| | | | | |
|---|---|---|---|---|
| **Prüfbericht-Nr.:** *Test report no.:* | **CN22TWVE 001** | **Auftrags-Nr.:** *Order no.:* | **168349178** | **Seite 1 von 26** *Page 1 of 26* |
| **Kunden-Referenz-Nr.:** *Client reference no.:* | **N/A** | **Auftragsdatum:** *Order date:* | 2021-12-23 | |
| **Auftraggeber:** *Client:* | ZTE Corporation<br>ZTE Plaza, Hi-Tech Park, Nanshan District, Shenzhen, Guangdong, P.R.China | | | |
| **Prüfgegenstand:** *Test item:* | RichMedia Box | | | |
| **Bezeichnung / Typ-Nr.:** *Identification / Type no.:* | ZXV10 B866V2F, ZXV10 B866V2F1, ZXV10 B866V2Fi, ZXV10 B866V2FA, ZXV10 B866V2FB, ZXV10 B866V2K, ZXV10 B866V2K1, ZXV10 B860HF, ZXV10 B860V2F, ZXV10 B870V2F, ZXV10 B766V2<br>(Trademark: ZTE) | | | |
| **Auftrags-Inhalt:** *Order content*: | Test Report | | | |
| **Prüfgrundlage:** *Test specification:* | CFR47 FCC Part 15: Subpart C Section 15.247<br>FCC KDB 558074 D01 15.247 Meas Guidance v05r02<br>ANSI C63.10:2013 | | | |

| | | |
|---|---|---|
| **Wareneingangsdatum:** *Date of sample receipt:* | 2021-12-29 | Please refer to Photo Document |
| **Prüfmuster-Nr.:** *Test sample no:* | A003191348-002~004<br>A003199431-002 | |
| **Prüfzeitraum:** *Testing period:* | 2021-12-30 - 2022-01-20 | |
| **Ort der Prüfung:** *Place of testing:* | TÜV Rheinland (Shenzhen) Co., Ltd. | |
| **Prüflaboratorium:** *Testing laboratory:* | TÜV Rheinland (Shenzhen) Co., Ltd. | |
| **Prüfergebnis*:** *Test result*:* | Pass | |

| | | | |
|---|---|---|---|
| **geprüft von:** *tested by:* | X Tim.zhang<br>Signed by: Tim Zhang | **genehmigt von:** *authorized by:* | X Lin Lin<br>Signed by: Lin Lin |
| **Datum:** *Date:* 2022-01-21 | | **Ausstellungsdatum:** *Issue date:* 2022-01-21 | |
| **Stellung** */ Position:* | Project Manager | **Stellung** */ Position:* | Reviewer |
| **Sonstiges** */ Other:* | FCC ID: Q78-ZXV10905Y4A | | |

| | |
|---|---|
| **Zustand des Prüfgegenstandes bei Anlieferung:** *Condition of the test item at delivery:* | Prüfmuster vollständig und unbeschädigt<br>*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* |





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Mail: service@de.tuv.com · Web: www.tuv.com

# *Test Summary*

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

**5.1.2 MAXIMUM PEAK CONDUCTED OUTPUT POWER**
*RESULT: Pass*

**5.1.3 CONDUCTED POWER SPECTRAL DENSITY**
*RESULT: Pass*

**5.1.4 6DB BANDWIDTH**
*RESULT: Pass*

**5.1.5 99% BANDWIDTH**
*RESULT: Pass*

**5.1.6 20DB BANDWIDTH**
*RESULT: Pass*

**5.1.7 CARRIER FREQUENCY SEPARATION**
*RESULT: Pass*

**5.1.8 NUMBER OF HOPPING FREQUENCY**
*RESULT: Pass*

**5.1.9 TIME OF OCCUPANCY**
*RESULT: Pass*

**5.1.10 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH**
*RESULT: Pass*

**5.1.11 RADIATED SPURIOUS EMISSION**
*RESULT: Pass*

**5.1.12 CONDUCTED EMISSION**
*RESULT: Pass*

# *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: Test Results of Bluetooth BDR/EDR mode

Appendix B: Test Results of Bluetooth Low Energy

# 2 Test Sites

## 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**
No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. China.

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

## 2.2 List of Test and Measurement Instruments

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

| **Radio Spectrum Testing (SRD-Tonscend)** | | | | |
|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| EXA Signal Analyzer, Multi-touch | Keysight | N9010B | MY60241175 | 2022-09-28 |
| MXG X-Series RF Vector Signal Generator | Keysight | N5182B | MY61250137 | 2022-09-28 |
| EXG X-Series Microwave Analog Signal Generator | Keysight | N5173B | MY61250141 | 2022-09-28 |
| DC power supply | Keysight | E3642A | MY61276100 | 2022-09-28 |
| Power Control Unit | Tonscend | JS0806-4ADC | N/A | 2022-09-28 |
| Automation Control Unit | Tonscend | JS0806-2 | 21C8060396 | 2022-09-28 |
| Test Software | Tonscend | JS1120-3 | N/A | N/A |
| Control PC | Lenovo | TianYi510S-071MB | YLX23JMF | N/A |
| Shielding Room 8# | Albatross | SR8 | APC17151-SR8 | 2024-06-22 |
| **Unwanted Emission Testing (TS9975)** | | | | |
| **Equipment** | **Manufacturer** | **Model** | **Serial No.** | **Cal. until** |
| EMI Test Receiver | R&S | ESR 7 | 102021 | 2022-08-10 |
| Signal Analyzer | R&S | FSV 40 | 101439 | 2022-08-09 |
| System Controller Interface | R&S | SCI-100 | S10010038 | N/A |
| Filterbank | R&S | Wlan | 100759 | 2022-08-09 |
| OSP | R&S | OSP 120 | 102040 | N/A |
| Pre-amplifier | R&S | SCU08F1 | 08320031 | 2022-08-09 |
| Amplifier | R&S | SCU-18F | 180070 | 2022-08-09 |
| Amplifier | R&S | SCU40A | 100475 | 2022-08-09 |
| Trilog Broadband Antenna (30 MHz - 7 GHz) | Schwarzbeck | VULB 9162 | 193 | 2022-08-08 |
| Double-Ridged Antenna (1 -18 GHz) | ETS-LINDGREN | 3117 | 00218717 | 2022-08-08 |
| Wideband Ridged Horn Antenna (18-40 GHz) | Steatite | QMS-00880 | 19067 | 2022-08-08 |
| Active Loop Antenna | Schwarzbeck | FMZB 1513 | 302 | 2022-09-13 |
| Test software | R&S | EMC32 (V10.60.10) | N/A | N/A |
| Control PC | Dell | OptiPlex 7050 | 36NV9P2 | N/A |
| 3m Semi-Anechoic Chamber | Albatross | SAC-3m | APC17151-SAC | 2024-06-22 |

| **Conducted Emission** | | | | |
|---|---|---|---|---|
| **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Cal. Until** |
| EMI Test Receiver | R&S | ESR3 | 102428 | 2022-08-10 |
| Artificial Mains Network | R&S | ENV216 | 102333 | 2022-08-10 |
| Artificial Mains Network | R&S | ENV432 | 101411 | 2022-08-10 |
| EMC32 test software | R&S | EMC32(Ver.10.50.00) | N/A | 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.

| Parameter | Uncertainty |
|---|---|
| Radio Frequency | ±1 x 10-7 |
| RF Power (conducted) | ±2.5 dB |
| Radiated Emission of Transmitter, valid up to 26.5 GHz | ±6 dB |
| Radiated Emission of Receiver, valid up to 26.5 GHz | ±6 dB |
| Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz) | ± 3.70 dB / ± 3.30 dB |
| Temperature | ±1 °C |
| Humidity | ±5 % |
| Voltage (DC) | ±1 % |
| Voltage (AC, <10kHz) | ±2 % |

## 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 (Shenzhen) Co., Ltd. file for certification follow-up purposes.

## 2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, 518110, Shenzhen, P. R. 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 RichMedia Box, which supports Bluetooth(dual mode), 2.4GHz Wi-Fi 802.11 b/g/n and 5GHz Wi-Fi 802.11a/n/ac wireless technology.

According to the declaration of the applicant, the schematics, PCB layout and electronic components are identical, only the model number is different for market strategy.
The EUT have four adapters, details as below table:

| Description | Model | Rating | Manufacturer |
|---|---|---|---|
| Adapter 1# | UWP-12W-1210S | Input: 100-240V, 50/60Hz, 0.6A<br>Output: 12.0V, 1.0A | I.T.E&AV POWER SUPPLY |
| Adapter 2# | KL-WA120100-B | Input: 100-240V, 50/60Hz, 0.6A<br>Output: 12.0V, 1.0A | XIAMEN KELI ELECTRONIC CO., LTD |
| Adapter 3# | MN012E-L120100 | Input: 100-240V, 50/60Hz, 0.6A<br>Output: 12.0V, 1.0A | XIAMEN CASTEC ELECTRONIC INDUSTRY CO., LTD |
| Adapter 4# | RD1201000-C55-35MGD | Input: 100-240V, 50/60Hz, 0.6A<br>Output: 12.0V, 1.0A | Shenzhen Ruide electronic industrial Co., Ltd. |

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

## 3.2 Ratings and System Details

**Table 2: Technical Specification of EUT**

| General Information of EUT | Value |
|---|---|
| Kind of Equipment: | RichMedia Box |
| Type Designation: | ZXV10 B866V2F, ZXV10 B866V2F1, ZXV10 B866V2Fi, ZXV10 B866V2FA, ZXV10 B866V2FB, ZXV10 B866V2K, ZXV10 B866V2K1, ZXV10 B860HF, ZXV10 B860V2F, ZXV10 B870V2F, ZXV10 B766V2 |
| Trademark: | ZTE |
| FCC ID: | Q78-ZXV10905Y4A |
| Operating Voltage: | AC 120~240V, 50/60Hz via adapter |
| Testing Voltage: | AC 120V, 60Hz |
| **Technical Specification of Bluetooth (dual mode)** | |
| Operating Frequency: | 2402 MHz to 2480 MHz |
| Type of Modulation: | GFSK, π/4-DQPSK, 8DPSK |
| Channel Number: | BDR & EDR mode:79 channels, Low Energy mode:40 channels |
| Channel Separation: | BDR & EDR mode: 1MHz, Low Energy mode: 2MHz |
| Data Rate: | BDR & EDR mode: 1Mbps, 3Mbps<br>Low Energy mode: 1Mbps |
| Antenna Type: | Integral Antenna |
| Antenna Gain of Bluetooth: | 3.0 dBi |
| **Technical Specification of Wi-Fi 802.11 b/g/n** | |
| Operating Frequency: | 2412 - 2462 MHz for 802.11b/g/n(HT20)<br>2422 - 2452 MHz for 802.11n(HT40) |
| Type of Modulation: | DSSS(DBPSK/DQPSK/CCK) |

| | |
|---|---|
| | OFDM(BPSK/QPSK/16QAM/64QAM) |
| Data Rate: | 6/9/12/18/24/36/48/54 Mbps for 802.11g<br>MCS0 ~ MCS7 for 802.11n |
| Channel Number: | 11 channels for 802.11b/g/n(HT20)<br>7 channels for 802.11n(HT40) |
| Channel Separation: | 5 MHz |
| Antenna Type: | Integral Antenna |
| Number of Antenna: | 2 |
| Antenna Gain 1: | 3.0 dBi |
| Antenna Gain 2: | 3.0 dBi |
| **Technical Specification of Wi-Fi 802.11 a/n/ac** | |
| Operating Frequency: | 5180-5320MHz, 5500-5700MHz, 5745-5825MHz |
| Type of Modulation: | OFDM(BPSK/QPSK/16QAM/64QAM/256QAM) |
| Channel Number: | 5180-5320MHz, 14CHs, 802.11 a/n20/n40/ac20/ac40/ac80<br>5500-5700MHz, 12CHs, 802.11 a/n20/n40/ac20/ac40/ac80<br>5745-5825MHz, 8CHs, 802.11 a/n20/n40/ac20/ac40/ac80 |
| Channel Separation | 5 MHz |
| Antenna Type: | Integral Antenna |
| Number of Antenna: | 2 |
| Antenna Gain 1: | 3.5 dBi |
| Antenna Gain 2: | 3.5 dBi |

**Table 3: RF Channel and Frequency of Bluetooth BDR/EDR**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|---|---|---|---|---|---|---|---|
| **0** | **2402.00** | 20 | 2422.00 | 40 | 2442.00 | 60 | 2462.00 |
| 1 | 2403.00 | 21 | 2423.00 | 41 | 2443.00 | 61 | 2463.00 |
| 2 | 2404.00 | 22 | 2424.00 | 42 | 2444.00 | 62 | 2464.00 |
| 3 | 2405.00 | 23 | 2425.00 | 43 | 2445.00 | 63 | 2465.00 |
| 4 | 2406.00 | 24 | 2426.00 | 44 | 2446.00 | 64 | 2466.00 |
| 5 | 2407.00 | 25 | 2427.00 | 45 | 2447.00 | 65 | 2467.00 |
| 6 | 2408.00 | 26 | 2428.00 | 46 | 2448.00 | 66 | 2468.00 |
| 7 | 2409.00 | 27 | 2429.00 | 47 | 2449.00 | 67 | 2469.00 |
| 8 | 2410.00 | 28 | 2430.00 | 48 | 2450.00 | 68 | 2470.00 |
| 9 | 2411.00 | 29 | 2431.00 | 49 | 2451.00 | 69 | 2471.00 |
| 10 | 2412.00 | 30 | 2432.00 | 50 | 2452.00 | 70 | 2472.00 |
| 11 | 2413.00 | 31 | 2433.00 | 51 | 2453.00 | 71 | 2473.00 |
| 12 | 2414.00 | 32 | 2434.00 | 52 | 2454.00 | 72 | 2474.00 |
| 13 | 2415.00 | 33 | 2435.00 | 53 | 2455.00 | 73 | 2475.00 |
| 14 | 2416.00 | 34 | 2436.00 | 54 | 2456.00 | 74 | 2476.00 |
| 15 | 2417.00 | 35 | 2437.00 | 55 | 2457.00 | 75 | 2477.00 |
| 16 | 2418.00 | 36 | 2438.00 | 56 | 2458.00 | 76 | 2478.00 |
| 17 | 2419.00 | 37 | 2439.00 | 57 | 2459.00 | 77 | 2479.00 |
| 18 | 2420.00 | 38 | 2440.00 | 58 | 2460.00 | 78 | **2480.00** |
| 19 | 2421.00 | 39 | **2441.00** | 59 | 2461.00 | | |

Test frequencies are lowest channel: 2402 MHz, middle channel: 2441 MHz and highest channel: 2480 MHz for Bluetooth BDR/EDR

**Table 4: RF Channel and Frequency of BLE**

| RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) | RF Channel | Frequency (MHz) |
|---|---|---|---|---|---|---|---|
| **0** | **2402** | 10 | 2422 | 20 | 2442 | 30 | 2462 |
| 1 | 2404 | 11 | 2424 | 21 | 2444 | 31 | 2464 |
| 2 | 2406 | 12 | 2426 | 22 | 2446 | 32 | 2466 |
| 3 | 2408 | 13 | 2428 | 23 | 2448 | 33 | 2468 |
| 4 | 2410 | 14 | 2430 | 24 | 2450 | 34 | 2470 |
| 5 | 2412 | 15 | 2432 | 25 | 2452 | 35 | 2472 |
| 6 | 2414 | 16 | 2434 | 26 | 2454 | 36 | 2474 |
| 7 | 2416 | 17 | 2436 | 27 | 2456 | 37 | 2476 |
| 8 | 2418 | 18 | 2438 | 28 | 2458 | 38 | 2478 |
| 9 | 2420 | **19** | **2440** | 29 | 2460 | **39** | **2480** |

Test frequencies are lowest channel: 2402 MHz, middle channel: 2440 MHz and highest channel: 2480 MHz for BLE

## 3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth transmitting mode (BDR & EDR mode)
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. On, Bluetooth transmitting mode (BLE mode)
   1) Low Channel
   2) Middle Channel
   3) High Channel

C. On, Transmitting on Hopping channel

D. On, Normal Operation(BT Link)

E. Off

## 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

## 3.5 Submitted Documents

- Application Form
- Operation Description
- Schematics
- PCB Layout
- User Manual
- Block Diagram
- Rating Label
- Parts List

# 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.

According to clause 3.1, all tests were performed on model ZXV10 B866V2F in this report.

## 4.3 Special Accessories and Auxiliary Equipment

**Table 5: Auxiliary Equipment Used during Test**

| Description | Manufacturer | Model | S/N |
|---|---|---|---|
| Laptop | Lenovo | T480 | PF-16A6N8 |
| LCD 4K Color Display | PHILIPS | 272P7V | AUCA1833000075472 |
| Soundbar | Fenda | NS-HTSB22 | / |
| RJ45 cable | / | / | / |
| AV cable | / | / | / |
| HDMI cable | / | / | / |
| Optical fiber cable | / | / | / |

## 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)**

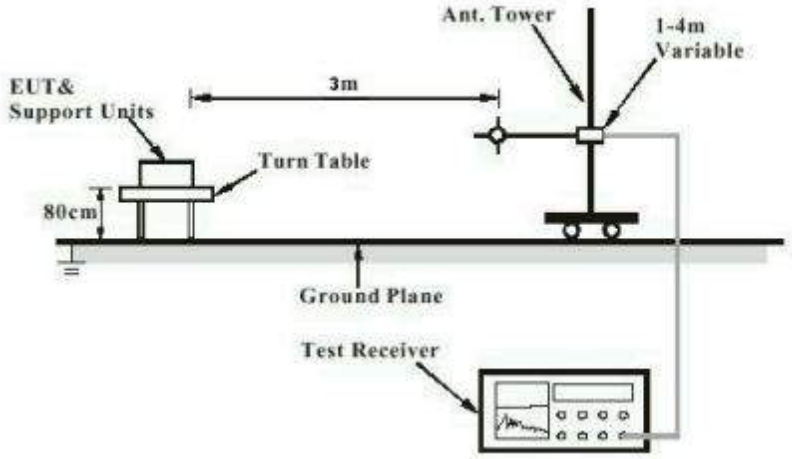



**Diagram of Measurement Configuration for Radiation Test (Above 1GHz)**

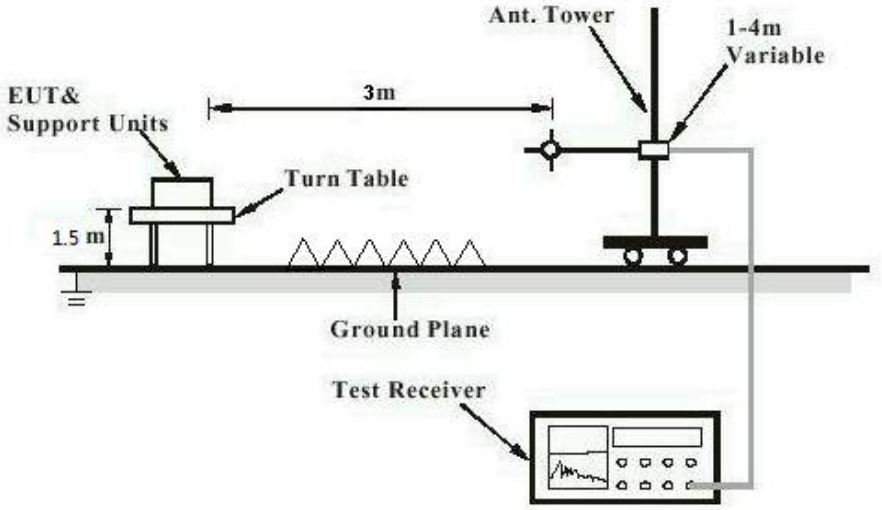


**Diagram of Measurement Configuration for Mains Conduction Measurement**

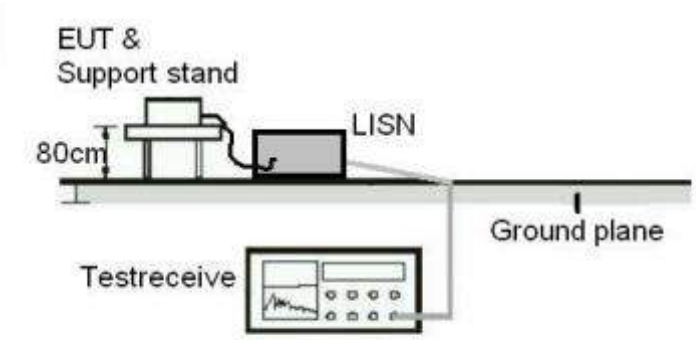
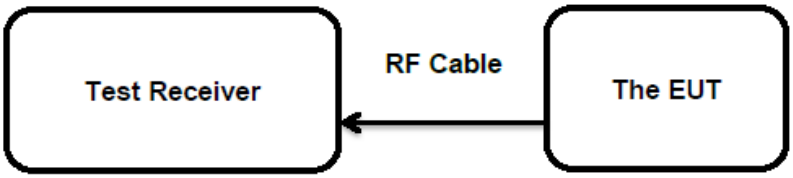



