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EMC COMPLIANCE REPORT
Supplier's Declaration of Conformity (SDoC) Test Report
In accordance with:
CFR47 FCC Part 15, Subpart B (Class B)

Gallagher Group Ltd

eS1 Cellular

eShepherd Neckband

REPORT: E2401-1729-1 Rev1
DATE: April, 2025

Accreditation Number: 18553
Accredited for compliance with ISO/IEC 17025 – Testing

Certificate of Compliance
Supplier's Declaration of Conformity (SDoC)
EMC Compliance Report
EMC Bayswater Test Report: E2401-1729-1 Rev1
Issue Date: April, 2025

Product:	eShepherd Neckband
Model:	eS1 Cellular
Part No:	G04081
Serial:	2350119059
Variant:	G040811
	The above-listed model with part no. G04081 was tested by EMC Bayswater Pty Ltd as a representative sample and the results and conclusions within this report do not necessarily reflect compliance for other variants. Please refer to section 5 of this report for variant information and the customer variant declaration.
Customer Details:	Mr. Hayden Goble Gallagher Group Ltd 181 Kahikatea Drive, Melville, Hamilton 3206 New Zealand Phone No: +64 800 731 500 e-mail: Hayden.goble@gallagher.com
Test Specification:	CFR47 FCC Part 15, Subpart B (Class B)
Results Summary:	Radiated Emissions – CFR47 FCC Part 15, section 15.109 ***Complied (Class B)*** Conducted Emissions – CFR47 FCC Part 15, section 15.107 ***N/A[1]***
	[1]The EUT is a battery powered device and does not connect to an AC mains supply
Test Date(s):	15th of January, 2024
Test House (Issued By):	EMC Bayswater Pty Ltd 18/88 Merrindale Drive Croydon South Victoria, 3136 Australia FCC Accredited Test Firm Registration number: 527798 Phone No: +61 3 9761 5888 e-mail: sales@emcbayswater.com.au Fax No: +61 3 8761 6547 Web: www.emcbayswater.com.au

This is to certify that the necessary measurements were made by EMC Bayswater Pty Ltd, and that the Gallagher Group Ltd, eS1 Cellular, eShepherd Neckband (Serial No: 2350119059) have been tested in accordance with requirements contained in the appropriate commission regulations.

Prepared by:	Tested by:	Approved by:	
Hon Sang Kong (EMC Test Engineer)	Adnan Zaman (EMC Test Engineer)	Neville Liyanapatabendige (Manager)	09/04/2025 16:02 Date

FCC Supplier's Declaration of Conformity (SDoC) Test Report
for
Gallagher Group Ltd

Contents

1. Introduction 4
2. Test Report Revision History 4
3. Report Information 4
4. Summary of Results 4
5. Product Sample, Configuration & Modifications 5
5.1. Product Sample Details 5
5.2. Product description 5
5.3. Support Equipment 6
5.4. Product operating modes 6
5.5. Product operating mode for testing 6
5.6. EUT Configuration 7
5.7. Modifications 7
6. Test Facility & Equipment 8
6.1. Test Facility 8
6.2. Test Equipment 8
7. Referenced Standards 8
8. Referenced Documents 8
9. Radiated Emissions 9
9.1. Test Procedure 9
9.2. Limits 11
9.3. Test Results 11
10. Conclusion 14
Appendix A – Test Equipment 15
Appendix B – Photographs 16
Appendix C – Measurement Graphs 23
Appendix D – Customer Declaration of Product Variant 28
Appendix E – Customer Declaration of Responsible Party 29
Appendix F – FCC Declaration of Conformity documentation requirements 30

1. Introduction

Electromagnetic Compatibility (EMC) tests were performed on a Gallagher Group Ltd, eS1 Cellular eShepherd Neckband in accordance with the requirements of Title 47 of the standard CFR47 FCC Part 15, Subpart B (Class B).

2. Test Report Revision History

ISSUE	DATE	Description	AUTHORISED BY
E2401-1729-1	05-04-2024	Original	Neville Liyanapatabendige (Manager)
E2401-1729-1 Rev1	09-04-2025	Customer requested to include G040811 variant.	Neville Liyanapatabendige (Manager)

3. Report Information

EMC Bayswater Pty Ltd reports apply only to the specific samples tested under the stated test conditions. All samples tested were in good operating condition throughout the entire test program unless otherwise stated. EMC Bayswater Pty Ltd does not in any way guarantee the later performance of the product/equipment. It is the manufacturer's responsibility to ensure that additional production units of the tested model are manufactured with identical electrical and mechanical components. EMC Bayswater Pty Ltd shall have no liability for any deductions, inference or generalisations drawn by the clients or others from EMC Bayswater Pty Ltd issued reports. This report shall not be used to claim, constitute or imply product endorsement by EMC Bayswater Pty Ltd. This report shall not be reproduced except in full (with the exception of the certificate on page 2) without the written approval of EMC Bayswater Pty Ltd. This document may be altered or revised by EMC Bayswater Pty Ltd personnel only, and shall be noted in the revision section of the document. Any alteration of this document not carried out by EMC Bayswater Pty Ltd will nullify the document.

4. Summary of Results

The EUT complied with the CFR47 FCC Part 15, Subpart B, Class B, Radiated Emissions (section 15.109) requirements. Worst-case emissions are tabled as follows:

Test	Result
Radiated Emissions (Horizontal Antenna Polarisation)	Complied with quasi-peak limit by 14.2dB
	Complied with peak limit by 30.1dB
	Complied with average limit by 23.3dB
Radiated Emissions (Vertical Antenna Polarisation)	Complied with quasi-peak limit by 12.1dB
	Complied with peak limit by 35.3dB
	Complied with average limit by 24.3dB

Table 1: Summary of test results

5. Product Sample, Configuration & Modifications

5.1. Product Sample Details

The EUT (Equipment Under Test), as supplied by the client, is described as follows:

Product:	eShepherd Neckband	
Model No:	eS1 Cellular	
Part No:	G04081	
Serial No:	2350119059	
Variant:	G040811*	
	**The customer (Gallagher Group Ltd) declared testing of one model as a worst case representative sample and declared that to be the model with part no. G04081 (refer to Appendix D of this report for the customer declaration of worst-case variant used for testing). Please note other than the unit(s) listed as a) "Product" and b) "Model", no other products/models or variant(s) were tested.*	
Firmware:	6.x.xxx	
Software:	N/A	
Power Specifications:	Battery Powered LiFePO4, 3.2V, 12000mAH	
Dimensions:	210mm (L) x 90mm (W) x 350mm (H)	
Weight:	2.7 kg / 5.9lbs (including chains)	
EUT Type:	Tested as table-top	
Transmitter details:	Description:	RF TXRX MODULE CELL/NAV 5G SMD
	Type:	SARA-R510s-01B
	Frequencies:	600MHz, 700MHz, 750MHz, 800MHz, 850MHz, 900MHz, 1.7GHz, 1.8GHz, 1.9GHz, 2.1GHz
	Max power:	23dBm
	Antenna:	PCB type antenna
	FCC ID:	XPYUBX19KM01
	IC:	8595A-UBX19KM01

(Customer supplied product information)

(Refer to photographs in Appendix B for views of the EUT)

5.2. Product description

The EUT (Equipment Under Test) has been described by the customer as follows:

"Neckband is located around the neck of a farm animal, typically beef cattle. It determines its location by GPS/GNSS and compares it to programmed 'virtual fences'. If the animal attempts to cross a virtual fence the product first issues an audible warning. If the animal continues moving in the wrong direction the product applies an aversive electrical stimulus (series of HV pulses). It periodically transmits status via cellular network and receives an acknowledgement and optional additional information."

(Customer supplied product description information)

The highest frequency generated or used in the device or on which the device operates or tunes as specified by the customer is 1.575GHz.

The EUT has been identified as class B digital device or peripheral by the customer.

The following or similar warning shall be included in the instructions for use:

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

5.3. Support Equipment

Support Equipment: 1	Description:	Laptop
	Manufacturer:	DELL
	Model No:	Latitude 7420
	Serial No:	Not stated
Support Equipment: 2	Description:	Power supply
	Manufacturer:	TENMA
	Model No:	72-10480
	Serial No:	202108070789
Support Equipment: 3	Description:	1k Ohms Resistive Load
	Manufacturer:	NA
	Model No:	NA
	Serial No:	NA

5.4. Product operating modes

The customer described the products normal operation modes as the following:

"The animal is near a virtual fence, and the product remains active, monitors position and animal movement, and applies audio and aversive stimulus pulses as required. The product transmits status through cellular network to our backend at >10min intervals (programmed time slots) typically every 10 minutes. The backend sends an acknowledgement and optionally additional information such as new virtual fence information or operating parameters."

(Customer supplied product operating mode information)

5.5. Product operating mode for testing

Refer to section 5.4.

5.6. EUT Configuration

The EUT was either configured by the customer or configured using the customer's instructions.

"Product was put into receive-only mode. A repeating sequence of audio and pulse events at approx. 2 second intervals represented accelerated normal operation for purpose of measurement position scanning (turntable etc). Product would continuously try to acquire GPS fix and solar charge is simulated by connecting power supply to solar inputs via wire.

The product does not normally have any cable connections. For testing a serial cable was connected from the product to a PC running a control program (Bandchat). The cable was fitted with numerous ferrites close to the product so as not to affect measurements."

