SL3019VS Class AB 150-1500MHz
June 26 , 2026

Introduction

This amplifier is designed with Innogration 50V Gan transistor.

Demo and Transistor

Frequencyband	：	150-1500MHz
Application	：	Multi Market
Configuration	：	Class AB
Test Signal	：	Pulse/CW
Transistor	：	SL3019VS
Date code	：	252306
PCB	：	F4BTMS1000 ,r=10.2 ,30 mil

The amplifier has been characterized under the following conditions:

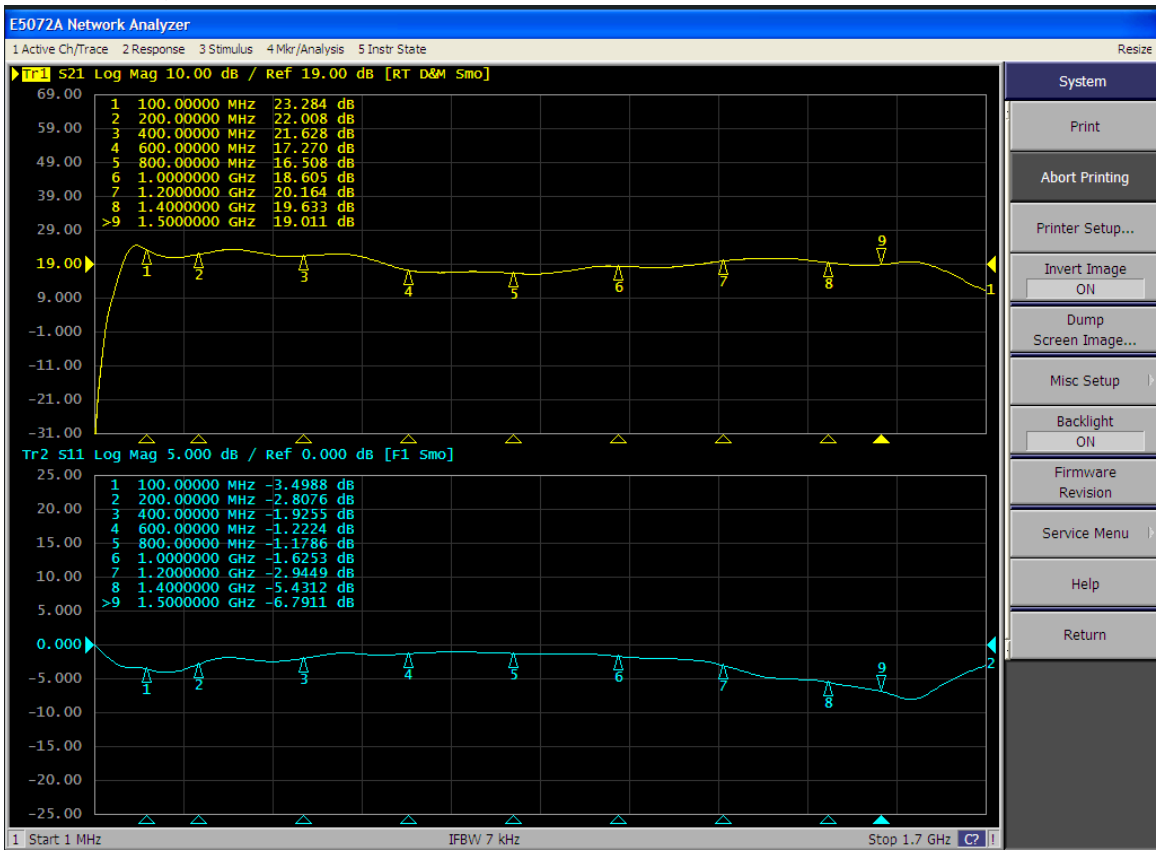
- Network Analyzer plots for gain and IRL.
- The output power measurement using CW .

Note： The PA is tested with a supply voltage of V_{DS} = 50V , I_{dq} = 100mA， all measurements unless otherwise noted.

1. Network Results

Test Condition

V_{ds}=50V，V_{gs}=-3.12V，I_{dq}=200mA，Input Power = 0dBm



Test Results

2. Summary @ Bench 2(Chengdu)

(1) Test Condition

Signal mode： Pulse 10% 100us

Frequency： 120-1550MHz

V_{gs}= -3.17V， V_{ds}= 50V， I_{dq} = 100mA

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)
100	33.3	50.27	106.41	0.29	16.97	73.39
120	33.6	51.98	157.76	0.49	18.38	64.39
150	33.5	52.6	181.97	0.65	19.1	55.99
200	33.68	53.83	241.55	0.75	20.15	64.41
300	33.64	52.63	183.23	0.52	18.99	70.47
400	32.67	53.44	220.80	0.75	20.77	58.88
500	34.31	52.06	160.69	0.44	17.75	73.04
600	37.06	52.56	180.30	0.65	15.5	55.48
700	38.09	52.59	181.55	0.64	14.5	56.73
800	38.39	52.81	190.99	0.87	14.42	43.90
900	38.23	52.43	174.98	0.82	14.2	42.68
1000	36.09	52.49	177.42	0.6	16.4	59.14
1100	35.92	53.45	221.31	0.78	17.53	56.75
1200	35.15	53.16	207.01	0.66	18.01	62.73
1300	35.51	53.07	202.77	0.62	17.56	65.41
1400	35.57	52.2	165.96	0.59	16.63	56.26
1500	35.21	52.83	191.87	0.73	17.62	52.57
1550	35.24	52.41	174.18	0.6	17.17	58.06
1600	36.08	50.87	122.18	0.51	14.79	47.91

