



Appendix B

RF Test Data for BT LE (Conducted Measurement)

Product Name: Creative Zen Hybrid SXFI

Test Model: EF1200

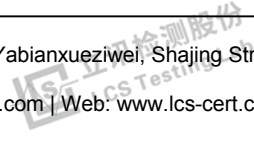


Environmental Conditions

| | |
|--------------------|------------|
| Temperature: | 23.8 °C |
| Relative Humidity: | 52.1% |
| ATM Pressure: | 100.0 kPa |
| Test Engineer: | Paddi Chen |
| Supervised by: | Nick Peng |



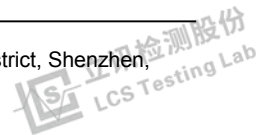
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B.1 -6dB Bandwidth

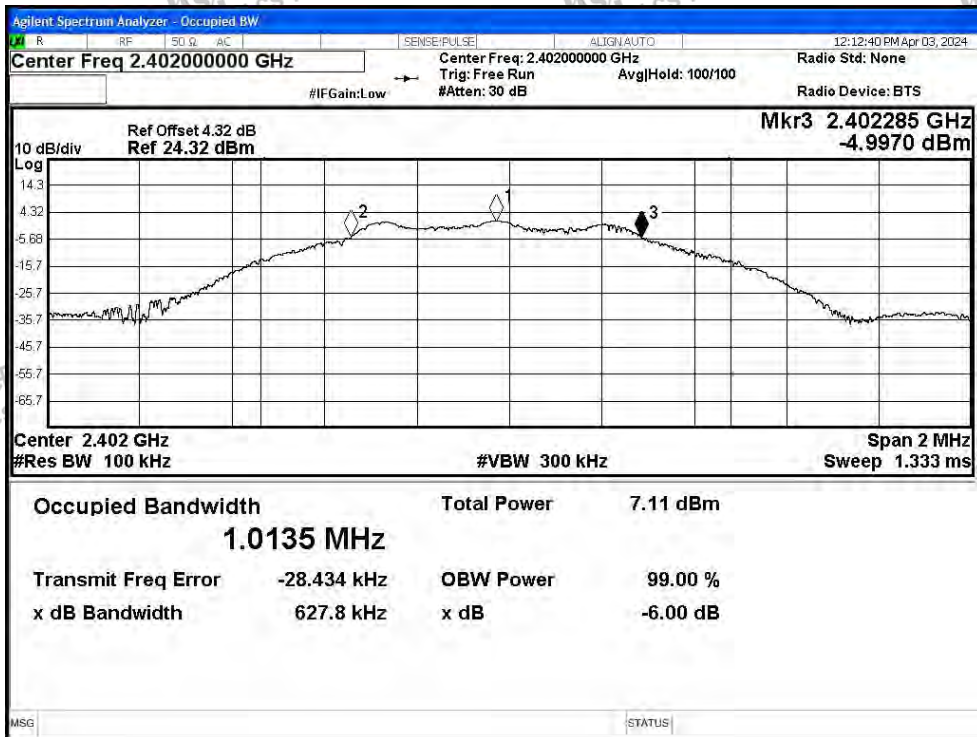
| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|--------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT | BLE 1M | 2402 | Ant1 | 0.628 | >=0.5 | Pass |
| NVNT | BLE 1M | 2440 | Ant1 | 0.624 | >=0.5 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 0.64 | >=0.5 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 1.072 | >=0.5 | Pass |
| NVNT | BLE 2M | 2440 | Ant1 | 1.078 | >=0.5 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 1.091 | >=0.5 | Pass |



