AR191184

BLP15H9S10, 1030-1090MHz

v1.0 — 7-February-2020

AMPLEON

Application Report

Document information	
Status	Company Public
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Abstract	Measurement results of a Class AB design for the 1030-1090MHz band with the BLP15H9S10

1. Revision History

Table 1: Report revisions

Revision	Date	Description	Author
1.0	20200207	Objective test report	Harrie Rahangmetan

2. Contents

3. List of figures

4. List of tables

5. Introduction

5.1 General description

This document shows the measurement results of a 1030-1090MHz demo amplifier (BoardAR191184) with 1xBLP15H9S10.

5.2 Test object details

Transistor type:	BLP15H9S10(Soldered down)
Production code:	rNH1916
Package:	SOT1483-1
Board:	BLP15H9S10_1030-1090MHz_PCB
Demo number:	AR191184

5.3 Used Test signals

CW-Pulsed:	100us, 10%

5.4 Test circuit

A description of this circuit can be found in Appendix A.

Supply voltage (drain-source) is typical 28V. The total Idq will be 40mA. (start with Vgs=1.5V and increase until Idq=40mA)

6. Measurement Results

6.1 Summary CW-Pulsed Power Sweeps

Freq [MHz]	P1dB [dBm]*	P1dB [W]*	G@P1dB [dB]*	Eff@P1dB [%]*	P3dB [dBm]*	P3dB [W]*	G@P3dB [dB]*	Eff@P3dB [%]*	S11 [dB]@
1030.00	40.5	11.28	22.0	63.7	41.0	12.61	20.0	64.6	-5.1
1040.00	40.5	11.15	22.3	64.9	41.0	12.46	20.3	63.9	-6.2
1050.00	40.4	10.99	22.5	64.2	40.9	12.30	20.5	64.7	-7.4
1060.00	40.4	10.86	22.5	63.5	40.8	12.14	20.5	63.9	-8.6
1070.00	40.3	10.67	22.5	62.9	40.8	11.95	20.5	62.9	-9.5
1080.00	40.2	10.49	22.3	63.8	40.7	11.75	20.3	63.5	-9.7
1090.00	40.1	10.29	22.1	61.3	40.6	11.53	20.1	62.3	-9.1

