R F – T E S T R E P O R T

- Human Exposure -

Type / Model Name	:	2815-006 – Model: 815A HVIN: 815A
Product Description	:	BLE5.0 remote control
Applicant	:	ruwido austria gmbh
Address	:	Koestendorfer Strasse 8 5202 NEUMARKT, AUSTRIA
Manufacturer	:	ruwido austria gmbh
Address	:	Koestendorfer Strasse 8 5202 NEUMARKT, AUSTRIA

Test Result according to the standards listed in clause 1 test standards:	**POSITIVE**

Test Report No. : 80201625-01 Rev_0	13. November 2024 Date of issue

Deutsche Akkreditierungsstelle
D-PL-12030-01-03
D-PL-12030-01-04

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FCC ID: XYN815A IC ID: 8748A-815A

Contents

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1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 1, Subpart I - Procedures Implementing the National Environmental Policy Act of 1969

KDB 447498 D01	RF Exposure procedures and equipment authorisation policies for mobile and portable devices, April 20, 2021.

FCC ID: XYN815A **IC ID: 8748A-815A**

2 EQUIPMENT UNDER TEST

2.1 Information provided by the Client

Please note, we do not take any responsibility for information provided by the client or his representative which may have an influence on the validity of the test results.

2.2 Sampling

The customer is responsible for the choice of sample. Sample configuration, start-up and operation is carried out by the customer or according his/her instructions.

2.3 Photo documentation of the EUT – See ATTACHMENT A

2.4 Equipment type

BLE device

2.5 Short description of the equipment under test (EUT)

The EUT is a Bluetooth Low Energy wireless remote control. A single PCB antenna is used within the system. The EUT has only one integrated antenna, no temporary connector and no external antenna can be connected.

Number of tested samples:	2
Serial number:	prototype
Firmware version:	0.0.232

2.6 Variants of the EUT

There are no variants.

2.7 Operation frequency and channel plan

The operating frequency is 2400 MHz to 2483.5 MHz.

2.8 Transmit operating modes

The EUT uses GFSK modulation and may provide following data rates:

- 1000 kbps
- 2000 kbps

2.9 Antennas

The following antennas shall be used with the EUT:
The EUT has only an integrated PCB antenna with a maximum of -3 dBi, no temporary connector and no external antenna to be connected.

2.10 Power supply system utilised

Power supply voltage, V_{nom} : 3 V_{DC} battery powered

FCC ID: XYN815A **IC ID: 8748A-815A**

3 TEST RESULT SUMMARY

BLE operating in the 2400 MHz – 2483.5 MHz band:

Rule Part	Description	Result
KDB 447498	1 mW exemption limit	passed

3.1 Revision history of test report

Test report No	Rev.	Issue Date	Changes
80201625-01	0	04 April 2024	Initial test report
80201625-01	1	13. November 2024	EIRP corrected, 1 mW exemption limit used

The test report with the highest revision number replaces the previous test reports.

3.2 Final assessment

The equipment under test fulfils the requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 14 March 2024

Testing concluded on : 25 March 2024

Checked by:

Klaus Gegenfurtner 2024.11.13 08:56:40 +01'00'

Klaus Gegenfurtner
Teamleader Radio

Tested by:

Christopher Thaller 2024.11.13 07:28:52 +01'00'

Christopher Thaller
Radio Team

FCC ID: XYN815A **IC ID: 8748A-815A**

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

CSA Group Bayern GmbH
Ohmstrasse 1-4
94342 STRASSKIRCHEN
GERMANY

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15 - 35 °C
Humidity:	30 - 60 %
Atmospheric pressure:	86 - 106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor k = 2. The true value is located in the corresponding interval with a probability of 95 %. The measurement uncertainty was calculated for all measurements listed in this test report on basis of the ETSI Technical Report TR 100 028 Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1 and Part 2. The results are documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.4 Conformity Decision Rule

The applied conformity decision rule is based on ILAC G8:09/2019 clause 4.2.1 Binary Statement for Simple Acceptance Rule (w = 0).
Details can be found in the procedure CSA_B_V50_29.

5 HUMAN EXPOSURE

5.1 RF Output Power

The RF output power is taken from the test report 80201625-00 Rev_0 issued by CSA Group.

FCC §15.247 (b)(3) | RSS-247 5.4 (d)					
Modulation	Channel	Frequency	Measured Conducted	Conducted Tx-Power Limit	Margin
		MHz	dBm	dBm	dB
1 Mbps	CH37	2402	0.5	30.0	-29.5
	CH18	2442	0.0	30.0	-30.0
	CH39	2480	-0.3	30.0	-30.3
2 Mbps	CH37	2402	0.5	30.0	-29.5
	CH18	2442	0.0	30.0	-30.0
	CH39	2480	-0.3	30.0	-30.3

RSS-247 5.4 (d)							
Modulation	Channel	Frequency	Measured	Antenna	EIRP	EIRP Limit	Margin
		MHz	dBm	dBi	dBm	dBm	dB
1 Mbps	CH37	2402	0.5	-3.0	-2.5	36.0	-38.5
	CH18	2442	0.0	-3.0	-3.0	36.0	-39.0
	CH39	2480	-0.3	-3.0	-3.3	36.0	-39.3
2 Mbps	CH37	2402	0.5	-3.0	-2.5	36.0	-38.5
	CH18	2442	0.0	-3.0	-3.0	36.0	-39.0
	CH39	2480	-0.3	-3.0	-3.3	36.0	-39.3

Remarks: As worst case power the peak power is not averaged over time.

FCC ID: XYN815A **IC ID: 8748A-815A**

5.2 SAR test exclusion considerations

5.2.1 Applicable standard

According to KDB 447498 D01 (3)(a) according to §§ 1.1307(b)(3)(i)(A):
The available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

5.2.2 Evaluation of the EUT

Modulation	Channel	Frequency	Measured Conducted TX Power	Antenna gain	tune up tolerance	EIRP	EIRP
		MHz	dBm	dBi	dB	dBm	mW
1 Mbps	CH37	2402	0.5	-3.0	1.0	-1.5	0.7
	CH18	2442	0.0	-3.0	1.0	-2.0	0.6
	CH39	2480	-0.3	-3.0	1.0	-2.3	0.6
2 Mbps	CH37	2402	0.5	-3.0	1.0	-1.5	0.7
	CH18	2442	0.0	-3.0	1.0	-2.0	0.6
	CH39	2480	-0.3	-3.0	1.0	-2.3	0.6

0.7 mW < 1 mW

Conclusion: The Threshold level is lower than the limit, SAR measurement is not necessary.

The requirements are **FULFILLED.**

Remarks: None.