# TEST REPORT

DT&C Co., Ltd.
42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042
Tel : 031-321-2664, Fax : 031-321-1664

1. Report No. : DREFCC1909-0244(1)

2. Client / Applicant

   • Name : LG Electronics Inc.

   • Address : 1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States

3. Use of Report : Grant of Certification

4. Product Name / Model Name / FCC ID : Mobile Phone / KA1935 / ZNFKA1935

5. Test Standard : ANSI C63.4:2014
   FCC Part 15 Subpart B
   (Class B personal computers and peripherals)

6. Date of Test : Aug. 07. 2019

7. Testing Environment : Temperature (21 ~ 23) °C , Humidity (48 ~ 52) % R.H.

8. Test Result : Refer to the attached Test Result

| Affirmation | Tested by | Reviewed by |
|---|---|---|
| | Name : YongKi Kim (Signature) | Name : HyungJun Kim (Signature) |



**Sep. 18. 2019**

**DT&C Co., Ltd.**

# CONTENTS

# 1. General Remarks

This report contains the result of tests performed by :

**DT&C Co., Ltd.**
42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042
http://www.dtnc.net
Tel: +82-31-321-2664 Fax: +82-31-321-1664

# 2. Test Laboratory

DT&C Co., Ltd. has been accredited / filed / authorized by the agencies listed in the following table;

| Certificate | Nation | Agency | Code | Remark |
|---|---|---|---|---|
| Accreditation | Korea | KOLAS | 393 | ISO/IEC 17025 |
| | South Africa | SABS | 0006 | ISO/IEC 17025 |
| | Ghana | NCA | NCA agreement 23rd,Oct,2018 | - |
| Site Filing | USA | FCC | KR0034<br>101842<br>678747, 596748, 804488, 165783 | Accredited<br><br>2.948 Listed |
| | Canada | IC | 5740A-3<br>5740A-4 | Registered |
| | Japan | VCCI | C-1427<br>R-3385, R-4076, R-4180, R-4496, T-1442,<br>G-10338, G-754, G-10815, G-20051 | Registered |
| Certification | Korea | KC | KR0034 | Designation |
| | Germany | TUV | CARAT 089112 0006 Rev.00 | ISO/IEC 17025 |
| | Russia | RMRS | 17.10189.296 | ISO/IEC 17025 |

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the “General requirements for the competent of calibration and testing laboratory”.

# 3. General Information of EUT

<table>
<tr><td>Applicant</td><td>LG Electronics Inc.<br>1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States</td></tr>
<tr><td>Manufacturer</td><td>LG Electronics Inc.<br>1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States</td></tr>
<tr><td>Factory</td><td>LG Electronics Inc.<br>1000 Sylvan Avenue, Englewood Cliffs NJ 07632 United States</td></tr>
<tr><td>Product Name</td><td>Mobile Phone</td></tr>
<tr><td>Model Name</td><td>KA1935</td></tr>
<tr><td>Add Model Name</td><td>None</td></tr>
<tr><td>Add Model Difference</td><td>None</td></tr>
<tr><td>FCC ID</td><td>ZNFKA1935</td></tr>
<tr><td>RF Module Name</td><td>None</td></tr>
<tr><td>Rated Power</td><td>DC 3.87 V</td></tr>
<tr><td>Remarks</td><td>1. Earphone
<table>
<tr><td>Model</td><td>P/N</td><td>Manufacturer</td></tr>
<tr><td>EMB-LGE53STKKB</td><td>EAB63728241</td><td>Cresyn</td></tr>
</table>
2. USB Cable
<table>
<tr><td>Model</td><td>P/N</td><td>Manufacturer</td></tr>
<tr><td>DC1701</td><td>EAD63849235</td><td>-</td></tr>
</table></td></tr>
</table>

**Related Submittal(s) / Grant(s)**
**Original submittal only**

# 4. EUT Operations and Test Configurations

## 4.1 Principle of Configuration Selection

**Emission :**
The equipment under test (EUT) was configured to measure its highest possible radiation level.
The test modes were adapted accordingly in reference to the instructions for use.
For each testing mode different configurations were used,
Refer to the individual tests.

## 4.2 EUT Operation Mode

| No. | Mode | Description |
|---|---|---|
| 1 | PC Link | The EUT is reading, writing, and erasing internal storage |

## 4.3 Test Configuration Mode

| No. | Mode | Description |
|---|---|---|
| 1 | PC Link | EUT was connected PC by USB cable and continuously operated |

## 4.4 Supported Equipment

| Used* | Product Type | Manufacturer | Model | Remarks |
|---|---|---|---|---|
| AE | LCD Monitor | DELL | UP2414Qt | CN-OJJRX2-74261-67B-4P4U-A00 |
| AE | PC | DELL | GX620 DCNE | N/A |
| AE | Mouse | LG | MS26 | 78B00309 |
| AE | SSD 3.0 | SAMSUNG | MU-PT250B | S2WKNAAH32059X |
| AE | Printer | Bixolon | SRP-770 | N/A |
| AE | Keyboard | LG | KBW211 | 7AD02348 |
| AE | Headset | COSY | COV903 | N/A |

*Abbreviations:
AE - Auxiliary/Associated Equipment, or
SIM - Simulator

## 4.5 EUT In/Output Port

| Name | Type* | Cable Max. >3m | Cable Shielded | Cable Back shell | Remarks |
|---|---|---|---|---|---|
| USB | I/O | 1.7 | Shield | Plastic | Keyboard |
| USB | I/O | 1.7 | Shield | Plastic | Mouse |
| Power In | AC | 1.8 | Non Shield | Plastic | LCD Monitor |
| D-Sub | I/O | 1.8 | Shield | Plastic | LCD Monitor |
| Power In | AC | 1.8 | Non Shield | Plastic | PC |
| D-Sub<br>Parallel<br>Serial<br>Stereo/Mic<br>USB<br>USB<br>USB<br>USB | I/O | 1.8<br>2.0<br>1.9<br>2.5<br>1.7<br>1.7<br>1.5<br>1.1 | Shield<br>Shield<br>Shield<br>Non Shield<br>Shield<br>Shield<br>Shield<br>Shield | Plastic | PC |
| USB | I/O | 1.5 | Shield | Plastic | SSD 3.0 |
| Parallel<br>Serial | I/O | 2.0<br>1.9 | Shield | Plastic | Printer |
| Stereo/Mic | I/O | 2.5 | Non Shield | Plastic | Headset |
| Stereo | I/O | 1.8 | Non Shield | Plastic | EUT |
| USB | I/O | 1.1 | Non Shield | Plastic | EUT |