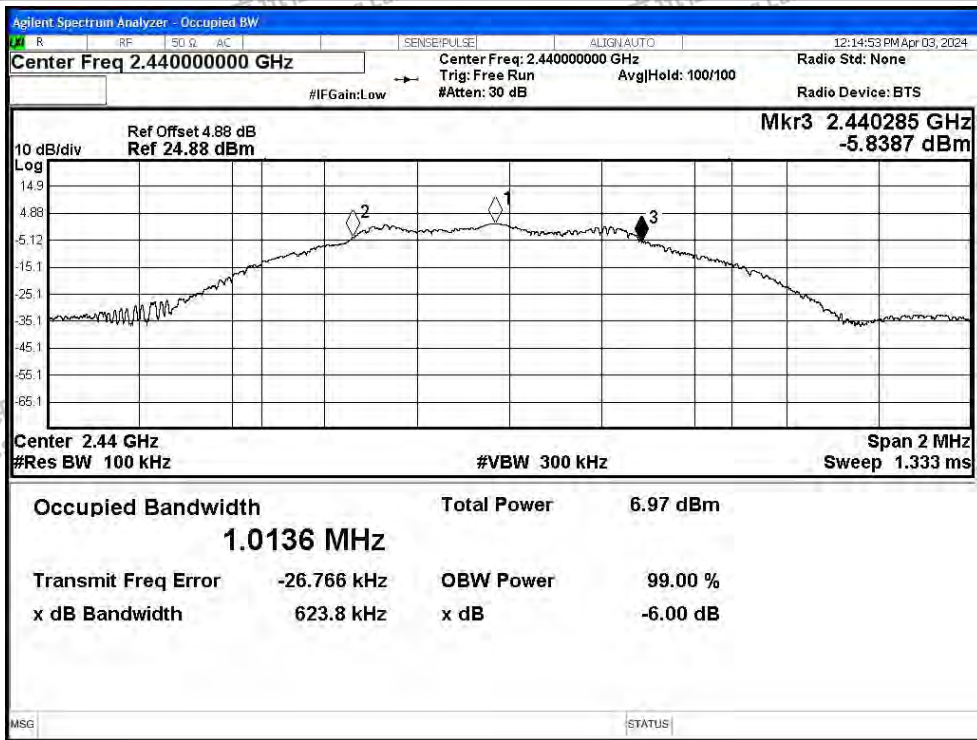


Test Graphs

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1

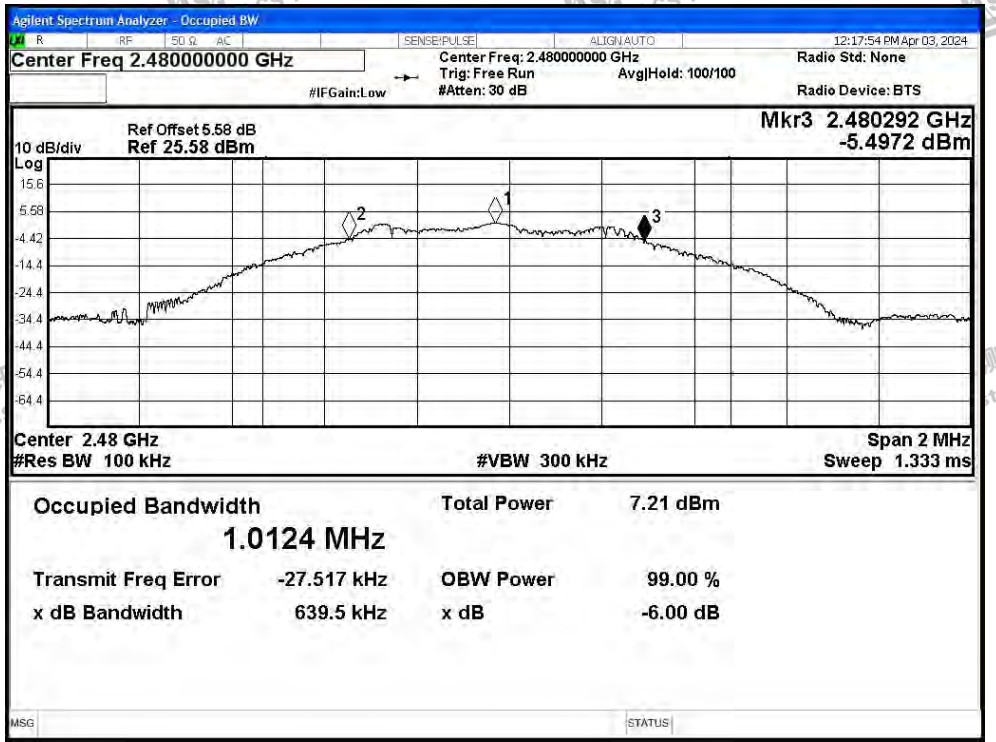


-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1

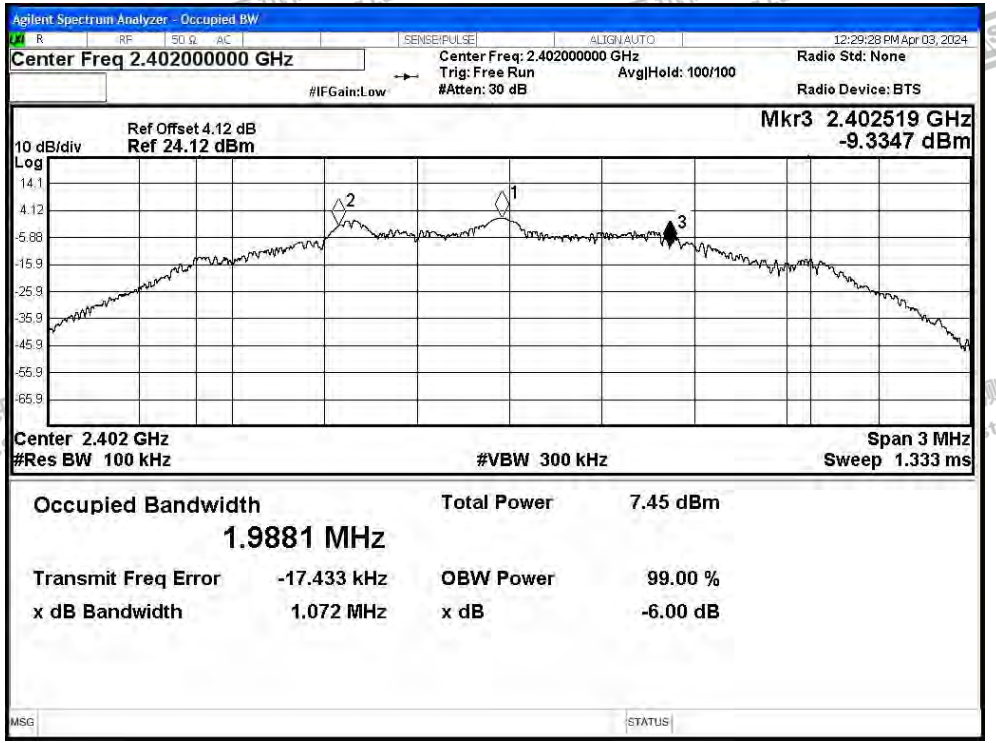




-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1

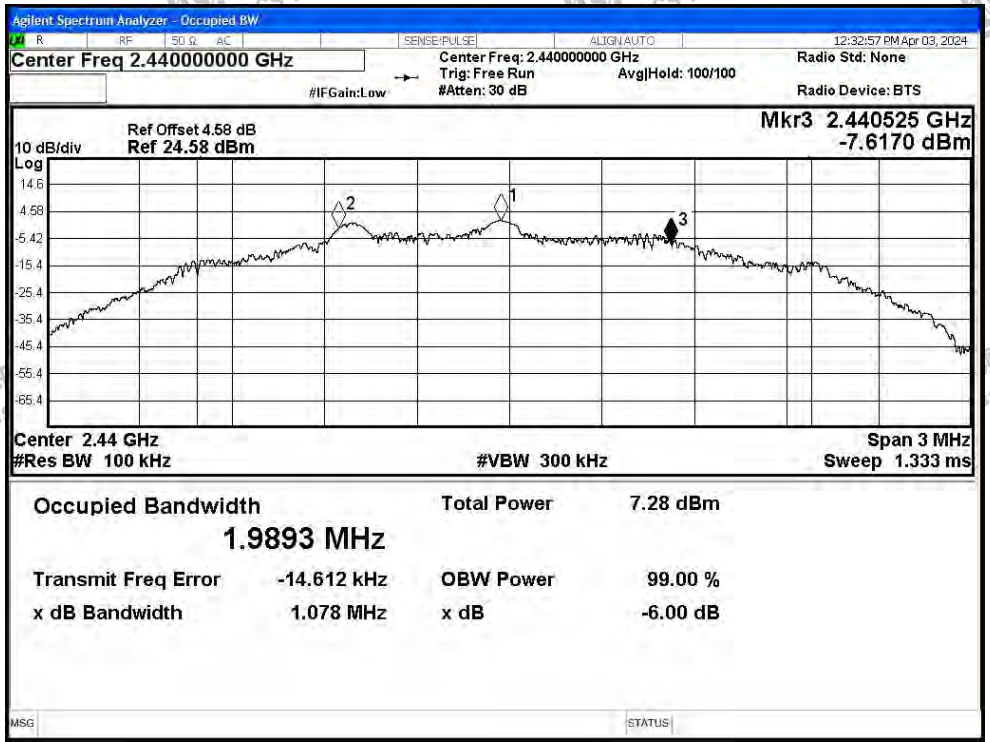


-6dB Bandwidth NVNT BLE 2M 2402MHz Ant1

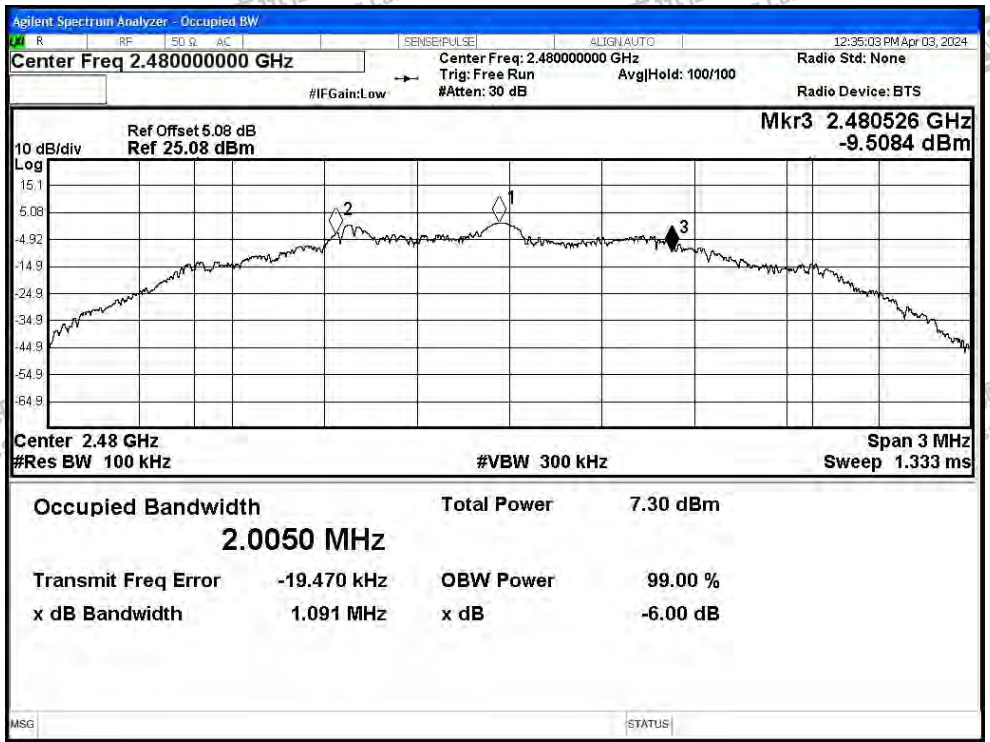




-6dB Bandwidth NVNT BLE 2M 2440MHz Ant1



-6dB Bandwidth NVNT BLE 2M 2480MHz Ant1



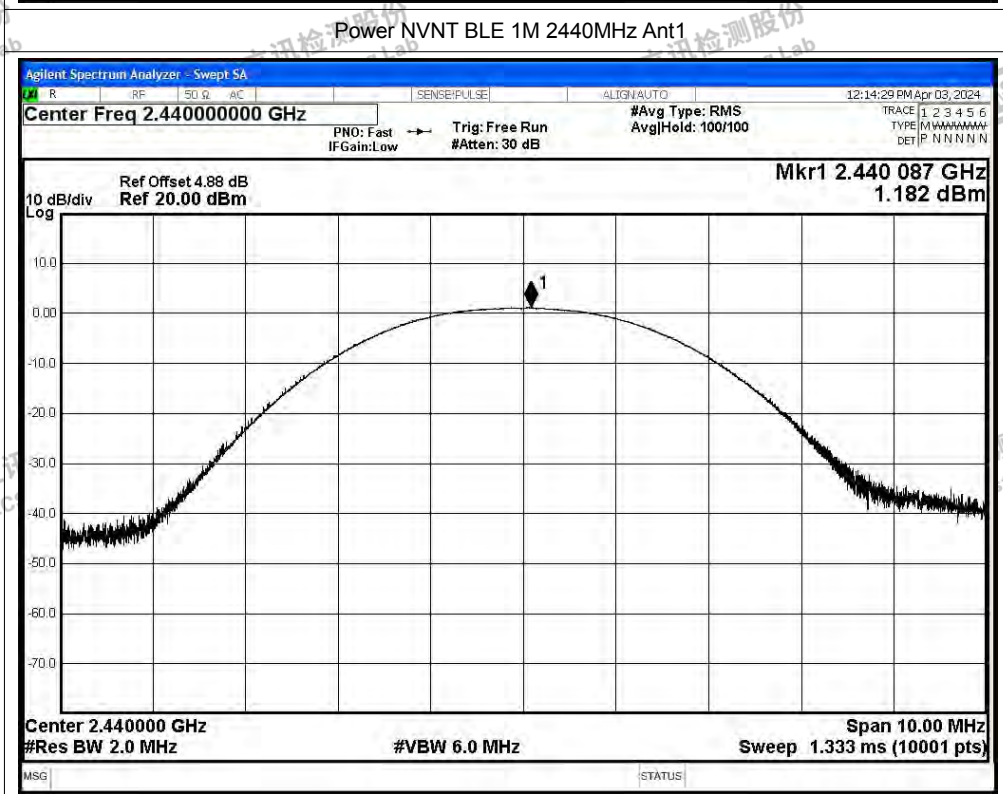
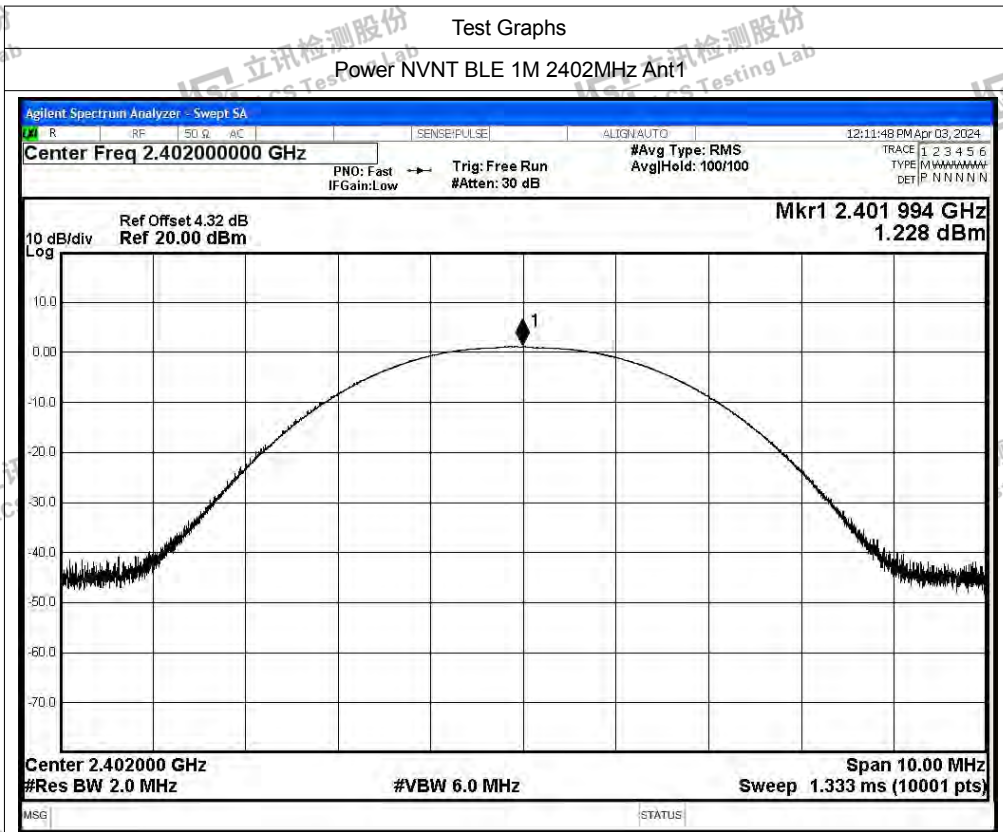


B.2 Maximum Conducted Output Power

| Condition | Mode | Frequency (MHz) | Antenna | Total Power (dBm) | Limit (dBm) | Verdict |
|-----------|--------|-----------------|---------|-------------------|-------------|---------|
| NVNT | BLE 1M | 2402 | Ant1 | 1.23 | 30 | Pass |
| NVNT | BLE 1M | 2440 | Ant1 | 1.18 | 30 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 1.44 | 30 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 1.42 | 30 | Pass |
| NVNT | BLE 2M | 2440 | Ant1 | 1.37 | 30 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 1.45 | 30 | Pass |



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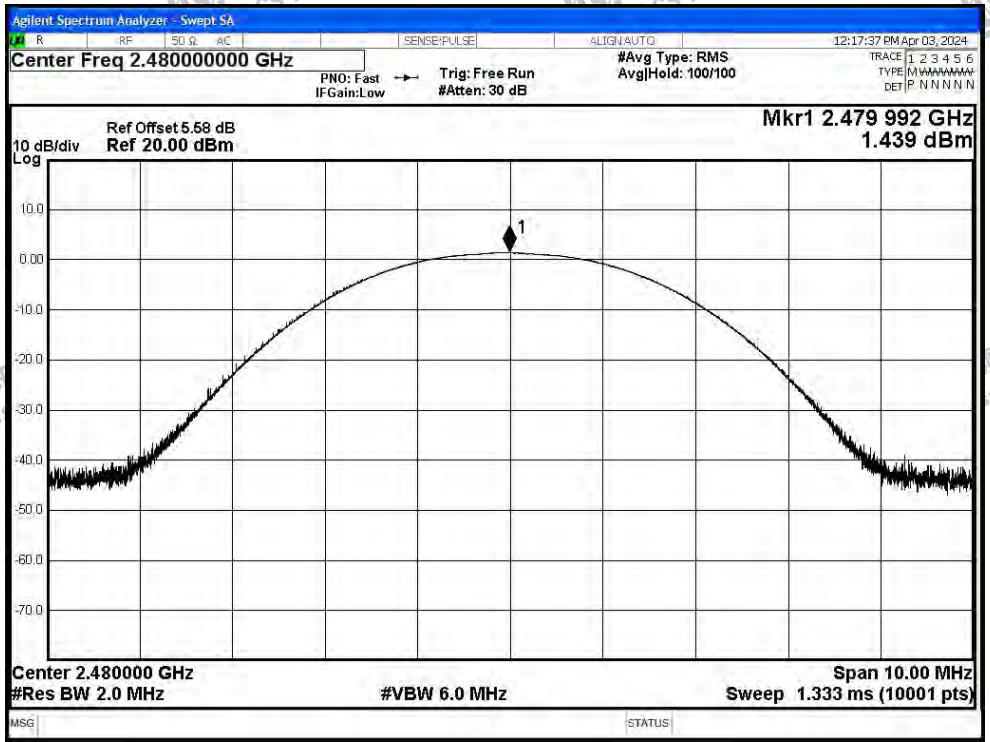
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

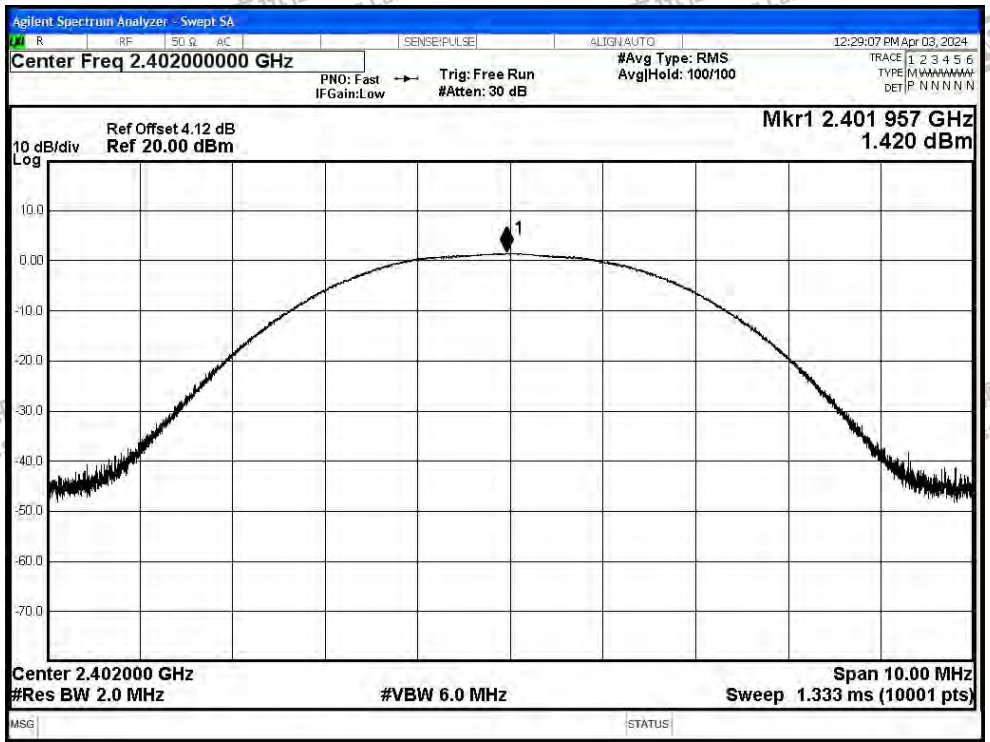
Scan code to check authenticity



Power NVNT BLE 1M 2480MHz Ant1

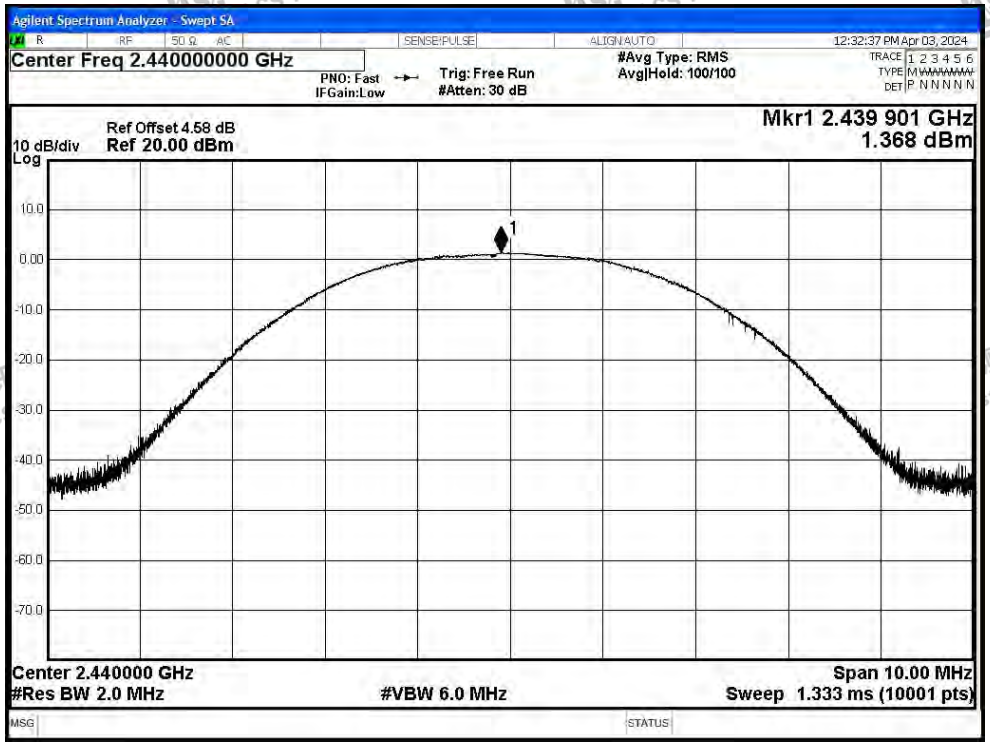


Power NVNT BLE 2M 2402MHz Ant1

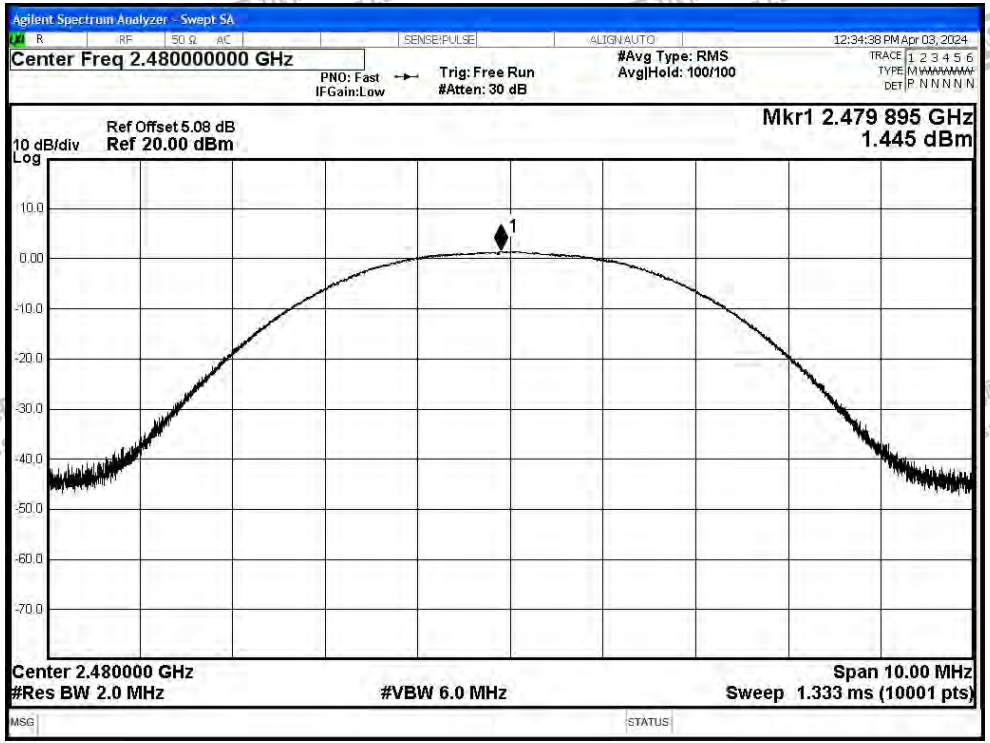




Power NVNT BLE 2M 2440MHz Ant1



Power NVNT BLE 2M 2480MHz Ant1



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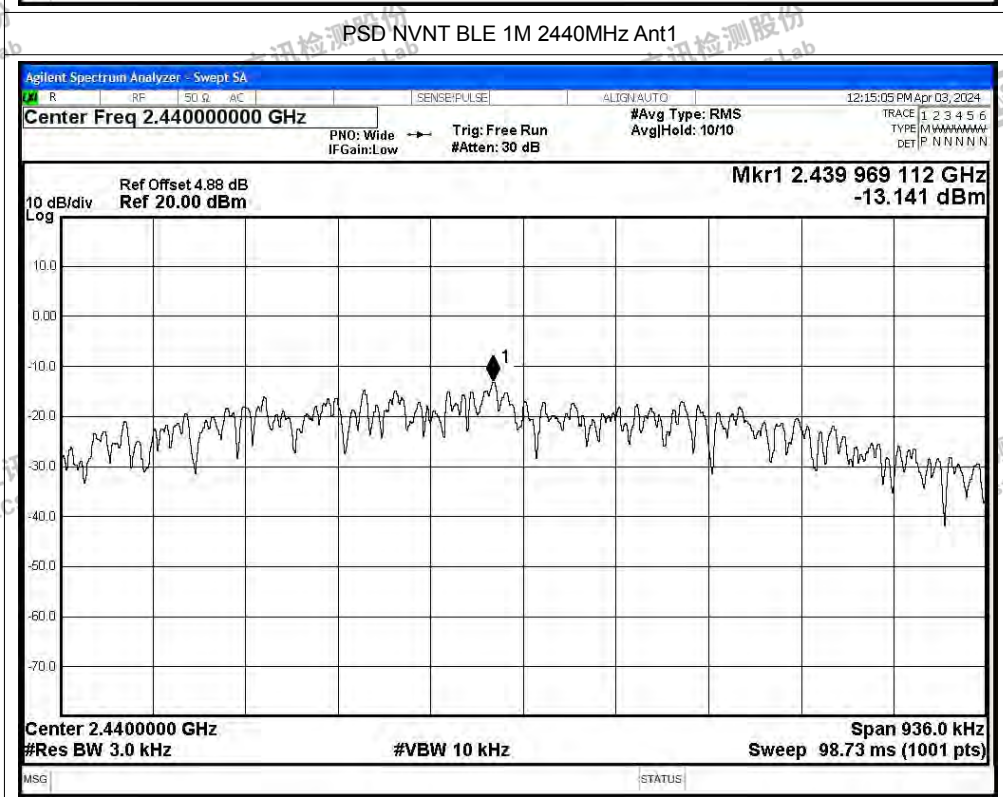
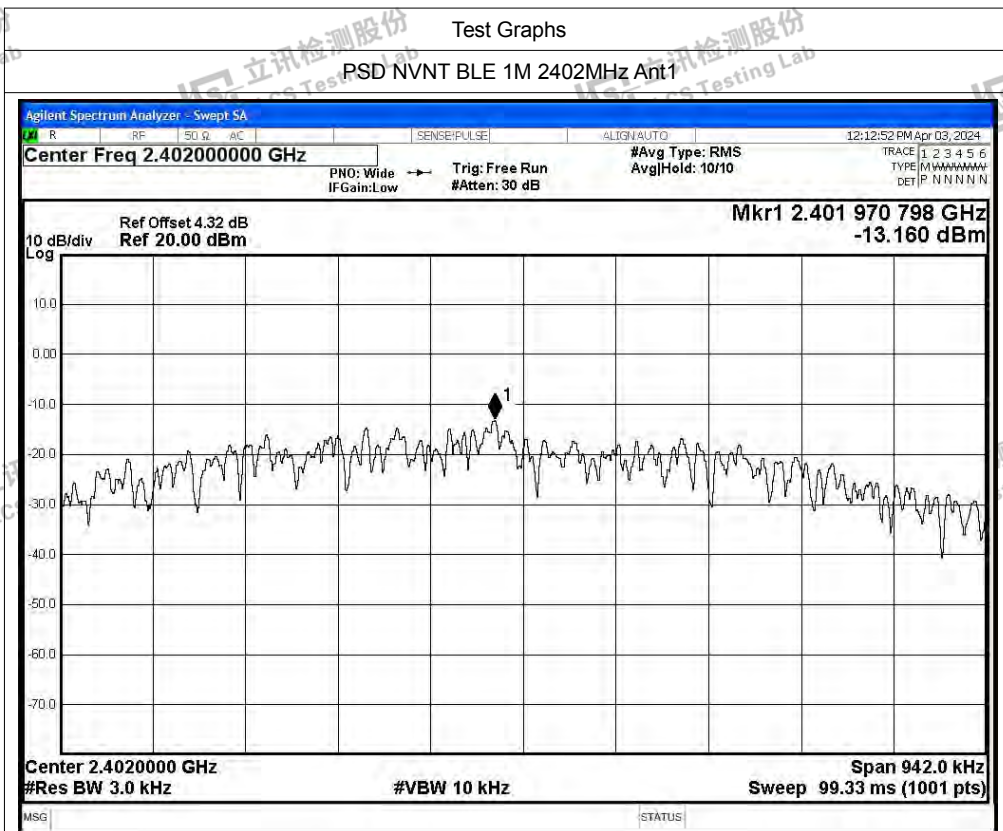