(Customer supplied product configuration information)

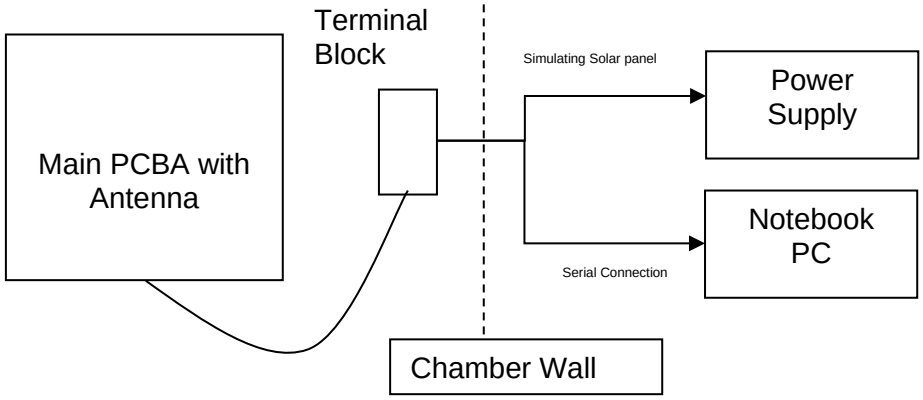

Figure 1: Customer supplied block diagram of EUT test configuration

Port	Cable type	Cable Brand	Cable Model	Length	Termination
Serial debug port (for test access only, not part of normal configuration)	Short 3-wire non shielded patch cable from PCB to outside of product.	Generic	Ribbon cable	50mm	2x8 pin 1.27mm pitch header
(As above)	DC extension cable from above patch cable to power supply simulating Solar input.	Generic	Shielded multi-core	9m	Power supply
	Serial extension cable from above patch cable to control PC – fitted with multiple ferrites				USB-to-Serial adapter at PC end

Table 2: List of ports and associated cables/terminations used for testing.

5.7. Modifications

EMC Bayswater Pty Ltd did not modify the EUT.

6. Test Facility & Equipment

6.1. Test Facility

Radiated Emissions measurements were taken in the indoor Open Area Test Site (iOATS) facility at EMC Bayswater Pty Ltd, located at 18/88 Merrindale Drive, Croydon South, Victoria, 3136, Australia.

EMC Bayswater Pty Ltd's FCC Accredited Test Firm Registration number: 527798.
EMC Bayswater Pty Ltd's FCC Accredited Test Firm Designation number: AU0004

6.2. Test Equipment

Refer to Appendix A for the measurement instrument list.

7. Referenced Standards

CFR47 FCC Part 15, Subpart B

ANSI C63.4 - 2014
American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

8. Referenced Documents

None.

9. Radiated Emissions

9.1. Test Procedure

Radiated Emissions were measured 3 metres away from the EUT in the iOATS (indoor Open Area Test Site) facility, which is an ANSI C63.4 compliant semi-anechoic chamber with ground plane. The EUT was placed on a non-conductive table, at a height of 0.8m above the ground plane.

In the frequency range of 30MHz to 1GHz, a Biconilog antenna was used. For both horizontal and vertical antenna polarizations, the peak detector was set to MAX-HOLD and the range selected continuously scanned. The measuring antenna was positioned at 4 different fixed height positions and the turntable slowly rotated. The peak preview measurements were performed with a resolution bandwidth of 120 kHz and a video bandwidth of 300 kHz. Peak emissions that exceeded the limit or were close to the applicable limit were investigated further. The frequency of each emissions was then accurately determined. Each emission of interest was then in-turn maximised by using the turntable to rotate the EUT through 360 degrees and varying the height of the antenna between 1 and 4 metres to find the worst-case emission arrangement. Quasi peak measurements were then performed using a measuring time of no less than 15 seconds. The final quasi-peak measurements were performed using a receiver bandwidth of 6dB and a resolution bandwidth of 120 kHz.

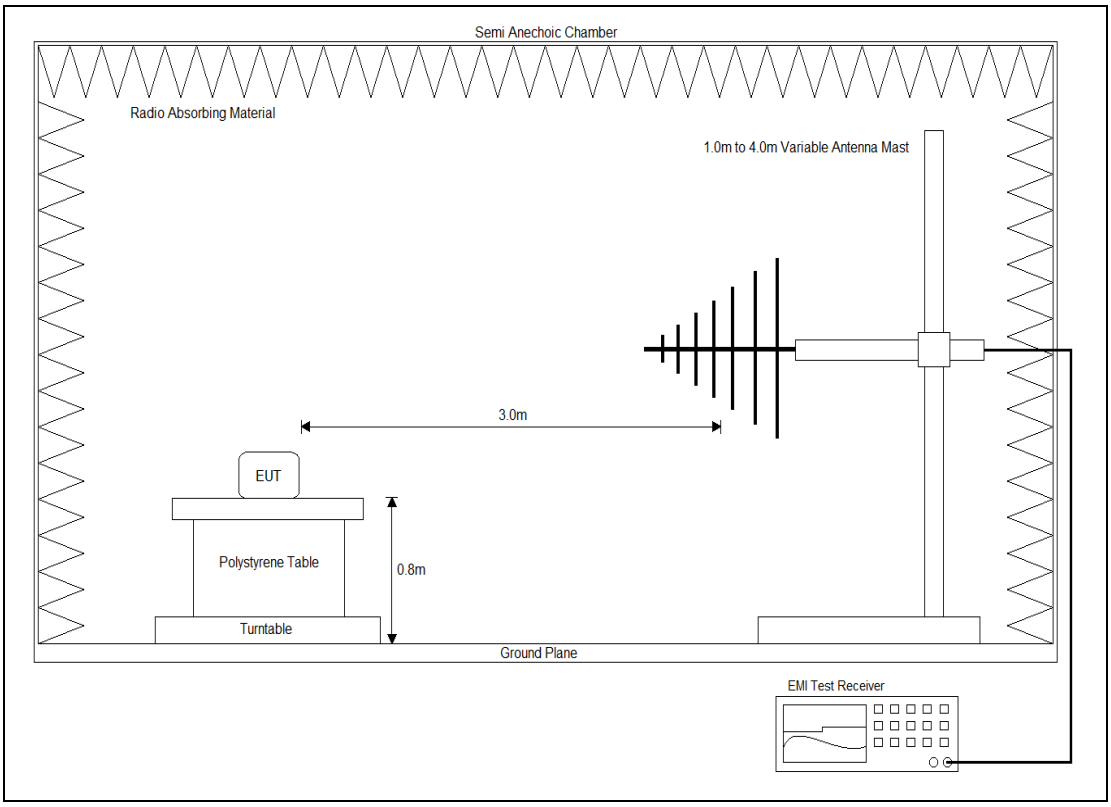

Figure 2: Test setup – 30MHz to 1GHz

In the frequency range 1.0GHz to 26.5GHz a Horn antenna was used and an area of 3m x 3m was covered between the antenna and the EUT using RF absorbing material with a rated attenuation more than 20dB over the frequency range. In the frequency range 26.5GHz to 40.0GHz a Horn antenna was used and an area of 1m x 3m was covered between the antenna and the EUT using RF absorbing material with a rated attenuation more than 20dB over the frequency range. The height of the horn antenna was varied using the antenna bore-sighting technique and the turntable slowly rotated to maximise the emissions. For both horizontal and vertical antenna polarizations, the Peak and Average preview measurements were performed with a resolution bandwidth of 1 MHz and a video bandwidth of 3 MHz. Peak and average emissions that exceeded the applicable limit or were close to the applicable limit were investigated further. Each emission of interest was then in-turn maximised by using the turntable to rotate the EUT through 360 degrees and the antenna height varied (if applicable, using the antenna bore-sighting technique) to find the worst-case emission arrangement. Peak and CISPR Average measurements were then performed using a measuring time of no less than 15 seconds, the maximum emission level in the observed duration was recorded as the final result. The final peak and CISPR Average measurements were performed using a receiver bandwidth of 6dB and a resolution bandwidth of 1 MHz. Peak and Average measurements were performed at spot frequencies where the peak or average emission was close to, or exceeded the applicable limit line with the EUT rotation and antenna height varied (if applicable, using the antenna bore-sighting technique) to produce the highest emission.

