

FCC AND ISED CERTIFICATION TEST REPORT

FOR

| | | |
|-----------------------------|---|--|
| Applicant | : | Mercku Inc. |
| Address | : | 51 Breithaupt Street, Suite 100 Kitchener, ON Canada, N2H 5G5 |
| Equipment under Test | : | M6 Mesh Wi-Fi Router |
| Model No. | : | M6 |
| Trade Mark | : | MERCKU |
| FCC ID | : | 2APR4-M6 |
| IC | : | 23877-M6 |
| Manufacturer | : | Mercku Technology (China), Inc. |
| Address | : | Block B1, Southern Software Park No.1 Software Road, Tangjia Zhuhai, Guangdong, China |

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park,
Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, **E-mail:** ddt@dgdtd.com, <http://www.dgdtd.com>

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Test Report Declare

| | | |
|-----------------------------|---|---|
| Applicant | : | Mercku Inc. |
| Address | : | 51 Breithaupt Street, Suite 100 Kitchener, ON Canada, N2H 5G5 |
| Equipment under Test | : | M6 Mesh Wi-Fi Router |
| Model No | : | M6 |
| Trade Mark | : | MERCKU |
| Manufacturer | : | Mercku Technology (China), Inc. |
| Address | : | Block B1, Southern Software Park No.1 Software Road, Tangjia Zhuhai, Guangdong, China |

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C, RSS-247 Issue 2 February 2017.

Test procedure used: ANSI C63.10:2013, 789033 D02 General U-NII Test Procedures New Rules v02r01, 662911 D01 Multiple Transmitter Output v02r01

We Declare:

The equipment described above is tested by Dongguan Dongdian Testing Service Co., Ltd and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

| | | | |
|-------------------------|-------------------|----------------------|-------------------------------|
| Report No: | DDT-R20110315-1E4 | | |
| Date of Receipt: | Nov. 11, 2020 | Date of Test: | Nov. 11, 2020 ~ Feb. 05, 2021 |

Prepared By:

Talent Zhang

Talent Zhang/Engineer

Approved By:



Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

| Rev. | Revisions | Issue Date | Revised By |
|------|---------------|---------------|------------|
| --- | Initial issue | Feb. 05, 2021 | |
| | | | |

1. Summary of test results

| The EUT have been tested according to the applicable standards as referenced below. | | |
|---|--|---------|
| Description of Test Item | Standard | Verdict |
| 6/26db Bandwidth and 99% Bandwidth | FCC 15.407 (e) RSS-247 Clause 6.2 | Pass |
| Maximum Conducted Output Power | FCC 15.407 (a) RSS-247 Clause 6.2 | Pass |
| Power Spectral Density | FCC 15.407 (a) RSS-247 Clause 6.2 | Pass |
| Frequency Stability Measurement | FCC 15.407 (g) | Pass |
| Emissions in restricted frequency bands | FCC 15.407 (a) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9 | Pass |
| Band Edge Compliance | FCC 15.407 (a) FCC 15.209 FCC 15.205 RSS-247 Clause 6.2 RSS-GEN Clause 8.9 | Pass |
| Power Line Conducted Emission | FCC 15.207 RSS-GEN Clause 8.8 | Pass |
| Antenna requirement | FCC 15.203 RSS-GEN Clause 8.3 | Pass |
| Dynamic Frequency Selection | FCC 15.407 (h) RSS-247 Clause 6.3 | Pass |

2. General Test Information

2.1. Description of EUT

| | |
|--------------------------|--|
| EUT* Name | : M6 Mesh Wi-Fi Router |
| Model Number | : M6 |
| EUT function description | : Please reference user manual of this device |
| Power supply | : DC 12V, 1.5A from external AC Adapter |
| Radio Technology | : IEEE 802.11a/n/ac/ax |
| FCC Operation frequency | : IEEE 802.11a: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11n HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11ac HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ac HT80: 5210MHz, 5775MHz IEEE 802.11ax HT20: 5180MHz-5240MHz, 5745MHz-5825MHz IEEE 802.11ax HT40: 5190MHz-5230MHz, 5755MHz-5755MHz IEEE 802.11ax HT80: 5210MHz, 5775MHz |
| Modulation | : IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac (HT20/40/80): OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ax (HT20/40/80): OFDMA (1024QAM, 256QAM, 64QAM, 16QAM, QPSK, BPSK) |
| Transmitter rate | : IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: 14.4, 28.9, 43.3, 57.8, 86.7, 115.6, 130.0, 144.4 Mbps IEEE 802.11n HT40: 30, 60, 90, 120, 180, 240, 270, 300 Mbps IEEE 802.11ac HT20: 14.4, 28.8, 43.4, 57.8, 86.6, 115.6, 130, 144.4, 173.4 Mbps IEEE 802.11ac HT40: 30, 60, 90, 120, 180, 240, 270, 300, 360, 400 Mbps IEEE 802.11ac HT80: 65, 130, 195, 260, 390, 520, 585, 650, 780, 866.6 Mbps IEEE 802.11ax HT20: 17.2, 34.4, 51.6, 68.8, 103.2, 137.6, 154.9, 172.1, 206.5, 229.2, 258.1, 286.8Mbps IEEE 802.11ax HT40: 34.4, 68.8, 103.2, 137.6, 206.5, 275.3, 309.7, 344.1, 412.9, 458.8, 516.2, 573.5 Mbps IEEE 802.11ax HT80: 72.1, 144.1, 216.2, 288.2, 432.4, 576.5, 648.5, 720.6, 864.7, 960.8, 1080.9, 1201Mbps |
| Antenna Type | : Dedicated antenna, maximum PK gain: 4 dBi |
| Sample Type | : Series production |
| Serial Number | : N/A |

Note 1: EUT is the ab. of equipment under test.

Note 2: EUT without DFS detection.

| Antenna information | | | |
|---------------------|-----------|-----------|------|
| | Ant1 gain | Ant2 gain | MIMO |
| IEEE 802.11a | 4 | 4 | / |
| IEEE 802.11n HT20 | 4 | 4 | 7 |

| | | | |
|---------------------|---|---|---|
| IEEE 802.11n HT40 | 4 | 4 | 7 |
| IEEE 802.11ac VHT20 | 4 | 4 | 7 |
| IEEE 802.11ac VHT40 | 4 | 4 | 7 |
| IEEE 802.11ac VHT80 | 4 | 4 | 7 |
| IEEE 802.11ax VHT20 | 4 | 4 | 7 |
| IEEE 802.11ax VHT40 | 4 | 4 | 7 |
| IEEE 802.11ax VHT80 | 4 | 4 | 7 |

2.2. Accessories of EUT

| Description of Accessories | Manufacturer | Model number | Description | Remark |
|----------------------------|---|-------------------|-------------|--|
| AC/DC ADAPTER | Shenzhen Keyu Power Supply Technology Co., Ltd. | KA1801A-1201500BS | N/A | INPUT: 100 – 240V ~ 50/60 Hz 0.55A OUTPUT: 12V 1.5A 18.0W |
| AC/DC ADAPTER | Shenzhen Keyu Power Supply Technology Co., Ltd. | KA1801A-1201500US | N/A | INPUT: 100 – 240V ~ 50/60 Hz 0.55A OUTPUT: 12V 1.5A 18.0W |
| AC/DC ADAPTER | Shenzhen Keyu Power Supply Technology Co., Ltd. | KA1801A-1201500EU | N/AS | INPUT: 100 – 240V ~ 50/60 Hz 0.55A OUTPUT: 12V 1.5A 18.0W |

2.3. Assistant equipment used for test

| Assistant equipment | Manufacturer | Model number | EMC Compliance | SN |
|---------------------|-------------------------|--------------|----------------|----------|
| Notebook | Lenovo Beijing Co. Ltd. | ThinkPad | FCC/CE | TP00015A |

2.4. Block diagram of EUT configuration for test



Run a special test software “QRCT.exe” provided by manufacturer to control EUT work in Continuous Tx mode, and select test channel, wireless mode and data rate.

| Tested mode, channel, and data rate information | | | | | |
|---|------------------|------|--------------------------------|---------------|--------------------|
| Mode | Setting Tx Power | | data rate (Mbps) (see Note) | Channel | Frequency (MHz) |
| | Ant1 | Ant2 | | | |
| IEEE 802.11a | 15 | 15 | 54 | Low: CH36 | 5180 |
| | 15 | 15 | 54 | Middle: CH40 | 5200 |
| | 15 | 15 | 54 | High: CH48 | 5240 |
| | / | / | 54 | Low: CH149 | 5745 |
| | / | / | 54 | Middle: CH157 | 5785 |
| | / | / | 54 | High: CH165 | 5825 |
| IEEE 802.11n HT20 | 15 | 15 | MCS 15 | Low: CH36 | 5180 |
| | 15 | 15 | MCS 15 | Middle: CH40 | 5200 |
| | 15 | 15 | MCS 15 | High: CH48 | 5240 |
| | / | / | MCS 15 | Low: CH149 | 5745 |
| | / | / | MCS 15 | Middle: CH157 | 5785 |
| | / | / | MCS 15 | High: CH165 | 5825 |
| IEEE 802.11n HT40 | 11 | 11 | MCS 15 | Low: CH38 | 5190 |
| | 11 | 11 | MCS 15 | Middle: CH46 | 5230 |
| | / | / | MCS 15 | Middle: CH151 | 5755 |
| | / | / | MCS 15 | High: CH159 | 5795 |
| IEEE 802.11ac HT20 | 15 | 15 | MCS 9 | Low: CH36 | 5180 |
| | 15 | 15 | MCS 9 | Middle: CH40 | 5200 |
| | 15 | 15 | MCS 9 | High: CH48 | 5240 |
| | / | / | MCS 9 | Low: CH149 | 5745 |
| | / | / | MCS 9 | Middle: CH157 | 5785 |
| | / | / | MCS 9 | High: CH165 | 5825 |
| IEEE 802.11ac HT40 | 11 | 11 | MCS 9 | Low: CH38 | 5190 |
| | 11 | 11 | MCS 9 | Middle: CH46 | 5230 |
| | / | / | MCS 9 | Middle: CH151 | 5755 |
| | / | / | MCS 9 | High: CH159 | 5795 |
| IEEE 802.11ac HT80 | 11 | 11 | MCS 9 | CH42 | 5210 |
| | / | / | MCS 9 | CH155 | 5775 |
| IEEE 802.11ax HT20 | 15 | 15 | MCS 11 | Low: CH36 | 5180 |
| | 15 | 15 | MCS 11 | Middle: CH40 | 5200 |
| | 15 | 15 | MCS 11 | High: CH48 | 5240 |
| | / | / | MCS 11 | Low: CH149 | 5745 |
| | / | / | MCS 11 | Middle: CH157 | 5785 |
| | / | / | MCS 11 | High: CH165 | 5825 |
| IEEE 802.11ax HT40 | 11 | 11 | MCS 11 | Low: CH38 | 5190 |
| | 11 | 11 | MCS 11 | Middle: CH46 | 5230 |
| | / | / | MCS 11 | Middle: CH151 | 5755 |
| | / | / | MCS 11 | High: CH159 | 5795 |
| IEEE 802.11ax HT80 | 11 | 11 | MCS 11 | CH42 | 5210 |
| | / | / | MCS 11 | CH155 | 5775 |

| RU Configuration: | | |
|---|------------------------|---------------|
| IEEE 802.11ax HT20 | Resource Unit | 242 Tone(20M) |
| | Specific Resource Unit | 61 |
| IEEE 802.11ax HT40 | Resource Unit | 484 Tone(40M) |
| | Specific Resource Unit | 65 |
| IEEE 802.11ax HT80 | Resource Unit | 996 Tone(80M) |
| | Specific Resource Unit | 67 |
| <p>Note 1: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.</p> <p>Note 2: "f" is the default setting power.</p> <p>Note 3: IEEE 802.11ax mode only supports the highest tone, so the highest tone was evaluated and measured inside report.</p> | | |

2.5. Deviations of test standard

No Deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|--------------------|------------|
| Temperature range: | 21-25℃ |
| Humidity range: | 40-75% |
| Pressure range: | 86-106 kPa |

2.7. Test laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com

CNAS Registration No. CNAS L6451; A2LA Certificate Number: 3870.01;

FCC Designation Number: CN1182; FCC Test Firm Registration Number: 540522

Industry Canada Site Registration Number: 10288A-1

2.8. Measurement uncertainty

| Test Item | Uncertainty |
|---|---------------------------------|
| Bandwidth | 1.1% |
| Peak Output Power (Conducted) (Spectrum analyzer) | 0.86 dB (10 MHz ≤ f < 3.6 GHz); |
| | 1.38 dB (3.6 GHz ≤ f < 8 GHz) |
| Peak Output Power (Conducted) (Power Sensor) | 0.74 dB |
| Power Spectral Density | 0.74 dB (10 MHz ≤ f < 3.6 GHz); |
| | 1.38 dB (3.6 GHz ≤ f < 8 GHz) |

| | |
|---|--|
| Frequencies Stability | 6.7 x 10 ⁻⁸ (Antenna couple method) |
| | 5.5 x 10 ⁻⁸ (Conducted method) |
| Conducted spurious emissions | 0.86 dB (10 MHz ≤ f < 3.6GHz); |
| | 1.40 dB (3.6 GHz ≤ f < 8 GHz) |
| | 1.66 dB (8 GHz ≤ f < 22 GHz) |
| Uncertainty for radio frequency (RBW<20kHz) | 3x10 ⁻⁸ |
| Temperature | 0.4°C |
| Humidity | 2% |
| Uncertainty for Radiation Emission test (30MHz-1GHz) | 4.70 dB (Antenna Polarize: V) |
| | 4.84 dB (Antenna Polarize: H) |
| Uncertainty for Radiation Emission test (1GHz-40GHz) | 4.10 dB (1-6 GHz) |
| | 4.40 dB (6 GHz-18 GHz) |
| | 3.54 dB (18 GHz-26 GHz) |
| | 4.30 dB (26 GHz-40 GHz) |
| Uncertainty for Power line conduction emission test | 3.32 dB (150 kHz-30 MHz) |
| Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2. | |

3. Equipment Used During Test

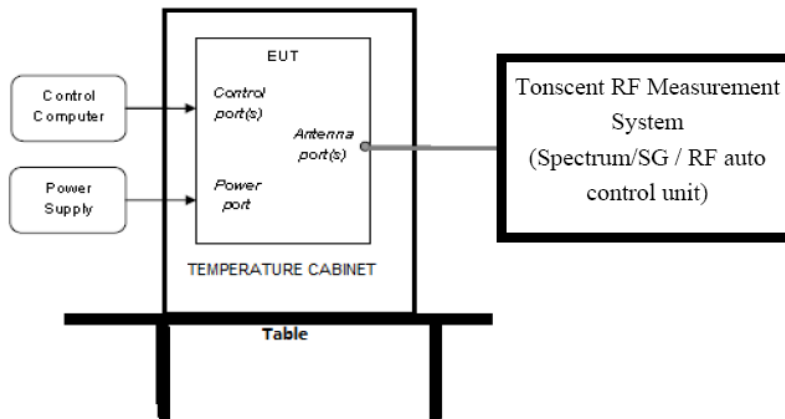
| Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|--------------|-------------|------------|---------------|---------------|
| <input type="checkbox"/> RF Connected Test (Tonscend RF Measurement System 1#) | | | | | |
| Spectrum analyzer | R&S | FSU26 | 101272 | Jul. 01, 2020 | 1 Year |
| Spectrum analyzer | Agilent | N9020D | MY49100362 | Sep. 28, 2020 | 1 Year |
| Wideband Radio Communication tester | R&S | CMW500 | 117491 | Jul. 01, 2020 | 1 Year |
| Vector Signal Generator | Agilent | E8267D | US49060192 | Sep. 24, 2020 | 1 Year |
| Vector Signal Generator | Agilent | N5182A | MY48180737 | Jul. 01, 2020 | 1 Year |
| Power Sensor | Agilent | U2021XA | MY55150010 | Jul. 01, 2020 | 1 Year |
| Power Sensor | Agilent | U2021XA | MY55150011 | Jul. 01, 2020 | 1 Year |
| DC Power Source | MATRIS | MPS-3005L-3 | D813058W | Apr. 25, 2020 | 1 Year |
| RF Cable | Micable | C10-01-01-1 | 100309 | Sep. 28, 2020 | 1 Year |
| Temp&Humi Programmable | ZHIXIANG | ZXGDJS-150L | ZX170110-A | Jul. 01, 2020 | 1 Year |
| Test Software | JS Tonscend | JS1120-3 | Ver.2.7 | N/A | N/A |
| <input checked="" type="checkbox"/> RF Connected Test (Tonscend RF Measurement System 2#) | | | | | |
| Spectrum analyzer | R&S | FSU26 | 200071 | Sep. 25, 2020 | 1 Year |
| Spectrum analyzer | Agilent | N9020D | MY49100362 | Sep. 28, 2020 | 1 Year |
| Wideband Radio Communication tester | R&S | CMW500 | 117491 | Jul. 01, 2020 | 1 Year |
| Vector Signal Generator | Agilent | N5182A | MY19060405 | Jul. 01, 2020 | 1 Year |
| Vector Signal Generator | Agilent | N5182A | MY48180912 | Jul. 01, 2020 | 1 Year |
| RF Control Unit | Tonsend | JS0806-2 | DDT-ZC0144 | Jul. 01, 2020 | 1 Year |

| | | | | | |
|---|-------------|------------------|-------------------|---------------|--------|
| | | | 9 | | |
| DC Power Source | MATRIS | MPS-3005L-3 | D813058W | Apr. 25, 2020 | 1 Year |
| RF Cable | Micable | C10-01-01-1 | 100309 | Sep. 28, 2020 | 1 Year |
| Temp&Humi Programmable | ZHIXIANG | ZXGDJS-150L | ZX170110-A | Jul. 01, 2020 | 1 Year |
| Test Software | JS Tonscend | JS1120-3 | Ver.2.7 | N/A | N/A |
| <input type="checkbox"/> Radiation 1#chamber | | | | | |
| EMI Test Receiver | R&S | ESU8 | 100316 | Sep. 24, 2020 | 1 Year |
| Spectrum analyzer | Agilent | E4447A | MY50180031 | Jul. 01, 2020 | 1 Year |
| Trilog Broadband Antenna | Schwarzbeck | VULB9163 | 9163-462 | Nov. 13, 2020 | 1 Year |
| Active Loop antenna | Schwarzbeck | FMZB-1519 | 1519-038 | Nov. 18, 2020 | 1 Year |
| Double Ridged Horn Antenna | R&S | HF907 | 100276 | Nov. 13, 2020 | 1 Year |
| Broad Band Horn Antenna | Schwarzbeck | BBHA 9170 | 790 | Apr. 11, 2020 | 1 Year |
| Pre-amplifier | A.H. | PAM-0118 | 360 | Sep. 28, 2020 | 1 Year |
| RF Cable | HUBSER | CP-X2+ CP-X1 | W11.03+ W12.02 | Sep. 24, 2020 | 1 Year |
| RF Cable | N/A | 5m+6m+1m | 06270619 | Sep. 30, 2020 | 1 Year |
| MI Cable | HUBSER | C10-01-01-1 M | 1091629 | Sep. 30, 2020 | 1 Year |
| Test software | Audix | E3 | V 6.11111b | N/A | N/A |
| <input checked="" type="checkbox"/> Radiation 2#chamber | | | | | |
| EMI Test Receiver | R&S | ESCI | 101364 | Sep. 28, 2020 | 1 Year |
| Spectrum analyzer | Agilent | E4447A | MY50180031 | Jul. 01, 2020 | 1 Year |
| Trilog Broadband Antenna | Schwarzbeck | VULB 9163 | 9163-994 | Nov. 13, 2020 | 1 Year |
| Active Loop antenna | Schwarzbeck | FMZB-1519 | 1519-038 | Nov. 18, 2020 | 1 Year |
| Double Ridged Horn Antenna | Schwarzbeck | BBHA9120 | 02108 | Jul. 11, 2020 | 1 Year |
| Broad Band Horn Antenna | Schwarzbeck | BBHA 9170 | 790 | Apr. 11, 2020 | 1 Year |
| Pre-amplifier | TERA-MW | TRLA-0040 G35 | 1013 03 | Sep. 28, 2020 | 1 Year |
| RF Cable | N/A | 14+1.5m | 06270619 | Sep. 28, 2020 | 1 Year |
| Test software | Audix | E3 | V 6.11111b | N/A | N/A |
| <input checked="" type="checkbox"/> Power Line Conducted Emissions Test 1# | | | | | |
| EMI Test Receiver | R&S | ESU8 | 100316 | Sep. 24, 2020 | 1 Year |
| LISN 1 | R&S | ENV216 | 101109 | Sep. 28, 2020 | 1 Year |
| LISN 2 | R&S | ESH2-Z5 | 100309 | Sep. 28, 2020 | 1 Year |
| Pulse Limiter | R&S | ESH3-Z2 | 101242 | Sep. 24, 2020 | 1 Year |
| CE Cable 1 | HUBSER | N/A | W10.01 | Sep. 24, 2020 | 1 Year |
| Test software | Audix | E3 | V 6.11111b | N/A | N/A |
| <input type="checkbox"/> Power Line Conducted Emissions Test 2# | | | | | |
| Test Receiver | R&S | ESPI | 101761 | Sep. 24, 2020 | 1 Year |
| LISN 1 | R&S | ENV216 | 101170 | Sep. 28, 2020 | 1 Year |

| | | | | | |
|---------------|--------|---------|----------------------|---------------|--------|
| LISN 2 | R&S | ESH2-Z5 | 100309 | Sep. 28, 2020 | 1 Year |
| Pulse Limiter | R&S | KH43101 | 43101180156 8-12# | Jul. 01, 2020 | 1 Year |
| CE Cable 2 | HUBSER | N/A | W11.02 | Sep. 24, 2020 | 1 Year |
| Test software | Audix | E3 | V 6.11111b | N/A | N/A |

4. 26dB Bandwidth, 6dB Bandwidth and 99% Bandwidth

4.1. Block diagram of test setup



4.2. Limits

| FCC Part15, Subpart E/ RSS-247 | | |
|--------------------------------|--------------------------------|--|
| Test Item | Limit | Frequency Range (MHz) |
| Bandwidth | 26 dB Bandwidth | 5150 - 5250 |
| | 26 dB Bandwidth | 5250 - 5350 |
| | 26 dB Bandwidth | For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 5725 |
| | Minimum 500 kHz 6 dB Bandwidth | 5725 - 5850 |

4.3. Test procedure

(1) Connect EUT's antenna output to spectrum analyzer by RF cable.

| | |
|------------------|---|
| Center Frequency | The centre frequency of the channel under test |
| Detector | Peak |
| RBW | For 6 dB Bandwidth: RBW=100 kHz For 26 dB Bandwidth: approximately 1% of the emission bandwidth. |
| VBW | For 6 dB Bandwidth: VBW=300 kHz For 26 dB Bandwidth: >3 RBW |
| Trace | Max hold |
| Sweep | Auto couple |

(2) Allow the trace to stabilize, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB and 6 dB relative to the maximum level measured in the fundamental emission.

4.4. Test result

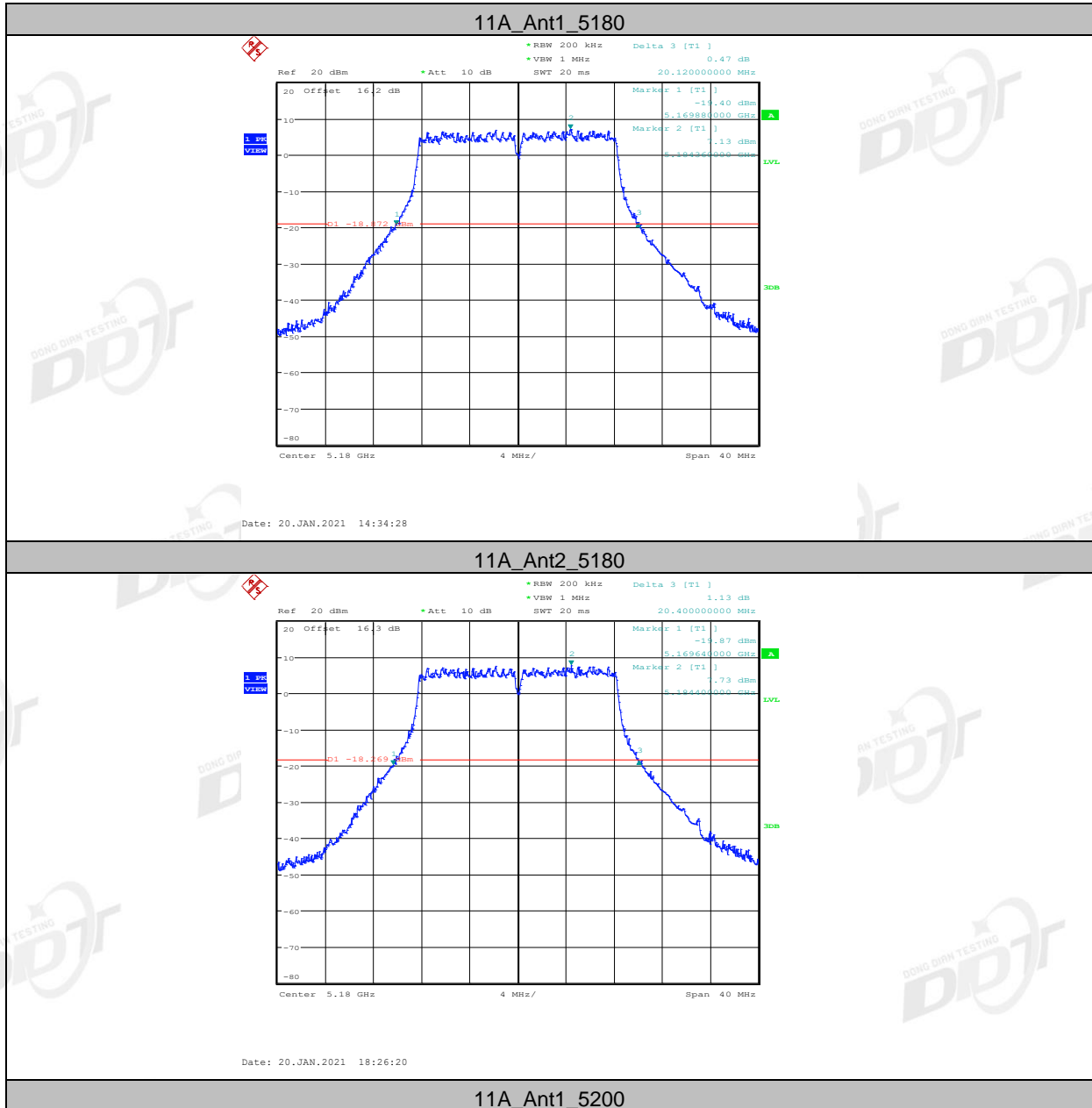
| Test Mode | Antenna | Channel | 99% BW (MHz) | EBW (MHz) | Limit (MHz) | Verdict |
|------------|---------|---------|--------------|-----------|-------------|---------|
| 11A | ANT1 | 5180 | 16.76 | 20.120 | --- | Pass |
| 11A | ANT2 | 5180 | 16.72 | 20.400 | --- | Pass |
| 11A | ANT1 | 5200 | 16.72 | 20.200 | --- | Pass |
| 11A | ANT2 | 5200 | 16.72 | 20.240 | --- | Pass |
| 11A | ANT1 | 5240 | 16.72 | 20.360 | --- | Pass |
| 11A | ANT2 | 5240 | 16.72 | 20.120 | --- | Pass |
| 11A | ANT1 | 5745 | 16.72 | 16.560 | 0.5 | Pass |
| 11A | ANT2 | 5745 | 16.76 | 16.560 | 0.5 | Pass |
| 11A | ANT1 | 5785 | 16.72 | 16.560 | 0.5 | Pass |
| 11A | ANT2 | 5785 | 16.72 | 16.560 | 0.5 | Pass |
| 11A | ANT1 | 5825 | 16.68 | 16.560 | 0.5 | Pass |
| 11A | ANT2 | 5825 | 16.72 | 16.560 | 0.5 | Pass |
| 11N20MIMO | ANT1 | 5180 | 17.68 | 21.000 | --- | Pass |
| 11N20MIMO | ANT2 | 5180 | 17.68 | 21.200 | --- | Pass |
| 11N20MIMO | ANT1 | 5200 | 17.68 | 21.400 | --- | Pass |
| 11N20MIMO | ANT2 | 5200 | 17.68 | 21.120 | --- | Pass |
| 11N20MIMO | ANT1 | 5240 | 17.72 | 20.960 | --- | Pass |
| 11N20MIMO | ANT2 | 5240 | 17.68 | 20.760 | --- | Pass |
| 11N20MIMO | ANT1 | 5745 | 17.68 | 14.720 | 0.5 | Pass |
| 11N20MIMO | ANT2 | 5745 | 17.68 | 16.400 | 0.5 | Pass |
| 11N20MIMO | ANT1 | 5785 | 17.68 | 15.720 | 0.5 | Pass |
| 11N20MIMO | ANT2 | 5785 | 17.68 | 15.760 | 0.5 | Pass |
| 11N20MIMO | ANT1 | 5825 | 17.68 | 15.760 | 0.5 | Pass |
| 11N20MIMO | ANT2 | 5825 | 17.68 | 16.400 | 0.5 | Pass |
| 11N40MIMO | ANT1 | 5190 | 36.24 | 40.800 | --- | Pass |
| 11N40MIMO | ANT2 | 5190 | 36.40 | 40.880 | --- | Pass |
| 11N40MIMO | ANT1 | 5230 | 36.32 | 41.120 | --- | Pass |
| 11N40MIMO | ANT2 | 5230 | 36.40 | 40.560 | --- | Pass |
| 11N40MIMO | ANT1 | 5755 | 36.32 | 35.040 | 0.5 | Pass |
| 11N40MIMO | ANT2 | 5755 | 36.32 | 35.280 | 0.5 | Pass |
| 11N40MIMO | ANT1 | 5795 | 36.40 | 35.440 | 0.5 | Pass |
| 11N40MIMO | ANT2 | 5795 | 36.32 | 35.840 | 0.5 | Pass |
| 11AC20MIMO | ANT1 | 5180 | 17.96 | 21.720 | --- | Pass |
| 11AC20MIMO | ANT2 | 5180 | 17.96 | 21.560 | --- | Pass |
| 11AC20MIMO | ANT1 | 5200 | 18.00 | 21.600 | --- | Pass |
| 11AC20MIMO | ANT2 | 5200 | 18.00 | 21.600 | --- | Pass |

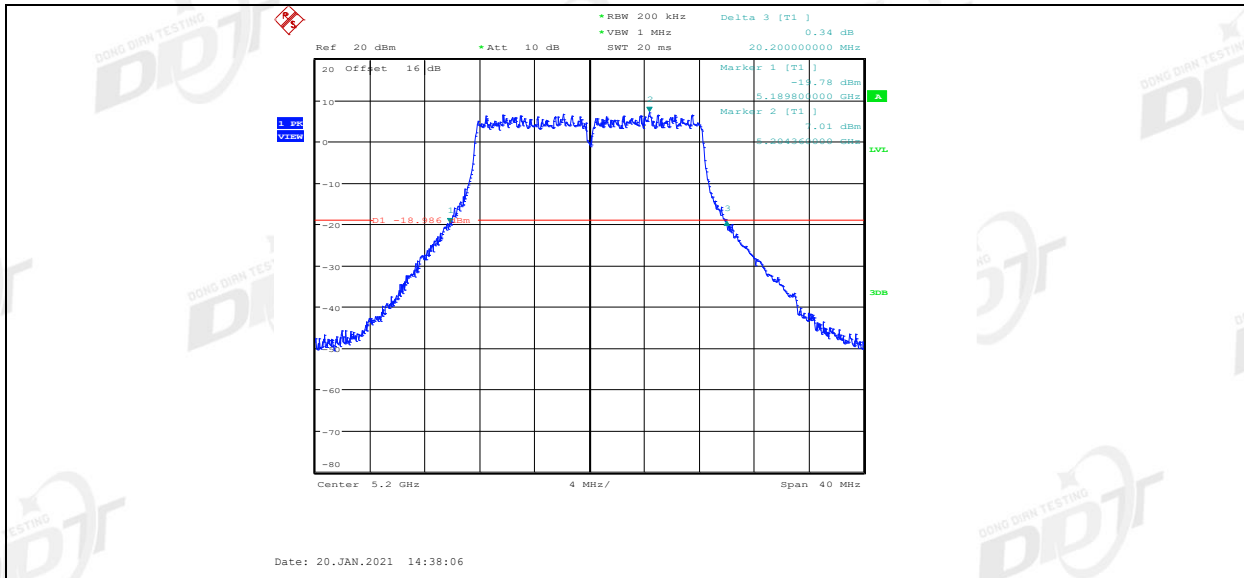
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|------------|------|------|-------|--------|-----|------|
| 11AC20MIMO | ANT1 | 5240 | 18.00 | 21.680 | --- | Pass |
| 11AC20MIMO | ANT2 | 5240 | 17.96 | 22.120 | --- | Pass |
| 11AC20MIMO | ANT1 | 5745 | 17.96 | 17.800 | 0.5 | Pass |
| 11AC20MIMO | ANT2 | 5745 | 18.00 | 17.840 | 0.5 | Pass |
| 11AC20MIMO | ANT1 | 5785 | 18.00 | 17.800 | 0.5 | Pass |
| 11AC20MIMO | ANT2 | 5785 | 18.00 | 17.800 | 0.5 | Pass |
| 11AC20MIMO | ANT1 | 5825 | 17.96 | 17.840 | 0.5 | Pass |
| 11AC20MIMO | ANT2 | 5825 | 18.00 | 17.800 | 0.5 | Pass |
| 11AC40MIMO | ANT1 | 5190 | 37.28 | 44.240 | --- | Pass |
| 11AC40MIMO | ANT2 | 5190 | 37.36 | 43.920 | --- | Pass |
| 11AC40MIMO | ANT1 | 5230 | 37.44 | 44.560 | --- | Pass |
| 11AC40MIMO | ANT2 | 5230 | 37.36 | 44.160 | --- | Pass |
| 11AC40MIMO | ANT1 | 5755 | 37.36 | 36.640 | 0.5 | Pass |
| 11AC40MIMO | ANT2 | 5755 | 37.36 | 36.560 | 0.5 | Pass |
| 11AC40MIMO | ANT1 | 5795 | 37.28 | 36.560 | 0.5 | Pass |
| 11AC40MIMO | ANT2 | 5795 | 37.36 | 36.640 | 0.5 | Pass |
| 11AC80MIMO | ANT1 | 5210 | 76.16 | 88.480 | --- | Pass |
| 11AC80MIMO | ANT2 | 5210 | 76.32 | 88.640 | --- | Pass |
| 11AC80MIMO | ANT1 | 5775 | 76.32 | 76.800 | 0.5 | Pass |
| 11AC80MIMO | ANT2 | 5775 | 76.48 | 76.800 | 0.5 | Pass |
| 11AX20MIMO | ANT1 | 5180 | 19.12 | 22.280 | --- | Pass |
| 11AX20MIMO | ANT2 | 5180 | 19.16 | 22.440 | --- | Pass |
| 11AX20MIMO | ANT1 | 5200 | 19.16 | 22.120 | --- | Pass |
| 11AX20MIMO | ANT2 | 5200 | 19.16 | 22.360 | --- | Pass |
| 11AX20MIMO | ANT1 | 5240 | 19.16 | 22.240 | --- | Pass |
| 11AX20MIMO | ANT2 | 5240 | 19.16 | 22.200 | --- | Pass |
| 11AX20MIMO | ANT1 | 5745 | 19.16 | 19.160 | 0.5 | Pass |
| 11AX20MIMO | ANT2 | 5745 | 19.16 | 19.160 | 0.5 | Pass |
| 11AX20MIMO | ANT1 | 5785 | 19.12 | 19.200 | 0.5 | Pass |
| 11AX20MIMO | ANT2 | 5785 | 19.16 | 19.160 | 0.5 | Pass |
| 11AX20MIMO | ANT1 | 5825 | 19.16 | 19.120 | 0.5 | Pass |
| 11AX20MIMO | ANT2 | 5825 | 19.16 | 19.120 | 0.5 | Pass |
| 11AX40MIMO | ANT1 | 5190 | 38.56 | 43.920 | --- | Pass |
| 11AX40MIMO | ANT2 | 5190 | 38.56 | 44.560 | --- | Pass |
| 11AX40MIMO | ANT1 | 5230 | 38.48 | 44.640 | --- | Pass |
| 11AX40MIMO | ANT2 | 5230 | 38.56 | 44.800 | --- | Pass |
| 11AX40MIMO | ANT1 | 5755 | 38.48 | 38.160 | 0.5 | Pass |
| 11AX40MIMO | ANT2 | 5755 | 38.56 | 38.320 | 0.5 | Pass |
| 11AX40MIMO | ANT1 | 5795 | 38.40 | 38.320 | 0.5 | Pass |

| | | | | | | |
|------------|------|------|-------|--------|-----|------|
| 11AX40MIMO | ANT2 | 5795 | 38.56 | 38.320 | 0.5 | Pass |
| 11AX80MIMO | ANT1 | 5210 | 77.76 | 89.760 | --- | Pass |
| 11AX80MIMO | ANT2 | 5210 | 77.92 | 89.600 | --- | Pass |
| 11AX80MIMO | ANT1 | 5775 | 77.76 | 78.400 | 0.5 | Pass |
| 11AX80MIMO | ANT2 | 5775 | 77.76 | 78.400 | 0.5 | Pass |

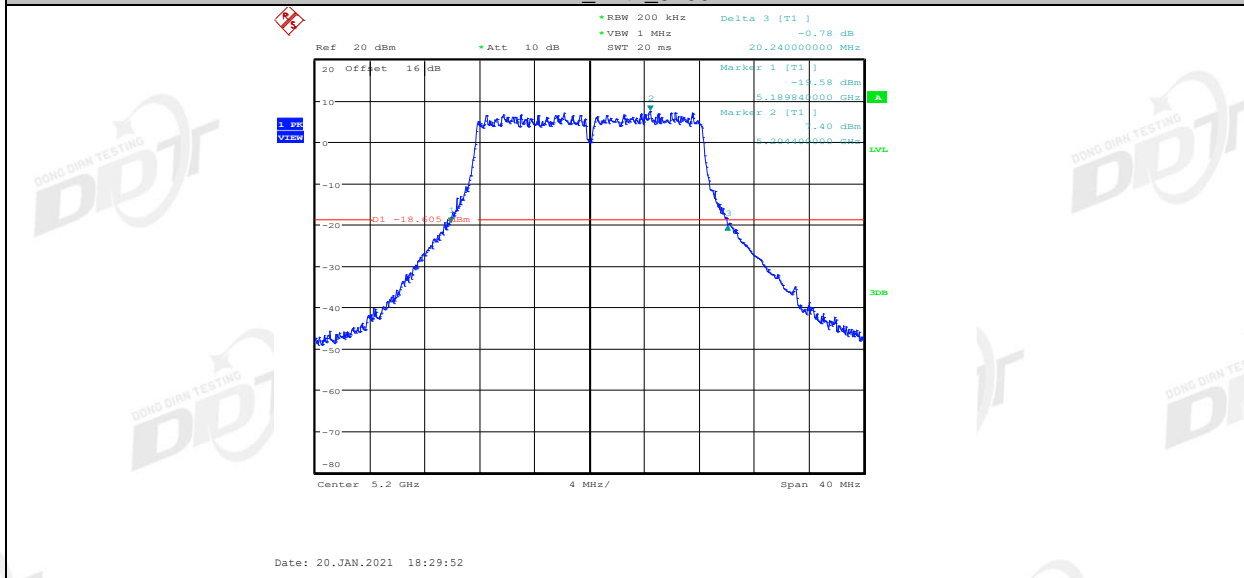
4.5. Original test data

26 dB Bandwidth:

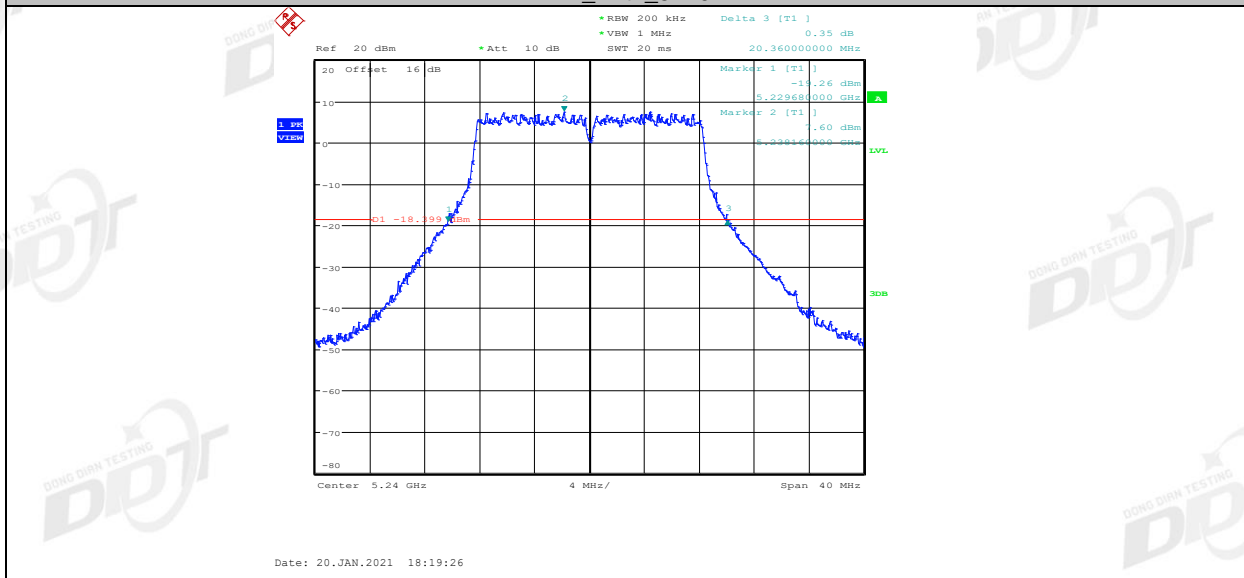




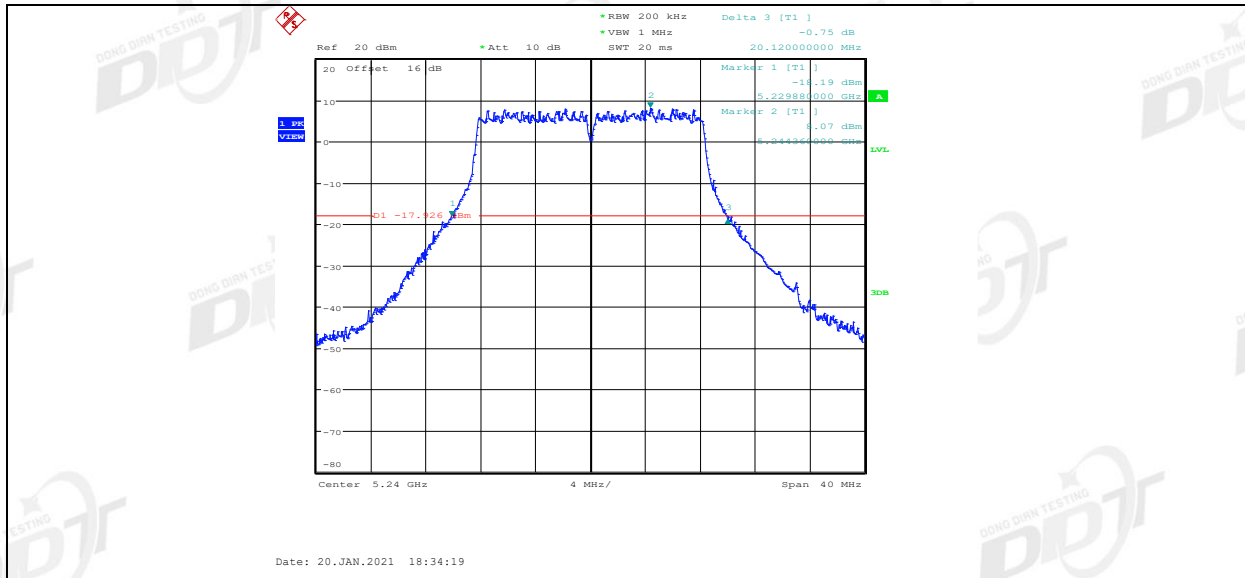
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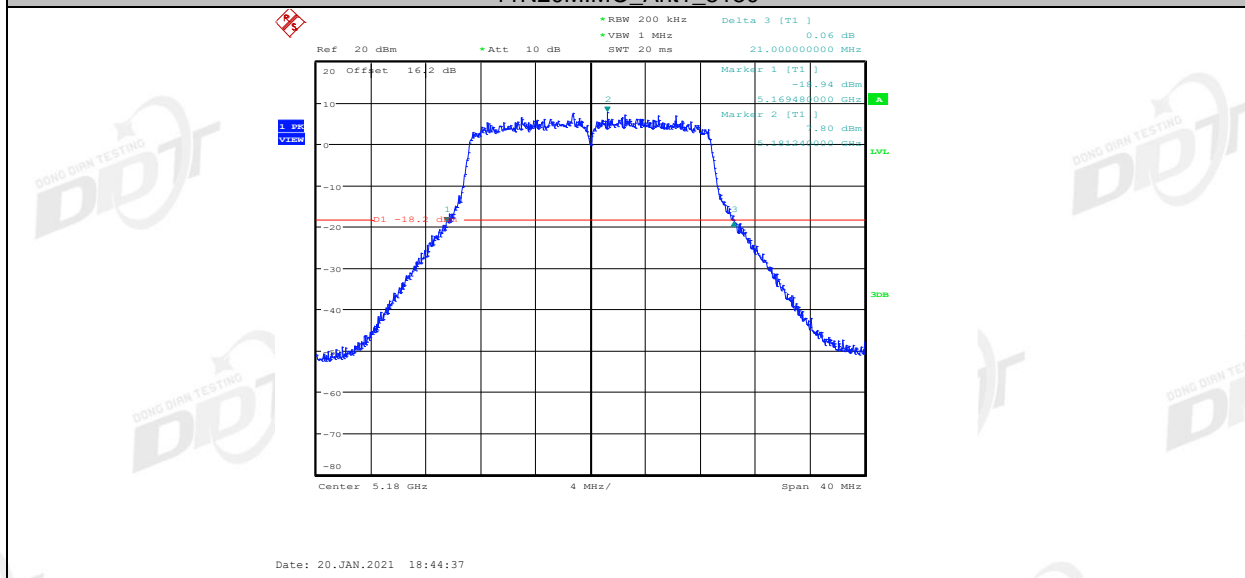
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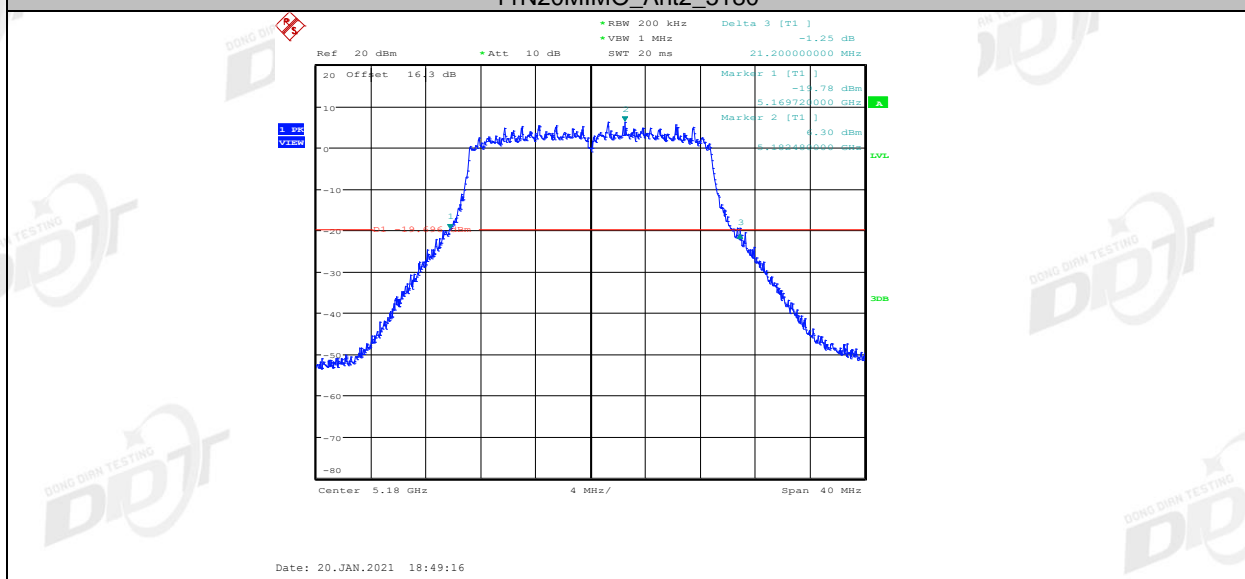
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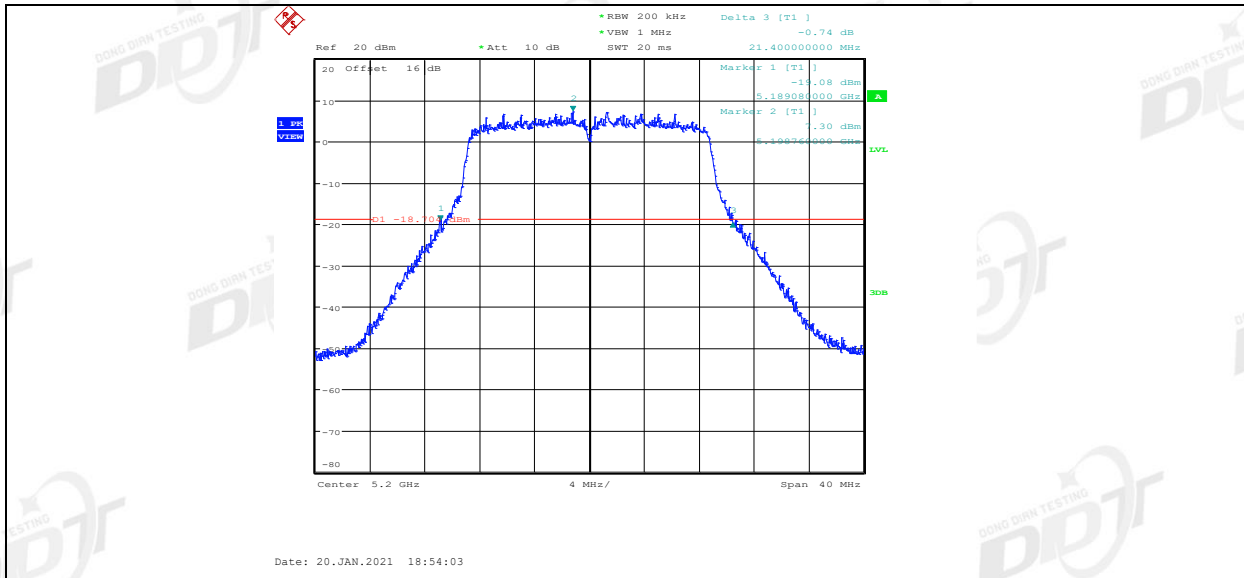
11N20MIMO_Ant1_5180



