| | | | | |
|---|---|---|---|---|
| **Prüfbericht-Nr.:** *Test report no.:* | **CN24LY2D 001** | **Auftrags-Nr.:** *Order no.*: | **170389116** | Seite 1 von **18** *Page 1 of 18* |
| **Kunden-Referenz-Nr.:** *Client reference no.:* | **N/A** | **Auftragsdatum:** *Order date:* | 2024-09-20 | |
| **Auftraggeber:** *Client:* | **ONWARD BRANDS LLC** 767 5TH AVE FL 37TH NEW YORK, NY 10153, USA | | | |
| **Prüfgegenstand:** *Test item:* | Dongle | | | |
| **Bezeichnung / Typ-Nr.:** *Identification / Type no.:* | OB1461C | | | |
| **Auftrags-Inhalt:** *Order content*: | Test Report | | | |
| **Prüfgrundlage:** *Test specification:* | FCC CFR Title 47, Part 15, Subpart C, Section 15.249<br>RSS-210 Issue 11 June 2024<br>RSS-Gen Issue 5 March 2019 | | | |
| **Wareneingangsdatum:** *Date of sample receipt:* | 2024-11-28 | Please refer to Photo Document | | |
| **Prüfmuster-Nr.:** *Test sample no:* | LP24080228C02-S001 | | | |
| **Prüfzeitraum:** *Testing period:* | 2024-11-03 - 2024-12-12 | | | |
| **Ort der Prüfung:** *Place of testing:* | Refer to section 2.1 | | | |
| **Prüflaboratorium:** *Testing laboratory:* | TÜV Rheinland (Guangdong) Co., Ltd. | | | |
| **Prüfergebnis*:** *Test result*:* | Pass | | | |

| | | | |
|---|---|---|---|
| **geprüft von:** *tested by:* | Amy Wang<br>*Signed by: Amy Wang* | **genehmigt von:** *authorized by:* | Storm Shu<br>*Signed by: Storm Shu* |
| **Datum:** *Date:* 2025-01-21 | | **Ausstellungsdatum:** *Issue date:* 2025-01-21 | |
| **Stellung** / *Position:* | Sachverständige(r)/Expert | **Stellung** / *Position:* | Sachverständige(r)/Expert |

**Sonstiges** / *Other:*

FCC ID: 2BCOY-OB1461C
IC: 32736-OB1461C
HVIN: OB1461C

**Zustand des Prüfgegenstandes bei Anlieferung:** Prüfmuster vollständig und unbeschädigt
*Condition of the test item at delivery:* *Test item complete and undamaged*

| | | | | | |
|---|---|---|---|---|---|
| * Legende: | 1 = sehr gut | 2 = gut | 3 = befriedigend | 4 = ausreichend | 5 = mangelhaft |
| | P(ass) = entspricht o.g. Prüfgrundlage(n) | | F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | N/A = nicht anwendbar | N/T = nicht getestet |
| * *Legend:* | *1 = very good* | *2 = good* | *3 = satisfactory* | *4 = sufficient* | *5 = poor* |
| | *P(ass) = passed a.m. test specification(s)* | | *F(ail) = failed a.m. test specification(s)* | *N/A = not applicable* | *N/T = not tested* |

## *Anmerkungen*
*Remarks*

| | |
|---|---|
| **1** | The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.<br>Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.<br><br>*Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.*<br>*Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden.* |
| **2** | As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged.<br><br>*Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben.* |
| **3** | Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report. Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.<br><br>*Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.* |
| **4** | The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.<br><br>*Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.* |

# *Test Summary*

**5.1.1 ANTENNA REQUIREMENT**
*RESULT: Pass*

**5.1.2 FIELD STRENGTH OF FUNDAMENTAL AND HARMONICS**
*RESULT: Pass*

**5.1.3 20DB AND 99% BANDWIDTH**
*RESULT: Pass*

**5.1.4 BAND EDGE**
*RESULT: Pass*

**5.1.5 CONDUCTED EMISSION ON AC MAINS**
*RESULT: Pass*

# Table of Contents

# 1 General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results

# 2 Test Sites

## 2.1 Test Facilities

**Dongguan Lepont Testing Service Co., Ltd.**
Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China

FCC Accreditation Designation No.: CN1351
ISED wireless device testing laboratory: 20133

The all tests at this test site have been conducted under the supervision of a TÜV Rheinland engineer.

## 2.2 List of Test and Measurement Instruments

**Table 1: List of Test and Measurement Equipment**

| **Radio Spectrum Testing** | | | | |
|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| Spectrum analyzer | Agilent | N9020A | MY49100060 | Jan. 25, 2025 |
| Vector source | Agilent | N5182A | MY47420382 | Jan. 25, 2025 |
| Analog signal source | Agilent | N5171B | MY51350292 | Jan. 25, 2025 |
| All instrument | Rohde & Schwarz | CMW 500 | 1201.002K50 | Jan. 25, 2025 |
| High and low temperature chamber | Math-mart | MT-1202-40 | LEP-E041 | Jan. 25, 2025 |
| control unit | Tonscend | JS0806-2 | 10165 | Jan. 25, 2025 |
| Testing software | Tonscend | JSTS1120-3 | Ver 2.6.77.0518 | Jan. 25, 2025 |
| **Unwanted Emission Testing** | | | | |
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| EMI Test Receiver | Rohde & Schwarz | ESR 3 | 101849 | Jan. 30, 2025 |
| TRILOG Broadband Antenna | Schwarzbeck | VULB 9163 | 743 | Nov. 19, 2025 |
| Spectrum analyzer | Agilent | N9020A | MY49100060 | Nov. 19, 2025 |
| Horn antenna | Schwarzbeck | BBHA 9120D | 01875 | Jan. 23, 2025 |
| Preamplifier | Schwarzbeck | BBN 9718B | 00010 | Nov. 16, 2025 |
| Signal Amplifier | HP | 8447D | 1726A01222 | Jan. 23, 2025 |
| 6dB Attenuator | RswTech | 5W 6dB | LEP-E084 | Jan. 23, 2025 |
| 966 Chamber 1 | MR | MR-L02 | LEP-E051 | Nov. 16, 2025 |
| Test software | EZ-EMC | Fala | EMEC-3A1 | N/A |
| **Conducted Emission** | | | | |
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal. Until** |
| EMI Test Receiver | Rohde & Schwarz | ESHS30 | 8290501003 | Jan. 30, 2025 |
| Artificial Mains Network | Baluelec | LSN016 | BL041122050121 | Jan. 23, 2025 |
| Shielded Room 1 | MR | MR-L05 | LEP-E053 | Nov. 16, 2025 |
| Test software | EZ-EMC | Fala | LEPONT-03A2 | N/A |

## 2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

## 2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally, all equipment is verified for proper performance on a regular basics using in house standards or comparisons.

## 2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

**Table 2: Measurement Uncertainty**

| Parameter | Uncertainty (k=2) |
|---|---|
| RF output power, conducted | ± 1.06dB |
| Occupied Channel Bandwidth | ± 1.42 |
| RF power density, conducted | ± 1.06dB |
| Unwanted Emissions, conducted | ± 2.51dB |
| All emissions, radiated | ± 3.70dB |
| Conducted Emission 150kHz to 30MHz | ± 2.44dB |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Guangdong) Co., Ltd. file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

Dongguan Lepont Testing Service Co., Ltd.Test facility located at Room 102, Building 11, No.7, Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

# 3 General Product Information

## 3.1 Product Function and Intended Use

The EUT is a USB dongle, which supports 2.4GHz wireless technologies.

For details refer to the User Manual, Technical Description and Circuit Diagram.

