RF Exposure Report

Report No.:	SA150623E09
FCC ID:	U8G-P1934
Test Model:	MAX BR1 PRO LTE
Series Model:	MAX BR1 PRO, MAX BR2, MAX BR4, Pismo 934, Surf SOHO, Surf SOHO LTE, MAX BR2 LTE, MAX BR4 LTE
Received Date:	June 23, 2015
Test Date:	July 13 to 14, 2015
Issued Date:	July 24, 2015
Applicant:	Pismo Labs Technology Limited
Address:	FLAT/RM A5, 5/F, HK SPINNERS IND BLDG PHASE 6, 481 CASTLE PEAK ROAD, CHEUNG SHA WAN, HONG KONG.
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (1):	No. 81-1, Lu Liao Keng, 9th Ling,Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.
Test Location (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA150623E09	Original release.	July 24, 2015

1 Certificate of Conformity

Product:	Industrial-Grade M2M Cellular Router
Brand:	Pepwave / Peplink / Pismo
Test Model:	MAX BR1 PRO LTE
Series Model:	MAX BR1 PRO, MAX BR2, MAX BR4, Pismo 934, Surf SOHO, Surf SOHO LTE, MAX BR2 LTE, MAX BR4 LTE
Sample Status:	MASS-PRODUCTION
Applicant:	Pismo Labs Technology Limited
Test Date:	July 13 to 14, 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:** July 24, 2015

Claire Kuan / Specialist

Approved by : _____ , **Date:** July 24, 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

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

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 25cm 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:

WLAN Antenna Spec.							
No.	Transmitter Circuit	Brand	Model No.	Antenna Type	Antenna Connecter	Gain(dBi) including cable loss	Frequency (GHz to GHz)
1	Chain (0)	SmartAnt	SAA06-220690	Dipole	RP-SMA	3	2.4~2.4835
		SmartAnt	SAA06-220690	Dipole	RP-SMA	4-5.5	5.15~5.25
		SmartAnt	SAA06-220690	Dipole	RP-SMA	5.5-6	5.725~5.85
2	Chain (1)	SmartAnt	SAA06-220690	Dipole	RP-SMA	3	2.4~2.4835
		SmartAnt	SAA06-220690	Dipole	RP-SMA	4-5.5	5.15~5.25
		SmartAnt	SAA06-220690	Dipole	RP-SMA	5.5-6	5.725~5.85

LTE Antenna Spec.							
Set	Transmitter Circuit	Brand	Model No.	Antenna Type	Antenna Connecter	Gain(dBi) including cable loss	Frequency (GHz to GHz)
1	Cellular Main	Pulse	SPDA24700/2700	Dipole	SMA Male	2	698-960/ 1710-2170/ 2500-2700
	Cellular Diversity/ Aux	Pulse	SPDA24700/2700	Dipole	SMA Male	2	

GPS Antenna Spec.						
No.	Brand	Model No.	Antenna Type	Antenna Connecter	Gain(dBi) including cable loss	Frequency (GHz to GHz)
1	Chang Hong	GPS-01	Magnetic	R-SMA Male	-1	1.57542 (+/- 1.023)

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)
2412-2462	833.681	3.00	25	0.21179	1
5180-5240	146.218	5.50	25	0.06606	1
5745-5825	114.815	6.00	25	0.05820	1

For WWAN(2G):

Frequency (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
824.2	1959	2.00	25	0.39532	0.5495

Note: The EUT contains WWAN certified module which FCC ID: N7NMC7355 (Model: MC7354).

Conclusion:

The formula of calculated the MPE is:

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

CPD = Calculation power density

LPD = Limit of power density

WLAN(2.4GHz) + WWAN(2G) = 0.21179 + (0.39532/0.5495) = 0.931

WLAN(5GHz) + WWAN(2G) = 0.06606 + (0.39532/0.5495) = 0.786

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

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