

NA-1479

BLF642 at 1300 MHz

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AMPLEON

Application Measurement
Report

Document information

Info	Content
Keywords	NA-1479
Abstract	Measurement results of a demo board (from datasheet) for 1300 MHz with 1x BLF642.

Revision history

Rev	Date	Description
1	20120208	
2	20150424	Update for web publication
3	20151005	The format of this document has been redesigned to comply with the new identity guidelines of Ampleon. Legal texts have been adapted to the new company name where appropriate.

1. Introduction

1.1 General Description

This document contains measurement results of a 1030 MHz demo amplifier (Board NA-1479) with 1x BLF642.

1.1.1 Test object details

Transistor type:	BLF642 (bolded down)
Production code:	8033 m1117W0 Philippines
Package:	SOT467C
Board:	BLF642 rev1 - Output BLF642 rev1 - Input
Demo number:	NA-1479

1.2 Used Test signals

CW + 2Tone: 2-Tone 100kHz spacing

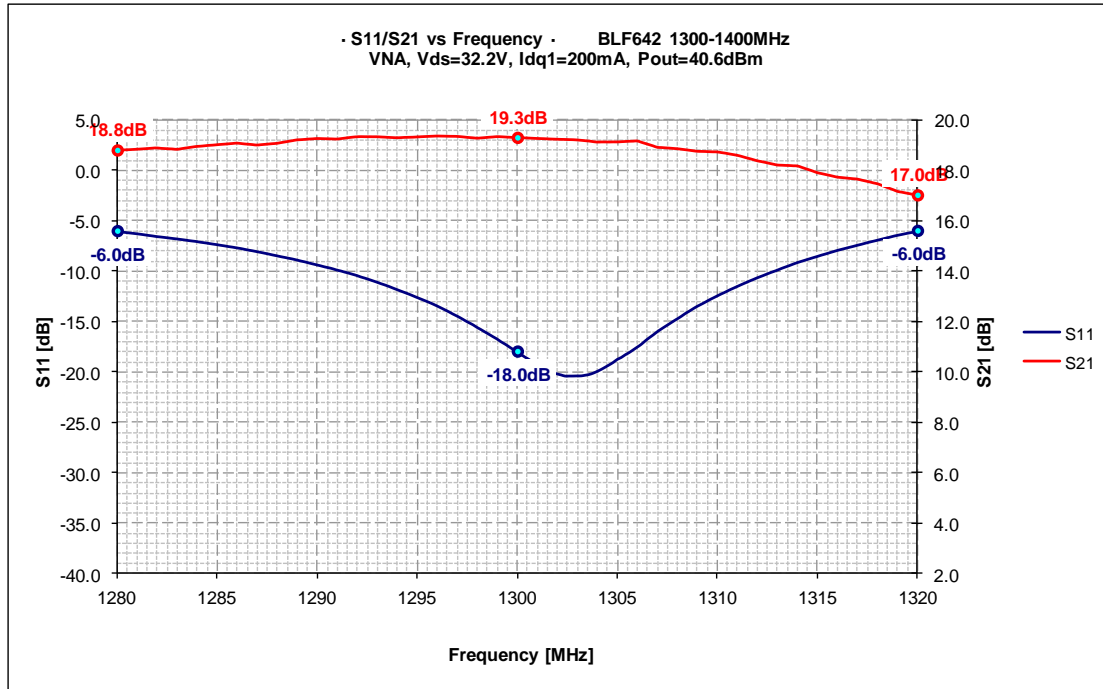
1.3 Testcircuit

A description of this circuit can be found in **chapter 3**. The test circuit has been designed on Rogers 5880, $h=0.79\text{mm}$, $\epsilon_r=2.2$. Supply voltage (drain-source) is typical 32V. In this case we use **$V_{ds}=32\text{V}$** . Start with $V_{gs}=1.5\text{V}$ and increase until **$I_{dq}=200\text{mA}$** ($V_{gs}\sim 2\text{V}$).

