

RF MMIC Innovator

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[CLASSIFICATION] APPLICATION NOTE

[DATE] 2024. 07

[REVISION NO.] REV.B

[MEASURING INSTRUMENTS]

- NA_AGILENT E5071B

- SA_AGILENT N9020A

- SG_AGILENT 4438C

- SG_IFR 3416

Si-Ge Gain Block Amp BGS1

Application Note



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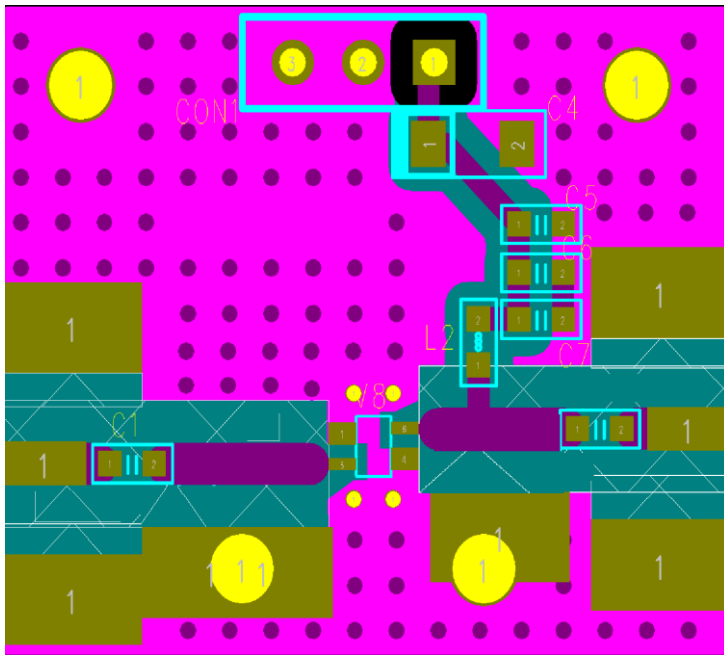
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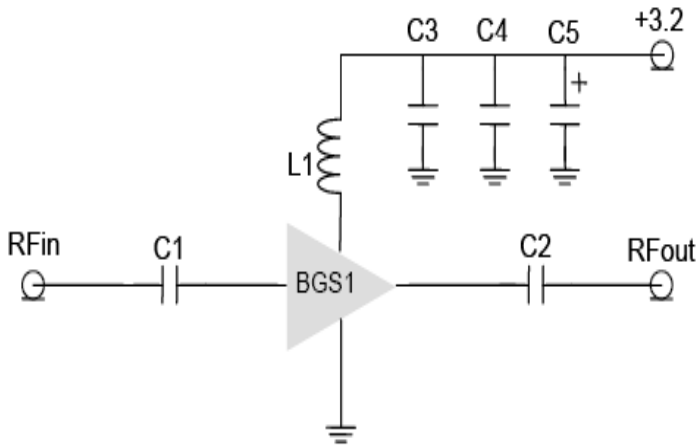
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1. BGS1_ 3500MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	10pF	Samsung
C2	0603 CAP	10pF	Samsung
C3	0603 CAP	100pF	Samsung
C4	0603 CAP	1000pF	Samsung
C5	A3216 CAP	10uF	AVX
L1	0603 CAP	12nH	Samsung
U1	SOT363 PKG	BGS1	BEREX



Note:

1. PCB: 31mil thick FR4

TITLE

BGS1 Evaluation Board

(3500MHz)

Drawing Number

Rev.

