

BRF MMIC Innovator

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[CLASSIFICATION] APPLICATION NOTE

[DATE] 2015.01

[REVISION No.] REV.A

[MEASURING INSTRUMENTS]

- NA_AGILENT E5071B

- SA_AGILENT N9020A

- SG_AGILENT 4438C

- SG_IFR 3416

Wide Band Low Noise Amp BL082

Application Note



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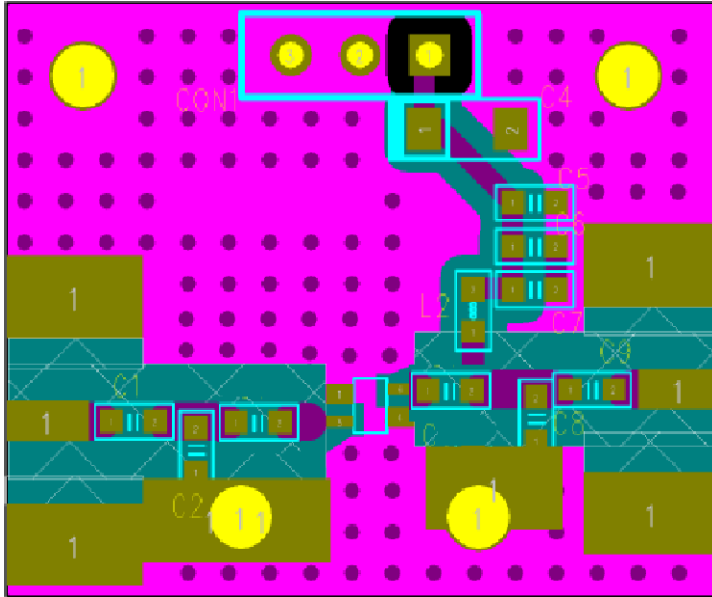
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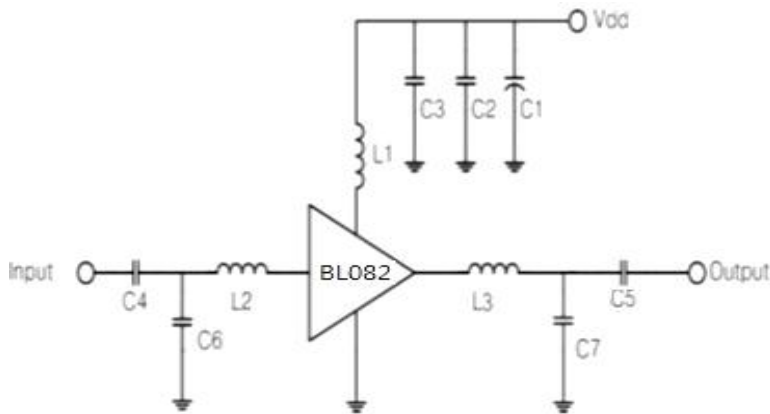
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1. BL082_ 3500MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	3216 CAP	10uF	Samsung
C2	6003 CAP	1000pF	Samsung
C3	0603 CAP	100pF	Samsung
C4	3216 CAP	22pF	Samsung
C5	0603 CAP	22pF	Samsung
C6	0603 CAP	0.3pF	Samsung
C7	0603 CAP	0.5pF	Samsung
L1	0603 IND	10nH	Ceratech
L2	0603 IND	1.5nH	Ceratech
L3	0603 IND	2.7nH	Ceratech
U1	SOT363 PKG	BL082	BEREX



Note:

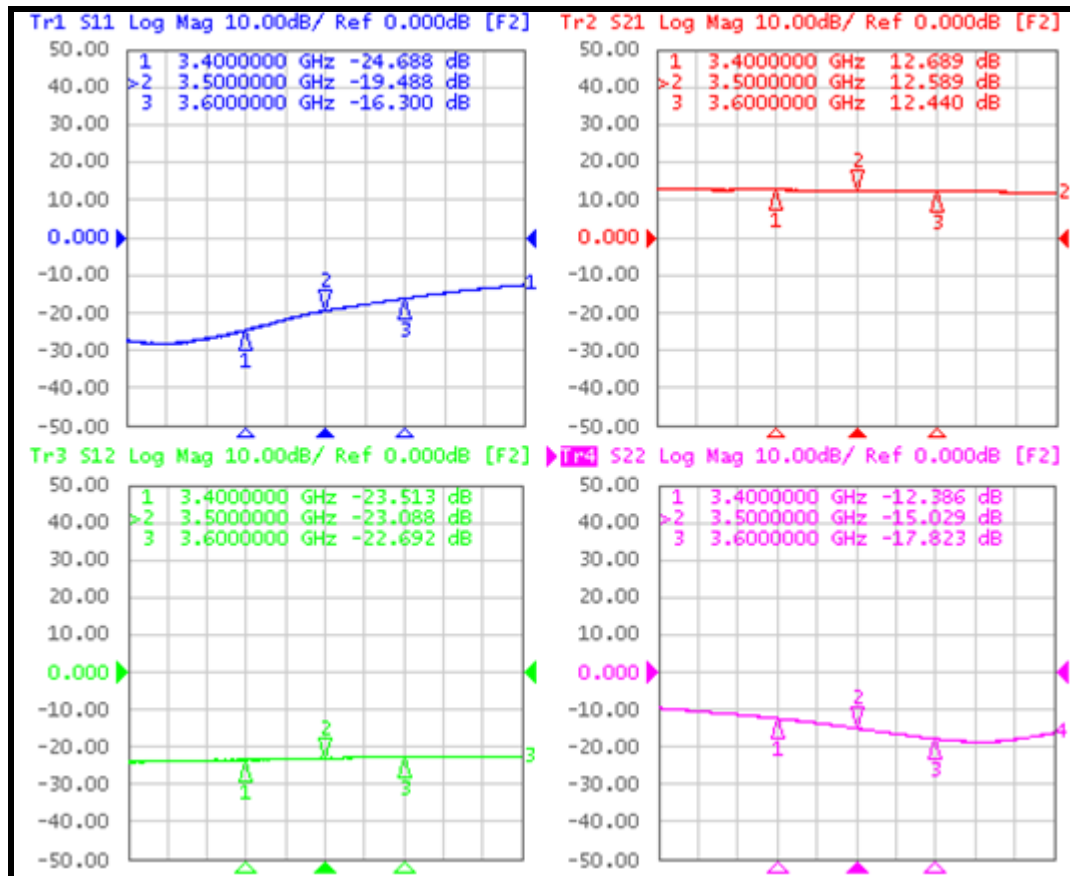
1. PCB: 31mil thick FR4

TITLE	
BL082 Evaluation Board	
(3500 MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

1.1 BL082_3500MHz 5V Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3400	5	30	12.7	30.0	18.6	-24.7	-12.4	1.3
-	3500	5	30	12.6	29.9	18.8	-19.5	-15.0	1.3
-	3600	5	30	12.4	29.7	18.7	-16.3	-17.8	1.4

