

FCC 47 CFR PART 15 SUBPART B (ICES-003) TEST REPORT

Test Report No. : OT-218-RED-103

Reception No. : 2108003645

Applicant : Ubridge Co., Ltd.
Address : #(1-1704, Ace Hightech City, Mullae-dong 3ga), 775, Gyeongin-ro, Yeongdeungpo-Gu, Seoul 07299, Korea

Manufacturer : FourStech Co., Ltd.
Address : Bucheon Technopark Ssangyong III, 397 Seokchonro, Bucheonsi, Gyeonggi-do 14449 Korea

Type of Equipment : GPS Smart Antenna

Model Name : MG-G01

FCC ID. : 2AWC3-MG-G01

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 19 pages (including this page)

Date of Incoming : August 16, 2021

Date of Issuing : August 31, 2021

SUMMARY

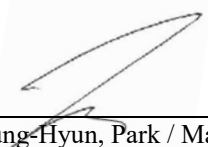
The equipment complies with the requirement of

FCC CFR 47 Part 15 Subpart B and Canadian Standard ICES-003:Issue 7.


This test report contains only the results of a single test of the sample supplied for the examination.

It is not a general valid assessment of the features of the respective products of the mass-production.

Reviewed by:


Seung-Hyun, Park / Manager
EMC Testing Div.
ONETECH Corp.

Approved by:


Gea-Won, Lee / Exe. Managing Director
EMC Testing Div.
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Revision History

Rev. No.	Issued Report No.	Issued Date	Revisions	Section Affected
0	OT-218-RED-103	August 31, 2021	Initial Issue	All

* Please contact us (e-mail: info@onetech.co.kr) for verification of this test report.

1. VERIFICATION OF COMPLIANCE

APPLICANT	Ubridge Co., Ltd. #(1-1704, Ace Hightech City, Mullae-dong 3ga), 775, Gyeongin-ro, Yeongdeungpo-Gu, Seoul 07299, Korea
MANUFACTURER	FourStech Co., Ltd. Bucheon Technopark Ssangyong III, 397 Seokchonro, Bucheonsi, Gyeonggi-do 14449 Korea
NAME AND ADDRESS OF FACTORY	Fourstech.co.,ltd. Samjeong-dong, bucheontechnopark Ssangyong III, 202-403. 397, Seokcheon-ro, Ojeong-Gu Bucheon-si, Gyeonggi-do, Korea

EQUIPMENT CLASS	Other Class B digital devices & peripherals
E.U.T. DESCRIPTION	GPS Smart Antenna
MEASUREMENT PROCEDURES	ANSI C63.4: 2014
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	Certification
STANDARDS	FCC Part 15 (Class B) Canadian Standard ICES-003 Issue 7
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	None
FINAL TEST WAS CONDUCTED ON	10 m Semi anechoic chamber

ONETECH Corp. tested the above equipment in accordance with the requirements set forth in the above standard. The test results show that equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

2. TEST FACILITY

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at:

- 1) 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea
- 2) 12-5, Jinsaegol-gil 75 beon-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea

-. Site Filing:

VCCI (Voluntary Control Council for Interference) – Registration No. R-20122/ C-14617/ G-10666/ T-11842

ISED (Innovation, Science and Economic Development Canada) – Registration No. Site# 3736A

-. Site Accreditation:

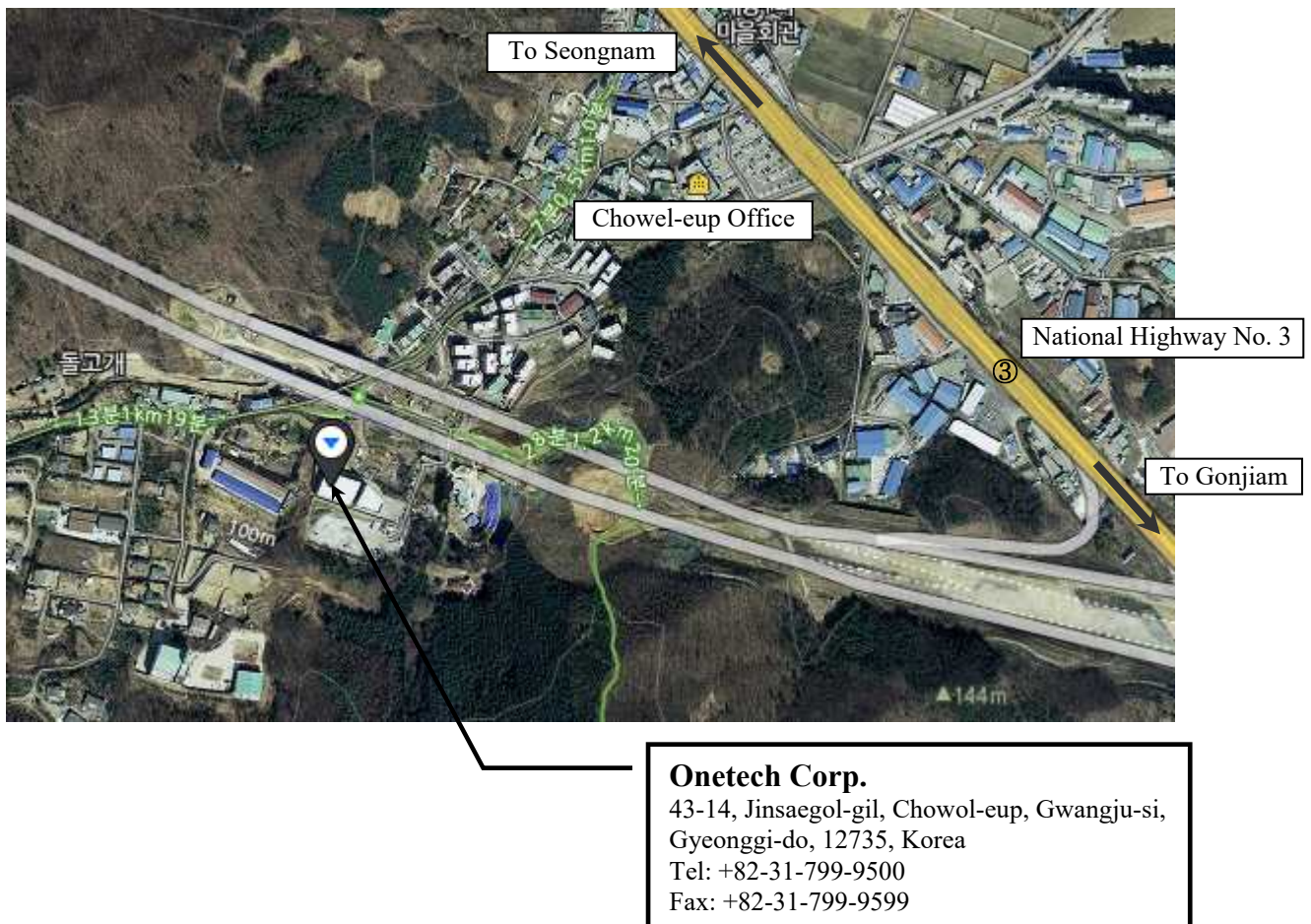
KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation No. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) – Designation No. KR0013

These measurement tests were conducted at Onetech Corp.

The 10 m semi anechoic chamber and conducted measurement facilities are located on at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.



3. PRODUCT INFORMATION

3.1 Description of EUT

The Ubridge Co., Ltd., Model MG-G01 (referred to as the EUT in this report) is a GPS Smart Antenna.

Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic & Metal
LIST OF EACH OSC. OR CRY. FREQ. (FREQ. \geq 1 MHz)	26 MHz, 32.768 MHz
NUMBER OF LAYER	4 Layers
RF FREQUENCY	1 575.42 MHz
POWER REQUIREMENT	DC 5 V, 300 mA
EXTERNAL CONNECTOR	USB

3.2 Model Differences

-. None

3.3 Support Equipment

The model numbers for all the equipment that were used in the tested system is:

Description	Model	Manufacturer	Connected to
GPS Smart Antenna (EUT)	MG-G01	FourStech Co., Ltd.	-
Signal Generator	GSS7000	Spirent Communications Plc	-
Antenna	N/A	N/A	Signal Generator
Monitor	24MK430H	LG Electronics Inc.	Signal Generator
Keyboard	TGK-3000U	TG	Signal Generator
Mouse	SPA-JMA1PUB	SAMSUNG	Signal Generator
Laptop	80XH	Lenovo	EUT, Adapter
Laptop Adapter	ADL45WCE	Lenovo	Laptop

3.4 System Configuration

DEVICE TYPE	MODEL/PART NUMBER	MANUFACTURER	FCC ID
GPS Smart Antenna	MG-G01	FourStech Co., Ltd.	2AWC3-MG-G01

3.5 Cable Description

Ports Name	Shielded	Ferrite Bead	Metal Shell	Length (m)	Connected to
USB	Y	N	N	1.5	Laptop

3.6 Equipment Modifications

-. None

4. DESCRIPTION OF TESTS

4.1 Test standards and result

Test Items	Applied Standards	Results
Conducted Emission	ANSI C63.4: 2014 CAN/CSA-CISPR 32:17	C
Radiated Emission	ANSI C63.4: 2014 CAN/CSA-CISPR 32:17	C
C=Comply N/C=Not Comply N/T=Not Tested N/A=Not Applicable		

4.2 Test Condition

The test conditions of the noted test mode(s) in this test report are;

-. Test Voltage / Frequency: AC 120 V / 60 Hz

-. Test Mode(s)

No.	Mode	Description
1	GPS	1) Laptop was connected to the USB port. 2) GPS signal was supplied from the radiating antenna connected to the signal generator. 3) GPS receiver status is checked by specific program on laptop.

4.3 Conducted Emission

The EUT was placed on a non-conductive 2.5 m × 1.5 m table, which is 0.8 m in height above the reference ground plane and 0.4 m away from the vertical conducting plane (over 2 m × 2 m) that is bonded to the reference ground plane. The power of EUT is fed through a 50 Ω/ 50 μH + 5 Ω LISN and all support equipment is powered from another LISN. Powers to the LISN are filtered by high-current high insertion loss power line filter.

Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

The RF output of the LISN was connected to the EMI test receiver.

Exploratory measurements were conducted to identify the highest emission by operating the EUT in a range of typical modes of operation, cable positions, system configuration and arrangement.

Based on exploratory measurements, the final measurements were conducted at the worst test conditions.

Exploratory measurements were scanned using Peak mode of EMI Test receiver from 150 kHz to 30 MHz with 20 ms sweep time. The final measurements were measured with Quasi-Peak and CISPR-Average mode.

The bandwidth of EMI Test Receiver was set to 9 kHz. Interface cables were connected to the available interface ports of the test unit. Excess cable lengths were bundled at center with 30 cm ~ 40 cm.

4.4 Radiated Emission

Exploratory Radiated measurements were conducted at the 10 m semi anechoic chamber in order to identify the highest emission by operating the EUT in a range of typical modes of operation, cable positions, system configuration and arrangement.

Based on exploratory measurements, the final measurements were conducted at the worst test conditions.

Final measurements were made at 10 m semi anechoic chamber that complies with CISPR 16/ANSI C63.4.

Exploratory measurements were scanned using Peak mode of EMI Test receiver and final measurements were measured with Quasi-Peak mode (Below 1 GHz) and Peak & CISPR-Average mode (Above 1 GHz).

The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

5. FINAL RESULT OF MEASUREMENT

Exploratory measurement was done in normal operation mode. And the final measurement was selected for the maximized emission level.

5.1 Conducted Emission Test

5.1.1 Operating Environment

Temperature : 23.4 °C
Relative humidity : 51.1 % R.H.

5.1.2 Test Setup

The EUT and all local support equipment were placed on a non-conductive table, 0.8 m height above the reference ground plane. The EUT was fed by dc power supply through a 50 Ω / 50 μ H + 5 Ω Artificial Mains Network (AMN). The ground plane was electrically bonded to the reference ground system and all power lines were filtered from ambient.

5.1.3 Measurement uncertainty

Conducted emission, quasi-peak detection : ± 3.9 dB
Conducted emission, CISPR average detection : ± 3.9 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2. The measurement uncertainty is given with a confidence of 95 % with the coverage factor, $k = 2$.

5.1.4 Limit

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	CISPR Average
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50
* Decreases with the logarithm of the frequency		

5.1.5 Test Equipment used

Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ - ESCI	Rohde & Schwarz	Test Receiver	101420	Mar. 23, 2021 (1Y)
■ - LT32C/10	Afj Instruments	LISN	32032039322	Oct. 22, 2020 (1Y)
□ - 3825/2	EMCO	AMN	9109-1867	Mar. 22, 2021 (1Y)
■ - 11947A	Hewlett Packard	Transient Limiter	3107A02762	Mar. 22, 2021 (1Y)

All test equipment used is calibrated on a regular basis.

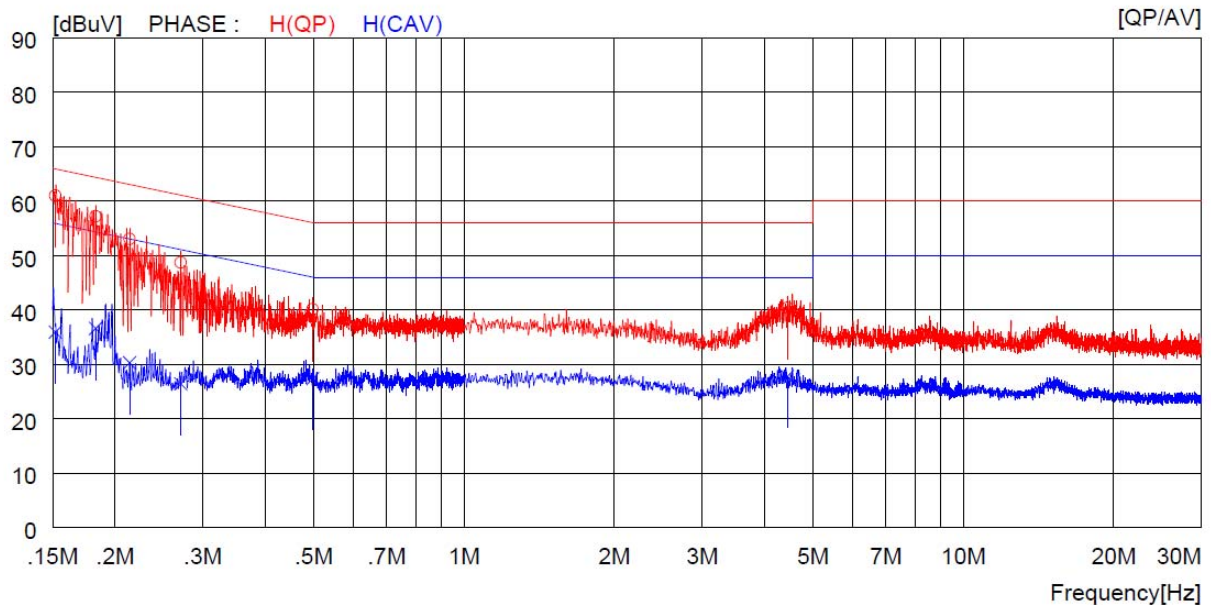
5.1.6 Test Data

-. Test Result : Pass



Tested by: Su-Jin, Kang / Project Engineer

Operating Mode 1 (GPS)			
Frequency range	: 0.15 MHz ~ 30 MHz	Test Date	: August 26, 2021
Resolution bandwidth	: 9 kHz	Tested Line	: HOT LINE

