

AR204006

BLP15M9S30, 915MHz

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AMPLEON

Application
Measurement
Report

Document information

Status Public

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Abstract Measurement results of CW design with BLP15M9S30,
this circuit works at 915MHz

1. Revision History

Table 1: *Report revisions*

Revision	Date	Description	Author
1.0	20200829	Initial document	Rock Qiu

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General description

This report presents the measurement results of 915MHz CW demo. The device is BLP15M9S30 LDMOS in plastic package, which can handle 30:1 VSWR.

5. Biasing

The biasing is as follows:

$$\begin{aligned}V_{DS} &= 28V \\ I_{dq} &= 30mA\end{aligned}$$

6. Performance Indication

Table 2: *Performance indication*

Parameter	Condition	Unit	
V_{DD}		V	28
S11 at input		dB	-22
Gain		dB	20
Drain Efficiency		%	78(cw)

7. Performance Details

7.1 Return loss at input side

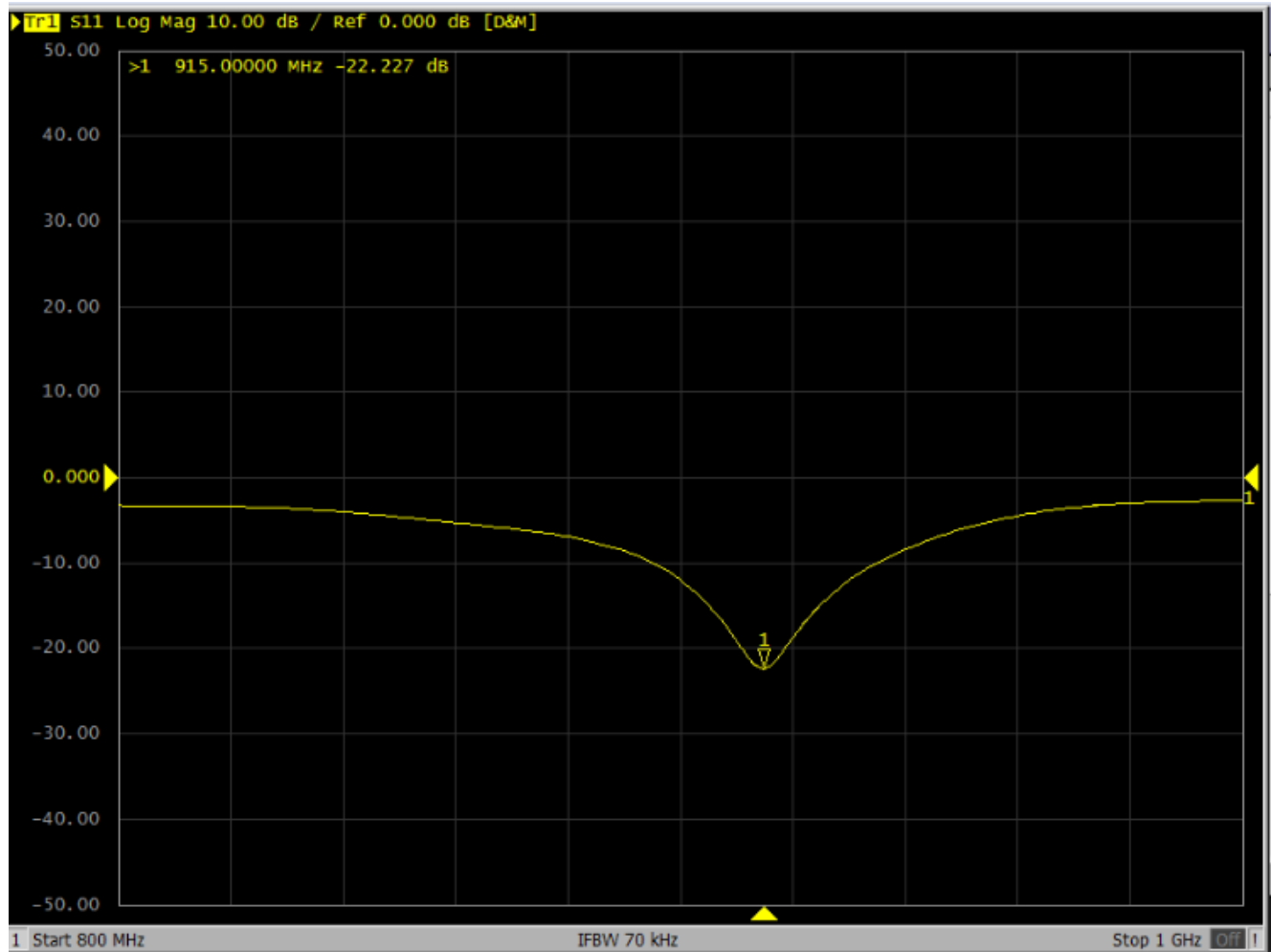


Figure 1 return loss

7.2 Pulsed test of 28V (100us, 10% duty cycle)