B.3 Maximum Power Spectral Density Level

| Condition | Mode | Frequency (MHz) | Antenna | Total PSD (dBm/3kHz) | Limit (dBm/3kHz) | Verdict |
|-----------|--------|-----------------|---------|----------------------|------------------|---------|
| NVNT | BLE 1M | 2402 | Ant1 | -13.16 | 8 | Pass |
| NVNT | BLE 1M | 2440 | Ant1 | -13.14 | 8 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | -12.79 | 8 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | -14.18 | 8 | Pass |
| NVNT | BLE 2M | 2440 | Ant1 | -14 | 8 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | -13.88 | 8 | Pass |

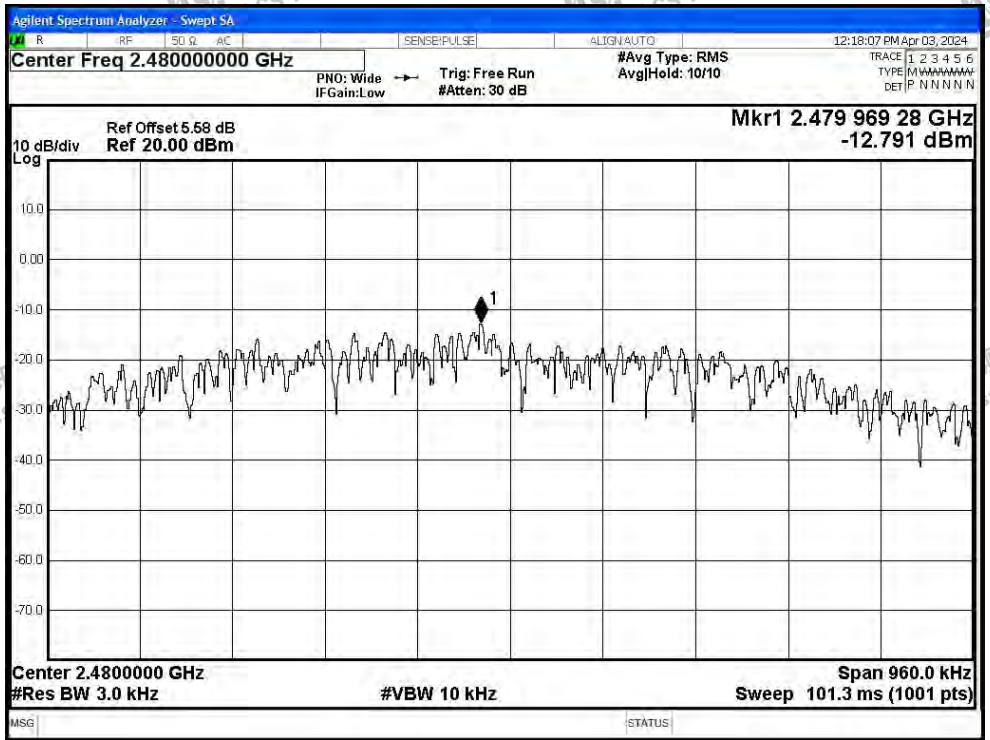


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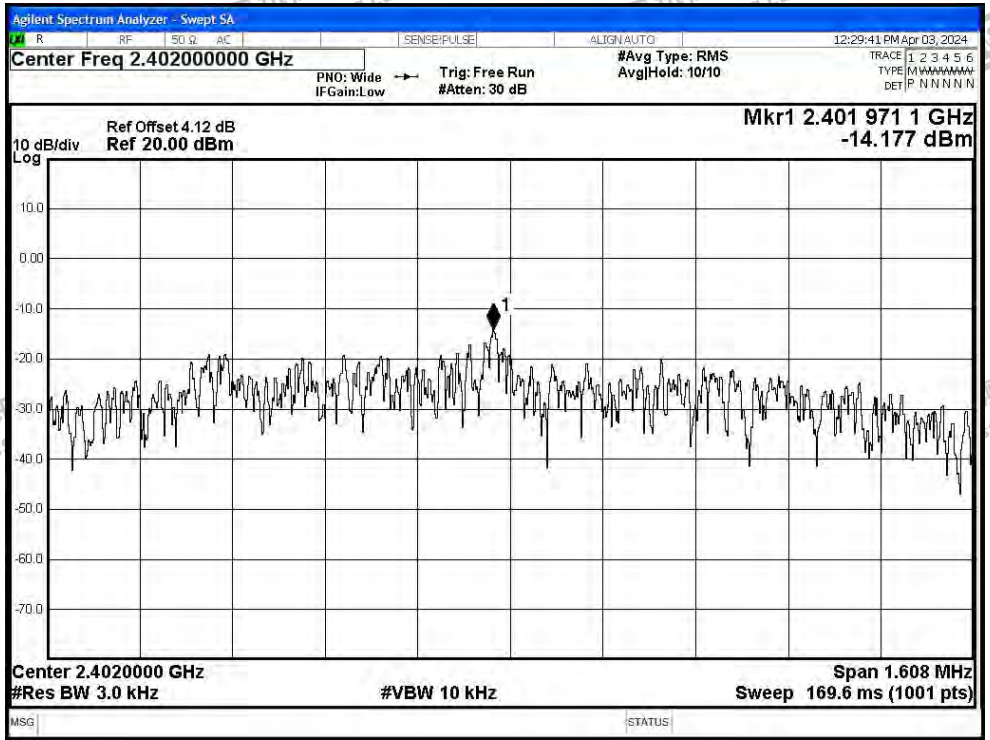




PSD NVNT BLE 1M 2480MHz Ant1



PSD NVNT BLE 2M 2402MHz Ant1



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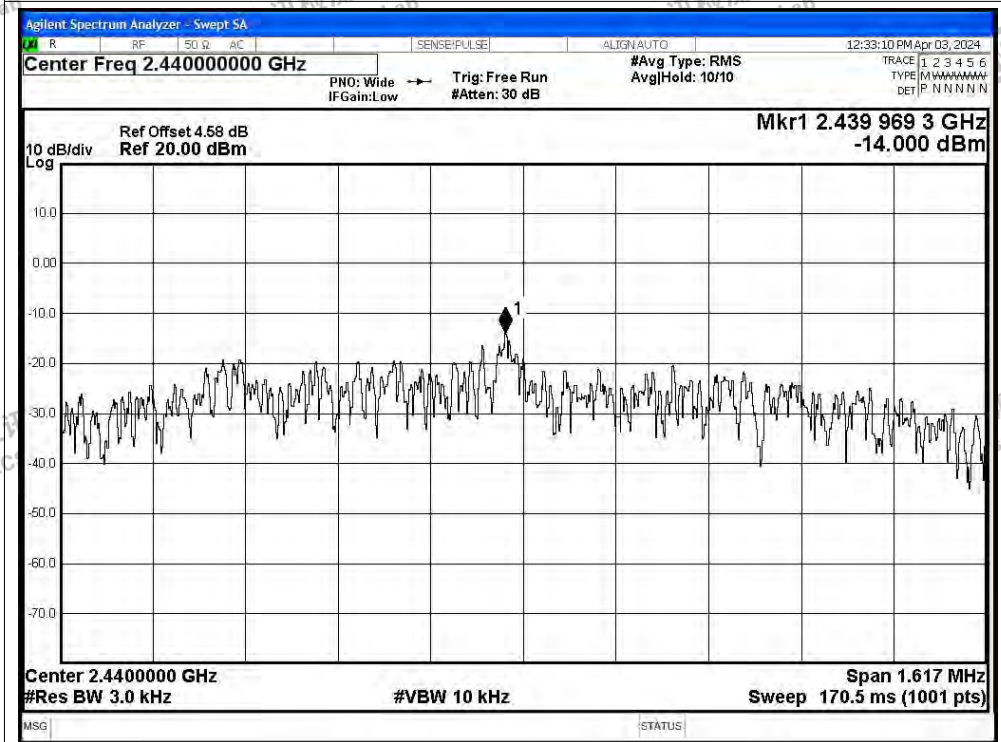
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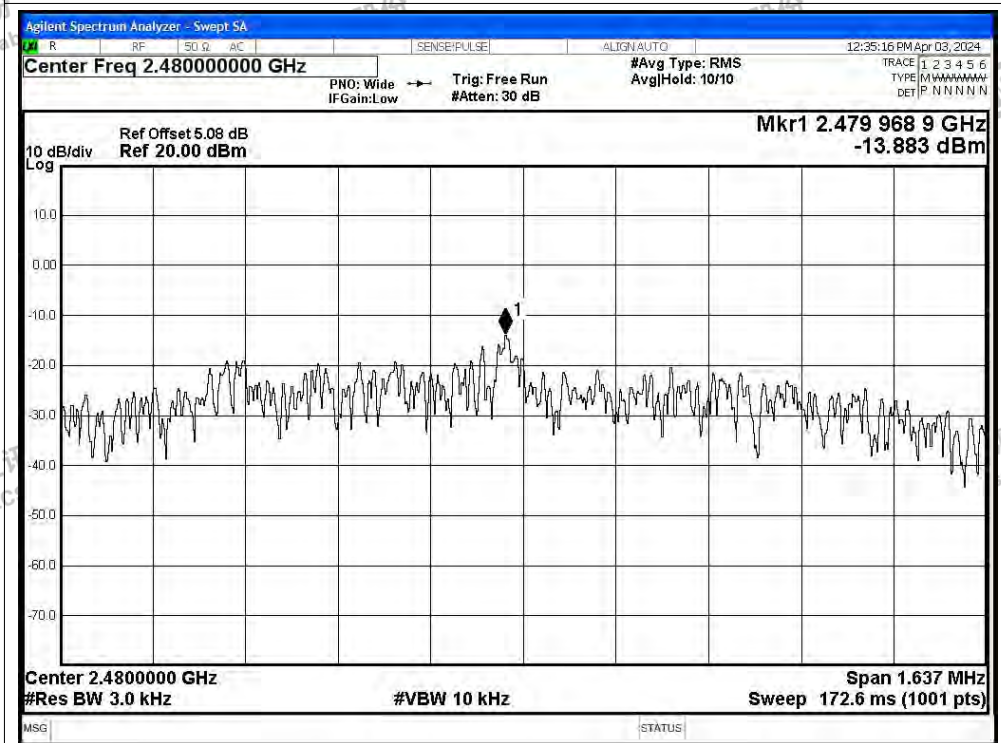
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PSD NVNT BLE 2M 2440MHz Ant1



PSD NVNT BLE 2M 2480MHz Ant1



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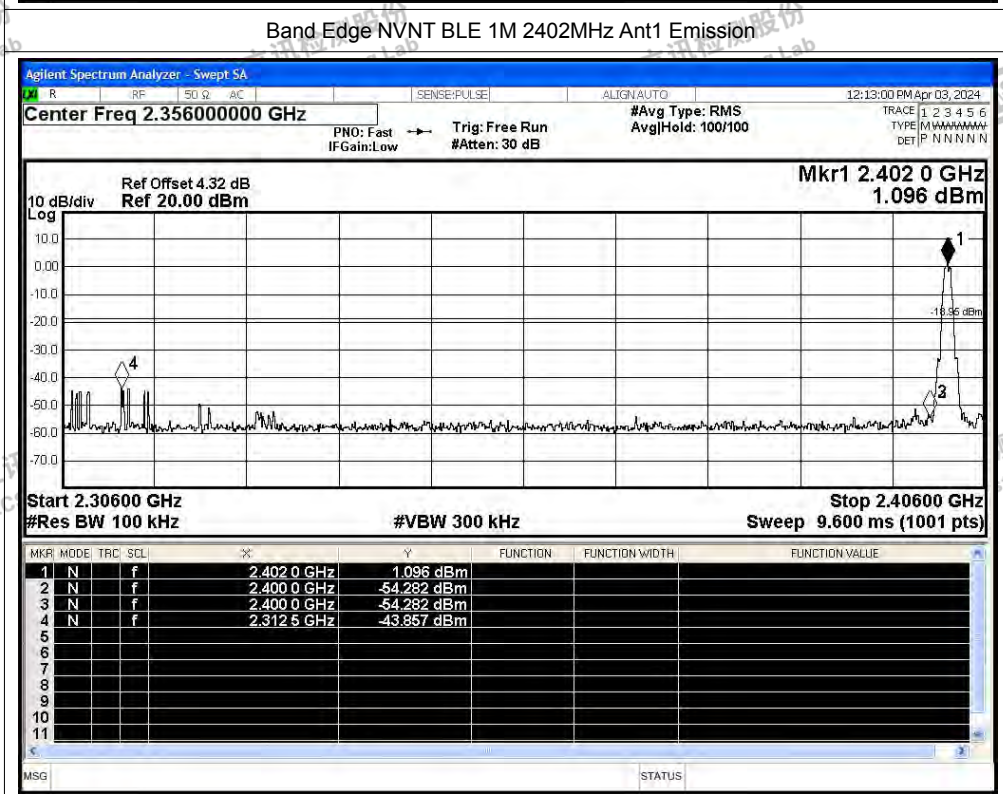
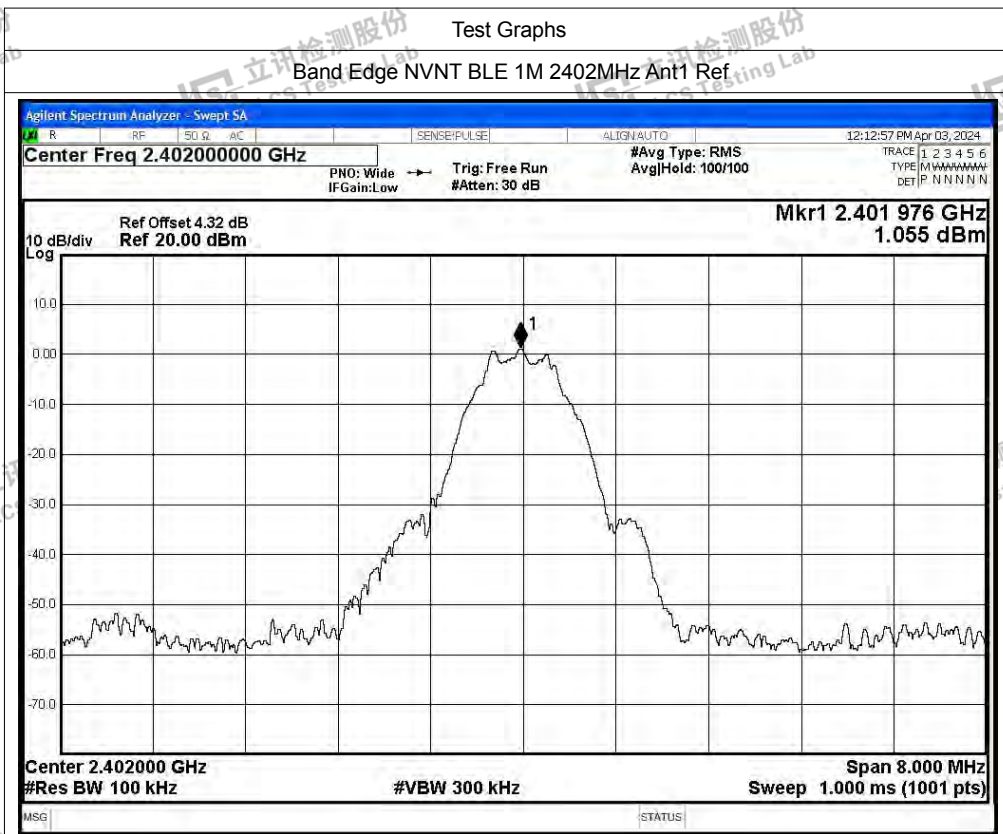