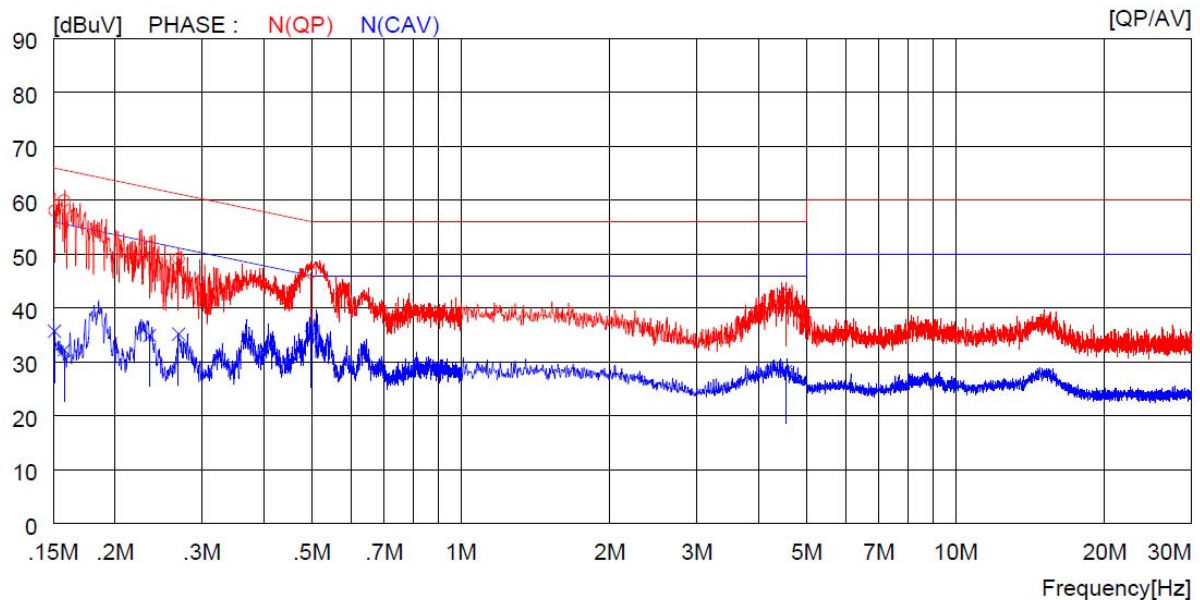


NO	FREQ [MHz]	READING		C. FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15200	39.7	----	21.3	61.0	----	65.9	----	4.9	----	H (QP)
2	0.18300	35.9	----	21.3	57.2	----	64.3	----	7.1	----	H (QP)
3	0.21400	31.7	----	21.3	53.0	----	63.0	----	10.0	----	H (QP)
4	0.27100	27.4	----	21.3	48.7	----	61.1	----	12.4	----	H (QP)
5	0.49800	18.8	----	21.3	40.1	----	56.0	----	15.9	----	H (QP)
6	4.44400	19.0	----	21.4	40.4	----	56.0	----	15.6	----	H (QP)
7	0.15200	----	14.6	21.3	----	35.9	----	55.9	----	20.0	H (CAV)
8	0.18300	----	15.3	21.3	----	36.6	----	54.3	----	17.7	H (CAV)
9	0.21400	----	9.0	21.3	----	30.3	----	53.0	----	22.7	H (CAV)
10	0.27100	----	5.1	21.3	----	26.4	----	51.1	----	24.7	H (CAV)
11	0.49800	----	6.1	21.3	----	27.4	----	46.0	----	18.6	H (CAV)
12	4.44400	----	6.4	21.4	----	27.8	----	46.0	----	18.2	H (CAV)

Remark: Margin (dB) = Limit – Level (Result)

The result level in above table is included the transducer factor that means insertion loss (AMN), cable loss and attenuator.

Operating Mode 1 (GPS)			
Frequency range	: 0.15 MHz ~ 30 MHz	Test Date	: August 26, 2021
Resolution bandwidth	: 9 kHz	Tested Line	: NEUTRAL LINE



NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.15100	36.7	----	21.3	58.0	----	65.9	----	7.9	----	N(QP)
2	0.15800	38.6	----	21.3	59.9	----	65.6	----	5.7	----	N(QP)
3	0.23500	30.0	----	21.3	51.3	----	62.3	----	11.0	----	N(QP)
4	0.26900	27.8	----	21.3	49.1	----	61.1	----	12.0	----	N(QP)
5	0.49800	25.3	----	21.3	46.6	----	56.0	----	9.4	----	N(QP)
6	4.54000	21.0	----	21.4	42.4	----	56.0	----	13.6	----	N(QP)
7	0.15100	----	14.4	21.3	----	35.7	----	55.9	----	20.2	N(CAV)
8	0.15800	----	10.9	21.3	----	32.2	----	55.6	----	23.4	N(CAV)
9	0.23500	----	13.6	21.3	----	34.9	----	52.3	----	17.4	N(CAV)
10	0.26900	----	13.9	21.3	----	35.2	----	51.1	----	15.9	N(CAV)
11	0.49800	----	13.4	21.3	----	34.7	----	46.0	----	11.3	N(CAV)
12	4.54000	----	6.8	21.4	----	28.2	----	46.0	----	17.8	N(CAV)

Remark: Margin (dB) = Limit – Level (Result)

The result level in above table is included the transducer factor that means insertion loss (AMN), cable loss and attenuator.

5.2 Radiated Emission Test

5.2.1 Operating Environment

Temperature : 23.8 °C
Relative humidity : 53.3 % R.H.

5.2.2 Test Setup

The radiated emissions measurements were on the 10 m semi anechoic chamber. The EUT and all local support equipments were placed on a non-conductive turntable approximately 0.8 m above the ground plane.

The frequency spectrum from 30 MHz to 8 000 MHz was scanned and emission levels maximized at each frequency recorded. The system was rotated 360°, and the antenna was varied in height between 1.0 m and 4.0 m in order to determine the maximum emission levels. This procedure was performed for both horizontal and vertical polarization of the receiving antenna.

5.2.3 Measurement uncertainty

Radiated emission electric field intensity, 30 MHz ~ 1 000 MHz : ± 4.6 dB
Radiated emission electric field intensity, 1 GHz ~ 18 GHz : ± 6.0 dB

Measurement uncertainty is calculated in accordance with CISPR 16-4-2. The measurement uncertainty is given with a confidence of 95 % with the coverage factor, $k = 2$.

5.2.4 Limit

Frequency of Emission (MHz)	Resolution bandwidth	Field strength @ 3 m (dBμV/m)	
30 ~ 88 88 ~ 216 216 ~ 230 230 ~ 960 960 ~ 1 000	120 kHz	Quasi-peak	
		40.0	
		43.5	
		46.0	
		46.0	
		54.0	
> 1 000	1 MHz	Peak Limit	CISPR Average Limit
		74.0	54.0

5.2.5 Test Equipment used

	Model Number	Manufacturer	Description	Serial Number	Last Cal. (Interval)
■ -	ESW	Rohde & Schwarz	Test Receiver	101851	Mar. 23, 2021 (1Y)
■ -	VULB9163	Schwarzbeck	Trilog Broadband Antenna	9163-225	Sep. 14, 2020 (2Y)
■ -	3115	ETS-LINDGREN	Horn Antenna	34823	Aug. 18, 2021 (1Y)
■ -	SAS-574	A.H. System	Horn Antenna	676	Oct. 15, 2020 (1Y)
■ -	8447D	Hewlett Packard	Amplifier	2944A07777	Mar. 15, 2021 (1Y)
■ -	PAM-118A	Com-Power	Amplifier	18040081	Oct. 12, 2020 (1Y)
■ -	PAM-840A	Com-Power	Amplifier	461339	Oct. 16, 2020 (1Y)
■ -	CO3000	Innco Systems GmbH	Controller	N/A	N/A
■ -	DT5000	Innco Systems GmbH	Turn Table	N/A	N/A
■ -	MA4000-EP	Innco Systems GmbH	Antenna Master	N/A	N/A
■ -	MA4640-XPET	Innco Systems GmbH	Antenna Master	N/A	N/A

All test equipment used is calibrated on a regular basis.