## 3.2 Ratings and System Details

**Table 3: Technical Specification of EUT**

| **General Information of EUT** | **Value** |
|---|---|
| Kind of Equipment: | Dongle |
| Type Designation: | OB1461C |
| Trademark: | N/A |
| FCC ID: | 2BCOY-OB1461C |
| IC: | 32736-OB1461C |
| HVIN: | OB1461C |
| Operating Voltage: | Supplied by PC USB Port (PC input voltage 120Vac, 60Hz) |
| Test Voltage: | DC 5V, supplied by PC USB Port |
| Operating Temperature Range: | -20 °C ~ +40 °C |
| **Technical Specification of 2.4GHz** | |
| Frequency Range: | 2403 MHz to 2480 MHz |
| Type of Modulation: | GFSK |
| Channel Number: | 24 channels |
| Channel Separation: | See table 4 |
| Antenna Type: | PCB Layout Antenna |
| Antenna Gain: | 3.01dBi |

Table 4: RF Channel and Frequency of General 2.4GHz Wireless

| CHANNEL | FREQ (MHZ) | CHANNEL | FREQ (MHz) | CHANNEL | FREQ (MHz) | CHANNEL | FREQ. (MHz) |
|---|---|---|---|---|---|---|---|
| **1** | **2403** | 2 | 2405 | 3 | 2417 | 4 | 2419 |
| 5 | 2421 | 6 | 2423 | 7 | 2425 | 8 | 2427 |
| 9 | 2429 | 10 | 2431 | **11** | **2444** | 12 | 2446 |
| 13 | 2448 | 14 | 2450 | 15 | 2452 | 16 | 2454 |
| 17 | 2456 | 18 | 2468 | 19 | 2470 | 20 | 2472 |
| 21 | 2474 | 22 | 2476 | 23 | 2478 | **24** | **2480** |

## 3.3 Independent Operation Modes

The basic operation modes are:

A. 2.4GHz transmitting mode
    1. Low channel
    2. Middle channel
    3. High channel
B. On, normal operation
C. Off

## 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

## 3.5 Submitted Documents

- Application Form
- User Manual
- FCC/IC Label and Location Info

# 4 Test Set-up and Operation Modes

## 4.1 Principle of Configuration Selection

**Radio Spectrum:** The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

## 4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

**Table 5: Test environments**

| Environment Parameter | Values During Tests | | |
|---|---|---|---|
| | Temperature | Voltage | Relative Humidity |
| NTNV | 25°C±2°C | 5.0Vdc | Ambient |

**Table 6: Test channel and frequency of 2.4GHz**

| Mode | Test Channels (MHz) | Remark |
|---|---|---|
| Transmitting | L/M/H: 2403MHz, 2444MHz, 2480MHz | -- |

## 4.3 Special Accessories and Auxiliary Equipment

**Table 7: Auxiliary Equipment Used during Test**

| Description | Manufacturer | Model | S/N | Rating |
|---|---|---|---|---|
| Laptop | Lenovo | Xiaoxin Pro IA5HR | PF490VB0 | N/A |

## 4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

## 4.5 Test Setup Diagram

**Diagram of Measurement Configuration for Radiation Test (Below 1GHz)**

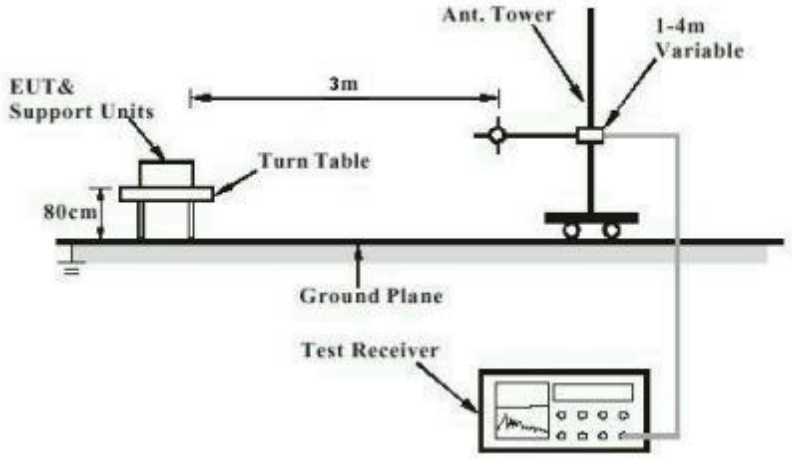



**Diagram of Measurement Configuration for Radiation Test (Above 1GHz)**

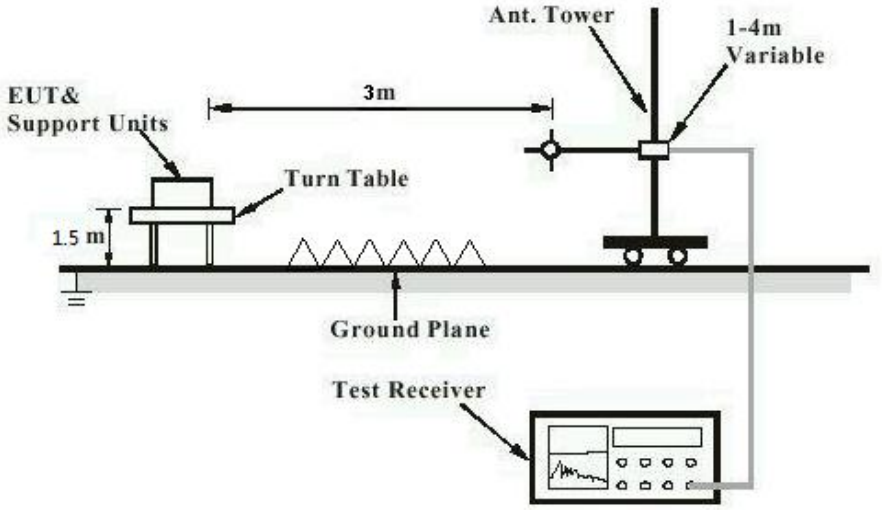


**Diagram of Measurement Configuration for Mains Conduction Measurement**

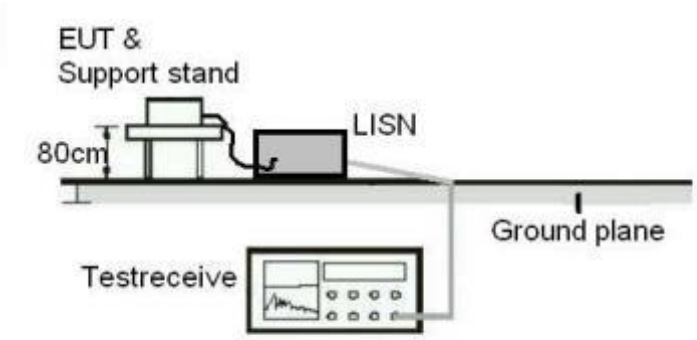
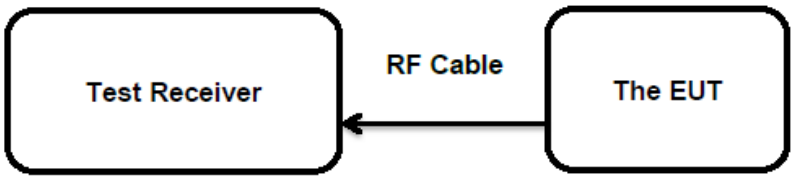



**Diagram of Measurement Configuration for Conducted Transmitter Measurement**



# 5 Test Results

## 5.1 Transmitter Requirement & Test Suites

### 5.1.1 Antenna Requirement

**RESULT:** **Pass**

**Test Specification**

Test standard : FCC Part 15.203
RSS-Gen Section 6.8

According to the manufacturer declared, the EUT has a PCB antenna, the gain of antenna is 3.01 dBi, which that permanent attachment and no consideration of replacement.

