



中认信通
CHINA CERTIFICATION ICT CO., LTD (DONGGUAN)



TEST REPORT

Applicant: 12 Speed Products, Inc

Address: 27231 Burbank Suite 202 Foothill Ranch CA 92610

FCC ID: 2A3LL-DOORMATE

Product Name: Bicycle garage door remote control

Model Number: Doormate

Standard(s): 47 CFR Part 15, Subpart C(15.231)
ANSI C63.10-2013

The above equipment has been tested and found compliance with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR21100106-00

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Title: Manager

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0123.

Declarations

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1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

| | |
|-----------------------------|------------------------------------|
| EUT Name: | Bicycle garage door remote control |
| EUT Model: | Doormate |
| Operation Frequency: | 300MHz, 315MHz, 318MHz, 390MHz |
| Modulation Type: | ASK |
| Rated Input Voltage: | DC 12V from battery |
| Serial Number: | CR21100106-RF-S1 |
| EUT Received Date: | 2021.10.25 |
| EUT Received Status: | Good |

Operation Frequency Detail:

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 1 | 300 | 2 | 315 |
| 3 | 318 | 4 | 390 |

Per section 15.31(m), the lowest frequency, middle frequency, and highest frequency were performed the test as below:

| Test Channel | Frequency (MHz) |
|--------------|-----------------|
| 1 | 300 |
| 2 | 315 |
| 3 | 318 |
| 4 | 390 |

Antenna Information Detail▲:

| Antenna Manufacturer | Antenna Type | input impedance (Ohm) | §15.203 Requirement |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------|---------------------|
| 12 Speed Products, Inc | Coil | 50 | Compliance |
| The Method of §15.203 Compliance: <input checked="" type="checkbox"/> Antenna must be permanently attached to the unit. <input type="checkbox"/> Antenna must use a unique type of connector to attach to the EUT. <input type="checkbox"/> Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit. | | | |

Accessory Information:

No Accessory.

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition:

| | |
|---------------------------------|----------------------------------------------------------------------------------------------------|
| EUT Operation Mode: | The system was configured for testing in Engineering Mode, which was provided by the manufacturer. |
| Equipment Modifications: | No |
| EUT Exercise Software: | No |

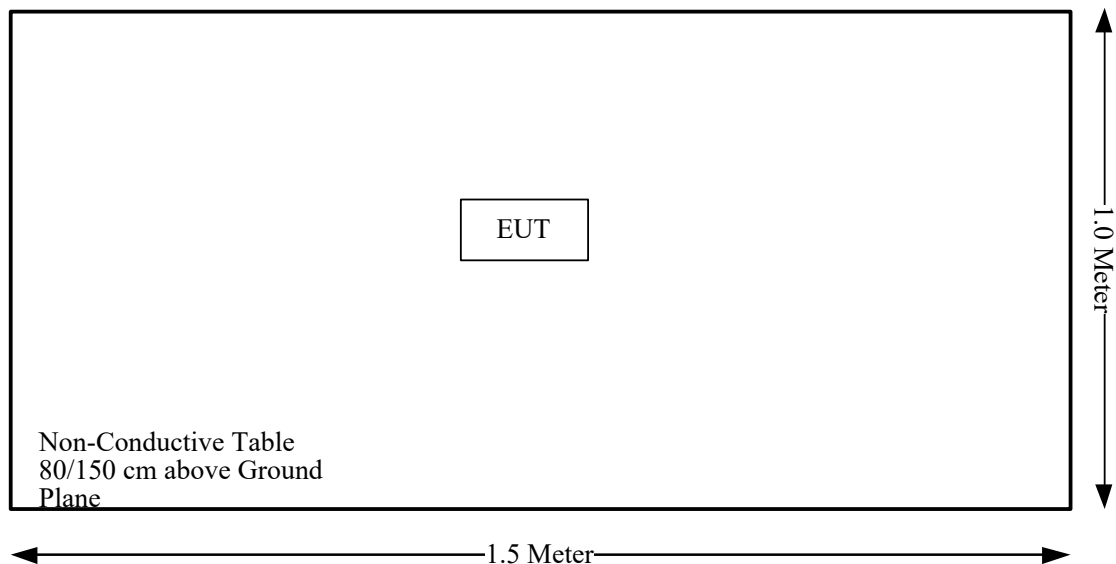
1.2.2 Support Equipment List and Details

| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-------|---------------|
| / | / | / | / |

1.2.3 Support Cable List and Details

| Cable Description | Shielding Type | Ferrite Core | Length (m) | From Port | To |
|-------------------|----------------|--------------|------------|-----------|----|
| / | / | / | / | / | / |

1.2.4 Block Diagram of Test Setup



1.3 Measurement Uncertainty

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

| Parameter | Measurement Uncertainty |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Occupied Channel Bandwidth | ±5 % |
| Unwanted Emissions, radiated | 30M~200MHz: 4.15 dB, 200M~1GHz: 5.61 dB, 1G~6GHz: 5.14 dB, 6G~18GHz: 5.93 dB, 18G~26.5G: 5.47 dB, 26.5G~40G: 5.63 dB |
| Temperature | ±1 °C |
| Humidity | ±5% |
| DC and low frequency voltages | ±0.4% |
| Duty Cycle | 1% |
| AC Power Lines Conducted Emission | 2.8 dB (150 kHz to 30 MHz) |

2. SUMMARY OF TEST RESULTS

| Standard(s) Section | Test Items | Result |
|-------------------------------|----------------------|----------------|
| §15.207 (a) | Conducted Emissions | Not applicable |
| §15.205, §15.209, §15.231 (b) | Radiated Emissions | Compliance |
| §15.231 (c) | 20dB Bandwidth | Compliance |
| §15.231 (a) | Deactivation Testing | Compliance |
| §15.203 | Antenna Requirement | Compliance |

Not Applicable: the device was powered by battery.

