

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 BG17C

Application Note



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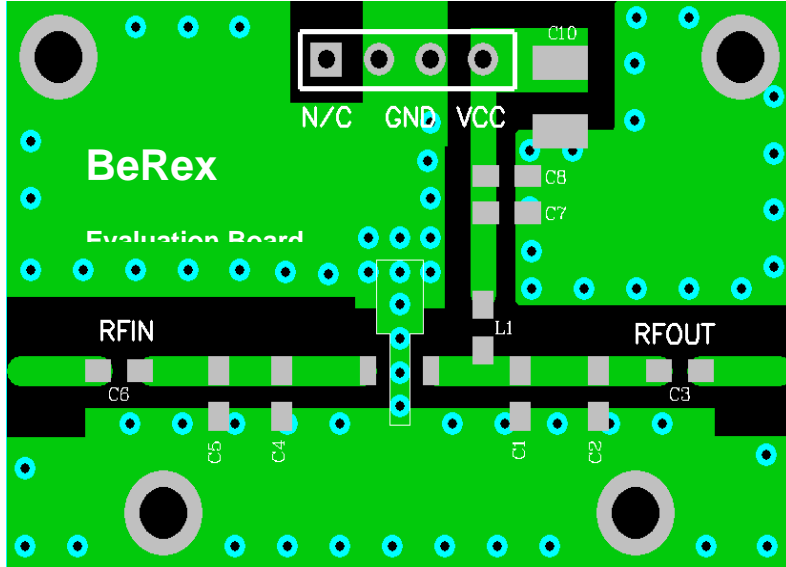
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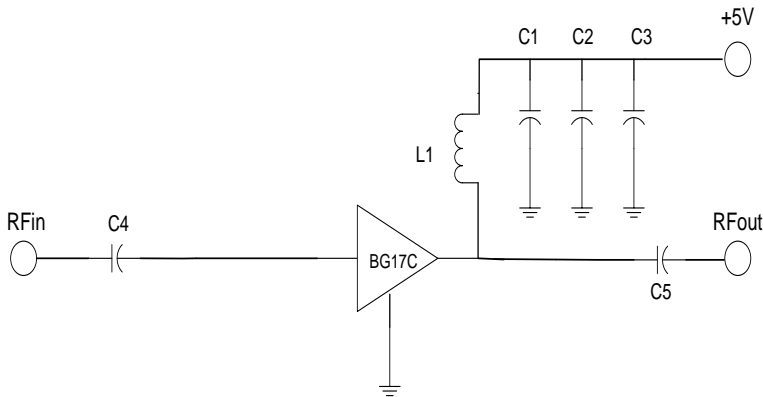
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1. BG17C_ 2600MHz Application Note



| 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 | BG17C | BEREX |
| | | | |
| | | | |



Note:

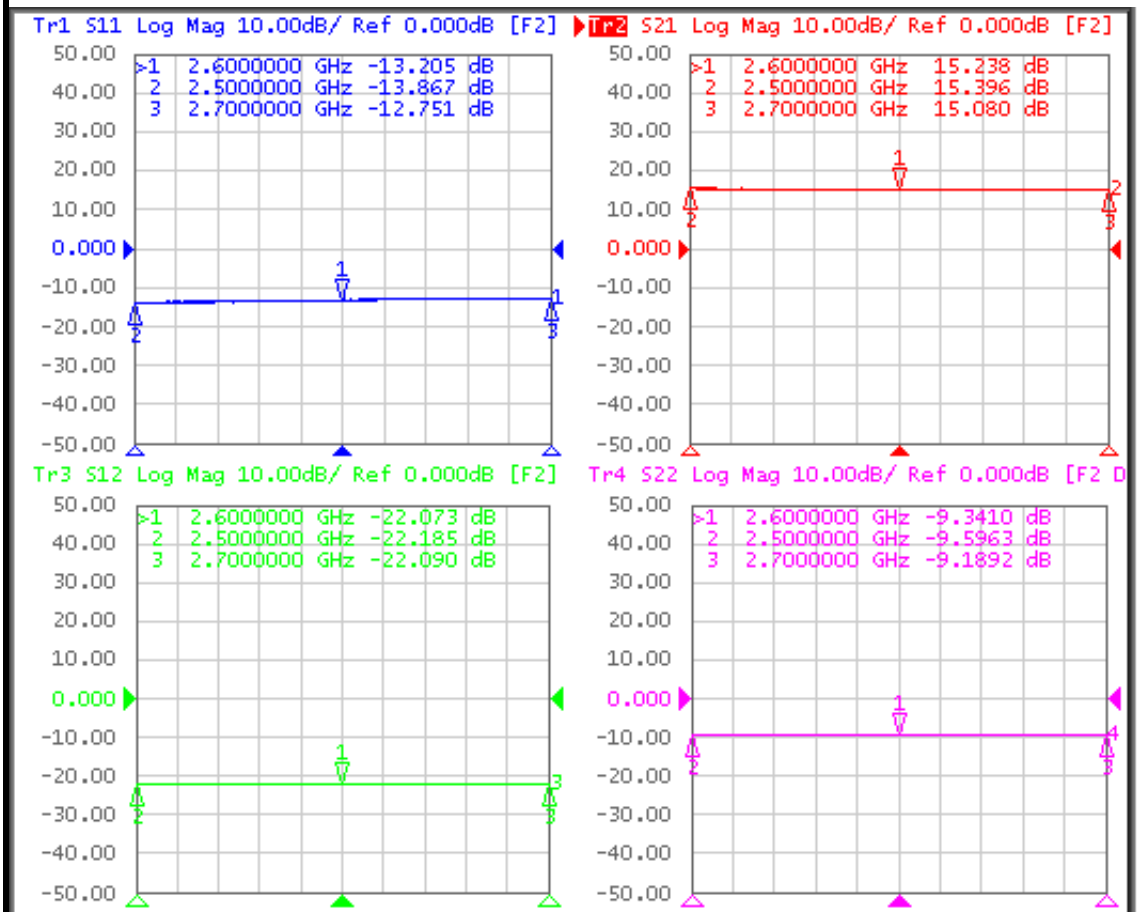
1. PCB: 31mil thick FR4

| | |
|------------------------|----------|
| TITLE | |
| BG17C Evaluation Board | |
| (2600MHz) | |
| Drawing Number | Rev. |
| Date | Drawn By |
| FILE NAME | SHEET |
| | |

1.1 BG17C_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 | 53 | 15.3 | 29.7 | 16 | -13.8 | -9.5 | 4.1 |
| - | 2600 | 5 | 53 | 15.2 | 29.7 | 15.9 | -13.2 | -9.3 | 4.1 |
| - | 2700 | 5 | 53 | 15.0 | 29.5 | 15.6 | -12.7 | -9.1 | 4.1 |

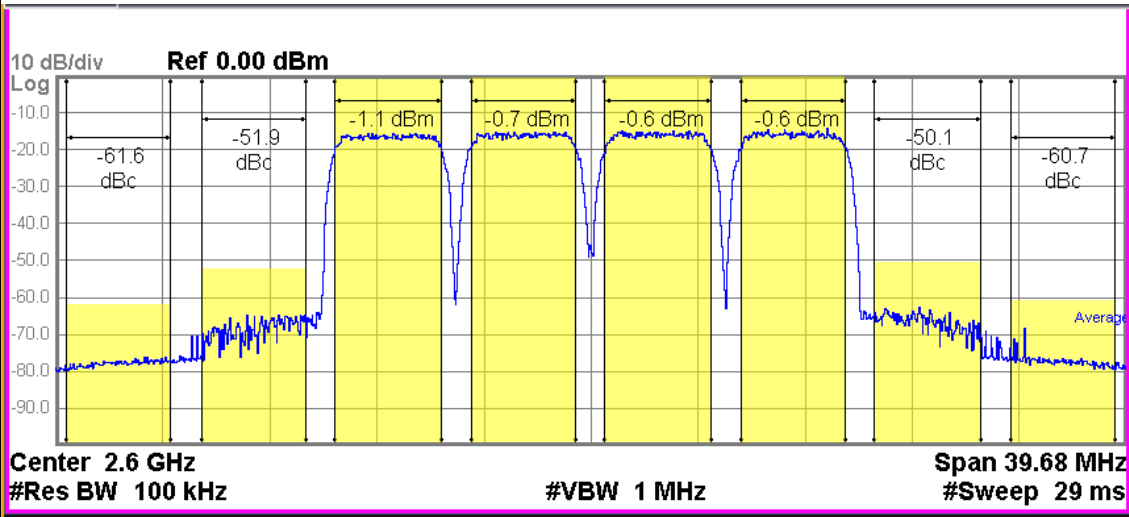
(1) OIP3 was tested @Pout=2dBm/tone 1MHz offset



