



**SGS-CSTC Standards Technical Services Co., Ltd.**  
**Shenzhen Branch**

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Report No.: SZEM160800733201  
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## FCC REPORT

**Application No. :** SZEM1608007332CR (SGS SZ No.:T51610240127EM)  
**Applicant:** CHT International  
**Product Name:** TRUCK WITH REMOTE  
**Model No.(EUT):** TT-301  
**Add Model No.:** TT-302  
**FCC ID:** 2AJNZ-TIMHU888  
**Standards:** 47 CFR Part 15, Subpart C (2015)  
**Date of Receipt:** 2016-08-30  
**Date of Test:** 2016-08-31 to 2016-09-12  
**Date of Issue:** 2016-09-18

|                     |               |
|---------------------|---------------|
| <b>Test Result:</b> | <b>PASS *</b> |
|---------------------|---------------|

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Jack Zhang  
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

| Revision Record |         |            |          |          |
|-----------------|---------|------------|----------|----------|
| Version         | Chapter | Date       | Modifier | Remark   |
| 00              |         | 2016-09-18 |          | Original |
|                 |         |            |          |          |
|                 |         |            |          |          |

|                          |  |  |            |
|--------------------------|--|--|------------|
| Authorized for issue by: |  |  |            |
|                          |  |   |            |
|                          |  |  | 2016-09-12 |
| Tested By                |  | (Bill Chen) /Project Engineer  | Date       |
|                          |  |  |            |
|                          |  |  | 2016-09-18 |
| Checked By               |  | (Eric Fu) /Reviewer  | Date       |



### 3 Test Summary

| Test Item           | Test Requirement                            | Test method        | Result |
|---------------------|---|--------------------|--------|
| Antenna Requirement | 47 CFR Part 15, Subpart C<br>Section 15.203 | ANSI C63.10 (2013) | PASS   |
| Radiated Emission   | 47 CFR Part 15, Subpart C<br>Section 15.227 | ANSI C63.10 (2013) | PASS   |
| Occupied Bandwidth  | 47 CFR Part 15, Subpart C<br>Section 15.215 | ANSI C63.10 (2013) | PASS   |

Remark:

Model No.: TT-301, TT-301

Only the model TT-301 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for all above models. Only different on decorations, color of appearance and model No..



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## 5 General Information

### 5.1 Client Information

|                       |                                     |
|-----------------------|-------------------------------------|
| Applicant:            | CHT International                   |
| Address of Applicant: | 339 N.Berry St., Brea, CA 92821 USA |

### 5.2 General Description of EUT

|                      |  |
|----------------------|--|
| Product Name:        | TRUCK WITH REMOTE                            |
| Model No.:           | TT-301                                       |
| Request Age Grading: | 3+   |
| Operation Frequency: | 27.145MHz                                    |
| Modulation Type:     | FM   |
| Antenna Gain :       | 1dBi   |
| Power Supply:        | 3.0V DC (1.5V x 2" AA " Size Battery) for Tx |

### 5.3 Test Environment and Mode

|                               |                                    |
|-------------------------------|------------------------------------|
| <b>Operating Environment:</b> |                                    |
| Temperature:                  | 25.0 °C                            |
| Humidity:                     | 52 % RH                            |
| Atmospheric Pressure:         | 1010 mbar                          |
| <b>Test mode:</b>             |                                    |
| Transmitting mode:            | Keep the EUT in transmitting mode. |

### 5.4 Description of Support Units

The EUT has been tested independent unit.



## 5.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China.  
518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

## 5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

- **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

## 5.7 Deviation from Standards

None.

## 5.8 Abnormalities from Standard Conditions

None.

## 5.9 Other Information Requested by the Customer

None.



