

RF MMIC Innovator

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[CLASSIFICATION] APPLICATION NOTE

[DATE] 2024.07

[REVISION NO.] REV.B

[MEASURING INSTRUMENTS]

- NA\_AGILENT 8753ES

- SA\_AGILENT E4404B

- SG\_AGILENT 4438C

- SG\_IFR 3416

## 3.0~3.3V Supply Amplifier BGS6

### Application Note



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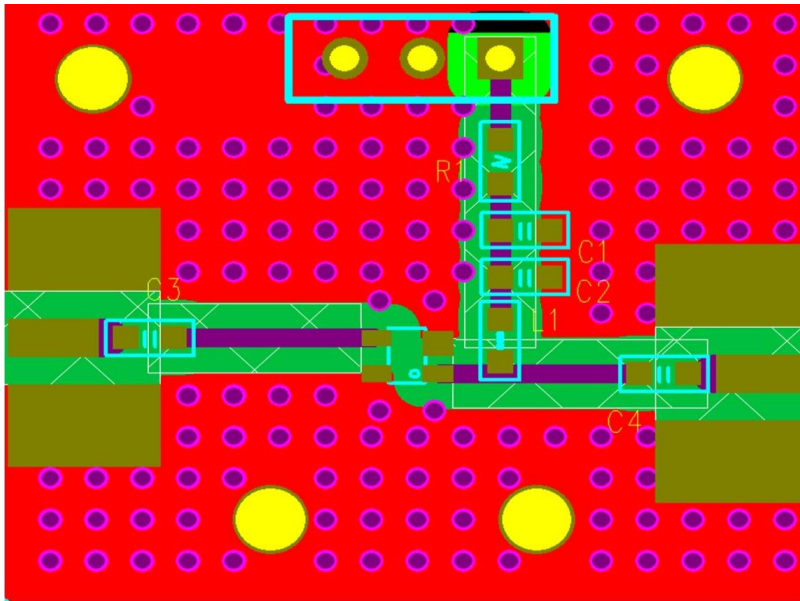
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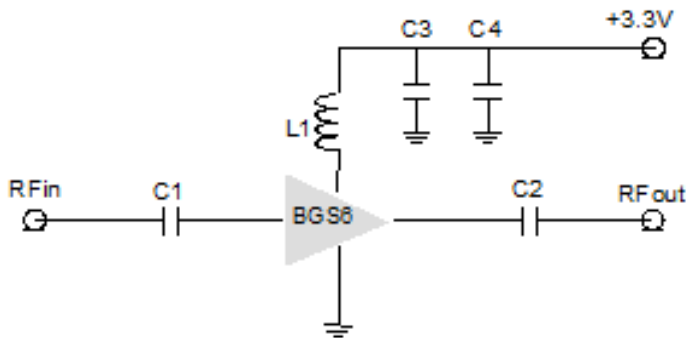
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1. BGS6\_ 3500MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	100pF	Samsung
C2	0603 CAP	100pF	Samsung
C3	0603 CAP	100pF	Samsung
C4	0603 CAP	1000pF	Samsung
L1	0603 CAP	33nH	Samsung
U1	SOT343 PKG	BGS6	BEREX



Note:

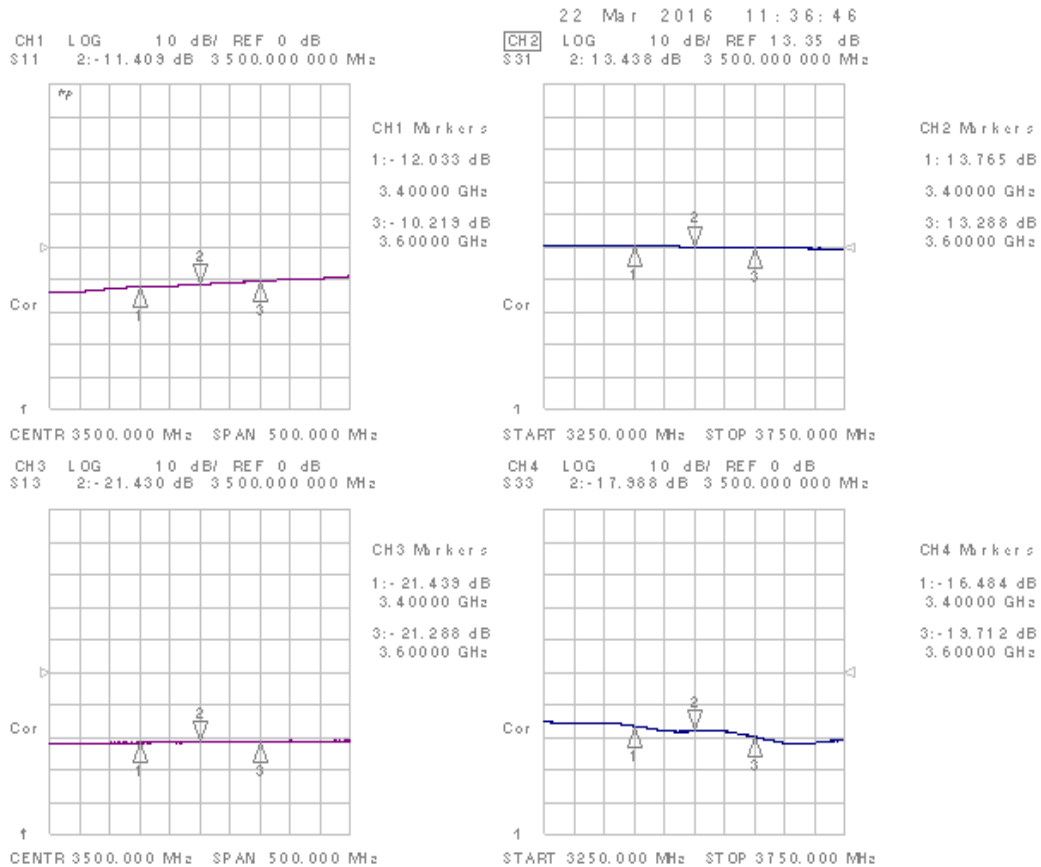
1. PCB: 31mil thick FR4

TITLE	
BGS6 Evaluation Board	
(3500MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

### 1.1 BGS6\_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	3.3	25	13.6	20.1	10.1	-12.7	-11.7	3.7
-	3500	3.3	25	13.4	20.2	10.6	-12.2	-12.4	3.7
-	3600	3.3	25	13.2	20.3	10.4	-11.3	-13.2	3.7

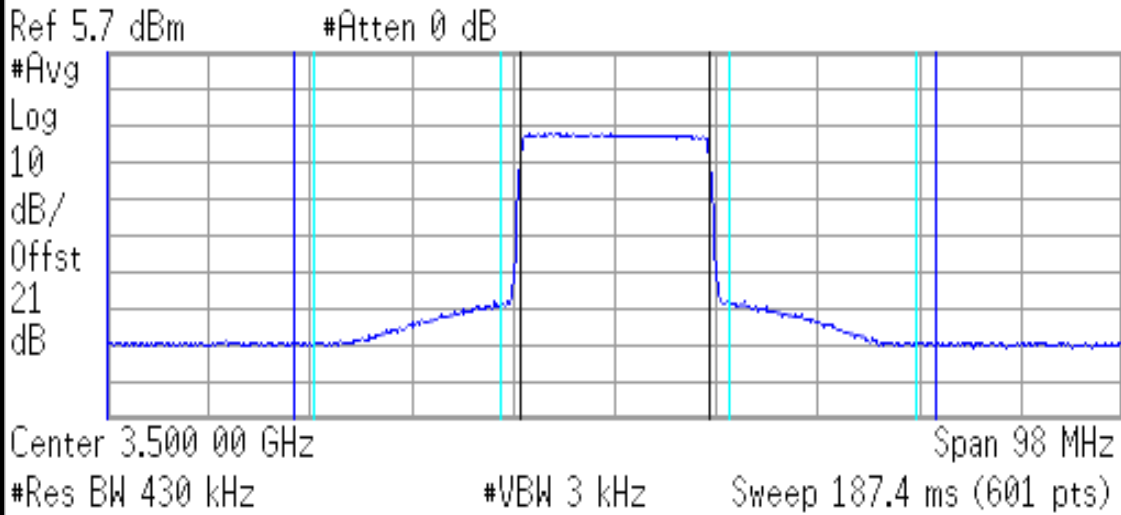
(1) OIP3 was tested @Pout= 0dBm/tone 1MHz offset