Therefore, the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

## 5.1.2 Field strength of fundamental and harmonics

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.249(a) (d) (e)<br>RSS-210 Section B.10 |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | FCC Part 15.249(a) (d) (e) & 15.209(a)<br>RSS-210 Section B.10 (a) & (b)<br>RSS-Gen Section 8.9 |
| Kind of test site | : | 3m Semi-anechoic Chamber |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2024-12-11 |
| Input voltage | : | Supplied by PC USB Port (PC input voltage 120Vac, 60Hz) |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | Refer to test result |
| Relative humidity | : | Refer to test result |
| Atmospheric pressure | : | 101 kPa |

Note: Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst-case spurious emissions configuration of each mode was reported.

For the measurement records, refer to the appendix B.

## 5.1.3 20dB and 99% Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | RSS-Gen Section 6.7 |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | Within assigned band |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2024-12-04 |
| Input voltage | : | Supplied by PC USB Port (PC input voltage 120Vac, 60Hz) |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.2 ℃ |
| Relative humidity | : | 53 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix B.

## 5.1.4 Band Edge

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.249(a) (d) (e) & 15.209 & 15.205<br>RSS-210 Section B.10 (a) & (b)<br>RSS-Gen Section 8.9 & 8.10 |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | FCC Part 15.249(a) (d) (e) & 15.209 & 15.205<br>RSS-Gen Table 5 & 7 |
| Kind of test site | : | 3m Semi-anechoic Chamber |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2024-12-11 |
| Input voltage | : | Supplied by PC USB Port (PC input voltage 120Vac, 60Hz) |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | Refer to test result |
| Relative humidity | : | Refer to test result |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix B.

## 5.1.5 Conducted Emission on AC Mains

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.207(a)<br>RSS-Gen Section 8.8 |
| Basic standard | : | ANSI C63.10: 2013 |
| Frequency range | : | 0.15 – 30MHz |
| Limits | : | FCC Part 15.207(a)<br>RSS-Gen Table 4 |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2024-12-03 |
| Input voltage | : | Supplied by PC USB Port (PC input voltage 120Vac, 60Hz) |
| Operation mode | : | B |
| Earthing | : | Not connected |
| Ambient temperature | : | 23.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix B.

# 6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

# 7 List of Tables

# Appendix B: Test Results of General 2.4GHz

## Appendix B.1: Fundamental

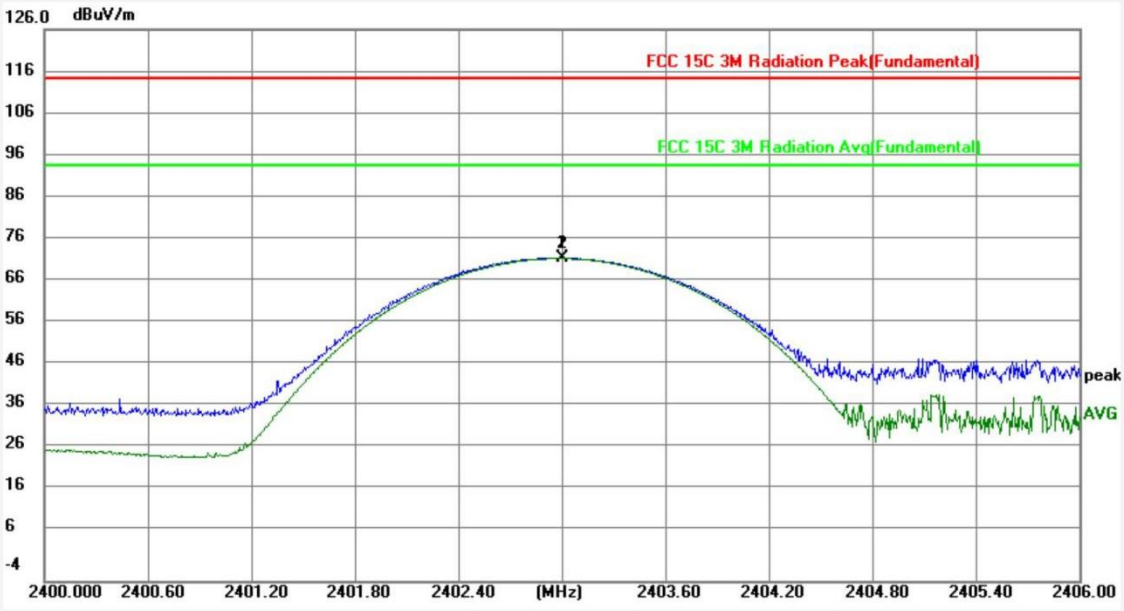
**Dongguan Lepont Testing Service Co., Ltd.**
Room 102, Building 11, No.7 Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China
Tel.: +86 769 8308 6888 Http://www.lepont.com.cn

### Radiation Emission

Site: 966 Chamber 1

2024/12/11

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 21.1 (C) / 49 %RH/ 1014 |
| Test Standard: | FCC 15C 3M Radiation Peak(Fundamental) | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Horizontal** |
| Test Mode: | TX | | |
| Remark 1: | 2403MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2403.000 | -4.78 | 76.99 | 72.21 | 114.00 | -41.79 | peak | | |
| 2 | 2403.000 | -4.78 | 76.89 | 72.11 | 94.00 | -21.89 | AVG | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C-Fundamental\Data :#2

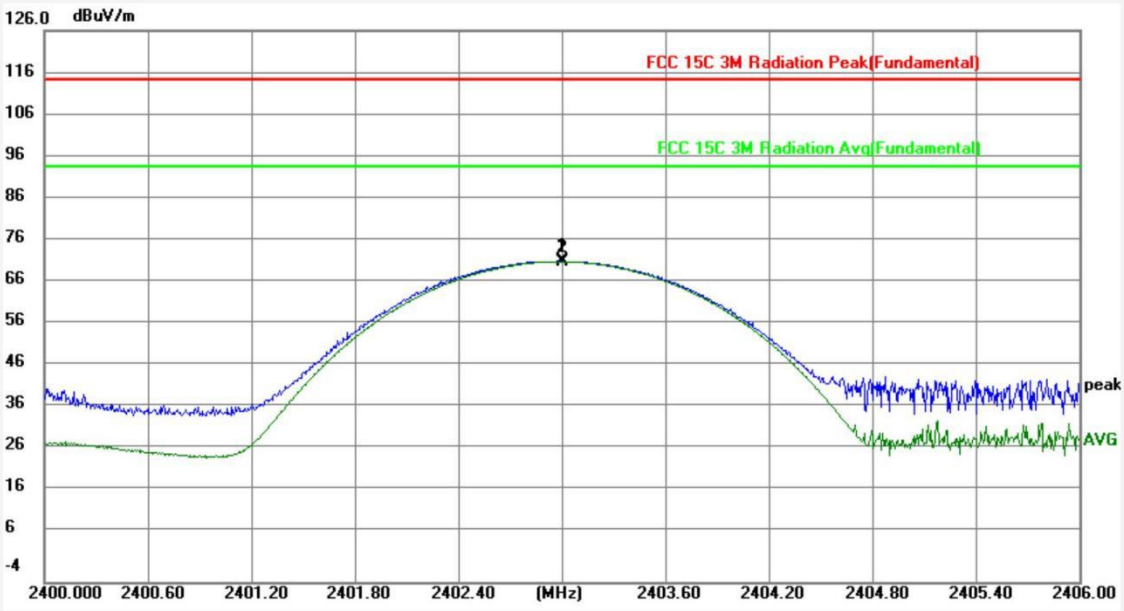
**Dongguan Lepont Testing Service Co., Ltd.**
Room 102, Building 11, No.7 Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China
Tel.: +86 769 8308 6888 Http://www.lepont.com.cn