6.2 Gain & Efficiency @ Frequency=1030-1090MHz CW-Pulsed

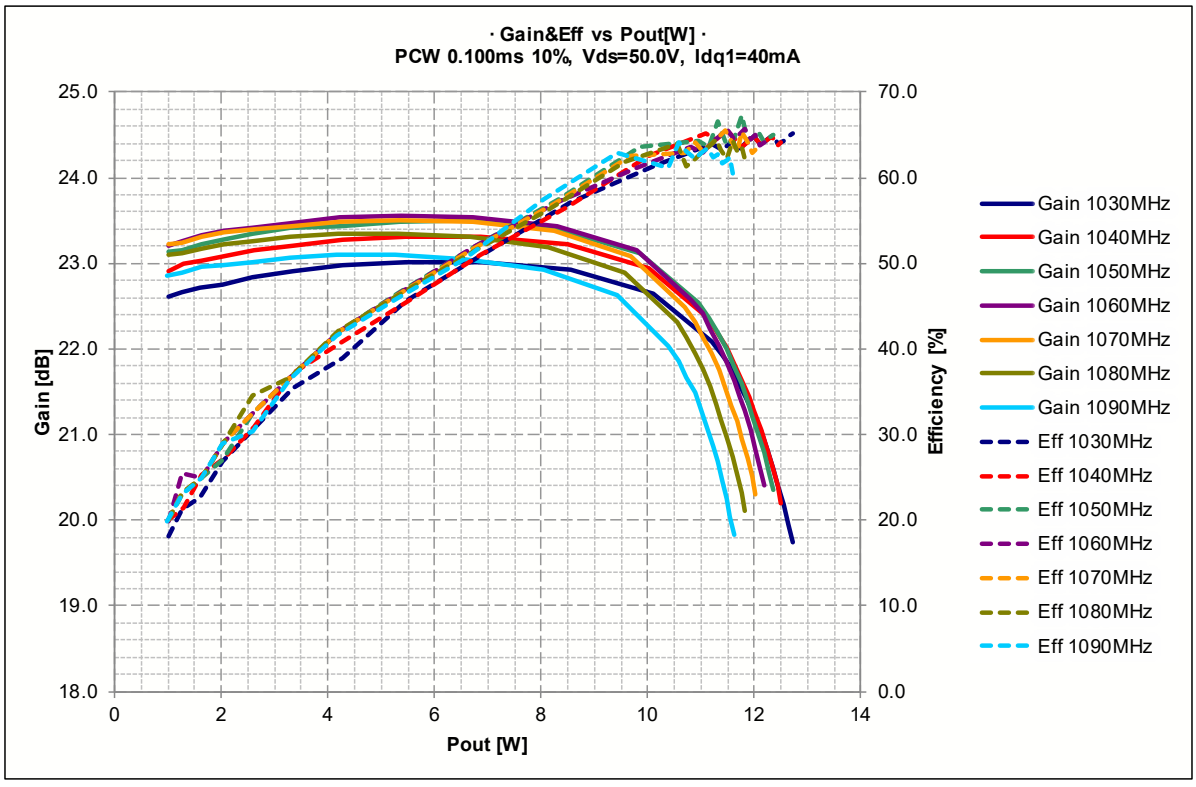

Figure 1 CW Gain and Efficiency vs Pout [W]

