

XTAH58070A2C^{V0}X2 Class AB 5000~6000MHz

December 12, 2025

Introduction

This amplifier is designed with Innogration 28V GaN transistor.

Demo and Transistor

Frequency band :	5000~6000MHz
Application :	Multi Market
Configuration :	Class AB
Test Signal :	CW/Pulse
Transistor :	XTAH58070A2C ^{V0} X2
Date code :	252910S-02, 252910S-03
PCB :	30 Mil Rogers 4350B

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 $V_{ds} = 28V$, $V_{gs} = -2.6V$,

$I_{dq} = 200mA$ all measurements unless otherwise noted.

Test Results

Test Condition

$V_{gs} = -2.6V$, $V_{ds} = 28V$, $I_{dq} = 200mA$

Signal mode : CW

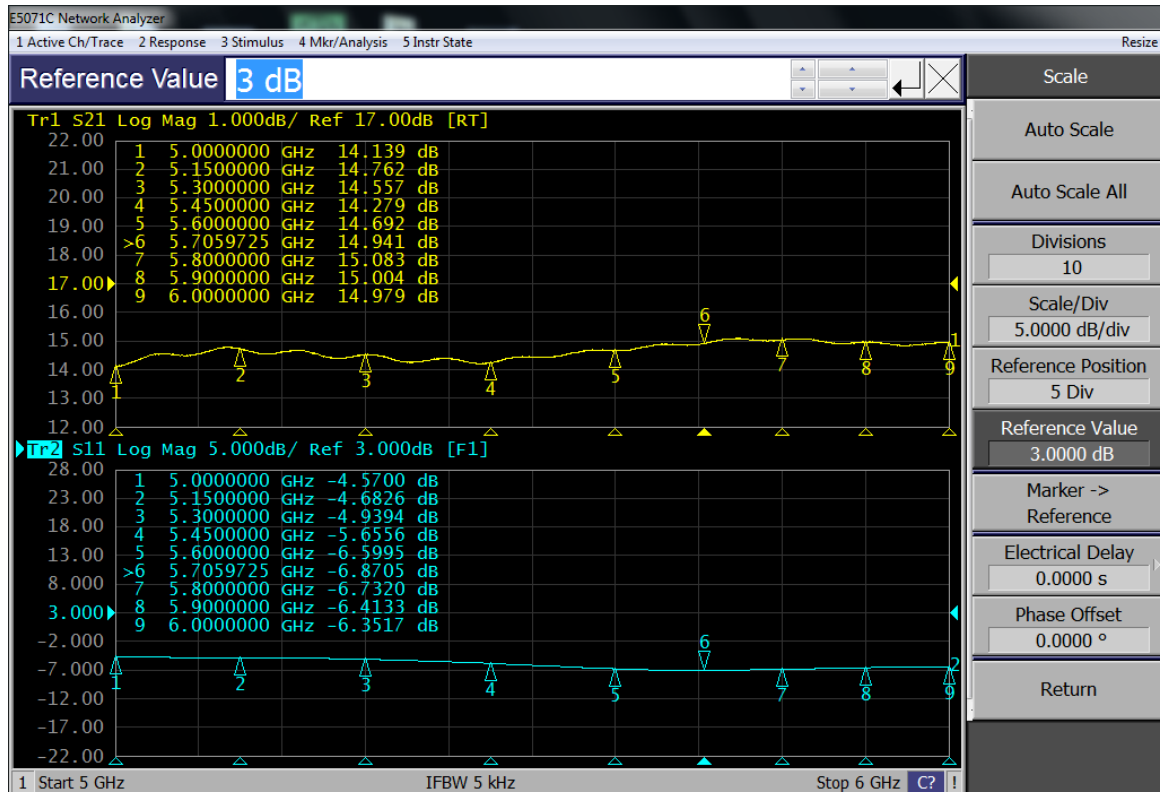
Freq(MHz)	Pin(dBm)	Pout(dBm)	Pout(W)	IDS(A)	Gain(dB)	Eff(%)
5000	41.97	51.97	157.40	11.42	10.00	49.22
5100	41.56	51.91	155.24	10.96	10.35	50.59
5200	41.39	51.96	157.04	11.04	10.57	50.80
5300	41.33	52.02	159.22	11.32	10.69	50.23
5400	40.45	51.91	155.24	11.51	11.46	48.17
5500	40.72	51.94	156.31	11.74	11.22	47.55
5600	41.89	51.81	151.71	11.58	9.92	46.79
5700	41.56	51.72	148.59	11.36	10.16	46.72
5800	41.99	51.70	147.91	11.16	9.71	47.33
5900	40.82	51.97	157.40	11.27	11.15	49.88
6000	40.84	51.63	145.55	11.05	10.79	47.04