# Radiation Emission

Site: 966 Chamber 1

2024/12/11

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 21.1 (C) / 49 %RH/ 1014 |
| Test Standard: | FCC 15C 3M Radiation Peak(Fundamental) | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Vertical** |
| Test Mode: | TX | | |
| Remark 1: | 2403MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2403.000 | -4.78 | 76.51 | 71.73 | 114.00 | -42.27 | peak | | |
| 2 | 2403.000 | -4.78 | 76.43 | 71.65 | 94.00 | -22.35 | AVG | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C-Fundamental\Data :#1

LEPONT 力邦检测

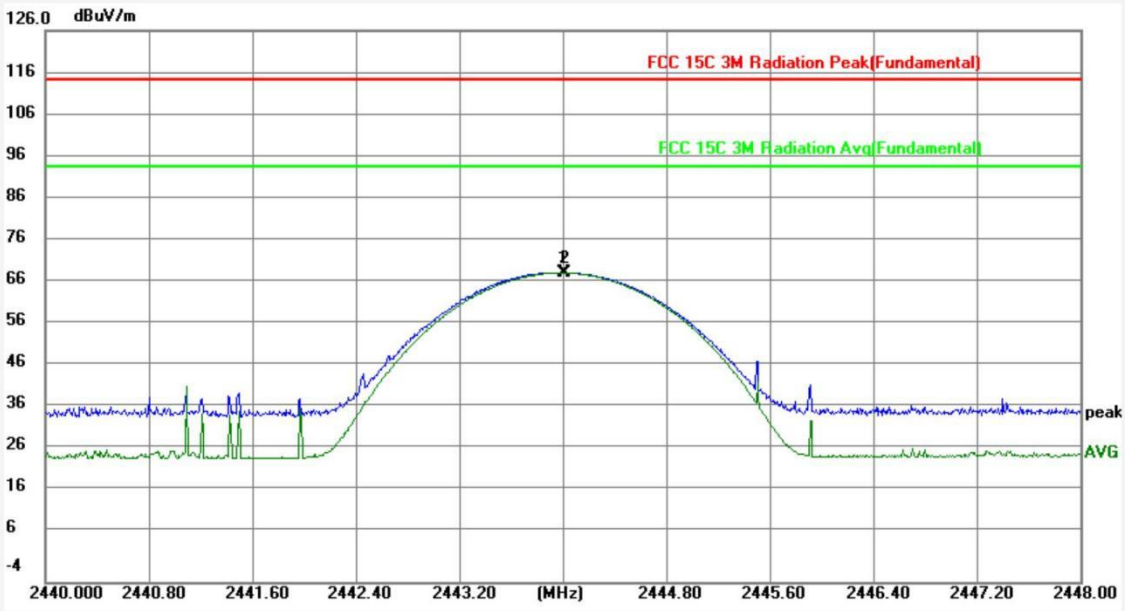
**Dongguan Lepont Testing Service Co., Ltd.**
Room 102, Building 11, No.7 Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China
Tel.: +86 769 8308 6888 Http://www.lepont.com.cn

# Radiation Emission

Site: 966 Chamber 1

2024/12/11

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 21.1 (C) / 49 %RH/ 1014 |
| Test Standard: | FCC 15C 3M Radiation Peak(Fundamental) | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Vertical** |
| Test Mode: | TX | | |
| Remark 1: | 2444MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2444.000 | -4.62 | 73.73 | 69.11 | 114.00 | -44.89 | peak | | |
| 2 | 2444.016 | -4.62 | 73.63 | 69.01 | 94.00 | -24.99 | AVG | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C-Fundamental\Data :#4

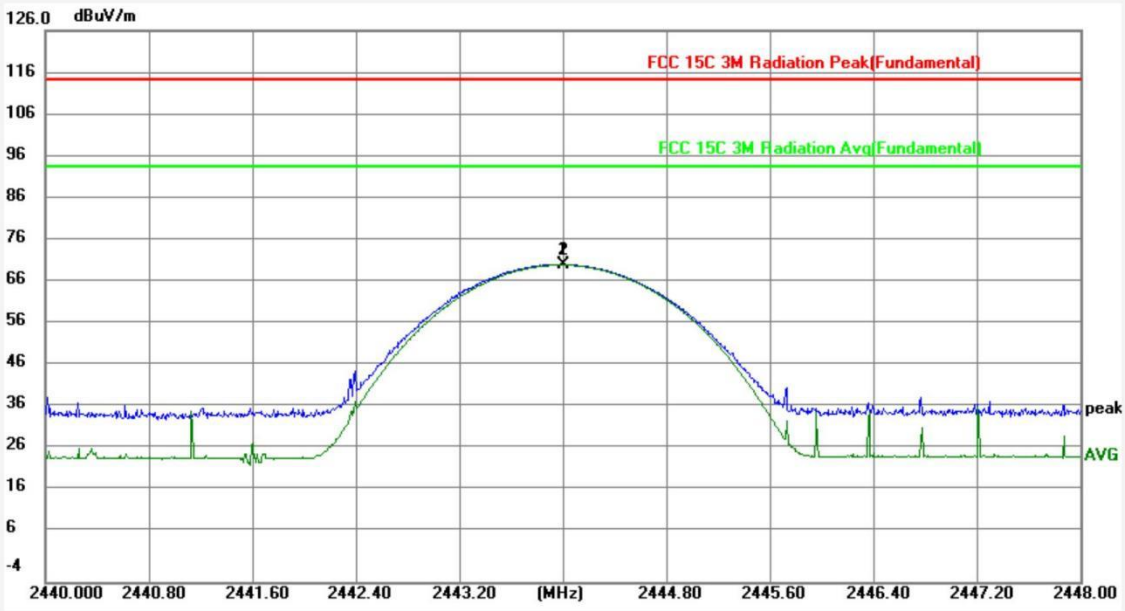
**Dongguan Lepont Testing Service Co., Ltd.**
Room 102, Building 11, No.7 Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China
Tel.: +86 769 8308 6888 Http://www.lepont.com.cn

# Radiation Emission

Site: 966 Chamber 1

2024/12/11

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 21.1 (C) / 49 %RH/ 1014 |
| Test Standard: | FCC 15C 3M Radiation Peak(Fundamental) | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Horizontal** |
| Test Mode: | TX | | |
| Remark 1: | 2444MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2444.000 | -4.62 | 75.58 | 70.96 | 114.00 | -43.04 | peak | | |
| 2 | 2444.000 | -4.62 | 75.48 | 70.86 | 94.00 | -23.14 | AVG | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C-Fundamental\Data :#3

