


Prüfbericht-Nr.: <i>Test report no.:</i>	NN22LX7U 002	Auftrags-Nr.: <i>Order no.:</i>	168394207	Seite 1 von 3 <i>Page 1 of 3</i>	
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2022-10-14		
Auftraggeber: <i>Client:</i>	Signify (China) Investment Co Ltd Bldg 9 Ln 888, Tianlin Rd, Minhang District Shanghai 200233, China				
Prüfgegenstand: <i>Test item:</i>	Sensor				
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	9290035638,9290035639 (Trademark: PHILIPS)				
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 KDB 447498 D01 General RF Exposure Guidance v06 FCC KDB Publication 865664 D02 v01r02 RSS-102 Issue 5 March 2015				
Wareneingangsdatum: <i>Date of sample receipt:</i>	2022-10-15	Please refer to Photo Document			
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003349095-005-010				
Prüfzeitraum: <i>Testing period:</i>	2022-10-15 - 2022-11-11				
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.				
Prüfergebnis*: <i>Test result*:</i>	Pass				
geprüft von: <i>tested by:</i>			genehmigt von: <i>authorized by:</i>		
Datum: <i>Date:</i>	2022-11-18		Ausstellungsdatum: <i>Issue date:</i>	2022-11-18	
Stellung / Position:	Department Manager		Stellung / Position:	Reviewer	
Sonstiges / Other:	FCC ID: 2AGBW9290035638X IC: 20812-35638X HVIN: 35638				
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:	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	
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 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

1. Radio Frequency Exposure

RESULT:

Pass

Test standard : KDB 447498 D01 General RF Exposure Guidance v06
 CFR47 FCC Part 2: Section 2.1093
 CFR47 FCC Part 1: Section 1.1310
 FCC KDB Publication 865664 D02 v01r02
 RSS-102 Issue 5 March 2015

1.1 Product Technical Information

The EUT is Sensor which supports 2.4GHz ZigBee wireless technology.
 All the models has the same construction and inner layout, the different model name is only for the appearance color.
 For details refer to the User Manual, Technical Description and Circuit Diagram.

General Information of EUT	Value
Kind of Equipment	Sensor
Type Designation	9290035638, 9290035639
Operating Voltage	DC 3.0 via Battery CR2
FCC ID	2AGBW9290035638X
IC	20812-35638X
HVIN	35638
Technical Specification of ZigBee	
Operating Frequency	2405.0 - 2480.0 MHz
Type of Modulation	DSSS(OQPSK)
Channel Number	16 channels
Channel Separation	5 MHz
Antenna Type	IFA Antenna
Antenna Number	1
Antenna Gain	3.5 dBi

➤ **Product Classification**

This device defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at 20 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

Max 3.50 dBi for 2.4GHz ZigBee antenna

➤ **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

a) RF Exposure Evaluation (worse case)

Mode	*Measured RF Output Power (dBm)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)
2.4G ZigBee	5.16	8.66	20	0.002	1.0

Note:

*ZigBee RF Output Power: Refer to NN22LX7U 001

➤ **Conclusion**

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