# FCC REPORT

| | |
|---|---|
| **Application No. :** | HKES1511002039IT |
| **Applicant:** | Standard Merit Industrial Limited |
| **Manufacturer:** | Foshan Shunde Alford Electronics Co., Ltd, Xinjian Industrial Park, Daliang, Shunde, Foshan City, Guangdong Province, China. |
| **Product Name:** | Wireless monitor (Monitor unit) |
| **Model No.(EUT):** | DXR-8 (DXR-8PU) |
| **FCC ID:** | 2AAAM-DXR-8PU-1 |
| **Standards:** | 47 CFR Part 15, Subpart C (2014) |
| **Date of Receipt:** | 2015-11-13 |
| **Date of Test:** | 2015-11-26 to 2015-12-30 |
| **Date of Issue:** | 2016-01-06 |
| **Test Result:** | **PASS *** |

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

**CHEN Jian-feng, Jeffrey**

**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.**

**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.**

**This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.**

# 2 Version

| Revision Record | | | | |
|---|---|---|---|---|
| ***Version*** | ***Chapter*** | ***Date*** | ***Modifier*** | ***Remark*** |
| 00 | | 2016-01-06 | | Original |
| | | | | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| **Authorized for issue by:** | | | | |
| **Tested By** | | **(Martin Li) /Project Engineer** | | 2015-12-30 **Date** |
| **Prepared By** | | **(Iris Zhou) /Clerk** | | 2016-01-06 **Date** |
| **Checked By** | | **(Eric Fu) /Reviewer** | | 2016-01-06 **Date** |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

# 3 Test Summary

| Test Item | Test Requirement | Test method | Result |
|---|---|---|---|
| **Antenna Requirement** | 47 CFR Part 15, Subpart C Section 15.203 | ANSI C63.10 (2013) | PASS |
| **AC Power Line Conducted Emission** | 47 CFR Part 15, Subpart C Section 15.207 | ANSI C63.10 (2013) | PASS |
| **Field Strength of the Fundamental Signal** | 47 CFR Part 15, Subpart C Section 15.249 (a) | ANSI C63.10 (2013) | PASS |
| **Spurious Emissions** | 47 CFR Part 15, Subpart C Section 15.249 (a)/15.209 | ANSI C63.10 (2013) | PASS |
| **Duty Cycle** | 47 CFR Part 15, Subpart C Section 15.35 (c) | ANSI C63.10 (2013) | PASS |
| **Restricted bands around fundamental frequency (Radiated Emission)** | 47 CFR Part 15, Subpart C Section 15.249(a)/15.205 | ANSI C63.10 (2013) | PASS |
| **20dB Occupied Bandwidth** | 47 CFR Part 15, Subpart C Section 15.215 (c) | ANSI C63.10 (2013) | PASS |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

# 4 Contents

Page

1 COVER PAGE ..... 1

2 VERSION ..... 2

3 TEST SUMMARY ..... 3

4 CONTENTS ..... 4

5 GENERAL INFORMATION ..... 5

5.1 CLIENT INFORMATION ..... 5
5.2 GENERAL DESCRIPTION OF EUT ..... 5
5.3 TEST ENVIRONMENT AND MODE ..... 7
5.4 DESCRIPTION OF SUPPORT UNITS ..... 7
5.5 TEST LOCATION ..... 7
5.6 DEVIATION FROM STANDARDS ..... 7
5.7 ABNORMALITIES FROM STANDARD CONDITIONS ..... 7
5.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER ..... 7
5.9 EQUIPMENT LIST ..... 8

6 TEST RESULTS AND MEASUREMENT DATA ..... 11

6.1 ANTENNA REQUIREMENT ..... 11
6.2 CONDUCTED EMISSIONS ..... 13
6.3 SPURIOUS EMISSIONS ..... 19
*6.3.1 Duty Cycle ..... 19*
*6.3.2 Radiated Emission ..... 22*
6.4 RESTRICTED BANDS AROUND FUNDAMENTAL FREQUENCY ..... 34
6.5 20DB BANDWIDTH ..... 42

7 PHOTOGRAPHS ..... 45

7.1 RADIATED EMISSION TEST SETUP ..... 45
7.2 CONDUCTED EMISSION ..... 46
7.3 EUT CONSTRUCTIONAL DETAILS ..... 47

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

# 5 General Information

## 5.1 Client Information

| | |
|---|---|
| Applicant: | Standard Merit Industrial Limited |
| Address of Applicant: | 2/A Harrison Court Stage 6, 10 Man Wan Road, Kowloon, Hong Kong |
| Manufacturer: | Foshan Shunde Alford Electronics Co., Ltd, Xinjian Industrial Park, Daliang, Shunde, Foshan City, Guangdong Province, China. |

## 5.2 General Description of EUT

| | |
|---|---|
| Name: | Wireless monitor (Monitor unit) |
| Model No.: | DXR-8 (DXR-8PU) |
| Frequency Range: | 2410.875 MHz ~ 2471.625MHz |
| Modulation Technique: | Frequency Hopping Spread Spectrum(FHSS) |
| Hopping Channel Type: | Adaptive Frequency Hopping systems |
| Modulation Type: | GFSK |
| Number of Channels: | 19 (declared by the client) |
| Sample Type: | Portable production |
| Antenna Type: | Integral |
| Antenna Gain: | 0dBi |
| Power Supply: | Monitor Unit<br>Rechargeable battery: DC 3.7V 1200mAh (charge by USB)<br>Adapter 1 Model: CS3B050055FUUSB<br>Input: AC 100-240V 50/60Hz 200mA<br>Output: DC 5.0V 550 mA<br>Adapter 2 Model: BLJ06W050055U1-U<br>Input: AC 100-240V 50/60Hz 0.2A<br>Output: DC 5V 550mA<br>USB cable1:100cm unshielded<br>USB cable2:300cm unshielded |
| Test Voltage: | AC 120V 60Hz |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Channel | Frequency | Channel | Frequency |
|---|---|---|---|
| 1CH | 2410.875 | 14CH | 2454.750 |
| 2CH | 2414.250 | 15CH | 2458.125 |
| 3CH | 2417.625 | 16CH | 2461.500 |
| 4CH | 2421.000 | 17CH | 2464.875 |
| 5CH | 2424.375 | 18CH | 2468.250 |
| 6CH | 2427.750 | 19CH | 2471.625 |
| 7CH | 2431.125 | | |
| 8CH | 2434.500 | | |
| 9CH | 2437.875 | | |
| 10CH | 2441.250 | | |

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

| Channel | Frequency |
|---|---|
| The lowest channel (CH0) | 2410.875MHz |
| The middle channel (CH10) | 2441.250MHz |
| The highest channel (CH19) | 2471.625MHz |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

## 5.3 Test Environment and Mode

| | Operating Environment: |
|---|---|
| Temperature: | 25.0 °C |
| Humidity: | 50% RH |
| Atmospheric Pressure: | 1025 mbar |

## 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 E&E Lab,

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 Deviation from Standards

None.

## 5.7 Abnormalities from Standard Conditions

None.

## 5.8 Other Information Requested by the Customer

None.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

## 5.9 Equipment List

| Conducted Emission | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 1 | Shielding Room | ZhongYu Electron | GB-88 | SEL0042 | 2015-05-13 | 2016-05-13 |
| 2 | LISN | Rohde & Schwarz | ENV216 | SEL0152 | 2015-10-09 | 2016-10-09 |
| 3 | LISN | ETS-LINDGREN | 3816/2 | SEL0021 | 2015-05-13 | 2016-05-13 |
| 4 | 8 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T8-02 | SEL0162 | 2015-08-30 | 2016-08-30 |
| 5 | 4 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T4-02 | SEL0163 | 2015-08-30 | 2016-08-30 |
| 6 | 2 Line ISN | Fischer Custom Communications Inc. | FCC-TLISN-T2-02 | SEL0164 | 2015-08-30 | 2016-08-30 |
| 7 | EMI Test Receiver | Rohde & Schwarz | ESCI | SEL0022 | 2015-05-13 | 2016-05-13 |
| 8 | Coaxial Cable | SGS | N/A | SEL0025 | 2015-05-13 | 2016-05-13 |
| 9 | DC Power Supply | Zhao Xin | RXN-305D | SEL0117 | 2015-10-09 | 2016-10-09 |
| 10 | Humidity/ Temperature Indicator | Shanhai Qixiang | ZJ1-2B | SEL0103 | 2015-10-24 | 2016-10-24 |
| 11 | Barometer | Chang Chun | DYM3 | SEL0088 | 2015-05-13 | 2016-05-13 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| RE in Chamber | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 1 | 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEL0017 | 2015-05-13 | 2016-05-13 |
| 2 | EMI Test Receiver | Agilent Technologies | N9038A | SEL0312 | 2015-09-16 | 2016-09-16 |
| 3 | EMI Test software | AUDIX | E3 | SEL0050 | N/A | N/A |
| 4 | BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN | 3142C | SEL0015 | 2014-11-15 | 2017-11-15 |
| 5 | Double-ridged horn (1-18GHz) | ETS-LINDGREN | 3117 | SEL0006 | 2015-10-17 | 2016-10-17 |
| 6 | Horn Antenna (18-26GHz) | ETS-LINDGREN | 3160 | SEL0076 | 2014-11-24 | 2017-11-24 |
| 7 | Pre-amplifier (0.1-1300MHz) | Agilent Technologies | 8447D | SEL0053 | 2015-05-13 | 2016-05-13 |
| 8 | Pre-Amplifier (0.1-26.5GHz) | Compliance Directions Systems Inc. | PAP-0126 | SEL0168 | 2015-10-17 | 2016-10-17 |
| 9 | Coaxial cable | SGS | N/A | SEL0027 | 2015-05-13 | 2016-05-13 |
| 10 | Coaxial cable | SGS | N/A | SEL0189 | 2015-05-13 | 2016-05-13 |
| 11 | Coaxial cable | SGS | N/A | SEL0121 | 2015-05-13 | 2016-05-13 |
| 12 | Coaxial cable | SGS | N/A | SEL0178 | 2015-05-13 | 2016-05-13 |
| 13 | Band filter | Amindeon | 82346 | SEL0094 | 2015-05-13 | 2016-05-13 |
| 14 | Barometer | Chang Chun | DYM3 | SEL0088 | 2015-05-13 | 2016-05-13 |
| 15 | DC Power Supply | Zhao Xin | RXN-305D | SEL0117 | 2015-10-09 | 2016-10-09 |
| 16 | Humidity/ Temperature Indicator | Shanhai Qixiang | ZJ1-2B | SEL0103 | 2015-10-24 | 2016-10-24 |
| 17 | Signal Generator (10M-27GHz) | Rohde & Schwarz | SMR27 | SEL0067 | 2015-05-13 | 2016-05-13 |
| 18 | Loop Antenna | Beijing Daze | ZN30401 | SEL0203 | 2015-05-13 | 2016-05-13 |

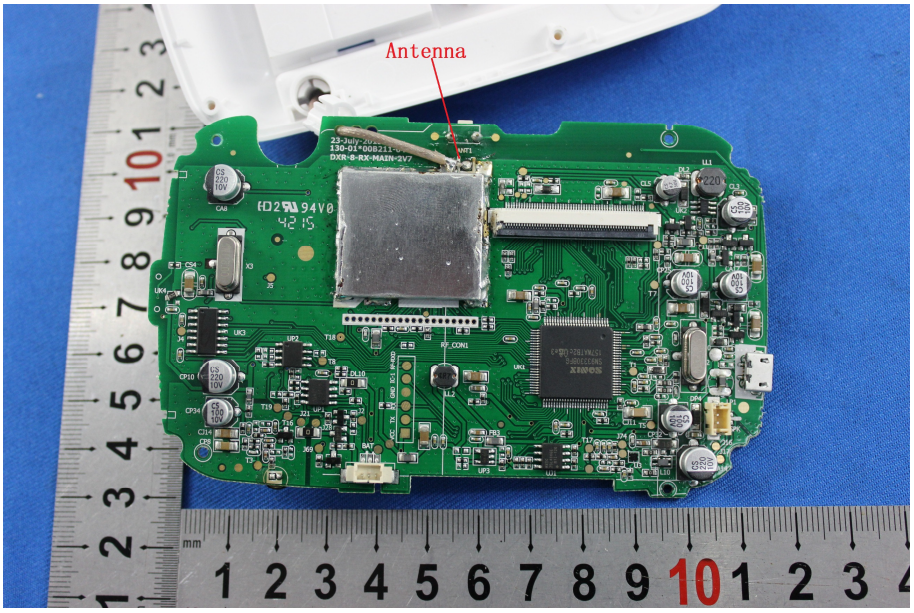
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| RF connected test | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Test Equipment** | **Manufacturer** | **Model No.** | **Inventory No.** | **Cal. date (yyyy-mm-dd)** | **Cal.Due date (yyyy-mm-dd)** |
| 1 | DC Power Supply | Zhao Xin | RXN-305D | SEL0117 | 2015-10-09 | 2016-10-09 |
| 2 | Humidity/ Temperature Indicator | HYGRO | ZJ1-2B | SEL0033 | 2015-10-24 | 2016-10-24 |
| 3 | Spectrum Analyzer | Rohde & Schwarz | FSP | SEL0154 | 2015-10-17 | 2016-10-17 |
| 4 | Coaxial cable | SGS | N/A | SEL0178 | 2015-05-13 | 2016-05-13 |
| 5 | Coaxial cable | SGS | N/A | SEL0179 | 2015-05-13 | 2016-05-13 |
| 6 | Barometer | ChangChun | DYM3 | SEL0088 | 2015-05-13 | 2016-05-13 |
| 7 | Signal Generator | Rohde & Schwarz | SML03 | SEL0068 | 2015-04-25 | 2016-04-25 |
| 8 | POWER METER | R & S | NRVS | SEL0144 | 2015-10-09 | 2016-10-09 |
| 9 | Attenuator | Beijin feihang taida | TST-2-6dB | SEL0205 | 2015-04-25 | 2016-04-25 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

