

XMAH4080-31A2TS x2 Class AB 3600~8100MHz Test September 22, 2026

Introduction

This amplifier is designed with Innegration 28V Gan IMFET, XMAH4080-31A2TS is the earless version of XMAH4080-31A2T to save PCB size, for details, pls check its datasheet.

Demo and Transistor

Frequency band : 3600~8100MHz
Application : Multi Market
Configuration : Class AB
Test Signal : Pusle/CW
Transistor : XMAH4080-31A2TS x2
Date code : 263613S-01&02
PCB : 20Mil Rogers 4350B

The amplifier has been characterized under the following conditions:

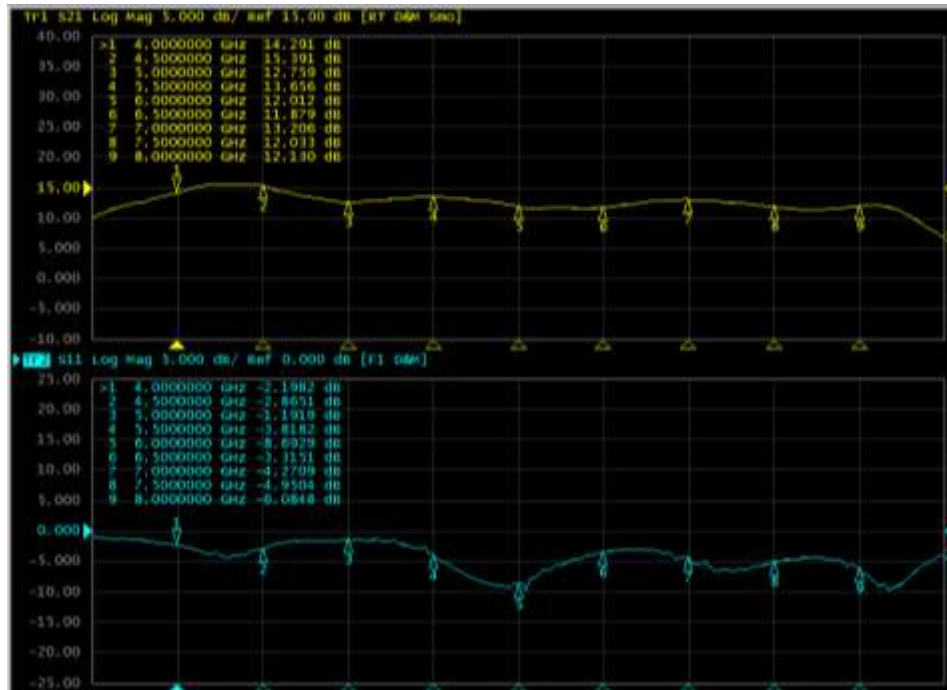
- Network Analyzer plots for gain and IRL.
- The output power measurement using Pulsed Signal.

