

|                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                  |                                                            |                                                                     |                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------|
| <b>Prüfbericht-Nr.:</b><br><i>Test report no.:</i>                                                                                                                                                                                                                                                                                                                                                                                                         | <b>CN22CATP 001</b>                                                                                                                                                                                                                              | <b>Auftrags-Nr.:</b><br><i>Order no.:</i>                  | 168371162                                                           | Seite 1 von 24<br><i>Page 1 of 24</i>    |
| <b>Kunden-Referenz-Nr.:</b><br><i>Client reference no.:</i>                                                                                                                                                                                                                                                                                                                                                                                                | <b>N/A</b>                                                                                                                                                                                                                                       | <b>Auftragsdatum:</b><br><i>Order date:</i>                | 2022-04-01                                                          |                                          |
| <b>Auftraggeber:</b><br><i>Client:</i>                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Shenzhen RAKwireless Technology Co.,Ltd.</b><br>Room 506, Building B, New Compark, Pingshan First Road, Taoyuan Street,<br>Nanshan District, Shenzhen, Guangdong, P.R. China                                                                  |                                                            |                                                                     |                                          |
| <b>Prüfgegenstand:</b><br><i>Test item:</i>                                                                                                                                                                                                                                                                                                                                                                                                                | WisGate Edge Lite 2                                                                                                                                                                                                                              |                                                            |                                                                     |                                          |
| <b>Bezeichnung / Typ-Nr.:</b><br><i>Identification / Type no.:</i>                                                                                                                                                                                                                                                                                                                                                                                         | RAK7268CV2H<br>(Trademark: RAK, Arduino)                                                                                                                                                                                                         |                                                            |                                                                     |                                          |
| <b>Auftrags-Inhalt:</b><br><i>Order content:</i>                                                                                                                                                                                                                                                                                                                                                                                                           | Type Test                                                                                                                                                                                                                                        |                                                            |                                                                     |                                          |
| <b>Prüfgrundlage:</b><br><i>Test specification:</i>                                                                                                                                                                                                                                                                                                                                                                                                        | *CFR47 FCC Part 15: Subpart C Section 15.247<br>*CFR47 FCC Part 22<br>*CFR47 FCC Part 24<br>*CFR47 FCC Part 27<br>*RSS-247 Issue 2<br>*RSS-130 Issue 2<br>*RSS-132 Issue 3<br>*RSS-133 Issue 6<br>*RSS-139 Issue 3                               |                                                            |                                                                     |                                          |
| <b>Wareneingangsdatum:</b><br><i>Date of sample receipt:</i>                                                                                                                                                                                                                                                                                                                                                                                               | 2022-05-11                                                                                                                                                                                                                                       | Refer to photos documents                                  |                                                                     |                                          |
| <b>Prüfmuster-Nr.:</b><br><i>Test sample no.:</i>                                                                                                                                                                                                                                                                                                                                                                                                          | A003257041-001 to 003<br>A003257041-008 to 015                                                                                                                                                                                                   |                                                            |                                                                     |                                          |
| <b>Prüfzeitraum:</b><br><i>Testing period:</i>                                                                                                                                                                                                                                                                                                                                                                                                             | 2022-06-02 – 2022-06-16                                                                                                                                                                                                                          |                                                            |                                                                     |                                          |
| <b>Ort der Prüfung:</b><br><i>Place of testing:</i>                                                                                                                                                                                                                                                                                                                                                                                                        | TÜV Rheinland (Shenzhen)<br>Co., Ltd.                                                                                                                                                                                                            |                                                            |                                                                     |                                          |
| <b>Prüflaboratorium:</b><br><i>Testing laboratory:</i>                                                                                                                                                                                                                                                                                                                                                                                                     | TÜV Rheinland (Shenzhen)<br>Co., Ltd.                                                                                                                                                                                                            |                                                            |                                                                     |                                          |
| <b>Prüfergebnis*:</b><br><i>Test result*:</i>                                                                                                                                                                                                                                                                                                                                                                                                              | Pass                                                                                                                                                                                                                                             |                                                            |                                                                     |                                          |
| <b>geprüft von:</b><br><i>tested by:</i>                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>genehmigt von:</b><br><i>authorized by:</i>                                                                                                                                                                                                   |                                                            |                                                                     |                                          |
| <b>Datum:</b><br><i>Date:</i> 2022-06-29                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Ausstellungsdatum:</b><br><i>Issue date:</i> 2022-06-30                                                                                                                                                                                       |                                                            |                                                                     |                                          |
| <b>Stellung / Position</b>                                                                                                                                                                                                                                                                                                                                                                                                                                 | Assistant Project Manager                                                                                                                                                                                                                        | <b>Stellung / Position</b>                                 | Department Manager                                                  |                                          |
| <b>Sonstiges / Other:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                  | * The LTE module, BLE module, Wi-Fi module and Lora module are combination in a new host, the co-located radiated spurious emission is arrange re-assessment.<br>* * This product contains transmitter modules; refer to clause 3.1 for details. |                                                            |                                                                     |                                          |
| <b>Zustand des Prüfgegenstandes bei Anlieferung:</b><br><i>Condition of the test item at delivery:</i>                                                                                                                                                                                                                                                                                                                                                     | Prüfmuster vollständig und unbeschädigt<br><i>Test item complete and undamaged</i>                                                                                                                                                               |                                                            |                                                                     |                                          |
| <b>* Legende:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1 = sehr gut<br>P(ass) = entspricht o.g. Prüfgrundlage(n)                                                                                                                                                                                        | 2 = gut<br>F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | 3 = befriedigend<br>F(ail) = entspricht nicht o.g. Prüfgrundlage(n) | 4 = ausreichend<br>N/A = nicht anwendbar |
| <b>* Legend:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           | 1 = very good<br>P(ass) = passed a.m. test specification(s)                                                                                                                                                                                      | 2 = good<br>F(ail) = failed a.m. test specification(s)     | 3 = satisfactory<br>F(ail) = failed a.m. test specification(s)      | 4 = sufficient<br>N/A = not applicable   |
| <b>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</b><br><i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i> |                                                                                                                                                                                                                                                  |                                                            |                                                                     |                                          |