# 6 Test results and Measurement Data

## 6.1 Antenna Requirement

| | |
|---|---|
| **Standard requirement:** | 47 CFR Part 15C Section 15.203 |
| 15.203 requirement:<br>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. | |
| **EUT Antenna:** |  |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

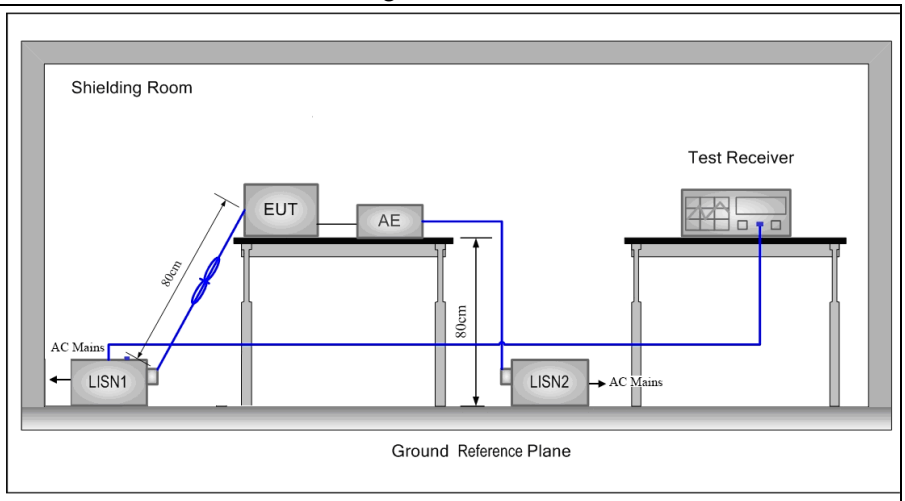
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

## 6.2 Conducted Emissions

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.207 |
| Test Method: | ANSI C63.10: 2013 |
| Test Frequency Range: | 150KHz to 30MHz |
| Limit: | Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average<br>0.15-0.5: 66 to 56* / 56 to 46*<br>0.5-5: 56 / 46<br>5-30: 60 / 50<br>* Decreases with the logarithm of the frequency. |
| Test Procedure: | 1) The mains terminal disturbance voltage test was conducted in a shielded room.<br>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.<br>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,<br>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0,4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN 2.<br>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| | |
|---|---|
| Test Setup: |  |
| Test Mode: | Keep the EUT in transmitting mode |
| Instruments Used: | Refer to section 5.10 for details |
| Test Results: | Pass |

**Measurement Data**

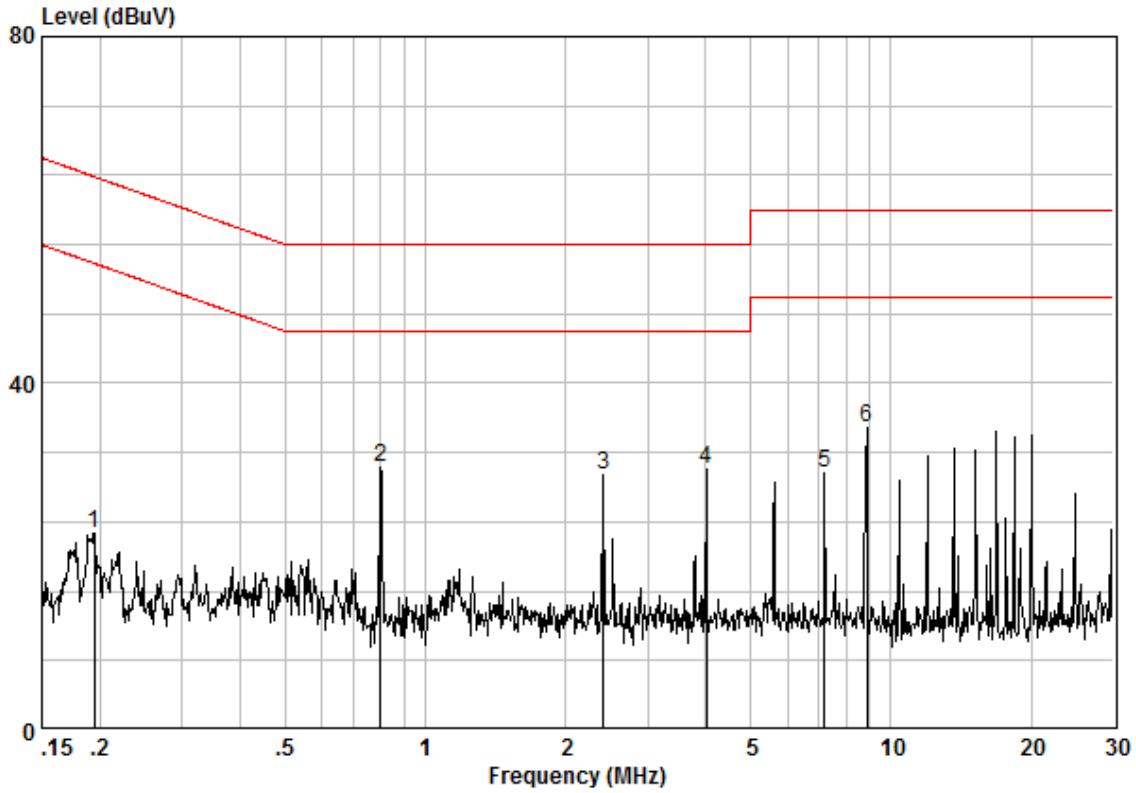
An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Adapter 1 Model: CS3B050055FUUSB

Live Line:

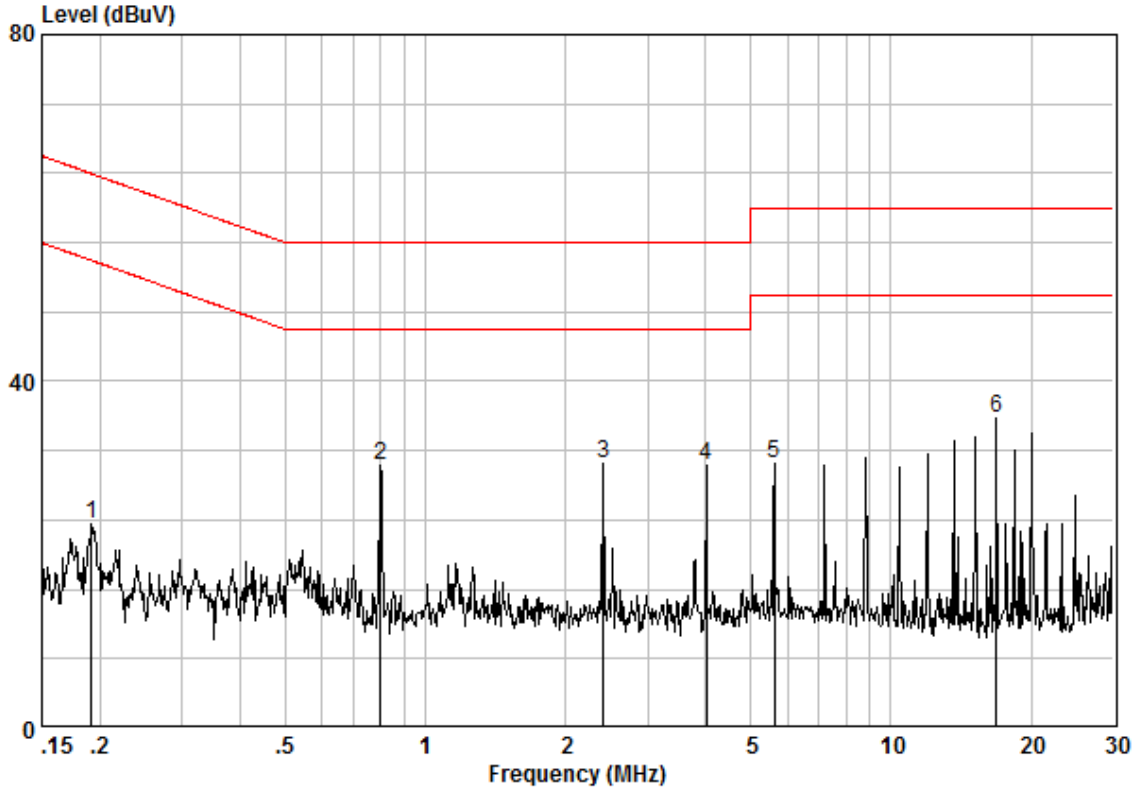



Site : Shielding Room
Condition : CE LINE
Job No. : 2039IT
Test Mode : Charge+TX

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.19447 | 0.02 | 9.60 | 13.08 | 22.70 | 53.84 | -31.14 | Peak |
| 2 | 0.80023 | 0.02 | 9.60 | 20.59 | 30.21 | 46.00 | -15.79 | Peak |
| 3 | 2.409 | 0.02 | 9.62 | 19.87 | 29.51 | 46.00 | -16.49 | Peak |
| 4 | 4.006 | 0.02 | 9.63 | 20.44 | 30.09 | 46.00 | -15.91 | Peak |
| 5 | 7.213 | 0.01 | 9.68 | 19.86 | 29.55 | 50.00 | -20.45 | Peak |
| 6 | 8.869 | 0.01 | 9.70 | 25.08 | 34.79 | 50.00 | -15.21 | Peak |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Neutral Line:



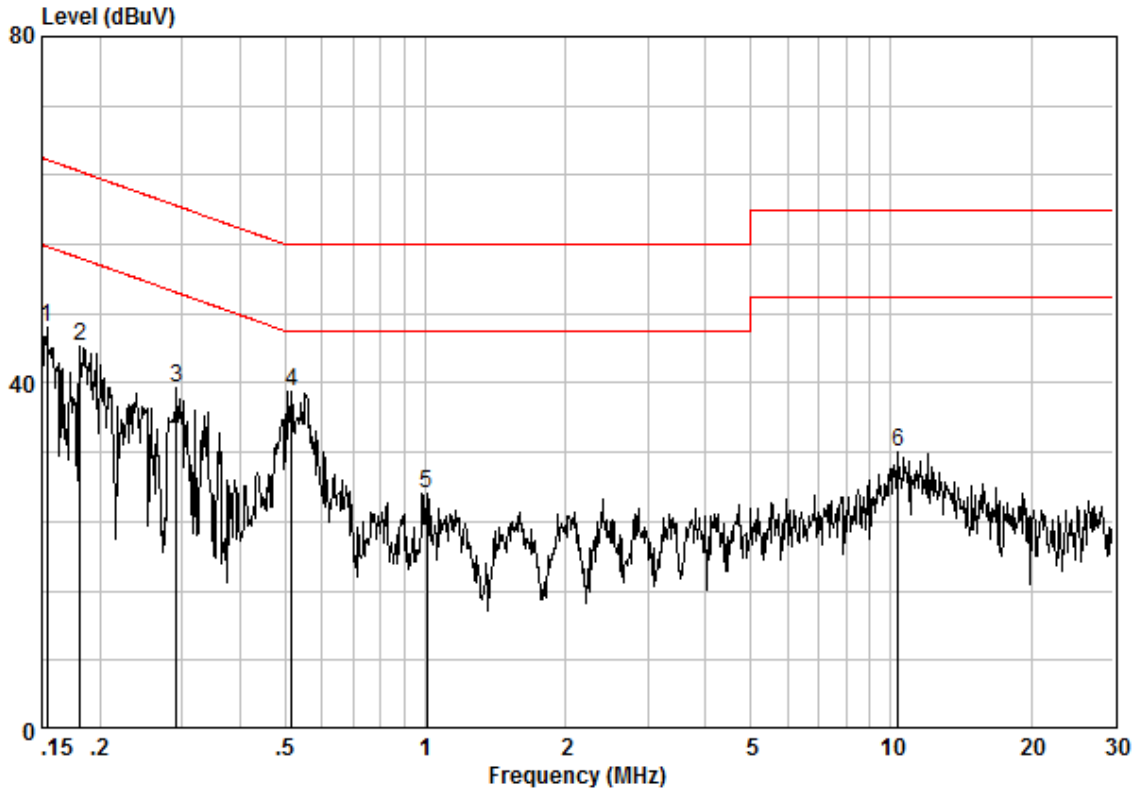

Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 2039IT
Test Mode : Charge+TX