**Diagram of Measurement Configuration for Conducted Transmitter Measurement**



# 5 Test Results

## 5.1 Transmitter Requirement & Test Suites

### 5.1.1 Antenna Requirement

**RESULT:** **Pass**

**Test Specification**

Test standard : FCC Part 15.247(b)(4) and Part 15.203

According to the manufacturer declared, the EUT has an Integral antenna, the directional gain of antenna is 3.0 dBi, and the antenna connector is designed with 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 Maximum Peak Conducted Output Power

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(b)(1)&(3) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | FHSS < 0.125 Watts, DSSS < 1.0 Watts |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-08 to 2022-01-17 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | A, B |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

**Table 6: Test Result of Maximum Peak Conducted Output Power, Bluetooth BDR & EDR**

| Test Mode | Test Channel (MHz) | Measured Peak Power | | Limit (W) |
|---|---|---|---|---|
| | | (dBm) | (W) | |
| GFSK (BDR) | 2402.0 | 11.04 | 0.0127 | < 0.125 |
| | 2441.0 | 11.08 | 0.0128 | |
| | 2480.0 | 11.25 | 0.0133 | |
| **Maximum Measured Value** | | 11.25 | 0.0133 | |

| Test Mode | Test Channel (MHz) | Measured Peak Power | | Limit (W) |
|---|---|---|---|---|
| | | (dBm) | (W) | |
| 8DPSK (EDR) | 2402.0 | 11.15 | 0.0130 | < 0.125 |
| | 2441.0 | 11.04 | 0.0127 | |
| | 2480.0 | 11.18 | 0.0131 | |
| **Maximum Measured Value** | | 11.18 | 0.0131 | |

**Table 7: Test Result of Maximum Peak Conducted Output Power, Bluetooth LE**

| Test Mode | Test Channel (MHz) | Measured Peak Power | | Limit (W) |
|---|---|---|---|---|
| | | (dBm) | (W) | |
| BLE | 2402 | 2.59 | 0.0018 | < 1.0 |
| | 2440 | 3.23 | 0.0021 | |
| | 2480 | 4.03 | 0.0025 | |
| **Max. Measured Value** | | 4.03 | 0.0025 | |

Note:
1) The cable loss is take into account in results.
2) Antenna gain(G): 3.0 dBi

## 5.1.3 Conducted Power Spectral Density

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(e) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | < 8 dBm / 3kHz |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | B |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix B.

## 5.1.4 6dB Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(a)(2) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | > 500 kHz |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | B |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix B.

## 5.1.5 99% Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(a) |
| Basic standard | : | ANSI C63.10: 2013 |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | A, B |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A & B.

## 5.1.6 20dB Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(a)(1) |
| Basic standard | : | ANSI C63.10: 2013 |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | A |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

## 5.1.7 Carrier Frequency Separation

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(a)(1) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | ≥ 25kHz or 2/3 of 20dB bandwidth, whichever is greater |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | C |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

## 5.1.8 Number of Hopping Frequency

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC part 15.247(a)(1)(iii) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | ≥ 15 non-overlapping channels |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | C |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

## 5.1.9 Time of Occupancy

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC part 15.247(a)(1)(iii) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | < 0.4s |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | C |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

For the measurement records, refer to the appendix A.

## 5.1.10 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(d) |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power);<br>In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a) |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-07 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | A, B |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | 24.8 ℃ |
| Relative humidity | : | 55 % |
| Atmospheric pressure | : | 101 kPa |

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A & B.

## 5.1.11 Radiated Spurious Emission

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.247(d) & FCC Part 15.205 |
| Basic standard | : | ANSI C63.10: 2013 |
| Limits | : | Refer to 15.209(a) of FCC part 15.247(d) |
| Kind of test site | : | 3m Semi-anechoic Chamber |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-15 to 2022-01-18 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | A, B |
| Test channel | : | Low / Middle / High |
| Ambient temperature | : | Refer to test result |
| Relative humidity | : | Refer to test result |
| Atmospheric pressure | : | 101 kPa |

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

For the measurement records, refer to the appendix A & B.

## 5.1.12 Conducted Emission

**RESULT:** **Pass**

**Test Specification**

| | | |
|---|---|---|
| Test standard | : | FCC Part 15.207(a) |
| Basic standard | : | ANSI C63.10: 2013 |
| Frequency range | : | 0.15 – 30MHz |
| Limits | : | FCC Part 15.207(a) |
| Kind of test site | : | Shielded Room |

**Test Setup**

| | | |
|---|---|---|
| Date of testing | : | 2022-01-16 |
| Input voltage | : | AC 120V, 60Hz |
| Operation mode | : | D |
| Earthing | : | Not connected |
| Ambient temperature | : | 23.1 ℃ |
| Relative humidity | : | 52 % |
| 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 separate test photo file.

# 7 List of Tables

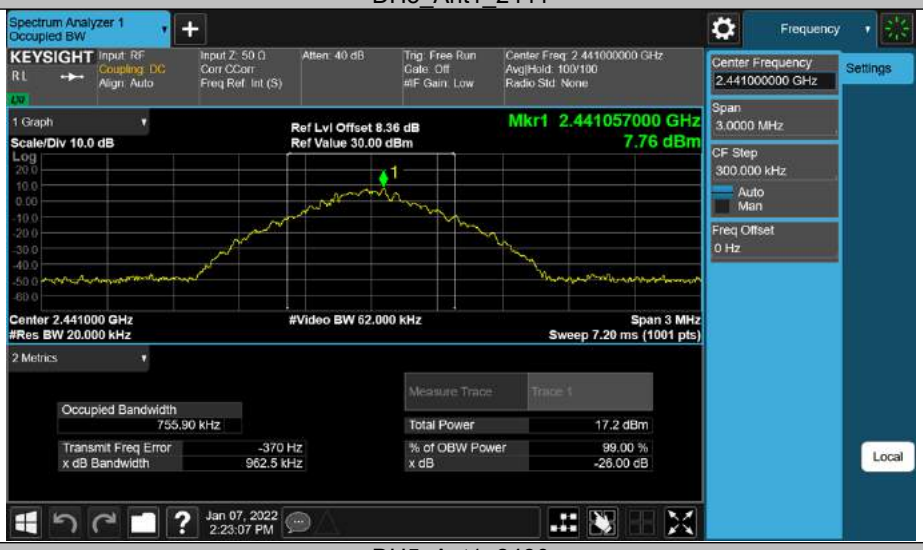
# Appendix A: Test Results of Bluetooth BDR/EDR mode

## Appendix A.1: Test Results of 99% Bandwidth

| TestMode | Antenna | Channel | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| DH5 | Ant1 | 2402 | 0.75389 | 2401.623 | 2402.377 | --- | PASS |
| | | 2441 | 0.75590 | 2440.622 | 2441.378 | --- | PASS |
| | | 2480 | 0.75595 | 2479.623 | 2480.379 | --- | PASS |
| 3DH5 | Ant1 | 2402 | 1.1839 | 2401.403 | 2402.587 | --- | PASS |
| | | 2441 | 1.1635 | 2440.415 | 2441.578 | --- | PASS |
| | | 2480 | 1.1797 | 2479.403 | 2480.583 | --- | PASS |

DH5_Ant1_2402


DH5_Ant1_2441




DH5_Ant1_2480

3DH5_Ant1_2402


3DH5_Ant1_2441


3DH5_Ant1_2480

## Appendix A.2: Test Results of 20dB Bandwidth

| TestMode | Antenna | Channel | 20db EBW[MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| DH5 | Ant1 | 2402 | 0.807 | 2401.595 | 2402.402 | --- | PASS |
| | | 2441 | 0.807 | 2440.595 | 2441.402 | --- | PASS |
| | | 2480 | 0.807 | 2479.595 | 2480.402 | --- | PASS |
| 3DH5 | Ant1 | 2402 | 1.281 | 2401.349 | 2402.630 | --- | PASS |
| | | 2441 | 1.251 | 2440.361 | 2441.612 | --- | PASS |
| | | 2480 | 1.254 | 2479.358 | 2480.612 | --- | PASS |

DH5_Ant1_2402


DH5_Ant1_2441


DH5_Ant1_2480

3DH5_Ant1_2402


3DH5_Ant1_2441


3DH5_Ant1_2480

## Appendix A.3: Test Results of Carrier Frequency Separation

| TestMode | Antenna | Channel | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|
| DH5 | Ant1 | Hop | 1.12 | ≥0.807 | PASS |
| 3DH5 | Ant1 | Hop | 0.858 | ≥0.854 | PASS |

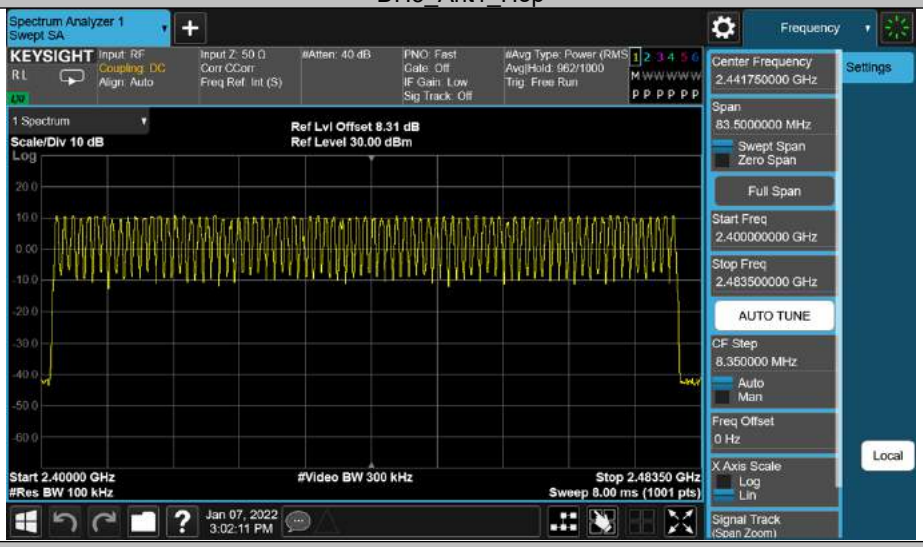
DH5_Ant1_Hop


3DH5_Ant1_Hop

## Appendix A.4: Test Results of Number of Hopping Frequency

| TestMode | Antenna | Channel | Result[Num] | Limit[Num] | Verdict |
|---|---|---|---|---|---|
| DH5 | Ant1 | Hop | 79 | ≥15 | PASS |
| 3DH5 | Ant1 | Hop | 79 | ≥15 | PASS |

DH5_Ant1_Hop

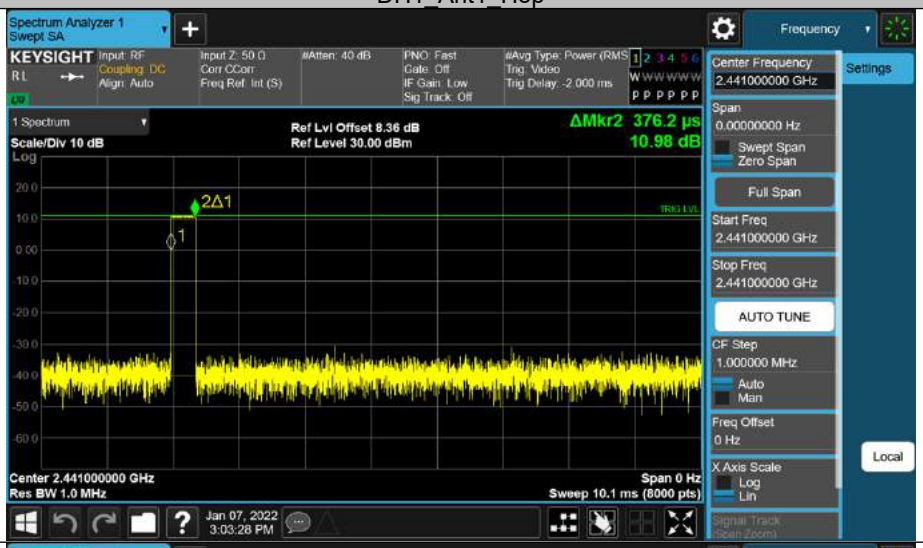



3DH5_Ant1_Hop

## Appendix A.5: Test Results of Time of Occupancy

| TestMode | Antenna | Channel | BurstWidth [ms] | TotalHops [Num] | Result[s] | Limit[s] | Verdict |
|---|---|---|---|---|---|---|---|
| DH1 | Ant1 | Hop | 0.38 | 170 | 0.064 | ≤0.4 | PASS |
| DH3 | Ant1 | Hop | 1.63 | 180 | 0.294 | ≤0.4 | PASS |
| DH5 | Ant1 | Hop | 2.88 | 120 | 0.346 | ≤0.4 | PASS |
| 3DH1 | Ant1 | Hop | 0.38 | 154 | 0.059 | ≤0.4 | PASS |
| 3DH3 | Ant1 | Hop | 1.64 | 130 | 0.213 | ≤0.4 | PASS |
| 3DH5 | Ant1 | Hop | 2.89 | 80 | 0.231 | ≤0.4 | PASS |

DH1_Ant1_Hop





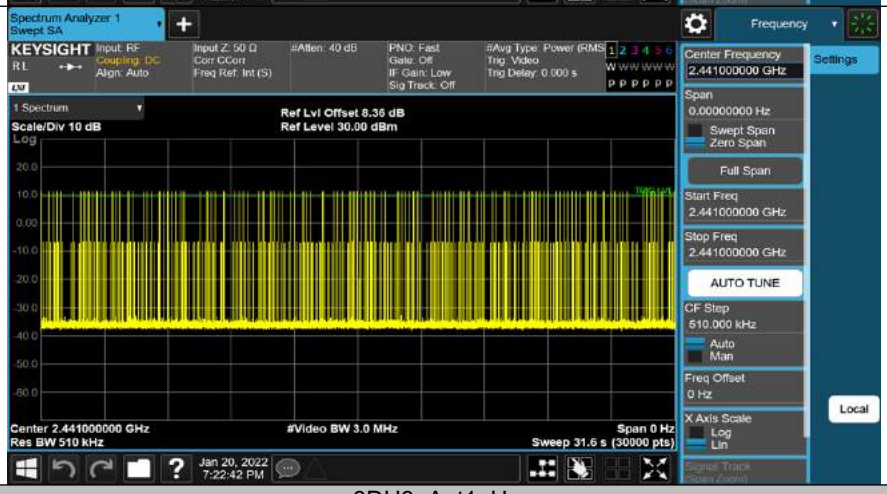
DH3_Ant1_Hop


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Frequency
Center Frequency
2.441000000 GHz
Settings
1 Spectrum
Ref Lvl Offset 8.36 dB
Ref Level 30.00 dBm
Scale/Div 10 dB
Log
Span
0.00000000 Hz
Swept Span
Zero Span
Full Span
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
AUTO TUNE
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Local
Center 2.441000000 GHz
Res BW 510 kHz
Span 0 Hz
Sweep 3.16 s (30000 pts)
Jan 07, 2022
3:05:08 PM

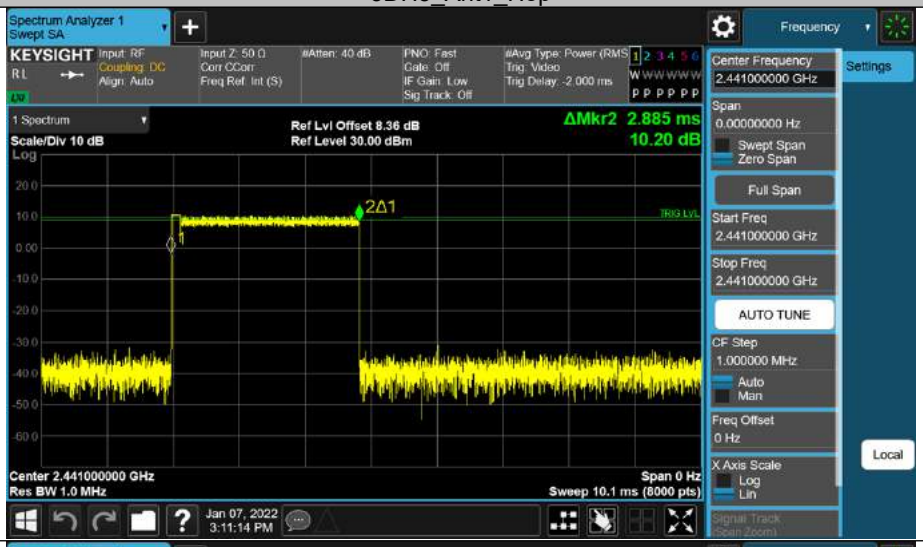
DH5_Ant1_Hop


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Frequency
Center Frequency
2.441000000 GHz
Settings
1 Spectrum
Ref Lvl Offset 8.36 dB
Ref Level 30.00 dBm
ΔMkr2 2.880 ms
6.57 dB
Scale/Div 10 dB
Log
2Δ1
Span
0.00000000 Hz
Swept Span
Zero Span
Full Span
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
AUTO TUNE
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Local
Center 2.441000000 GHz
Res BW 1.0 MHz
Span 0 Hz
Sweep 10.1 ms (8000 pts)
Jan 07, 2022
3:02:30 PM