Date

Drawn By

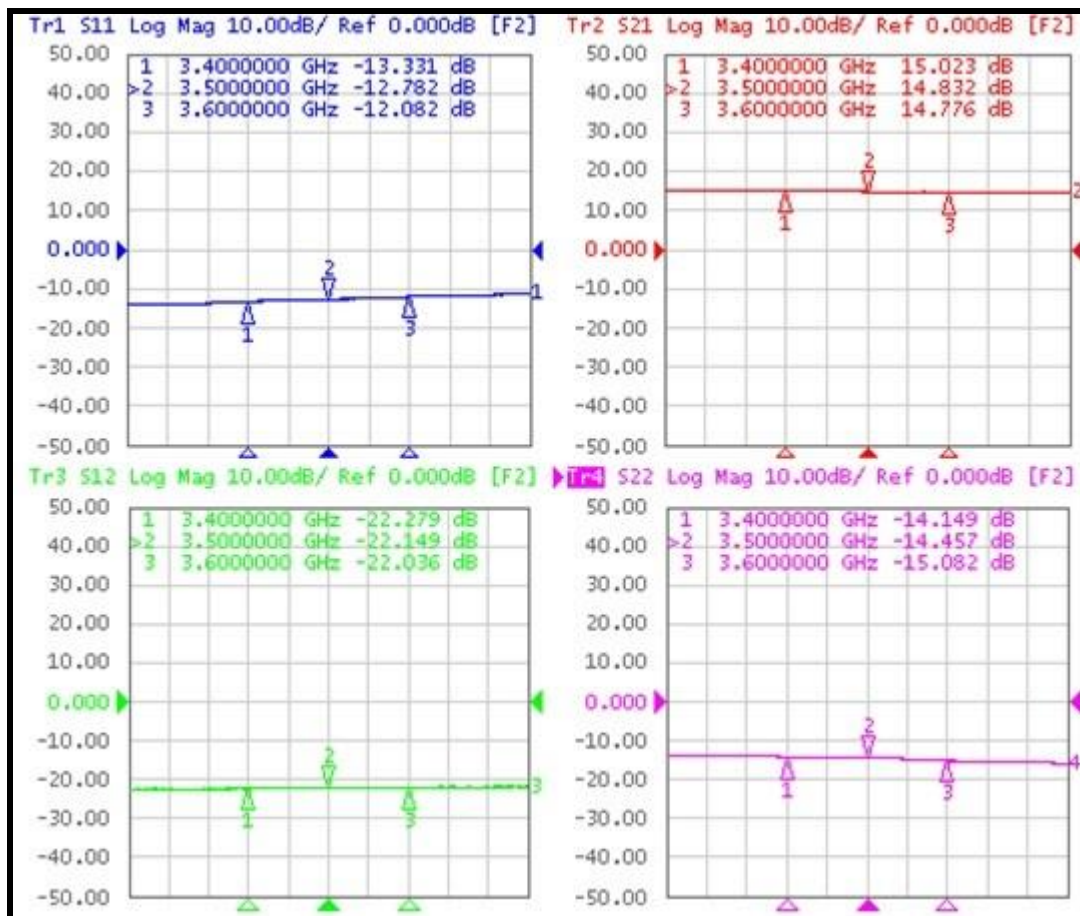
FILE NAME

SHEET

1.1 BGS1_3500MHz Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3400	3.2	24	15.0	18.8	9.7	-13.3	-14.1	3.1
-	3500	3.2	24	14.8	18.7	9.7	-12.9	-14.5	3.1
-	3600	3.2	24	14.7	18.5	9.6	-12.5	-15.1	3.2

