AR164009

BLF188XR, 162.5MHz

AMPLEON

Application Measurement Report

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Document information	
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Abstract	Measurement results of CW design with BLF188XR, this circuit works at 162.5MHz, with coax balun output matching, can output >1200W CW RF Power.

1. Revision History

Table 1: ***Report revisions***

Revision	Date	Description	Author
1.0	20160815	Initial document	Rock Qiu

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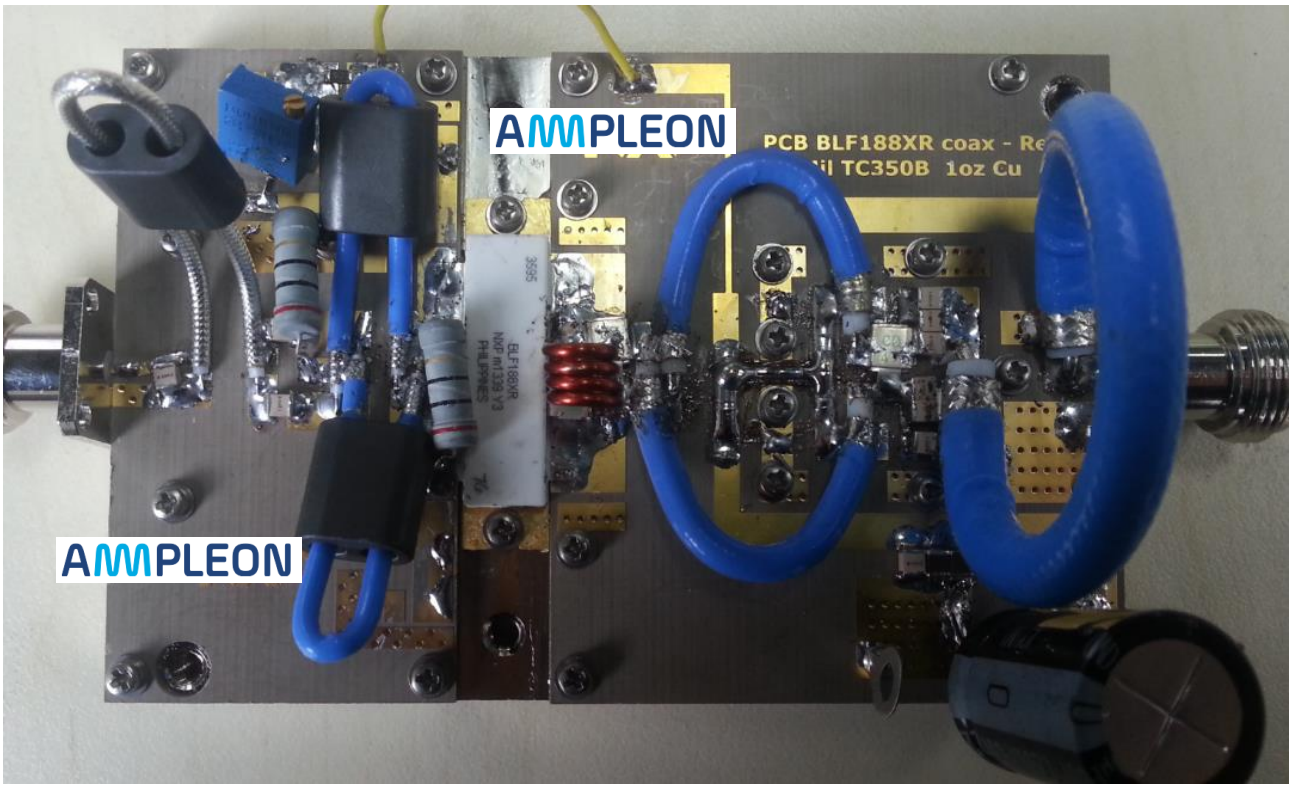
General description

This report presents the measurement results of the CW demo AR164009. The device is BLF188XR LDMOS in a push-pull package, which can handle 65:1 VSWR.The presented demo is tuned for the frequency of 162.5MHz. this demo can output >1200W CW RF power with 79% efficiency!



