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EMC COMPLIANCE REPORT
In accordance with:
CISPR 14-2: 2020

Gallagher Group Ltd

eS1 Cellular

eShepherd Neckband

REPORT: E2401-1729-4 Rev1
DATE: April, 2025

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

Certificate of Compliance

EMC Bayswater Test Report: E2401-1729-4 Rev1
Issue Date: April, 2025

Product:	eShepherd Neckband
Model	eS1 Cellular
Part No.	G04081
Serial No.	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:
CISPR 14-2: 2020
Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus.

Results Summary:

Electrostatic Discharge	(IEC 61000-4-2)	***Complied***
Fast Transients	(IEC 61000-4-4)	***N/A[1]***
Injected Currents	(IEC 61000-4-6)	***N/A[1]***
Radio Frequency EM Fields	(IEC 61000-4-3)	***Complied***
Surges	(IEC 61000-4-5)	***N/A[1]***
Voltage Dips and Interruptions	(IEC 61000-4-11)	***N/A[1]***

Note 1 *The EUT is a battery powered device and it has no ports of any kind.*

Test Date(s): 15th to the 22nd of January, 2024

Test House (Issued By):
EMC Bayswater Pty Ltd
18/88 Merrindale Drive
Croydon South
Victoria 3136
Australia

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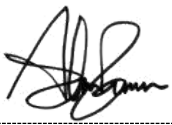
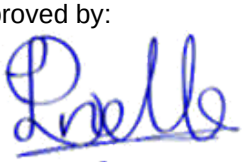
The Gallagher Group Ltd eS1 Cellular, eShepherd Neckband, complied with the applicable requirements of CISPR 14-2: 2020.

Prepared & tested by:	Tested by:	Approved by:	
			09/04/2025 16:22
Adnan Zaman (EMC Test Engineer)	Hon Sang Kong (EMC Test Engineer)	Neville Liyanapatabendige (Manager)	Date

EMC Compliance Report
for
Gallagher Group Ltd

Contents

1. Introduction

Electromagnetic compatibility (EMC) tests were performed on a Gallagher Group Ltd eS1 Cellular, eShepherd Neckband in accordance with the applicable requirements of CISPR 14-2: 2020.

2. Test Report Revision History

ISSUE	DATE	Description	AUTHORISED BY
E2401-1729-4	05-04-2024	Original	Neville Liyanapatabendige (Manager)
E2401-1729-4 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 guarantees 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 customers 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, 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 shall nullify the document.

4. Summary of Results

Test	Performance (Pass/Fail) Criteria	Result
Electrostatic Discharge (IEC 61000-4-2)	Performance Criteria B	Complied
Radio Frequency EM Fields (IEC 61000-4-3)	Performance Criteria A	Complied

Table 1: Results Summary

5. Product Sample, Configuration & Modifications

5.1. Product Sample Details

The EUT (Equipment Under Test), as supplied by the customer, 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)

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 fundamental frequency generated or used within the EUT, or the highest frequency at which it operates as specified by the customer is 1.575GHz.

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. Configuration

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

The product was tested in Transmit mode. In Transmit mode, the product established connection over the air with CMW500 communication tester operating in Band28. The product was on continuous transmit mode and Bit Error Rate (BER) was monitored on the CMW500.

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).

(Customer supplied product configuration information)

ESD test: The pulse function of the EUT was disabled during the ESD testing. All other EUT functions were operational. The pulse function was checked after the test.

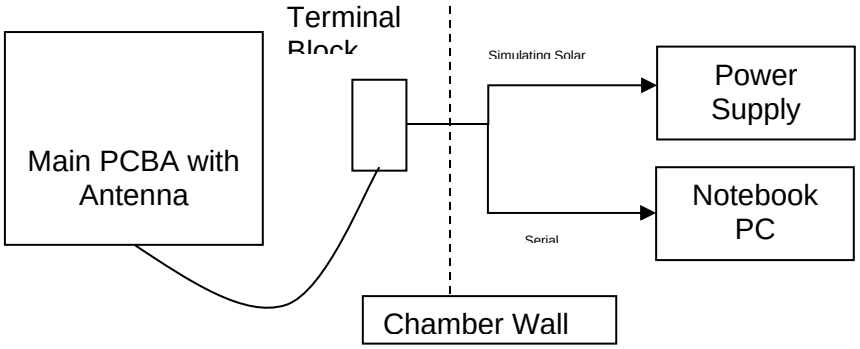


Figure 1: Customer supplied block diagram of EUT test configuration.

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.

5.8. Monitoring

Serial terminal port was monitored using PC application (Bandchat) for messages indication abnormal events eg: unexpected reboot, failed to deliver audio or pulse, attempt to acquire GPS, battery data and solar charging. Repeatable audible warning sound generated from the EUT was also monitored during testing. The cellular comms were monitored with CMW500 for BER in percentage during transmit mode of operation.

6. Test Facility & Equipment

6.1. Test Facility

Tests were performed inside a semi-anechoic shielded enclosure or a standard shielded enclosure, where applicable, at EMC Bayswater, located at 18/88 Merrindale Drive, Croydon South, Victoria, 3136, Australia.

6.2. Test Equipment

Refer to Appendix A for the measurement instrument list.

7. Referenced Standards

CISPR 14-2: 2020
Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus.

IEC 61000-4-2:2008
Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test.

IEC 61000-4-3:2006 + AMD1:2007 + AMD2:2010
Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test.

8. EUT Classification

The EUT as defined in CISPR 14-2: 2020 is classified according to the following categories. For each category, specific requirements are formulated.

