NU3020V Class AB 100~1200MHz

June 10, 2026

Introduction

This amplifier is designed with Innogration 50V GaN transistor.

Demo and Transistor

Frequency band :	100~1200MHz
Application :	Multi Market
Configuration :	Class AB
Test Signal :	Pulse
Transistor :	NU3020V
Date code :	250947;
PCB :	F4BTMS1000 ,r=10.2 ,30 mil

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- The output power measurement using CW

Note: The PA is tested with a supply voltage of V_{ds} = 50V， V_{gs} = -3.15V，

I_{dq} = 100mA all measurements unless otherwise noted.

Test Results

1. Summary @ Bench (Chengdu)

(1) Test Condition

V_{gs}= 3.15V， V_{ds}= 50V， I_{dq} = 100mA

Signal mode： Pulse 10% 100us， Frequency： 100-1200MHz

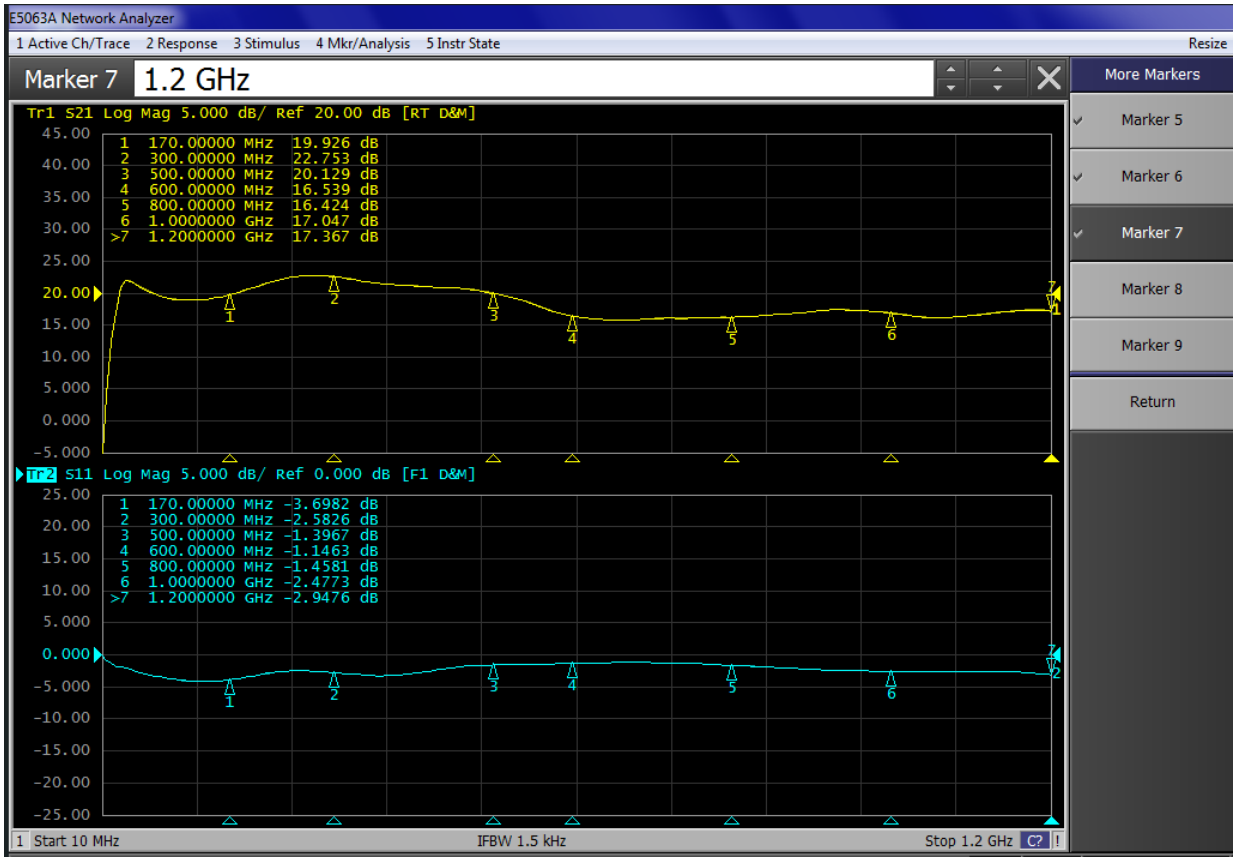
Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2nd	3rd
100	32.65	50.85	121.62	0.444	18.2	54.56	-6.4	-11.7
120	32.67	52.07	161.06	0.625	19.4	51.34	-6.8	-16.8
150	32.59	52.87	193.64	0.731	20.28	52.77	-7.7	-12.0
170	31.60	53.17	207.49	0.766	21.57	53.96	-9.3	-13.2
200	32.80	54.40	275.17	0.839	21.6	65.33	-13.5	-13.6
300	30.32	52.92	195.88	0.56	22.6	69.68	-18.4	-13.2
400	30.41	53.91	246.04	0.783	23.5	62.59	-11.8	-14.6
500	32.78	52.62	182.81	0.524	19.84	69.50	-15.4	-14.3
600	39.23	53.13	205.59	0.7	13.9	58.51	-23.8	-16.3
700	38.73	52.73	187.50	0.641	14	58.27	-14.6	-13.3
800	38.00	53.70	234.42	0.844	15.7	55.33	-16.9	-16.8
900	37.53	53.58	227.77	0.755	16.05	60.10	-16.4	-17.3
1000	38.36	53.46	221.67	0.7	15.1	63.08	-21.7	-14.4
1100	39.04	52.84	192.49	0.624	13.8	61.45	-15.5	-10.4
1200	38.90	52.34	171.40	0.523	13.44	65.28	-18.1	-19.1