## 5.10 Equipment List

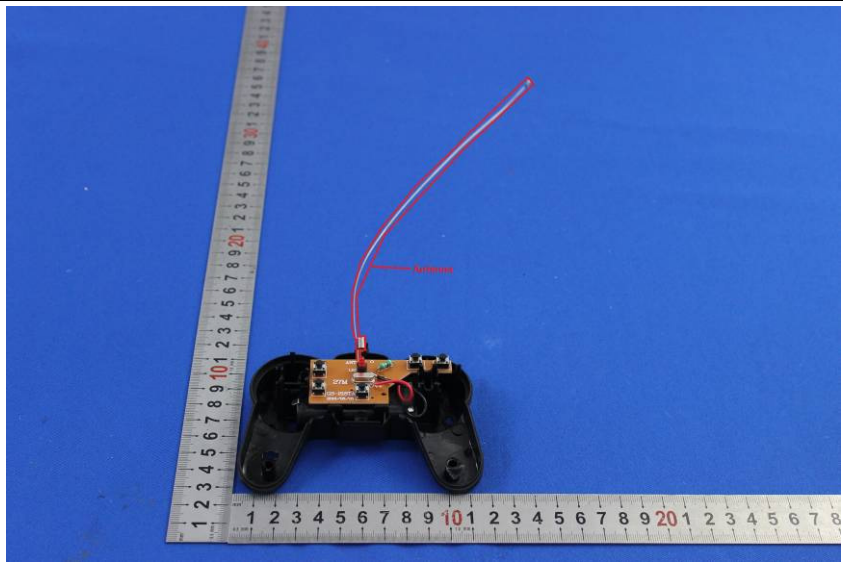
| RF connected test |                   |                 |           |               |                           |                              |
|-------------------|-------------------|-----------------|-----------|---------------|---------------------------|------------------------------|
| Item              | Test Equipment    | Manufacturer    | Model No. | Inventory No. | Cal. date<br>(yyyy-mm-dd) | Cal.Due date<br>(yyyy-mm-dd) |
| 1                 | DC Power Supply   | ZhaoXin         | RXN-305D  | SEM011-02     | 2015-10-09                | 2016-10-09                   |
| 2                 | Spectrum Analyzer | Rohde & Schwarz | FSP       | SEM004-06     | 2015-10-17                | 2016-10-17                   |
| 3                 | Signal Generator  | Rohde & Schwarz | SML03     | SEM006-02     | 2016-04-25                | 2017-04-25                   |
| 4                 | Power Meter       | Rohde & Schwarz | NRVS      | SEM014-02     | 2015-10-09                | 2016-10-09                   |

| RE in Chamber |                                |                      |           |               |                           |                              |
|---------------|--------------------------------|----------------------|-----------|---------------|---------------------------|------------------------------|
| Item          | Test Equipment                 | Manufacturer         | Model No. | Inventory No. | Cal. date<br>(yyyy-mm-dd) | Cal.Due date<br>(yyyy-mm-dd) |
| 1             | 3m Semi-Anechoic Chamber       | ETS-LINDGREN         | N/A       | SEM001-01     | 2016-05-13                | 2017-05-13                   |
| 2             | EMI Test Receiver              | Agilent Technologies | N9038A    | SEM004-05     | 2015-09-16                | 2016-09-16                   |
| 3             | BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN         | 3142C     | SEM003-01     | 2014-11-01                | 2017-11-01                   |
| 4             | Double-ridged horn (1-18GHz)   | ETS-LINDGREN         | 3117      | SEM003-11     | 2015-10-17                | 2018-10-17                   |
| 5             | Horn Antenna (18-26GHz)        | ETS-LINDGREN         | 3160      | SEM003-12     | 2014-11-24                | 2017-11-24                   |
| 6             | Pre-amplifier (0.1-1300MHz)    | Agilent Technologies | 8447D     | SEM005-01     | 2016-04-25                | 2017-04-25                   |
| 7             | Band filter                    | Amindeon             | Asi 3314  | SEM023-01     | N/A                       | N/A                          |
| 8             | DC Power Supply                | Zhao Xin             | RXN-305D  | SEM011-02     | 2015-10-09                | 2016-10-09                   |
| 9             | Loop Antenna                   | Beijing Daze         | ZN30401   | SEM003-09     | 2015-05-13                | 2018-05-13                   |

Note: The calibration interval is one year, all the instruments are valid.

## 6 Test Result & Measurement Data

### 6.1 Antenna Requirement

|  |   |
|--|---|
| <b>Standard Requirement:</b>   | 47 CFR Part 15C Section 15.203  |
| <p>15.203 Requirement:</p> <p>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, 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.</p> |   |
| <b>EUT Antenna:</b>  |  |