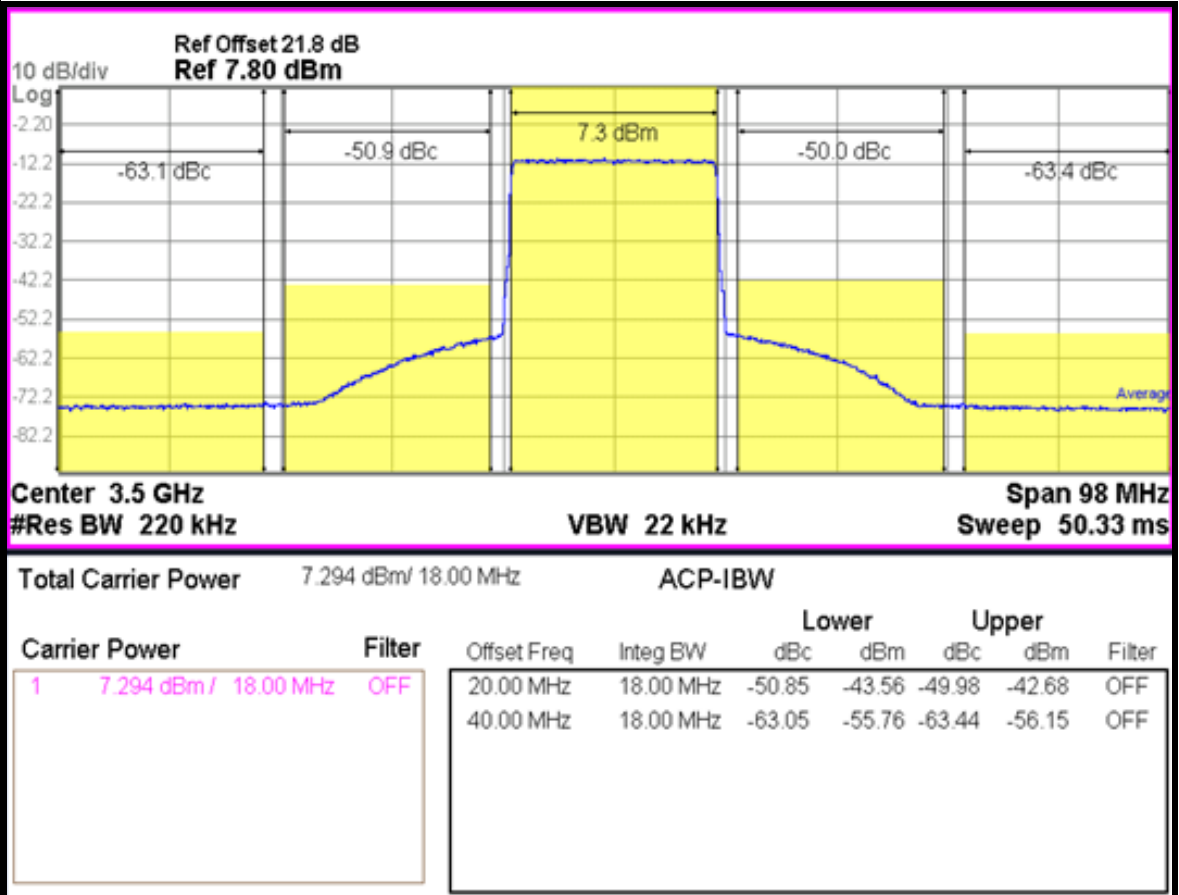
(1) OIP3_tested @Pout=5dBm/tone 1MHz offset



