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EMR Compliance Report

ARPANSA RPS3

Report Number: TR2316B

April 2018

Comtest
LTE Module
Model: N710

EMR Compliance Certificate

Client Contact: Robert Norris
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Device: LTE Module
 Model No: N710
 Serial No: N/A

Reference Standard: ARPANSA Radiation Protection Standard:
 Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz –
 Radiation Protection Series Publication No. 3: 2002

Summary Result: Exempt (*under schedule 5.3 of ARPANSA RPS3*)

Test Date: 13th April 2018

Tests Performed by: Gabriel Mendez
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The LTE Module complies with the requirements of ARPANSA Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz – Radiation Protection Series Publication No. 3: 2002.

		17 th April 2018
Prepared: Gabriel Mendez Test Engineer Compliance Engineering Pty Ltd	Approved: Andrew Burden Technical Manager Compliance Engineering Pty Ltd	Date

EMR Compliance Report

1. INTRODUCTION

An EMR assessment was performed on the LTE Module in accordance with the requirements of the ARPANSA Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz – Radiation Protection Series Publication No. 3: 2002.

2. RESULTS SUMMARY

Schedule 5 of ARPANSA RPS3 **Complies**

3. TEST SAMPLE

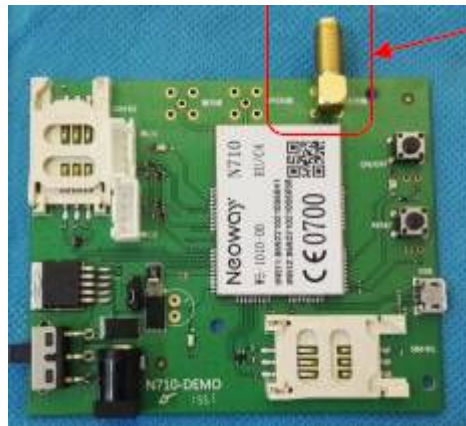
The equipment under test (EUT) is described as follows:

LTE Module

Model No: N710

Operation Band:	GSM900,DCS1800
Supported type:	GSM/GPRS/EGPRS
Operation Frequency Range:	Transmit: GSM900: 880.2MHz~914.8MHz DCS1800: 1710.2MHz~1784.8MHz Receive: GSM900: 925.2MHz~959.8MHz DCS1800: 1805.2MHz~1879.8MHz
Power Class:	GSM900:Power Class 4 DCS1800:Power Class 1
Modulation Type:	GMSK for GSM/GPRS GMSK, 8PSK for EGPRS
GSM Release Version	R99
GPRS Multislot Class	12
EGPRS Multislot Class	12
Hardware version:	1722-V1.0
Software version:	N710E_C1463FF_T1033_V012C
Antenna type:	Internal Antenna
Antenna gain:	GSM900:0.6dBi DCS1800:0.6dBi

Operation Band:	FDD Band I and FDD Band VIII
Power Class:	Power Class 3
Operation Frequency Range:	Transmit: FDD Band I: 1922.4MHz~1977.6MHz FDD Band VIII: 882.4 MHz~912.6 MHz Receive: FDD Band I: 2112.4MHz~2167.6MHz FDD Band VIII: 927.4MHz~957.6 MHz
Modulation Type:	QPSK
WCDMA Release Version:	R7
HSDPA Release Version:	Release 8
HSUPA Release Version:	Release 6
Hardware version:	1722-V1.0
Software version:	N710E_C1463FF_T1033_V012C
Antenna type:	Internal Antenna
Antenna gain:	FDD Band I: 1dBi FDD Band VIII:1dBi



4. REQUIREMENTS

(Reference: ARPANSA RPS3: Schedule 5.3)

S5.3 EQUIPMENT INTENDED FOR USE BY THE GENERAL PUBLIC

S5.3.1 Application

Sub-section S5.3 provides a means, based on equipment and usage parameters, to readily determine compliance with the spatial peak SAR restrictions of Table 2 for general public exposure of certain portable or mobile equipment. This sub-section has application to equipment intended for operation by general public users.

S5.3.2 Equipment with mean output power not exceeding 20 mW

The evaluation of mobile or portable transmitting equipment for compliance with this Standard, is not required where the nominal mean power output delivered to the antenna does not exceed 20 mW.

S5.3.3 Equipment with mean output power exceeding 20 mW

The evaluation of mobile or portable transmitting equipment for compliance with this Standard is not required where:

- (a) it operates on a push-to-talk basis;
- (b) it is operated with a transmit duty factor of 50% or less averaged over a six minute period;
- (c) it does not exceed one fifth (20%) of the power levels of Table S2; and
- (d) normal operation entails the antenna or other radiating structure being separated from the user's body by not less than 2.5 cm.

The evaluation of mobile or portable transmitting equipment for compliance with this Standard, is not required where the output power delivered to the antenna does not exceed the levels of Table S2 and normal operation entails the antenna or other radiating structure being separated from the user's body by not less than 20 cm.

Where the above provisions are not satisfied, testing or mathematical modelling to demonstrate compliance with the spatial peak SAR restrictions specified for the general public users category in Table 2 of this Standard must be undertaken. Such measurements or calculations should be based on normal use spatial relationships between the equipment and user.

TABLE S2

THRESHOLD LEVELS FOR TESTING

Operating frequency range	Nominal mean output power (W)
100 kHz to 450 MHz	7
450 MHz to 2500 MHz	3150 / <i>f</i>

NOTES:

- 1 For the purpose of this Schedule, mean power is as defined in ITU Radio Regulations as the average power over an interval of time which is long compared with the lowest modulating frequency (except for pulse-modulated or intermittent transmissions where mean power is to be taken as peak-envelope-power (PEP) multiplied by duty factor. For duty factors of less than 5 %, mean power is to be taken as 5 % of PEP).
- 2 *f* is the frequency in MHz.

5. RESULTS

The EUT is always positioned > 20 cm from the users head.

The nominal mean power output delivered to the antenna is tabled below:

Transmit Frequency	Operation Band	Transmit Power (dBm)	Transmit Power (W)	Transmit Power Limit Table S2 (W)	Comment
1922.4 MHz	FDD Band 1	23.43 dBm	0.220	1.63 W	Complies
1950 MHz	FDD Band 1	23.48 dBm	0.222	1.61 W	Complies
1977.6 MHz	FDD Band I	23.35 dBm	0.216	1.59 W	Complies
882.4 MHz	FDD Band VIII	22.78 dBm	0.189	3.56 W	Complies
897.6 MHz	FDD Band VIII	22.60 dBm	0.182	3.50 W	Complies
912.6 MHz	FDD Band VIII	22.40 dBm	0.173	3.45 W	Complies
914.8 MHz	GSM 900	32.57 dBm	1.807	3.44 W	Complies
902.4 MHz	GSM 900	32.15 dBm	1.640	3.49 W	Complies
880.2 MHz	GSM 900	32.23 dBm	1.671	3.57 W	Complies
1787.4 MHz	DCS1800	29.64 dBm	0.920	1.76 W	Complies
1747.4 MHz	DCS1800	29.93 dBm	0.984	1.80 W	Complies
1710.2 MHz	DCS1800	29.79 dBm	0.952	1.84 W	Complies

The transmit power of the LTE Module is below the transmit power limit specified in table S2. The antenna is mounted > 20 cm away from the user, therefore the evaluation of this device for compliance with ARPANSA RPS3 is not required.

6. CONCLUSION

The LTE Module complies with the requirements of ARPANSA Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields – 3 kHz to 300 GHz – Radiation Protection Series Publication No. 3: 2002.