

XMAH4080-30A2T*2**XMAH4080-30A2T*2 Class AB 4000~8000MHz****Nov. 27, 2025****Introduction**

This amplifier is designed with Innogrations 28V GaN IMFET

Demo and Transistor

Frequencyband	: 4000~8000MHz
Application	: Multi Market
Configuration	: Class AB
Test Signal	: CW
Transistor	: XMAH4080-30A2T*2
Date code	: 254528
PCB	: Rogers 4350B, 20mil

The amplifier has been characterized under the following conditions:

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

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Test Results

1. Summary @ Bench1(Chengdu)

(1) $V_{ds} = 28\text{ V}$, $V_{gs} = -2.36\text{ V}$, $I_{dq} = 320\text{ mA}$

Signal mode: CW

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	Ids(A)	Gain(dB)	Eff (%)	2nd (dBc)	3rd (dBc)
4000	40.00	48.35	68.4	7.18	8.4	34.0	-16.0	-30.1
4100	40.00	48.90	77.6	8.37	8.9	33.1	-16.0	-31.3
4200	40.00	49.65	92.3	8.90	9.7	37.0	-14.9	-31.8
4300	40.00	49.47	88.5	8.55	9.5	37.0	-14.8	-33.2
4400	40.00	49.02	79.8	7.80	9.0	36.5	-12.8	-36.3
4500	40.00	48.85	76.7	7.03	8.9	39.0	-12.0	-35.3
4600	40.00	48.77	75.3	6.61	8.8	40.7	-12.5	-36.0
4700	40.00	48.53	71.3	6.16	8.5	41.3	-12.8	-38.5
4800	40.00	48.46	70.1	5.74	8.5	43.6	-13.9	-39.2
4900	40.00	48.63	72.9	5.35	8.6	48.7	-14.7	-39.1
5000	40.00	48.30	67.6	5.05	8.3	47.8	-16.9	-37.3
5100	40.00	48.60	72.4	5.05	8.6	51.2	/	/
5200	40.00	48.74	74.8	5.05	8.7	52.9	/	/
5300	40.00	48.81	76.0	5.38	8.8	50.5	/	/
5400	40.00	48.75	75.0	5.74	8.8	46.7	/	/
5500	40.00	48.67	73.6	6.07	8.7	43.3	/	/
5600	40.00	48.40	69.2	6.29	8.4	39.3	/	/
5700	40.00	47.87	61.2	6.38	7.9	34.3	/	/
5800	40.00	47.71	59.0	6.57	7.7	32.1	/	/
5900	40.00	47.79	60.1	6.60	7.8	32.5	/	/
6000	40.00	47.92	61.9	6.71	7.9	33.0	/	/
6100	40.00	48.52	71.1	6.85	8.5	37.1	/	/
6200	40.00	48.71	74.3	6.70	8.7	39.6	/	/
6300	40.00	48.57	71.9	6.61	8.6	38.9	/	/
6400	40.00	48.46	70.1	6.44	8.5	38.9	/	/
6500	40.00	48.43	69.7	6.19	8.4	40.2	/	/
6600	40.00	48.53	71.3	6.30	8.5	40.4	/	/
6700	40.00	48.80	75.9	6.59	8.8	41.1	/	/

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6800	40.00	48.97	78.9	6.89	9.0	40.9	/	/
6900	40.00	48.92	78.0	7.04	8.9	39.6	/	/
7000	40.00	48.60	72.4	6.90	8.6	37.5	/	/
7100	40.00	48.45	70.0	6.80	8.5	36.8	/	/
7200	40.00	48.10	64.6	6.45	8.1	35.8	/	/
7300	40.00	47.80	60.3	6.24	7.8	34.5	/	/
7400	40.00	47.90	61.7	6.36	7.9	34.6	/	/
7500	40.00	48.30	67.6	6.50	8.3	37.1	/	/
7600	40.00	48.60	72.4	6.35	8.6	40.7	/	/
7700	40.00	48.49	70.6	5.93	8.5	42.5	/	/
7800	40.00	48.15	65.3	5.44	8.2	42.9	/	/
7900	40.00	47.88	61.4	4.05	7.9	54.1	/	/
8000	40.00	47.52	56.5	4.69	7.5	43.0	/	/

