

# NA-1918

CLF1G0035-100P at 3100-3500 MHz

Rev. 3 — 05 October 2015

AMPLEON

Application Measurement  
Report

## Document information

Info	Content
Keywords	NA-1918
Abstract	Measurement results of a demo board for 3100-3500MHz with 1x CLF1G0035-100P.

## Revision history

Rev	Date	Description
1	20130705	
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

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### 1.1 General Description

This document shows the measurement results of a 3100-3500MHz demo amplifier (Board NA-1918) with 1x CLF1G0035-100P.

#### 1.1.1 Test object details

Transistor type:	CLF1G0035-100P (bolted down)
Production code:	RFA D131310
Package:	SOT467C
Board:	CLF1G0035-100P Rev3 -Output CLF1G0035-100P Rev3 -Input
Demo number:	NA-1918

### 1.2 Used Test signals

CW-pulsed: Power Sweeps at 3.1-3.5GHz and Frequency Sweep at 100W (50dBm)

### 1.3 Test circuit

A description of this circuit can be found in **chapter 3**. The test circuit has been designed on Rogers RO3006, h=25mil, er=6.16, 2x35um copper. Supply voltage (drain-source) is 50V. The Idq is standard set to 100mA at the bias module. You can measure Id on the pins at shunt R3 (0.01Ohm).

Please note that the Bias module draws current. Approximately 20-30 mA.

A description can be found in application note: **AN11130**.

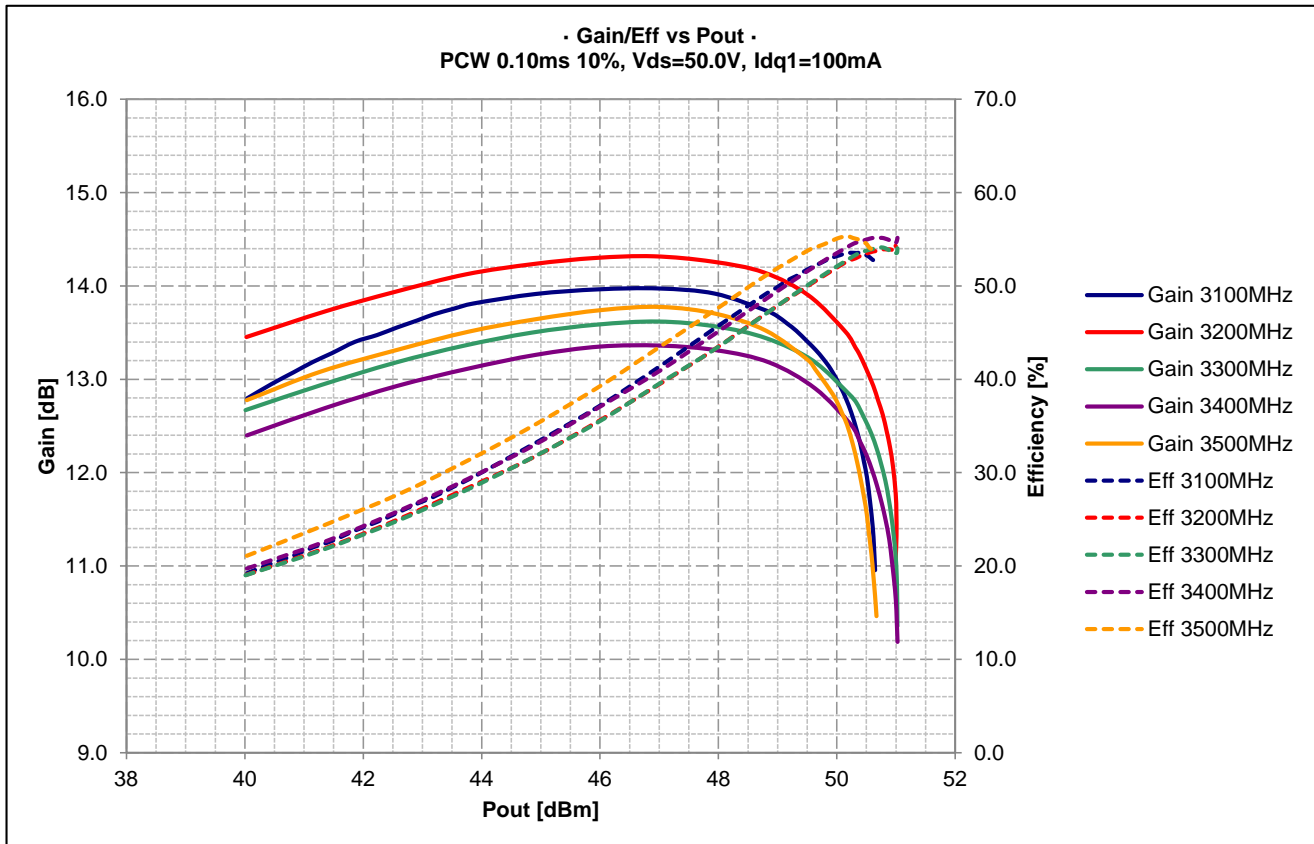
**NOTE: The leads at the input of the device are cut off half. This is done to get a better gain performance.**