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.19140 | 0.02 | 9.62 | 13.83 | 23.46 | 53.98 | -30.51 | Peak |
| 2 | 0.80023 | 0.02 | 9.64 | 20.58 | 30.24 | 46.00 | -15.76 | Peak |
| 3 | 2.409 | 0.02 | 9.67 | 20.85 | 30.54 | 46.00 | -15.46 | Peak |
| 4 | 4.006 | 0.02 | 9.68 | 20.57 | 30.26 | 46.00 | -15.74 | Peak |
| 5 | 5.623 | 0.01 | 9.73 | 20.88 | 30.62 | 50.00 | -19.38 | Peak |
| 6 | 16.839 | 0.02 | 9.95 | 25.68 | 35.65 | 50.00 | -14.35 | Peak |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Adapter 1 Model: CS3B050055FUUSB

Live Line:

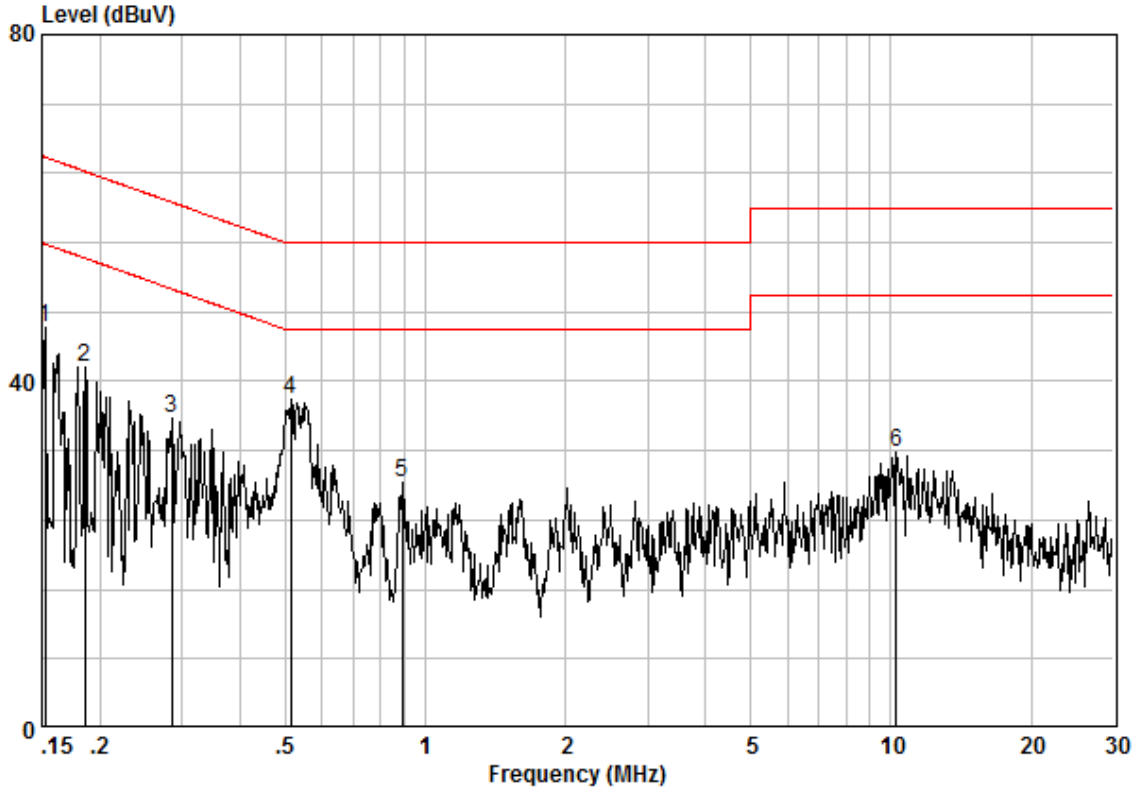



Site : Shielding Room
Condition : CE LINE
Job No. : 2039IT
Test Mode : Charge+TX

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.15403 | 0.02 | 9.59 | 36.75 | 46.36 | 55.78 | -9.42 | Peak |
| 2 | 0.18152 | 0.02 | 9.60 | 34.64 | 44.26 | 54.42 | -10.16 | Peak |
| 3 | 0.29243 | 0.01 | 9.59 | 29.75 | 39.35 | 50.46 | -11.10 | Peak |
| 4 | 0.51550 | 0.01 | 9.59 | 29.49 | 39.09 | 46.00 | -6.91 | Peak |
| 5 | 1.005 | 0.02 | 9.63 | 17.64 | 27.29 | 46.00 | -18.71 | Peak |
| 6 | 10.342 | 0.01 | 9.71 | 22.35 | 32.08 | 50.00 | -17.92 | Peak |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Neutral Line:




Site : Shielding Room
Condition : CE NEUTRAL
Job No. : 2039IT
Test Mode : Charge+TX

| | Freq | Cable Loss | LISN Factor | Read Level | Level | Limit Line | Over Limit | Remark |
|---|---|---|---|---|---|---|---|---|
| | MHz | dB | dB | dBuV | dBuV | dBuV | dB | |
| 1 | 0.15240 | 0.02 | 9.62 | 36.48 | 46.12 | 55.87 | -9.75 | Peak |
| 2 | 0.18541 | 0.02 | 9.61 | 31.97 | 41.60 | 54.24 | -12.64 | Peak |
| 3 | 0.28478 | 0.01 | 9.62 | 26.19 | 35.82 | 50.68 | -14.85 | Peak |
| 4 | 0.51278 | 0.01 | 9.63 | 28.19 | 37.83 | 46.00 | -8.17 | Peak |
| 5 | 0.88969 | 0.02 | 9.63 | 18.62 | 28.28 | 46.00 | -17.72 | Peak |
| 6 | 10.288 | 0.01 | 9.80 | 21.99 | 31.80 | 50.00 | -18.20 | Peak |

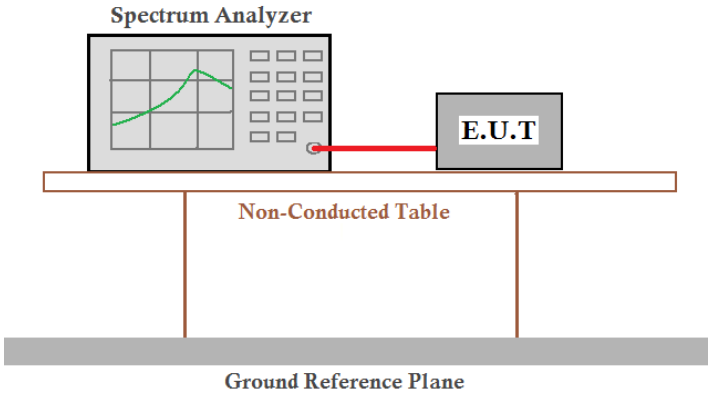
*Notes:*

1. *The following Quasi-Peak and Average measurements were performed on the EUT:*
2. *Final Test Level =Receiver Reading + LISN Factor + Cable Loss.*

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

## 6.3 Spurious Emissions

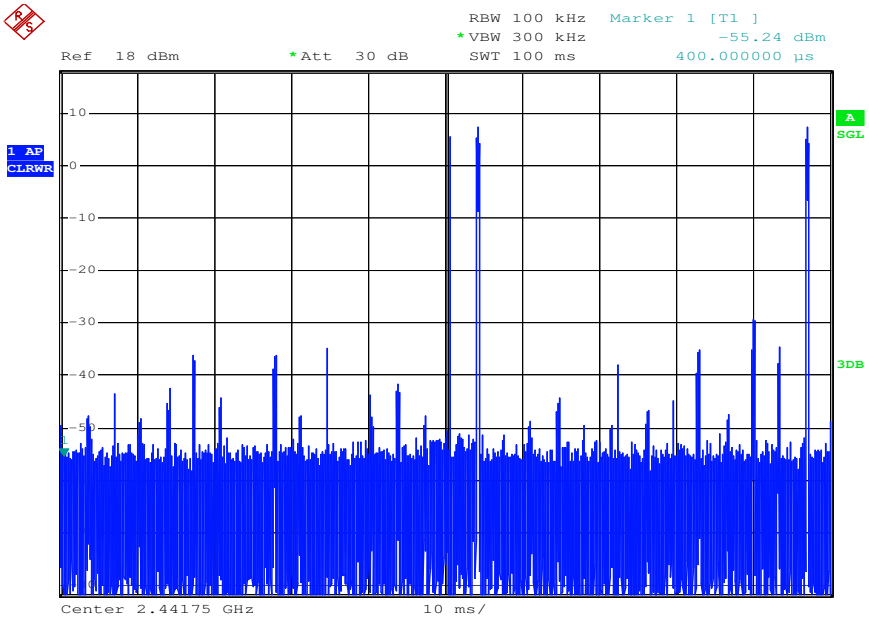
### 6.3.1 Duty Cycle

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.35 (c) |
| Test Method: | ANSI C63.10:2013 |
| Test Setup: |  |
| Instruments Used: | Refer to section 5.10 for details |
| Limit: | N/A |
| Test Mode: | Normal transmitting mode |
| Test Results: | Pass |

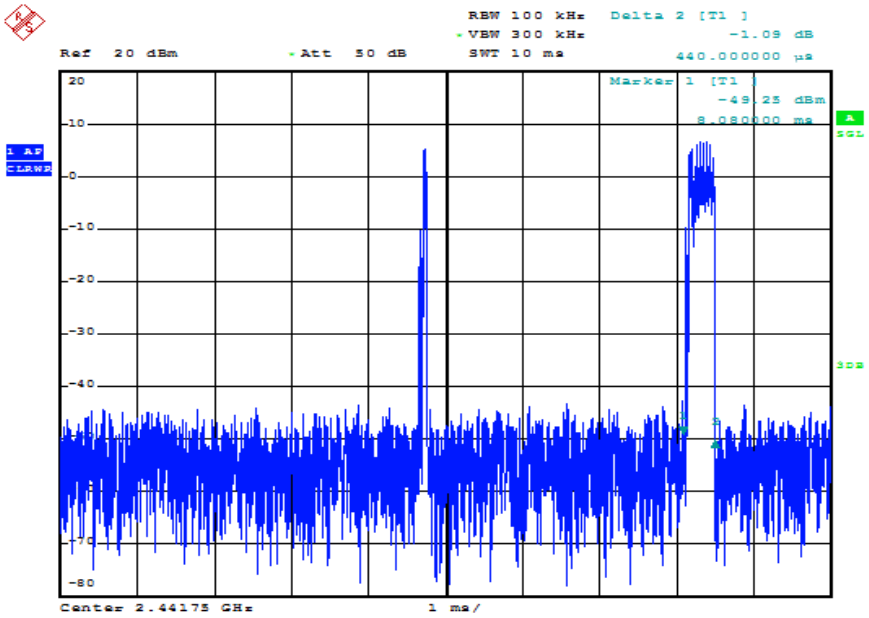
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

**Test plot as follows:**

3 bursts in 100mS, 1 short “on” time + 2 long “on” time

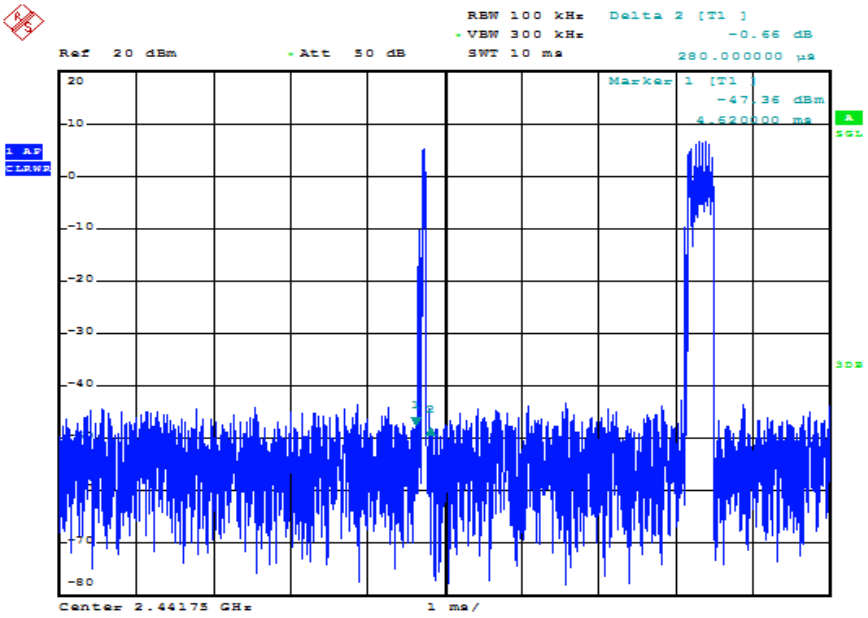



Long “on” time




"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Short “on” time




"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

### 6.3.2 Radiated Emission

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.249 and 15.209 |
| Test Method: | ANSI C63.10: 2013 |
| Test Site: | Measurement Distance: 3m (Semi-Anechoic Chamber) |

Receiver Setup:

| 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 |

Limit:
(Spurious Emissions)

| Frequency | Field strength (microvolt/meter) | Limit (dBuV/m ) | Remark | Measurement distance (m) |
|---|---|---|---|---|
| 0.009MHz-0.490MHz | 2400/F (kHz) | - | - | 300 |
| 0.490MHz-1.705MHz | 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.

