

Rollease Acmeda Inc MPE ASSESSMENT REPORT

Report Type:

FCC MPE assessment report

Model:

MT02-0401-067001, MT02-0401-067003, MT02-0401-067004, MT02-0401-067005

REPORT NUMBER:

180802994SHA-003

ISSUE DATE:

October 23, 2020

DOCUMENT CONTROL NUMBER:

TTRFFCCMPE-01_V1 © 2018 Intertek





Intertek Testing Services Shanghai Building No.86, 1198 Qinzhou Road (North) Caohejing Development Zone Shanghai 200233, China

Telephone: 86 21 6127 8200

www.intertek.com

Report no.: 180802994SHA-003

Applicant: Rollease Acmeda Inc

750 East Main Street, 7th Floor Stamford, CT 06902, United States of

America

Manufacturer: Rollease Acmeda Inc

750 East Main Street, 7th Floor Stamford, CT 06902, United States of

America

Factory: VirTex AVJ

Vicente Guerrero 7470-A Parque Industrial Fuentes

Ciudad Juarez, Chihuahua, Mexico, 32437

FCC ID: 2AGGZ-APULSE-2

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

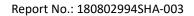
| PREPARED DI. | KLVILVVLD DI. |
|--------------|---------------|
| Gn'de Liu | Donnel |

Project Engineer Erick Liu

DDEDADED BV

Reviewer Daniel Zhao

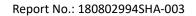
This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.





Revision History

| Report No. | Version | Description | Issued Date |
|------------------|---------|-------------------------|------------------|
| 180802994SHA-003 | Rev. 01 | Initial issue of report | October 23, 2020 |
| | | | |
| | | | |





1 GENERAL INFORMATION

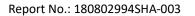
1.1 Description of Equipment Under Test (EUT)

| Product name: | Wi-Fi to RF433 Bridge |
|-----------------------|--|
| | MT02-0401-067001, MT02-0401-067003, MT02-0401-067004, |
| Type/Model: | MT02-0401-067005 |
| | The EUT is a Wi-Fi to RF433 Bridge, all models are same except the |
| | model name. After evaluation, we chose model MT02-0401-067001 for |
| Description of EUT: | all tests. |
| | Input: 5.0V DC, 1A |
| Rating: | Adapter: 100-240V~, 50/60Hz, 0.5A |
| Category of EUT: | Class B |
| EUT type: | ☐ Table top ☐ Floor standing |
| Software Version: | / |
| Hardware Version: | / |
| Sample received date: | September 11, 2018 |
| Date of test: | December 22, 2018~December 27, 2018 |

1.2 Technical Specification

| Frequency Range: | 433.92MHz |
|---------------------|---|
| Type of Modulation: | ASK |
| Channel Number: | 1 |
| Antenna: | 1.2dBi max (Declared by manufacture), PCB antenna |

| Frequency Range: | 2412MHz ~ 2462MHz | | | | | |
|---------------------|--|--|--|--|--|--|
| Support Standards: | IEEE 802.11b, IEEE 802.11g, IEEE 802.11n-HT20, IEEE 802.11n-HT40 | | | | | |
| | IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) | | | | | |
| | IEEE 802.11g: OFDM (64-QAM, 16-QAM, QPSK, BPSK) | | | | | |
| | IEEE 802.11n-HT20: OFDM (64-QAM, 16-QAM, QPSK, BPSK) | | | | | |
| Type of Modulation: | IEEE 802.11n-HT40: OFDM (64-QAM, 16-QAM, QPSK, BPSK) | | | | | |
| | 11 Channels for 802.11b, 802.11g and 802.11n(HT20) | | | | | |
| Channel Number: | 7 Channels for 802.11n(HT40) | | | | | |
| | IEEE 802.11b: Up to 11 Mbps | | | | | |
| | IEEE 802.11g: Up to 54 Mbps | | | | | |
| | IEEE 802.11n-HT20: Up to MCS7 | | | | | |
| Data Rate: | IEEE 802.11n-HT40: Up to MCS7 | | | | | |
| Channel Separation: | 1 MHz | | | | | |
| Antenna: | 0.7dBi, PCB antenna | | | | | |

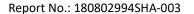




1.3 Description of Test Facility

| Name: | Intertek Testing Services Shanghai |
|------------|--|
| Address: | Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China |
| Telephone: | 86 21 61278200 |
| Telefax: | 86 21 54262353 |

| The test facility is | CNAS Accreditation Lab | | | |
|------------------------------------|--|--|--|--|
| recognized, | Registration No. CNAS L0139 | | | |
| certified, or | FCC Accredited Lab | | | |
| accredited by these organizations: | Designation Number: CN1175 | | | |
| organizations. | IC Registration Lab | | | |
| | CAB identifier.: CN0051 | | | |
| | VCCI Registration Lab | | | |
| | Registration No.: R-14243, G-10845, C-14723, T-12252 | | | |
| | A2LA Accreditation Lab | | | |
| | Certificate Number: 3309.02 | | | |





2 MPE Assessment

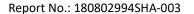
Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

| Frequency range | E-field strength | H-field strength B-field | | Equivalent plane wave | |
|-----------------|------------------------|--|---------------------|------------------------|--|
| | (V/m) | (A/m) (uT) | | power density | |
| | | | | S _{eq} (W/m²) | |
| 0-1 Hz | - | $3,2 \times 10^4$ | 4×10^{4} | - | |
| 1-8 Hz | 10 000 | $3.2 \times 10^4/f^2$ | $4 \times 10^4/f^2$ | - | |
| 8-25 Hz | 10 000 | 4 000/f | 5 000/f - | | |
| 0,025-0,8 kHz | 250/f | 4/f | 5/f | - | |
| 0,8-3 kHz | 250/f | 5 6,25 | | - | |
| 3-150 kHz | 87 | 5 | 6,25 - | | |
| 0,15-1 MHz | 87 | 0,73/f | 0,92/f | - | |
| 1-10 MHz | 87/f ^{1/2} | 0,73/f | 0,73/f 0,92/f - | | |
| 10-400 MHz | 28 | 0,073 0,092 | | 2 | |
| 400-2 000 MHz | 1,375 f ^{1/2} | 0,0037 f ^{1/2} 0,0046 f ^{1/2} f/20 | | f/200 | |
| 2-300 GHz | 61 | 0,16 | 0,20 | 10 | |

Mobile device exposure for simultaneous transmission operations: the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is \leq 1.0





TEST REPORT

2.2 Assessment Results

Power density (S) is calculated according to the formula:

 $S = P / (4\pi R^2)$

Where $S = power density in mW/cm^2$

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

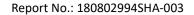
R = distance (cm)

As we can see from the test report 180802994SHA-001&180802994SHA-002:

| Mode | Frequency band | EIRP | Antenna Gain | R | S | Limits |
|--------|-------------------|-------|-----------------|------|----------|----------|
| | (MHz) | dBm | dBi | (cm) | (mW/cm2) | (mW/cm2) |
| 433MHz | 433.92 | -23.2 | 1.20 | 20 | 0.000001 | 0.217 |
| WiFi | 2400 -2483.5 | 21.33 | 0.7 | 20 | 0.027036 | 1 |

For the device consider simultaneous transmission of WiFi and 433MHz:

The worst MPE = 0.000001 + 0.027036 = 0.027037mW/cm2 < 0.217 mW/cm2.





Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.