RF MMIC Innovator www.berex.com

[CLASSIFICATION] APPLICATION NOTE

[DATE] 2022.02

[REVISION NO.] REV.A

[MEASURING INSTRUMENTS]

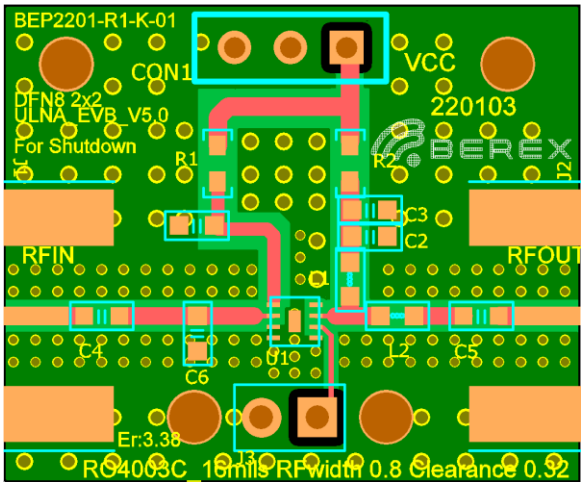
- NA_AGILENT E5071B
- SA_AGILENT E4440A
- SG_AGILENT N5182A
- SG_AGILENT N5182B

High Linearity LNA BLB04

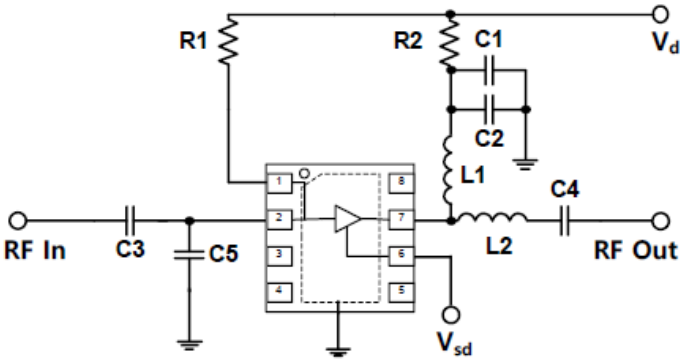
Application Note

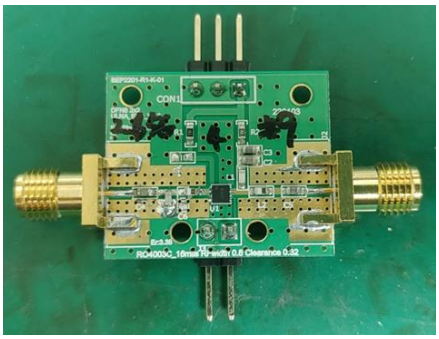
Contents

1. BLB04_ 2.65GHz 5V Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	0603 CAP	1nF	Samsung
C2	0603 CAP	100pF	Samsung
C3	0603 CAP	5.1pF	Johanson(HQ)
C4	0603 CAP	5pF	Samsung
C5	0603 CAP	0.75pF	Samsung
L1	0603 IND	2.2nH	TAIYOTUDEN
L2	0603 IND	1nH	TAIYOTUDEN
R1	0603 RES	1.8kohm	Samsung
R2	0603 RES	0ohm	Samsung
U1	DFN 2X2	BLB04	BEREX





Note:

1. PCB: 16mil thick RO4003

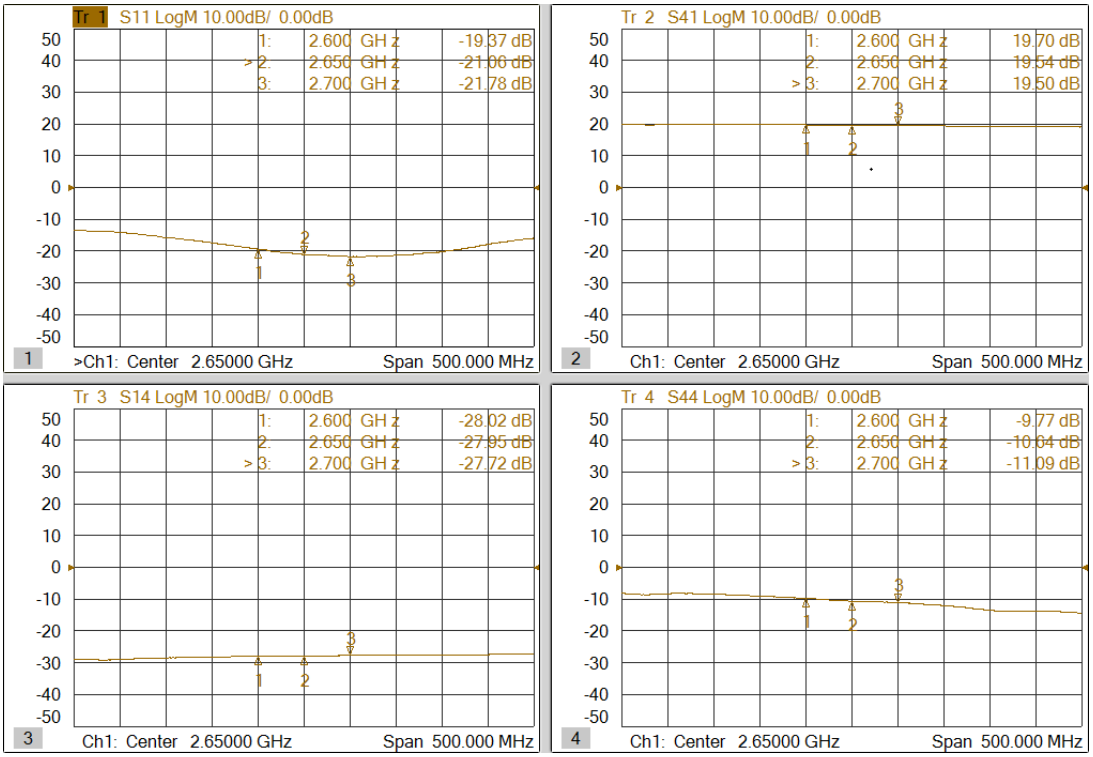
TITLE	
BLB04 Evaluation Board	
(2.65GHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

1.1 BLB04_2.65GHz 5V Test Result

SN	Freq [GHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm](1)	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]](2)
-#9	2.6	5	49	19.7	32.9	20.9	-19.4	-9.8	0.52
-#9	2.65	5	49	19.5	33.1	21.2	-21.1	-10.6	0.51
-#9	2.7	5	49	19.5	33.4	21.6	-21.8	-11.1	0.55

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

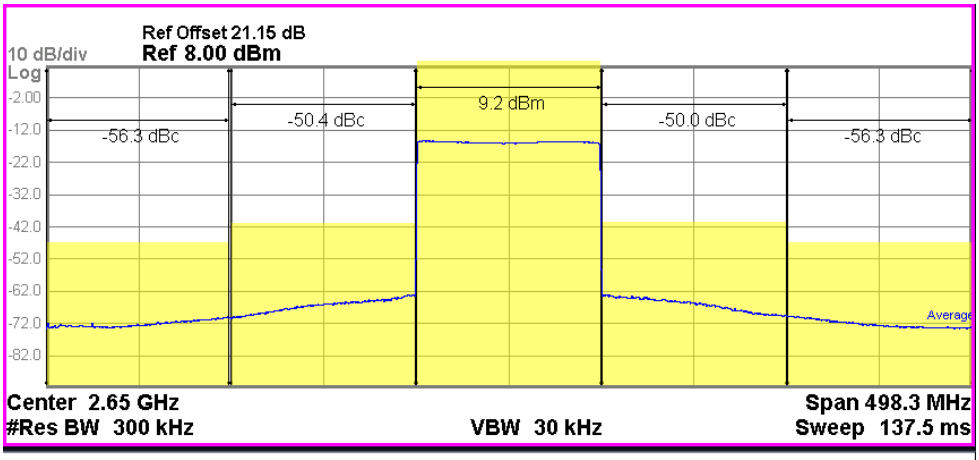
(2) Noise Figure data has input trace loss de-embedded.