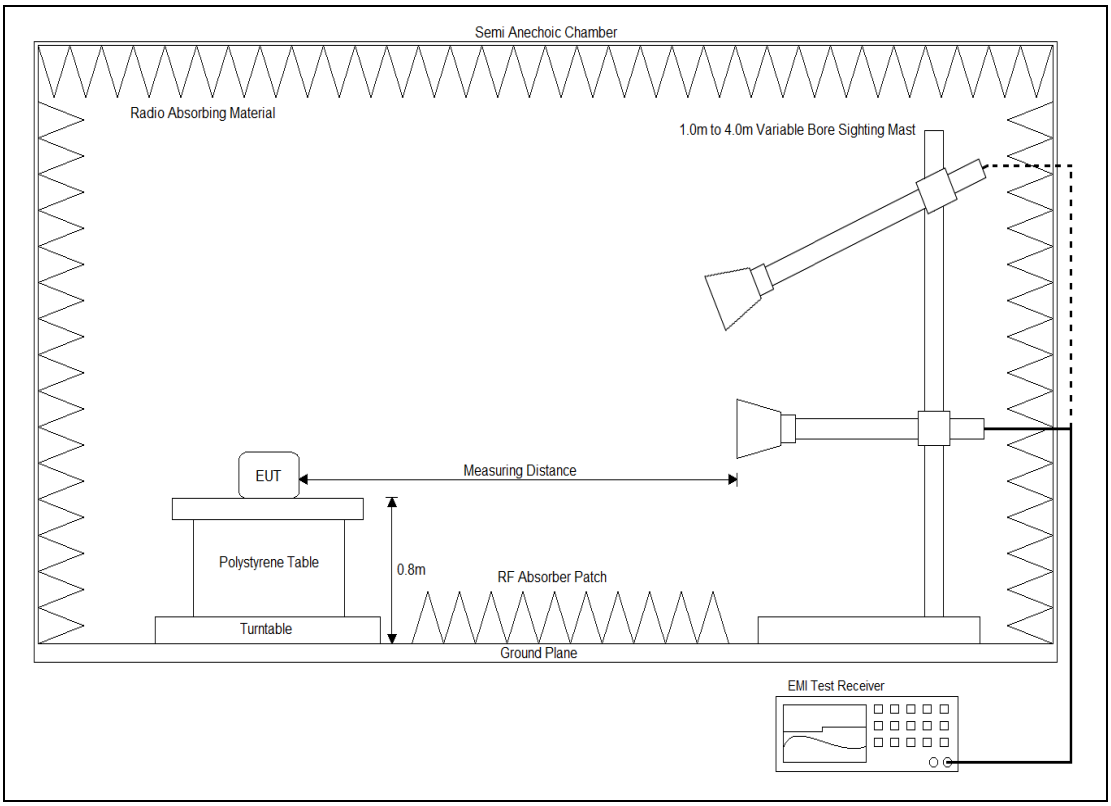

Figure 3: Test setup – above 1GHz

Horn	Frequency	Degrees	Measuring	Illumination	Measuring	Illumination
EMCO 3115	1 to 2	55.00	3	3.12	1	1.04
	2 to 4	50.00	3	2.80	1	0.93
	4 to 6	34.00	3	1.83	1	0.61
AH SAS-584	5.8 to 8.2	30.00	3	1.61	1	0.54
AH SAS-585	8.2 to 12.4	30.00	3	1.61	1	0.54
AH SAS-586	12.4 to 18	30.00	3	1.61	1	0.54
AH SAS 587	18 to 26.5	30.00	3	1.61	1	0.54
AH SAS 588	26.5 to 40	31.00	3	1.66	1	0.55

Table 3: Worst case Maximum size of measuring envelope for Horn antennas

Plots of the accumulated measurement data for both horizontal and vertical antenna polarizations, including all transducer and other measuring system correction factors were produced using commercially available compliant software (as listed in the test equipment list of this report).

(Refer to photographs 1 to 5 in Appendix B for views of the test configuration)

9.2. Limits

The EUT shall meet the limits in the following table:

Frequency Range (MHz)	Measuring distance	Limits (dBµV/m)	
		Quasi-Peak	
30 to 88	3m	40.0	
88 to 216	3m	43.5	
216 to 960	3m	46.0	
960 to 1000	3m	54.0	
Frequency Range (GHz)	**Measuring distance**	**Limits (dBµV/m)**	
		Average	**Peak**
1.0 to 26.5	3m	54.0	74.0
26.5 to 40.0	1m	64.0	84.0
26.5 to 40.0	0.5m	70.0	90.0
NOTE The lower limit shall apply at the transition frequency.			

Table 4: Limits for Radiated Emissions of Class B equipment

9.3. Test Results

Radiated Emissions measurements are tabulated below. For below 1GHz measurements, Quasi-peak measurements were performed at spot frequencies where the peak emission was close to, or exceeded the applicable limit line. For above 1GHz measurements, Peak or CISPR Average measurements were performed at spot frequencies where the peak or average emission was close to, or exceeded the applicable limit line.

(Refer to graphs 1 to 8 in Appendix C)

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
31.116	25.8	40.0	**-14.2***
36.742	21.0	40.0	-19.0
144.072	17.8	43.5	-25.7
803.478	31.1	46.0	-14.9
891.166	31.8	46.0	**-14.2***
977.011	32.9	54.0	-21.1

**Worst-case emissions*

Table 5: Radiated Emissions – Horizontal Antenna Polarisation (30MHz to 1GHz)

Peak Measurements				Average Measurements			
Frequency (MHz)	Result (dBµV/m)	Limit (dBµV/m)	Delta Limit (dB)	Frequency (MHz)	Result (dBµV/m)	Limit (dBµV/m)	Delta Limit (dB)
1495.820	34.4	74.0	-39.6	2023.620	22.3	54.0	-31.7
2648.920	38.0	74.0	-36.0	2672.580	24.2	54.0	-29.8
5833.440	43.9	74.0	**-30.1***	5929.440	30.7	54.0	**-23.3***

**Worst-case emissions*

Table 6: Radiated Emissions – Horizontal Antenna Polarisation (1GHz to 10GHz)

Frequency (MHz)	Result Quasi-peak (dBµV/m)	Limit Quasi-peak (dBµV/m)	Delta limit (dB)
31.455	25.6	40.0	-14.4
38.245	27.4	40.0	-12.6
39.021	27.9	40.0	**-12.1***
39.797	26.0	40.0	-14.0
45.666	17.6	40.0	-22.4
729.904	29.8	46.0	-16.2
872.930	31.7	46.0	-14.3

**Worst-case emissions*

Table 7: Radiated Emissions – Vertical Antenna Polarisation (30MHz to 1GHz)

Peak Measurements				Average Measurements			
Frequency (MHz)	Result (dBµV/m)	Limit (dBµV/m)	Delta Limit (dB)	Frequency (MHz)	Result (dBµV/m)	Limit (dBµV/m)	Delta Limit (dB)
1985.660	36.2	74.0	-37.8	2688.960	24.0	54.0	-30.0
2366.560	36.3	74.0	-37.7	2980.940	25.1	54.0	-28.9
3032.420	38.7	74.0	**-35.3***	5020.080	29.7	54.0	**-24.3***

**Worst-case emissions*

Table 8: Radiated Emissions – Vertical Antenna Polarisation – 1GHz to 10GHz

The measurement uncertainty was calculated as follows:

Measurement frequency range	Calculated measurement uncertainty
30MHz to 1GHz	±4.65dB
1GHz to 6GHz	±4.79dB
6GHz to 18GHz	±4.48dB
18GHz to 26.5GHz	±4.45dB
26.5GHz to 40GHz	±4.44dB

The reported uncertainty is an expanded uncertainty calculated using a coverage factor of *k=2* which gives a level of confidence of approximately 95%. The referenced uncertainty standard specifies that determination of compliance shall be based on measurements without taking into account measurement uncertainty. However, the measurement uncertainty shall appear in the test report.

Climatic Conditions	
Temperature:	22.2 to 22.8ºC
Humidity:	55 to 56%
Atmospheric pressure:	1017.2 to 1020.4hPa

Table 9: Climatic Conditions

Calculation: The above results are based upon the following calculation:

$$E = V_{QP/PK/AV} + AF - G_{Amp} + L_C$$

Where:

E	=	E-field in dBµV/m
$V_{QP/PK/AV}$	=	Measured Voltage (Quasi Peak, Peak or Average) in dBµV
AF	=	Antenna Factor in dB(/m)
L_C	=	Cable and attenuator Loss in dB
G_{Amp}	=	Pre Amplifier Voltage Gain in dB

Example calculation:

$E = V_{QP} + AF - G_{Amp} + L_C$
$E = 30dB\mu V + 12dB/m - 0dB + 2.3dB$
$E = 44.3\ dB\mu V/m$

Notes: All Radiated Emissions measured were below the Class B limits.

The EUT was not classified as a composite system (does not contain an intentional radiator combined with an unintentional radiator). Therefore the upper frequency range was determined as per CFR47 FCC Part 15, Subpart B, section 15.33(b)(1).

If the highest frequency generated or used within the device or on which the device operates or tunes is above 1000MHz, the upper frequency of measurement range should be 5th harmonic of the highest frequency or 40GHz whichever is lower.

The highest frequency of the EUT as specified by the customer is 1.575GHz as such measurements up to 10GHz were taken.

Assessment: The EUT complied with the Radiated Emissions requirements of CFR47 FCC Part 15, Subpart B (Class B) section 15.109.

10. Conclusion

The Gallagher Group Ltd, eS1 Cellular eShepherd Neckband (Serial No: 2350119059) complied with the requirements of CFR47 FCC Part 15, Subpart B (Class B) sections 15.109.

Appendix A – Test Equipment

Inv.	Equipment	Make	Model No.	Serial No.	Calibration	
					Due	Type
Radiated Emissions - 30MHz to 1000MHz						
1217	ANALYSER, EMI Receiver	Rohde & Schwarz	ESU40	100182	Jun-24	E
0932	CONTROLLER, Position	Sunol Sciences	SC104V-3	081006-1	N/A	V
0933	TURNTABLE	Sunol Sciences	SM46C	081006-2	N/A	V
0934	MAST, Antenna	Sunol Sciences	TLT2	081006-5	N/A	V
0935	ANTENNA, Biconilog	Sunol Sciences	JB5	A071106	May-25	E
0718	ATTENUATOR, 6dB	JFW	50FPE-006	-	Jan-25	I
0989	CABLE, Coax, Sucoflex 104A	Huber+Suhner	44454/4A	C357	Jan-25	I
1145	CABLE, Coax, Sucoflex 104PA	Huber + Suhner	84279564	MY056/4PA	Jan-25	I
1155	HYGROMETER, Temp, Humidity	DigiTech	QM7312	-	Jul-25	I
0666	ENCLOSURE, Semi-Anechoic #1	RFI Industries	S800 iOATS	1229	Aug-25	I
SW007	EMC Measurement Software	Rohde & Schwarz	EMC 32	Version 8.53.0	N/A	N/A
Radiated Emissions – 1GHz to 10GHz						
1217	ANALYSER, EMI Receiver	Rohde & Schwarz	ESU40	100182	Jun-24	E
0932	CONTROLLER, Position	Sunol Sciences	SC104V-3	081006-1	N/A	V
0933	TURNTABLE	Sunol Sciences	SM46C	081006-2	N/A	V
0934	MAST, Antenna	Sunol Sciences	TLT2	081006-5	N/A	V
0559	PRE-AMP, Microwave, 18GHz	Miteq	AFS8	605305	Apr-24	I
0633	ANTENNA, Double Ridge Horn	EMCO	3115	9712-5369	Aug-24	I
1193	Standard Gain Horn Antenna - 5.85GHz to 8.2GHz	A.H. Systems, inc	SAS-584	186	May-24	E
1194	Standard Gain Horn Antenna - 8.2GHz to 12.4GHz	A.H. Systems, inc	SAS-585	224	May-24	E
0989	CABLE, Coax, Sucoflex 104A	Huber+Suhner	44454/4A	C357	Jan-25	I
1145	CABLE, Coax, Sucoflex 104PA	Huber + Suhner	84279564	MY056/4PA	Jan-25	I
1238	CABLE, Coax, Sucoflex 126 E	Huber + Suhner	10422876	8000495/126E	Jan-25	I
1155	HYGROMETER, Temp, Humidity	DigiTech	QM7312	-	Jul-25	I
0666	ENCLOSURE, Semi-Anechoic #1	RFI Industries	S800 iOATS	1229	Aug-25	I
SW007	EMC Measurement Software	Rohde & Schwarz	EMC 32	Version 8.53.0	N/A	N/A

