Test Report ITGH09400D4C 869-894MHz
Apr 21th, 2026.

Introduction

This amplifier is designed with Innogration LDMOS ITGH09400D4C 28V **tuned as symmetrical Doherty**

Demo and Transistor

Frequency band ： 869-894MHz
Application ： Telecom
Configuration ： Class AB
Test Signal ： Pulse CW / ACPR
Transistor ： ITGH09400D4C
Date code ：
PCB ： **20mil Rogers 4350B**

The amplifier has been characterized under the following conditions:

- Network Analyzer plots for gain and IRL.
- Gain, Efficiency.
- Peak power measurement WCDMA_1C, (PAR=10.8dB @ 0.01% probability).
- P1dB and P3dB Peak power measurement using the Pulse，20uS width，10% dule cycle
- RF Test Bench 4

Note:

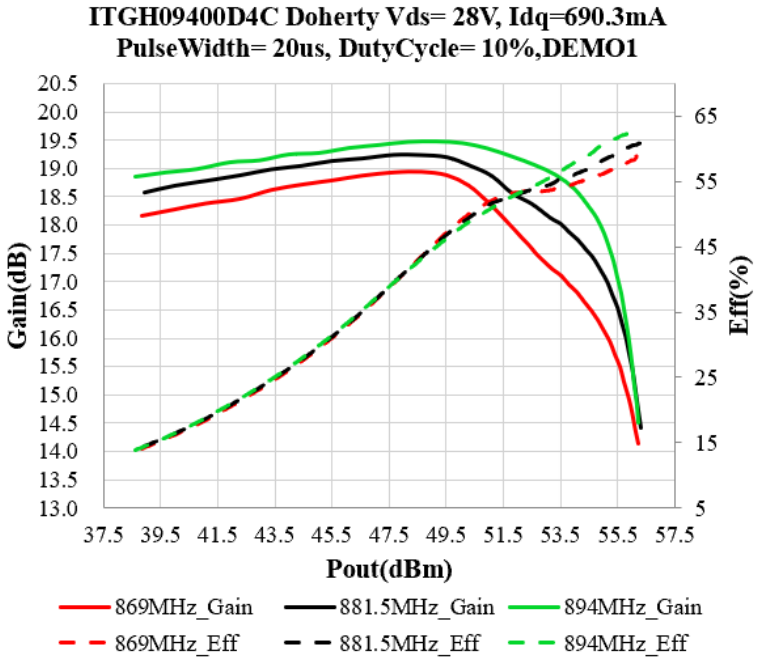
- **The = ITGH09400D4C is tested with a supply voltage of V_{dS}= 28V，I_{dq}=700mA，V_{gs1} =2.62V，V_{gs2} =1.4V.**

All measurements unless otherwise noted.

Test Results:

1. Pulse Peak power and Efficiency

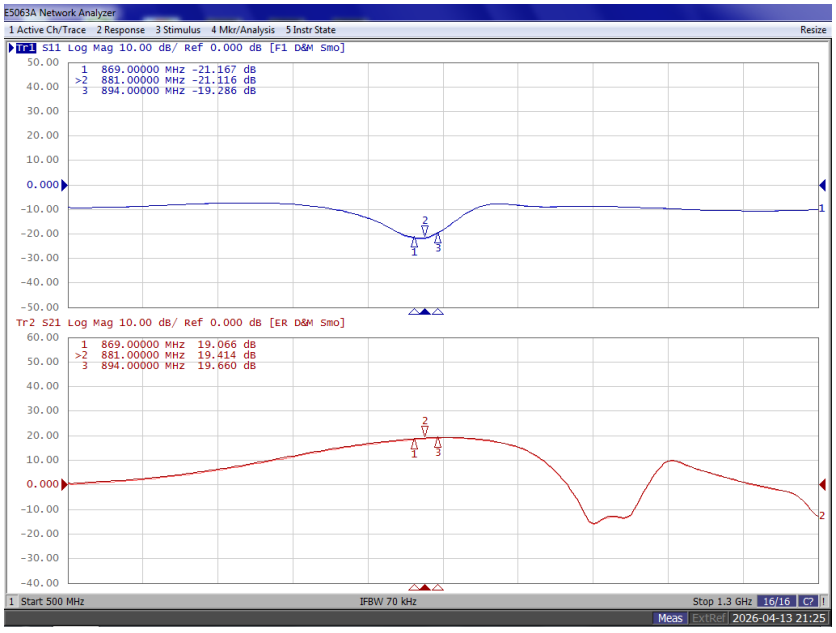
V_{DS}= 28V，I_{DQ}=700mA，V_{GS1} =2.62V，V_{GS2} =1.4V							
FREQ (MHZ)	P1dB (dBm)	P1dB (W)	P1dB Eff (%)	P1dB Gain (dB)	P4.5dB (dBm)	P4.5dB (W)	P3dB Eff (%)
869	51.81	151.7	53.2	17.96	56.09	406.0	58.4
881.5	52.81	191.0	54.2	18.26	56.21	418.2	60.8
894	54.2	263.2	58.4	18.5	56.12	409.0	62.6