*Abbreviations:

AC = AC Power Port DC = DC Power Port N/E = Non-Electrical

I/O = Signal Input or Output Port

TP = Telecommunication Ports

## 4.6 Test Voltage and Frequency

| Case | Voltage (V) | Frequency (DC/AC-Hz) | Phases | Remarks |
|---|---|---|---|---|
| 1 | AC 120 | 60 | Single | None |

# 5. Test Summary

| Test Items | Applied Standards | Results |
|---|---|---|
| Conducted Disturbance | ANSI C63.4 : 2014 | **C** |
| Radiated Disturbance | ANSI C63.4 : 2014 | **C** |
| C=Comply N/C=Not Comply N/T=Not Tested N/A=Not Applicable | | |

-Conducted Disturbance

| Frequency [MHz] | Phase | Result [dBµV] | Detector | Limit [dBµV] | Margin [dB] |
|---|---|---|---|---|---|
| 0.19764 | N | 50.81 | CAV | 53.71 | 2.90 |

-Radiated Disturbance

| Frequency [MHz] | Pol. | Result [dBµV/m] | Detector | Limit [dBµV/m] | Margin [dB] |
|---|---|---|---|---|---|
| 762.708 | H | 40.94 | QP | 46.00 | 5.06 |

# 6. Test Environment

| Test Items | Test date (YYYY-MM-DD) | Temp. (℃) | Humidity (% R.H.) | Pressure (kPa) |
|---|---|---|---|---|
| Conducted Disturbance | 2019-08-07 | 23 | 52 | - |
| Radiated Disturbance | 2019-08-07 | 21 | 48 | |

# 7. Test Results : Emission

## 7.1 Conducted Disturbance

| ANSI C63.4 | Mains terminal disturbance voltage | Result |
|---|---|---|
| Method: The AMN placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment were at least 0,8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN. The measuring port of the LISN for EUT was connected to spectrum analyzer. Using conducted emission test software, the emissions were scanned with peak detector mode. After scanning over the frequency range, suspected emissions were selected to perform final measurement. When performing final measurement, the receiver was used which has Quasi-Peak detector and CISPR Average detector. For (0.15 ~ 30) MHz frequency range, Quasi-Peak detector with 10 kHz RBW and 30 kHz VBW was used. By varying the configuration of the test sample and the cable routing it was attempted to maximize the emission. | | **Comply** |

| **Fully configured sample scanned over the following frequency range** | **Frequency range on each side of line** | **Measurement Point** |
|---|---|---|
| | **150 kHz to 30 MHz** | **Mains** |
| **EUT mode (Refer to clauses 4)** | **Test configuration mode** | **1** |
| | **EUT Operation mode** | **1** |

**Limits – Class A**

| **Frequency (MHz)** | **Limit dBµV** | |
|---|---|---|
| | **Quasi-Peak** | **Average** |
| 0.15 to 0.50 | 79 | 66 |
| 0.50 to 30 | 73 | 60 |

**Limits – Class B**

| **Frequency (MHz)** | **Limit dBµV** | |
|---|---|---|
| | **Quasi-Peak** | **Average** |
| 0.15 to 0.50 | 66 to 56 | 56 to 46 |
| 0.50 to 5 | 56 | 46 |
| 5 to 30 | 60 | 50 |

| **Measurement Instrument** | | | | | |
|---|---|---|---|---|---|
| **Description** | **Model** | **Manufacturer** | **Identifier** | **Cal. Date** | **Cal. Due** |
| MEASUREMENT SOFTWARE | EMI-C VER. 2.00.0171 | TSJ | N/A | N/A | N/A |
| EMI TEST RECEIVER | ESCI7 | ROHDE & SCHWARZ | 100910 | 2019.01.30 | 2020.01.30 |
| LISN | NNLK 8121 | SCHWARZBECK | 06183 | 2019.03.19 | 2020.03.19 |
| LISN | KNW-407 | KYORITSU | 8-317-8 | 2018.12.19 | 2019.12.19 |
| PULSE LIMITER | ESH3-Z2 | ROHDE & SCHWARZ | 101333 | 2018.09.27 | 2019.09.27 |
| 50 OHM TERMINATOR | CT-01 | TME | N/A | 2018.12.19 | 2019.12.19 |

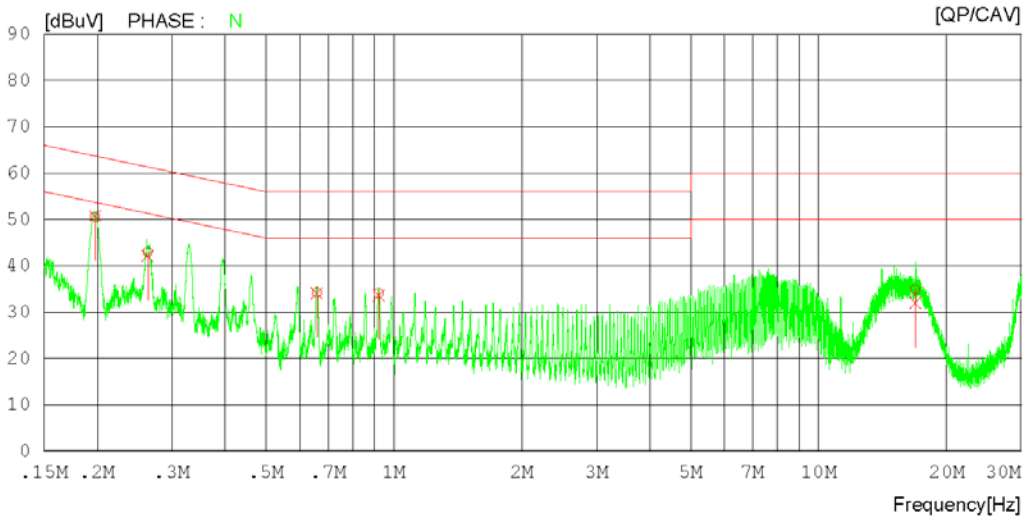
| Mains terminal disturbance voltage _Measurement data | | | |
|---|---|---|---|
| **Test configuration mode** | **1** | **EUT Operation mode** | **1** |
| **Test voltage (V)** | **AC 120** | **Test Frequency (Hz)** | **60** |