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 Applicable Standard

FCC§15.207(a).

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

| Frequency of emission (MHz) | Conducted limit (dB μ V) | |
|-----------------------------|------------------------------|-----------|
| | Quasi-peak | Average |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

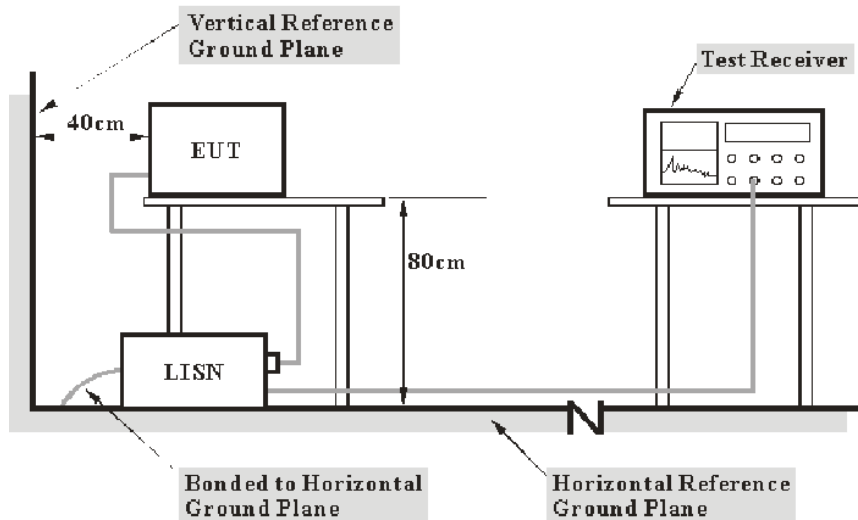
(1) For carrier current system containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 μ V within the frequency band 535-1705 kHz, as measured using a 50 μ H/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in §15.205, §15.209, §15.221, §15.223, or §15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provisions for, the use of battery chargers which permit operating while charging, AC adapters or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

3.1.2 EUT Setup



Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.3 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

| Frequency Range | IF B/W |
|------------------|--------|
| 150 kHz – 30 MHz | 9 kHz |

3.1.4 Test Procedure

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase (“hot”) line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

3.1.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

3.2 Radiation Spurious Emissions

3.2.1 Applicable Standard

FCC §15.231 (b);

In addition to the provisions of §15.205, the field strength of emissions from intentional radiators operated under this section shall not exceed the following:

| Fundamental frequency (MHz) | Field strength of fundamental (microvolts/meter) | Field strength of spurious emissions (microvolts/meter) |
|--------------------------------|-----------------------------------------------------|------------------------------------------------------------|
| 40.66-40.70 | 2,250 | 225 |
| 70-130 | 1,250 | 125 |
| 130-174 | ¹ 1,250 to 3,750 | ¹ 125 to 375 |
| 174-260 | 3,750 | 375 |
| 260-470 | ¹ 3,750 to 12,500 | ¹ 375 to 1,250 |
| Above 470 | 12,500 | 1,250 |

¹Linear interpolations.

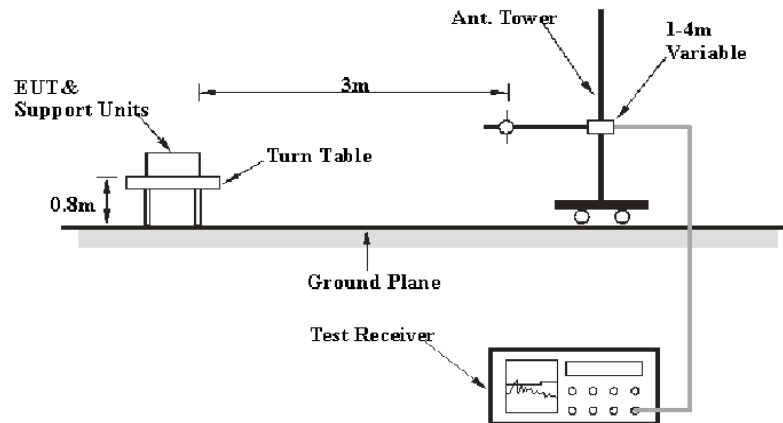
(1) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

(2) Intentional radiators operating under the provisions of this section shall demonstrate compliance with the limits on the field strength of emissions, as shown in the above table, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector. The specific method of measurement employed shall be specified in the application for equipment authorization. If average emission measurements are employed, the provisions in §15.35 for averaging pulsed emissions and for limiting peak emissions apply. Further, compliance with the provisions of §15.205 shall be demonstrated using the measurement instrumentation specified in that section.

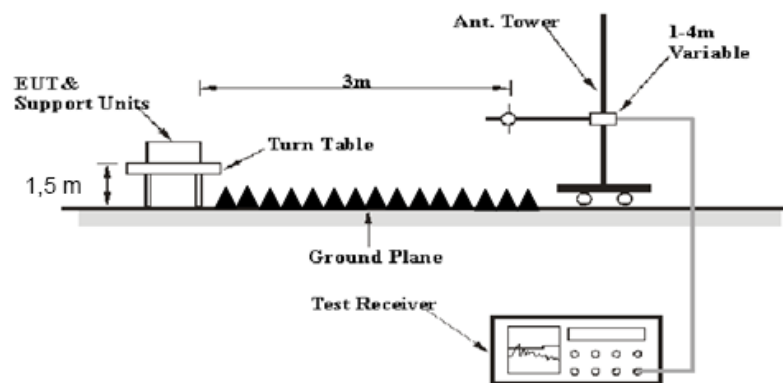
(3) The limits on the field strength of the spurious emissions in the above table are based on the fundamental frequency of the intentional radiator. Spurious emissions shall be attenuated to the average (or, alternatively, CISPR quasi-peak) limits shown in this table or to the general limits shown in §15.209, whichever limit permits a higher field strength.