V05

**Prüfbericht - Nr.:** CN22CATP 001  
*Test report no.*

Seite 2 von 24  
Page 2 of 24

## ***Test Summary***

***5.1 Co-Located Radiated Spurious Emissions***

***RESULT: Pass***

***5.2 Conducted emissions***

***RESULT: Pass***

## Contents

|            |                                                           |           |
|------------|-----------------------------------------------------------|-----------|
| <b>1</b>   | <b>GENERAL REMARKS .....</b>                              | <b>4</b>  |
| <b>1.1</b> | <b>COMPLEMENTARY MATERIALS.....</b>                       | <b>4</b>  |
| <b>2</b>   | <b>TEST SITES.....</b>                                    | <b>4</b>  |
| <b>2.1</b> | <b>TEST FACILITIES .....</b>                              | <b>4</b>  |
| <b>2.2</b> | <b>LIST OF TEST AND MEASUREMENT INSTRUMENTS .....</b>     | <b>5</b>  |
| <b>2.3</b> | <b>TRACEABILITY .....</b>                                 | <b>6</b>  |
| <b>2.4</b> | <b>CALIBRATION.....</b>                                   | <b>6</b>  |
| <b>2.5</b> | <b>MEASUREMENT UNCERTAINTY .....</b>                      | <b>6</b>  |
| <b>2.6</b> | <b>LOCATION OF ORIGINAL DATA.....</b>                     | <b>6</b>  |
| <b>2.7</b> | <b>STATUS OF FACILITY USED FOR TESTING .....</b>          | <b>6</b>  |
| <b>3</b>   | <b>GENERAL PRODUCT INFORMATION .....</b>                  | <b>7</b>  |
| <b>3.1</b> | <b>PRODUCT FUNCTION AND INTENDED USE .....</b>            | <b>7</b>  |
| <b>3.2</b> | <b>RATINGS AND SYSTEM DETAILS.....</b>                    | <b>7</b>  |
| <b>3.3</b> | <b>INDEPENDENT OPERATION MODES.....</b>                   | <b>9</b>  |
| <b>3.4</b> | <b>NOISE GENERATING AND NOISE SUPPRESSING PARTS .....</b> | <b>9</b>  |
| <b>3.5</b> | <b>SUBMITTED DOCUMENTS.....</b>                           | <b>9</b>  |
| <b>4</b>   | <b>TEST SET-UP AND OPERATION MODES.....</b>               | <b>10</b> |
| <b>4.1</b> | <b>PRINCIPLE OF CONFIGURATION SELECTION .....</b>         | <b>10</b> |
| <b>4.2</b> | <b>TEST OPERATION AND TEST SOFTWARE .....</b>             | <b>10</b> |
| <b>4.3</b> | <b>SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT .....</b>  | <b>10</b> |
| <b>4.4</b> | <b>COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE .....</b>    | <b>10</b> |
| <b>4.5</b> | <b>TEST SETUP DIAGRAM .....</b>                           | <b>11</b> |
| <b>5</b>   | <b>TEST RESULTS .....</b>                                 | <b>12</b> |
| <b>5.1</b> | <b>CO-LOCATED RADIATED SPURIOUS EMISSIONS.....</b>        | <b>12</b> |
| <b>5.2</b> | <b>CONDUCTED EMISSIONS .....</b>                          | <b>19</b> |
| <b>6</b>   | <b>PHOTOGRAPHS OF THE TEST SET-UP .....</b>               | <b>22</b> |
| <b>7</b>   | <b>LIST OF TABLES.....</b>                                | <b>24</b> |
| <b>8</b>   | <b>LIST OF PHOTOGRAPHS.....</b>                           | <b>24</b> |

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 4 von 24  
Page 4 of 24

# 1 General Remarks

## 1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:  
None.

# 2 Test Sites

## 2.1 Test Facilities

**TÜV Rheinland (Shenzhen) Co., Ltd.**

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069, CAB identifier: CN0078

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 5 von 24  
Page 5 of 24

## 2.2 List of Test and Measurement Instruments

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

| <b>Unwanted Emission Testing (TS9975)</b>    |                     |                         |                   |                   |
|----------------------------------------------|---------------------|-------------------------|-------------------|-------------------|
| <b>Equipment</b>                             | <b>Manufacturer</b> | <b>Model</b>            | <b>Serial No.</b> | <b>Cal. until</b> |
| 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<br>(30 MHz - 7 GHz) | Schwarzbeck         | VULB 9162               | 193               | 2022-08-08        |
| Double-Ridged Antenna (1 -18<br>GHz)         | ETS-LINDGREN        | 3117                    | 00218717          | 2022-08-08        |
| Wideband Ridged Horn Antenna<br>(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        |
| <b>Conducted Emissions testing</b>           |                     |                         |                   |                   |
| <b>Equipment</b>                             | <b>Manufacturer</b> | <b>Model</b>            | <b>Serial No.</b> | <b>Cal. until</b> |
| EMI Test Receiver                            | R&S                 | ESR3                    | 102428            | 2022-08-10        |
| Artificial Mains Network                     | R&S                 | ENV216                  | 102333            | 2022-08-10        |
| Impedance Stabilisation<br>Network           | R&S                 | ENY81                   | 100323            | 2022-08-11        |
| EMC32 test software                          | R&S                 | EMC32(Ver.10.50.00<br>) | 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 basis 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

| Test               | Parameters                            | uncertainty                    |
|--------------------|---------------------------------------|--------------------------------|
| Conducted Emission | Conducted emission 150kHz-30MHz (AMN) | $\pm 3.70$ dB<br>$\pm 3.30$ dB |
| Radiated Emission  | Radiated emission 30MHz-1GHz          | $\pm 4.52$ dB                  |
|                    | Radiated emission 1GHz-18GHz          | $\pm 4.37$ dB                  |

## 2.6 Location of Original Data

The original copies of all test data taken during actual testing were at this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) 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, Shenzhen 518110, People's Republic of 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 WisGate Edge Lite 2, which supports 2.4GHz Wi-Fi, BLE, Lora and LTE functions.