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## 6.2 Radiated Emissions

|   |   |                                     |                   |            |                             |
|---|---|-------------------------------------|-------------------|------------|-----------------------------|
| <b>Test Requirement:</b>  | 47 CFR Part 15C Section 15.227  |                                     |                   |            |                             |
| <b>Test Method:</b>   | ANSI C63.10: 2013   |                                     |                   |            |                             |
| <b>Test Site:</b>   | 3m (Semi-Anechoic Chamber)  |                                     |                   |            |                             |
| <b>ERP Limit:</b>   | Carrier Power will not exceed 80dBuV/m at 3m (Average).   |                                     |                   |            |                             |
| <b>Receiver Setup:</b>  | Frequency   | Detector                            | RBW               | VBW        | Remark                      |
|   | 0.009MHz-0.090MHz   | Peak                                | 10kHz             | 30kHz      | Peak                        |
|   | 0.009MHz-0.090MHz   | Average                             | 10kHz             | 30kHz      | Average                     |
|   | 0.090MHz-0.110MHz   | Quasi-peak                          | 10kHz             | 30kHz      | Quasi-peak                  |
|   | 0.110MHz-0.490MHz   | Peak                                | 10kHz             | 30kHz      | Peak                        |
|   | 0.110MHz-0.490MHz   | Average                             | 10kHz             | 30kHz      | Average                     |
|   | 0.490MHz -30MHz   | Quasi-peak                          | 10kHz             | 30kHz      | Quasi-peak                  |
|   | 30MHz-1GHz  | Quasi-peak                          | 100 kHz           | 300kHz     | Quasi-peak                  |
|   | Above 1GHz  | Peak                                | 1MHz              | 3MHz       | Peak                        |
|   |   | Peak                                | 1MHz              | 10Hz       | Average                     |
| <b>Limit:</b>   | Frequency   | Field strength<br>(microvolt/meter) | Limit<br>(dBuV/m) | Remark     | Measurement<br>distance (m) |
|   | 0.009MHz-0.490MHz   | 2400/F(kHz)                         | -                 | -          | 300                         |
|   | 0.490MHz-.705MHz  | 24000/F(kHz)                        | -                 | -          | 30                          |
|   | 1.705MHz-30MHz  | 30                                  | -                 | -          | 30                          |
|   | 30MHz-88MHz   | 100                                 | 40.0              | Quasi-peak | 3                           |
|   | 88MHz-216MHz  | 150                                 | 43.5              | Quasi-peak | 3                           |
|   | 216MHz-960MHz   | 200                                 | 46.0              | Quasi-peak | 3                           |
|   | 960MHz-1GHz   | 500                                 | 54.0              | Quasi-peak | 3                           |
|   | Above 1GHz  | 500                                 | 54.0              | Average    | 3                           |
| Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device. |   |                                     |                   |            |                             |
| <b>Test Procedure:</b>  | <p>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> |                                     |                   |            |                             |

|  |  |
|--|--|
|  | <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p> <p>g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.</p> |
|--|--|

**Test Setup:**

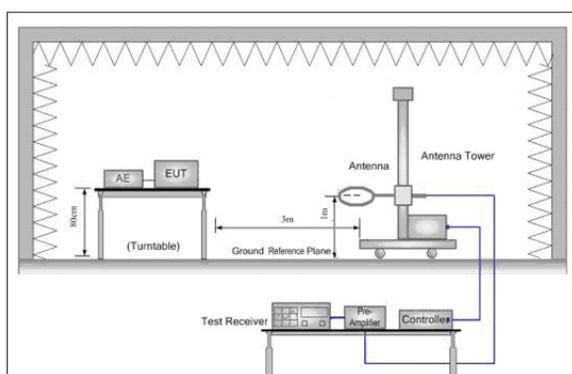


Figure 1. Below 30MHz

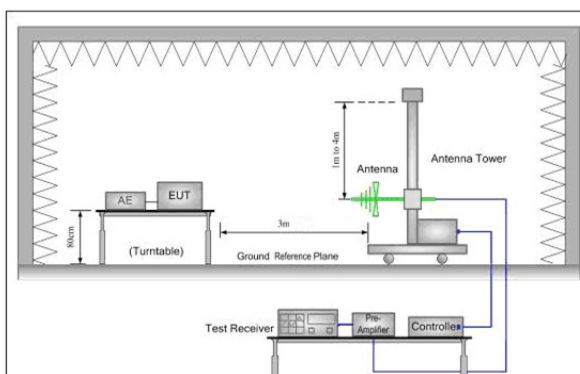


Figure 2. 30MHz to 1GHz

|                          |                                    |
|--------------------------|------------------------------------|
| <b>Test Mode:</b>        | Transmitting mode.                 |
| <b>Instruments Used:</b> | Refer to section 5.10 for details. |
| <b>Test Result:</b>      | Pass                               |