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

1. Network Analyzer plots for IRL.

$V_{GS} = -2.33V$; $V_{DS} = 28V$; $I_{dQ} = 400mA$

input power= 0 dBm

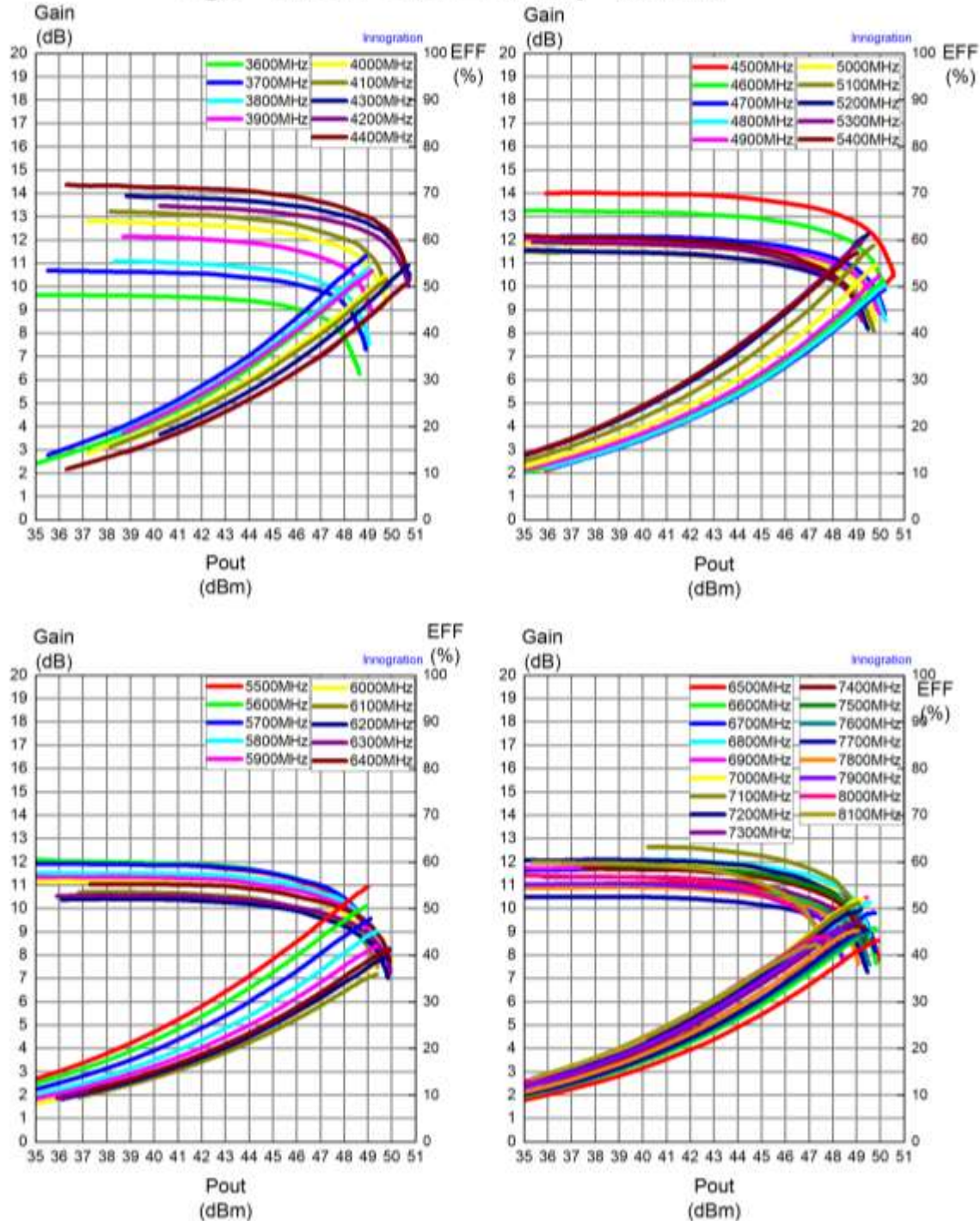


JF-26-26

XMAH4080-31A2TS x2

2.1 Test

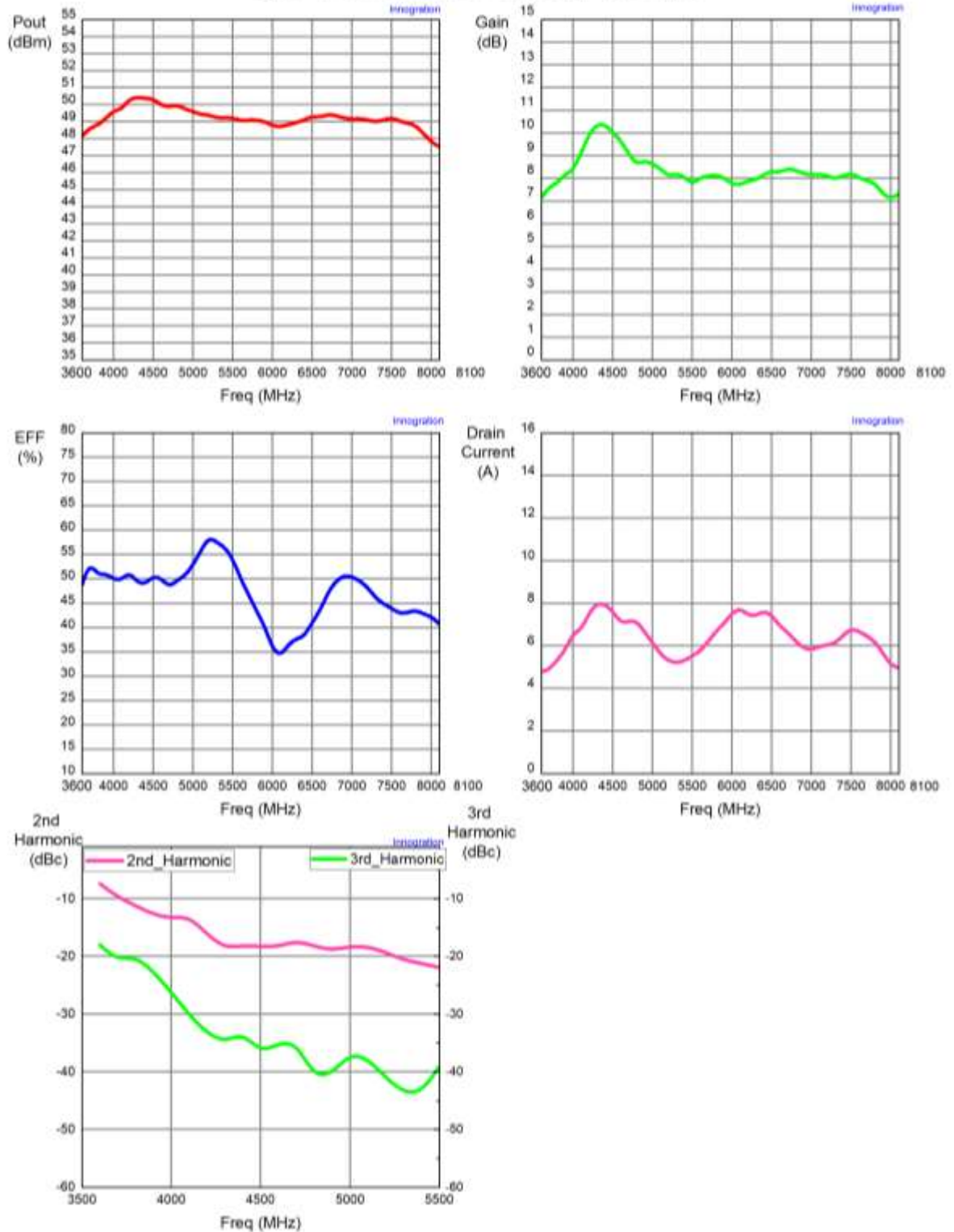
XMAH4080-31A2TS x2 Pulse 100us 10%
Vgs=-2.33V Vds=28V Idq=400mA



JF-26-26

XMAH4080-31A2TS x2

XMAH4080-31A2TS_x2 CW Test
Vgs=-2.33V Vds=28V Idq=400mA



CW Vgs=-2.33V Vds=28V Idq=400mA

Freq(GHz)	Pin(dBm)	Psat(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)	2 nd Harmonic	3 rd Harmonic
3600	41	48.15	65.3	4.78	7.15	48.8	-7.4	-18
3700	41	48.64	73.1	4.89	7.64	53.4	-9.7	-20.7
3800	41	48.8	75.9	5.33	7.80	50.8	-11.2	-19.9
3900	41	49.19	83.0	5.8	8.19	51.1	-12.7	-22.6