Limit:
(Field strength of the fundamental signal)

| Frequency | Limit (dBuV/m @3m) | Remark |
|---|---|---|
| 2400MHz-2483.5MHz | 94.0 | Average Value |
| | 114.0 | Peak Value |

Test Setup:

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

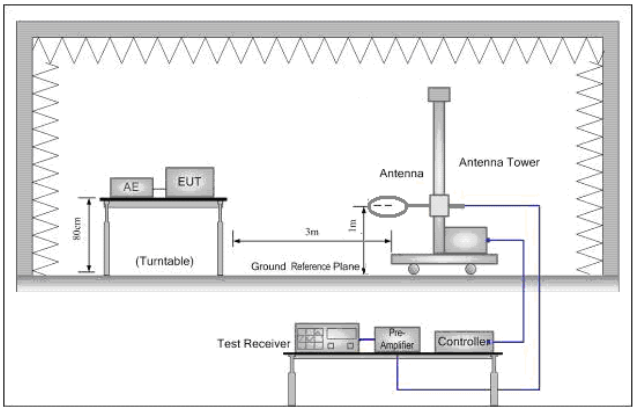



Figure 1. Below 30MHz

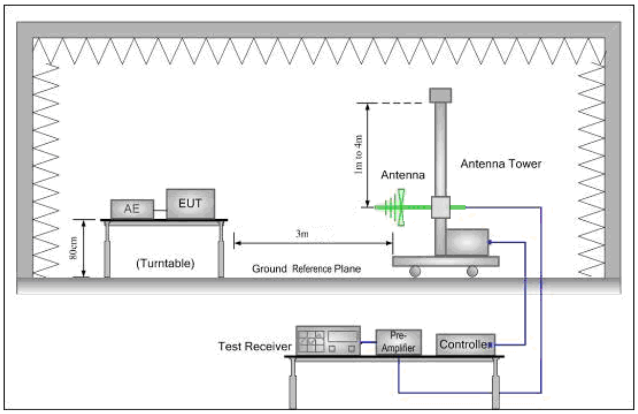



Figure 2. 30MHz to 1GHz

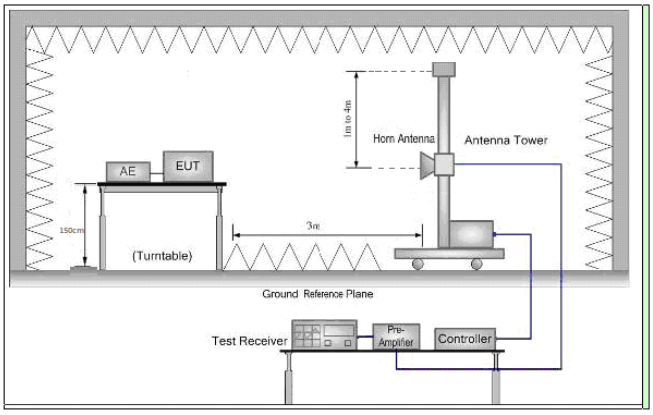



Figure 3. Above 1 GHz

| | |
|---|---|
| Test Procedure: | a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>d. 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.<br>e. 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.<br>f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>g. 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.<br>h. Test the EUT in the lowest channel,the middle channel,the Highest channel |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| | |
|---|---|
| | i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.<br>j. Repeat above procedures until all frequencies measured was complete. |
| Instruments Used: | Refer to section 5.10 for details |
| Exploratory Test Mode: | Transmitting mode, Charge +Transmitting mode |
| Final Test Mode: | Pretest the EUT at Transmitting mode and Charge +Transmitting mode, found the Charge +Transmitting mode which it is worse case<br>Only the worst case is recorded in the report. |
| Test Results: | Pass |

| **Average value:** | |
|---|---|
| Calculate Formula: | Average value=Peak value + PDCF |
| | PDCF=20 log(Duty cycle) |
| | Duty cycle= T on time / T period |
| Test data: | Ton time =0.44*2+0.28=1.16 |
| | T period =100 |
| | Average value=-38.71 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

**Measurement Data**

**6.3.2.1 Field Strength Of The Fundamental Signal**

Test channel: lowest

Peak value:

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 2470.83 | 5.40 | 28.93 | 38.12 | 107.25 | 103.46 | 114.00 | -10.54 | Horizontal |
| 2470.83 | 5.40 | 28.93 | 38.12 | 102.29 | 98.50 | 114.00 | -15.50 | Vertical |

Average value= Peak value+20 log(Duty cycle)

| Test mode: | GFSK | Test channel: | Lowest | Remark: | Average |
|---|---|---|---|---|---|
| Frequency (MHz) | Average Factor(dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 2470.83 | -38.71 | 64.75 | 94.00 | -29.25 | Horizontal |
| 2470.83 | -38.71 | 59.79 | 94.00 | -34.21 | Vertical |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Test channel: Middle

Peak value:

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 2410.11 | 5.35 | 28.65 | 38.11 | 108.78 | 104.67 | 114.00 | -9.33 | Horizontal |
| 2410.11 | 5.35 | 28.65 | 38.11 | 102.57 | 98.46 | 114.00 | -15.54 | Vertical |

Average value= Peak value+20 log(Duty cycle)

| Test mode: | GFSK | Test channel: | Lowest | Remark: | Average |
|---|---|---|---|---|---|
| Frequency (MHz) | Average Factor(dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 2410.11 | -38.71 | 65.96 | 94.00 | -28.04 | Horizontal |
| 2410.11 | -38.71 | 59.75 | 94.00 | -34.25 | Vertical |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Test channel: Highest

Peak value:

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 2470.83 | 5.40 | 28.93 | 38.12 | 107.25 | 103.46 | 114.00 | -10.54 | Horizontal |
| 2470.83 | 5.40 | 28.93 | 38.12 | 102.29 | 98.50 | 114.00 | -15.50 | Vertical |

Average value= Peak value+20 log(Duty cycle)

| Test mode: | GFSK | Test channel: | Lowest | Remark: | Average |
|---|---|---|---|---|---|
| Frequency (MHz) | Average Factor(dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 2470.83 | -38.71 | 64.75 | 94.00 | -29.25 | Horizontal |
| 2470.83 | -38.71 | 59.79 | 94.00 | -34.21 | Vertical |

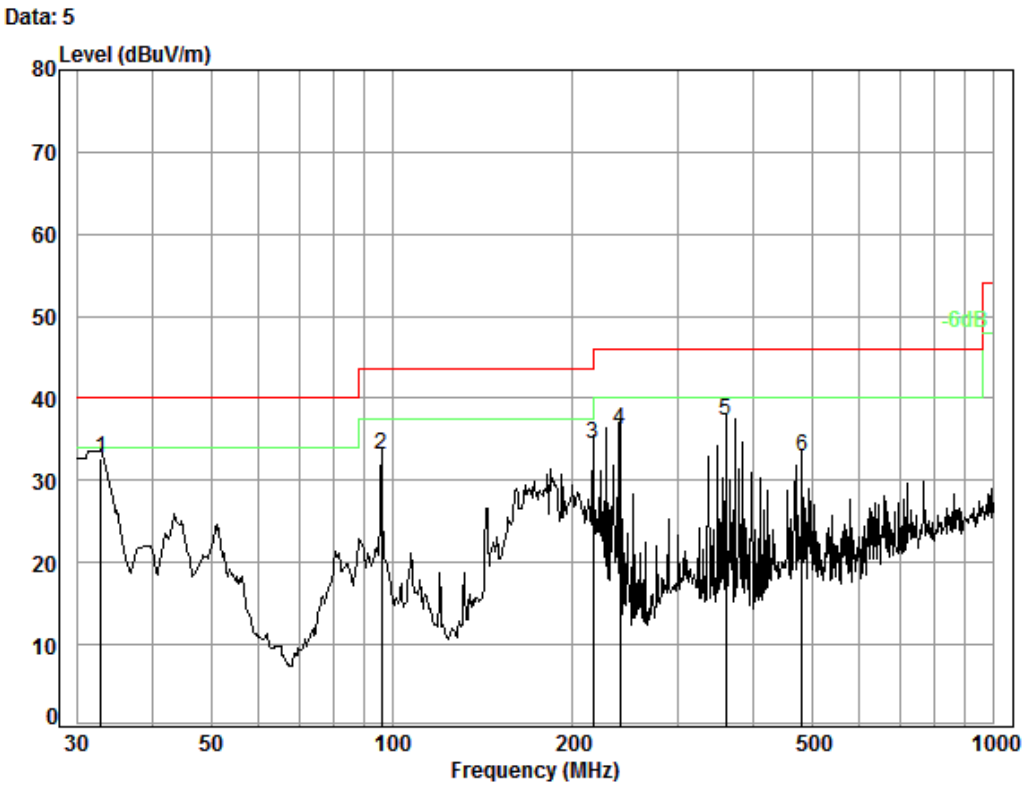
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

### 6.3.2.2 Spurious Emissions

| 30MHz~1GHz（QP） |
|---|

Adapter 1 Model: CS3B050055FUUSB

| Test mode: | Charge + Transmitting mode | Vertical |
|---|---|---|

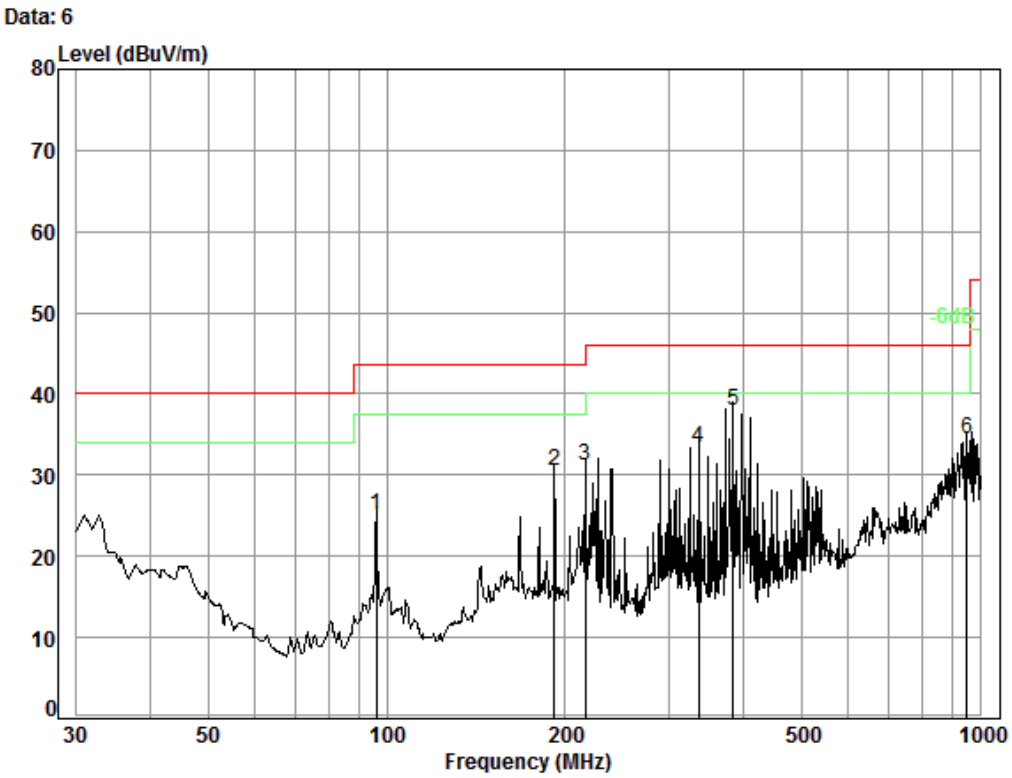



Condition: 3m 3142C 2015 VERTICAL
Job No. : 2039IT
Test mode: Charge+TX mode

| | 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 | 32.86 | 0.60 | 17.50 | 26.00 | 40.58 | 32.68 | 40.00 | -7.32 |
| 2 | 96.10 | 1.16 | 7.63 | 25.90 | 50.20 | 33.09 | 43.50 | -10.41 |
| 3 | 216.02 | 1.49 | 7.59 | 25.76 | 51.18 | 34.50 | 46.00 | -11.50 |
| 4 | 239.99 | 1.62 | 9.00 | 25.74 | 51.37 | 36.25 | 46.00 | -9.75 |
| 5 | 359.19 | 2.09 | 12.45 | 25.67 | 48.39 | 37.26 | 46.00 | -8.74 |
| 6 | 480.53 | 2.53 | 13.13 | 25.63 | 42.83 | 32.86 | 46.00 | -13.14 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Charge + Transmitting mode | Horizontal |
|---|---|---|



