

RF MMIC Innovator

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[CLASSIFICATION] APPLICATION NOTE

[DATE] 2022. 07

[REVISION No.] REV.1.0

[MEASURING INSTRUMENTS]

- NA_AGILENT E5080A

- SA_AGILENT N9020A

- SG_AGILENT N5182A

- SG_AGILENT N5182B

High Power Amp BT302

5G Application Note



Contents

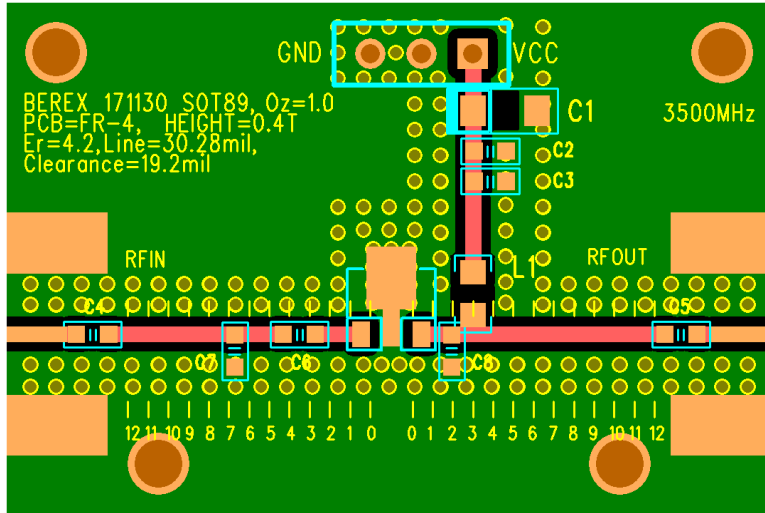
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1. 3500MHZ APPLICATION3

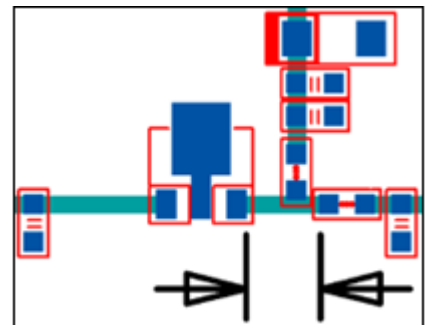
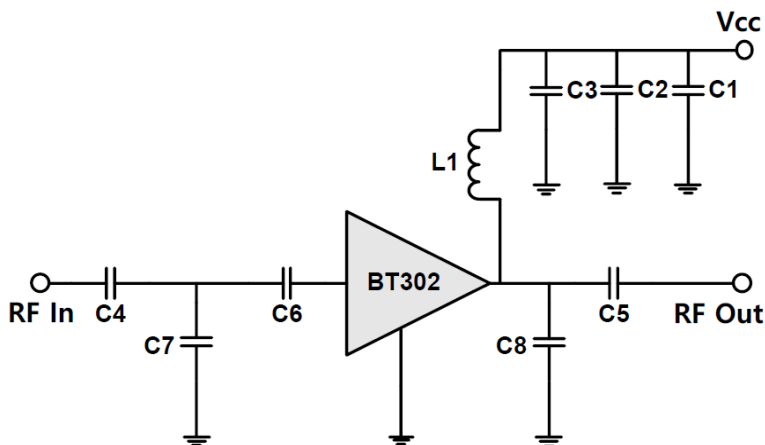
 1.1 3500MHZ TEST RESULT(S-PARAMETER, OIP3, P1, NF,ACLR)4

 1.2 3500MHZ 5G NR_ACLR TEST RESULT5

1. BT302_ 3500MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	A3216 CAP	10uF	AVX
C2	0603 CAP	1nF	Samsung
C3	0603 CAP	100pF	Samsung
C4	0603 CAP	22pF	Samsung
C5	0603 CAP	22pF	Samsung
C6	0603 CAP	0.3pF	Samsung
C7	0603 CAP	0.5pF	Samsung
C8	0603 CAP	0.75pF	Samsung
L1	0805 IND	18nH	Coilcraft
U1	SOT89 PKG	BT302	BEREX



Note:

1. PCB: 16mil thick FR4
2. Distance between the edge of the shunt cap (C7) and the input pin of BT302 is 7.5 mm.
3. Distance between the center of the series cap (C6) and the input pin of BT302 is 1.7 mm.
4. Distance between the center of the shunt cap (C8) and the input pin of BT302 is 0.1 mm.

