RF Exposure Report

Report No.: SA170829C21

FCC ID: VUISPECTRUM1-T

Test Model: Spectrum210-T

Series Model: Spectrum110-T

Received Date: Aug. 29, 2017

Test Date: Sep. 04, 2017

Issued Date: Sep. 27, 2017

Applicant: PEGATRON CORPORATION

Address: 5F, No. 76 Ligong St., Beitou, Taipei 112, Taiwan

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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Release Control Record

Issue No.	Description	Date Issued
SA170829C21	Original release.	Sep. 27, 2017

1 Certificate of Conformity

Product:	STB
Brand:	Technicolor
Test Model:	Spectrum210-T
Series Model:	Spectrum110-T
Sample Status:	ENGINEERING SAMPLE
Applicant:	PEGATRON CORPORATION
Test Date:	Sep. 04, 2017
Standards:	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v06 IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

Prepared by : _____ , **Date:** Sep. 27, 2017

Wendy Wu / Specialist

Approved by : _____ , **Date:** Sep. 27, 2017

May Chen / Manager

2 RF Exposure

2.1 Limits For Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time (minutes)
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

2.2 MPE Calculation Formula

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

2.3 Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

2.4 Antenna Gain

Bluetooth								
Antenna No.	Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connecter Type	Cable Length (mm)
1	Con2700	-	-	4.01	2.4-2.5	PCB	i-pex(MHF)	113

Zigbee / RF4CE							
Antenna No.	Chain No.	Brand	Model	Antenna Net Gain (dBi)	Frequency range (GHz)	Antenna Type	Connecter Type
1	ant100	-	-	3.2	2.4-2.5	PCB	none

2.5 Calculation Result of Maximum Conducted Power

For BT-EDR:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	2.884	4.01	20	0.00144	1

For BT-LE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2402-2480	2.382	4.01	20	0.00119	1

For Zigbee:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2405-2480	4.15	3.2	20	0.00172	1

For RF4CE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2425-2475	4.093	3.2	20	0.00170	1

Conclusion:

The formula of calculated the MPE is:

CPD1 / LPD1 + CPD2 / LPD2 + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Bluetooth + Zigbee = 0.00144 / 1 + 0.00172 / 1 = 0.00316

Therefore the maximum calculations of above situations are less than the "1" limit.

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