**27.145MHz Mode**

Test Procedure: For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.10: 2013. The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

**Test Result:**

**Intentional emission**

| Test Frequency (MHz) | Peak (dBμV/m) |            | Limits (dBμV/m) | Margin (dB) |            |
|----------------------|---------------|------------|-----------------|-------------|------------|
|                      | Vertical      | Horizontal |                 | Vertical    | Horizontal |
| 27.145               | 62.20         | 52.40      | 100.00          | -37.80      | -47.60     |

| Test Frequency (MHz) | Average (dBμV/m) |            | Limits (dBμV/m) | Margin (dB) |            |
|----------------------|------------------|------------|-----------------|-------------|------------|
|                      | Vertical         | Horizontal |                 | Vertical    | Horizontal |
| 27.145               | 60.06            | 49.82      | 80.00           | -19.94      | -30.18     |



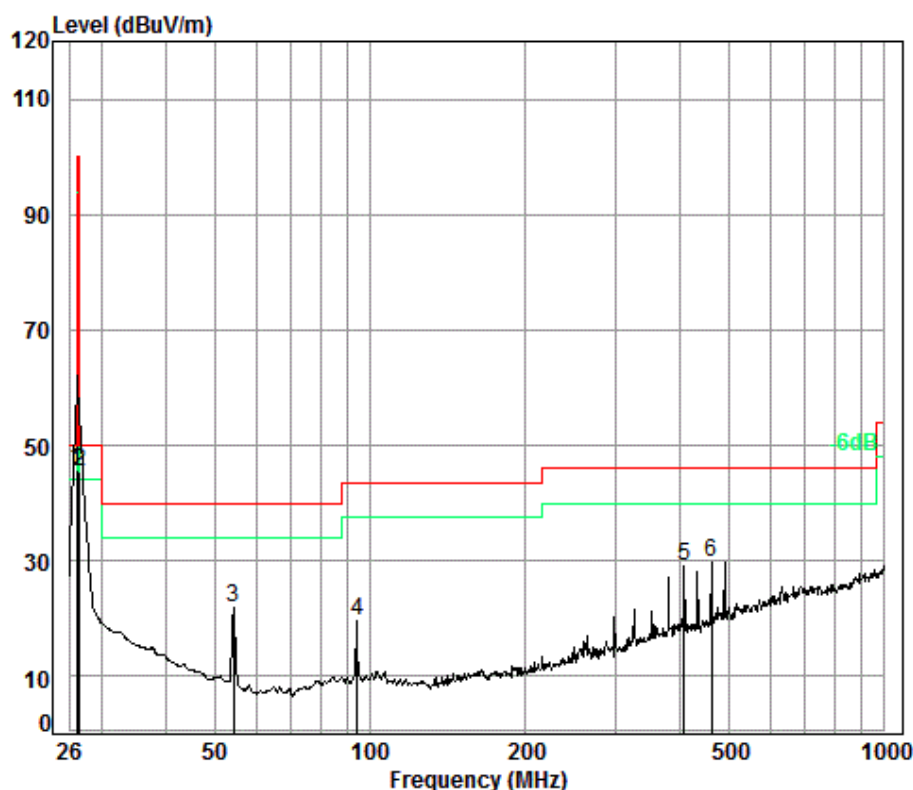
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## Out of Band Emissions

### Vertical



Condition: 3m Vertical

Job No. : 7332CR

Test Mode: TX mode

|      | Freq   | Cable Loss | Ant Factor | Preamp Factor | Read Level | Level  | Limit Line | Over Limit |
|------|--------|------------|------------|---------------|------------|--------|------------|------------|
|      | MHz    | dB         | dB/m       | dB            | dBuV       | dBuV/m | dBuV/m     | dB         |
| 1 pp | 26.96  | 0.60       | 20.86      | 26.01         | 50.27      | 45.72  | 50.00      | -4.28      |
| 2    | 27.28  | 0.60       | 20.66      | 26.01         | 50.17      | 45.42  | 50.00      | -4.58      |
| 3    | 54.34  | 0.80       | 8.12       | 25.95         | 39.07      | 22.04  | 40.00      | -17.96     |
| 4    | 94.29  | 1.14       | 8.93       | 25.91         | 35.31      | 19.47  | 43.50      | -24.03     |
| 5    | 407.46 | 2.24       | 16.37      | 25.66         | 36.16      | 29.11  | 46.00      | -16.89     |
| 6    | 461.29 | 2.45       | 17.27      | 25.64         | 35.78      | 29.86  | 46.00      | -16.14     |

