

RF MMIC Innovator

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[CLASSIFICATION] APPLICATION NOTE

[DATE] 2015.01

[REVISION No.] REV.A

[MEASURING INSTRUMENTS]

- NA\_AGILENT E5071B

- SA\_AGILENT E4440A

- SG\_AGILENT 4438C

- SG\_IFR 3416

## Wide Band Gain Block Amp BG14B

### Application Note



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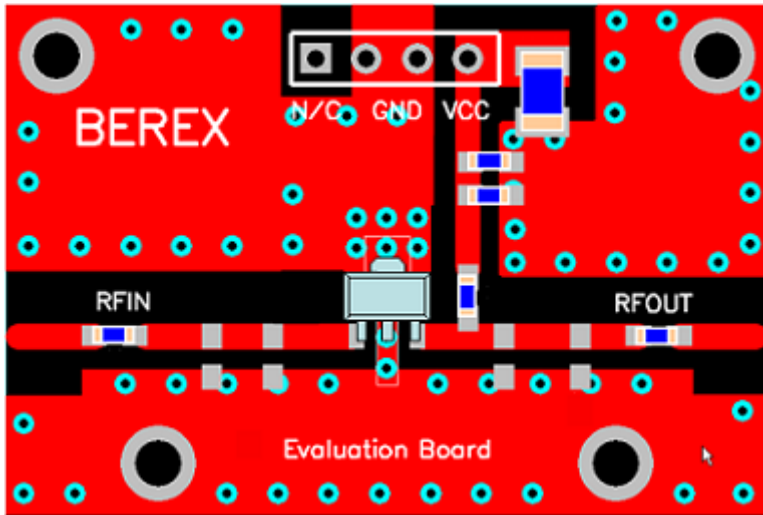
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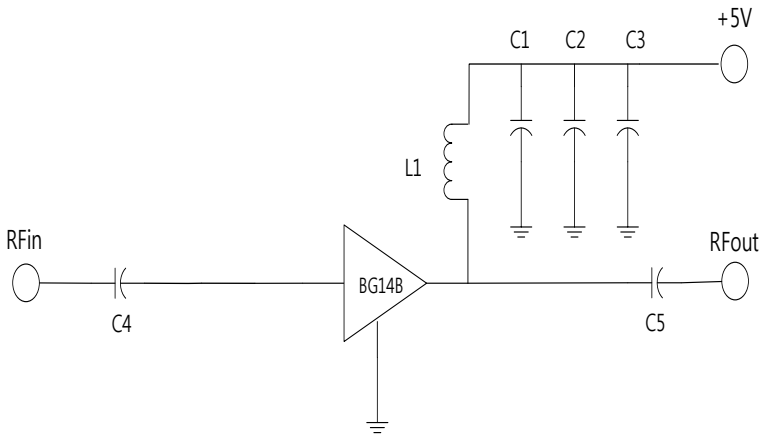
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1. BG14B\_3500MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	100pF	Samsung
C2	0603 CAP	1nF	Samsung
C3	A3216 CAP	10uF	AVX
C4	0603 CAP	10pF	Samsung
C5	0603 CAP	10pF	Samsung
L1	0603 IND	6.8nH	Ceratech
U1	SOT89 PKG	BG14B	BEREX



Note:

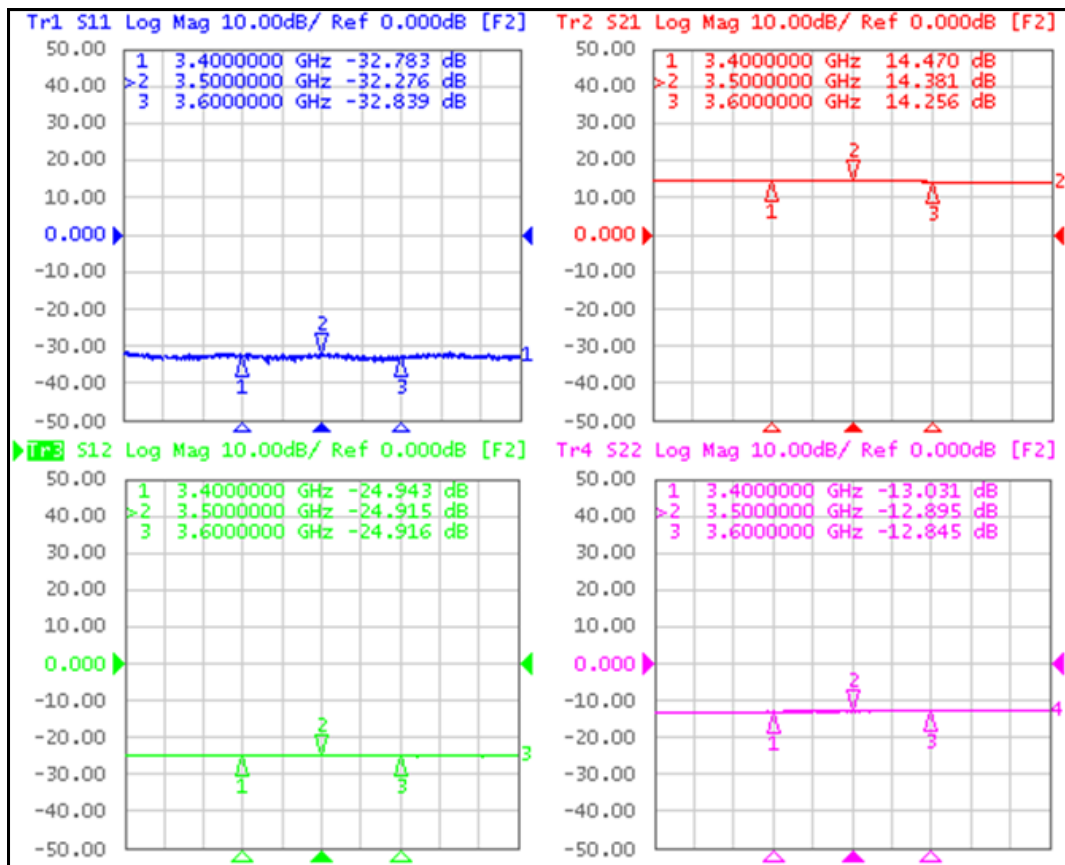
1. PCB: 31mil thick FR4

TITLE	
BG14B Evaluation Board	
(3500MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

### 1.1 BG14B\_3500MHz Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] <sup>(1)</sup>	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3400	5	76	14.4	29.0	17.6	-32.7	-13.0	7.0
-	3500	5	76	14.3	29.0	17.6	-32.2	-12.8	7.0
-	3600	5	76	14.2	28.7	17.5	-32.8	-12.8	7.1

