

LWH-24-05
STCV36500BY4V: 3300-3800MHz

Test Report STCV36500BY4V Doherty 3300-3800MHz

Jan 19th, 2024

Introduction

This amplifier is designed with Innogrations 50V STCV36500BY4V GaN

Demo and Transistor

Frequency band : 3300-3800 MHz
 Application : Telecom
 Configuration : Doherty
 Test Signal : Pulsed CW/ WCDMA
 Transistor : STCV36500BY4V
 Date code :
 PCB : **20 Mil** Rogers 4350B

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- P1dB and P3dB Peak power measurement using the Pulse, 20 us width, 10% duty cycle.
- RF Test Bench 1

Note: The PA is tested with a supply voltage of $V_{DS}=50V$, $I_{DQ-Mian}=280\text{ mA}$ $V_{gs-main}=-3.28V$. $V_{gs-peak}=-5.8V$. all measurements unless otherwise noted.

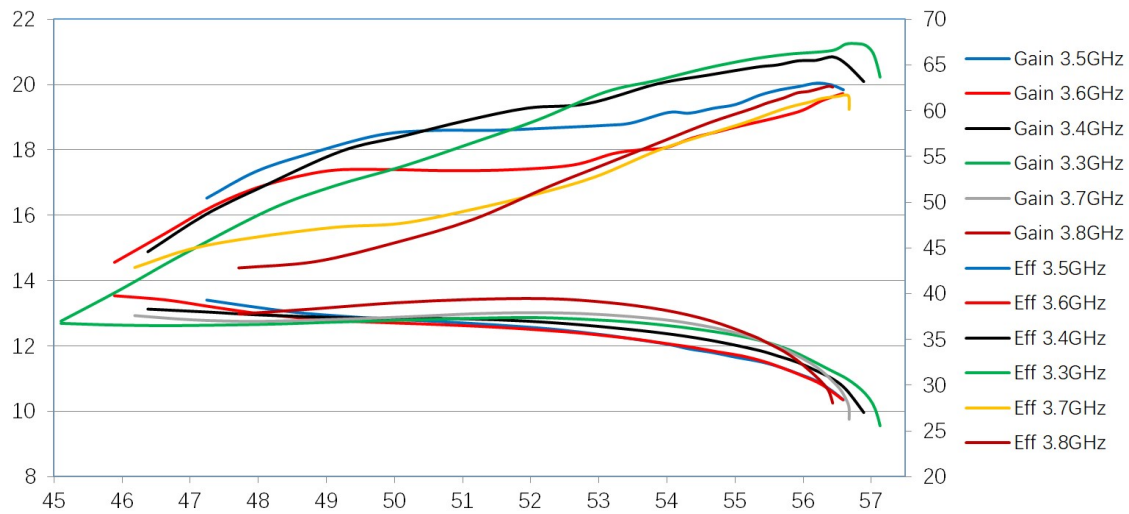
Test Results:

1. Pulsed CW Peak power and Efficiency /WCDMA_1C Pavs and Efficiency

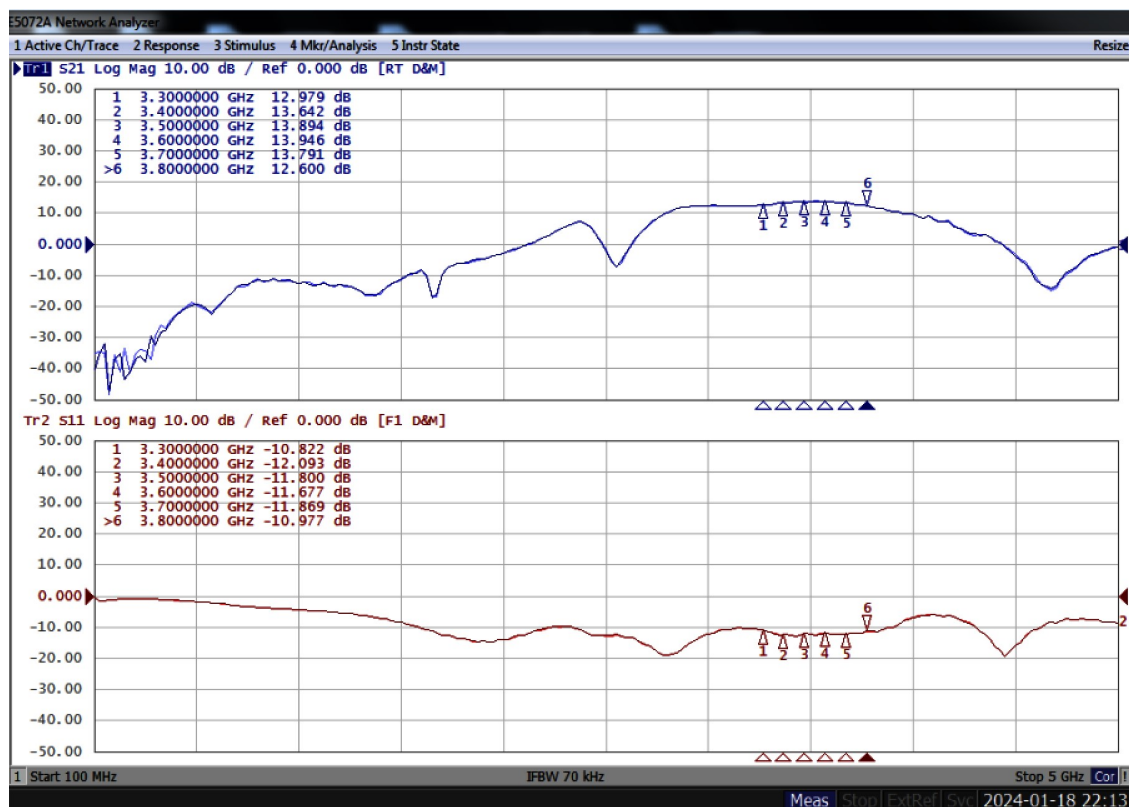
Freq (GHz)	Pulse CW Signal ⁽¹⁾			P _{avg} =47.5dBm WCDMA Signal ⁽²⁾		
	P1-Gain (dB)	P3 (dBm)	P3 (W)	Gp (dB)	η_D (%)	ACPR _{5M} (dBc)
3.3	11.24	57.13	516	12.29	46.81	-31.89
3.4	11.89	56.89	488	12.41	47.60	-34.00
3.5	12.34	56.59	456	12.39	47.31	-35.11
3.6	12.42	56.58	455	12.32	45.00	-38.51
3.7	11.96	56.67	465	12.58	42.50	-37.95
3.8	12.34	56.43	440	12.67	41.01	-30.76