3.2.2 EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.205, 15.209, and FCC 15.231 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

For portable device, test should be performed at X.Y.Z Axis:

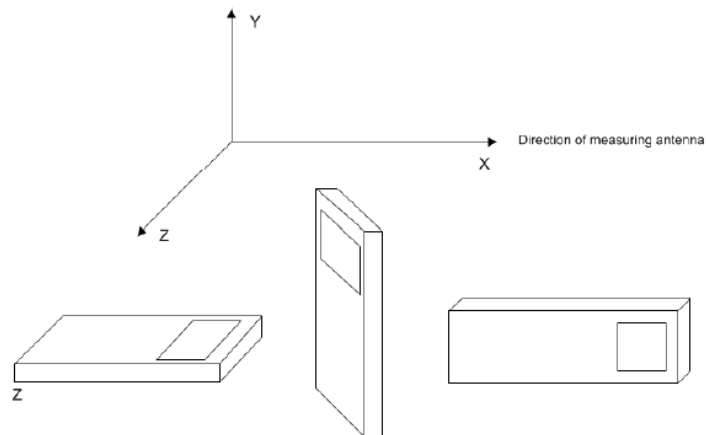


Figure 8—EUT configuration positions (see 6.3.1)

3.2.3 EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, the test receiver was set with the following configurations:

| Frequency Range | RBW | Video B/W | IF B/W | Measurement |
|-------------------|---------|-----------|---------|-------------|
| 30 MHz – 1000 MHz | 100 kHz | 300 kHz | 100 kHz | PK |
| Above 1 GHz | 1 MHz | 3 MHz | / | PK |

3.2.4 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

According to §15.231, Intentional radiators operating under the provisions of this Section shall demonstrate compliance with the limits on the field strength of emissions, based on the average value of the measured emissions. As an alternative, compliance with the limits in the above table may be based on the use of measurement instrumentation with a CISPR quasi-peak detector

3.2.5 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = Antenna Factor + Cable Loss - Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit – Result

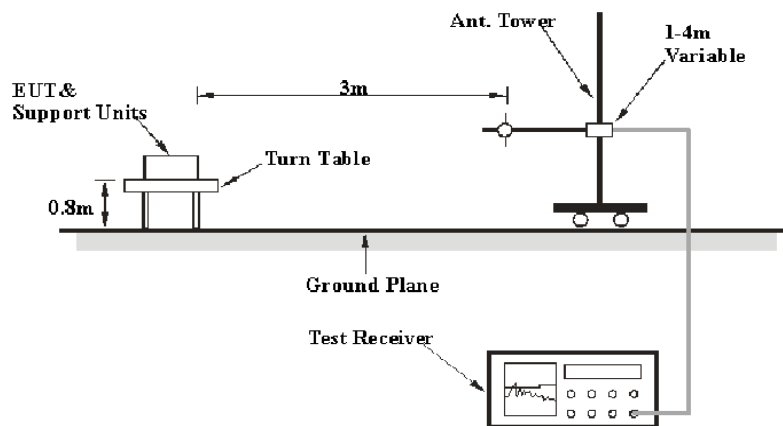
3.3 20 dB Emission Bandwidth:

3.3.1 Applicable Standard

FCC §15.231(c)

The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

3.3.2 EUT Setup



3.3.3 Test Procedure

- The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, unless otherwise specified by the applicable requirement.
- Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- 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 20 dB relative to the maximum level measured in the fundamental emission.

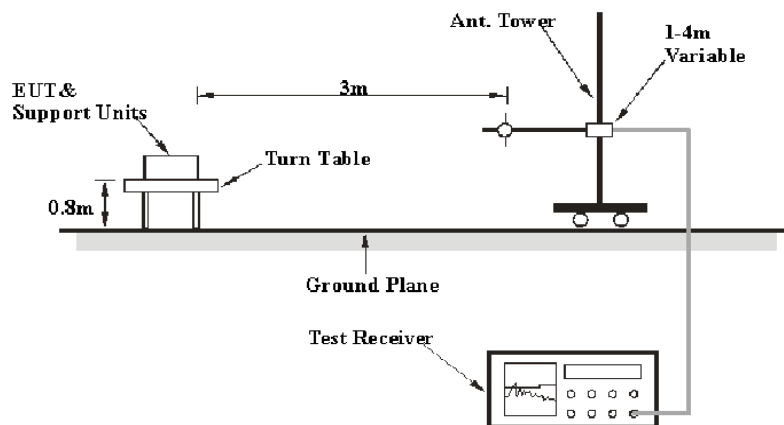
3.4 DEACTIVATION TESTING

3.4.1 Applicable Standard

FCC §15.231 (a)(1)

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

3.4.2 EUT Setup



3.4.3 Test Procedure

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the ON and OFF times of the transmitted signal:

- 1) Set the center frequency of the instrument to the center frequency of the transmission.
- 2) Set RBW \geq OBW if possible; otherwise, set RBW to the largest available value.
- 3) Set VBW \geq RBW. Set detector = peak or average.

3.5 Antenna Requirement

3.5.1 Applicable Standard

FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

3.5.2 Judgment

Please refer to the Antenna Information detail in Section 1.

4. Test DATA AND RESULTS

4.1 AC Line Conducted Emissions

Not Applicable. The device is powered by battery.