V: Verification of operation against an internal reference
I: Internal calibration against a traceable standard
E: External calibration by a NATA or MRA equivalent endorsed facility
N/A: Not Applicable

Appendix B – Photographs

Number	Photograph Description
1	Radiated Emissions – Test configuration
2	Radiated Emissions – Test configuration – 30MHz to 1GHz
3	Radiated Emissions – Test configuration – 1GHz to 6GHz
4	Radiated Emissions – Test configuration – 5.8GHz to 8.2GHz
5	Radiated Emissions – Test configuration – 8.2GHz to 10GHz
6	EUT – External views
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14	
15	EUT – Internal views
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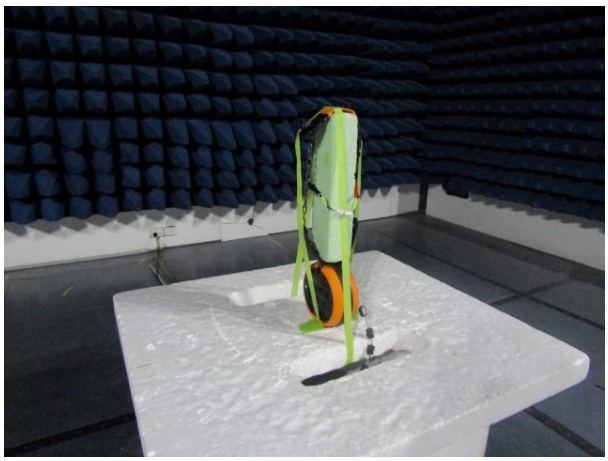
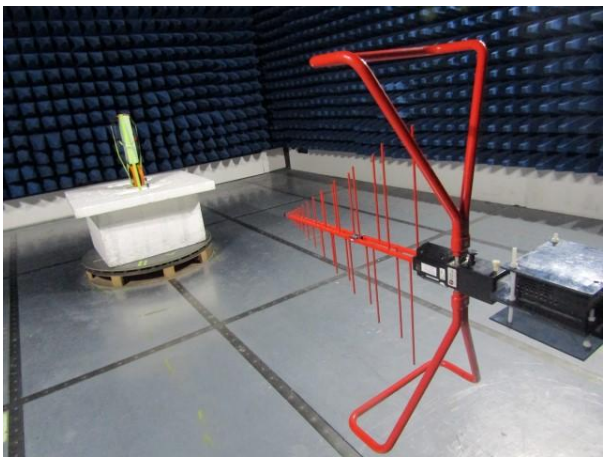
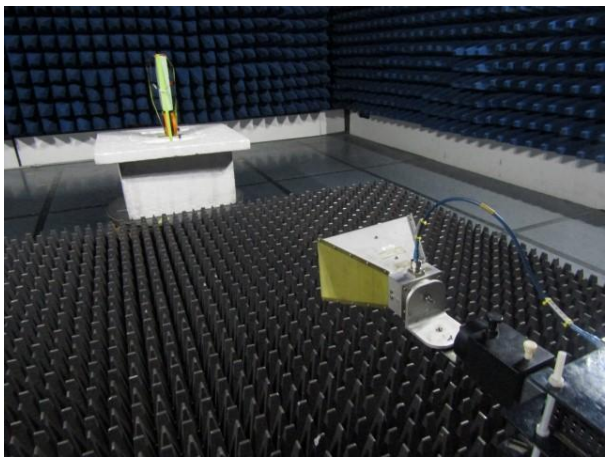
32	Support Equipment – 1k Ohms Resistive Load
33	Support Equipment – Laptop
34	
35	Support Equipment – Power Supply
36	



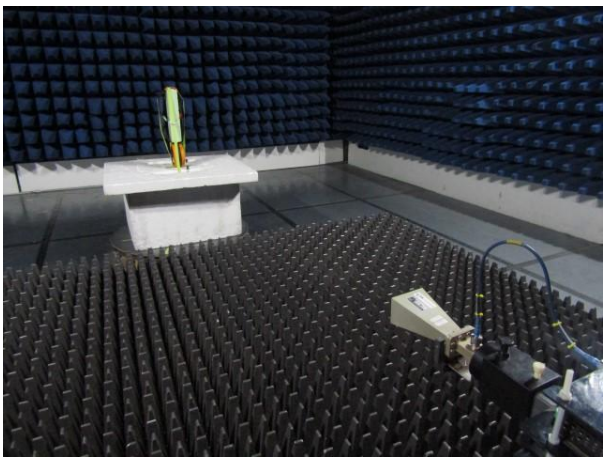
Photograph 1



Photograph 2



Photograph 3



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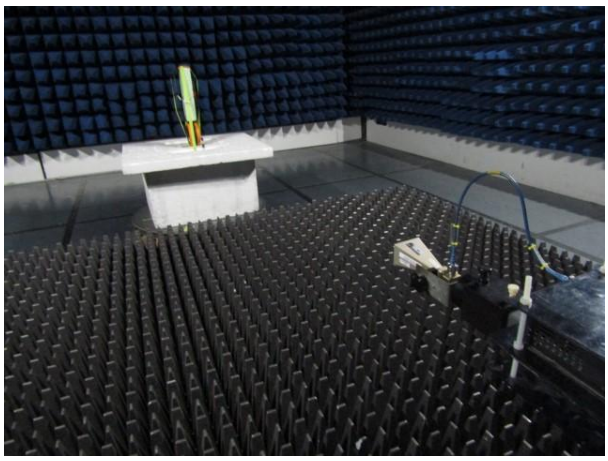
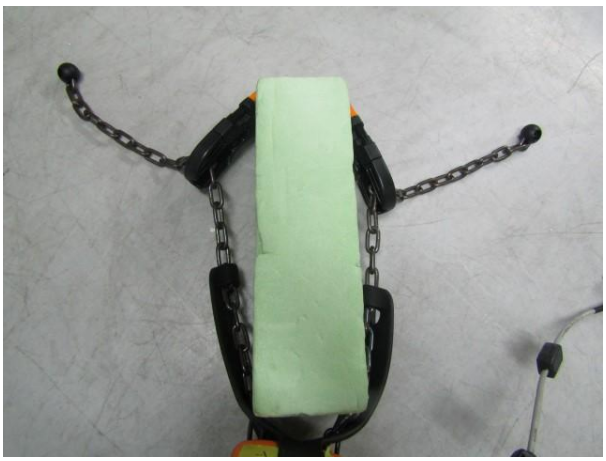