## 2. Measurement Results

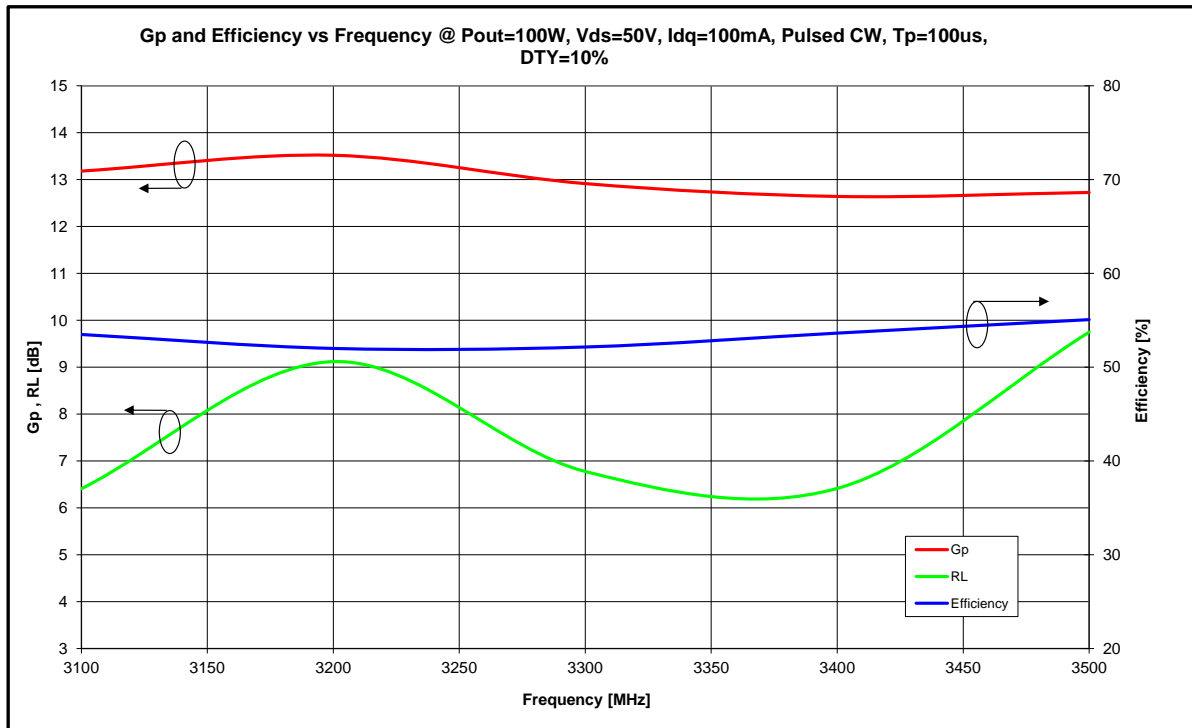
### 2.1 CW-Pulsed summary (@=@50dBm)