B.4 Band Edge

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE 1M | 2402 | Ant1 | -44.91 | -20 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | -54.02 | -20 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | -47.91 | -20 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | -55.12 | -20 | Pass |



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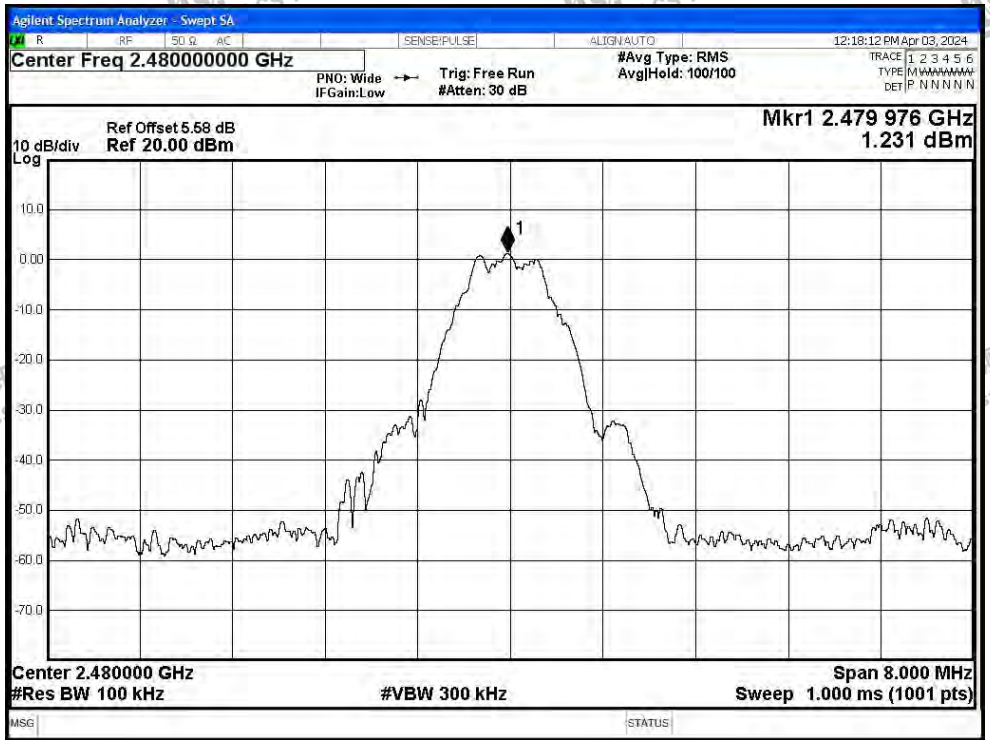
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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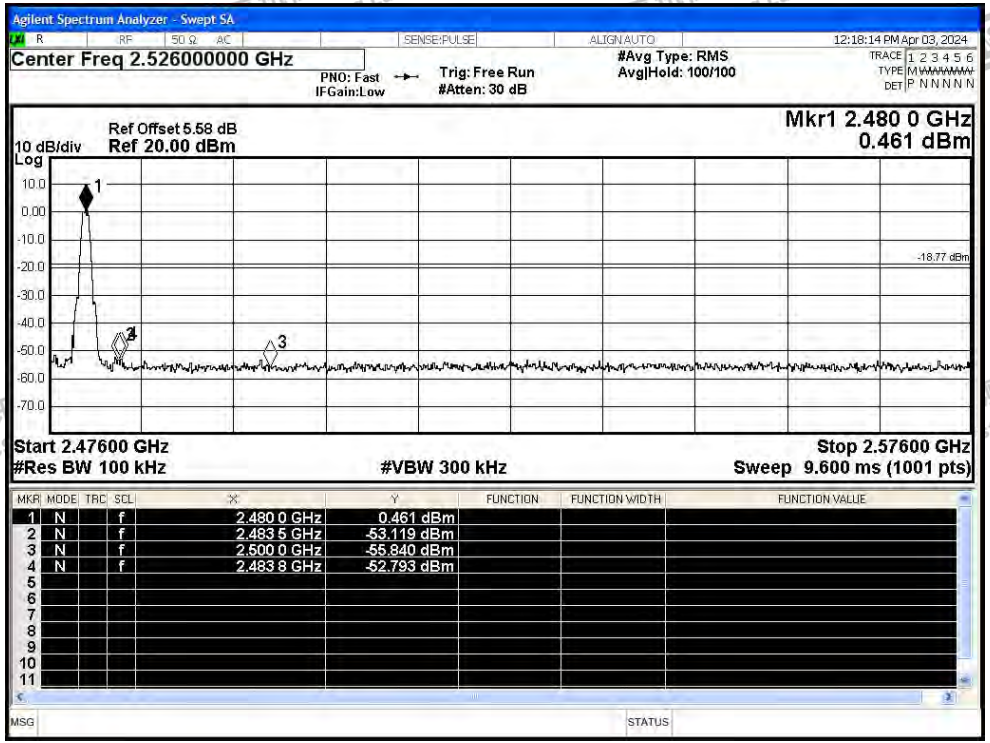
Scan code to check authenticity



Band Edge NVNT BLE 1M 2480MHz Ant1 Ref

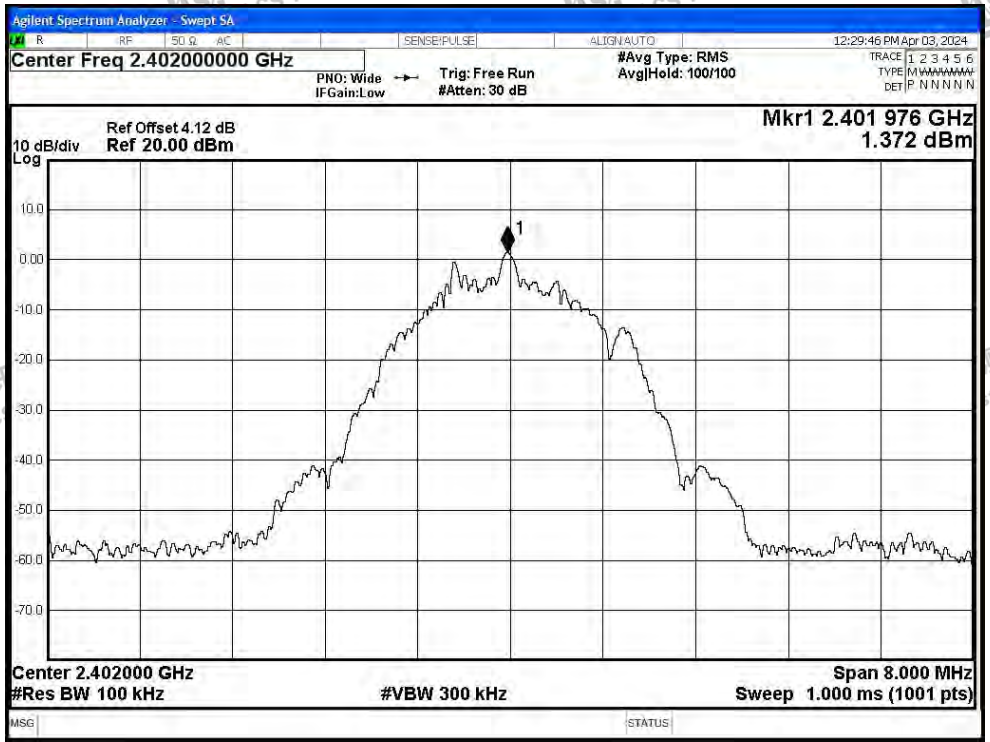


Band Edge NVNT BLE 1M 2480MHz Ant1 Emission

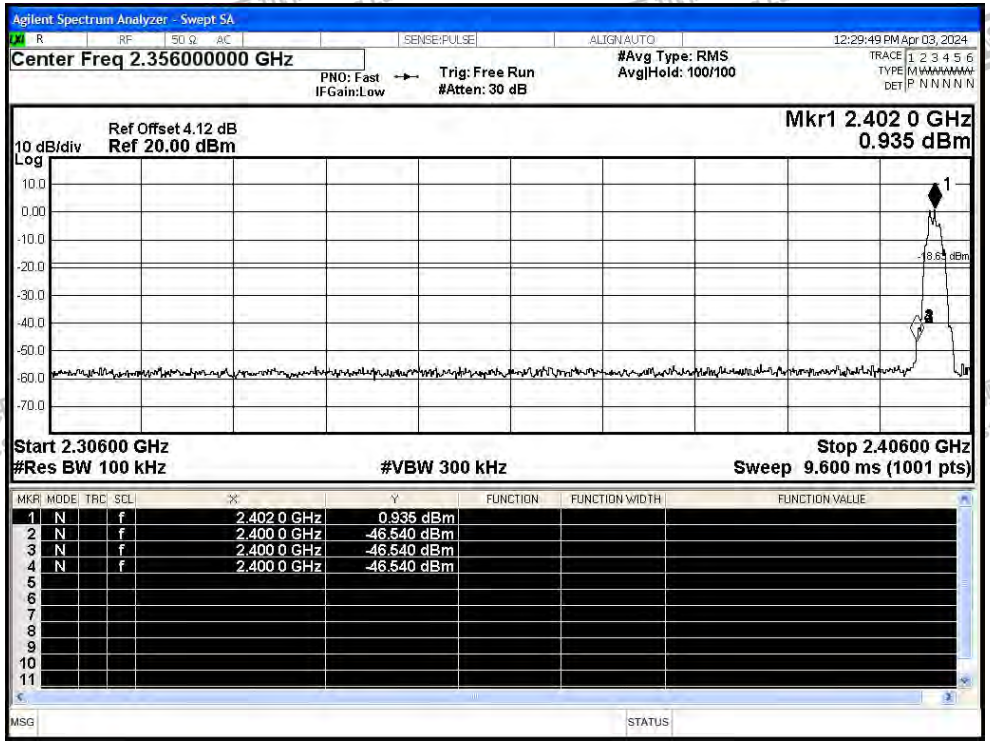




Band Edge NVNT BLE 2M 2402MHz Ant1 Ref



Band Edge NVNT BLE 2M 2402MHz Ant1 Emission



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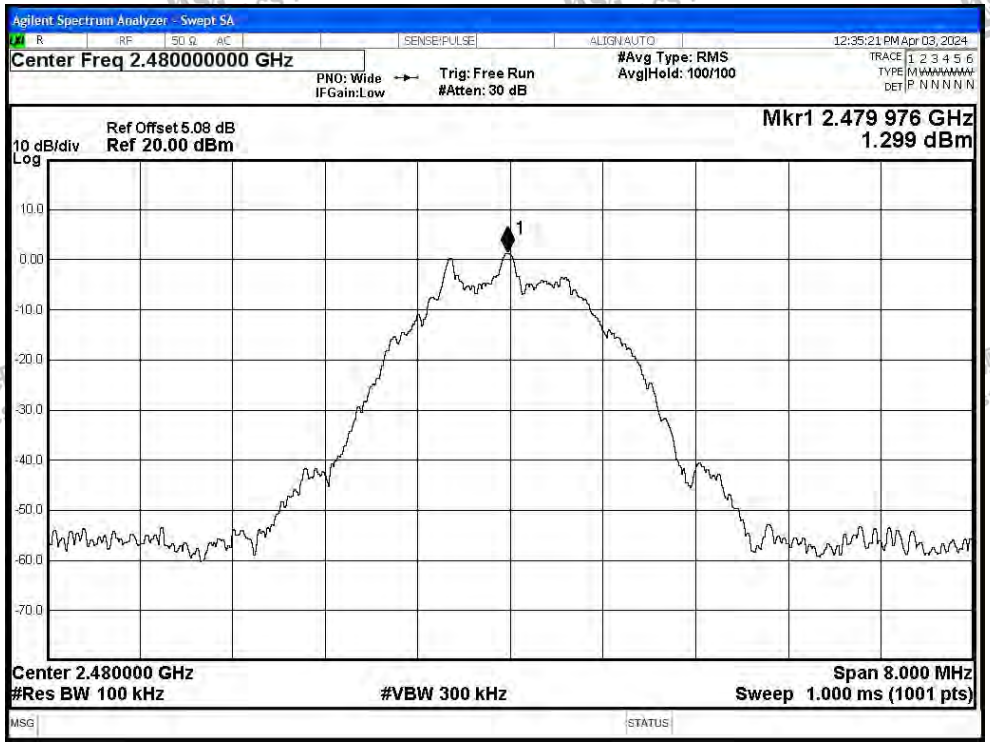
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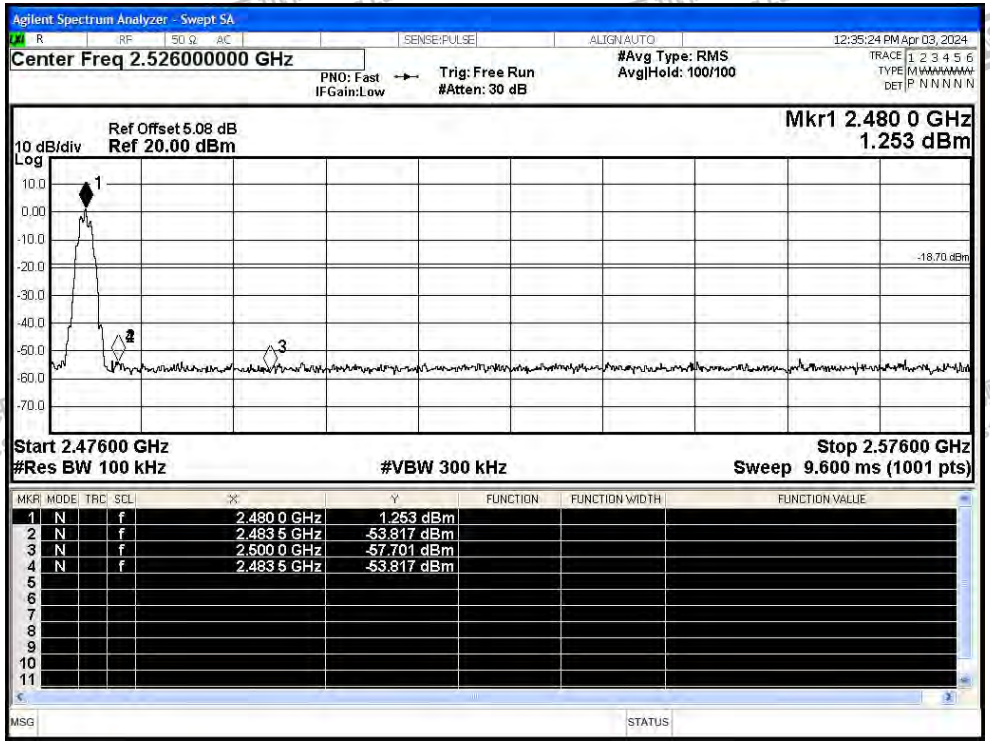
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Band Edge NVNT BLE 2M 2480MHz Ant1 Ref



Band Edge NVNT BLE 2M 2480MHz Ant1 Emission



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B.5 Conducted RF Spurious Emission

