COMPLIANCE ENGINEERING IRELAND LTD

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO.088T

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Confidential Report

Project Num	22E10055-2c
Quotation	Q21-2910-1
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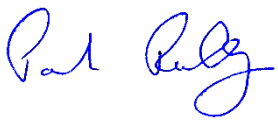
FCC Test Firm Registration	409640
IC CAB Identifier	8517A
Date	29th Sept 2022
EUT Description	Sensor with Bluetooth Low Energy
FCC ID	2A7OO-OUTPUT-V2
Authorised by	**Paul Reilly**
Authorised Signature:	

TEST SUMMARY

1.0 SAR Evaluation

Rated output power = 0.5dBm

SAR Exclusion Limits

Excerpt from 447498 KDB (47498 D01 General RF Exposure Guidance v06)

Section 4.3.1 Standalone SAR Test exclusion considerations

4.3.1. Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:

   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] · [$\sqrt{f_{(GHz)}}$] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR,[25] where

   - $f_{(GHz)}$ is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation[26]
   - The result is rounded to one decimal place for comparison
   - 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

   The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

2) At 100 MHz to 6 GHz and for *test separation distances* > 50 mm, the SAR test exclusion threshold is determined according to the following, and as illustrated in Appendix B:[27]

   a) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·($f_{(MHz)}$/150)] mW, at 100 MHz to 1500 MHz
   b) [Power allowed at numeric threshold for 50 mm in step 1) + (test separation distance - 50 mm)·10] mW at > 1500 MHz and ≤ 6 GHz

3) At frequencies below 100 MHz, the following may be considered for SAR test exclusion, and as illustrated in Appendix C:[28]

   a) The power threshold at the corresponding test separation distance at 100 MHz in step 2) is multiplied by [1 + log(100/$f_{(MHz)}$)] for *test separation distances* > 50 mm and < 200 mm
   b) The power threshold determined by the equation in a) for 50 mm and 100 MHz is multiplied by ½ for *test separation distances* ≤ 50 mm
   c) SAR measurement procedures are not established below 100 MHz. When SAR test exclusion cannot be applied, a KDB inquiry is required to determine SAR evaluation requirements for any test results to be acceptable.

Appendix 1

Head and Body SAR

Prediction frequency: f	2480	MHz
Rated Output Power	0.50	dBm
Tune up tolerance	1	dB
Rated Power plus tune up tolerance	1.50	dBm
Rated Power plus tune up tolerance (rounded to the nearest mW)	1	mW
Minimum separation distance: D	5	mm
Duty cycle factor (calc over max 30 mins)	0	dB
Calculation [(Max. power of channel, including tune up tolerance, mW / min.test separation distance ,mm)]*[√f (GHz)]	0.31	
Head and Body SAR 100MHz-6GHz ; <50mm		
General pop/Uncontrolled Environment		
Numeric Threshold for 1g SAR	**3**	
SAR Test not required	**0.3 < 3**	

End of report