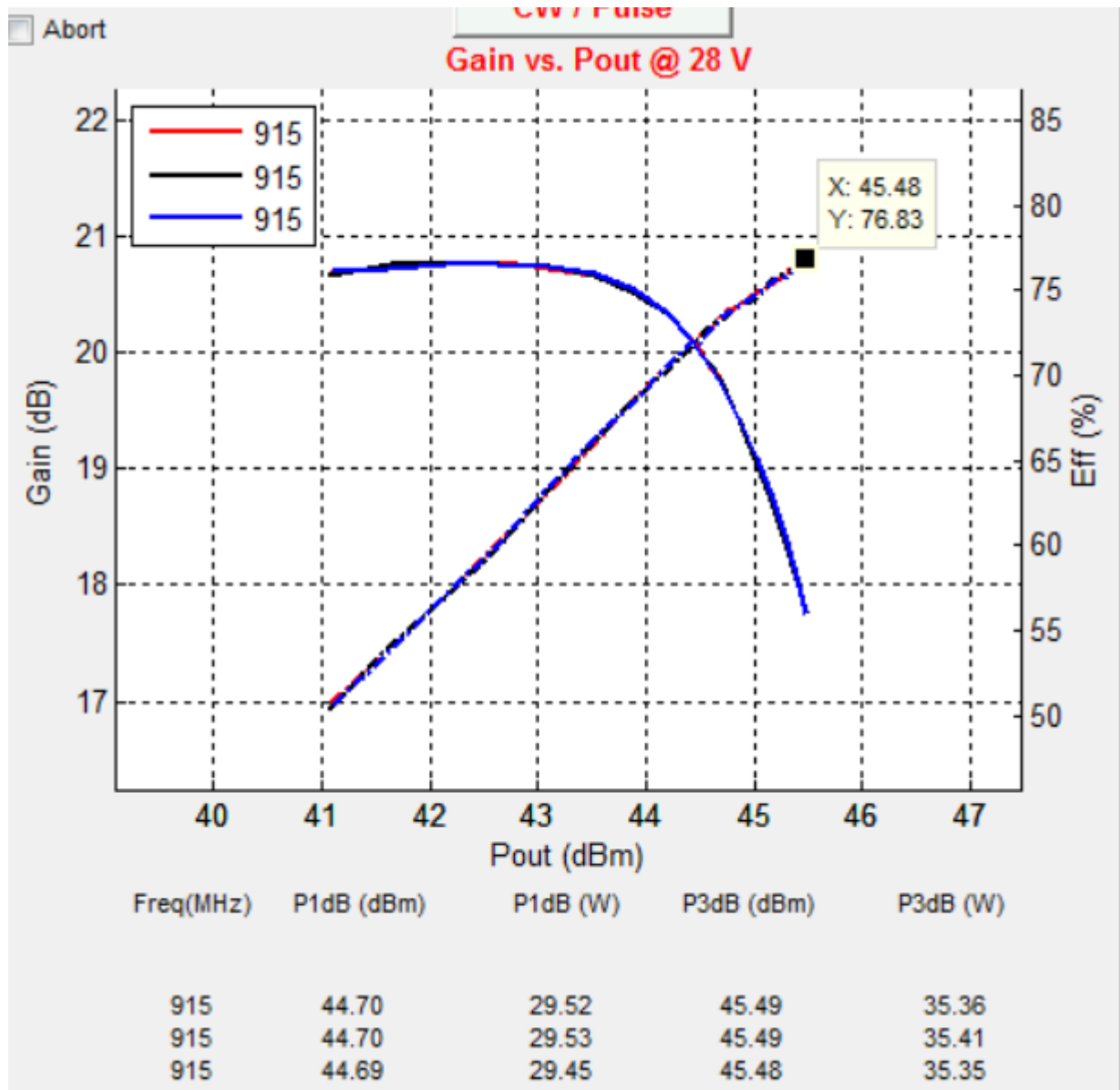


Figure 2 28V pulsed Gain&Eff vs Pout

7.3 CW test data 28V 30mA

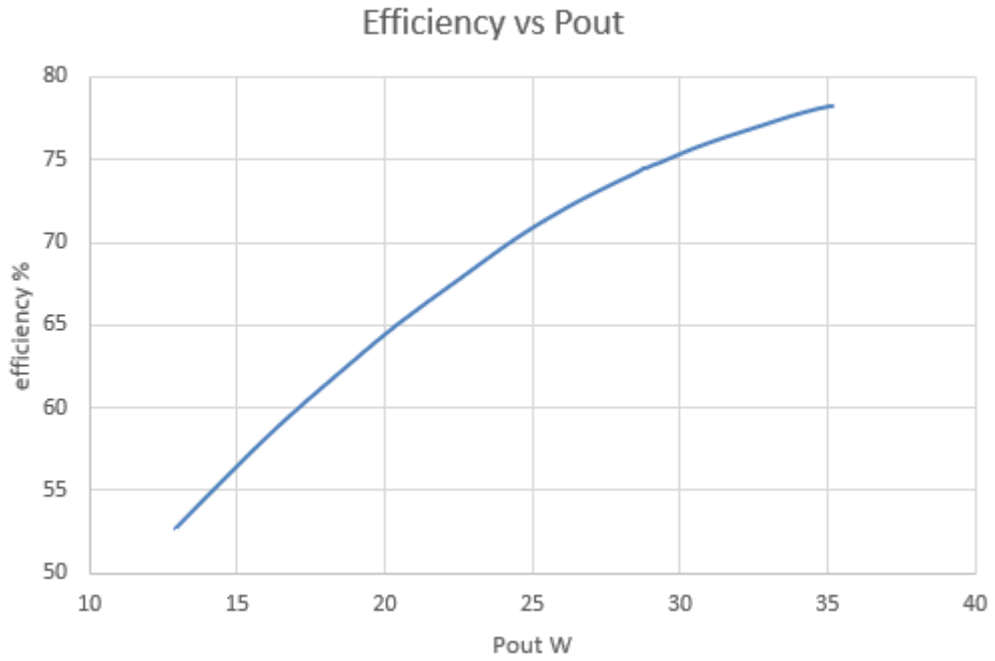


Figure 3 28V CW efficiency vs Pout

8. Hardware

8.1 Board Image

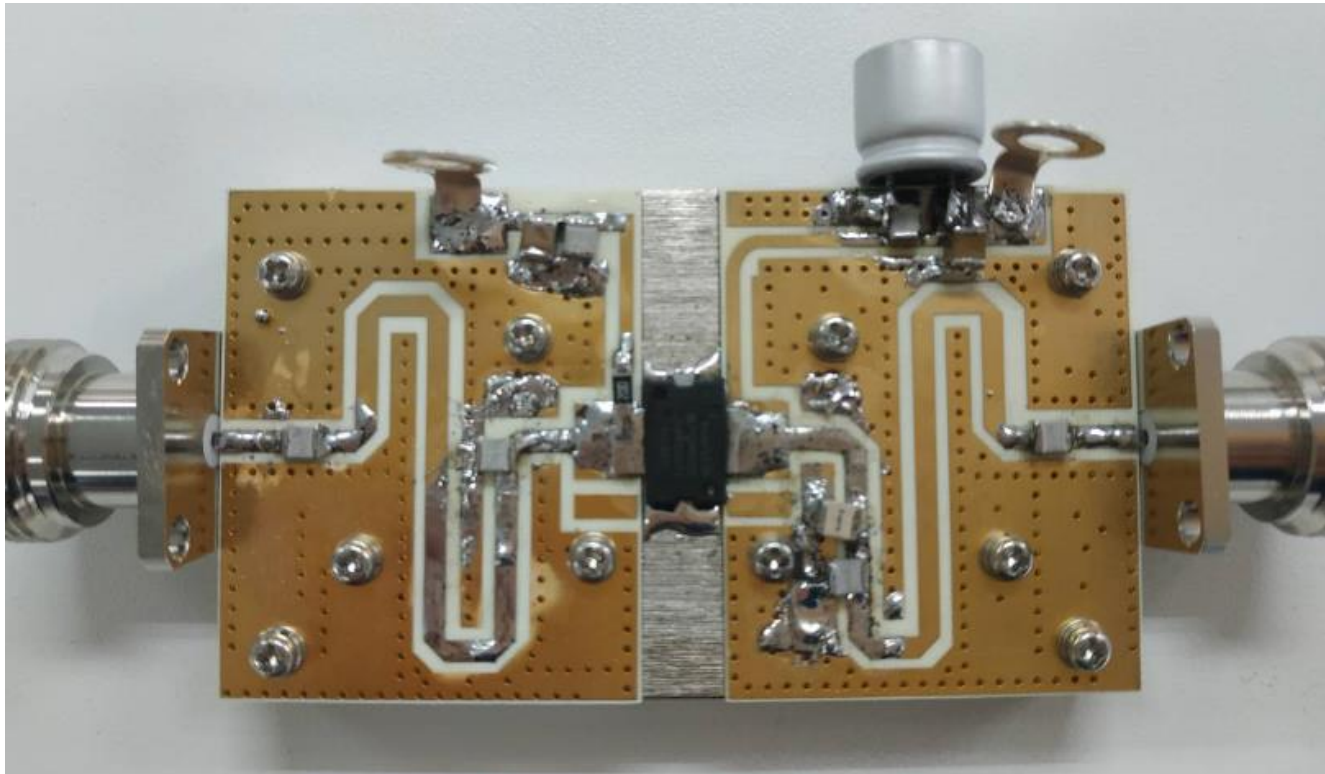
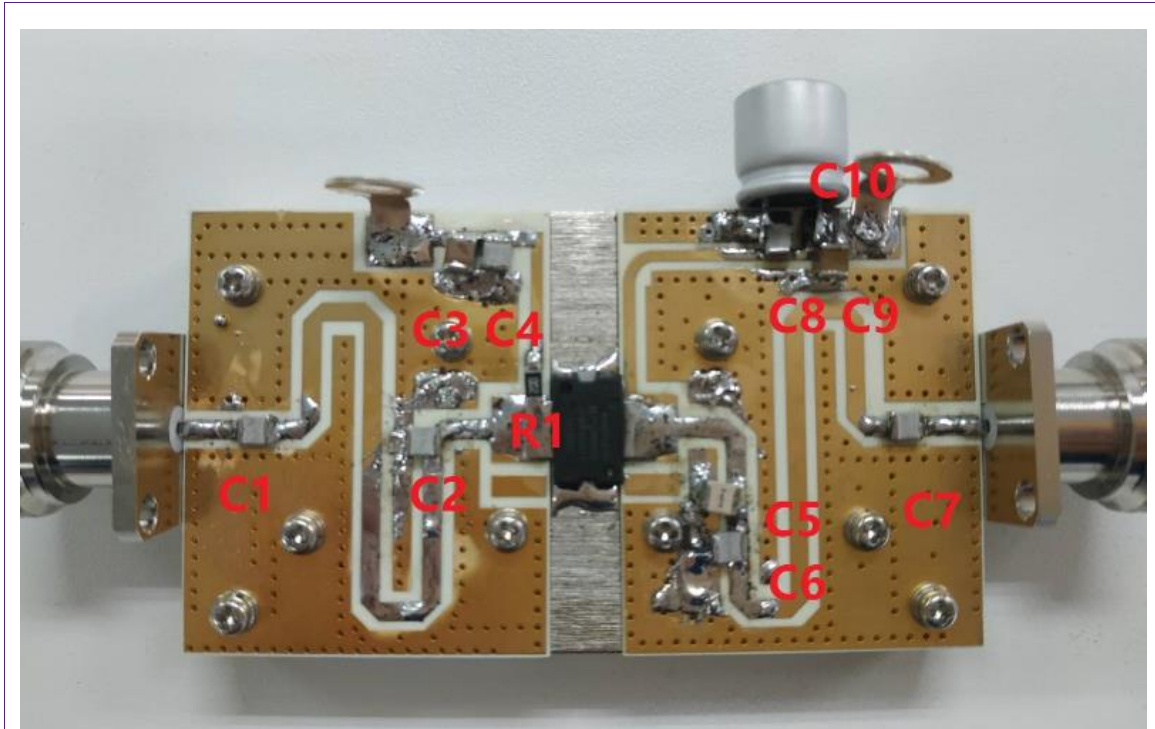


Figure 4 demo picture

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



(1) PCB is RO4350B; $\epsilon_R = 3.5$; height = 30mil; Cu thickness = 35 μm

Table 3: *Bill of materials*

Quantity	Description	Part Number	Manufacturer
R1	20ohm 1206 Resistor		
C1,C4,C7,C8	82P	800B	ATC
C2	15P	800B	ATC
C5	4.7P	800B	ATC
C6	3.9P	800B	ATC
C4,C9	10uF 50V Ceramic Capacitor		Kemet
C10	470 uF 63V Electrolytic Capacitor	MCRH63V477M13X 26-RH	MULTICOM P
PCB	Er=3.5, 30mil, 1OZ	R04350B	Rogers

8.3 Board material

Table 4: *Board specifications*

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

8.4 Device markings

Table 5: *Device specifics*

Parameter	Value
Manufacturer	Ampleon
Device	BLP15M9S30

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