Category I:
Equipment containing no electronic control circuitry.

Electric circuits consisting of passive components (such as radio interference suppression capacitors or inductors, mains transformers and mains frequency rectifiers) are not considered to be electronic circuitry.

Category II:
Mains operated equipment containing electronic control circuitry with no clock frequency higher than 15MHz.

Category III:
Battery powered equipment not included in Category I.

This category includes equipment provided with rechargeable batteries, which can be charged, directly or indirectly from mains. Accordingly, this equipment shall also be subject to the test requirement for mains operated equipment but only when testing the charging function.

Category IV:
Mains operated equipment containing electronic control circuitry with a highest clock frequency greater than 15MHz but lower than or equal to 200MHz.

Category V:
Mains operated equipment containing electronic control circuitry with a highest clock frequency greater than 200MHz..

The EUT was classed as a category III device.

9. Performance Criteria

Performance Criterion A:
The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance Criterion B:
The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however no change of actual operating state or stored data is allowed to persist after the test. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance Criterion C:
Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

In addition to the above, *the EUT shall not become dangerous or unsafe as a result of the application of the tests defined in this Standard.*

10. Electrostatic Discharge (IEC 61000-4-2)

10.1. Requirements

The EUT must meet performance criterion B.

10.2. Test Procedure

TABLE TOP EQUIPMENT

A Horizontal Coupling Plane (HCP), 1.6m x 0.8m was placed on top of a wooden table 0.8m high, standing on the ground reference plane. The EUT and cables were isolated from the coupling plane by an insulating film 0.5mm thick.

- Tabletop or floor standing equipment was placed at a distance of 1 metre from the enclosure walls or any metallic structure other than the ground reference plane.
- Both contact and air discharge were applied (as applicable) to:
  - all faces and access points of the EUT
  - the Horizontal Coupling Plane (HCP)
  - the Vertical Coupling Plane (VCP)
- All coupling planes were connected to the ground reference plane via a strap with a 470kΩ resistor located at each end.
- Contact discharges were applied to all conductive surfaces and to the coupling planes. Air discharges were applied only to the insulating surfaces.
- Discharges applied to the HCP and VCP were applied on each side of the EUT. Discharges made to the HCP were applied 0.1m from the EUT. Discharges made to the VCP were applied to the centre of one vertical edge of the coupling plane. The VCP (0.5m x 0.5m), was placed parallel to and positioned 0.1m from the EUT.
- At least 10 single discharges were applied in both positive and negative polarities.
- The applied test level was ±4kV for direct and indirect contact discharges and ±8kV for air discharges.

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

10.3. Discharge Points

Indirect contact discharges were applied to the Horizontal Coupling Plane (HCP) at the following positions:

- Front & Rear of EUT
- Right and Left hand sides of EUT

Indirect contact discharges were applied to the Vertical Coupling Plane (VCP) with the EUT at the following positions:

- Front & Rear of EUT
- Right and left hand sides of the EUT

Direct contact discharges were applied to the following points (Test points 1 to 16):

- Screws and chain

Direct air discharges were applied to the following points (Test points A to J):

- Enclosure and insulated parts

(Refer to photographs 6 to 12 of Appendix B for views of the discharge locations)

10.4. Test Results

The Electrostatic Discharge test results are detailed below:

Application	ESD Voltage	Observation	Results
HCP	±4.0 kV	No fault or loss of function detected	Complied, Criterion B
VCP	±4.0 kV	No fault or loss of function detected	Complied, Criterion B

Table 3: Electrostatic Discharge – Indirect Application

Discharge Location	ESD Voltage	Observation	Result
1 to 16	±4.0kV	No fault or loss of function detected	Complied, Criterion B

Table 4: Electrostatic Discharges – Direct Contact Application

Discharge Location	ESD Voltage	Observation	Result
A to J	±8.0kV	Due to the build of the EUT discharges were not possible	Complied, Criterion B

Table 5: Electrostatic Discharges – Direct Air Application

The measurement uncertainty for the Electrostatic Discharges (ESD) voltage was calculated at ±1.2% per EN 61000-4-2. The measurement uncertainty for the Electrostatic Discharge (ESD) current was calculated at ±8.1% per EN 61000-4-2. The measurement uncertainty for the Electrostatic Discharge (ESD) rise time of the current was calculated at ±14.2% per EN 61000-4-2. The reported uncertainty is an expanded uncertainty calculated using a coverage factor of *k=2* which gives a level of confidence of approximately 95%.

Climatic Conditions	
Temperature:	22.4 to 22.8°C
Humidity:	48.3%
Atmospheric pressure:	1016.4hPa

Table 6: Climatic conditions

Notes: No fault or loss of function was observed during Electrostatic Discharge testing.

Assessment: The EUT complied with the Electrostatic Discharge requirements of CISPR 14-2: 2020, performance criterion B.

11. Radio Frequency EM Fields (IEC 61000-4-3)

11.1. Requirements

The EUT must meet performance criterion A.

11.2. Test Procedure

Prior to testing, a sixteen-point 3V/m uniform CW electric field in the frequency range of 80MHz to 1GHz was calibrated at 2.3 metres from the tip of the Bi-Conilog transmitting antenna using an orthogonal electric field probe. A sixteen-point 3V/m CW electric field in the frequency range of 1GHz to 6GHz was calibrated at 3 metres from the front of transmitting horn antenna using an orthogonal electric field probe.