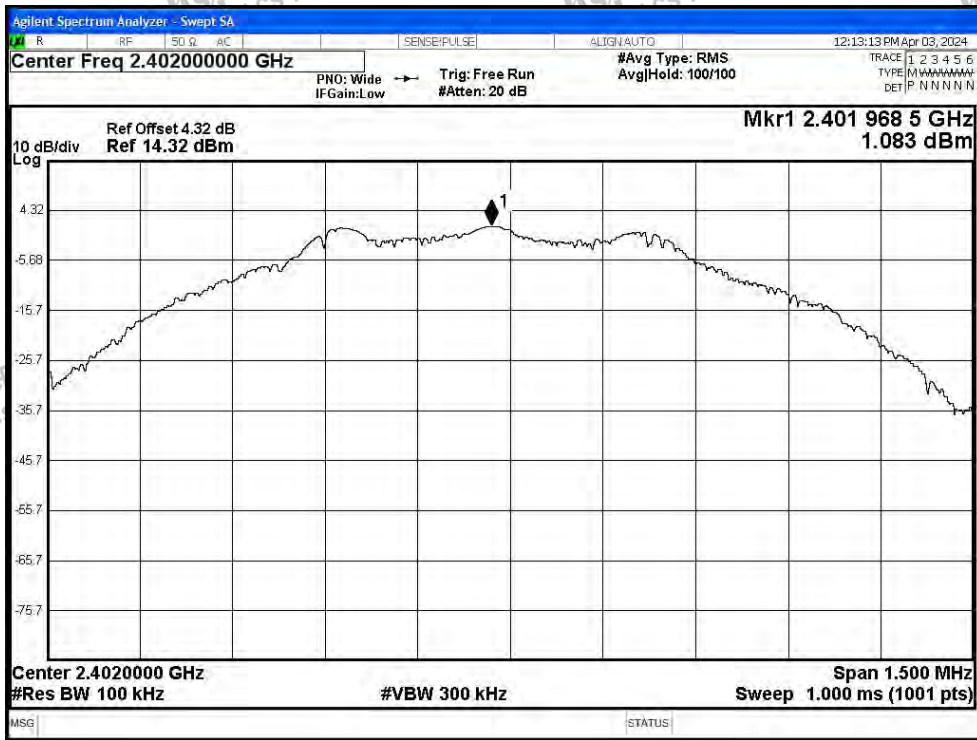
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|--------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE 1M | 2402 | Ant1 | -54.35 | -20 | Pass |
| NVNT | BLE 1M | 2440 | Ant1 | -53.03 | -20 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | -53.06 | -20 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | -55.03 | -20 | Pass |
| NVNT | BLE 2M | 2440 | Ant1 | -45.58 | -20 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | -53.66 | -20 | Pass |



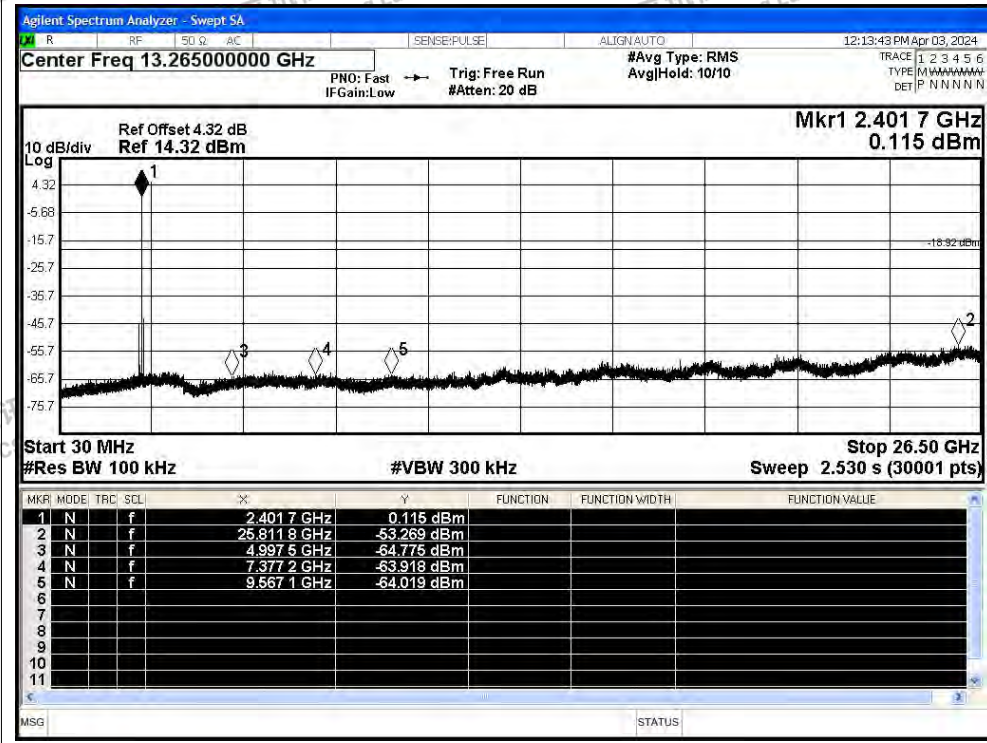


Test Graphs

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



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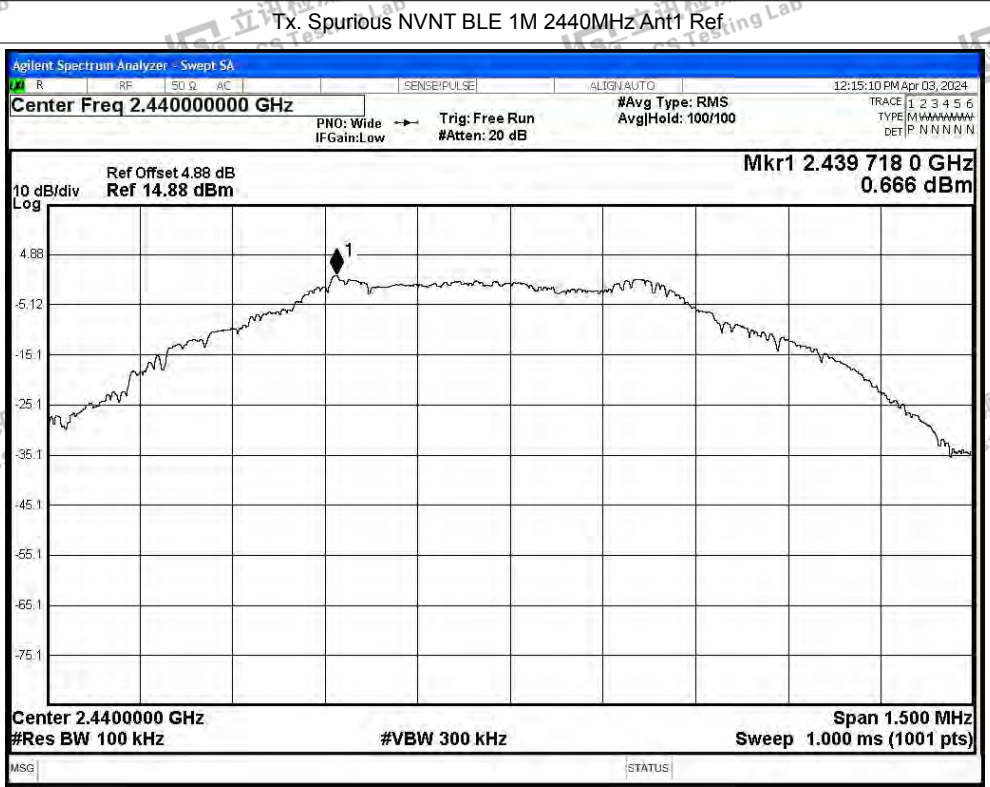
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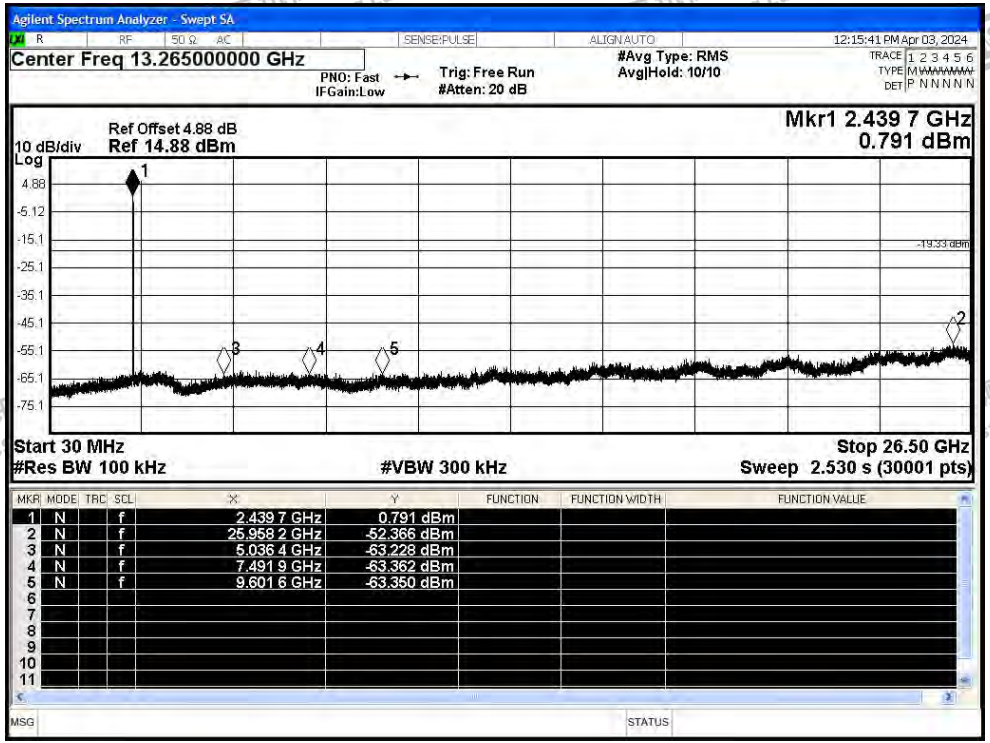
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Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission



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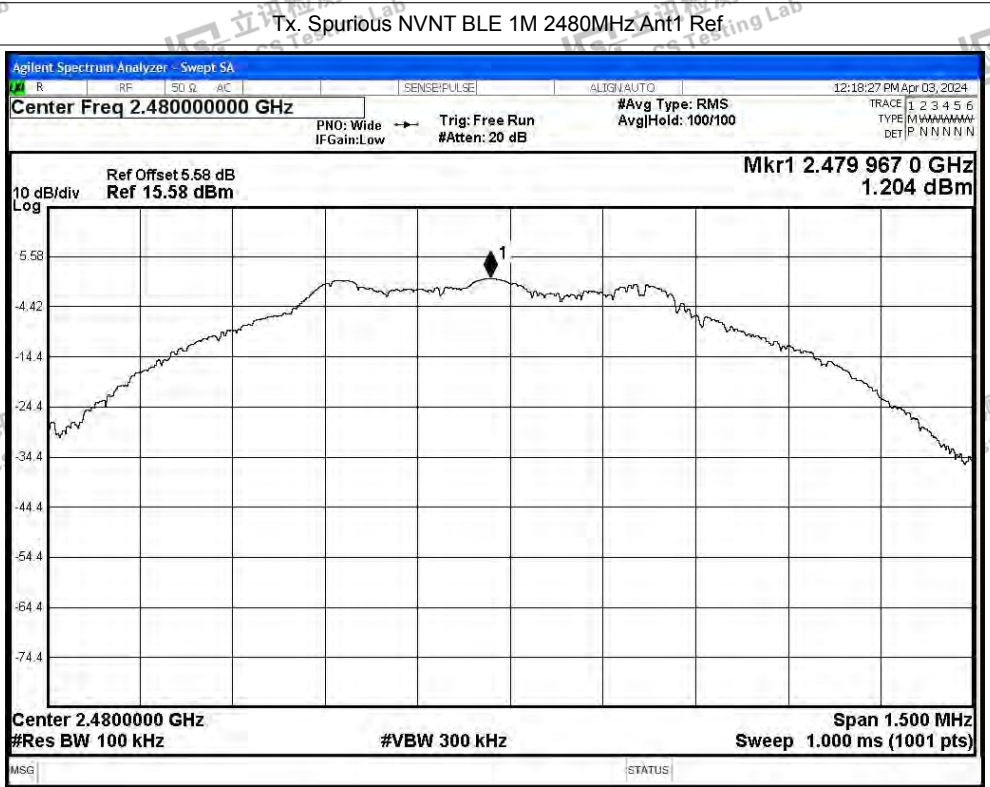
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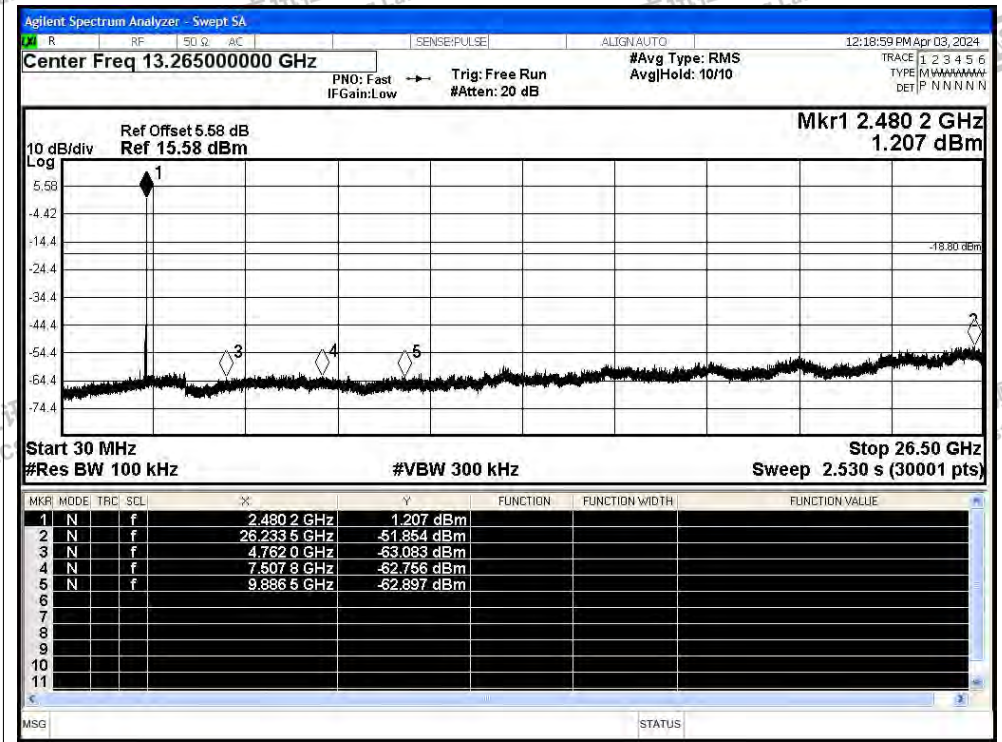
Scan code to check authenticity



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



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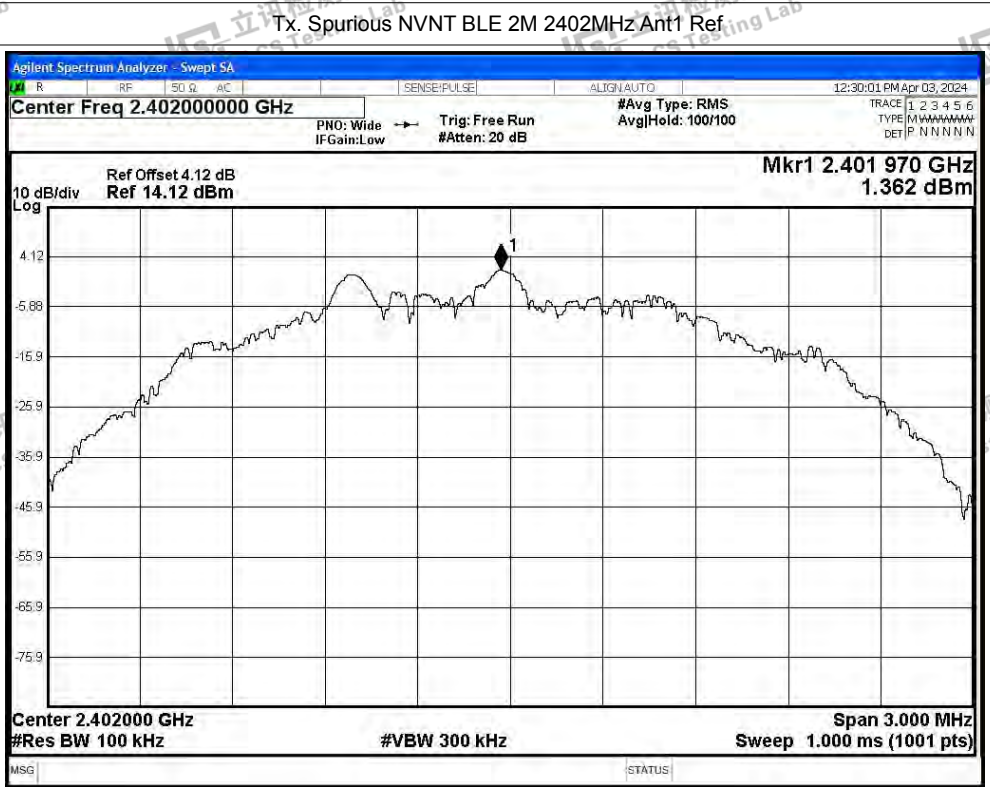
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

