

XTAH30160L4 Class AB 300~3000MHz

Jul 24, 2026

Introduction

This amplifier is designed with Innegration 28V GaN transistor.

Demo and Transistor

Frequency band :	300~3000MHz
Application :	Multi Market
Configuration :	Class AB
Test Signal :	CW
Transistor :	XTAH30160L4
Date code :	252425
PCB :	Rogers3010,r=10.2, 25mils

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 $V_{ds} = 28V$, $V_{gs} = -2.48V$,

$I_{dq} = 300mA$ all measurements unless otherwise noted.

Test Results

1. Summary @ Bench (Chengdu)

(1) Test Condition

 $V_{gs} = -2.58V$, $V_{ds} = 28V$, $I_{dq} = 200mA$

Signal mode : CW, Frequency : 300-3000MHz

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2 nd	3 rd
300	32.5	50.17	104	5.63	17.7	66.0	-13.00	-10.20
400	32.9	50.21	105	5.05	17.3	74.2	-20.40	-13.30
500	34.9	49.30	85	4.46	14.4	68.2	-14.40	-12.60
600	35.8	49.23	84	5.66	13.4	52.8	-14.60	-13.20
700	36.5	50.20	105	7.10	13.7	52.7	-14.30	-13.90
800	36.9	50.40	110	6.58	13.5	59.5	-19.70	-19.00
900	38.0	49.90	98	5.13	11.9	68.0	-23.00	-16.00
1000	38.3	49.35	86	5.31	11.1	57.9	-12.40	-12.80
1100	36.7	49.35	86	6.46	12.7	47.6	-12.00	-16.40
1200	36.3	50.91	123	8.55	14.6	51.5	-19.50	-21.50
1300	37.2	50.41	110	6.72	13.3	58.4	-26.50	-26.50
1400	39.9	49.20	83	5.36	9.3	55.4	-39.70	-29.50
1500	39.4	49.25	84	6.24	9.9	48.2	-12.40	-33.00
1600	38.7	50.27	106	8.27	11.6	46.0	-16.00	-32.00
1700	38.9	50.75	119	9.10	11.9	46.6	-25.50	-21.60
1800	40.0	50.37	109	8.64	10.4	45.0	-26.40	-19.20
1900	40.9	50.15	104	8.92	9.3	41.4	-32.70	-37.40
2000	40.8	50.01	100	9.40	9.2	38.1	-26.40	-24.40
2100	40.7	50.44	111	9.08	9.7	43.5	/	/
2200	41.0	50.07	102	9.06	9.1	40.1	/	/
2300	40.3	49.98	100	9.50	9.7	37.4	/	/
2400	40.7	50.10	102	9.80	9.4	37.3	/	/
2500	40.4	50.72	118	10.70	10.3	39.4	/	/
2600	40.5	51.34	136	10.44	10.8	46.6	/	/
2700	39.9	50.27	106	9.15	10.4	41.5	/	/
2800	40.6	50.38	109	9.97	9.8	39.1	/	/
2900	40.6	50.80	120	10.00	10.2	42.9	/	/
3000	40.1	50.20	105	8.42	10.1	44.4	/	/