1.2 5V LTE_20MHz_ACLR Test Result

Out Power : 7.3 dBm

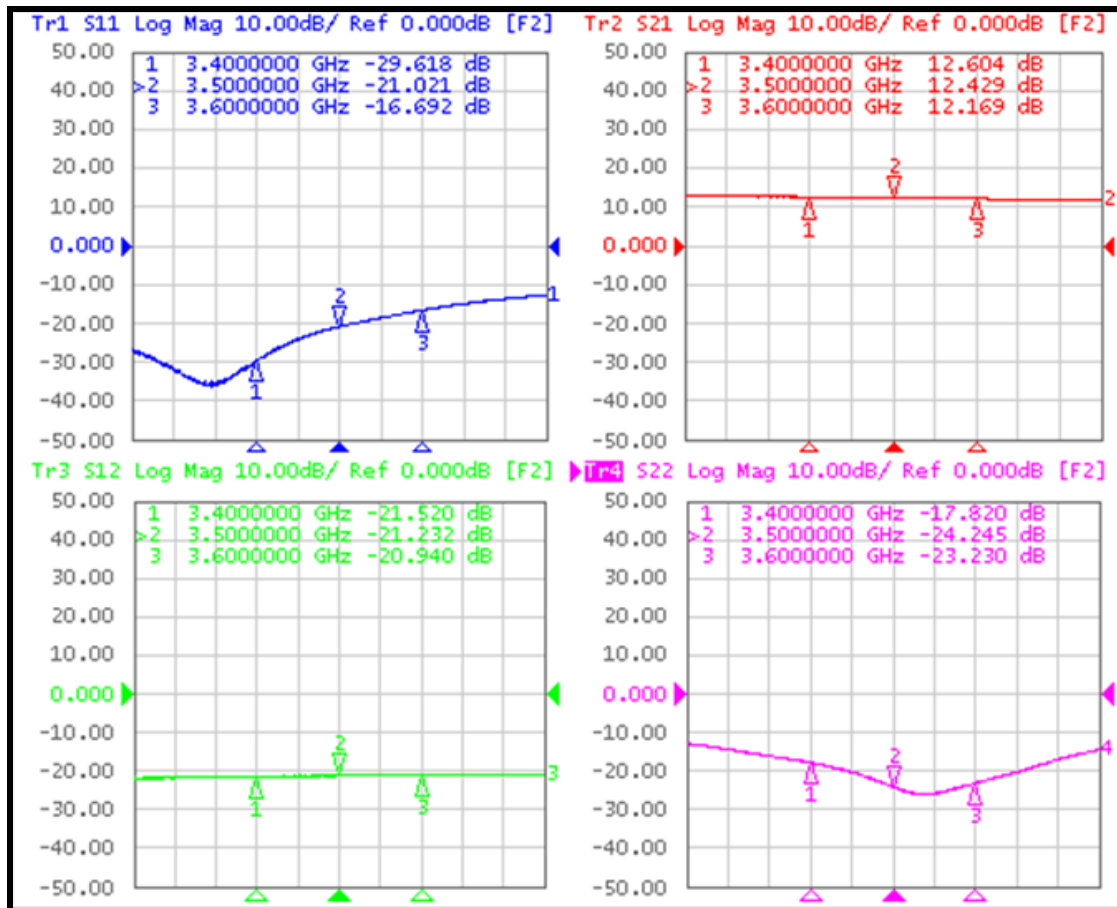
LTE_FDD_20MHz_TM 3p1_100 : 3500 -50dBc



1.3 BL082_3500MHz 3.3V Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3400	3.3	18	12.6	29.2	15.8	-29.6	-17.8	1.3
-	3500	3.3	18	12.4	29.5	15.8	-21.0	-24.2	1.3
-	3600	3.3	18	12.2	29.8	15.6	-16.7	-23.2	1.4

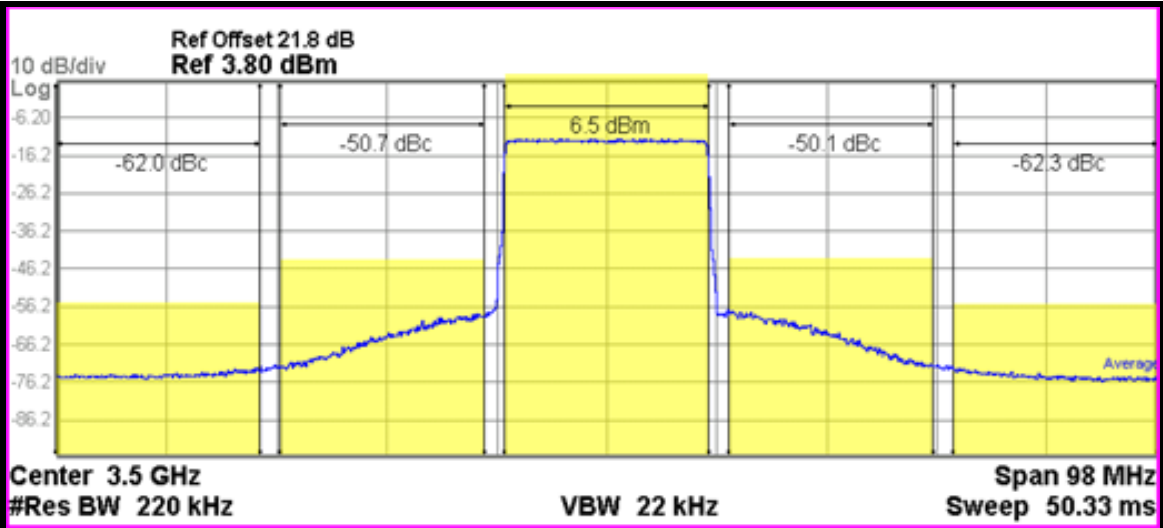
(1) OIP3_tested @Pout=5dBm/tone 1MHz offset