2. Network Results

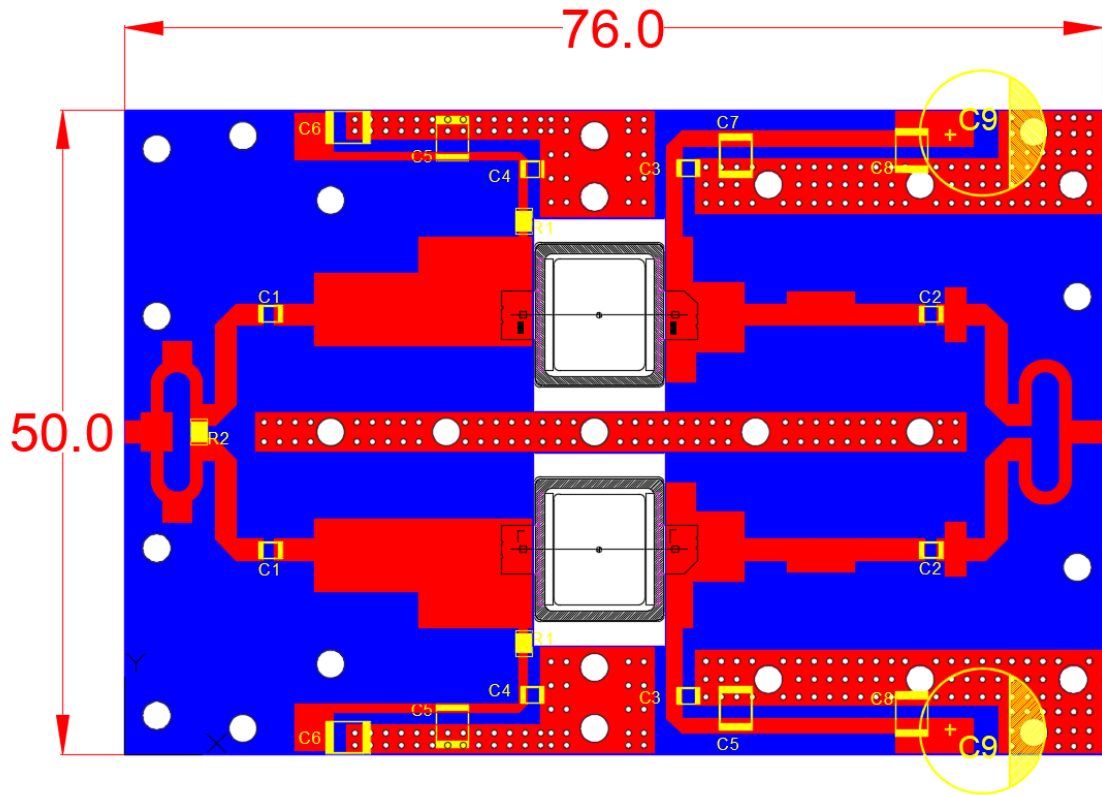
Test Condition

$V_{gs} = -2.55\text{V}$, $V_{ds} = 28\text{V}$, $I_{dq} = 400\text{mA}$

input power = 0 dBm



BOM of Test Circuit



Component	Description	Suggested Manufacturer
C9	470uF/63V	
C5,C6 C7,C7	10uF	
C1,C2, C3, C4	3.9pF(MQ300805)	
R1	Chip Resistor,10Ω(0805)	
R2	Chip Resistor,100Ω(1206)	
PCB	30mil Rogers 4350B	