

RF Exposure Exemption

Applicant : Thales DIS France SAS
Product Name : Smart Card Reader USB & Bluetooth
Trade Name : THALES
Model Number : Gemalto SWYS PIN PAD
Applicable Standard : 47 CFR § 2.1093
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Revision History

Version	Issued Date	Revisions	Revised By
00	Sep. 20, 2023	Initial Issue	Rowan Hsieh

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1. General Information

1.1 Reference Applicable Standard

Standard	Description	Version
IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
47 CFR § 2.1093	Radiofrequency radiation exposure evaluation: portable devices.	-
47 CFR § 1.1310	Radiofrequency radiation exposure limits.	-
KDB 447498 D04	RF exposure procedures and equipment authorization policies for mobile and portable devices	v01

1.2 Testing Location

Lab Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address: ☒ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address: ☐ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

2. Description of Equipment under Test (EUT)

Applicant	Thales DIS France SAS 6 Rue de la Verrerie, MEUDON 92197 France
Manufacturer	Thales DIS France SAS 6 Rue de la Verrerie, MEUDON 92197 France
Product Name	Smart Card Reader USB & Bluetooth
Trade Name	THALES
Model Number	Gemalto SWYS PIN PAD
FCC ID	MES-SWYSPINPAD
Antenna information	Brand: Thales Model: DA14531 PCB Antenna Type: PCB Antenna Gain: -5.1 dBi

Note:

The above information of DUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

3. RF Exposure Limit

For devices that operate at larger distances from persons, where there are minimal RF coupling interactions between a device and the user or nearby persons, RF exposure compliance using maximum permissible exposure (MPE) limits is applied. The limits for MPE is listed as below:

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
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 / 1,500	30
1,500-100,000	-	-	1.0	30
Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1,842 / f	4.89 / f	(900 / f ²)*	6
30-300	61.4	0.163	1.0	6
300-1,500	-	-	F / 300	6
1,500-100,000	-	-	5	6

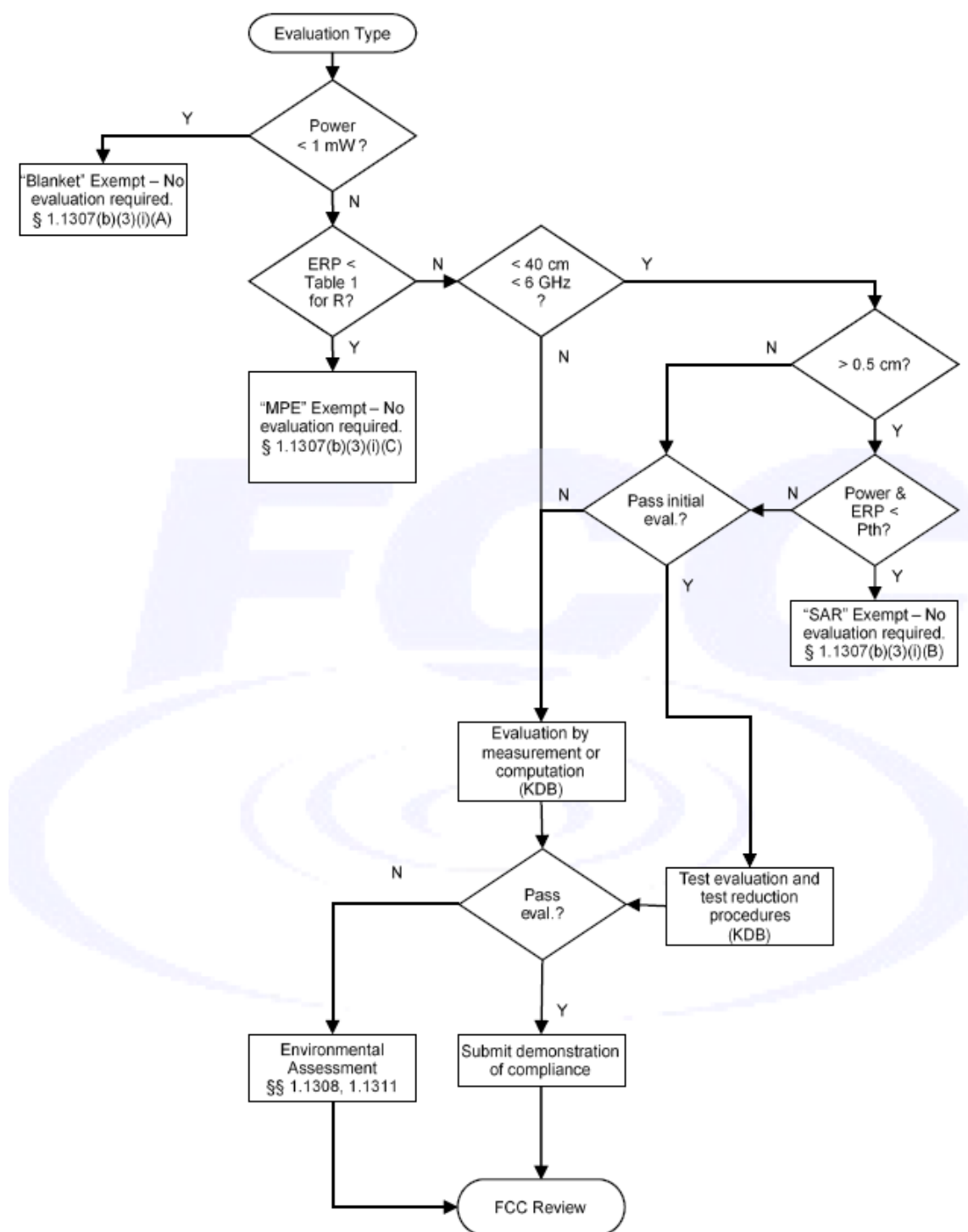
f = frequency in MHz. * = Plane-wave equivalent power density.

4. RF Exposure Assessment

4.1 Exemption Evaluation

Exemption evaluation was performed according to the appendix A and B in KDB447498 D04.

The General Sequence for Determination of Procedure demonstrated in Figure A.1 of KDB447498 D04 was applied.



4.2 Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled "Radiofrequency radiation exposure limits", generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device 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 cm is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons."

Exposure evaluation

$$S_{eirp} = \frac{EIRP}{4\pi d^2} = \frac{PG}{4\pi d^2} (W / m^2)$$

Where

S: is the input power (W);

G: is the antenna gain;

d : is the distance between antennas and evaluation point (m).

5. Result

Band	Freq.(Min)	Freq.(Max)	Antenna	Tune-up Power (dBm) [P]	ANT Gain (dBi)	ERP(mW)	<§1.1307(b)(3)(i)(A)> 1 mW Exemption Threshold ERP (mW)	Test Required
Bluetooth	2402	2480	ANT 0	-0.74	-5.1	0.159	1.00	No

Note:

This device is qualified for the 1 mW blanket exemption under §1.1307(b)(3)(i)(A).

Simultaneous Transmitting :

There are no simultaneous transmitting of combinations.

6. Conclusion

The result shows that this device is qualified for 1 mW Test Exemption in KDB447498. Therefore, testing is not required.

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