

Prüfbericht-Nr.: <i>Test report no.:</i>	CN241KYT 003	Auftrags-Nr.: <i>Order no.:</i>	168502104	Seite 1 von 10 Page 1 of 10
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2024-08-30	
Auftraggeber: <i>Client:</i>	LEEDARSON LIGHTING CO., LTD. Xingtai Industrial Zone, Economic Development Zone, Changtai County, Zhangzhou city, Fujian Province, P.R.China			
Prüfgegenstand: <i>Test item:</i>	Smart A19 Dimmable Bulb			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	13aSB-A806ST-Q1R_NA, 13aSB-A806ST-Q1R_NA_4P			
Auftrags-Inhalt: <i>Order content:</i>	Test Report			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 2: Section 2.1091 CFR47 FCC Part 1: Section 1.1310 RSS-102 Issue 6 December 2023			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2024-09-03	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no:</i>	S202409034265-ZJA01/3 S202409034265-ZJA02/3 S202409034265-ZJA03/3			
Prüfzeitraum: <i>Testing period:</i>	2024-09-05 - 2024-09-20			
Ort der Prüfung: <i>Place of testing:</i>	Refer to section 2.1			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	 Lin Lin	genehmigt von: <i>authorized by:</i>	 Hardy Suo	
Datum: <i>Date:</i>	2024-09-24	Ausstellungsdatum: <i>Issue date:</i>	2024-09-24	
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / <i>Other:</i>	FCC ID: 2AB2Q14ASBA806STQ1R IC: 10256A-14ASBA806ST, HVIN: 14aSB-A806ST-Q1R_NA			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende: P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
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. <i>This test report only relates to the above mentioned 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>				

Prüfbericht-Nr.: CN241KYT 003
Test report no.:

Seite 2 von 10
Page 2 of 10

Anmerkungen
Remarks

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

Prüfbericht - Nr.: CN241KYT 003
Test Report No.:

Seite 3 von 10
Page 3 of 10

Test Summary

3.1.1 RF EXPOSURE COMPLIANCE

RESULT: Pass

Contents

1.	TEST SITES.....	5
1.1	TEST FACILITIES.....	5
1.2	TRACEABILITY.....	5
1.3	CALIBRATION.....	5
1.4	LOCATION OF ORIGINAL DATA	5
1.5	STATUS OF FACILITY USED FOR TESTING	5
2.	GENERAL PRODUCT INFORMATION.....	6
2.1	GENERAL DESCRIPTION.....	6
2.2	RATING AND SYSTEM DETAILS	6
3.	TEST RESULTS.....	8
3.1	RF EXPOSURE EVALUATION	8
3.1.1	RF Exposure Compliance.....	8
4.	LIST OF TABLES.....	10

1. Test Sites

1.1 Test Facilities

Shenzhen UnionTrust Quality and Technology Co., Ltd.

Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China

CNAS Registration No.: CNAS L9069

A2LA Certificate Number: 4312.01

1.2 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

1.3 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.

1.4 Location of Original Data

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

1.5 Status of Facility Used for Testing

The Shenzhen UnionTrust Quality and Technology Co., Ltd. Test facility located at Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

2. General Product Information

2.1 General Description

The product is a Smart A19 Dimmable Bulb which supports 2.4GHz Band Wi-Fi and Bluetooth low energy wireless functions.