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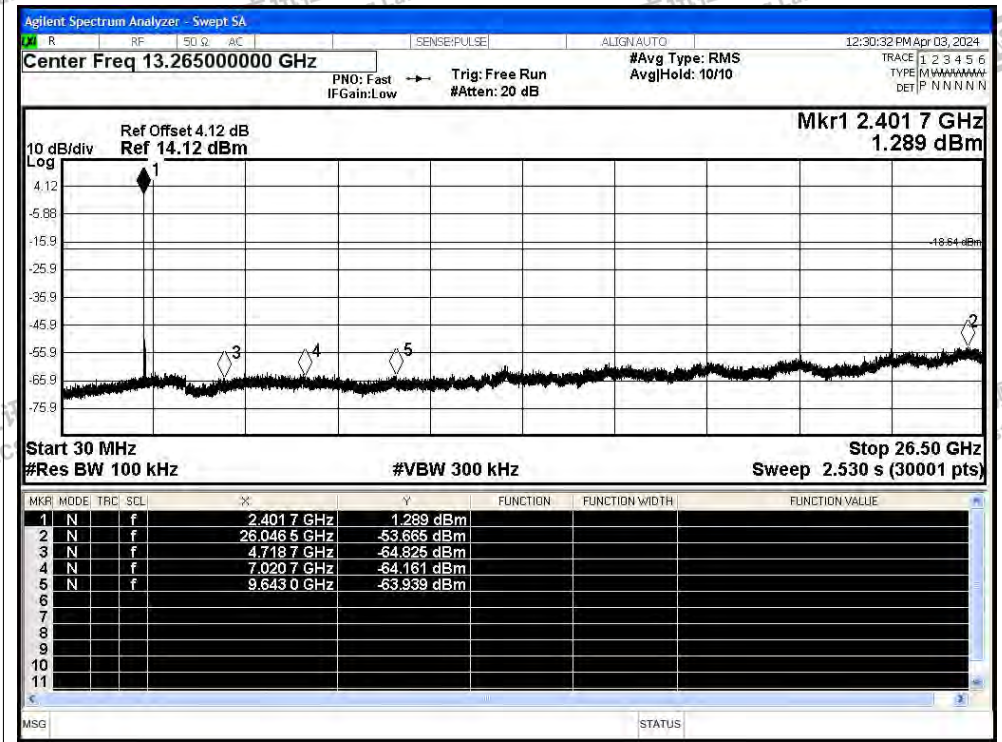
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Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2402MHz Ant1 Emission



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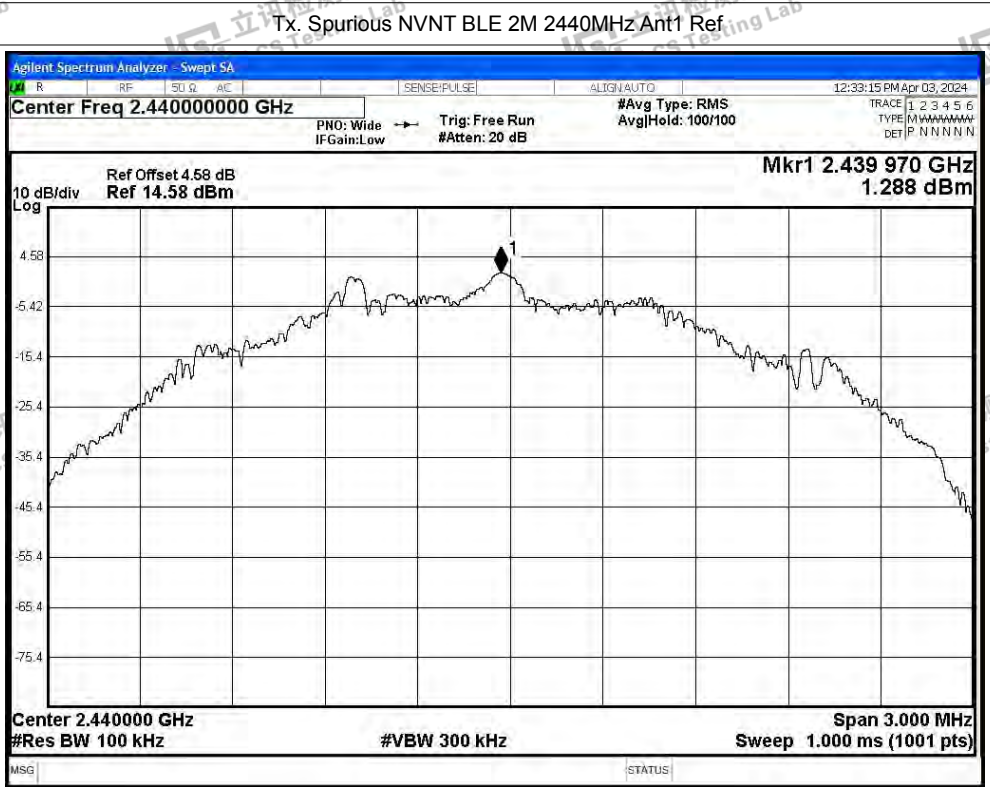
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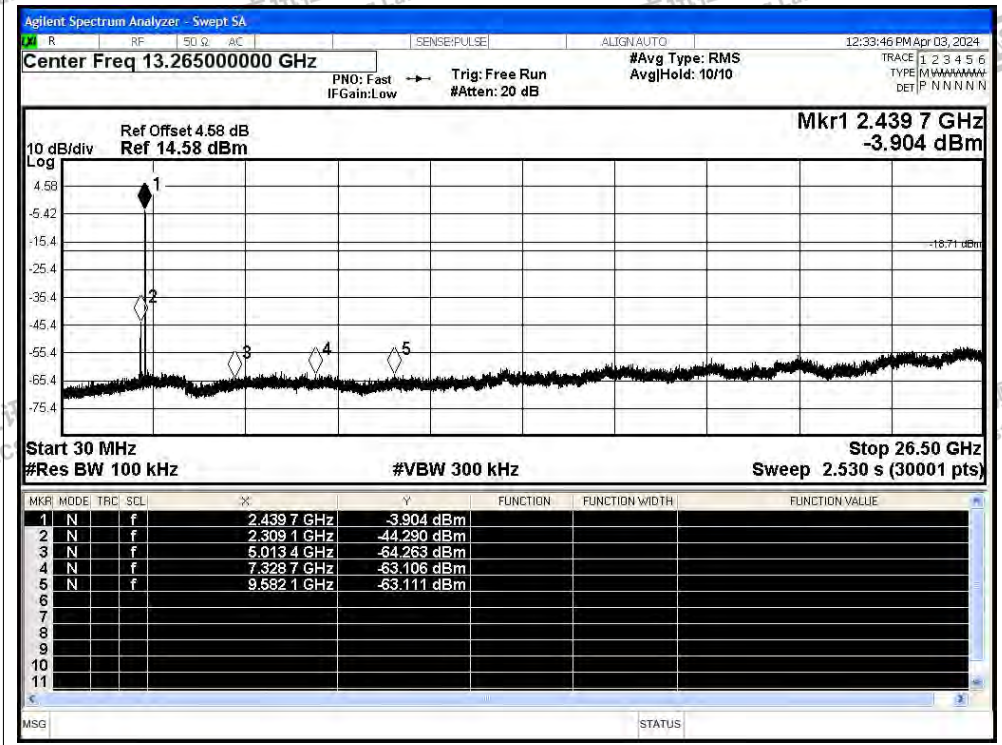
Scan code to check authenticity



Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2440MHz Ant1 Emission



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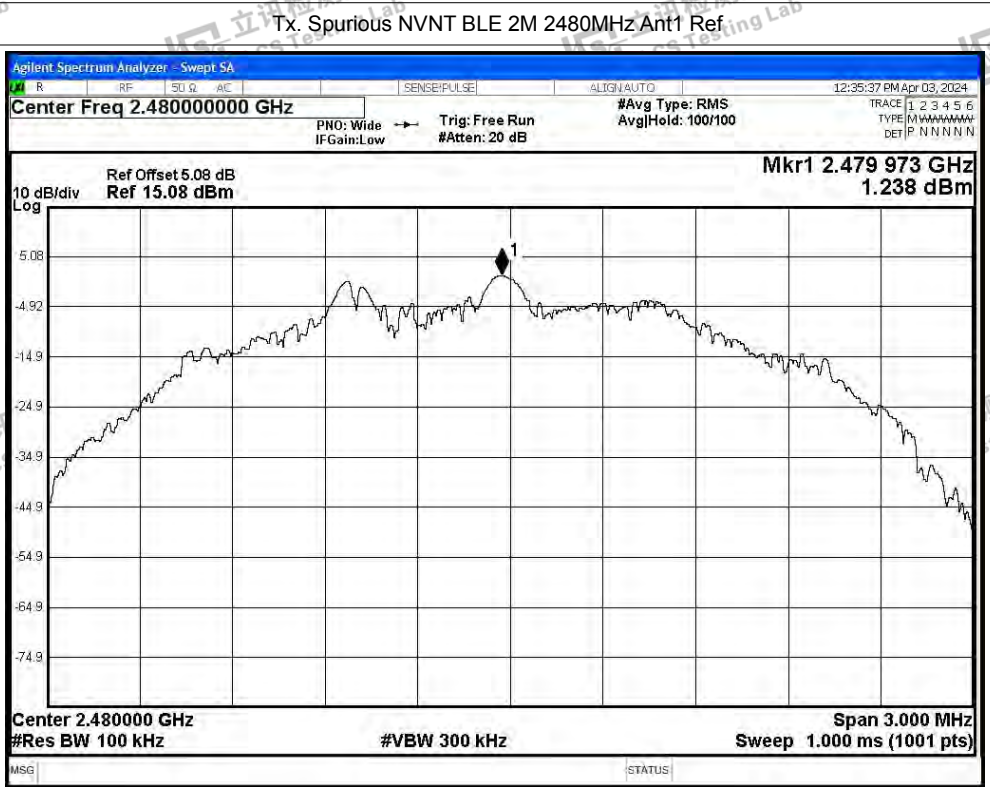
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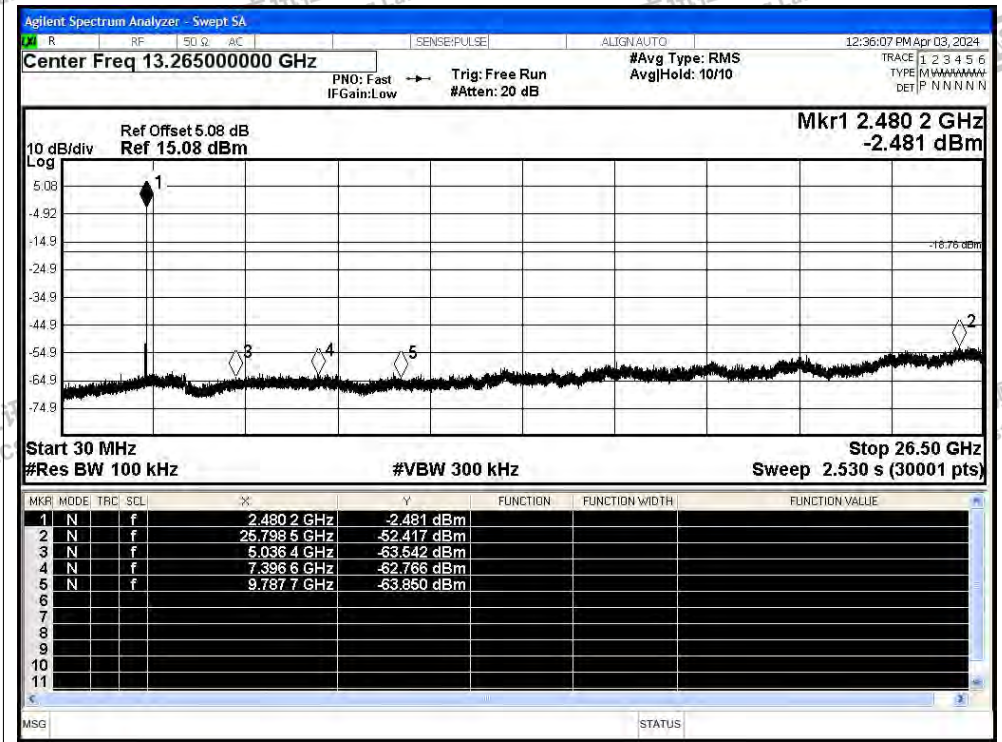
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Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2M 2480MHz Ant1 Emission



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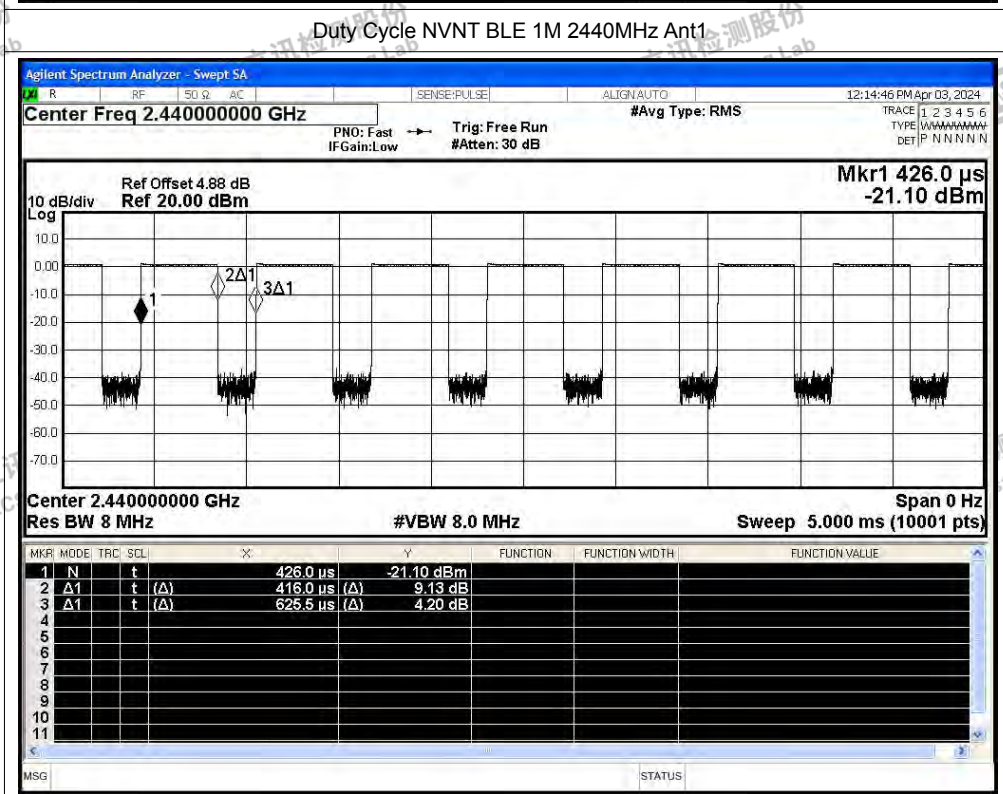
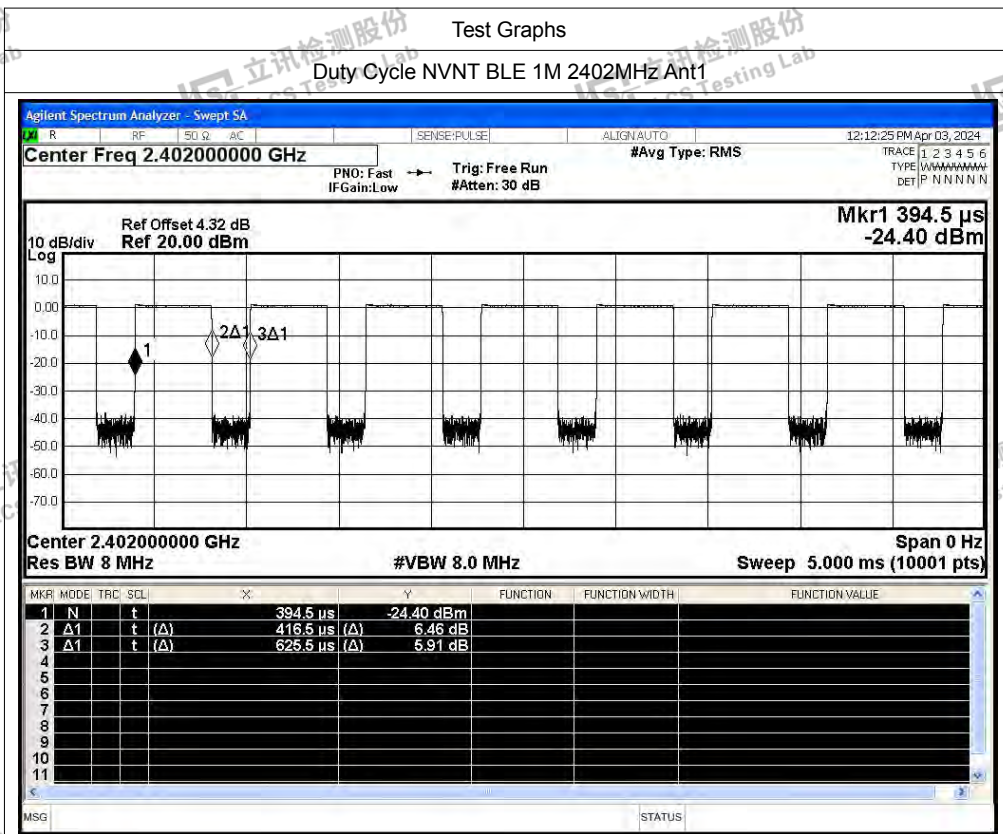