(2) Test Condition

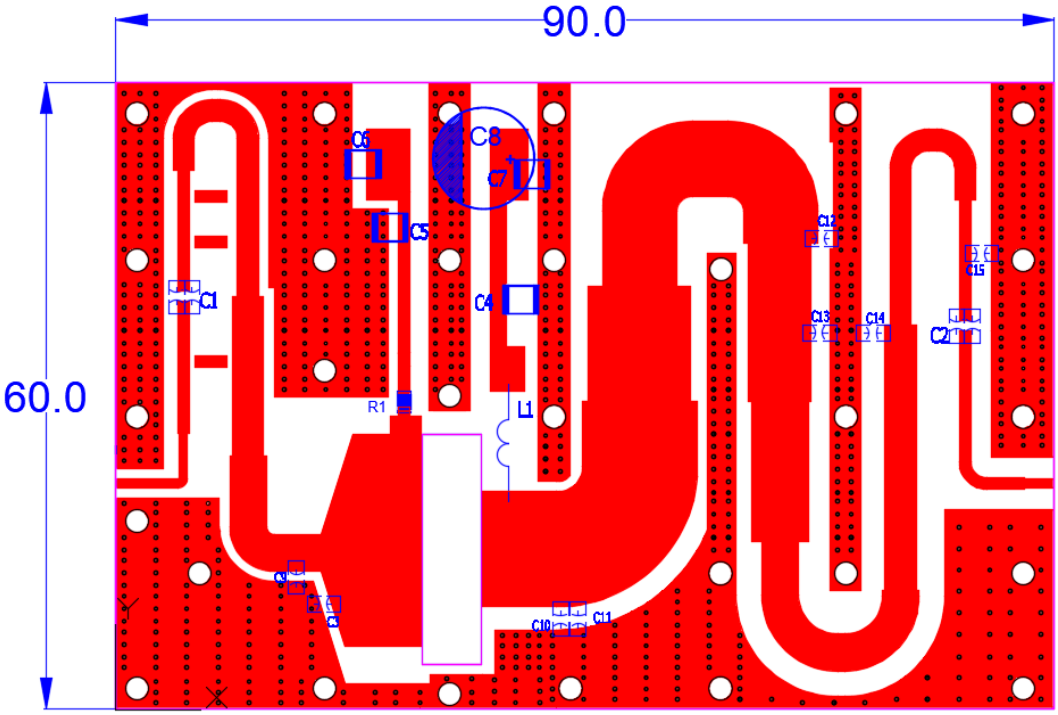
Signal mode： CW

Frequency： 120-1550MHz

V_{gs}= -3.17V， V_{ds}= 50V， I_{dq} = 100mA

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2th	3rd
100	33.3	50.22	105.20	2.93	16.92	71.81	-10.5	-12.3
120	33.7	51.72	148.59	4.86	18.02	61.15	-9.6	-14.2
150	**33.6**	**52.04**	**159.96**	**6.07**	**18.44**	**52.70**	**-8.8**	**-12.5**
200	**33.78**	**53.33**	**215.28**	**6.97**	**19.55**	**61.77**	**-12.5**	**-15.7**
300	**33.74**	**52.34**	**171.40**	**5.07**	**18.6**	**67.61**	**-12.8**	**-16.7**
400	**32.67**	**52.89**	**194.54**	**6.97**	**20.22**	**55.82**	**-11.7**	**-16.7**
500	**34.41**	**51.93**	**155.96**	**4.39**	**17.52**	**71.05**	**-22.5**	**-13.7**
600	**37.16**	**52**	**158.49**	**6.1**	**14.84**	**51.96**	**-11.8**	**-18.1**
700	**38.19**	**52.04**	**159.96**	**6.04**	**13.85**	**52.97**	**-13.4**	**-14.5**
800	**38.59**	**51.72**	**148.59**	**7.54**	**13.13**	**39.41**	**-16.3**	**-18.4**
900	**38.33**	**51.68**	**147.23**	**7.24**	**13.35**	**40.67**	**-15.4**	**-30.0**
1000	**36.19**	**51.95**	**156.68**	**5.66**	**15.76**	**55.36**	**-16.9**	**-30.0**
1100	**36.02**	**52.82**	**191.43**	**7.2**	**16.8**	**53.17**	**-24.8**	**-18.5**
1200	**35.35**	**52.83**	**191.87**	**6.36**	**17.48**	**60.34**	**-24.5**	**-17.9**
1300	**35.56**	**52.81**	**190.99**	**6.06**	**17.25**	**63.03**	**-30.6**	**-24.0**
1400	**35.59**	**51.84**	**152.76**	**5.64**	**16.25**	**54.17**	**-34.0**	**-34.0**
1500	**35.25**	**52.22**	**166.72**	**6.83**	**16.97**	**48.82**	**-32.0**	**-36.0**
1550	35.28	52.14	163.68	5.91	16.86	55.39	-30.9	-34.0
1600	36.08	50.62	115.35	4.94	14.54	46.70	-17.0	-21.0

BOM of Test Circuit



Component	Description	Suggested Manufacturer
C1,C2	56*2pF/MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C8	470uF	
C6,C7	10uF	
C4, C5	10nF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C10	2Pf/ MQ300805	
C11, C12, C13, C14, C15,	1Pf/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.
C3	5.6pF/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD
C9	3pF/ MQ300805	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD
L1	1mm，2 turns, diameter :5mm	DIY air core inductance
R1	10ohm/1206	Chip Resistor
PCB	F4BTMS1000 ,r=10.2 ,30 mil	