**1-2. LTE\_20MHz\_ACLR Test Result**

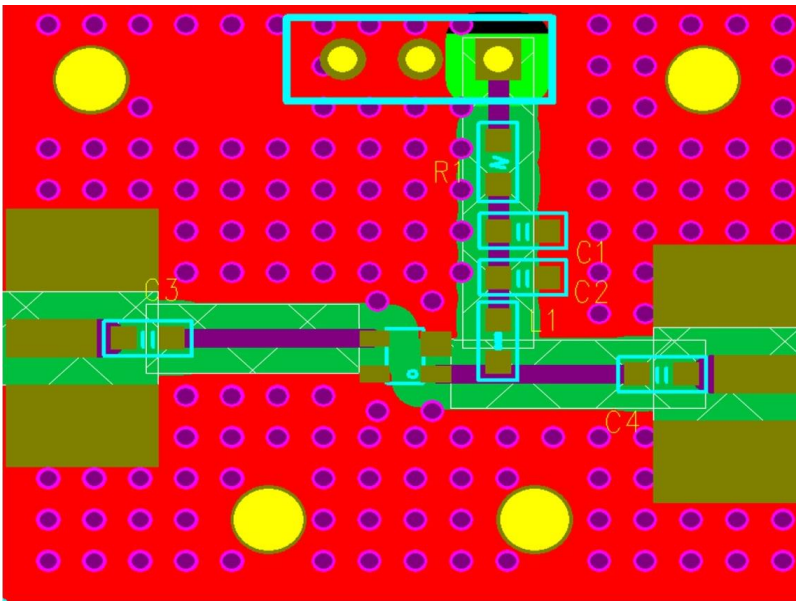
Out Power : -1.14 dBm

**LTE\_FDD\_20MHz\_TM 3p1\_100% : 3500MHz -50dBc**

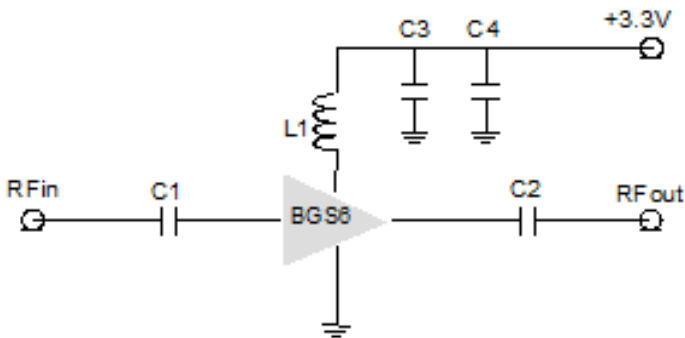


<b>RMS Results</b>		Freq Offset	Ref BW	dBc	Lower dBm	dBc	Upper dBm
Carrier Power	20.00 MHz	18.00 MHz	-50.45	-51.58	-50.02	-51.15	
-1.14 dBm /	40.00 MHz	18.00 MHz	-56.76	-57.89	-56.95	-58.08	
18.0000 MHz							

2. BGS6\_ 3700MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	100pF	Samsung
C2	0603 CAP	100pF	Samsung
C3	0603 CAP	100pF	Samsung
C4	0603 CAP	1000pF	Samsung
L1	0603 CAP	33nH	Samsung
U1	SOT343 PKG	BGS6	BEREX



Note:

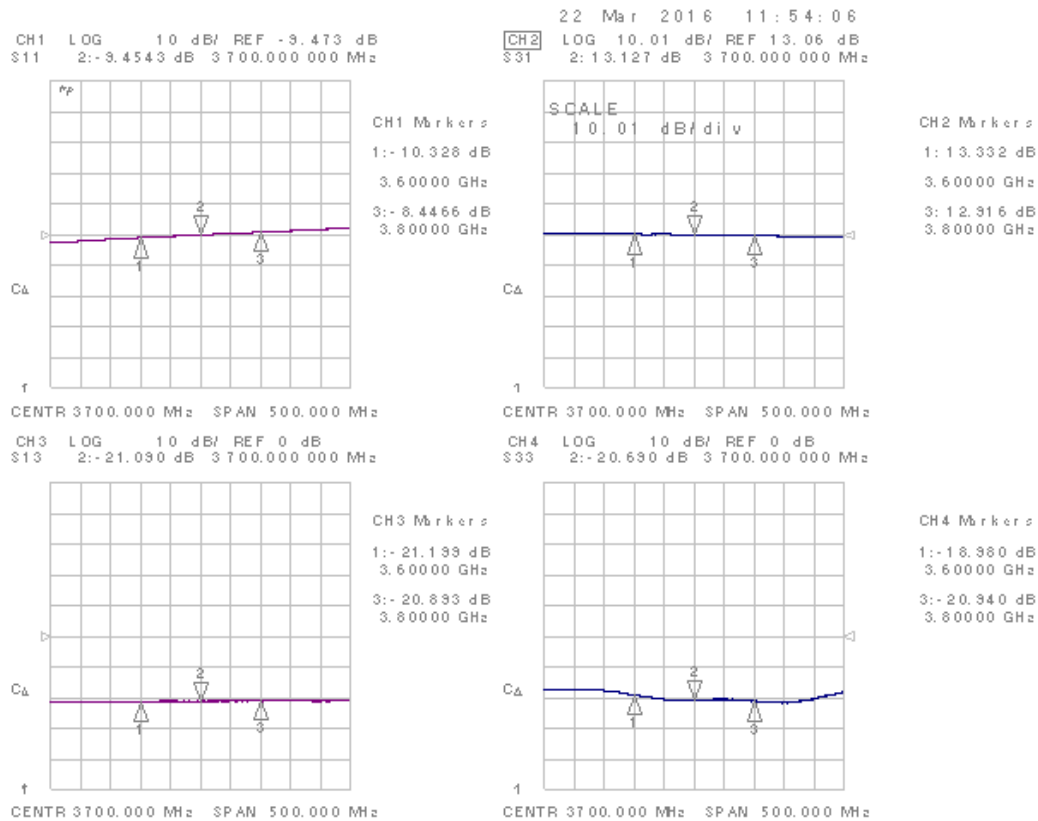
1. PCB: 31mil thick FR4

TITLE	
BGS6 Evaluation Board	
(3700MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

### 2.1 BGS6\_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	3.3	25	13.3	19.6	10.2	-10.3	-19.5	3.7
-	3700	3.3	25	13.0	19.7	10.5	-9.4	-20.3	3.7
-	3800	3.3	25	12.9	19.9	10.4	-8.4	-21.2	3.7

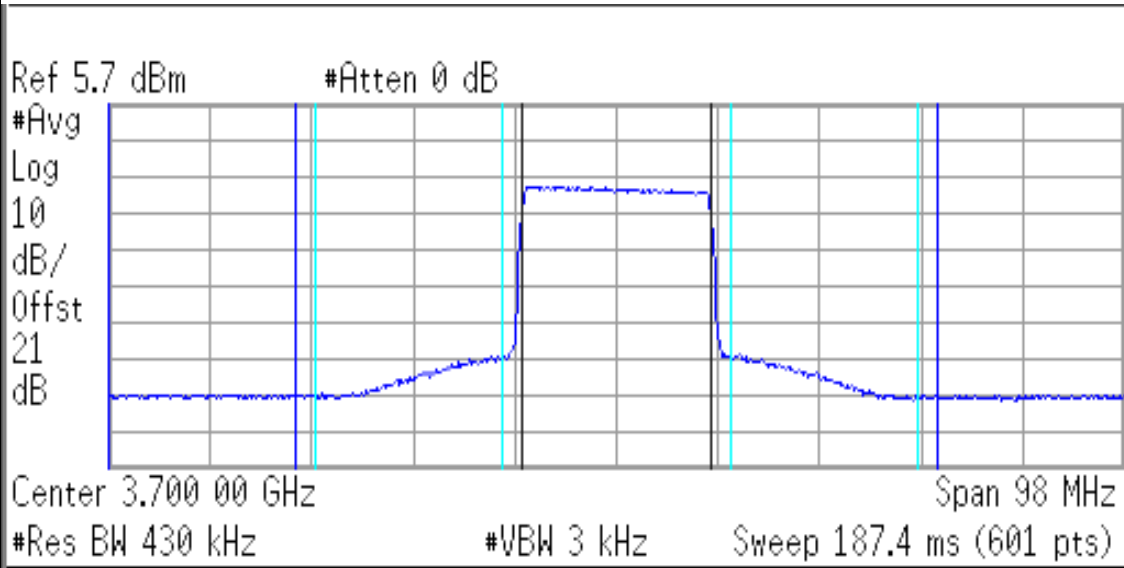
(1) OIP3 was tested @Pout= 0dBm/tone 1MHz offset



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

Out Power : -1.98 dBm

**LTE\_FDD\_20MHz\_TM 3p1\_100% : 3700MHz -50dBc**



<b>RMS Results</b>		Freq	Offset	Ref BW	dBc	Lower	dBm	dBc	Upper	dBm
Carrier Power		20.00 MHz		18.00 MHz	-50.29	-52.28		-50.18		-52.16
-1.98 dBm /		40.00 MHz		18.00 MHz	-56.59	-58.58		-56.91		-58.89
		18.0000 MHz								