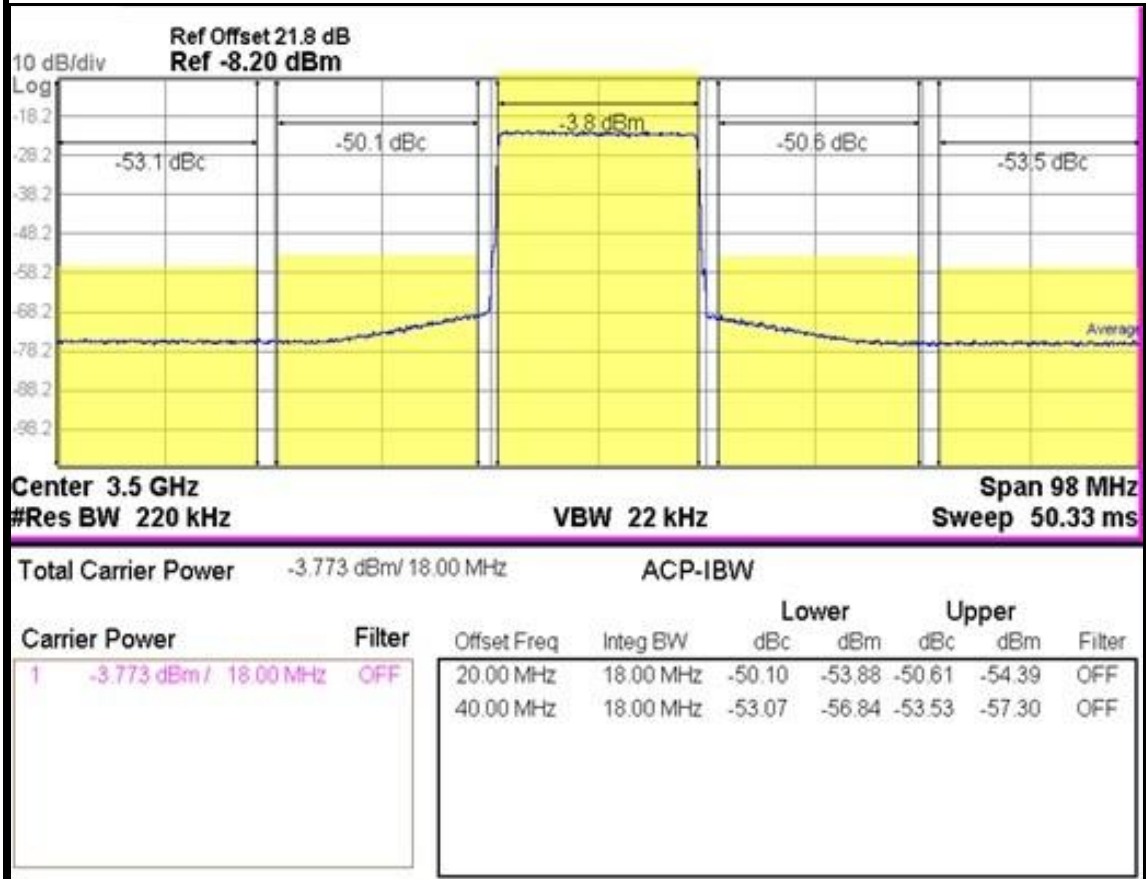
(1) OIP3 was tested @Pout=0dBm/tone 1MHz offset



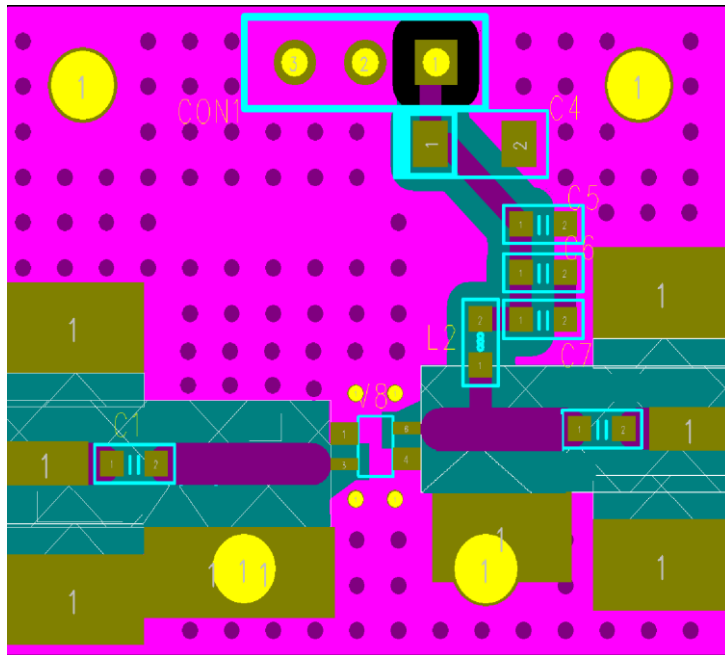
1.2 LTE_20MHz_ACLR Test Result

Out Power : -3.8 dBm

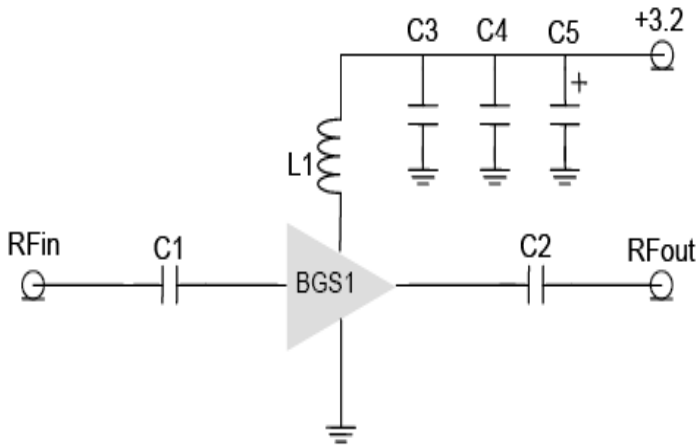
LTE_FDD_20MHz_TM 3p1_100% : 3500MHz -50dBc