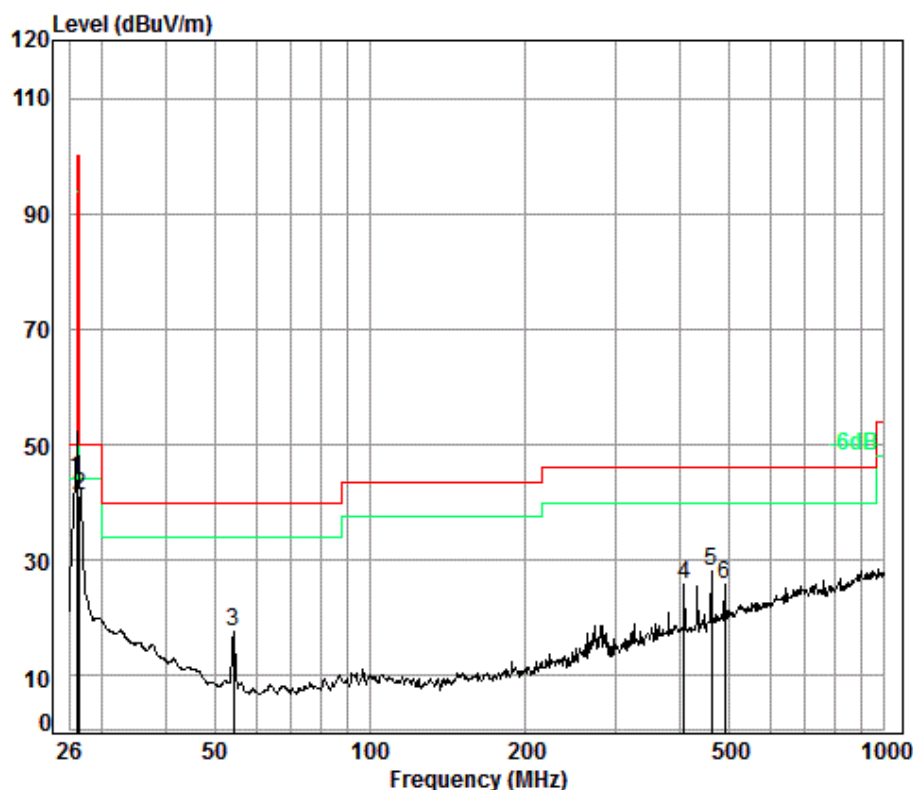


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Horizontal



Condition: 3m Horizontal

Job No. : 7332CR

Test Mode: TX mode

|   |      | Cable  | Ant    | Preamp | Read  |        | Limit  | Over         |
|---|------|--------|--------|--------|-------|--------|--------|--------------|
|   | Freq | Loss   | Factor | Factor | Level | Level  | Line   | Limit        |
|   | MHz  | dB     | dB/m   | dB     | dBuV  | dBuV/m | dBuV/m | dB           |
| 1 | pp   | 26.96  | 0.60   | 20.86  | 26.01 | 48.83  | 44.28  | 50.00 -5.72  |
| 2 |      | 27.28  | 0.60   | 20.66  | 26.01 | 45.90  | 41.15  | 50.00 -8.85  |
| 3 |      | 54.34  | 0.80   | 8.12   | 25.95 | 34.67  | 17.64  | 40.00 -22.36 |
| 4 |      | 407.46 | 2.24   | 16.37  | 25.66 | 32.82  | 25.77  | 46.00 -20.23 |
| 5 |      | 461.29 | 2.45   | 17.27  | 25.64 | 34.14  | 28.22  | 46.00 -17.78 |
| 6 |      | 489.03 | 2.56   | 17.64  | 25.63 | 31.39  | 25.96  | 46.00 -20.04 |

Remark:

- 1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor



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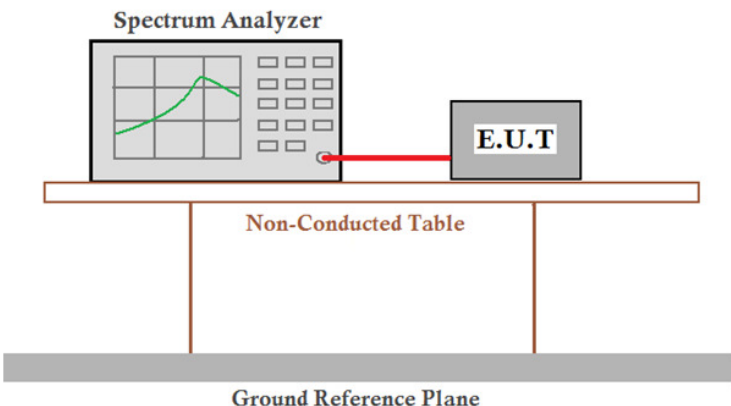
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- 2) The disturbance below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



### 6.3 Occupied Bandwidth

|                          |   |
|--------------------------|---|
| <b>Test Requirement:</b> | 47 CFR Part 15C Section 15.215 (C)  |
| <b>Test Method:</b>      | ANSI C63.10: 2013   |
| <b>Limit:</b>            | Operation within the band 26.960 – 27.280 MHz   |
| <b>Requirement :</b>     | Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equip compliance with the 20dB attenuation specification may base on measurement at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be demonstrated by measuring the radiated emissions. |
| <b>Test Setup:</b>       |  <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by two vertical legs. Below the table is a Ground Reference Plane.</p>   |
| <b>Test Mode:</b>        | Transmitting mode.  |
| <b>Instruments Used:</b> | Refer to section 5.10 for details.  |
| <b>Test Result:</b>      | Pass  |

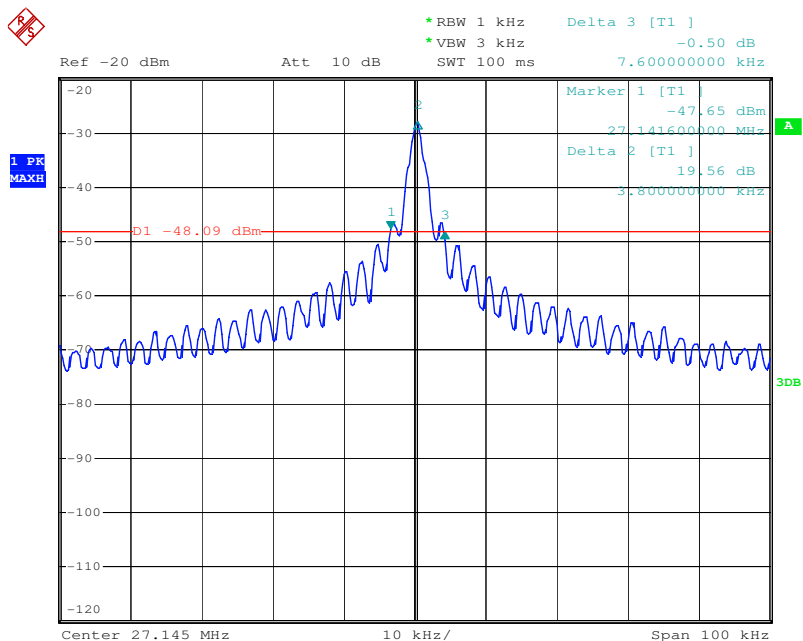


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## Test Result:



## **7 Photographs - EUT Test Setup**

Test model No.: TT-301

### **7.1 Radiated Emission**





## 8 Photographs - EUT Construction Details

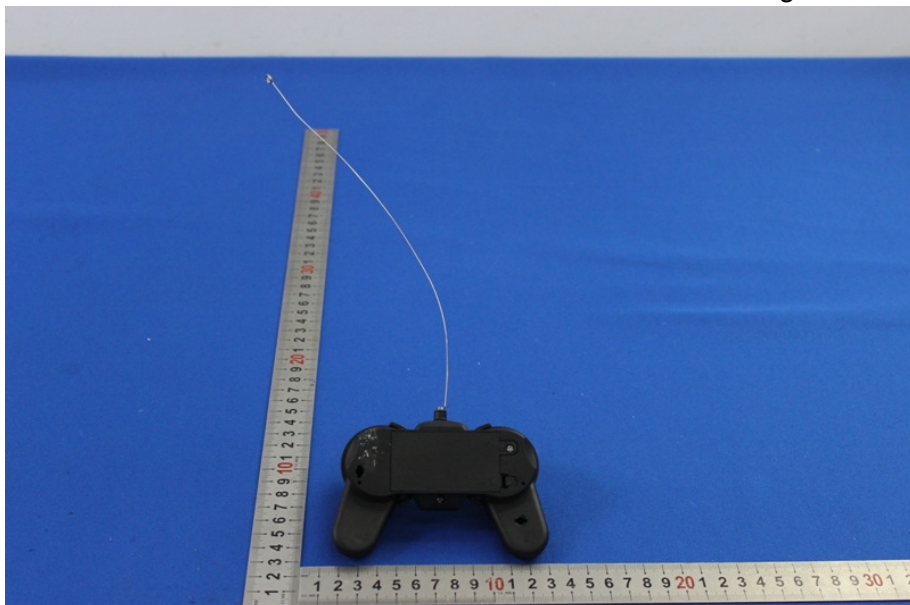




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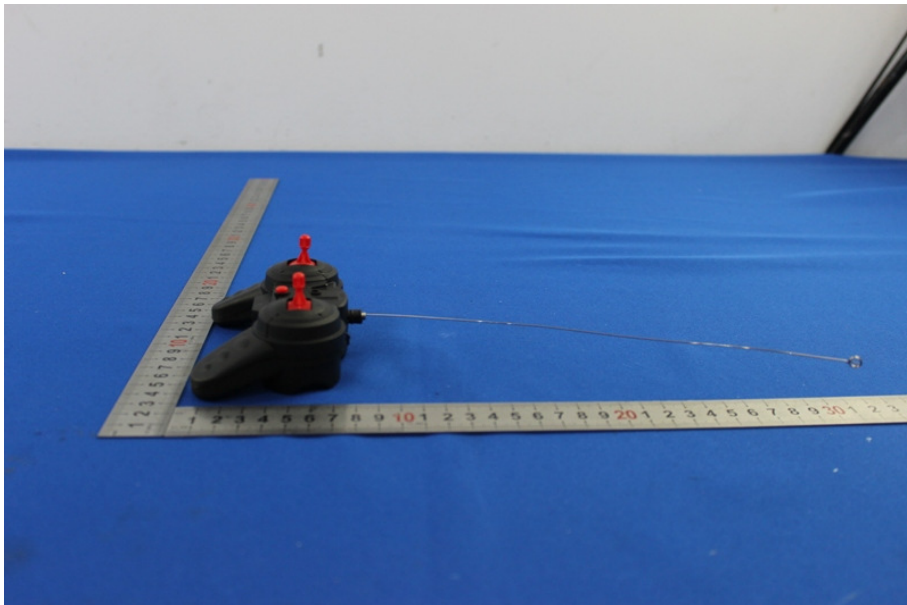
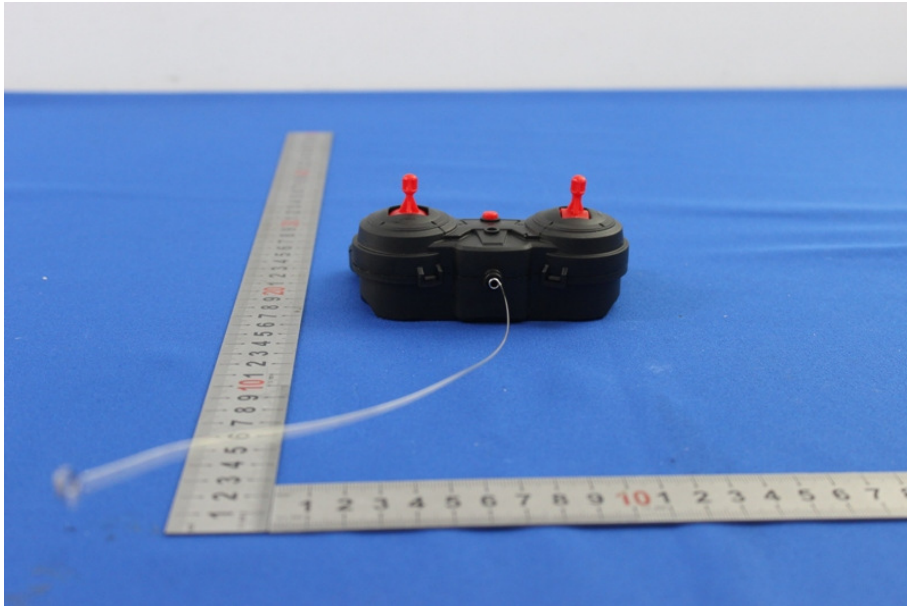




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