Note: This product contains transmitter modules.

|                                      |                                                                    |
|--------------------------------------|--------------------------------------------------------------------|
| LTE module<br>Model: EG95-NA         | Contains FCC ID: XMR201807EG95NA<br>Contains IC: 10224A-2018EG95NA |
| 2.4GHz Wi-Fi module<br>Model: RAK634 | Contains FCC ID: 2AF6B-RAK634<br>Contains IC: 25908-RAK634         |
| BLE module<br>Model: RAK13400        | Contains FCC ID: 2AF6B-RAK13400<br>Contains IC: 25908-RAK13400     |
| Lora module<br>Model: RAK2287X       | Contains FCC ID: 2AF6B-RAK2287X<br>Contains IC: 25908-RAK2287X     |

Note: The test standard for frequency Bands 698-756 MHz and 777-787 MHz in LTE module test report is RSS-130 issue 1 and the essential requirements remain unchanged in the updated version RSS-130 issue 2, hence it has been updated in current test report without additional test.

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          | WisGate Edge Lite 2                                                                                                                                                                                                                                             |
| Type Designation           | RAK7268CV2H                                                                                                                                                                                                                                                     |
| Trade Mark                 | RAK, Arduino                                                                                                                                                                                                                                                    |
| Input Voltage              | DC 12V via AC/DC Adapter or<br>DC 37 ~57V via POE adapter                                                                                                                                                                                                       |
| Testing Voltage            | AC 120V, 60Hz or DC 48V                                                                                                                                                                                                                                         |
| AC/DC Adapter information  | Model #1: AD-0241200200US-1<br>Model #2: PSYC1202000US<br>Model #3: PSYC1202000<br><br>Rating for all models:<br>Input: AC 100-240V, 50/60Hz, 0.6A Max<br>Output: DC 12.0V, 2A 24.0W<br><br>Note: Model #2 is identical with model # 3 except the type of plug. |

**Prüfbericht - Nr.: CN22CATP 001**

Test report no.

Seite 8 von 24

Page 8 of 24

| Technical Specification of Wi-Fi       |                                                                                                  |
|----------------------------------------|--------------------------------------------------------------------------------------------------|
| 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)<br>OFDM(BPSK/QPSK/16QAM/64QAM)                                             |
| Data Rate                              | 1/2/5.5/11 Mbps for 802.11b<br>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                                                                                            |
| Number of Antenna:                     | 2                                                                                                |
| Antenna Gain:                          | 3.0dBi for Ant0 & Ant1 (PCB Layout antenna)                                                      |
| Technical Specification of BLE         |                                                                                                  |
| Operating Frequency                    | 2402 – 2480MHz                                                                                   |
| Type of Modulation                     | GFSK                                                                                             |
| Data Rate                              | 125kbps, 500kbps, 1Mbps, 2Mbps                                                                   |
| Channel Number                         | 40 channels                                                                                      |
| Channel Separation                     | 2 MHz                                                                                            |
| Number of Antenna:                     | 1                                                                                                |
| Antenna Gain:                          | 1.8 dBi (ceramic chip antenna)                                                                   |
| Technical Specification of Lora DTS    |                                                                                                  |
| Operating Frequency                    | 923.3 - 927.5MHz                                                                                 |
| Type of Modulation                     | Lora                                                                                             |
| Data Rate                              | SF7 – SF12 / DR8 – DR13                                                                          |
| Channel Number                         | 8 channels                                                                                       |
| Channel Separation                     | 600 KHz                                                                                          |
| Occupied Bandwidth                     | 500 KHz                                                                                          |
| Number of Antenna:                     | 1                                                                                                |
| Antenna Gain:                          | 2.3dBi (Dipole Antenna)                                                                          |
| Technical Specification of Lora Hybrid |                                                                                                  |
| Frequency Range                        | 903.9MHz - 905.3MHz                                                                              |
| Type of Modulation                     | Lora                                                                                             |
| Data Rate                              | SF7 – SF10 / DR0 –DR3                                                                            |
| Channel Number                         | 8 channels                                                                                       |
| Channel Separation                     | 200 KHz                                                                                          |
| Occupied Bandwidth                     | 125 KHz                                                                                          |
| Number of Antenna:                     | 1                                                                                                |
| Antenna Gain:                          | 2.3dBi (Dipole Antenna)                                                                          |
| Technical Specification of LTE         |                                                                                                  |
| Wireless Technology:                   | LTE & WCDMA                                                                                      |
| Operation Frequency band(s)            | WCDMA Band: II, IV, V<br>LTE Band: 2, 4, 5, 12, 13                                               |
| Power Class:                           | Class 4                                                                                          |
| Type of Modulation:                    | BPSK, QPSK                                                                                       |
| Type of Antenna:                       | Internal Antenna                                                                                 |
| Antenna number:                        | 2                                                                                                |
| Antenna Gain:                          | 4.4dBi for Ant 0<br>2.9dBi@780MHz,3.5dBi@2300MHz for Ant1                                        |

### 3.3 Independent Operation Modes

The basic operation modes are:

- A, On, WIFI link + BLE link + LTE link + Lora DTS link
- B, On, WIFI link + BLE link + LTE link + Lora DSS (Hybrid) link

### 3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

### 3.5 Submitted Documents

- |                 |                  |
|-----------------|------------------|
| - Block Diagram | - Photo Document |
| - Schematics    | - User Manual    |

## 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.

According to clause 3.1, Co-location Radiated Spurious Emissions test were applied on model RAK7268CV2H with AC/DC Adapter #1 and Conducted Emissions test were applied on model RAK7268CV2H with AC/DC Adapter #1 & # 2.