5. Biasing

The biasing is as follows:

V_{DS} = 50V

Idq = 100mA

6. Performance Indication

Table 2: ***Performance indication***

Parameter	Condition	Unit	CW
V_{DD}		V	50
S11 at input		dB	-8
P_{1dB}	G_{MAX}-1dB	W	1056
P_{3dB}	G_{MAX}-3dB	W	1200
P_{OUT} of operation	***P_o***	W	*1200*
Gain	**@P_o**	dB	22
Drain Efficiency	**@P_o**	%	79

7. Performance Details

7.1.1 Gain vs. Pout to P1dB(CW test)

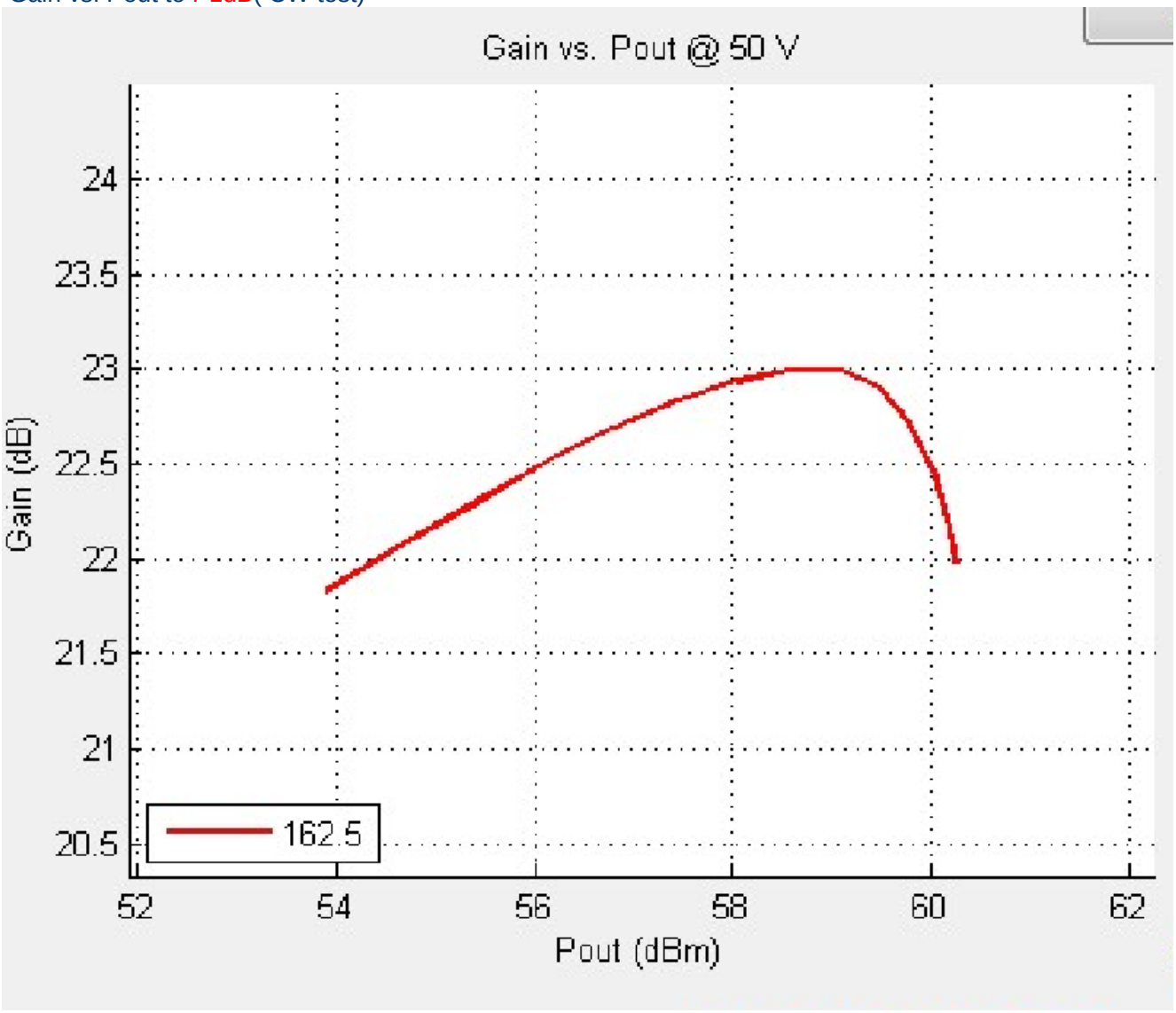


Figure 1 CW Gain vs Pout

7.1.2 Efficiency vs. Pout to P1dB

