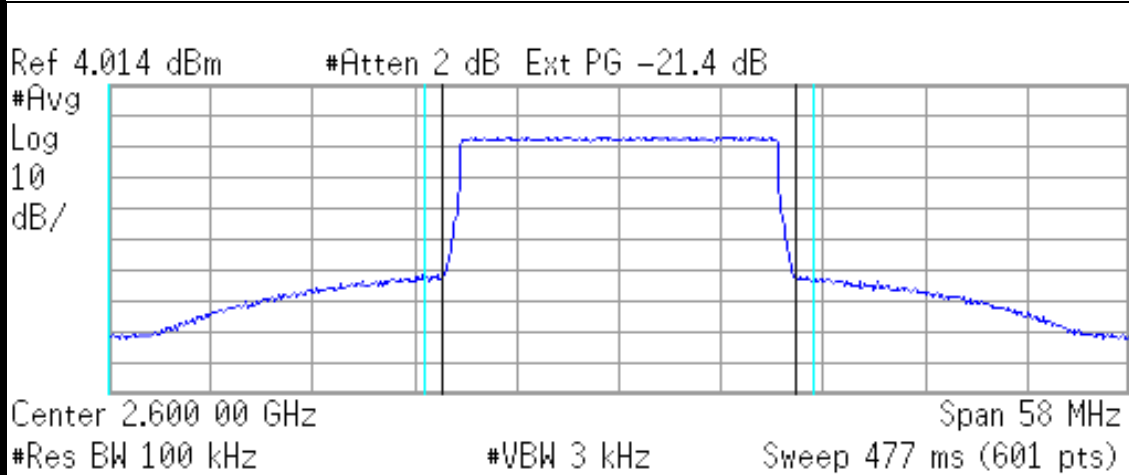
Total Carrier Power 7.749 dBm/ 15.36 MHz ACP-IBW

| Carrier Power | Filter | Offset Freq | Integ BW | Lower | | Upper | | Filter |
|-------------------------|--------|-------------|-----------|--------|--------|--------|--------|--------|
| | | | | dBc | dBm | dBc | dBm | |
| 1 1.460 dBm / 3.840 MHz | ON | 5.000 MHz | 3.840 MHz | -51.42 | -49.53 | -50.67 | -48.78 | ON |
| 2 1.663 dBm / 3.840 MHz | ON | 10.00 MHz | 3.840 MHz | -61.97 | -60.08 | -59.91 | -58.02 | ON |
| 3 1.887 dBm / 3.840 MHz | ON | | | | | | | |
| 4 1.889 dBm / 3.840 MHz | ON | | | | | | | |

1-2. LTE_20MHz_ACLR Test Result

Out Power : 8.77 dBm

LTE_FDD_20MHz_TM 3p1_100 : 2600 -50dBc



| RMS Results | | Freq Offset | Ref BW | dBc | Lower dBm | dBc | Upper dBm |
|--------------------|-------------|-------------|-----------|--------|-----------|--------|-----------|
| Carrier Power | 8.77 dBm / | 20.00 MHz | 18.00 MHz | -50.06 | -41.29 | -50.57 | -41.80 |
| | 20.0000 MHz | | | | | | |