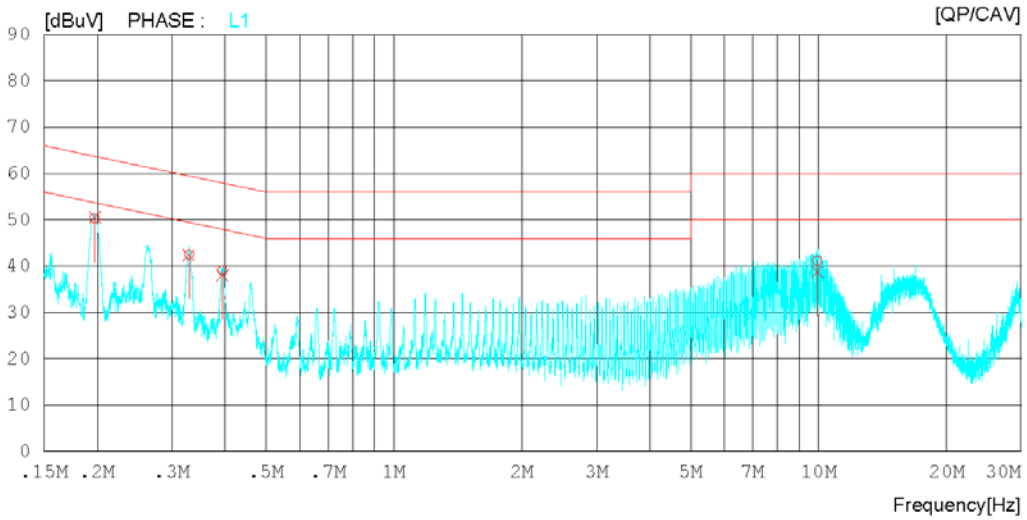
## Results of Conducted Emission

DTNC Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 52 % R.H.
Test Codition

LIMIT : CISPR32_B QP
CISPR32_B AV



# Results of Conducted Emission

DTNC Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 23 'C 52 % R.H.
Test Codition

LIMIT : CISPR32_B QP
CISPR32_B AV

| NO | FREQ | READING QP | READING CAV | C.FACTOR | RESULT QP | RESULT CAV | LIMIT QP | LIMIT CAV | MARGIN QP | MARGIN CAV | PHASE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | [dBuV] | [dBuV] | [dB] | [dBuV] | [dBuV] | [dBuV] | [dBuV] | [dBuV] | [dBuV] | |
| 1 | 0.19764 | 40.66 | 40.87 | 9.94 | 50.60 | 50.81 | 63.71 | 53.71 | 13.11 | 2.90 | N |
| 2 | 0.26316 | 33.03 | 32.19 | 9.94 | 42.97 | 42.13 | 61.33 | 51.33 | 18.36 | 9.20 | N |
| 3 | 0.65817 | 24.22 | 24.10 | 9.97 | 34.19 | 34.07 | 56.00 | 46.00 | 21.81 | 11.93 | N |
| 4 | 0.92118 | 24.15 | 23.62 | 9.97 | 34.12 | 33.59 | 56.00 | 46.00 | 21.88 | 12.41 | N |
| 5 | 16.89380 | 24.34 | 21.43 | 10.51 | 34.85 | 31.94 | 60.00 | 50.00 | 25.15 | 18.06 | N |
| 6 | 0.19747 | 40.40 | 40.59 | 9.94 | 50.34 | 50.53 | 63.72 | 53.72 | 13.38 | 3.19 | L1 |
| 7 | 0.32888 | 32.55 | 32.48 | 9.94 | 42.49 | 42.42 | 59.48 | 49.48 | 16.99 | 7.06 | L1 |
| 8 | 0.39473 | 29.02 | 28.02 | 9.95 | 38.97 | 37.97 | 57.96 | 47.96 | 18.99 | 9.99 | L1 |
| 9 | 9.93180 | 30.78 | 28.44 | 10.34 | 41.12 | 38.78 | 60.00 | 50.00 | 18.88 | 11.22 | L1 |

**Calculation**

| |
|---|
| N : Neutral phase, L1 : Live phase |
| C.FACTOR(dB) : Pulse Limiter(dB) + Cable loss(dB) + Insertion loss of LISN(dB) |
| Result(dBμV) : Reading Value(dBμV) + C.FACTOR(dB) |
| Margin(dB) : Limit(dBμV) - Result(dBμV) |

## 7.2 Radiated Disturbance

| ANSI C63.4 | Radiated disturbance 30 MHz – 18 GHz | Result |
|---|---|---|
| Method: Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 10 meter below 1GHz and 3 meter above 1GHz. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable. For final measurement below 1 GHz frequency range, Quasi-Peak detector with (RBW = 120 kHz Bandwidth) was used. For final measurement above 1 GHz frequency range, Peak detector with (RBW = 1 MHz Bandwidth) and CISPR Average detector with (RBW = 1 MHz Bandwidth) were used. | | **Comply** |

| **EUT mode** (Refer to clauses 4) | **Test configuration mode** | **1** |
|---|---|---|
| | **EUT Operation mode** | **1** |

**Radiated Disturbance below 1 000 MHz**

| **Frequency range (MHz)** | **Quasi-peak limit dBµV/m** | |
|---|---|---|
| | **Class A (10 m distance)** | **Class B (3 m distance)** |
| 30 to 88 | 39.1 | 40 |
| 88 to 216 | 43.5 | 43.5 |
| 216 to 960 | 46.4 | 46 |
| 960 to 1 000 | 49.5 | 54 |

