STCH15180A2C^{V2}×2 Class AB 200-1000MHz

Feb.27, 2026

Introduction

This amplifier is designed with Innogration 28V Gan transistor： STCH15180A2C， 2pcs with Balun configuration

Demo and Transistor

Frequencyband	：	200-1000MHz
Application	：	Multi Market
Configuration	：	Class AB
Test Signal	：	CW
Transistor	：	STCH15180A2C^{V2}×2
Date code	：	260612S-02;260612S-03
PCB	：	Rogers4350B 30mil

The amplifier has been characterized under the following conditions:

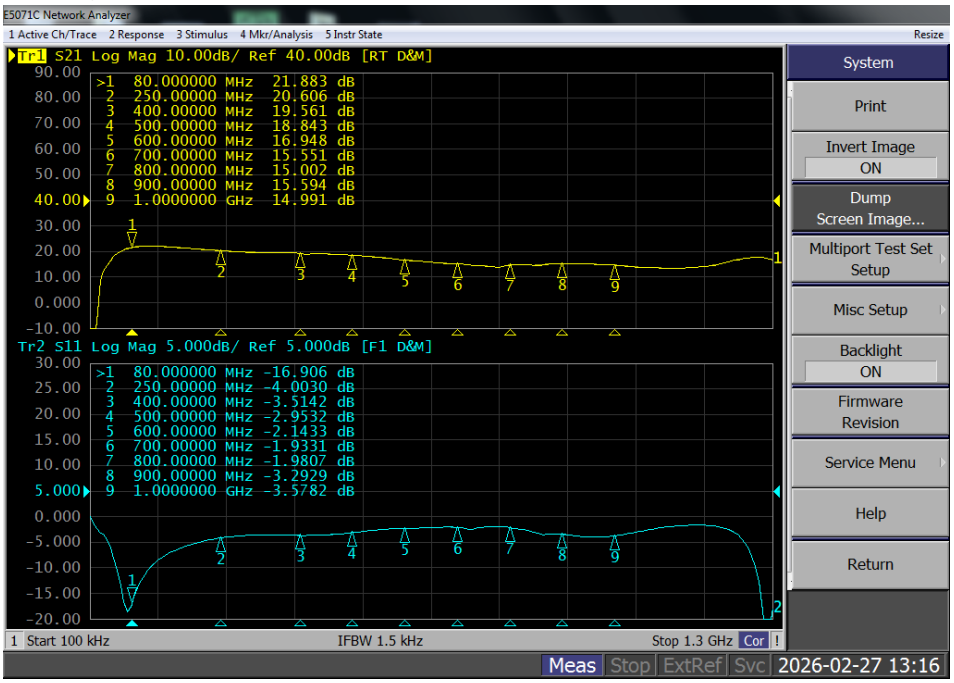
- Network Analyzer plots for gain and IRL.
- The output power measurement using CW.

Note： The PA is tested with a supply voltage of V_{DS} =28V ， I_{dq} = 360mA， all measurements unless otherwise noted.

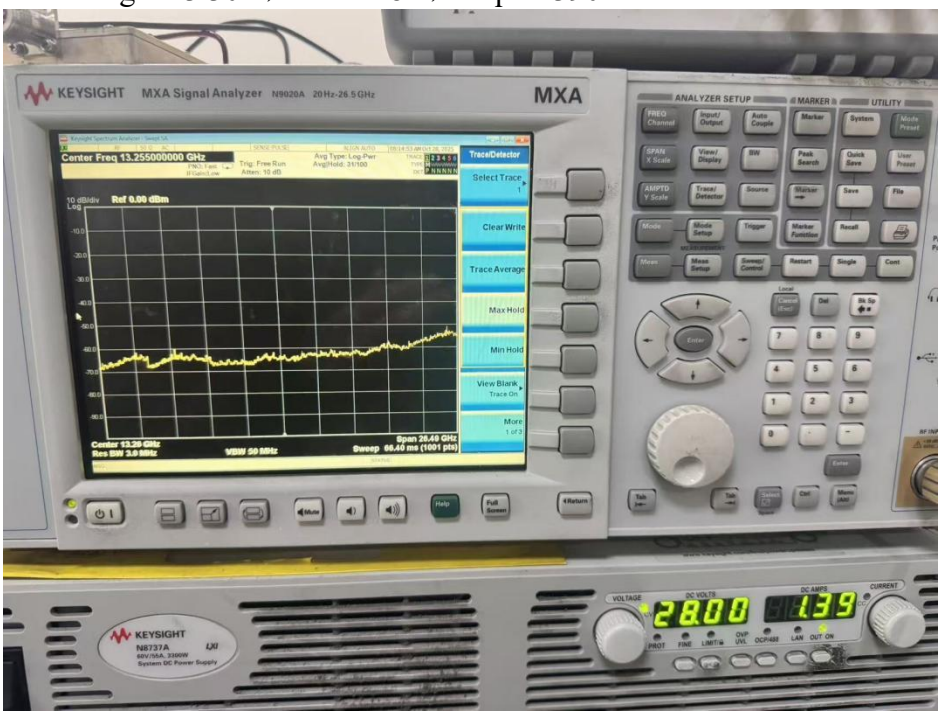
Network Results

Test Condition

V_{ds}=28V，V_{gs}=-3.40V，I_{dq}=360mA，Input Power = 0dBm



Spectrum analyzer to show no oscillation or instability issue
Test Condition:Vgs= -3.30V， Vds= 28V， Idq = 1390mA