TITLE

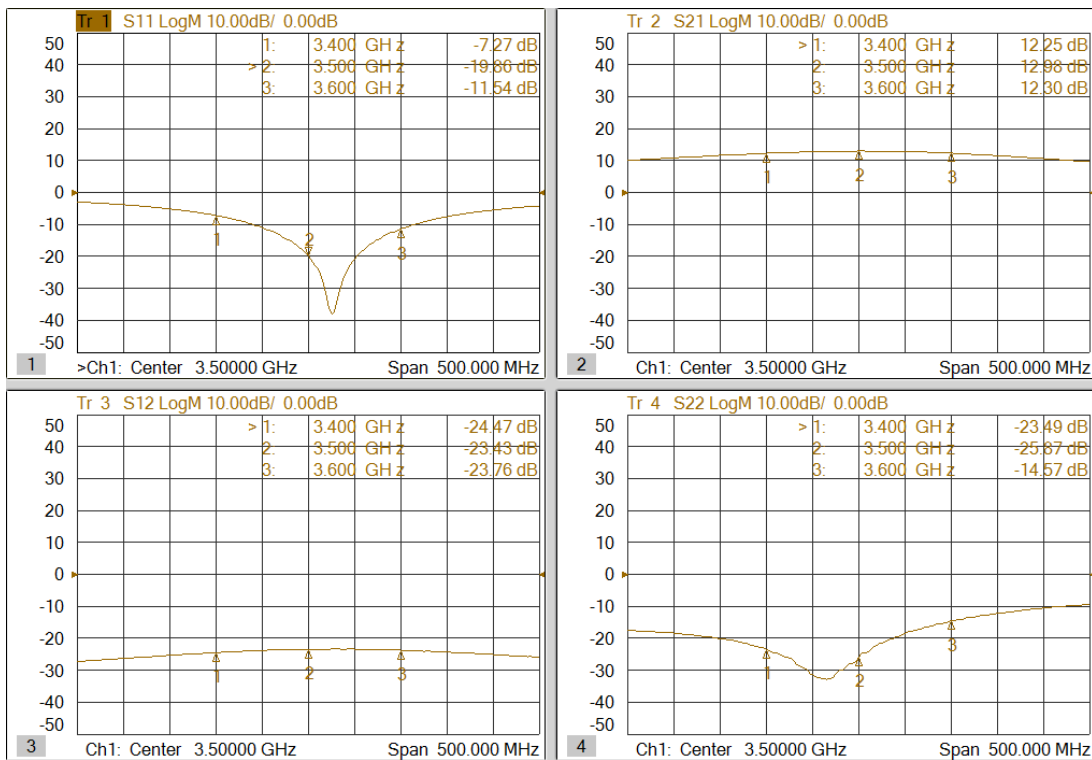
BT302 Evaluation Board
(3500MHz)

Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

1.1 BT302_3500MHz Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3400	5	209	12.3	43.2	29.0	-7.27	-23.5	6.5
-	3500	5	209	13.0	42.1	28.7	-19.9	-25.9	6.7
-	3600	5	209	12.3	41.2	28.5	-11.5	-14.6	6.7

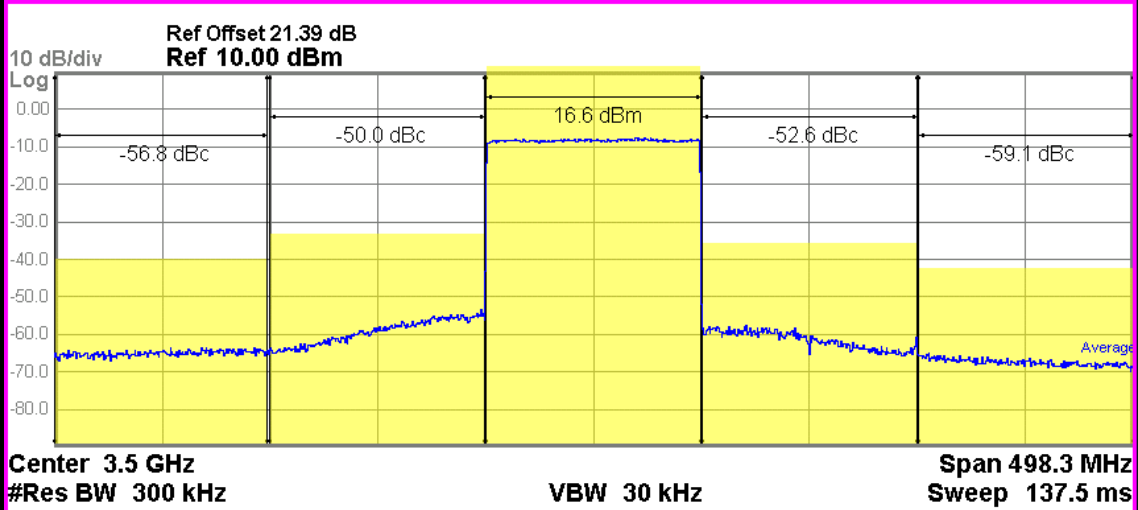
(1) OIP3 was tested @Pout=16dBm/tone 1MHz offset



1.2 5G NR_ACLR Test Result

Out Power : 16.6 dBm

5G NR_1FA_100MHz_TM 3.1 : 3500MHz -50dBc



Total Carrier Power		ACP-IBW		Lower		Upper		
Carrier Power	Filter	Offset Freq	Integ BW	dBc	dBm	dBc	dBm	Filter
16.613 dBm / 98.28 MHz	OFF	100.0 MHz	98.28 MHz	-50.00	-33.38	-52.63	-36.02	OFF
		200.0 MHz	98.28 MHz	-56.76	-40.14	-59.08	-42.47	OFF