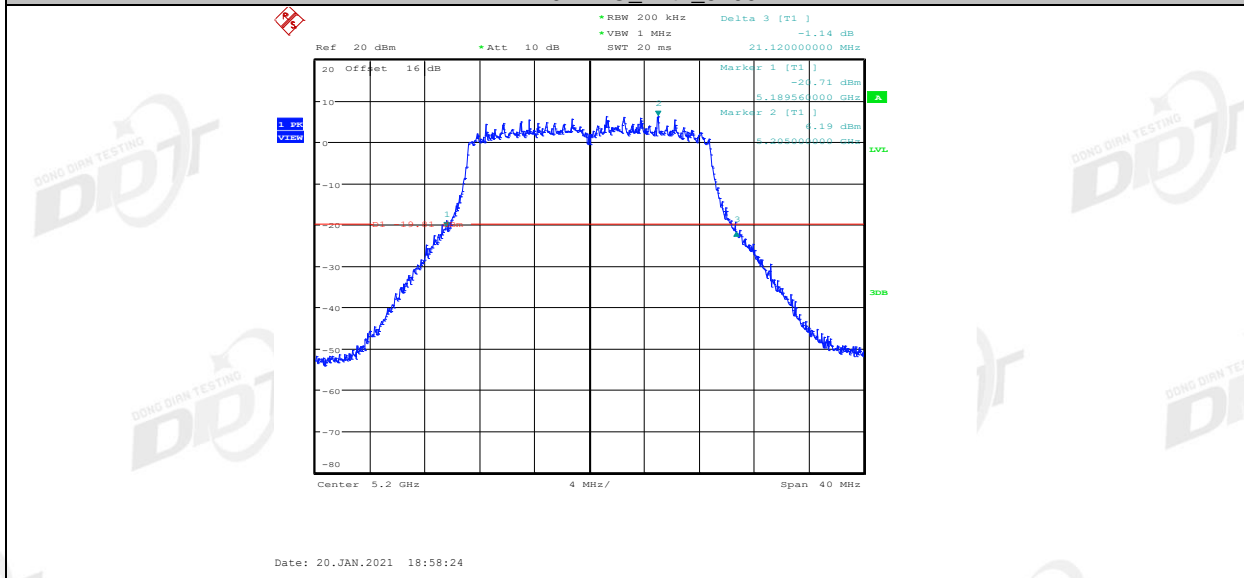
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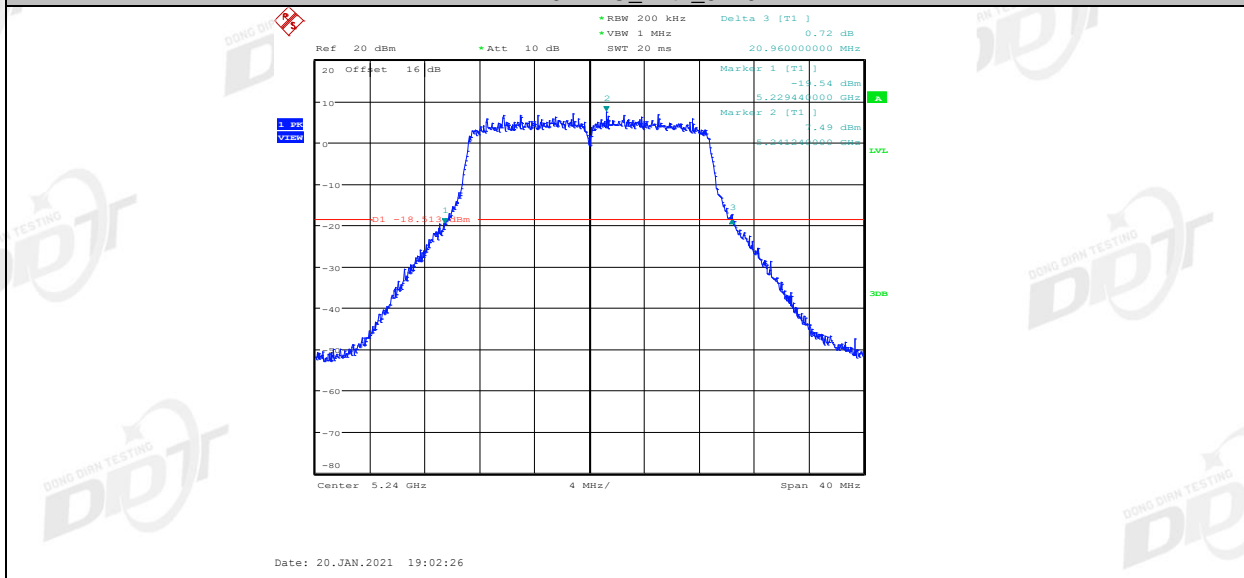
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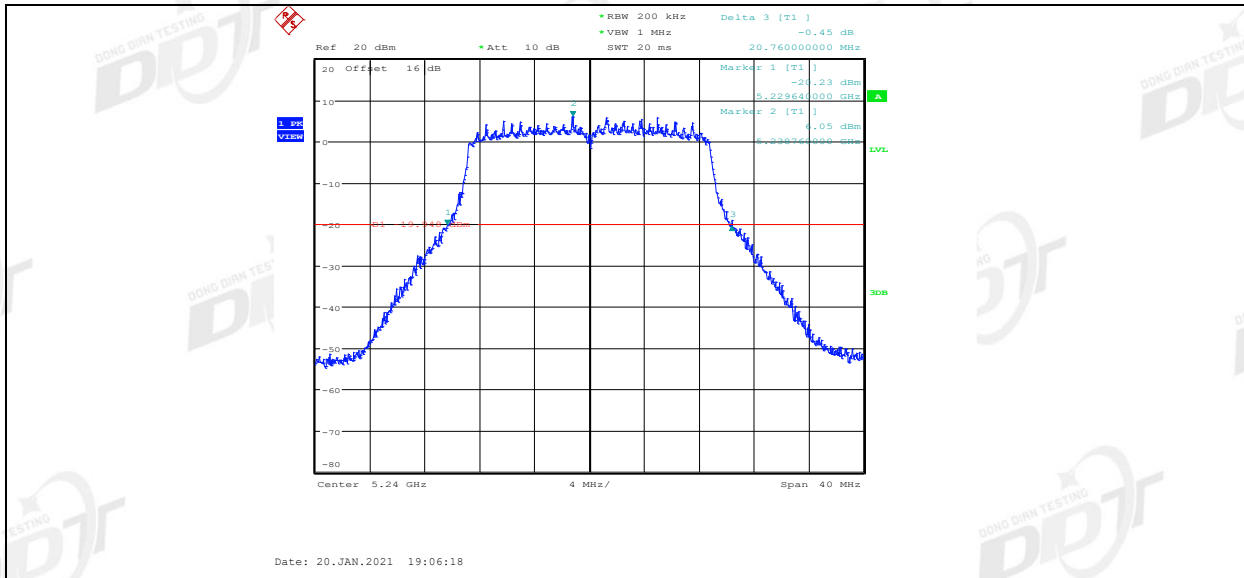
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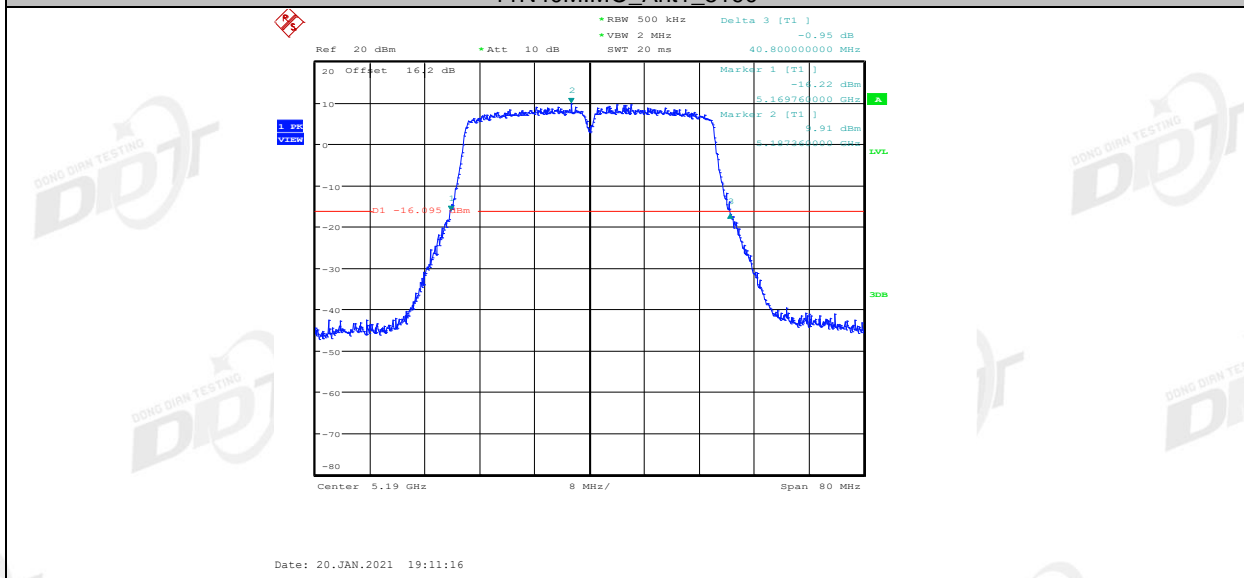
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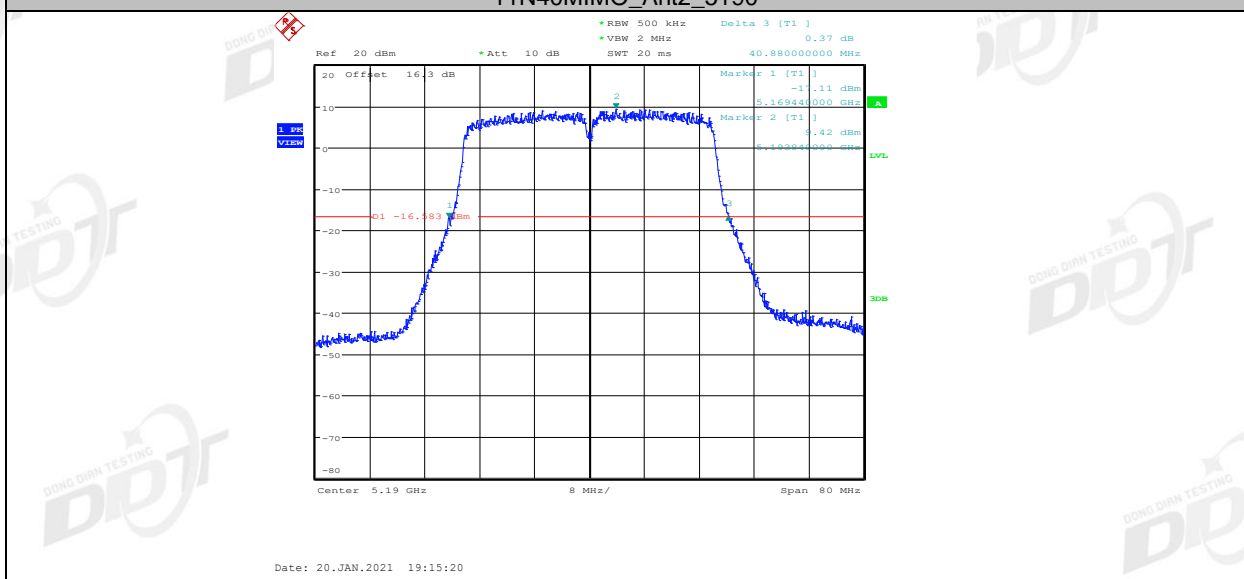
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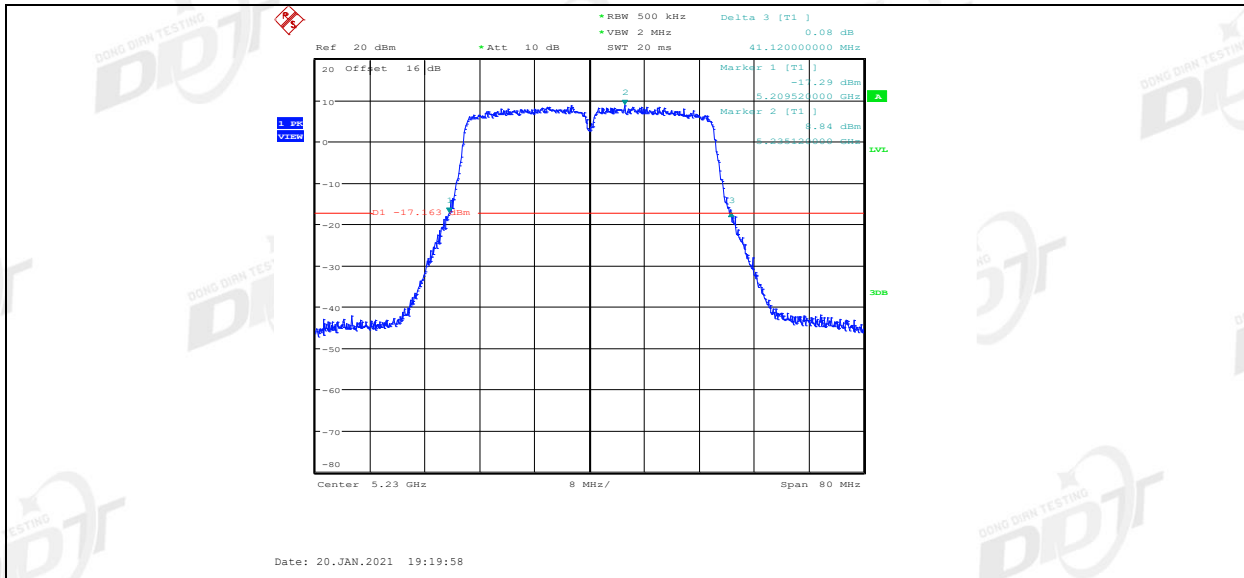
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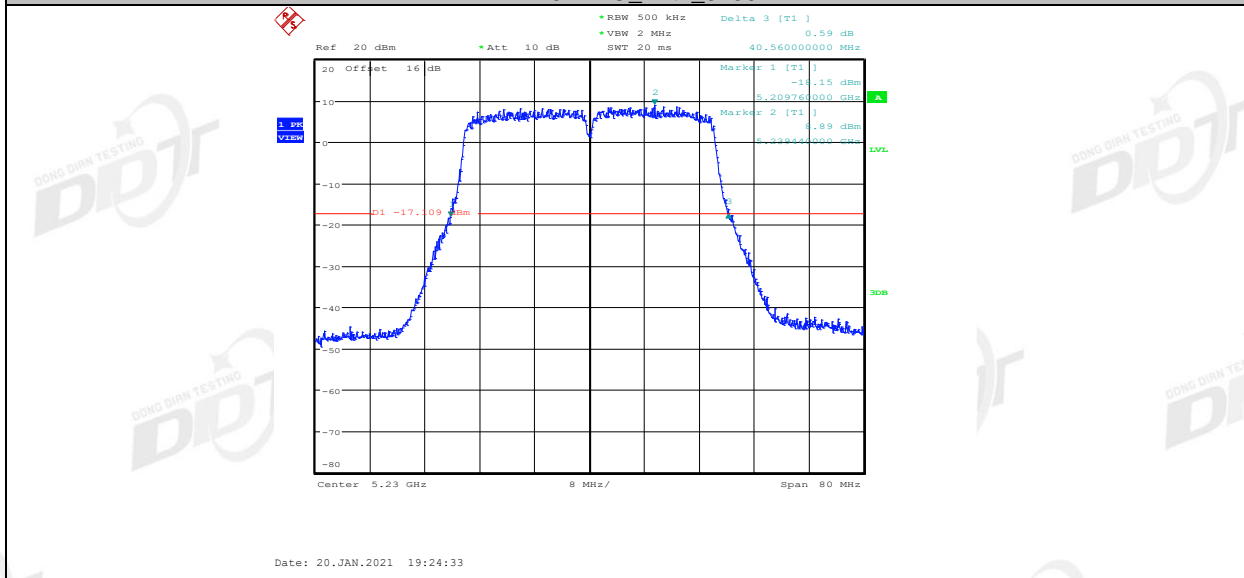
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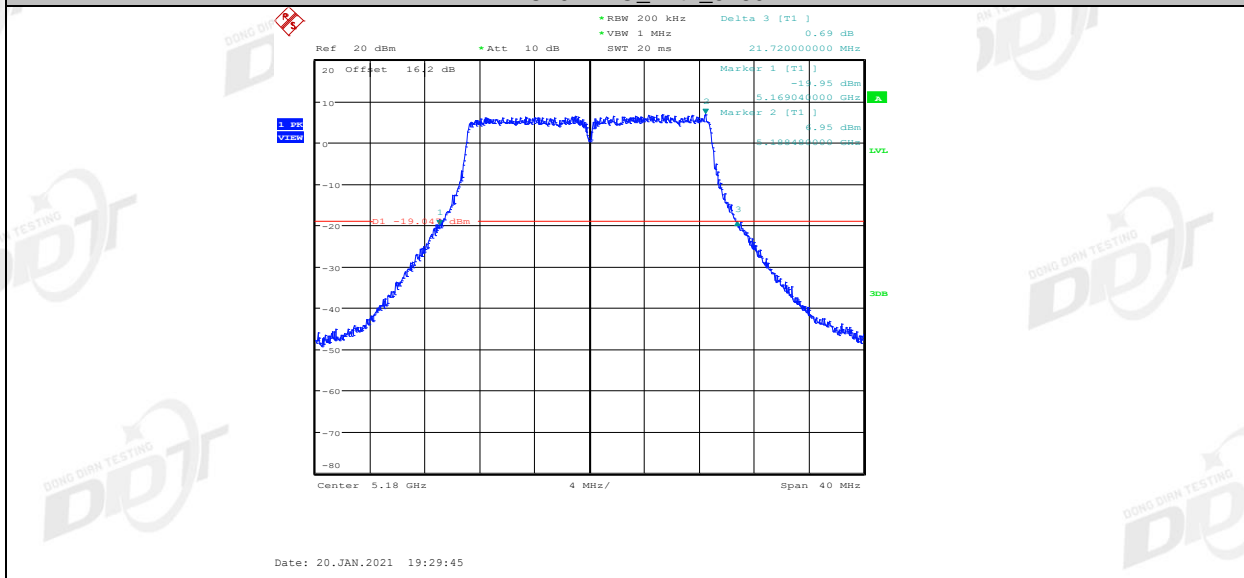
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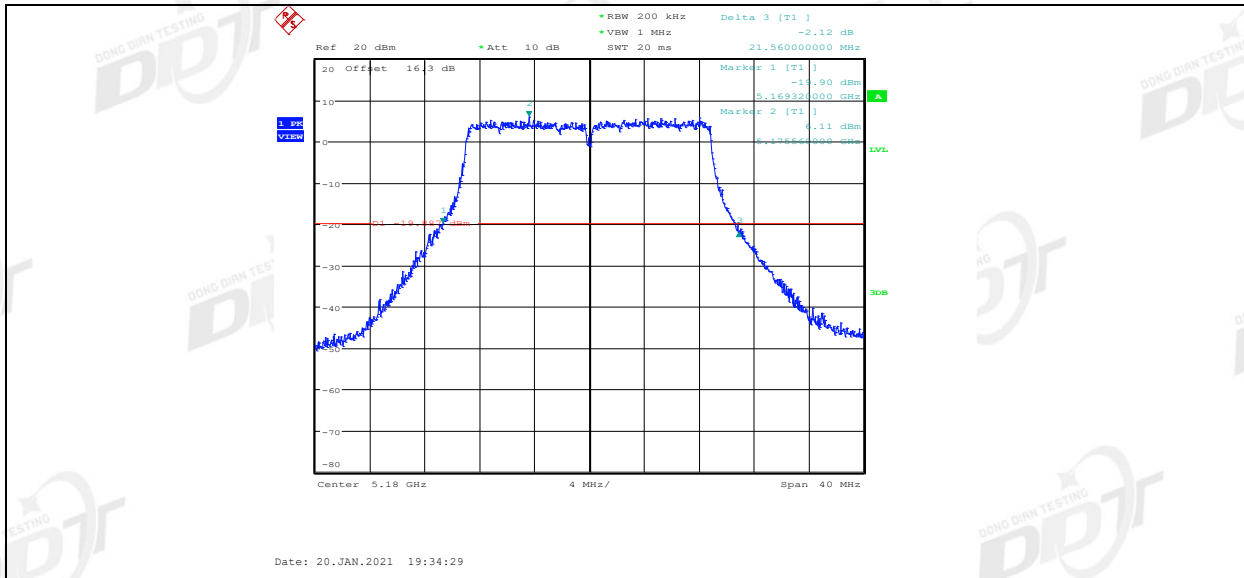
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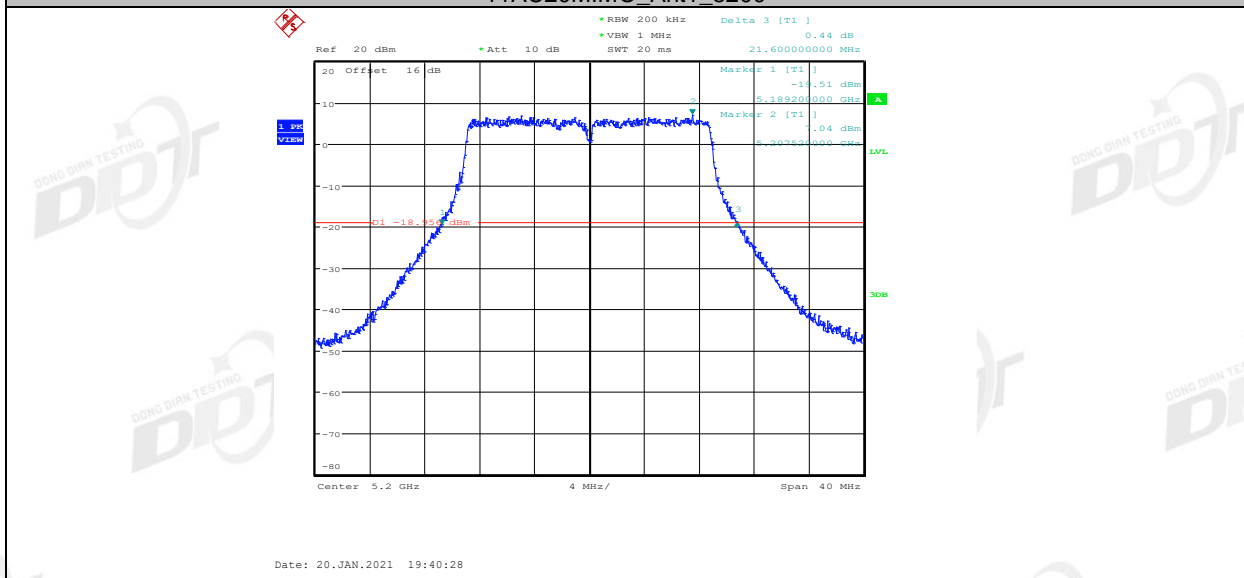
11AC20MIMO_Ant1_5180



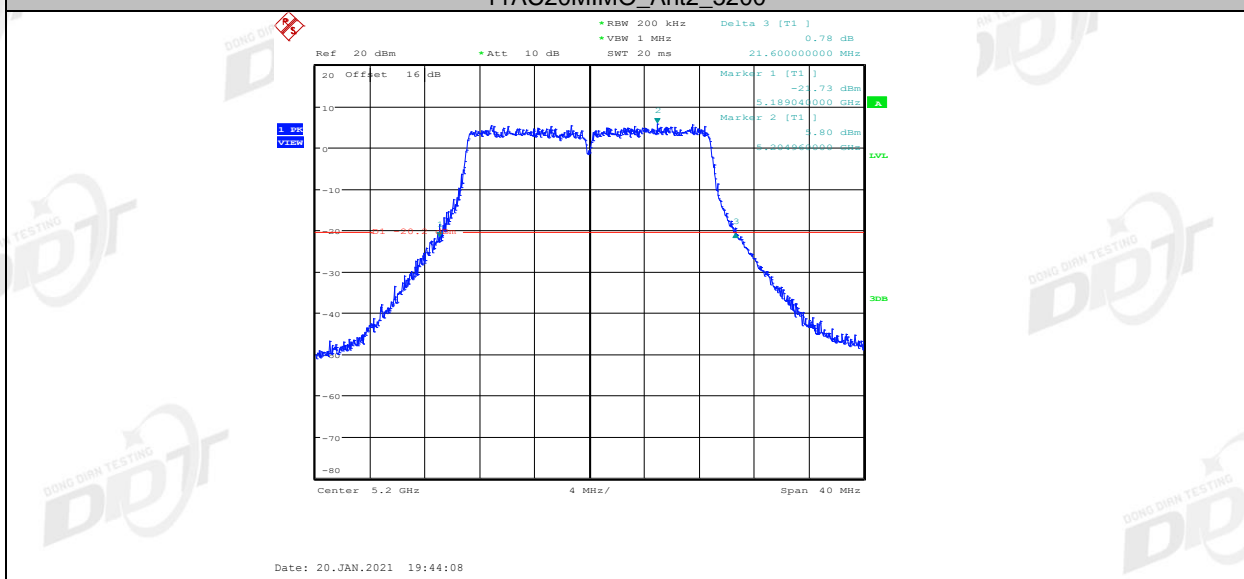
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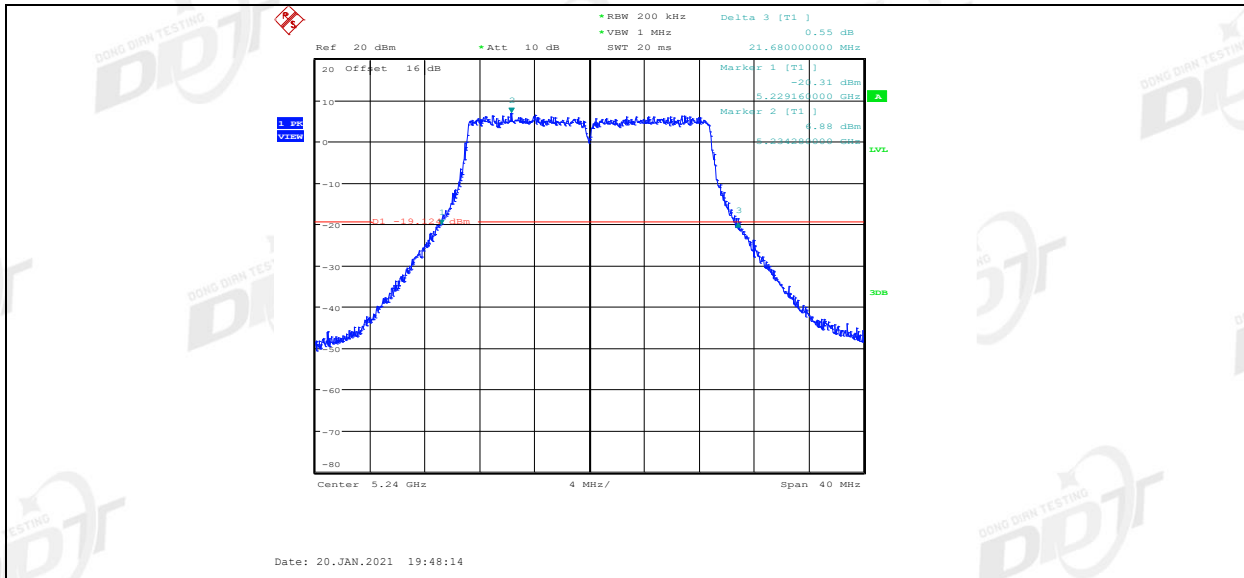
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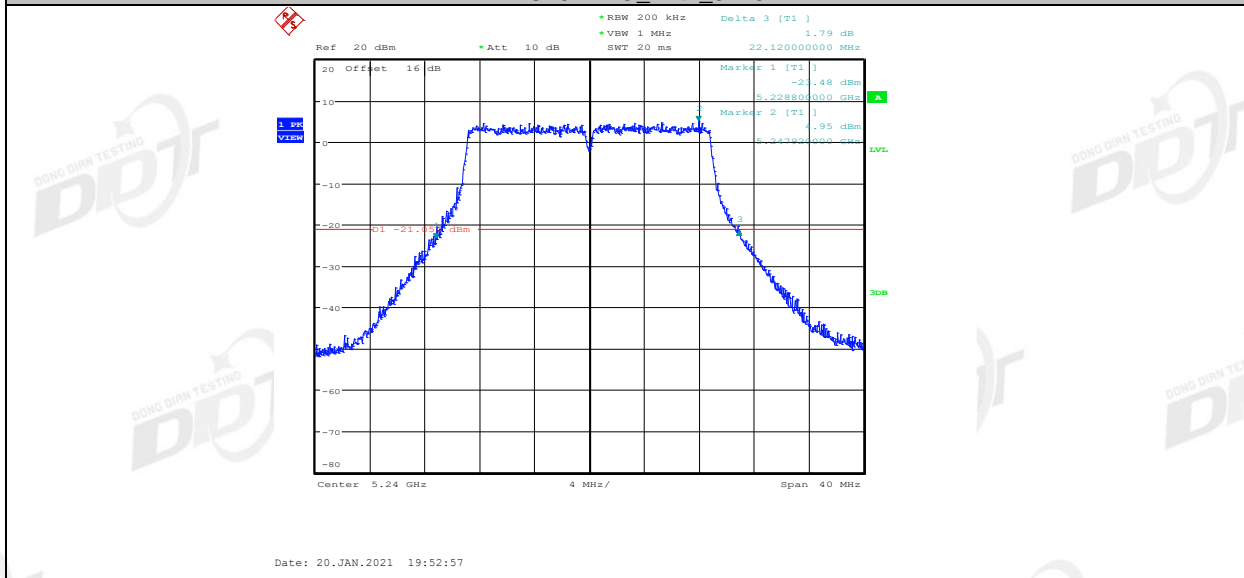
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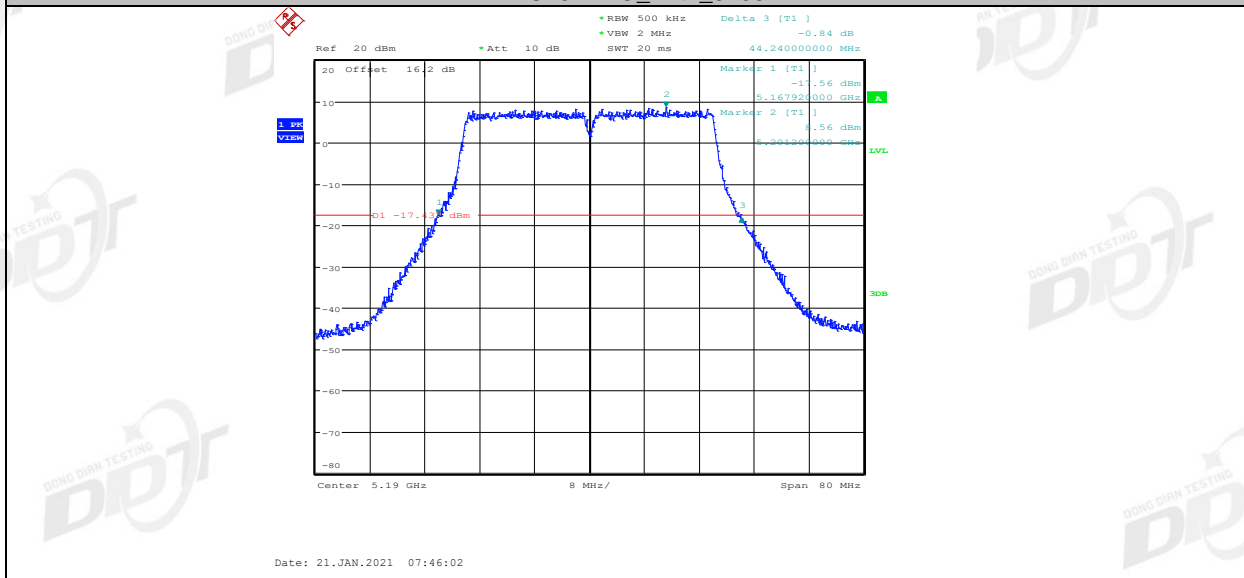
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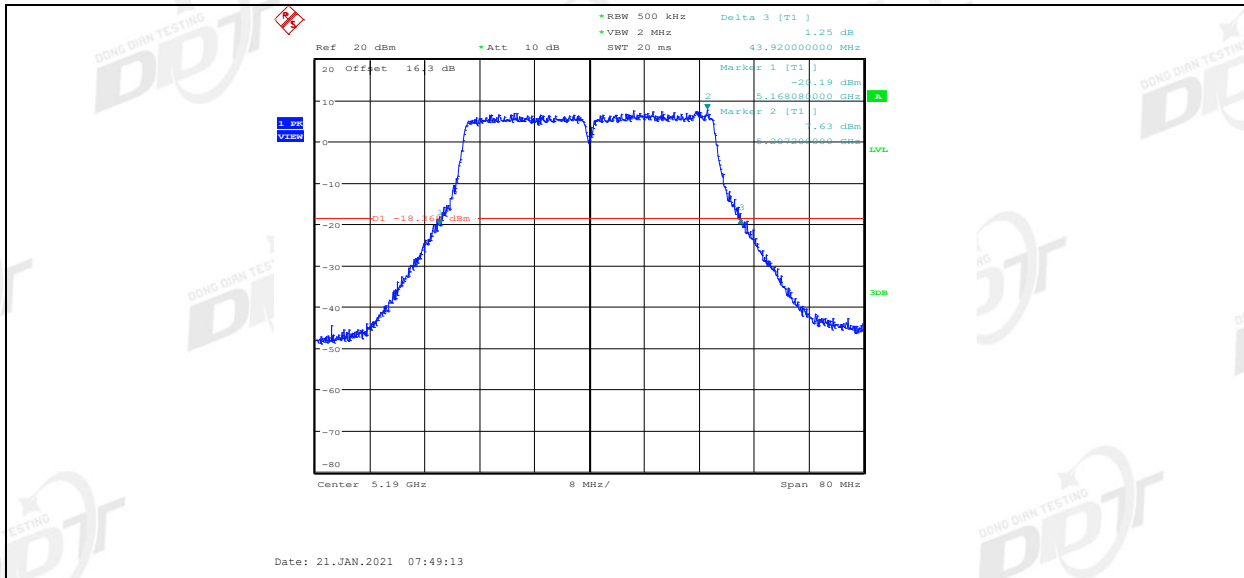
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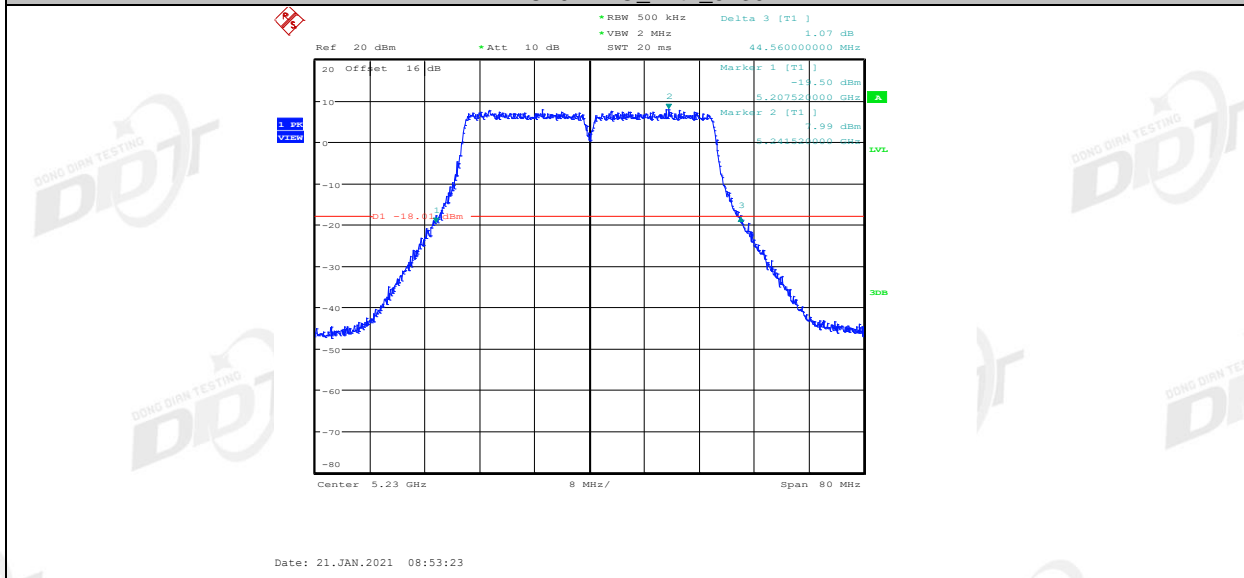
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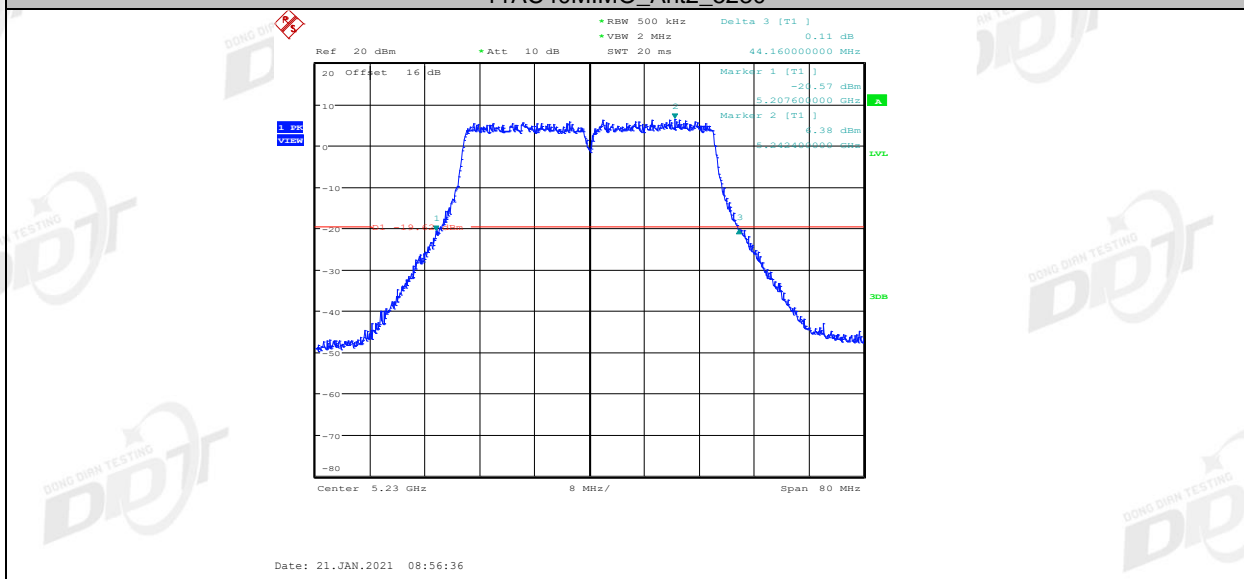
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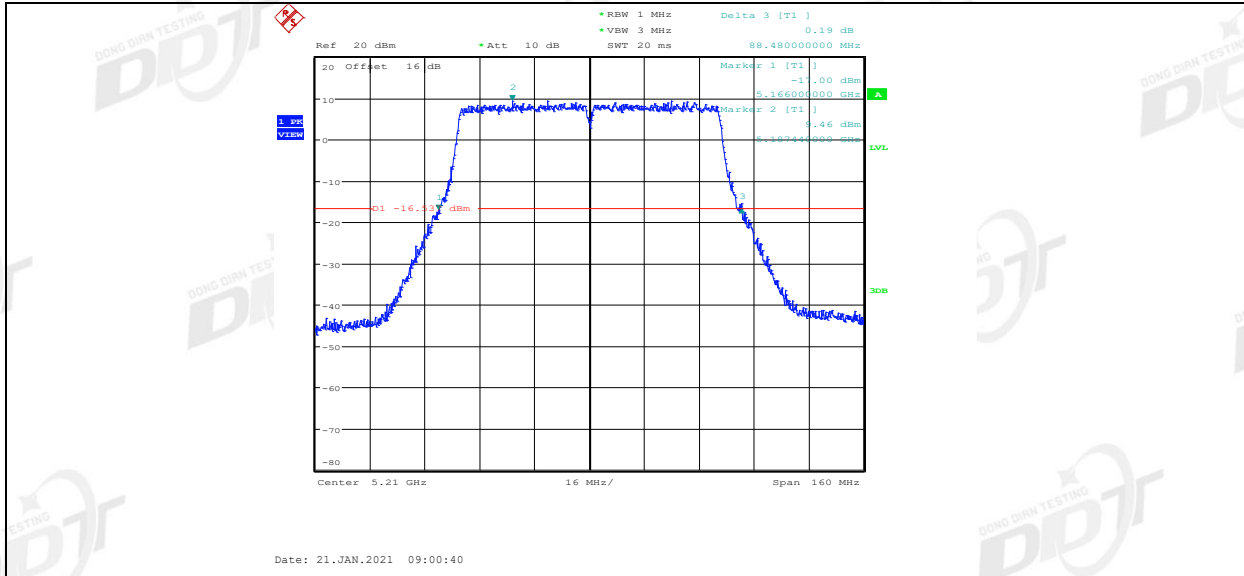
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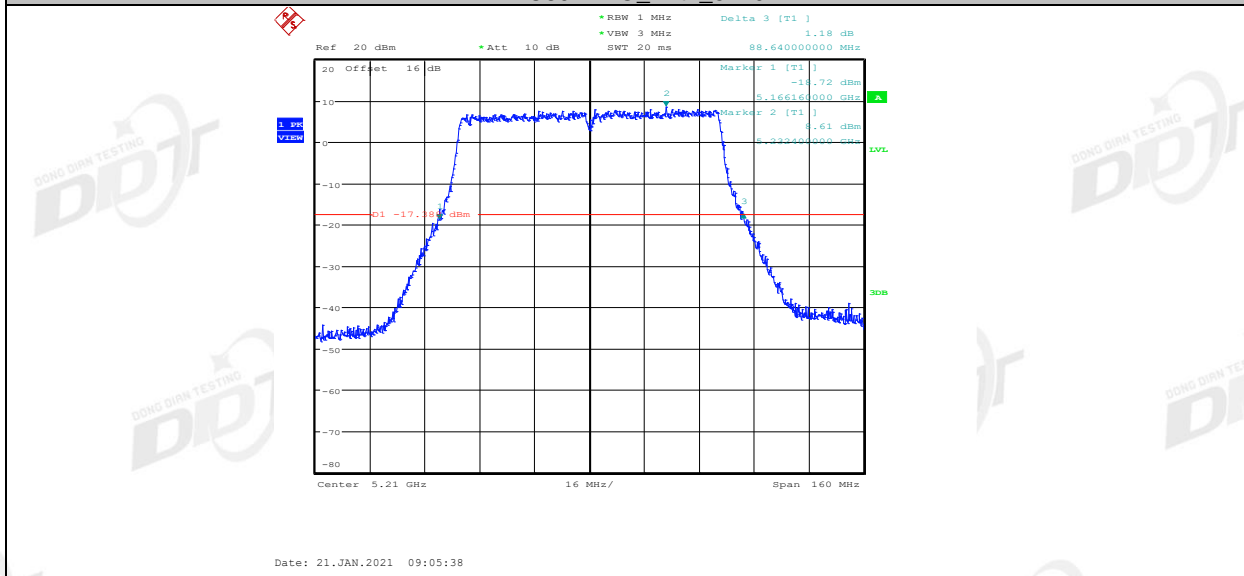
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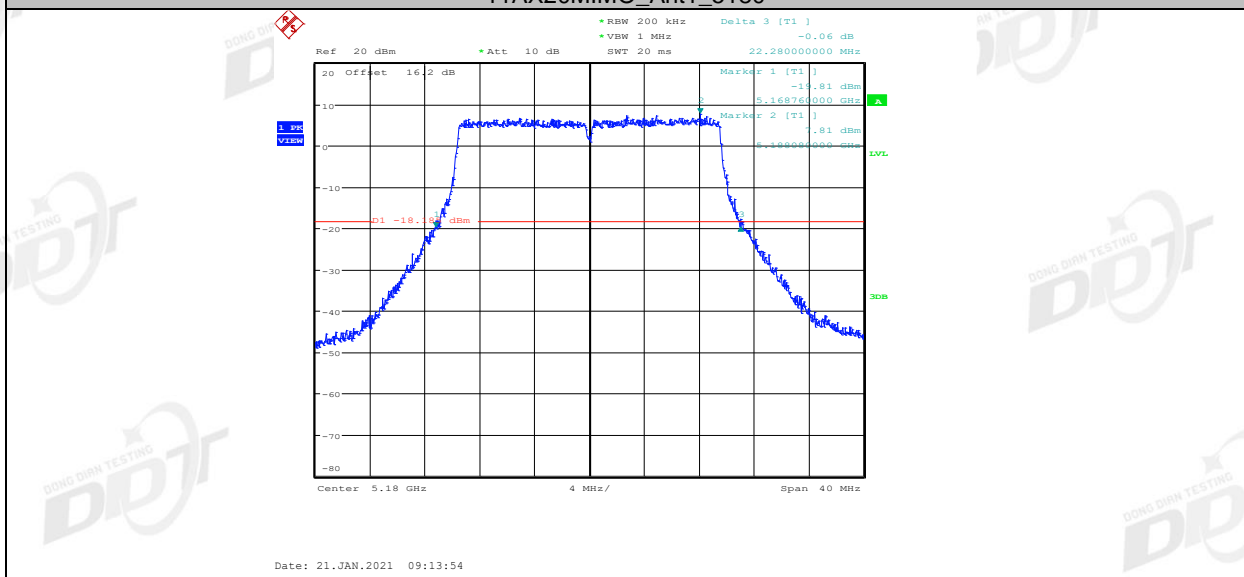
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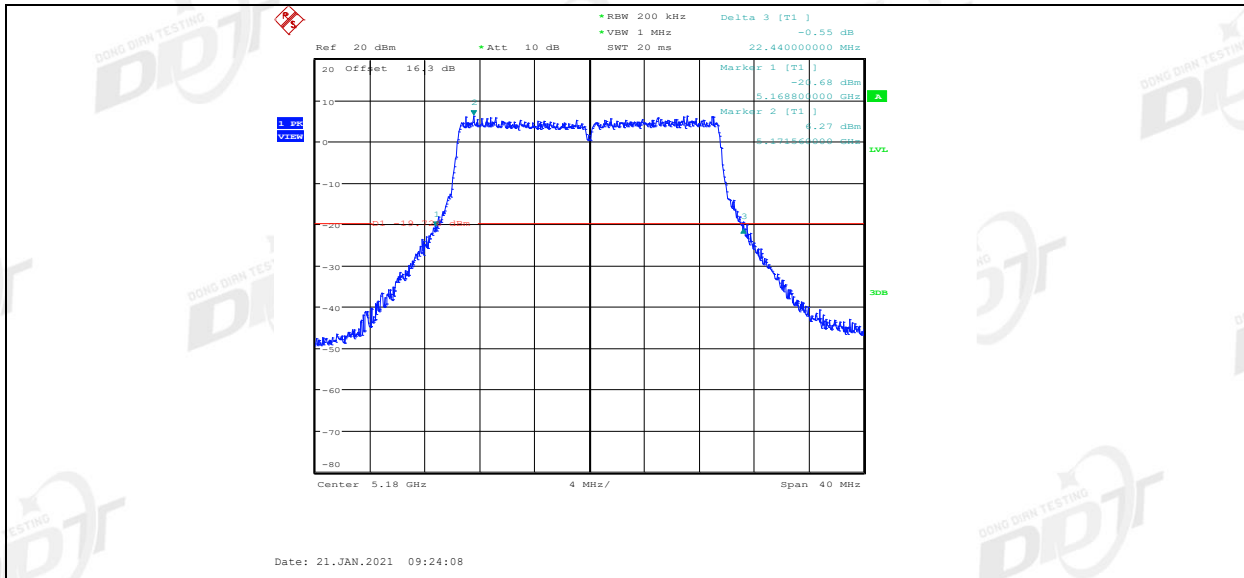
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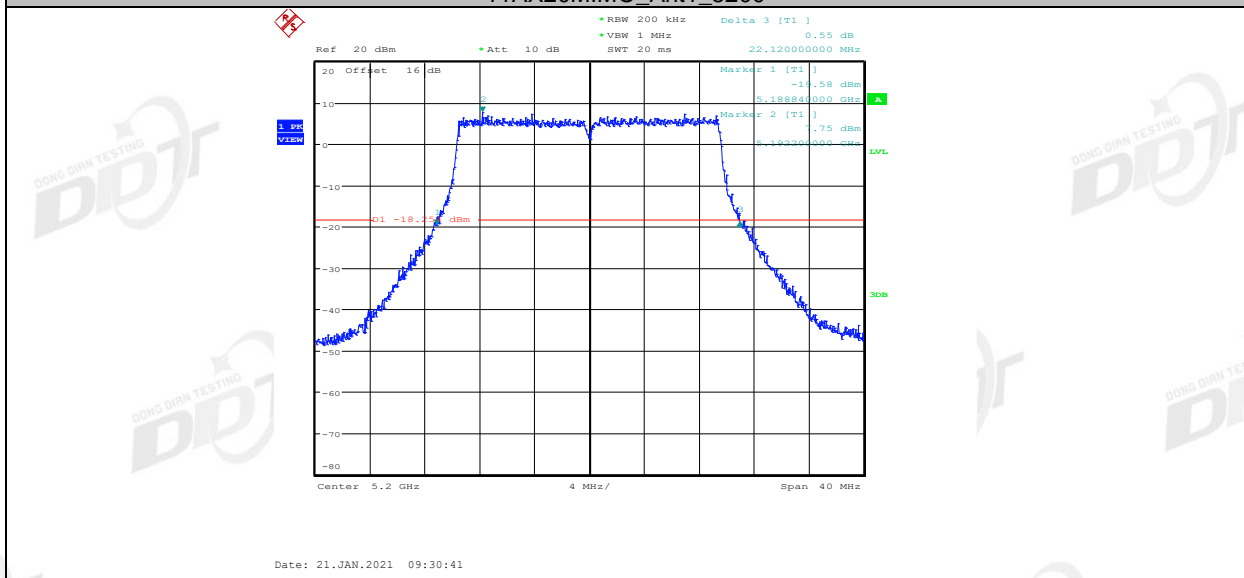
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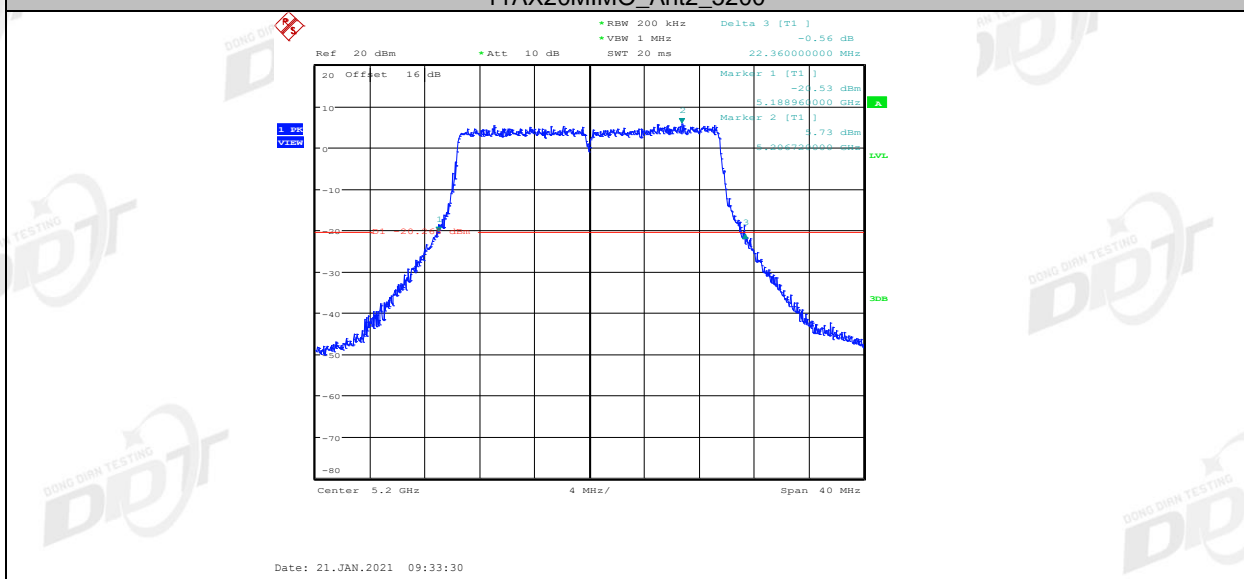
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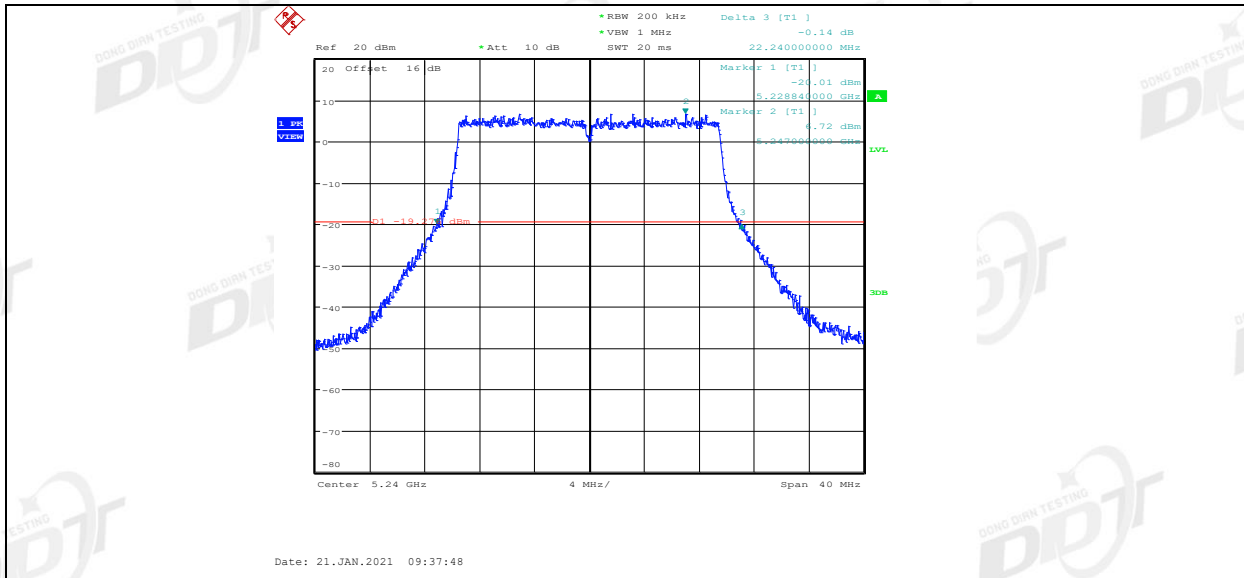
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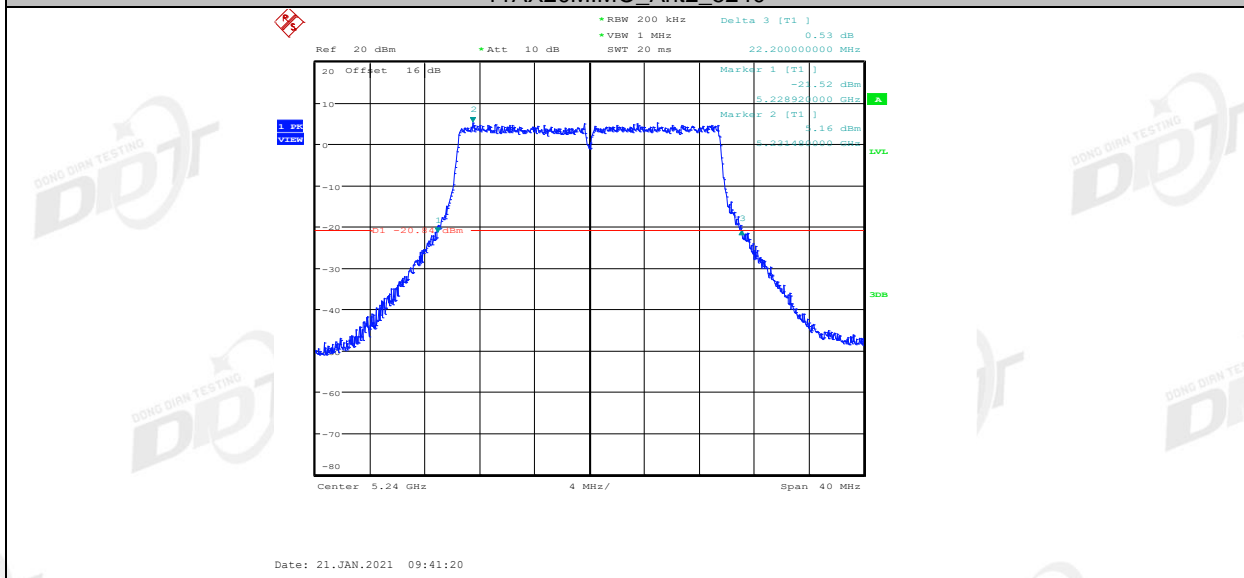
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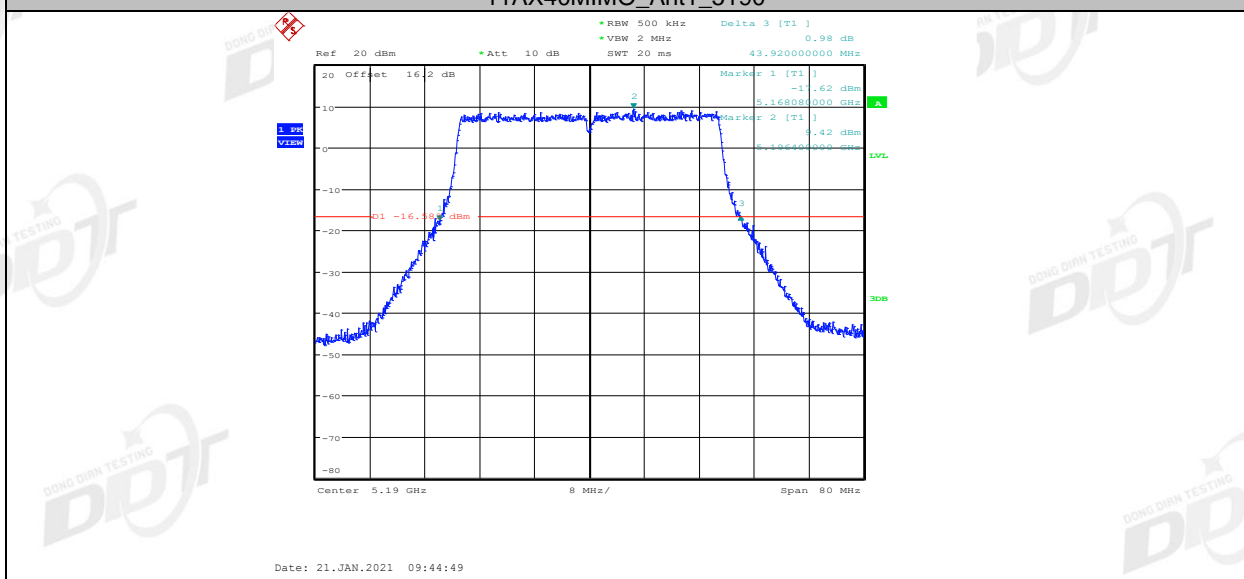
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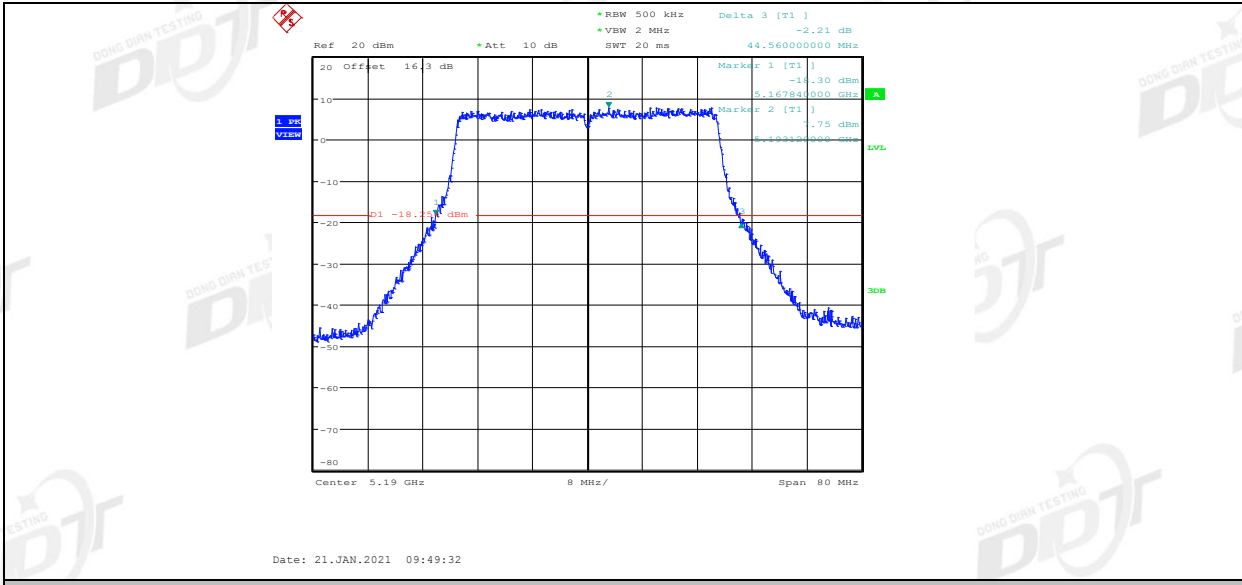
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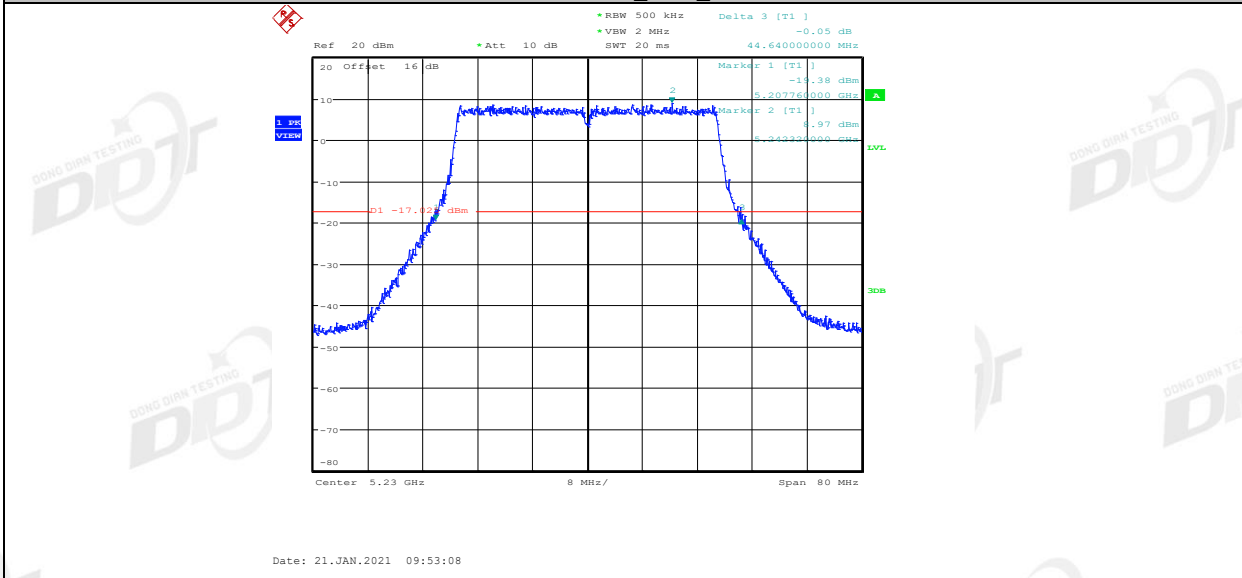
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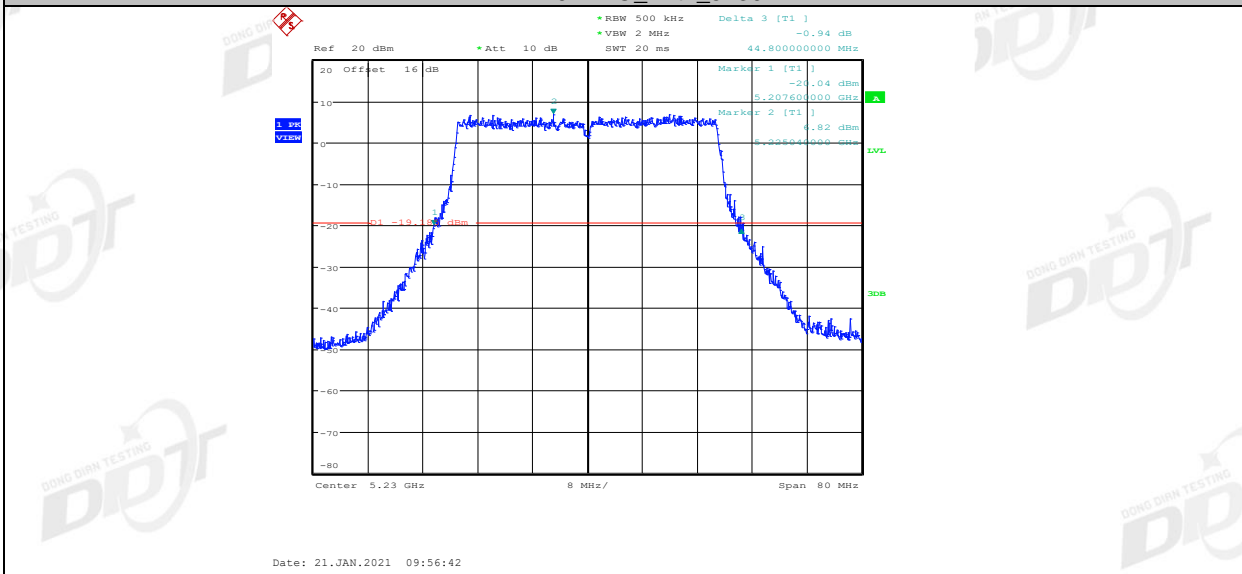
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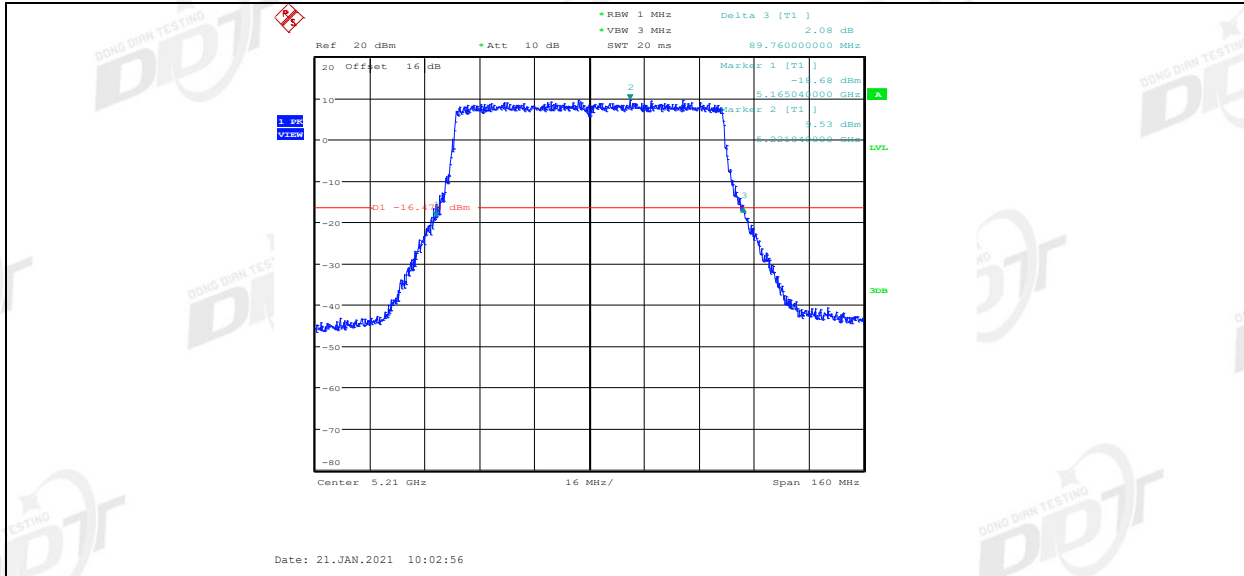
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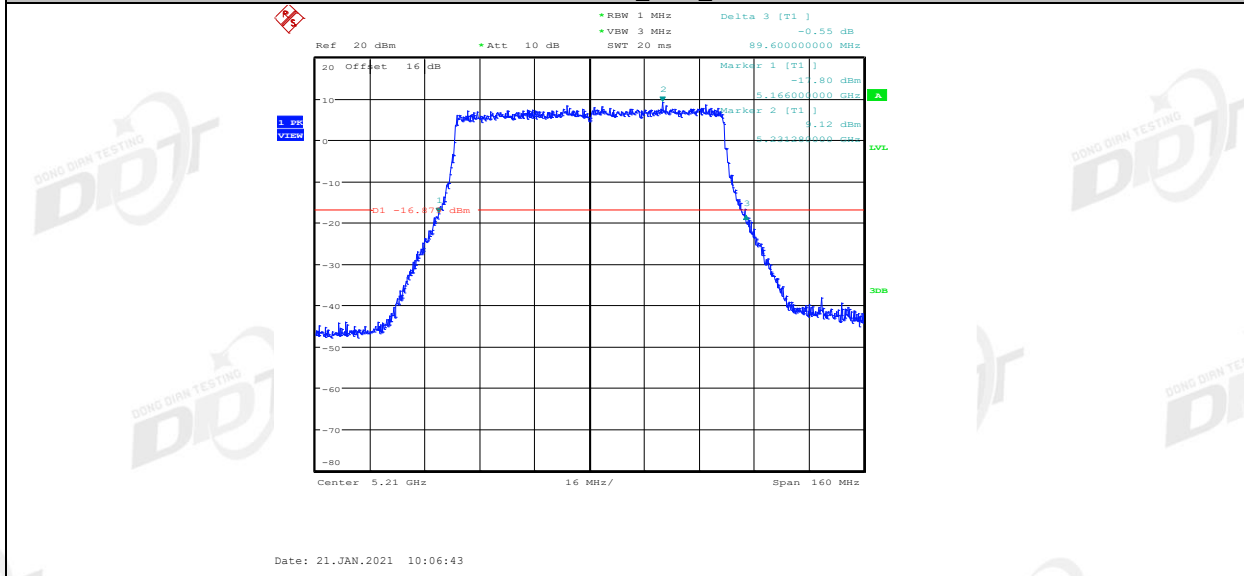
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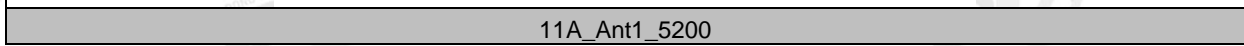
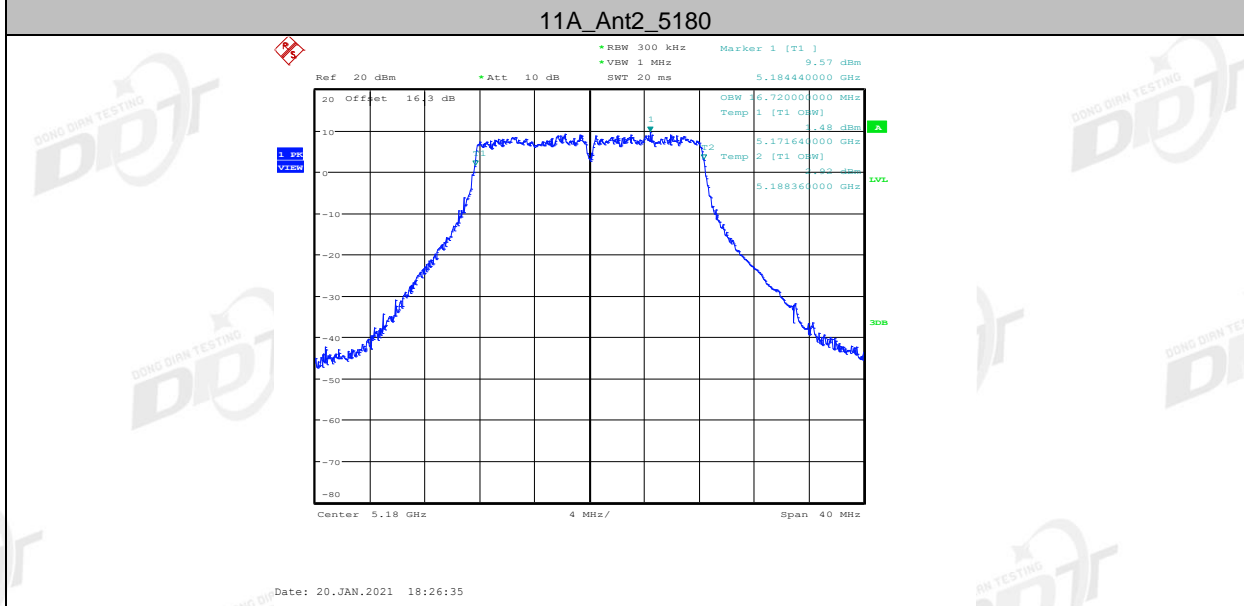
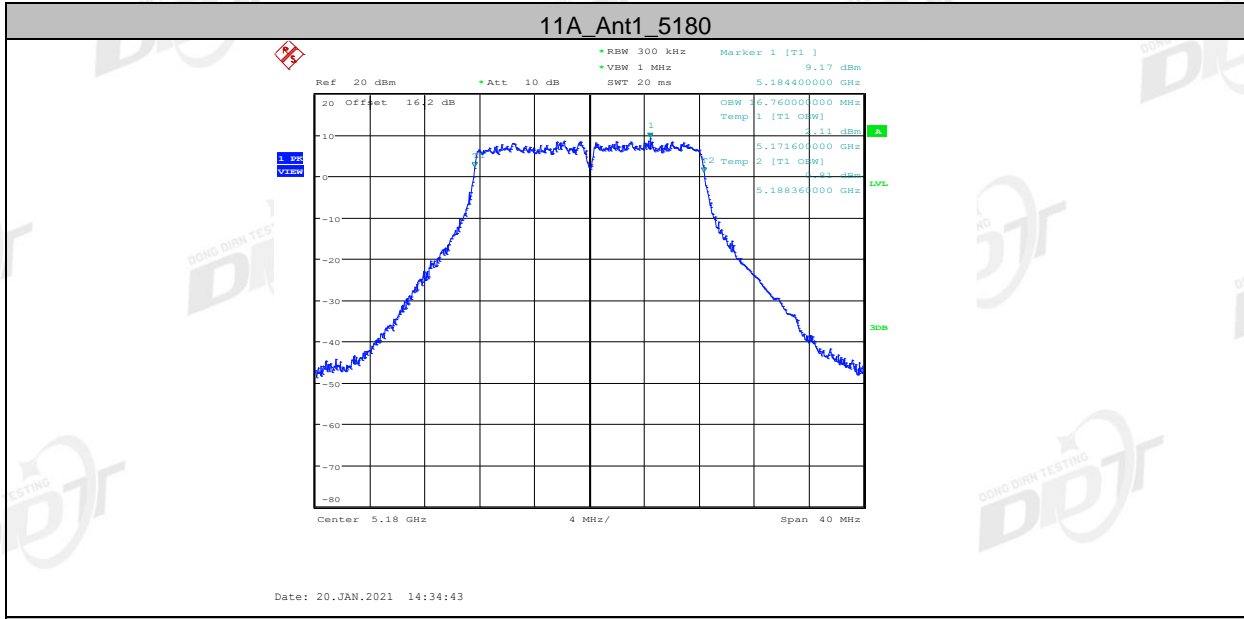
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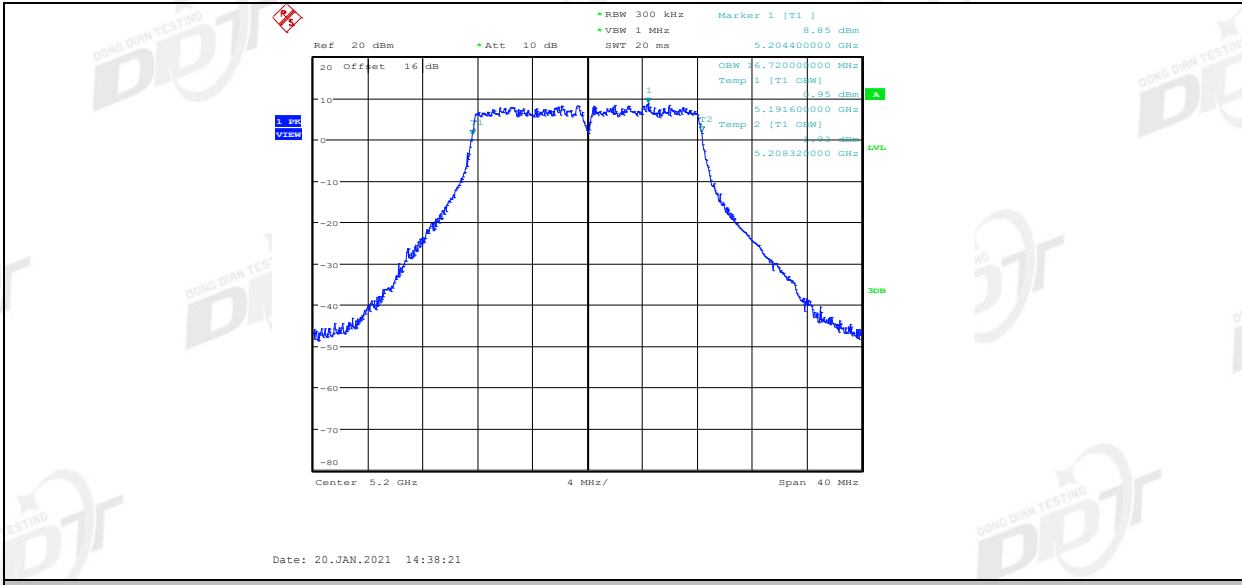