B.6 Duty Cycle

| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|--------|-----------------|---------|----------------|------------------------|-----------|
| NVNT | BLE 1M | 2402 | Ant1 | 66.59 | 1.77 | 2.4 |
| NVNT | BLE 1M | 2440 | Ant1 | 66.51 | 1.77 | 2.4 |
| NVNT | BLE 1M | 2480 | Ant1 | 66.56 | 1.77 | 2.4 |
| NVNT | BLE 2M | 2402 | Ant1 | 37.12 | 4.3 | 4.31 |
| NVNT | BLE 2M | 2440 | Ant1 | 37.12 | 4.3 | 4.31 |
| NVNT | BLE 2M | 2480 | Ant1 | 37.2 | 4.29 | 4.3 |



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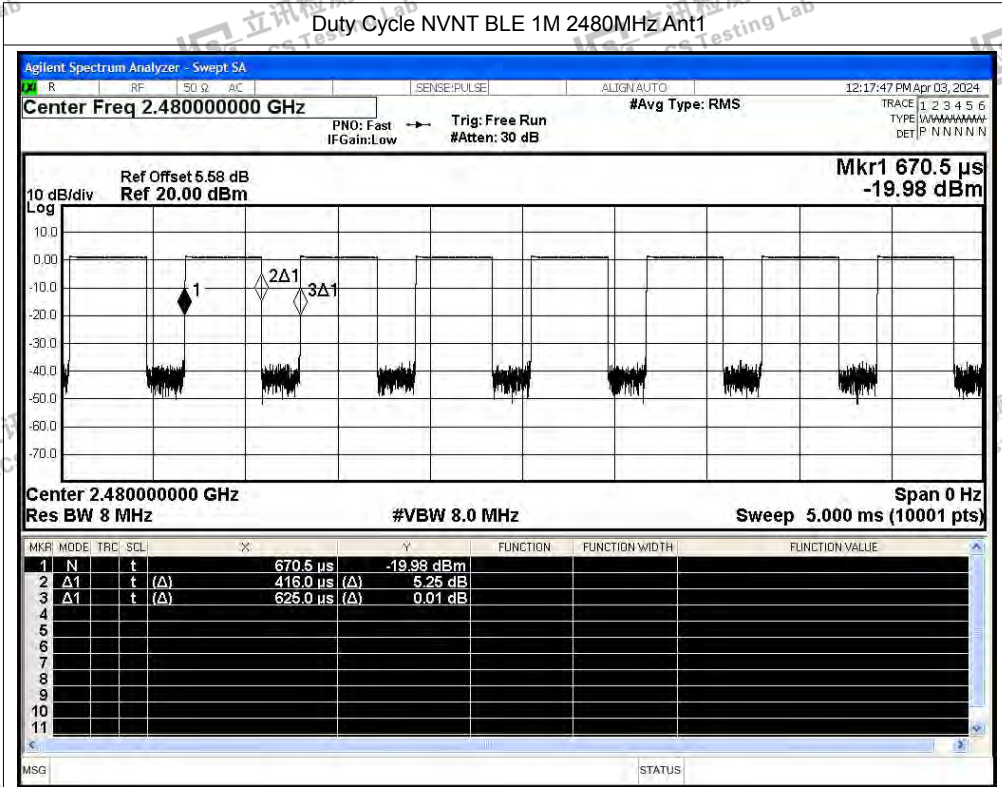
Add: 101, 201 Bldg A & 301 Bldg C, Juji Industrial Park Yabianxueziwei, Shajing Street, Baoan District, Shenzhen, 518000, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

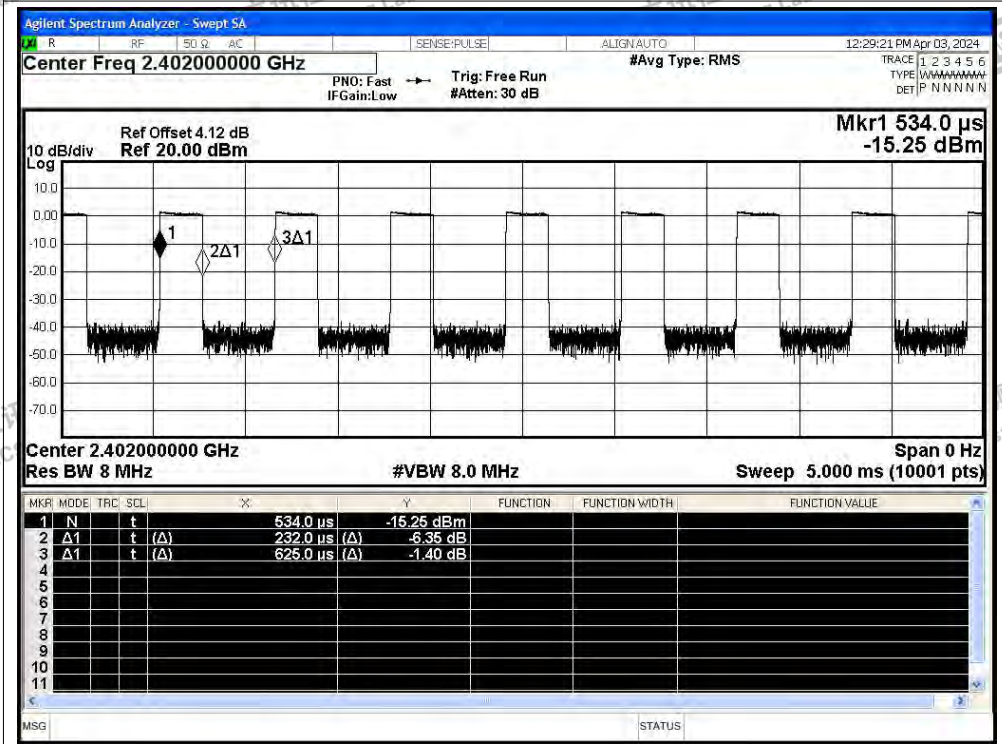
Scan code to check authenticity



Duty Cycle NVNT BLE 1M 2480MHz Ant1



Duty Cycle NVNT BLE 2M 2402MHz Ant1



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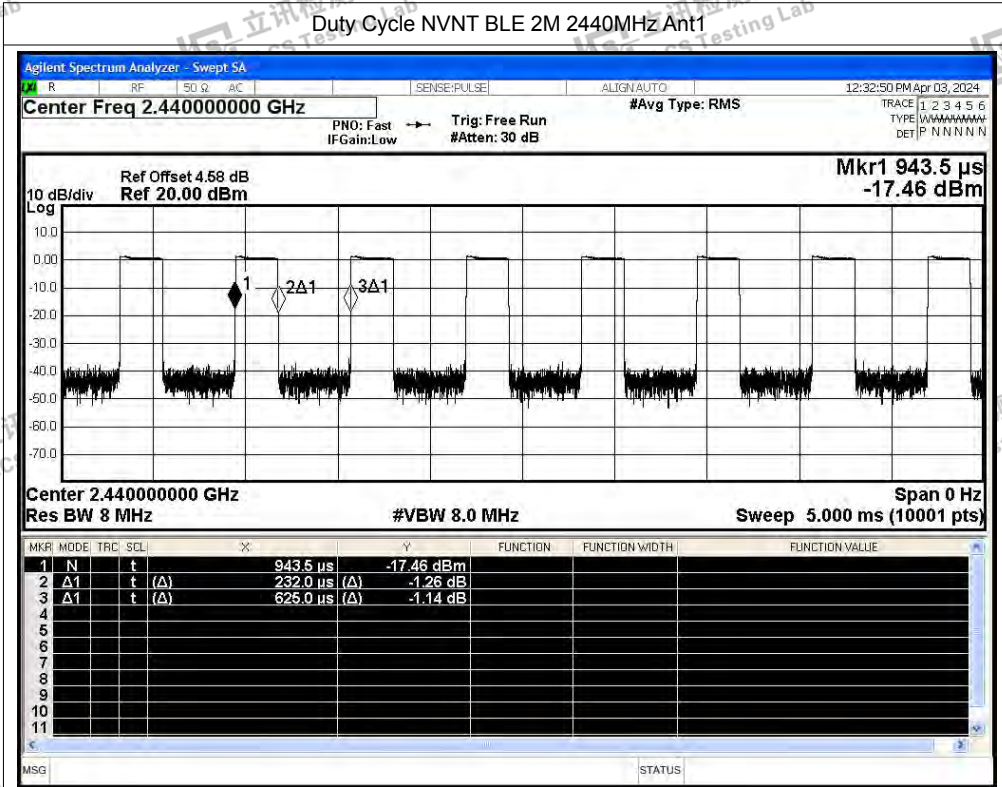
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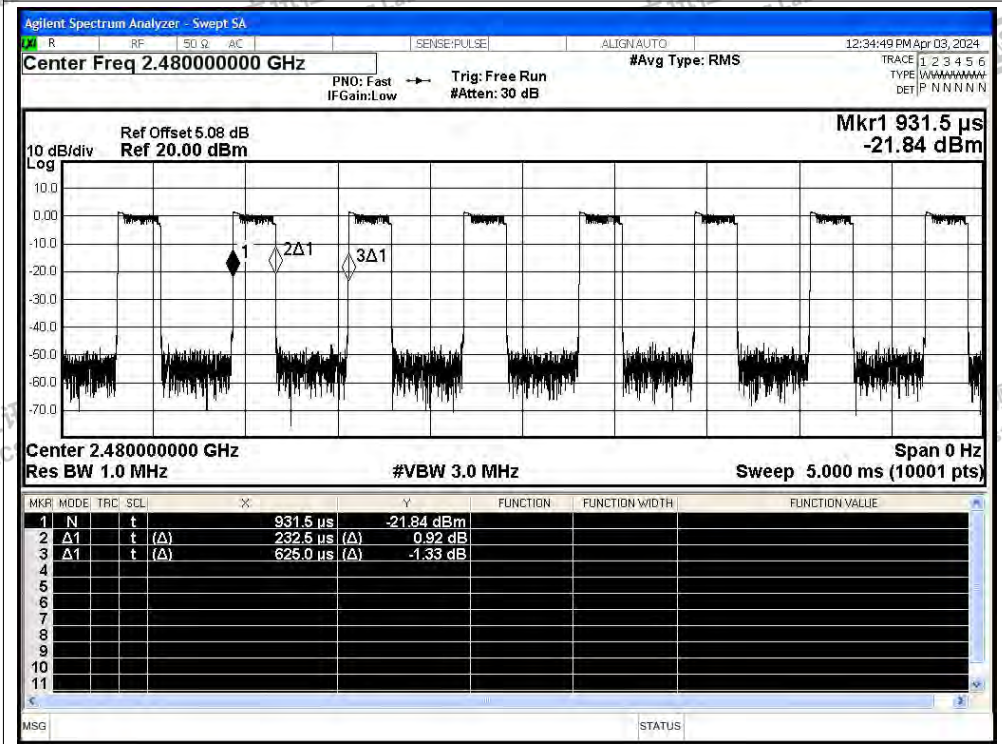
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Duty Cycle NVNT BLE 2M 2440MHz Ant1



Duty Cycle NVNT BLE 2M 2480MHz Ant1



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B.7 Restrict Band

| Condition | Mode | Frequency (MHz) | Antenna | Spur Freq (MHz) | Power (dBm) | Gain (dBi) | Duty Factor (dB) | E (dBuV/m) | Detector | Limit (dBuV/m) | Verdict |
|-----------|-----------|-----------------|---------|-----------------|-------------|------------|------------------|------------|----------|----------------|---------|
| NVNT | BLE 1M | 2402 | Ant1 | 2310 | -48.06 | 2 | - | 49.2 | Peak | 74 | Pass |
| NVNT | BLE 1M | 2402 | Ant1 | 2310 | -56.92 | 2 | 1.77 | 42.11 | Average | 54 | Pass |
| NVNT | BLE 1M | 2402 | Ant1 | 2334.768 | -39.19 | 2 | - | 58.07 | Peak | 74 | Pass |
| NVNT | BLE 1M | 2402 | Ant1 | 2312.208 | -55.26 | 2 | 1.77 | 43.77 | Average | 54 | Pass |
| NVNT | BLE 1M | 2402 | Ant1 | 2390 | -49.26 | 2 | - | 48 | Peak | 74 | Pass |
| NVNT | BLE 1M | 2402 | Ant1 | 2390 | -55.5 | 2 | 1.77 | 43.53 | Average | 54 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 2483.5 | -44.97 | 2 | - | 52.29 | Peak | 74 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 2483.5 | -53.42 | 2 | 1.77 | 45.61 | Average | 54 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 2483.656 | -43.99 | 2 | - | 53.27 | Peak | 74 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 2483.776 | -52.86 | 2 | 1.77 | 46.17 | Average | 54 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 2500 | -46.47 | 2 | - | 50.79 | Peak | 74 | Pass |
| NVNT | BLE 1M | 2480 | Ant1 | 2500 | -55.09 | 2 | 1.77 | 43.94 | Average | 54 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 2310 | -48.55 | 2 | - | 48.71 | Peak | 74 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 2310 | -56.6 | 2 | 4.3 | 44.96 | Average | 54 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 2351.664 | -44.82 | 2 | - | 52.44 | Peak | 74 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 2377.68 | -55.45 | 2 | 4.3 | 46.11 | Average | 54 | Pass |



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| | | | | | | | | | | | |
|------|-----------|------|------|----------|--------|---|------|-------|---------|----|------|
| NVNT | BLE 2M | 2402 | Ant1 | 2390 | -47.57 | 2 | - | 49.69 | Peak | 74 | Pass |
| NVNT | BLE 2M | 2402 | Ant1 | 2390 | -56.33 | 2 | 4.3 | 45.23 | Average | 54 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 2483.5 | -45.2 | 2 | - | 52.06 | Peak | 74 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 2483.5 | -55.12 | 2 | 4.29 | 46.43 | Average | 54 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 2483.608 | -43.48 | 2 | - | 53.78 | Peak | 74 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 2483.752 | -53.68 | 2 | 4.29 | 47.87 | Average | 54 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 2500 | -45.84 | 2 | - | 51.42 | Peak | 74 | Pass |
| NVNT | BLE 2M | 2480 | Ant1 | 2500 | -55.34 | 2 | 4.29 | 46.21 | Average | 54 | Pass |



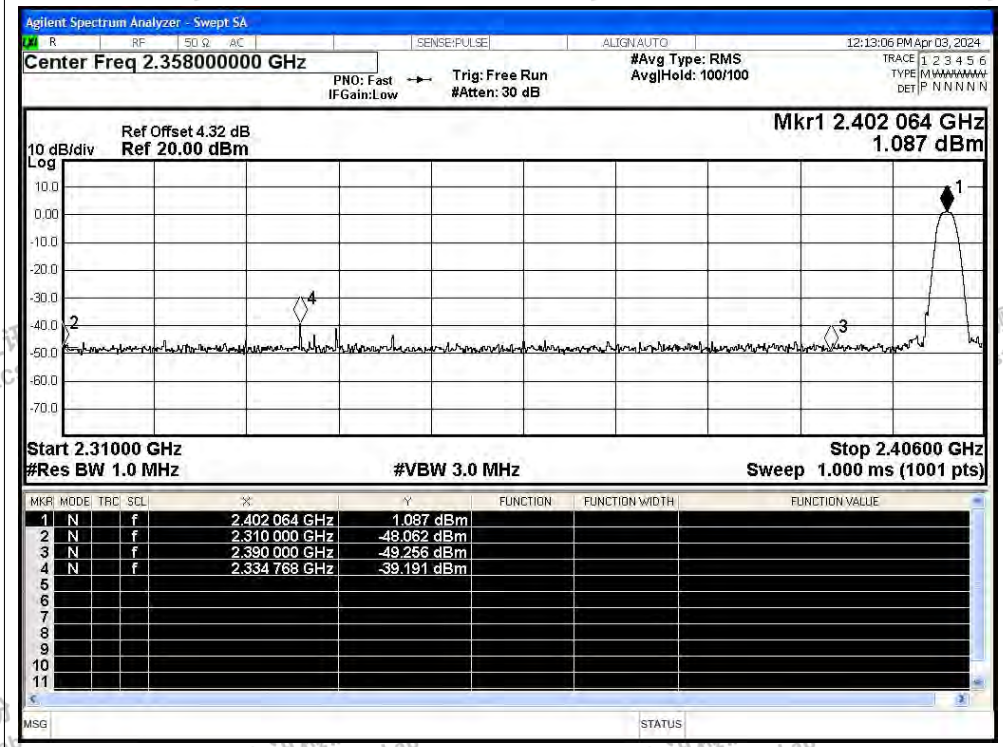
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Test Graphs

Restrict Band NVNT BLE 1M 2402MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2402MHz Ant1 Average