4.2 Radiation Spurious Emissions

| | | | |
|----------------|------------------------|--------------|-----------------------|
| Serial Number: | CR21100106-RF-S1 | Test Date: | 2021-11-24~2021-12-18 |
| Test Site: | 966-1/966-2 | Test Mode: | Transmitting |
| Tester: | Carl Liang, Great Qiao | Test Result: | Pass |

Environmental Conditions:

| | | | | | |
|----------------------|-----------|---------------------------|-------|------------------------|-------|
| Temperature: (°C) | 19.2~22.5 | Relative Humidity: (%) | 50~53 | ATM Pressure: (kPa) | 101.7 |
|----------------------|-----------|---------------------------|-------|------------------------|-------|

Test Equipment List and Details:

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-----------------------|---------------|------------------|----------------------|
| Sunol Sciences | Antenna | JB6 | A082520-5 | 2020-10-19 | 2023-10-18 |
| R&S | EMI Test Receiver | ESR3 | 102724 | 2021-07-22 | 2022-07-21 |
| TIMES MICROWAVE | Coaxial Cable | LMR-600-UltraFlex | C-0470-02 | 2021-07-18 | 2022-07-17 |
| TIMES MICROWAVE | Coaxial Cable | LMR-600-UltraFlex | C-0780-01 | 2021-07-18 | 2022-07-17 |
| Sonoma | Amplifier | 310N | 186165 | 2021-07-18 | 2022-07-17 |
| Audix | Test Software | E3 | 201021 (V9) | N/A | N/A |
| ETS-Lindgren | Horn Antenna | 3115 | 9912-5985 | 2020-10-13 | 2023-10-12 |
| R&S | Spectrum Analyzer | FSV40 | 101591 | 2021-07-22 | 2022-07-21 |
| MICRO-COAX | Coaxial Cable | UFA210A-1-1200-70U300 | 217423-008 | 2021-08-08 | 2022-08-07 |
| MICRO-COAX | Coaxial Cable | UFA210A-1-2362-300300 | 235780-001 | 2021-08-08 | 2022-08-07 |
| Mini | Pre-amplifier | ZVA-183-S+ | 5969001149 | 2021-11-10 | 2022-11-09 |

* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data(30MHz-4GHz):

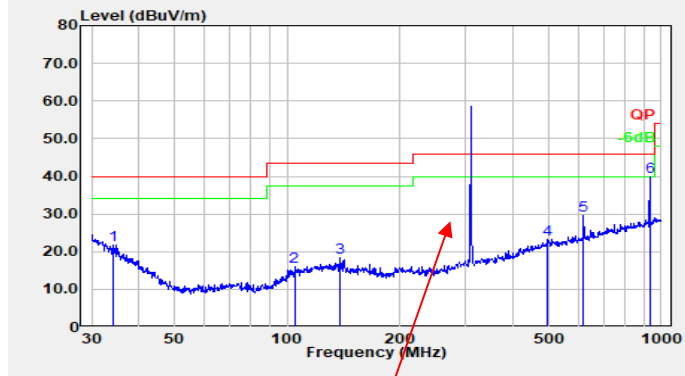
| Frequency (MHz) | Receiver | | Polar (H/V) | Factor (dB/m) | Result (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------------|-------------------|----------|----------------|------------------|--------------------|-------------------|----------------|
| | Reading (dBμV) | Detector | | | | | |
| Test Channel: 310 MHz | | | | | | | |
| 310.00 | 76.91 | Peak | H | 13.42 | 60.05 | 95.32 | 35.27 |
| 310.00 | 89.08 | Peak | V | 13.42 | 72.22 | 95.32 | 23.10 |
| 620.00 | 41.57 | Peak | H | 18.62 | 30.35 | 75.32 | 44.97 |
| 620.00 | 50.54 | Peak | V | 18.62 | 39.32 | 75.32 | 36.00 |
| 930.00 | 45.24 | Peak | H | 21.64 | 38.42 | 75.32 | 36.90 |
| 930.00 | 53.92 | Peak | V | 21.64 | 47.10 | 75.32 | 28.22 |
| 1240.00 | 44.43 | PK | H | -1.70 | 42.73 | 74.00 | 31.27 |
| 1240.00 | 54.36 | PK | V | -1.70 | 52.66 | 74.00 | 21.34 |
| 1550.00 | 38.47 | PK | H | -0.15 | 38.32 | 74.00 | 35.68 |
| 1550.00 | 38.59 | PK | V | -0.15 | 38.44 | 74.00 | 35.56 |
| 2170.00 | 34.05 | PK | H | 2.86 | 36.91 | 75.32 | 38.41 |
| 2170.00 | 35.49 | PK | V | 2.86 | 38.35 | 75.32 | 36.97 |
| 2480.00 | 33.69 | PK | H | 3.62 | 37.31 | 75.32 | 38.01 |
| 2480.00 | 38.71 | PK | V | 3.62 | 42.33 | 75.32 | 32.99 |
| 3100.00 | 40.57 | PK | H | 6.39 | 46.96 | 75.32 | 28.36 |
| 3100.00 | 47.84 | PK | V | 6.39 | 54.23 | 75.32 | 21.09 |
| 1860.00 | 39.52 | PK | H | 1.60 | 41.12 | 75.32 | 34.20 |
| 1860.00 | 42.77 | PK | V | 1.60 | 44.37 | 75.32 | 30.95 |
| 2790.00 | 34.15 | PK | H | 5.07 | 39.22 | 74.00 | 34.78 |
| 2790.00 | 40.84 | PK | V | 5.07 | 45.91 | 74.00 | 28.09 |
| Test Channel: 315 MHz | | | | | | | |
| 315.00 | 79.86 | Peak | H | 13.48 | 63.01 | 95.62 | 32.61 |
| 315.00 | 88.84 | Peak | V | 13.48 | 71.99 | 95.62 | 23.63 |
| 630.00 | 42.96 | Peak | H | 18.78 | 31.98 | 75.62 | 43.64 |
| 630.00 | 50.88 | Peak | V | 18.62 | 39.66 | 75.62 | 35.96 |
| 945.00 | 48.66 | Peak | H | 21.76 | 42.13 | 75.62 | 33.49 |
| 945.00 | 53.04 | Peak | V | 21.64 | 46.22 | 75.62 | 29.40 |
| 1260.00 | 37.95 | Peak | H | -1.71 | 36.24 | 75.62 | 39.38 |
| 1260.00 | 49.11 | Peak | V | -1.71 | 47.40 | 75.62 | 28.22 |
| 1575.00 | 37.93 | Peak | H | 0.04 | 37.97 | 74.00 | 36.03 |
| 1575.00 | 51.95 | Peak | V | 0.04 | 51.99 | 74.00 | 22.01 |
| 1890.00 | 44.14 | Peak | H | 1.81 | 45.95 | 75.62 | 29.67 |
| 1890.00 | 42.57 | Peak | V | 1.81 | 44.38 | 75.62 | 31.24 |
| 2205.00 | 34.57 | Peak | H | 2.94 | 37.51 | 74.00 | 36.49 |
| 2205.00 | 36.53 | Peak | V | 2.94 | 39.47 | 74.00 | 34.53 |
| 2520.00 | 35.30 | Peak | H | 3.76 | 39.06 | 75.62 | 36.56 |
| 2520.00 | 36.69 | Peak | V | 3.76 | 40.45 | 75.62 | 35.17 |
| 2835.00 | 34.89 | Peak | H | 5.28 | 40.17 | 74.00 | 33.83 |
| 2835.00 | 41.67 | Peak | V | 5.28 | 46.95 | 74.00 | 27.05 |
| 3150.00 | 39.76 | Peak | H | 6.60 | 46.36 | 75.62 | 29.26 |
| 3150.00 | 50.24 | Peak | V | 6.60 | 56.84 | 75.62 | 18.78 |