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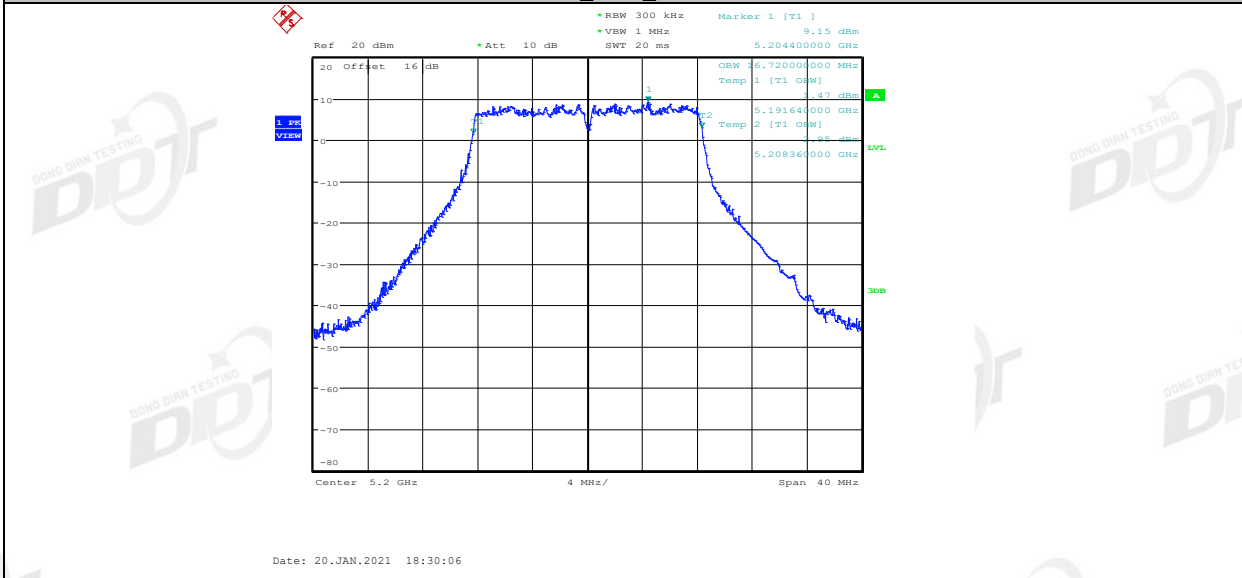