2. Network Analyzer Results（S11，S21）

Note:

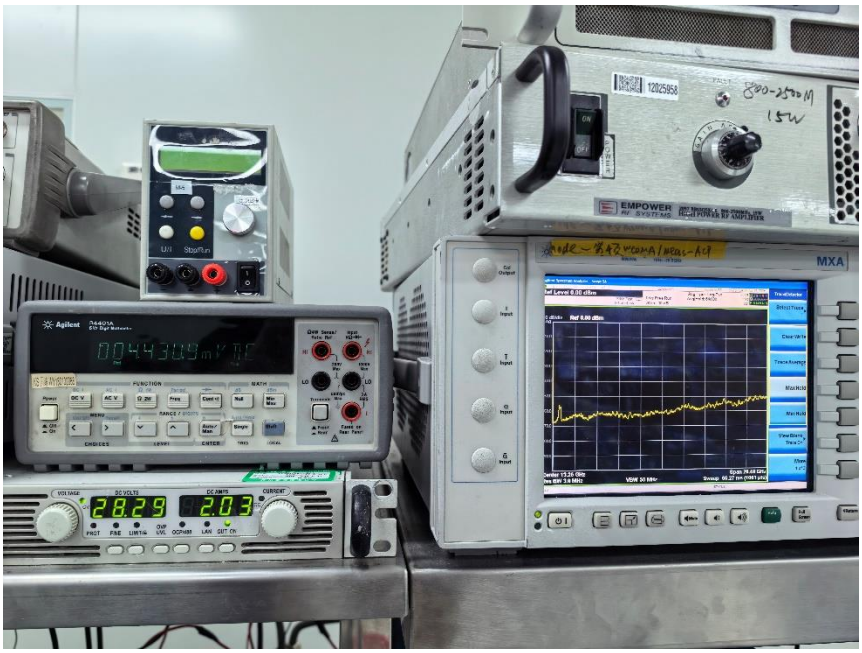
- **The = ITGH09400D4C is tested with a supply voltage of V_{dS}= 28V，I_{dq}=1080mA，V_{gs1} =2.68V，V_{gs2} =1.4V.**



3. Spectrum Analyzer To Show No Oscillation Or Instability Issue

Note:

- **The ITGH09400D4C is tested with a supply voltage of V_{dS}= 28V，I_{dq}=2050mA，V_{gs1} =3.04V，V_{gs2} =1.4V.**