4000	41.30	49.66	92.5	6.61	8.36	50.0	-13.4	-26.2
4100	40.60	49.73	94.0	6.74	9.13	49.8	-13	-30.1
4200	40.41	50.36	108.6	7.53	9.95	51.5	-16.2	-33.3
4300	40.04	50.43	110.4	8.01	10.39	49.2	-18.6	-34.9
4400	40.00	50.38	109.1	7.95	10.38	49.0	-18.1	-33.1
4500	40.30	50.34	108.1	7.63	10.04	50.6	-18.3	-36.7
4600	40.30	49.96	99.1	7.06	9.66	50.1	-18.3	-35.1
4700	40.76	49.86	96.8	7.16	9.10	48.3	-17.3	-34.8
4800	41.40	50.00	100.0	7.18	8.60	49.7	-18.2	-41
4900	40.94	49.74	94.2	6.64	8.80	50.7	-18.9	-40.3
5000	40.97	49.60	91.2	6.15	8.63	53.0	-18.3	-36.8
5100	41.00	49.43	87.7	5.61	8.43	55.8	-18.3	-37.7
5200	41.30	49.40	87.1	5.30	8.10	58.7	-19.3	-41
5300	41.00	49.23	83.8	5.20	8.23	57.5	-20.6	-43.6
5400	41.16	49.24	83.9	5.30	8.08	56.6	-21.2	-43.7