Test Results

2. Summary @ Bench 2(Chengdu)

(1) Test Condition

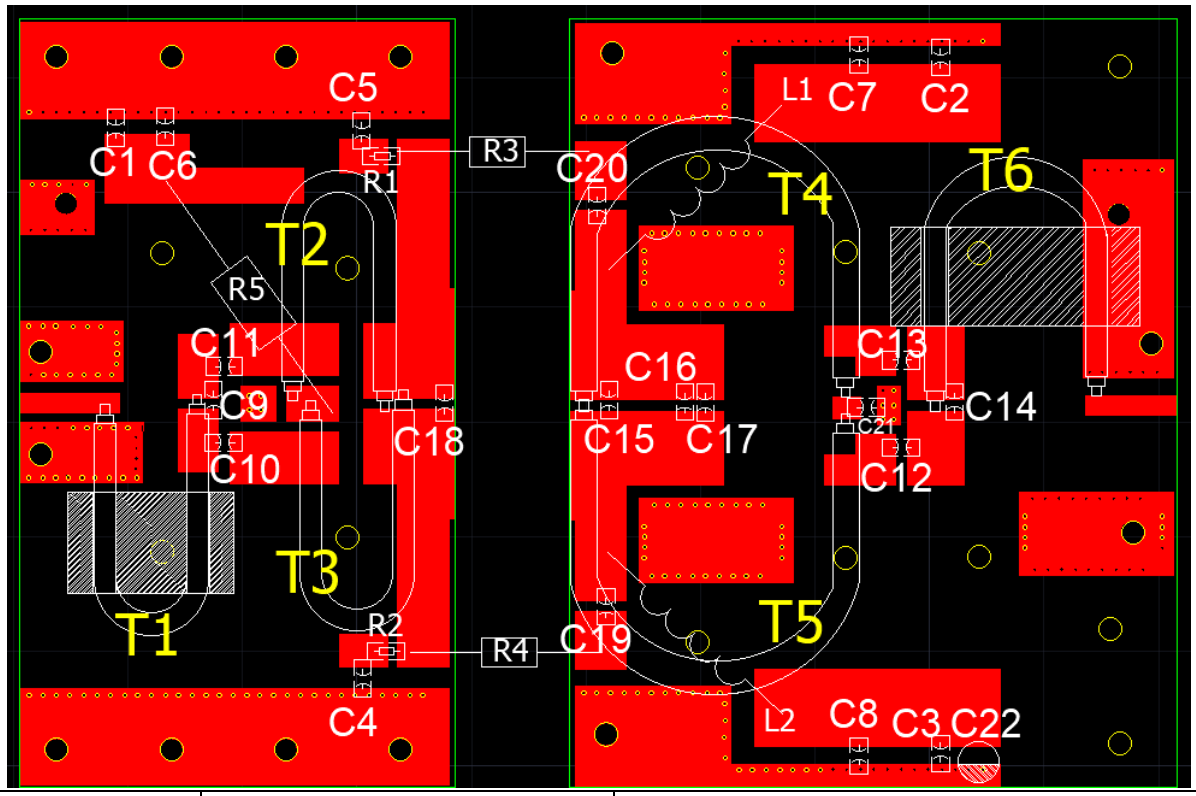
Signal mode： CW

Frequency： 200-1000MHz

V_{gs}= -3.40V， V_{ds}= 28V， I_{dq} = 360mA

STCH15180A2C^{V2}*2 VGS=-3.40V VDS=28V IDQ=360mA CW								
Freq (MHz)	**Psat (dBm)**	**Psat (W)**	**IDS (A)**	**Pin (dBm)**	**Gain (dB)**	**Eff(%)**	**2nd （dBc）**	**3rd （dBc）**
80	51.61	144.9	7.65	34.76	16.85	67.64	-11.70	-9.50
100	52.03	159.6	7.39	34.78	17.25	77.13	-17.10	-12.00
200	53.09	203.7	9.51	36.25	16.84	76.50	-32.80	-12.20
300	53.83	241.5	12.25	36.69	17.14	70.42	-30.20	-8.00
400	53.42	219.8	13.30	36.25	17.17	59.02	-25.50	-11.00
500	53.23	210.4	11.73	37.30	15.93	64.05	-25.80	-26.00
600	53.99	250.6	11.86	40.36	13.63	75.47	-35.00	-35.80
700	54.31	269.8	16.16	41.13	13.18	59.62	-47.00	-53.70
800	53.22	209.9	14.50	41.05	12.17	51.70	-27.80	49.70
900	54.25	266.1	16.40	41.36	12.89	57.94	-29.70	-44.30
1000	53.28	212.8	13.76	41.03	12.25	55.24	-34.00	-50.50

BOM of Test Circuit



Component	Description	Suggested Manufacturer
C1~C5,C21	10uF/200V-1210	Ceramic multilayer capacitor
C6~C8,C12,C13	1000pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ101111
C9	3pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ301111
C10,C11	560pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ301111
C14,C16	2.2pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ301111
C15	7.5pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ301111
C17	2.7pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ301111
C18	8.2pF	BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD.MQ301111
C19,C20	10nF/200V-1210	Ceramic multilayer capacitor
C22	470uF/63V	Electrolytic Capacitor
R1,R2	10Ω-1206	Chip Resistor
R3,R4，R5	300Ω	color ring resistor
L1,L2	1.5mm wire， 5mm inner diameter， 4Turns	DIY
T1,T6	50 ohm-60mm，NXO-20	RFSFBU-086-50;NXO-20
T2~T5	16.7 ohm-60mm	SFF-16.7-1.5