During the calibration the signal generator drive level to the amplifier was adjusted to achieve the required electric field strength as measured by the electric field probe. The required electric field was the CW level plus the AM modulation envelope of 80% i.e. 1.8 times the CW level. The forward power to the antenna, required to achieve the desired CW plus the AM modulation envelope electric field strength, was recorded using immunity software and stored as a look up table. The sixteen-point uniform calibration was performed in both horizontal and vertical transmit antenna polarisations. After the sixteen-point uniform calibration was completed the amplifier linearity verification was performed. The CW drive level to the amplifier was adjusted to the required level as determined by the sixteen-point calibration (CW level x 1.8) and then reduced by 5.1dB. The forward power was measured to ensure a corresponding reduction i.e. 5.1dB and no less than 3.1dB thus ensuring the amplifier was not saturated, this was repeated at each frequency. Spurious and harmonics emissions verification was then performed by removing the sixteen-point uniform calibration probe fixture and probe and substituting with a suitable receive antenna positioned directly in front and at the same height and antenna polarity as the transmitting antenna. The CW drive level to the amplifier was adjusted to the required level as determined by the sixteen-point calibration (CW level x 1.8) at each frequency. Using the receive antenna and a spectrum analyser/EMI receiver (including all correction factors for the receive antenna and cables) the spurious emissions and up to the 3rd harmonic of the fundamental were measured they were more than 6dB below the fundamental.

The EUT was positioned on a non-conductive table, 0.8m above the reference ground plane at the distance of specified previously from the transmitting antenna. All wiring to the EUT was left exposed to the electromagnetic field for a distance of 1m. All wiring less than or equal to 3m was bundled low-inductively to a 1m length. All wiring greater than 3m had RF ferrite beads placed 1m along the wiring.

The frequency ranges of 80MHz to 1.0GHz, 1.0GHz to 3.0GHz and 3.0GHz to 6.0GHz were swept incrementally using 1% step sizes, with the drive level to the amplifier adjusted accordingly to achieve the forward power level recorded in the electric field lookup table at each frequency interval when the CW drive level was achieved modulation (80% AM @ 1kHz) was applied with a dwell time of 3 seconds per frequency step. Both horizontal and vertical antenna polarizations were used to radiate the EUT in turn, on the front, left and right faces.

(Refer to photographs 13 to 17 in Appendix B for views of the test configuration)

11.3. Test Results

Field Level (V/m)	Antenna Polarisation	Frequency (MHz)	Observation	Results
3	Vertical	80-1000	See Note 1,2	Complied, Criterion A
3		1000-3000	No fault or loss of function	Complied, Criterion A
3		3000-6000	No fault or loss of function	Complied, Criterion A
3	Horizontal	80-1000	See Note 3,4	Complied, Criterion A
3		1000-3000	No fault or loss of function	Complied, Criterion A
3		3000-6000	No fault or loss of function	Complied, Criterion A

Table 7: Radio Frequency EM Fields – Front Side

Field Level (V/m)	Antenna Polarisation	Frequency (MHz)	Observation	Results
3	Vertical	80-1000	See Note 5	Complied, Criterion A
3		1000-3000	No fault or loss of function	Complied, Criterion A
3		3000-6000	No fault or loss of function	Complied, Criterion A
3	Horizontal	80-1000	See Note 6	Complied, Criterion A
3		1000-3000	No fault or loss of function	Complied, Criterion A
3		3000-6000	No fault or loss of function	Complied, Criterion A

Table 8: Radio Frequency EM Fields – Left Side

Field Level (V/m)	Antenna Polarisation	Frequency (MHz)	Observation	Results
3	Vertical	80-1000	No fault or loss of function	Complied, Criterion A
3		1000-3000	No fault or loss of function	Complied, Criterion A
3		3000-6000	No fault or loss of function	Complied, Criterion A
3	Horizontal	80-1000	No fault or loss of function	Complied, Criterion A
3		1000-3000	No fault or loss of function	Complied, Criterion A
3		3000-6000	No fault or loss of function	Complied, Criterion A

Table 9: Radio Frequency EM Fields – Right Side

The measurement uncertainty for the re-establishment of the calibrated uniformed field for Radio-Frequency Electromagnetic Field testing was calculated at ±3.32dB between 80MHz to 3GHz and was calculated at ±3.58dB between 3GHz to 6GHz per IEC 61000-4-3. The reported uncertainty is an expanded uncertainty calculated using a coverage factor of *k=2* which gives a level of confidence of approximately 95%.

Climatic Conditions	
Temperature:	21.1 to 22.5°C
Humidity:	49 to 52%
Atmospheric pressure:	1006.0 to 1011.6hPa

Table 10: Climatic conditions

Notes:

For the Electromagnetic Field immunity measurement, the base station was set to band 28 to determine the traffic mode throughput level.

The below noted observations were all related to the Radio functions of the EUT, which were assessed as per the requirements of the Radio Equipment standard ETSI EN 301 489-52.

Note 1: When 3V/m RF field was applied to the Front side of the EUT in the frequency range of 157MHz to 158MHz (Vertical antenna polarization) the LTE connection was dropped. The loss of function was not repeatable.

Note 2: When 3V/m RF field was applied to the Front side of the EUT in the frequency range of 195MHz to 199MHz (Vertical antenna polarization) the data throughput of the EUT failed 3% (i.e. 97% of the maximum data throughput). The EUT self-recovered thus complied the ETSI EN 301 489-52 requirements.

Note 3: When 3V/m RF field was applied to the Front side of the EUT in the frequency range of 195MHz to 197MHz (Horizontal antenna polarization) the data throughput of the EUT failed 1% (i.e. 99% of the maximum data throughput). The EUT self-recovered thus complied the ETSI EN 301 489-52 requirements.