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

2.2 Rating and System details

Table 1: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment:	Smart A19 Dimmable Bulb
Type Designation:	13aSB-A806ST-Q1R_NA, 13aSB-A806ST-Q1R_NA_4P Note: The 13aSB-A806ST-Q1R_NA_4P have the same technical construction including circuit diagram, PCB Layout, components and component layout, all electrical construction and mechanical construction with 13aSB-A806ST-Q1R_NA. The difference lies only model name and package style. all these changes do not degrade the unwanted emissions of the certified product.
FCC ID:	2AB2Q14ASBA806STQ1R
IC:	10256A-14ASBA806ST
HVIN:	14aSB-A806ST-Q1R_NA
Normal Test Voltage:	AC 120 V, 60Hz
Technical Specification of Bluetooth LE	
Operating Frequency:	2402 - 2480MHz
Type of Modulation:	GFSK
Data Rate:	1Mbps, 2Mbps
Channel Number:	40 channels
Channel Separation:	2MHz
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain:	1.58 dBi (Provided by the Client)
The type of wideband data transmission equipment:	Non-FHSS
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency:	2412 - 2462MHz for 802.11b/g/n(HT20) 2422 - 2452MHz for 802.11n(HT40)
Type of Modulation:	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate:	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n
Channel Number:	11 channels for 802.11b/g/n(HT20)

Prüfbericht - Nr.: CN241KYT 003
Test Report No.:

Seite 7 von 10
Page 7 of 10

	7 channels for 802.11n(HT40)
Channel Separation:	5 MHz
Antenna Type:	Integral Antenna
Antenna Number:	1
Antenna Gain:	1.58 dBi (Provided by the Client)
The type of wideband data transmission equipment:	DTS

3. Test Results

3.1 RF Exposure Evaluation

3.1.1 RF Exposure Compliance

RESULT:
Pass

Test standard : CFR47 FCC Part 2: Section 2.1091
RSS-102 Issue 6 December 2023

Limit : Table 1 of 47 CFR FCC Part 1.1310
Section 6.6 of RSS-102 Issue 6

This device is mobile device, and the applicant declares that the minimum separation distance is greater than 20cm. Therefore, MPE measurement or computational modelling should be used to determine compliance.

Antenna Gain: 1.58 dBi Bluetooth LE & 2.4GHz Wi-Fi.

3.1.1.1 RF Exposure Compliance Requirement for FCC

➤ Radio Frequency Exposure Limit

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)
300-1,500	--	--	f/1500
1,500-100,000	--	--	1.0

➤ Radio Frequency Exposure Calculation Formula

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density (in appropriate units, e.g. mW/cm²)
P = power input to the antenna (in appropriate units, e.g., mW)
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

or:

$$S = \frac{EIRP}{4\pi R^2}$$

where: EIRP = equivalent (or effective) isotropically radiated power

Prüfbericht - Nr.: CN241KYT 003

Test Report No.:

Seite 9 von 10

Page 9 of 10

Table 2: Test Results of RF Exposure Calculations for FCC, stand-alone mode

Operating Mode	Measured RF Output Power (dBm)	Max. EIRP (dBm)	Distance (cm)	MPE P_d (mW/cm ²)	Limit (mW/cm ²)	Verdict
Bluetooth LE	12.84	14.42	20	0.0055	1.0	Pass
2.4GHz Wi-Fi	24.60	26.18	20	0.0826	1.0	Pass

Note1: RF Output Power refer to report CN241KYT 002.

Note2: The WLAN and Bluetooth share a same antenna and cannot transmit simultaneously.

➤ **Conclusion**

Therefore the maximum calculations result of above are meet the requirement of Radio Frequency Exposure (MPE) limit.

3.1.1.2 RSS-102 Exemption Limits for Routine Evaluation – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Table 3: Test Results of RF Exposure Calculations for ISED, Stand-alone mode

Operating Mode	Maximum EIRP (dBm)	Maximum EIRP (W)	Distance (cm)	Threshold power (W)	Verdict
Bluetooth LE	14.42	0.0277	20	2.68	Pass
2.4GHz Wi-Fi	26.18	0.415	20	2.68	Pass

Note1: RF Output Power refer to report CN241KYT 002.

Note2: The WLAN and Bluetooth share a same antenna and cannot transmit simultaneously.

➤ **Conclusion**

“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”

4. List of Tables

Table 1: Technical Specification of EUT 6
Table 2: Test Results of RF Exposure Calculations for FCC, stand-alone mode..... 9
Table 3: Test Results of RF Exposure Calculations for ISED, Stand-alone mode 9