### 4.3 Special Accessories and Auxiliary Equipment

Table 3: List of Accessories and Auxiliary Equipment

| Description                         | Manufacturer    | Model No.     | Serial Number or Rating                                               |
|-------------------------------------|-----------------|---------------|-----------------------------------------------------------------------|
| Wideband Radio Communication Tester | Rohde & Schwarz | CMW500        | 166305                                                                |
| Portable Laptop                     | Lenovo          | ThinkPad T480 | 10Q67059                                                              |
| POE Adapter                         | RAK             | R012-4800500  | Input: AC 100-240V, 50/60Hz, 0.6A Max<br>Output: DC 48.0V, 0.5A 24.0W |

### 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)

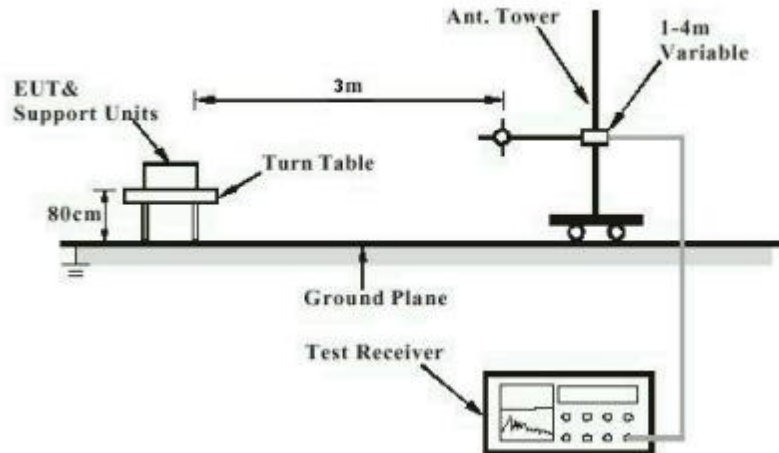


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

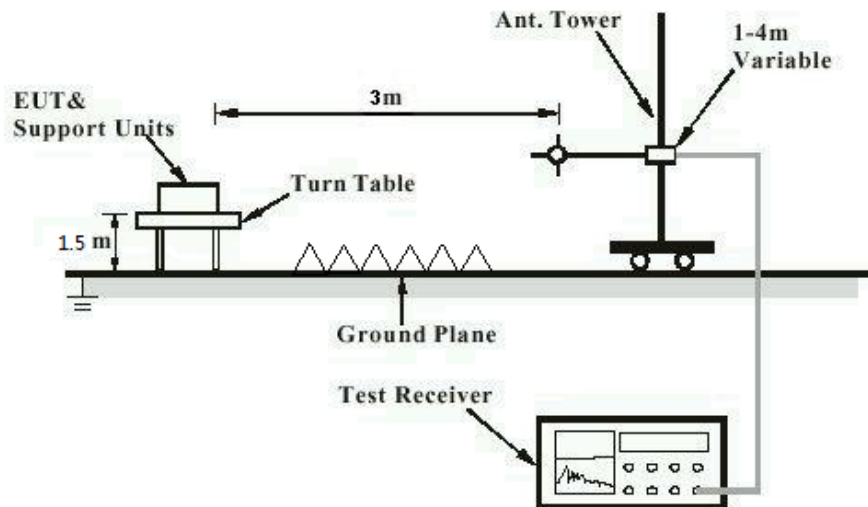
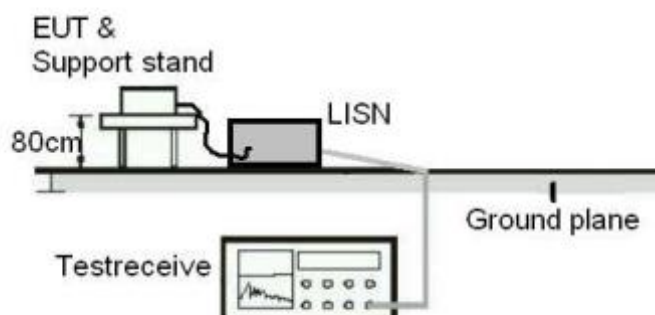


Diagram of Measurement Configuration for Mains Conduction Measurement



## 5 Test Results

### 5.1 Co-Located Radiated Spurious Emissions

RESULT:

Pass

#### Test Specification

|                   |   |                                                                                                                                                                                                           |
|-------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test standard     | : | CFR47 FCC Part 15: Subpart C Section 15.247<br>CFR47 FCC Part 22<br>CFR47 FCC Part 24<br>CFR47 FCC Part 27<br>RSS-247 Issue 2<br>RSS-130 Issue 2<br>RSS-132 Issue 3<br>RSS-133 Issue 6<br>RSS-139 Issue 3 |
| Basic standard    | : | ANSI C63.10                                                                                                                                                                                               |
| Limit             | : | KDB 996369 D04<br>The emissions not exceed the highest limit.                                                                                                                                             |
| Kind of test site | : | 3m Semi-anechoic Chamber                                                                                                                                                                                  |

#### Test Setup

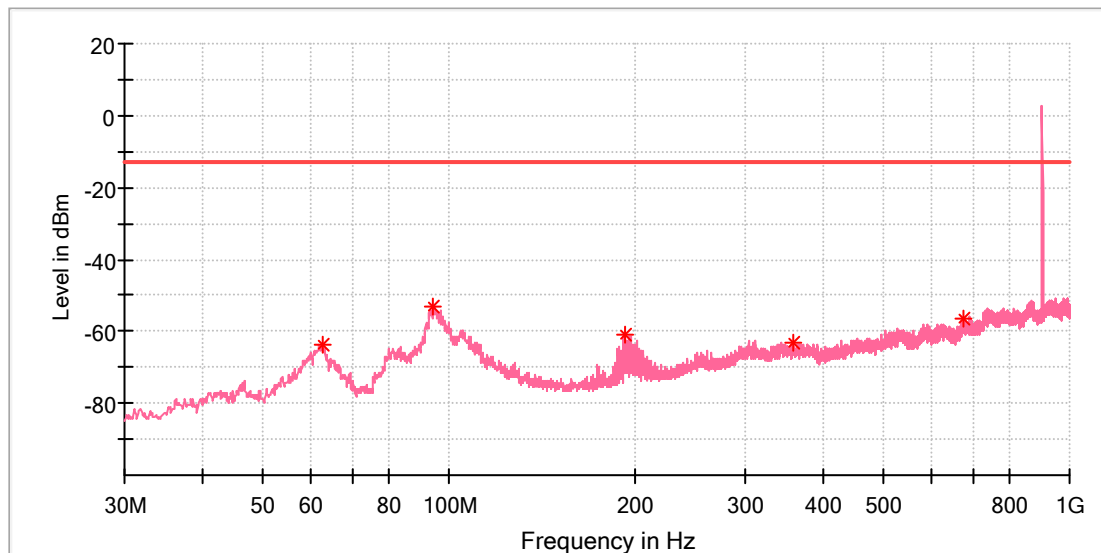
|                      |   |               |
|----------------------|---|---------------|
| Date of testing      | : | 2022-06-02    |
| Input voltage        | : | AC 120V, 60Hz |
| Operation mode       | : | A B           |
| Earthing             | : | Not Connected |
| Ambient temperature  | : | 23. °C        |
| Relative humidity    | : | 58 %          |
| Atmospheric pressure | : | 101 kPa       |

Note: The test plots of Co-located radiated spurious emissions beyond the limit are the fundamental radio frequency of Lora, BLE, Wi-Fi and LTE.