1.4 3.3V LTE_20MHz_ ACLR Test Result

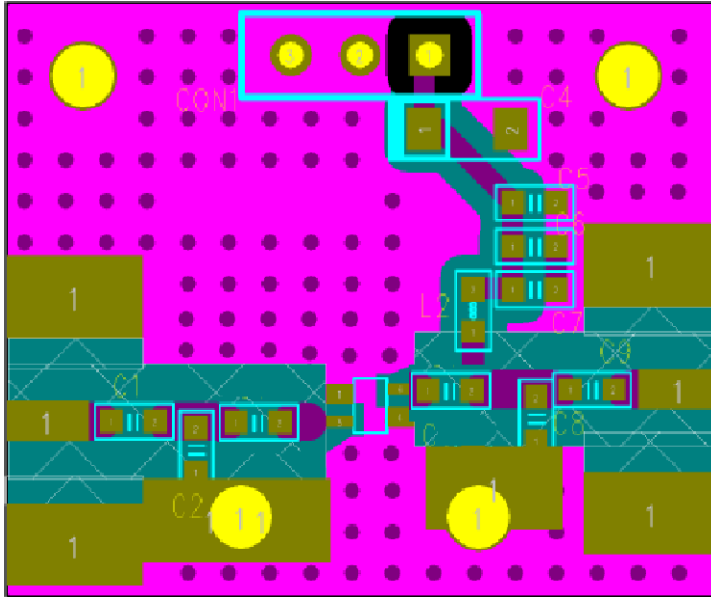
Out Power : 6.5 dBm

LTE_FDD_20MHz_TM 3p1_100 : 3500 -50dBc

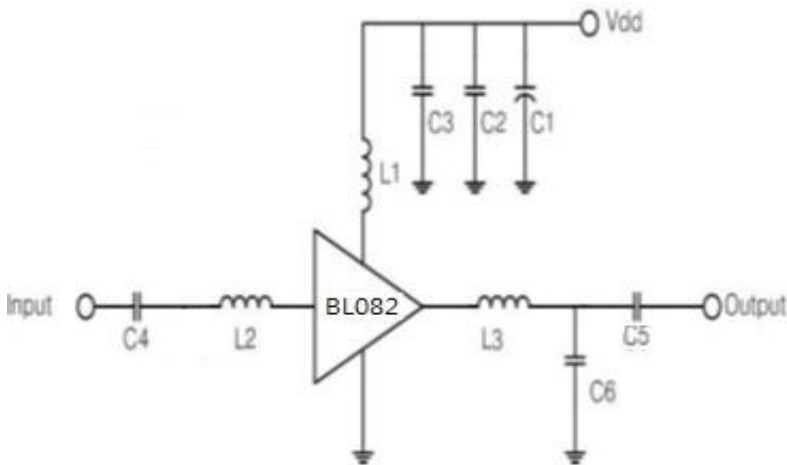


Carrier Power		Filter	Offset Freq	Integ BW	Lower		Upper		Filter
					dBc	dBm	dBc	dBm	
1	6.537 dBm / 18.00 MHz	OFF	20.00 MHz	18.00 MHz	-50.71	-44.18	-50.08	-43.54	OFF
			40.00 MHz	18.00 MHz	-61.98	-55.45	-62.26	-55.72	OFF