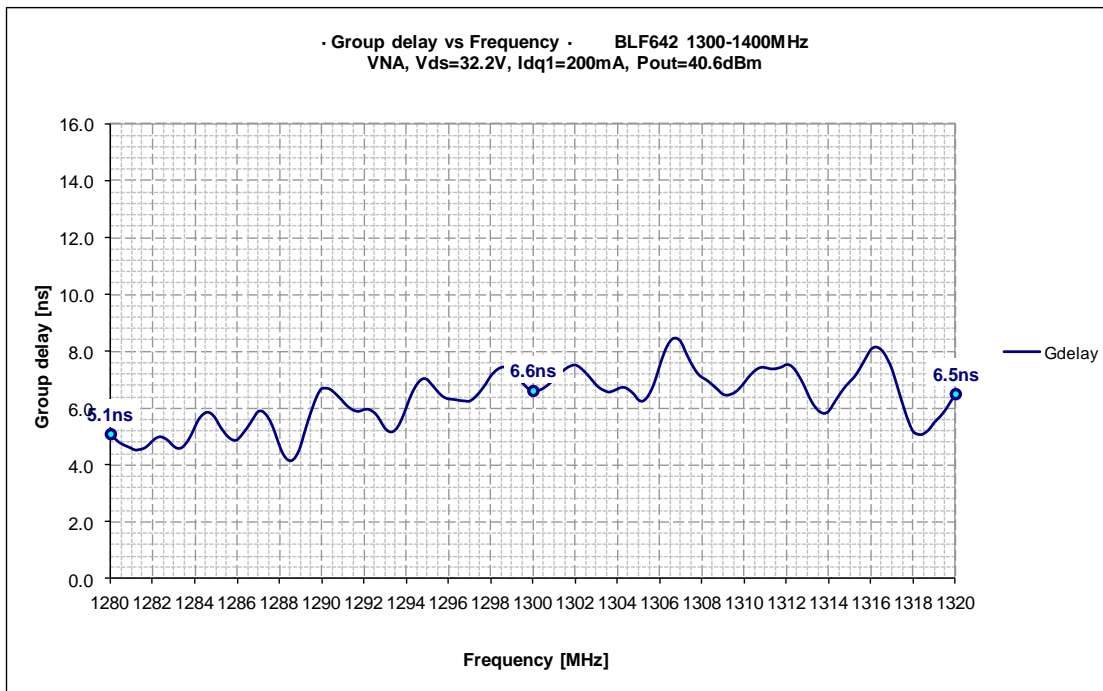
2. Measurement Results

2.1 Network Analyzer Sweep

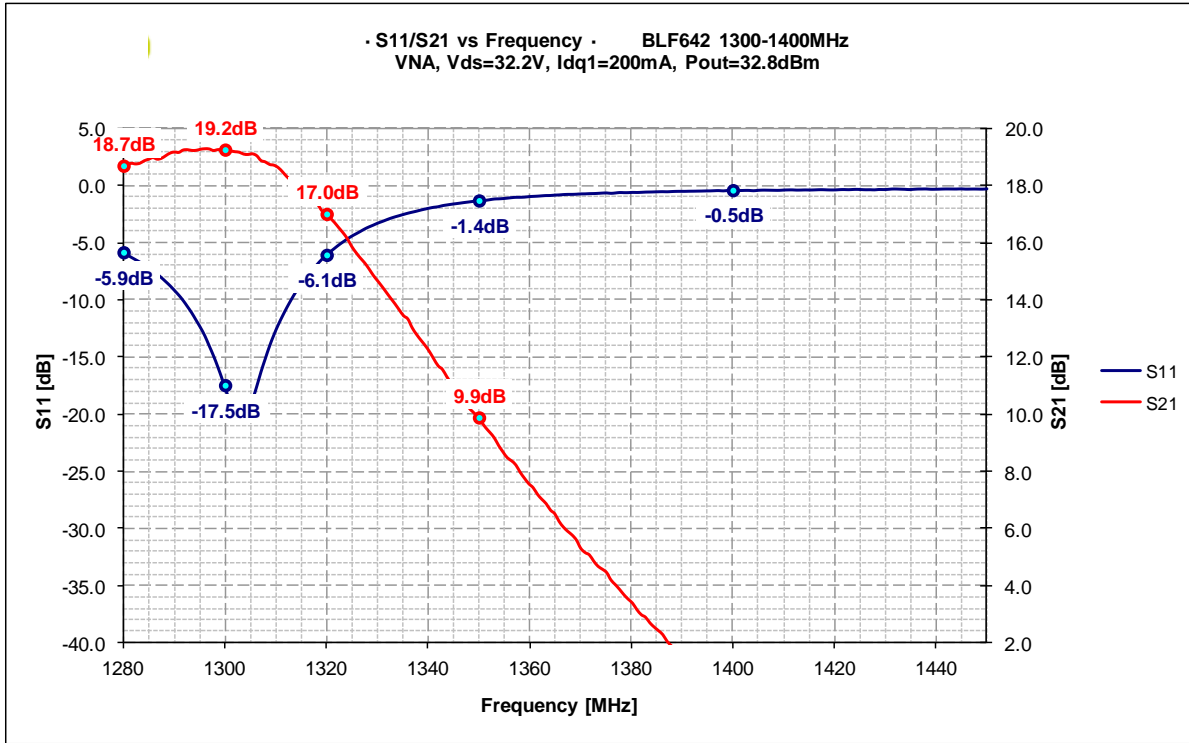
2.1.1 Gain & IRL @ Pout=40.6dBm



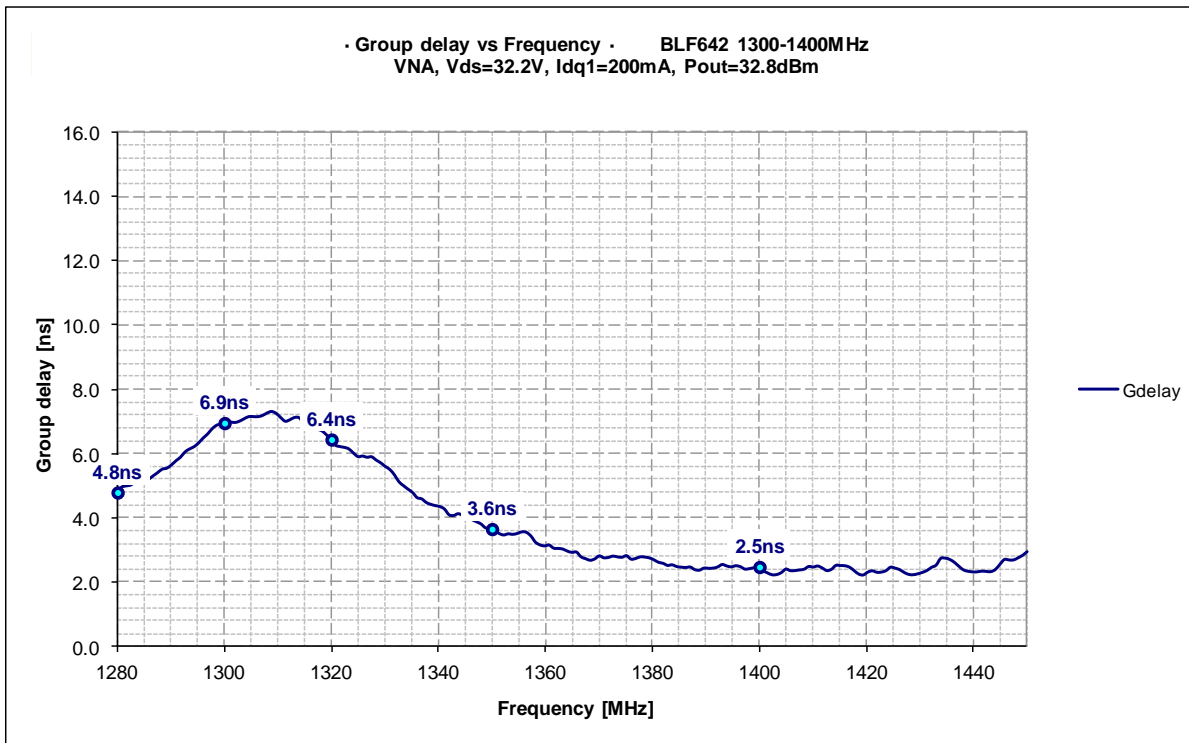