Spectrum Analyzer 1
Swept SA
KEYSIGHT
Frequency
Center Frequency
2.441000000 GHz
Settings
1 Spectrum
Ref Lvl Offset 8.36 dB
Ref Level 30.00 dBm
Scale/Div 10 dB
Log
Span
0.00000000 Hz
Swept Span
Zero Span
Full Span
Start Freq
2.441000000 GHz
Stop Freq
2.441000000 GHz
AUTO TUNE
CF Step
510.000 kHz
Auto
Man
Freq Offset
0 Hz
X Axis Scale
Log
Lin
Local
Center 2.441000000 GHz
Res BW 510 kHz
Span 0 Hz
Sweep 3.16 s (30000 pts)
Jan 07, 2022
3:02:36 PM

| 3DH1_Ant1_Hop |
| --- |
|  |
|  |
| 3DH3_Ant1_Hop |
|  |


3DH5_Ant1_Hop



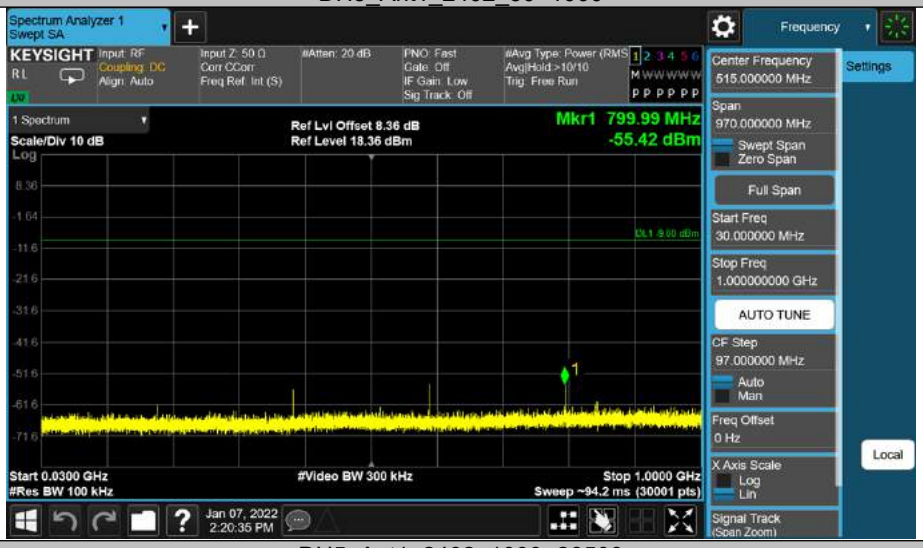

## Appendix A.6: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

### Conducted Spurious Emission

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| DH5 | Ant1 | 2402 | Reference | 11.00 | 11.00 | --- | PASS |
| | | | 30~1000 | 11.00 | -55.53 | ≤-9 | PASS |
| | | | 1000~26500 | 11.00 | -37.17 | ≤-9 | PASS |
| | | 2441 | Reference | 10.88 | 10.88 | --- | PASS |
| | | | 30~1000 | 10.88 | -54.83 | ≤-9.12 | PASS |
| | | | 1000~26500 | 10.88 | -37.43 | ≤-9.12 | PASS |
| | | 2480 | Reference | 10.99 | 10.99 | --- | PASS |
| | | | 30~1000 | 10.99 | -54.67 | ≤-9.01 | PASS |
| | | | 1000~26500 | 10.99 | -38.4 | ≤-9.01 | PASS |
| 3DH5 | Ant1 | 2402 | Reference | 11.11 | 11.11 | --- | PASS |
| | | | 30~1000 | 11.11 | -55.29 | ≤-8.89 | PASS |
| | | | 1000~26500 | 11.11 | -37.49 | ≤-8.89 | PASS |
| | | 2441 | Reference | 11.01 | 11.01 | --- | PASS |
| | | | 30~1000 | 11.01 | -55.12 | ≤-8.99 | PASS |
| | | | 1000~26500 | 11.01 | -39.82 | ≤-8.99 | PASS |
| | | 2480 | Reference | 11.10 | 11.10 | --- | PASS |
| | | | 30~1000 | 11.10 | -54.7 | ≤-8.9 | PASS |
| | | | 1000~26500 | 11.10 | -38.95 | ≤-8.9 | PASS |

DH5_Ant1_2402_0~Reference

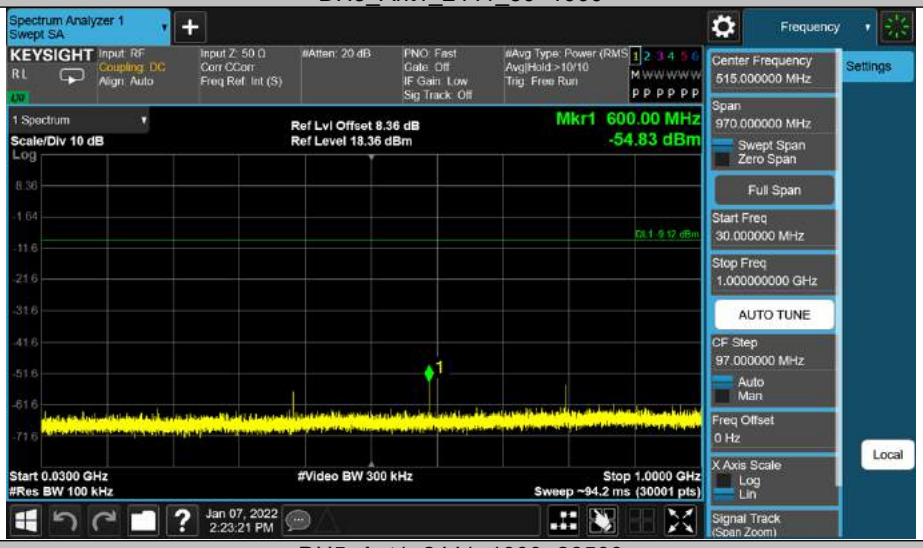

DH5_Ant1_2402_30~1000




DH5_Ant1_2402_1000~26500

DH5_Ant1_2441_0~Reference

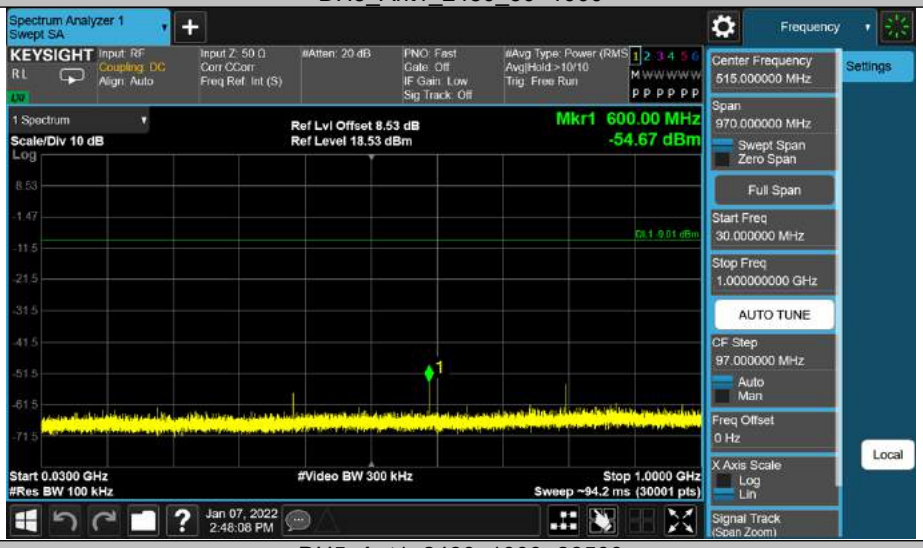

DH5_Ant1_2441_30~1000



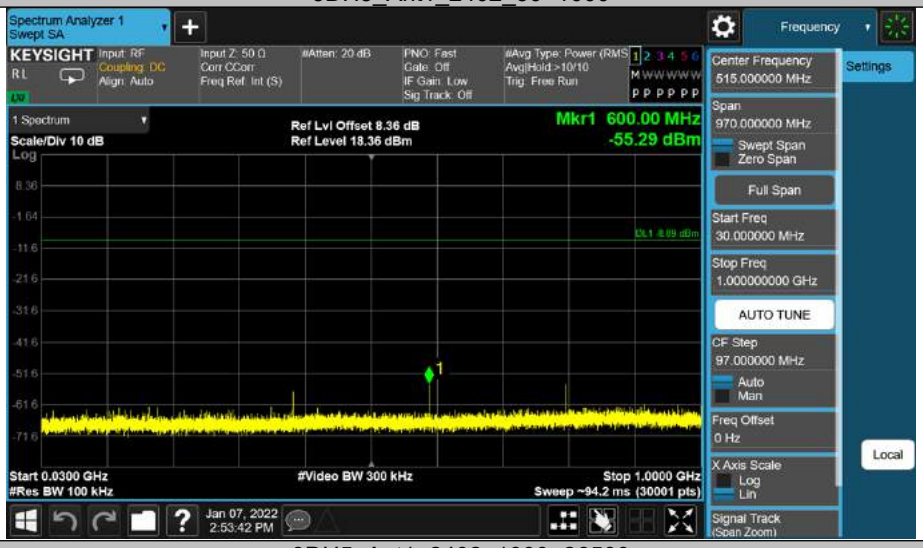

DH5_Ant1_2441_1000~26500

DH5_Ant1_2480_0~Reference


DH5_Ant1_2480_30~1000




DH5_Ant1_2480_1000~26500

| 3DH5_Ant1_2402_0~Reference |
|---|
|  |
| 3DH5_Ant1_2402_30~1000 |
|  |
| 3DH5_Ant1_2402_1000~26500 |
|  |

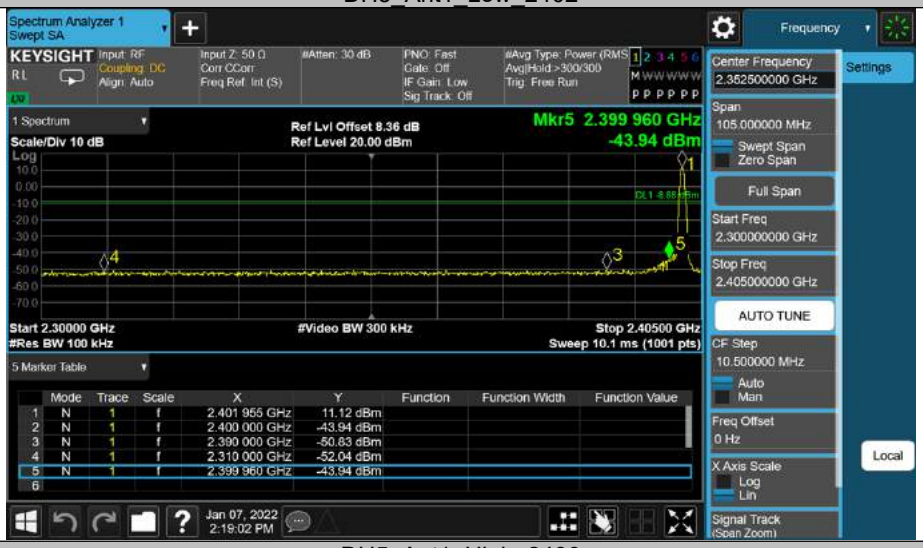
| 3DH5_Ant1_2441_0~Reference |
|---|
|  |
| 3DH5_Ant1_2441_30~1000 |
|  |
| 3DH5_Ant1_2441_1000~26500 |
|  |

| 3DH5_Ant1_2480_0~Reference |
|---|
|  |
| 3DH5_Ant1_2480_30~1000 |
|  |
| 3DH5_Ant1_2480_1000~26500 |
|  |

## Band Edge

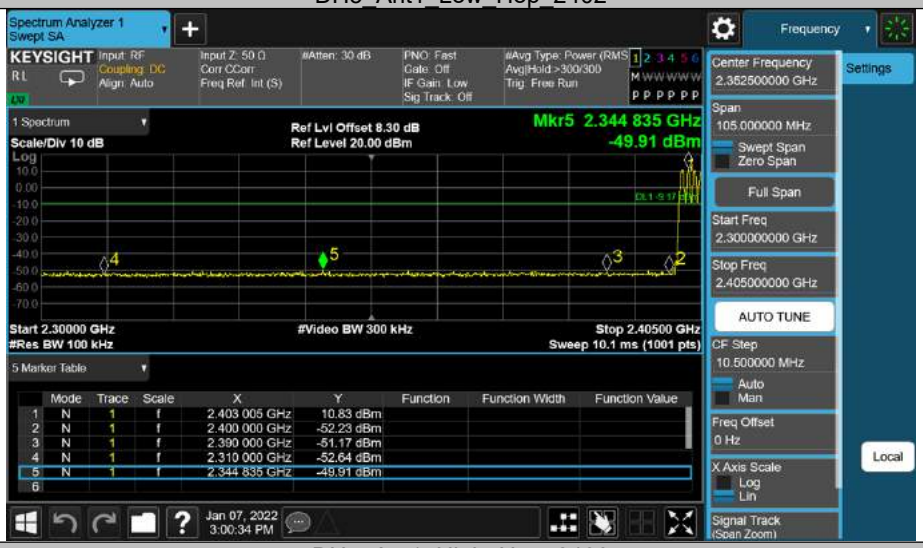
| TestMode | Antenna | ChName | Channel | RefLevel [dBm] | Result [dBm] | Limit [dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| DH5 | Ant1 | Low | 2402 | 11.12 | -43.94 | ≤-8.88 | PASS |
| | | High | 2480 | 11.43 | -49.75 | ≤-8.57 | PASS |
| | | Low | Hop_2402 | 10.83 | -49.91 | ≤-9.17 | PASS |
| | | High | Hop_2480 | 11.23 | -50.22 | ≤-8.77 | PASS |
| 3DH5 | Ant1 | Low | 2402 | 11.20 | -45.06 | ≤-8.81 | PASS |
| | | High | 2480 | 11.25 | -49.69 | ≤-8.75 | PASS |
| | | Low | Hop_2402 | 9.47 | -50.23 | ≤-10.53 | PASS |
| | | High | Hop_2480 | 9.23 | -50.03 | ≤-10.77 | PASS |

DH5_Ant1_Low_2402



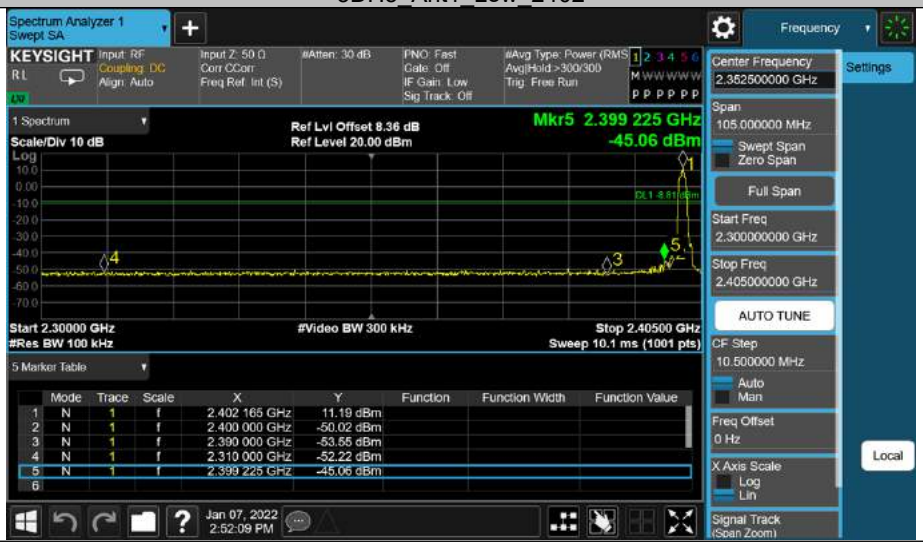

DH5_Ant1_High_2480

DH5_Ant1_Low_Hop_2402

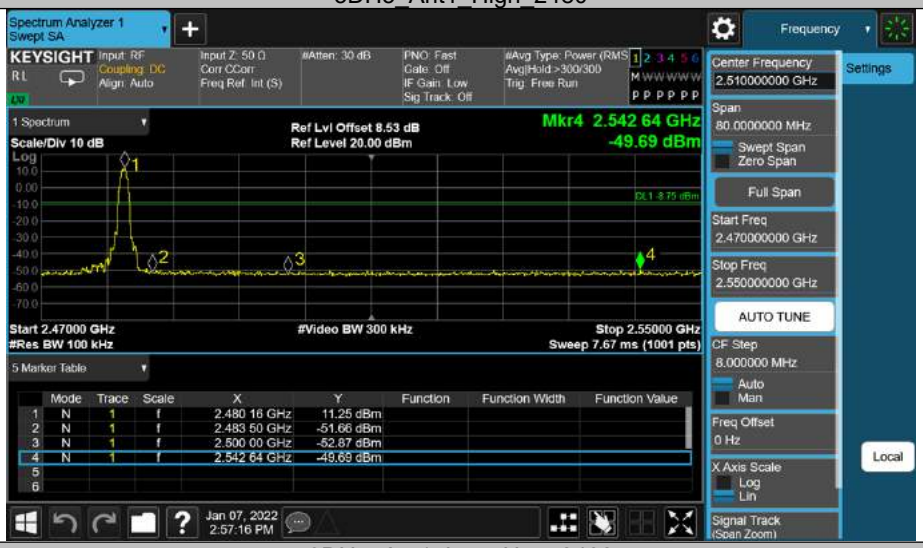



DH5_Ant1_High_Hop_2480

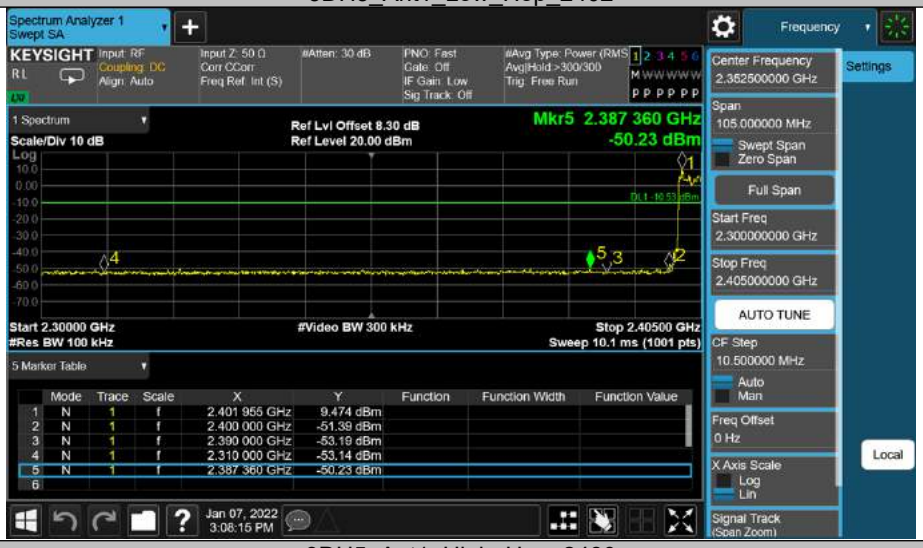

3DH5_Ant1_Low_2402



3DH5_Ant1_High_2480




3DH5_Ant1_Low_Hop_2402




3DH5_Ant1_High_Hop_2480

Note: 1. Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported. 2. This testing was carried out on different modulations, but only the worst case was presented in this report. 3. We tested four adapters, but only the worst case was presented in this report.

