



TEST REPORT

No. B23N00972-MPE

For

Robert Bosch GmbH

Virtual Cockpit Unit

Model Name: VCUNH1

With

Hardware Version: C3

Software Version: SQBR4-20

FCC ID: 2AUXS-VCUNH1

Issued Date: 2023-09-13

Designation Number: CN1210

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of SAICT.

Test Laboratory:

SAICT, Shenzhen Academy of Information and Communications Technology

Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China 518000.

Tel:+86(0)755-33322000, Fax:+86(0)755-33322001

Email: yewu@caict.ac.cn. www.saict.ac.cn



REPORT HISTORY

Report Number	Revision	Description	Issue Date
B23N00972-MPE	Rev.0	1st edition	2023-09-13



CONTENTS

1. SUMMARY OF TEST REPORT	4
1.1. TEST ITEMS	4
1.2. TEST STANDARDS	4
1.3. TEST RESULT	4
1.4. TESTING LOCATION	4
1.5. PROJECT DATA	4
1.6. SIGNATURE	4
2. CLIENT INFORMATION	5
2.1. APPLICANT INFORMATION	5
2.2. MANUFACTURER INFORMATION	5
3. EQUIPMENT UNDER TEST (EUT) AND ANCILLARY EQUIPMENT (AE)	5
3.1. ABOUT EUT	5
4. TEST METHODOLOGY	5
5. GENERAL DESCRIPTION	6
5.1. EVALUATION DISTANCE	6
5.2. EVALUATION METHOD	6
6. ASSESSMENT RESULT	7
6.1. REFERENCE LEVELS LIMITS	7
6.2. REFERENCE LEVELS EVALUATION	7

1. Summary of Test Report

1.1. Test Items

Description: Virtual Cockpit Unit
Model Name: VCUNH1
Applicant's Name: Robert Bosch GmbH
Manufacturer's Name: Robert Bosch GmbH

1.2. Test Standards

FCC Part 2 (Section 2.1091 and 1.1310), 447498 D01 General RF Exposure Guidance v06,
447498 D03 Supplement C Cross-Reference v01, IEEE C95.1:1992

1.3. Test Result

Pass

1.4. Testing Location

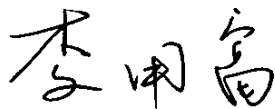
Address: Building G, Shenzhen International Innovation Center, No.1006 Shennan Road, Futian District, Shenzhen, Guangdong, P. R. China

1.5. Project Data

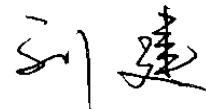
Testing Start Date: 2023-09-13

Testing End Date: 2023-09-13

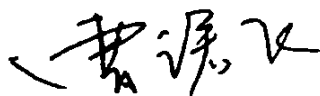
1.6. Signature



Li Yongfu
(Prepared this test report)



LiuJian
(Reviewed this test report)



Cao Junfei
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company Name:	Robert Bosch GmbH
Address:	Robert-Bosch-Str. 200, 31139 Hildesheim, Germany
City:	Hildesheim
Country:	Germany
Telephone:	+49 5121 49-2608

2.2. Manufacturer Information

Company Name:	Robert Bosch GmbH
Address:	Robert-Bosch-Str. 200, 31139 Hildesheim, Germany
City:	Hildesheim
Country:	Germany
Telephone:	+49 5121 49-2608

3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description:	Virtual Cockpit Unit
Model name:	VCUNH1
Condition of EUT as received:	No obvious damage in appearance
Frequency Bands:	Bluetooth, WLAN 2.4GHz/5GHz
Tx Frequency:	2400 – 2483.5MHz (Bluetooth)
	2412 – 2462MHz (WLAN 2.4GHz)
	5150 – 5250MHz, 5725 – 5850MHz (WLAN 5GHz)

4. Test Methodology

FCC Part 2 (Section 2.1091 and 1.1310)
447498 D01 General RF Exposure Guidance v06
447498 D03 Supplement C Cross-Reference v01
IEEE C95.1-1992

5. General Description

5.1. Evaluation Distance

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user.

5.2. Evaluation Method

Evaluation Method

$$P_d = (P_{out} * G) / (4 * \pi * R^2)$$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

Co-transmitting Evaluation Method

Conclusion:

$$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

6. Assessment Result

6.1. Reference Levels Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
30-300	27.5	0.073	0.2	30
300-1500	f/1500	30
1500-100,000	1.0	30

f = frequency in MHz
 * = Plane-wave equivalent power density

6.2. Reference Levels Evaluation

Band	Tune-up Power (dBm)	Maximum Antenna Gain (dBi)	EIRP (dBm)
Bluetooth (Antenna 0)	5.64	5.20	10.84
WLAN 2.4GHz (Antenna 0)	21.14	5.20	26.34
WLAN 2.4GHz (Antenna 1)	19.14	5.57	24.71
WLAN 5GHz (Antenna 0)	18.84	4.90	23.74
WLAN 5GHz (Antenna 1)	14.84	2.22	17.06

Note 1: Tune-up power/ antenna gain was declared by manufacturer.

Note 2: EIRP (dBm) = Tune-up Power (dBm) + Antenna Gain (dBi)



Power Density Calculations					
Distance (cm)	Evaluation Mode	EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Conclusion
20	Bluetooth	12.13	0.002	1.0	Pass
	WLAN 2.4GHz (Antenna 0)	430.53	0.086	1.0	Pass
	WLAN 2.4GHz (Antenna 1)	295.80	0.059	1.0	Pass
	WLAN 5GHz (Antenna 0)	236.59	0.047	1.0	Pass
	WLAN 5GHz (Antenna 1)	50.82	0.010	1.0	Pass

Note 1: The distance comes from the user's manual.

Note 2: $EIRP (mW) = 10^{[EIRP(dBm) / 10]}$

Co-transmitting Power Density Calculations			
Co-transmitting Mode	Co-transmitting Power Density / Limit	Limit	Conclusion
WLAN 2.4GHz (Antenna 0) + WLAN 2.4GHz (Antenna 1)	0.145	1	Pass

Note: The Co-transmitting mode of above tables is for the worse case that has been evaluated.

Conclusion: According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF exposure is FCC compliant.

END OF REPORT