| Frequency (MHz) | Receiver | | Polar (H/V) | Factor (dB/m) | Result (dBμV/m) | Limit (dBμV/m) | Margin (dB) |
|-----------------------|-------------------|----------|----------------|------------------|--------------------|-------------------|----------------|
| | Reading (dBμV) | Detector | | | | | |
| Test Channel: 318 MHz | | | | | | | |
| 318.00 | 79.92 | Peak | H | 13.52 | 63.10 | 95.80 | 32.70 |
| 318.00 | 83.56 | Peak | V | 13.52 | 66.74 | 95.80 | 29.06 |
| 636.00 | 46.37 | Peak | H | 18.88 | 35.57 | 75.80 | 40.23 |
| 636.00 | 48.96 | Peak | V | 18.62 | 37.74 | 75.80 | 38.06 |
| 954.00 | 48.25 | Peak | H | 21.85 | 41.89 | 75.80 | 33.91 |
| 954.00 | 52.88 | Peak | V | 21.64 | 46.06 | 75.80 | 29.74 |
| 1272.00 | 38.76 | Peak | H | -1.71 | 37.05 | 75.80 | 38.75 |
| 1272.00 | 54.69 | Peak | V | -1.71 | 52.98 | 75.80 | 22.82 |
| 1590.00 | 36.81 | Peak | H | 0.15 | 36.96 | 74.00 | 37.04 |
| 1590.00 | 49.52 | Peak | V | 0.15 | 49.67 | 74.00 | 24.33 |
| 1908.00 | 38.21 | Peak | H | 1.91 | 40.12 | 75.80 | 35.68 |
| 1908.00 | 42.88 | Peak | V | 1.91 | 44.79 | 75.80 | 31.01 |
| 2226.00 | 34.09 | Peak | H | 2.99 | 37.08 | 74.00 | 36.92 |
| 2226.00 | 35.29 | Peak | V | 2.99 | 38.28 | 74.00 | 35.72 |
| 2544.00 | 36.39 | Peak | H | 3.92 | 40.31 | 75.80 | 35.49 |
| 2544.00 | 34.72 | Peak | V | 3.92 | 38.64 | 75.80 | 37.16 |
| 2862.00 | 33.57 | Peak | H | 5.41 | 38.98 | 74.00 | 35.02 |
| 2862.00 | 35.06 | Peak | V | 5.41 | 40.47 | 74.00 | 33.53 |
| 3180.00 | 40.98 | Peak | H | 6.70 | 47.68 | 75.80 | 28.12 |
| 3180.00 | 47.96 | Peak | V | 6.70 | 54.66 | 75.80 | 21.14 |
| Test Channel: 390 MHz | | | | | | | |
| 390.00 | 73.48 | Peak | H | 14.78 | 58.30 | 99.24 | 40.94 |
| 390.00 | 90.20 | Peak | V | 14.78 | 75.02 | 99.24 | 24.22 |
| 780.00 | 52.85 | Peak | H | 20.56 | 44.29 | 79.24 | 34.95 |
| 780.00 | 54.05 | Peak | V | 18.62 | 42.83 | 79.24 | 36.41 |
| 1170.00 | 40.25 | Peak | H | -1.84 | 38.41 | 74.00 | 35.59 |
| 1170.00 | 51.77 | Peak | V | -1.84 | 49.93 | 74.00 | 24.07 |
| 1560.00 | 40.12 | Peak | H | -0.07 | 40.05 | 74.00 | 33.95 |
| 1560.00 | 52.18 | Peak | V | -0.07 | 52.11 | 74.00 | 21.89 |
| 1950.00 | 40.85 | Peak | H | 2.08 | 42.93 | 79.24 | 36.31 |
| 1950.00 | 46.52 | Peak | V | 2.08 | 48.60 | 79.24 | 30.64 |
| 2340.00 | 34.62 | Peak | H | 3.27 | 37.89 | 74.00 | 36.11 |
| 2340.00 | 38.11 | Peak | V | 3.27 | 41.38 | 74.00 | 32.62 |
| 2730.00 | 37.65 | Peak | H | 4.85 | 42.50 | 74.00 | 31.50 |
| 2730.00 | 40.22 | Peak | V | 4.85 | 45.07 | 74.00 | 28.93 |
| 3120.00 | 37.42 | Peak | H | 6.47 | 43.89 | 79.24 | 35.35 |
| 3120.00 | 45.67 | Peak | V | 6.47 | 52.14 | 79.24 | 27.10 |
| 3510.00 | 36.67 | Peak | H | 7.64 | 44.31 | 79.24 | 34.93 |
| 3510.00 | 40.52 | Peak | V | 7.64 | 48.16 | 79.24 | 31.08 |
| 3900.00 | 38.31 | Peak | H | 9.01 | 47.32 | 74.00 | 26.68 |
| 3900.00 | 38.15 | Peak | V | 9.01 | 47.16 | 74.00 | 26.84 |