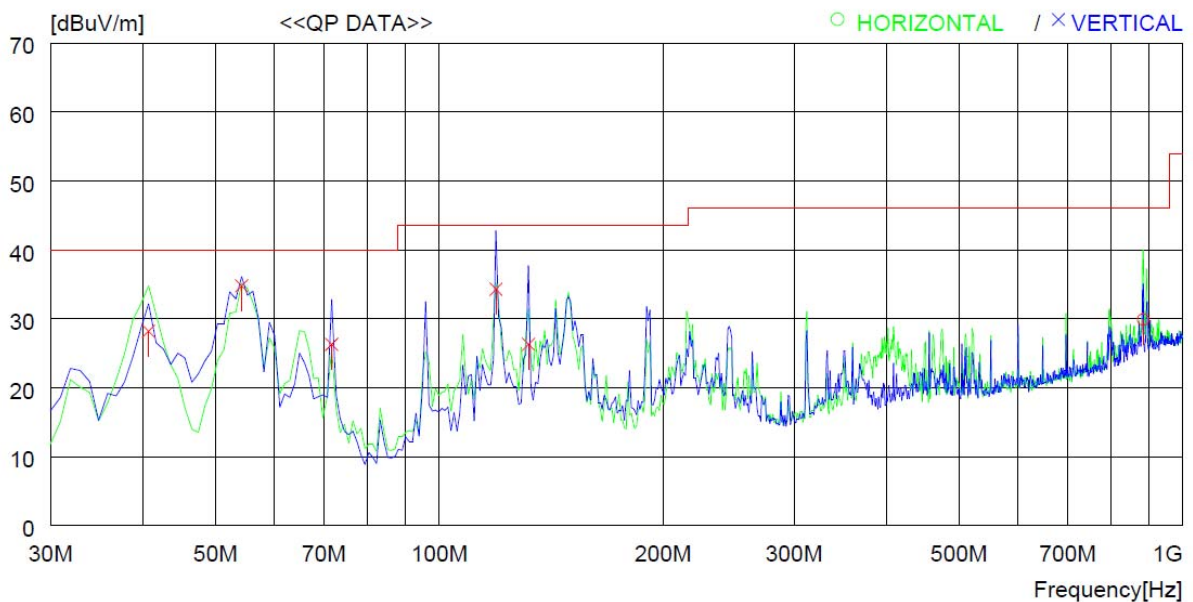
5.2.6 Test Data

-. Test Result : Pass



Tested by: Su-Jin, Kang / Project Engineer

Operating Mode 1 (GPS)			
Frequency range	: 30 MHz ~ 1 000 MHz	Applied Standards	: FCC Part 15 Subpart B
Resolution bandwidth	: 120 kHz	Test Date	: August 27, 2021
Detector Mode	: Quasi-Peak	Measurement distance	: 3 m



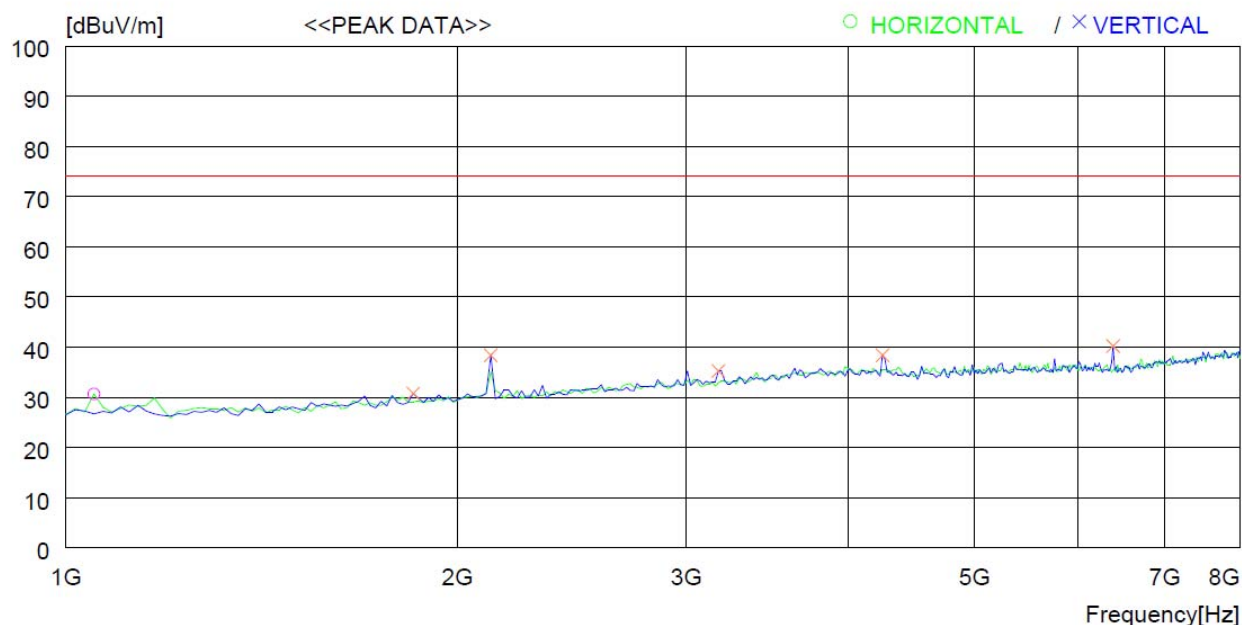
No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	884.559	25.9	21.9	10.0	27.9	29.9	46.0	16.1	100	359
----- Vertical -----										
2	40.670	41.2	13.7	1.6	28.3	28.2	40.0	11.8	100	236
3	54.250	47.1	13.7	2.3	28.3	34.8	40.0	5.2	100	219
4	71.710	42.5	9.4	2.6	28.2	26.3	40.0	13.7	100	261
5	119.240	49.4	9.6	3.4	28.1	34.3	43.5	9.2	200	222
6	131.850	42.1	8.7	3.5	28.0	26.3	43.5	17.2	200	359

Remark: Margin (dB) = Limit – Result

Result = Reading Quasi-Peak + Antenna Factor + Loss – Gain

Loss and Gain in above table means Cable Loss and Pre-amplifier gain.

Operating Mode 1 (GPS)			
Frequency range	: 1 GHz ~ 8 GHz	Test Date	: August 27, 2021
Resolution bandwidth	: 1 MHz	Measurement distance	: 3 m
Detector Mode	: Peak		



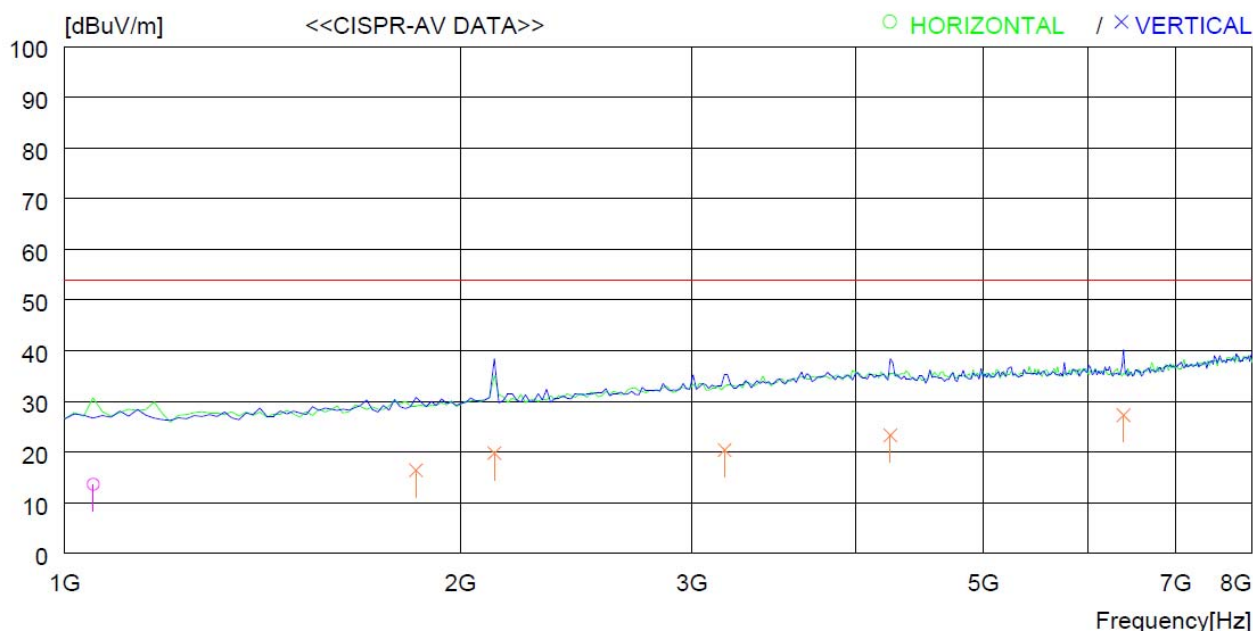
No.	FREQ [MHz]	READING [dBuV]	ANT PEAK FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	1051.000	49.3	24.0	2.2	44.8	30.7	74.0	43.3	200	168
----- Vertical -----										
2	1850.000	46.6	26.5	2.9	45.2	30.8	74.0	43.2	200	359
3	2122.000	53.3	27.4	3.1	45.4	38.4	74.0	35.6	100	158
4	3176.000	47.2	30.1	3.9	45.9	35.3	74.0	38.7	100	359
5	4247.000	47.9	32.3	4.5	46.3	38.4	74.0	35.6	200	359
6	6389.000	46.8	33.9	5.6	46.1	40.2	74.0	33.8	100	359