Photograph 5

Photograph 6

Photograph 7



Photograph 8

Photograph 9

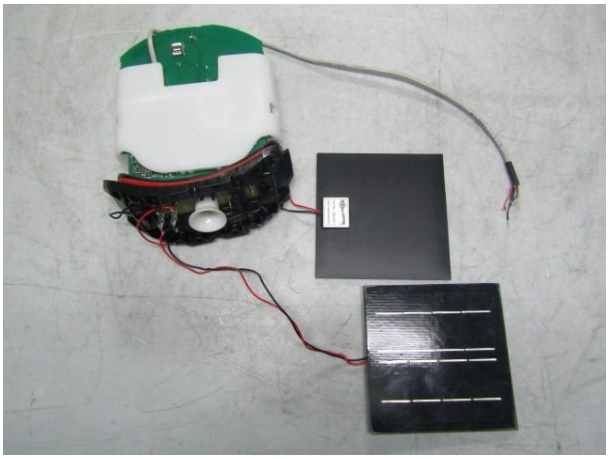
Photograph 10

Photograph 11

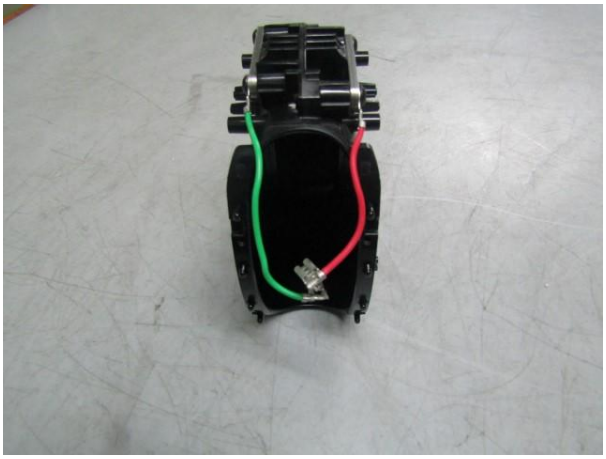
Photograph 12

Photograph 13

Photograph 14



Photograph 15



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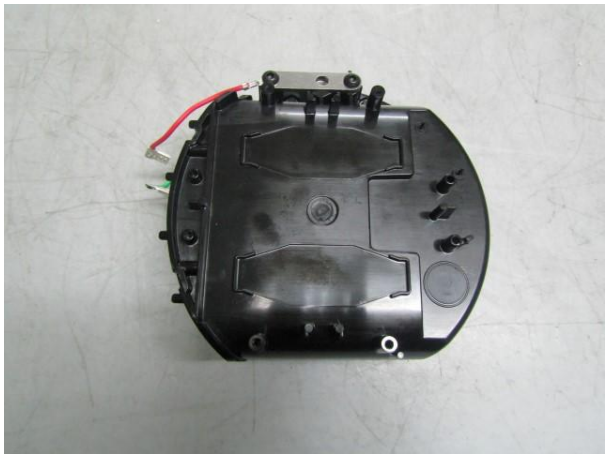
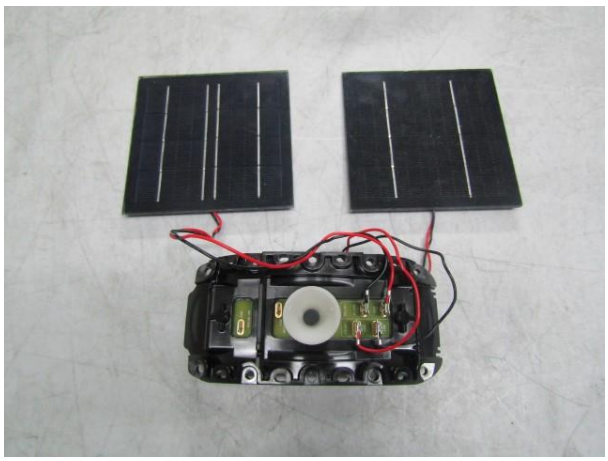


Photograph 17

Photograph 18

Photograph 19

Photograph 20



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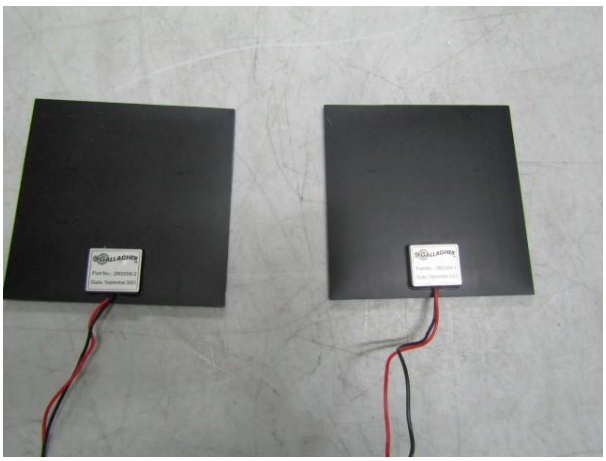
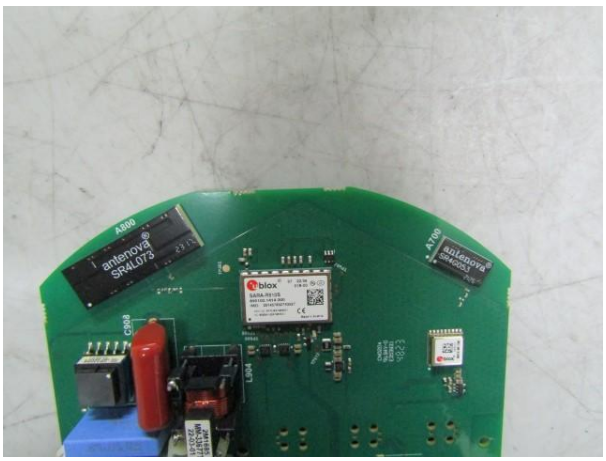


Photograph 22

Photograph 23

Photograph 24

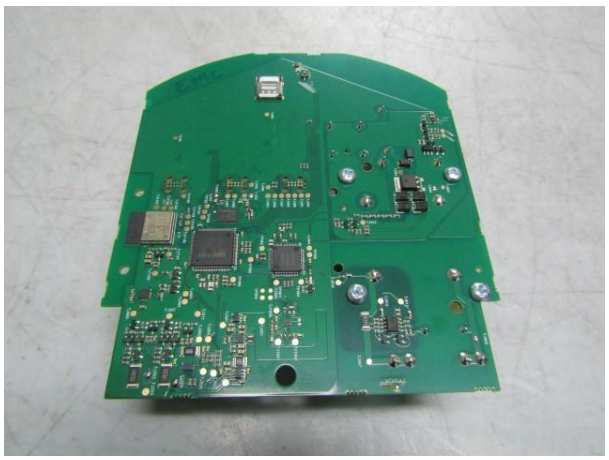
Photograph 25



Photograph 26

Photograph 27

Photograph 28



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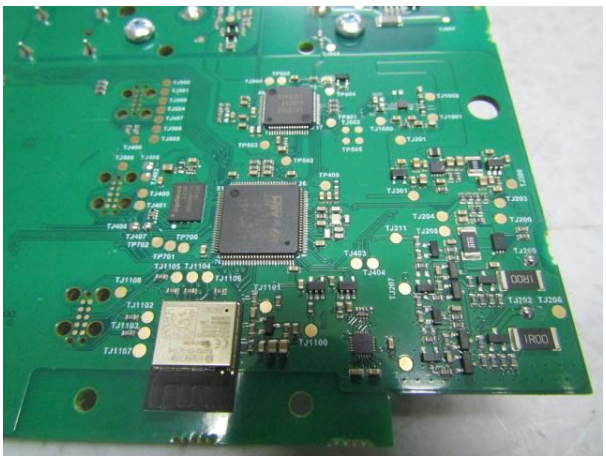
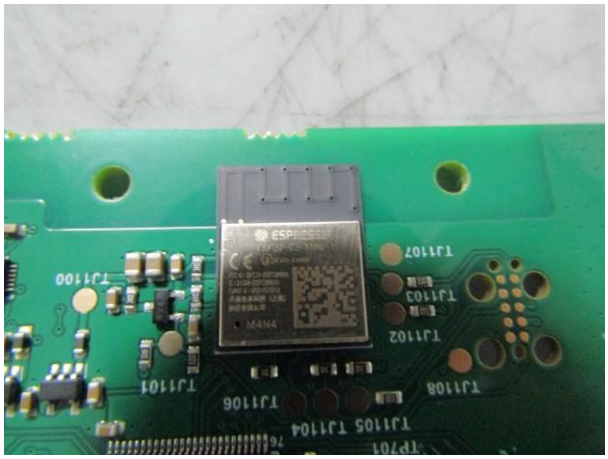
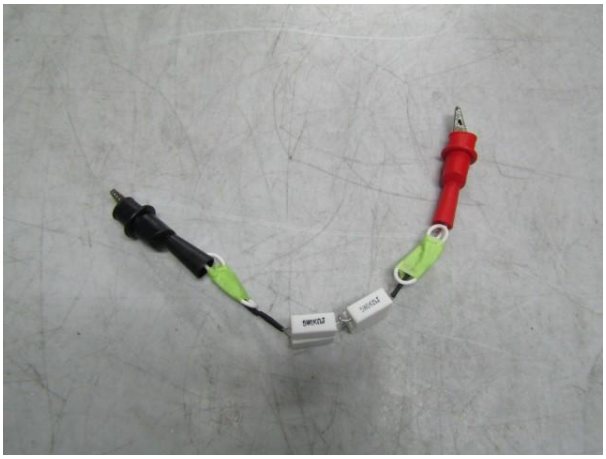


Photograph 30



Photograph 31



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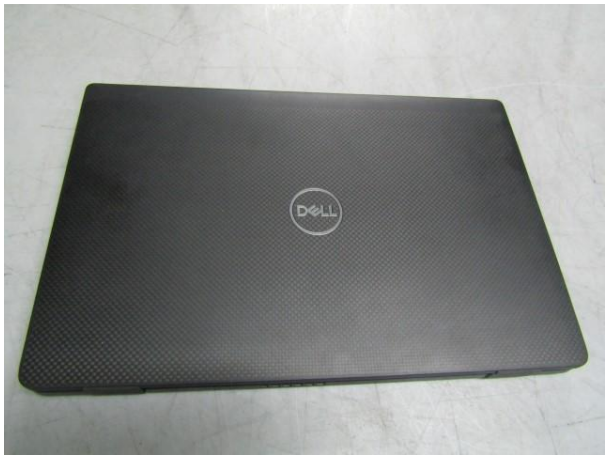


Photograph 33

Photograph 34

Photograph 35

Photograph 36

Appendix C – Measurement Graphs

No.	Test	Graph Description
1	Radiated Emissions	Horizontal Antenna Polarisation – 30MHz to 1000MHz
2		Horizontal Antenna Polarisation – 1GHz to 6GHz
3		Horizontal Antenna Polarisation – 5.8GHz to 8.2GHz
4		Horizontal Antenna Polarisation – 8.2GHz to 10GHz
5		Vertical Antenna Polarisation – 30MHz to 1000MHz
6		Vertical Antenna Polarisation – 1GHz to 6GHz
7		Vertical Antenna Polarisation – 5.8GHz to 8.2GHz
8		Vertical Antenna Polarisation – 8.2GHz to 10GHz

EMC Bayswater Pty. Ltd.