2.1.2 Delay @ Pout=40.6dBm



2.1.3 Gain & IRL @ Pout=32.8dBm

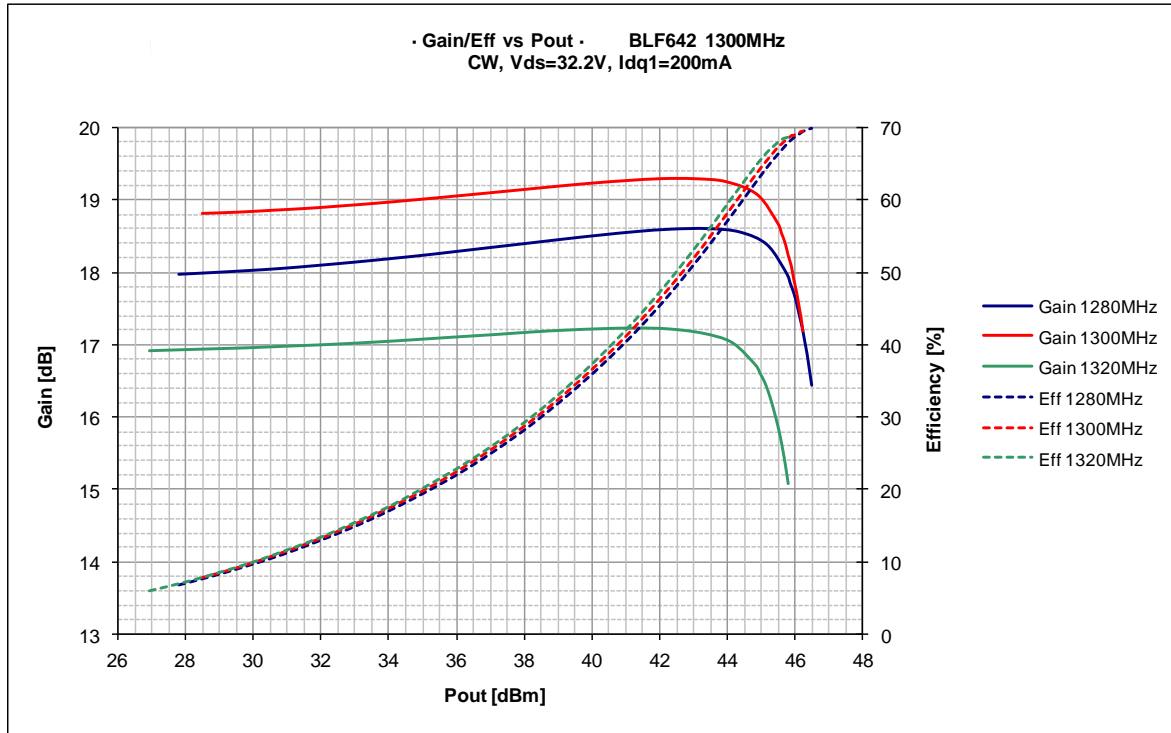


2.1.4 Delay @ Pout=32.8dBm



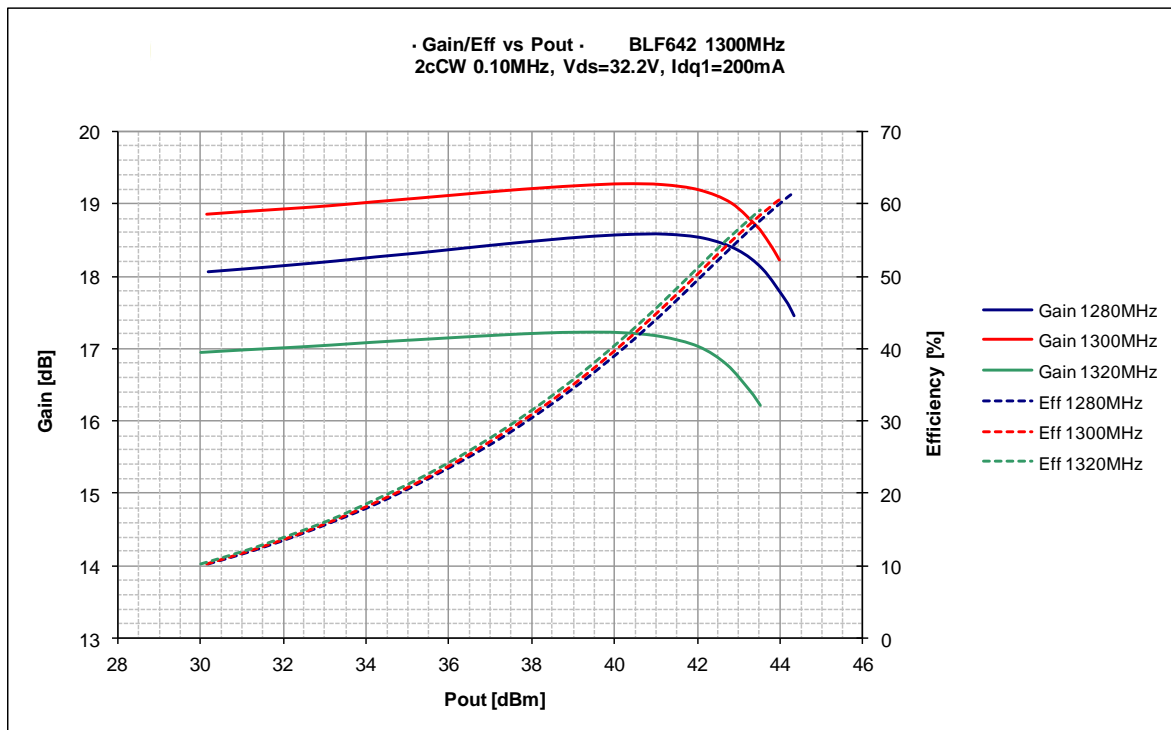
2.2 CW Powersweep

2.2.1 Gain and Efficiency