Remark: Margin (dB) = Limit – Result

Result = Reading Peak + Antenna Factor + Loss – Gain

Loss and Gain in above table means Cable Loss and Pre-amplifier gain.

Operating Mode 1 (GPS)			
Frequency range	: 1 GHz ~ 8 GHz	Test Date	: August 27, 2021
Resolution bandwidth	: 1 MHz	Measurement distance	: 3 m
Detector Mode	: CISPR-Average		



No.	FREQ	READING	ANT	LOSS	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE
	[MHz]	[dBuV]	FACTOR	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[DEG]
----- Horizontal -----										
1	1051.462	32.2	24.0	2.2	44.8	13.6	54.0	40.4	200	168
----- Vertical -----										
2	1850.334	32.2	26.5	2.9	45.2	16.4	54.0	37.6	200	359
3	2122.801	34.7	27.4	3.1	45.4	19.8	54.0	34.2	100	158
4	3177.209	32.3	30.1	3.9	45.9	20.4	54.0	33.6	100	359
5	4247.860	32.8	32.3	4.5	46.3	23.3	54.0	30.7	200	359
6	6388.777	33.9	33.9	5.6	46.1	27.3	54.0	26.7	100	359

Remark: Margin (dB) = Limit – Result

Result = Reading CISPR-Average + Antenna Factor + Loss – Gain

Loss and Gain in above table means Cable Loss and Pre-amplifier gain.

6. SAMPLE CALCULATIONS

$$\text{dB}\mu\text{V} = 20 \text{ Log}_{10}(\mu\text{V})$$

$$\text{Margin} = \text{Limit} - \text{Result}$$

-. Example 1: 0.15200 MHz

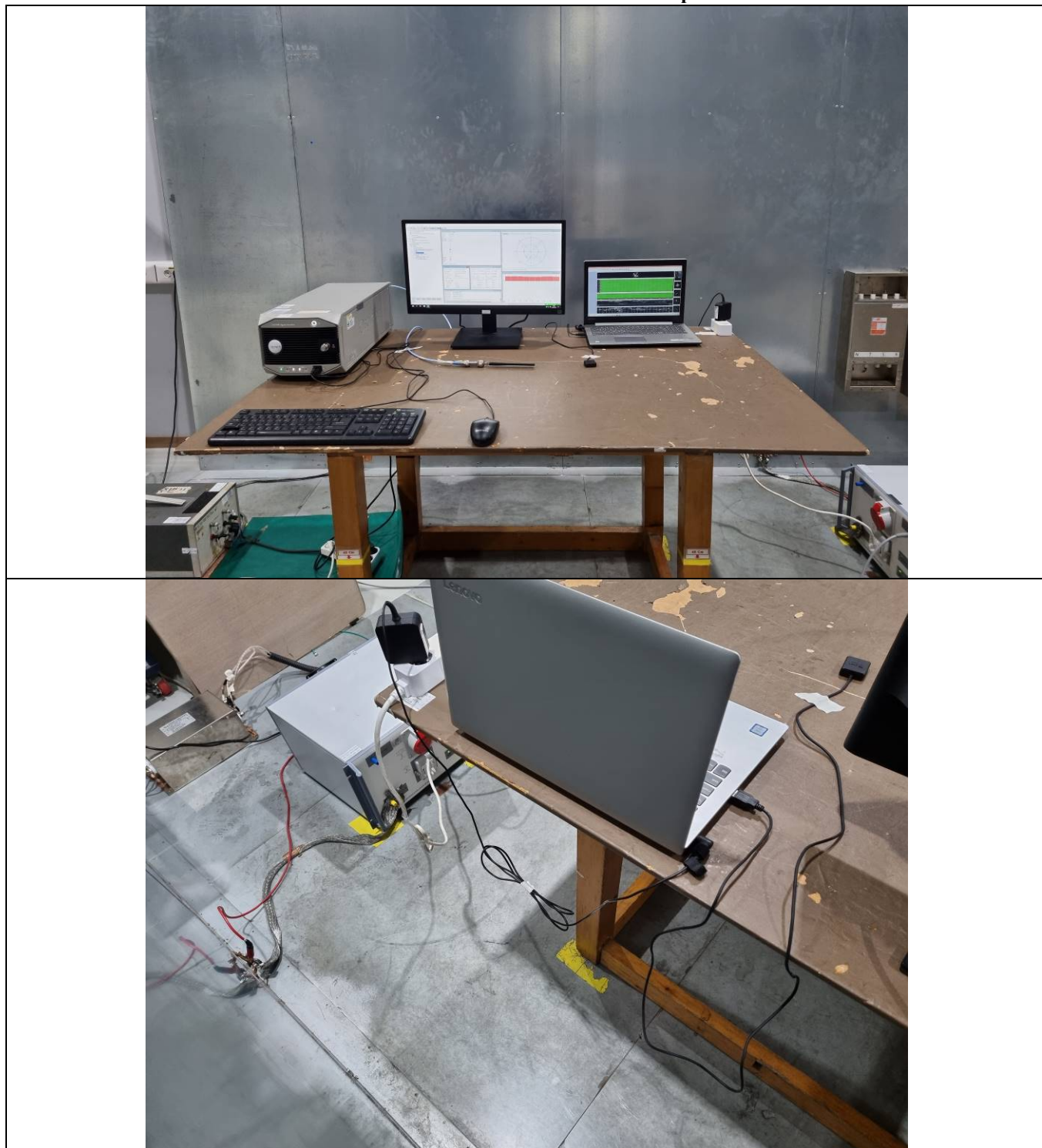
Class B Limit	= 65.9 dB μ V (Quasi-Peak)
Reading	= 39.7 dB μ V
Correction Factor	= Cable Loss + Pulse Limiter
	= 21.3 dB
Total	= 61.0 dB μ V
Margin	= 65.9 dB μ V – 61.0 dB μ V
	= 4.9 dB