(2) $V_{ds} = 32\text{ V}$, $V_{gs} = -2.36\text{ V}$, $I_{dq} = 320\text{ mA}$

Signal mode: CW

Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	Ids(A)	Gain(dB)	Eff (%)
4000	40.50	48.65	73.3	7.29	8.2	31.4
4100	40.50	49.05	80.4	8.48	8.6	29.6
4200	40.50	49.75	94.4	9.08	9.3	32.5
4300	40.50	49.64	92.0	8.80	9.1	32.7
4400	40.50	49.22	83.6	8.05	8.7	32.4
4500	40.50	49.10	81.3	7.38	8.6	34.4
4600	40.50	49.12	81.7	7.04	8.6	36.2
4700	40.50	48.93	78.2	6.64	8.4	36.8
4800	40.50	48.91	77.8	6.22	8.4	39.1
4900	40.50	49.23	83.8	5.90	8.7	44.4
5000	40.50	48.93	78.2	5.52	8.4	44.2
5100	40.50	49.30	85.1	5.47	8.8	48.6
5200	40.50	49.56	90.4	5.50	9.1	51.3
5300	40.50	49.65	92.3	5.82	9.2	49.5
5400	40.50	49.55	90.2	6.13	9.1	46.0
5500	40.50	49.39	86.9	6.40	8.9	42.4
5600	40.50	49.00	79.4	6.56	8.5	37.8
5700	40.50	48.47	70.3	6.60	8.0	33.3
5800	40.50	48.31	67.8	6.78	7.8	31.2

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5900	40.50	48.34	68.2	6.76	7.8	31.5
6000	40.50	48.61	72.6	7.11	8.1	31.9
6100	40.50	49.07	80.7	7.18	8.6	35.1
6200	40.50	49.41	87.3	7.08	8.9	38.5
6300	40.50	49.32	85.5	6.95	8.8	38.4
6400	40.50	49.28	84.7	6.86	8.8	38.6
6500	40.50	49.23	83.8	6.64	8.7	39.4
6600	40.50	49.28	84.7	6.69	8.8	39.6
6700	40.50	49.50	89.1	6.96	9.0	40.0
6800	40.50	49.62	91.6	7.23	9.1	39.6
6900	40.50	49.47	88.5	7.25	9.0	38.2
7000	40.50	49.20	83.2	7.33	8.7	35.5
7100	40.50	48.90	77.6	7.18	8.4	33.8
7200	40.50	48.47	70.3	6.75	8.0	32.5
7300	40.50	48.20	66.1	6.54	7.7	31.6
7400	40.50	48.47	70.3	6.72	8.0	32.7
7500	40.50	48.78	75.5	6.81	8.3	34.6
7600	40.50	49.15	82.2	6.76	8.7	38.0
7700	40.50	49.20	83.2	6.42	8.7	40.5
7800	40.50	48.90	77.6	5.90	8.4	41.1
7900	40.50	48.73	74.6	5.45	8.2	42.8
8000	40.50	48.42	69.5	5.06	7.9	42.9

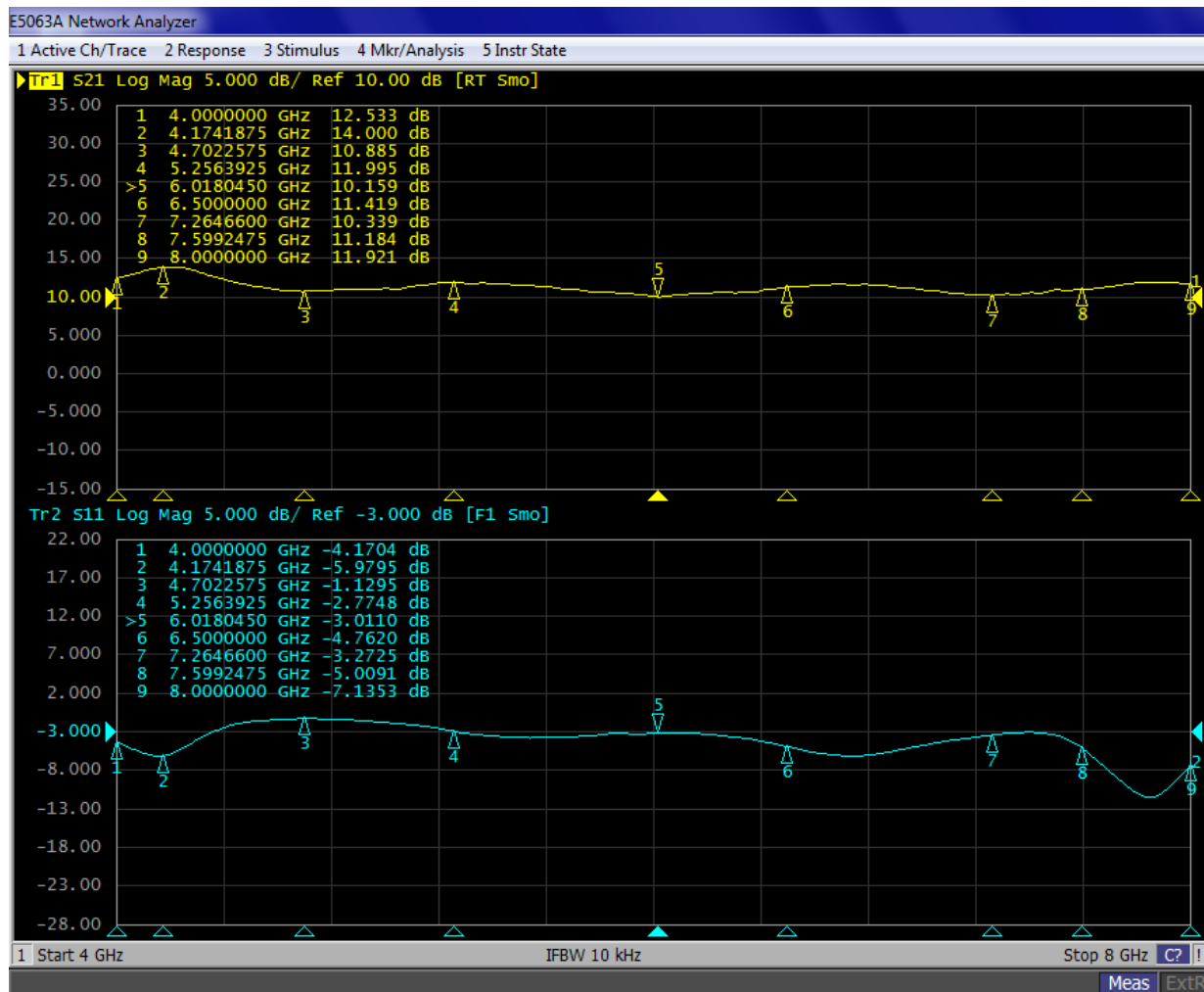
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2. Network Results