Note 4: When 3V/m RF field was applied to the Front side of the EUT in the frequency range of 363MHz (Horizontal antenna polarization) the LTE connection was dropped. The loss of function was not repeatable.

Note 5: When 3V/m RF field was applied to the Left side of the EUT during the frequency at 714.155MHz, with Vertical antenna polarization, The LTE communication dropped at traffic mode. which are within the exclusion band of ETSI EN 301 489-52 and are not subject to test or assessment.

Note 6: When 3V/m RF field was applied to the Front side of the EUT in the frequency range of 195MHz to 197MHz (Horizontal antenna polarization) the data throughput of the EUT failed 5% (i.e. 95% of the maximum data throughput). The EUT self-recovered thus complied the ETSI EN 301 489-52 requirements.

No other fault or loss of function was detected during Radio Frequency EM Fields testing.

The test shall normally be performed with the generating antenna facing each side of the EUT. When equipment can be used in different orientations (i.e. vertical or horizontal) all sides shall be exposed to the field during the test. When technically justified, some EUTs can be tested by exposing fewer faces to the generating antenna. In other cases, as determined for example by the type and

size of EUT or the frequencies of test, more than four azimuths may need to be exposed.

The customer declared the EUT to be exposed to the Electromagnetic Field on three sides of the product (front, left and right).

As per EN 61000-4-3 a technical rationale of testing fewer sides than the specified in the standard can be used to reduce the sides for testing. A technical rationale for the reduced faces exposed was declared by the customer.

"Due to the physical size of the EUT, a reduced number of sides exposed during radiated Electromagnetic Field testing shall be used. The sides tested are expected to be the worst-case sides with respect to immunity related functions of the EUT".

Assessment: The EUT complied with the Radio Frequency EM Fields requirement of CISPR 14-2: 2020, performance criterion A.

12. Conclusion

The Gallagher Group Ltd, eS1 Cellular, eShepherd Neckband complied with the applicable requirements of CISPR 14-2: 2020.

Appendix A – Test Equipment

Inv.	Equipment	Make	Model No	Serial No	Calibration	
					Due	Type
Electromagnetic Field – 80MHz to 6GHz						
1276	Generator, Signal, RF	Keysight Tech. Inc	N5183A	MY50140891	Jul-24*	I
0723	Attenuator, 10dB	JFW	50FPE-010	723	Aug-24	I
0728	Attenuator, 20dB	JFW	50FPE-020		Dec-24	I
1269	Amplifier, RF, power	TESEQ|AMETEK	CBA1G-150D	1092342	N/A	V
1136	Coupler, Coax, Bi-directional	Werlatone	05571	11662	Jan-25	I
0737	Meter, RF Power, Dual	Agilent	E4419B	MY45100325	Feb-27	E
0740	Sensor, RF Power	Agilent	E9304A	MY41496556	Feb-27	E
A-145	Antenna, Biconilog	EMCO	3143	1026	N/A	V
1284	METER, Field Strength	Narda	NBM-520	D-2502	Oct-24	E
1147	CABLE, Coax, Sucoflex 104PA	Huber + Suhner	84287045	SN MY057/4PA	Jan-25	I
1207	CABLE, Coax, Sucoflex 126 E	huber+ Suhner	85072828	SN MY979/26E	Jan-25	I
1212	CABLE, Coax, Sucoflex 126 E	Huber + Suhner	85072828	SN MY978/26EA	Jan-25	I
1235	CABLE, Coax, Sucoflex 126 E	Huber + Suhner	85072830	SN MY952/26EA	Jan-25	I
1248	Hygrometer, Temp, Humidity	Thomas Scientific	6066N53	181037404	Dec-24	I
1270	AMPLIFIER, RF, power	TESEQ|AMETEK	CBA6G-030D	1092343	N/A	V
0600	COUPLER, Coax, Bi-directional	Narda	3022	10096	May-26	I
1005	COUPLER, Coax, Bi-directional	Hewlett Packard	772D	2839A00568	Jul-26	I
0942	ATTENUATOR, 20dB	JFW	50FPE-020		May-25	I
0944	ATTENUATOR, 20dB	JFW	50FPE-020		May-25	I
0714	ATTENUATOR, 20dB	JFW	50HF-020N		Jan-25	I
0716	ATTENUATOR, 20dB	JFW	50HF-020N		Jan-25	I
0209	ANTENNA, Double Ridge Horn	EMCO	3115	9210-3945	Aug-24	I
1208	CABLE, Coax, Sucoflex 126 E	Huber+ Suhner	85072830	SN MY955/26EA	Jan-25	I
1211	CABLE, Coax, Sucoflex 126 E	Huber + Suhner	85072828	SN MY980/26EA	Jan-25	I
1213	CABLE, Coax, Sucoflex 126 E	Huber + Suhner	85072830	SN MY947/26EA	Jan-25	I
0667	Enclosure, Semi-Anechoic, No 3	RFI Industries	S800	1201	N/A	V
SW008	EMC Immunity Software	Amplifier Research	EMC Ware	Version 6.0.11	N/A	N/A
Electrostatic Discharge						
0730	GENERATOR, ESD System	EMC Partner	ESD3000	150	Jan-25	E
1293	Hygrometer, Temp, Humidity	Thomas Scientific	1235C97	221636757	Jul-24*	V
0174	ENCLOSURE, Shielded, No.4	RFI Industries	S100	652	N/A	V