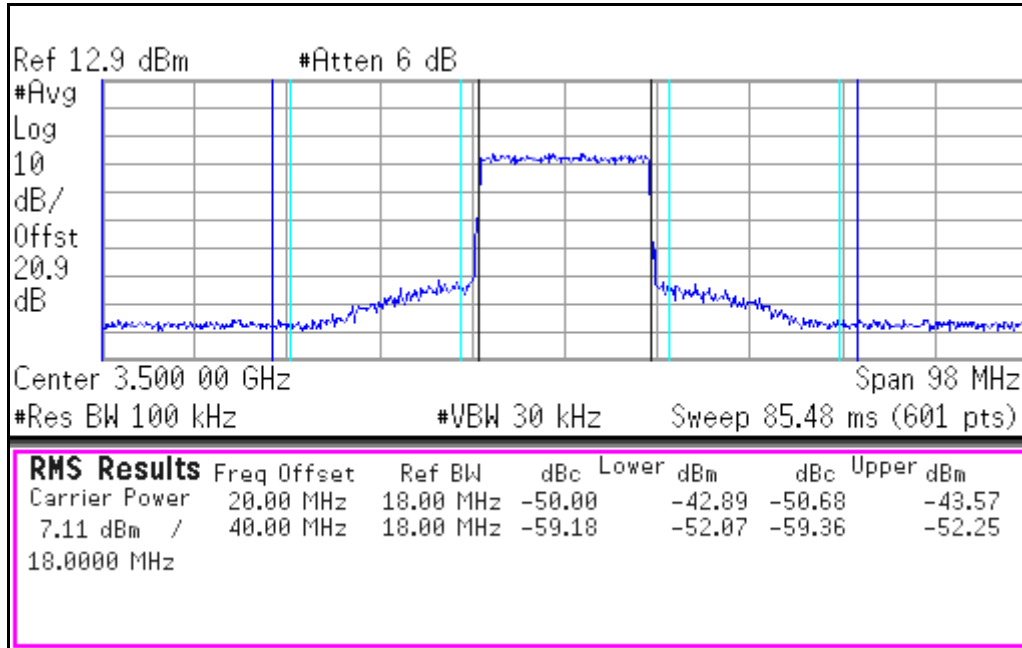
(1) OIP3 was tested @Pout=9dBm/tone 1MHz offset



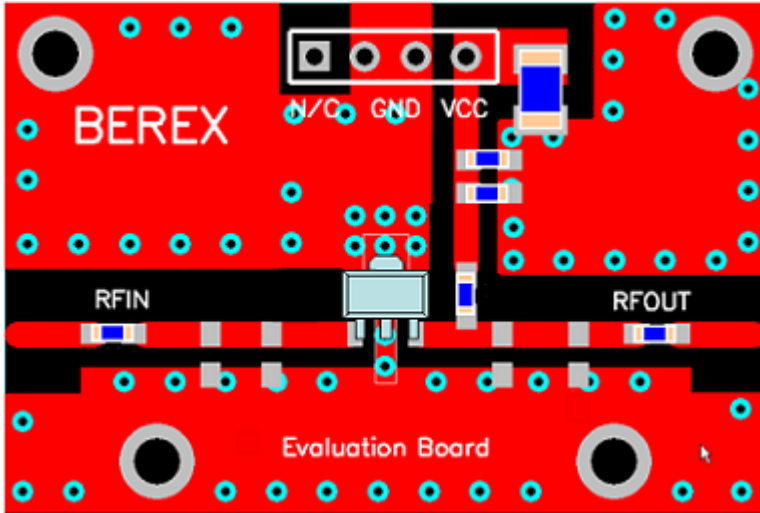
### 1.2 LTE\_20MHz\_ACLR Test Result

Out Power : 7.1 dBm

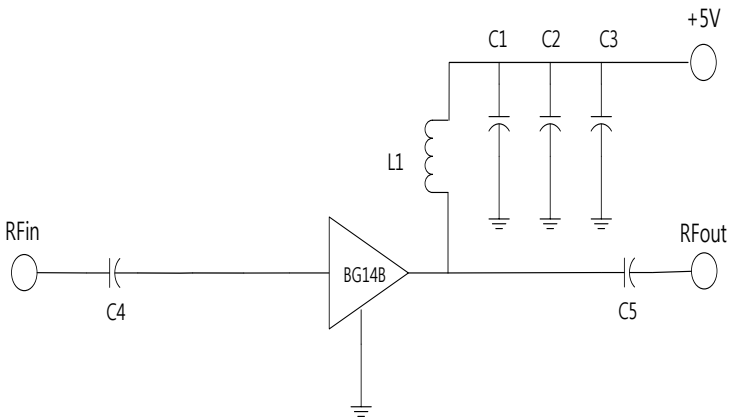
LTE\_FDD\_20MHz\_TM 3.1\_100% : 3500MHz -50dBc