For the measurement records, refer to the following plots, only the worst case mode are shown in this report.

## EUT Information

EUT Name: WisGate Edge Lite 2  
Model: RAK7268CV2H  
Test Mode: WIFI 2.4G+Lora(2287)+BLE+LTE  
Order No/Sample No: 168371162/A003257041-003  
Test Voltage:: 120V/60Hz  
Remark: Temp 23 Humi:58%  
Test Standard: FCC Part 22  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



## Critical Freqs

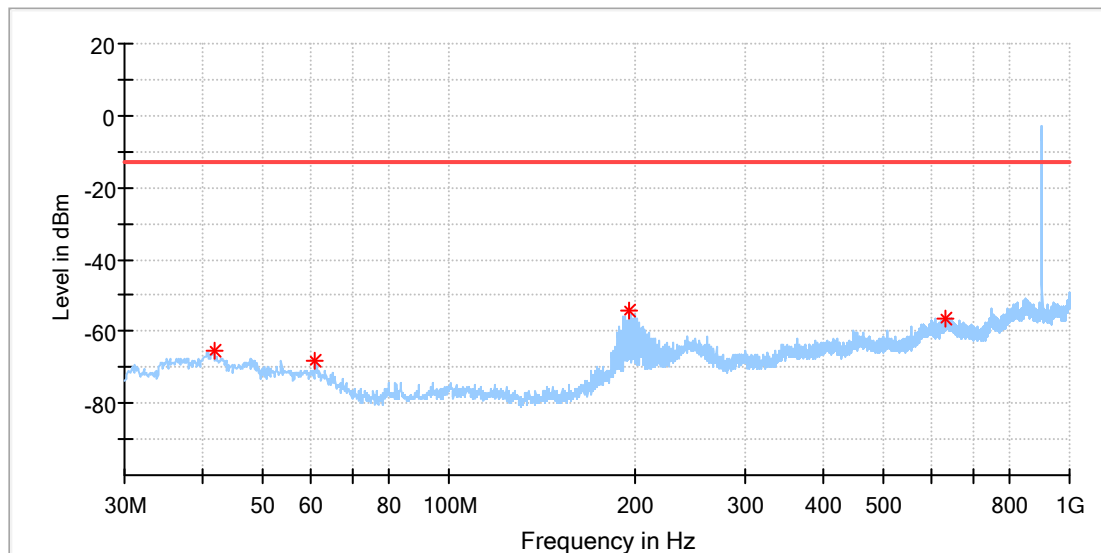
| Frequency (MHz) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|---------------|-------------|-------------|-------------|-----|---------------|------------|
| 62.373750       | -63.72        | -13.00      | 50.72       | 100.0       | V   | 332.0         | -120.6     |
| 94.505000       | -53.16        | -13.00      | 40.16       | 100.0       | V   | 107.0         | -99.6      |
| 192.353750      | -60.97        | -13.00      | 47.97       | 100.0       | V   | 136.0         | -118.6     |
| 359.800000      | -62.95        | -13.00      | 49.95       | 100.0       | V   | 167.0         | -111.4     |
| 672.382500      | -56.19        | -13.00      | 43.19       | 100.0       | V   | 358.0         | -105.1     |

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 14 von 24  
Page 14 of 24

## EUT Information

|                     |                              |
|---------------------|------------------------------|
| EUT Name:           | WisGate Edge Lite 2          |
| Model:              | RAK7268CV2H                  |
| Test Mode:          | WIFI 2.4G+Lora(2287)+BLE+LTE |
| Order No/Sample No: | 168371162/A003257041-003     |
| Test Voltage::      | 120V/60Hz                    |
| Remark:             | Temp 23 Humi:58%             |
| Test Standard:      | FCC Part 22                  |
| Tested By:          | Kei Zhang                    |
| Reviewed By:        | Terry Yin                    |

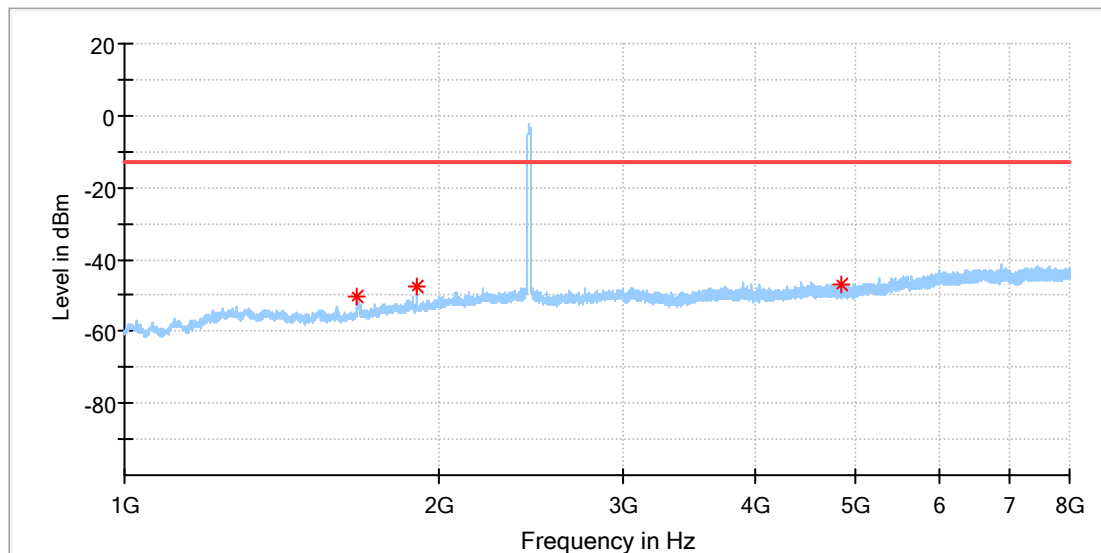


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|---------------|-------------|-------------|-------------|-----|---------------|------------|
| 41.761250       | -65.38        | -13.00      | 52.38       | 100.0       | H   | 304.0         | -112.2     |
| 60.918750       | -68.33        | -13.00      | 55.33       | 100.0       | H   | 297.0         | -117.0     |
| 195.263750      | -54.37        | -13.00      | 41.37       | 100.0       | H   | 61.0          | -115.2     |
| 633.218750      | -56.62        | -13.00      | 43.62       | 100.0       | H   | 0.0           | -104.9     |