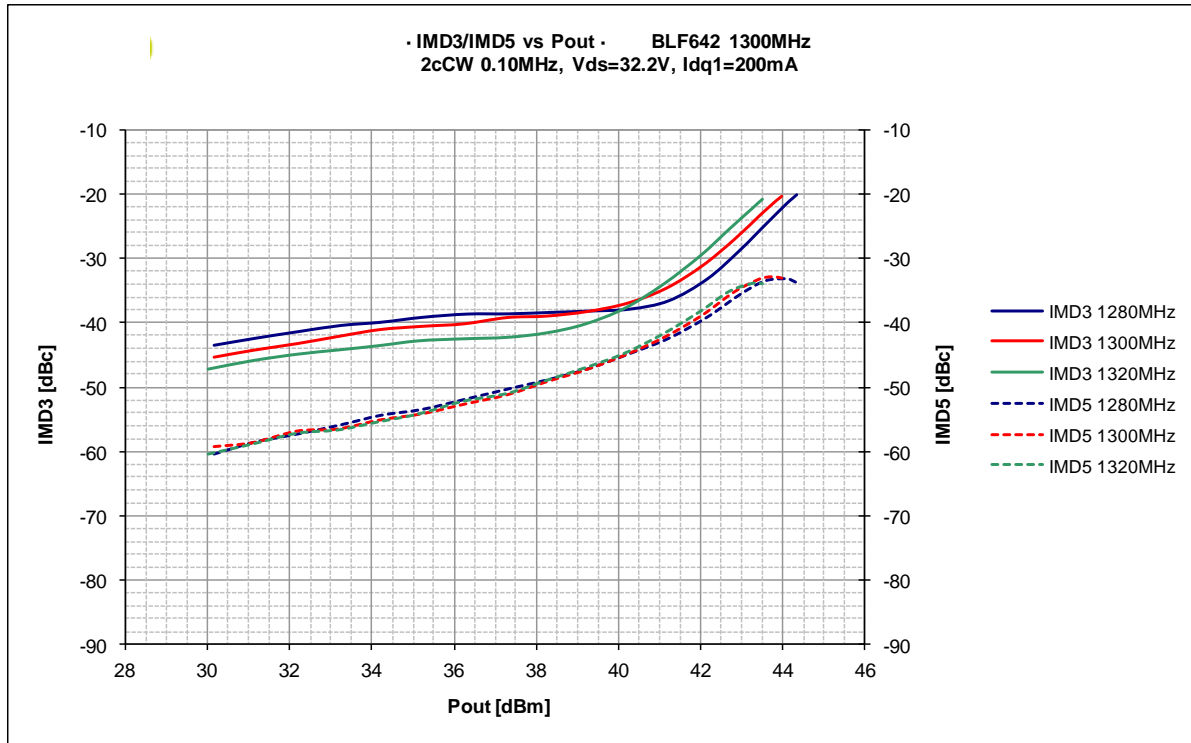


2.3 2-Tone powersweep

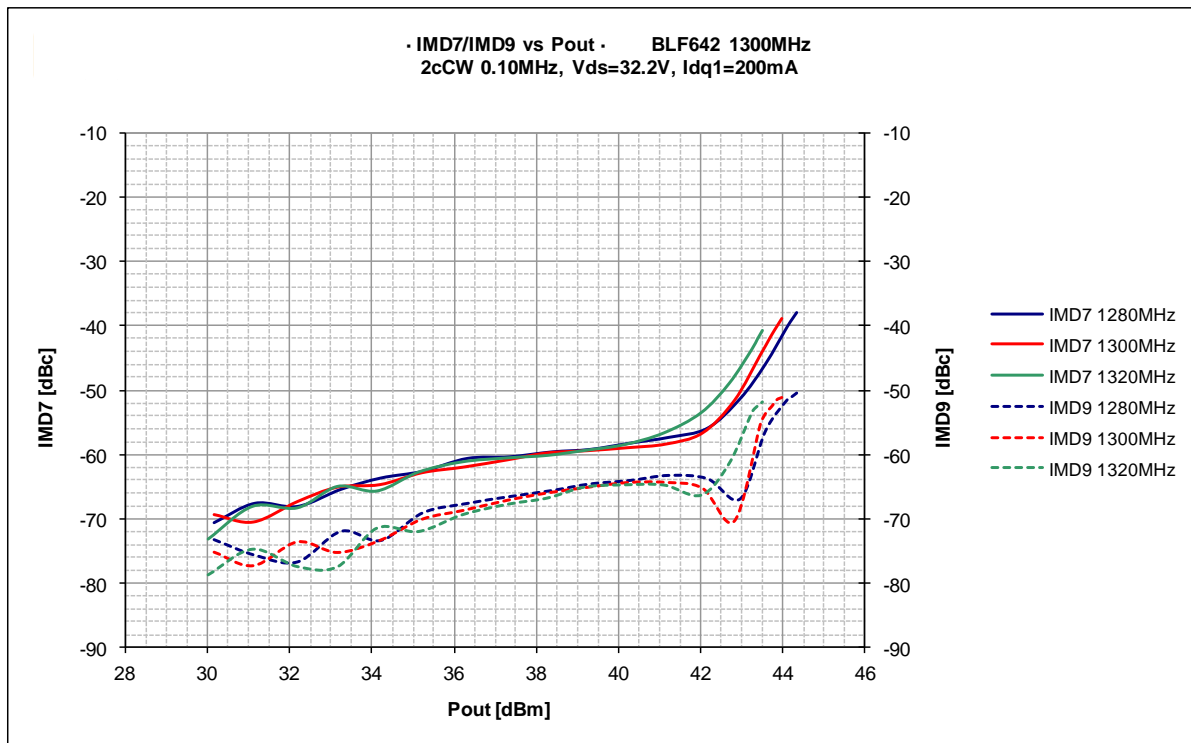
2.3.1 Gain and Efficiency



2.3.2 $IMD3_{max}$ and $IMD5_{max}$

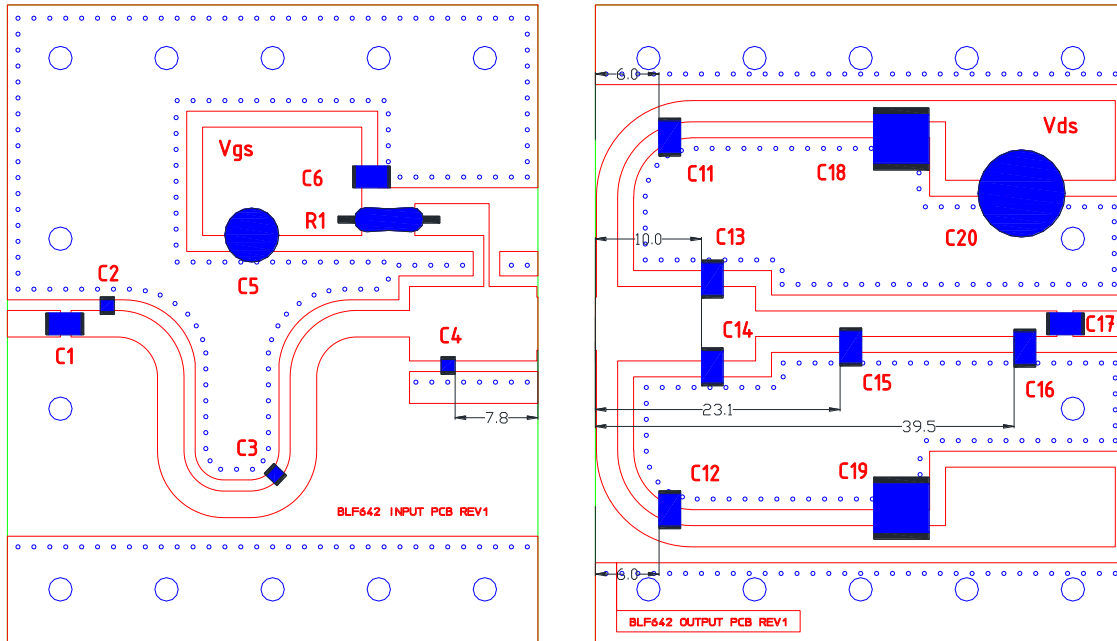


