AR254001

BLF981, 88-108MHz

V1.0---28 Feb. 2025

Application Measurement Report

Document information		
Status	Public	
Author(s)	Rock Qiu,	rock.qiu@ampleon.com
Abstract	Measurement results of FM design with BLF981, this circuit works at 88-108MHz.	

1. Revision History

Table 1: ***Report revisions***

Revision	Date	Description	Author
1.0	20250228	Initial document	Rock Qiu

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2. Contents

3. List of figures

4. List of tables

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General description

This report presents the measurement results of the CW demo AR254001. The device is BLF981 LDMOS with plastic package. The presented demo is tuned for the frequency 88-108MHz.

5. Biasing

The biasing is as follows:

V_{DS} = 48V

Idq = 50mA

6. Performance Indication

Table 2: ***Performance indication***

Parameter	Condition	Unit	
V_{DD}		V	48
S11 at input		dB	-14
P_{3dB}	G_{MAX}-3dB	W	160
P_{OUT} of operation	P_o	W	150
Gain	@P_o	dB	21
Drain Efficiency	@P_o	%	75

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7. Performance Details

7.1 Return loss at input side

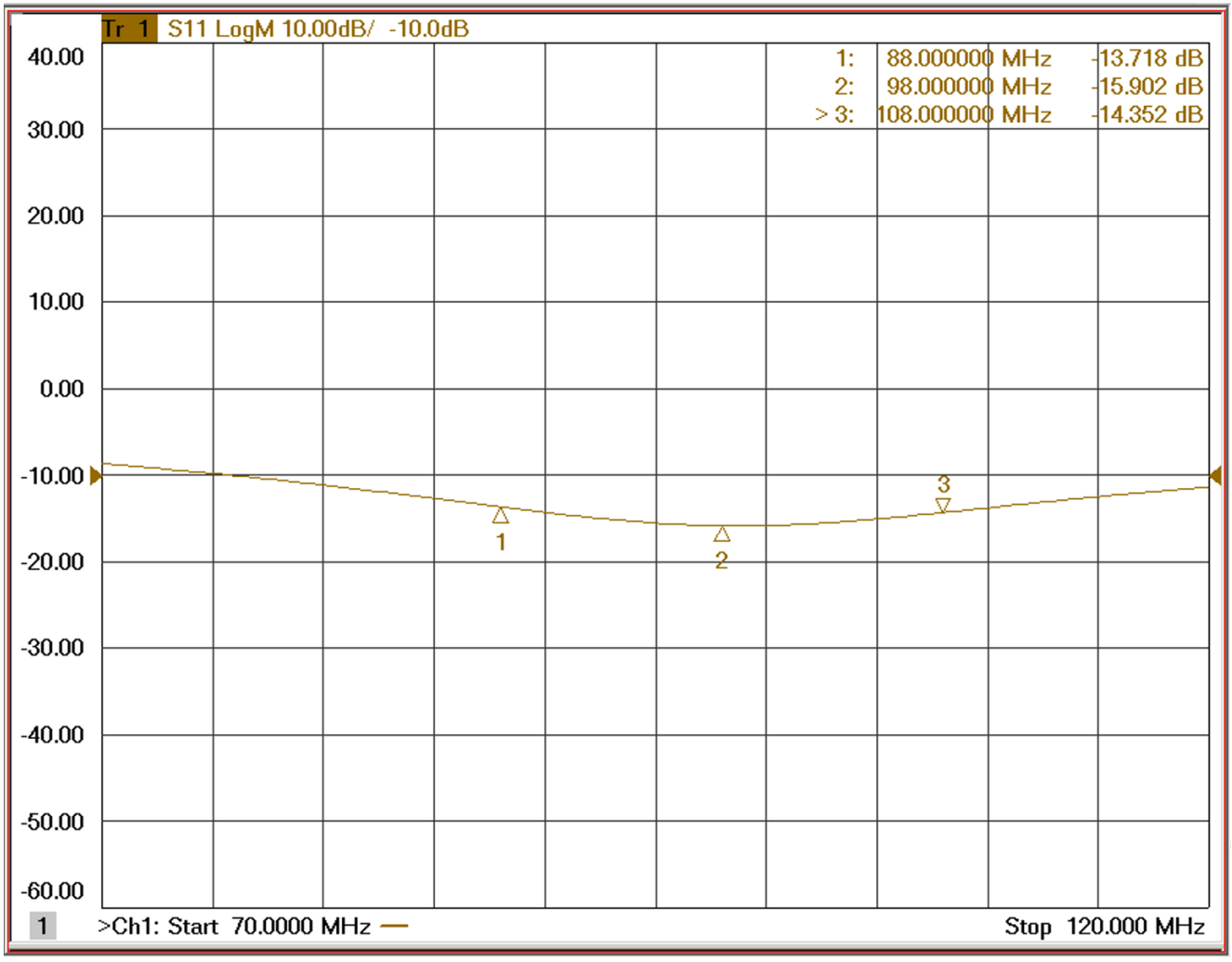

Figure 1 return loss

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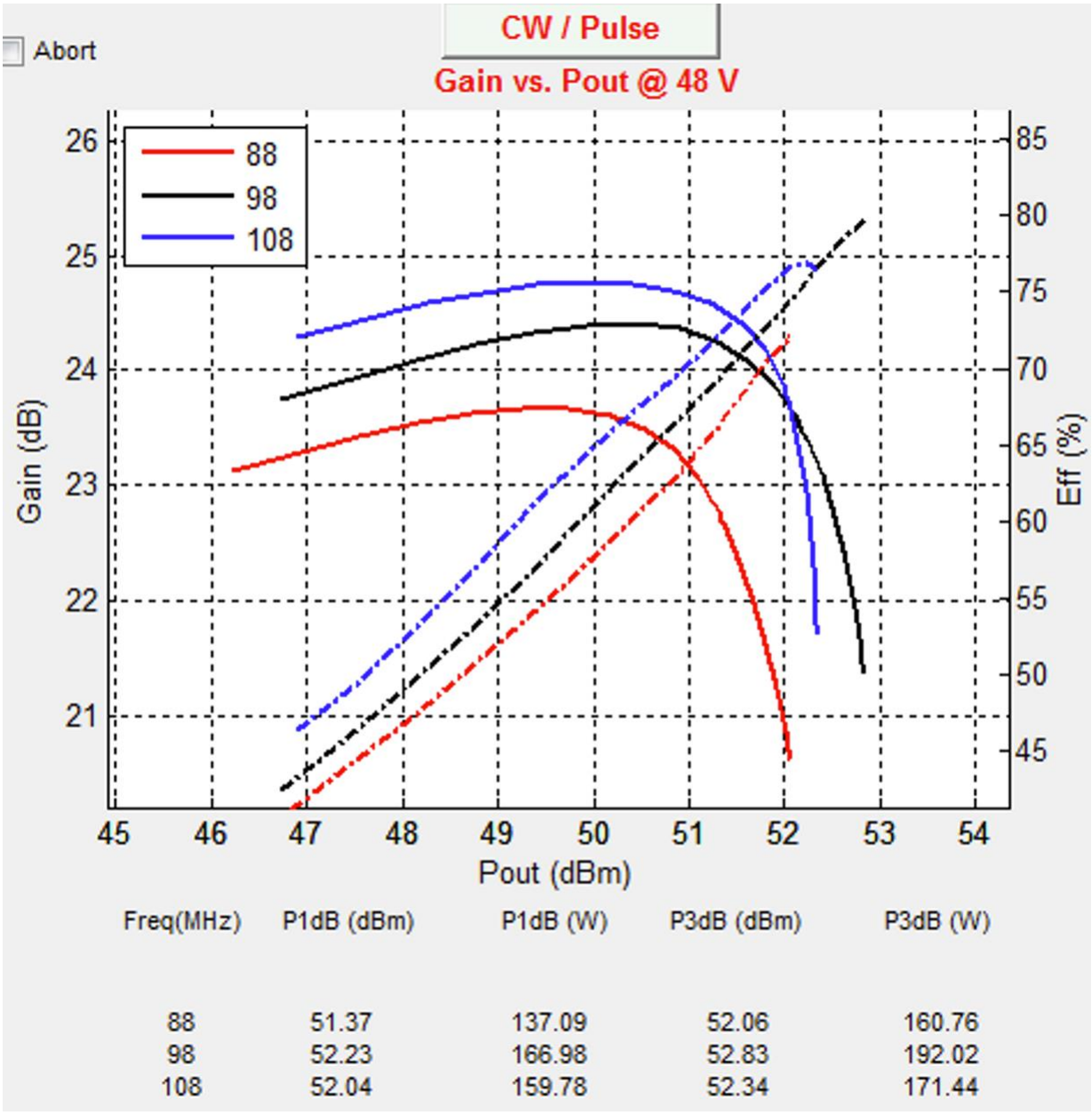
7.2 Test data:

7.2.1 88-108MHz Pout and Efficiency



Freq(MHz)	P1dB (dBm)	P1dB (W)	P3dB (dBm)	P3dB (W)
88	51.37	137.09	52.06	160.76
98	52.23	166.98	52.83	192.02
108	52.04	159.78	52.34	171.44

Figure 2 Pout and efficiency(88-108MHz)

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8. Hardware

8.1 Board Image

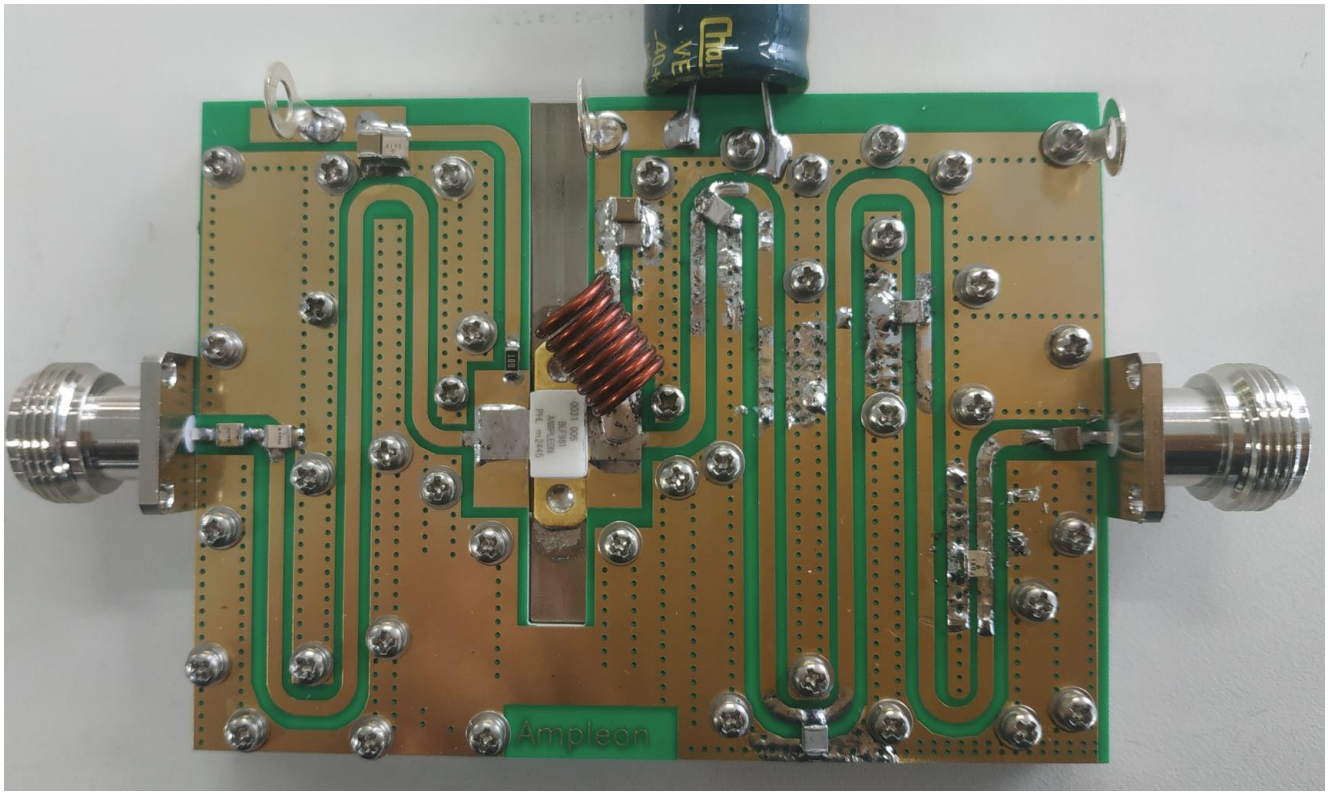

Figure 3 Demo picture

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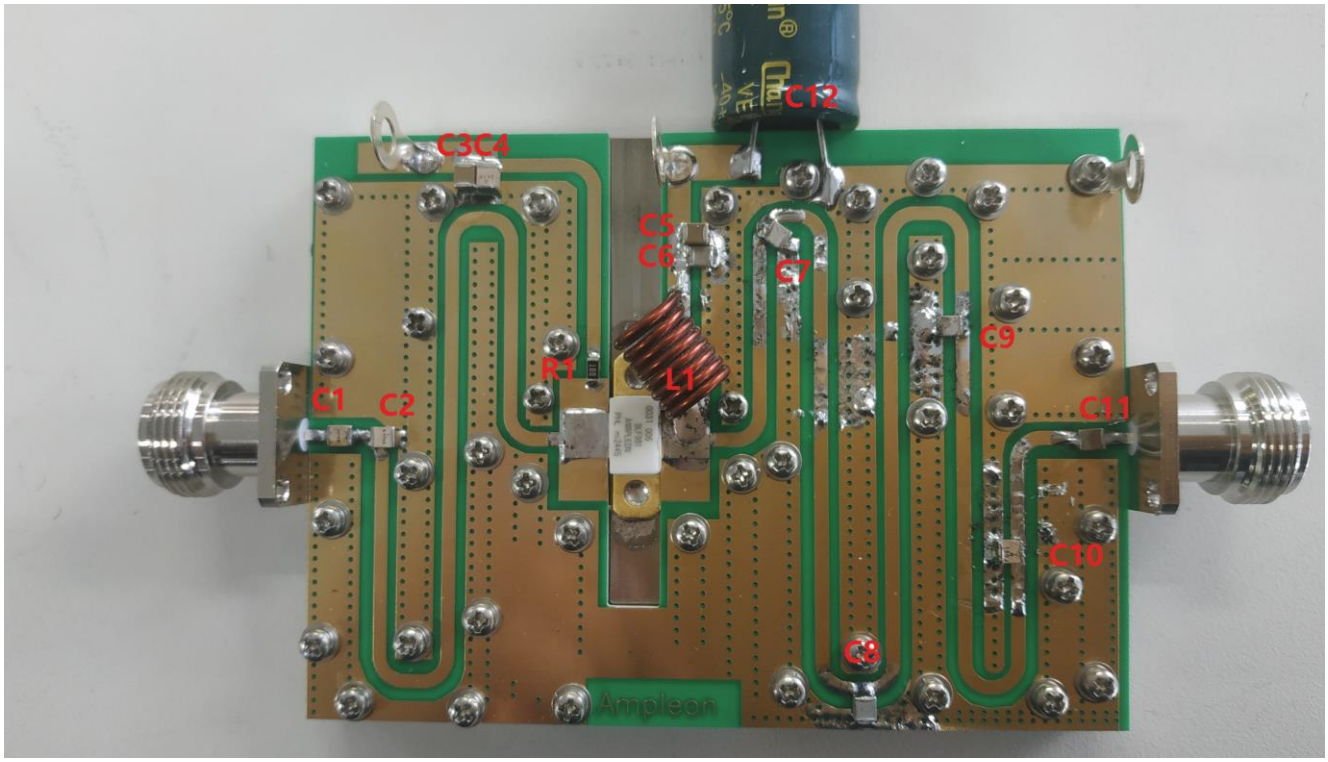
8.2 Copper Layout and components mapping(layout, BOM is attached in the PDF report)



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8.3 Bill of materials

Table 3: ***Bill of Materials***

Quantity	Description	Part Number	Manufacturer
R1	10 ohm Resistor	1206	
C3,C5	10uF	GRM32DF51H106ZA01L	Murata
C6,C11	910P	800B	ATC
C1,C4	560P	800B	ATC
C2	47P	800B	ATC
C7	82P	800B	ATC
C8	24P	800B	ATC
C9,10	15P	800B	ATC
C12	470 uF 63V Electrolytic Capacitor	MCRH63V477M13X26-RH	MULTICOMP
L1	8T coil, 6.5mm inner diameter, 1.3mm wire		Handwound
PCB	RO4350B 30mil		Rogers

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8.4 Board material

Table 4: ***Board specifications***

Parameter	Value
Manufacturer	Rogers
Type	RO4350B
Thickness	30mil, 0.762mm
Layers	2, top/bottom. Bottom all copper

8.5 Device markings

Table 5: ***Device specifics***

Parameter	Value
Manufacturer	Ampleon
Device	*BLF981*

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