RF Exposure Evaluation Declaration

Product Name	:	Module
Trade Name	:	AirPrime
Model No.	:	HL7718
FCC ID.	:	N7NHL7718

Applicant : Sierra Wireless Inc.

Address : 13811 Wireless Way, Richmond, BC, V6V 3A4 Canada

Date of Receipt	:	Sep. 20, 2017
Date of Declaration	:	Nov. 11, 2017
Report No.	:	17A0040R-SAUSP03V00
Report Version	:	V2.0

Testing Laboratory
3024

The declaration results relate only to the samples calculated.
The declaration shall not be reproduced except in full without the written approval of DEKRA Testing and Certification Co., Ltd..

1. RF Exposure Evaluation

1.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

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)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission 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

Pd id the limit of MPE, 1 mW/cm^2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18℃ and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	Module
Test Mode	Mode 1: LTE_CAT-M1_Band 13_Link
Test Condition	RF Exposure Evaluation

Antenna Gain

Based on the Maximum Conducted Output Power, the usable maximum antenna gain is 2dBi or 3 in linear scale.

Output Power into Antenna & RF Exposure Evaluation Distance:

LTE Band13_QPSK

Frequency (MHz)	Maximum Output Power by manufacturer's declaration		Conducted Output Power by Testing		Maximum Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2.)
	(dBm)	(mW)	(dBm)	(mW)		
777.7	25	316.23	24.67	293.09	0.10	0.518
780.3	25	316.23	24.38	274.16	0.10	0.520
786.3	25	316.23	24.89	308.32	0.10	0.524

Output Power into Antenna & RF Exposure Evaluation Distance:

LTE Band13_16-QAM

Frequency (MHz)	Maximum Output Power by manufacturer's declaration		Conducted Output Power by Testing		Maximum Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2.)
	(dBm)	(mW)	(dBm)	(mW)		
777.7	25	316.23	23.57	227.51	0.10	0.518
780.3	25	316.23	23.14	206.06	0.10	0.520
786.3	25	316.23	23.41	219.28	0.10	0.524