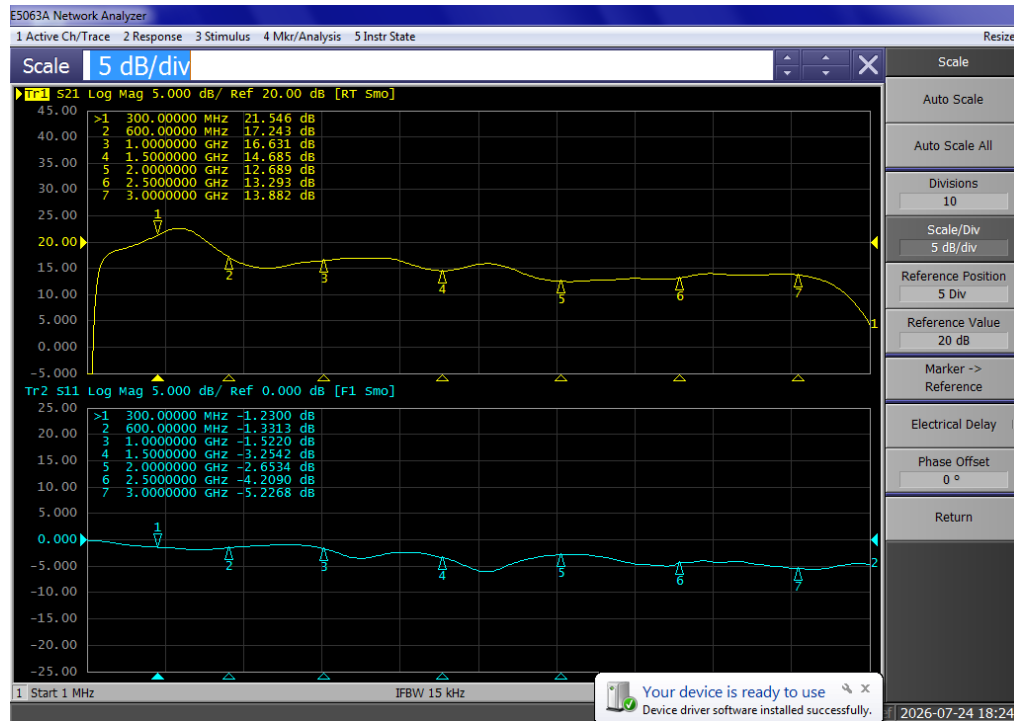
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2. Network Results

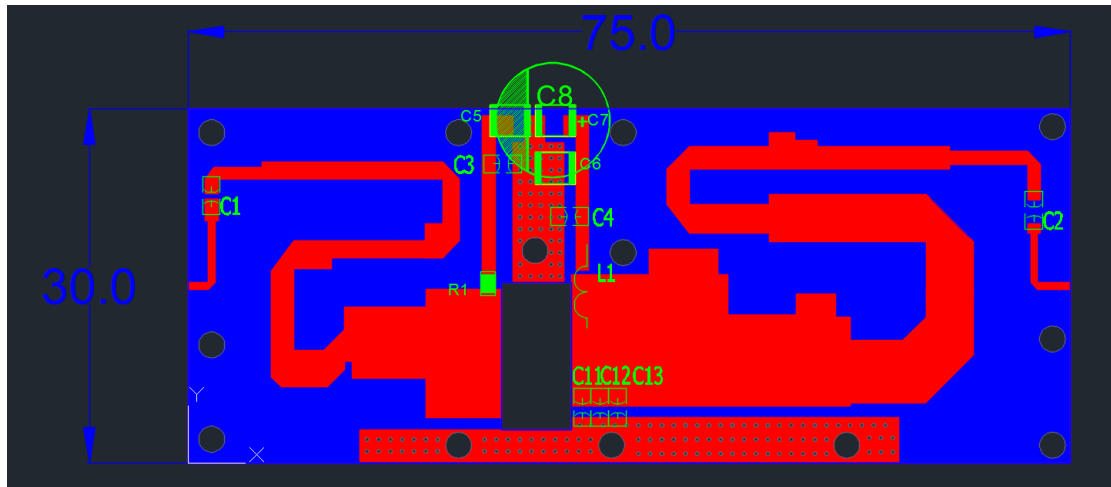
Test Condition

$V_{gs} = -2.52V$, $V_{ds} = 28V$, $I_{dq} = 420mA$

input power = 0 dBm



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BOM of Test Circuit



Component	Description	Suggested Manufacturer
C2	20pF(MQ301111)	
C5,C6,C7	10uF (1210)	//
C1, C3, C4	20pF(MQ300805)	
C9, C10	0.3pF(MQ300805)	
C11, C12, C13	1pF(MQ300805)	
L1	1mm, 3 turns, diameter :5mm	
R1	Chip Resistor,51Ω (0805)	-
PCB	Rogers3010, r = 10.2, 25mils	-