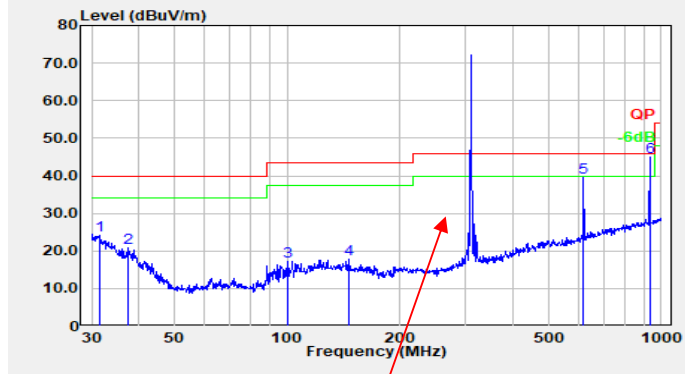
Note:

All the peak emissions are under the peak emission limit more than 20dB, comply with the average limit, therefore average detector is unnecessary.

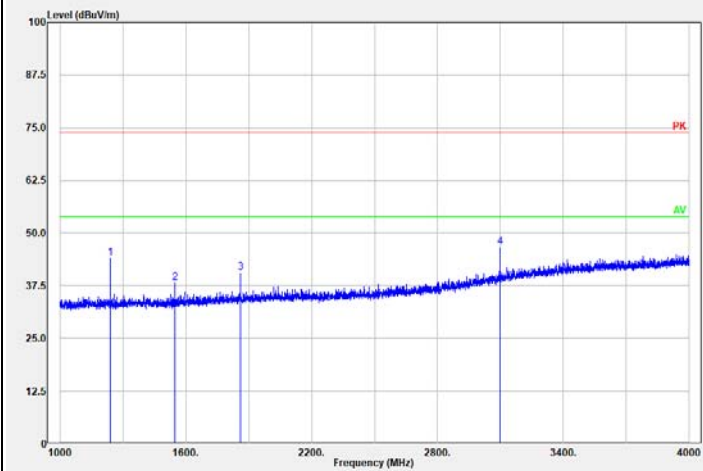
The device can be mounted in multiple orientations, test was performed with X,Y, Z Axis, the worst orientation was photographed and it's data was recorded.

Worst Test Plots(310MHz)30MHz-1GHz
Horizontal

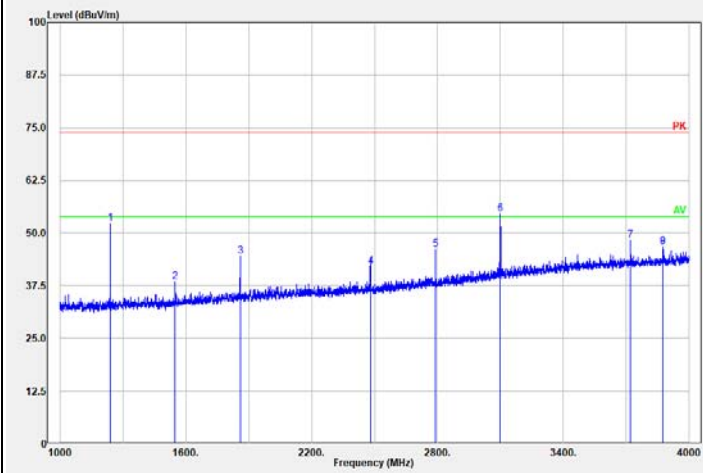
Fundamental

30MHz-1GHz
Vertical

Fundamental

1GHz-4GHz
Horizontal

1GHz -4GHz
Vertical



4.3 20 dB Emission Bandwidth:

| | | | |
|----------------|------------------|--------------|-----------------------|
| Serial Number: | CR21100106-RF-S1 | Test Date: | 2021-11-20~2021-11-24 |
| Test Site: | 966-2 | Test Mode: | Transmitting |
| Tester: | Great Qiao | Test Result: | Pass |

Environmental Conditions:

| | | | | | |
|----------------------|-----------|---------------------------|-------|------------------------|-------------|
| Temperature: (°C) | 22.1~24.6 | Relative Humidity: (%) | 36~47 | ATM Pressure: (kPa) | 100.7~101.7 |
|----------------------|-----------|---------------------------|-------|------------------------|-------------|

Test Equipment List and Details:

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------------------|---------------|------------------|----------------------|
| Sunol Sciences | Antenna | JB6 | A082520-5 | 2020-10-19 | 2023-10-18 |
| R&S | EMI Test Receiver | ESR3 | 102724 | 2021-07-22 | 2022-07-21 |
| TIMES MICROWAVE | Coaxial Cable | LMR-600-UltraFlex | C-0470-02 | 2021-07-18 | 2022-07-17 |
| TIMES MICROWAVE | Coaxial Cable | LMR-600-UltraFlex | C-0780-01 | 2021-07-18 | 2022-07-17 |
| Sonoma | Amplifier | 310N | 186165 | 2021-07-18 | 2022-07-17 |