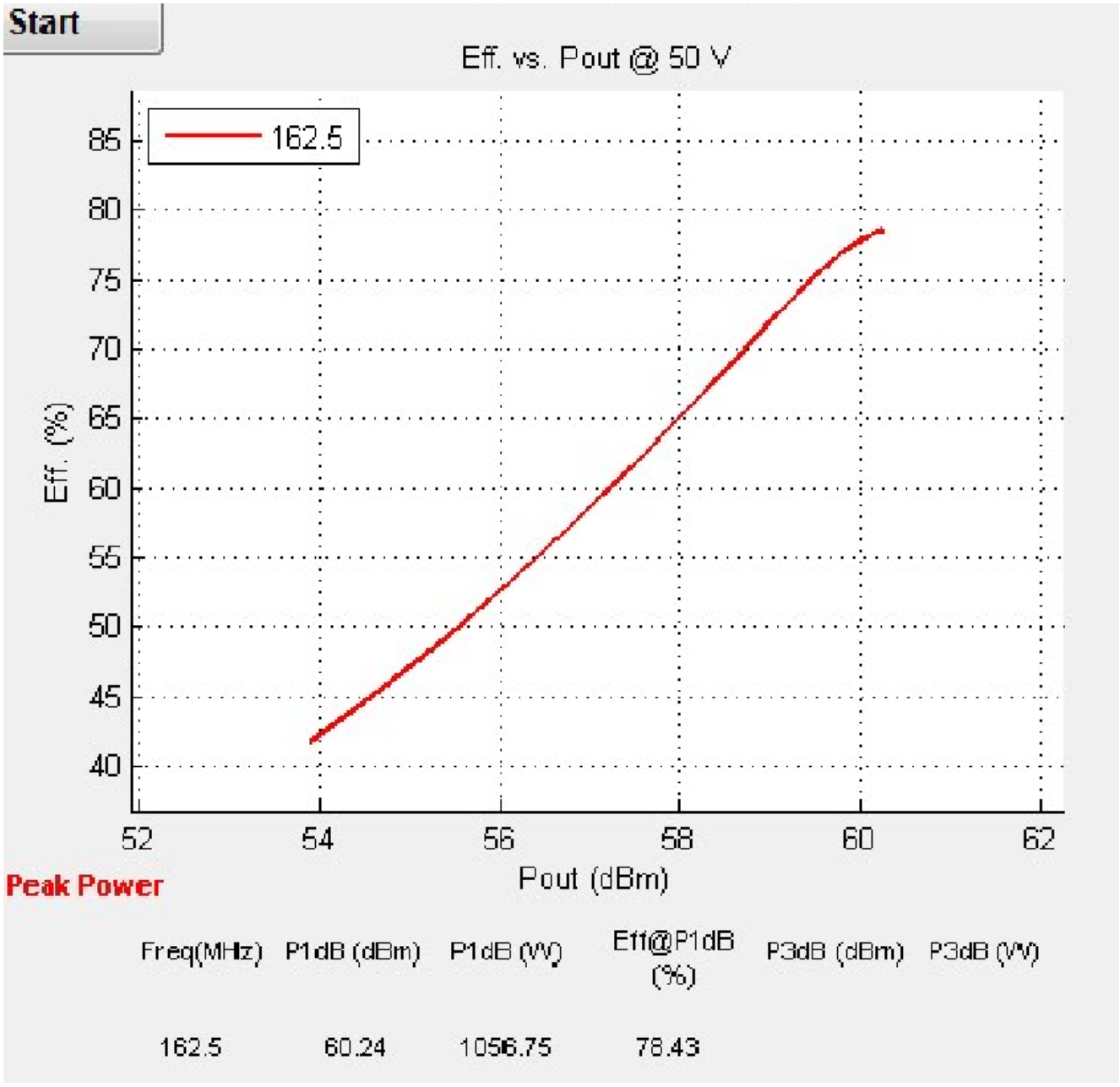


Figure 2 CW efficiency vs Pout

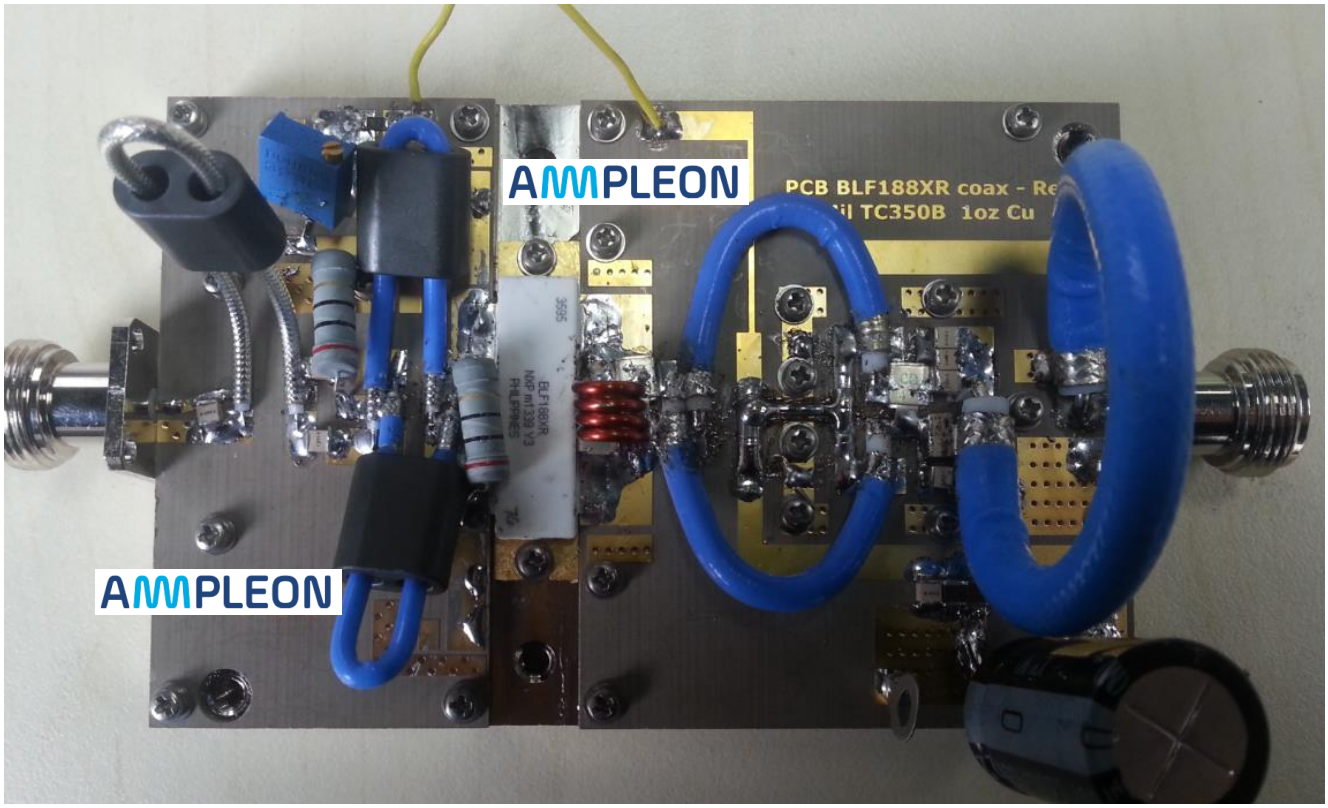
7.1.3 Efficiency vs. Pout to P3dB

162.5MHz	IRL	in(W)	out (W)	Current(A)	efficiency	Gain(dB)
	- 15dBc	13.6	1200	30.3	79.15	19.5