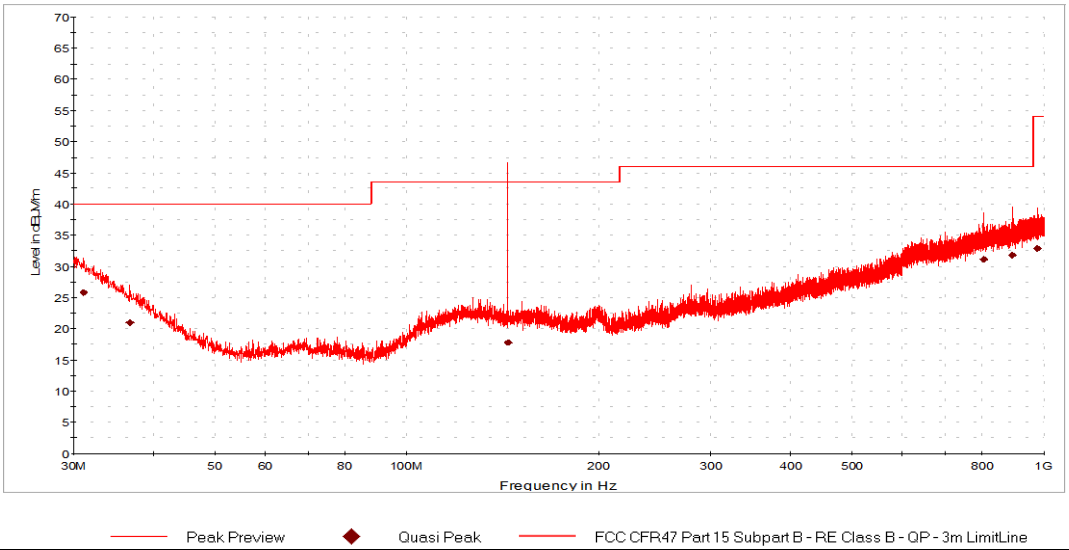
CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Job Number: E2401-1729-1 Rev1

Gallagher Group Ltd - eS1 Cellular

Test Engineer: AZ

Horizontal Antenna Polarisation – 30MHz to 1000MHz



Graph 1

EMC Bayswater Pty. Ltd.

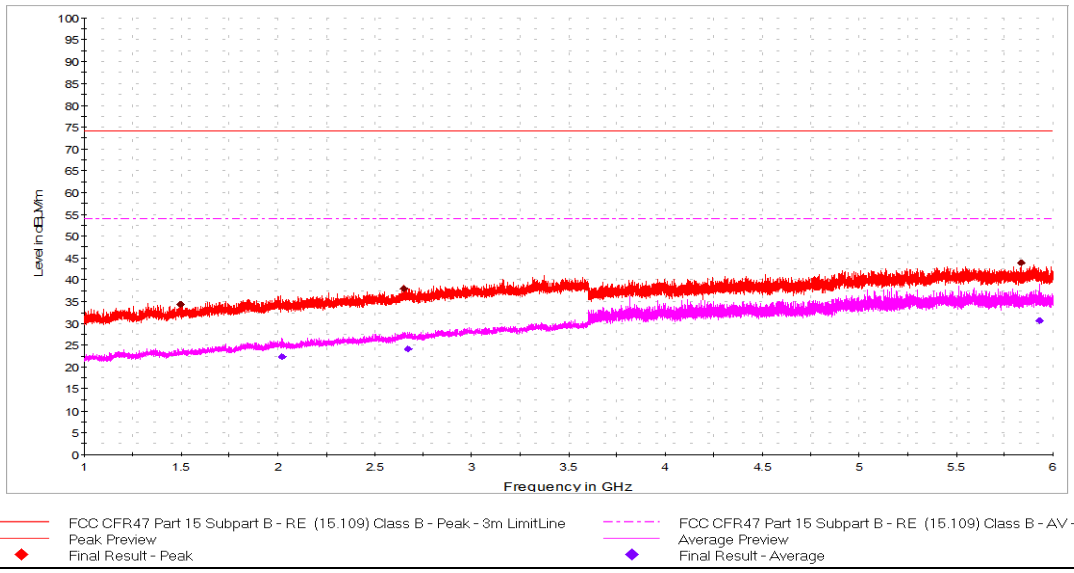
CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Job Number: E2401-1729-1 Rev1

Gallagher Group Ltd - eS1 Cellular

Test Engineer: AZ

Horizontal Antenna Polarisation – 1GHz to 6GHz



Graph 2

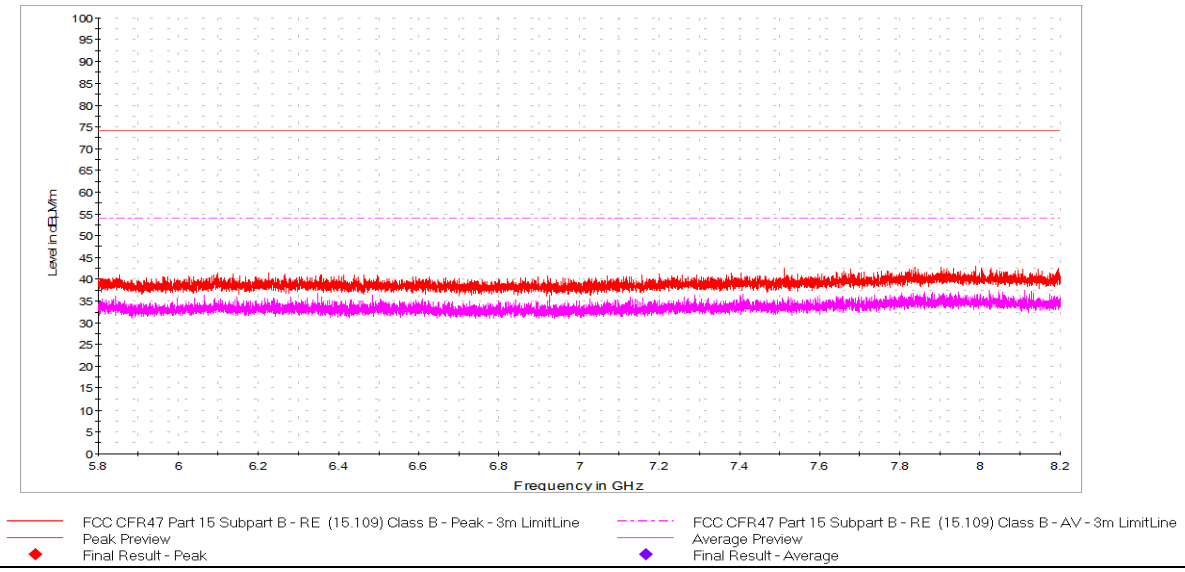
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Gallagher Group Ltd - eS1 Cellular

Horizontal Antenna Polarisation – 5.8GHz to 8.2GHz

Job Number: E2401-1729-1 Rev1
Test Engineer: AZ



Graph 3

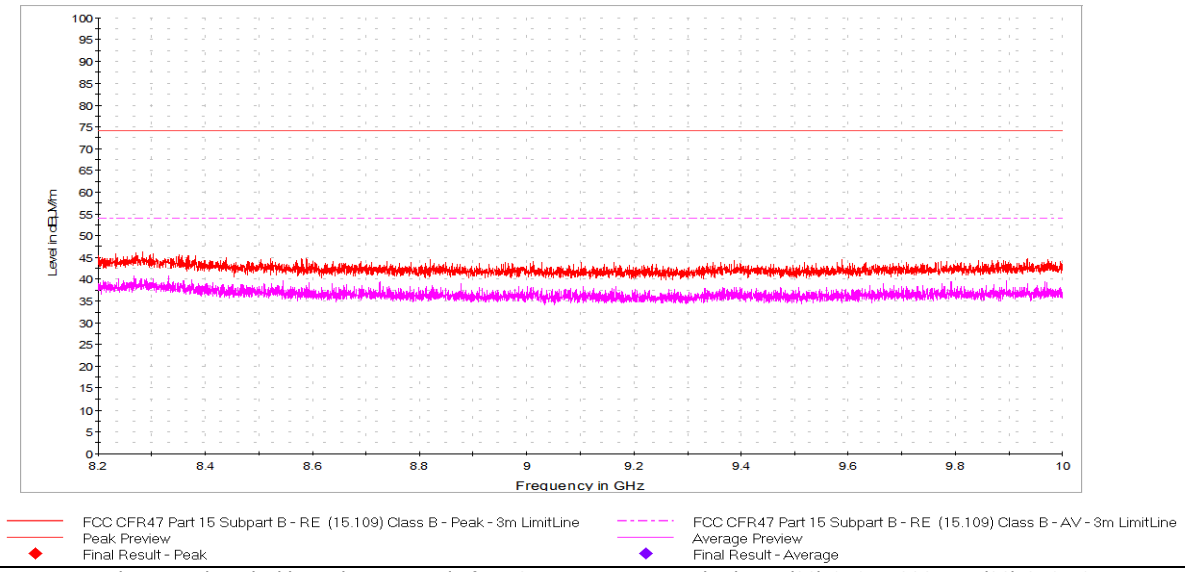
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Gallagher Group Ltd - eS1 Cellular