Freq [MHz]	P1dB [dBm]*	P1dB [W]*	Eff@P1d B [%]*	P2dB [dBm]*	P2dB [W]*	Eff@P2d B [%]*	Gain [dB]@	Compr [dB]@	Eff [%]@	IRL [dB]@	S11 [dB]@
3100	50.0	100.4	53.2	50.6	116.0	53.0	13.0	-0.98	53.2	6.3	-6.3
3200	50.3	108.0	53.0	51.0	126.1	54.1	13.6	-0.71	51.9	9.0	-9.0
3300	50.4	110.6	53.6	51.0	126.5	53.7	13.0	-0.65	52.0	6.7	-6.7
3400	50.4	108.9	54.7	51.0	126.4	54.9	12.7	-0.69	53.5	6.4	-6.4
3500	50.0	99.8	55.1	50.6	115.7	53.7	12.8	-1.01	55.1	9.7	-9.7

### 2.2 CW-pulsed – Power Sweep

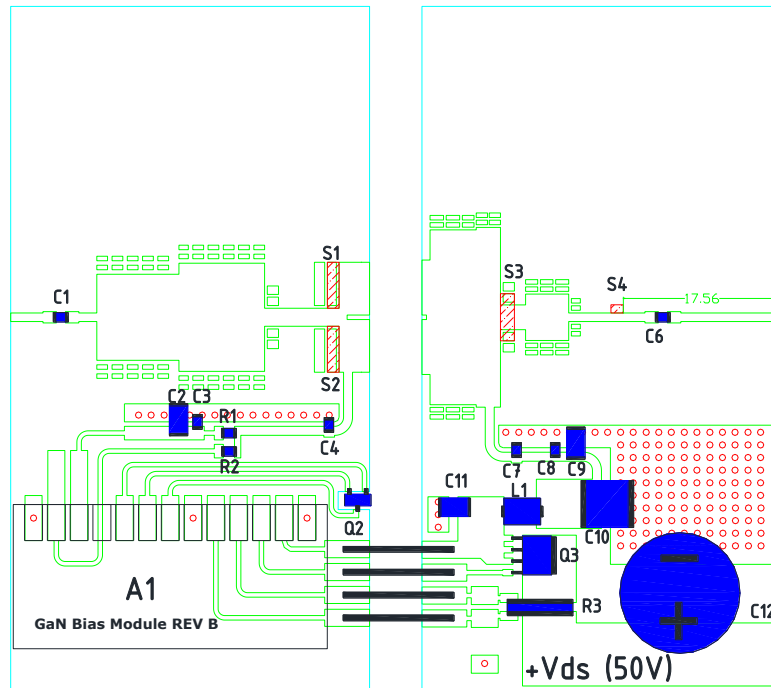


2.3 Frequency sweep at Pout=50dBm (100W)



### 3. PCB Layout

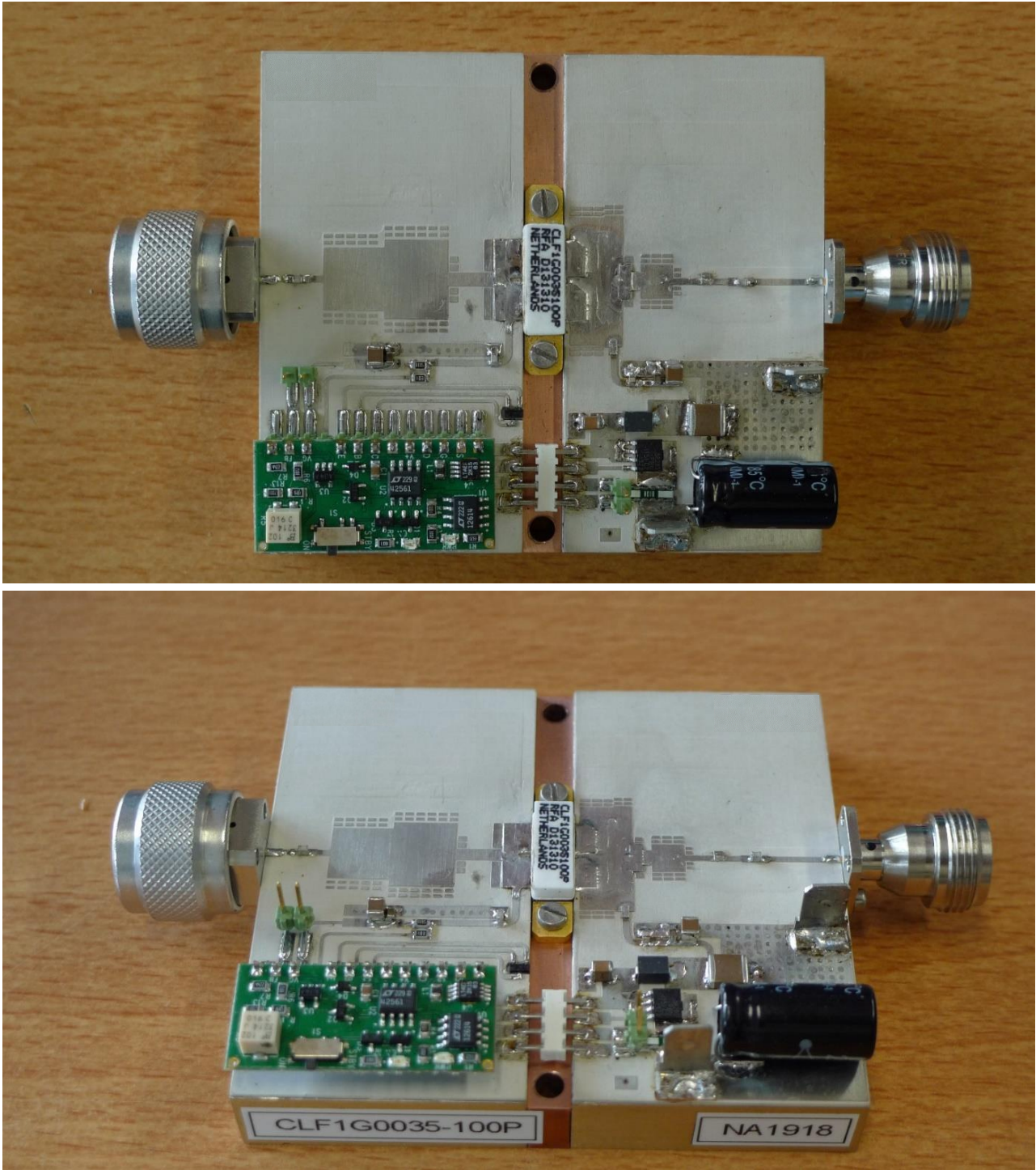
#### 3.1 PCB Layout Drawing



#### 3.2 Component list

Components list circuit.			
C1,C4,C6,C7	20pF	ATC800A	
C2,C9	4.7uF	Murata, 50V	
C10	10uF	Murata, 50V	
C3,C8	1nF	ATC700A	
C11	20nF	ATC	
C12	220uF	Electrolytic Capacitor	63V
L1		Ferrite Bead	Fair-Rite 2743019447
R1	5.1 Ω	SMD Resistor 1206	
R2	10k Ω	SMD Resistor 1206	
R3	0.01 Ω	Resistor 3008, 2W	Susumu RL7520WT-R010-F
Q1	100W	Transistor Ampleon	Ampleon CLF1G0035_100P
Q2	PNP 45V 100mA GP	Transistor NXP	NXP BC857B