According to 15.109(g), as an alternative to the radiated emission limit shown above, digital devices may be shown to comply with the standards(CISPR), Pub. 22 shown as below.

| **Frequency range (MHz)** | **Quasi-peak limit dBµV/m** | |
|---|---|---|
| | **Class A (10 m distance)** | **Class B (10 m distance)** |
| 30 to 230 | 40 | 30 |
| 230 to 1 000 | 47 | 37 |

**Radiated Disturbance for above 1 000 MHz at a measurement distance of 3 m**

| **Frequency range (GHz)** | **Peak limit dBµV/m** | | **Average limit dBµV/m** | |
|---|---|---|---|---|
| | **Class A** | **Class B** | **Class A** | **Class B** |
| 1 to 40 | 80 | 74 | 60 | 54 |

**The test frequency range of Radiated Disturbance measurements are listed below.**

| **Highest frequency generated or used in the device or on which the device operates or tunes (MHz)** | **Upper frequency of measurement range (MHz)** |
|---|---|
| Below 108 | 1 000 |
| 108 – 500 | 2 000 |
| 500 – 1 000 | 5 000 |
| Above 1 000 | 5th harmonic of the highest frequency or 40 GHz, whichever is lower |

| Measurement Instrument | | | | | |
|---|---|---|---|---|---|
| **Description** | **Model** | **Manufacturer** | **Identifier** | **Cal. Date** | **Cal. Due** |
| MEASUREMENT SOFTWARE | EMI-R VER. 2.00.0177 | TSJ | N/A | N/A | N/A |
| EMI TEST RECEIVER | ESU40 | ROHDE & SCHWARZ | 100525 | 2018.12.18 | 2019.12.18 |
| TRILOG BROADBAND TEST-ANTENNA WITH 6DB ATT | VULB9160 | SCHWARZBECK | 9160-3339 | 2018.10.22 | 2020.10.22 |
| | 8491B | HP | 18403 | 2018.10.22 | 2020.10.22 |
| LOW NOISE PRE AMPLIFIER | MLA-100K01-B01-26 | TSJ | 1252741 | 2019.02.18 | 2020.02.18 |
| PREAMPLIFIER | 8449B | H.P | 3008A00887 | 2018.08.31 | 2019.08.31 |
| HORN ANTENNA | 3117 | ETS-LINDGREN | 00152093 | 2018.03.26 | 2020.03.26 |
| HORN ANTENNA | EM-6969 | ELECTRO-METRICS | 156 | 2019.02.13 | 2021.02.13 |
| PREAMPLIFIER | MLA-0618-B03-34 | TSJ | 1785642 | 2019.01.02 | 2020.01.02 |
| HORN ANTENNA | 3116C | ETS-LINDGREN | 00213177 | 2017.12.05 | 2019.12.05 |
| PREAMPLIFIER | JS44-18004000-35-8P | L3 NARDA-MITEQ | 2046884 | 2018.11.09 | 2019.11.09 |
| (NOTE : THE MEASUREMENT ANTENNAS WERE CALIBRATED IN ACCORDANCE TO THE REQUIREMENTS OF C63.5-2017.) | | | | | |

| Radiated disturbance at (30 ~ 1000) MHz _Measurement data | | | |
|---|---|---|---|
| **Test configuration mode** | **1** | **EUT Operation mode** | **1** |
| **Test voltage (V)** | **AC 120** | **Test Frequency (Hz)** | **60** |

