Test Report

Date : 2017-07-25
No. : HM170812

Applicant:	Arwin Technology Limited Unit 716B, 7/F, Enterprise Place, No.5 Science Park West Avenue, N.T., Hong Kong
Manufacturer:	Arwin Technology Limited Unit 716B, 7/F, Enterprise Place, No.5 Science Park West Avenue, N.t., Hong Kong
Description of Sample(s):	Product: Wireless Climate Sensor Brand Name: Nano S Model Number: S1100 FCC ID: 2AMWTS1100
Date Sample(s) Received:	2017-06-29
Date Tested:	2017-07-10 to 2017-07-14
Investigation Requested:	Perform ElectroMagnetic Interference measurement in accordance with FCC 47 CFR [Codes of Federal Regulations] Part 15: 2016 according to ANSI C63.10:2013 for FCC Certification.
Conclusion(s):	The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.
Remark(s):	The tested model supports Bluetooth (BLE) single mode only

CHEUNG Chi, Kenneth
Authorized Signatory
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

Test Report

CONTENT:

1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.
EMC Laboratory
10 Dai Wang Street, Taipo Industrial Estate

Telephone: (852) 26661888
Fax: (852) 26644353

1.2 Equipment Under Test [EUT]
Description of Sample(s)

Product:	Wireless Climate Sensor
Manufacturer:	Arwin Technology Limited Unit 716B, 7/F, Enterprise Place, No.5 Science Park West Avenue, N.T., Hong Kong
Brand Name:	Nano S
Model Number:	S1100
Rating:	Input: 3.0Vd.c, “CR2450” x 1

1.2.1 Description of EUT Operation

The Equipment Under Test (EUT) is Wireless Climate Sensor, which is a BLE single mode device. The R.F. signal was modulated by IC; the type of modulation used was GFSK.

1.3 Date of Order

2017-06-29

1.4 Submitted Sample(s):

2 Samples

1.5 Test Duration

2017-07-10 to 2017-07-14

1.6 Country of Origin

China

1.7 Antenna Details

Antenna Type (Bluetooth):	Circuit printed - Inverted-F Antenna
Antenna Gain (Bluetooth):	1dBi

2.0 Technical Details

2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2016 Regulations according to ANSI C63.10: 2013 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION (BLUETOOTH)
Results Summary

Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Fail	N/A
Maximum Peak Conducted Output Power	FCC 47CFR 15.247(b)(1)	ANSI C63.10: 2013	N/A	☒	☐	☐
Radiated Spurious Emissions	FCC 47CFR 15.209	ANSI C63.10: 2013	N/A	☒	☐	☐
Power Spectral Density	FCC 47CFR 15.247(a)(1)	ANSI C63.10: 2013	N/A	☒	☐	☐
6dB Bandwidth	FCC 47CFR 15.247(a)(1)	ANSI C63.10: 2013	N/A	☒	☐	☐
Band-edge measurement (Radiated)	FCC 47CFR 15.247(d)	ANSI C63.10: 2013	N/A	☒	☐	☐
Conducted Emissions	FCC 47CFR 15.207	ANSI C63.10: 2013	N/A	☐	☐	☒
Antenna requirement	FCC 47CFR 15.203	N/A	N/A	☒	☐	☐
RF Exposure	FCC 47CFR 15.247(i)	N/A	N/A	☐	☐	☒

Note: N/A – Not Applicable

2.3 Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate in the table below is the worst case rate with respect to the specific test item.
Investigation has been done on all the possible configurations for searching the worst cases.
The following table is a list of the test modes shown in this test report.

Bluetooth

Test Items	Mode
Maximum Peak Conducted Output Power	GFSK
Power Spectral Density	GFSK
Radiated Spurious Emissions	GFSK
Band-edge compliance of Radiated Emission	GFSK

3.0 Test Results

3.1 Emission

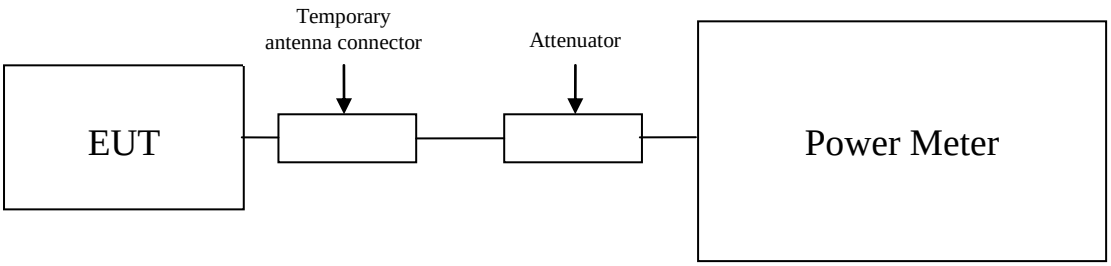
3.1.1 Maximum Peak Conducted Output Power

Test Requirement:	FCC 47CFR 15.247(b)(2)
Test Method:	ANSI C63.10:2013
Test Date:	2017-07-12
Mode of Operation:	Tx mode

Test Method:

The RF output of the EUT was connected to the Power Meter. All the attenuation or cable loss will be added to the measured maximum output power. The results are recorded in dBm.