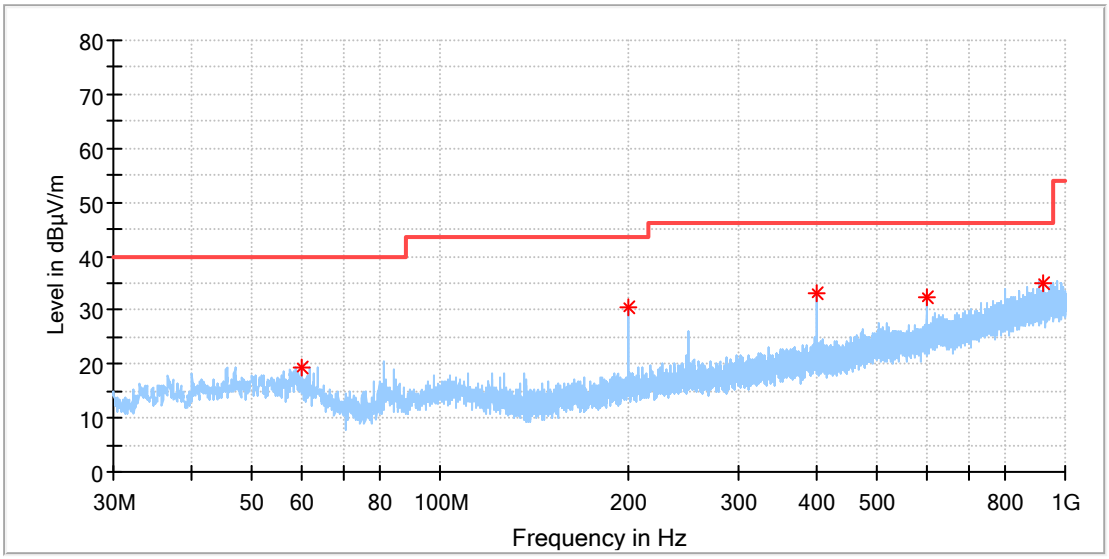
## Appendix A.7: Test Results of Radiated Spurious Emissions

**30MHz - 1GHz (Worst Case)**

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



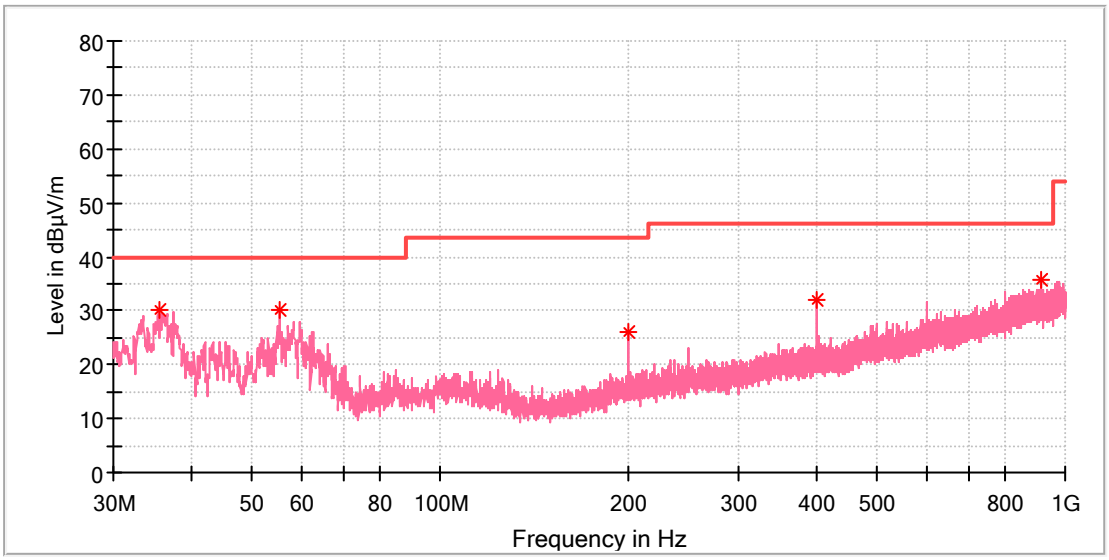

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 60.118500 | 19.47 | 40.00 | 20.53 | 100.0 | H | 136.0 | -19.0 |
| 199.992500 | 30.49 | 43.50 | 13.01 | 100.0 | H | 187.0 | -19.0 |
| 400.006500 | 33.14 | 46.00 | 12.86 | 100.0 | H | 310.0 | -13.6 |
| 600.020500 | 32.33 | 46.00 | 13.67 | 100.0 | H | 285.0 | -9.8 |
| 924.631000 | 35.05 | 46.00 | 10.95 | 100.0 | H | 92.0 | -4.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




## Critical_Freqs

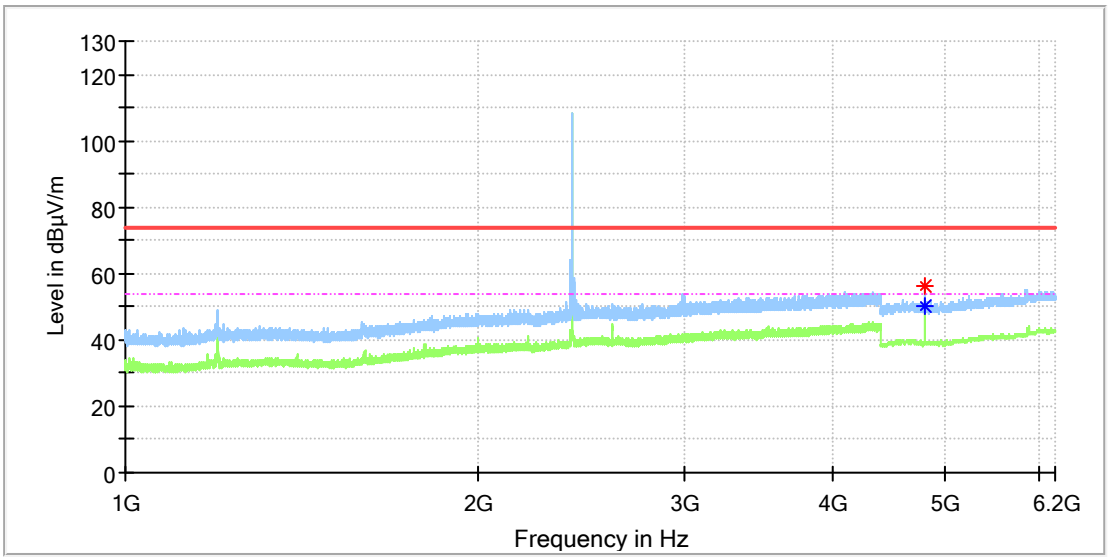
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 35.480500 | 30.15 | 40.00 | 9.85 | 100.0 | V | 349.0 | -21.8 |
| 55.414000 | 30.19 | 40.00 | 9.81 | 100.0 | V | 316.0 | -18.5 |
| 199.992500 | 25.97 | 43.50 | 17.53 | 100.0 | V | 143.0 | -19.0 |
| 400.006500 | 31.99 | 46.00 | 14.01 | 100.0 | V | 332.0 | -13.6 |
| 912.166500 | 35.82 | 46.00 | 10.18 | 100.0 | V | 259.0 | -4.9 |

**1GHz - 18GHz**
Note: The highest waveform in the figure is Bluetooth Fundamental.

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



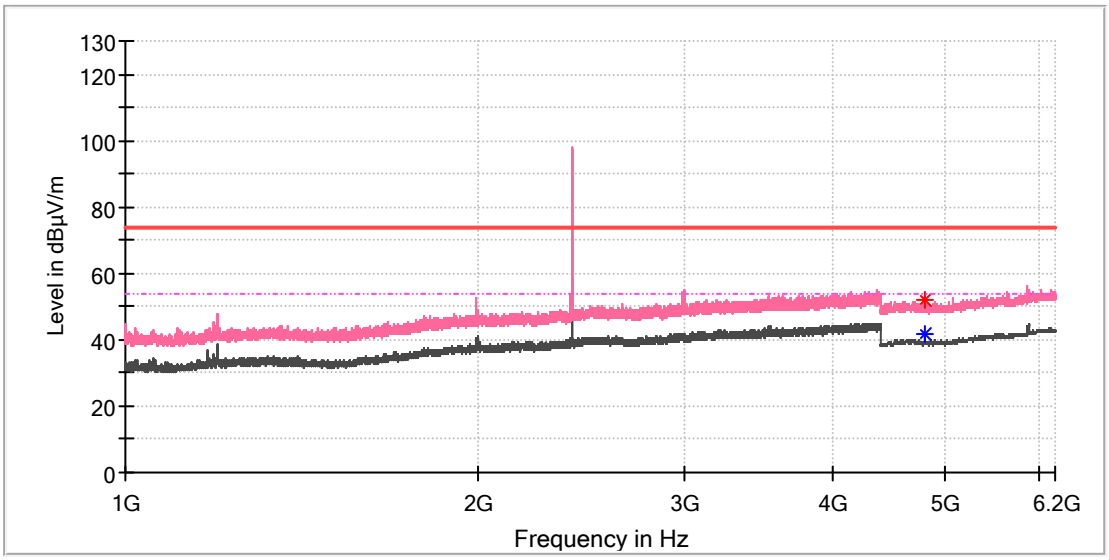

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4803.500000 | --- | 50.31 | 54.00 | 3.69 | 100.0 | H | 358.0 | 11.8 |
| 4804.000000 | 55.98 | --- | 74.00 | 18.02 | 100.0 | H | 358.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



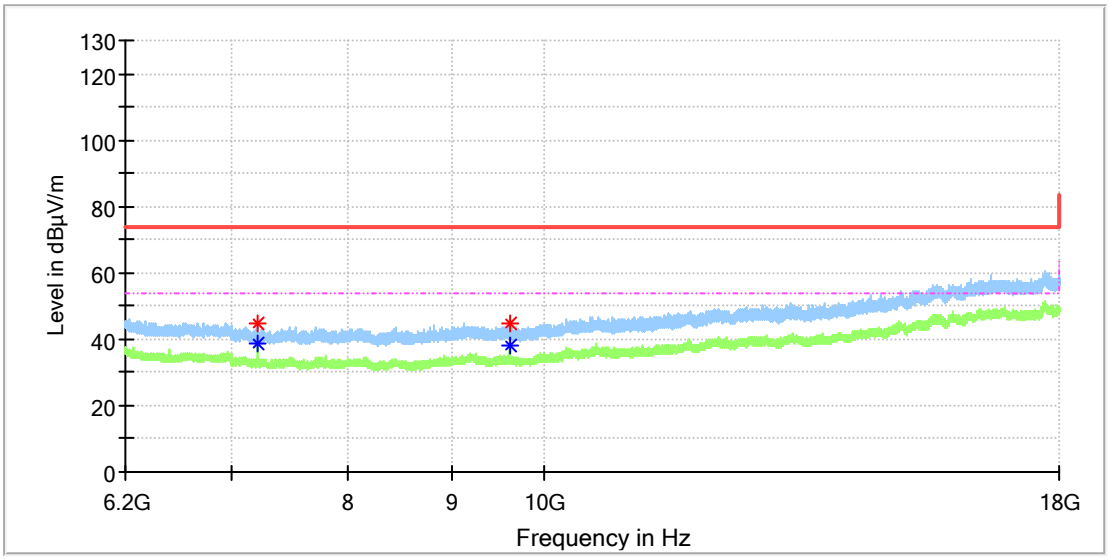

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4803.500000 | --- | 42.00 | 54.00 | 12.00 | 100.0 | V | 237.0 | 11.8 |
| 4804.500000 | 51.74 | --- | 74.00 | 22.27 | 100.0 | V | 237.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



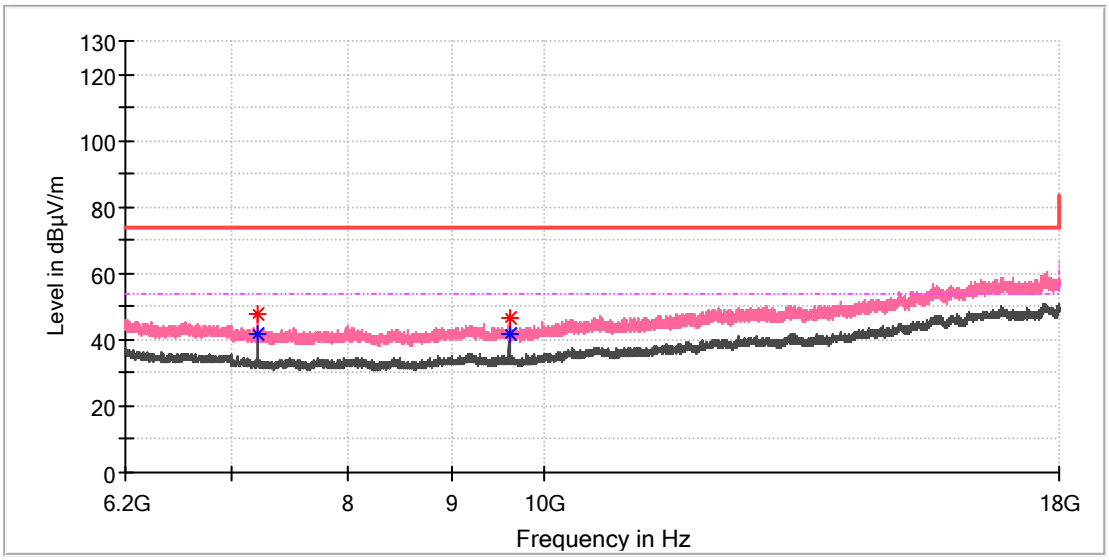

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7205.458333 | 44.46 | --- | 74.00 | 29.54 | 100.0 | H | 19.0 | 8.8 |
| 7205.950000 | --- | 38.88 | 54.00 | 15.12 | 100.0 | H | 74.0 | 8.8 |
| 9607.741667 | --- | 38.15 | 54.00 | 15.85 | 100.0 | H | 333.0 | 10.4 |
| 9608.725000 | 44.92 | --- | 74.00 | 29.08 | 100.0 | H | 345.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



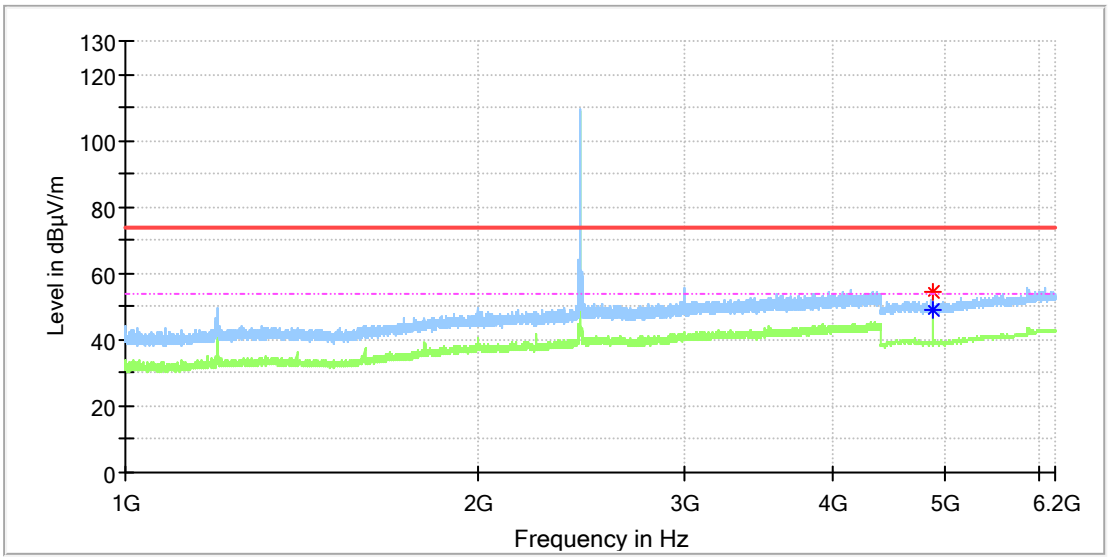

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7205.950000 | 47.47 | --- | 74.00 | 26.53 | 100.0 | V | 181.0 | 8.8 |
| 7205.950000 | --- | 41.44 | 54.00 | 12.56 | 100.0 | V | 181.0 | 8.8 |
| 9608.233333 | 46.84 | --- | 74.00 | 27.16 | 100.0 | V | 244.0 | 10.4 |
| 9608.233333 | --- | 42.00 | 54.00 | 12.00 | 100.0 | V | 244.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



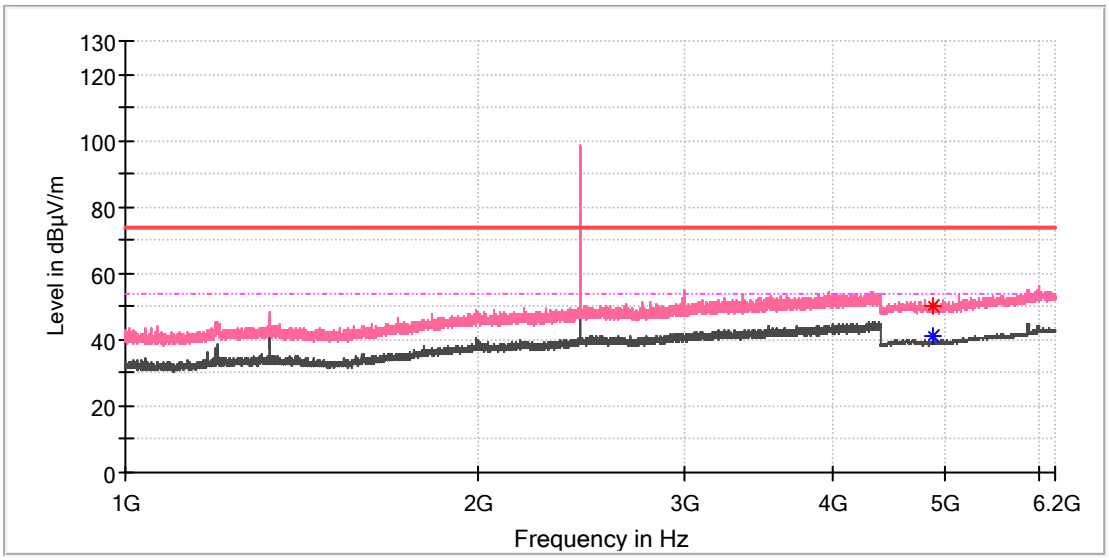

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4882.000000 | 54.53 | --- | 74.00 | 19.47 | 100.0 | H | 359.0 | 11.8 |
| 4882.000000 | --- | 48.81 | 54.00 | 5.19 | 100.0 | H | 359.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



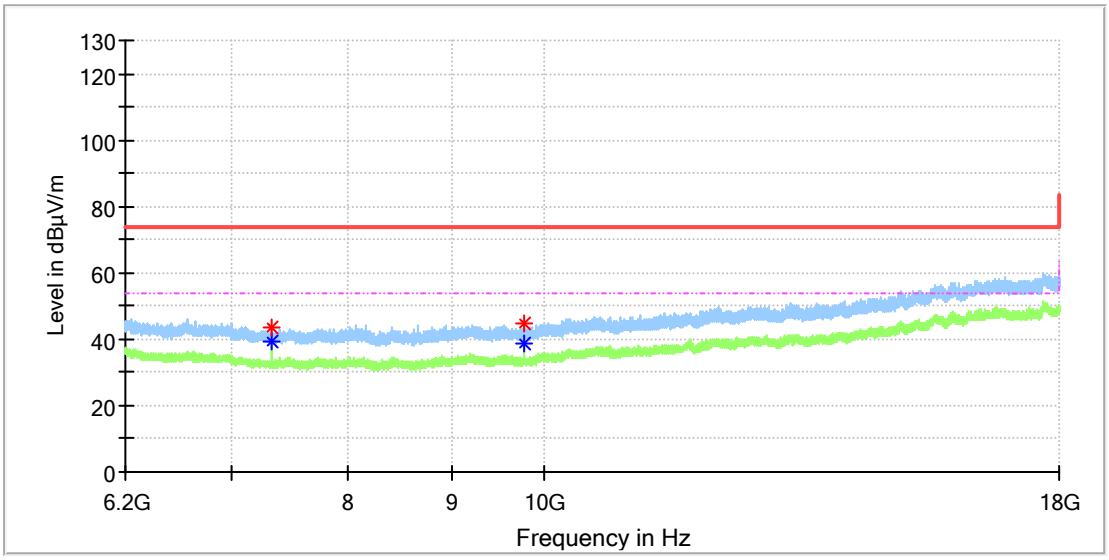

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4882.000000 | 49.90 | --- | 74.00 | 24.10 | 100.0 | V | 322.0 | 11.8 |
| 4882.000000 | --- | 41.34 | 54.00 | 12.66 | 100.0 | V | 322.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



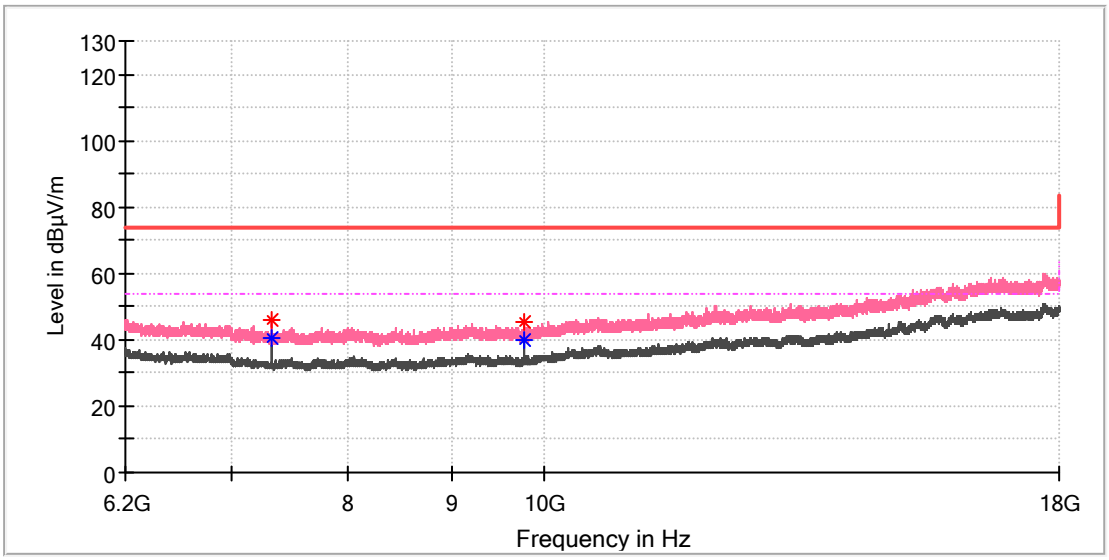

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7322.475000 | 43.42 | --- | 74.00 | 30.58 | 100.0 | H | 35.0 | 8.2 |
| 7322.475000 | --- | 39.22 | 54.00 | 14.78 | 100.0 | H | 35.0 | 8.2 |
| 9764.091667 | 44.59 | --- | 74.00 | 29.41 | 100.0 | H | 290.0 | 10.4 |
| 9764.091667 | --- | 38.81 | 54.00 | 15.19 | 100.0 | H | 290.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