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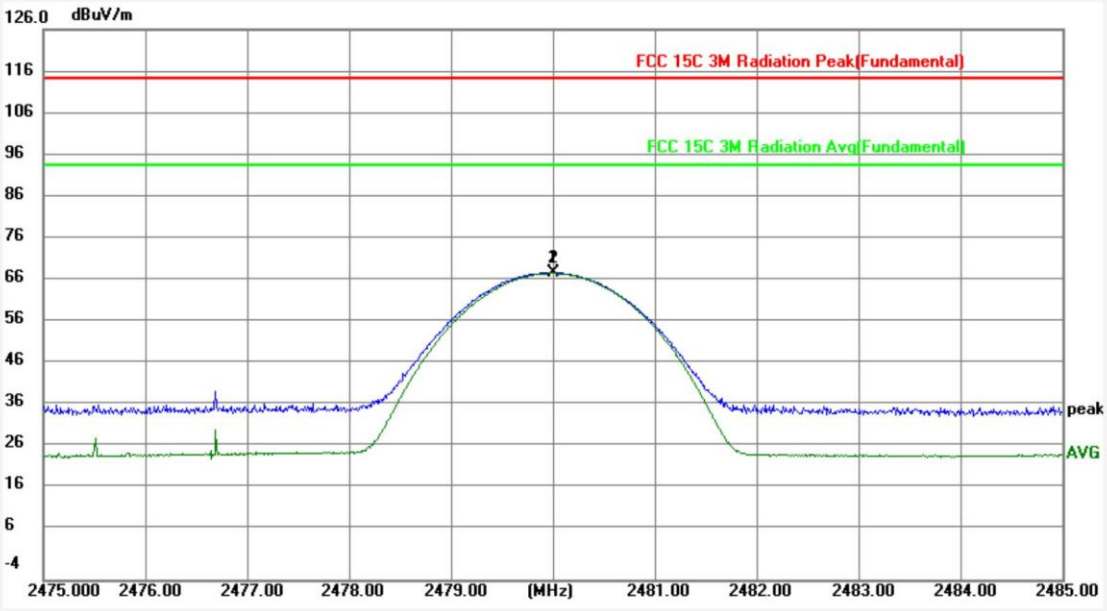
## Radiation Emission

Site: 966 Chamber 1 2024/12/11

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 21.1 (C) / 49 %RH/ 1014 |
| Test Standard: | FCC 15C 3M Radiation Peak(Fundamental) | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Horizontal** |
| Test Mode: | TX | | |
| Remark 1: | 2480MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2480.000 | -4.48 | 73.11 | 68.63 | 114.00 | -45.37 | peak | | |
| 2 | 2480.000 | -4.48 | 72.98 | 68.50 | 94.00 | -25.50 | AVG | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C-Fundamental\Data :#6

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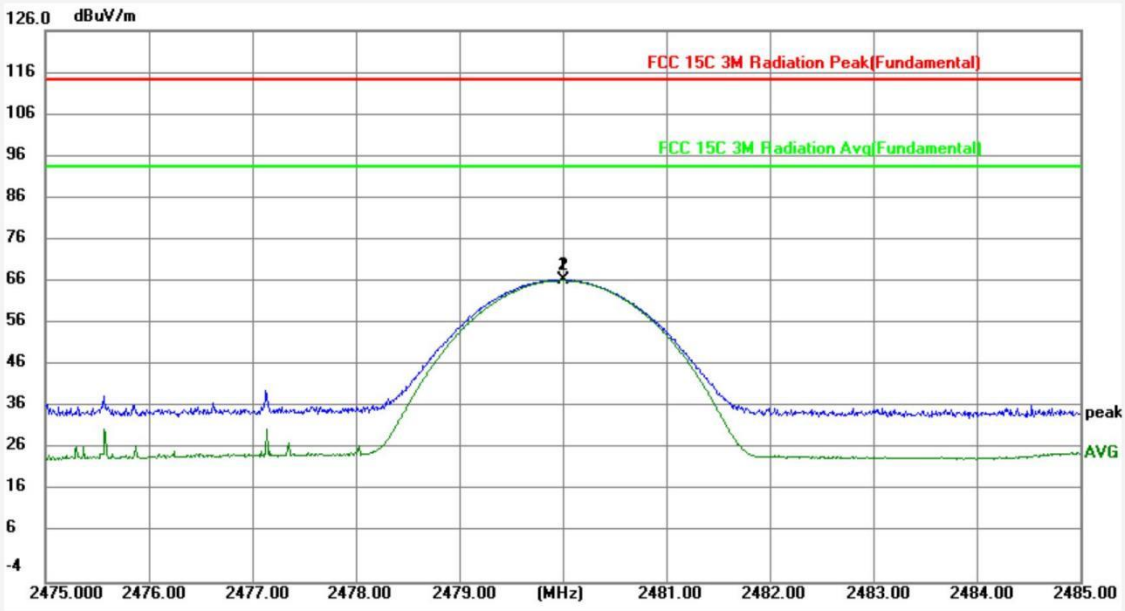
# Radiation Emission

Site: 966 Chamber 1

2024/12/11

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 21.1 (C) / 49 %RH/ 1014 |
| Test Standard: | FCC 15C 3M Radiation Peak(Fundamental) | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Vertical** |
| Test Mode: | TX | | |
| Remark 1: | 2480MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2480.000 | -4.48 | 71.82 | 67.34 | 114.00 | -46.66 | peak | | |
| 2 | 2480.000 | -4.48 | 71.67 | 67.19 | 94.00 | -26.81 | AVG | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C-Fundamental\Data :#5

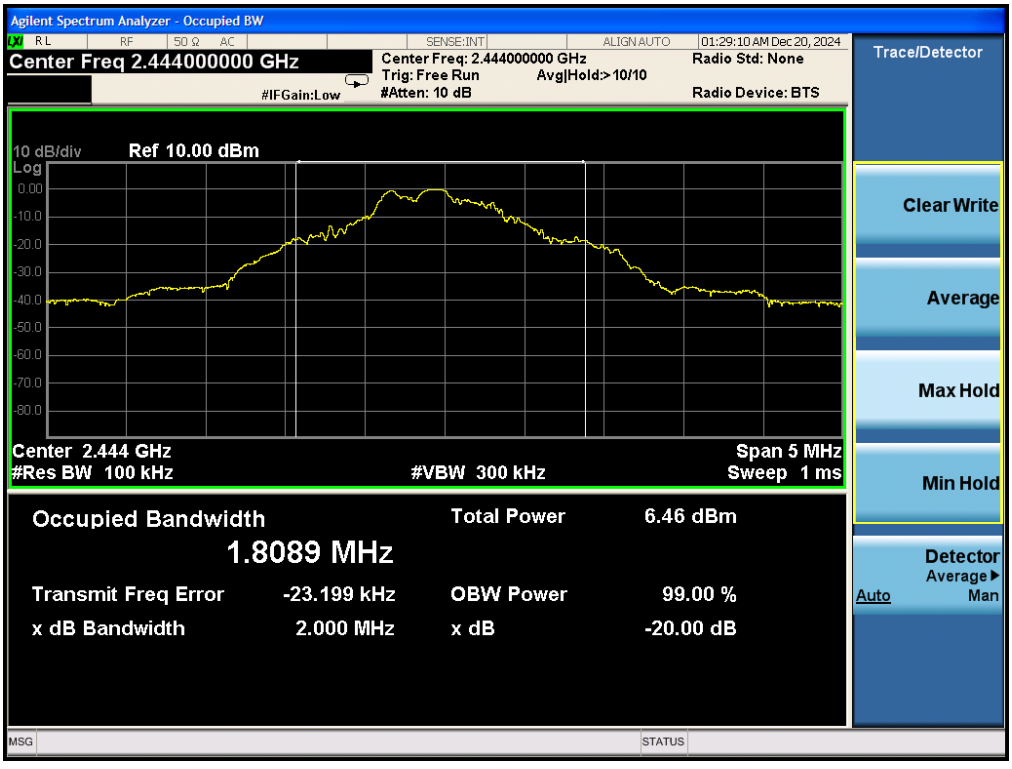
## Appendix B.2: 20dB and 99% Bandwidth

| Channel | Test Mode Test Channel (MHz) | 20dB Bandwidth (kHz) | 99% Bandwidth (kHz) | Limit (MHz) |
|---|---|---|---|---|
| Low Channel | 2403 | 2031 | 1786.5 | Within the assigned frequency band 2400~2483.5MHz |
| Middle Channel | 2444 | 2000 | 1809.8 | |
| High Channel | 2480 | 1932 | 1796.9 | |
| **Maximum Measured Value** | **Maximum Measured Value** | 2031 | 1809.8 | |