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

**Calibration valid at the time of testing*

Appendix B – Photographs

Number	Photograph Description
1	Electrostatic Discharge – Test configuration
2	Electrostatic Discharge – Test configuration - HCP
3	Electrostatic Discharge – Test configuration - VCP
4	Electrostatic Discharge – Test configuration – Direct Contact discharge
5	Electrostatic Discharge – Test configuration – Direct Air discharge
6	Electrostatic Discharge – Test points
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13	Radio Frequency Electromagnetic Field – Test configuration – Front side
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15	Radio Frequency Electromagnetic Field – Test configuration – Right side
16	Radio Frequency Electromagnetic Field – Test configuration
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18	EUT External Views
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44	Support Equipment – 1k Ohms Resistive Load
45	Support Equipment – Laptop
46	
47	Support Equipment – Power Supply
48	

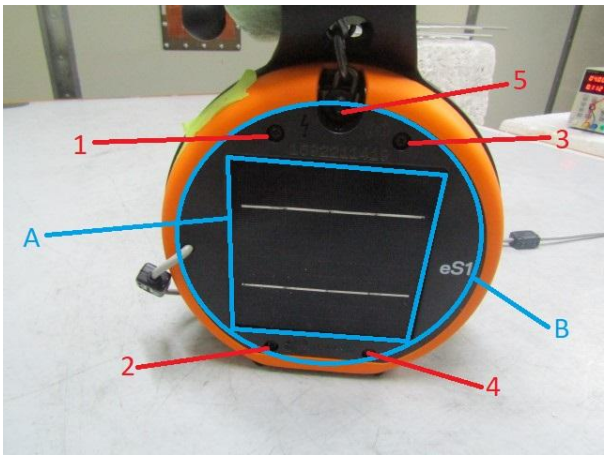
Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5



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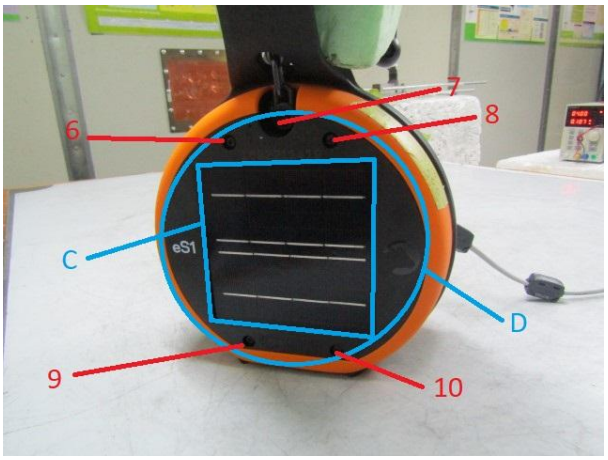

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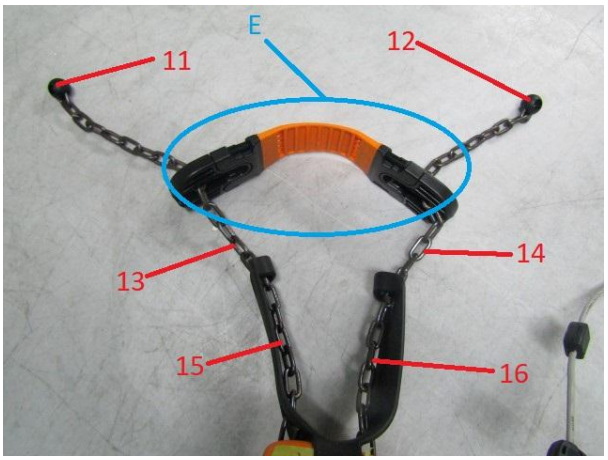

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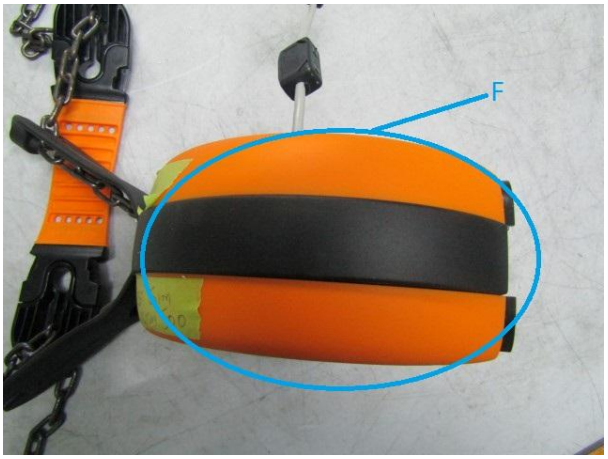

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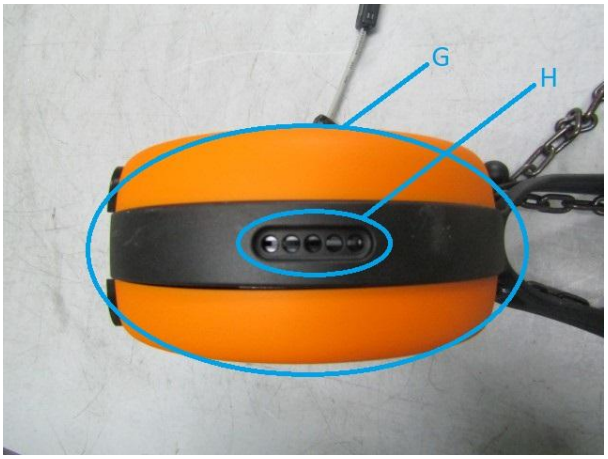