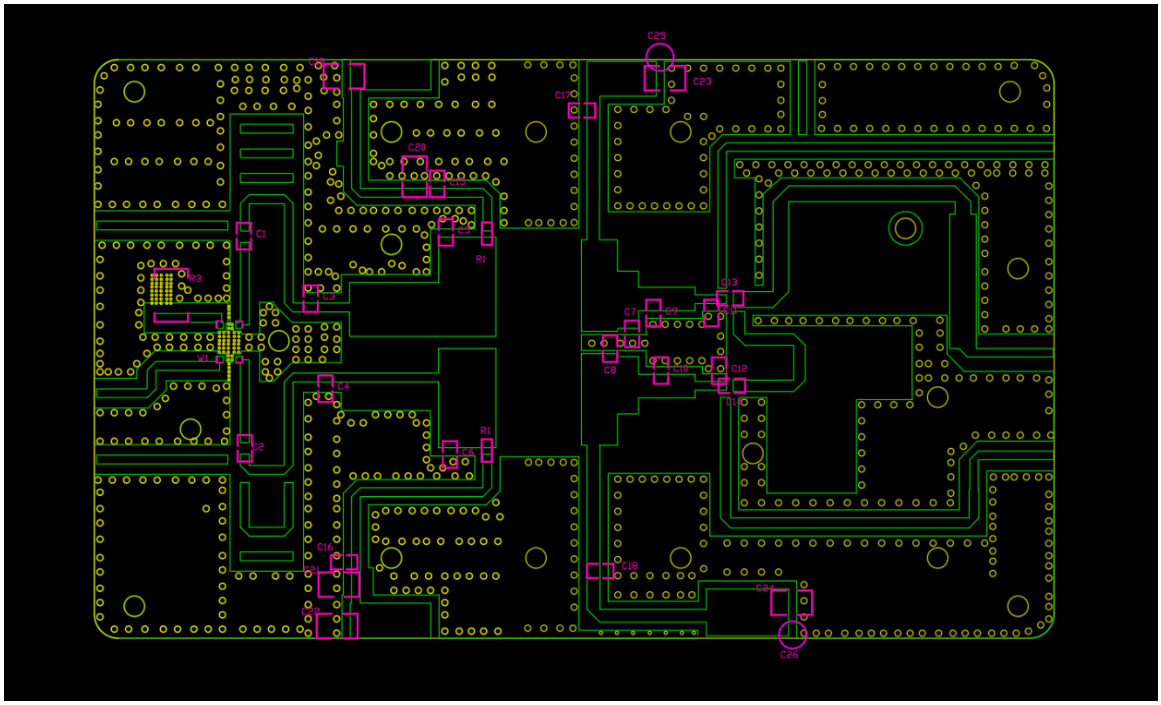
4. ACPR Test Data

Note:

- **The WCDMA-1C-5MHz Signal PAR = 10dB @ 0.01% Probability on CCDF. V_{dS}= 28V，I_{dq}=700mA，V_{gs1} =2.62V，V_{gs2} =1.4V.**

Freq (MHz)	Pout (dBm)	CCDF (dB)	Ppeak (dBm)	Ppeak (W)	ACPR (dBc)	Gain (dB)	Efficiency (%)
869	47	7.14	54.16	260.5	-32.8	18.6	39.4
881.5		7.82	54.85	305.3	-33.0	18.9	39.3
894		8.08	55.08	322.3	-35.7	19.3	39.2
869	45.5	7.81	53.34	215.6	-35.9	18.7	34.2
881.5		8.36	53.87	244.0	-36.3	19.1	34.2
894		8.81	54.30	269.1	-38.9	19.3	34.1
869	45	8.02	53.02	200.3	-36.9	18.7	32.3
881.5		8.61	53.62	230.1	-37.5	19.1	32.5
894		9.02	54.02	252.3	-40.2	19.3	32.5

5. PCB Layout



6. BOM of Test Circuit

Component	Value	Suggested Manufacture	Quantity
U1	ITGH09400D4C		1
C1、C2、C14、C15、C16、C17、C18	68pF	GQM2195C2E68R0BB12D	7
C3	8.2pF	GQM2195C2E8R2BB12D	1
C4、C11、C13	6.8pF	GQM2195C2E6R8BB12D	3
C5、C6	18pF	GQM2195C2E18R0BB12D	2
C7、C9、C10	12pF	GQM2195C2E12R0BB12D	3
C8	15 pF	GQM2195C2E15R0BB12D	1
C12	6.2pF	GQM2195C2E6R2BB12D	1
C19、C20、C21、C22、C23、C24	10uF/63V	GRM32EC72A106KE05	6
C25、C26	470uF/63V	EEVFK1J471M	2
R1	10 Ω	ERJPA3F10R0V	2
R3	51 Ω	Power Resistor	1
W1	3dB Bridge	HC07F03	1