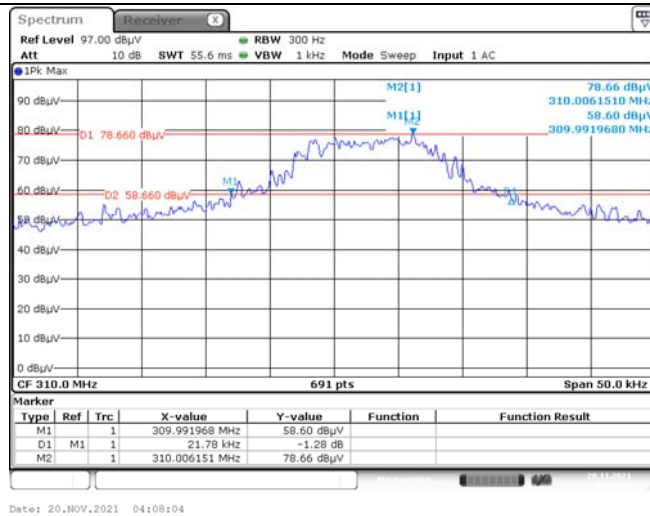
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

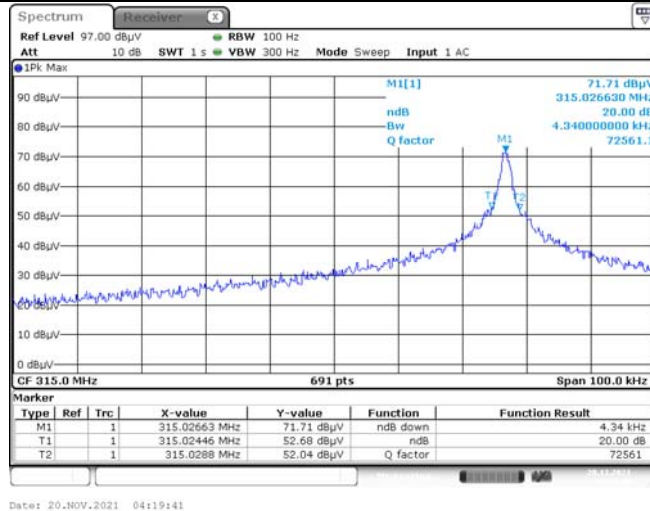
| Test Frequency (MHz) | 20 dB Bandwidth (kHz) | Limit (kHz) |
|-------------------------|--------------------------|----------------|
| 310 | 21.78 | 775 |
| 315 | 4.34 | 787.5 |
| 318 | 5.79 | 795 |
| 390 | 4.99 | 975 |

20dB Emission Bandwidth

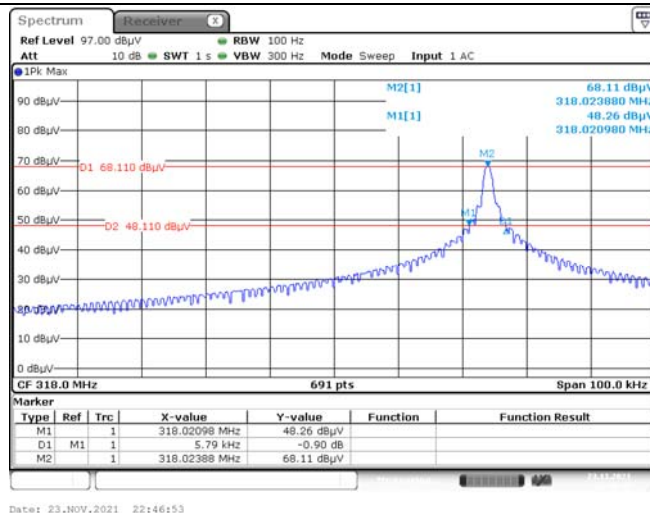
310MHz



315MHz

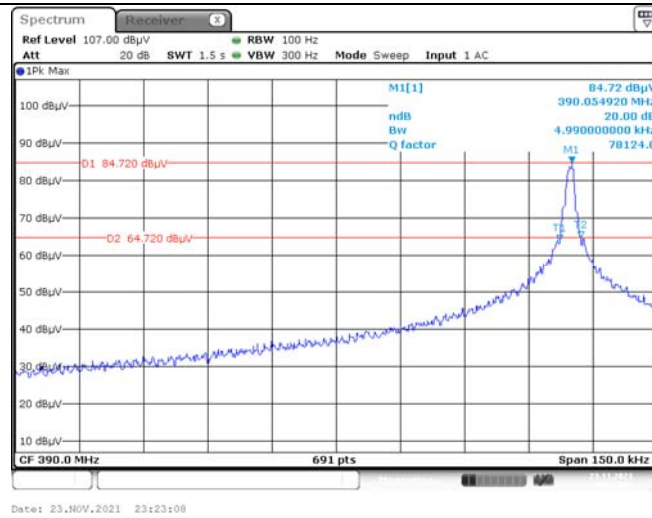


318MHz



20dB Emission Bandwidth

390MHz



4.4 DEACTIVATION TESTING:

| | | | |
|----------------|------------------|--------------|-----------------------|
| Serial Number: | CR21100106-RF-S1 | Test Date: | 2021-11-20~2021-11-24 |
| Test Site: | 966-2 | Test Mode: | Transmitting |
| Tester: | Great Qiao | Test Result: | Pass |

Environmental Conditions:

| | | | | | |
|----------------------|-----------|---------------------------|-------|------------------------|-------------|
| Temperature: (°C) | 22.1~24.6 | Relative Humidity: (%) | 36~47 | ATM Pressure: (kPa) | 100.7~101.7 |
|----------------------|-----------|---------------------------|-------|------------------------|-------------|