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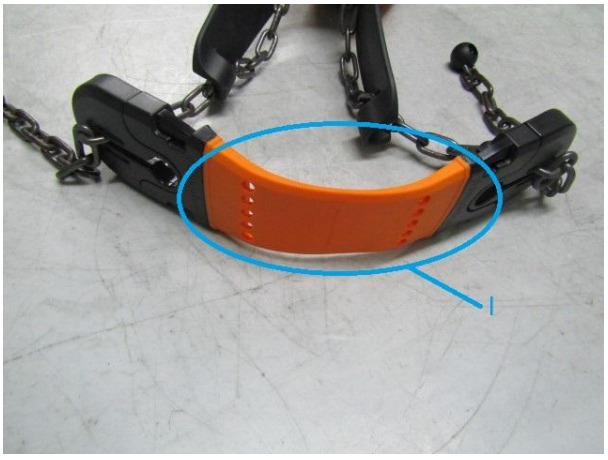
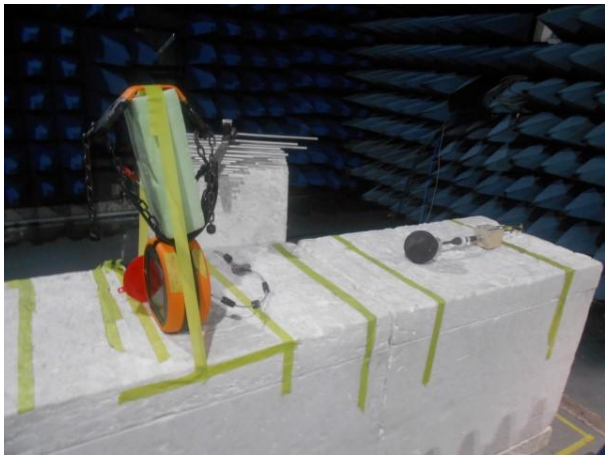


Photograph 11

Photograph 12



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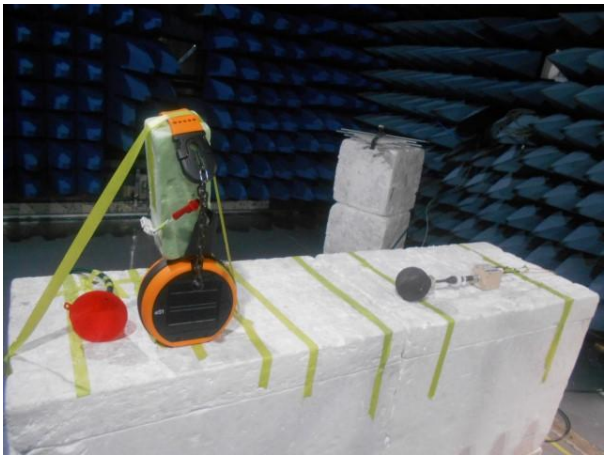
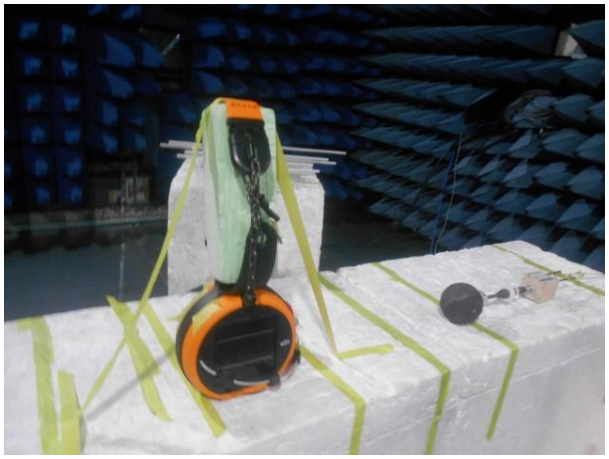