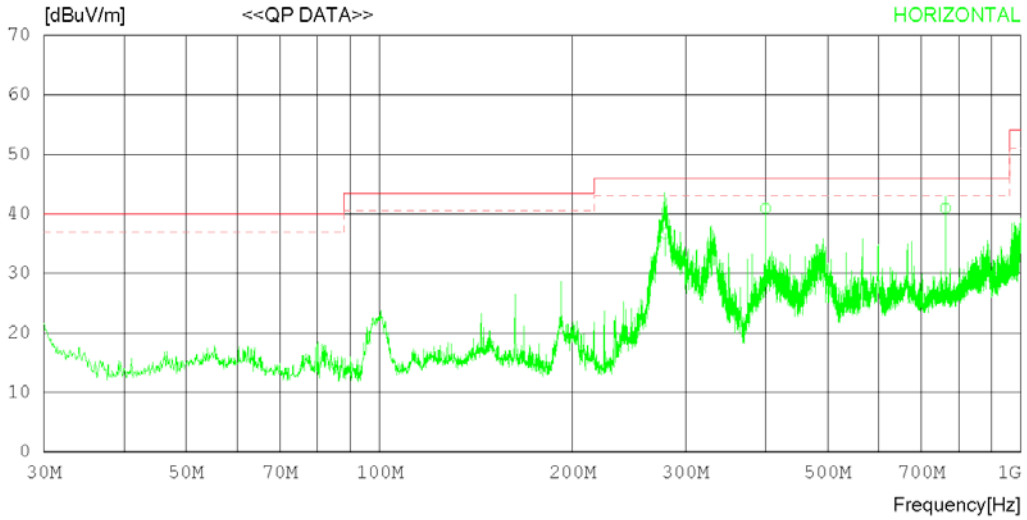
# RADIATED EMISSION

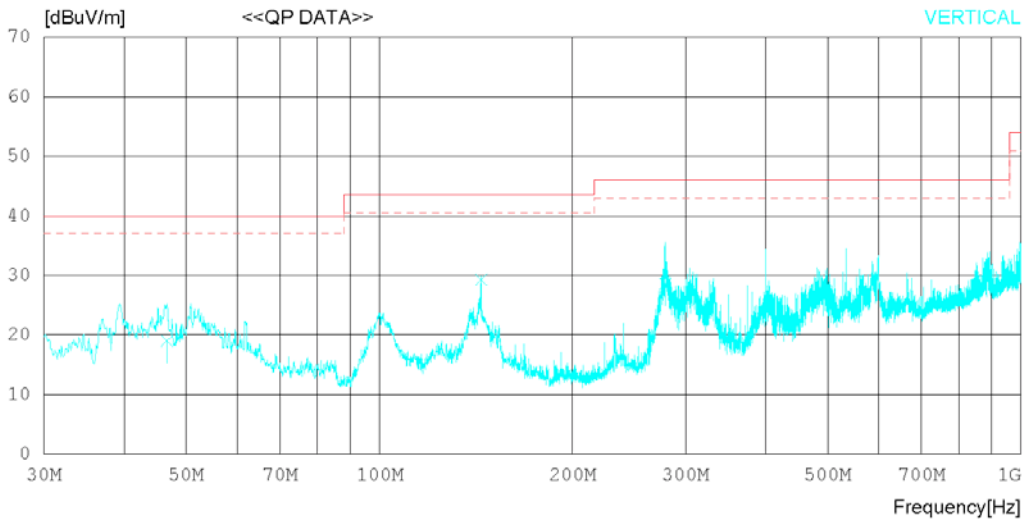
Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB



# RADIATED EMISSION

Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m)
MARGIN: 3 dB

| No. | FREQ [MHz] | READING QP [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|---|---|---|---|---|---|---|---|---|---|---|
| ----- Horizontal ------ | | | | | | | | | | |
| 1 | 278.568 | 41.21 | 19.13 | 2.18 | 25.80 | 36.72 | 46.00 | 9.28 | 100 | 193 |
| 2 | 399.992 | 42.72 | 21.50 | 2.53 | 25.84 | 40.91 | 46.00 | 5.09 | 227 | 321 |
| 3 | 762.708 | 34.96 | 28.35 | 3.43 | 25.80 | 40.94 | 46.00 | 5.06 | 205 | 0 |
| ----- Vertical ------ | | | | | | | | | | |
| 4 | 46.665 | 25.68 | 17.90 | 1.25 | 25.80 | 19.03 | 40.00 | 20.97 | 115 | 0 |
| 5 | 143.998 | 34.49 | 18.78 | 1.71 | 25.67 | 29.31 | 43.50 | 14.19 | 101 | 351 |
| 6 | 278.726 | 33.08 | 19.14 | 2.18 | 25.80 | 28.60 | 46.00 | 17.40 | 222 | 193 |

| Radiated disturbance at (1 ~ 6) GHz _Peak Measurement data | | | |
|---|---|---|---|
| **Test configuration mode** | **1** | **EUT Operation mode** | **1** |
| **Test voltage (V)** | **AC 120** | **Test Frequency (Hz)** | **60** |

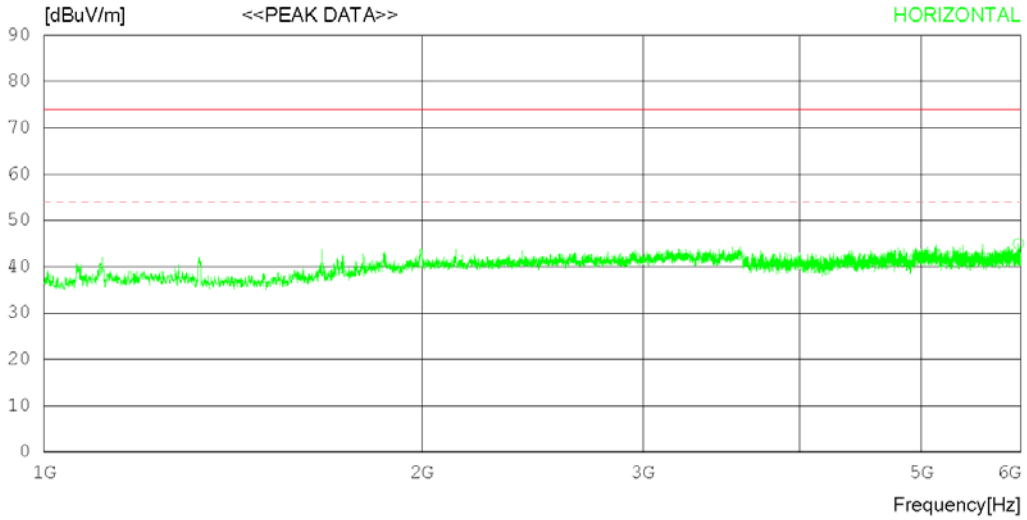
# RADIATED EMISSION

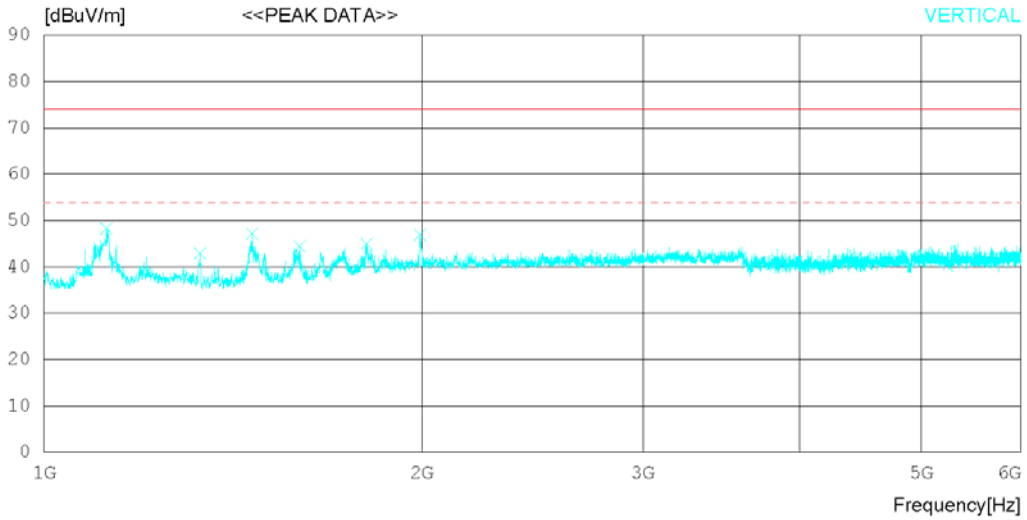
Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)