99% Bandwidth

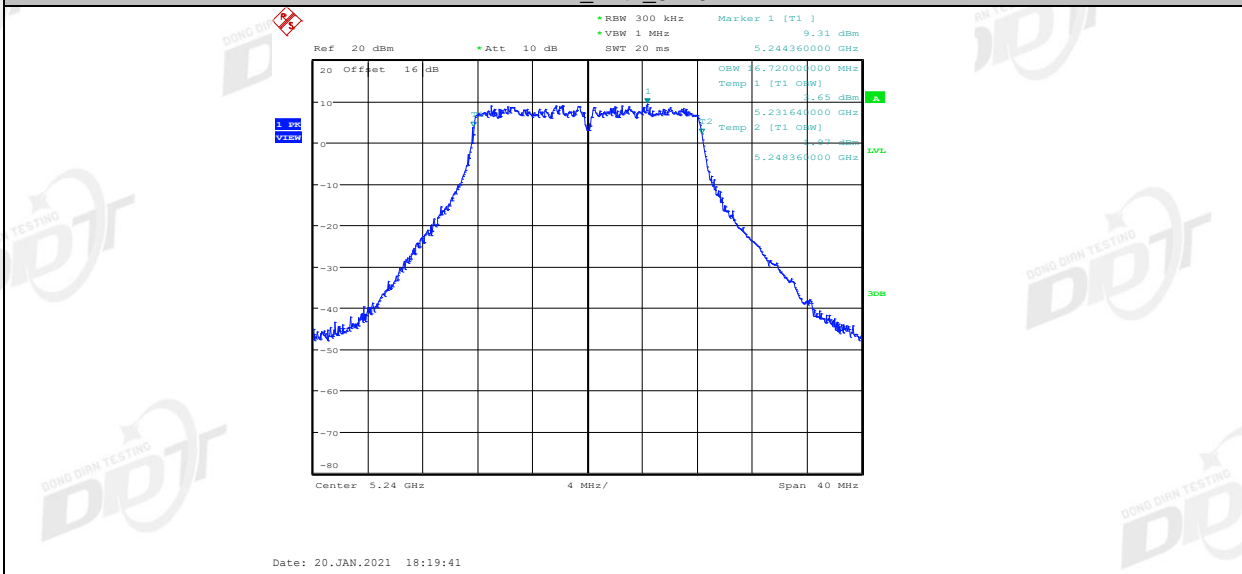




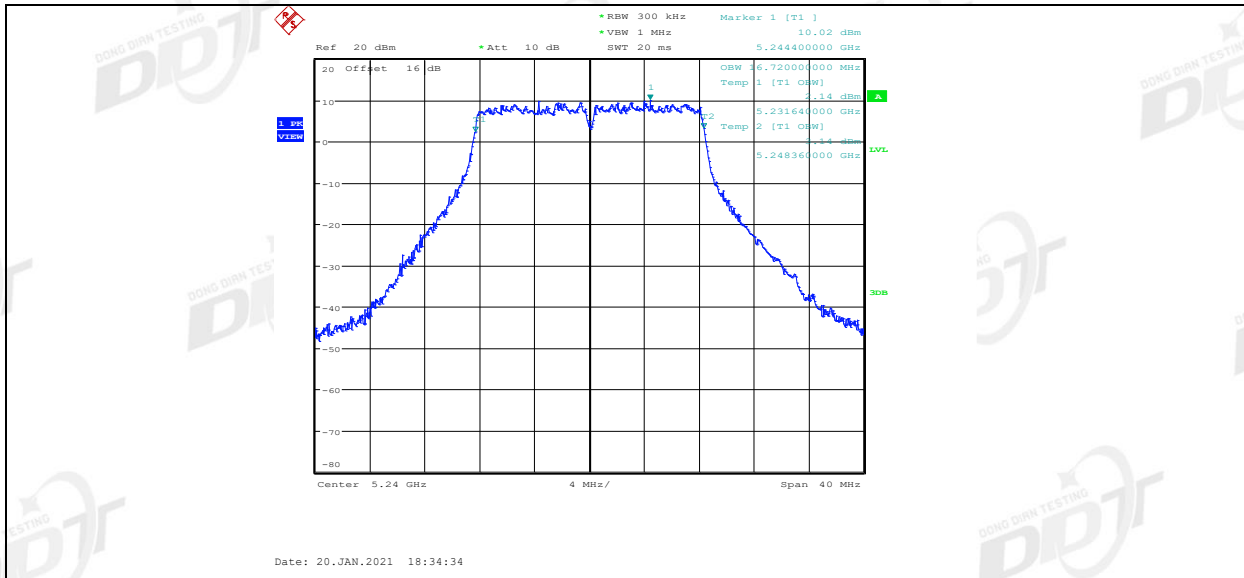
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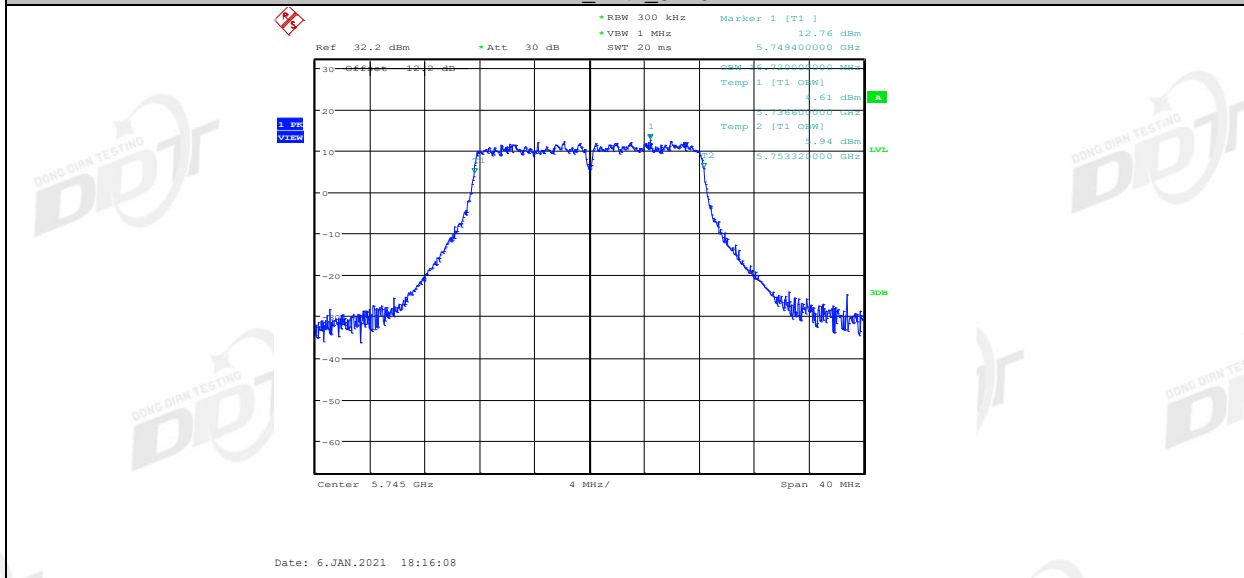
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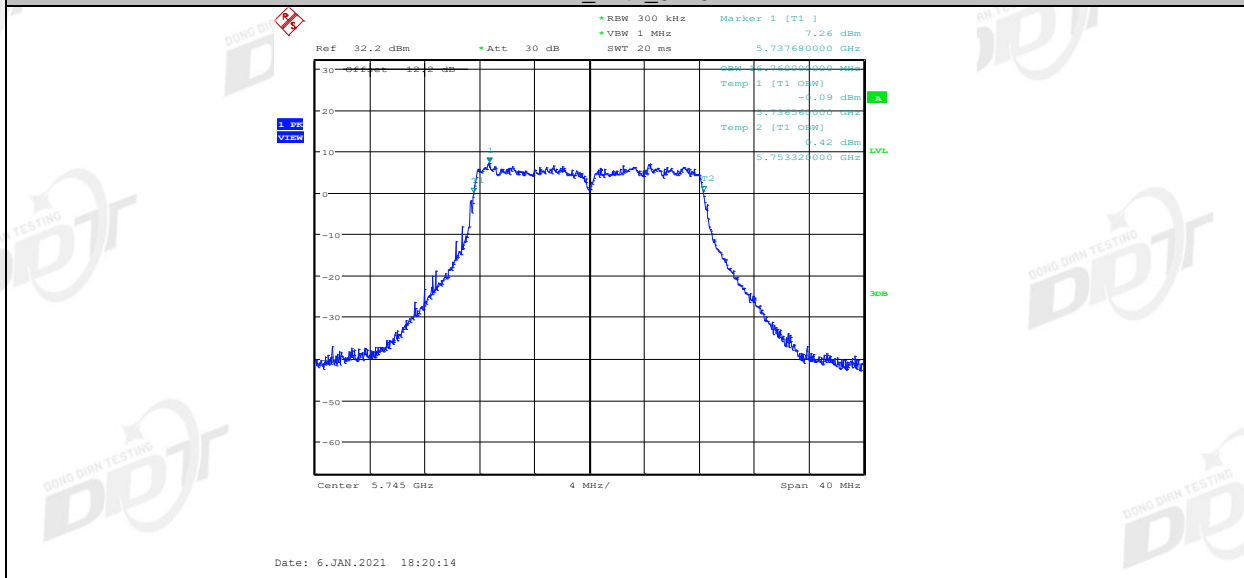
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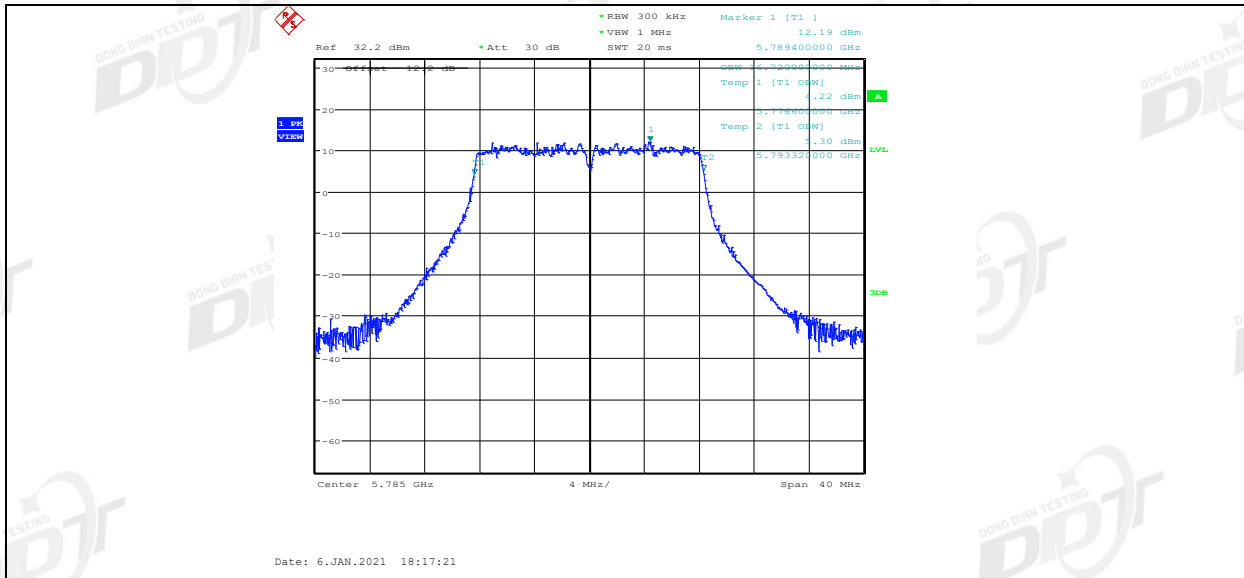
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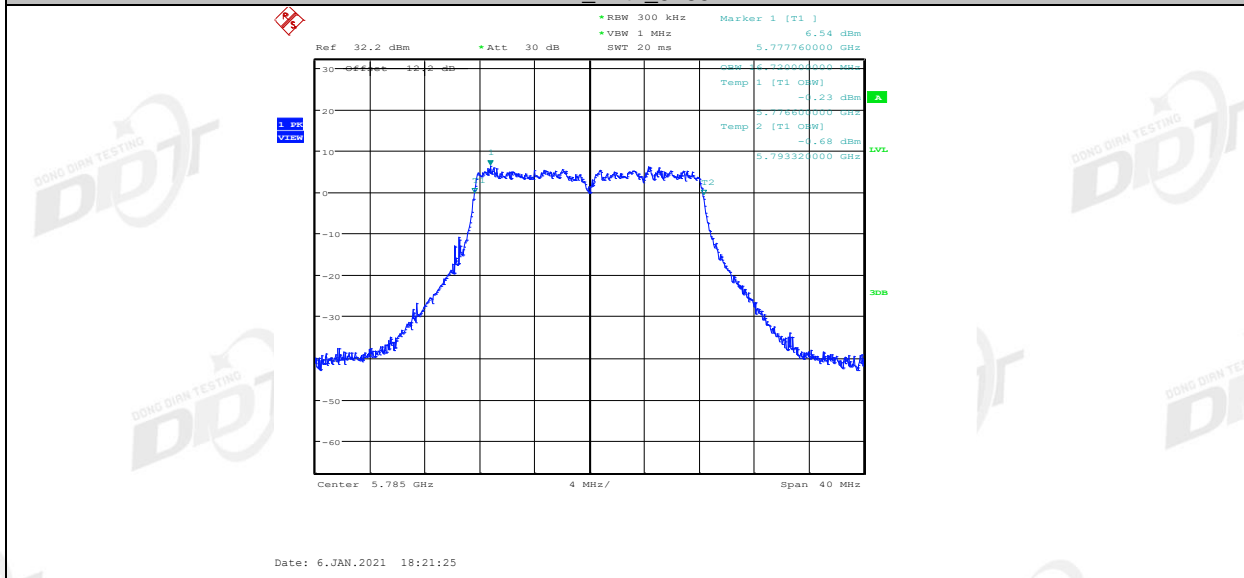
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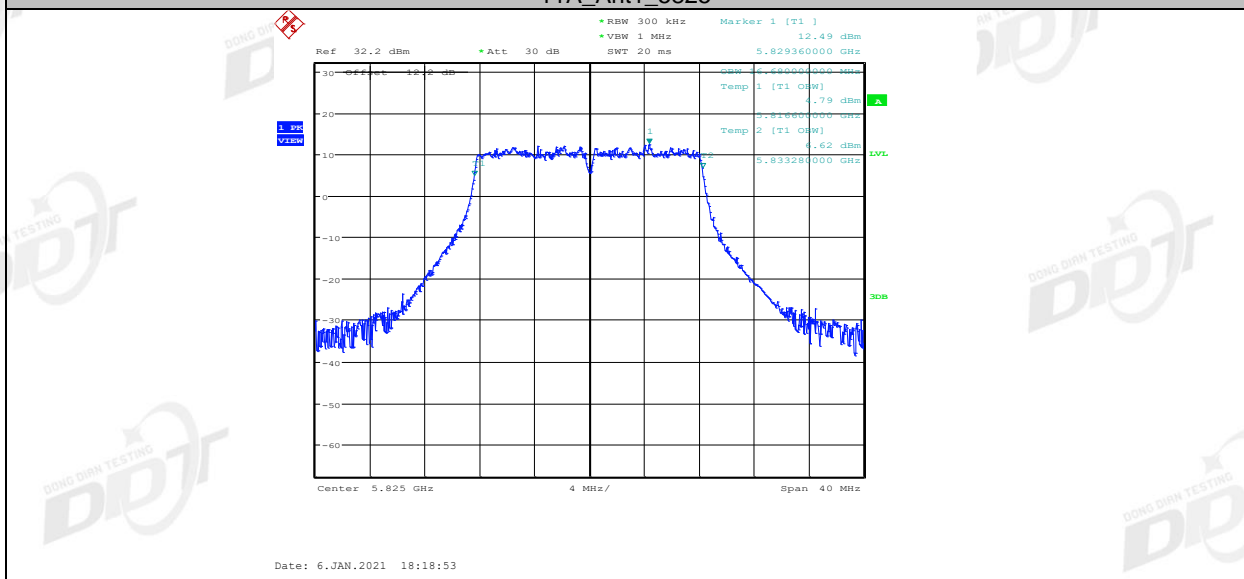
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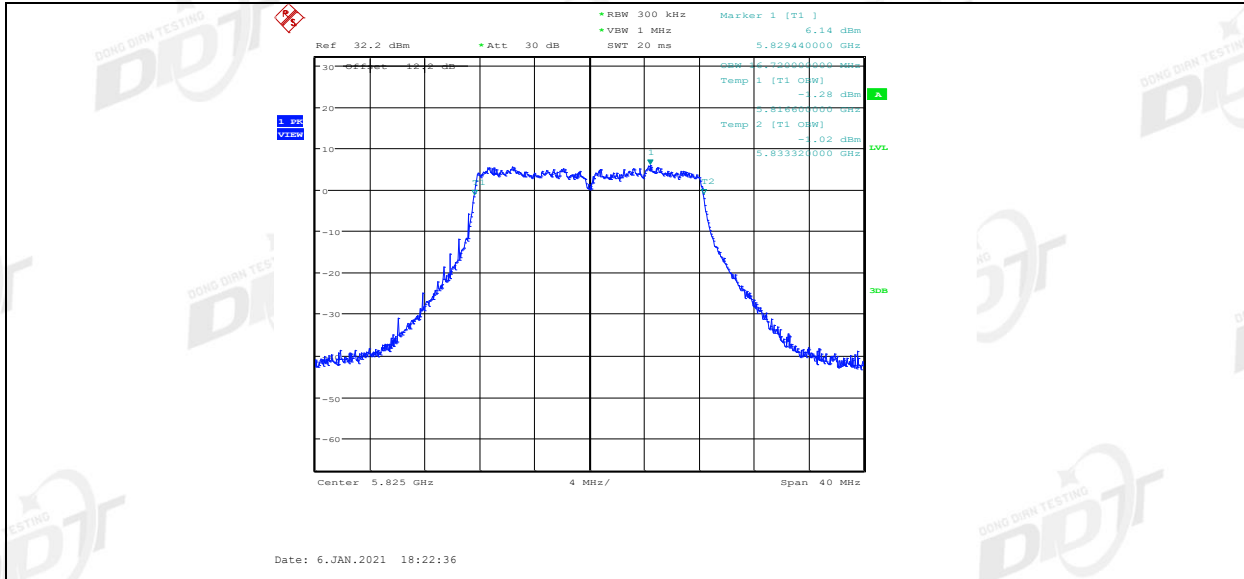
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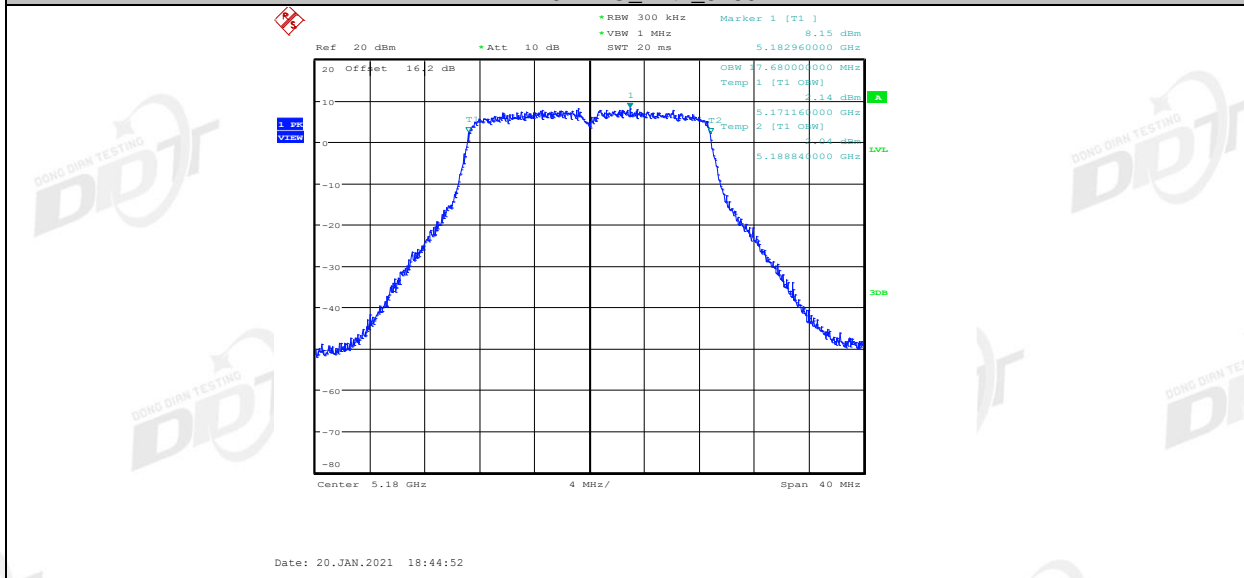
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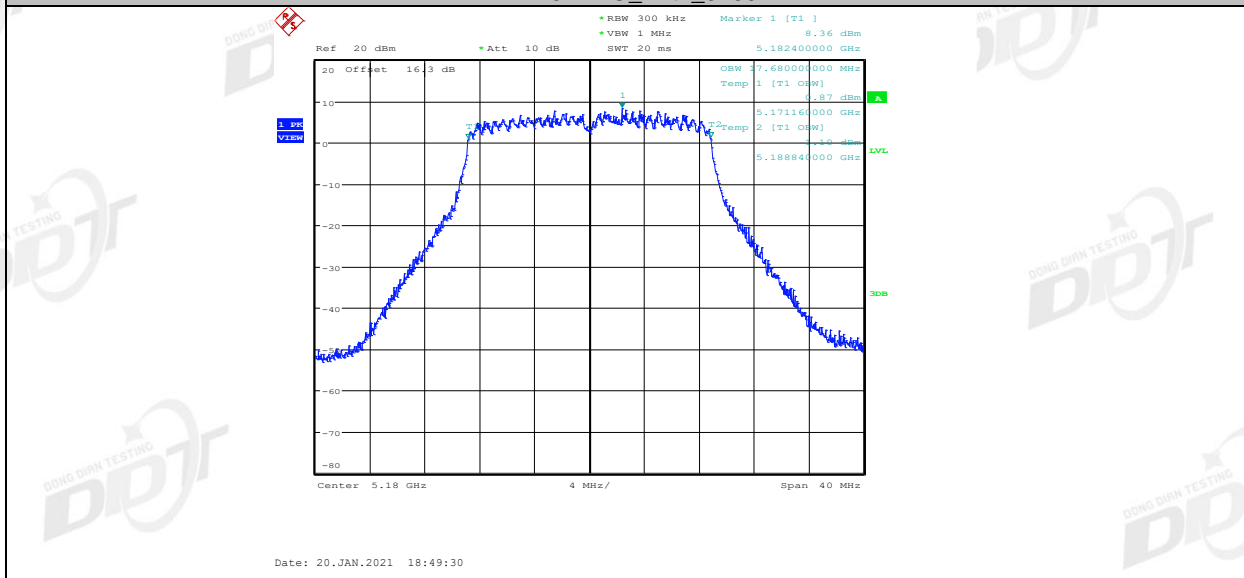
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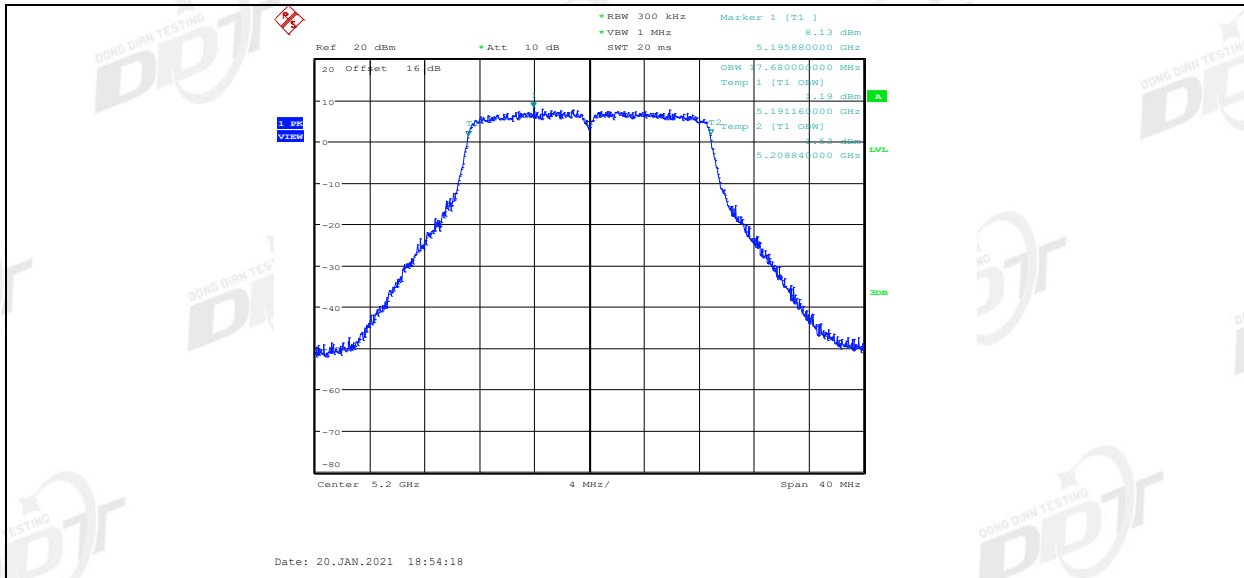
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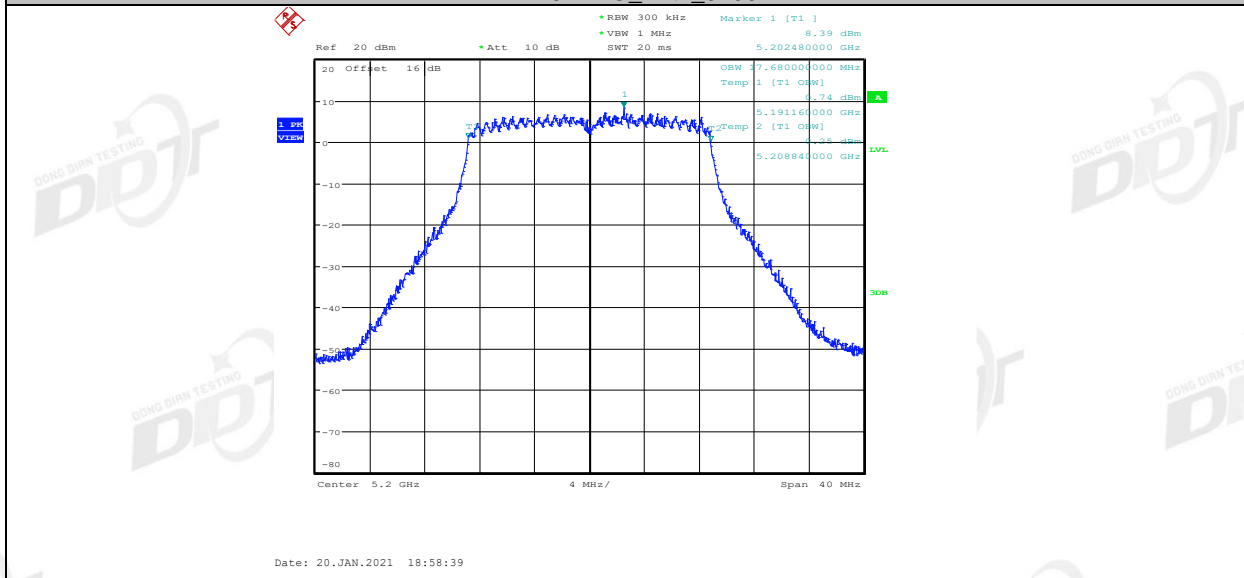
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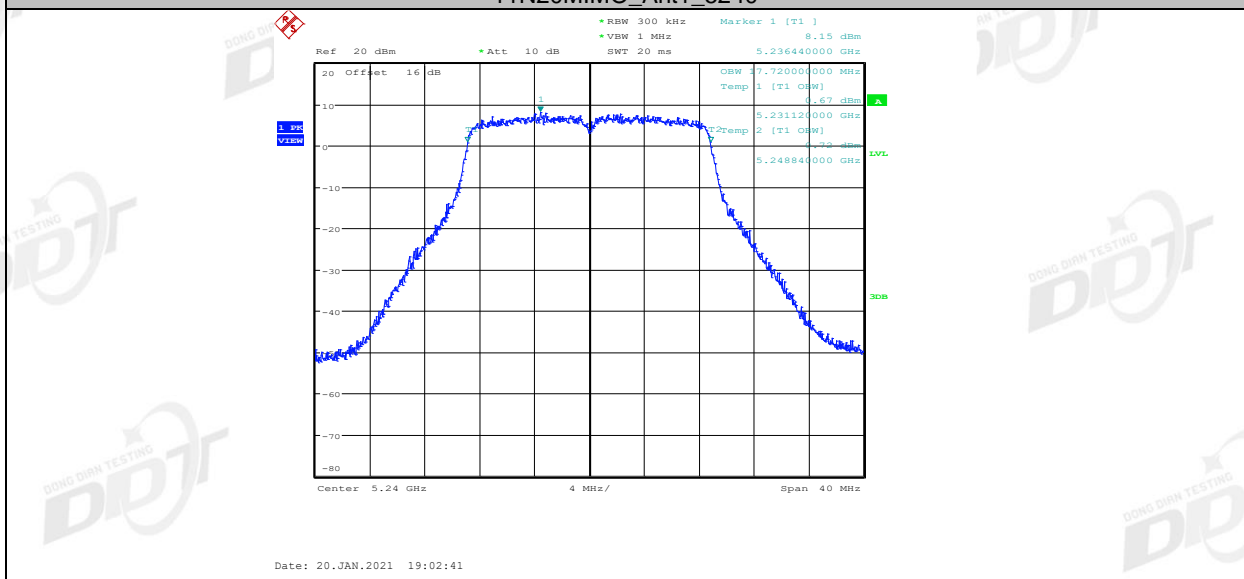
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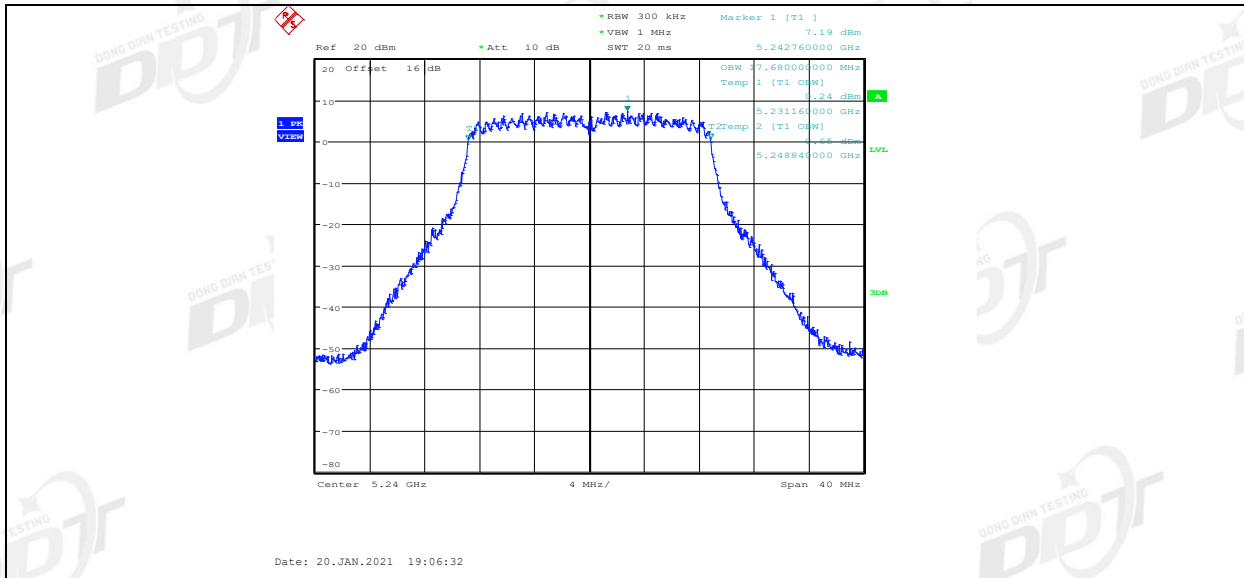
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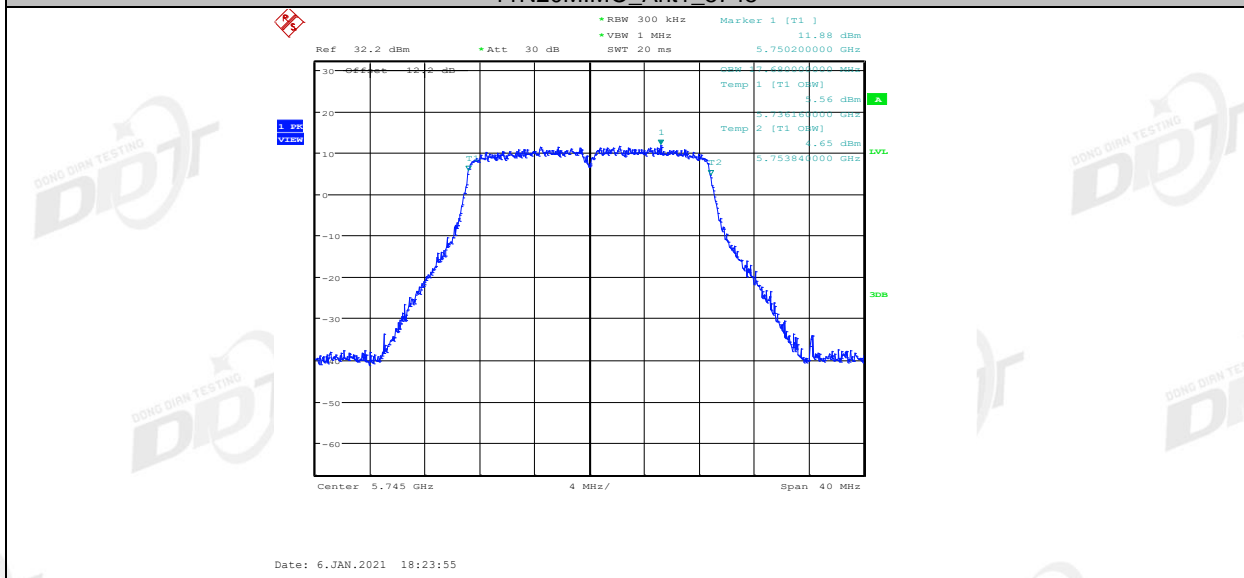
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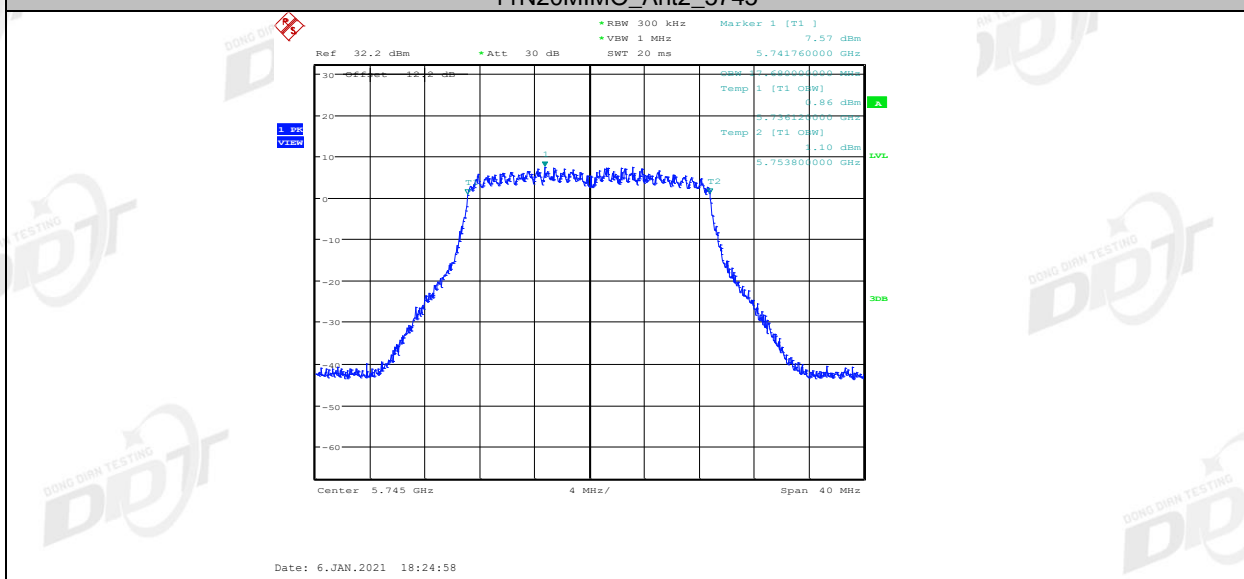
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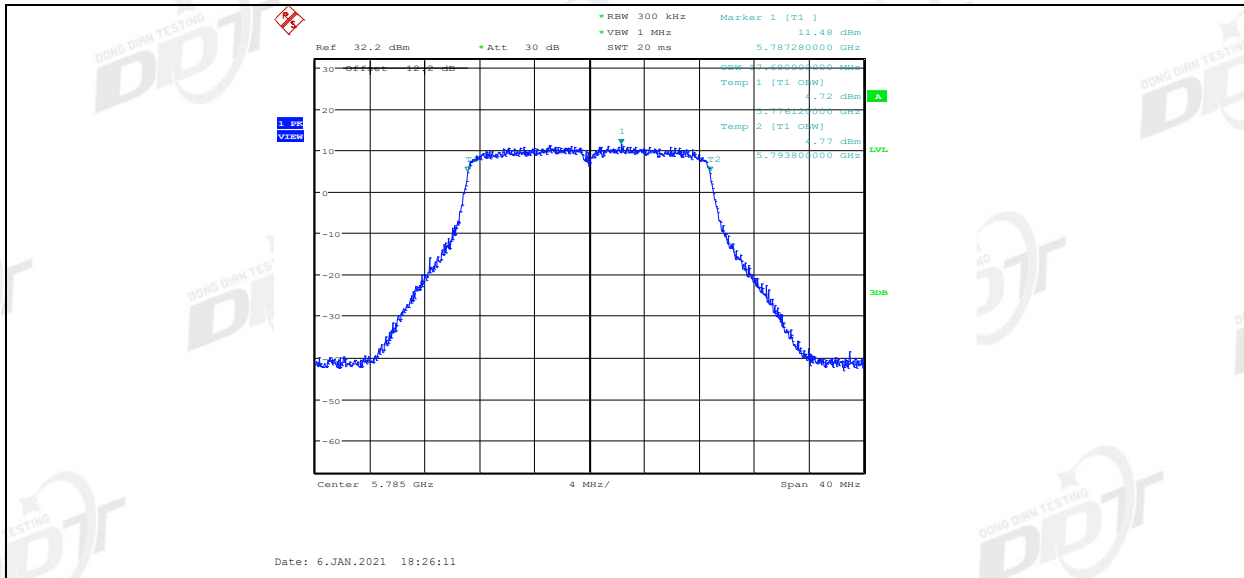
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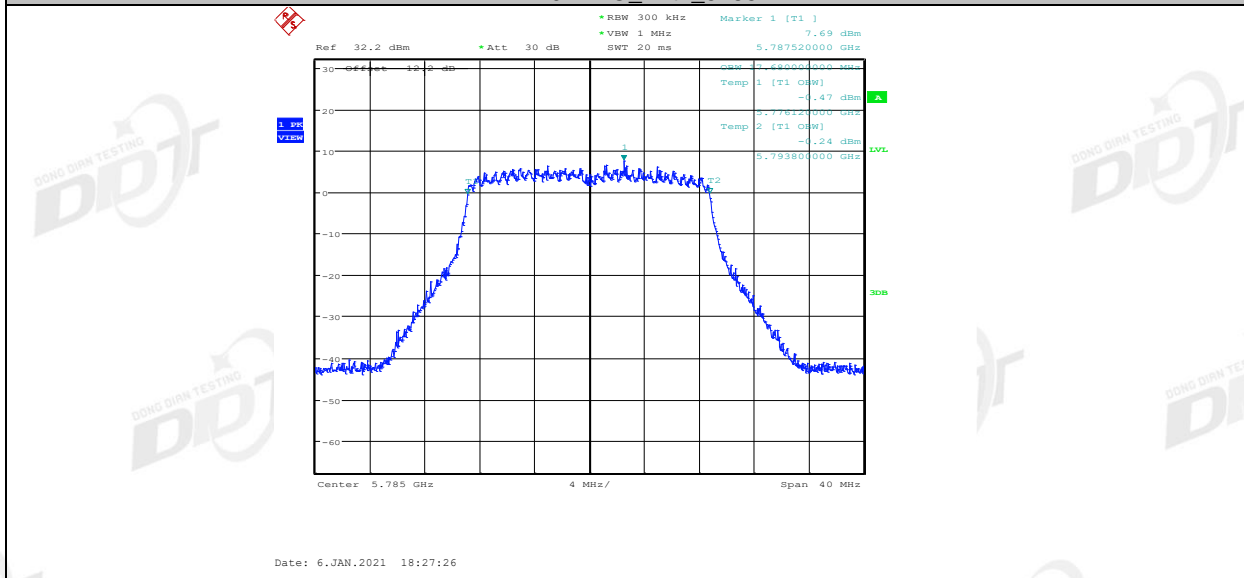
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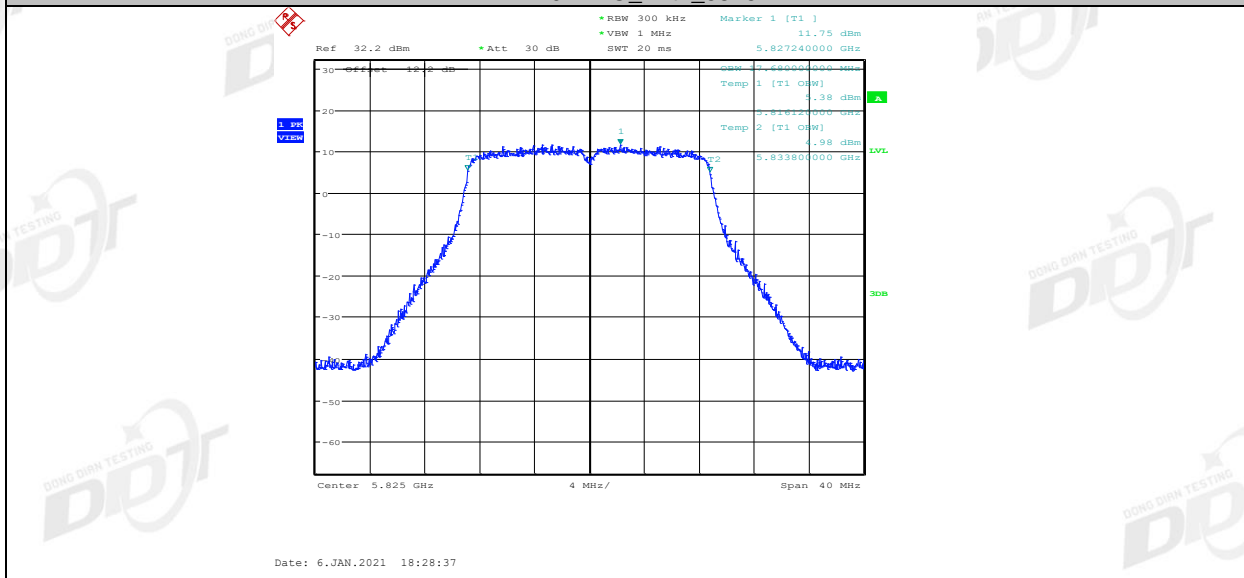
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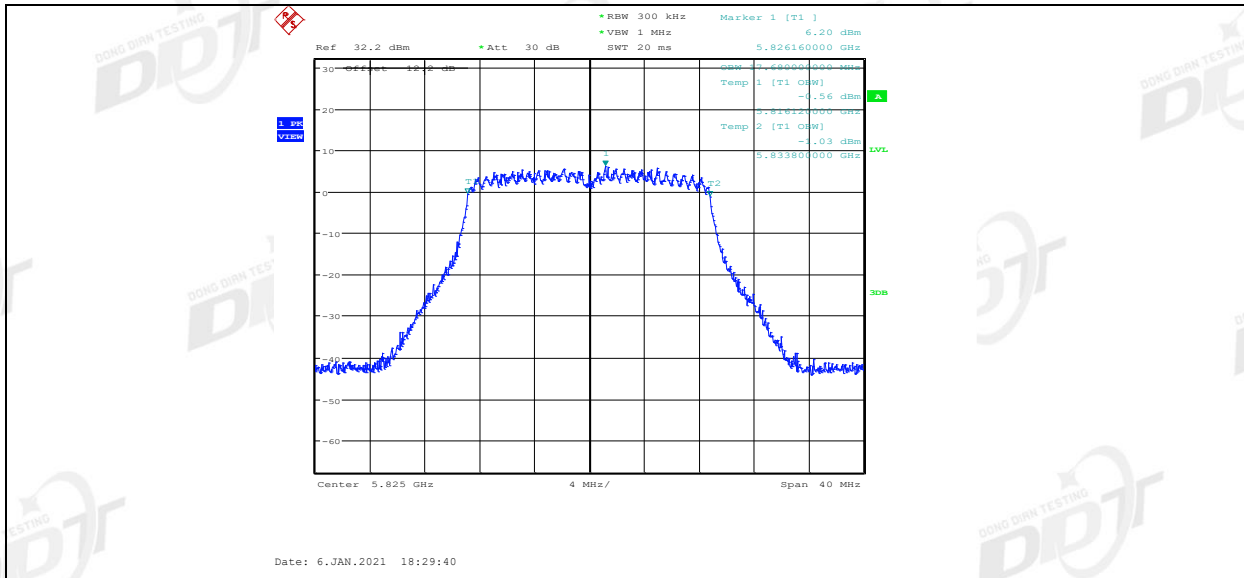
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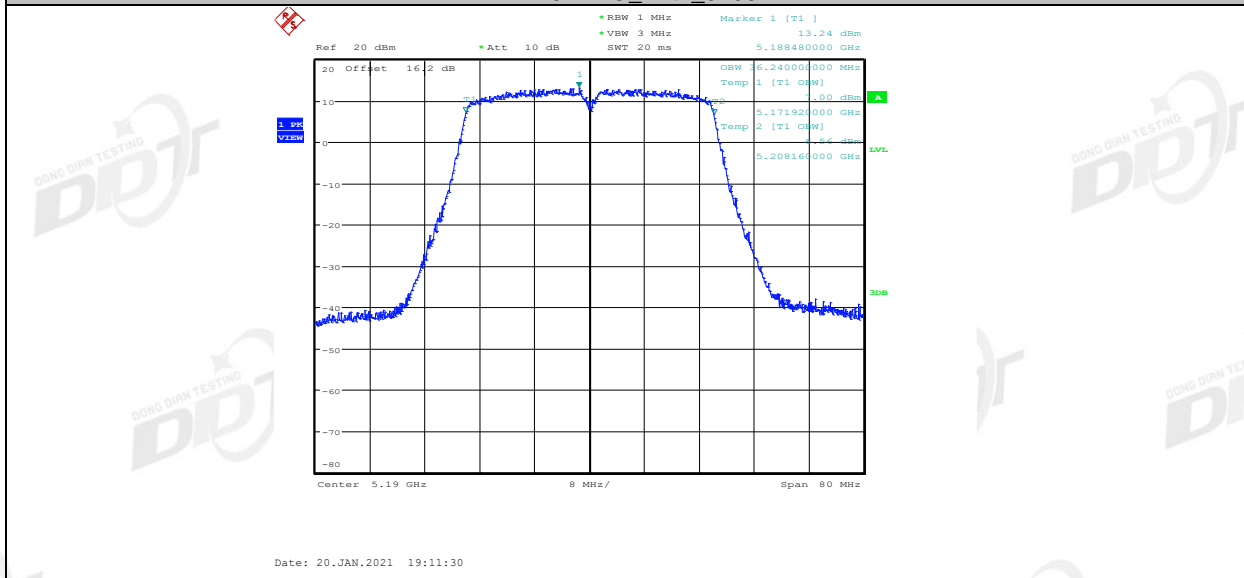
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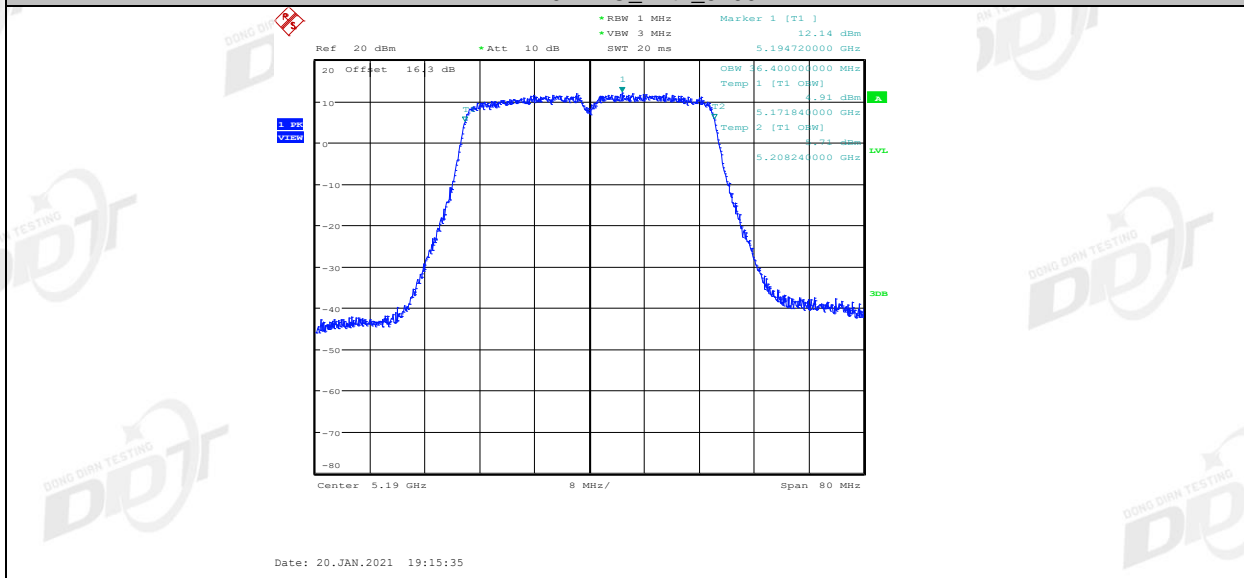
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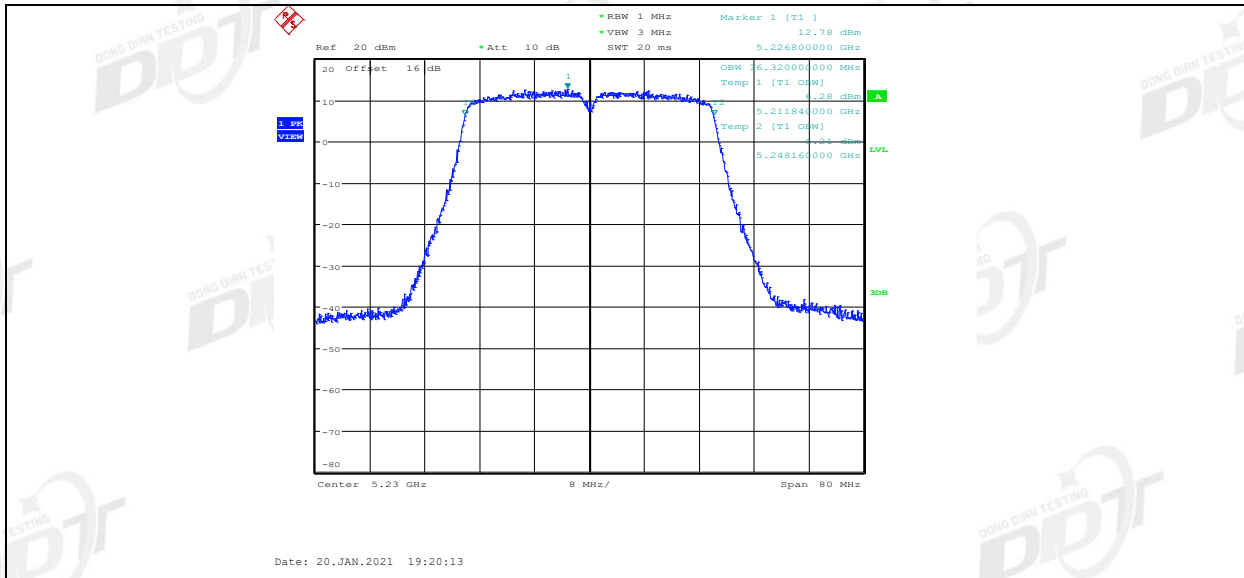
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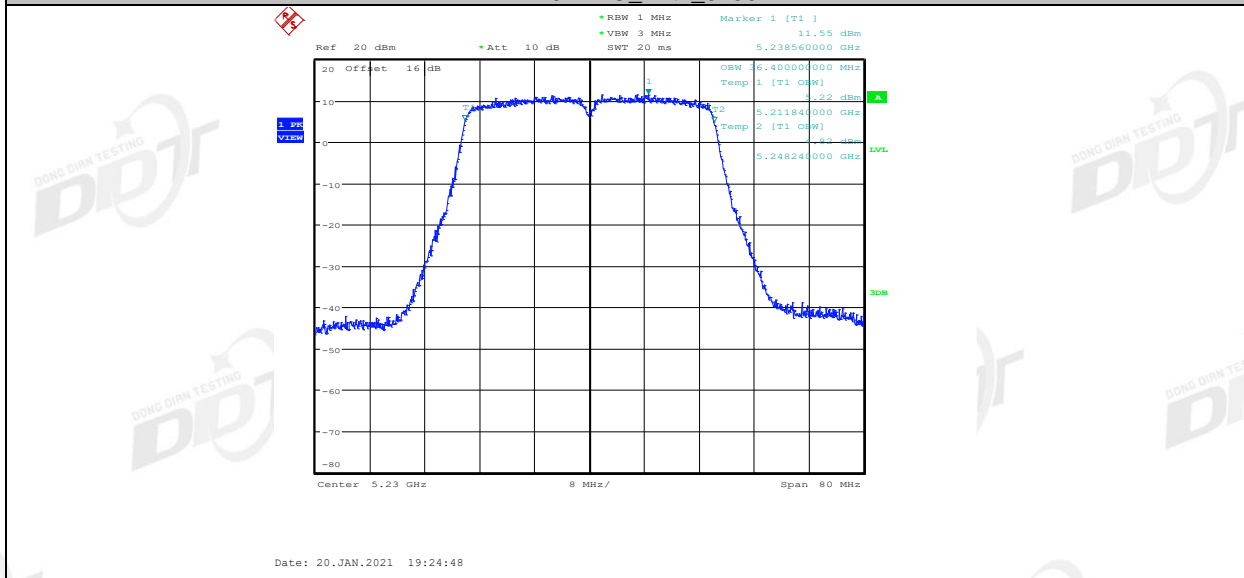
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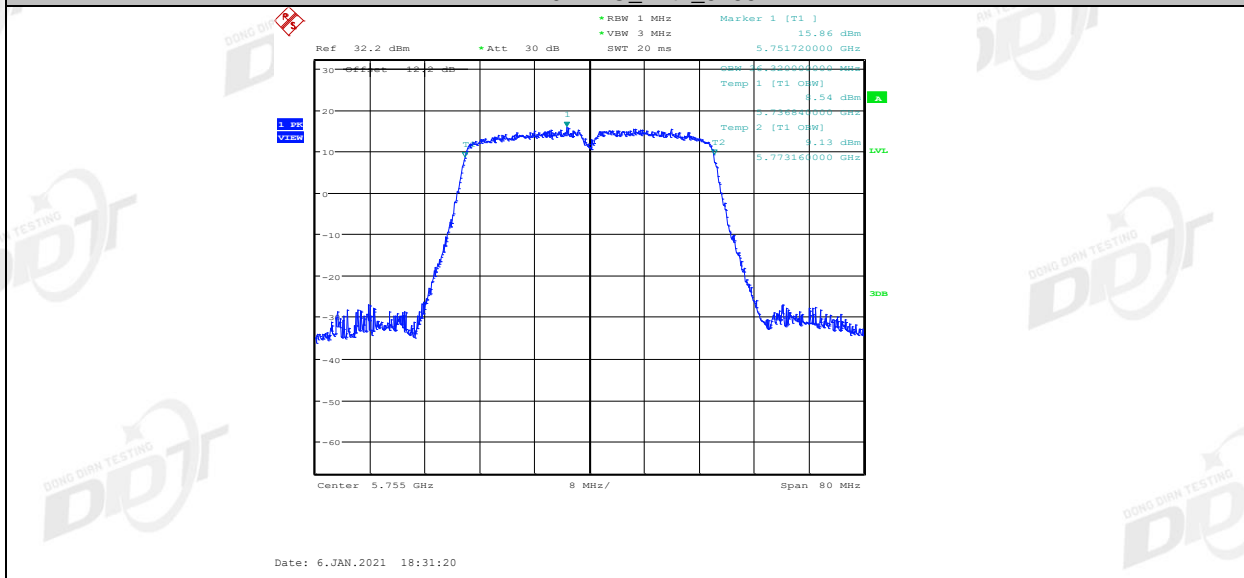
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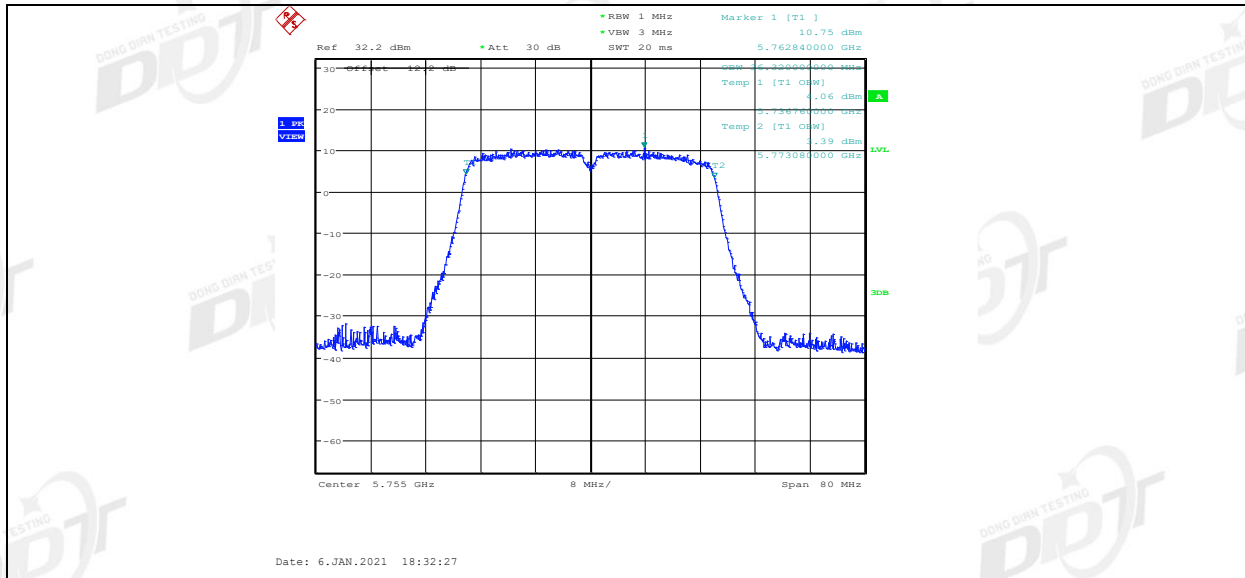
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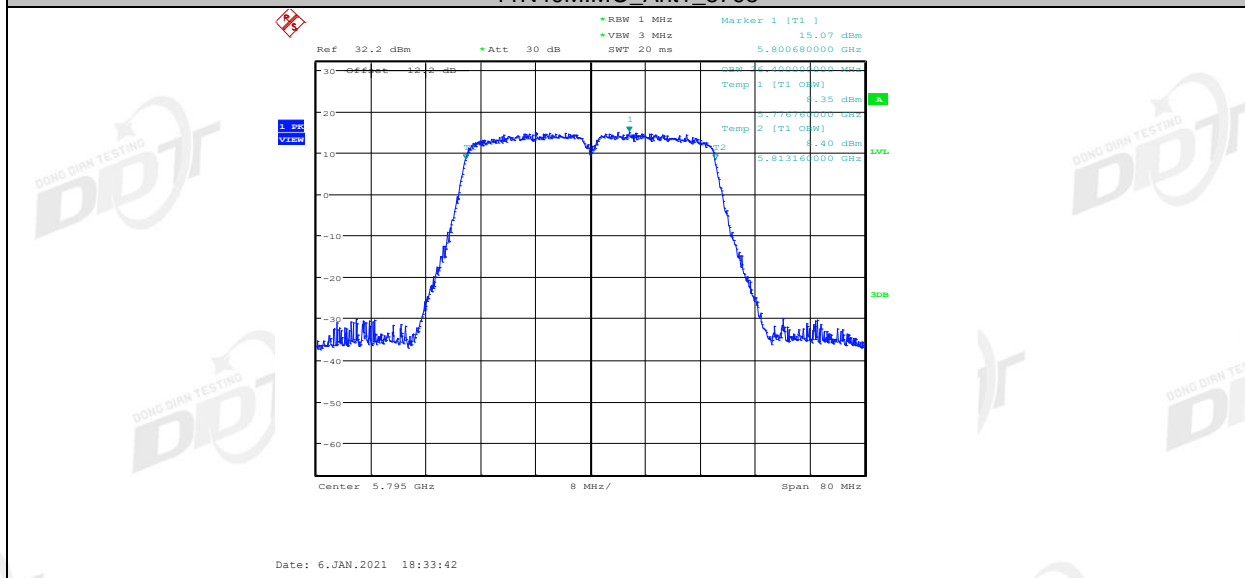