2. BL082_ 3700MHz Application Note



Ref. Des.	Description/ Part Number	Values	Vendor
C1	3216 CAP	10uF	Samsung
C2	6003 CAP	1000pF	Samsung
C3	0603 CAP	100pF	Samsung
C4	3216 CAP	22pF	Samsung
C5	0603 CAP	22pF	Samsung
C6	0603 CAP	0.5pF	Samsung
L1	0603 IND	10nH	Ceratech
L2	0603 IND	1nH	Ceratech
L3	0603 IND	2.7nH	Ceratech
U1	SOT363 PKG	BL082	BEREX



Note:

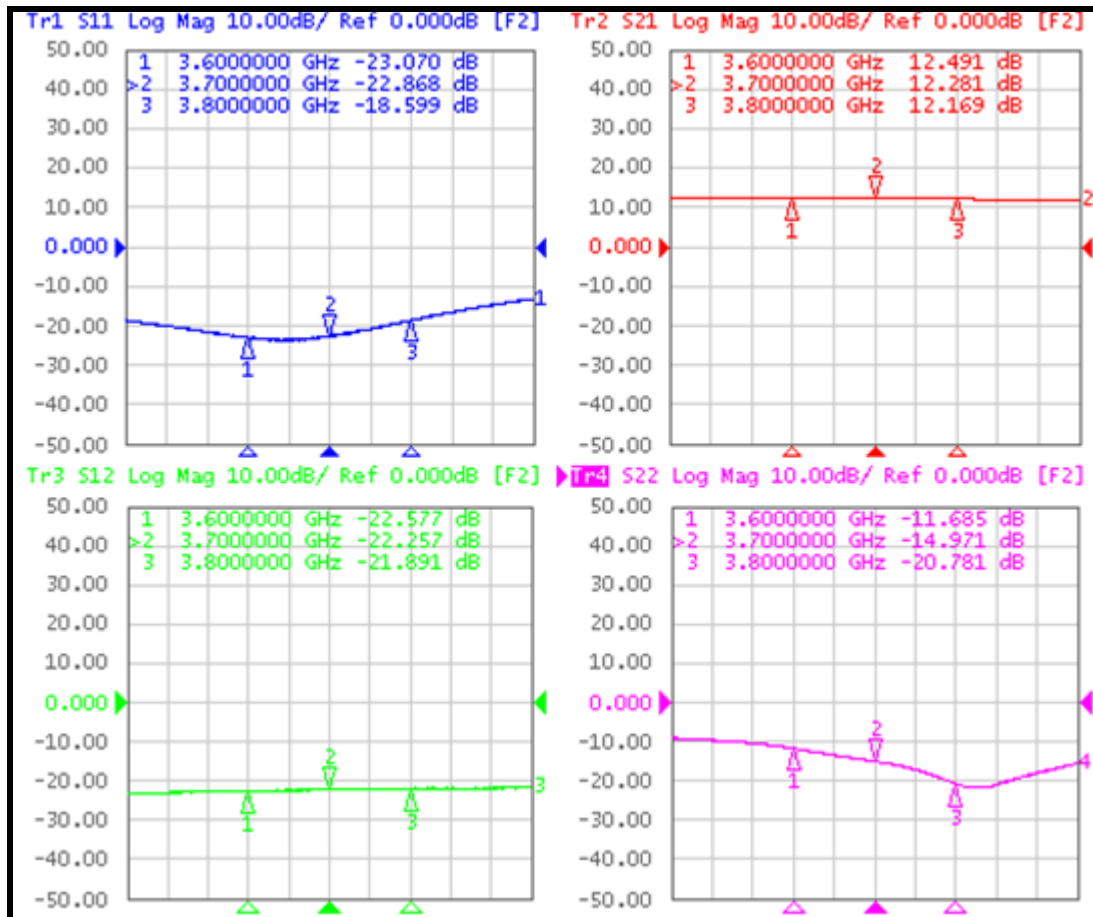
- 2. PCB: 31mil thick FR4

TITLE	
BL082 Evaluation Board	
(3700 MHz)	
Drawing Number	Rev.
Date	Drawn By
FILE NAME	SHEET