Test Condition

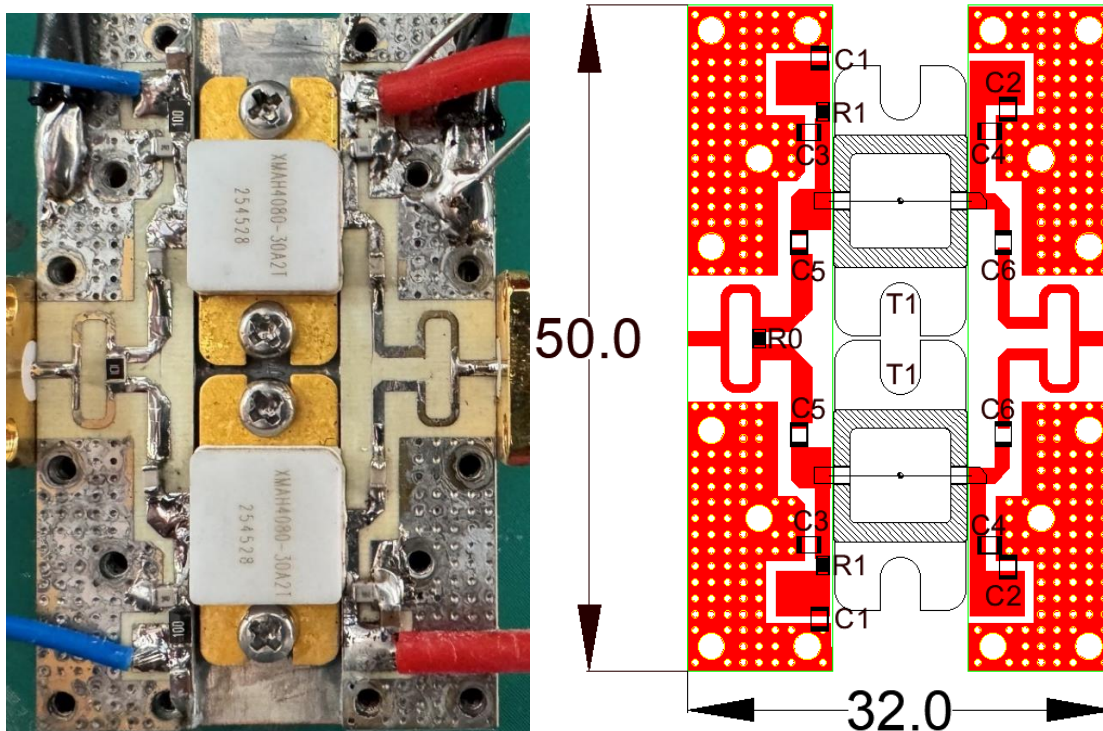
$$V_{ds} = 32 \text{ V}, V_{gs} = -2.36 \text{ V}, I_{dq} = 320 \text{ mA}$$

input power = 0 dBm



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BOM of Test Circuit



Reference Designator	Description	Quantity	Suggestion
C1, C2	1uF/200V, 0805/1111	4	
C4	56 pF, 0603/0805	2	Beijing YuanLu HongYuan Electronic Technology CO., LTD
C6	3.9 pF, 0603/0805	2	
C3	2.2 pF, 0603/0805	2	
C5	2.0 pF, 0603/0805	2	
R0	100 Ω , 0805/1206	1	Murata
R1	10 Ω , 0805/1206	2	Murata
T1	XMAH4080-30A2T	2	Innogration
PCB	Rogers 4350B, 20mil		-