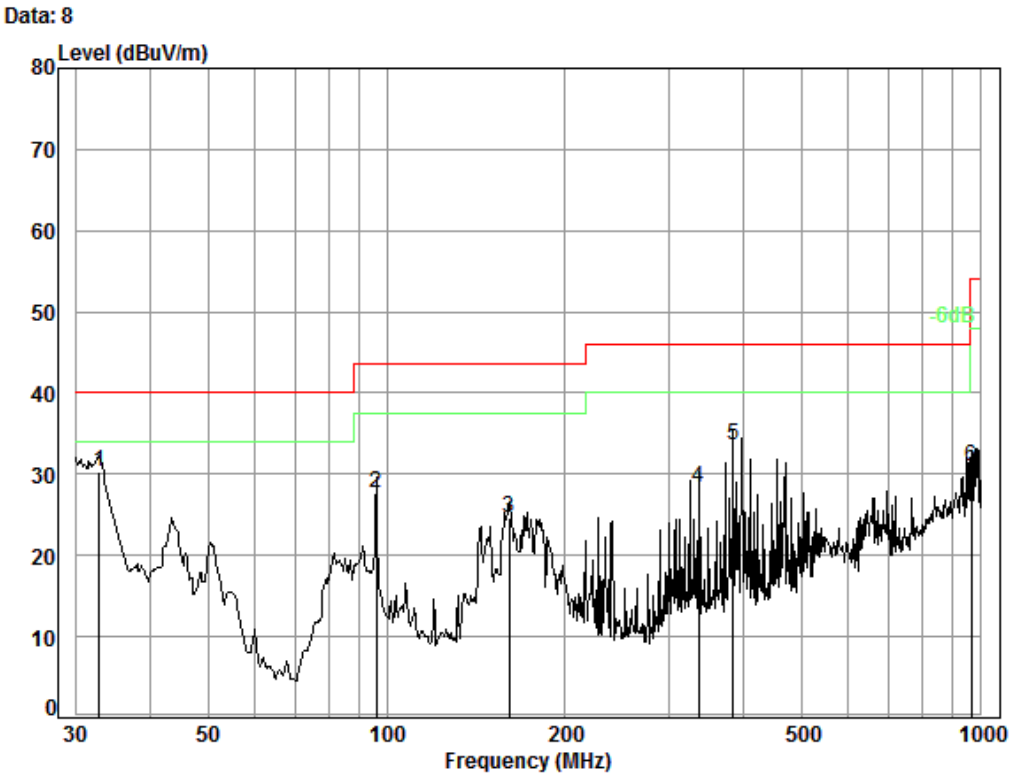

Condition: 3m 3142C 2015 HORIZONTAL
Job No. : 2039IT
Test mode: Charge+TX mode

| | 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 | 96.10 | 1.16 | 7.63 | 25.90 | 42.24 | 25.13 | 43.50 | -18.37 |
| 2 | 191.75 | 1.39 | 6.40 | 25.78 | 48.45 | 30.46 | 43.50 | -13.04 |
| 3 | 216.02 | 1.49 | 7.59 | 25.76 | 47.78 | 31.10 | 46.00 | -14.90 |
| 4 | 336.04 | 2.02 | 11.60 | 25.68 | 45.46 | 33.40 | 46.00 | -12.60 |
| 5 | 383.93 | 2.16 | 12.92 | 25.66 | 48.50 | 37.92 | 46.00 | -8.08 |
| 6 | 948.76 | 3.65 | 22.33 | 24.73 | 33.16 | 34.41 | 46.00 | -11.59 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

Adapter 2 Model: BLJ06W050055U1-U

| Test mode: | Charge +Transmitting | Vertical |
|---|---|---|

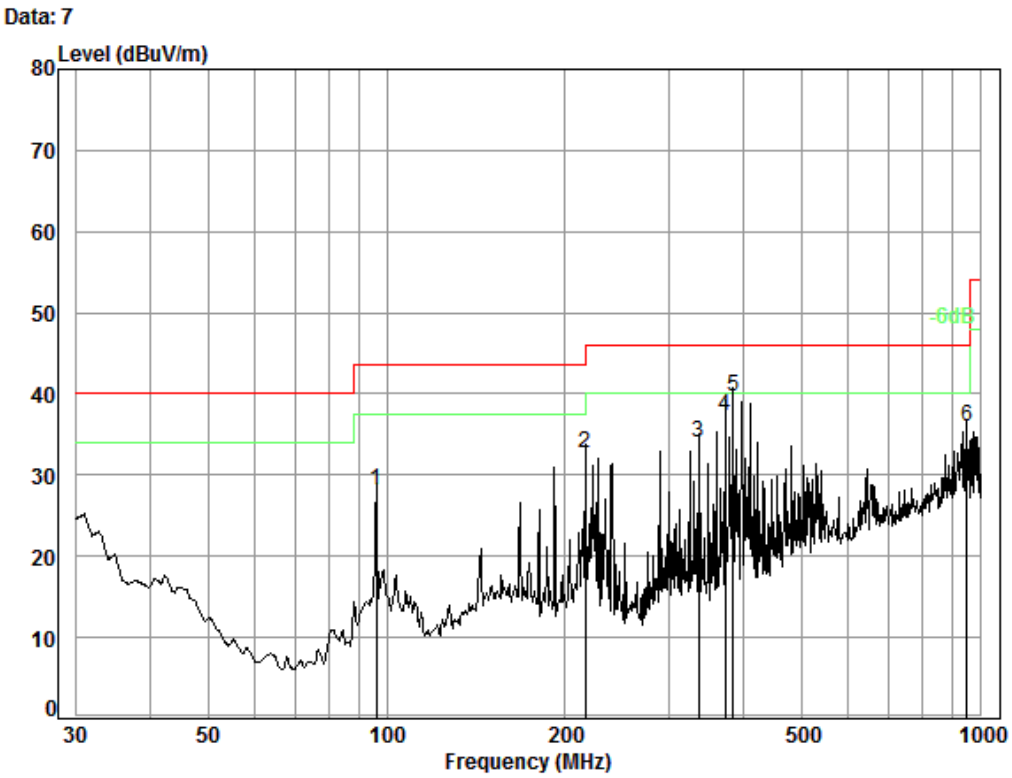



Condition: 3m 3142C 2015 VERTICAL
Job No. : 2039IT
Test mode: Charge+TX mode

| | 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 | 32.86 | 0.60 | 17.50 | 26.00 | 38.20 | 30.30 | 40.00 | -9.70 |
| 2 | 96.10 | 1.16 | 7.63 | 25.90 | 44.74 | 27.63 | 43.50 | -15.87 |
| 3 | 160.91 | 1.34 | 10.23 | 25.81 | 38.91 | 24.67 | 43.50 | -18.83 |
| 4 | 336.04 | 2.02 | 11.60 | 25.68 | 40.34 | 28.28 | 46.00 | -17.72 |
| 5 | 383.93 | 2.16 | 12.92 | 25.66 | 44.17 | 33.59 | 46.00 | -12.41 |
| 6 | 965.54 | 3.67 | 22.11 | 24.62 | 29.73 | 30.89 | 54.00 | -23.11 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Charge +Transmitting | Horizontal |
|---|---|---|




Condition: 3m 3142C 2015 HORIZONTAL
Job No. : 2039IT
Test mode: Charge+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 | 96.10 | 1.16 | 7.63 | 25.90 | 45.16 | 28.05 | 43.50 | -15.45 |
| 2 | 216.02 | 1.49 | 7.59 | 25.76 | 49.42 | 32.74 | 46.00 | -13.26 |
| 3 | 336.04 | 2.02 | 11.60 | 25.68 | 46.09 | 34.03 | 46.00 | -11.97 |
| 4 | 372.00 | 2.12 | 12.52 | 25.67 | 48.25 | 37.22 | 46.00 | -8.78 |
| 5 | 383.93 | 2.16 | 12.92 | 25.66 | 50.30 | 39.72 | 46.00 | -6.28 |
| 6 | 948.76 | 3.65 | 22.33 | 24.73 | 34.65 | 35.90 | 46.00 | -10.10 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Above 1GHz | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Test mode: | Transmitting | Test channel: | Lowest | Remark: | Peak | | | |
| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 3527.774 | 31.99 | 7.64 | 38.38 | 45.52 | 46.77 | 74 | -27.23 | Vertical |
| 4821.750 | 34.12 | 8.89 | 38.75 | 49.56 | 53.82 | 74 | -20.18 | Vertical |
| 6016.949 | 34.71 | 10.54 | 38.94 | 45.56 | 51.87 | 74 | -22.13 | Vertical |
| 7232.625 | 35.58 | 10.69 | 37.63 | 41.41 | 50.05 | 74 | -23.95 | Vertical |
| 9643.500 | 37.10 | 12.52 | 36.30 | 36.81 | 50.13 | 74 | -23.87 | Vertical |
| 12603.270 | 37.90 | 14.44 | 37.75 | 37.22 | 51.81 | 74 | -22.19 | Vertical |
| 3206.470 | 31.80 | 7.56 | 38.24 | 49.95 | 51.07 | 74 | -22.93 | Horizontal |
| 4821.750 | 34.12 | 8.89 | 38.75 | 49.00 | 53.26 | 74 | -20.74 | Horizontal |
| 5982.226 | 34.66 | 10.51 | 38.96 | 45.62 | 51.83 | 74 | -22.17 | Horizontal |
| 7232.625 | 35.58 | 10.69 | 37.63 | 41.39 | 50.03 | 74 | -23.97 | Horizontal |
| 9643.500 | 37.10 | 12.52 | 36.30 | 35.62 | 48.94 | 74 | -25.06 | Horizontal |
| 12603.270 | 37.90 | 14.44 | 37.75 | 37.34 | 51.93 | 74 | -22.07 | Horizontal |

| Test mode: | Transmitting | Test channel: | Middle | Remark: | Peak | | | |
|---|---|---|---|---|---|---|---|---|
| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 3253.202 | 31.80 | 7.57 | 38.26 | 46.94 | 48.05 | 74 | -25.95 | Vertical |
| 4882.500 | 34.18 | 8.98 | 38.77 | 48.88 | 53.27 | 74 | -20.73 | Vertical |
| 6016.949 | 34.71 | 10.54 | 38.94 | 46.55 | 52.86 | 74 | -21.14 | Vertical |
| 7323.750 | 35.54 | 10.72 | 37.59 | 42.64 | 51.31 | 74 | -22.69 | Vertical |
| 9765.000 | 37.10 | 12.58 | 36.14 | 37.89 | 51.43 | 74 | -22.57 | Vertical |
| 12494.320 | 37.79 | 14.15 | 37.65 | 38.34 | 52.63 | 74 | -21.37 | Vertical |
| 3641.878 | 32.27 | 7.68 | 38.42 | 44.93 | 46.46 | 74 | -27.54 | Horizontal |
| 4882.500 | 34.18 | 8.98 | 38.77 | 49.12 | 53.51 | 74 | -20.49 | Horizontal |
| 5964.939 | 34.61 | 10.46 | 38.95 | 45.95 | 52.07 | 74 | -21.93 | Horizontal |
| 7323.750 | 35.54 | 10.72 | 37.59 | 41.25 | 49.92 | 74 | -24.08 | Horizontal |
| 9765.000 | 37.10 | 12.58 | 36.14 | 37.47 | 51.01 | 74 | -22.99 | Horizontal |
| 12603.270 | 37.90 | 14.44 | 37.75 | 38.21 | 52.80 | 74 | -21.20 | Horizontal |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Transmitting | Test channel: | Highest | Remark: | Peak |
|---|---|---|---|---|---|