Photograph 14



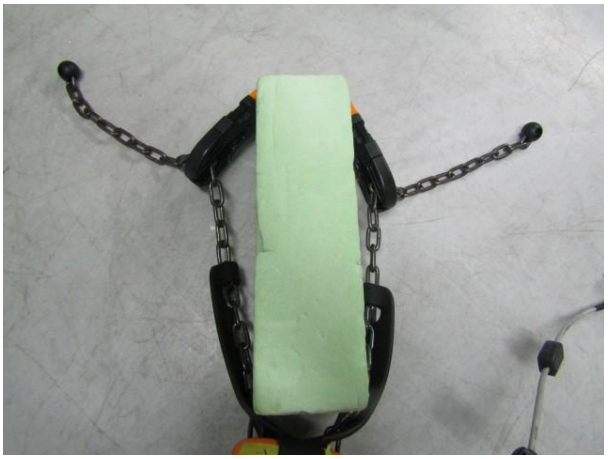
Photograph 15

Photograph 16

Photograph 17

Photograph 18

Photograph 19



Photograph 20

Photograph 21

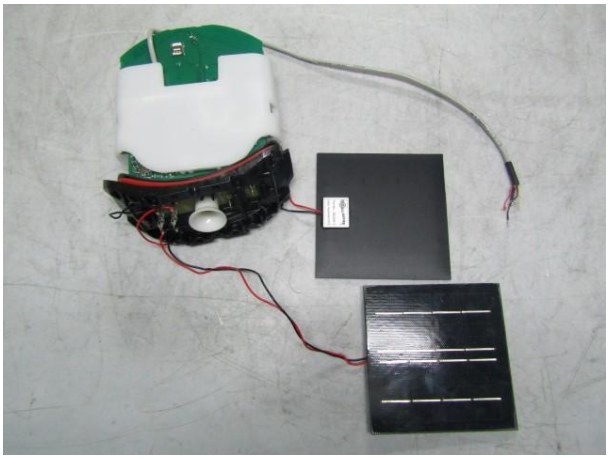
Photograph 22

Photograph 23

Photograph 24

Photograph 25

Photograph 26



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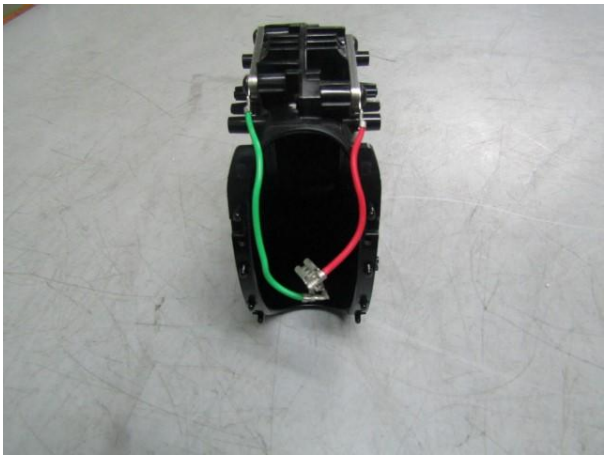
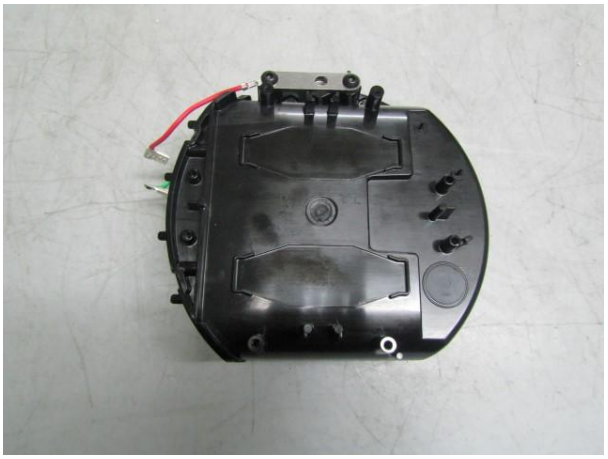


Photograph 28

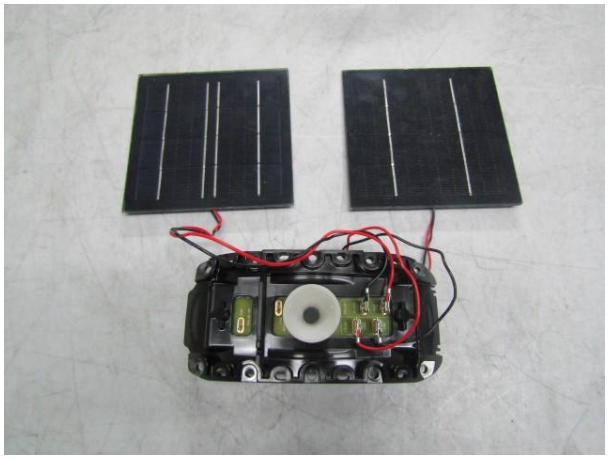


Photograph 29

Photograph 30

Photograph 31

Photograph 32



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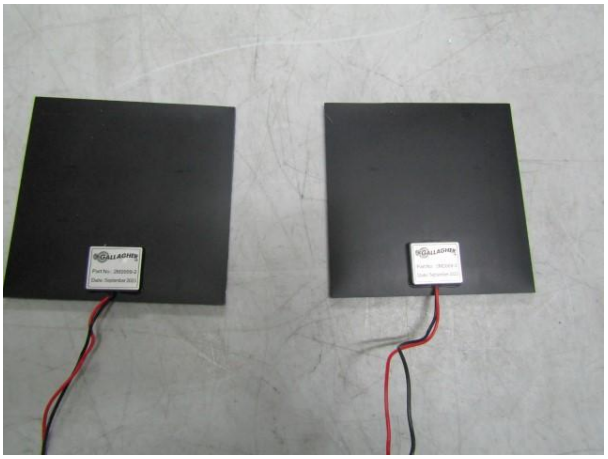
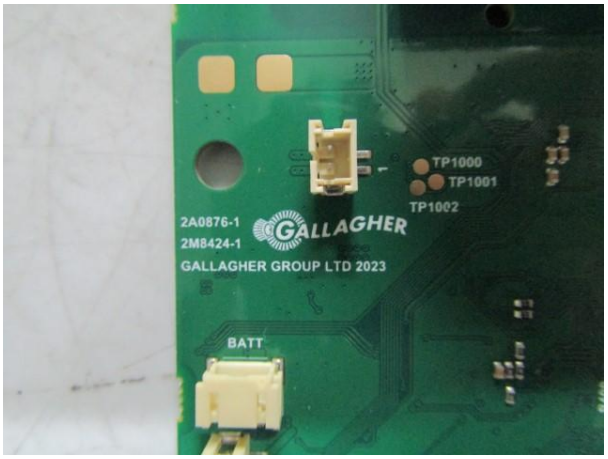