Horizontal Antenna Polarisation – 8.2GHz to 10GHz

Job Number: E2401-1729-1 Rev1
Test Engineer: AZ



Graph 4

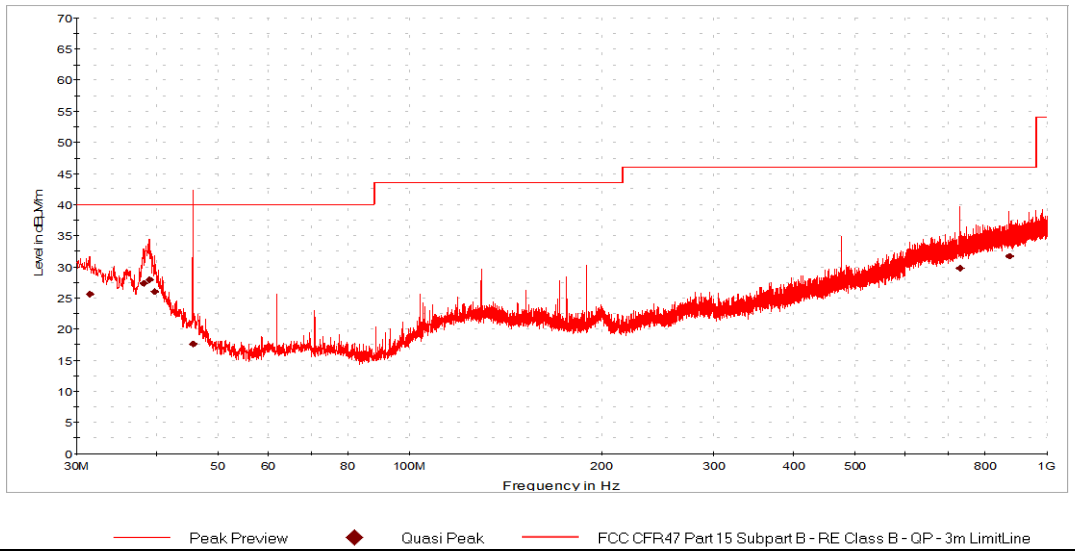
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Gallagher Group Ltd - eS1 Cellular

Vertical Antenna Polarisation – 30MHz to 1000MHz

Job Number: E2401-1729-1 Rev1
Test Engineer: AZ



Graph 5

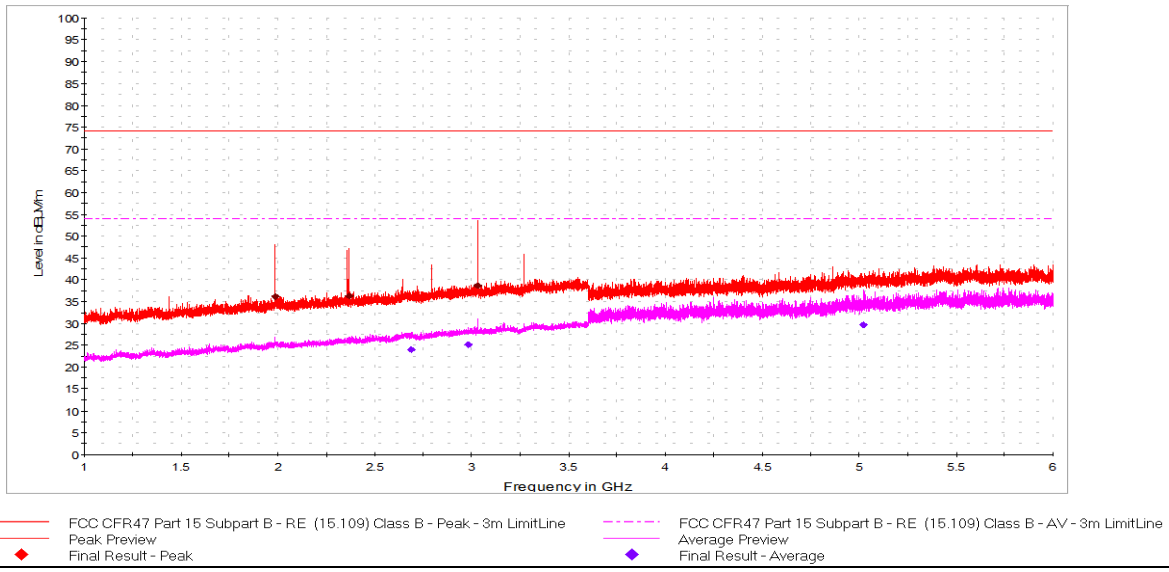
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Gallagher Group Ltd - eS1 Cellular

Vertical Antenna Polarisation – 1GHz to 6GHz

Job Number: E2401-1729-1 Rev1
Test Engineer: AZ



Graph 6

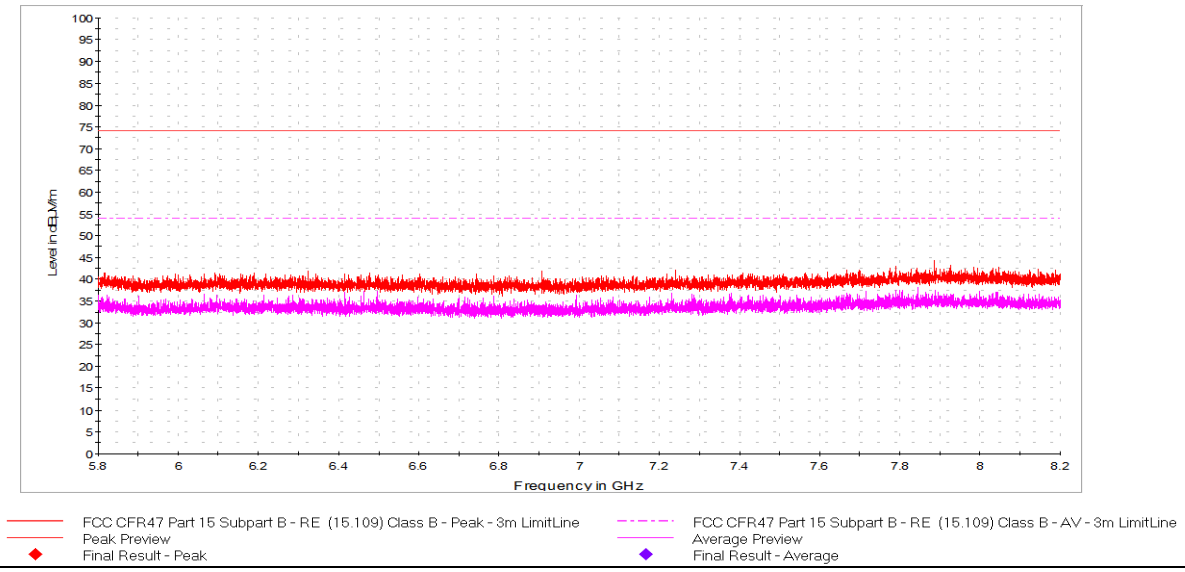
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Gallagher Group Ltd - eS1 Cellular

Vertical Antenna Polarisation – 5.8GHz to 8.2GHz

Job Number: E2401-1729-1 Rev1
Test Engineer: AZ



Graph 7

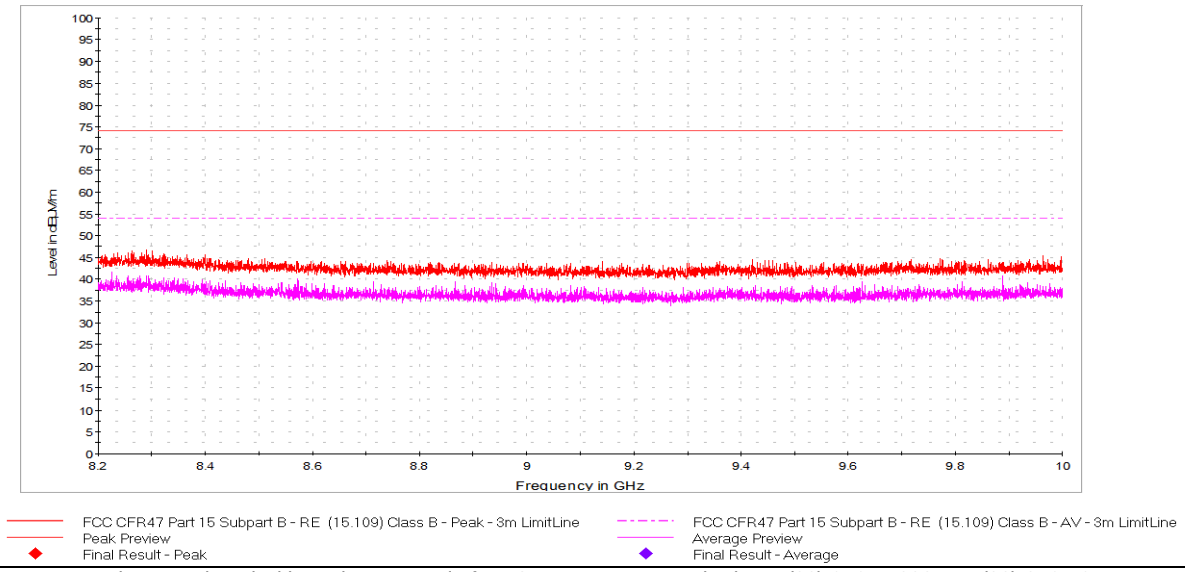
EMC Bayswater Pty. Ltd.

CFR47 FCC Part 15, Subpart B (Class B) - Radiated Emissions

Gallagher Group Ltd - eS1 Cellular

Vertical Antenna Polarisation – 8.2GHz to 10GHz

Job Number: E2401-1729-1 Rev1
Test Engineer: AZ



Graph 8

Appendix D – Customer Declaration of Product Variant

Docusign Envelope ID: 7D6D13A0-8B76-4E6D-BD91-BD5D6AE39A32

Gallagher Group Ltd
181 Kahikatea Drive
Hamilton 3206
New Zealand
T +64 7 838 9800
F +64 7 838 9801
www.gallagher.com
IRDN 024 824 357

Date: 12th February 2025

Declaration of Product Variations

We Gallagher Group Ltd
of 181 Kahikatea Drive, Melville, Hamilton 3206, New Zealand

hereby declare that:

Equipment eShepherd Neckband

Model number G04081

to be the worst case variant used for EMC testing of a product range consisting of other variants along with the justification declared in the table below. Gallagher Group Ltd accepts all responsibility for any adverse effects with respect to the EMC performance of the variant products listed in the table with regards to the performance observed whilst testing the declared worst case model.