## EUT Information

EUT Name: WisGate Edge Lite 2  
Model: RAK7268CV2H  
Test Mode: WIFI 2.4G+Lora(2287)+BLE+LTE  
Order No/Sample No: 168371162/A003257041-003  
Test Voltage:: 120V/60Hz  
Remark: Temp 23 Humi:58%  
Test Standard: FCC Part 22  
Tested By: Kei Zhang  
Reviewed By: Terry Yin

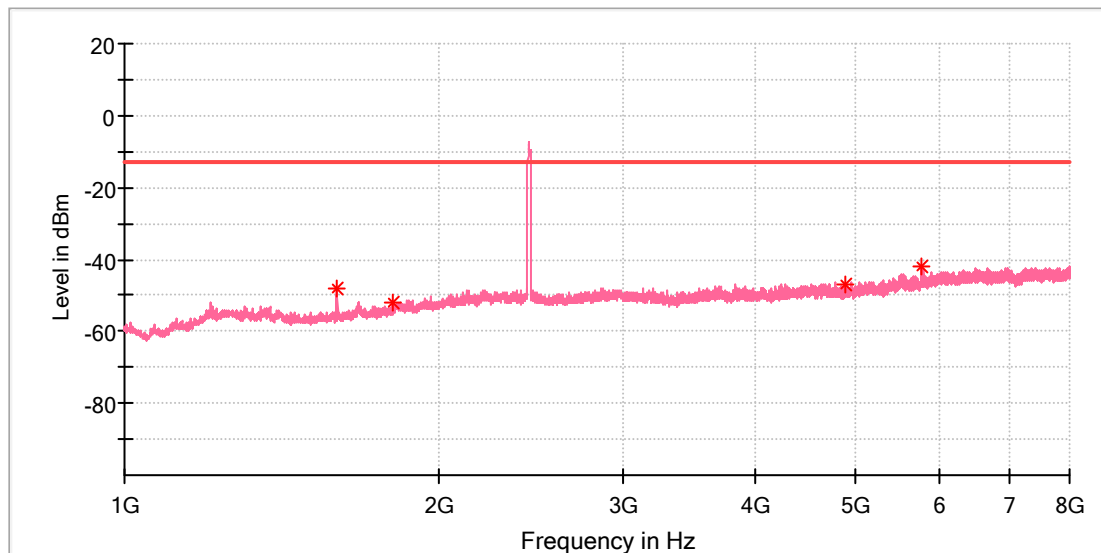


## Critical Freqs

| Frequency (MHz) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|---------------|-------------|-------------|-------------|-----|---------------|------------|
| 1670.500000     | -50.52        | -13.00      | 37.52       | 100.0       | H   | 124.0         | -92.6      |
| 1904.000000     | -47.54        | -13.00      | 34.54       | 100.0       | H   | 93.0          | -90.1      |
| 4839.500000     | -46.96        | -13.00      | 33.96       | 100.0       | H   | 336.0         | -85.9      |

## EUT Information

EUT Name: WisGate Edge Lite 2  
Model: RAK7268CV2H  
Test Mode: WIFI 2.4G+Lora(2287)+BLE+LTE  
Order No/Sample No: 168371162/A003257041-003  
Test Voltage:: 120V/60Hz  
Remark: Temp 23 Humi:58%  
Test Standard: FCC Part 22  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



## Critical Freqs

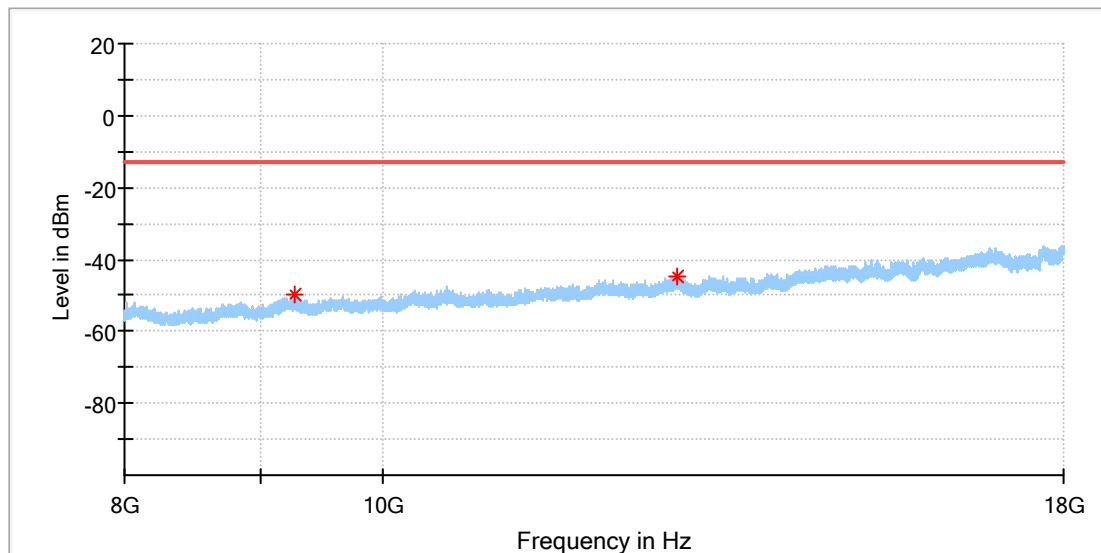
| Frequency (MHz) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|---------------|-------------|-------------|-------------|-----|---------------|------------|
| 1597.000000     | -48.23        | -13.00      | 35.23       | 100.0       | V   | 97.0          | -92.9      |
| 1806.500000     | -51.73        | -13.00      | 38.73       | 100.0       | V   | 154.0         | -90.5      |
| 4885.000000     | -46.99        | -13.00      | 33.99       | 100.0       | V   | 3.0           | -85.8      |
| 5772.500000     | -41.96        | -13.00      | 28.96       | 100.0       | V   | 124.0         | -83.6      |