Photograph 34

Photograph 35

Photograph 36



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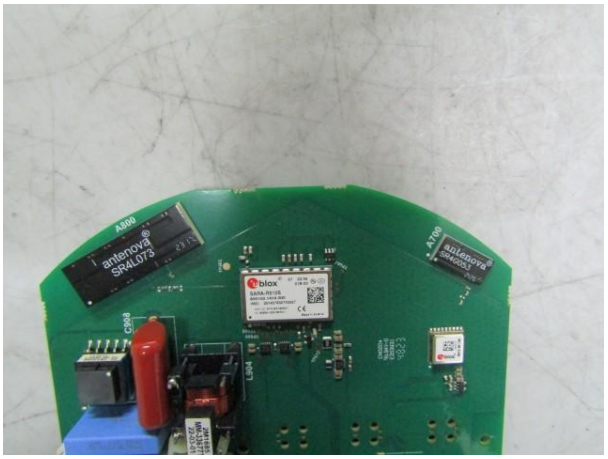
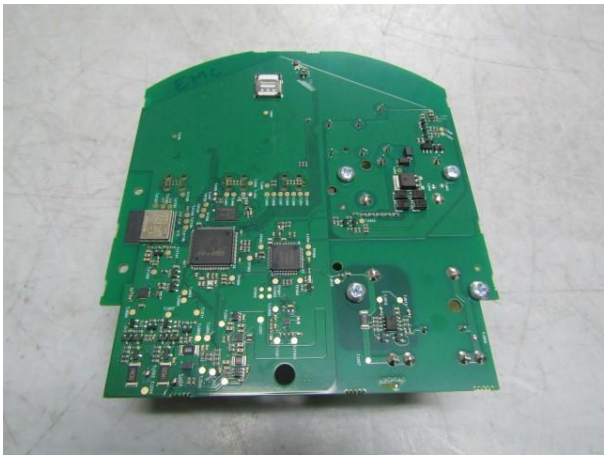


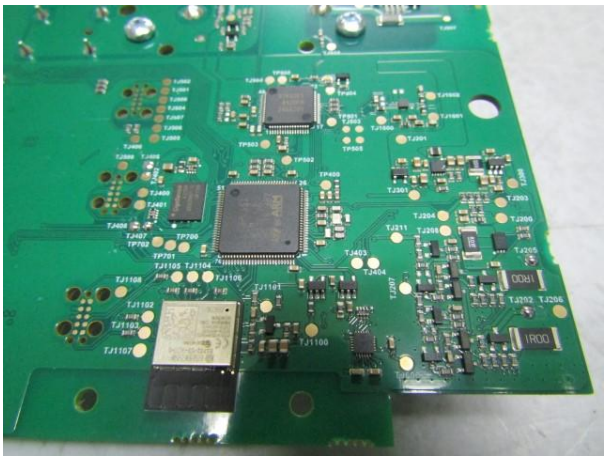
Photograph 38

Photograph 39

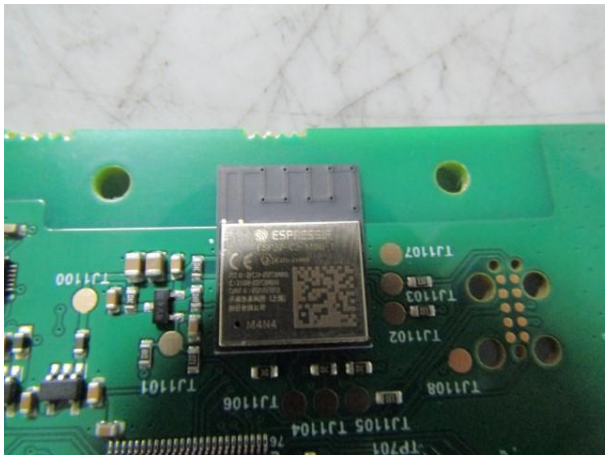
Photograph 40



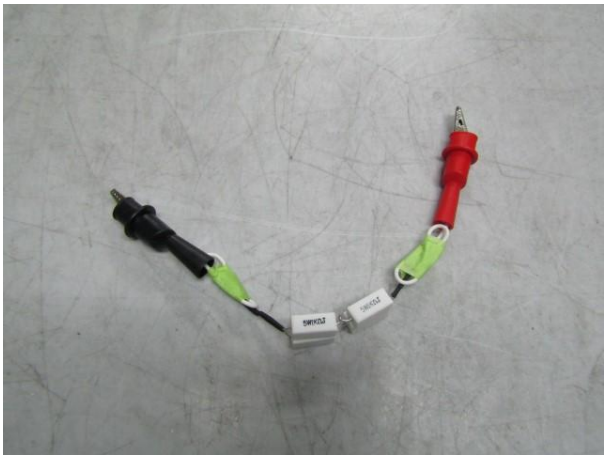
Photograph 41



Photograph 42



Photograph 43



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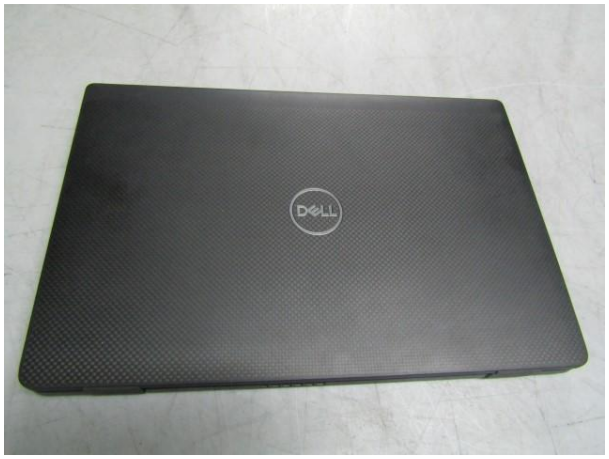

Photograph 45

Photograph 46

Photograph 47

Photograph 48

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

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