2. BGS1_ 3700MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	10pF	Samsung
C2	0603 CAP	10pF	Samsung
C3	0603 CAP	100pF	Samsung
C4	0603 CAP	1000pF	Samsung
C5	A3216 CAP	10uF	AVX
L1	0603 CAP	12nH	Samsung
U1	SOT363 PKG	BGS1	BEREX



Note:

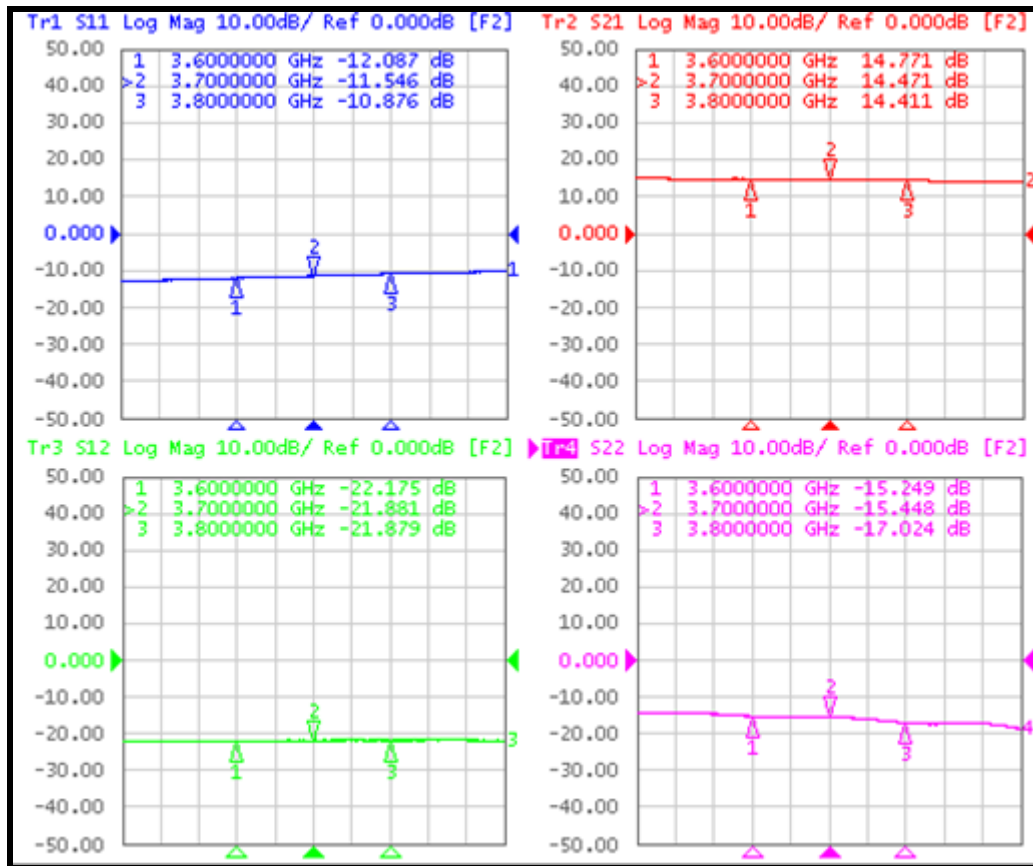
- 2. PCB: 31mil thick FR4

TITLE	
BGS1 Evaluation Board	
(3700MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

2.1 BGS1_3700MHz Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3600	3.2	24	14.7	18.5	9.6	-12.1	-15.2	3.2
-	3700	3.2	24	14.5	18.0	9.6	-11.5	-15.4	3.1
-	3800	3.2	24	14.4	17.7	9.7	-10.8	-17.0	3.3

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



2.2 LTE_20MHz_ACLR Test Result

Out Power : -4.2 dBm

LTE_FDD_20MHz_TM 3p1_100% : 3700MHz -50dBc