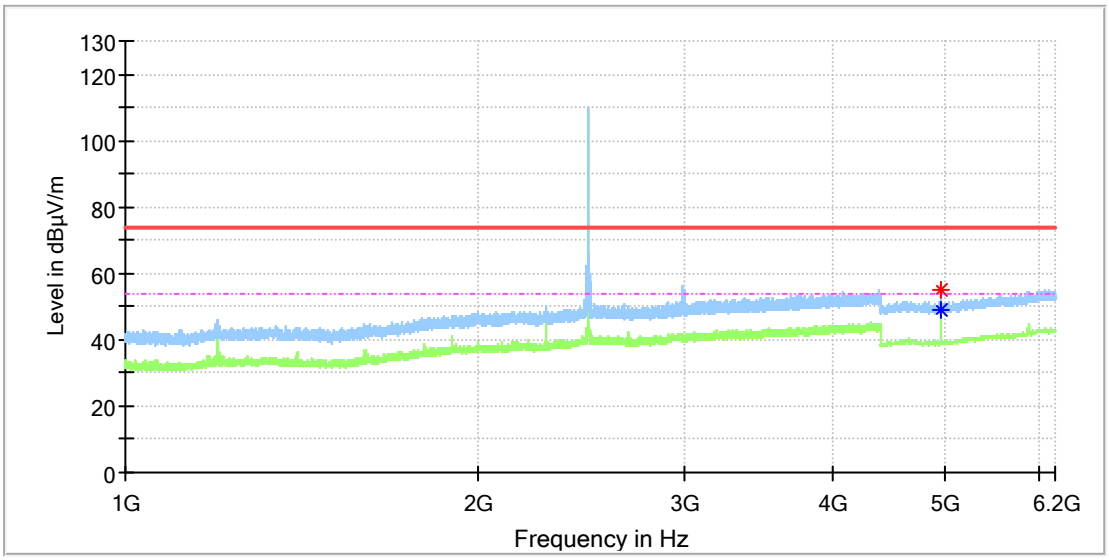

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7322.475000 | 45.68 | --- | 74.00 | 28.32 | 100.0 | V | 162.0 | 8.2 |
| 7322.966667 | --- | 40.27 | 54.00 | 13.73 | 100.0 | V | 174.0 | 8.2 |
| 9763.600000 | 45.11 | --- | 74.00 | 28.89 | 100.0 | V | 272.0 | 10.4 |
| 9764.091667 | --- | 40.09 | 54.00 | 13.91 | 100.0 | V | 248.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



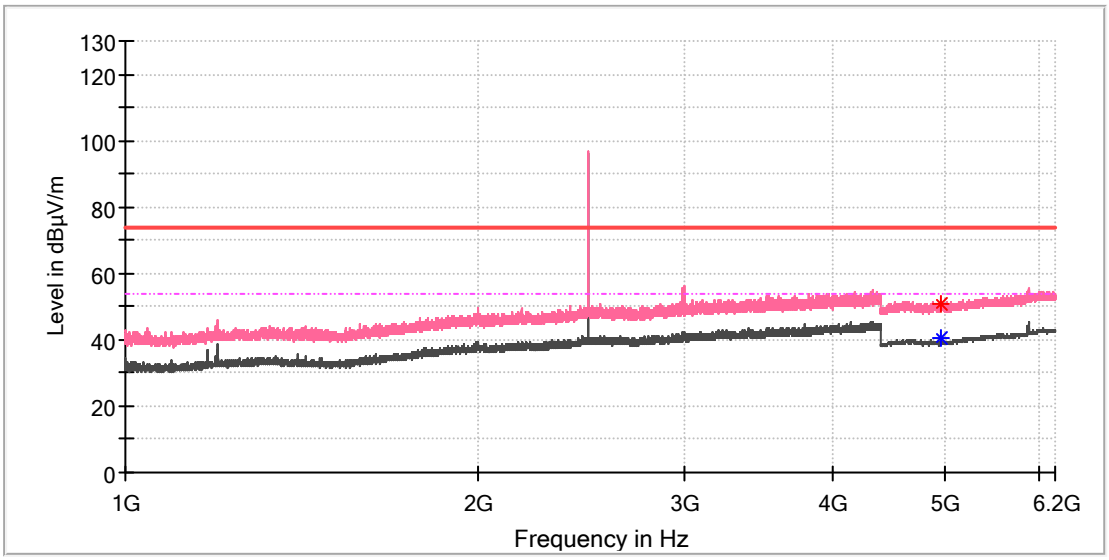

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4960.000000 | 54.85 | --- | 74.00 | 19.15 | 100.0 | H | 359.0 | 11.8 |
| 4960.000000 | --- | 48.93 | 54.00 | 5.07 | 100.0 | H | 359.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



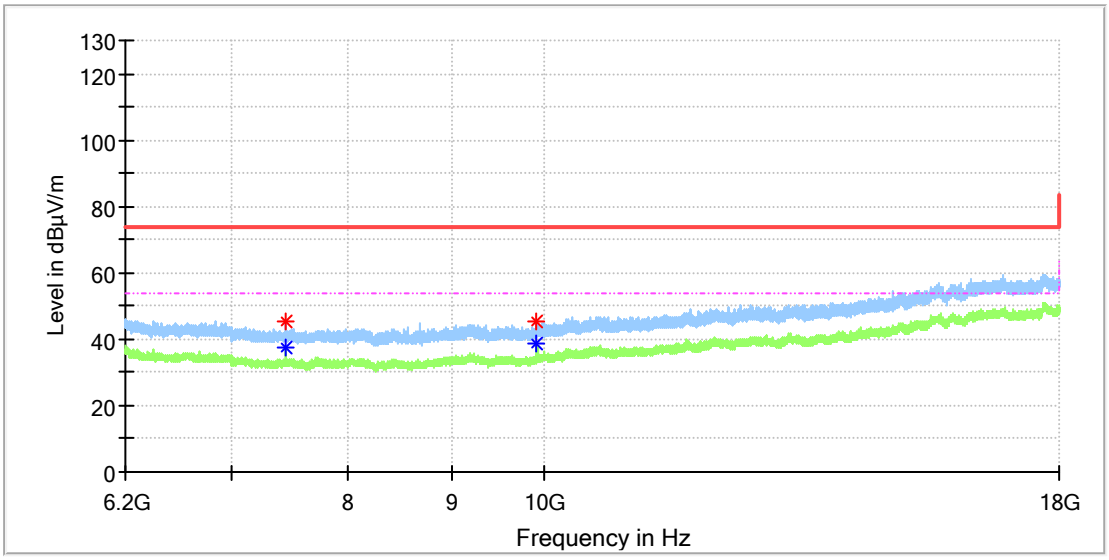

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4960.000000 | --- | 40.70 | 54.00 | 13.30 | 100.0 | V | 283.0 | 11.8 |
| 4963.000000 | 50.91 | --- | 74.00 | 23.09 | 100.0 | V | 307.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



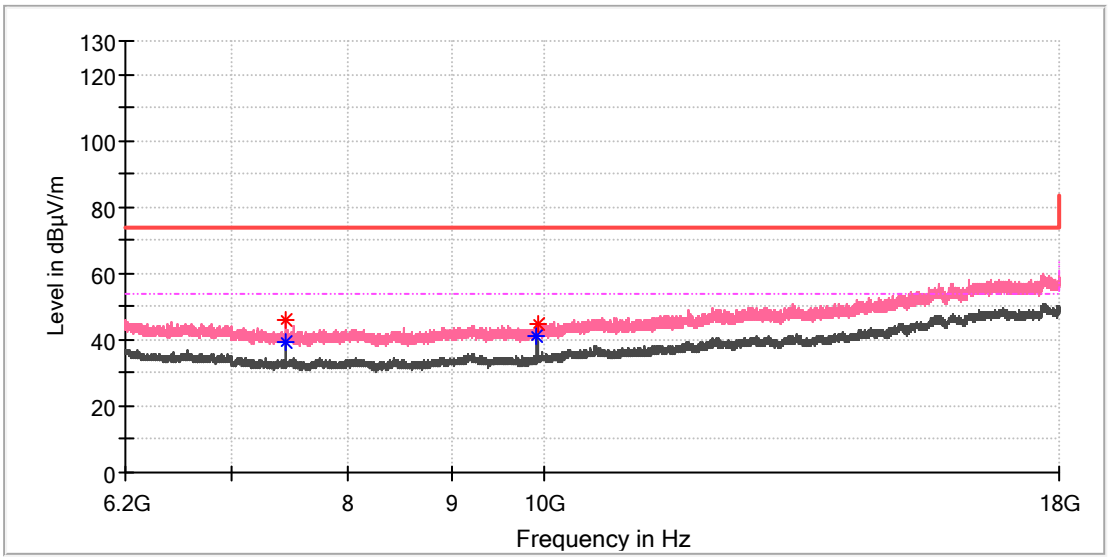

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7439.983333 | 45.17 | --- | 74.00 | 28.83 | 100.0 | H | 18.0 | 8.4 |
| 7439.983333 | --- | 37.70 | 54.00 | 16.30 | 100.0 | H | 18.0 | 8.4 |
| 9919.950000 | 45.22 | --- | 74.00 | 28.78 | 100.0 | H | 275.0 | 10.8 |
| 9919.950000 | --- | 38.48 | 54.00 | 15.52 | 100.0 | H | 275.0 | 10.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




## Critical_Freqs

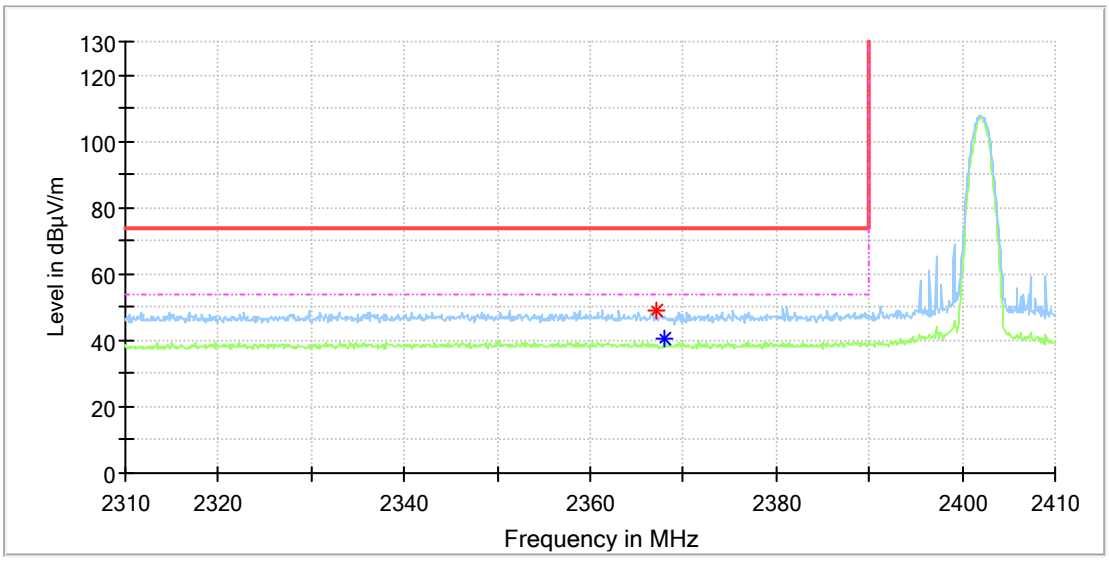
| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7439.491667 | --- | 39.49 | 54.00 | 14.51 | 100.0 | V | 177.0 | 8.4 |
| 7439.983333 | 45.80 | --- | 74.00 | 28.20 | 100.0 | V | 190.0 | 8.4 |
| 9919.950000 | --- | 41.21 | 54.00 | 12.79 | 100.0 | V | 254.0 | 10.8 |
| 9920.441667 | 44.72 | --- | 74.00 | 29.28 | 100.0 | V | 254.0 | 10.8 |

## Appendix A.8: Test Results of Radiated Emissions in Restricted Bands

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



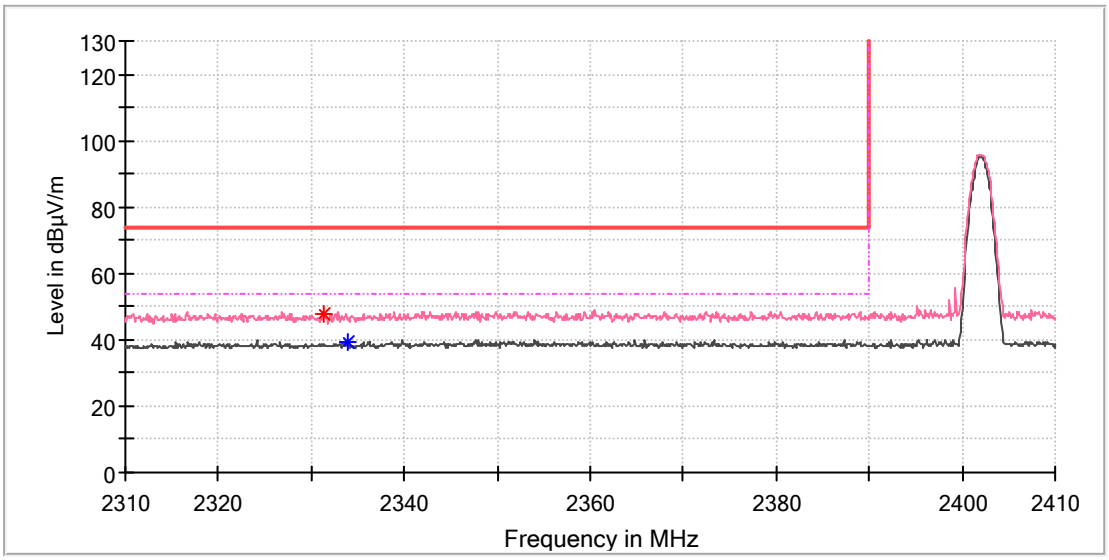

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2367.100000 | 49.25 | --- | 74.00 | 24.75 | 100.0 | H | 342.0 | 6.9 |
| 2368.000000 | --- | 40.32 | 54.00 | 13.69 | 100.0 | H | 0.0 | 6.9 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



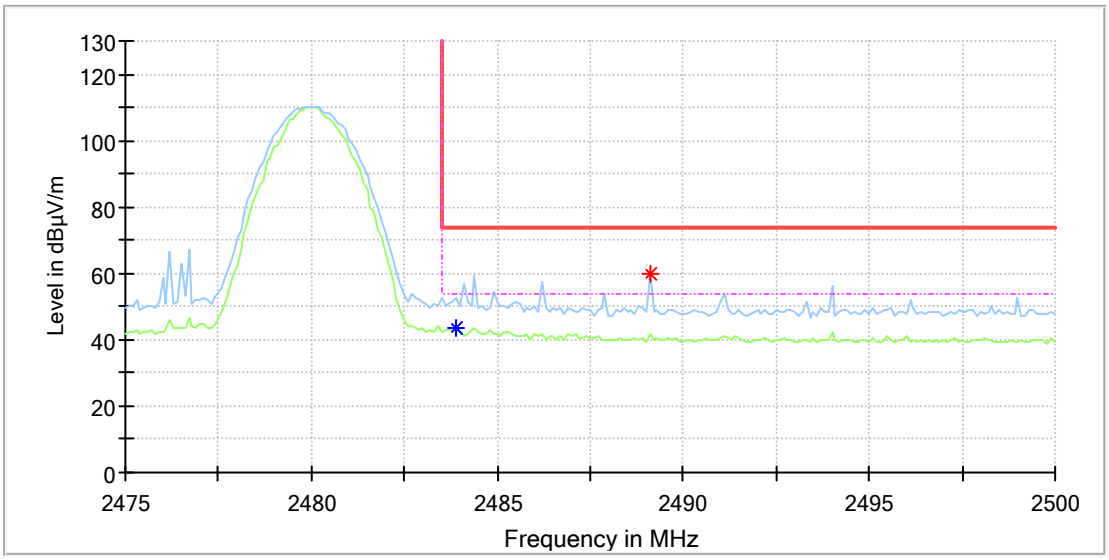

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2331.400000 | 48.01 | --- | 74.00 | 25.99 | 100.0 | V | 144.0 | 6.7 |
| 2333.900000 | --- | 39.54 | 54.00 | 14.46 | 100.0 | V | 327.0 | 6.7 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



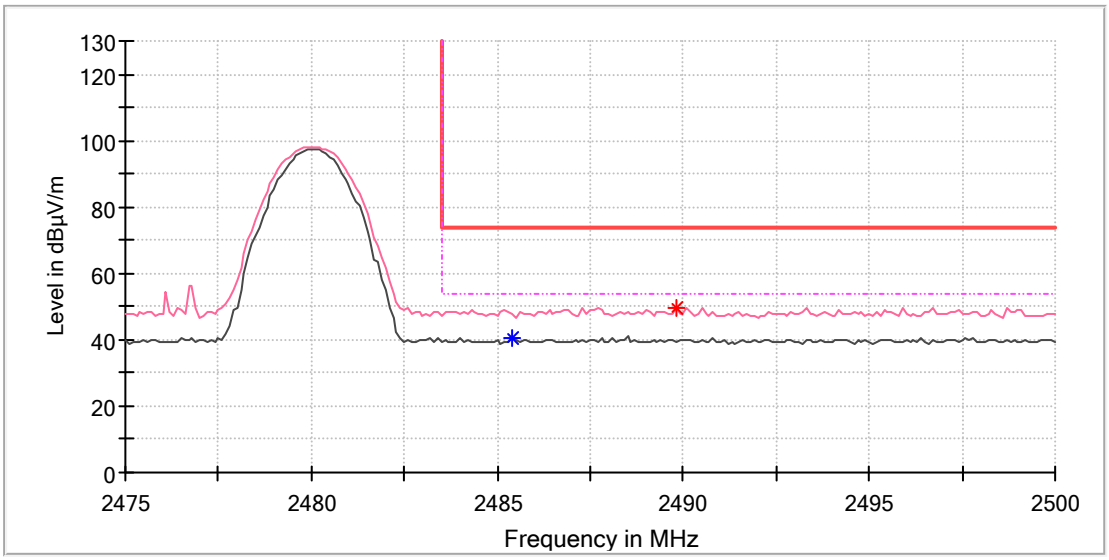

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2483.900000 | --- | 43.25 | 54.00 | 10.75 | 100.0 | H | 56.0 | 7.4 |
| 2489.100000 | 59.80 | --- | 74.00 | 14.20 | 100.0 | H | 76.0 | 7.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BR_DH5_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2485.400000 | --- | 40.38 | 54.00 | 13.62 | 100.0 | V | 323.0 | 7.4 |
| 2489.800000 | 49.49 | --- | 74.00 | 24.51 | 100.0 | V | 312.0 | 7.4 |

# Appendix B: Test Results of Bluetooth Low Energy

## Appendix B.1: Test Results of Conducted Power Spectral Density

| TestMode | Antenna | Channel | Result[dBm/3-100kHz] | Limit[dBm/3kHz] | Verdict |
|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 1.41 | ≤8 | PASS |
| | | 2440 | 1.17 | ≤8 | PASS |
| | | 2480 | 1.41 | ≤8 | PASS |

BLE_1M_Ant1_2402


BLE_1M_Ant1_2440

| BLE_1M_Ant1_2480 |
| --- |
|  |

## Appendix B.2: Test Results of 6dB Bandwidth

| TestMode | Antenna | Channel | DTS BW [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 0.676 | 2401.656 | 2402.332 | 0.5 | PASS |
| | | 2440 | 0.684 | 2439.656 | 2440.340 | 0.5 | PASS |
| | | 2480 | 0.684 | 2479.656 | 2480.340 | 0.5 | PASS |