## Test Plot of 20dB Bandwidth

Low CH


Middle CH

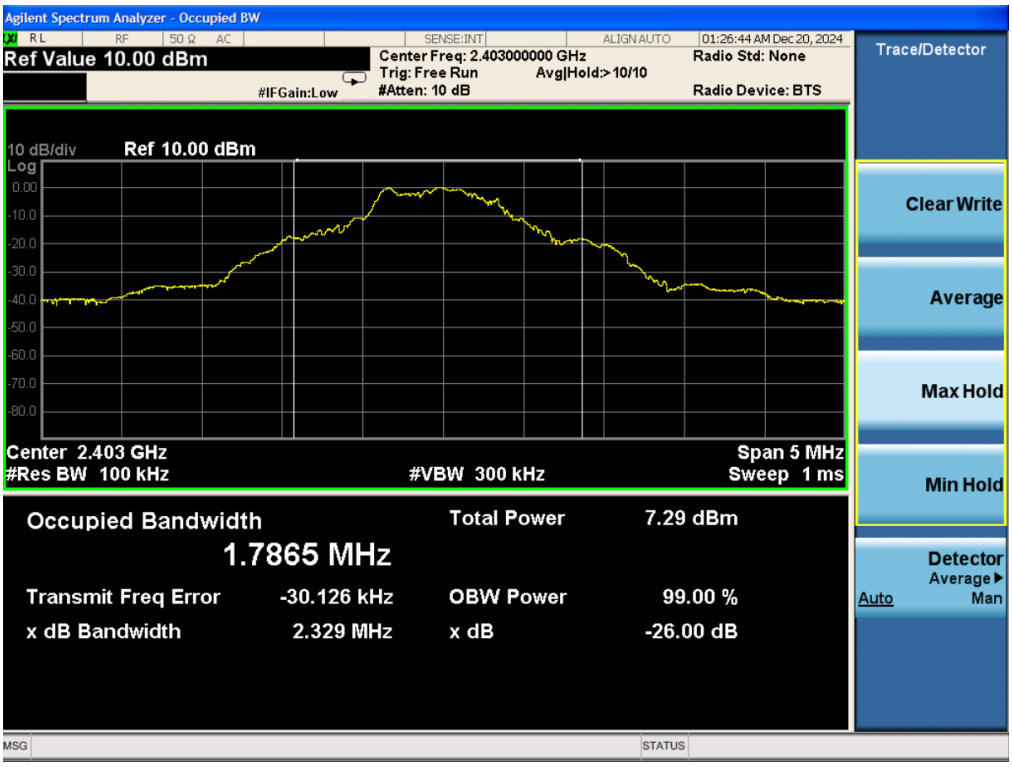


High CH

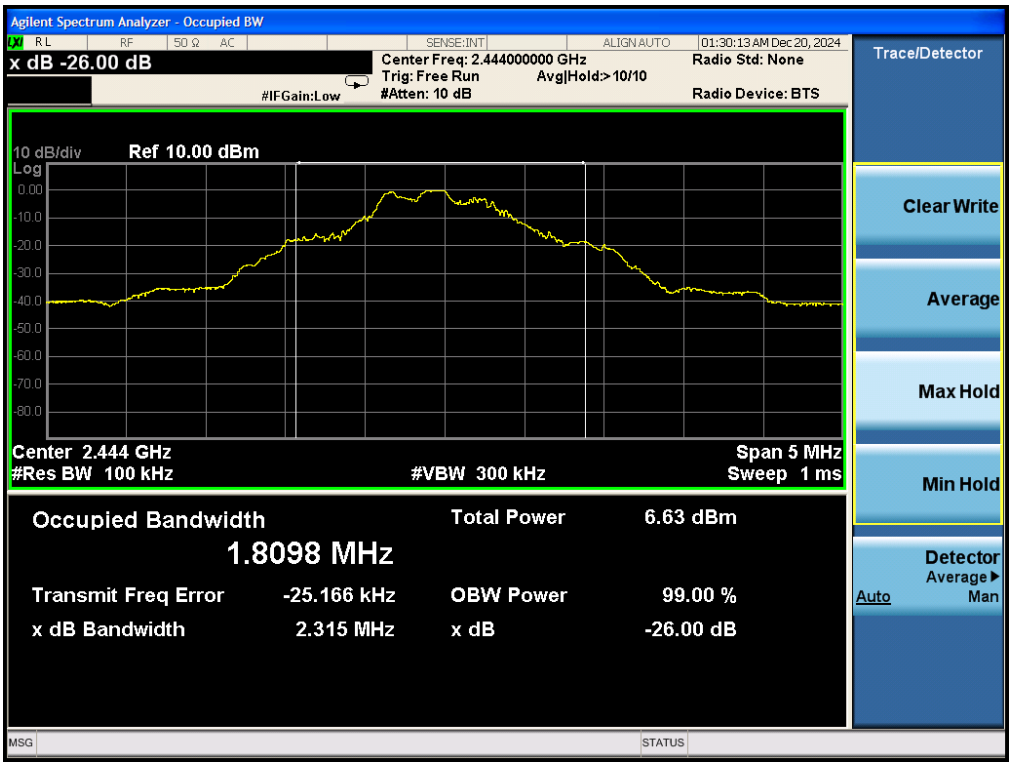

Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
01:40:37 AM Dec 20, 2024
x dB -20.00 dB
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 10 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 5 MHz
Sweep 1 ms
Occupied Bandwidth
1.7586 MHz
Total Power
6.44 dBm
Transmit Freq Error
-28.394 kHz
OBW Power
99.00 %
x dB Bandwidth
1.932 MHz
x dB
-20.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Average
Auto
Man
MSG
STATUS