5500	41.50	49.23	83.8	5.53	7.73	54.1	-21.9	-39
5600	41.00	49.06	80.5	5.75	8.06	50.0		
5700	41.00	49.10	81.3	6.21	8.10	46.7		
5800	40.92	49.10	81.3	6.68	8.18	43.5		
5900	41.00	49.01	79.6	7.06	8.01	40.3		
6000	41.00	48.76	75.2	7.53	7.76	35.6		
6100	41.00	48.71	74.3	7.78	7.71	34.1		
6200	40.92	48.82	76.2	7.44	7.90	36.6		
6300	41.00	48.94	78.3	7.41	7.94	37.8		
6400	40.95	49.12	81.7	7.64	8.17	38.2		
6500	41.00	49.33	85.7	7.44	8.33	41.1		
6600	41.00	49.27	84.5	6.93	8.27	43.6		
6700	41.00	49.44	87.9	6.64	8.44	47.3		
6800	41.00	49.37	86.5	6.23	8.37	49.6		
6900	41.00	49.22	83.6	5.88	8.22	50.8		
7000	41.00	49.15	82.2	5.82	8.15	50.5		
7100	41.00	49.19	83.0	5.97	8.19	49.6		
7200	41.00	49.12	81.7	6.05	8.12	48.2		
7300	41.00	48.97	78.9	6.11	7.97	46.1		

