IEEE C95.1 2005
KDB 447498 D01 V06
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

WiFi+Bluetooth 4.0(HS) System on Module

Model: PICO-IMX7

Trade Name: TechNexion

Issued to

TechNexion Ltd.
16f-5, No.736, Zhongzheng Road, Zhonghe Dist., New Taipei City, 23511
Taiwan ROC

Issued by

Compliance Certification Services Inc.
Tainan Laboratory
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Issued Date: September 27, 2017

Revision History

Rev.		Issue Date		Revisions	Effect Page	Revised By
00		September 27, 2017		Initial Issue	ALL	Vicki Huang

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1. TEST RESULT CERTIFICATION

We hereby certify that:

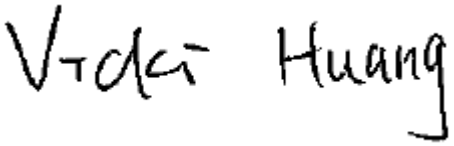
The equipment has been tested by Compliance Certification Services Inc., and found compliance with the requirement of the applicable standards. The test record, data evaluation and Equipment under Test (EUT) configurations represented herein are true and accurate accounts of the measurement of the sample's RF characteristics under the conditions specified in this report.

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:

Jeter Wu
Assistant Manager
Compliance Certification Services Inc.

Prepared by:



Vicki Huang
Report coordinator
Compliance Certification Services Inc.

2. 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.

3. EUT SPECIFICATION

Product	WiFi+Bluetooth 4.0(HS) System on Module
Model	PICO-IMX7
Brand name	TechNexion
Model Discrepancy	N/A
Frequency band (Operating)	☒ Bluetooth 2.1 + EDR / 4.0: 2402 MHz ~ 2480 MHz 802.11b/g/n HT20: 2412MHz ~ 2462MHz 802.11a: 5180MHz ~ 5240MHz / 5720MHz 802.11n HT20: 5180MHz ~ 5240MHz / 5745 ~ 5825MHz 802.11n HT40: 5190MHz ~ 5230MHz / 5755 ~ 5795MHz 802.11ac VHT80: 5210MHz / 5775MHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)

Antenna Specification	**Bluetooth:** Dipole Antenna / Gain: 3dBi **2.4G** Dipole Antenna / Gain: 3dBi **5G** Dipole Antenna / Gain: 4dBi BT: Antenna Gain : 3.00 dBi (Numeric gain: 2.00) Worst 2.4GHz: Antenna Gain : 3.00 dBi (Numeric gain: 2.00) Worst 5GHz: Antenna Gain : 4.00 dBi (Numeric gain: 2.51) Worst
Maximum Average output power	Bluetooth Mode : 9.81 dBm (9.572 mW) IEEE 802.11b Mode: 14.70 dBm (29.512 mW) IEEE 802.11g Mode: 14.67 dBm (29.309 mW) IEEE 802.11n HT 20 Mode: 13.62 dBm (23.014 mW) IEEE 802.11a Mode: 15.85 dBm (38.459 mW) IEEE 802.11n HT 20 Mode: 14.41 dBm (27.606 mW) IEEE 802.11n HT 40 Mode: 14.46 dBm (27.925 mW) IEEE 802.11ac VHT 80 MHz: 13.68 dBm (23.335 mW)
Maximum Tune up Power	Bluetooth Mode : 10.00 dBm (10.000 mW) IEEE 802.11b Mode: 15.50 dBm (35.481 mW) IEEE 802.11g Mode: 15.00 dBm (31.623 mW) IEEE 802.11n HT 20 Mode: 14.50 dBm (28.184 mW) IEEE 802.11a Mode: 16.00 dBm (39.811 mW) IEEE 802.11n HT 20 Mode: 15.00 dBm (31.623 mW) IEEE 802.11n HT 40 Mode: 15.00 dBm (31.623 mW) IEEE 802.11ac VHT 80 MHz: 14.50 dBm (28.184 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A

4. TEST RESULTS

No non-compliance noted.

Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{377}$

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:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

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

Where d = Distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using d = 20 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

Bluetooth mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
1	2402	10.000	2.00	20	0.0040	1

IEEE 802.11b mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
6	2437	35.481	2.00	20	0.0141	1

IEEE 802.11g mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
6	2437	31.623	2.00	20	0.0126	1

IEEE 802.11n HT 20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
6	2437	28.184	2.00	20	0.0112	1

IEEE 802.11a mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
157	5785	39.811	2.51	20	0.0199	1

IEEE 802.11a HT20 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
36	5180	31.623	2.51	20	0.0158	1

IEEE 802.11a HT40 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
151	5755	31.623	2.51	20	0.0158	1

IEEE 802.11ac VHT80 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm²	Limit (mW/cm2)
155	5775	28.184	2.51	20	0.0141	1