

**LWH-26-14**

**STBV38280BY4V: 3400-4000MHz**

**Test Report STBV38280BY4V Doherty 3400-4000MHz**

**June 18th, 2026**

**Introduction**

This amplifier is designed with Innogrations 50V STBV38280BY4V GaN

**Demo and Transistor**

Frequency band : 3400-4000 MHz  
 Application : Telecom  
 Configuration : Doherty  
 Test Signal : Pulsed CW/ WCDMA  
 Transistor : STBV38280BY4V  
 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  $V_{DS}= 50V$ ,  $I_{DQ-Mian}=160\text{ mA}$   $V_{gs-main}=-3.14V$ .  $V_{gs-peak}=-5.4V$ . all measurements unless otherwise noted.**

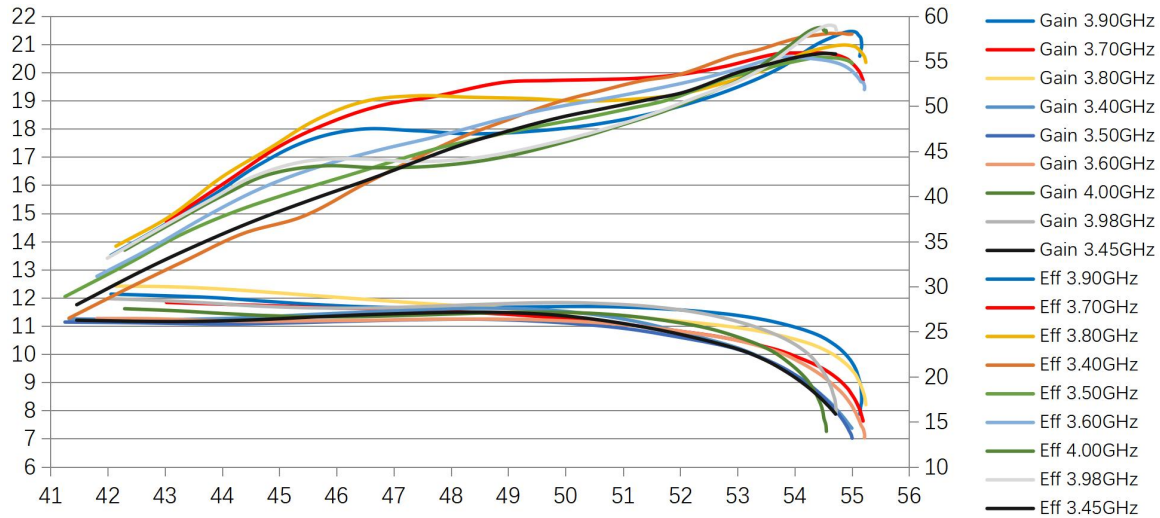
**Test Results:**

**1. Pulsed CW Peak power and Efficiency**

| Freq (MHz) | P3dB (dBm) | P3dB (W) | P3dB Eff (%) | P3dB Gain (dB) | P4dB (dBm) | P4dB (W) | P4dB Eff (%) |
|------------|------------|----------|--------------|----------------|------------|----------|--------------|
| 3400       | 54.42      | 276.8    | 57.9         | 8.63           | 54.9       | 309.1    | 58.0         |
| 3450       | 54.42      | 276.5    | 55.8         | 8.5            | 54.85      | 305.8    | 55.7         |
| 3500       | 54.61      | 288.8    | 55.4         | 8.25           | 54.96      | 313.4    | 55.0         |
| 3600       | 54.96      | 313.4    | 54.1         | 8.28           | 55.21      | 331.6    | 52.5         |
| 3700       | 54.89      | 308.6    | 55.3         | 8.84           | 55.16      | 328.4    | 53.4         |
| 3800       | 55         | 316.0    | 56.7         | 9.43           | 55.23      | 333.3    | 55.3         |
| 3900       | 55.12      | 325.1    | 57.9         | 9.13           | 55.15      | 327.6    | 56.2         |
| 3980       | 54.6       | 288.4    | 59.0         | 8.98           | 54.72      | 296.8    | 58.5         |
| 4000       | 54.36      | 273.0    | 58.6         | 8.62           | 54.53      | 283.5    | 58.4         |