Q3	N-ch MOS 80V 80A	Transistor NXP	NXP BSMN8R2-80YS
A1	As described in AN11130	Ampleon	GaN Bias Module Rev B
S1,S2,S3,S4	Tuning strip		
PCB Material: Rogers RO3006, Thickness 0,64mm, εr = 6.15, Cu=2x35 micron			

3.3 Photo's Demo Board



4. Attachments

Please see the attachment for the support files.

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**6. Contents**

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**1. Introduction ..... 3**

1.1 General Description ..... 3

1.1.1 Test object details ..... 3

1.2 Used Test signals..... 3

1.3 Test circuit..... 3

**2. Measurement Results ..... 4**

2.1 CW-Pulsed summary (@=@50dBm) ..... 4

2.2 CW-pulsed – Power Sweep ..... 4

2.3 Frequency sweep at Pout=50dBm (100W) ..... 5

**3. PCB Layout ..... 6**

3.1 PCB Layout Drawing..... 6

3.2 Component list ..... 6

3.3 Photo's Demo Board ..... 7

**4. Attachments..... 7**

**5. Legal information ..... 8**

5.1 Definitions ..... 8

5.2 Disclaimers..... 8

5.3 Trademarks ..... 8

5.4 Contact information ..... 8

**6. Contents..... 9**

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