2.1 BL082_3700MHz 5V Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3600	5	30	12.5	29.8	18.8	-23.1	-11.7	1.3
-	3700	5	30	12.3	29.7	18.7	-22.9	-15.0	1.4
-	3800	5	30	12.2	29.5	18.6	-18.6	-20.8	1.3

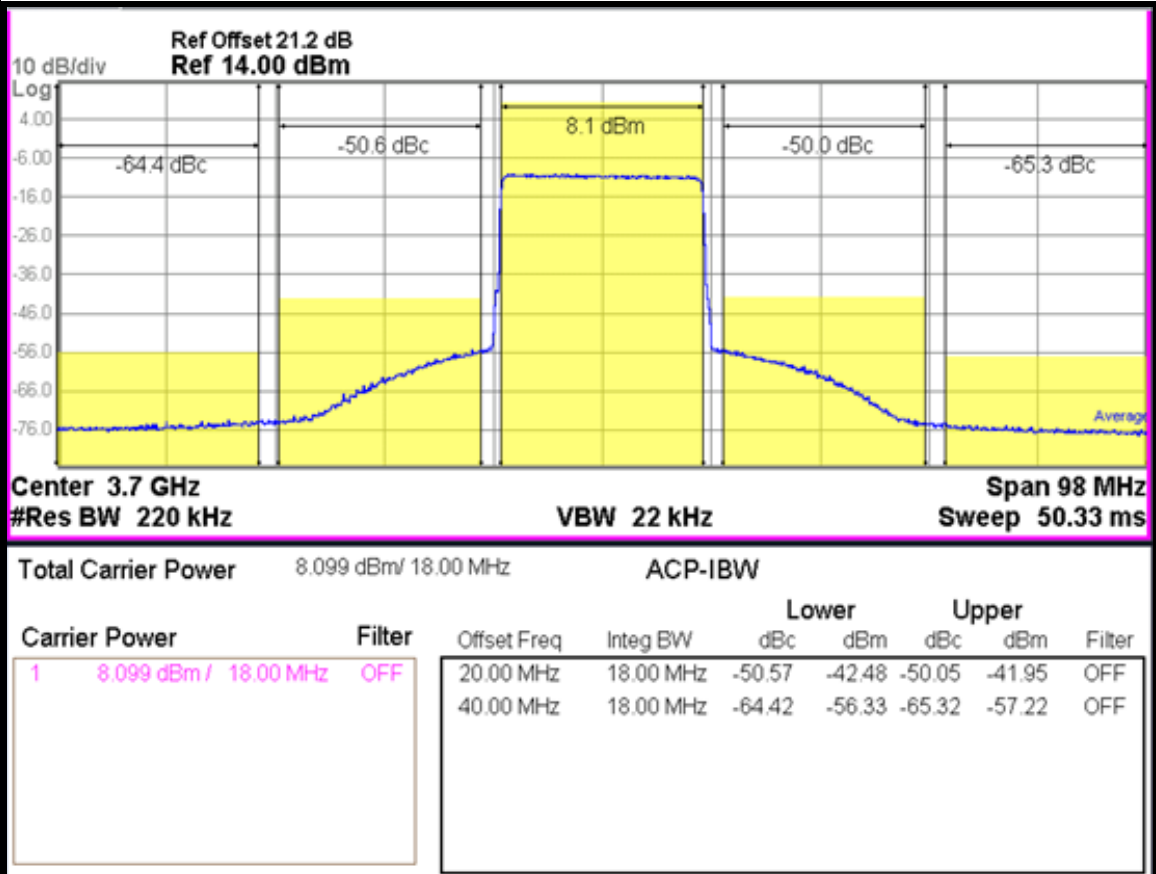
(1) OIP3_tested @Pout=5dBm/tone 1MHz offset