BLE_1M_Ant1_2402


BLE_1M_Ant1_2440

| BLE_1M_Ant1_2480 |
| --- |
|  |

## Appendix B.3: Test Results of 99% Bandwidth

| TestMode | Antenna | Channel | OCB [MHz] | FL[MHz] | FH[MHz] | Limit[MHz] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | 1.0350 | 2401.489 | 2402.524 | --- | PASS |
| | | 2440 | 1.0376 | 2439.489 | 2440.527 | --- | PASS |
| | | 2480 | 1.0452 | 2479.486 | 2480.532 | --- | PASS |

BLE_1M_Ant1_2402


BLE_1M_Ant1_2440

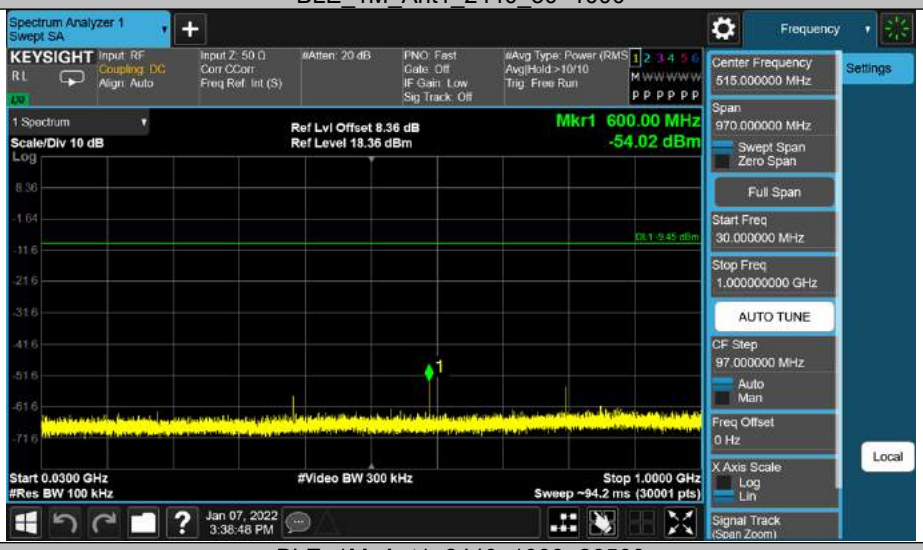
| BLE_1M_Ant1_2480 |
| --- |
|  |

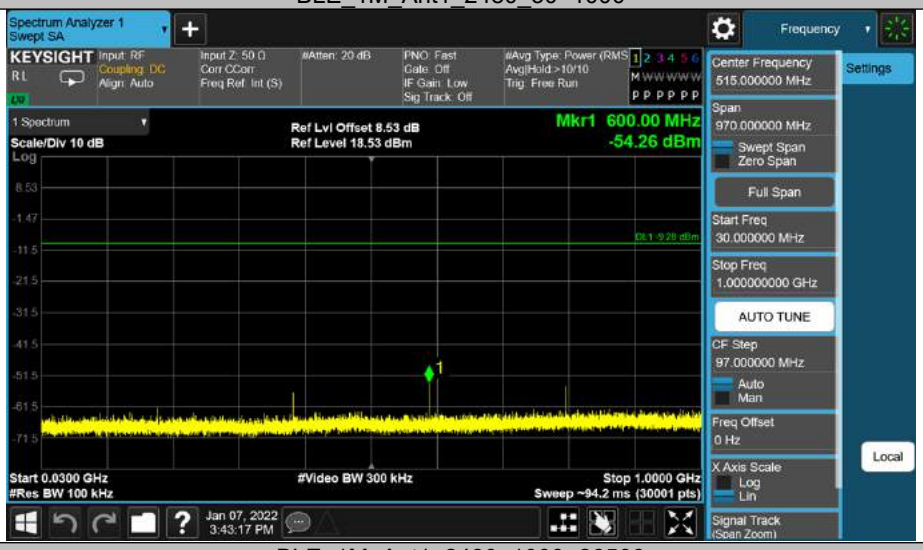
## Appendix B.4: Test Results of Conducted Spurious Emissions Measured in 100 kHz Bandwidth

### Conducted Spurious Emission

| TestMode | Antenna | Channel | FreqRange [MHz] | RefLevel [dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | 2402 | Reference | 10.74 | 10.74 | --- | PASS |
| | | | 30~1000 | 10.74 | -54.65 | ≤-9.26 | PASS |
| | | | 1000~26500 | 10.74 | -40.26 | ≤-9.26 | PASS |
| | | 2440 | Reference | 10.55 | 10.55 | --- | PASS |
| | | | 30~1000 | 10.55 | -54.02 | ≤-9.45 | PASS |
| | | | 1000~26500 | 10.55 | -39.14 | ≤-9.45 | PASS |
| | | 2480 | Reference | 10.72 | 10.72 | --- | PASS |
| | | | 30~1000 | 10.72 | -54.27 | ≤-9.28 | PASS |
| | | | 1000~26500 | 10.72 | -39.94 | ≤-9.28 | PASS |

| BLE_1M_Ant1_2402_0~Reference |
|---|
|  |
| BLE_1M_Ant1_2402_30~1000 |
|  |
| BLE_1M_Ant1_2402_1000~26500 |
|  |

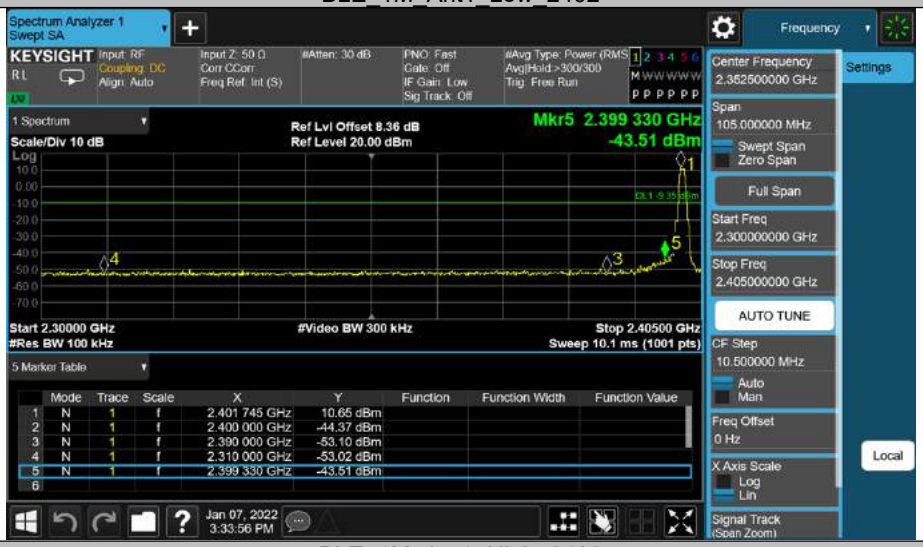
| BLE_1M_Ant1_2440_0~Reference |
|---|
|  |
| BLE_1M_Ant1_2440_30~1000 |
|  |
| BLE_1M_Ant1_2440_1000~26500 |
|  |

| BLE_1M_Ant1_2480_0~Reference |
|---|
|  |
| BLE_1M_Ant1_2480_30~1000 |
|  |
| BLE_1M_Ant1_2480_1000~26500 |
|  |

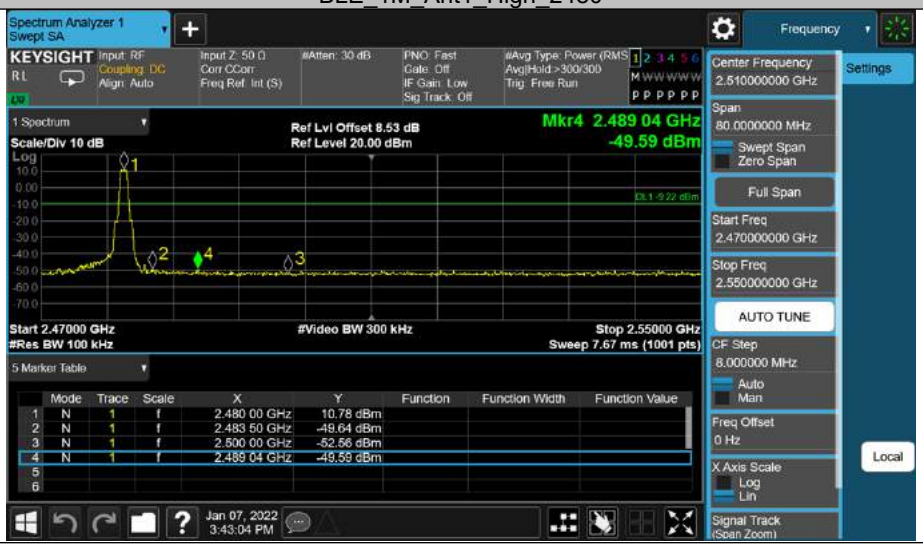
## Band Edge

| TestMode | Antenna | ChName | Channel | RefLevel[dBm] | Result[dBm] | Limit[dBm] | Verdict |
|---|---|---|---|---|---|---|---|
| BLE_1M | Ant1 | Low | 2402 | 10.65 | -43.51 | ≤-9.35 | PASS |
| | | High | 2480 | 10.78 | -49.60 | ≤-9.22 | PASS |

BLE_1M_Ant1_Low_2402




BLE_1M_Ant1_High_2480



## Appendix B.5: Test Results of Radiated Spurious Emissions

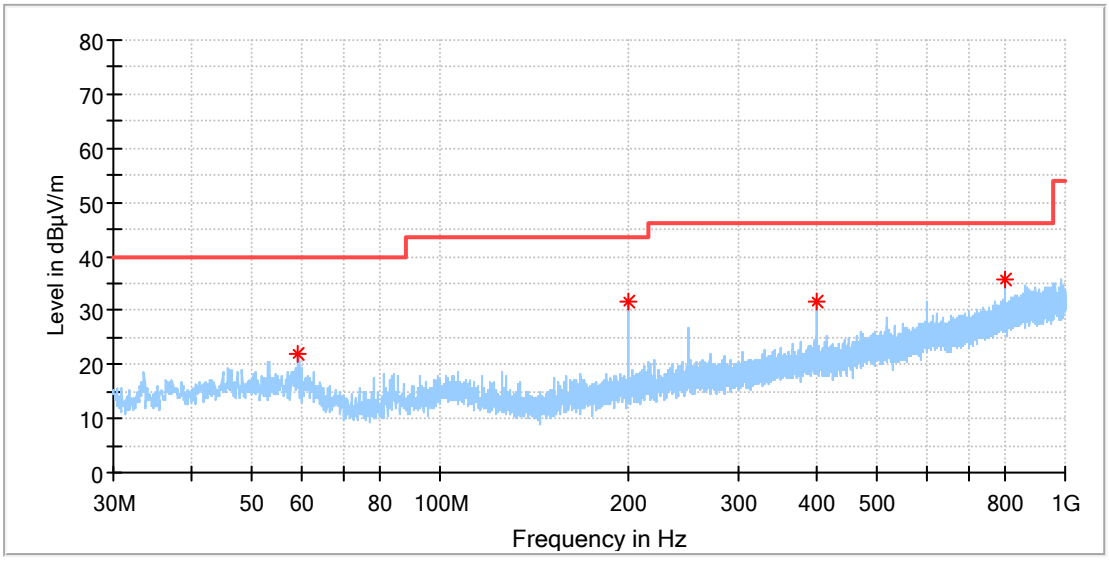
Note:
1) This testing was carried out on different modulations, but only the worst case was presented in this report.
2) We tested four adapters, but only the worst case was presented in this report.
3) Testing was carried out within frequency range 9kHz to the tenth harmonics. The measurement results below 30MHz and 18GHz - 26.5GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

**30 MHz to 1GHz**

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:58% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



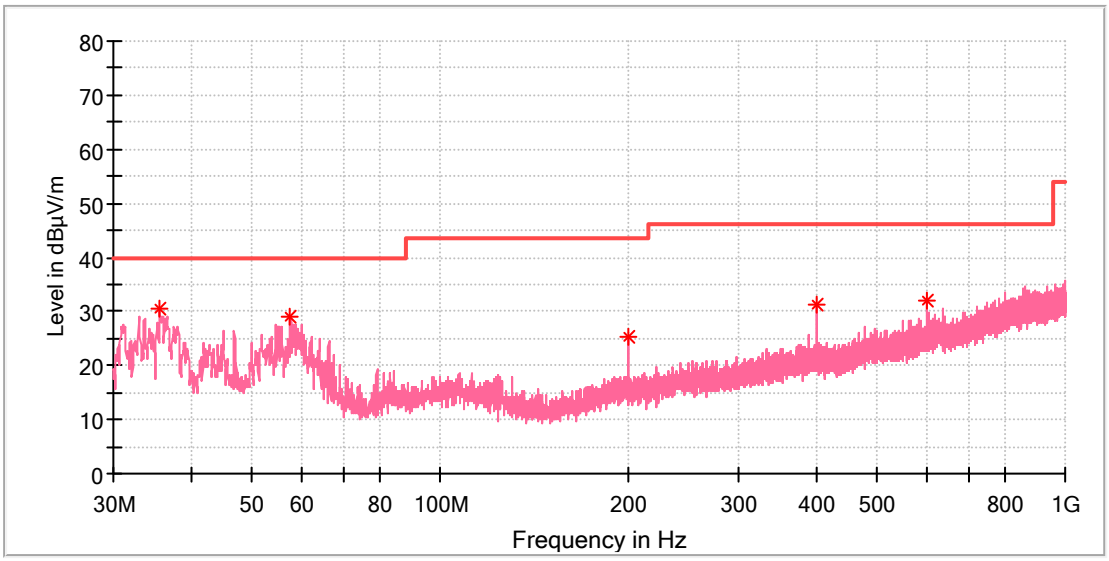

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 59.294000 | 21.84 | 40.00 | 18.16 | 100.0 | H | 178.0 | -18.9 |
| 199.992500 | 31.65 | 43.50 | 11.85 | 100.0 | H | 223.0 | -19.0 |
| 400.006500 | 31.61 | 46.00 | 14.39 | 100.0 | H | 318.0 | -13.6 |
| 800.034500 | 35.60 | 46.00 | 10.40 | 100.0 | H | 40.0 | -6.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:58% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




## Critical_Freqs

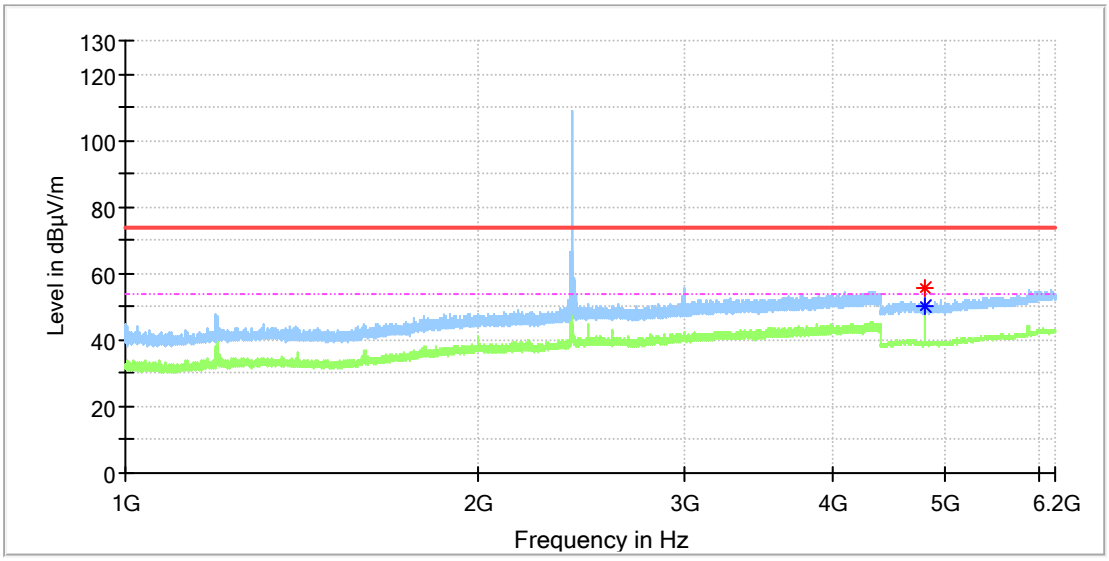
| Frequency (MHz) | MaxPeak (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|
| 35.577500 | 30.44 | 40.00 | 9.56 | 100.0 | V | 0.0 | -21.7 |
| 57.596500 | 29.13 | 40.00 | 10.87 | 100.0 | V | 251.0 | -18.7 |
| 199.992500 | 25.47 | 43.50 | 18.03 | 100.0 | V | 32.0 | -19.0 |
| 400.006500 | 31.27 | 46.00 | 14.73 | 100.0 | V | 335.0 | -13.6 |
| 599.972000 | 32.01 | 46.00 | 13.99 | 100.0 | V | 327.0 | -9.8 |

**1GHz-18GHz**
Note: The highest waveform in the figure is Bluetooth Fundamental.

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



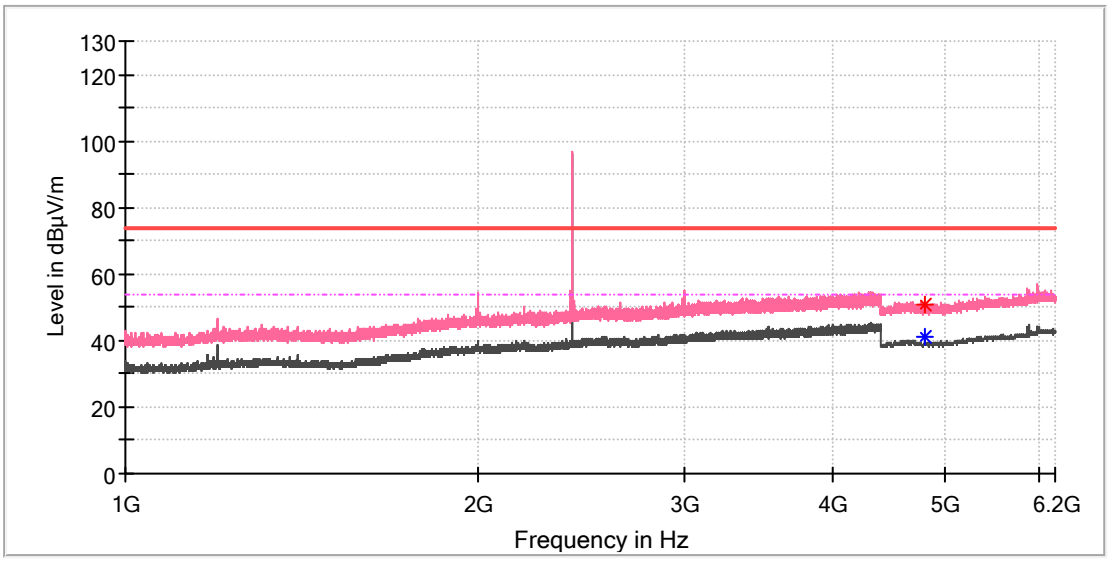

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4803.500000 | --- | 50.31 | 54.00 | 3.69 | 100.0 | H | 0.0 | 11.8 |
| 4804.000000 | 55.76 | --- | 74.00 | 18.24 | 100.0 | H | 0.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