2. BG14B\_ 3700MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	100pF	Samsung
C2	0603 CAP	1nF	Samsung
C3	A3216 CAP	10uF	AVX
C4	0603 CAP	10pF	Samsung
C5	0603 CAP	10pF	Samsung
L1	0603 IND	6.8nH	Ceratech
U1	SOT89 PKG	BG14B	BEREX



Note:

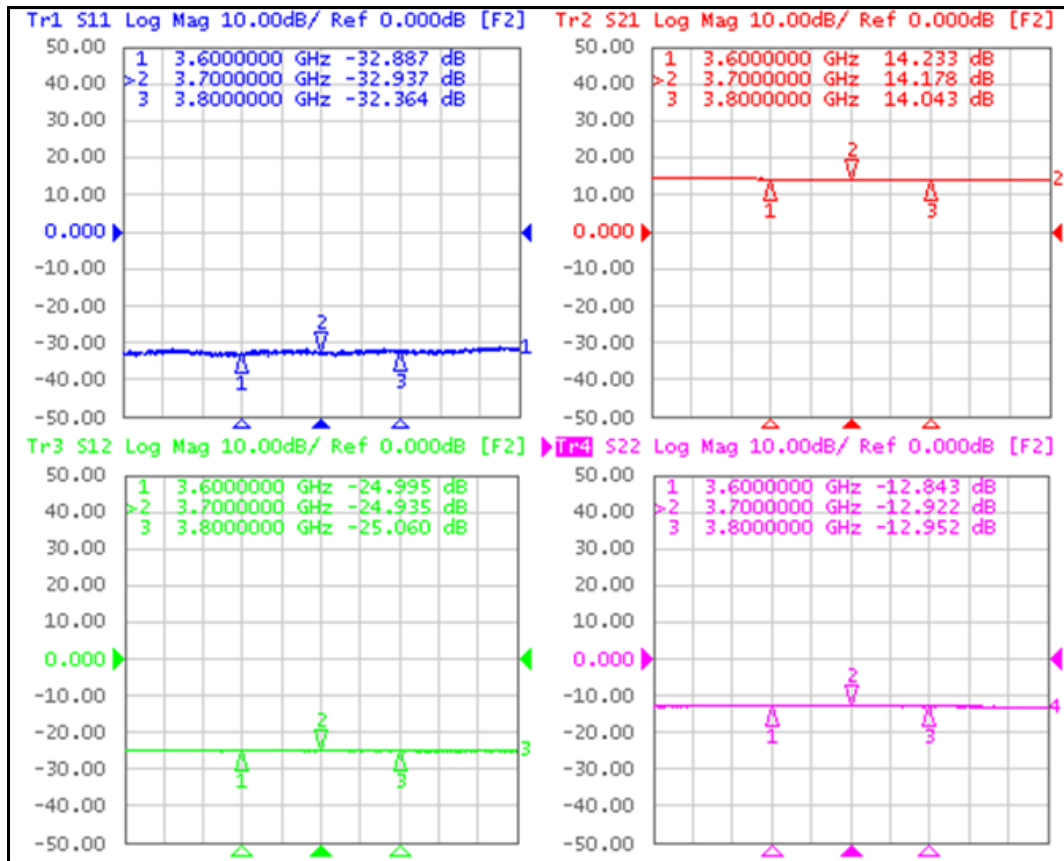
- 2. PCB: 31mil thick FR4

TITLE	
BG14B Evaluation Board	
(3700MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

2.1 BG14B\_3700MHz Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] <sup>(1)</sup>	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3600	5	76	14.2	28.7	17.5	-32.8	-12.8	7.1
-	3700	5	76	14.1	28.6	17.5	-32.9	-12.9	7.0
-	3800	5	76	14.0	28.3	17.3	-32.3	-12.9	7.1

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



**2.2 LTE\_20MHz\_ACLR Test Result**

Out Power : 6.8 dBm

**LTE\_FDD\_20MHz\_TM 3.1\_100% : 3700MHz -50dBc**