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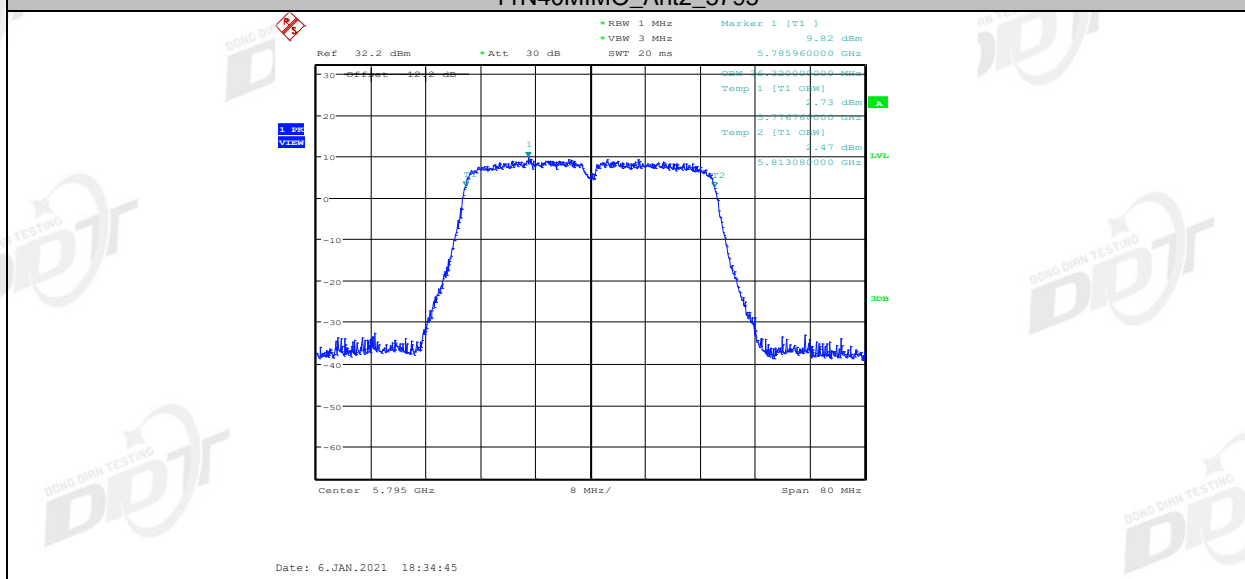
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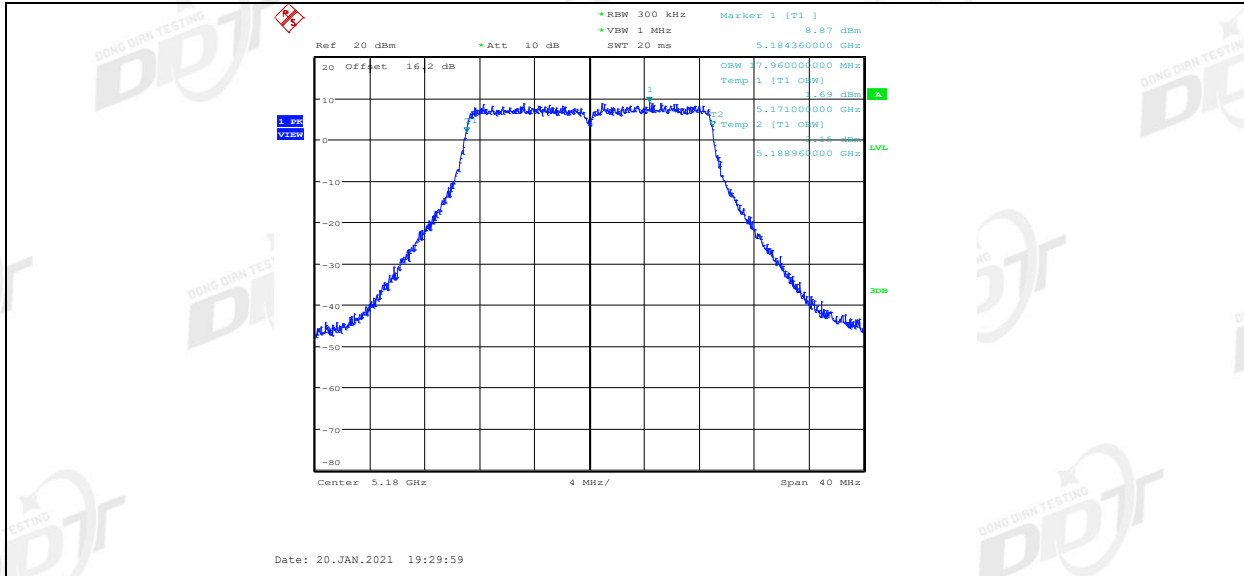
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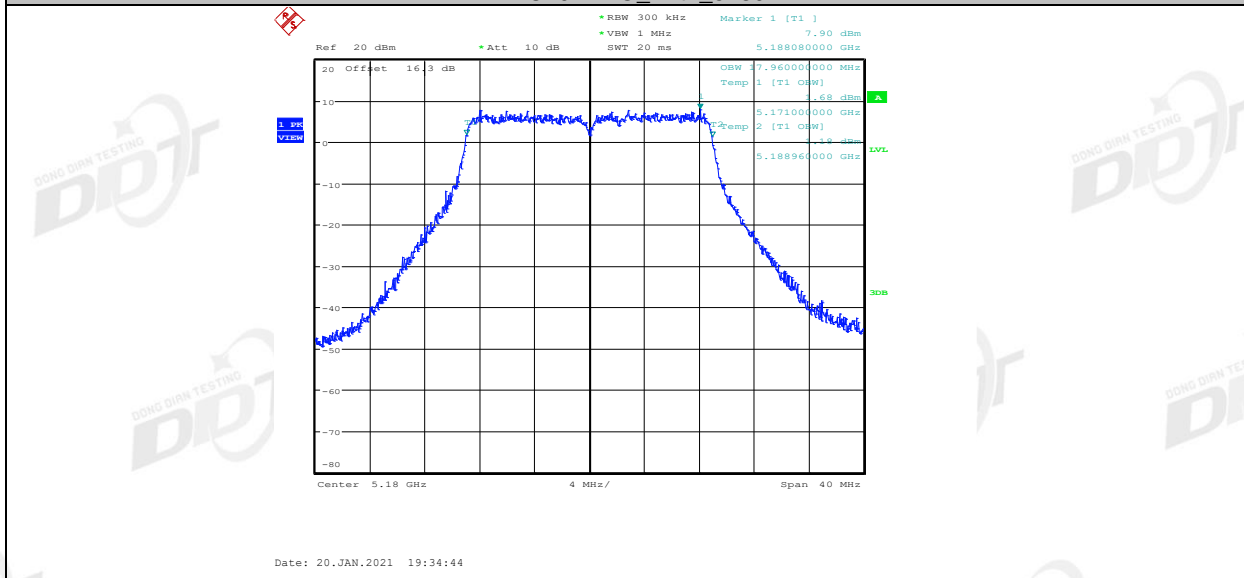
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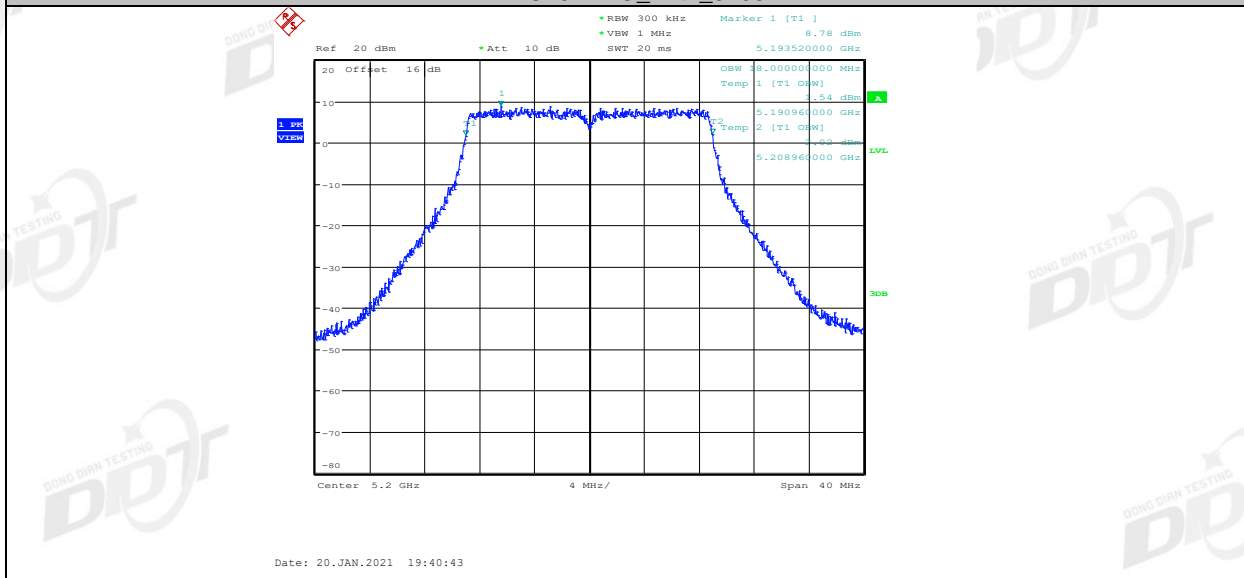
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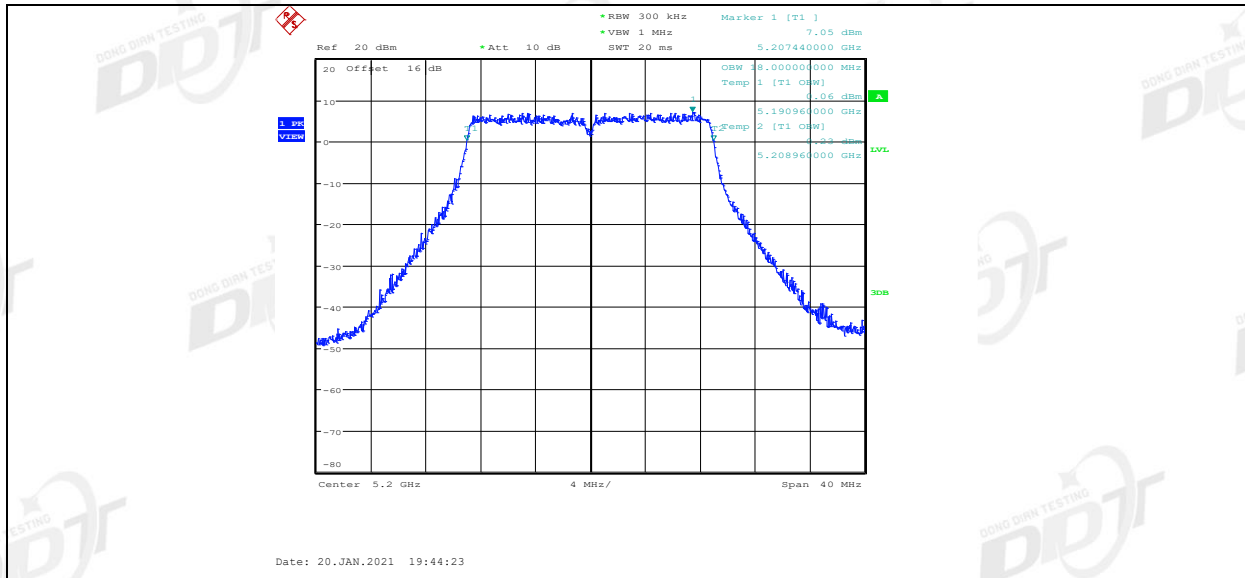
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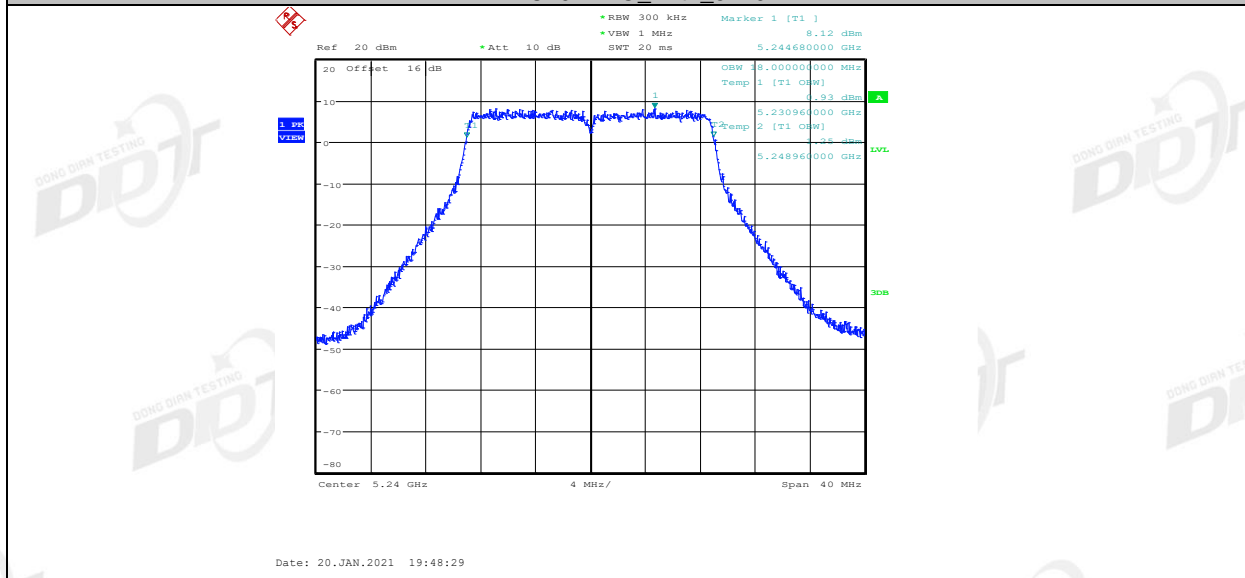
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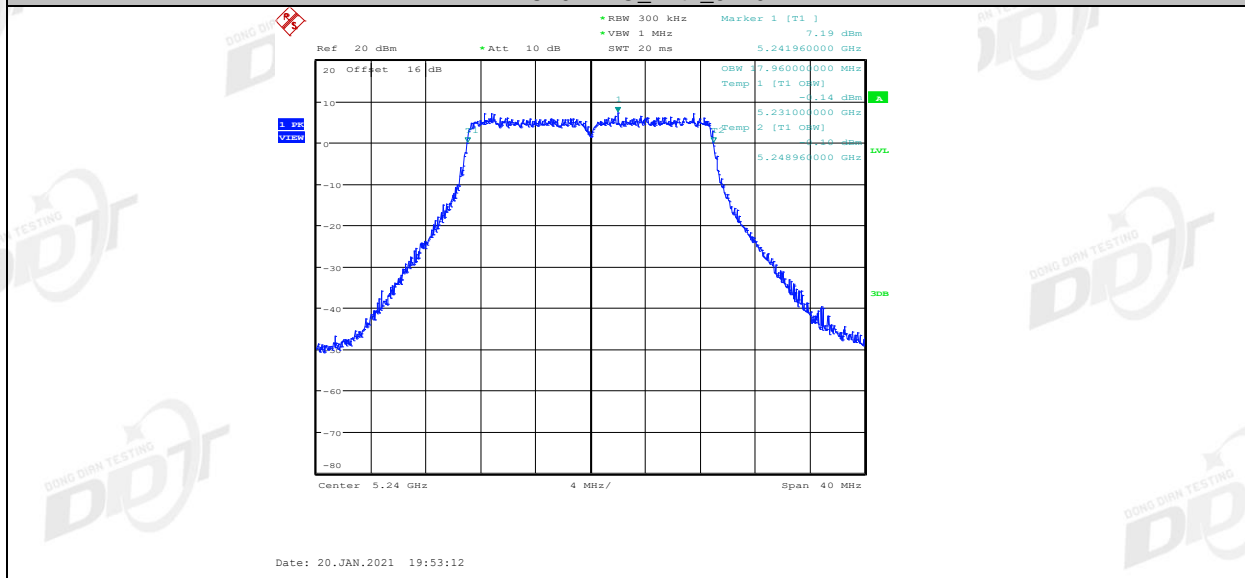
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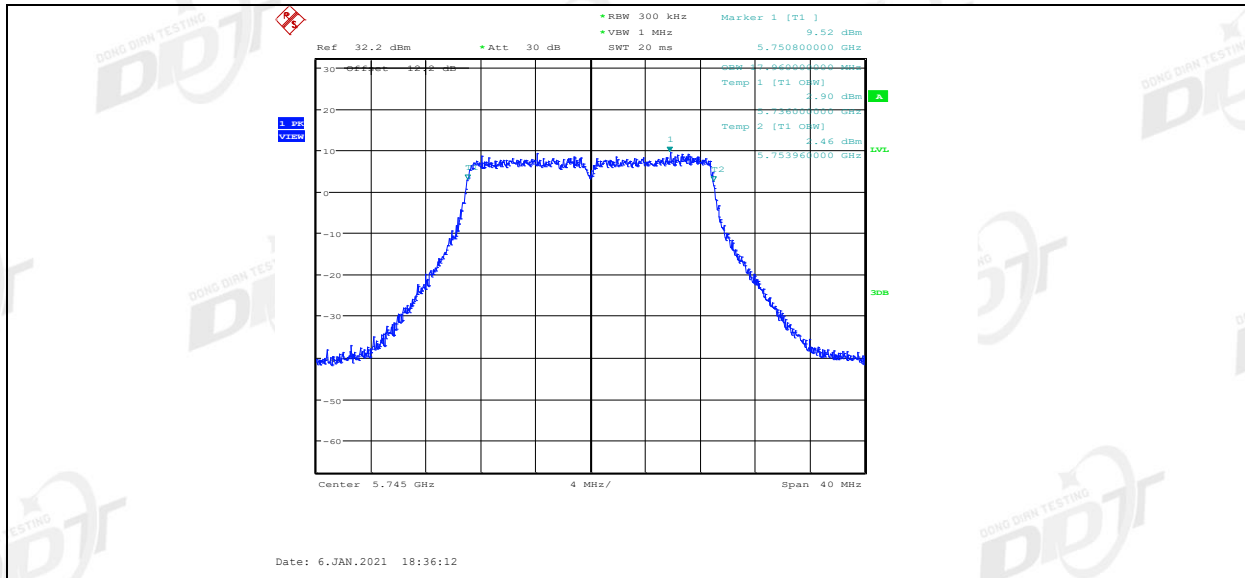
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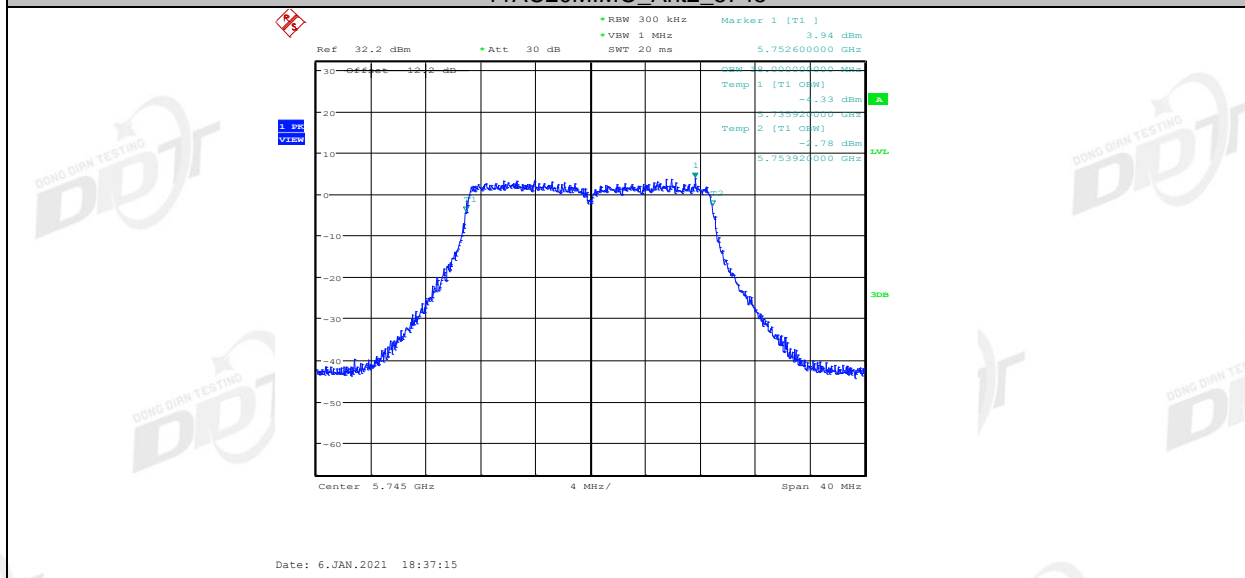
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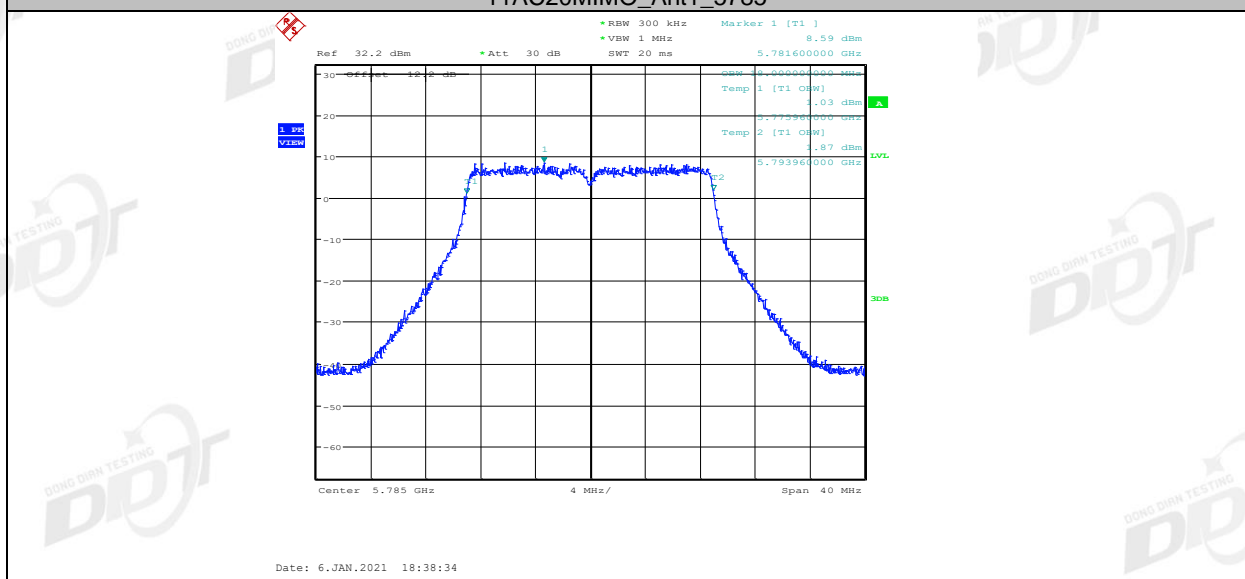
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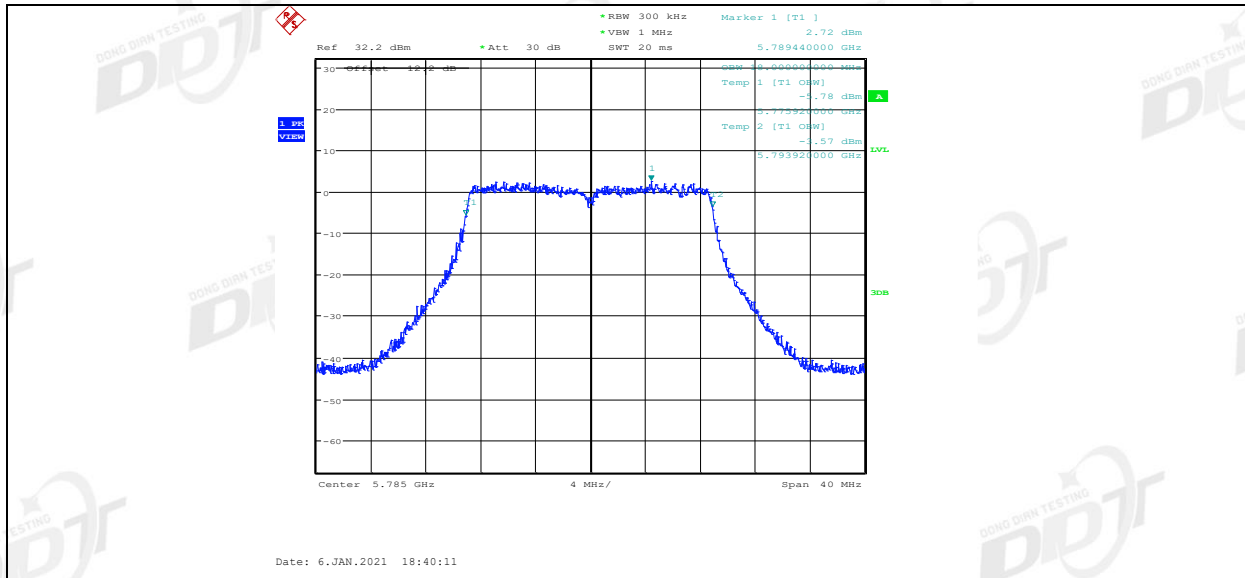
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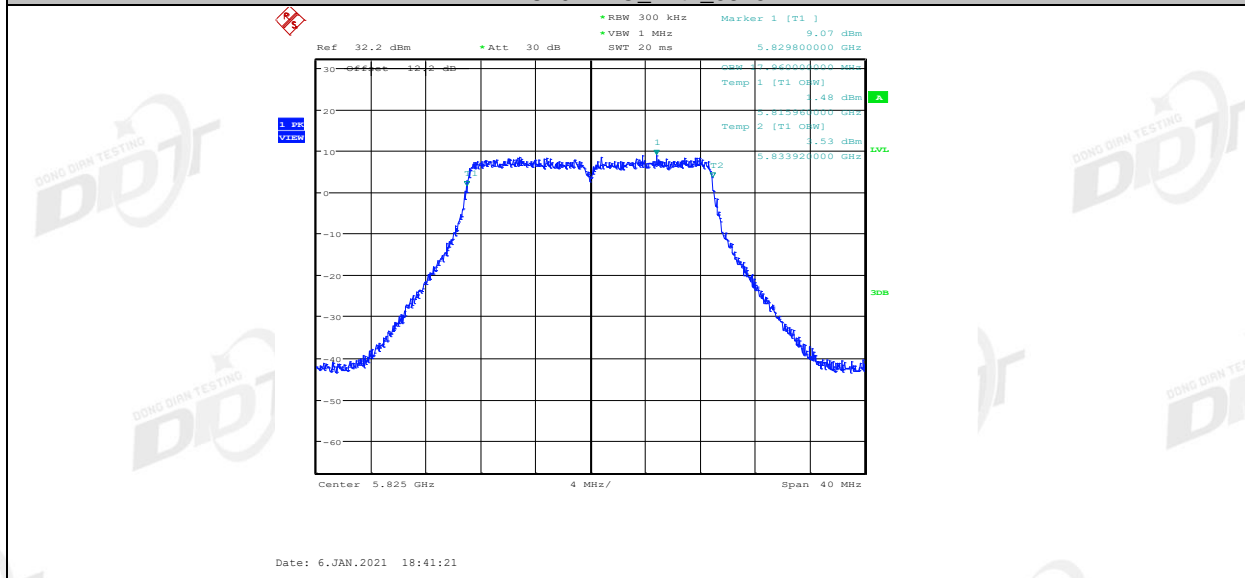
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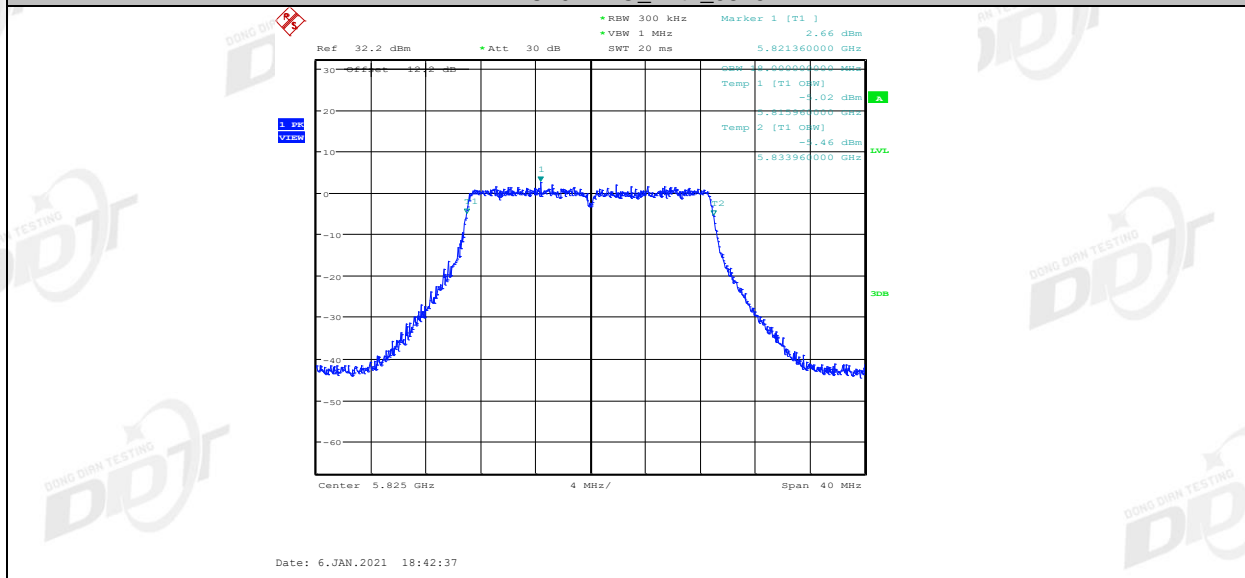
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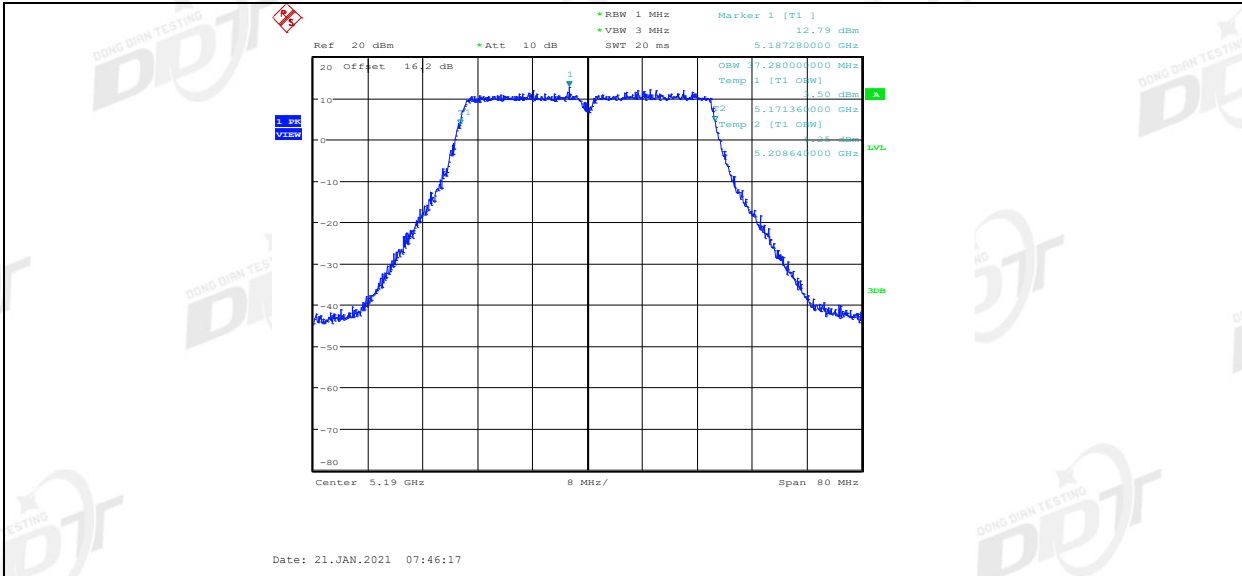
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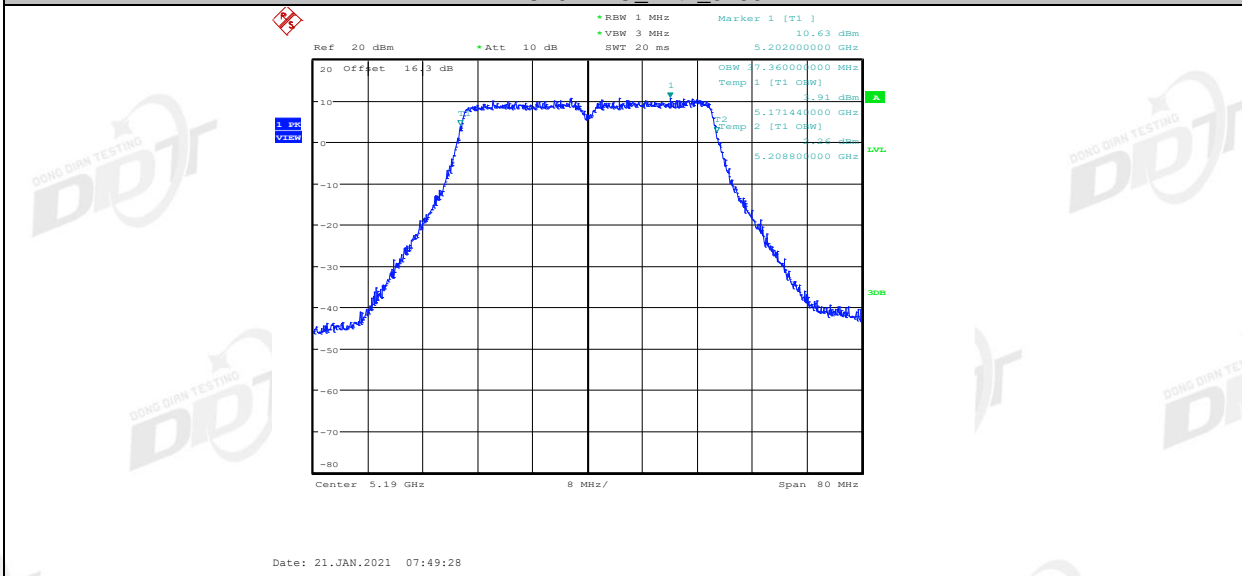
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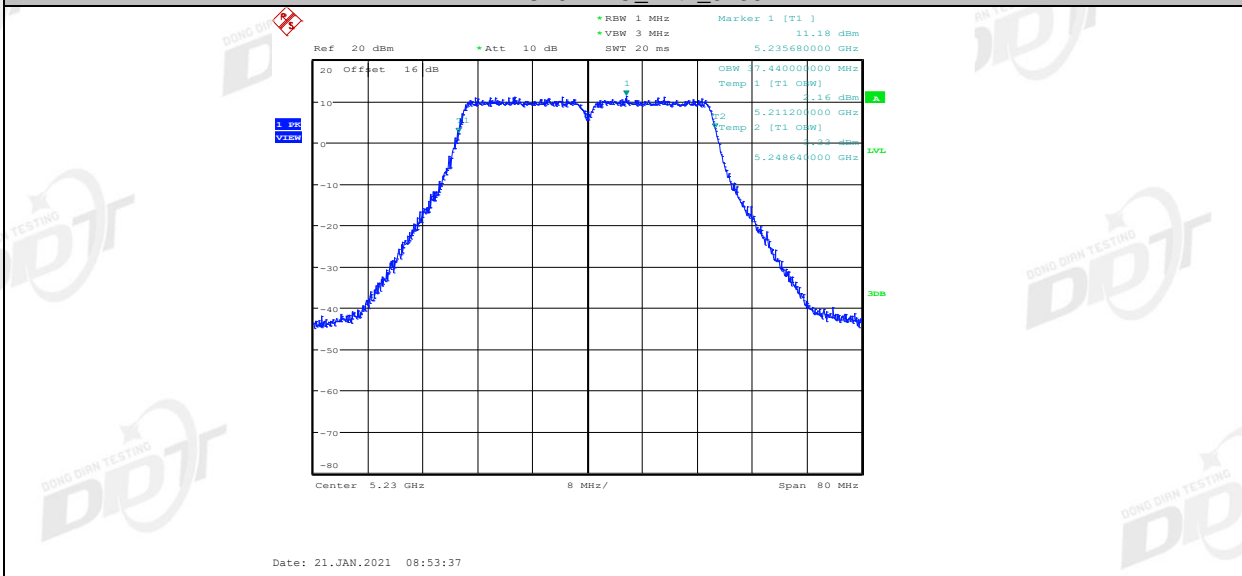
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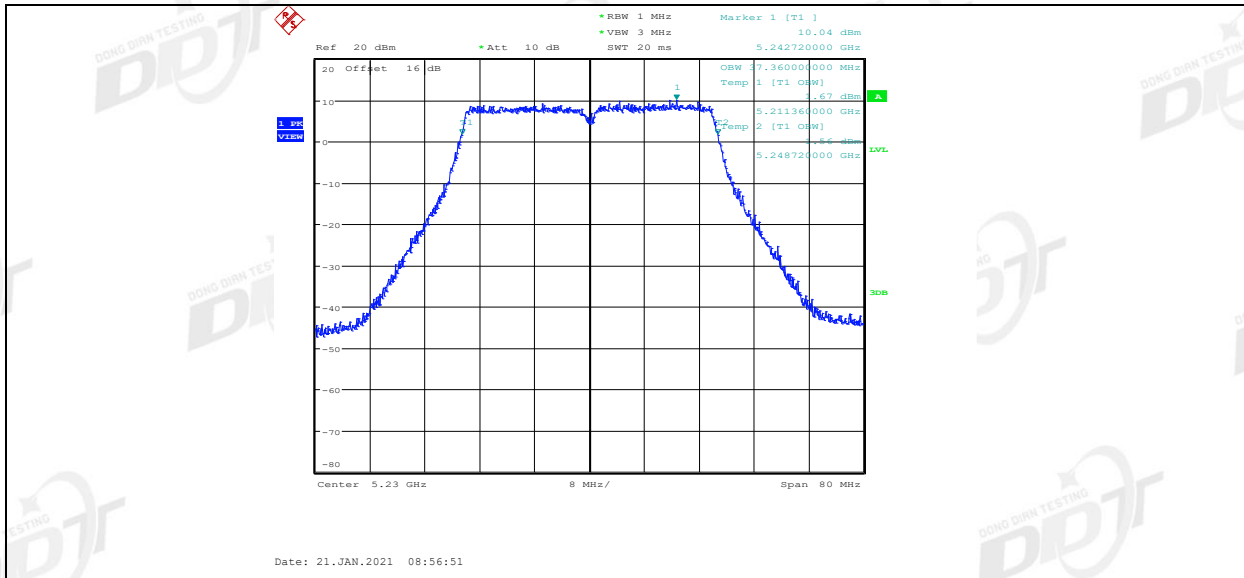
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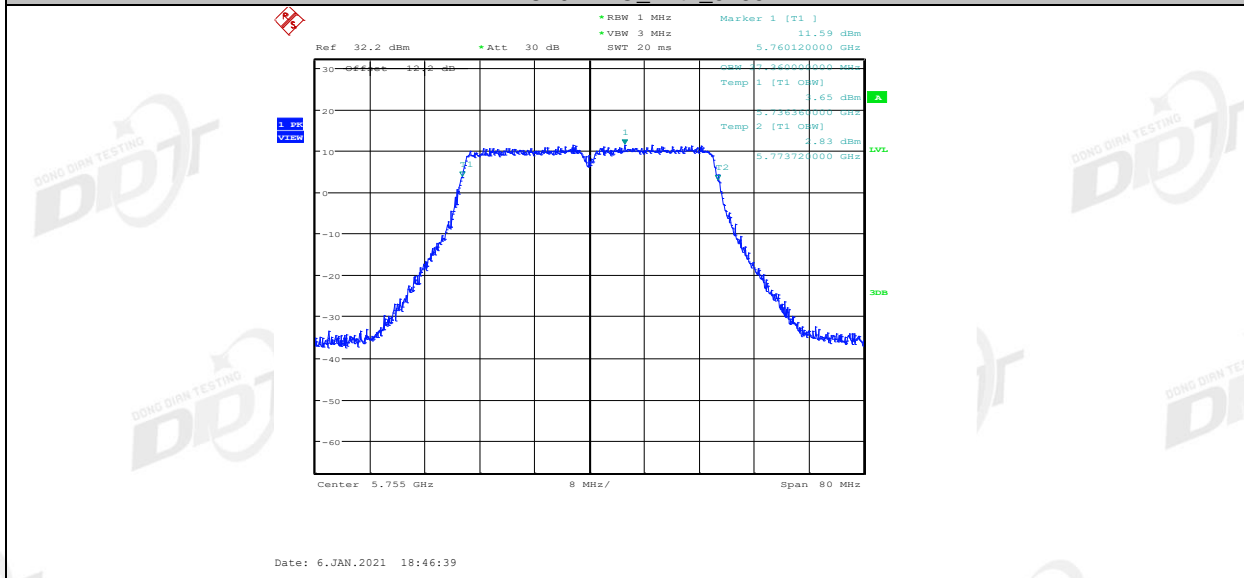
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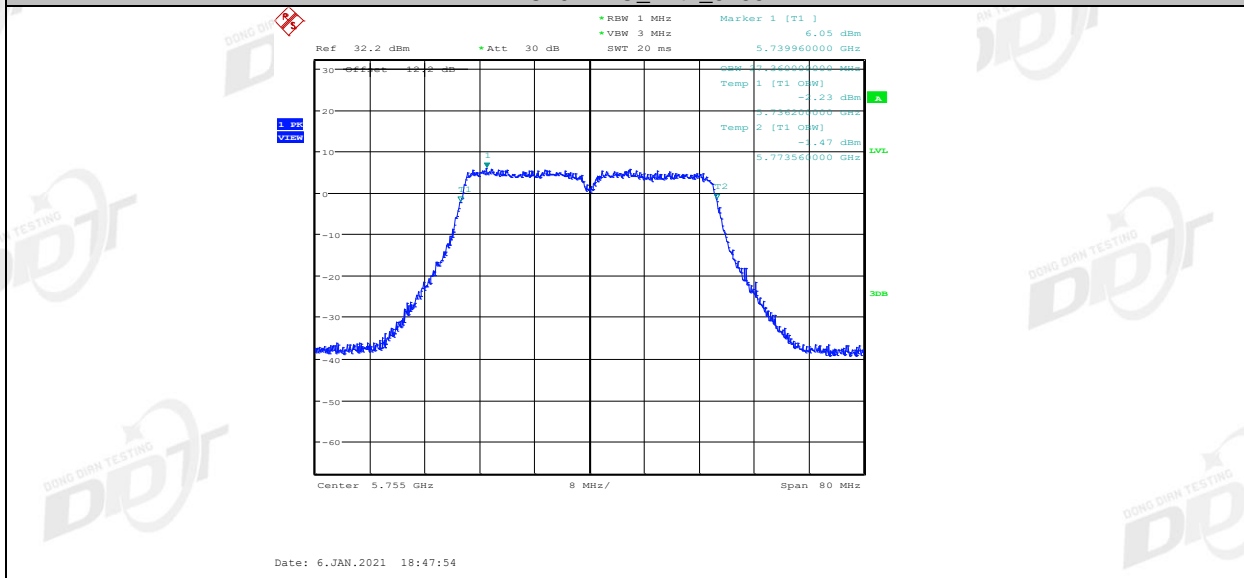
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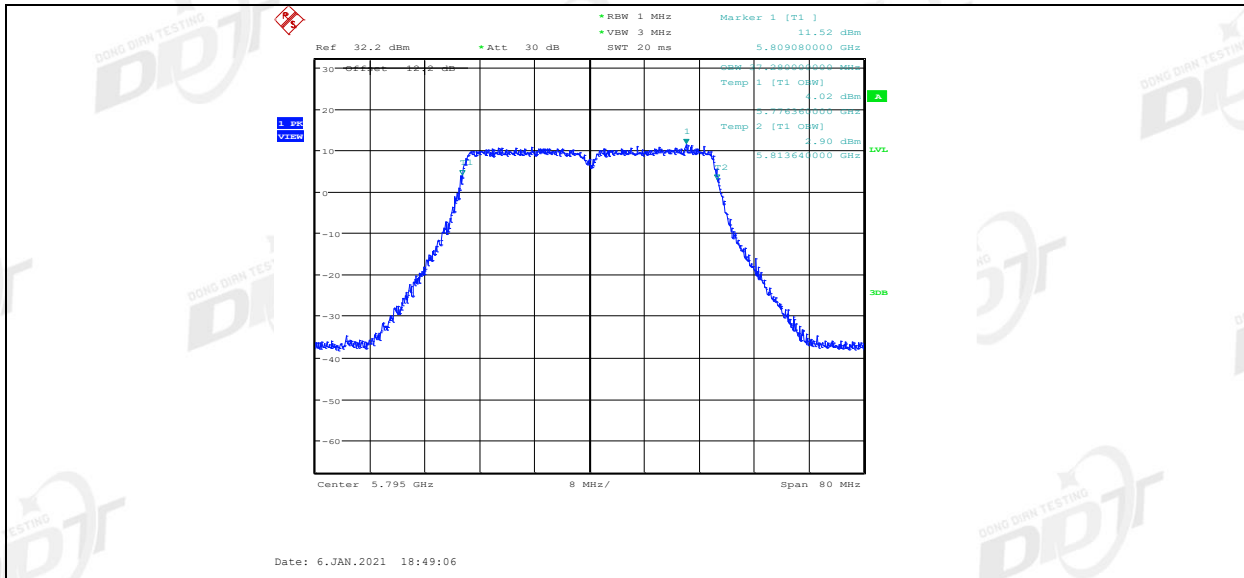
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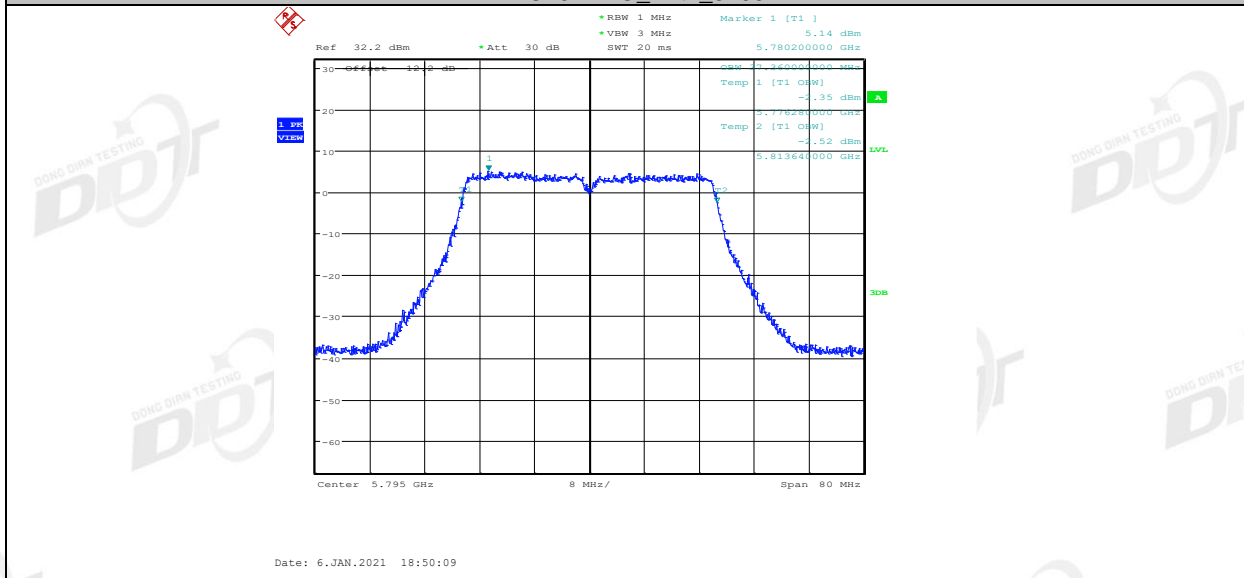
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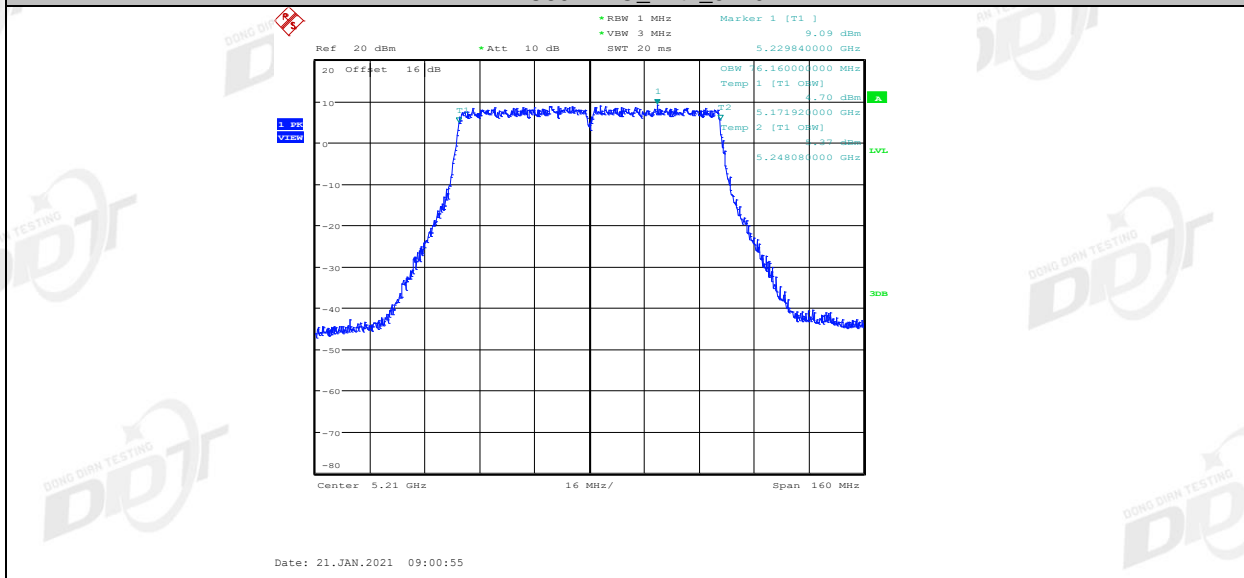
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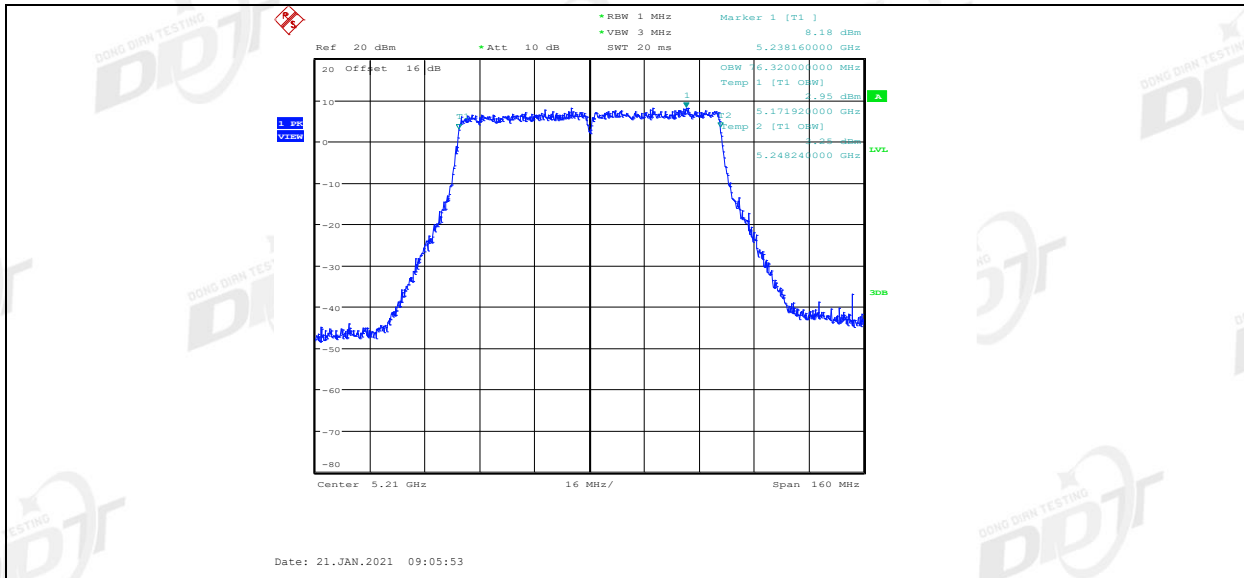
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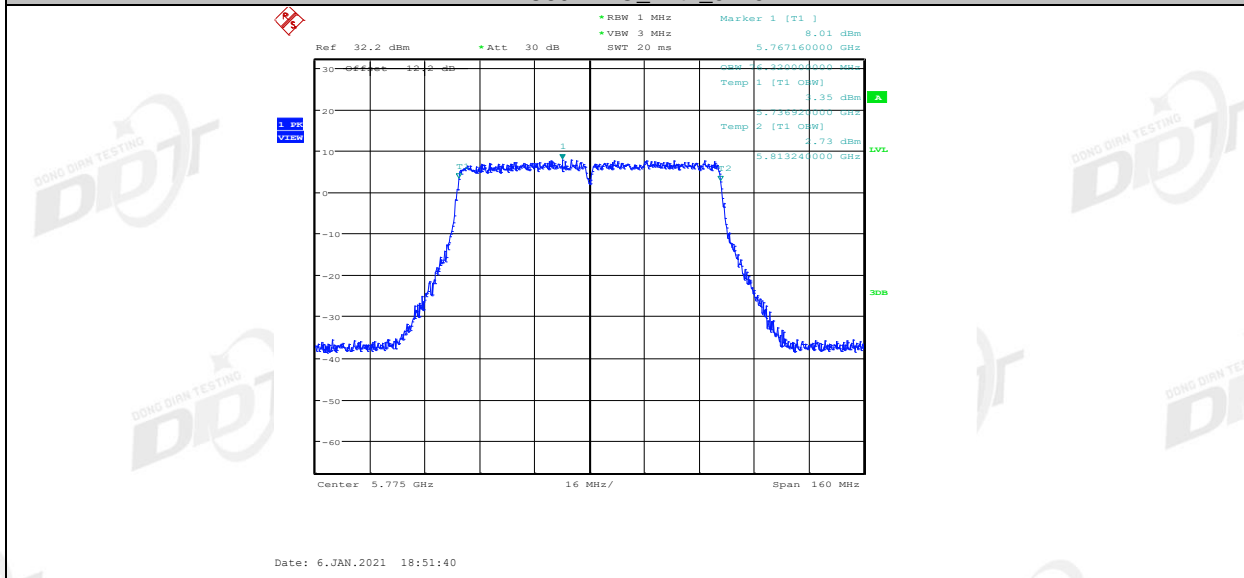
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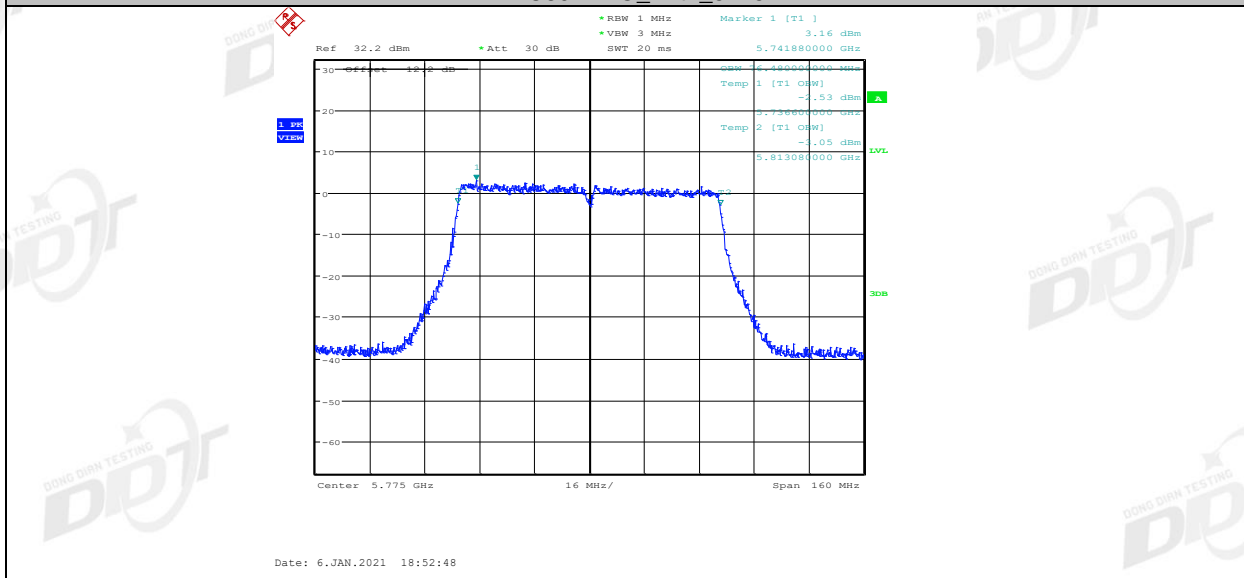