1-1. WCDMA 4FA_ ACLR Test Result

Out Power : 5.25 dBm

WCDMA 4FA : 2600 -50dBc



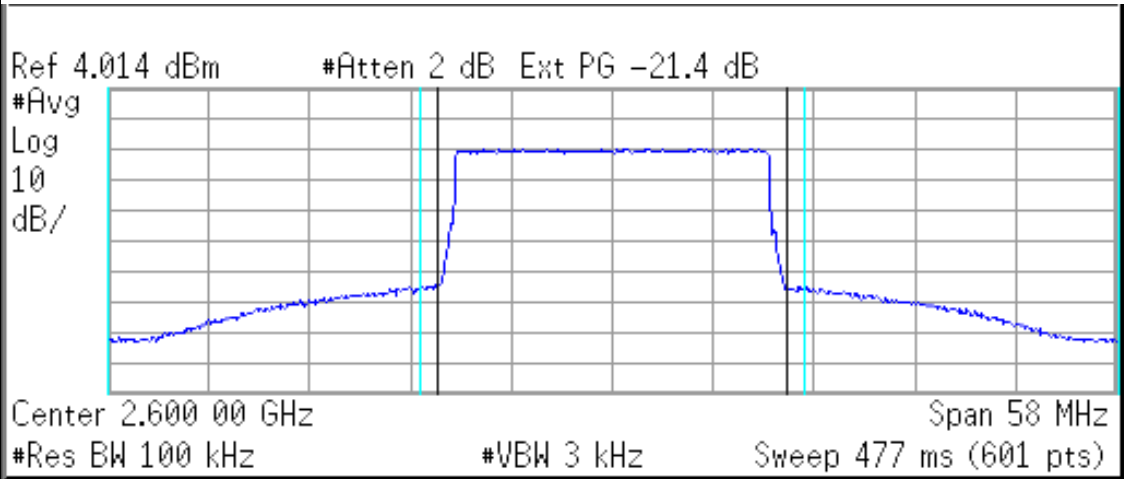
| Carrier Power | | Filter | Offset Freq | Integ BW | Lower | | Upper | | Filter |
|---------------|------------------------|--------|-------------|-----------|--------|--------|--------|--------|--------|
| | | | | | dBc | dBm | dBc | dBm | |
| 1 | -1.136 dBm / 3.840 MHz | ON | 5.000 MHz | 3.840 MHz | -51.85 | -52.47 | -50.10 | -50.71 | ON |
| 2 | -0.723 dBm / 3.840 MHz | ON | 10.00 MHz | 3.840 MHz | -61.56 | -62.18 | -60.73 | -61.35 | ON |
| 3 | -0.616 dBm / 3.840 MHz | ON | | | | | | | |
| 4 | -0.621 dBm / 3.840 MHz | ON | | | | | | | |

Total Carrier Power 5.252 dBm/ 15.36 MHz ACP-IBW

1-2. LTE_20MHz_ACLR Test Result

Out Power : 5.72 dBm

LTE_FDD_20MHz_TM 3p1_100 : 2600 -50dBc



| RMS Results | | Freq | Offset | Ref BW | dBc | Lower | dBm | dBc | Upper | dBm |
|--------------------|-----------|-----------|--------|--------|--------|--------|-----|-----|-------|-----|
| Carrier Power | 20.00 MHz | 18.00 MHz | -50.06 | -44.34 | -50.42 | -44.70 | | | | |
| 5.72 dBm / | | | | | | | | | | |
| 20.0000 MHz | | | | | | | | | | |