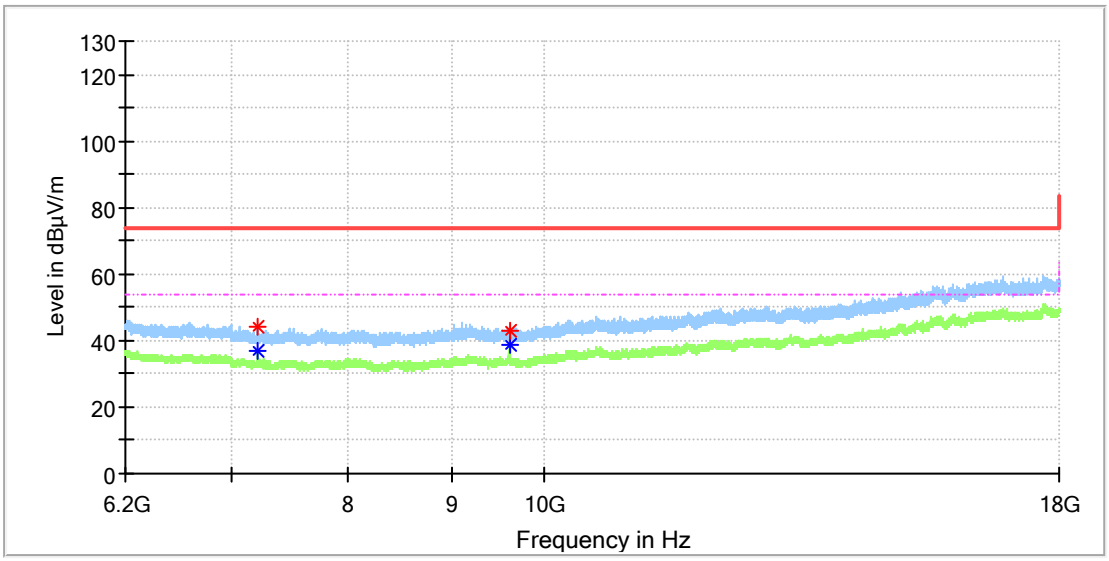

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4804.000000 | --- | 41.15 | 54.00 | 12.85 | 100.0 | V | 245.0 | 11.8 |
| 4806.000000 | 50.99 | --- | 74.00 | 23.01 | 100.0 | V | 194.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



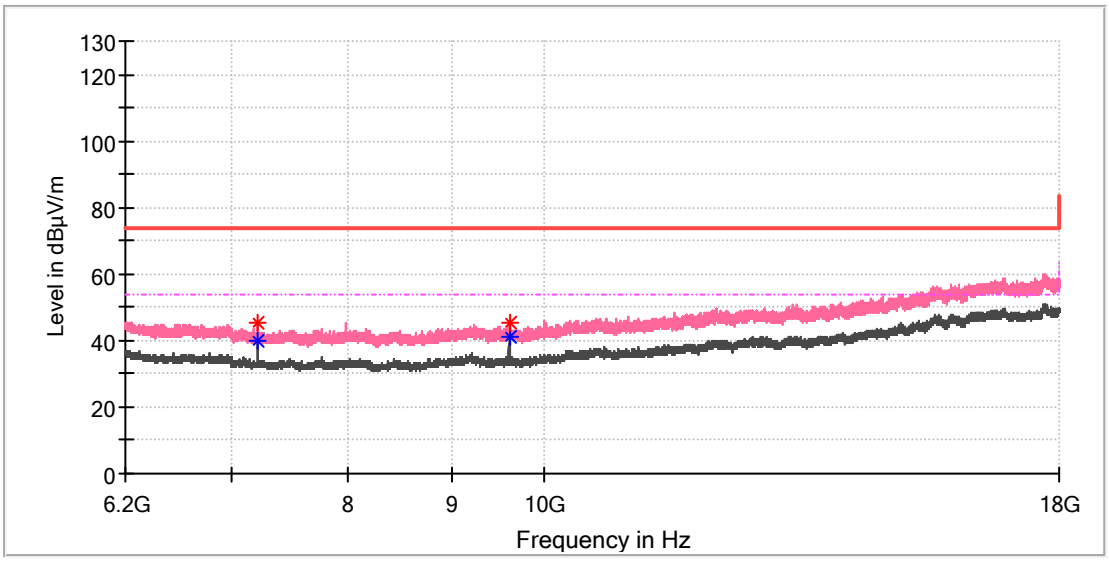

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7205.458333 | --- | 36.80 | 54.00 | 17.20 | 100.0 | H | 35.0 | 8.8 |
| 7205.458333 | 44.13 | --- | 74.00 | 29.87 | 100.0 | H | 35.0 | 8.8 |
| 9607.741667 | 42.97 | --- | 74.00 | 31.03 | 100.0 | H | 270.0 | 10.4 |
| 9607.741667 | --- | 38.67 | 54.00 | 15.33 | 100.0 | H | 270.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



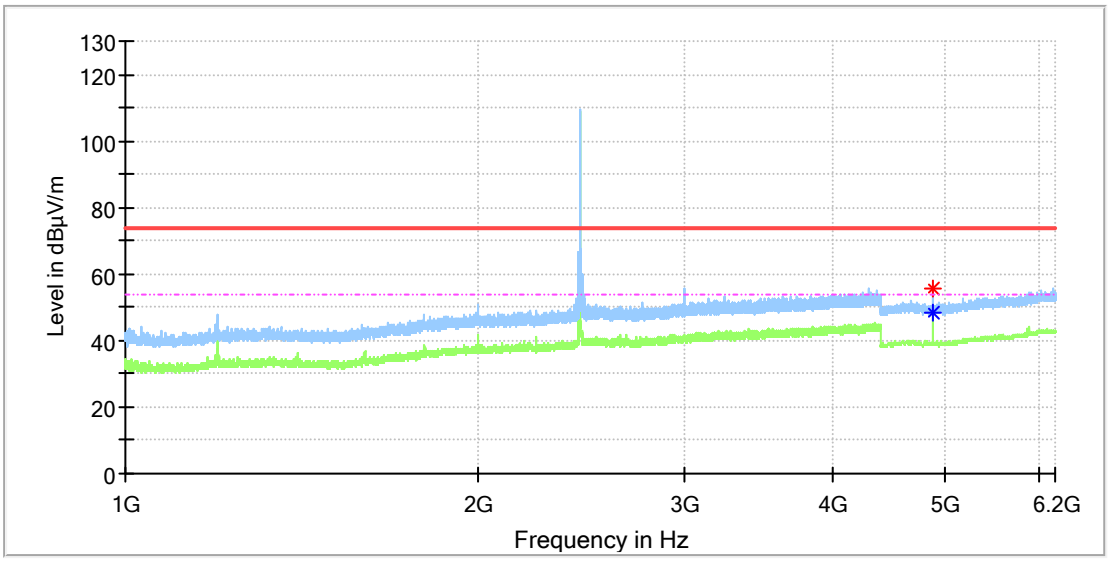

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7205.458333 | --- | 39.65 | 54.00 | 14.35 | 100.0 | V | 182.0 | 8.8 |
| 7205.950000 | 45.45 | --- | 74.00 | 28.55 | 100.0 | V | 170.0 | 8.8 |
| 9607.741667 | 45.18 | --- | 74.00 | 28.82 | 100.0 | V | 234.0 | 10.4 |
| 9607.741667 | --- | 40.86 | 54.00 | 13.14 | 100.0 | V | 234.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



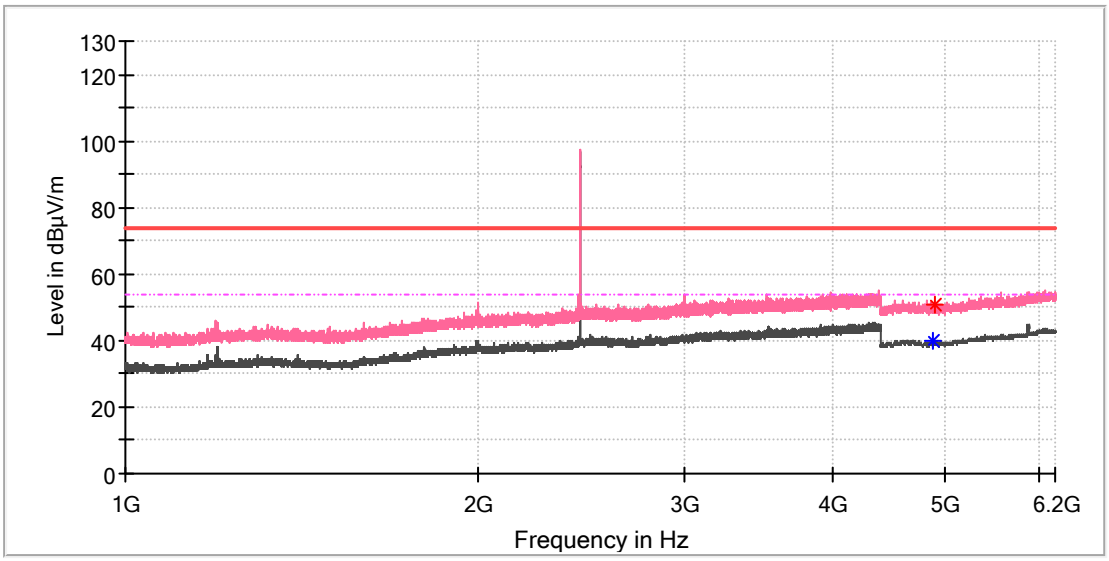

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4880.000000 | --- | 48.53 | 54.00 | 5.47 | 100.0 | H | 358.0 | 11.8 |
| 4880.000000 | 55.67 | --- | 74.00 | 18.33 | 100.0 | H | 358.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



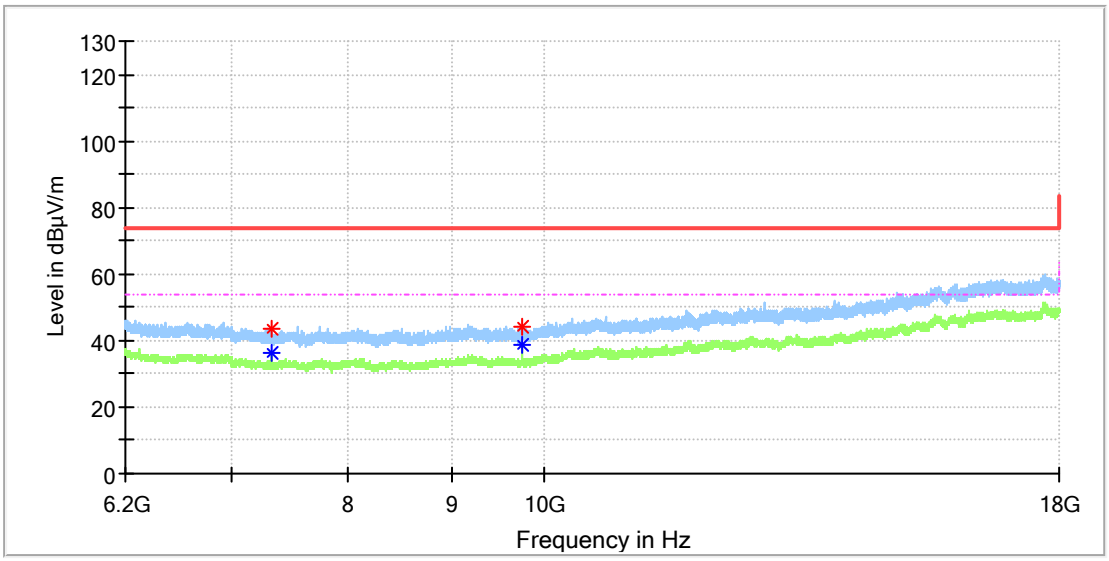

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4879.500000 | --- | 40.02 | 54.00 | 13.98 | 100.0 | V | 275.0 | 11.8 |
| 4889.000000 | 50.53 | --- | 74.00 | 23.47 | 100.0 | V | 190.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



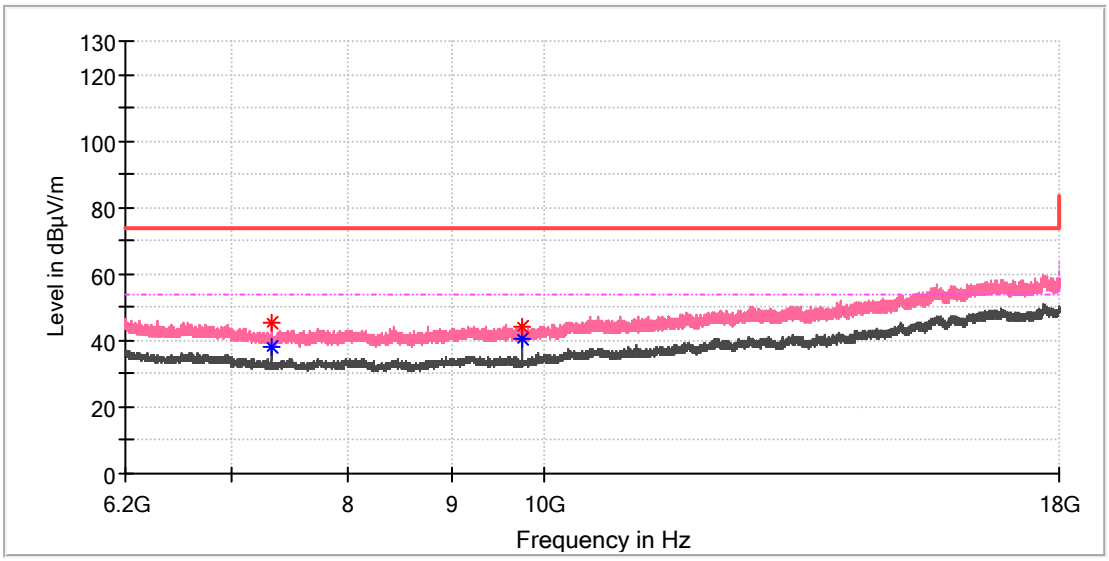

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7319.525000 | 43.46 | --- | 74.00 | 30.54 | 100.0 | H | 40.0 | 8.2 |
| 7320.016667 | --- | 36.04 | 54.00 | 17.96 | 100.0 | H | 76.0 | 8.2 |
| 9760.158333 | 44.04 | --- | 74.00 | 29.96 | 100.0 | H | 273.0 | 10.4 |
| 9760.158333 | --- | 38.52 | 54.00 | 15.48 | 100.0 | H | 273.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Mid channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



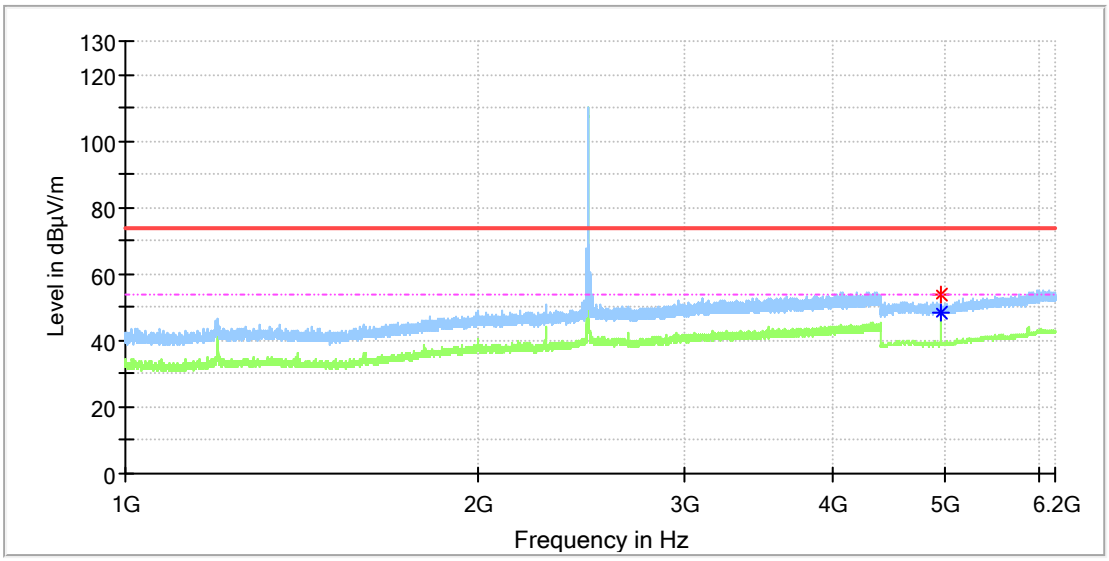

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7319.525000 | 45.20 | --- | 74.00 | 28.80 | 100.0 | V | 181.0 | 8.2 |
| 7319.525000 | --- | 38.21 | 54.00 | 15.79 | 100.0 | V | 181.0 | 8.2 |
| 9760.158333 | 44.44 | --- | 74.00 | 29.56 | 100.0 | V | 244.0 | 10.4 |
| 9760.158333 | --- | 40.65 | 54.00 | 13.35 | 100.0 | V | 244.0 | 10.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



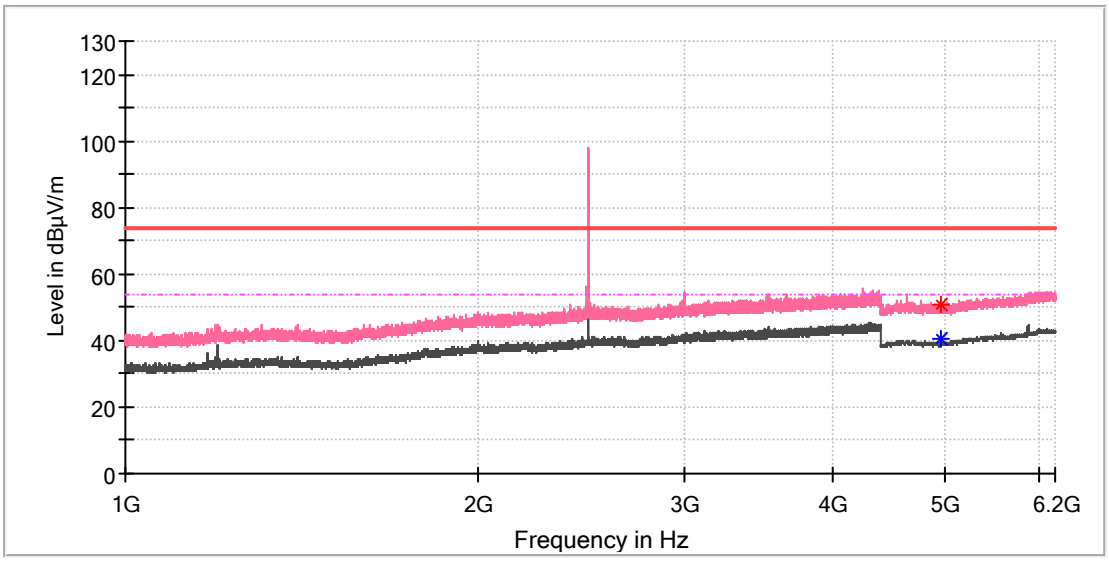

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4959.500000 | 54.09 | --- | 74.00 | 19.91 | 100.0 | H | 0.0 | 11.8 |
| 4960.000000 | --- | 48.44 | 54.00 | 5.56 | 100.0 | H | 356.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



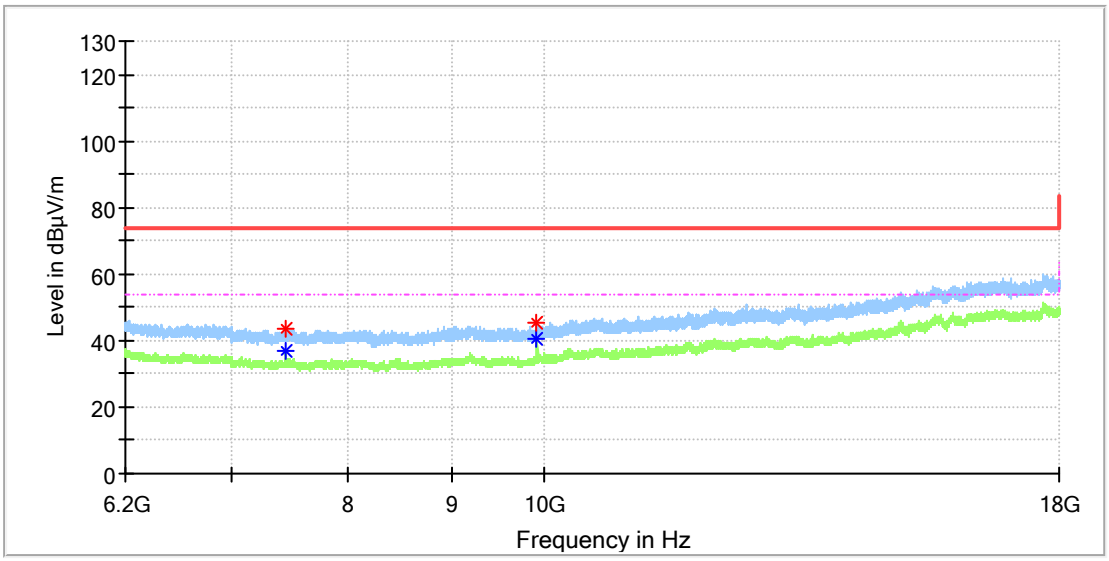

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 4956.500000 | 50.79 | --- | 74.00 | 23.21 | 100.0 | V | 67.0 | 11.8 |
| 4959.500000 | --- | 40.31 | 54.00 | 13.69 | 100.0 | V | 141.0 | 11.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



