

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

Si-Ge Gain Block Amp BGS1

Application Note



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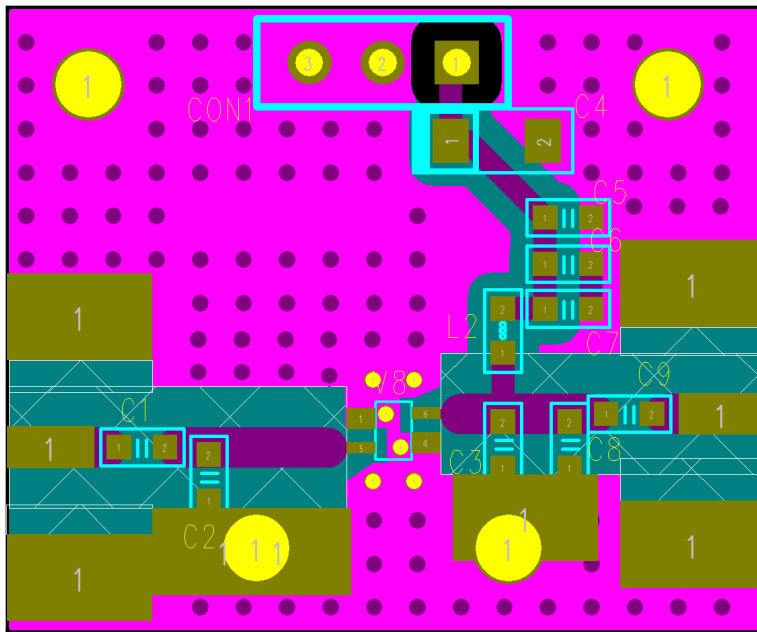
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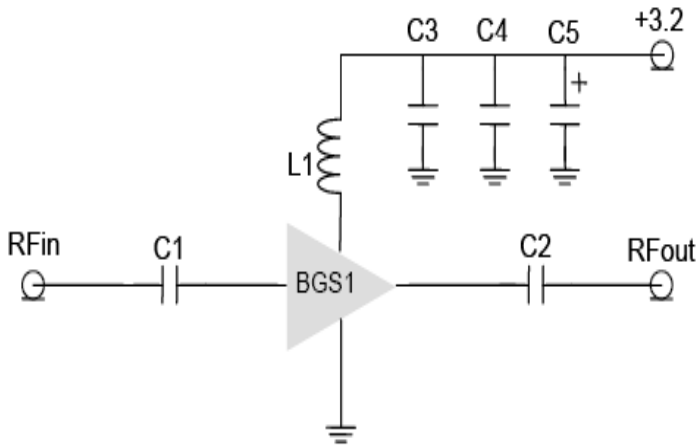
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1. BGS1_ 2600MHz Application Note



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
C5	A3216 CAP	10uF	AVX
L1	0603 CAP	56nH	Samsung
U1	SOT363 PKG	BGS1	BEREX



Note:

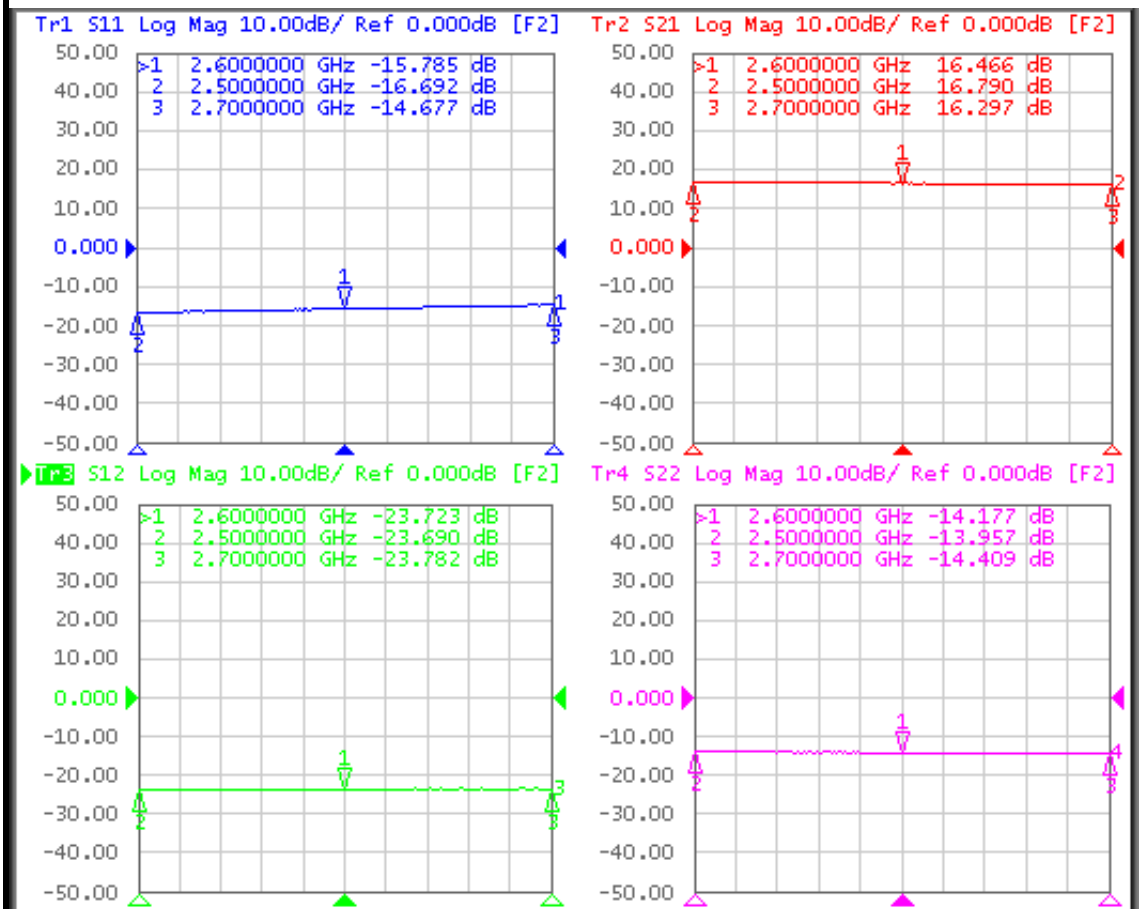
- 1. PCB: 31mil thick FR4

TITLE	
BGS1 Evaluation Board	
(2600MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

1.1 BGS1_2600MHz Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	2500	3.2	27	16.8	22.5	12.4	-16.7	-14.0	3.4
-	2600	3.2	27	16.5	22.5	12.2	-15.8	-14.2	3.4
-	2700	3.2	27	16.3	22.5	12.1	-14.6	-14.4	3.4

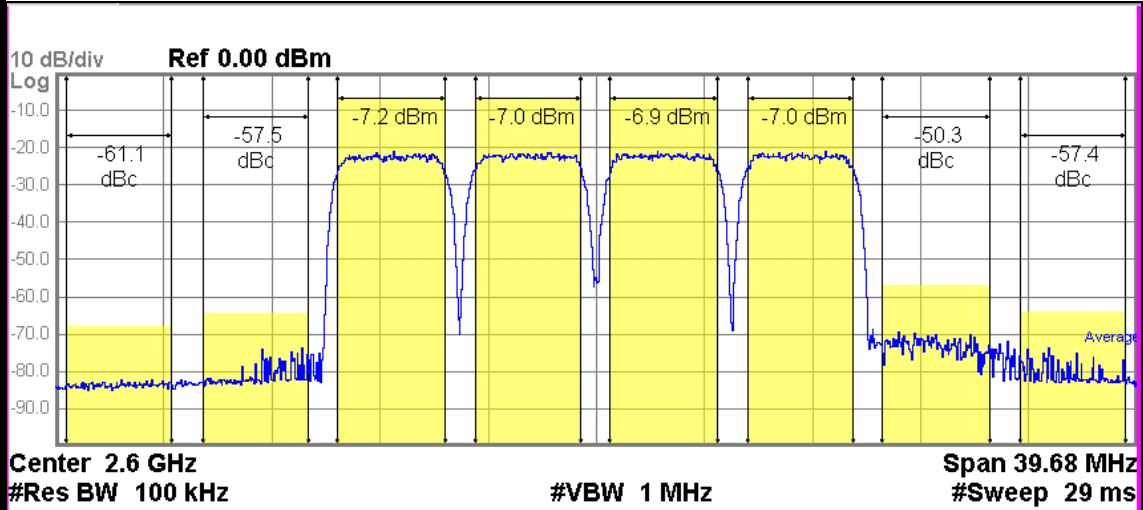
(1) OIP3 was tested @Pout=0dBm/tone 1MHz offset