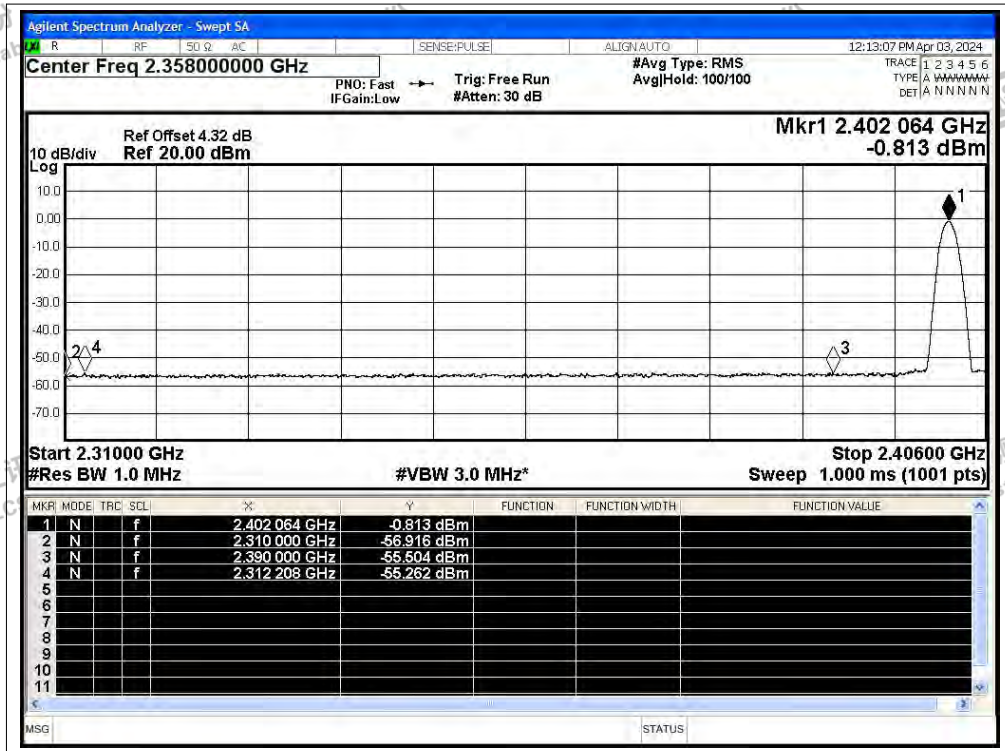


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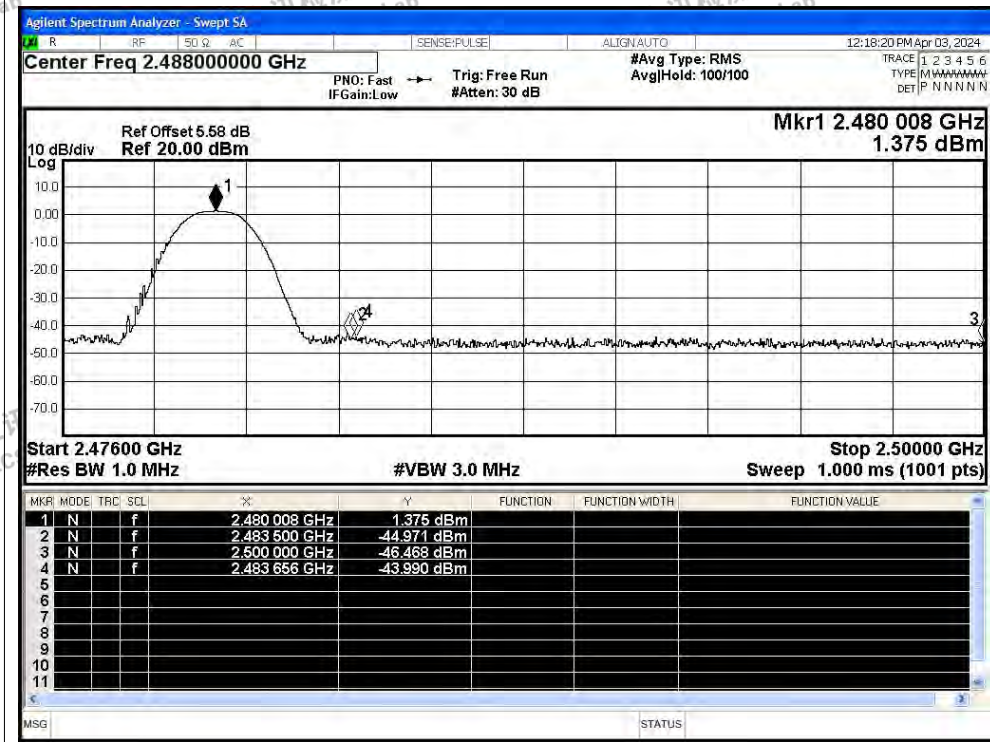
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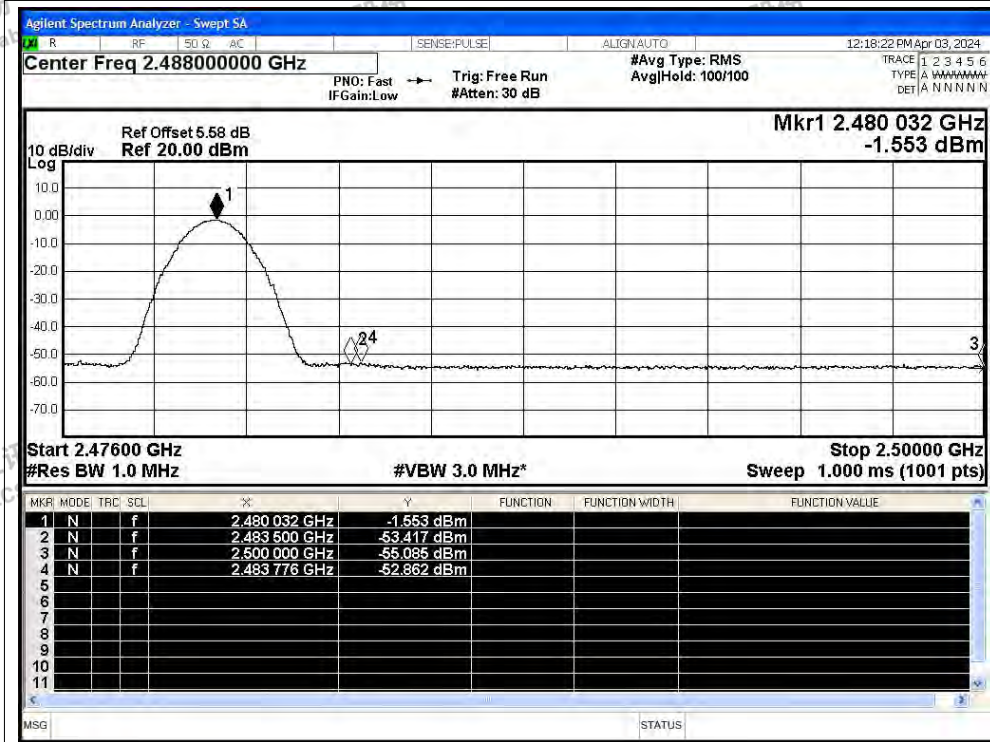




Restrict Band NVNT BLE 1M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 1M 2480MHz Ant1 Average

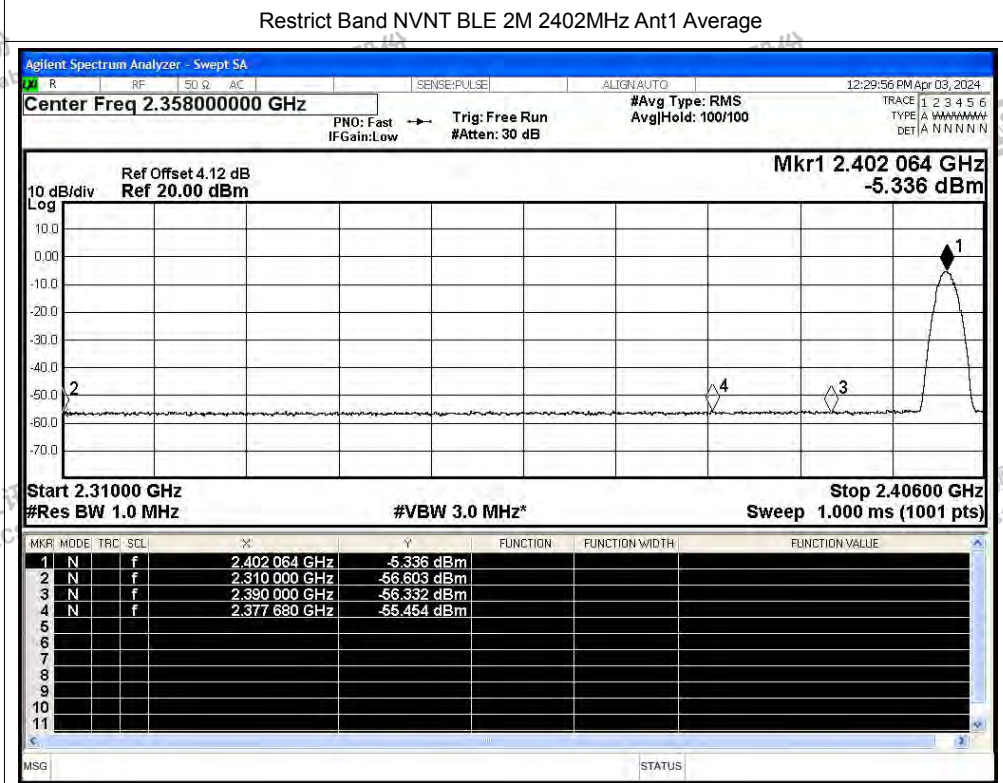
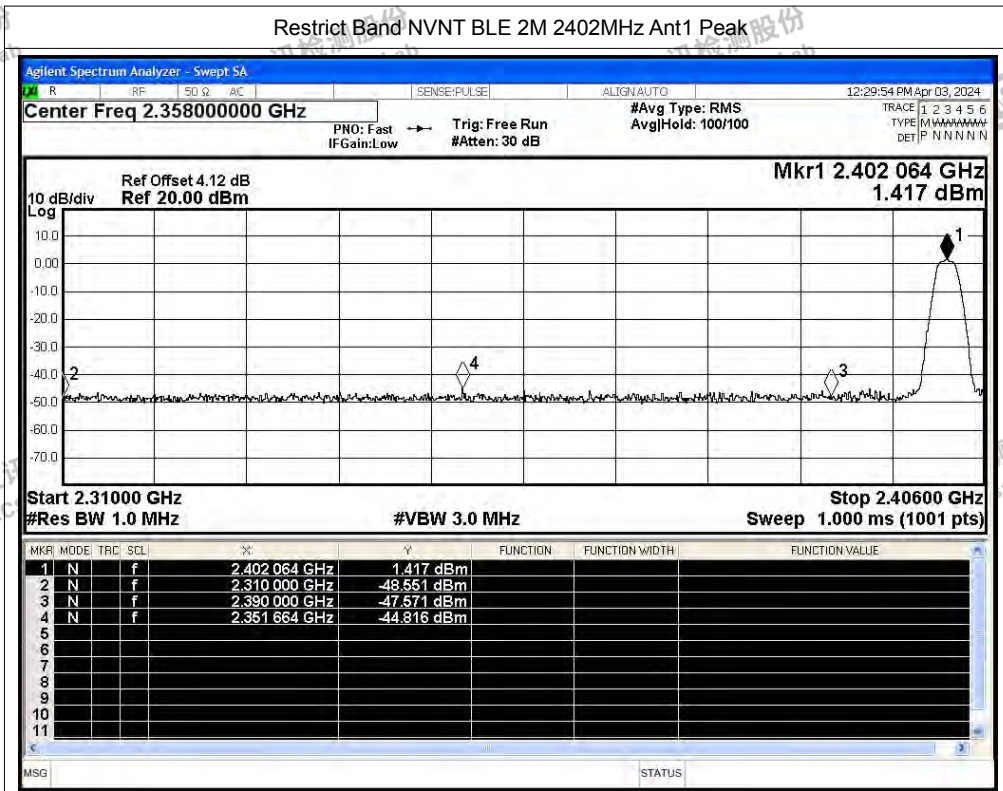


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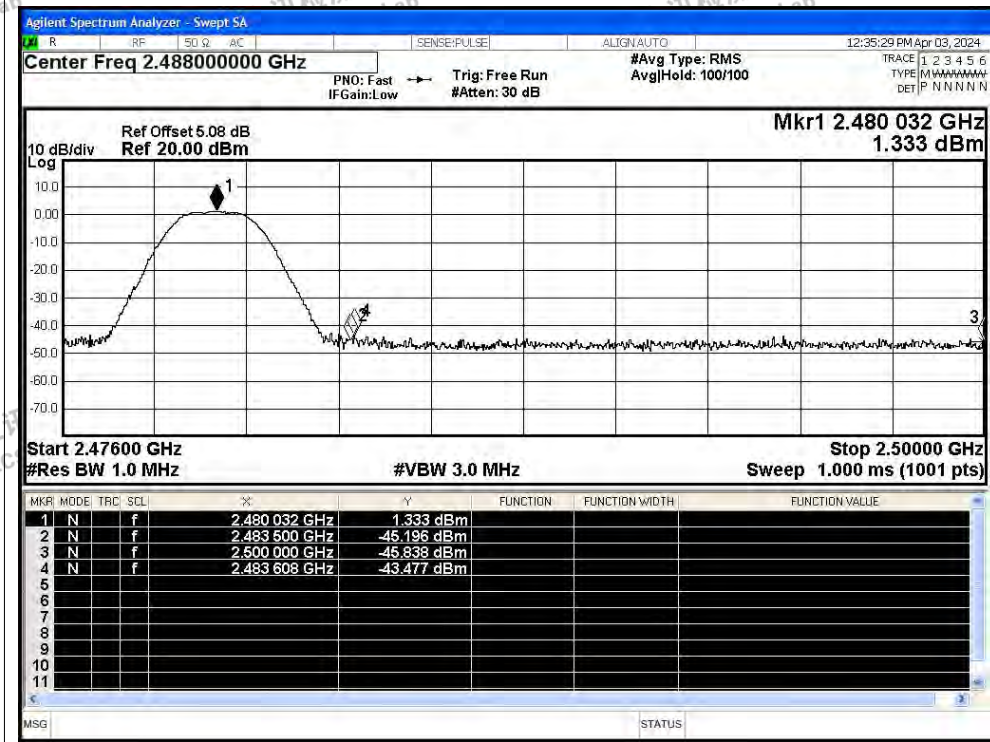
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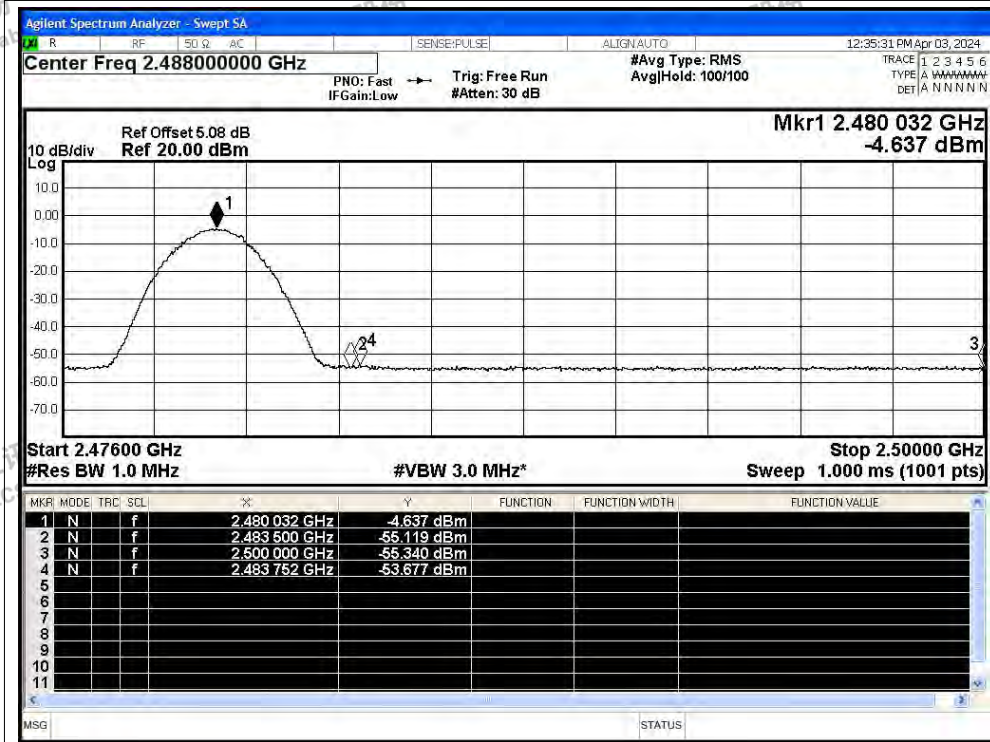
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Restrict Band NVNT BLE 2M 2480MHz Ant1 Peak



Restrict Band NVNT BLE 2M 2480MHz Ant1 Average



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