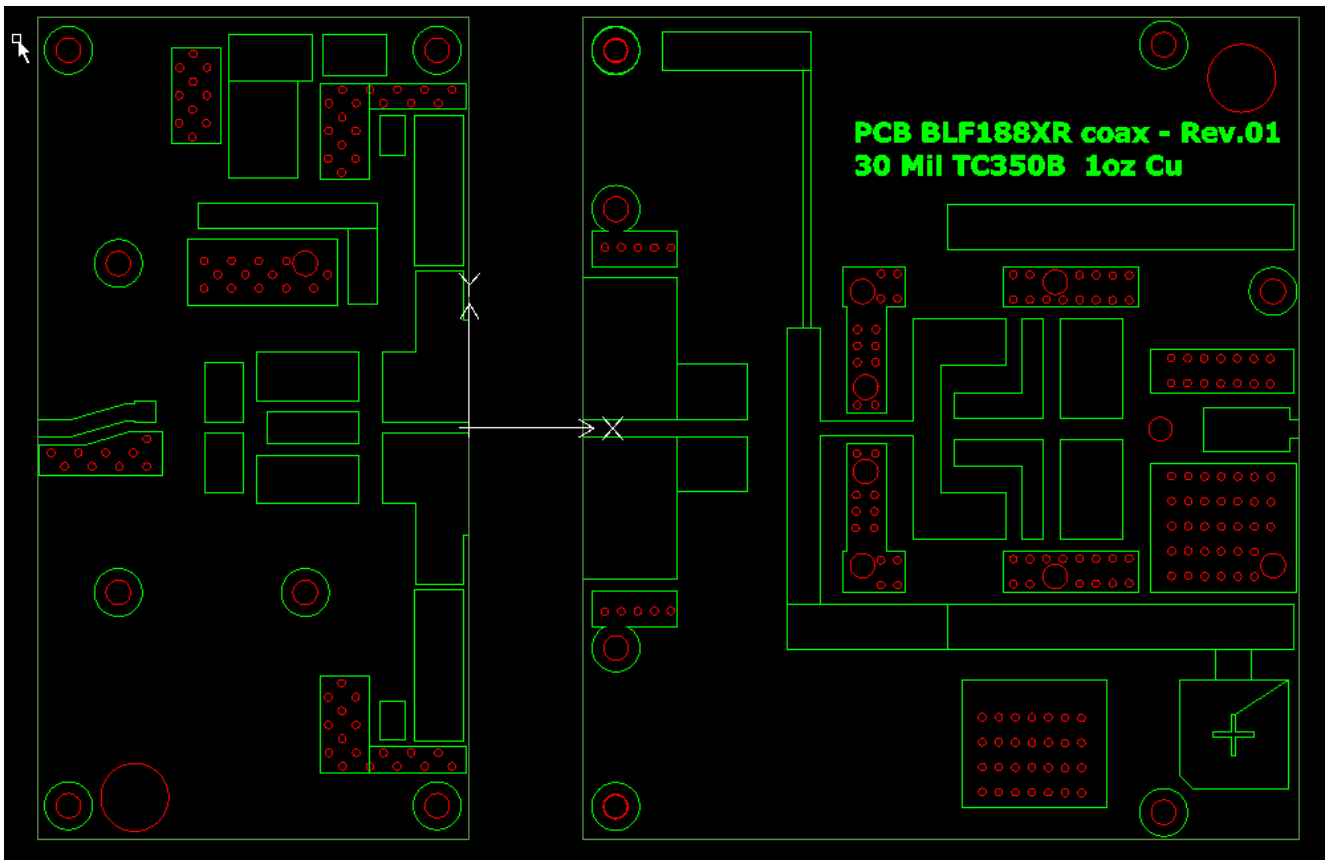
Figure 3 CW efficiency vs Pout at P3dB

8. Hardware

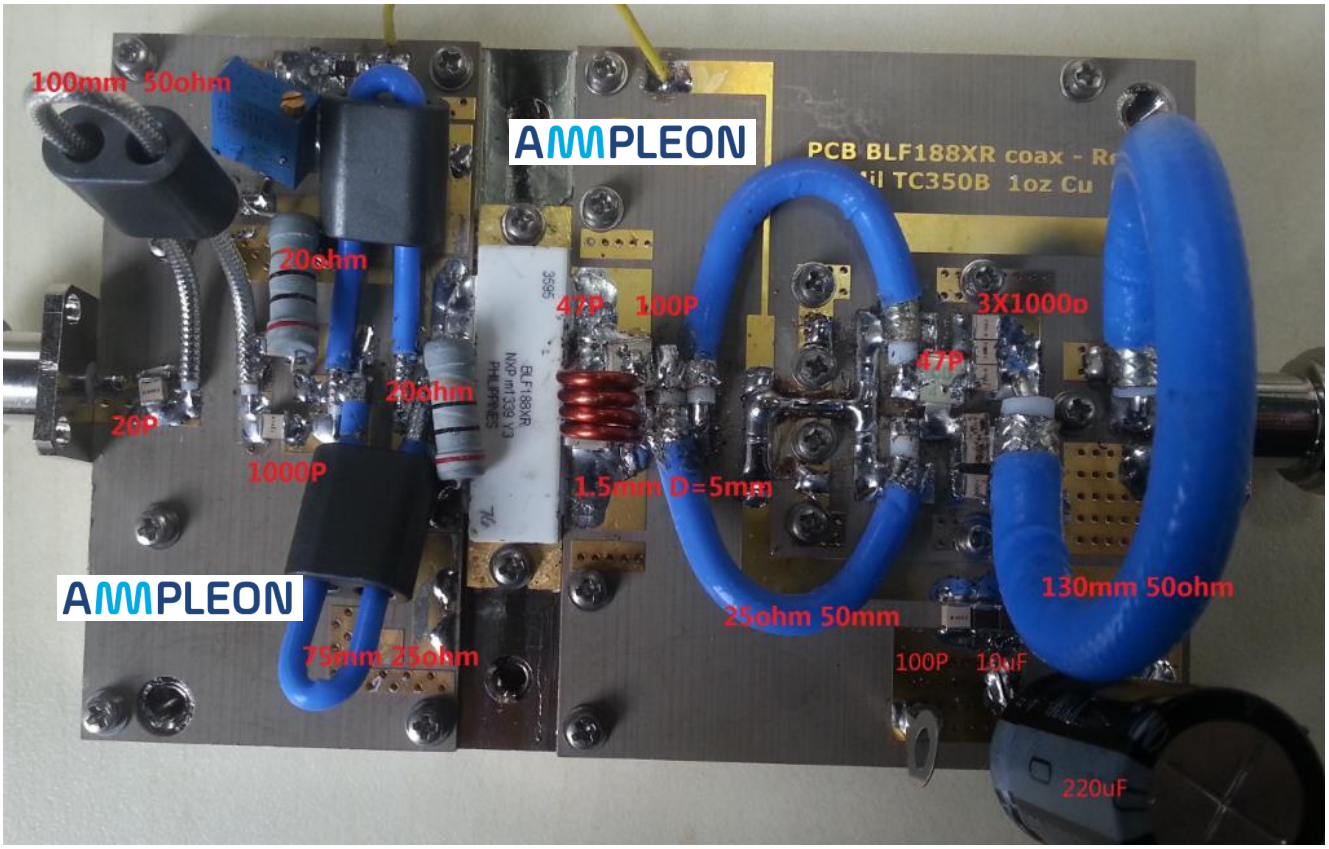
8.1 Board Image



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



8.3 BOM



8.4 Board material

Table 3: ***Board specifications***

Parameter	Value
Manufacturer	Rogers
Type	TC350
Thickness	30mil, 0.762mm
Layers	2, top/bottom. Bottom all copper

8.5 Device markings

Table 4: ***Device specifics***

Parameter	Value
Manufacturer	Ampleon
Device	BLF188XR(S)

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