

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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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits For Maximum Permissible Exposure (MPE).....	5
2.2 Mpe Calculation Formula	5
2.3 Classification	5
3 Calculation Result Of Maximum Conducted Power	7



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Release Control Record

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



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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

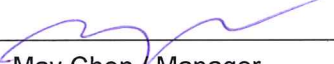
Standards: FCC Part 2 (Section 2.1091)

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

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

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 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 Connector	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 Connector	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 Connector	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:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

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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