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Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)

| No. | FREQ [MHz] | READING PEAK [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|---|---|---|---|---|---|---|---|---|---|---|
| ----- Horizontal ------ | | | | | | | | | | |
| 1 | 5973.750 | 41.00 | 35.10 | 3.63 | 34.76 | 44.97 | 74.0 | 29.03 | 262 | 53 |
| ----- Vertical ------ | | | | | | | | | | |
| 2 | 1121.250 | 54.40 | 28.04 | 1.60 | 35.73 | 48.31 | 74.0 | 25.69 | 138 | 0 |
| 3 | 1331.250 | 48.40 | 28.30 | 1.74 | 35.51 | 42.93 | 74.0 | 31.07 | 105 | 232 |
| 4 | 1465.000 | 52.80 | 27.90 | 1.81 | 35.37 | 47.14 | 74.0 | 26.86 | 173 | 0 |
| 5 | 1598.125 | 49.50 | 28.39 | 1.87 | 35.23 | 44.53 | 74.0 | 29.47 | 111 | 292 |
| 6 | 1808.125 | 47.60 | 30.43 | 2.02 | 35.02 | 45.03 | 74.0 | 28.97 | 197 | 167 |
| 7 | 1993.750 | 48.00 | 31.59 | 2.14 | 34.83 | 46.90 | 74.0 | 27.1 | 105 | 227 |

| Radiated disturbance at (1 ~ 6) GHz _Average Measurement data | | | |
|---|---|---|---|
| **Test configuration mode** | **1** | **EUT Operation mode** | **1** |
| **Test voltage (V)** | **AC 120** | **Test Frequency (Hz)** | **60** |

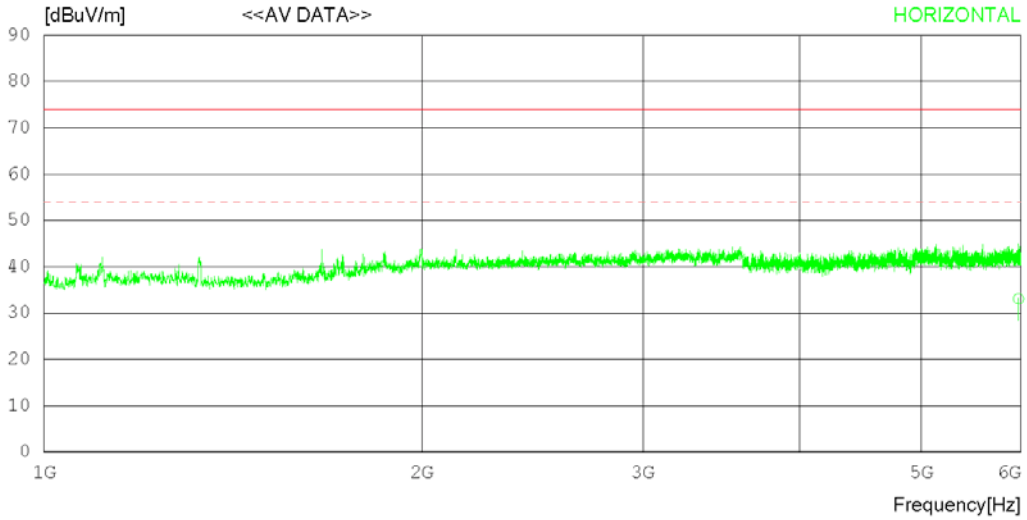
# RADIATED EMISSION

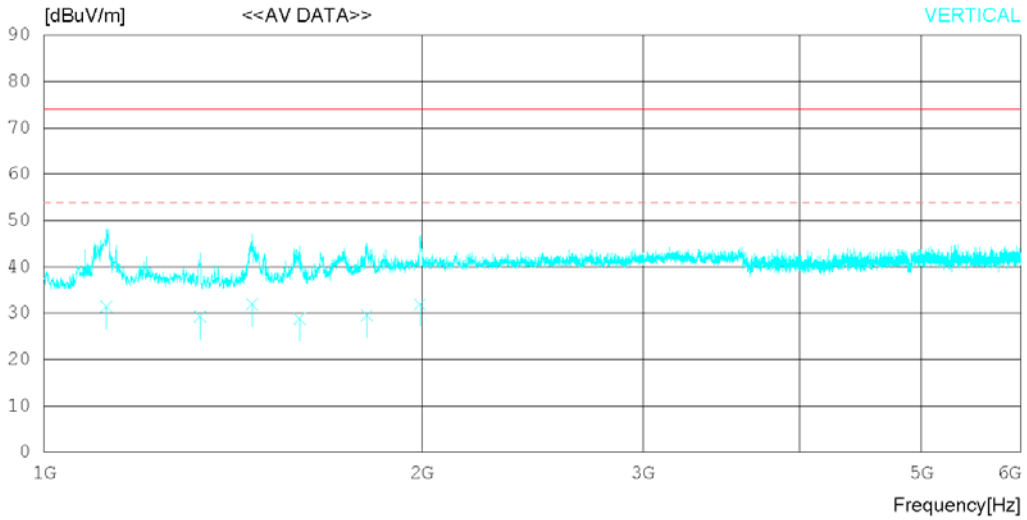
Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)



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Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)

| No. | FREQ [MHz] | READING CAV [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|---|---|---|---|---|---|---|---|---|---|---|
| ----- Horizontal ------ | | | | | | | | | | |
| 1 | 5973.060 | 29.13 | 35.10 | 3.63 | 34.76 | 33.10 | 54.00 | 20.90 | 299 | 360 |
| ----- Vertical ------ | | | | | | | | | | |
| 2 | 1121.049 | 37.49 | 28.04 | 1.60 | 35.73 | 31.40 | 54.00 | 22.60 | 146 | 150 |
| 3 | 1331.201 | 34.71 | 28.30 | 1.74 | 35.51 | 29.24 | 54.00 | 24.76 | 110 | 360 |
| 4 | 1465.178 | 37.62 | 27.90 | 1.81 | 35.37 | 31.96 | 54.00 | 22.04 | 193 | 162 |
| 5 | 1598.204 | 33.82 | 28.39 | 1.87 | 35.23 | 28.85 | 54.00 | 25.15 | 121 | 285 |
| 6 | 1808.125 | 32.11 | 30.43 | 2.02 | 35.02 | 29.54 | 54.00 | 24.46 | 224 | 179 |
| 7 | 1993.329 | 33.10 | 31.59 | 2.14 | 34.83 | 32.00 | 54.00 | 22.00 | 107 | 308 |

| Radiated disturbance at (6 ~ 18) GHz _Peak Measurement data | | | |
|---|---|---|---|
| **Test configuration mode** | **1** | **EUT Operation mode** | **1** |
| **Test voltage (V)** | **AC 120** | **Test Frequency (Hz)** | **60** |