1.1.1 2650MHz 5V 5GNR_ ACLR Test Result

Out Power : 9.2 dBm

5GNR_1FA_TM 3p1_100% : 2650MHz -50dBc

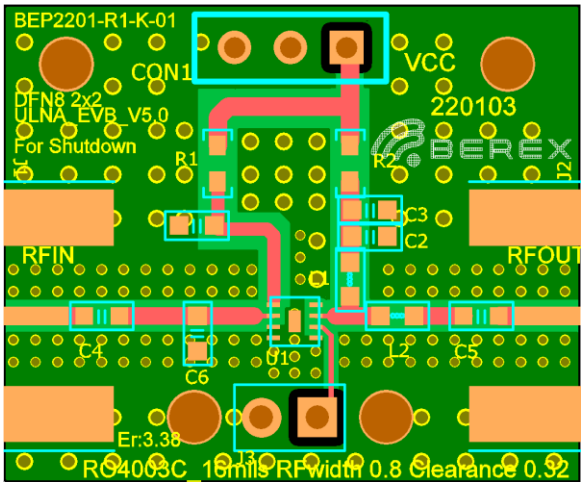


Total Carrier Power 9.173 dBm/ 98.28 MHz ACP-IBW

Carrier Power			Filter
1	9.173 dBm /	98.28 MHz	OFF

			Lower		Upper		
Offset Freq	Integ BW	dBc	dBm	dBc	dBm	Filter
100.0 MHz	98.28 MHz	-50.38	-41.20	-50.03	-40.85	OFF
200.0 MHz	98.28 MHz	-56.32	-47.15	-56.33	-47.15	OFF

2 BLB04_ 2.65GHz 3.3V Application Note



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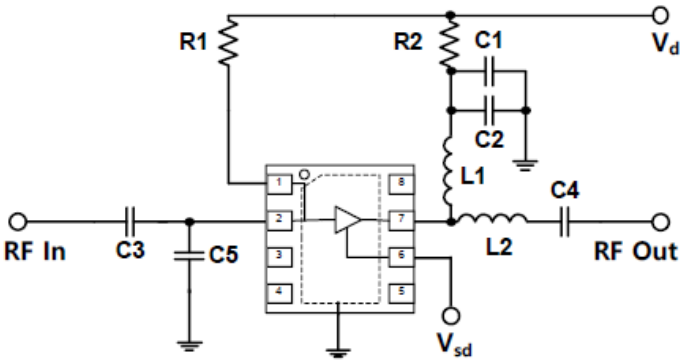
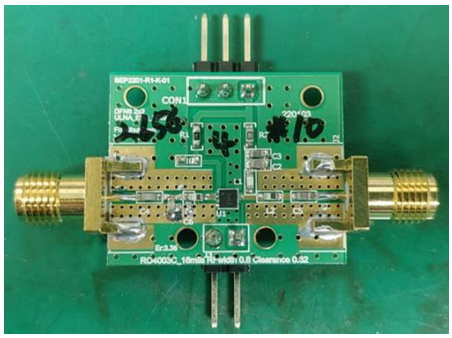
R1	0603 RES	910ohm	Samsung
R2	0603 RES	0ohm	Samsung
U1	DFN 2X2	BLB04	BEREX





Note:

1. PCB: 16mil thick RO4003

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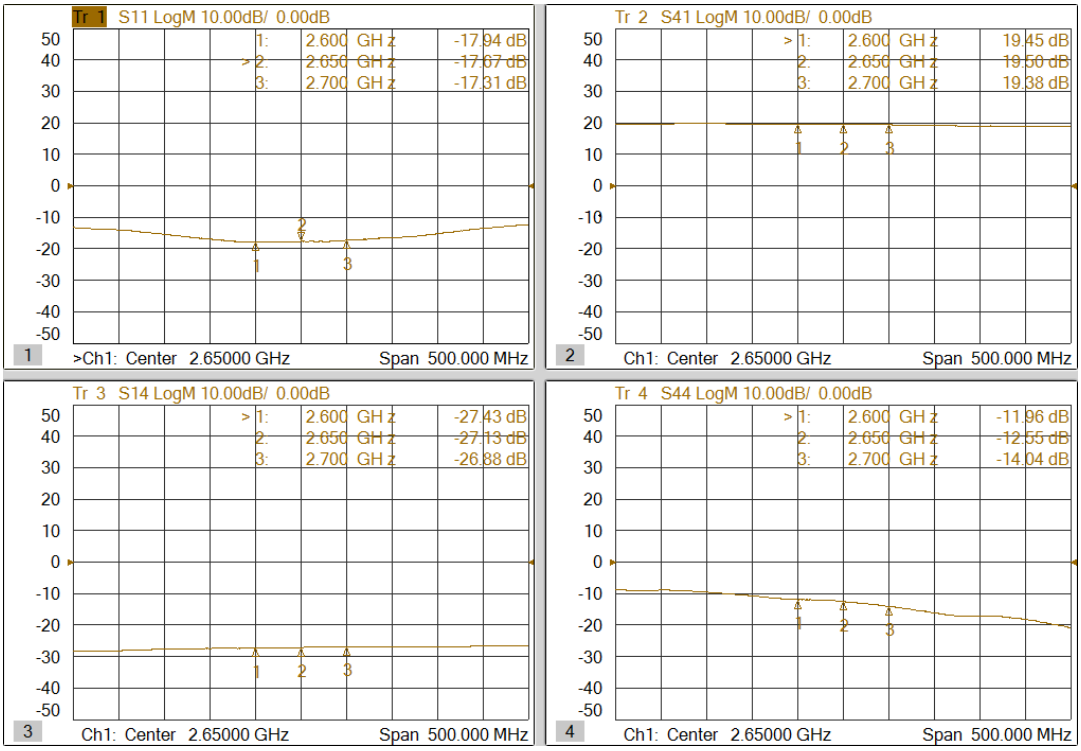
BLB04 Evaluation Board	
(2.65GHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

2.1 BLB04_ 2.65GHz 3.3V Test Result

SN	Freq [GHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm](1)	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB](2)
-#10	2.6	3.3	44	19.5	36.9	16.0	-17.9	-12.0	0.50
-#10	2.65	3.3	44	19.5	36.0	16.5	-17.7	-12.6	0.46
-#10	2.7	3.3	44	19.4	35.8	16.8	-17.3	-14.0	0.44

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

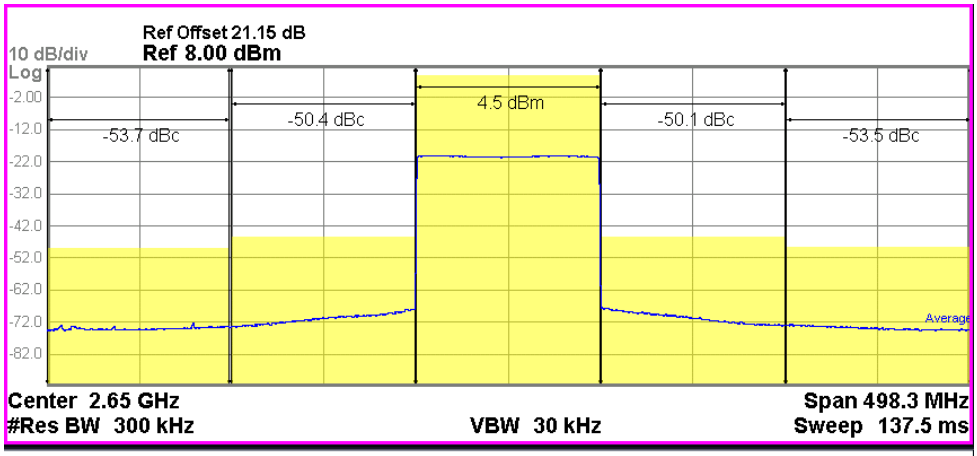
(2) Noise Figure data has input trace loss de-embedded.



2.1.1 2650MHz 3.3V 5GNR_ ACLR Test Result

Out Power : 4.5 dBm

5GNR_1FA_TM 3p1_100% : 2650MHz -50dBc



Total Carrier Power 4.538 dBm/ 98.28 MHz ACP-IBW

Carrier Power			Filter
1	4.538 dBm /	98.28 MHz	OFF

		Lower		Upper		
Offset Freq	Integ BW	dBc	dBm	dBc	dBm	Filter
100.0 MHz	98.28 MHz	-50.38	-45.85	-50.06	-45.52	OFF
200.0 MHz	98.28 MHz	-53.66	-49.13	-53.47	-48.93	OFF