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47 C.F.R. Part 1, Subpart I, Section 1.1310

47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

4-port RFID smart Reader

Model: F741-SD

Data Applies To: F741

Trade Name: Favite

Issued for

Favite Inc.

No.176,Taihe Rd., Jhubei City, Hsinchu County 30267, Taiwan

Issued by

Compliance Certification Services Inc.

Hsinchu Lab.

NO. 989-1, Wenshan Rd., Shangshan Village,

Qionglin Township, Hsinchu County 30741, Taiwan (R.O.C.)

<http://www.ccsrf.com>

service@ccsrf.com

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
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1. Limit

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

2. EUT Specification

Product Name	4-port RFID smart Reader
Model Number	F741-SD
Identify Number	T160119S03
Received Date	January 19, 2016
Frequency band (Operating)	902.75MHz ~ 927.25MHz
Device category	Mobile (>20cm separation)
Exposure classification	☐ Occupational/Controlled exposure ($S = 5\text{mW}/\text{cm}^2$) ☒ General Population/Uncontrolled exposure ($S=0.610\text{mW}/\text{cm}^2$)
Antenna Specification	Antenna Gain : 5.85 dBi (Numeric gain: 3.85)
Maximum Peak output power	29.86 dBm (968.278 mW)
Evaluation applied	MPE Evaluation*

Remark:

1. For more details, please refer to the User's manual of the EUT.
2. This submittal(s) (test report) is intended for FCC ID: XLG-F741-SD filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.

3. Test Results

No non-compliance noted.

Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{3770}$$

Where E = Field strength in Volts / meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \textbf{Equation 1}$$

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

4. Maximum Permissible Exposure

Substituting the MPE safe distance using $d = 23$ cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm2)
915.25	968.278	3.85	23	0.5608	0.610