2. Network Results

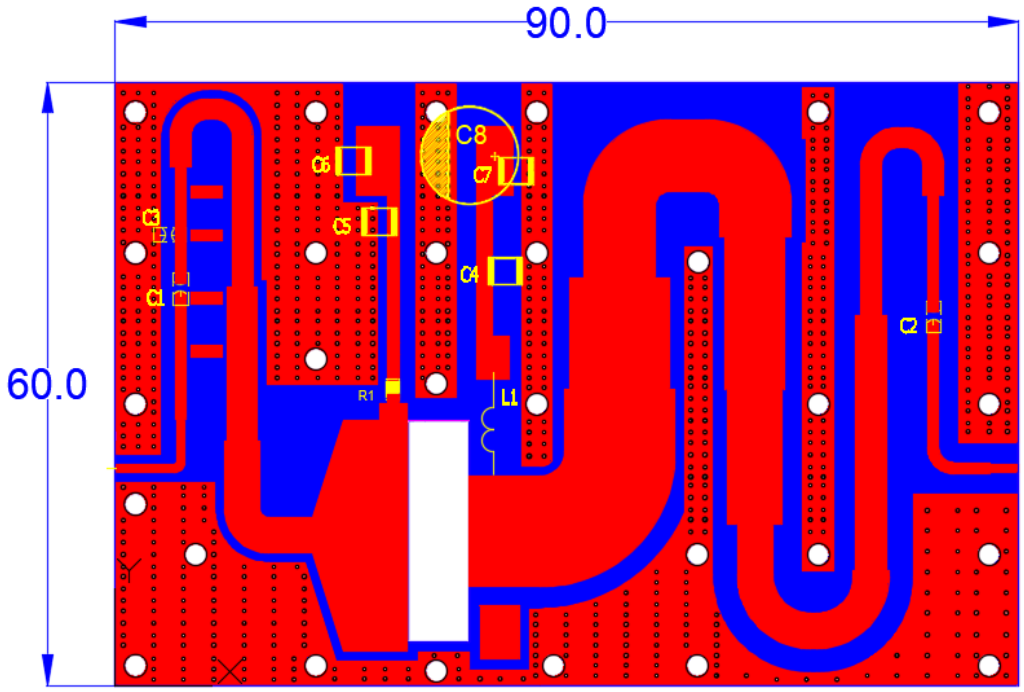
Test Condition

Vgs=-3.1V, Vds=50V, Idq=200mA

input power= 0 dBm



BOM of Test Circuit



Demo Picture