2.3.3 $IMD7_{max}$ and $IMD9_{max}$



3. PCB Layout

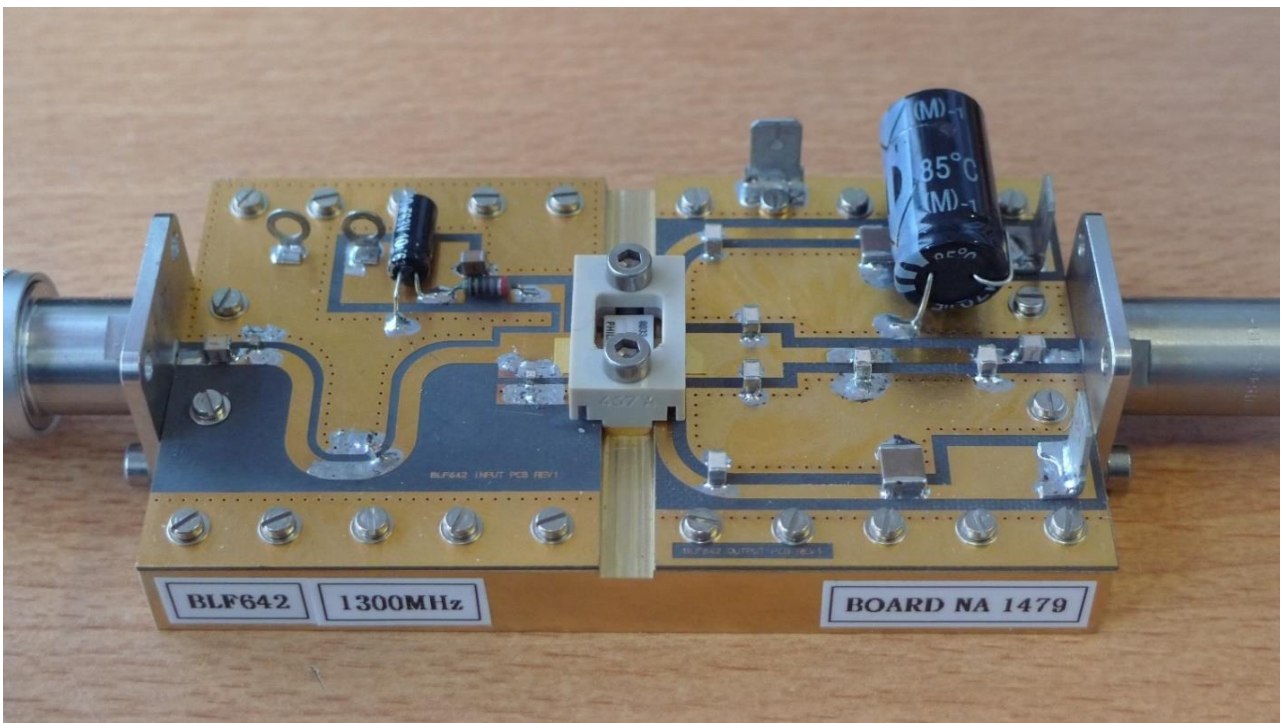
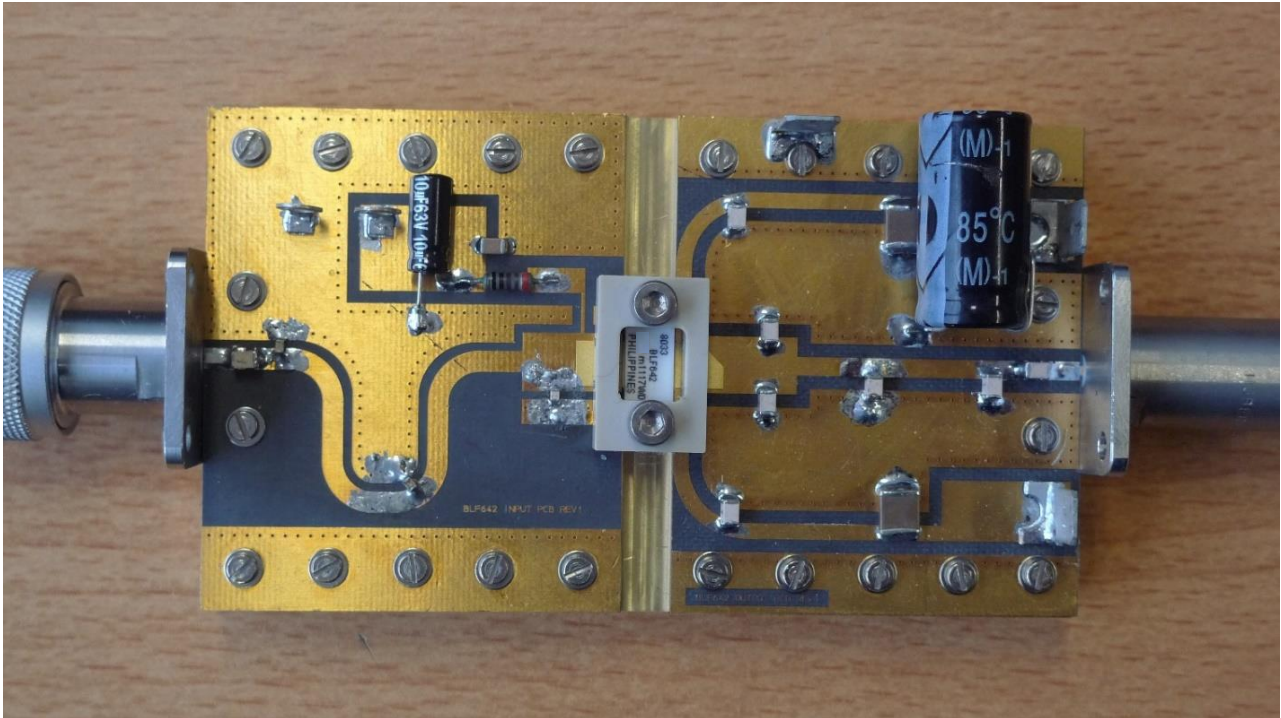
3.1 PCB Layout Drawing



3.2 Component list

Partslist BLF642			
Input			
no.	value	type	comment
C1	22pF	ATC100B	
C2	5.1pF	ATC100A	
C3	4.3pF	ATC100A	
C4	9.1pF	ATC100A	different from datasheet
C5	10uF	Electrolytic Capacitor	63V
C6	20nF	ATC100A	different from datasheet
R1	100Ω		
PCB		RO5880 epsr = 2.2 h = 0.79mm 95 x 80 mm Cu plating 35μ	
Output			
no.	value	type	comment
C11,C12	22pF	ATC100B	
C13,C14	6.2pF	ATC100B	
C15	4.3pF	ATC100B	
C16	1.2pF	ATC100B	
C17	22pF	ATC100B	
C18,C19	10uF	Murata	
C20	470uF	Electrolytic Capacitor	63V
PCB		RO5880 epsr = 2.2 h = 0.79mm 95 x 80 mm Cu plating 35μ	

3.3 Photo's Demo Board



4. Attachments

Please see the attachment for the support files.

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