



REPORT No.: SZ26090251S01

RF EXPOSURE EVALUATION REPORT

APPLICANT : Aptiv Services Poland S.A.

PRODUCT NAME : P-MIB4

MODEL NAME : P-MIB4

BRAND NAME : APTIV

FCC ID : 2BU79PMIB4

STANDARD(S) : 47 CFR Part 2(2.1091)

RECEIPT DATE : 2026-01-19

TEST DATE : 2026-03-10 to 2026-03-26

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MORLAB

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Change History		
Version	Date	Reason for change
1.0	2026-09-21	First edition

1. Technical Information

Note: Provide by applicant.

1.1 Applicant and Manufacturer Information

Applicant:	Aptiv Services Poland S.A.
Applicant Address:	ul. Podgórk Tynieckie 2,30-399 Kraków, Poland
Manufacturer:	Aptiv Services Poland S.A.
Manufacturer Address:	ul. Podgórk Tynieckie 2,30-399 Kraków, Poland

1.2 Equipment under Test (EUT) Description

Product Name:	P-MIB4	
Sample No.:	13#, 14#, 19#	
Hardware Version:	6	
Software Version:	X021	
Blockchain log:		
Frequency Bands:	WLAN 2.4GHz	2412MHz-2472MHz
	WLAN 5GHz	5180MHz-5240MHz; 5745MHz-5825MHz
	Bluetooth	2402MHz-2480MHz
Modulation Mode:	WLAN 2.4GHz	DSSS, OFDM, OFDMA
	WLAN 5GHz	OFDM, OFDM, OFDMA
	Bluetooth	GFSK, $\pi/4$ -DQPSK, 8-DPSK
Antenna Information:	Bluetooth	
	Antenna Type:	Internal Antenna
	Antenna Gain:	ANT1: 2.40dBi; ANT2: 2.51dBi
	WLAN 2.4GHz	
	Antenna Type:	Internal Antenna
	Antenna Gain:	ANT1: 2.51dBi; ANT2: 2.51dBi
	WLAN 5GHz	
	Antenna Type:	Internal Antenna
	Antenna Gain:	ANT1: 5180-5240MHz: 3.77 dBi; 5745-5825MHz: 2.86 dBi
		ANT2: 5180-5240MHz: 3.77 dBi; 5745-5825MHz: 2.86 dBi



Note 1: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

Note 2: This is a variant report of original report (Report No.: SZ26030114S01, FCC ID: 2BU79PMIB4) to request a Class II Permissive change, based on the similarity between before, made the following changes:

- a) Nexperia shortage mitigation many component swaps across RSC/MMX (transistors, MOSFETs, diodes, and logic ICs) replaced with alternates from Diodes Inc., TI, Yangjie, Panjit.
 - b) Smaller design fixes and improvements (I2C fixes, SI tuning, USB fixes, coding updates)
 - c) A few component robustness updates (e.g., higher temperature-rated crystals)
- And Strongbox removal, the others are the same as before.
- d) Change the hardware version.

Due to the above changes, we have evaluated and retested worst case of RF output power and radiated emissions, the test results are better than before, all other test items are no need to be retested. The changes do not affect the test results in this report.



1.3 Applied Reference Documents

Leading reference documents for testing:

Identity	Document Title	Remark
47 CFR Part 2(2.1091)	Radio Frequency Radiation Exposure Assessment: mobile devices	/
KDB 447498 D01v06	General RF Exposure Guidance	/
Note 1: Any additions, deviation, or exclusions from the method shall be noted in the "Remark".		



2. Device Category and RF Exposure Limit

Per user manual, based on 47 CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

Mobile Devices:

47 CFR 2.1091(b)

For purposes of this section, a mobile device is 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 least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

General Population/Uncontrolled Exposure:

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

Table 1 Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
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

3. Maximum Average Power Summary

Wireless Mode	Channel	Frequency (MHz)	Max. Average Power (dBm)	Tune-up Limit (dBm)
WLAN 2.4GHz ANT 1	CH 7	2442	17.24	18.50
WLAN 2.4GHz ANT 2	CH 7	2442	15.77	17.00
WLAN 5GHz ANT 1	CH 36	5180	15.93	17.00
WLAN 5GHz ANT 2	CH 48	5240	13.45	14.50
Bluetooth ANT 1	CH 78	2480	8.65	9.50
Bluetooth ANT 2	CH 39	2480	9.46	10.50

Maximum Average Power for MIMO

Wireless Mode	Channel	Frequency (MHz)	Max. Average Power (dBm)	Tune-up Limit (dBm)
WLAN 5GHz	CH 36	5180	14.50	15.50
WLAN 2.4GHz	CH 1	2412	16.48	17.50

Note 1: According to KDB 447498, MPE assessment is based on source-based time-averaged maximum conducted output power of the RF channel requiring assessment, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.