-. Example 2: 54.250 MHz

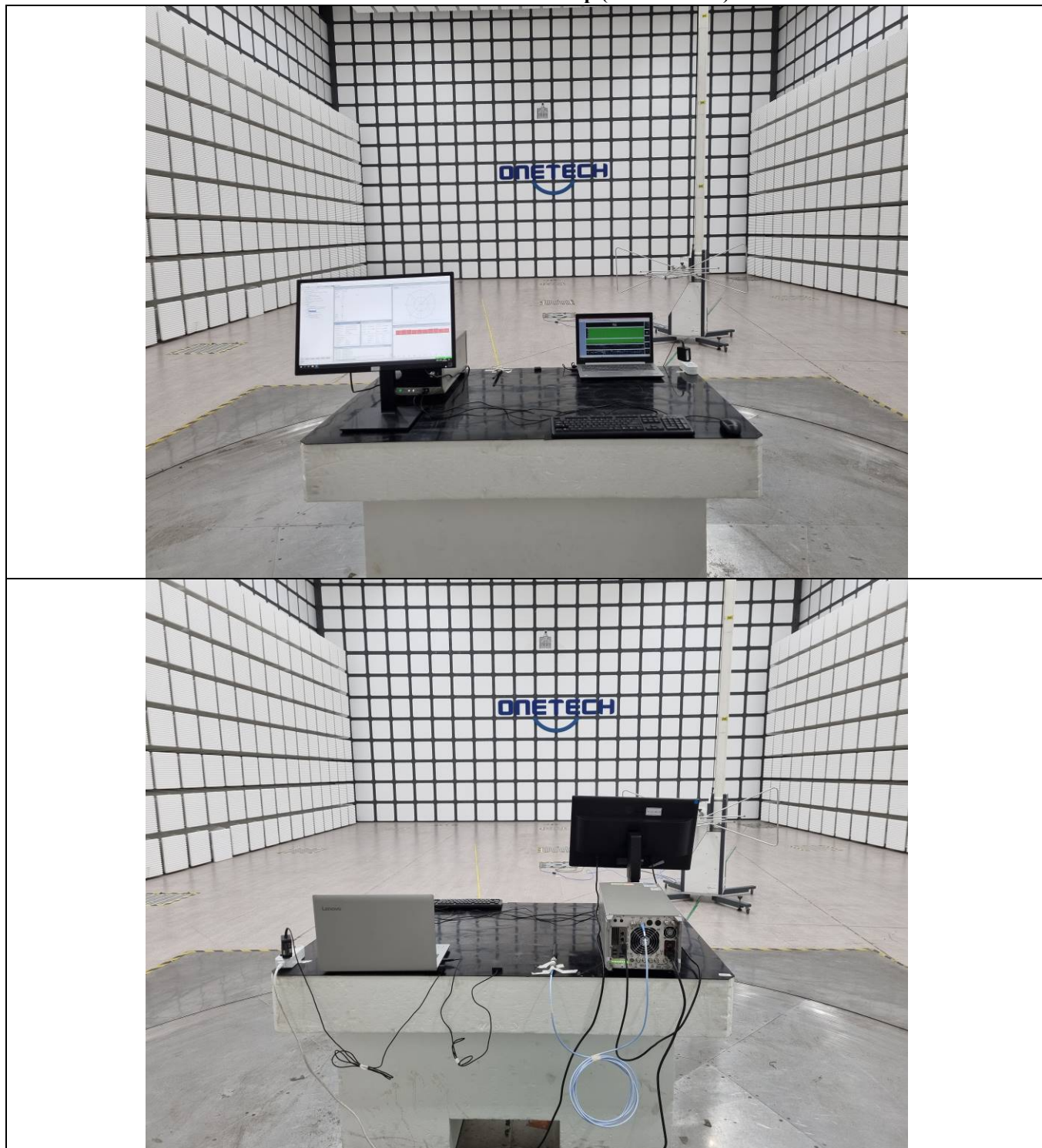
Class B Limit	= 40.0 dB μ V/m (CISPR Average)
Reading	= 47.1 dB μ V
Correction Factor	= Antenna Factor (13.7 dB/m) + Cable Loss (2.3 dB) - Amp. Gain (28.3 dB)
	= -12.3 dB
Total	= 34.8 dB μ V/m
Margin	= 40.0 dB μ V/m – 34.8 dB μ V/m
	= 5.2 dB

APPENDIX A
[TEST SET UP PHOTOGRAPHS]

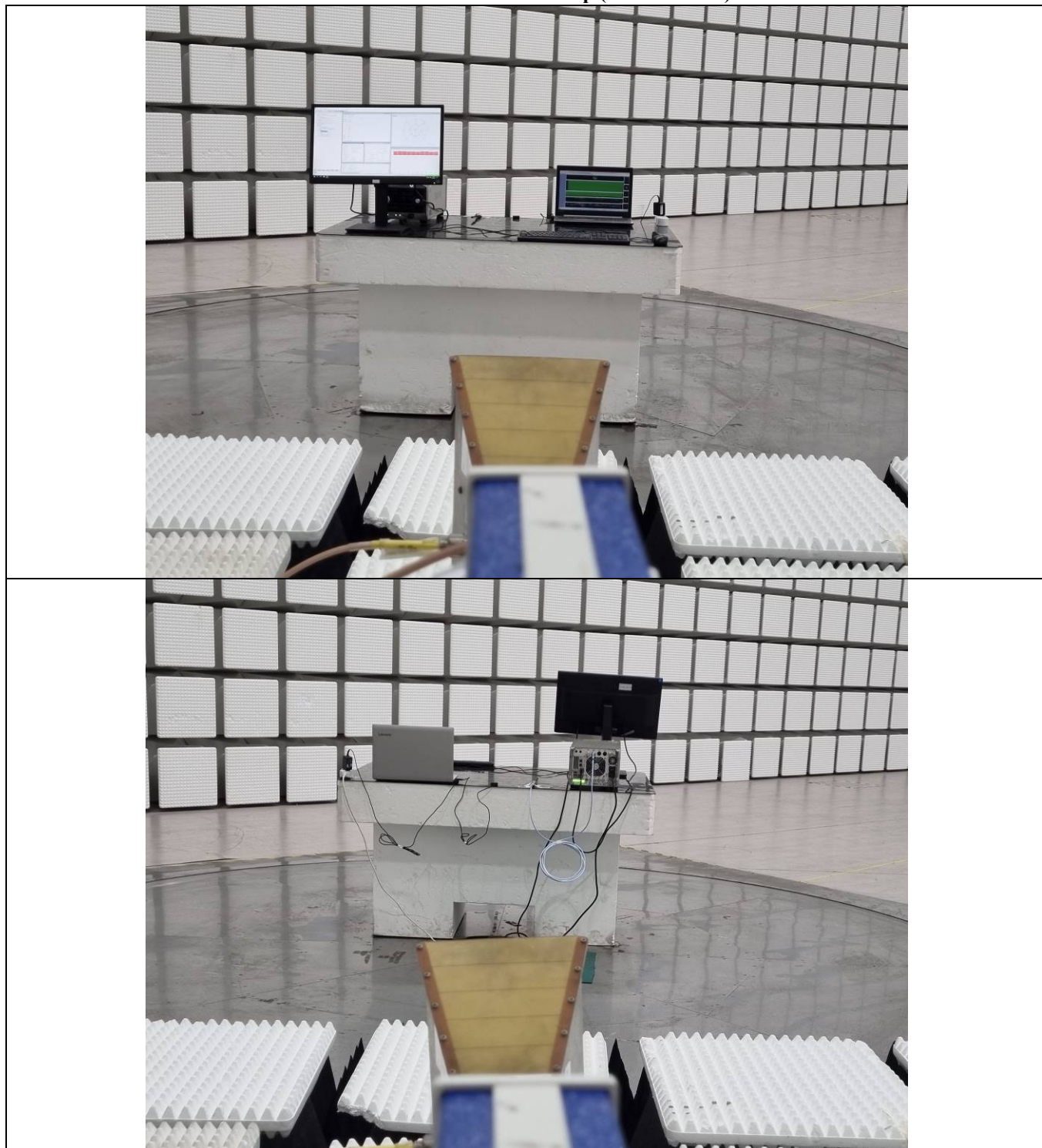
Conducted Emission Test Test Set Up



Radiated Emission Test Set Up (Below 1 GHz)



Radiated Emission Test Set Up (Above 1 GHz)



APPENDIX B
[EXTERNAL PHOTOGRAPHS]