6.3 Appendix A – PCB Layout

6.4 PCB Layout Drawing

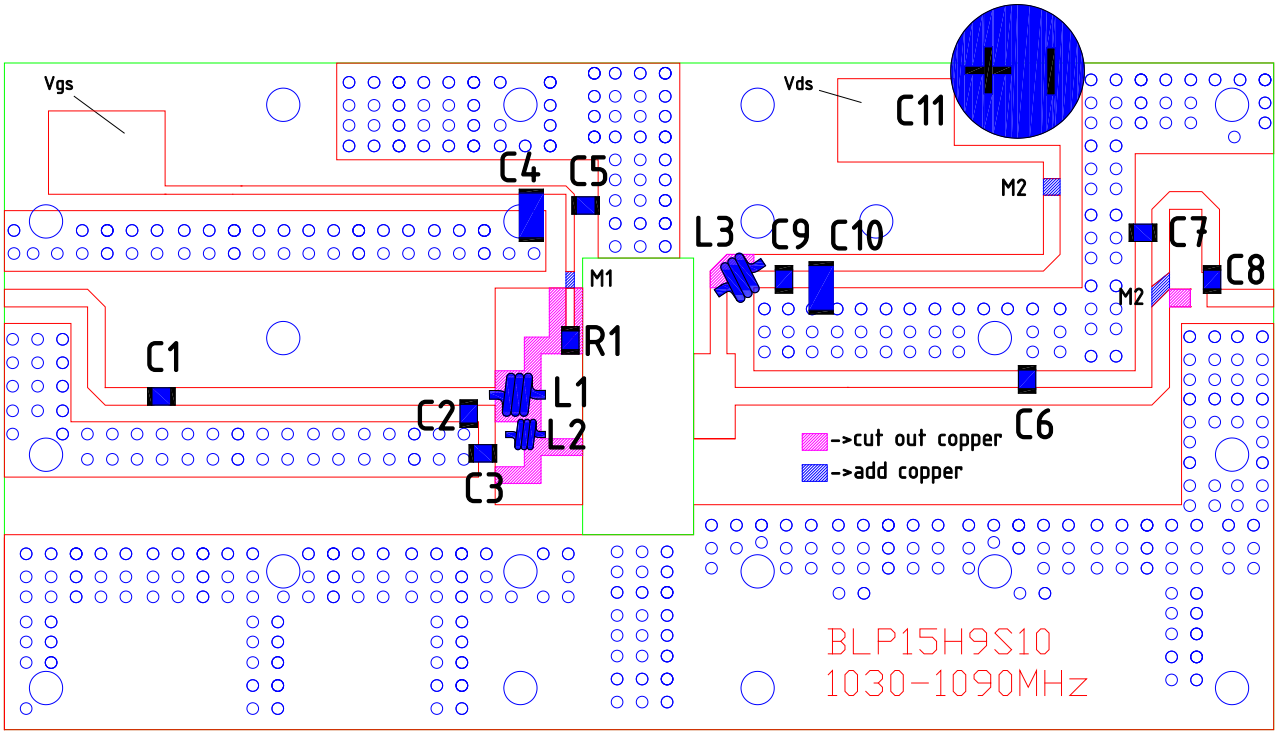

Figure 2 PCB Layout Drawing .

6.5 Component list

Table 2: Component list

Designator	Description	Manufacturer	Part #
C1, C5, C8, C9	100pF	ATC	800A
C2	4.3pF	ATC	800A
C3	82pF	ATC	800A
C4, C10	1uF	Murata	
C6	9.1pF	ATC	800A
C7	3.0pF	ATC	800A
C11	470uF, 63 V electrolytic SMT		
L1	7.15nH	Coilcraft	1606-7GLB
L2	2.55nH	Coilcraft	0906-3GLB
L3	39nH	Coilcraft	1812SMS-39NGLB
R1	4k7Ohm 0805		
M1, M2, M3	Metal strip		
PC-board Material: 20 mil thick. RO4350B, 1oz copper both sides (top and bottom)			