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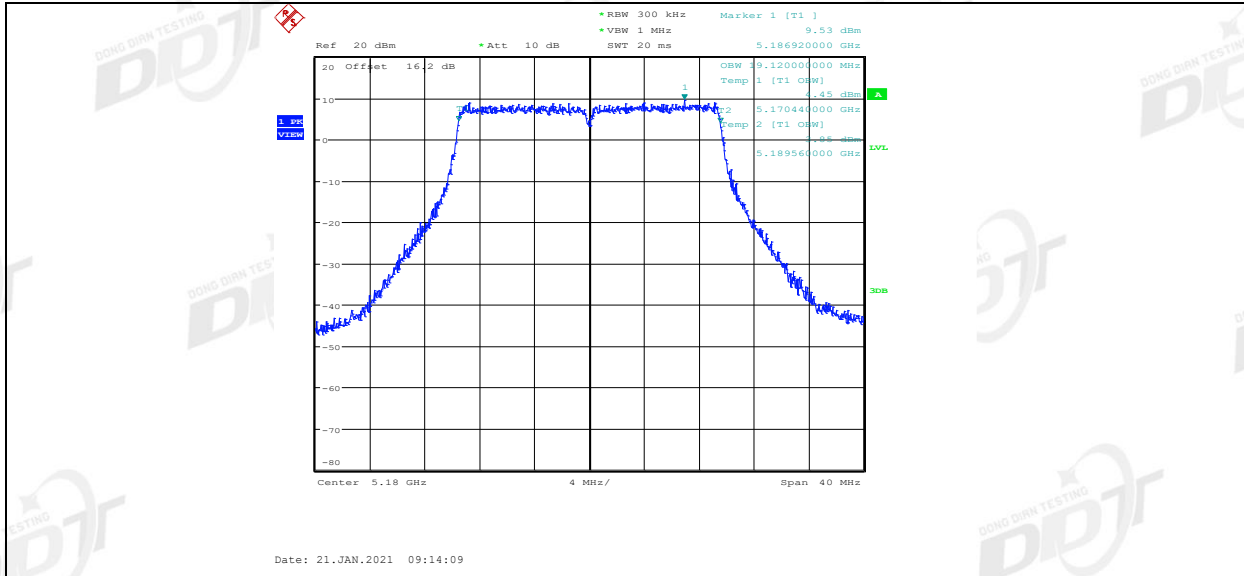
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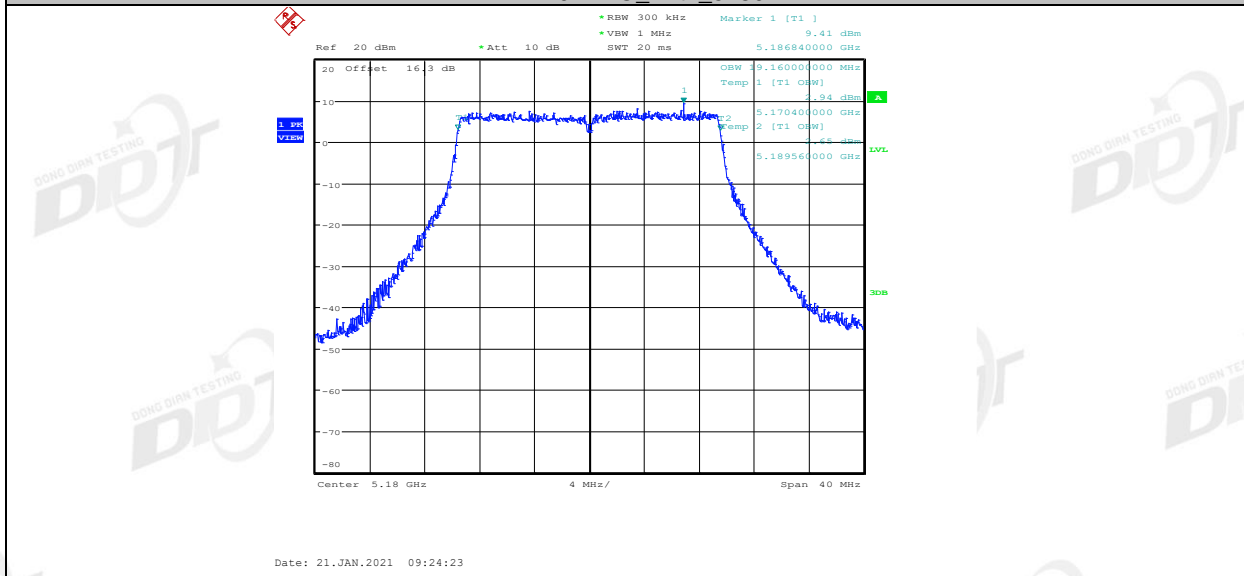
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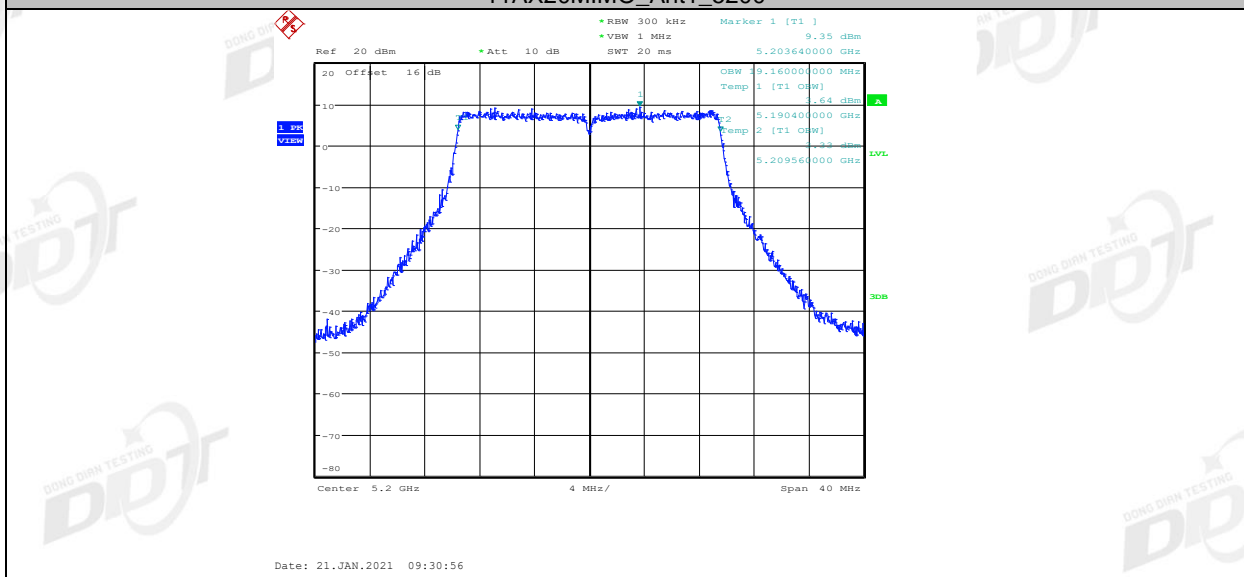
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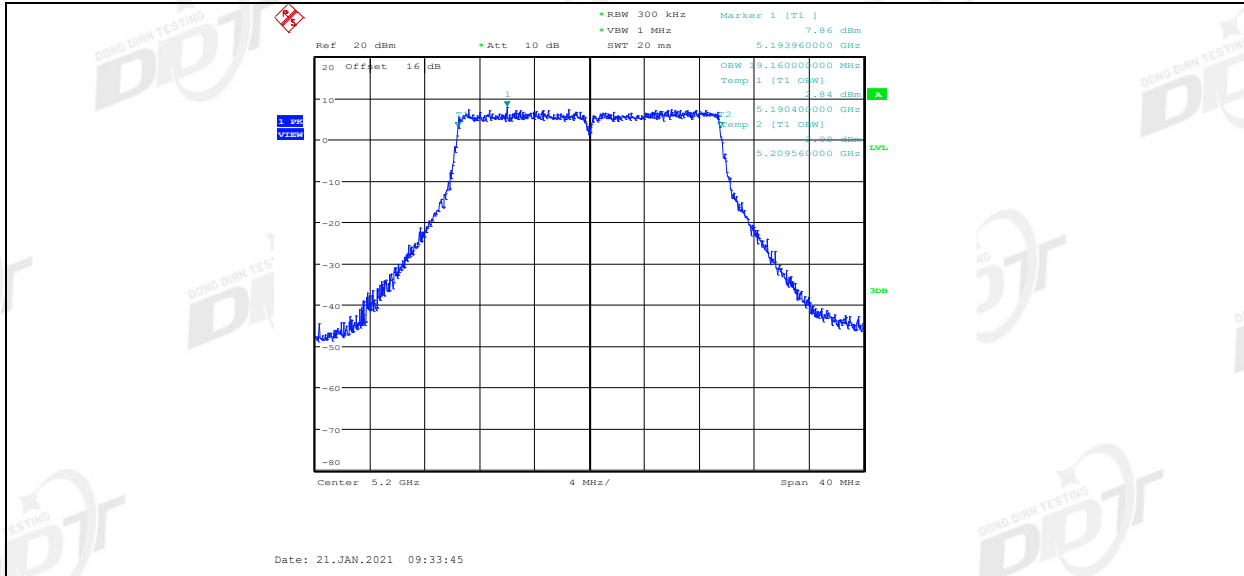
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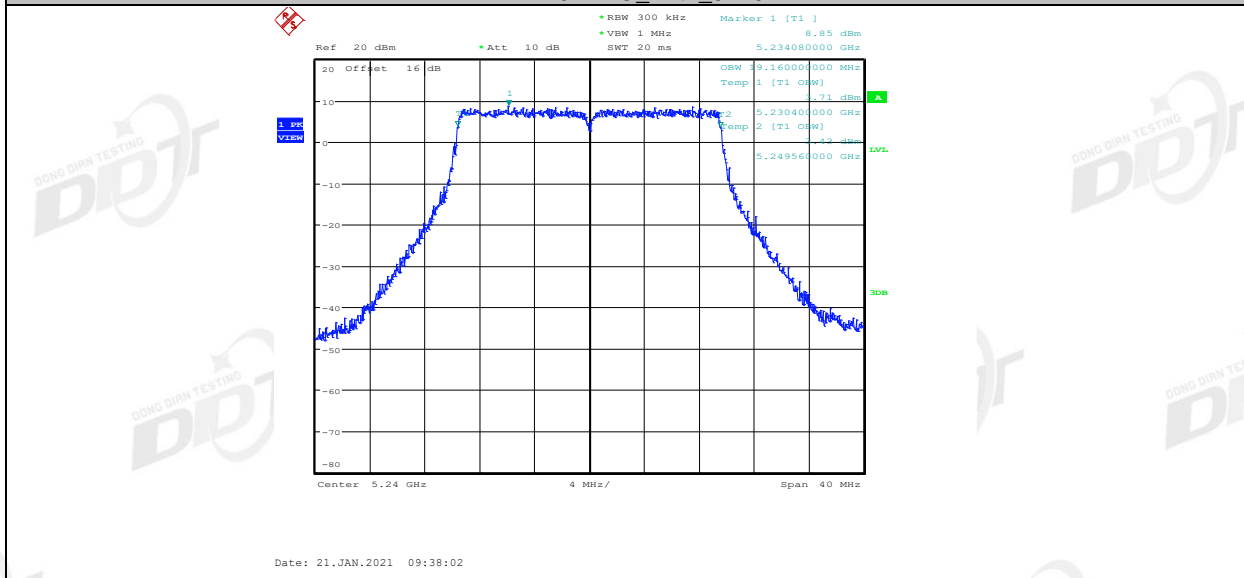
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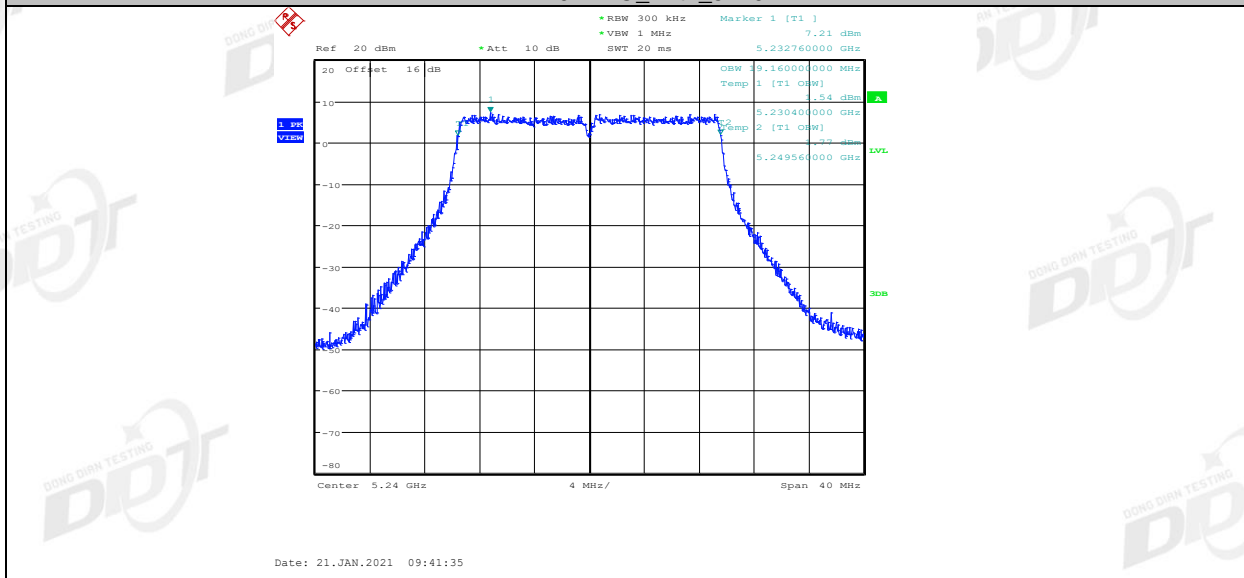
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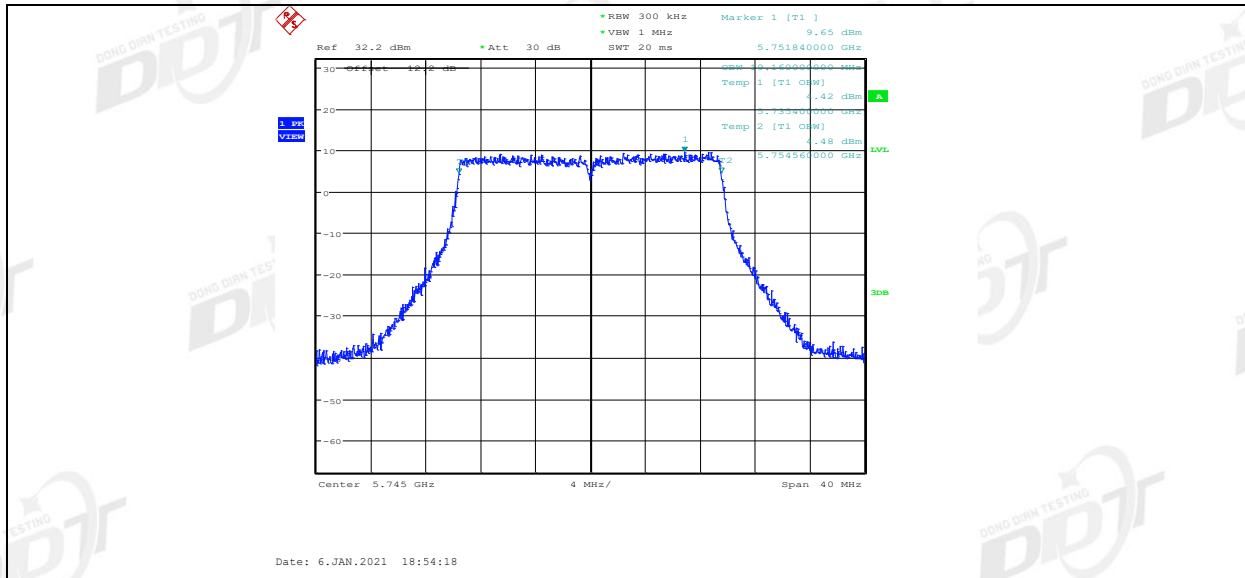
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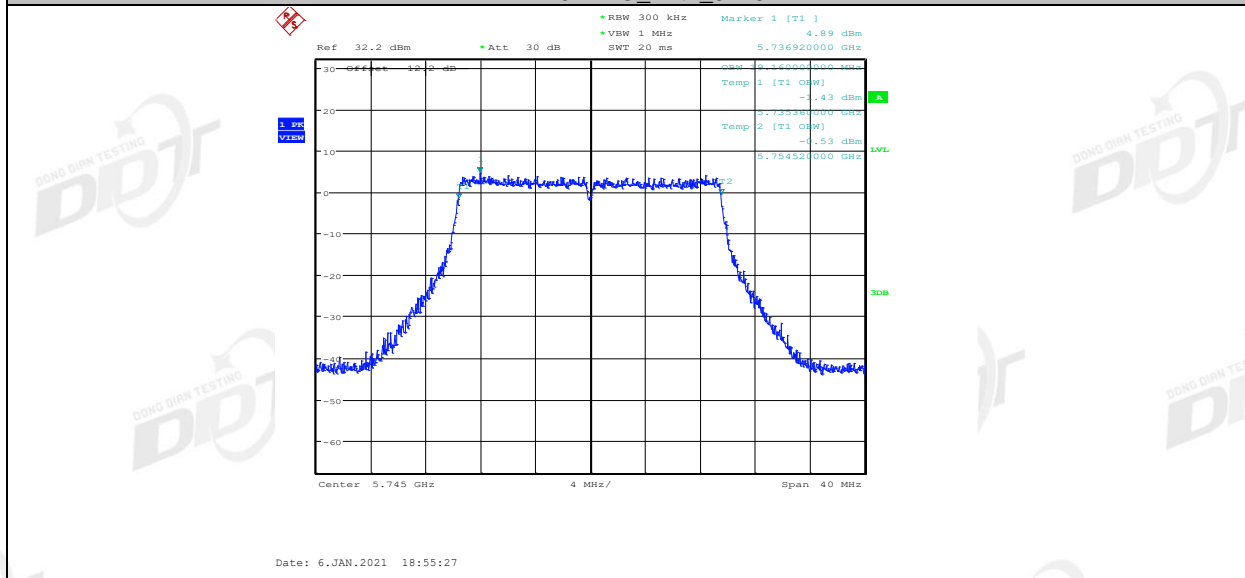
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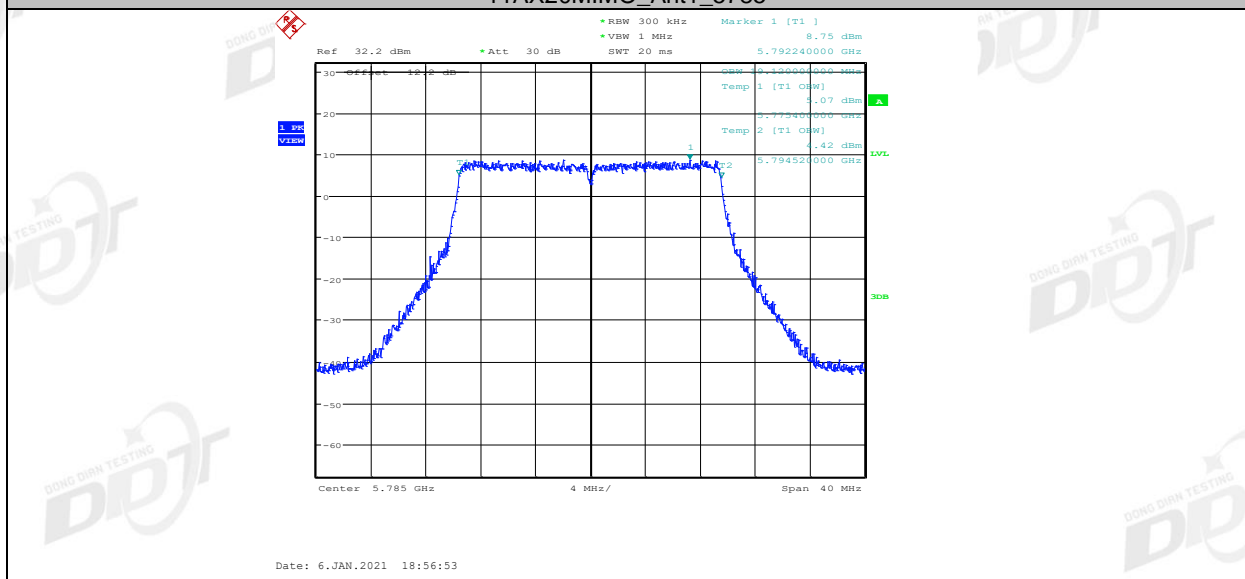
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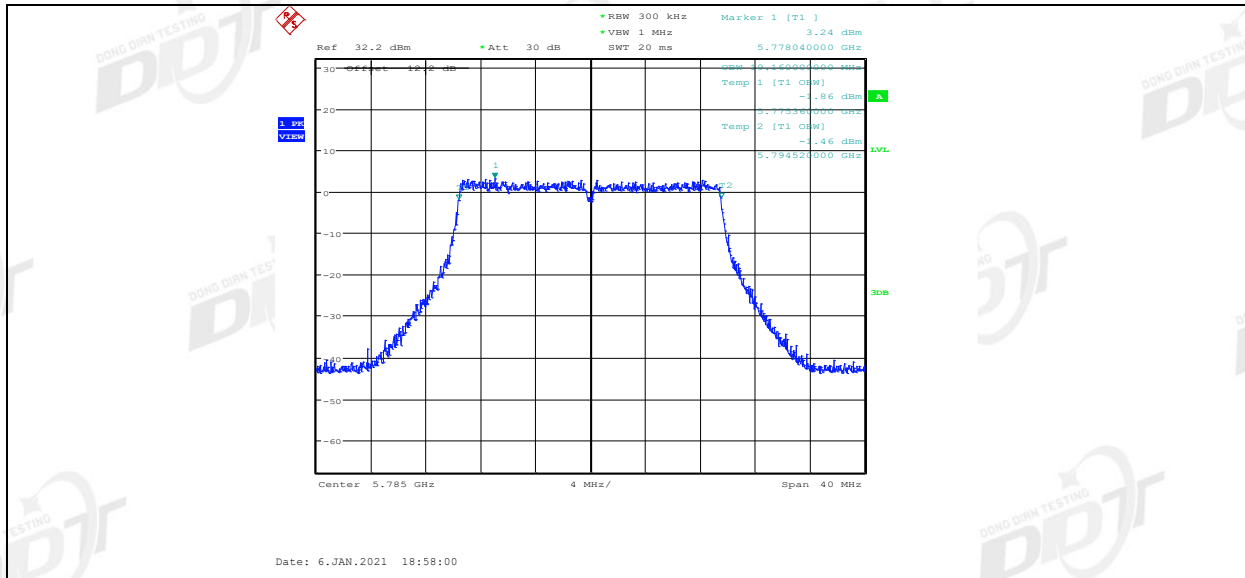
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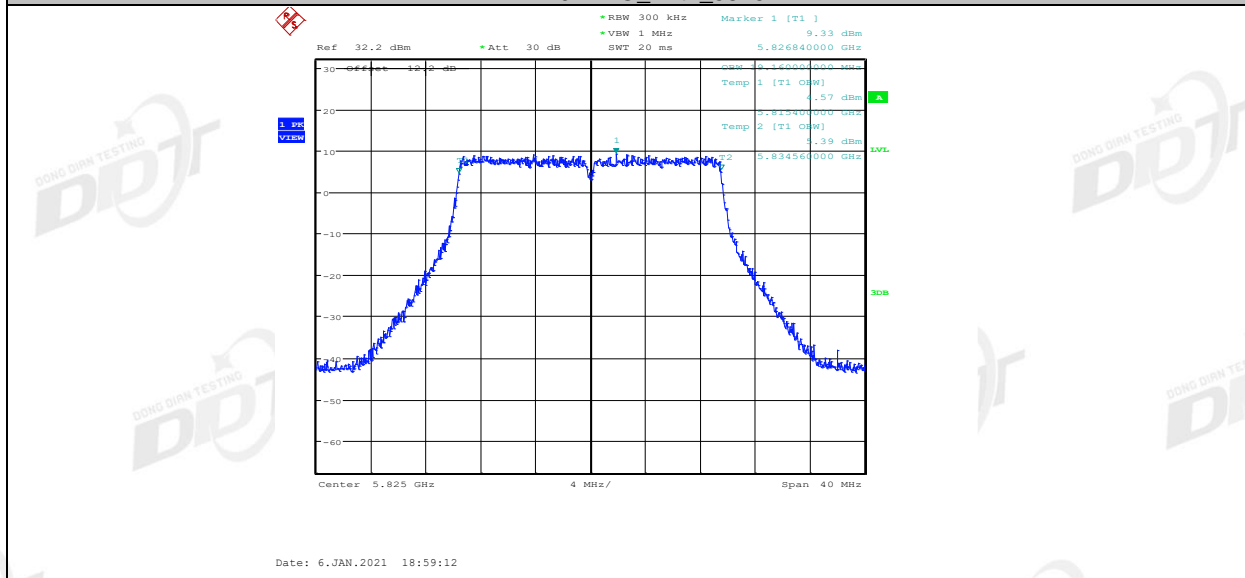
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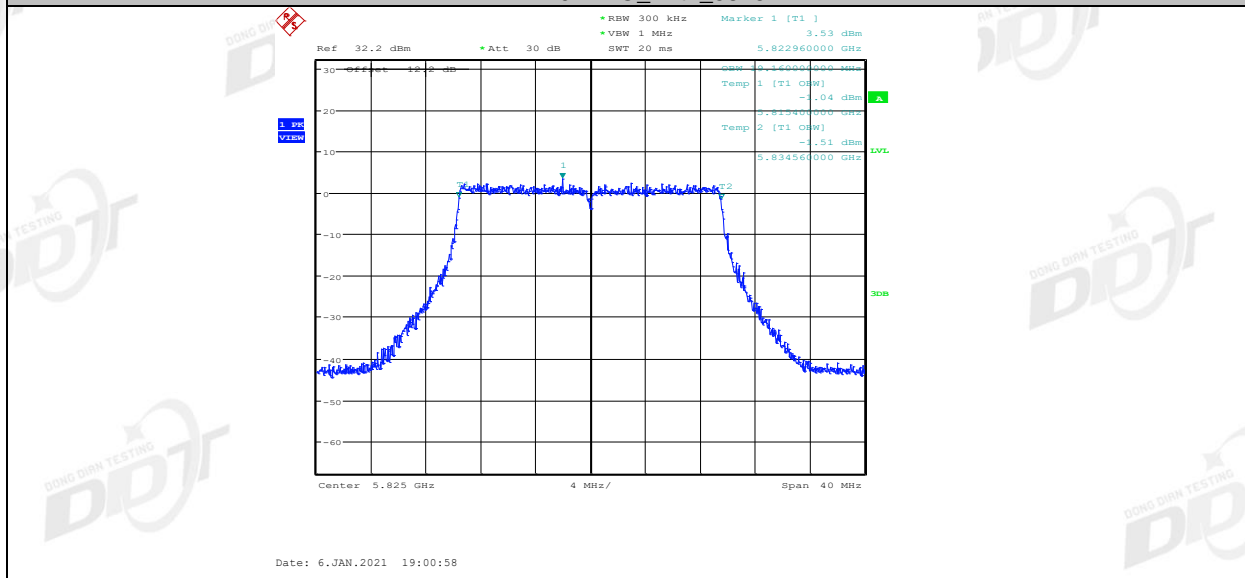
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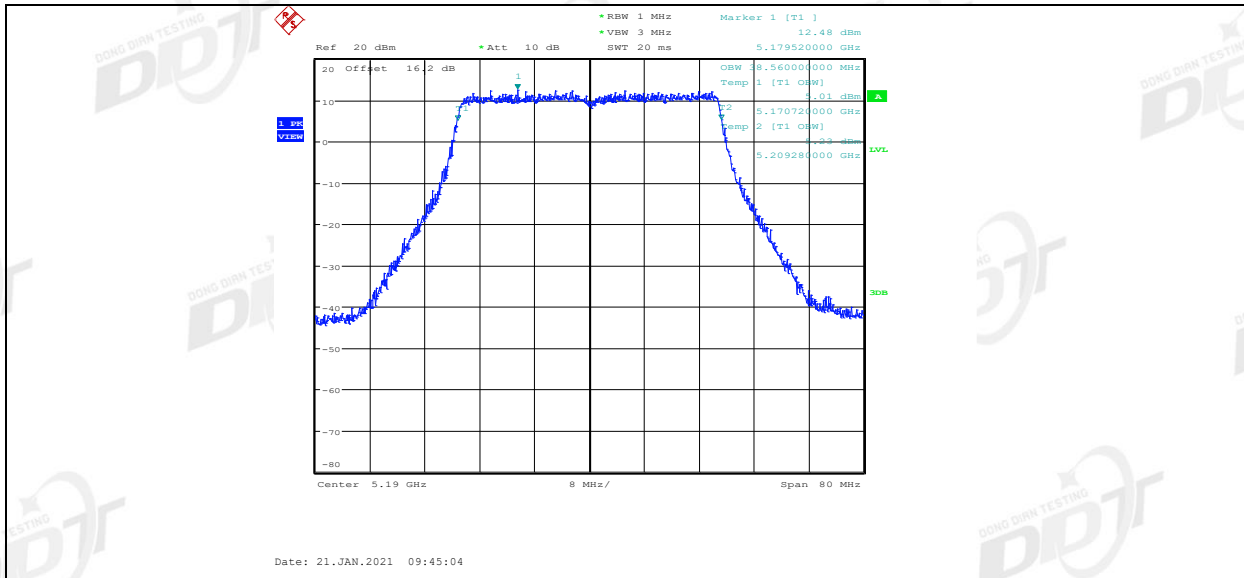
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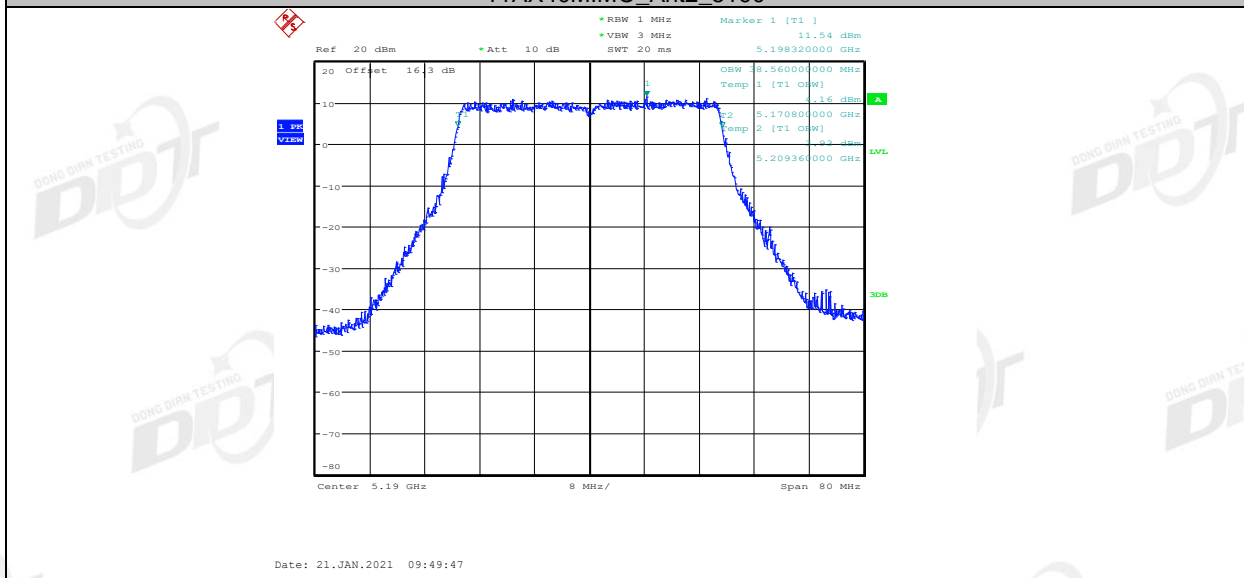
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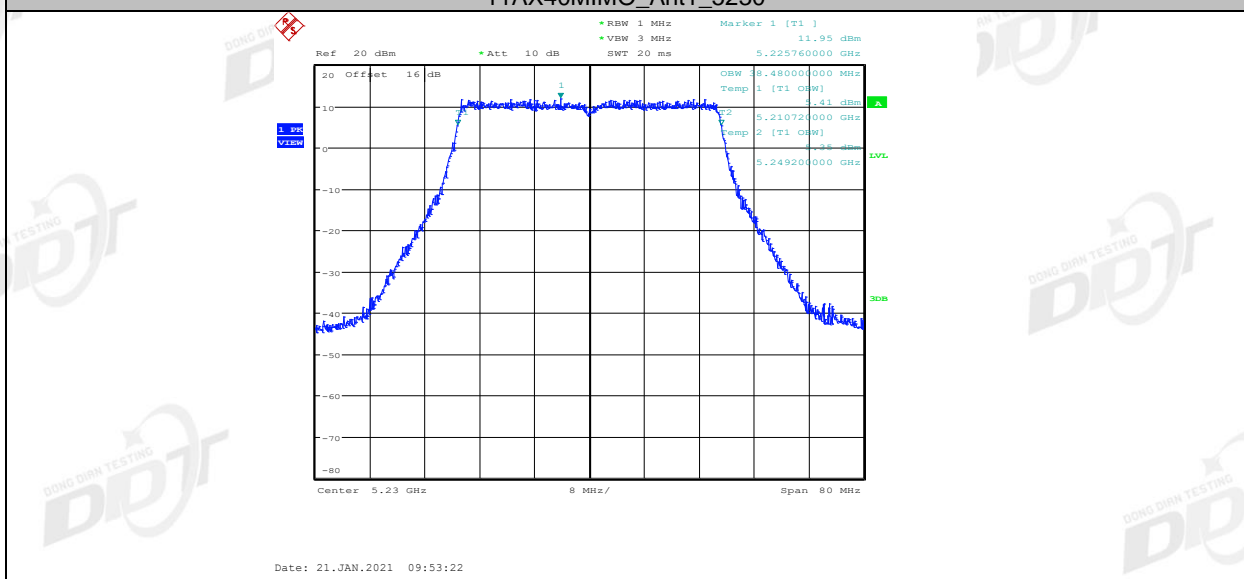
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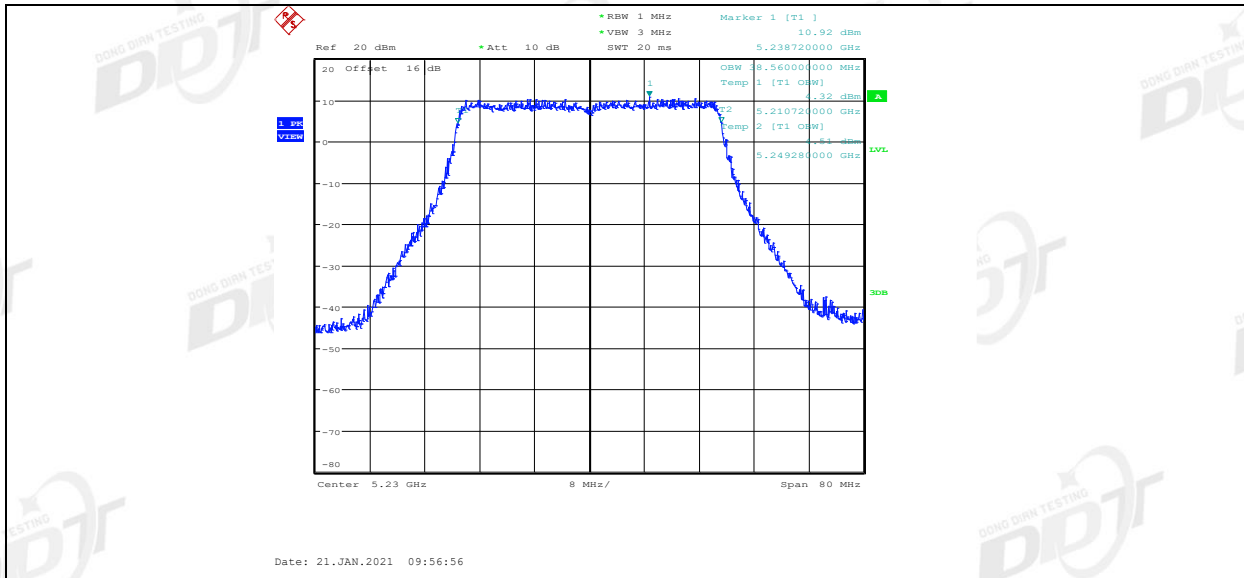
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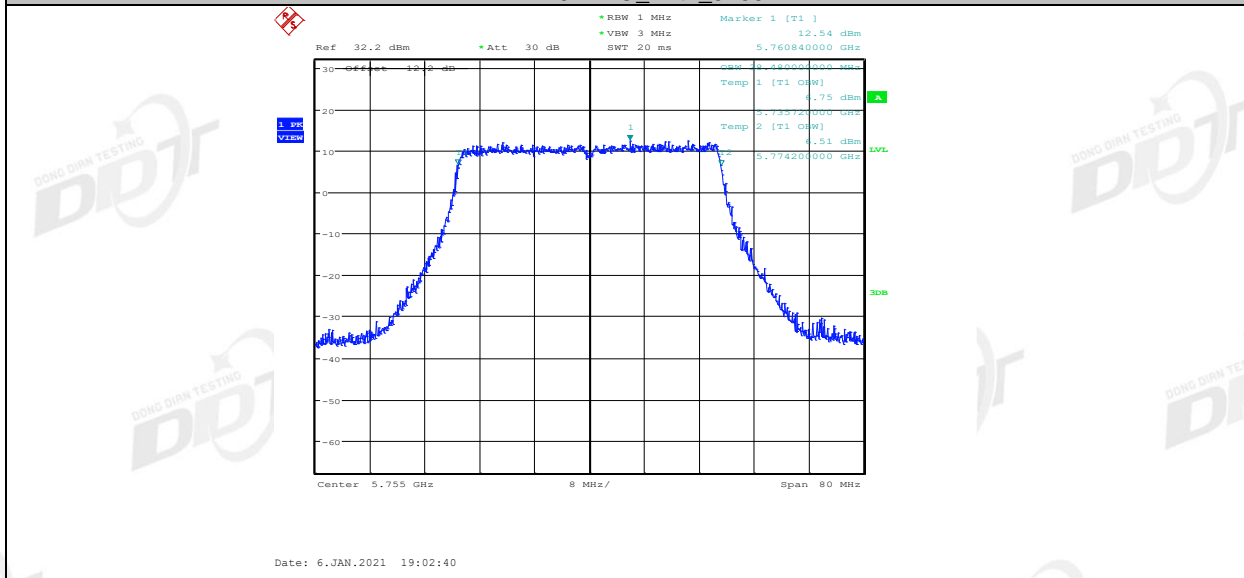
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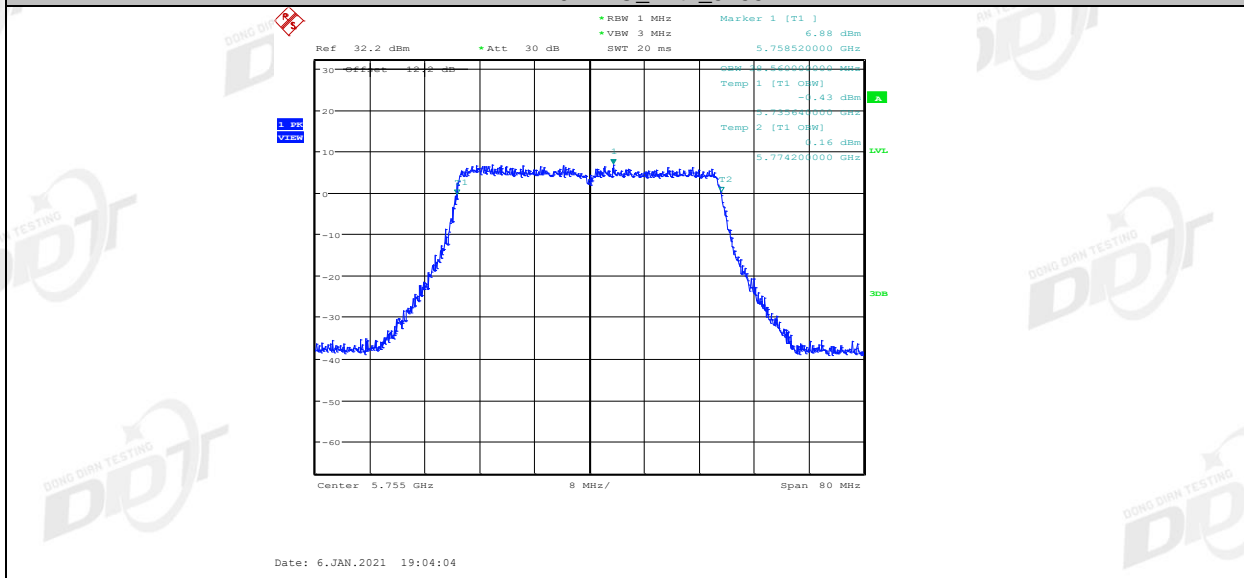
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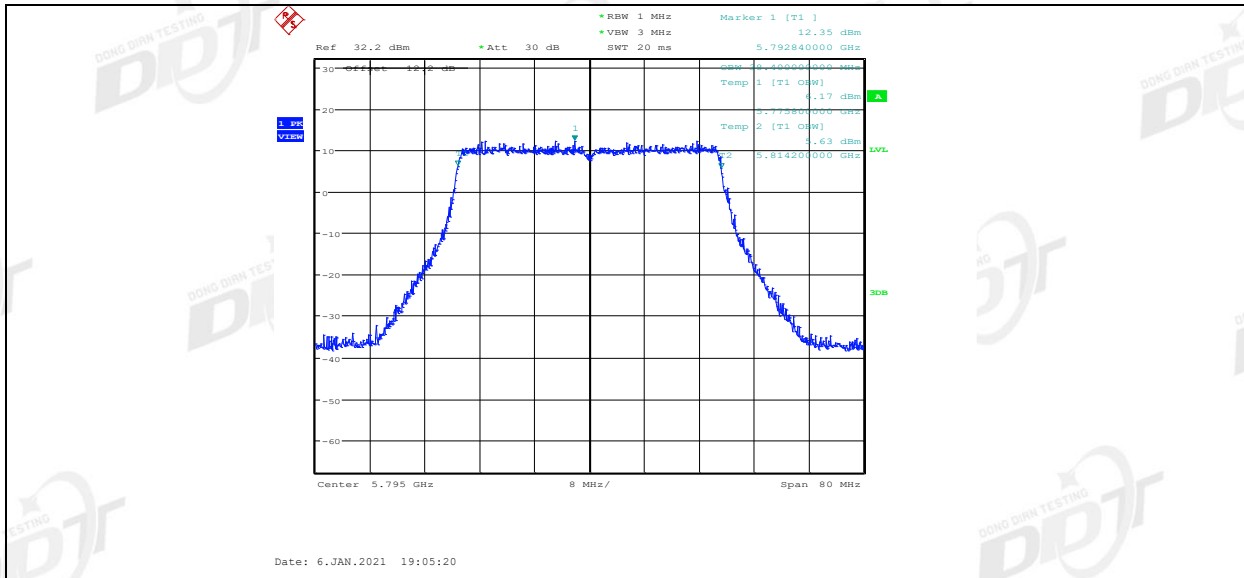
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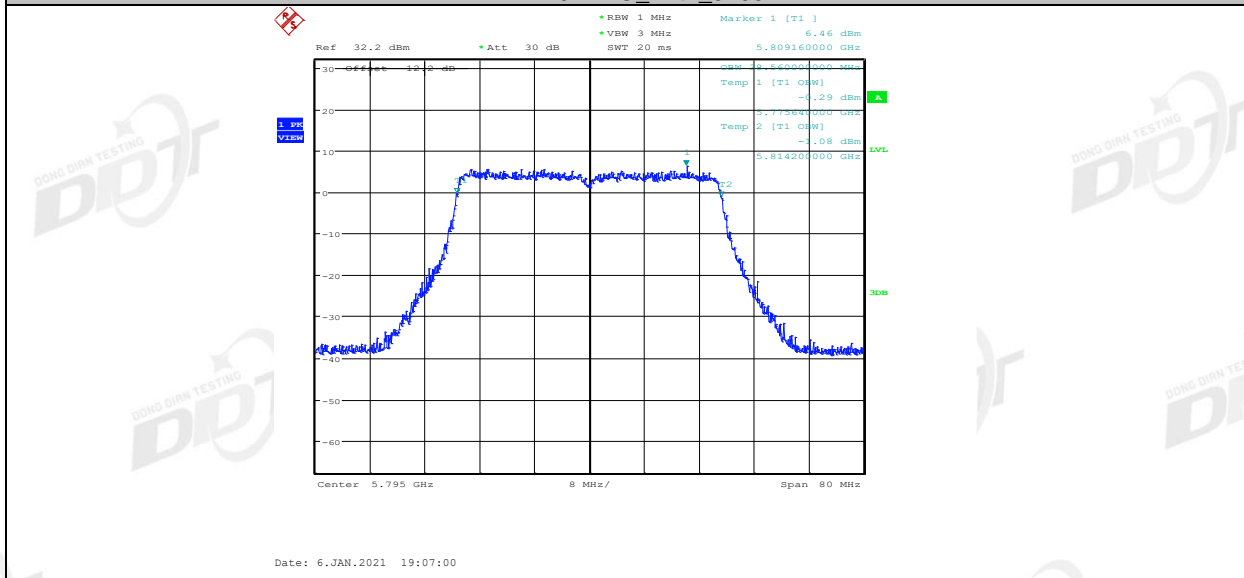
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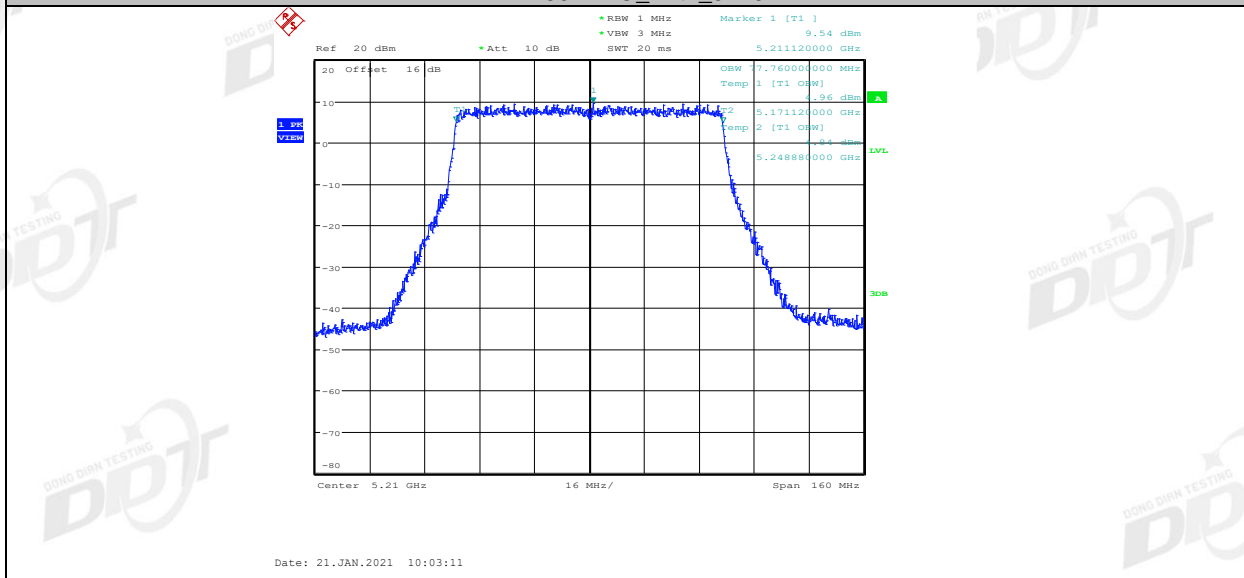
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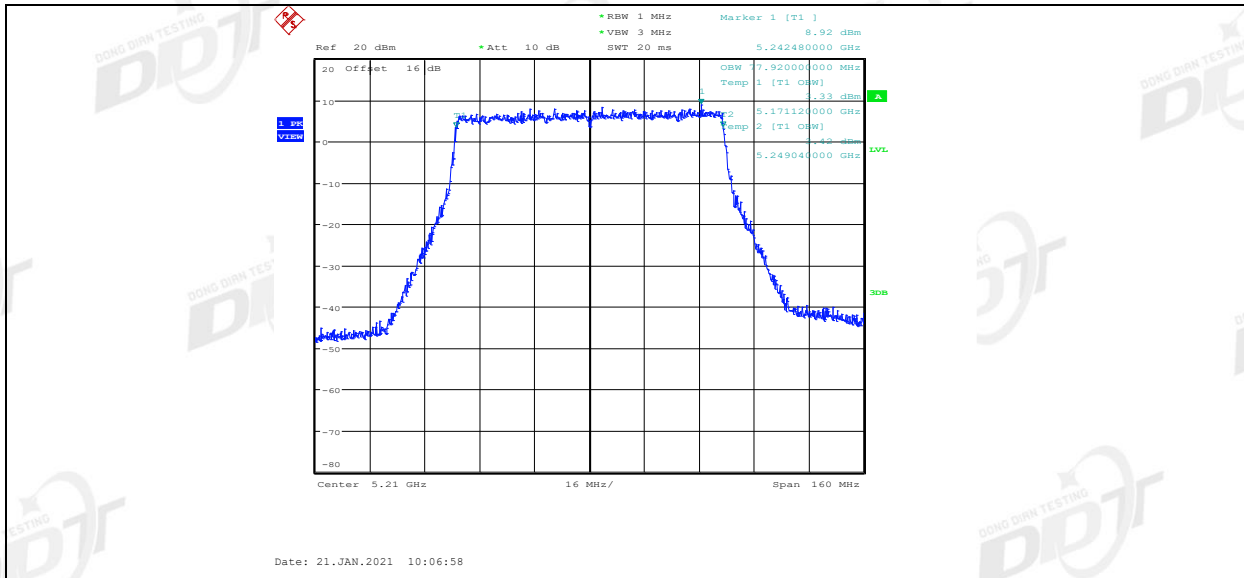
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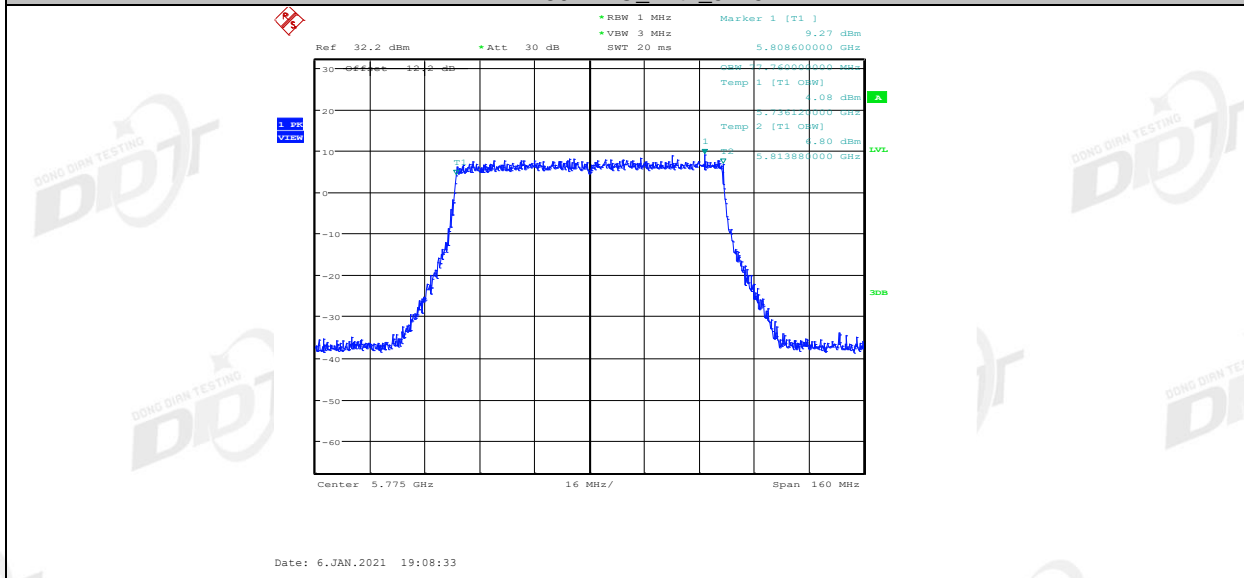
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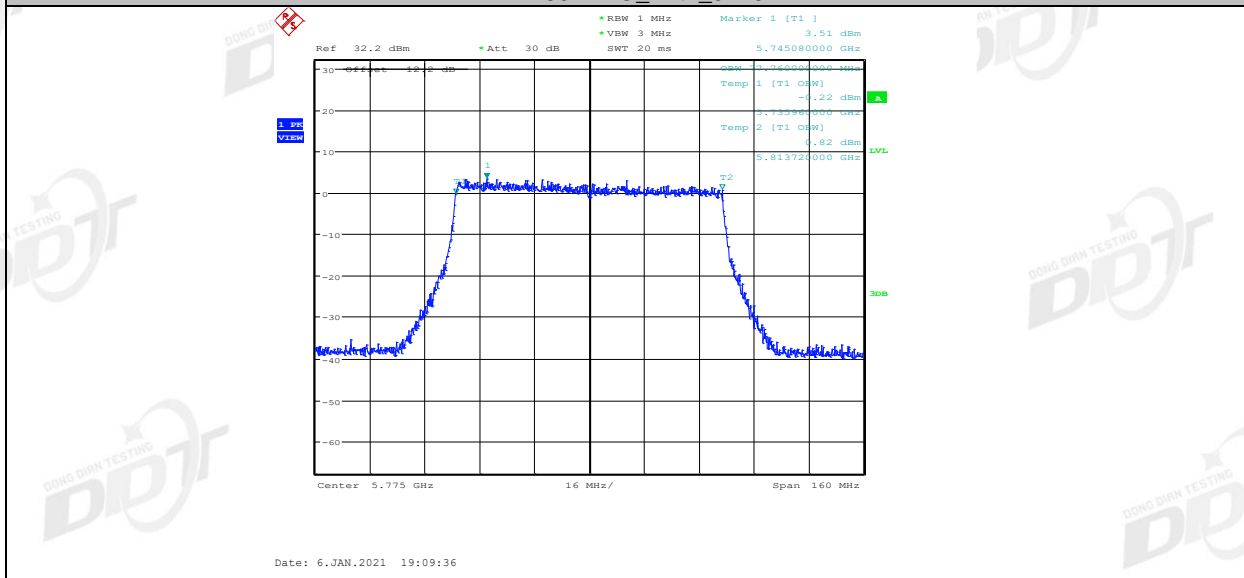
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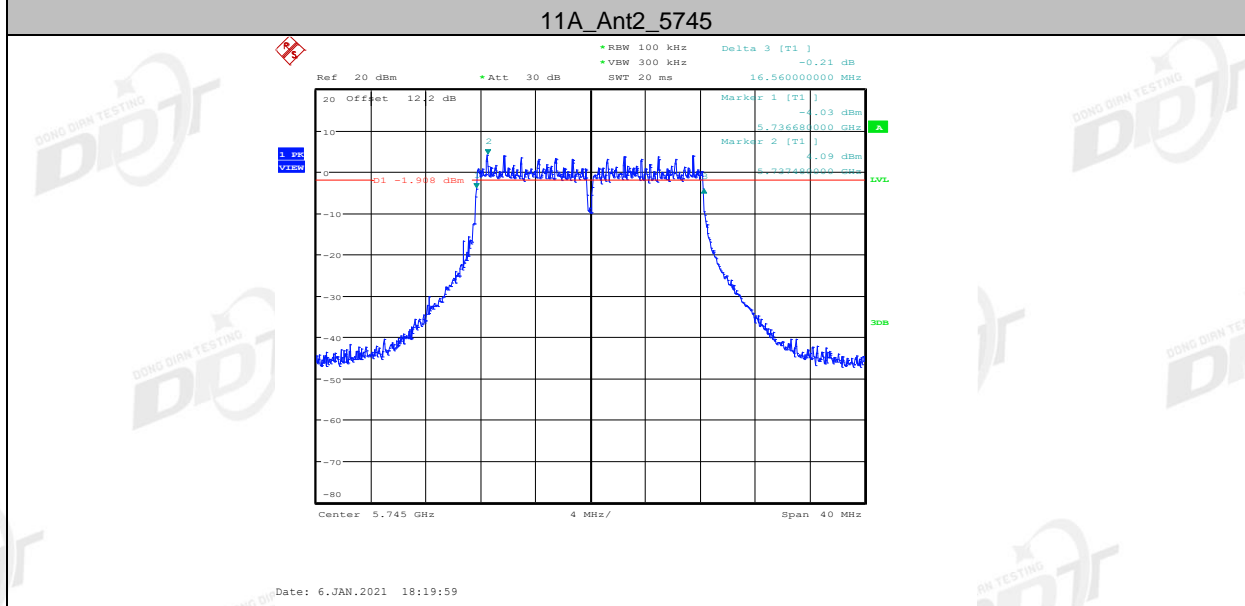
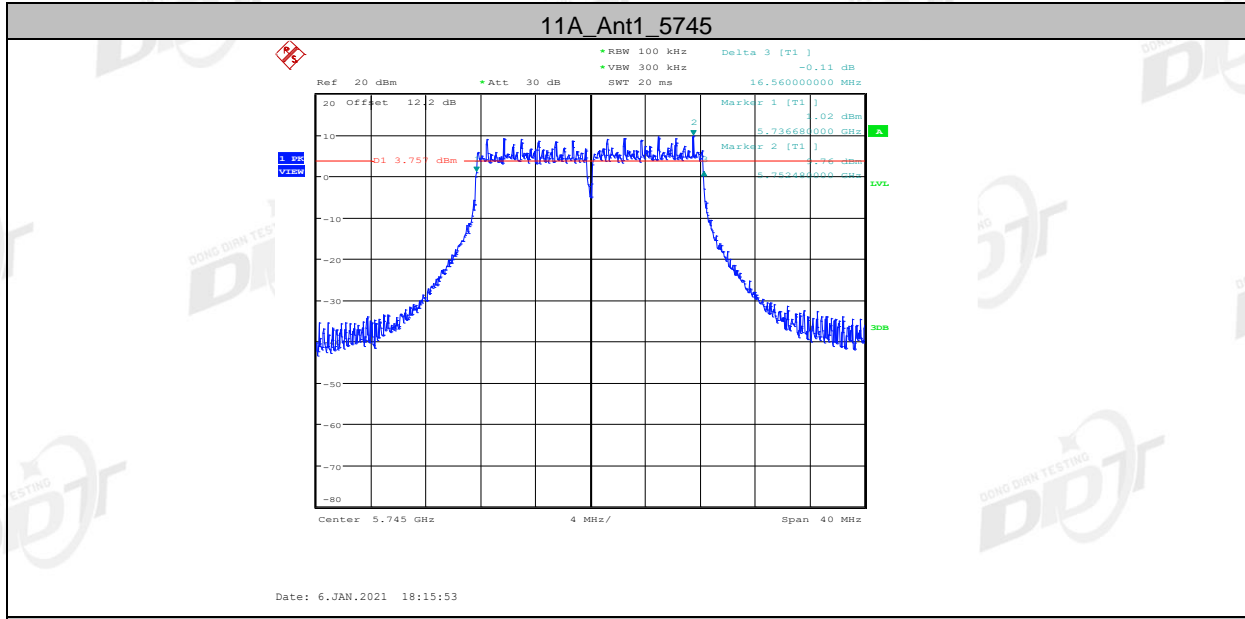
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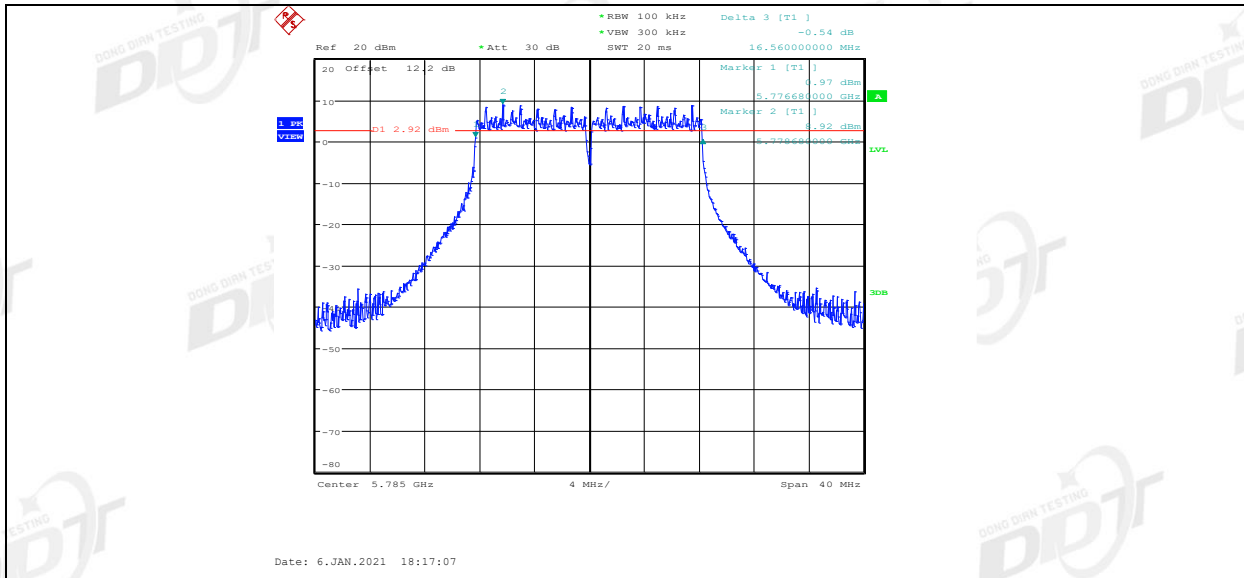