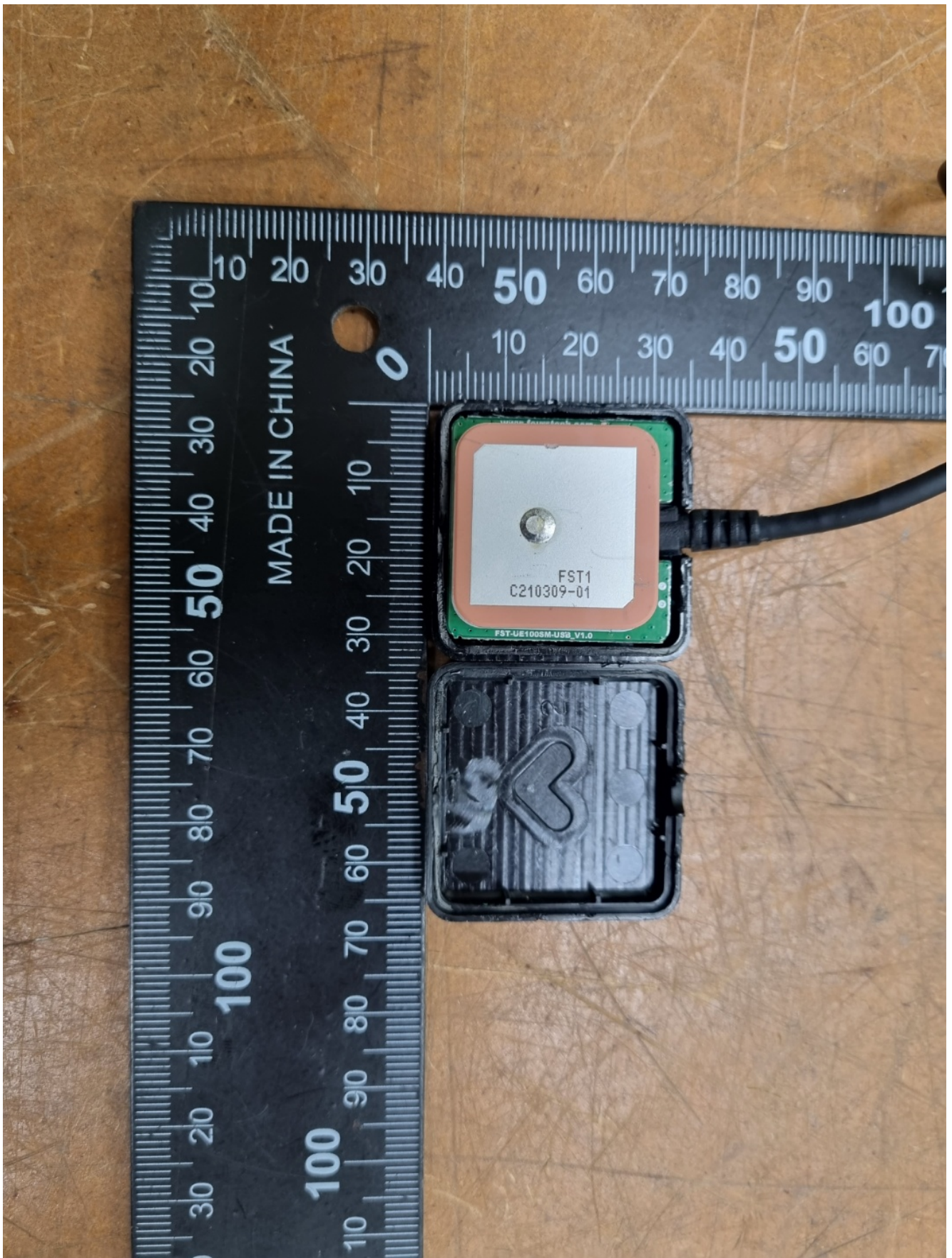


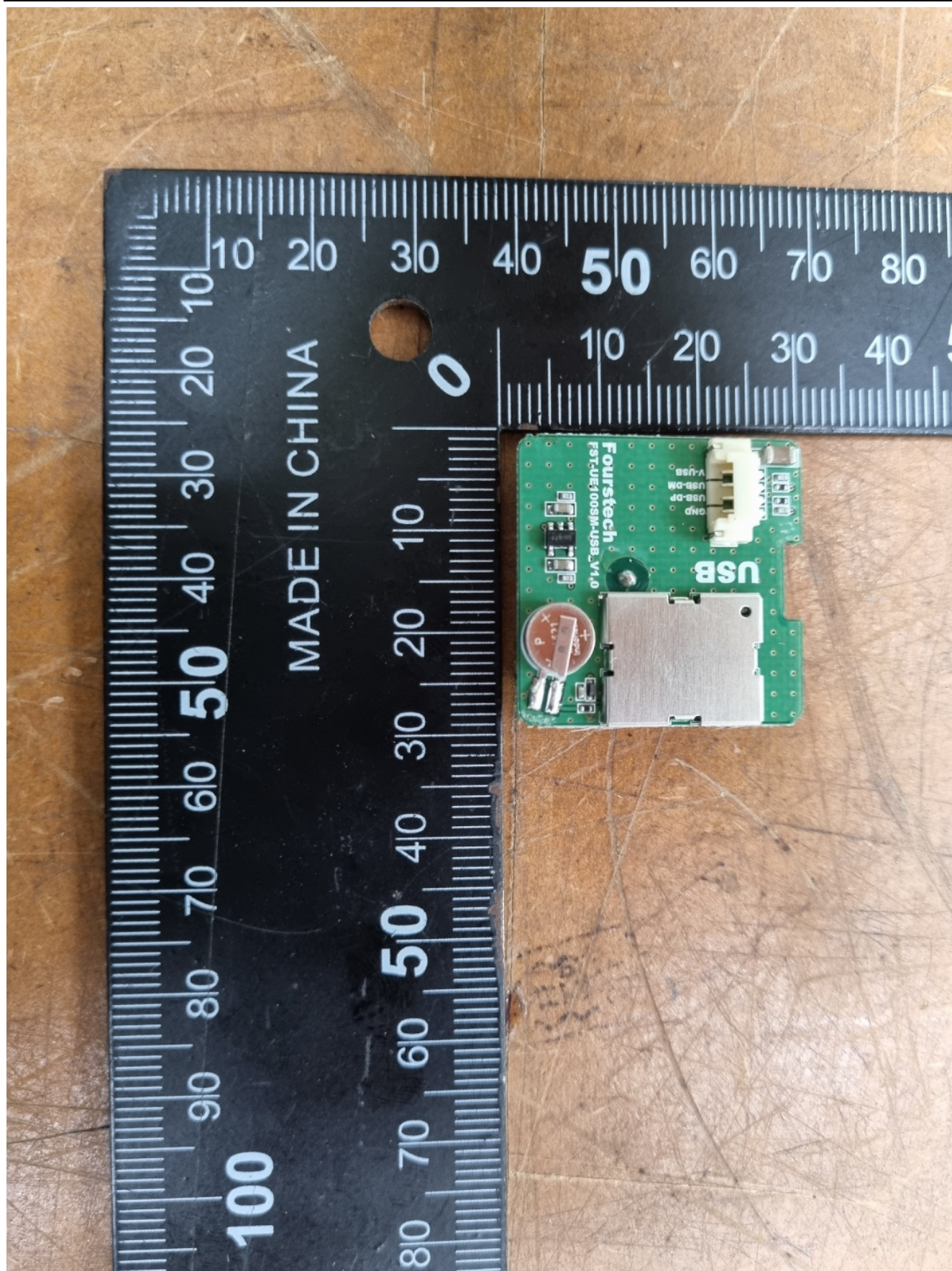


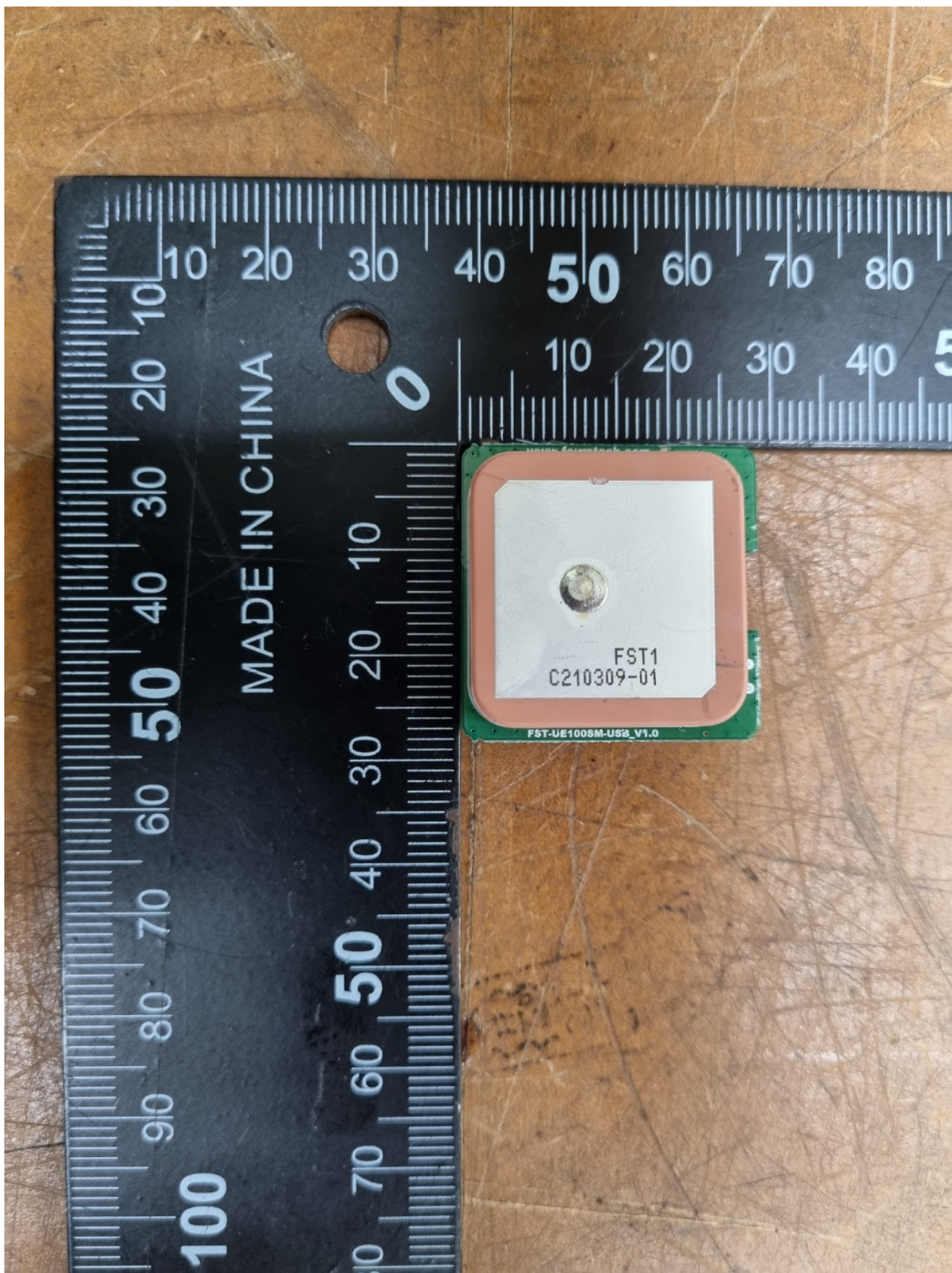




APPENDIX C
[INTERNAL PHOTOGRAPHS]







APPENDIX D
[LABELLING REQUIREMENTS]
[INFORMATION TO THE USER IN USER'S MANUAL]

LABELLING REQUIREMENTS

FCC Part 15 SUBPART B § 15.19 Labeling requirements

(a) In addition to the requirements in part 2 of this chapter, a device subject to certification, or Supplier's Declaration of Conformity shall be labeled as follows:

(1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under part 73 of this chapter, land mobile operation under part 90 of this chapter, etc., shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

(2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules for use with cable television service.

(3) All other devices shall bear the following statement in a conspicuous location on the device:

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.

(4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.

(5) When the device is so small or for such use that it is impracticable to label it with the statement specified under paragraph (a) of this section in a font that is four-point or larger, and the device does not have a display that can show electronic labeling, then the information required by this paragraph shall be placed in the user manual and must also either be placed on the device packaging or on a removable label attached to the device.

For FCC Certification

If the device is subject to Certification: (1) Section 2.925 contains information on identification of the equipment; (2) include a label bearing an FCC Identifier (FCC ID) (Section 2.926) and (3) include the appropriate compliance statement in Section 15.19(a). If the labelling area is considered too small and therefore it is impractical (smaller than the palm of the hand) to display the compliance statement, then the statement may be placed in the user manual or product packaging. However, the device must still be labelled with the FCC ID. If the device is unquestionably too small for the FCC ID to be readable (smaller than 4-6 points), the FCC ID may be placed in the user manual. However, it must be determined that the device itself is too small – the label area allocated to the FCC ID may not be reduced because of over crowded identification of other product and regulatory information. Justification for placing the FCC ID in the manual must be submitted with the initial application for certification for review and approval.

For FCC Supplier's Declaration of Conformity (SDOC)

(a) If a product must be tested and authorized under Supplier's Declaration of Conformity, a compliance information statement shall be supplied with the product at the time of marketing or importation, containing the following information:

- (1) Identification of the product, e.g., name and model number;
- (2) A compliance statement as applicable, e.g., for devices subject to part 15 of this chapter as specified in §15.19(a)(3) of this chapter, that the product complies with the rules; and
- (3) The identification, by name, address and telephone number or Internet contact information, of the responsible party, as defined in §2.909. The responsible party for Supplier's Declaration of Conformity must be located within the United States.

(b) If a product is assembled from modular components (e.g., enclosures, power supplies and CPU boards) that, by themselves, are authorized under a Supplier's Declaration of Conformity and/or a grant of certification, and the assembled product is also subject to authorization under Supplier's Declaration of Conformity but, in accordance with the applicable regulations, does not require additional testing, the product shall be supplied, at the time of marketing or importation, with a compliance information statement containing the following information:

- (1) Identification of the assembled product, e.g., name and model number.
- (2) Identification of the modular components used in the assembly. A modular component authorized under Supplier's Declaration of Conformity shall be identified as specified in paragraph (a)(1) of this section. A modular component authorized under a grant of certification shall be identified by name and model number (if applicable) along with the FCC Identifier number.
- (3) A statement that the product complies with part 15 of this chapter.
- (4) The identification, by name, address and telephone number or Internet contact information, of the responsible party who assembled the product from modular components, as defined in §2.909. The responsible party for Supplier's Declaration of Conformity must be located within the United States.
- (5) Copies of the compliance information statements for each modular component used in the system that is authorized under Supplier's Declaration of Conformity.

(c) 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 by this section 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. The information may be provided electronically as permitted in §2.935.

For ICES-003

The manufacturer, importer or supplier shall meet the labelling requirements set out in this section and in Notice 2014-DRS1003 for electronic labelling for every unit:

- i. prior to marketing in Canada, for ITE manufactured in Canada and
- ii. prior to importation into Canada, for imported ITE.

Each unit of an ITE model shall bear a label (see below) that represents the manufacturer's or the importer's SDoC with Innovation, Science and Economic Development Canada's ICES-003. This label shall be permanently affixed to the ITE or displayed electronically and its text must be clearly legible. If the dimensions of the device are too small or if it is not practical to place the label on the ITE and electronic labelling has not been implemented, the label shall be, upon agreement with Innovation, Science and Economic Development Canada, placed in a prominent location in the user manual supplied with the ITE. The user manual may be in an electronic format and must be readily available.

Innovation, Science and Economic Development Canada ICES-003 Compliance Label:

CAN ICES-3 (*)/NMB-3(*)

* Insert either "A" or "B" but not both to identify the applicable Class of ITE.

PROPOSED LABEL

The label included following statement will be attached on product or the compliance statement can be observed in a prominent location in the instruction manual.

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.

PROPOSED LABEL

The label included following statement will be attached on product or the compliance statement can be observed in a prominent location in the instruction manual.

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.

INFORMATION TO THE USER IN USER'S MANUAL

For FCC: The instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

For a **Class A** digital device or peripheral

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

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

For a **Class B** digital device or peripheral

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 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.

WARNING

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.