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
|---|---|---|---|---|---|---|---|---|
| 3497.281 | 31.95 | 7.63 | 38.36 | 45.81 | 47.03 | 74 | -26.97 | Vertical |
| 4943.250 | 34.24 | 9.06 | 38.78 | 47.45 | 51.97 | 74 | -22.03 | Vertical |
| 6016.949 | 34.71 | 10.54 | 38.94 | 46.57 | 52.88 | 74 | -21.12 | Vertical |
| 7414.875 | 35.54 | 10.76 | 37.55 | 40.75 | 49.50 | 74 | -24.50 | Vertical |
| 9886.500 | 37.19 | 12.65 | 35.98 | 37.96 | 51.82 | 74 | -22.18 | Vertical |
| 12530.530 | 37.83 | 14.24 | 37.68 | 38.39 | 52.78 | 74 | -21.22 | Vertical |
| 3291.078 | 31.80 | 7.58 | 38.28 | 51.39 | 52.49 | 74 | -21.51 | Horizontal |
| 4943.250 | 34.24 | 9.06 | 38.78 | 47.43 | 51.95 | 74 | -22.05 | Horizontal |
| 6034.386 | 34.72 | 10.52 | 38.91 | 45.73 | 52.06 | 74 | -21.94 | Horizontal |
| 7414.875 | 35.54 | 10.76 | 37.55 | 40.92 | 49.67 | 74 | -24.33 | Horizontal |
| 9886.500 | 37.19 | 12.65 | 35.98 | 37.82 | 51.68 | 74 | -22.32 | Horizontal |
| 12566.850 | 37.87 | 14.34 | 37.72 | 38.46 | 52.95 | 74 | -21.05 | Horizontal |

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

2) Scan from 9kHz to 25GHz,The disturbance above 13GHz and 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. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported .

3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

## 6.4 Restricted bands around fundamental frequency

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.209 and 15.205 |
| Test Method: | ANSI C63.10: 2013 |
| Test Site: | Measurement Distance: 3m (Semi-Anechoic Chamber) |
| Limit(band edge): | Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation. |

| Frequency | Limit (dBuV/m @3m) | Remark |
|---|---|---|
| 30MHz-88MHz | 40.0 | Quasi-peak Value |
| 88MHz-216MHz | 43.5 | Quasi-peak Value |
| 216MHz-960MHz | 46.0 | Quasi-peak Value |
| 960MHz-1GHz | 54.0 | Quasi-peak Value |
| Above 1GHz | 54.0 | Average Value |
| | 74.0 | Peak Value |

Test Setup:

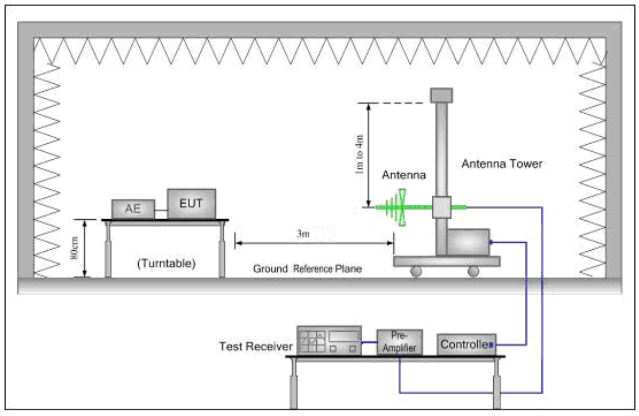



Figure 1. 30MHz to 1GHz

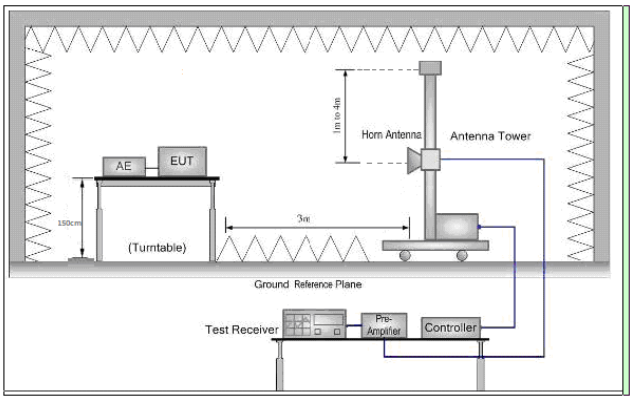


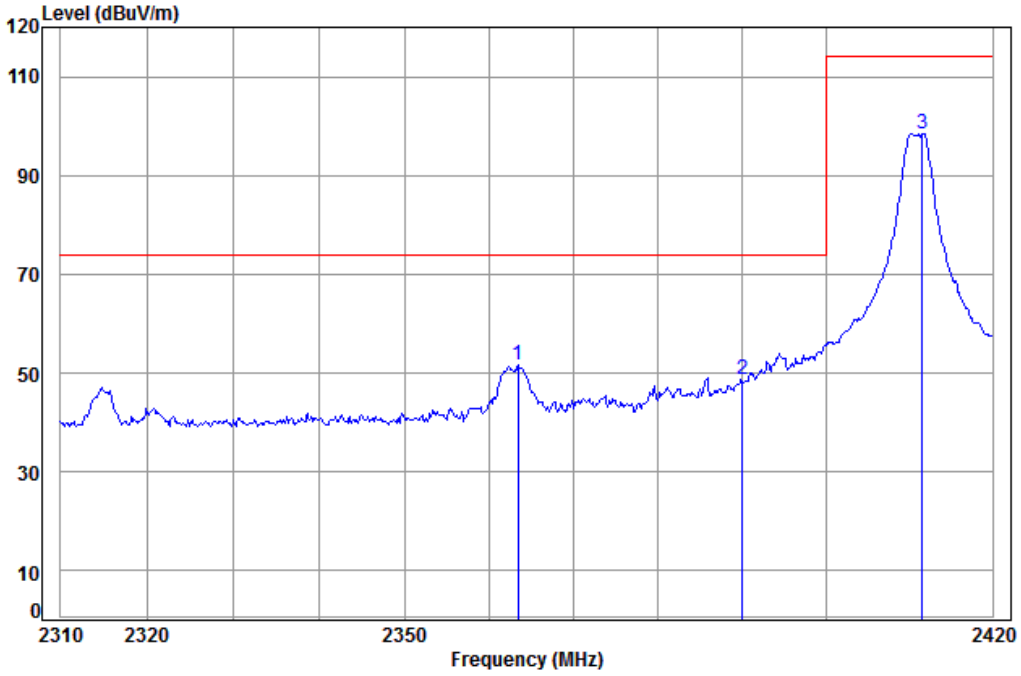

Figure 2. Above 1 GHz

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| | |
|---|---|
| Test Procedure: | a. For bleow 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.<br>b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation<br>c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.<br>d. 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.<br>e. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.<br>f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.<br>g. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel<br>h. Test the EUT in the lowest channel , the Highest channel<br>i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case.<br>j. Repeat above procedures until all frequencies measured was complete. |
| Instruments Used: | Refer to section 5.10 for details |
| Exploratory Test Mode: | Transmitting mode,Charge +Transmitting mode |
| Final Test Mode: | Pretest the EUT at Transmitting mode and Charge +Transmitting mode, found the Charge +Transmitting mode which it is worse case<br>Only the worst case is recorded in the report. |
| Test Results: | Pass |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Band edge test data (Radiated Emission) | | | | | | |
|---|---|---|---|---|---|---|
| Test mode: | Transmitting | Test channel: | Lowest | Remark: | Peak | Vertical |

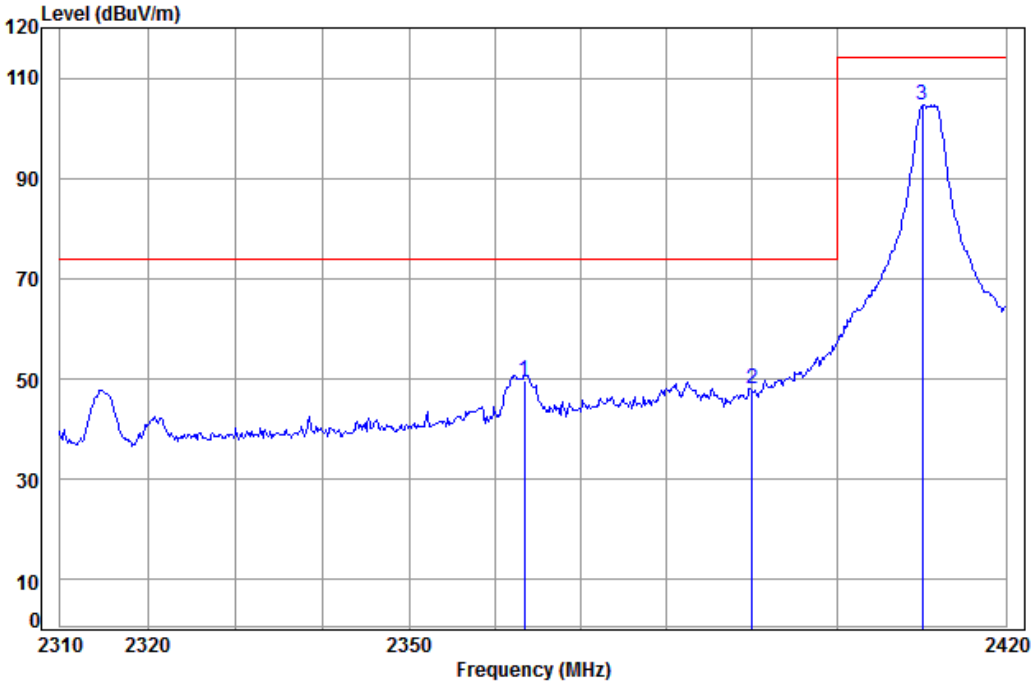



Condition: 3m Vertical
Job No: : 2039IT
Mode: : 2410.875 Band edge

| | 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 | 2363.37 | 5.32 | 28.49 | 38.11 | 55.89 | 51.59 | 74.00 | -22.41 |
| 2 pk | 2390.00 | 5.34 | 28.57 | 38.11 | 52.83 | 48.63 | 74.00 | -25.37 |
| 3 pp | 2411.57 | 5.35 | 28.65 | 38.11 | 102.57 | 98.46 | 114.00 | -15.54 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Transmitting | Test channel: | Lowest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|

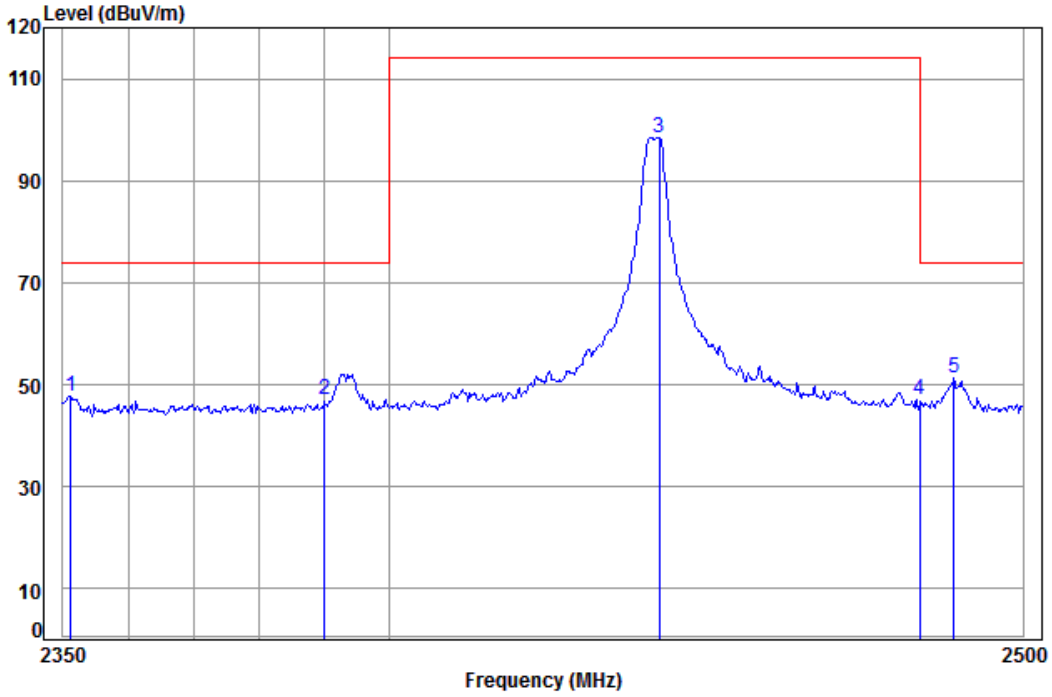



Condition: 3m Horizontal
Job No: : 2039IT
Mode: : 2410.875 Band edge

| | 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 | 2363.37 | 5.32 | 28.49 | 38.11 | 54.16 | 49.86 | 74.00 | -24.14 |
| 2 pk | 2390.00 | 5.34 | 28.57 | 38.11 | 52.28 | 48.08 | 74.00 | -25.92 |
| 3 pp | 2410.11 | 5.35 | 28.65 | 38.11 | 108.78 | 104.67 | 114.00 | -9.33 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Transmitting | Test channel: | Middle | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|