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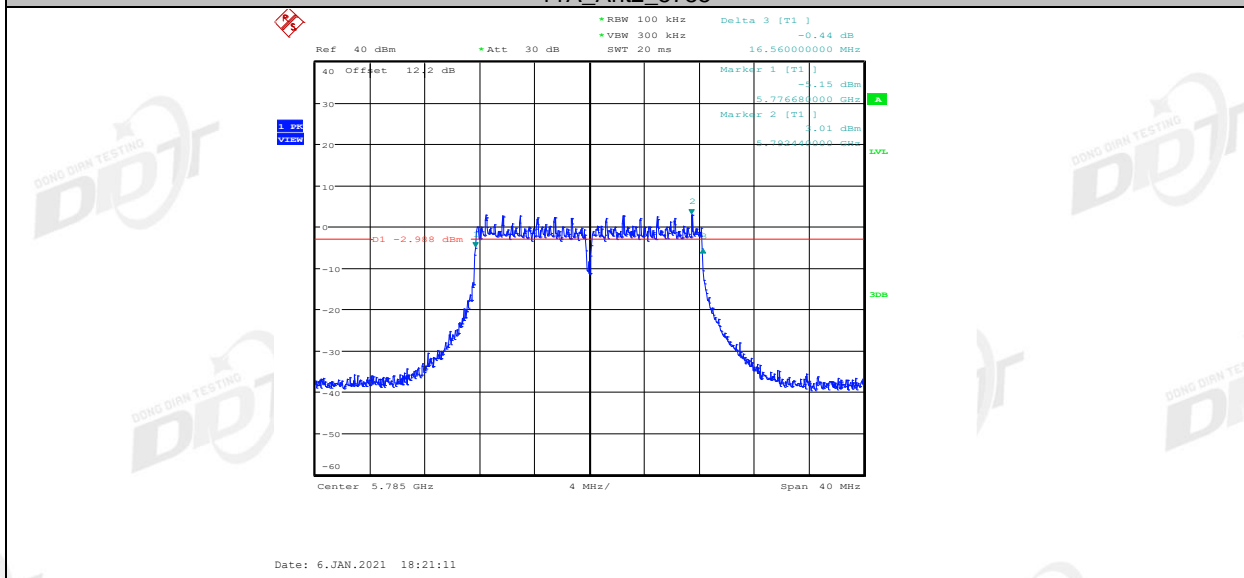
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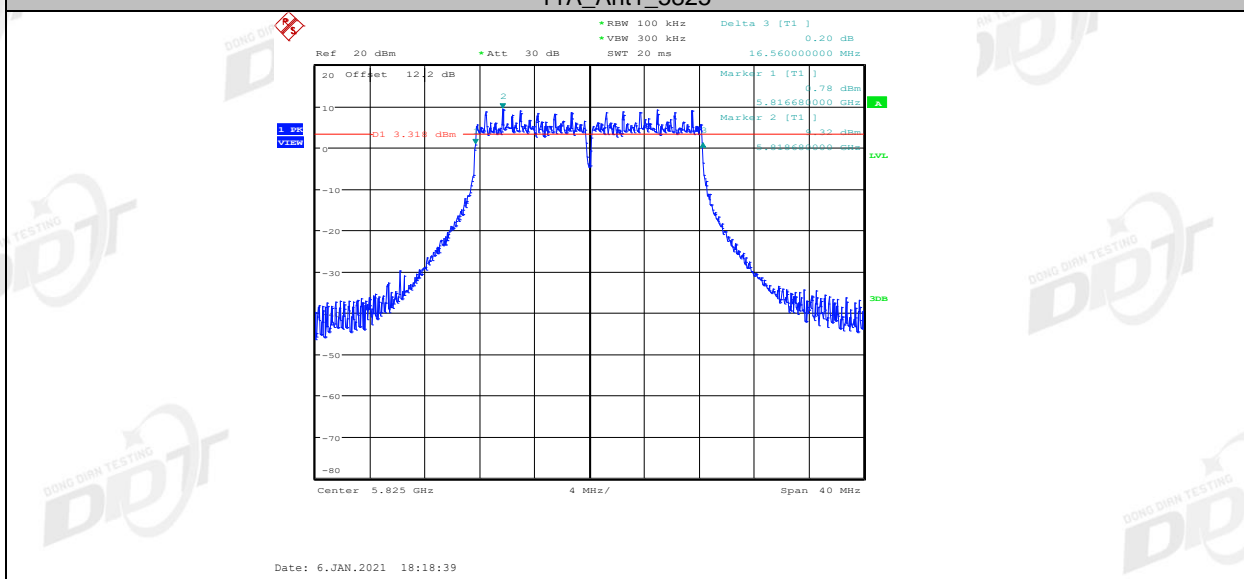
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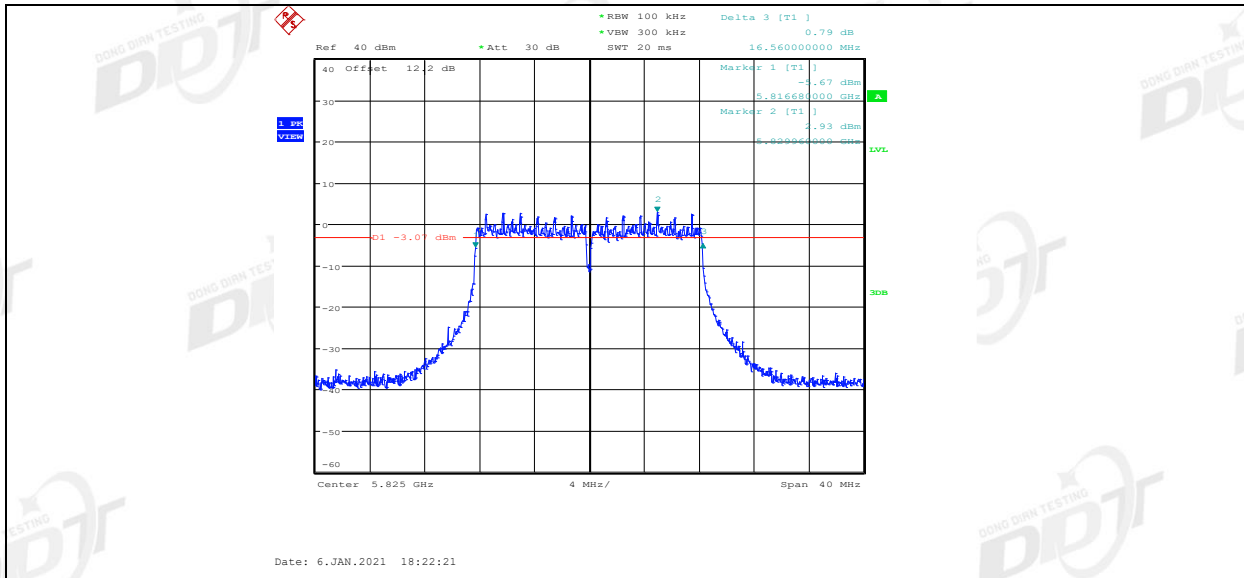
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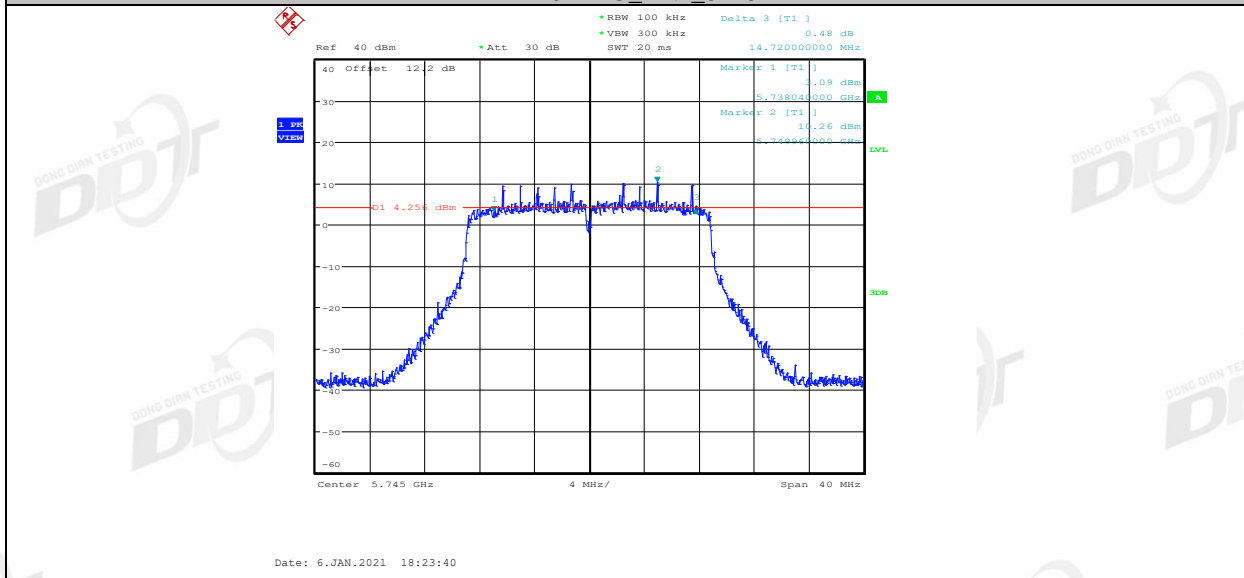
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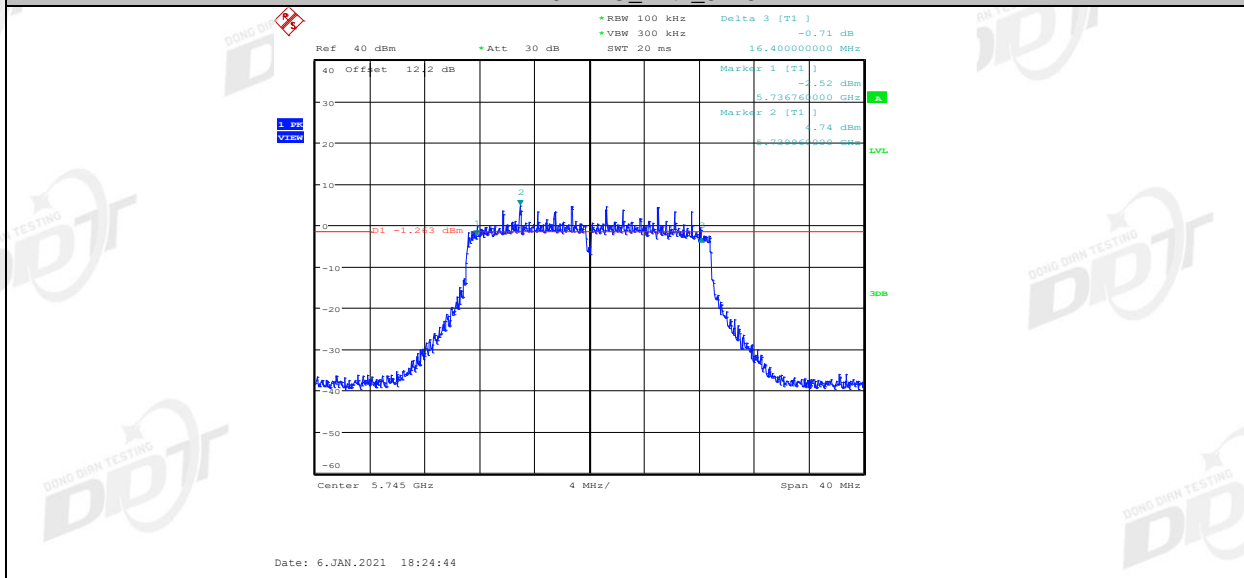
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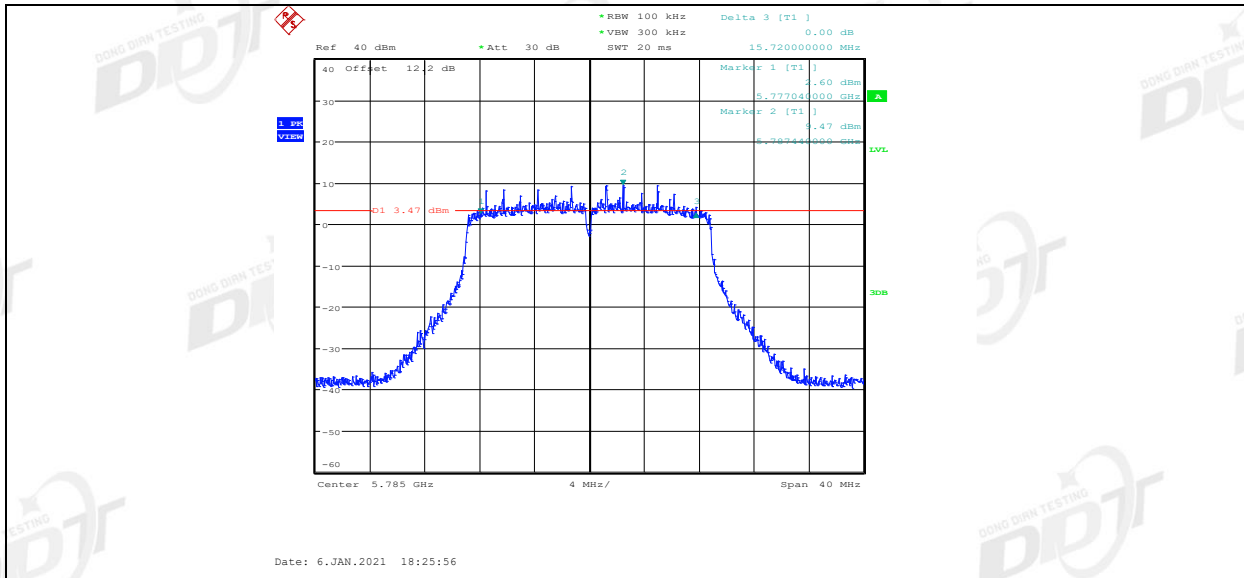
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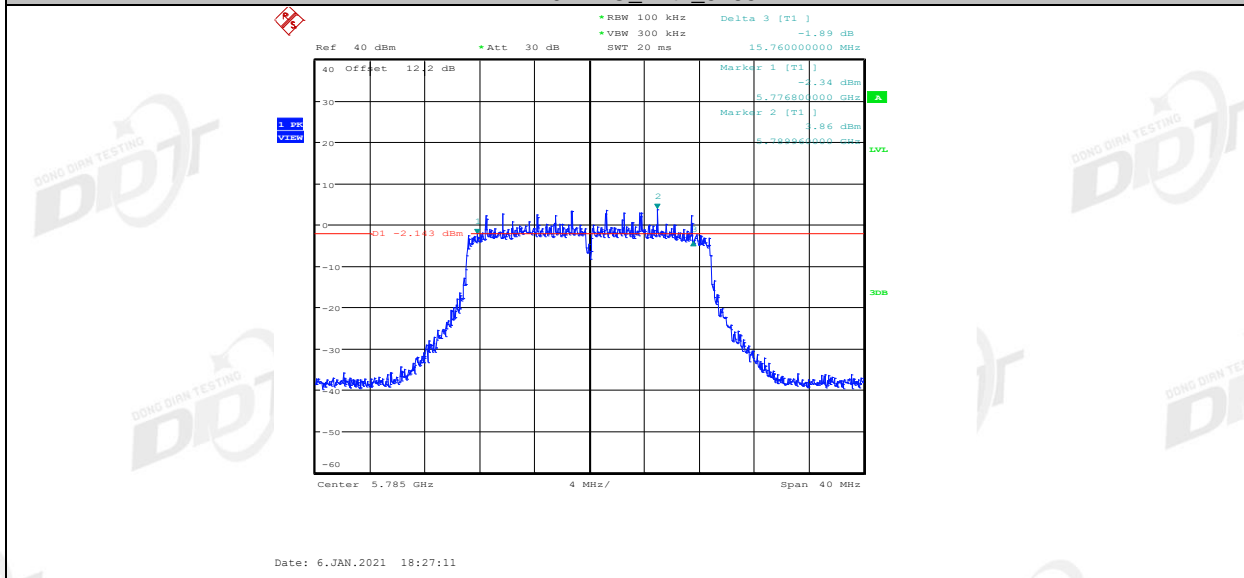
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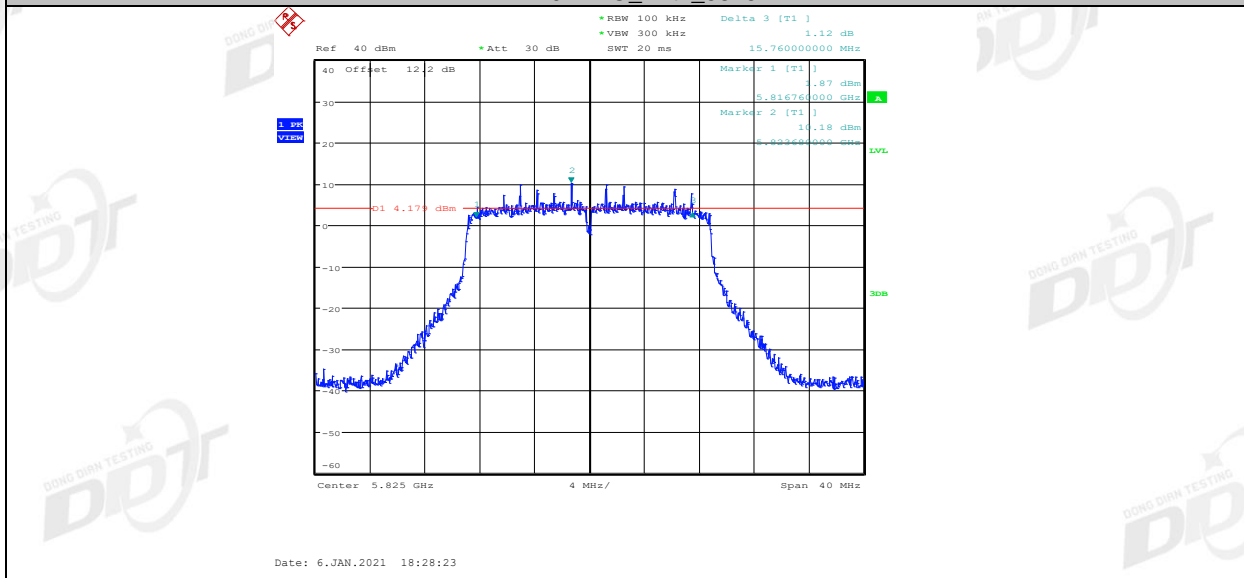
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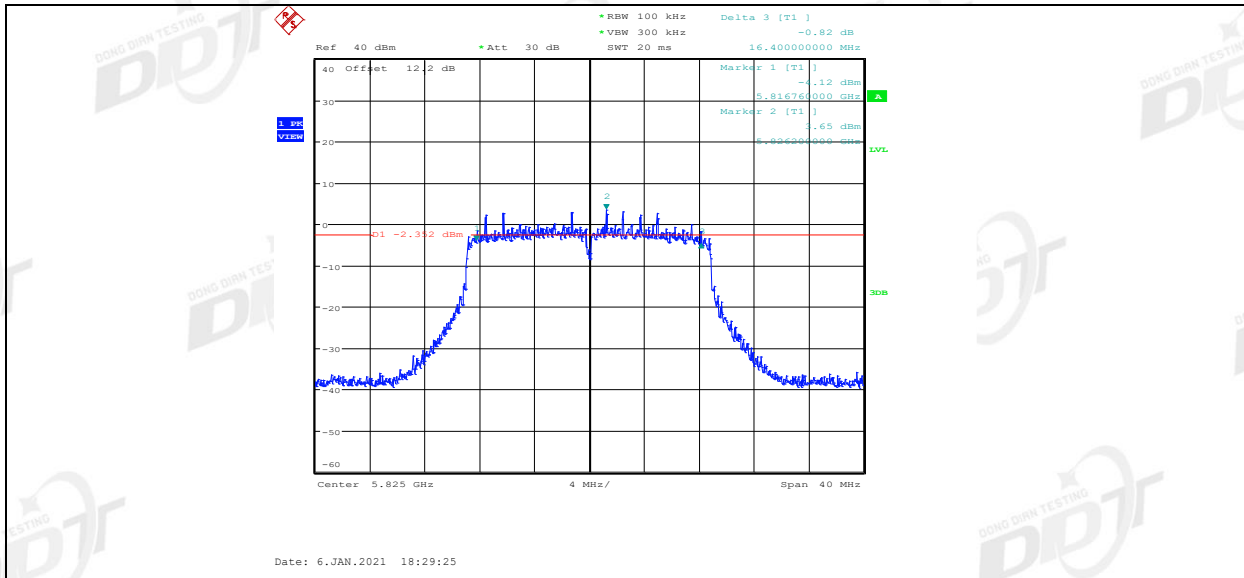
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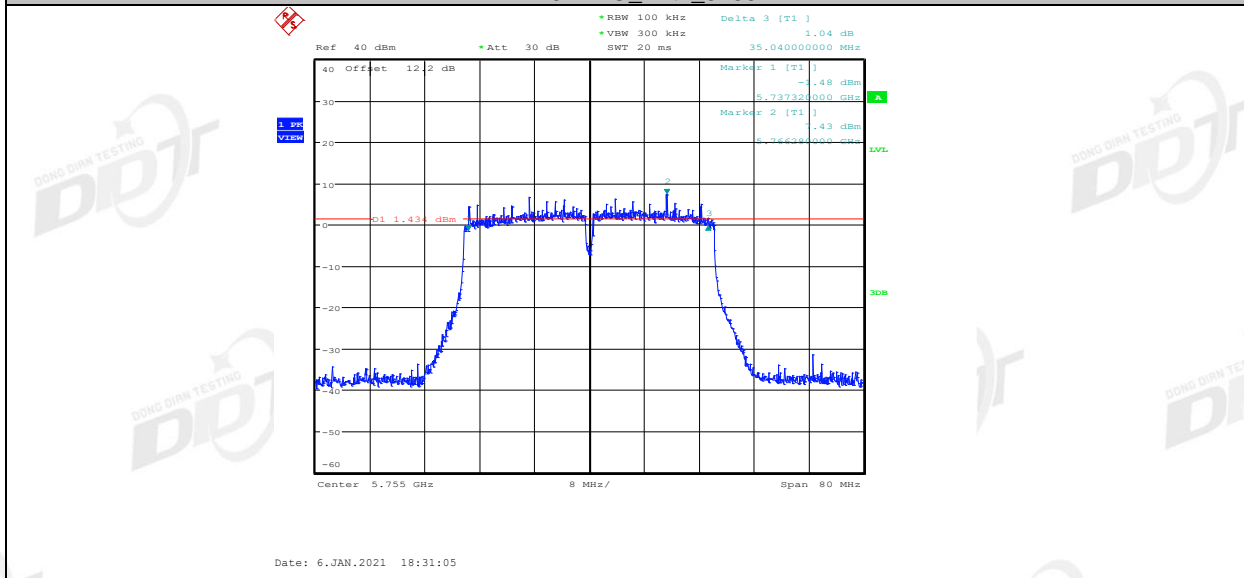
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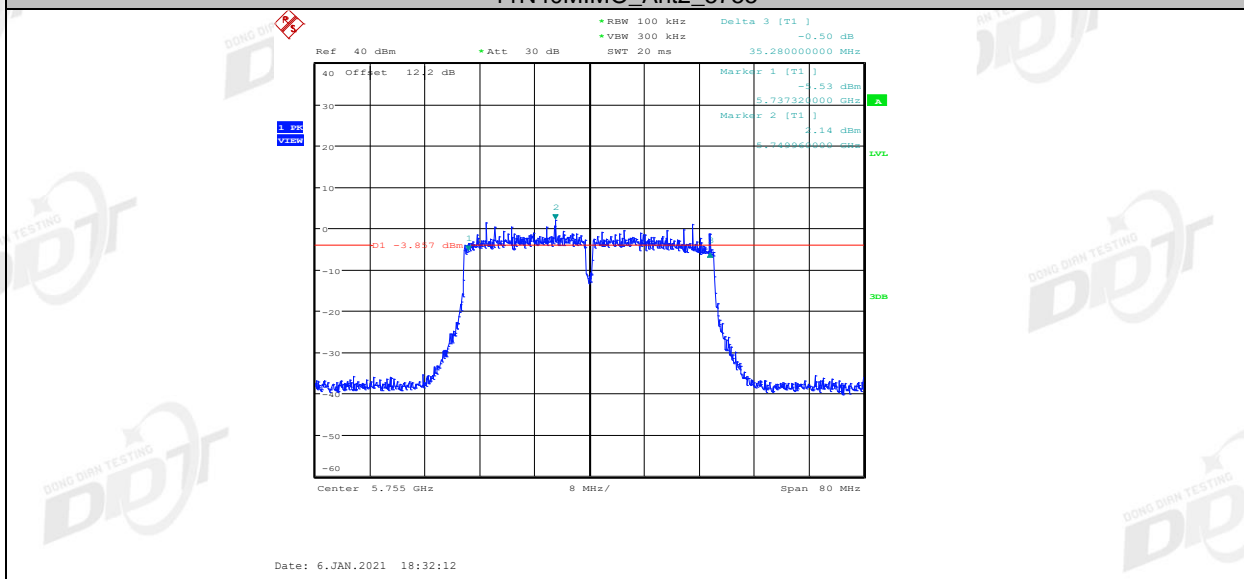
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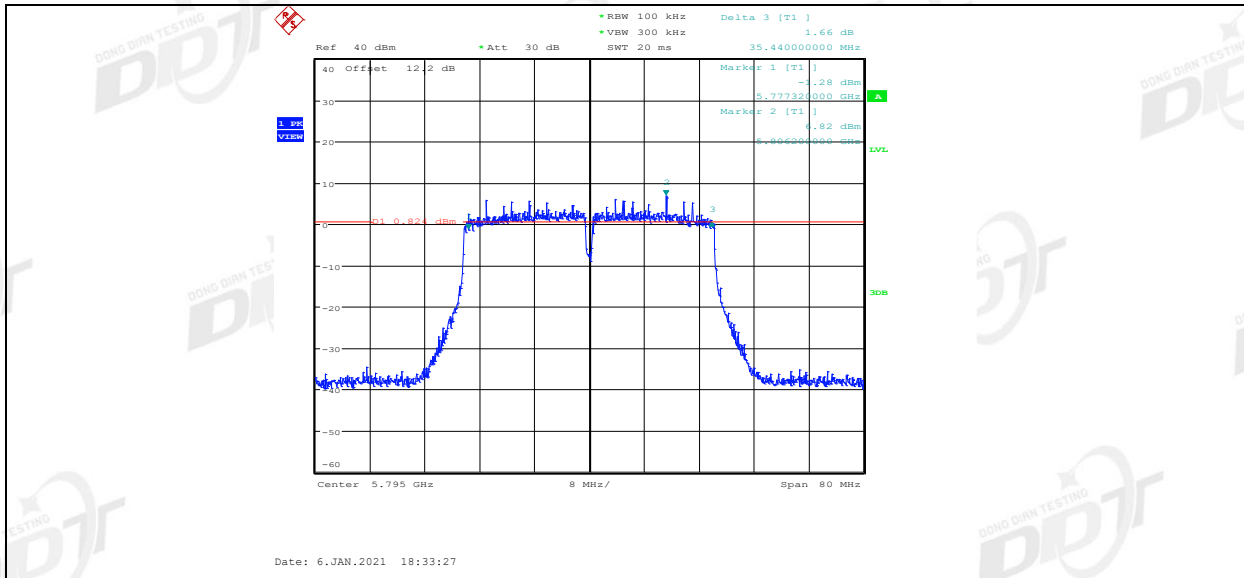
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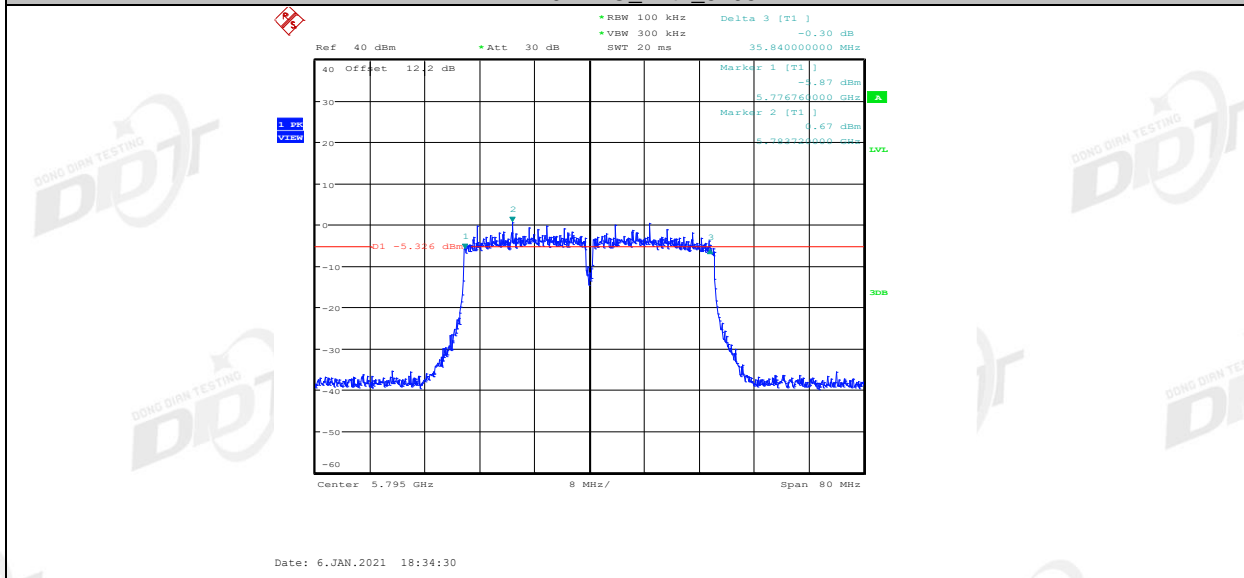
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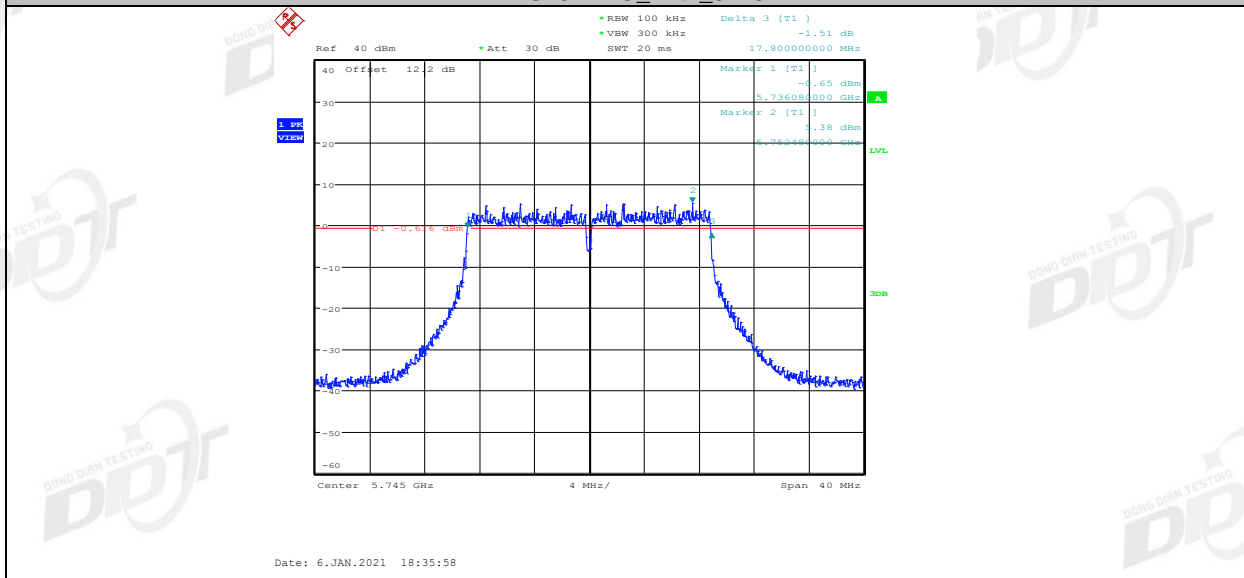
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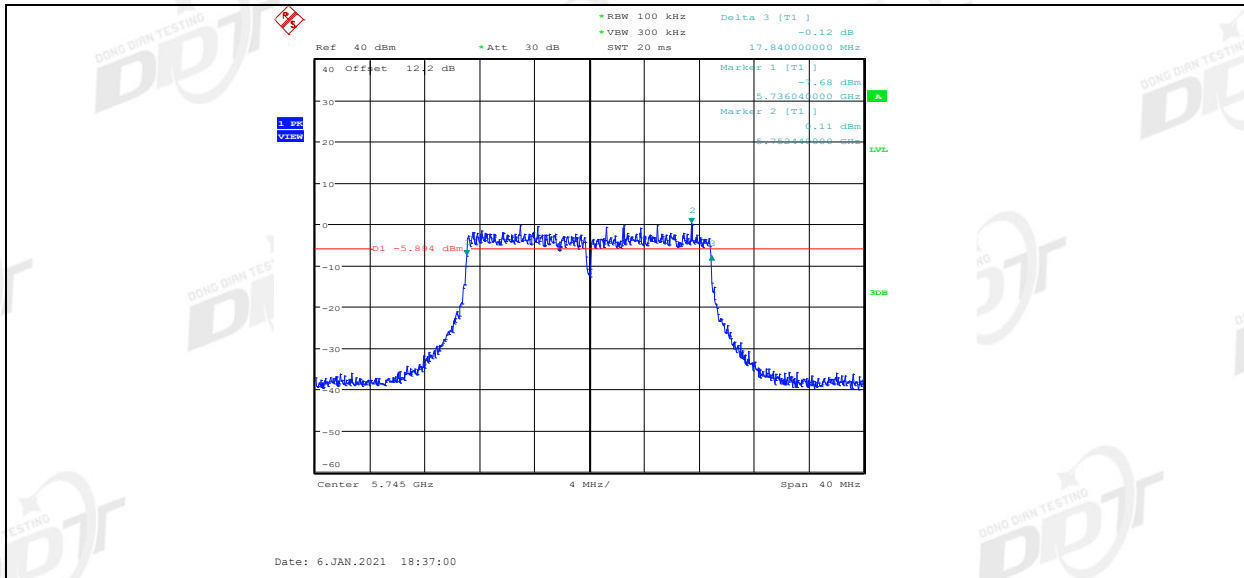
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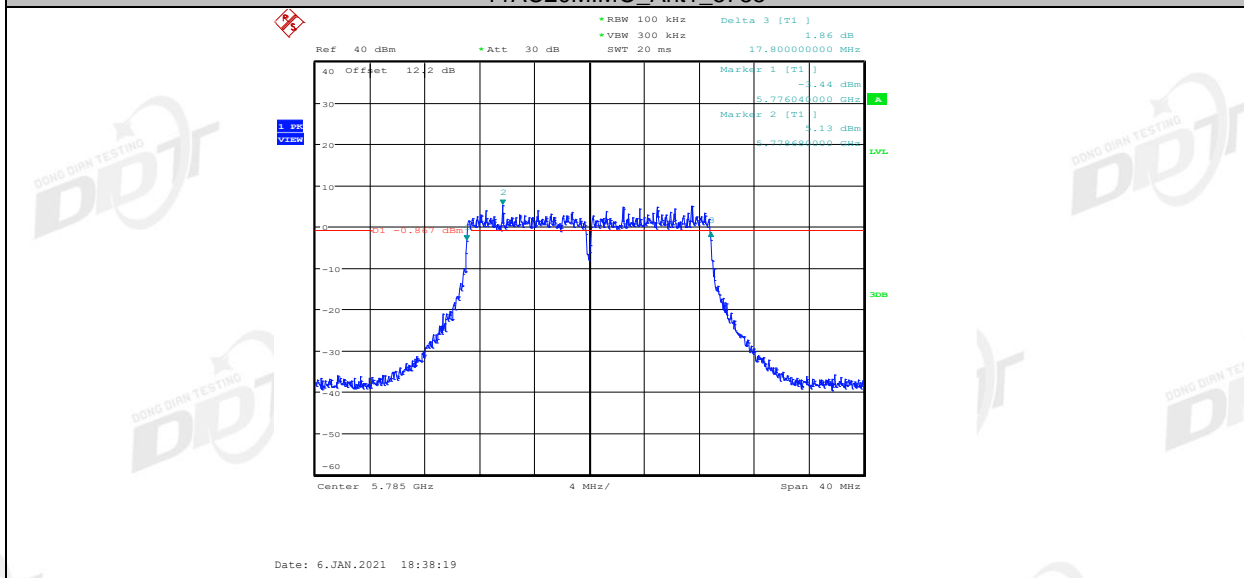
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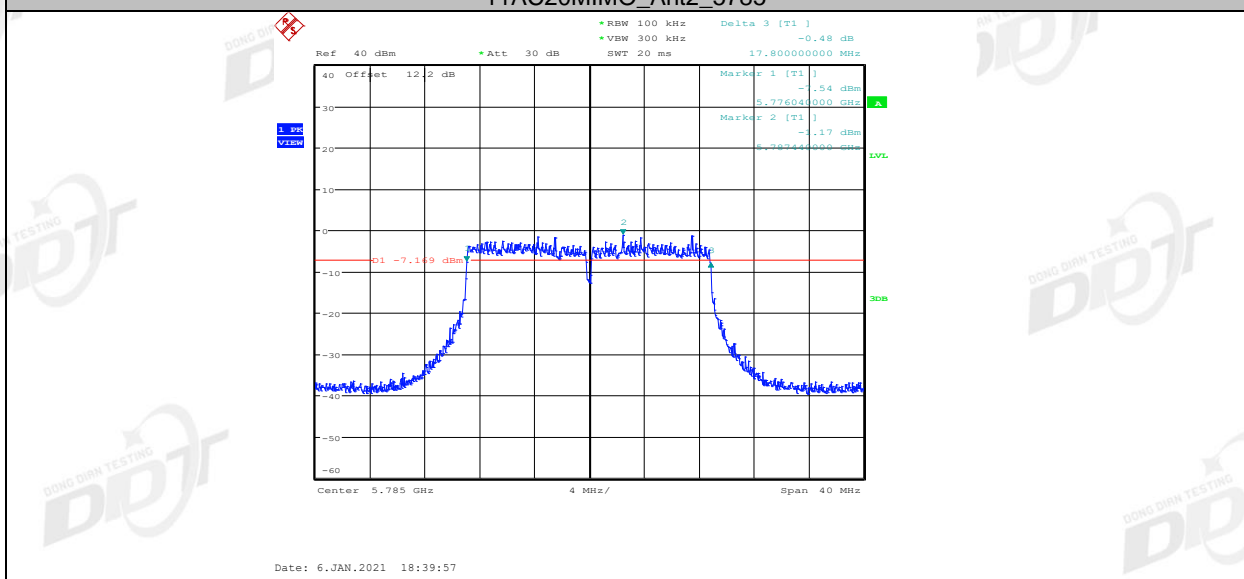
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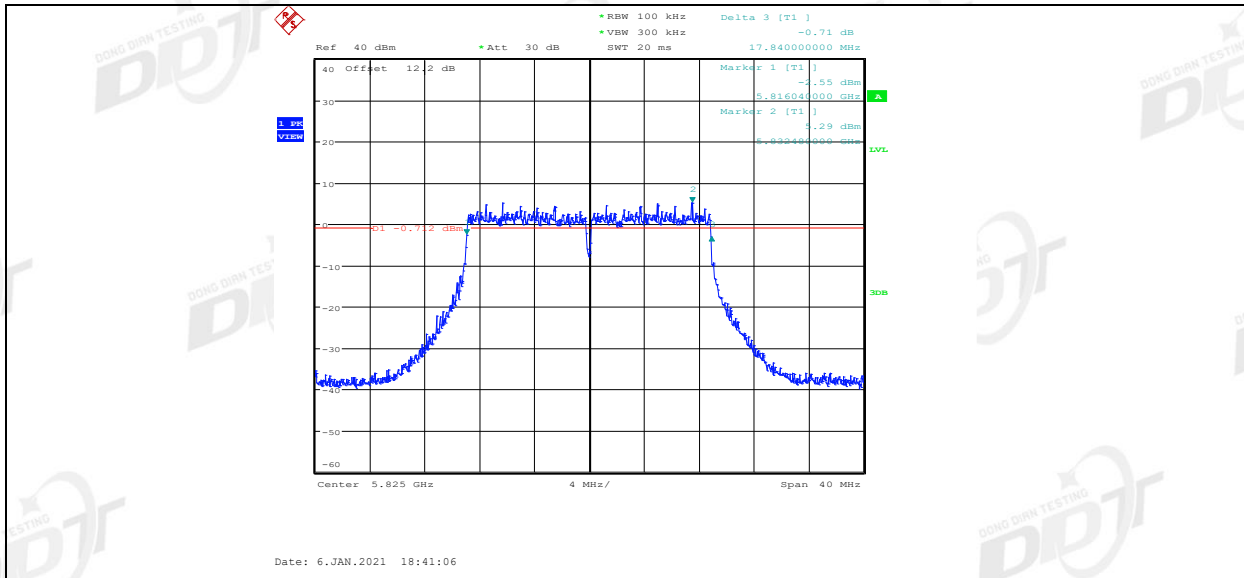
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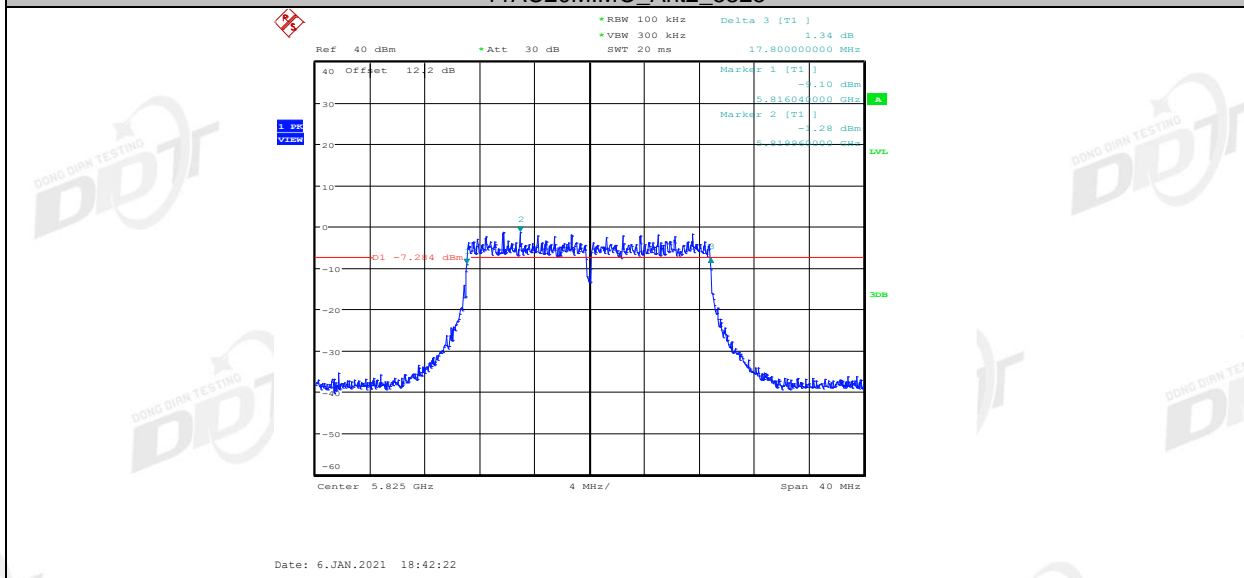
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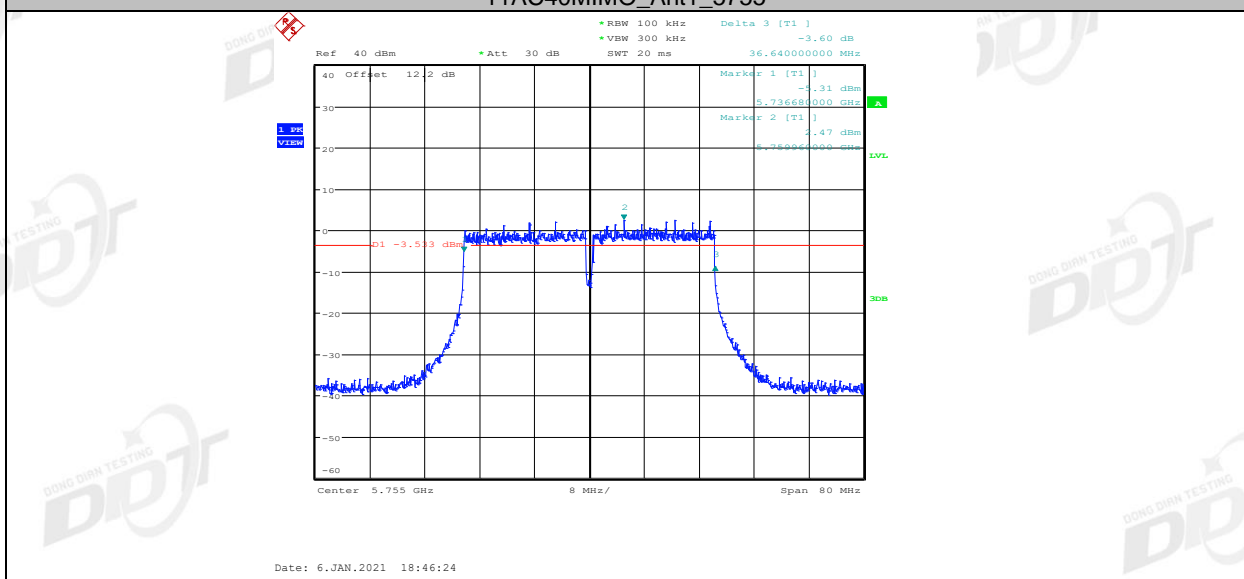
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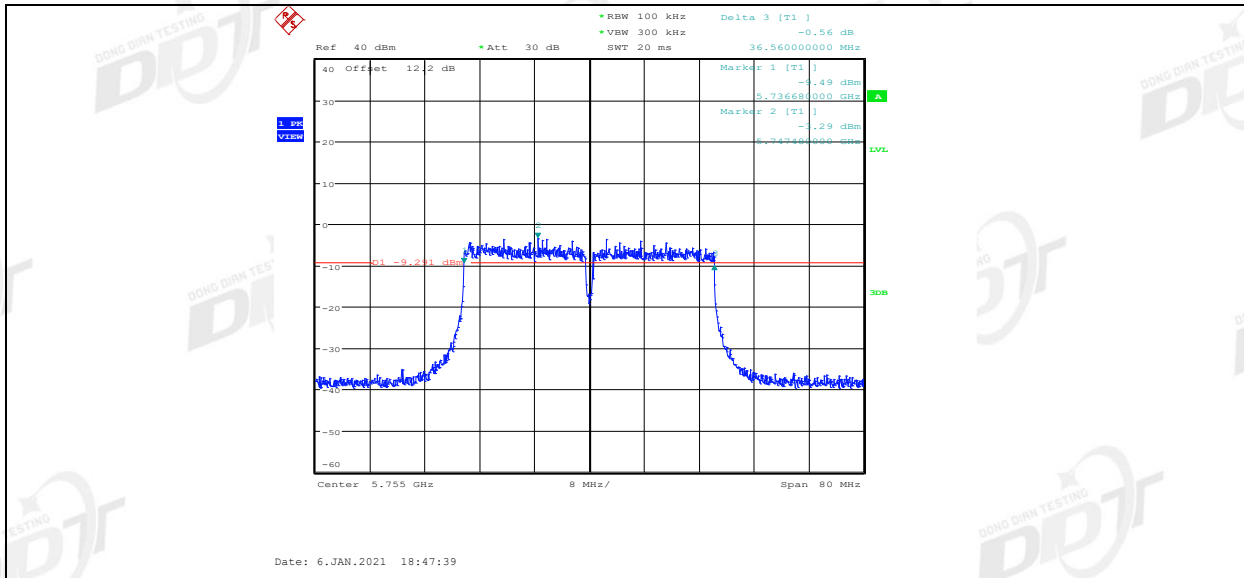
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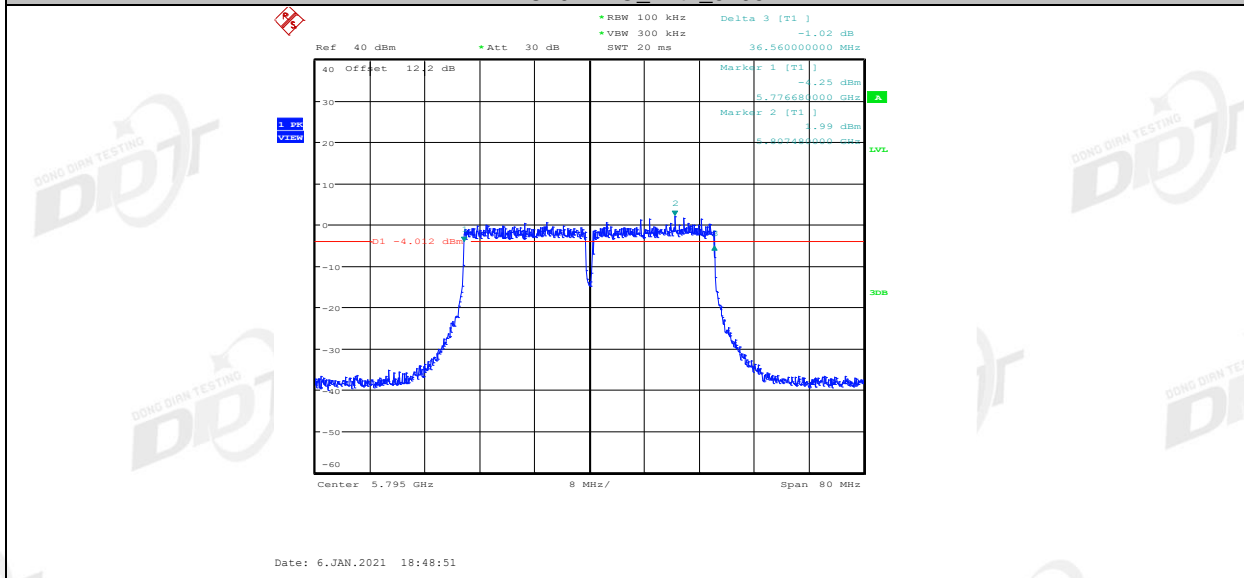
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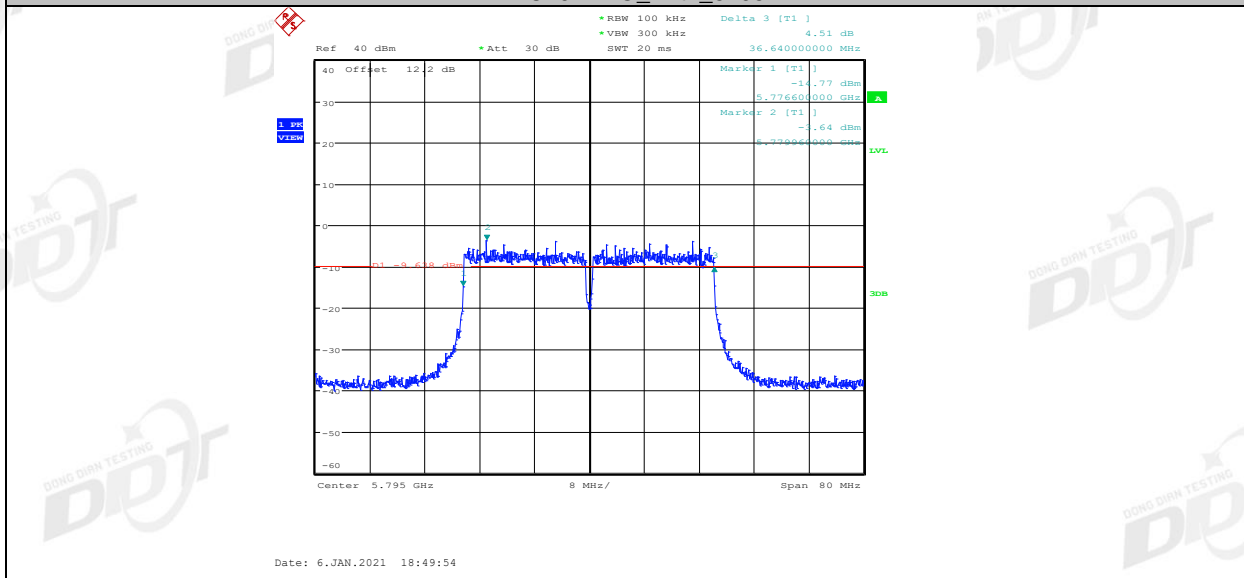
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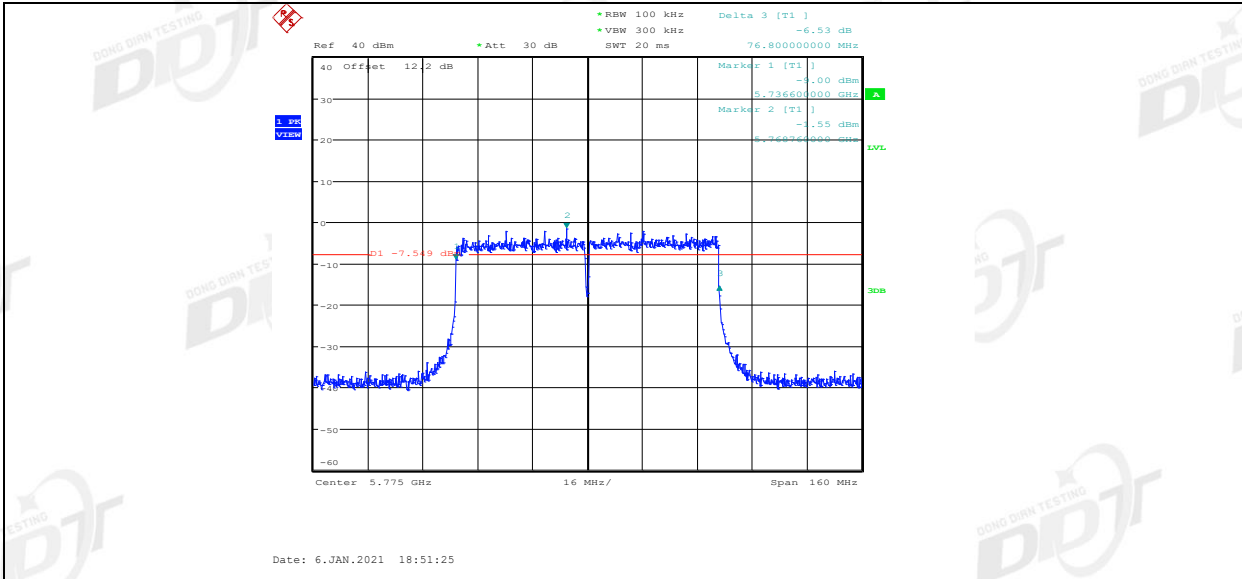
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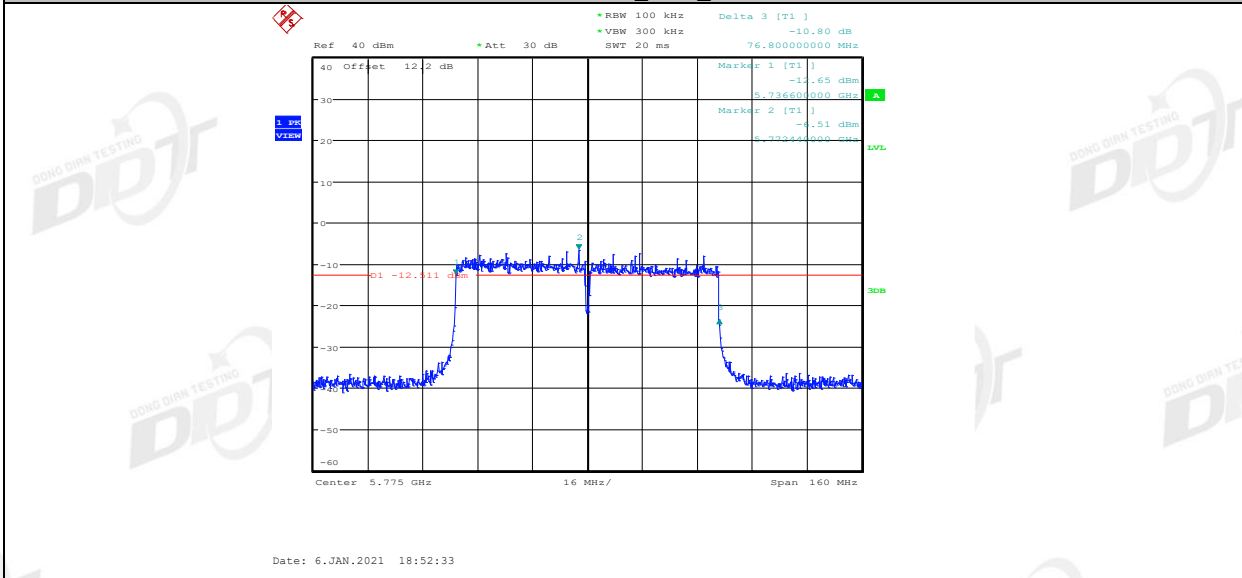
11AC40MIMO_Ant2_5795



