

RF Exposure Report

Report No.: SA150810C21

FCC ID: NQ8CI2516

Test Model: CI2516

Received Date: Aug. 10, 2015

Test Date: Aug. 20 to 24, 2015

Issued Date: Sep. 02, 2015

Applicant: Pace Micro Technology plc

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
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A D T

Release Control Record

Issue No.	Description	Date Issued
SA150810C21	Original release.	Sep. 02, 2015



A D T

1 Certificate of Conformity

Product: IP Set Top Box

Brand: Layer3 TV

Test Model: CI2516

Sample Status: ENGINEERING SAMPLE

Applicant: Pace Micro Technology plc

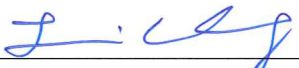
Test Date: Aug. 20 to 24, 2015

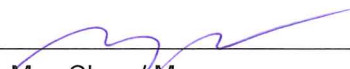
Standards: FCC Part 2 (Section 2.1091)

KDB 447498 D03

IEEE C95.1

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. 02, 2015
Lori Chung / Specialist

Approved by : , **Date:** Sep. 02, 2015
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				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

2.2 MPE Calculation Formula

$$P_d = (P_{out} * G) / (4 * \pi * r^2)$$

where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 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 22cm away from the body of the user.

So, this device is classified as **Mobile Device**.

3 Antenna Gain

The antennas provided to the EUT, please refer to the following table:

The antennas provided to the EOI, please refer to the following table.

Bluetooth					
Ant. No.	Ant. Gain (dBi) Including cable loss	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type	
1	3.2	2.4~2.5	Dipole	ipex	
WLAN					
Ant. No.	Transmitter Circuit	Ant. Gain (dBi) Including cable loss	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type
2	Chain (0)	4.6	5.15~5.85	Dipole	ipex
3	Chain (1)	4.7	5.15~5.85	Dipole	ipex
4	Chain (2)	5.4	5.15~5.85	Dipole	ipex
RF4CE					
Ant. No.	Transmitter Circuit	Ant. Gain (dBi) Including cable loss	Frequency range (GHz ~ GHz)	Ant. Type	Connector Type
5	Chain (0)	4.1	2.4~2.5	Dipole	NA
6	Chain (1)	3.2	2.4~2.5	Dipole	NA

4 Calculation Result Of Maximum Conducted Power

For WLAN:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
5180-5240	354.86	9.68	22	0.54200	1
5260-5320	202.234	9.68	22	0.30889	1
5500-0700	238.435	9.68	22	0.36418	1
5745-5825	588.201	9.68	22	0.89840	1

Note: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 3] = 9.68\text{dBi}$

For Bluetooth:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2402-2480	6.026	3.2	22	0.00207	1

For RF4CE:

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
2405-2480	1.73	4.1	22	0.00073	1

Conclusion:

Both of the WLAN, Bluetooth & RF4CE can transmit simultaneously, the formula of calculated the MPE is:

$$CPD_1 / LPD_1 + CPD_2 / LPD_2 + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is $0.89840 / 1 + 0.00207 / 1 + 0.00073 / 1 = 0.901$, which is less than "1".

This confirmed that the device comply with FCC 1.1310 MPE limit.

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