7. Photo's Demo Board

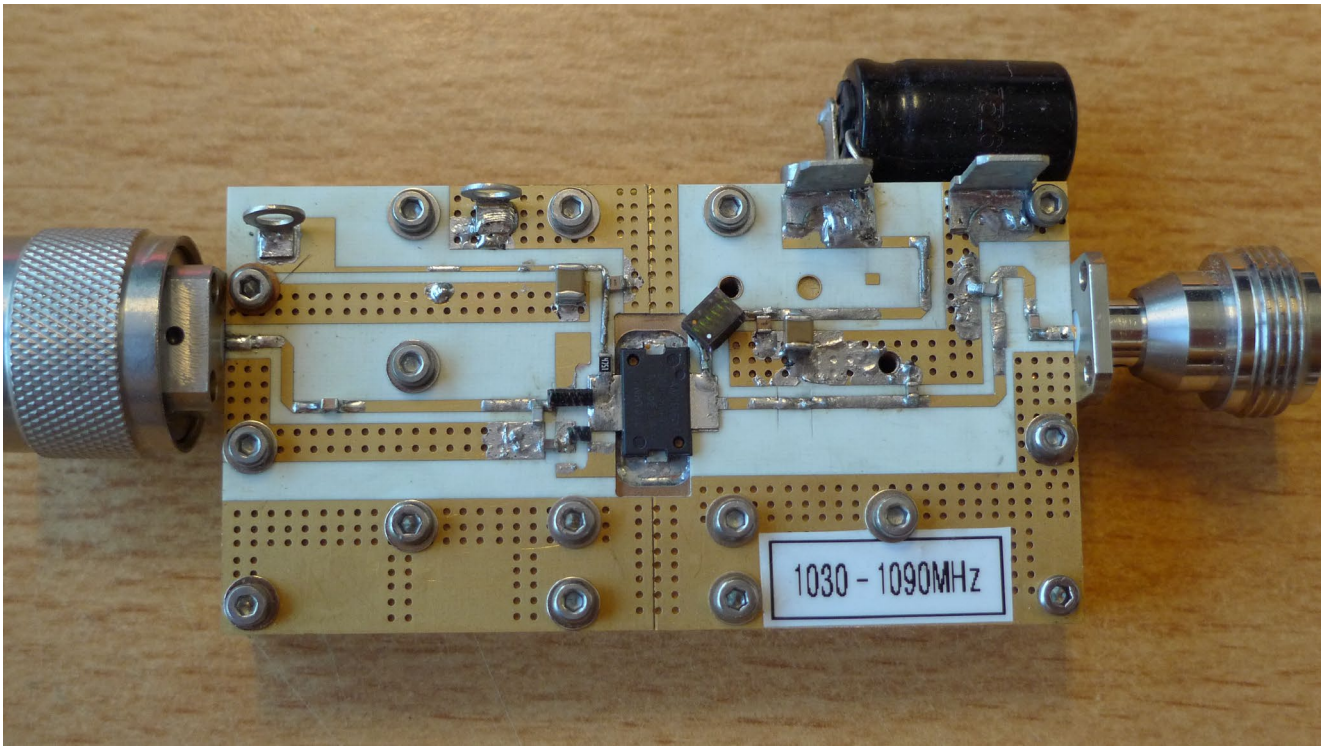

Figure 3 Picture Top View Demo Board

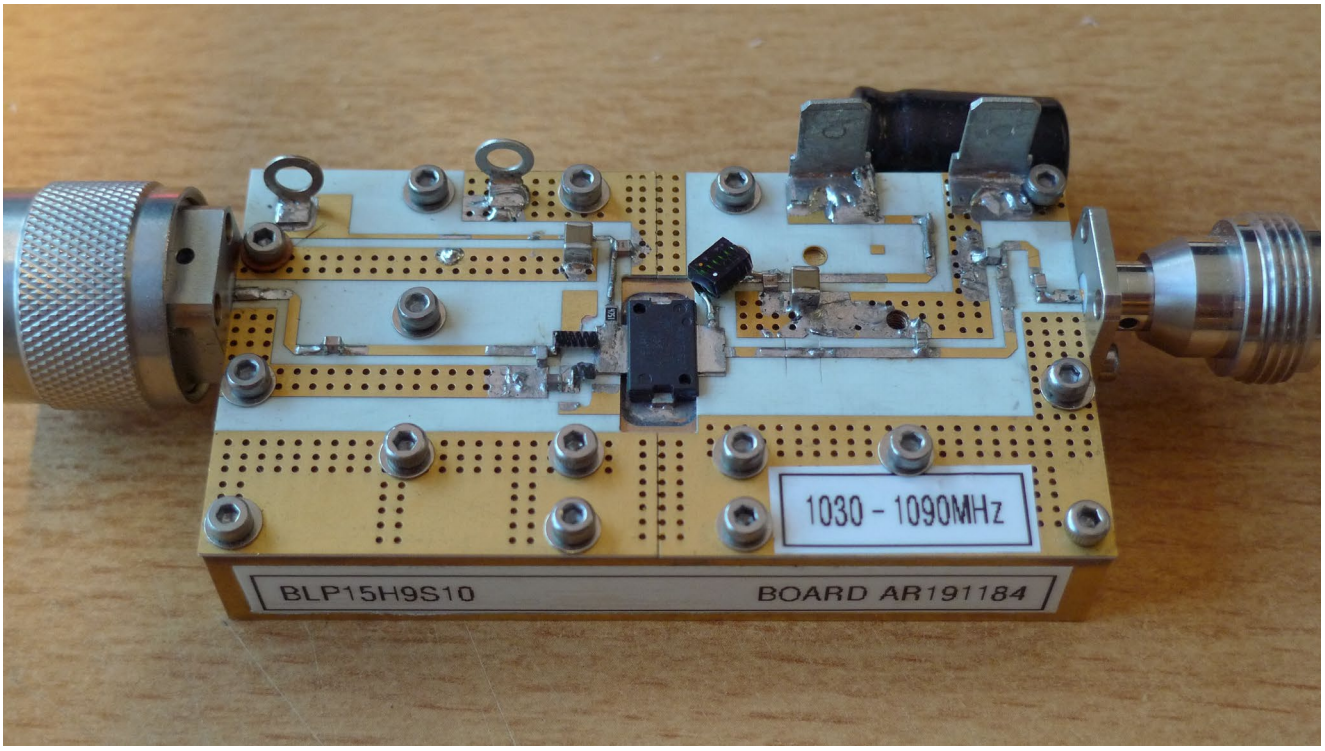

Figure 4 Picture Side View Demo Board

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