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 17 von 24  
Page 17 of 24

## EUT Information

|                     |                              |
|---------------------|------------------------------|
| EUT Name:           | WisGate Edge Lite 2          |
| Model:              | RAK7268CV2H                  |
| Test Mode:          | WIFI 2.4G+Lora(2287)+BLE+LTE |
| Order No/Sample No: | 168371162/A003257041-003     |
| Test Voltage::      | 120V/60Hz                    |
| Remark:             | Temp 23 Humi:58%             |
| Test Standard:      | FCC Part 22                  |
| Tested By:          | Kei Zhang                    |
| Reviewed By:        | Terry Yin                    |



## Critical Freqs

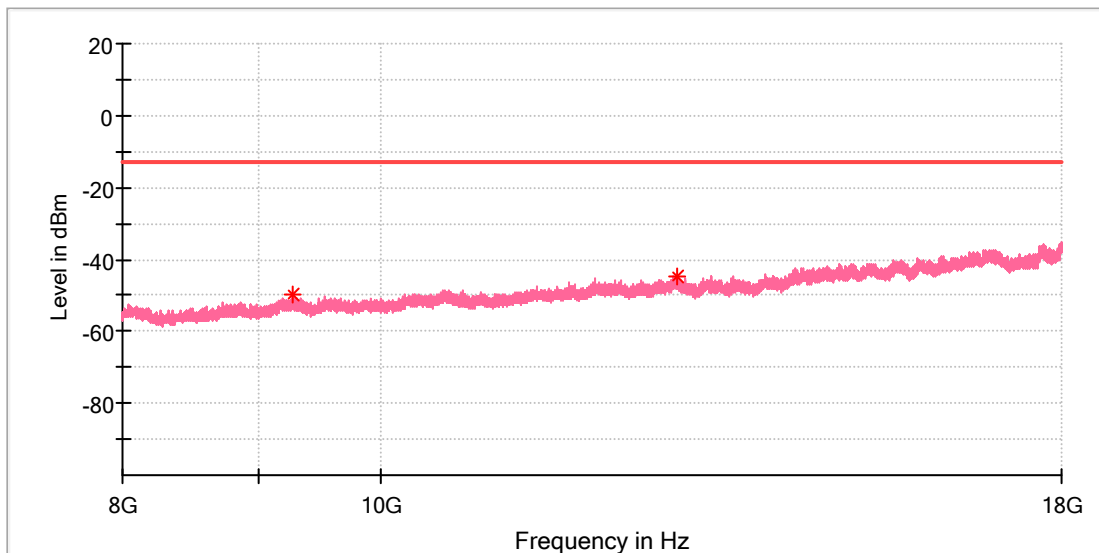
| Frequency (MHz) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|---------------|-------------|-------------|-------------|-----|---------------|------------|
| 9270.000000     | -49.81        | -13.00      | 36.81       | 100.0       | H   | 42.0          | -84.1      |
| 12900.000000    | -44.88        | -13.00      | 31.88       | 100.0       | H   | 0.0           | -78.3      |

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 18 von 24  
Page 18 of 24

## EUT Information

EUT Name: WisGate Edge Lite 2  
Model: RAK7268CV2H  
Test Mode: WIFI 2.4G+Lora(2287)+BLE+LTE  
Order No/Sample No: 168371162/A003257041-003  
Test Voltage:: 120V/60Hz  
Remark: Temp 23 Humi:58%  
Test Standard: FCC Part 22  
Tested By: Kei Zhang  
Reviewed By: Terry Yin



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|---------------|-------------|-------------|-------------|-----|---------------|------------|
| 9259.500000     | -49.98        | -13.00      | 36.98       | 100.0       | V   | 76.0          | -84.0      |
| 12926.000000    | -44.88        | -13.00      | 31.88       | 100.0       | V   | 343.0         | -78.6      |

**Prüfbericht - Nr.: CN22CATP 001**

*Test report no.*

Seite 19 von 24

Page 19 of 24

## 5.2 Conducted emissions

**RESULT:**

**Pass**

### Test Specification

|                   |                      |
|-------------------|----------------------|
| Test standard     | : FCC Part 15.207(a) |
|                   | : RSS-Gen Clause 8.8 |
| Basic standard    | : ANSI C63.10: 2013  |
| Frequency range   | : 150KHz - 30MHz     |
| Classification    | : Class B            |
| Limit             | : FCC Part 15.207(a) |
|                   | : RSS-Gen Table 4    |
| Kind of test site | : Shielded Room      |

### Test Setup

|                      |                 |
|----------------------|-----------------|
| Date of testing      | : 2022-06-16    |
| Input voltage        | : AC 120V, 60Hz |
| Operation mode       | : A, B          |
| Earthing             | : Not Connected |
| Ambient temperature  | : 23.8 °C       |
| Relative humidity    | : 52.5 %        |
| Atmospheric pressure | : 101 kPa       |