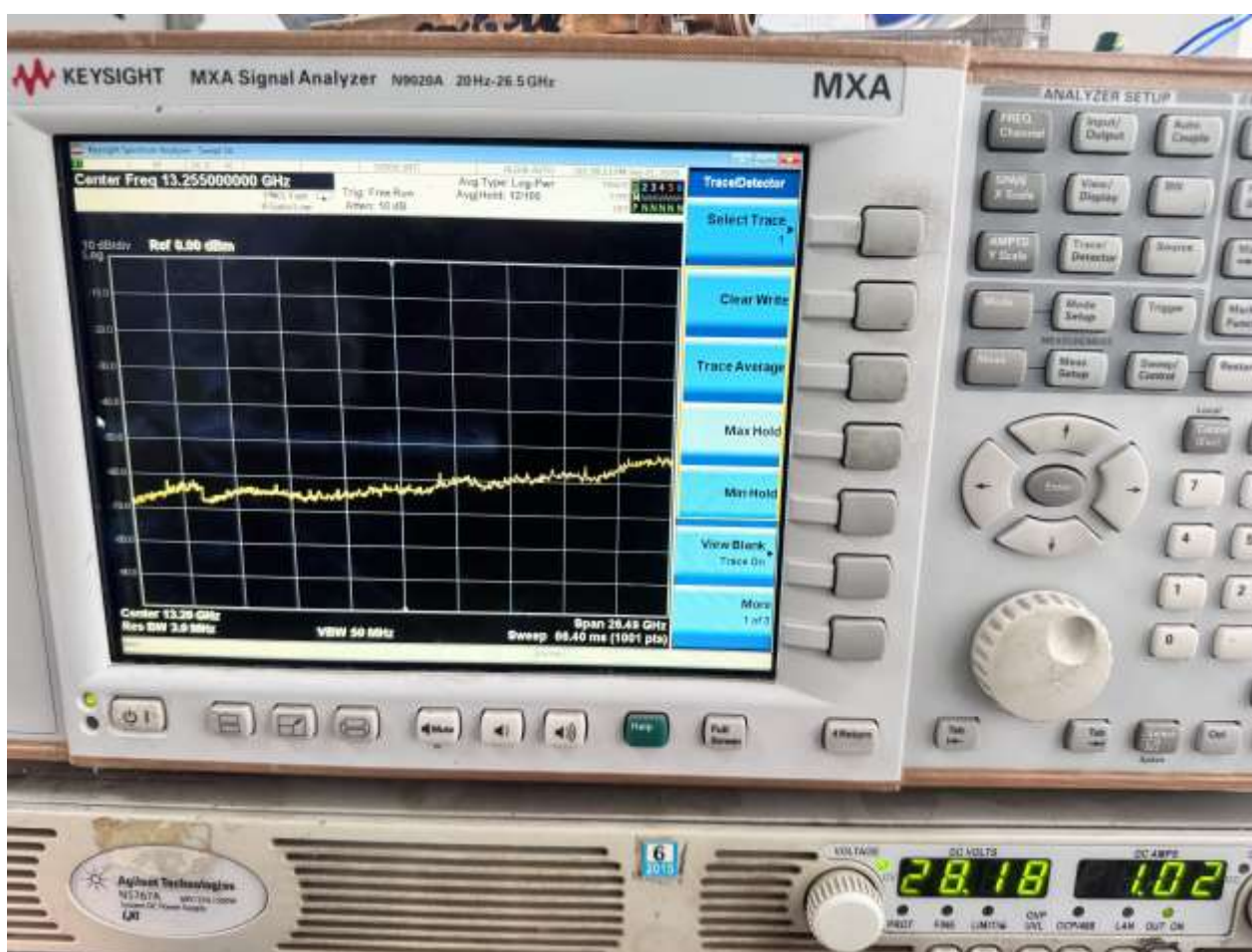
JF-26-26

XMAH4080-31A2TS x2

7400	41.00	49.12	81.7	6.51	8.12	44.8		
7500	41.00	49.24	83.9	6.81	8.24	44.0		
7600	41.00	49.04	80.2	6.68	8.04	42.9		
7700	41.00	48.91	77.8	6.45	7.91	43.1		
7800	41.00	48.80	75.9	6.21	7.80	43.6		
7900	41.00	48.31	67.8	5.65	7.31	42.8		
8000	40.70	47.80	60.3	5.09	7.10	42.3		
8100	40.20	47.54	56.8	4.97	7.34	40.8		

3. Stability Test

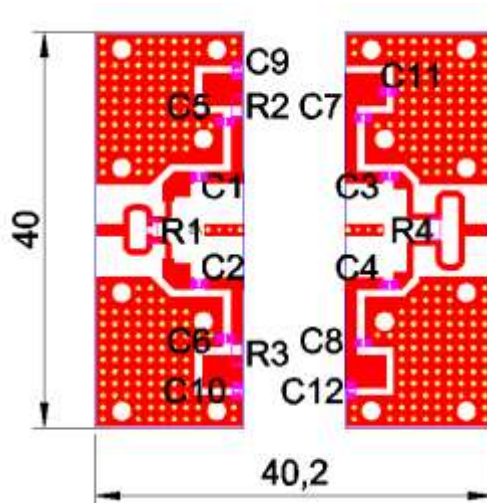
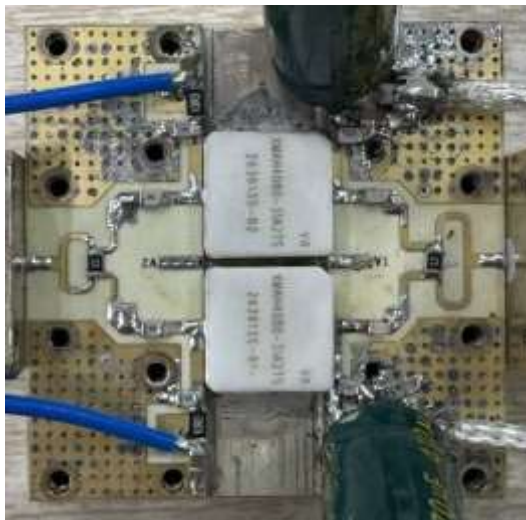
V_{gs}=-2.21V; V_{ds}=28.18V I_{dq}=1.02A



JF-26-26

XMAH4080-31A2TS x2

4. BOM of Test Circuit



Component	Description	Suggested Manufacturer / Series Number
C1 C2 C3 C4	2.2 pF	MQ300805 BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD
C5 C6 C7 C8	100 pF	MQ300805 BEIJING YUANLU HONGYUAN ELECTRONIC TECHNOLOGY CO., LTD
C9 C10 C11 C12	1 uF	Open suppliers
R1 R4	100 Ohm	Open suppliers. 0805 SMD Resistor
R2 R3	10 Ohm	Open suppliers. 1206 SMD Resistor
PCB	20Mil Rogers 4350	Rogers