2.2 5V LTE_20MHz_ ACLR Test Result

Out Power : 8.1 dBm

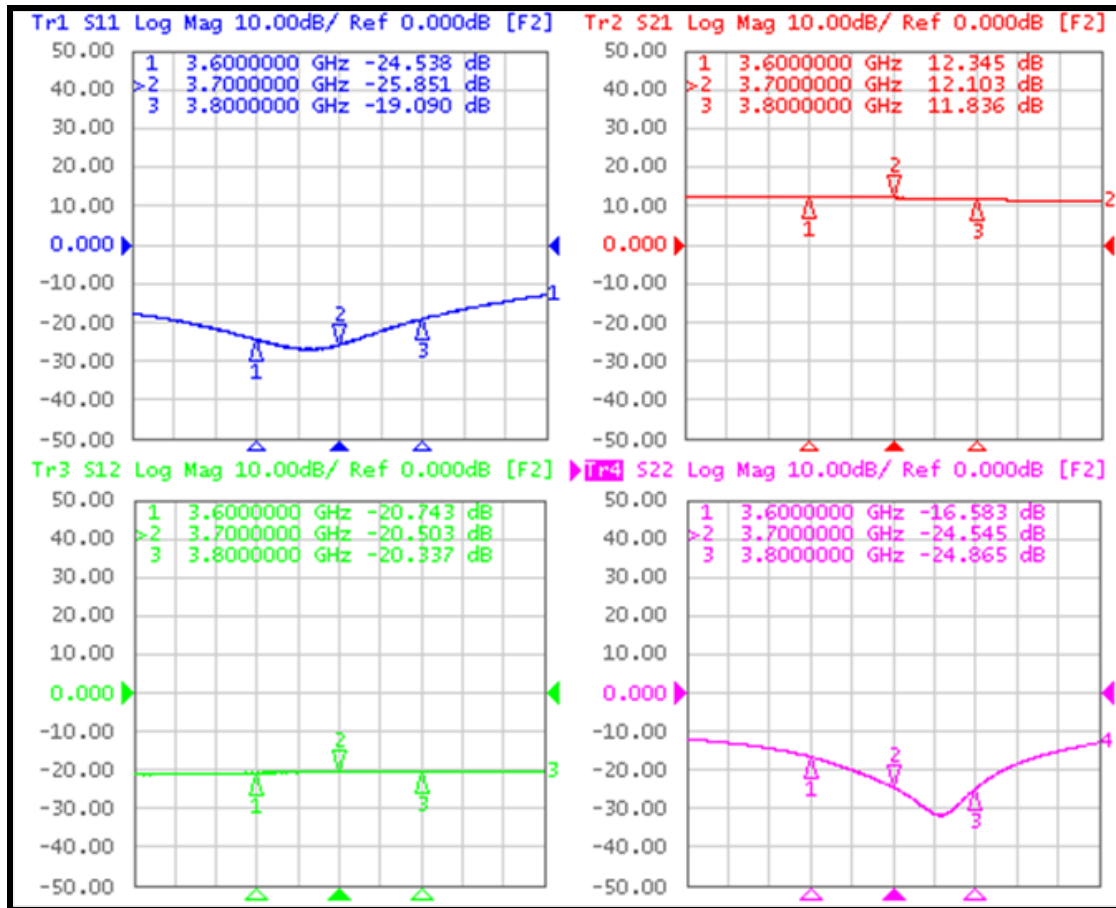
LTE_FDD_20MHz_TM 3p1_100 : 3700 -50dBc



2.3 BL082_3700MHz 3.3V Test Result

SN	Freq [MHz]	Vcc [V]	Icc [mA]	Gain [dB]	OIP3 [dBm] ⁽¹⁾	P1dB [dBm]	IRL [dB]	ORL [dB]	NF [dB]
-	3600	3.3	30	12.3	29.4	15.7	-24.5	-16.5	1.3
-	3700	3.3	30	12.1	29.6	15.6	-25.8	-24.5	1.5
-	3800	3.3	30	11.8	29.7	15.4	-19.0	-24.8	1.4

(1) OIP3_tested @Pout=5dBm/tone 1MHz offset



2.4 3.3V LTE_20MHz_ ACLR Test Result

Out Power : 6.4 dBm

LTE_FDD_20MHz_TM 3p1_100 : 3700 -50dBc