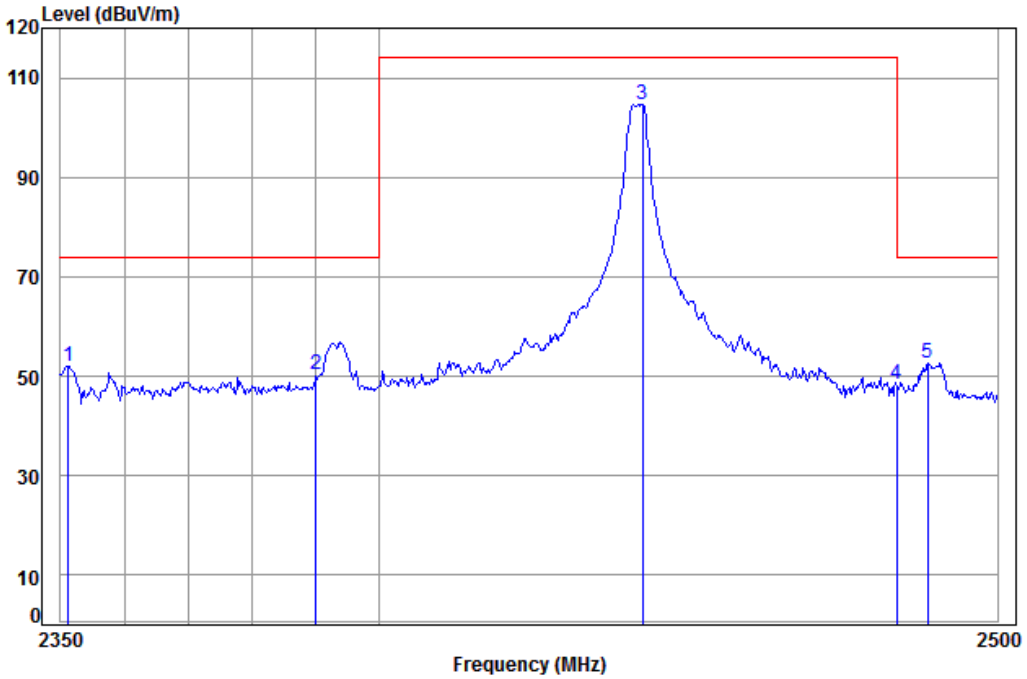



Condition: 3m Vertical
Job No: : 2039IT
Mode: : 2441.250 Band edge

| | 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 | 2351.16 | 5.31 | 28.46 | 38.11 | 52.17 | 47.83 | 74.00 | -26.17 |
| 2 | 2390.00 | 5.34 | 28.57 | 38.11 | 51.24 | 47.04 | 74.00 | -26.96 |
| 3 pp | 2442.06 | 5.38 | 28.80 | 38.11 | 102.41 | 98.48 | 114.00 | -15.52 |
| 4 pk | 2483.50 | 5.41 | 28.98 | 38.12 | 50.83 | 47.10 | 74.00 | -26.90 |
| 5 | 2488.89 | 5.41 | 29.01 | 38.12 | 54.89 | 51.19 | 74.00 | -22.81 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Transmitting | Test channel: | Middle | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|

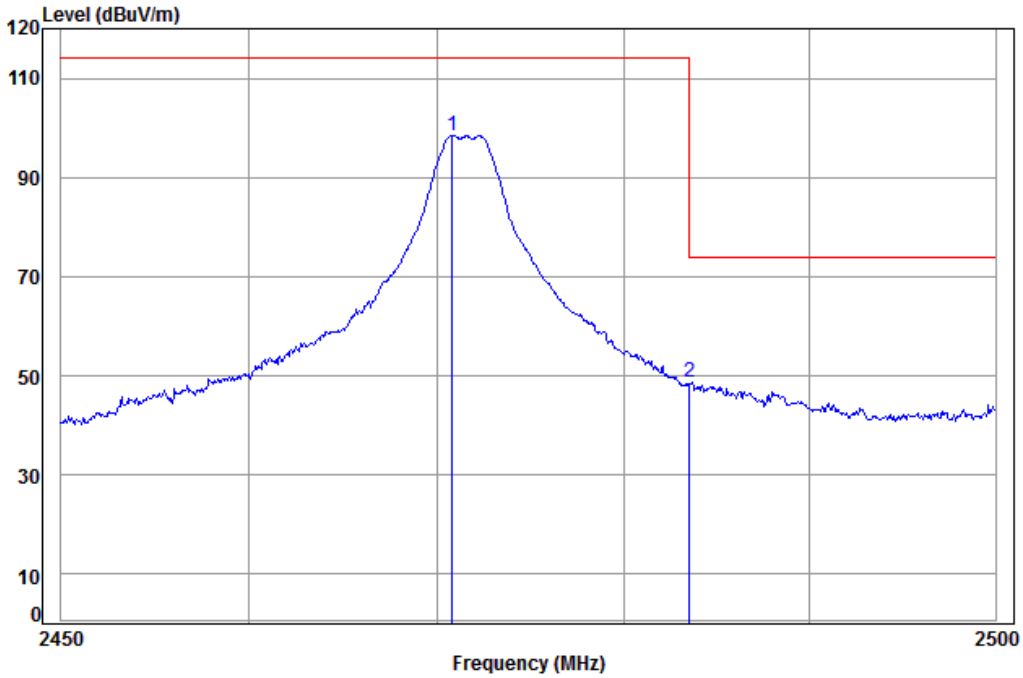



Condition: 3m Horizontal
Job No: : 2039IT
Mode: : 2441.250 Band edge

| | 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 | 2351.16 | 5.31 | 28.46 | 38.11 | 56.42 | 52.08 | 74.00 | -21.92 |
| 2 pk | 2390.00 | 5.34 | 28.57 | 38.11 | 54.55 | 50.35 | 74.00 | -23.65 |
| 3 pp | 2442.06 | 5.38 | 28.80 | 38.11 | 108.70 | 104.77 | 114.00 | -9.23 |
| 4 | 2483.50 | 5.41 | 28.98 | 38.12 | 52.20 | 48.47 | 74.00 | -25.53 |
| 5 | 2488.58 | 5.41 | 29.01 | 38.12 | 56.19 | 52.49 | 74.00 | -21.51 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Transmitting | Test channel: | Highest | Remark: | Peak | Vertical |
|---|---|---|---|---|---|---|

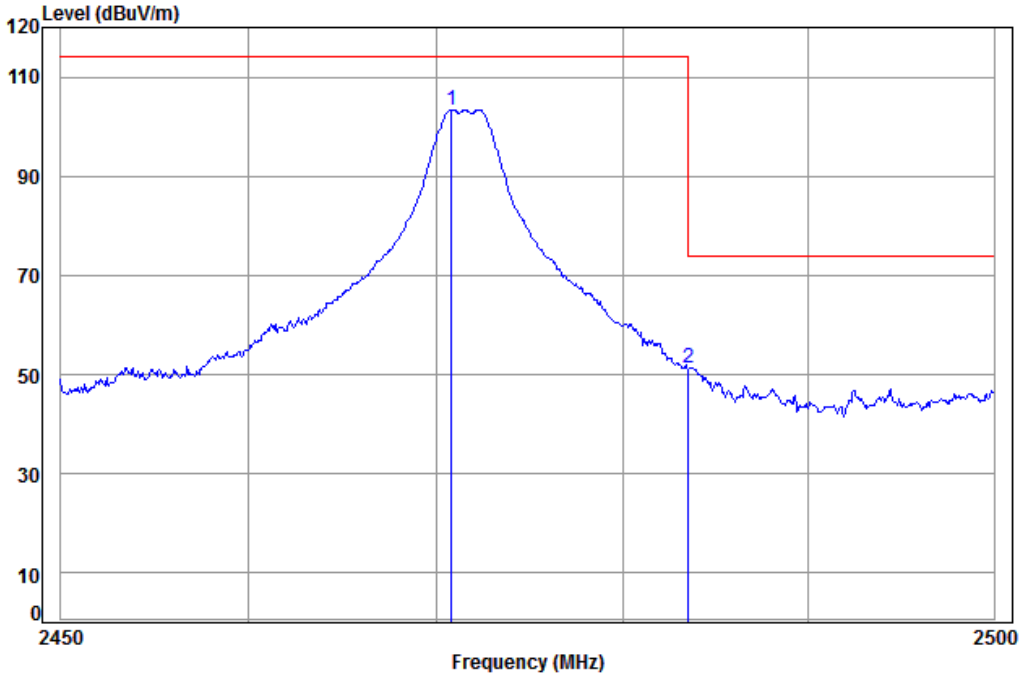



Condition: 3m Vertical
Job No: : 2039IT
Mode: : 2471.625 Band edge

| | 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 | 2470.83 | 5.40 | 28.93 | 38.12 | 102.29 | 98.50 | 114.00 | -15.50 |
| 2 pk | 2483.50 | 5.41 | 28.98 | 38.12 | 52.51 | 48.78 | 74.00 | -25.22 |

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test mode: | Transmitting | Test channel: | Highest | Remark: | Peak | Horizontal |
|---|---|---|---|---|---|---|




Condition: 3m Horizontal
Job No: : 2039IT
Mode: : 2471.625 Band edge

| | 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 | 2470.83 | 5.40 | 28.93 | 38.12 | 107.25 | 103.46 | 114.00 | -10.54 |
| 2 pk | 2483.50 | 5.41 | 28.98 | 38.12 | 55.22 | 51.49 | 74.00 | -22.51 |

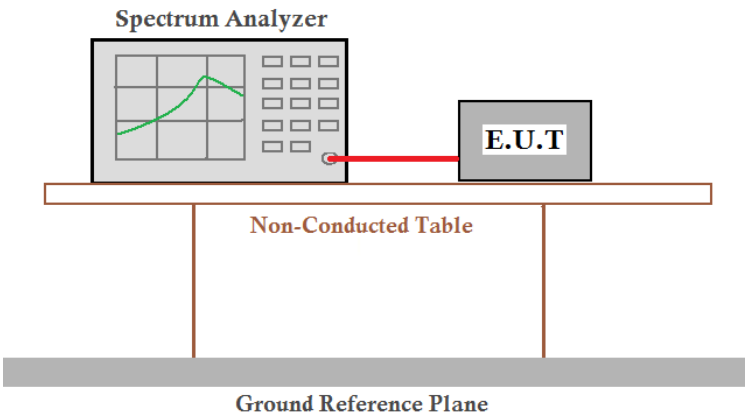
*Note:*
*The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:*

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

*As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.*

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

## 6.5 20dB Bandwidth

| | |
|---|---|
| Test Requirement: | 47 CFR Part 15C Section 15.215 |
| Test Method: | ANSI C63.10:2013 |
| Test Setup: |  |
| Instruments Used: | Refer to section 5.10 for details |
| Exploratory Test Mode: | Non-hopping transmitting mode with all kind of modulation and all kind of data type |
| Final Test Mode: | Through Pre-scan, find the DH3 of date type is the worse case of 8DPSK modulation type |
| Limit: | N/A |
| Test Results: | Pass |