Note 2: The maximum average power refers to report (Report No.: SZ26030114W01/W02/W03/W04).

4. RF Exposure Assessment

> Standalone Transmission Assessment

<Standalone Antenna Transmission Assessment>

Bands	Frequency (MHz)	Tune-up Power(dBm)	Antenna Gain(dBi)	E.I.R.P. (mW)	Power Density (mW/cm ²)	Limit for MPE (mW/cm ²)
WLAN 2.4GHz ANT 1	2442	18.50	2.51	126.18	0.025	1.0
WLAN 2.4GHz ANT 2	2442	17.00	2.51	89.33	0.018	1.0
WLAN 5GHz ANT 1	5180	17.00	3.77	119.40	0.024	1.0
WLAN 5GHz ANT 2	5240	14.50	3.77	67.14	0.013	1.0
Bluetooth ANT 1	2480	9.50	2.40	12.74	0.003	1.0
Bluetooth ANT 2	2480	10.50	2.51	15.74	0.003	1.0

<MIMO Transmission Assessment>

Bands	Frequency (MHz)	Tune-up Power(dBm)	Directional Gain(dBi)	E.I.R.P. (mW)	Power Density (mW/cm ²)	Limit for MPE (mW/cm ²)
WLAN 5GHz	5180	15.50	6.34	152.76	0.030	1.0
WLAN 2.4GHz	2412	17.50	5.52	200.45	0.040	1.0

Note 1: The WLAN 2.4GHz directional gain = $10\log(10^{G1/20} + 10^{G2/20})^2/2 = 5.52\text{dBi}$; WLAN 5GHz directional gain = $10\log(10^{G1/20} + 10^{G2/20})^2/2 = 6.34\text{dBi}$.

Note 2: For 5G WLAN, only the worst case will be used for calculating the power density.

Note 3: MPE calculate method

$$S = PG/4\pi R^2$$

Where: S= Power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune-up power (in appropriate units, e.g. dBm)

G = numeric gain of the antenna (in appropriate units, e.g. dBi)

R = Separation distance to the centre of radiation of the antenna (20cm)

➤ **Simultaneous Transmission Assessment:**

Multi-Band Simultaneous Transmission Consideration

Simultaneous Transmission Consideration	Position	Applicable Combination
	Body	Bluetooth ANT1+WLAN 2.4GHz ANT1
		Bluetooth ANT1+WLAN 2.4GHz ANT2
		Bluetooth ANT1+WLAN 5GHz ANT1
		Bluetooth ANT1+WLAN 5GHz ANT2
		Bluetooth ANT2+WLAN 2.4GHz ANT1
		Bluetooth ANT2+WLAN 2.4GHz ANT2
		Bluetooth ANT2+WLAN 5GHz ANT1
		Bluetooth ANT2+ WLAN 5GHz ANT2
		WLAN 2.4GHz ANT1+WLAN 2.4GHz ANT2
		WLAN 2.4GHz ANT1+ WLAN 5GHz ANT1
		WLAN 2.4GHz ANT1+ WLAN 5GHz ANT2
		WLAN 2.4GHz ANT2+ WLAN 5GHz ANT1
		WLAN 2.4GHz ANT2+ WLAN 5GHz ANT2
		WLAN 5GHz ANT1+ WLAN 5GHz I ANT2

Note 1: This device contains transmitters that may operate simultaneously, therefore simultaneous transmission analysis is required as below.

Applicable Combination	Transmission Bands	Power Density (mW/cm²)	Limit (mW/cm²)	Simultaneous Transmission Result
WLAN 2.4GHz ANT 1+ WLAN 5GHz ANT 1	WLAN 2.4GHz	0.025	1.0	0.049
	WLAN 5GHz	0.024	1.0	
Note 1: Formula for result=Power density ₁ / limit ₁ + Power density ₂ / limit ₂ ≤1.				
Note 2: The highlight applicable combination is the worst condition.				

➤ **Conclusion:**

According to 47 CFR 2.1091, this device complies with human exposure basic restrictions.



Annex A Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



Notes

1. The report shall have report stamp or our company stamp.
2. The report shall be invalid without all the signatures of the editor and approver.
3. The report shall not be changed.
4. Any objections must be raised to Morlab within 15 days since the date when the report is received. It will not be taken into consideration beyond this limit.
5. Conformity declaration:
 - ☒ Morlab issues a statement of conformity based on the corresponding standards (default)
 - ☐ Morlab issues a statement of conformity based on the applicant requirement
6. Use of uncertainty of measurement for decisions on conformity (decision rule):

No decision rule is specified by the testing standard, when comparing the measurement result with the applicable limit according to the specification in that standard. The decisions on conformity are made without applying the measurement uncertainty ("simple acceptance" decision rule).

_____ END OF REPORT _____