Test Setup:



Limits for Maximum Peak Conducted Output Power [FCC 47CFR 15.247]:

2400–2483.5 MHz band: The maximum peak output power shall not exceeded the following limits: For frequency hopping systems employing at least 75 hopping channels: 1 Watt For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watts For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt

Results of Bluetooth mode (Fundamental Power): Pass

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2402	0.000427

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2440	0.000537

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2480	0.000670

	:	30MHz to 1GHz	1.7dB
Calculated measurement uncertainty		1GHz to 18GHz	1.7dB

Remark:
1. All test data for each data rate were verified, but only the worst case was reported.
2. The EUT is programmed to transmit signals continuously for all testing.

3.1.2 Radiated Spurious Emissions

Test Requirement:	FCC 47CFR 15.209
Test Method:	ANSI C63.10: 2013
Test Date:	2017-07-13
Mode of Operation:	Tx mode (Bluetooth)

Test Method:

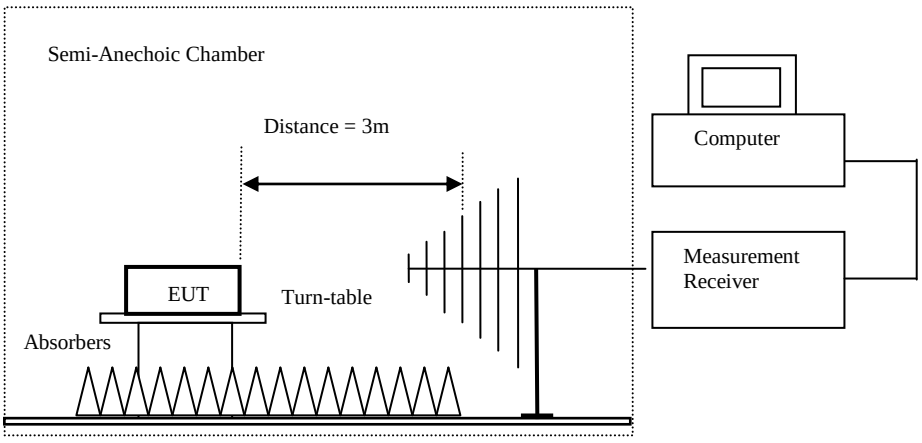
For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. For emission measurements above 1 GHz, the sample was placed 1.5m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.
The frequency range from 9kHz to the 10^{th} harmonic of the fundamental transmitter was observed.

* Semi-anechoic chamber located on the G/F of "The Hong Kong Standards and Testing Centre Ltd." with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Spectrum Analyzer Setting:

9KHz – 30MHz (Pk & Av)	RBW:	10kHz
	VBW:	30kHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
30MHz – 1GHz (QP)	RBW:	120kHz
	VBW:	120kHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
Above 1GHz (Pk & Av)	RBW:	1MHz
	VBW:	3MHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold

Test Setup:



Ground Plane

- Absorbers placed on top of the ground plane are for measurements above 1000MHz only.
- Measurements between 30MHz to 1000MHz made with Bi-log antennas, above 1000MHz horn antennas are used, 9kHz to 30MHz loop antennas are used.

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	[μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Tx mode (Bluetooth: 2402.0 MHz) (GFSK mode) (9kHz – 30MHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level dBuV	Correction Factor dB/m	Field Strength dBuV/m	Field Strength uV/m	Limit uV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Result of Tx mode (Bluetooth: 2402.0 MHz) (GFSK mode) (30MHz – 1GHz): Pass

Field Strength of Spurious Emissions Quasi-Peak Value						
Frequency MHz	Measured Level dBuV	Correction Factor dB/m	Field Strength dBuV/m	Field Strength uV/m	Limit uV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Result of Tx mode (Bluetooth: 2402.0 MHz) (GFSK mode) (Above 1GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4804.1	11.3	32.1	43.4	74.0	30.6	Horizontal
7206.3	5.1	38.6	43.7	74.0	30.3	Horizontal
9608.3	3.3	40.3	43.6	74.0	30.4	Horizontal
12010.7	2.3	43.7	46.0	74.0	28.0	Horizontal