Test Equipment List and Details:

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|-----------------|-------------------|-------------------|---------------|------------------|----------------------|
| Sunol Sciences | Antenna | JB6 | A082520-5 | 2020-10-19 | 2023-10-18 |
| R&S | EMI Test Receiver | ESR3 | 102724 | 2021-07-22 | 2022-07-21 |
| TIMES MICROWAVE | Coaxial Cable | LMR-600-UltraFlex | C-0470-02 | 2021-07-18 | 2022-07-17 |
| TIMES MICROWAVE | Coaxial Cable | LMR-600-UltraFlex | C-0780-01 | 2021-07-18 | 2022-07-17 |
| Sonoma | Amplifier | 310N | 186165 | 2021-07-18 | 2022-07-17 |

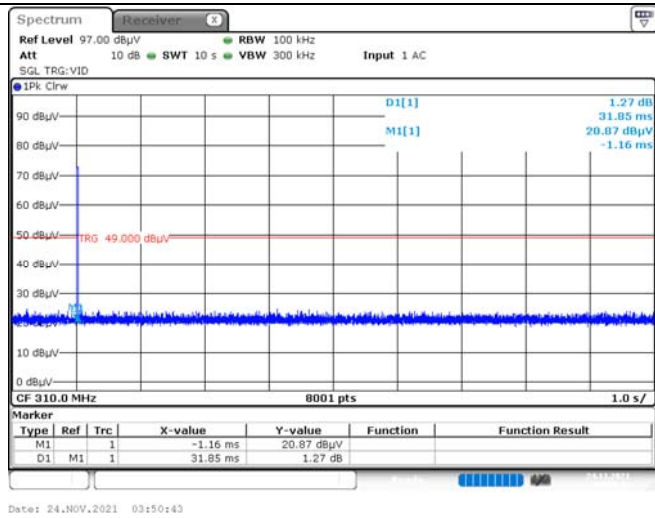
* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data:

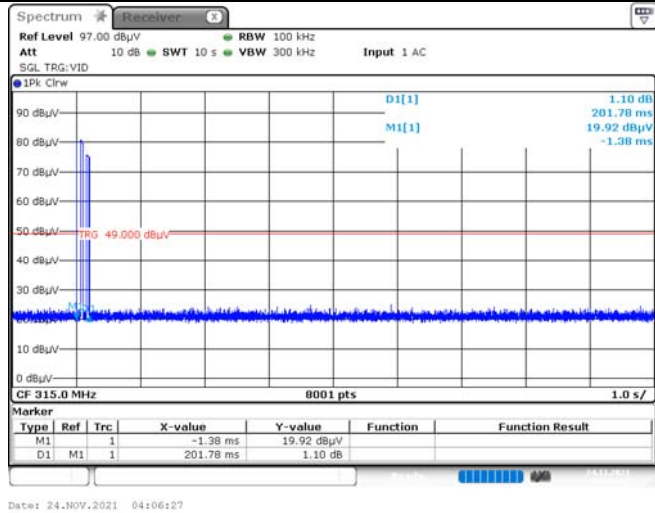
| Test Frequency (MHz) | Maximum Deactivate Time (s) | Limit (s) |
|-------------------------|--------------------------------|--------------|
| 310 | 0.032 | <5 |
| 315 | 0.202 | <5 |
| 318 | 0.146 | <5 |
| 390 | 0.232 | <5 |

DEACTIVATION TESTING

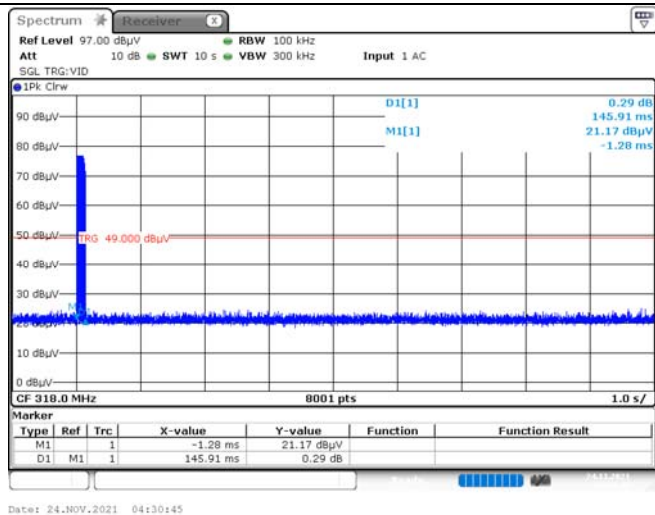
310 MHz



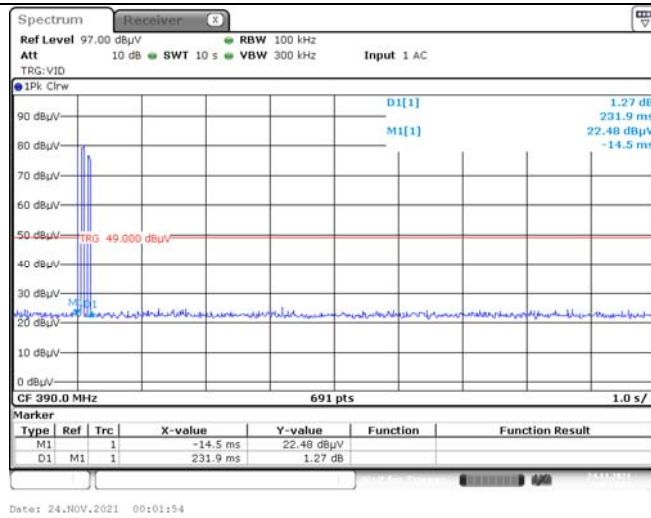
315 MHz



318 MHz



390 MHz



===== END OF REPORT =====