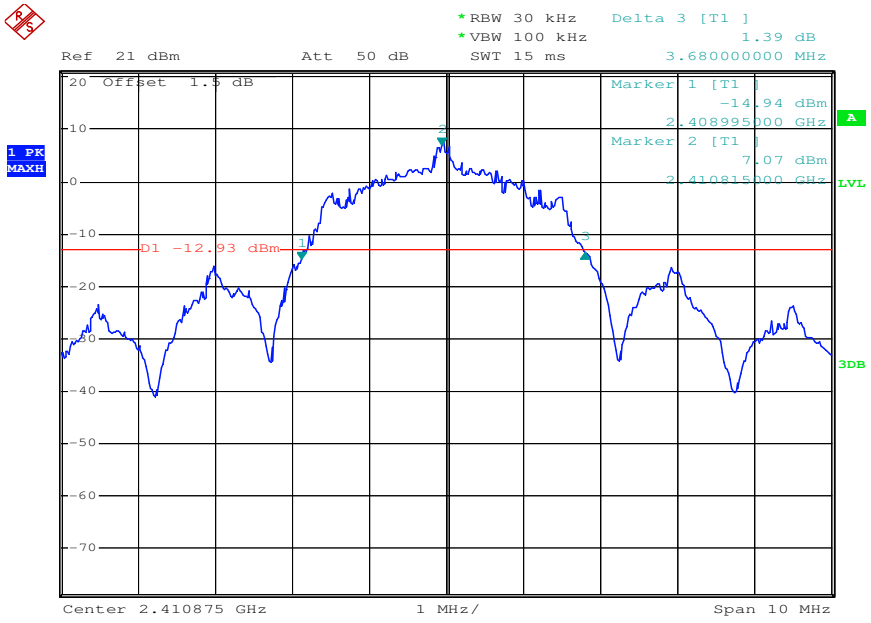
**Measurement Data**

| Test channel | 20dB bandwidth (MHz) | Results |
|---|---|---|
| Lowest | 3.68 | Pass |
| Middle | 3.86 | Pass |
| Highest | 3.78 | Pass |

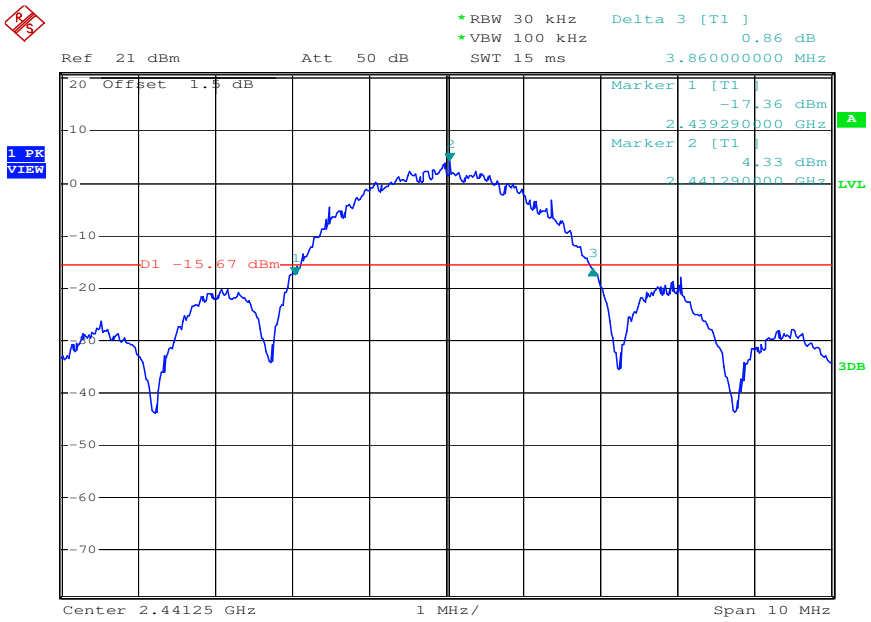
"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

**Test plot as follows:**

| Test channel: | Lowest |
|---|---|

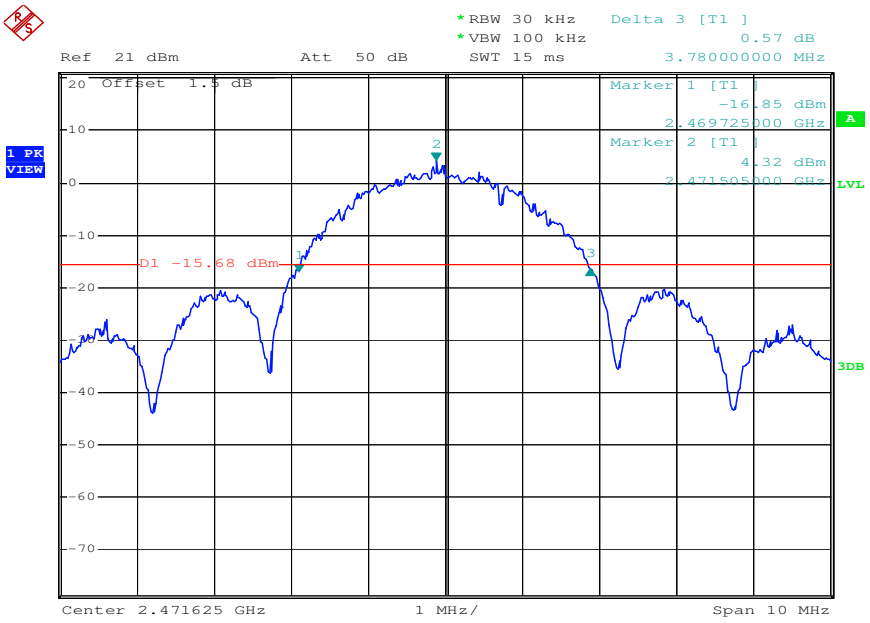



| Test channel: | Middle |
|---|---|




"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

| Test channel: | Highest |
|---|---|

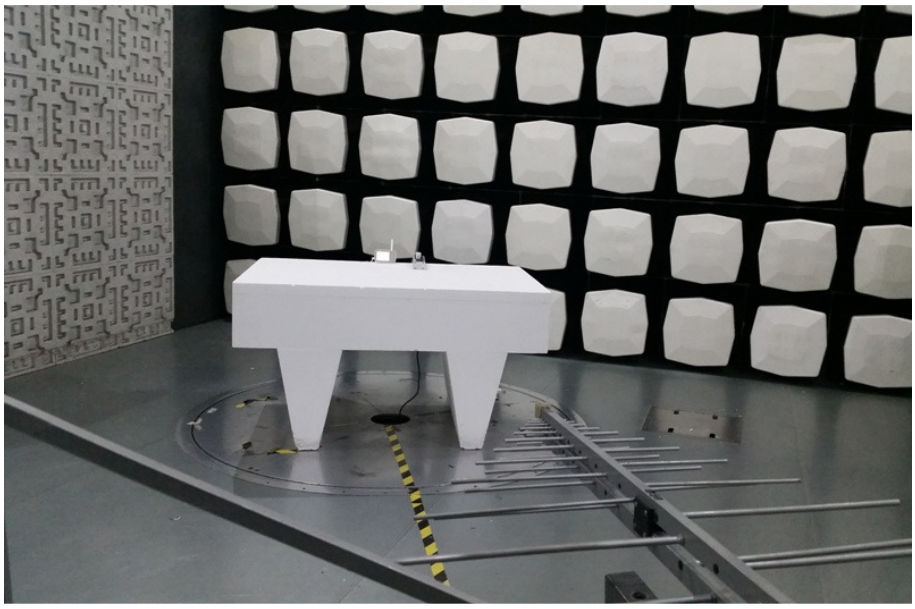


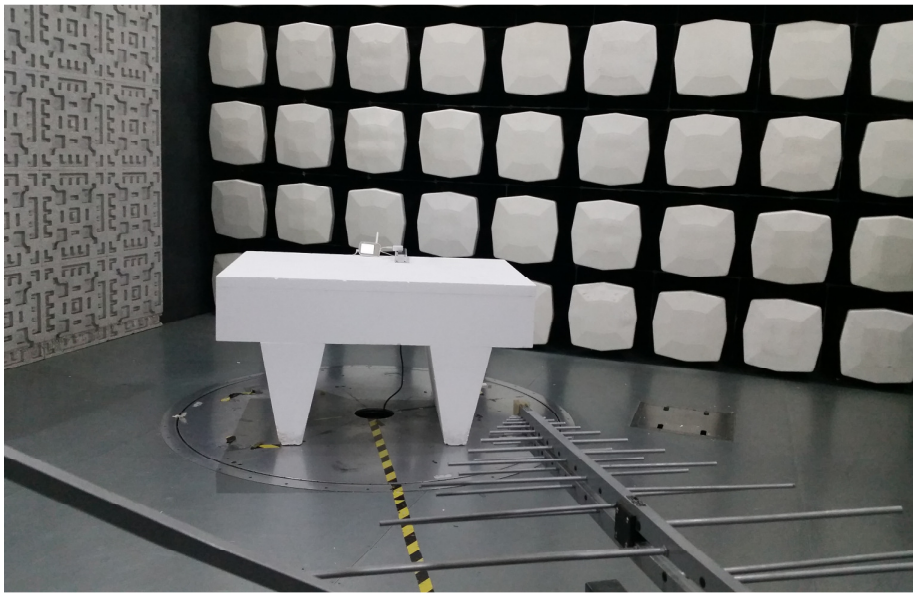

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

# 7 Photographs

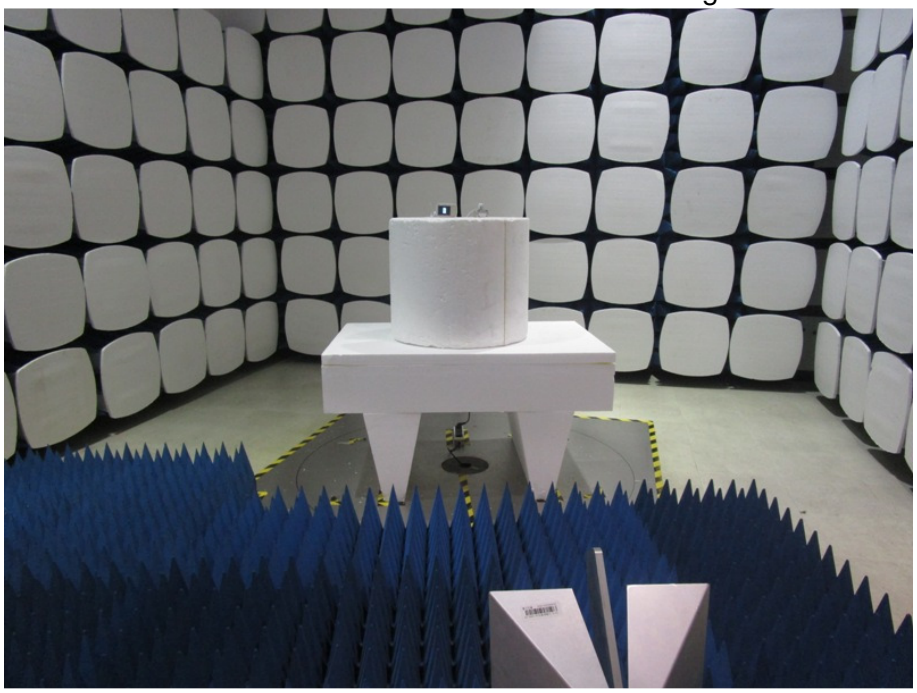
**Test model No.: DXR-8 (DXR-8PU)**

## 7.1 Radiated Emission Test Setup



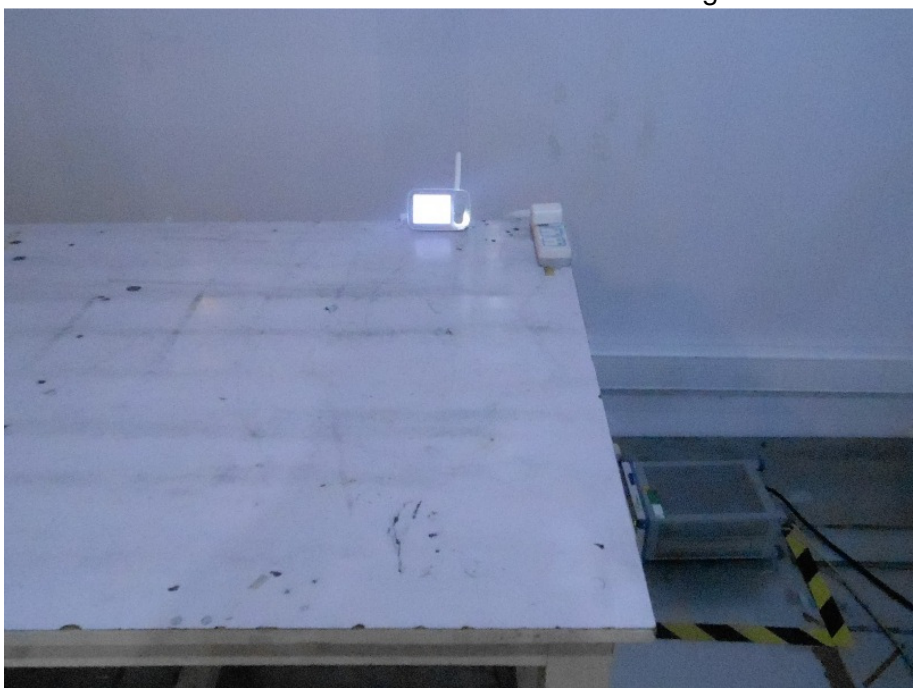


"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



## 7.2 Conducted Emission

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."



## 7.3 EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for HKES1511002039IT.

"This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."