Result of Tx mode (Bluetooth: 2402.0 MHz) (GFSK mode) (Above 1GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4804.1	0.7	32.1	32.8	54.0	21.2	Horizontal
7206.3	-2.7	38.6	35.9	54.0	18.1	Horizontal
9608.3	-2.3	40.3	38.0	54.0	16.0	Horizontal
12010.7	-2.3	43.7	41.4	54.0	12.6	Horizontal

Result of Tx mode (Bluetooth: 2440.0 MHz) (GFSK mode) (9kHz – 30MHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level dBuV	Correction Factor dB/m	Field Strength dBuV/m	Field Strength uV/m	Limit uV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Results of Tx mode (Bluetooth: 2440.0 MHz) (GFSK mode) (30MHz – 1000MHz): PASS

Field Strength of Spurious Emissions Quasi-Peak Value						
Frequency MHz	Measured Level dBuV	Correction Factor dB/m	Field Strength dBuV/m	Field Strength uV/m	Limit uV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Result of Tx mode (Bluetooth: 2440.0 MHz) (GFSK mode) (Above 1GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4880.1	10.3	33.5	43.8	74.0	30.2	Horizontal
7320.3	5.1	39.7	44.8	74.0	29.2	Horizontal
9760.7	4.2	40.7	44.9	74.0	29.1	Horizontal
12220.9	2.1	43.1	45.2	74.0	28.8	Horizontal

Result of Tx mode (Bluetooth: 2440.0 MHz) (GFSK mode) (Above 1GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4880.1	0.9	33.5	34.4	54.0	19.6	Horizontal
7320.3	-2.1	39.7	37.6	54.0	16.4	Horizontal
9760.7	-3.1	40.7	37.6	54.0	16.4	Horizontal
12220.9	-3.3	43.1	39.8	54.0	14.2	Horizontal

Result of Tx mode (Bluetooth: 2480.0 MHz) (GFSK mode) (9kHz – 30MHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level dBuV	Correction Factor dB/m	Field Strength dBuV/m	Field Strength uV/m	Limit uV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Results of Tx mode (Bluetooth: 2480.0 MHz) (GFSK mode) (30MHz – 1000MHz): PASS

Field Strength of Spurious Emissions Quasi-Peak Value						
Frequency MHz	Measured Level dBuV	Correction Factor dB/m	Field Strength dBuV/m	Field Strength uV/m	Limit uV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Result of Tx mode (Bluetooth: 2480.0 MHz) (GFSK mode) (Above 1GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4960.4	10.1	33.9	44.0	74.0	30.0	Horizontal
7440.7	4.7	40.3	45.0	74.0	29.0	Horizontal
9920.9	3.9	40.9	44.8	74.0	29.2	Horizontal
12401.1	2.3	43.5	45.8	74.0	28.2	Horizontal

Result of Tx mode (Bluetooth: 2480.0 MHz) (GFSK mode) (Above 1GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4960.4	0.8	42.7	43.5	54.0	10.5	Horizontal
7440.7	-2.3	46.5	44.2	54.0	9.8	Horizontal
9920.9	-3.3	49.7	46.4	54.0	7.6	Horizontal
12401.1	-3.1	52.7	49.6	54.0	4.4	Horizontal

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty: (9kHz - 30MHz): 2.4dB
(30MHz - 18GHz): 5.0dB
(18GHz - 26GHz): 5.24dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

3.1.3 Power Spectral Density

Test Requirement:	FCC 47CFR 15.247(e)
Test Method:	ANSI C63.10:2013
Test Date:	2017-07-14
Mode of Operation:	Tx mode

Test Method:

The RF output of the EUT was connected to the spectrum analyzer. Set the fundamental frequency as the center frequency of the spectral analyzer. Use RBW=3kHz , VBW= 10KHz , Set the span to 1.5 times the DTS channel bandwidth. Detector = peak, Sweep time = auto couple , Trace mode = max hold. Measure the Power Spectral Density (PSD) and record the results in dBm.

Test Setup:

As Test Setup of clause 3.1.3 in this test report.