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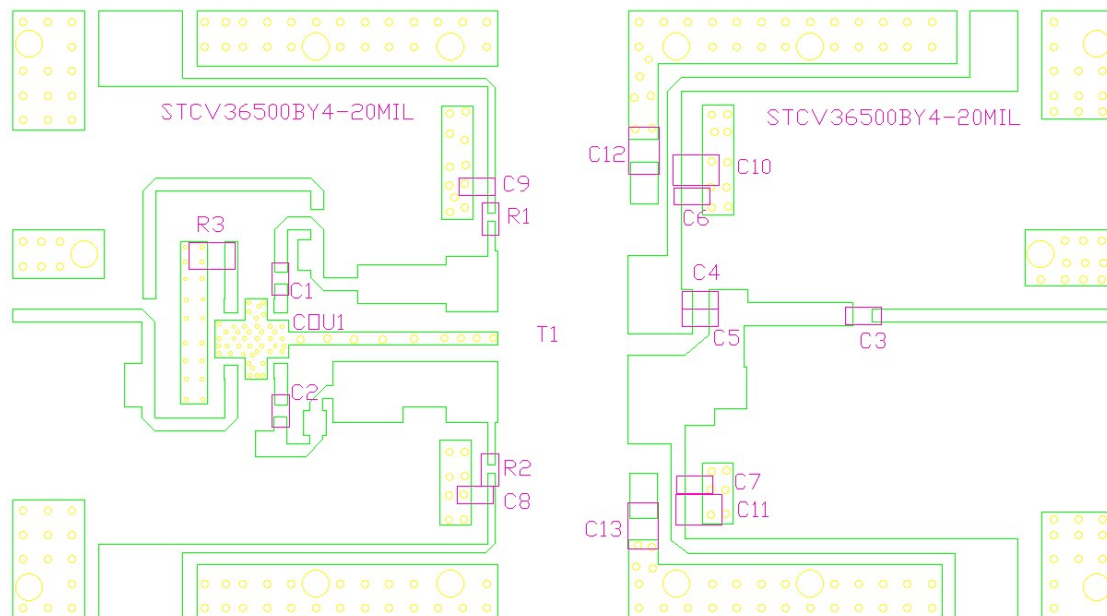
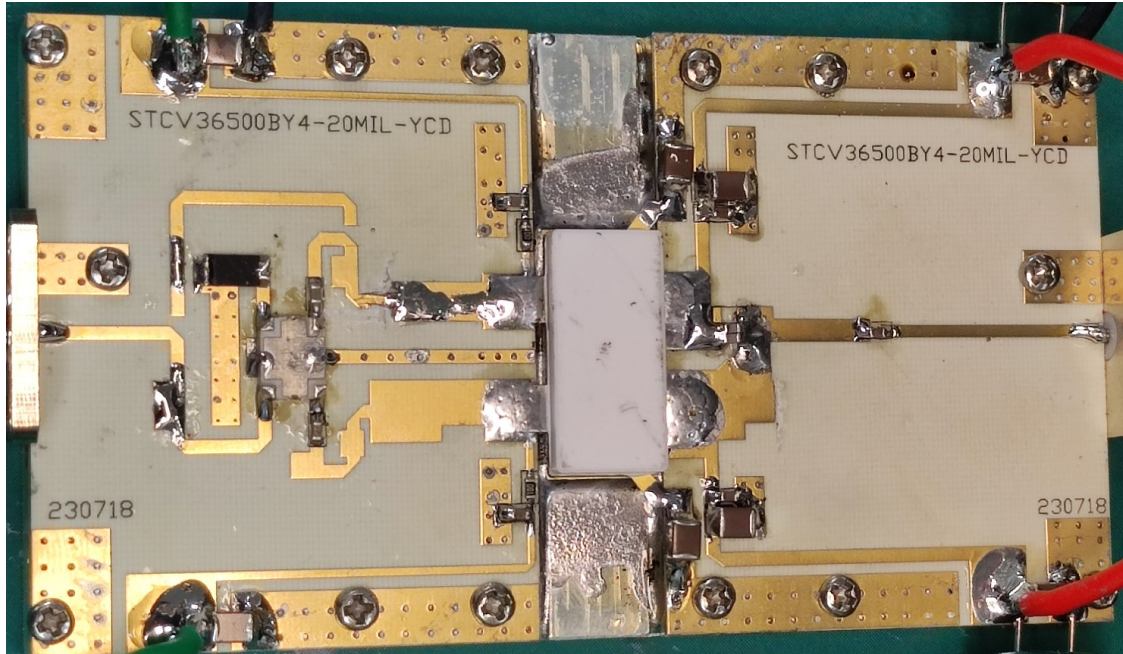
2. S11 S21 Curve Picture



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3. DEMO And BOM Picturee



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Test Board Bom				
Part	Quantity	Description	Part Number	Manufacture
C1,C2,C3,C6, C7,C8,C9	7	8.2pF High Q Capacitor	251SHS8R2BSE	TEMEX
C4,C5	2	1.8pF High Q Capacitor	ATC600F1R8	ATC
C10,C11,C12,C13	4	10uF MLCC	GRM32EC72A106ME05	Murata
R1,R2	2	10 Ω Power Resistor	MCR10EZJ100	ROHM
R3	1	51 Ω Power Resistor	S1206N	RN2
COU1	1	3 dB Bridge	XC3500P-03S	ANAREN
T1	1	500W GaN Dual Transistor	STCV36500BY4V	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.