

LWH-2024-47

STBV22W350BY4V: 1800-2200MHz

CW operation STBV22W350BY4V Doherty 1800-2200MHz

Oct 27th, 2024

Introduction

This amplifier is designed with Innogrations 50V STBV22W350BY4V GaN

Demo and Transistor

Frequency band : 1800-2200 MHz
Application : Telecom
Configuration : Doherty
Test Signal : CW
Transistor : STBV22W350BY4V
Date code :
PCB : 20 Mil Rogers 4350

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- P3dB Peak power measurement using the Pulse, 100% duty cycle.
- RF Test Bench 1

Note: The PA is tested with a supply voltage of $V_{DS}=50V$, $I_{DQ-Mian}=260\text{ mA}$ $V_{gs-main}=-3.34V$. $V_{gs-peak}=-4.9V$.all measurements unless otherwise noted.

Test Results:

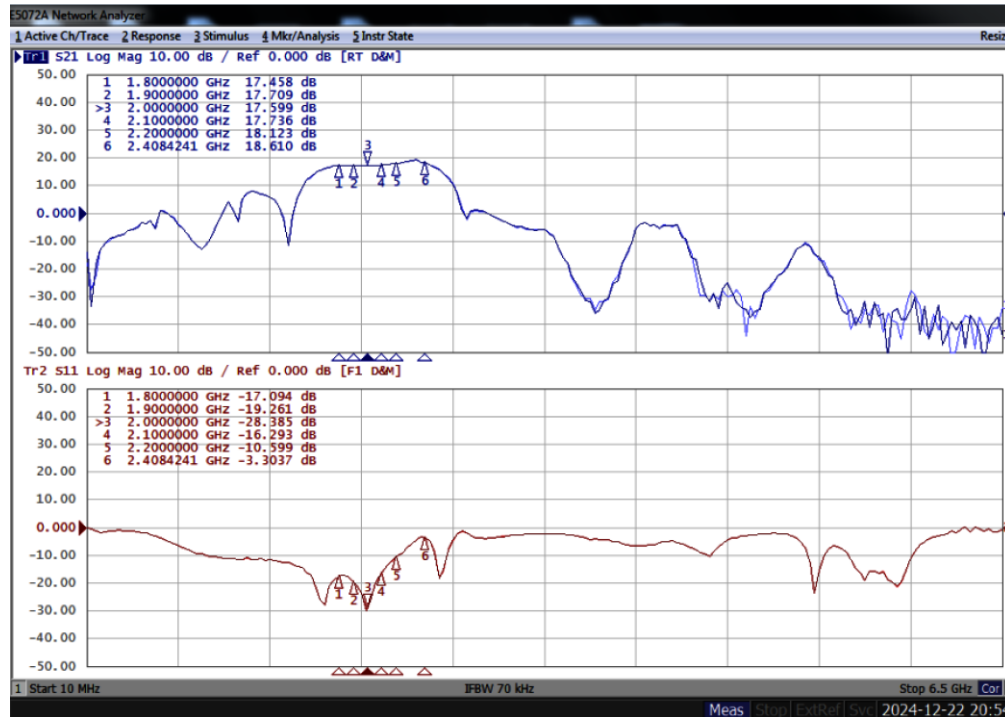
1. CW Peak power and Efficiency

Freq (MHz)	P3dB (dBm)	P3dB (W)	Id (A)	P3dB Eff(%)
1800	54.94	312	9.38	66.52
1900	54.94	312	9.51	65.62
2000	54.97	314	9.56	65.69
2100	54.91	310	9.55	64.92
2200	54.96	313	9.32	67.17

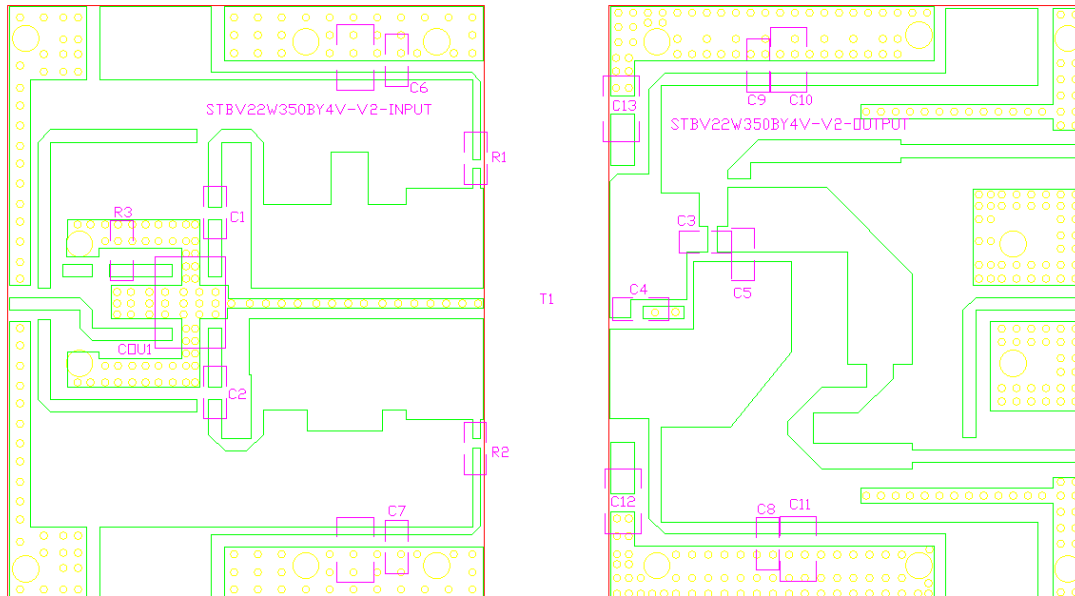
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2. S11 S21 Curve Picture



3 DEMO And BOM Picture



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Test Board Bom				
Part	Quantity	Description	Part Number	Manufacturer
C1,C2,C6, C9,C7,C8	6	20pF High Q Capacitor	251SHS200BSE	TEMEX
C5	1	5.6pF High Q Capacitor	ATC600F5R6	ATC
C3	1	10pF High Q Capacitor	ATC600S10R0	ATC
C10,C11,C12,C13	4	10uF MLCC	RS80R2A106M	MARUWA
C4	1	1.2pF High Q Capacitor	251SHS1R2BSE	TEMEX
R1,R2	2	10 Ω Power Resistor	ESR03EZPF100	ROHM
R3	1	50 Ω Power Resistor	S1206N	RN2
COU1	1	3 dB Bridge	HC2100P03H	YANTEL
T1	1	350W GaN Dual Transistor	STBV22W350BY4V	Innogrations

Notes:

- (1) Pulse Width=100 us, Duty cycle=20%
- (2) WCDMA signal: 3GPP test model 1; 1 to 64 DPCH; Channel Bandwidth=3.84MHz, PAR =10.5 dB at 0.01 % probability on CCDF.