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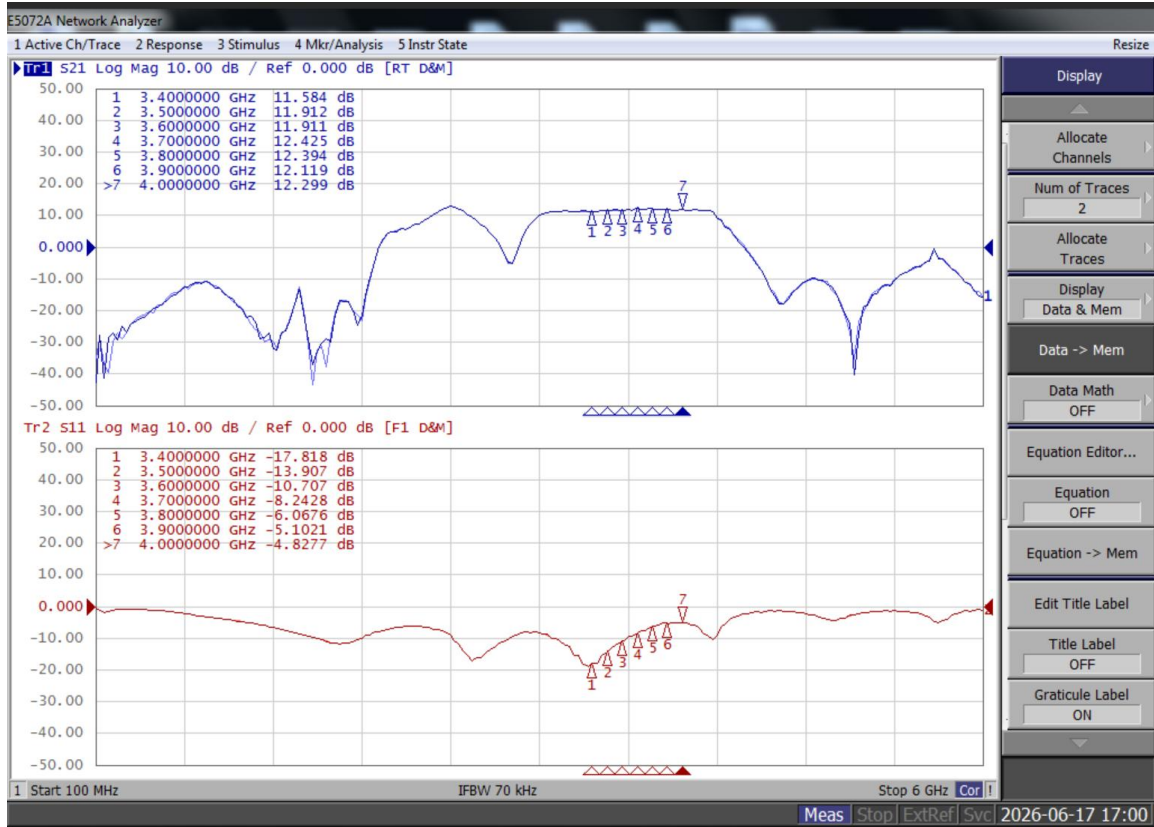
**2. WCDMA\_1C Pavs and Efficiency**

| Freq (MHz) | Pout (dBm) | CCDF (dB) | Ppeak (dBm) | Ppeak (W) | ACPR (dBc) | Gain (dB) | Efficiency (%) |
|------------|------------|-----------|-------------|-----------|------------|-----------|----------------|
| 3400       | 46.04      | 8.30      | 54.34       | 271.6     | -31.0      | 11.1      | 42.2           |
| 3450       | 46.03      | 8.38      | 54.41       | 275.8     | -32.1      | 11.0      | 41.8           |
| 3500       | 46.02      | 8.41      | 54.44       | 277.8     | -34.6      | 10.8      | 42.4           |
| 3600       | 46.00      | 8.63      | 54.63       | 290.2     | -36.8      | 10.9      | 43.6           |
| 3700       | 46.00      | 8.56      | 54.56       | 285.8     | -37.2      | 11.1      | 46.0           |
| 3800       | 45.99      | 8.69      | 54.69       | 294.4     | -37.2      | 11.4      | 45.1           |
| 3900       | 46.00      | 8.94      | 54.94       | 312.0     | -37.7      | 11.4      | 42.8           |
| 3980       | 46.00      | 8.46      | 54.45       | 278.8     | -37.9      | 11.3      | 41.3           |
| 4000       | 46.00      | 8.36      | 54.36       | 273.1     | -37.4      | 11.0      | 41.0           |