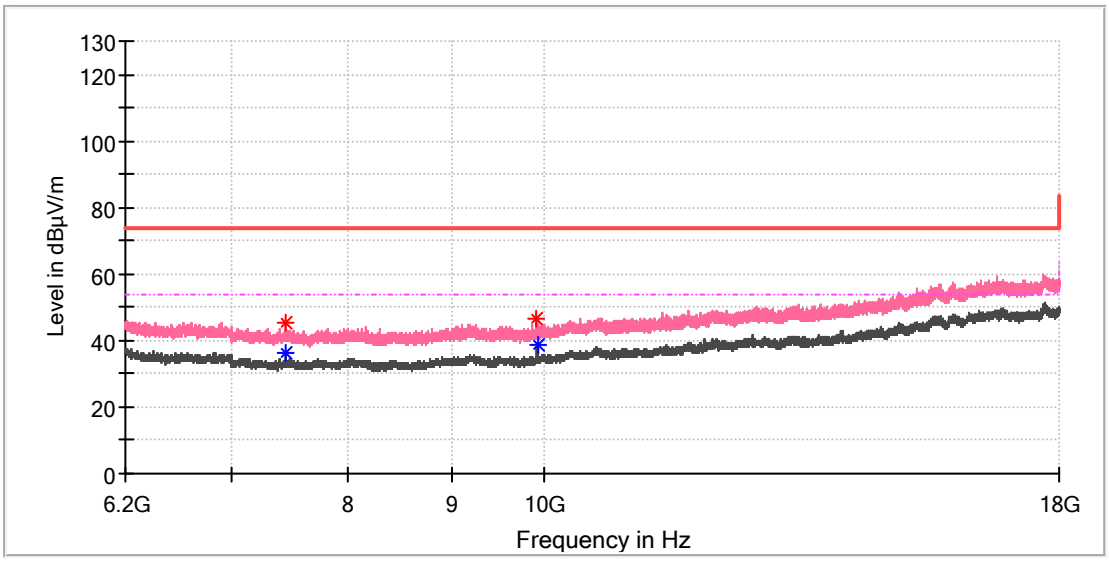

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7439.491667 | 43.32 | --- | 74.00 | 30.68 | 100.0 | H | 48.0 | 8.4 |
| 7440.475000 | --- | 37.02 | 54.00 | 16.98 | 100.0 | H | 48.0 | 8.4 |
| 9919.950000 | 45.36 | --- | 74.00 | 28.64 | 100.0 | H | 274.0 | 10.8 |
| 9919.950000 | --- | 40.26 | 54.00 | 13.74 | 100.0 | H | 274.0 | 10.8 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




## Critical_Freqs

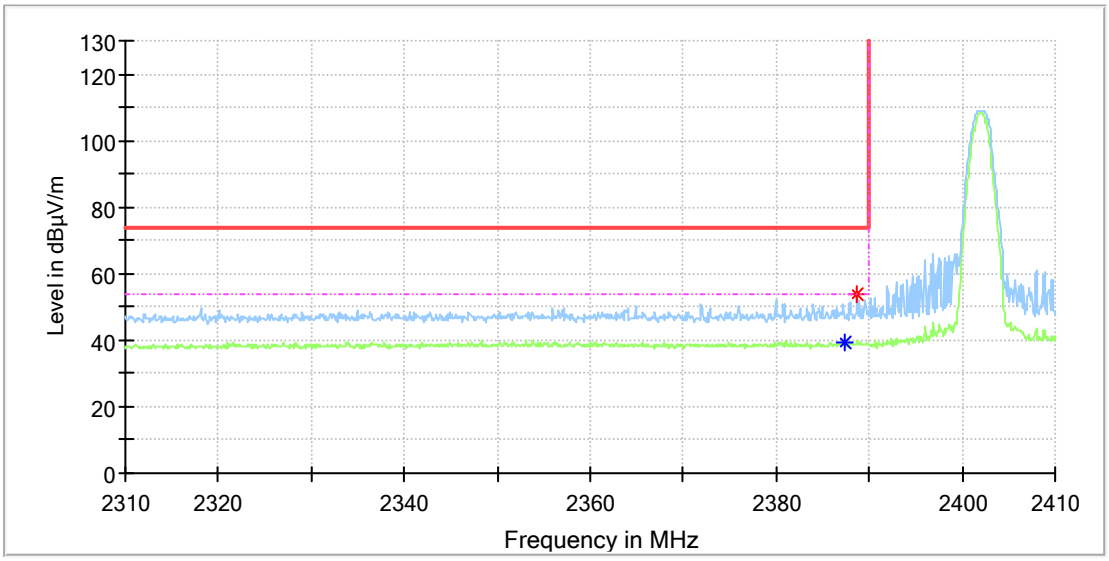
| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 7439.491667 | 45.26 | --- | 74.00 | 28.74 | 100.0 | V | 149.0 | 8.4 |
| 7439.491667 | --- | 36.26 | 54.00 | 17.74 | 100.0 | V | 149.0 | 8.4 |
| 9919.950000 | 46.47 | --- | 74.00 | 27.53 | 100.0 | V | 264.0 | 10.8 |
| 9920.441667 | --- | 39.00 | 54.00 | 15.00 | 100.0 | V | 252.0 | 10.8 |

## Appendix B.6: Test Results of Radiated Emissions in Restricted Bands

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



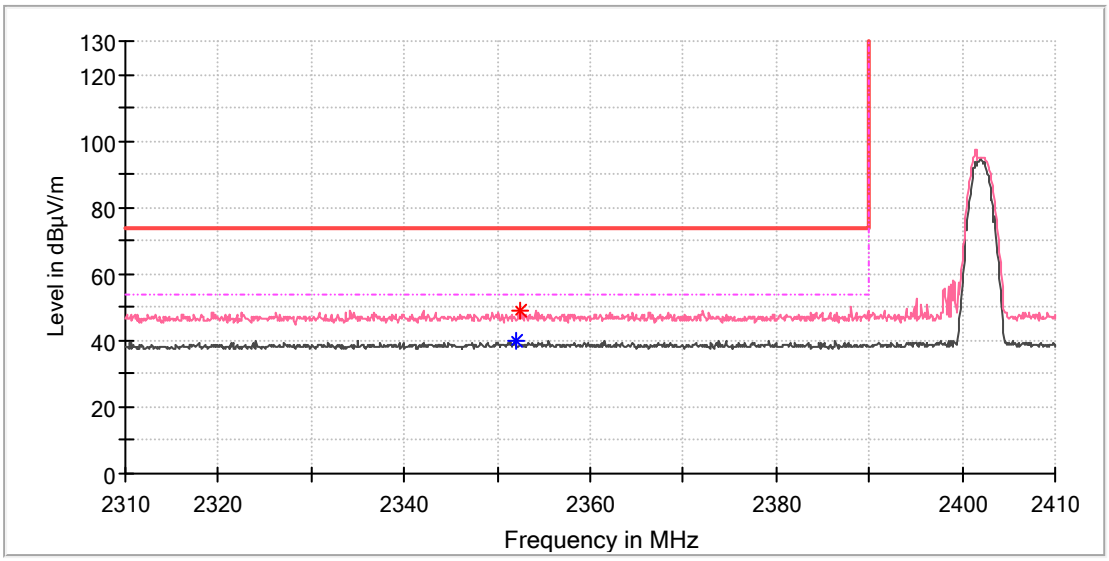

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2387.400000 | --- | 39.57 | 54.00 | 14.43 | 100.0 | H | 23.0 | 7.0 |
| 2388.700000 | 54.00 | --- | 74.00 | 20.00 | 100.0 | H | 51.0 | 7.0 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_Low channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



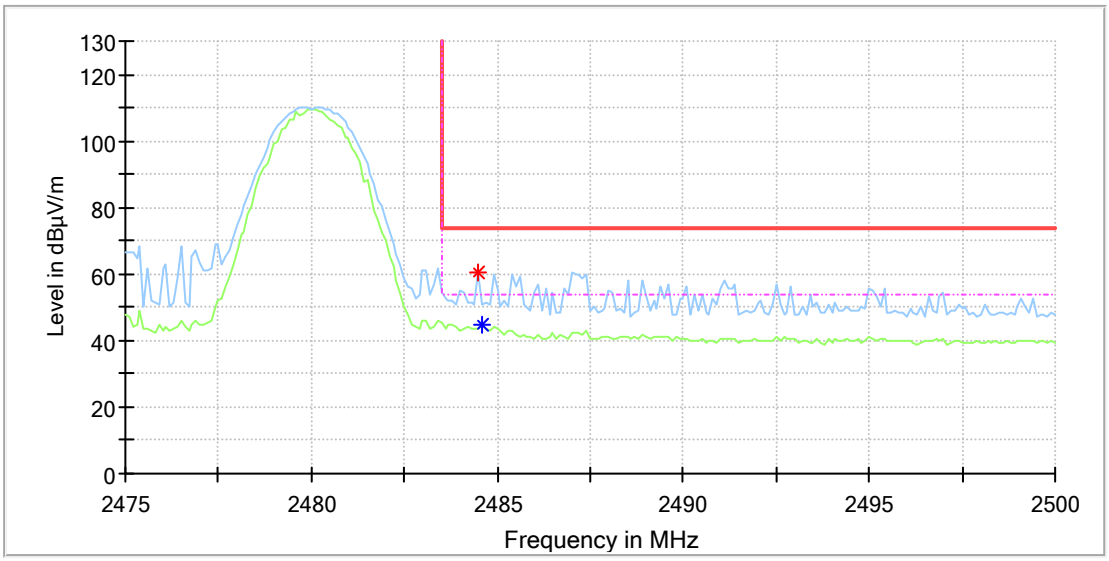

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2352.000000 | --- | 39.90 | 54.00 | 14.10 | 100.0 | V | 293.0 | 6.9 |
| 2352.500000 | 48.94 | --- | 74.00 | 25.06 | 100.0 | V | 203.0 | 6.9 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |



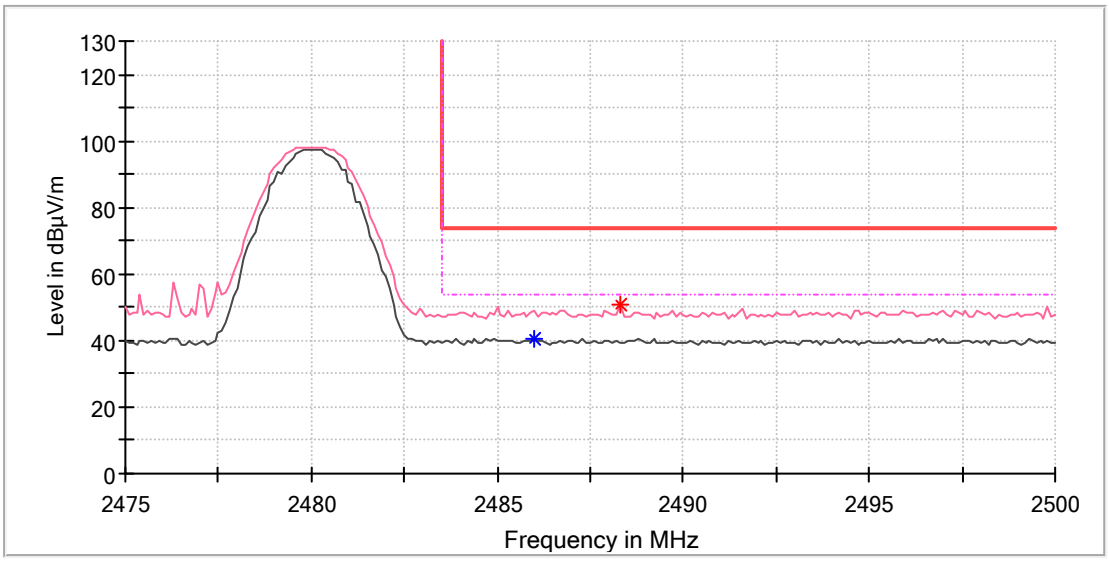

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2484.500000 | 60.60 | --- | 74.00 | 13.40 | 100.0 | H | 54.0 | 7.4 |
| 2484.600000 | --- | 44.59 | 54.00 | 9.41 | 100.0 | H | 54.0 | 7.4 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Model: | ZXV10 B866V2F |
| Test Mode: | BLE 1M_High channel |
| Order No/Sample No: | 168349178/A003191348-002 |
| Test Voltage:: | 120V/60Hz |
| Remark: | Temp 23 Humi:56% |
| Test Standard: | FCC 15.247 |
| Tested By: | Kei Zhang |
| Reviewed By: | Terry Yin |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV/m) | Average (dBµV/m) | Limit (dBµV/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB/m) |
|---|---|---|---|---|---|---|---|---|
| 2486.000000 | --- | 40.58 | 54.00 | 13.42 | 100.0 | V | 121.0 | 7.4 |
| 2488.300000 | 50.99 | --- | 74.00 | 23.01 | 100.0 | V | 285.0 | 7.4 |

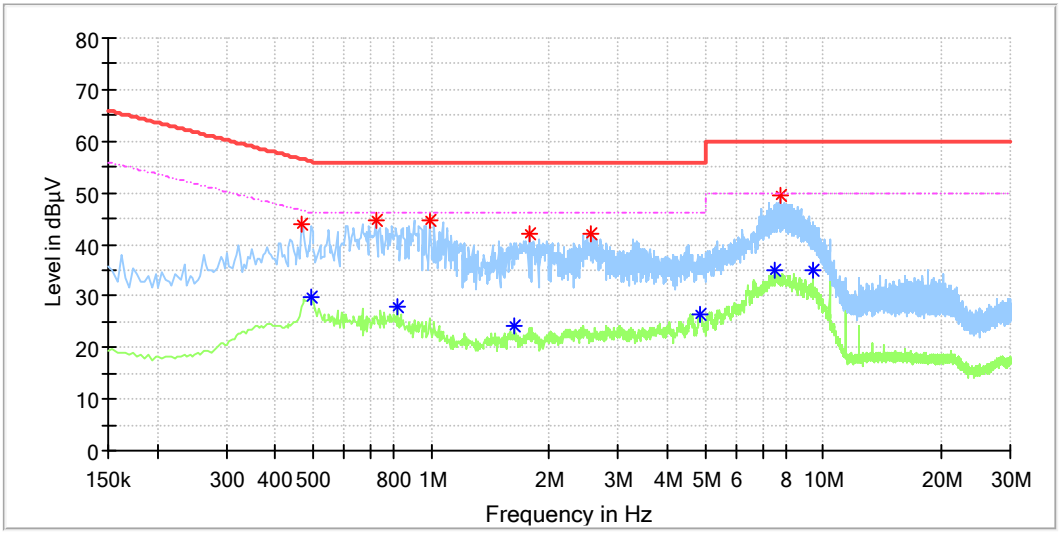
## Appendix B.7: Test Results of Conducted Emission

Note: We tested four adapters, but only the worst case was presented in this report.

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Order No: | 168349178 |
| Model: | ZXV10 B866V2F |
| Test Mode: | BT operation |
| Test Voltage: | AC 120V/60Hz |
| Test By: | Shower Dai |
| Review By: | Gary Chen |
| Remark: | Adapter Model:UWP-12W-1210S |



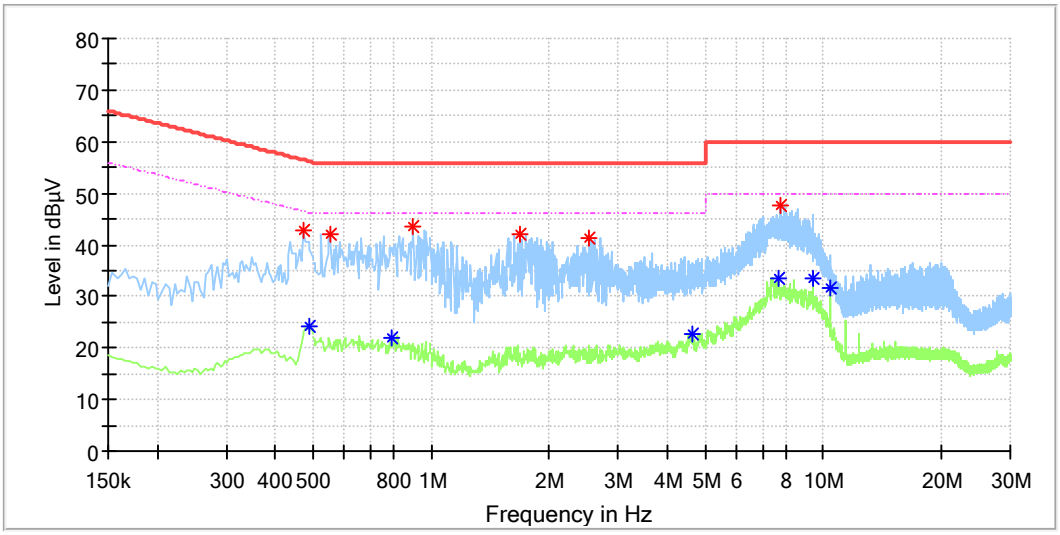

## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|
| 0.466000 | 44.01 | --- | 56.59 | 12.58 | L1 | 9.7 |
| 0.494000 | --- | 29.85 | 46.10 | 16.25 | L1 | 9.7 |
| 0.724000 | 44.73 | --- | 56.00 | 11.27 | L1 | 9.7 |
| 0.820000 | --- | 27.98 | 46.00 | 18.02 | L1 | 9.7 |
| 0.988000 | 44.55 | --- | 56.00 | 11.45 | L1 | 9.7 |
| 1.628000 | --- | 24.20 | 46.00 | 21.80 | L1 | 9.8 |
| 1.784000 | 41.89 | --- | 56.00 | 14.11 | L1 | 9.8 |
| 2.560000 | 42.08 | --- | 56.00 | 13.92 | L1 | 9.9 |
| 4.860000 | --- | 26.44 | 46.00 | 19.56 | L1 | 10.0 |
| 7.496000 | --- | 34.99 | 50.00 | 15.01 | L1 | 10.0 |
| 7.744000 | 49.48 | --- | 60.00 | 10.52 | L1 | 10.0 |
| 9.380000 | --- | 35.14 | 50.00 | 14.86 | L1 | 10.0 |

# Test Report

## EUT Information

| | |
|---|---|
| EUT Name: | RichMedia Box |
| Order No: | 168349178 |
| Model: | ZXV10 B866V2F |
| Test Mode: | BT operation |
| Test Voltage: | AC 120V/60Hz |
| Test By: | Shower Dai |
| Review By: | Gary Chen |
| Remark: | Adapter Model:UWP-12W-1210S |




## Critical_Freqs

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|---|---|---|---|---|---|---|
| 0.470000 | 42.69 | --- | 56.51 | 13.82 | N | 9.7 |
| 0.486000 | --- | 24.04 | 46.24 | 22.19 | N | 9.7 |
| 0.552000 | 42.08 | --- | 56.00 | 13.92 | N | 9.7 |
| 0.792000 | --- | 22.09 | 46.00 | 23.91 | N | 9.7 |
| 0.900000 | 43.58 | --- | 56.00 | 12.42 | N | 9.7 |
| 1.680000 | 42.20 | --- | 56.00 | 13.80 | N | 9.7 |
| 2.524000 | 41.48 | --- | 56.00 | 14.52 | N | 9.9 |
| 4.624000 | --- | 22.72 | 46.00 | 23.28 | N | 10.0 |
| 7.680000 | --- | 33.43 | 50.00 | 16.57 | N | 10.0 |
| 7.756000 | 47.60 | --- | 60.00 | 12.40 | N | 10.0 |
| 9.384000 | --- | 33.47 | 50.00 | 16.53 | N | 10.0 |
| 10.372000 | --- | 31.70 | 50.00 | 18.30 | N | 10.0 |