Model tested	Variants models	Justification
G04081	G040811	G040811 uses different network provider SIM card in the product with exact same hardware as G04081

Signed by:
Hayden Goble
3F954F68E3A34C9...

Signed by: .....
Name: Hayden Goble
Position: Head of eShepherd
Date signed: 12th February 2025

GALLAGHER GROUP LIMITED

181 Kahikatea Drive, Hamilton 3206, New Zealand.
Private Bag 3026, Hamilton 3240, New Zealand.

TEL +64 7 838 9800
FAX +64 7 838 9801

EMAIL info@gallagher.com
www.gallagher.com

Appendix E – Customer Declaration of Responsible Party

Gallagher Group Limited
181 Kahikatea Drive
Hamilton 3206
New Zealand
T +64 7 838 9800
F +64 7 838 9801
www.gallagher.com
IRDN 024 824 357

Date: 09 February 2024

Declaration of Responsible Party

We (Responsible party), Gallagher Group Limited of 181 Kahikatea Drive, Hamilton 3206, New Zealand, hereby declare as per FCC KDB 896810 D01 SDoC v02 that:

Hayden Goble

is acting as the representative of the responsible party with the authority to act on behalf of the responsible party.

Signed by: Hayden Goble
Name: Hayden Goble
Position: Head of eShepherd
Date signed: 09 February 2024

GALLAGHER GROUP LIMITED

181 Kahikatea Drive, Hamilton 3206, New Zealand.
Private Bag 3026, Hamilton 3240, New Zealand.
TEL +64 7 838 9800
FAX +64 7 838 9801
EMAIL info@gallagher.com
www.gallagher.com

Appendix F – FCC Declaration of Conformity documentation requirements

FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The following information is believed to be true and accurate, however we advise that the current Federal Communications Commission (FCC) rules/regulations be consulted. EMC Bayswater Pty Ltd accepts no responsibility for any consequences arising from the use of the following information. It is the manufacturer's/suppliers responsibility to ensure that all applicable FCC Rules are identified and adhered to. If other parts of the FCC Rules apply, there may be requirements for additional of different forms of labelling and user information.

Supplier's Declaration of Conformity

Supplier's Declaration of Conformity (SDoC) is an FCC equipment authorization procedure that requires the party responsible for compliance to ensure that the equipment complies with the appropriate technical standards. The responsible party is not required to file an equipment authorization application with the Commission or a TCB; therefore, equipment approved under the SDoC procedure is not listed in any Commission database. However, the responsible party must provide a test report and other information demonstrating compliance with the rules upon request by the Commission. For any equipment subject to the SDoC procedure, the certification equipment authorization procedure may be used in place of the SDoC procedure at the option of the responsible party.

Applicability of Suppliers Declaration of Conformity (SDoC)

FCC Title 47, part 15 lists the following device types as falling within the SDoC authorization procedure. Optionally most of these types can also be authorized under the certification procedures.

- TV Broadcast Receiver
- FM Broadcast Receiver
- CB Receiver
- Superregenerative Receiver
- All other receivers subject to part 15
- TV interface device
- Cable system terminal device
- Stand-alone Cable input selector switch
- Class B personal computers and peripherals
- CPU boards and internal power supplies used with Class B personal computers
- Class B personal computers assembled using authorized CPU boards or power supplies
- Class B external switching power supplies
- Other Class B digital devices & peripherals
- Class A digital devices, peripherals & external switching power supplies
- All other devices

Responsible Party for SDoC

The responsible party is typically one of the following: the manufacturer, the assembler (if the equipment is assembled from individual component parts), or the importer (if the equipment is imported). This party is responsible for the compliance of the equipment with the applicable standards and must maintain a United States presence. A U.S. retailer or original equipment manufacturer (OEM) may enter into an agreement with the responsible party (manufacturer, assembler, or importer) to assume the liabilities of guaranteeing compliance of the equipment and become the new responsible party for the purposes of the Commission's rules. In all cases, the compliance information provided with the equipment must identify the responsible party by name, United States-based address, and telephone number or internet contact information.
Although supporting records are not required to be maintained within the United States, the

responsible party, located within the United States, is required to be able to provide any compliance information, such as test reports and equipment samples at no cost to the FCC, when requested by the Commission.
In determining compliance for devices subject to SDoC, the responsible party warrants that each unit of equipment marketed under an SDoC will be identical to the unit tested and found acceptable with the standards, and that the records maintained by the responsible party continue to reflect the equipment being produced under the SDoC within the variation that can be expected due to quantity production and testing on a statistical basis.

Responsibilities
In determining compliance for devices subject to Supplier's Declaration of Conformity, the responsible party warrants that each unit of equipment marketed under Supplier's Declaration of Conformity will be identical to the unit tested and found acceptable with the standards and that the records maintained by the responsible party continue to reflect the equipment being produced under such Supplier's Declaration of Conformity within the variation that can be expected due to quantity production and testing on a statistical basis.

For equipment subject to Supplier's Declaration of Conformity, the responsible party must re-evaluate the equipment if any modification or change adversely affects the emanation characteristics of the modified equipment. The responsible party bears responsibility for continued compliance of subsequently produced equipment.

FCC Report & Documentation Requirements
Refer to section 2.938 of 47 CFR (Retention of records)

A copy of the measurement report showing compliance with FCC standards must be retained and, if requested, submitted to the commission. The copy of the following documentation pertaining to the equipment tested must be kept with test report:

- Test Sample Block Diagram
- Test Sample Schematics
- Test Sample PCB Layouts
- Test Sample User Manual
- Suppliers Declaration of Conformity (SDoC)

It is important that testing i.e. the test report and product information be in English and be readily available, as failure to produce this information within 14 days of a request by the FCC may result in them issuing of a substantial fine.

Additional items are then prepared by the responsible party includes;

- Prepare a Supplier’s Declaration of Conformity (SDoC), and include it with the product literature.
- Include mandatory user’s manual information regarding the interference potential of the device.

Placement of Compliance Information Statement
The compliance information statement shall be included in the user’s manual or as a separate sheet. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

Labelling & Identification requirements for Supplier's Declaration of Conformity (SDoC):

Identification and the labelling requirements for a device subject to the SDoC procedure are specified in section 2.1074 and Section 15.19 of 47 CFR.

Please note that FCC regulations declare:

Devices subject only to Supplier's Declaration of Conformity shall be uniquely identified by the party responsible for marketing or importing the equipment within the United States. However, the identification shall not be of a format which could be confused with the FCC Identifier required on certified equipment. The responsible party shall maintain adequate identification records to facilitate positive identification for each device.

Devices subject to authorization under Supplier's Declaration of Conformity may be labeled with the following logo on a voluntary basis as a visual indication that the product complies with the applicable FCC requirements. However, use of the FCC logo is limited to products that fully comply with the SDoC procedures.

Information to the user (Refer to Section 15.105 of 47 CFR)

Place the following text in the user (instruction) manual or product literature:

Class B Product:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encourage to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

OR

Class A product:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning: (Refer to Section 15.21 of 47 CFR)
In addition the user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment (see example below).

Warning: Any changes or modifications not expressively approved by (company name) could void the user's authority to operate this equipment

The user shall also be informed of any additional information that may affect the compliance of the product, an example would be the use of shielded cable to achieve compliance or if shielded cables were used for testing include. In this instance the following shall be added to the user information:

“In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception.”

Filing requirements for imported devices
Prior to July 1, 2016, importers were required to file FCC Form 740, Section 2.1203 – General Requirement for Entry, and Section 2.1205 – Filing of Required Declaration, along with their customs entry documentation.

As of November 2, 2017, the requirement to submit a Form 740 has been eliminated, see FCC-17-93. Importation of radio frequency equipment still requires that the product: (1) Have the required FCC equipment authorization; (2) Is only being imported for evaluation purposes; (3) Is only being imported for demonstration at a trade show; or (4) Meets one of the conditions as permitted in Section 2.1204.

Sample Supplier's Declaration of Conformity (SDoC)
(Included in the user manual or separate sheet)

COMPANY or TRADE NAME:

PRODUCT NAME: (GENERIC TYPE OF PRODUCT, i.e. personal computer)

MODEL NUMBER: (MODEL NUMBER OF UNIT TESTED)

COMPLIANCE TEST REPORT NUMBER: (AS PER THIS REPORT)

COMPLIANCE TEST REPORT DATE: (AS PER THE SECOND PAGE OF THIS REPORT)

RESPONSIBLE PARTY (IN USA): *Manufacturer, assembler, importer, or retailer (must be located in United States!)*

ADDRESS:

TELEPHONE:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules as documented in the above referenced test report. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

This equipment referenced in this declaration is identical to the unit tested and found acceptable with the standards. The technical records maintained by the responsible party continue to reflect the equipment being produced under this Declaration of Conformity within the variation that can be expected due to quantity production and testing on a statistical basis.

Date:

Name:

Signature:

For more information please refer to:

FCC Title 47: Telecommunication, Part 2 – Frequency allocations and radio treaty matters; General rules and regulations, Subpart J—Equipment Authorization Procedures, *§2.931 Responsibilities*

Additionally refer to:
Equipment Authorization – Importation (https://www.fcc.gov/oet/ea/importation)