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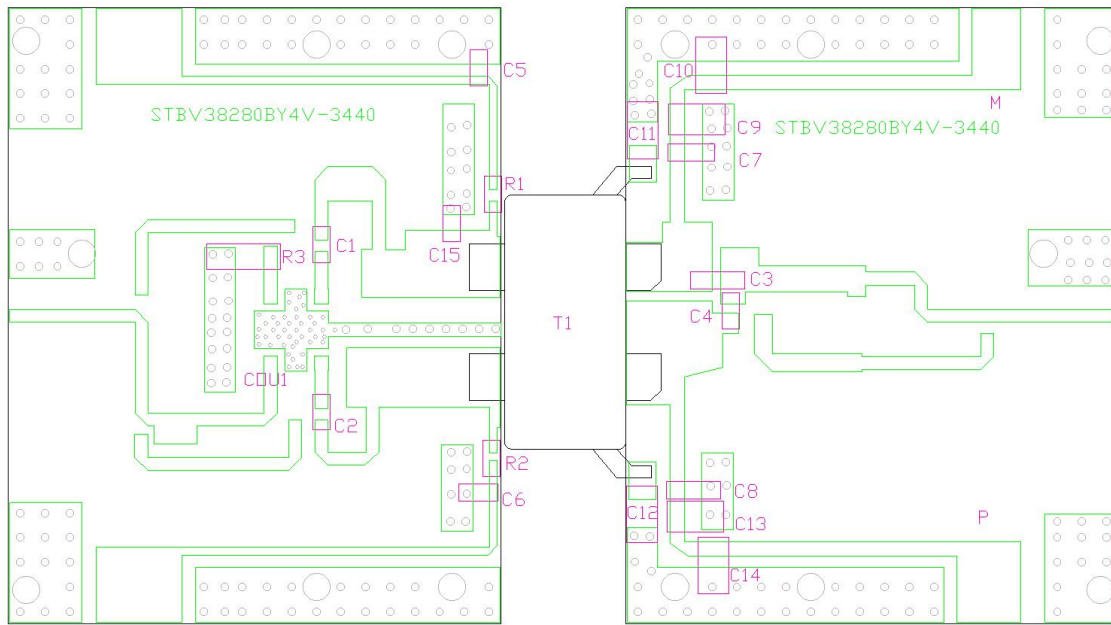
**3. S11 S21 Curve Picture**



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**4. DEMO And BOM Picture**



| Test Board Bom         |          |                             |               |             |
|------------------------|----------|-----------------------------|---------------|-------------|
| Part                   | Quantity | Description                 | Part Number   | Manufacture |
| C1,C2,C5,C6,<br>C7,C8  | 6        | 8.2pF High Q<br>Capacitor   | 251SHS8R2BSE  | TEMEX       |
| C3                     | 1        | 1.5pF High Q<br>Capacitor   | 251SHS1R5BSE  | TEMEX       |
| C4                     | 1        | 2.7pF High Q<br>Capacitor   | 251SHS2R7BSE  | TEMEX       |
| C15                    | 1        | 0.9pF High Q<br>Capacitor   | 251SHS0R9BSE  | TEMEX       |
| C9,C10,C11,C12,C13,C14 | 6        | 10uF MLCC                   | RS80R2A106M   | MARUWA      |
| R1,R2                  | 2        | 10 Ω Power<br>Resistor      | ESR03EZPF100  | ROHM        |
| R3                     | 1        | 51 Ω Power<br>Resistor      | 1206          | RN2         |
| COUT1                  | 1        | 3 dB Bridge                 | XC3500P-03S   | ANAREN      |
| T1                     | 1        | 280W GaN<br>Dual Transistor | STBV38280BY4V | Innogration |

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.