## Test Plot of 99% Bandwidth

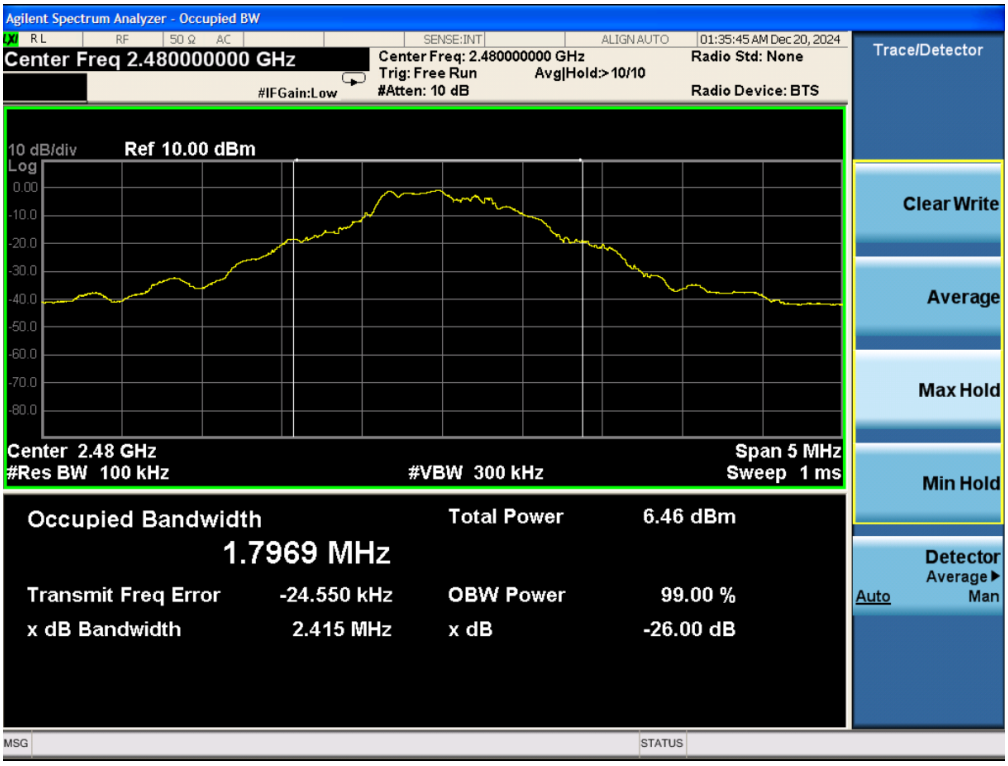
Low CH




Middle CH



High CH


Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
01:35:45 AM Dec 20, 2024
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 10 dB
Radio Std: None
Radio Device: BTS
Trace/Detector
10 dB/div
Ref 10.00 dBm
Log
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Center 2.48 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 5 MHz
Sweep 1 ms
Occupied Bandwidth
1.7969 MHz
Total Power
6.46 dBm
Transmit Freq Error
-24.550 kHz
OBW Power
99.00 %
x dB Bandwidth
2.415 MHz
x dB
-26.00 dB
Clear Write
Average
Max Hold
Min Hold
Detector
Average
Auto
Man
MSG
STATUS

## Appendix B.3: Harmonics Radiated Emission

30MHz - 1GHz

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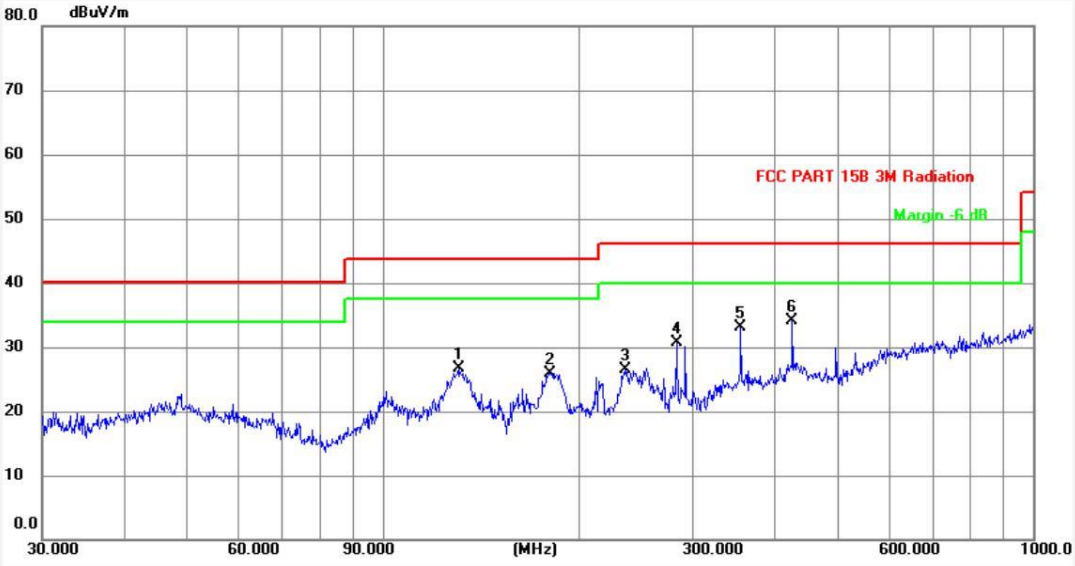
Room 102, Building 11, No.7 Houjie Science And Technology Avenue, Houjie, Dongguan, Guangdong, China
Tel.：+86 769 8308 6888 Http://www.lepont.com.cn

### Radiation Emission

Site: 966 Chamber 1 2024/12/12

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 22.5 (C) / 51 %RH/ 1014 |
| Test Standard: | FCC PART 15B 3M Radiation | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Horizontal** |
| Test Mode: | TX | | |
| Remark 1: | 2480MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 130.8369 | 7.52 | 19.09 | 26.61 | 43.50 | -16.89 | QP | | |
| 2 | 180.6487 | 9.01 | 16.93 | 25.94 | 43.50 | -17.56 | QP | | |
| 3 | 236.6447 | 11.01 | 15.44 | 26.45 | 46.00 | -19.55 | QP | | |
| 4 | 282.9849 | 11.95 | 18.72 | 30.67 | 46.00 | -15.33 | QP | | |
| 5 | 355.4272 | 14.56 | 18.49 | 33.05 | 46.00 | -12.95 | QP | | |
| 6 | 426.5210 | 15.21 | 18.83 | 34.04 | 46.00 | -11.96 | QP | * | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C -30-1000 RSE\Data :#6

**Dongguan Lepont Testing Service Co., Ltd.**
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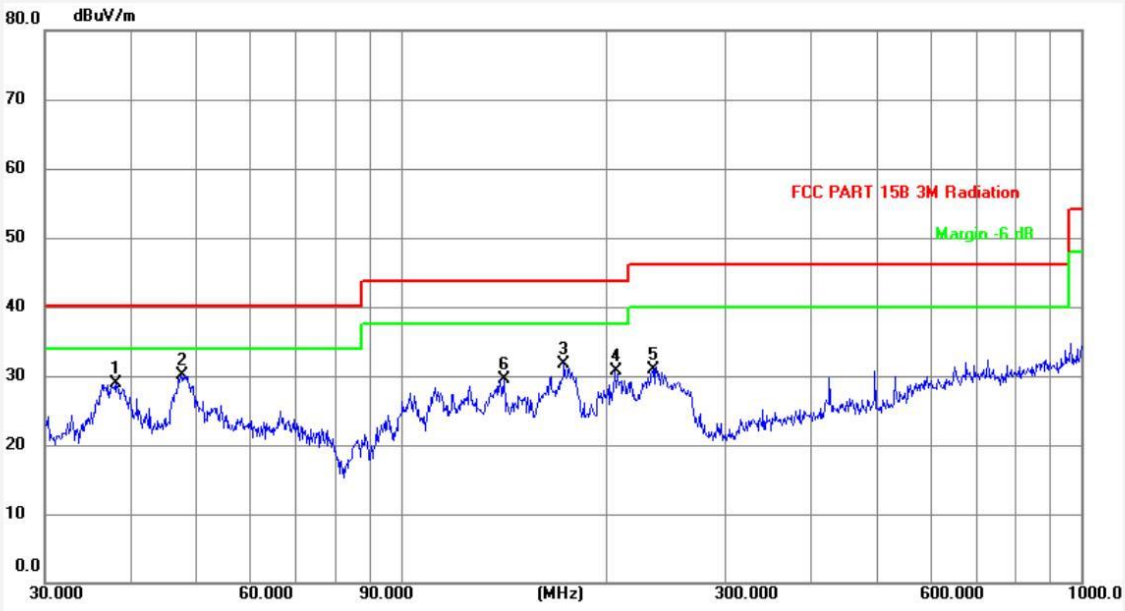
Tel.：+86 769 8308 6888 Http://www.lepont.com.cn

# Radiation Emission

Site: 966 Chamber 1

2024/12/12

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 22.5 (C) / 51 %RH/ 1014 |
| Test Standard: | FCC PART 15B 3M Radiation | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Vertical** |
| Test Mode: | TX | | |
| Remark 1: | 2480MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 38.2120 | 10.87 | 17.98 | 28.85 | 40.00 | -11.15 | QP | | |
| 2 | 47.4918 | 12.59 | 17.52 | 30.11 | 40.00 | -9.89 | QP | * | |
| 3 | 173.8135 | 8.75 | 23.05 | 31.80 | 43.50 | -11.70 | QP | | |
| 4 | 206.3976 | 10.85 | 19.93 | 30.78 | 43.50 | -12.72 | QP | | |
| 5 | 234.9909 | 11.09 | 19.88 | 30.97 | 46.00 | -15.03 | QP | | |
| 6 | 141.8262 | 6.81 | 22.61 | 29.42 | 43.50 | -14.08 | QP | | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C -30-1000 RSE\Data :#5