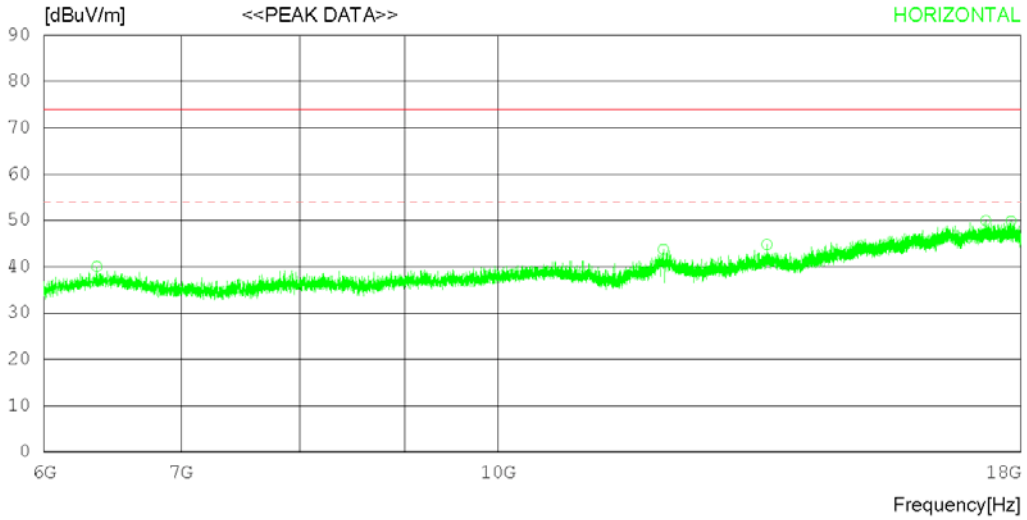
# RADIATED EMISSION

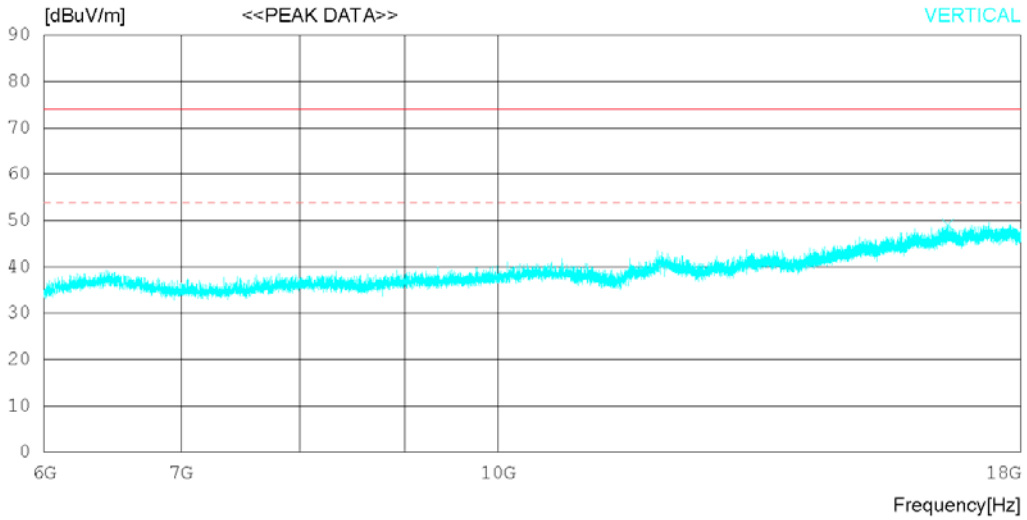
Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)




* Note : The measurement is performed above 18 GHz up to 40 GHz and not found emissions above 18 GHz.

# RADIATED EMISSION

Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Peak)
FCC Part15 Subpart.B Class B (3m) - GHz(Average)

| No. | FREQ [MHz] | READING PEAK [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|---|---|---|---|---|---|---|---|---|---|---|
| ----- Horizontal ------ | | | | | | | | | | |
| 1 | 6366.750 | 36.00 | 31.62 | 11.12 | 38.69 | 40.05 | 74.0 | 33.95 | 199 | 0 |
| 2 | 12039.750 | 32.40 | 33.46 | 15.65 | 37.73 | 43.78 | 74.0 | 30.22 | 243 | 352 |
| 3 | 13528.500 | 31.70 | 33.74 | 17.12 | 37.76 | 44.80 | 74.0 | 29.2 | 351 | 105 |
| 4 | 17301.000 | 30.20 | 37.78 | 19.48 | 37.51 | 49.95 | 74.0 | 24.05 | 174 | 358 |
| 5 | 17802.000 | 30.10 | 38.17 | 19.70 | 38.10 | 49.87 | 74.0 | 24.13 | 226 | 0 |
| ----- Vertical ------ | | | | | | | | | | |
| 6 | 16583.250 | 28.90 | 37.08 | 20.01 | 36.88 | 49.11 | 74.0 | 24.89 | 112 | 15 |

| Radiated disturbance at (6 ~18) GHz _Average Measurement data | | | |
|---|---|---|---|
| **Test configuration mode** | **1** | **EUT Operation mode** | **1** |
| **Test voltage (V)** | **AC 120** | **Test Frequency (Hz)** | **60** |