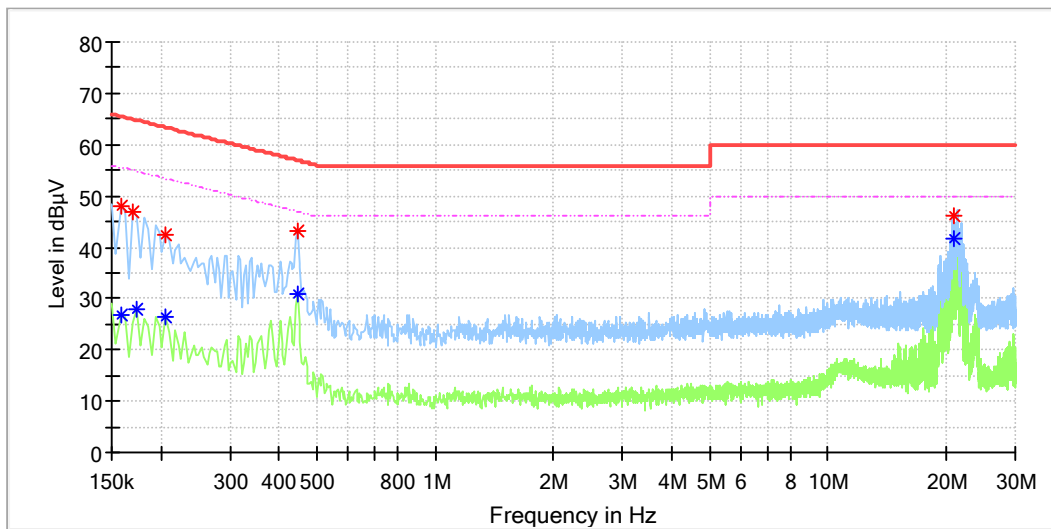
For the measurement records, refer to the following plots, only the worst case mode are shown in this report.

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 20 von 24  
Page 20 of 24

## EUT Information

EUT Name: WisGate Edge Lite 2  
Model: RAK7268CV2H  
Test Mode: Operating Adapter  
Test Voltage: AC 120V/60Hz  
Test By/Review By: Jianhua Lu/Gary Chen  
Test Standard: FCC part 15  
Tem./Hum./Pressure: 23.8°C/52.5%/101kPa



## Critical Freqs

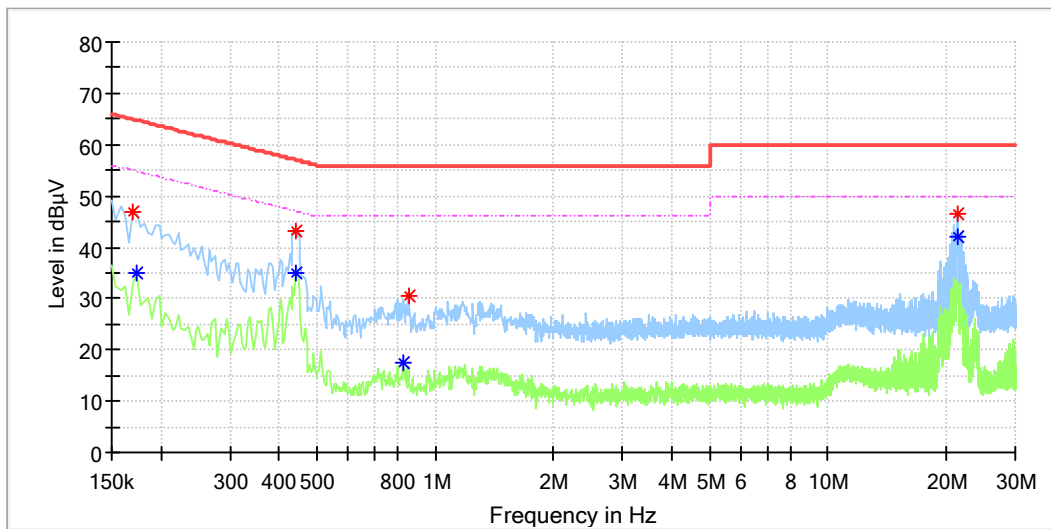
| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.158000        | ---            | 26.66          | 55.57        | 28.91       | L1   | 9.9        |
| 0.158000        | 48.12          | ---            | 65.57        | 17.45       | L1   | 9.9        |
| 0.170000        | 46.85          | ---            | 64.96        | 18.11       | L1   | 9.9        |
| 0.174000        | ---            | 28.02          | 54.77        | 26.75       | L1   | 9.9        |
| 0.206000        | ---            | 26.36          | 53.37        | 27.00       | L1   | 9.9        |
| 0.206000        | 42.52          | ---            | 63.37        | 20.85       | L1   | 9.9        |
| 0.446000        | ---            | 30.94          | 46.95        | 16.01       | L1   | 9.9        |
| 0.446000        | 43.02          | ---            | 56.95        | 13.93       | L1   | 9.9        |
| 20.878000       | ---            | 41.54          | 50.00        | 8.46        | L1   | 10.4       |
| 20.882000       | 46.04          | ---            | 60.00        | 13.96       | L1   | 10.4       |

**Prüfbericht - Nr.: CN22CATP 001**  
Test report no.

Seite 21 von 24  
Page 21 of 24

## EUT Information

EUT Name: WisGate Edge Lite 2  
Model: RAK7268CV2H  
Test Mode: Operating Adapter  
Test Voltage: AC 120V/60Hz  
Test By/Review By: Jianhua Lu/Gary Chen  
Test Standard: FCC part 15  
Tem./Hum./Pressure: 23.8°C/52.5%/101kPa



## Critical Freqs

| Frequency (MHz) | MaxPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Line | Corr. (dB) |
|-----------------|----------------|----------------|--------------|-------------|------|------------|
| 0.170000        | 46.76          | ---            | 64.96        | 18.20       | N    | 9.8        |
| 0.174000        | ---            | 34.88          | 54.77        | 19.88       | N    | 9.8        |
| 0.442000        | 43.01          | ---            | 57.02        | 14.01       | N    | 9.8        |
| 0.442000        | ---            | 34.83          | 47.02        | 12.19       | N    | 9.8        |
| 0.826000        | ---            | 17.57          | 46.00        | 28.43       | N    | 9.8        |
| 0.854000        | 30.37          | ---            | 56.00        | 25.63       | N    | 9.8        |
| 21.442000       | ---            | 41.97          | 50.00        | 8.03        | N    | 10.3       |
| 21.442000       | 46.35          | ---            | 60.00        | 13.65       | N    | 10.3       |

7 List of Tables

Table 1: List of Test and Measurement Equipment.....5  
 Table 2: Technical Specification of EUT.....7  
 Table 3: List of Accessories and Auxiliary Equipment.....10

8 List of Photographs

Photograph 1: Set-up for Co-Located Radiated Spurious Emissions, below 1GHz.....22  
 Photograph 2: Set-up for Co-Located Radiated Spurious Emissions, above 1GHz.....22  
 Photograph 3: Set-up for Conducted Emissions, AC Mains.....23