1-1.WCDMA4FA_ ACLR Test Result

Out Power : -1.01 dBm

WCDMA 4FA : 2600 -50dBc



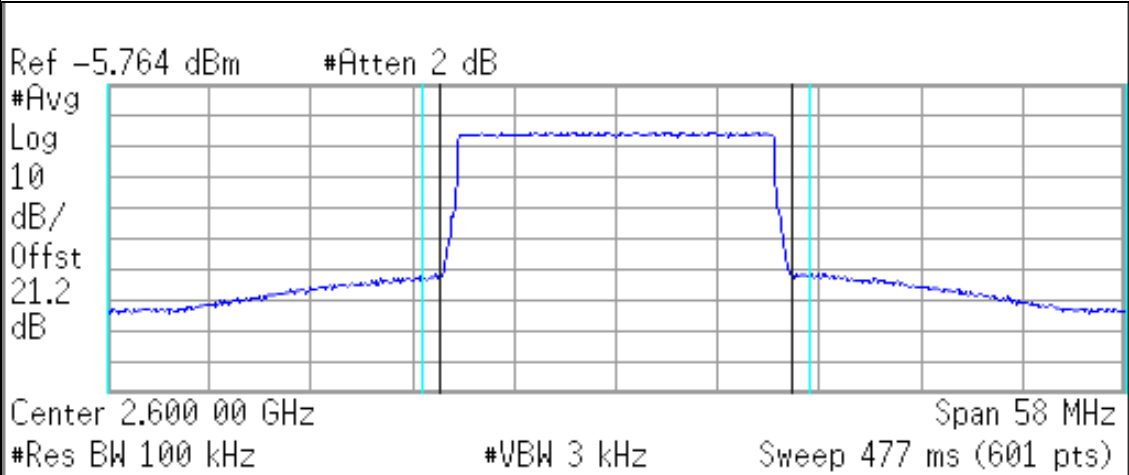
Total Carrier Power -1.012 dBm/ 15.36 MHz ACP-IBW

Carrier Power	Filter	Offset Freq	Integ BW	Lower		Upper		Filter
				dBc	dBm	dBc	dBm	
1 -7.225 dBm / 3.840 MHz	ON	5.000 MHz	3.840 MHz	-57.54	-64.54	-50.28	-57.28	ON
2 -7.000 dBm / 3.840 MHz	ON	10.00 MHz	3.840 MHz	-61.06	-68.06	-57.39	-64.39	ON
3 -6.930 dBm / 3.840 MHz	ON							
4 -6.983 dBm / 3.840 MHz	ON							

1-2. LTE_20MHz_ACLR Test Result

Out Power : 0.4 dBm

LTE_FDD_20MHz_TM 3p1_100 : 2600 -50dBc



RMS Results		Freq Offset	Ref BW	dBc	Lower dBm	dBc	Upper dBm
Carrier Power	0.39 dBm /	20.00 MHz	18.00 MHz	-51.10	-50.71	-50.15	-49.75
	20.0000 MHz						