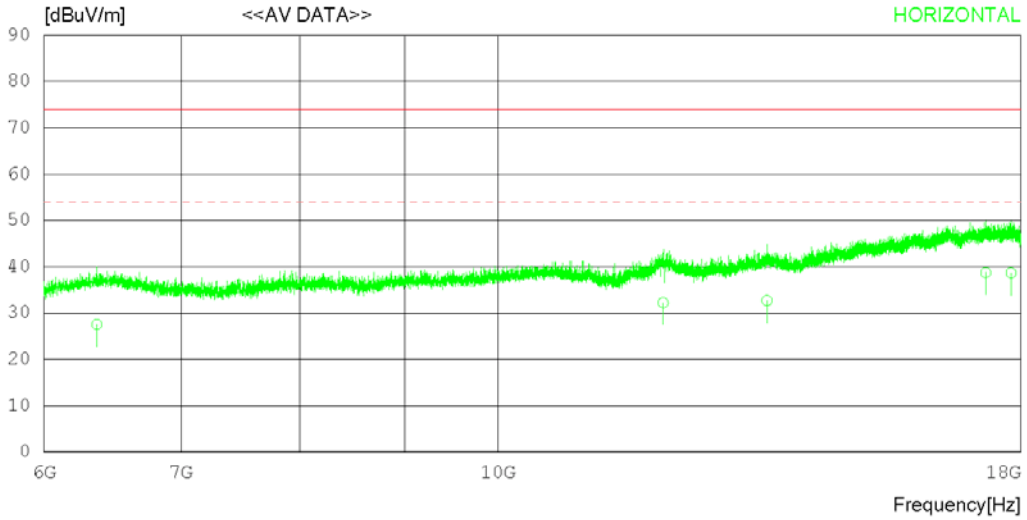
# RADIATED EMISSION

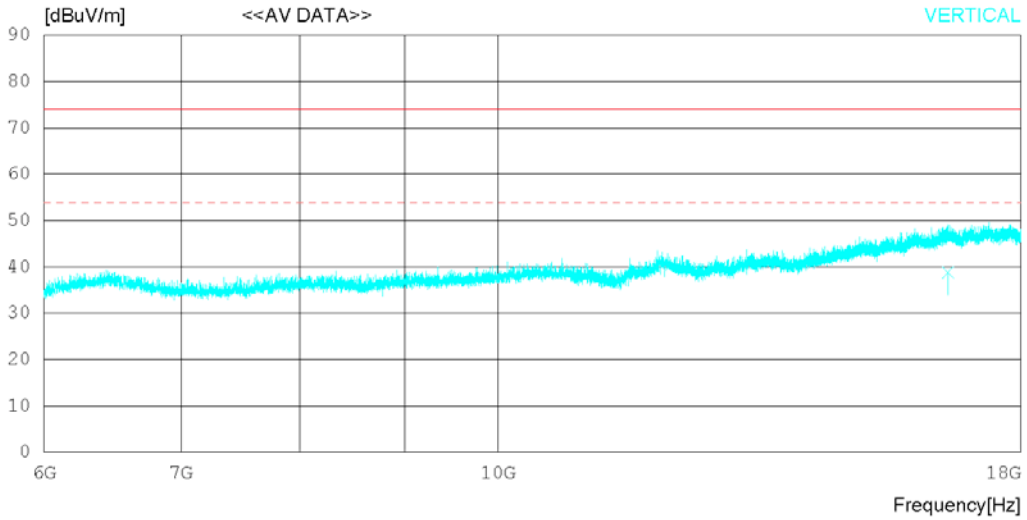
Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)




* Note : The measurement is performed above 18 GHz up to 40 GHz and not found emissions above 18 GHz.

# RADIATED EMISSION

Date 2019-08-07

Order No. DTNC1907-06220
Power Supply 120 V 60 Hz
Temp/Humi 21 'C 48 % R.H.
Test Condition

Memo

LIMIT : FCC Part15 Subpart.B Class B (3m) - GHz(Average)
FCC Part15 Subpart.B Class B (3m) - GHz(Peak)

| No. | FREQ [MHz] | READING CAV [dBuV] | ANT FACTOR [dB] | LOSS [dB] | GAIN [dB] | RESULT [dBuV/m] | LIMIT [dBuV/m] | MARGIN [dB] | ANTENNA [cm] | TABLE [DEG] |
|---|---|---|---|---|---|---|---|---|---|---|
| ----- Horizontal ------ | | | | | | | | | | |
| 1 | 6366.486 | 23.46 | 31.62 | 11.11 | 38.70 | 27.49 | 54.00 | 26.51 | 207 | 205 |
| 2 | 12038.770 | 20.85 | 33.46 | 15.66 | 37.73 | 32.24 | 54.00 | 21.76 | 354 | 0 |
| 3 | 13528.000 | 19.61 | 33.74 | 17.12 | 37.76 | 32.71 | 54.00 | 21.29 | 381 | 94 |
| 4 | 17301.090 | 18.98 | 37.78 | 19.48 | 37.51 | 38.73 | 54.00 | 15.27 | 210 | 358 |
| 5 | 17801.820 | 18.90 | 38.17 | 19.70 | 38.10 | 38.67 | 54.00 | 15.33 | 308 | 0 |
| ----- Vertical ------ | | | | | | | | | | |
| 6 | 16583.180 | 18.55 | 37.08 | 20.01 | 36.88 | 38.76 | 54.00 | 15.24 | 127 | 124 |

**Calculation**

| |
|---|
| Result(dBμV/m) : 30 ~ 1G : Reading Value(dBμV) + Cable loss(dB) - Pre amplifier gain(dB) + Ant. Factor(dB) |
| 1 ~ 6 G : Ant. Factor = Ant. Factor - Pre amplifier gain |
| Margin(dB) : Limit(dBμV/m) - Result(dBμV/m) |

# 8. Revision History

| Date | Description | Revised By | Reviewed By |
|---|---|---|---|
| Sep. 06. 2019 | Initial report | YongKi Kim | HyungJun Kim |
| Sep. 18. 2019 | Add Note<br>- Radiated disturbance at (6 ~18) GHz | YongKi Kim | HyungJun Kim |
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-End of test report-