**Dongguan Lepont Testing Service Co., Ltd.**
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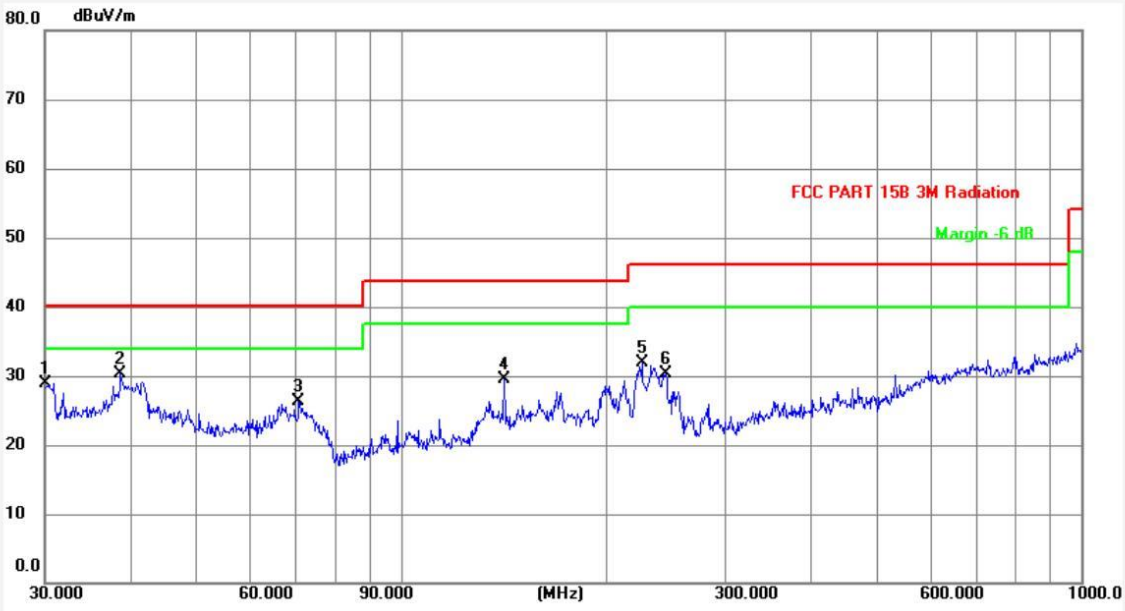
Tel.：+86 769 8308 6888 Http://www.lepont.com.cn

# Radiation Emission

Site: 966 Chamber 1

2024/12/12

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 22.5 (C) / 51 %RH/ 1014 |
| Test Standard: | FCC PART 15B 3M Radiation | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Vertical** |
| Test Mode: | TX | | |
| Remark 1: | 2444MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.0000 | 10.10 | 18.85 | 28.95 | 40.00 | -11.05 | QP | | |
| 2 | 38.7516 | 11.04 | 19.18 | 30.22 | 40.00 | -9.78 | QP | * | |
| 3 | 70.8315 | 8.73 | 17.63 | 26.36 | 40.00 | -13.64 | QP | | |
| 4 | 141.8262 | 6.81 | 22.71 | 29.52 | 43.50 | -13.98 | QP | | |
| 5 | 226.0994 | 11.02 | 20.87 | 31.89 | 46.00 | -14.11 | QP | | |
| 6 | 245.0900 | 11.18 | 19.14 | 30.32 | 46.00 | -15.68 | QP | | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C -30-1000 RSE\Data :#4

**Dongguan Lepont Testing Service Co., Ltd.**
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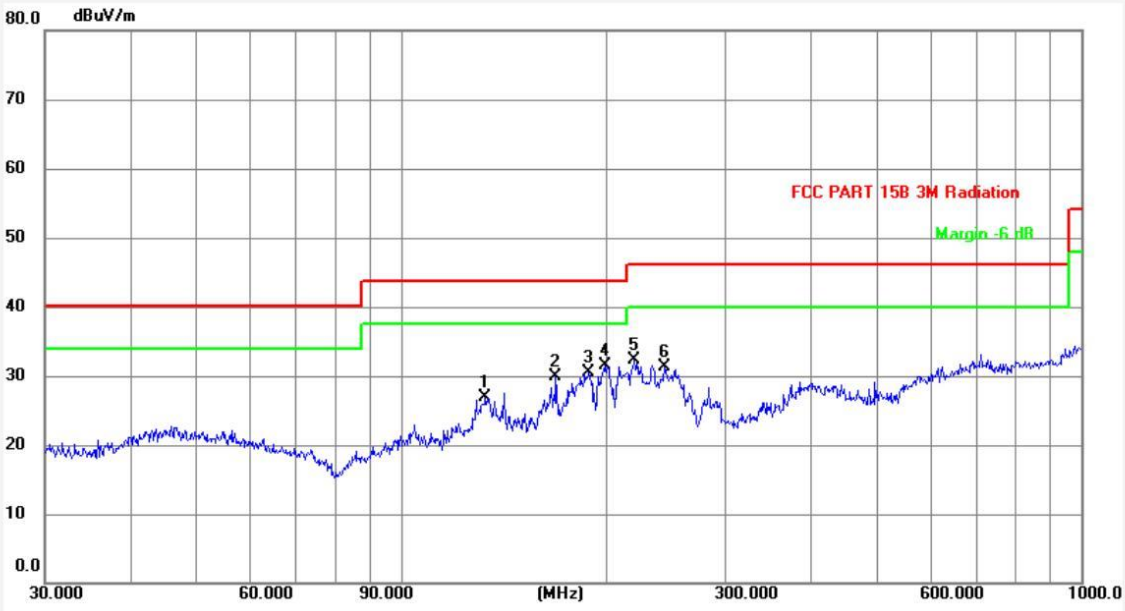
Tel.: +86 769 8308 6888 Http://www.lepont.com.cn

# Radiation Emission

Site: 966 Chamber 1

2024/12/12

| | | | |
|---|---|---|---|
| Job No.: | LP24070228C02-03 | Temp: | 22.5 (C) / 51 %RH/ 1014 |
| Test Standard: | FCC PART 15B 3M Radiation | Test Engineer: | Kervin |
| EUT: | Dongle | Power Rating: | DC 5V |
| Model No.: | OB1461C | Ant. Polarization: | **Horizontal** |
| Test Mode: | TX | | |
| Remark 1: | 2444MHz | | |




| No. | Frequency (MHz) | Factor (dBuV/m) | Reading (dBuV) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | MK. | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 133.1510 | 7.32 | 19.52 | 26.84 | 43.50 | -16.66 | QP | | |
| 2 | 169.0053 | 8.54 | 21.38 | 29.92 | 43.50 | -13.58 | QP | | |
| 3 | 189.0743 | 9.18 | 21.36 | 30.54 | 43.50 | -12.96 | QP | | |
| 4 | 199.2855 | 10.69 | 20.89 | 31.58 | 43.50 | -11.92 | QP | * | |
| 5 | 220.6171 | 10.97 | 21.31 | 32.28 | 46.00 | -13.72 | QP | | |
| 6 | 244.2321 | 11.01 | 20.34 | 31.35 | 46.00 | -14.65 | QP | | |

Note: Level=Reading+Factor,Over=Level-Limit.
MK.:*:Maximum data x:Over limit !:Over margin

File: OB146C -30-1000 RSE\Data :#3