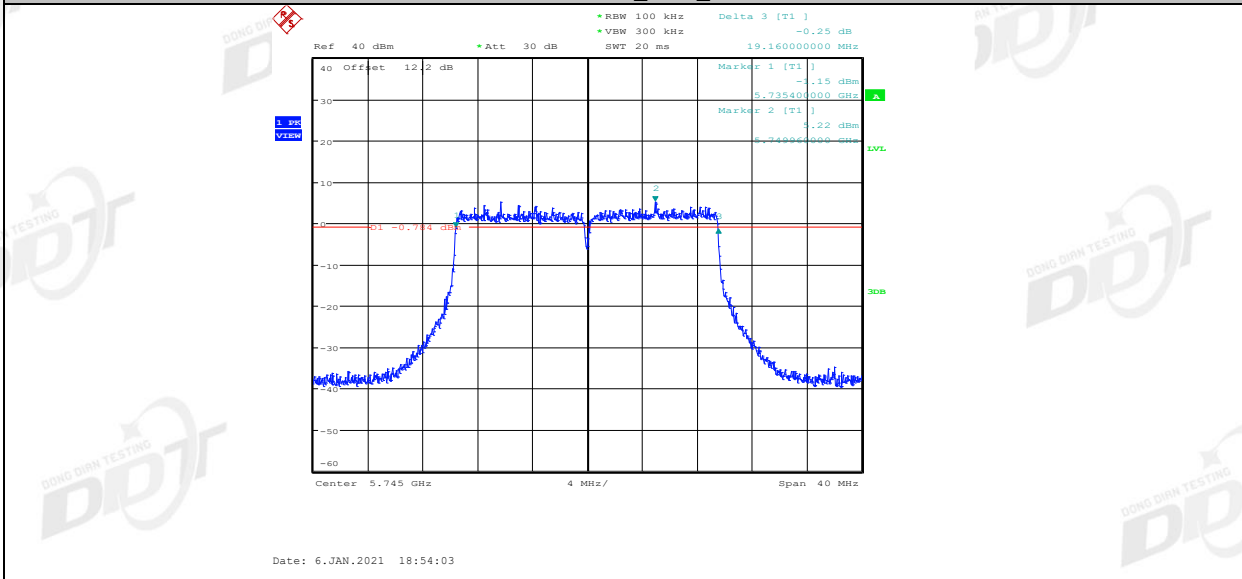
11AC80MIMO_Ant1_5775



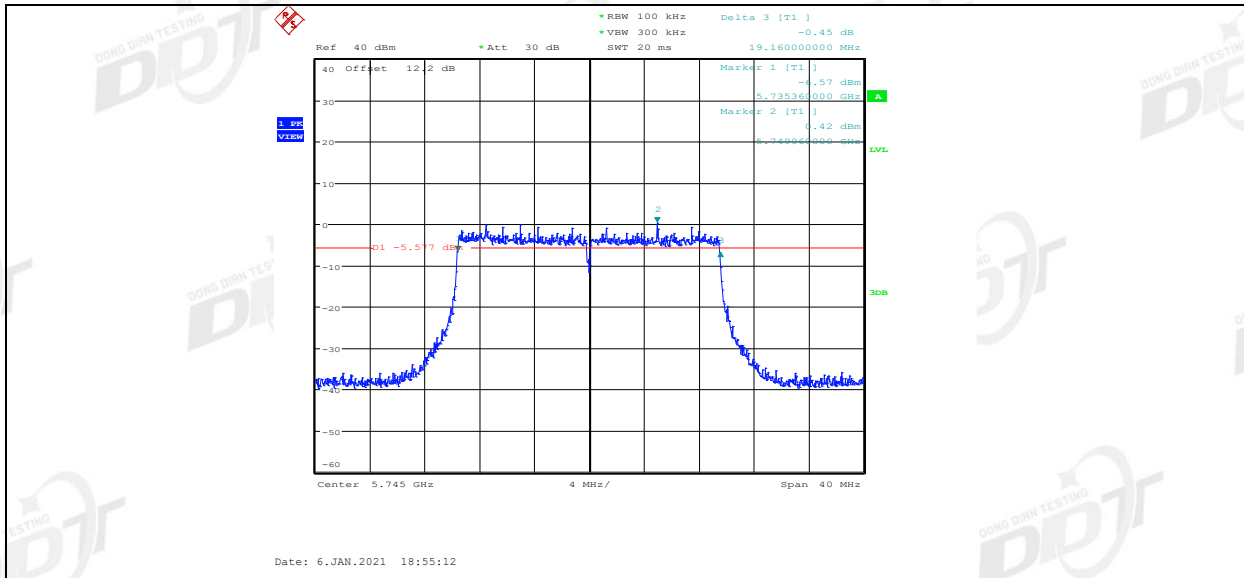
11AC80MIMO_Ant2_5775



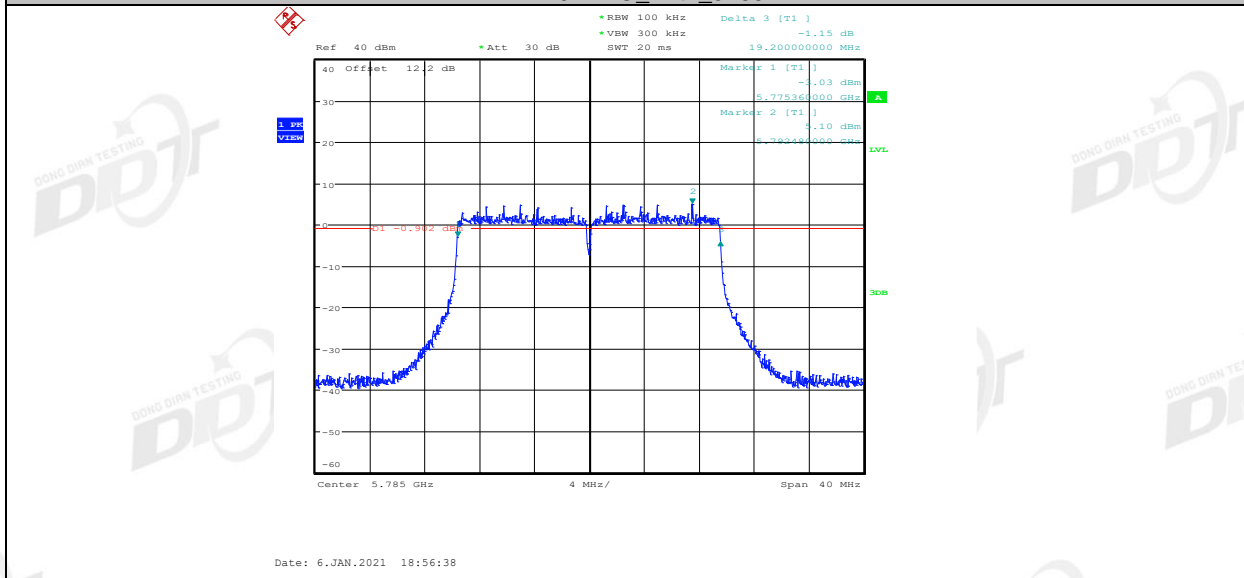
11AX20MIMO_Ant1_5745



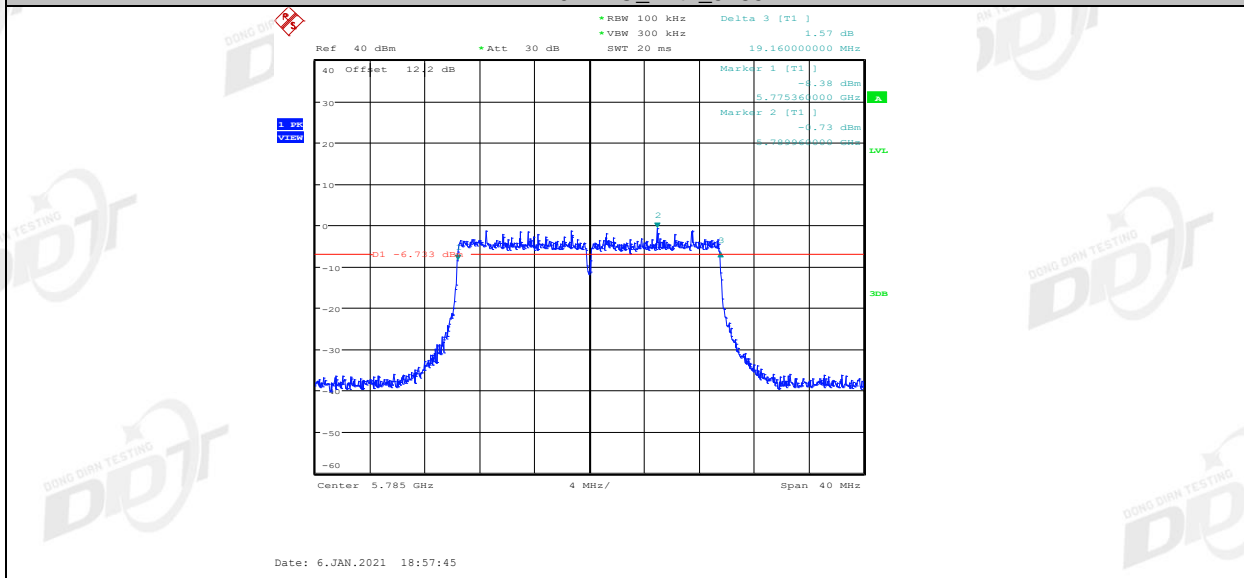
11AX20MIMO_Ant2_5745



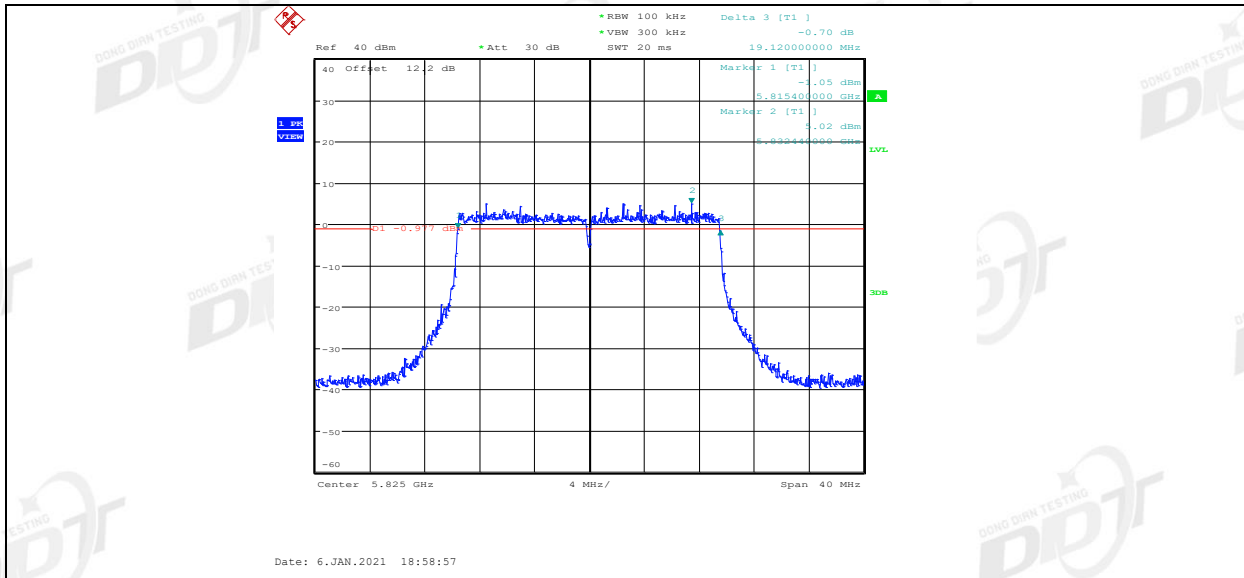
11AX20MIMO_Ant1_5785



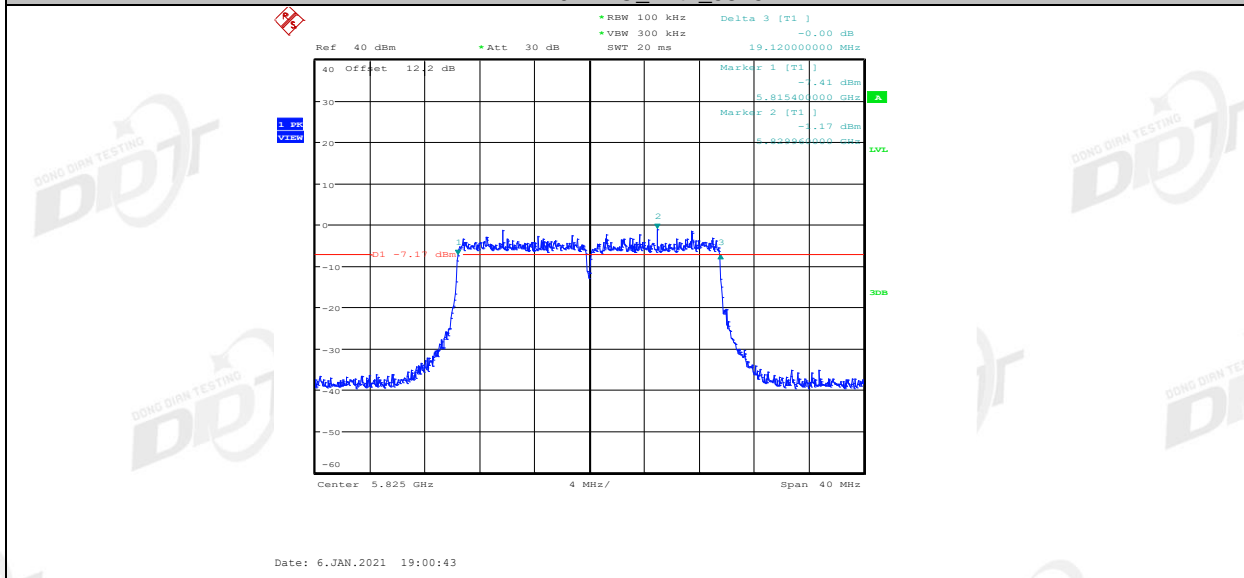
11AX20MIMO_Ant2_5785



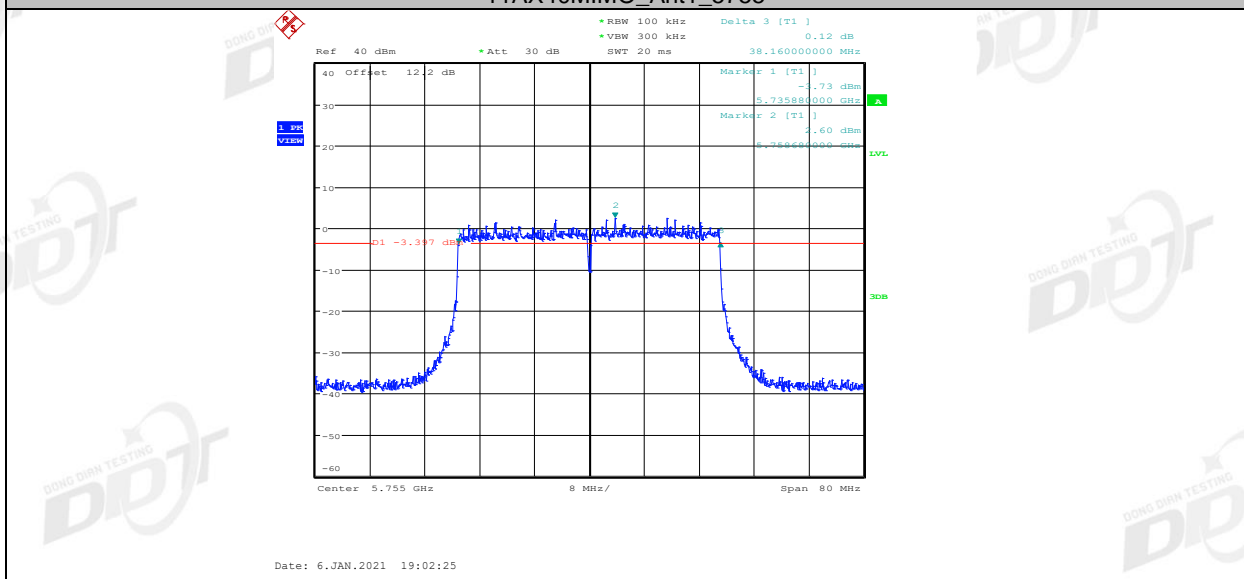
11AX20MIMO_Ant1_5825



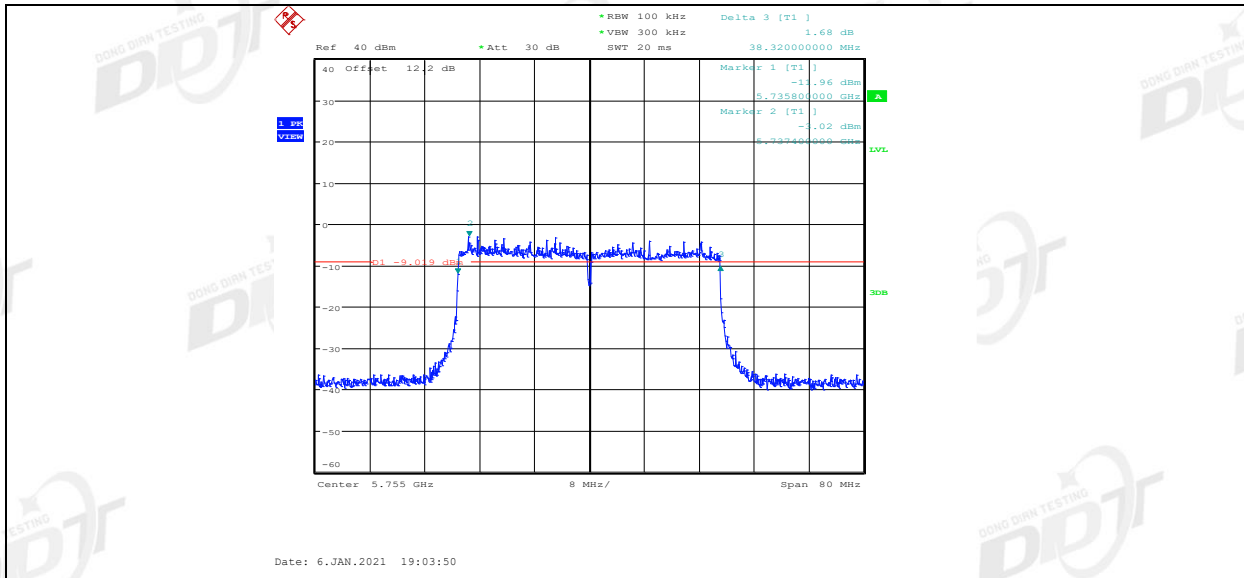
11AX20MIMO_Ant2_5825



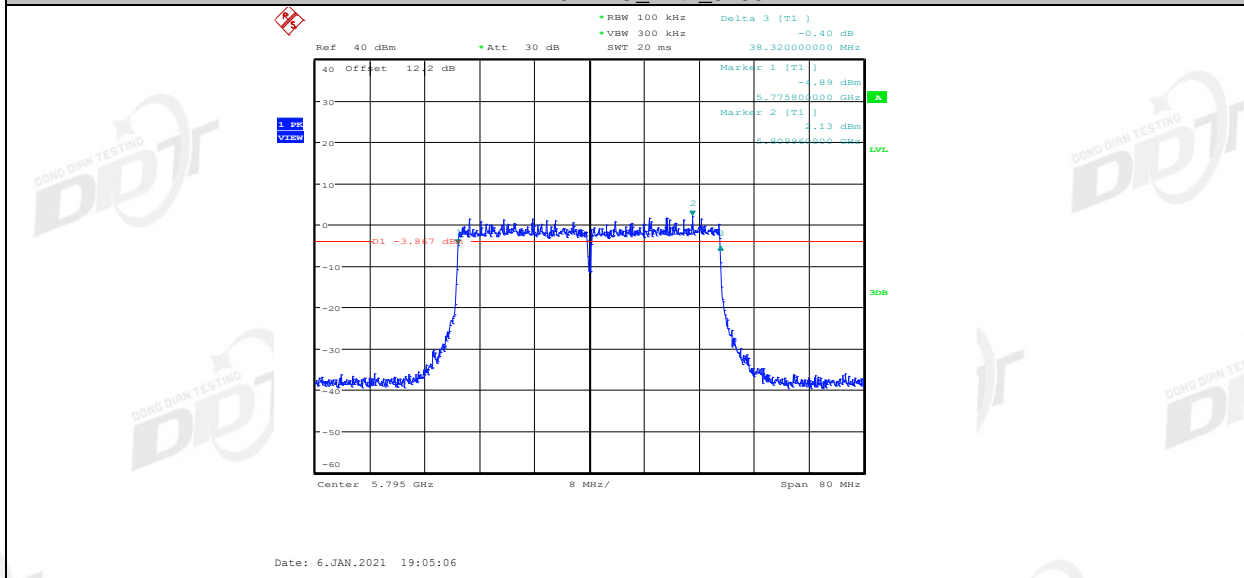
11AX40MIMO_Ant1_5755



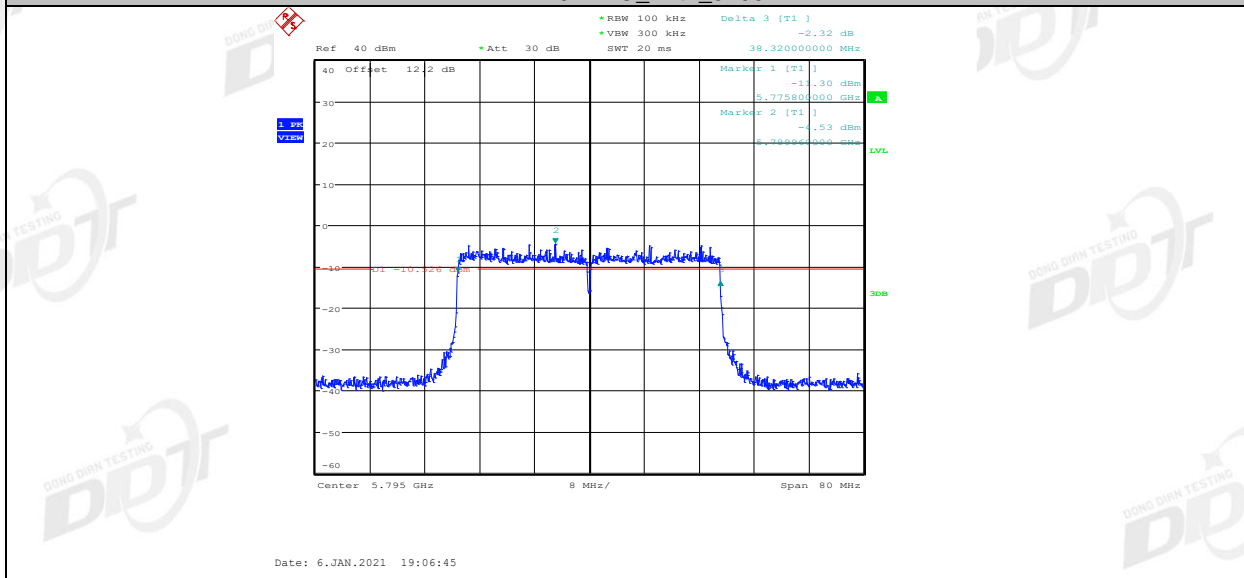
11AX40MIMO_Ant2_5755



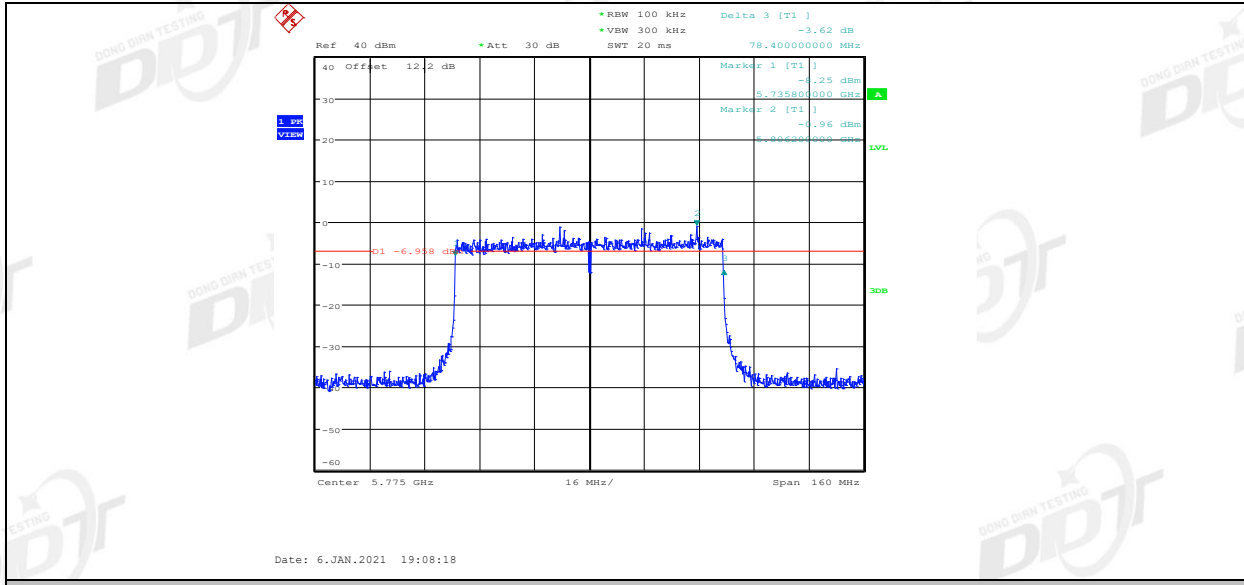
11AX40MIMO_Ant1_5795



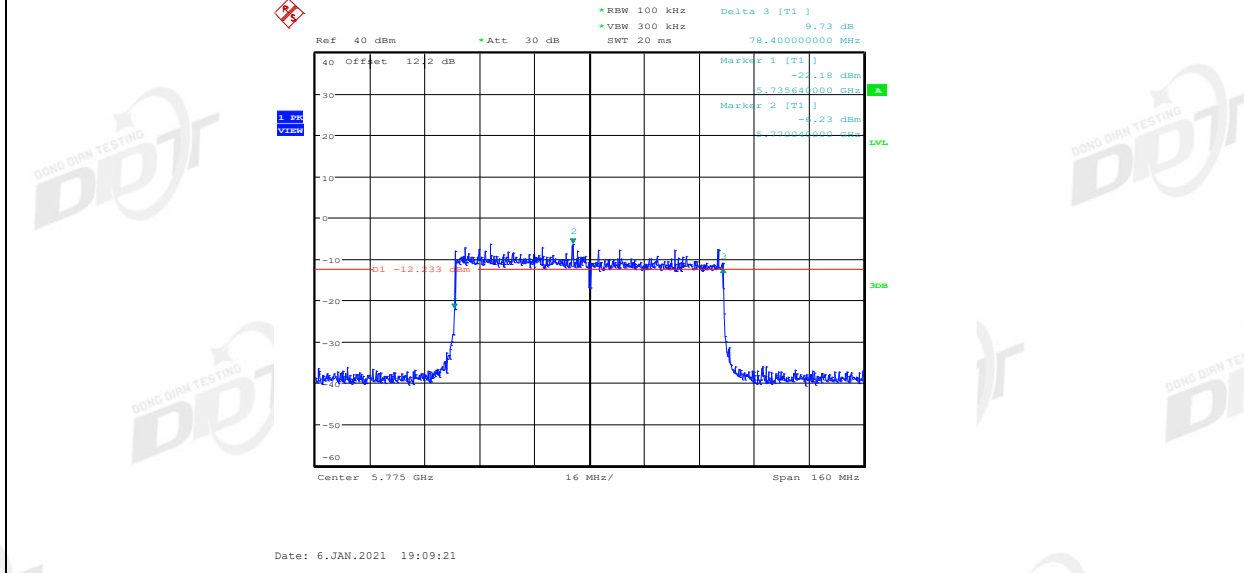
11AX40MIMO_Ant2_5795



11AX80MIMO_Ant1_5775



11AX80MIMO_Ant2_5775



5. Maximum Output Power

5.1. Block diagram of test setup

Same as section 4.1

5.2. Limits

| FCC Part15, Subpart E | | |
|------------------------|--|--|
| Test Item | Limit | Frequency Range (MHz) |
| Conducted Output Power | For an indoor access point: 1 W | 5150-5250 |
| | For RSS: e.i.r.p. power: not exceed 200 mW (23 dBm) or $10 + 10 \log_{10} B$ For FCC: 250 mW (24 dBm) or $11 + 10 \log_{10} B$ | |
| | For RSS: For conducted output power: 250 mW (24 dBm) or $11 + 10 \log_{10} B$ | 5250-5350 |
| | For RSS: e.i.r.p. power: not exceed 1.0 W (30 dBm) or $17 + 10 \log_{10} B$ For FCC: 250 mW (24 dBm) or $11 + 10 \log_{10} B$ | |
| | For RSS: For conducted output power: 250 mW (24 dBm) or $11 + 10 \log_{10} B$ | For FCC:5470 - 5725 For IC:5470 - 5600 5650 - 5725 |
| | For RSS: e.i.r.p. power: not exceed 1.0 W (30 dBm) or $17 + 10 \log_{10} B$ | |
| | 1 Watt (30 dBm) | 5725-5850 |

Note 1: For FCC: B=26 bandwidth; For ISSED: B=99% bandwidth.
 Note 2: For 802.11n, 802.11ac and 802.11ax, the EUT incorporates a MIMO function. The Antenna directional gain is 7 dBi.
 The Output Power limit is the above limits -(7-6) dB

5.3. Test procedure

- (1) Connect each EUT's antenna output to power meter by RF cable and attenuator
- (2) Add each antenna port's results to get the total output power of EUT.

5.4. Test result

(5150-5250)

| Test Mode | Ant | Test Channel | Output Power (dBm) | EIRP (dBm) | FCC LIMIT (dBm) | ISED LIMIT (dBm) |
|-----------|------|--------------|--------------------|------------|-----------------|------------------|
| 11A | ANT1 | 5180 | 13.21 | 17.21 | 30 | 22.23 |
| 11A | ANT2 | 5180 | 13.85 | 17.85 | 30 | 22.23 |
| 11A | ANT1 | 5200 | 13.30 | 17.30 | 30 | 22.23 |
| 11A | ANT2 | 5200 | 13.27 | 17.27 | 30 | 22.23 |
| 11A | ANT1 | 5240 | 14.11 | 18.11 | 30 | 22.23 |
| 11A | ANT2 | 5240 | 14.58 | 18.58 | 30 | 22.23 |
| 11N20MIMO | ANT1 | 5180 | 12.41 | 16.41 | 29 | 21.47 |
| 11N20MIMO | ANT2 | 5180 | 11.10 | 15.10 | 29 | 21.47 |

| | | | | | | |
|------------|-------|------|-------|-------|----|-------|
| 11N20MIMO | total | 5180 | 14.81 | 18.81 | 29 | 21.47 |
| 11N20MIMO | ANT1 | 5200 | 12.21 | 16.21 | 29 | 21.47 |
| 11N20MIMO | ANT2 | 5200 | 11.17 | 15.17 | 29 | 21.47 |
| 11N20MIMO | total | 5200 | 14.73 | 18.73 | 29 | 21.47 |
| 11N20MIMO | ANT1 | 5240 | 12.17 | 16.17 | 29 | 21.47 |
| 11N20MIMO | ANT2 | 5240 | 10.93 | 14.93 | 29 | 21.47 |
| 11N20MIMO | total | 5240 | 14.60 | 18.60 | 29 | 21.47 |
| 11N40MIMO | ANT1 | 5190 | 8.51 | 12.51 | 29 | 22 |
| 11N40MIMO | ANT2 | 5190 | 7.24 | 11.24 | 29 | 22 |
| 11N40MIMO | total | 5190 | 10.93 | 14.93 | 29 | 22 |
| 11N40MIMO | ANT1 | 5230 | 8.07 | 12.07 | 29 | 22 |
| 11N40MIMO | ANT2 | 5230 | 7.15 | 11.15 | 29 | 22 |
| 11N40MIMO | total | 5230 | 10.64 | 14.64 | 29 | 22 |
| 11AC20MIMO | ANT1 | 5180 | 12.88 | 16.88 | 29 | 21.54 |
| 11AC20MIMO | ANT2 | 5180 | 11.67 | 15.67 | 29 | 21.54 |
| 11AC20MIMO | total | 5180 | 15.33 | 19.33 | 29 | 21.54 |
| 11AC20MIMO | ANT1 | 5200 | 12.71 | 16.71 | 29 | 21.54 |
| 11AC20MIMO | ANT2 | 5200 | 11.54 | 15.54 | 29 | 21.54 |
| 11AC20MIMO | total | 5200 | 15.17 | 19.17 | 29 | 21.54 |
| 11AC20MIMO | ANT1 | 5240 | 12.65 | 16.65 | 29 | 21.54 |
| 11AC20MIMO | ANT2 | 5240 | 11.23 | 15.23 | 29 | 21.54 |
| 11AC20MIMO | total | 5240 | 15.01 | 19.01 | 29 | 21.54 |
| 11AC40MIMO | ANT1 | 5190 | 7.81 | 11.81 | 29 | 22 |
| 11AC40MIMO | ANT2 | 5190 | 7.15 | 11.15 | 29 | 22 |
| 11AC40MIMO | total | 5190 | 10.5 | 14.50 | 29 | 22 |
| 11AC40MIMO | ANT1 | 5230 | 7.96 | 11.96 | 29 | 22 |
| 11AC40MIMO | ANT2 | 5230 | 6.9 | 10.90 | 29 | 22 |
| 11AC40MIMO | total | 5230 | 10.47 | 14.47 | 29 | 22 |
| 11AC80MIMO | ANT1 | 5210 | 7.65 | 11.65 | 29 | 22 |
| 11AC80MIMO | ANT2 | 5210 | 6.97 | 10.97 | 29 | 22 |
| 11AC80MIMO | total | 5210 | 10.33 | 14.33 | 29 | 22 |
| 11AX20MIMO | ANT1 | 5180 | 12.92 | 16.92 | 29 | 21.81 |
| 11AX20MIMO | ANT2 | 5180 | 11.79 | 15.79 | 29 | 21.81 |
| 11AX20MIMO | total | 5180 | 15.4 | 19.40 | 29 | 21.81 |
| 11AX20MIMO | ANT1 | 5200 | 12.75 | 16.75 | 29 | 21.81 |
| 11AX20MIMO | ANT2 | 5200 | 11.56 | 15.56 | 29 | 21.81 |
| 11AX20MIMO | total | 5200 | 15.21 | 19.21 | 29 | 21.81 |
| 11AX20MIMO | ANT1 | 5240 | 12.84 | 16.84 | 29 | 21.81 |
| 11AX20MIMO | ANT2 | 5240 | 11.25 | 15.25 | 29 | 21.81 |

| | | | | | | |
|------------|-------|------|-------|-------|----|-------|
| 11AX20MIMO | total | 5240 | 15.13 | 19.13 | 29 | 21.81 |
| 11AX40MIMO | ANT1 | 5190 | 7.85 | 11.85 | 29 | 22 |
| 11AX40MIMO | ANT2 | 5190 | 7.13 | 11.13 | 29 | 22 |
| 11AX40MIMO | total | 5190 | 10.52 | 14.52 | 29 | 22 |
| 11AX40MIMO | ANT1 | 5230 | 7.76 | 11.76 | 29 | 22 |
| 11AX40MIMO | ANT2 | 5230 | 6.73 | 10.73 | 29 | 22 |
| 11AX40MIMO | total | 5230 | 10.29 | 14.29 | 29 | 22 |
| 11AX80MIMO | ANT1 | 5210 | 7.73 | 11.73 | 29 | 22 |
| 11AX80MIMO | ANT2 | 5210 | 6.82 | 10.82 | 29 | 22 |
| 11AX80MIMO | total | 5210 | 10.31 | 14.31 | 29 | 22 |

(5725-5850)

| Test Mode | Ant | Test Channel | Output Power (dBm) | LIMIT (dBm) |
|------------|-------|--------------|--------------------|-------------|
| 11A | ANT1 | 5745 | 21.80 | 30 |
| 11A | ANT2 | 5745 | 16.51 | 30 |
| 11A | ANT1 | 5785 | 21.16 | 30 |
| 11A | ANT2 | 5785 | 14.60 | 30 |
| 11A | ANT1 | 5825 | 21.15 | 30 |
| 11A | ANT2 | 5825 | 14.49 | 30 |
| 11N20MIMO | ANT1 | 5745 | 20.64 | 29 |
| 11N20MIMO | ANT2 | 5745 | 15.41 | 29 |
| 11N20MIMO | total | 5745 | 21.78 | 29 |
| 11N20MIMO | ANT1 | 5785 | 20.05 | 29 |
| 11N20MIMO | ANT2 | 5785 | 14.13 | 29 |
| 11N20MIMO | total | 5785 | 21.04 | 29 |
| 11N20MIMO | ANT1 | 5825 | 20.15 | 29 |
| 11N20MIMO | ANT2 | 5825 | 13.87 | 29 |
| 11N20MIMO | total | 5825 | 21.07 | 29 |
| 11N40MIMO | ANT1 | 5755 | 21.50 | 29 |
| 11N40MIMO | ANT2 | 5755 | 16.05 | 29 |
| 11N40MIMO | total | 5755 | 22.59 | 29 |
| 11N40MIMO | ANT1 | 5795 | 21.03 | 29 |
| 11N40MIMO | ANT2 | 5795 | 15.08 | 29 |
| 11N40MIMO | total | 5795 | 22.01 | 29 |
| 11AC20MIMO | ANT1 | 5745 | 17.60 | 29 |
| 11AC20MIMO | ANT2 | 5745 | 12.25 | 29 |
| 11AC20MIMO | total | 5745 | 18.71 | 29 |
| 11AC20MIMO | ANT1 | 5785 | 16.83 | 29 |

| | | | | |
|------------|-------|------|-------|----|
| 11AC20MIMO | ANT2 | 5785 | 11.18 | 29 |
| 11AC20MIMO | total | 5785 | 17.88 | 29 |
| 11AC20MIMO | ANT1 | 5825 | 17.06 | 29 |
| 11AC20MIMO | ANT2 | 5825 | 10.42 | 29 |
| 11AC20MIMO | total | 5825 | 17.91 | 29 |
| 11AC40MIMO | ANT1 | 5755 | 17.34 | 29 |
| 11AC40MIMO | ANT2 | 5755 | 12.01 | 29 |
| 11AC40MIMO | total | 5755 | 18.46 | 29 |
| 11AC40MIMO | ANT1 | 5795 | 17.05 | 29 |
| 11AC40MIMO | ANT2 | 5795 | 10.87 | 29 |
| 11AC40MIMO | total | 5795 | 17.99 | 29 |
| 11AC80MIMO | ANT1 | 5775 | 16.82 | 29 |
| 11AC80MIMO | ANT2 | 5775 | 11.60 | 29 |
| 11AC80MIMO | total | 5775 | 17.96 | 29 |
| 11AX20MIMO | ANT1 | 5745 | 17.62 | 29 |
| 11AX20MIMO | ANT2 | 5745 | 12.30 | 29 |
| 11AX20MIMO | total | 5745 | 18.74 | 29 |
| 11AX20MIMO | ANT1 | 5785 | 16.90 | 29 |
| 11AX20MIMO | ANT2 | 5785 | 10.97 | 29 |
| 11AX20MIMO | total | 5785 | 17.89 | 29 |
| 11AX20MIMO | ANT1 | 5825 | 16.99 | 29 |
| 11AX20MIMO | ANT2 | 5825 | 10.42 | 29 |
| 11AX20MIMO | total | 5825 | 17.85 | 29 |
| 11AX40MIMO | ANT1 | 5755 | 17.40 | 29 |
| 11AX40MIMO | ANT2 | 5755 | 12.19 | 29 |
| 11AX40MIMO | total | 5755 | 18.54 | 29 |
| 11AX40MIMO | ANT1 | 5795 | 17.05 | 29 |
| 11AX40MIMO | ANT2 | 5795 | 10.96 | 29 |
| 11AX40MIMO | total | 5795 | 18.01 | 29 |
| 11AX80MIMO | ANT1 | 5775 | 16.76 | 29 |
| 11AX80MIMO | ANT2 | 5775 | 11.44 | 29 |
| 11AX80MIMO | total | 5775 | 17.88 | 29 |

6. Power Spectral Density

6.1. Block diagram of test setup

Same with 4.1

6.2. Limits

| FCC Part15, Subpart E/ RSS-247 | | |
|--------------------------------|---|--|
| Test Item | Limit | Frequency Range (MHz) |
| Power Spectral Density | For FCC: Other than Mobile and portable:17 dBm/MHz Mobile and portable client devices:11 dBm/MHz | 5150-5250 |
| | For RSS eirp: 10 dBm/MHz | |
| | 11 dBm/MHz | 5250-5350 |
| | 11 dBm/MHz | For FCC: 5470 - 5725 For IC: 5470 - 5600 5650 - 5725 |
| | 30 dBm/500 kHz | 5725-5850 |

Note: For 802.11n, 802.11ac and 802.11ax, the EUT incorporates a MIMO function. The Antenna directional gain is 7 dBi.
The Power Spectral Density limit is the above limits-(7-6)

6.3. Test procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 1MHz RBW and 3MHz VBW.

Connect the UUT to the spectrum analyser and use the following settings:

5150 MHz~5250 MHz, 5250 MHz~5350 MHz, 5470 MHz~5725 MHz

| | |
|------------------|--|
| Center Frequency | The centre frequency of the channel under test |
| Detector | RMS |
| RBW | 1MHz |
| VBW | $\geq 3 \times \text{RBW}$ |
| Span | Encompass the entire emissions bandwidth (EBW) of the signal |
| Trace | Max hold |
| Sweep time | Auto |

5725 MHz-5850 MHz

| | |
|------------------|--|
| Center Frequency | The centre frequency of the channel under test |
| Detector | RMS |
| RBW | 500 kHz |
| VBW | $\geq 3 \times \text{RBW}$ |
| Span | Encompass the entire emissions bandwidth (EBW) of the signal |
| Trace | Max hold |
| Sweep time | Auto |

Note:

1. For UNII-3, according to KDB publication 789033 D02 General U-NII Test Procedures New Rules v02r01, section II.F.5., it is acceptable to set RBW at 1 MHz and VBW at 3 MHz if the spectrum analyzer does not have 500 kHz RBW.
 2. The value measured with RBW=1MHz is to be added with $10\log(500\text{kHz}/1\text{MHz})$ which is - 3dB. For example, if the measured value is +10 dBm using RBW=1 MHz (that is +10 dBm/MHz), then the converted value will be +7 dBm/500 kHz.
- Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

6.4. Test result

(5150-5250)

| Test Mode | Ant | Test Channel | PSD (dBm/MHz) | PSD eirp (dBm/MHz) | FCC Limit (dBm/MHz) | ISED Limit (dBm/MHz) | Verdict |
|------------|-------|--------------|---------------|--------------------|---------------------|----------------------|---------|
| 11A | ANT1 | 5180 | 5.06 | 9.06 | 17 | 10 | Pass |
| 11A | ANT2 | 5180 | 5.44 | 9.44 | 17 | 10 | Pass |
| 11A | ANT1 | 5200 | 4.85 | 8.85 | 17 | 10 | Pass |
| 11A | ANT2 | 5200 | 4.48 | 8.48 | 17 | 10 | Pass |
| 11A | ANT1 | 5240 | 5.27 | 9.27 | 17 | 10 | Pass |
| 11A | ANT2 | 5240 | 5.83 | 9.83 | 17 | 10 | Pass |
| 11N20MIMO | ANT1 | 5180 | 2.40 | 6.40 | 16 | 9 | Pass |
| 11N20MIMO | ANT2 | 5180 | 0.80 | 4.80 | 16 | 9 | Pass |
| 11N20MIMO | total | 5180 | 4.68 | 8.68 | 16 | 9 | Pass |
| 11N20MIMO | ANT1 | 5200 | 2.40 | 6.40 | 16 | 9 | Pass |
| 11N20MIMO | ANT2 | 5200 | 1.03 | 5.03 | 16 | 9 | Pass |
| 11N20MIMO | total | 5200 | 4.78 | 8.78 | 16 | 9 | Pass |
| 11N20MIMO | ANT1 | 5240 | 2.12 | 6.12 | 16 | 9 | Pass |
| 11N20MIMO | ANT2 | 5240 | 0.57 | 4.57 | 16 | 9 | Pass |
| 11N20MIMO | total | 5240 | 4.42 | 8.42 | 16 | 9 | Pass |
| 11N40MIMO | ANT1 | 5190 | -4.97 | -0.97 | 16 | 9 | Pass |
| 11N40MIMO | ANT2 | 5190 | -5.86 | -1.86 | 16 | 9 | Pass |
| 11N40MIMO | total | 5190 | -2.38 | 1.62 | 16 | 9 | Pass |
| 11N40MIMO | ANT1 | 5230 | -6.12 | -2.12 | 16 | 9 | Pass |
| 11N40MIMO | ANT2 | 5230 | -6.85 | -2.85 | 16 | 9 | Pass |
| 11N40MIMO | total | 5230 | -3.46 | 0.54 | 16 | 9 | Pass |
| 11AC20MIMO | ANT1 | 5180 | 2.73 | 6.73 | 16 | 9 | Pass |
| 11AC20MIMO | ANT2 | 5180 | 1.17 | 5.17 | 16 | 9 | Pass |
| 11AC20MIMO | total | 5180 | 5.03 | 9.03 | 16 | 9 | Pass |
| 11AC20MIMO | ANT1 | 5200 | 2.14 | 6.14 | 16 | 9 | Pass |
| 11AC20MIMO | ANT2 | 5200 | 0.75 | 4.75 | 16 | 9 | Pass |
| 11AC20MIMO | total | 5200 | 4.51 | 8.51 | 16 | 9 | Pass |
| 11AC20MIMO | ANT1 | 5240 | 1.71 | 5.71 | 16 | 9 | Pass |

| | | | | | | | |
|------------|-------|------|--------|-------|----|---|------|
| 11AC20MIMO | ANT2 | 5240 | 0.33 | 4.33 | 16 | 9 | Pass |
| 11AC20MIMO | total | 5240 | 4.08 | 8.08 | 16 | 9 | Pass |
| 11AC40MIMO | ANT1 | 5190 | -5.64 | -1.64 | 16 | 9 | Pass |
| 11AC40MIMO | ANT2 | 5190 | -6.58 | -2.58 | 16 | 9 | Pass |
| 11AC40MIMO | total | 5190 | -3.07 | 0.93 | 16 | 9 | Pass |
| 11AC40MIMO | ANT1 | 5230 | -6.07 | -2.07 | 16 | 9 | Pass |
| 11AC40MIMO | ANT2 | 5230 | -7.31 | -3.31 | 16 | 9 | Pass |
| 11AC40MIMO | total | 5230 | -3.64 | 0.36 | 16 | 9 | Pass |
| 11AC80MIMO | ANT1 | 5210 | -9.63 | -5.63 | 16 | 9 | Pass |
| 11AC80MIMO | ANT2 | 5210 | -9.84 | -5.84 | 16 | 9 | Pass |
| 11AC80MIMO | total | 5210 | -6.72 | -2.72 | 16 | 9 | Pass |
| 11AX20MIMO | ANT1 | 5180 | 1.93 | 5.93 | 16 | 9 | Pass |
| 11AX20MIMO | ANT2 | 5180 | 0.75 | 4.75 | 16 | 9 | Pass |
| 11AX20MIMO | total | 5180 | 4.39 | 8.39 | 16 | 9 | Pass |
| 11AX20MIMO | ANT1 | 5200 | 1.55 | 5.55 | 16 | 9 | Pass |
| 11AX20MIMO | ANT2 | 5200 | 0.48 | 4.48 | 16 | 9 | Pass |
| 11AX20MIMO | total | 5200 | 4.06 | 8.06 | 16 | 9 | Pass |
| 11AX20MIMO | ANT1 | 5240 | 1.36 | 5.36 | 16 | 9 | Pass |
| 11AX20MIMO | ANT2 | 5240 | -0.28 | 3.72 | 16 | 9 | Pass |
| 11AX20MIMO | total | 5240 | 3.63 | 7.63 | 16 | 9 | Pass |
| 11AX40MIMO | ANT1 | 5190 | -6.35 | -2.35 | 16 | 9 | Pass |
| 11AX40MIMO | ANT2 | 5190 | -6.30 | -2.3 | 16 | 9 | Pass |
| 11AX40MIMO | total | 5190 | -3.31 | 0.69 | 16 | 9 | Pass |
| 11AX40MIMO | ANT1 | 5230 | -6.48 | -2.48 | 16 | 9 | Pass |
| 11AX40MIMO | ANT2 | 5230 | -7.47 | -3.47 | 16 | 9 | Pass |
| 11AX40MIMO | total | 5230 | -3.94 | 0.06 | 16 | 9 | Pass |
| 11AX80MIMO | ANT1 | 5210 | -9.80 | -5.80 | 16 | 9 | Pass |
| 11AX80MIMO | ANT2 | 5210 | -10.65 | -6.65 | 16 | 9 | Pass |
| 11AX80MIMO | total | 5210 | -7.19 | -3.19 | 16 | 9 | Pass |

(5725-5850)

| Test Mode | Test Channel | Ant | PSD (dBm/1MHz) | Limit (dBm/1MHz) | Verdict |
|-----------|--------------|------|-------------------|---------------------|---------|
| 11A | ANT1 | 5745 | 12.23 | 27 | Pass |
| 11A | ANT2 | 5745 | 7.10 | 27 | Pass |
| 11A | ANT1 | 5785 | 11.70 | 27 | Pass |
| 11A | ANT2 | 5785 | 5.49 | 27 | Pass |
| 11A | ANT1 | 5825 | 12.14 | 27 | Pass |
| 11A | ANT2 | 5825 | 5.80 | 27 | Pass |

| | | | | | |
|------------|-------|------|-------|----|------|
| 11N20MIMO | ANT1 | 5745 | 9.64 | 26 | Pass |
| 11N20MIMO | ANT2 | 5745 | 4.09 | 26 | Pass |
| 11N20MIMO | total | 5745 | 10.71 | 26 | Pass |
| 11N20MIMO | ANT1 | 5785 | 9.65 | 26 | Pass |
| 11N20MIMO | ANT2 | 5785 | 3.62 | 26 | Pass |
| 11N20MIMO | total | 5785 | 10.62 | 26 | Pass |
| 11N20MIMO | ANT1 | 5825 | 9.85 | 26 | Pass |
| 11N20MIMO | ANT2 | 5825 | 2.71 | 26 | Pass |
| 11N20MIMO | total | 5825 | 10.62 | 26 | Pass |
| 11N40MIMO | ANT1 | 5755 | 6.70 | 26 | Pass |
| 11N40MIMO | ANT2 | 5755 | 1.18 | 26 | Pass |
| 11N40MIMO | total | 5755 | 7.77 | 26 | Pass |
| 11N40MIMO | ANT1 | 5795 | 6.33 | 26 | Pass |
| 11N40MIMO | ANT2 | 5795 | 0.62 | 26 | Pass |
| 11N40MIMO | total | 5795 | 7.36 | 26 | Pass |
| 11AC20MIMO | ANT1 | 5745 | 6.00 | 26 | Pass |
| 11AC20MIMO | ANT2 | 5745 | 0.39 | 26 | Pass |
| 11AC20MIMO | total | 5745 | 7.05 | 26 | Pass |
| 11AC20MIMO | ANT1 | 5785 | 6.03 | 26 | Pass |
| 11AC20MIMO | ANT2 | 5785 | -0.19 | 26 | Pass |
| 11AC20MIMO | total | 5785 | 6.96 | 26 | Pass |
| 11AC20MIMO | ANT1 | 5825 | 5.20 | 26 | Pass |
| 11AC20MIMO | ANT2 | 5825 | -0.69 | 26 | Pass |
| 11AC20MIMO | total | 5825 | 6.20 | 26 | Pass |
| 11AC40MIMO | ANT1 | 5755 | 2.75 | 26 | Pass |
| 11AC40MIMO | ANT2 | 5755 | -2.53 | 26 | Pass |
| 11AC40MIMO | total | 5755 | 3.88 | 26 | Pass |
| 11AC40MIMO | ANT1 | 5795 | 2.70 | 26 | Pass |
| 11AC40MIMO | ANT2 | 5795 | -3.72 | 26 | Pass |
| 11AC40MIMO | total | 5795 | 3.59 | 26 | Pass |
| 11AC80MIMO | ANT1 | 5775 | -1.61 | 26 | Pass |
| 11AC80MIMO | ANT2 | 5775 | -5.58 | 26 | Pass |
| 11AC80MIMO | total | 5775 | -0.15 | 26 | Pass |
| 11AX20MIMO | ANT1 | 5745 | 5.99 | 26 | Pass |
| 11AX20MIMO | ANT2 | 5745 | 0.03 | 26 | Pass |
| 11AX20MIMO | total | 5745 | 6.97 | 26 | Pass |
| 11AX20MIMO | ANT1 | 5785 | 4.70 | 26 | Pass |
| 11AX20MIMO | ANT2 | 5785 | -0.97 | 26 | Pass |
| 11AX20MIMO | total | 5785 | 5.74 | 26 | Pass |

| | | | | | |
|------------|-------|------|-------|----|------|
| 11AX20MIMO | ANT1 | 5825 | 5.42 | 26 | Pass |
| 11AX20MIMO | ANT2 | 5825 | -0.88 | 26 | Pass |
| 11AX20MIMO | total | 5825 | 6.33 | 26 | Pass |
| 11AX40MIMO | ANT1 | 5755 | 2.81 | 26 | Pass |
| 11AX40MIMO | ANT2 | 5755 | -2.30 | 26 | Pass |
| 11AX40MIMO | total | 5755 | 3.98 | 26 | Pass |
| 11AX40MIMO | ANT1 | 5795 | 2.47 | 26 | Pass |
| 11AX40MIMO | ANT2 | 5795 | -3.75 | 26 | Pass |
| 11AX40MIMO | total | 5795 | 3.40 | 26 | Pass |
| 11AX80MIMO | ANT1 | 5775 | -1.04 | 26 | Pass |
| 11AX80MIMO | ANT2 | 5775 | -5.47 | 26 | Pass |
| 11AX80MIMO | total | 5775 | 0.30 | 26 | Pass |