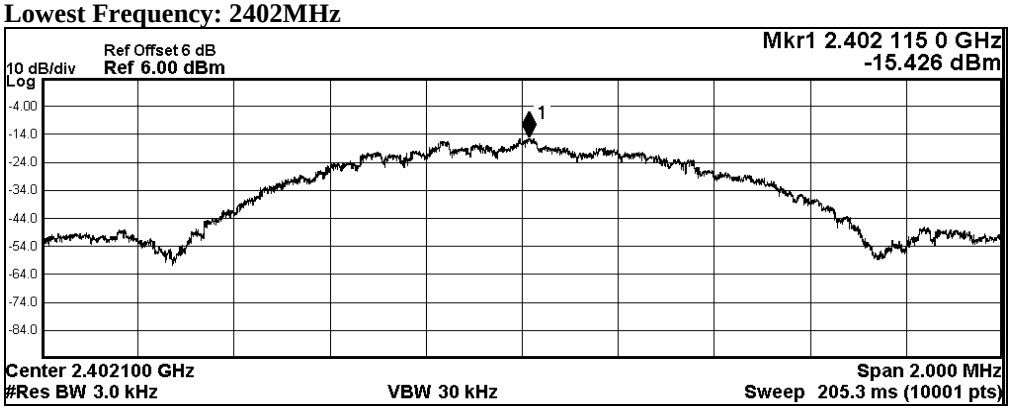
Test Limit:
The maximum power spectral density (PSD) shall not exceeded 8dBm in any 3kHz band.

Result of on mode: Pass

Maximum power spectral density

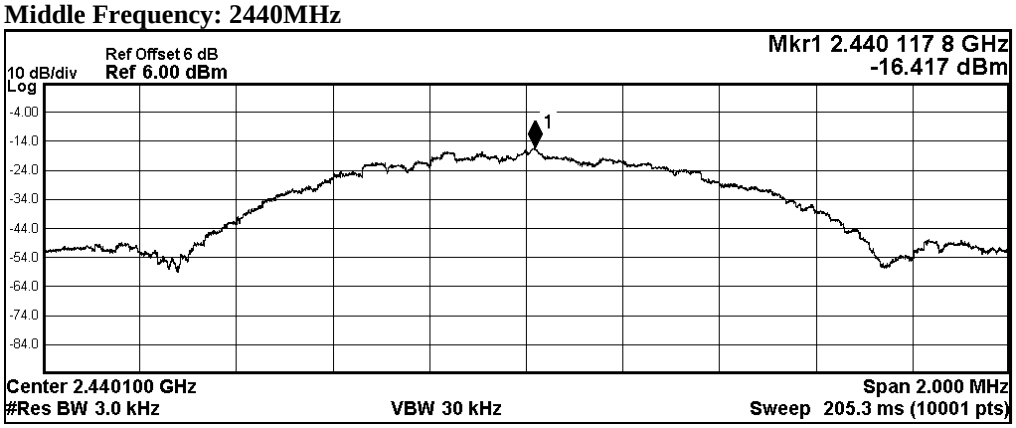
Transmitter Frequency (MHz)	Maximum Power spectral density level / 3kHz band (dBm)	Maximum Power spectral density / 3kHz band limit
2402	-15.4	**8dBm**
2440	-16.4	**8dBm**
2480	-17.7	**8dBm**

Lowest Frequency: 2402MHz



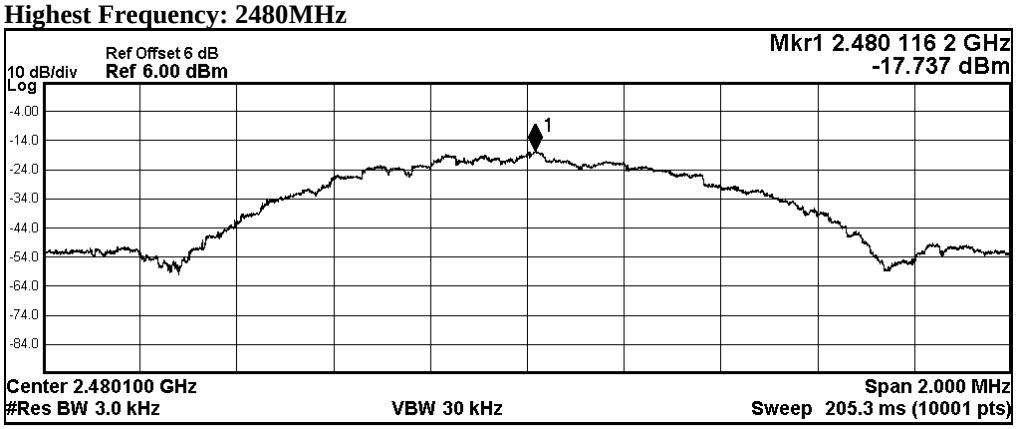
PSD at 3kHz = -15.4dBm/3kHz

Middle Frequency: 2440MHz



PSD at 3kHz = -16.4dBm/3kHz

Highest Frequency: 2480MHz



PSD at 3kHz = -17.7dBm

3.1.5 6dB Bandwidth Measurement

Test Requirement:	FCC 47CFR 15.247(a)(2)
Test Method:	ANSI C63.10-2013
Test Date:	2017-07-14
Mode of Operation:	Tx mode

Remark:
The result has been done on all the possible configurations for searching the worst cases.

Test Method:

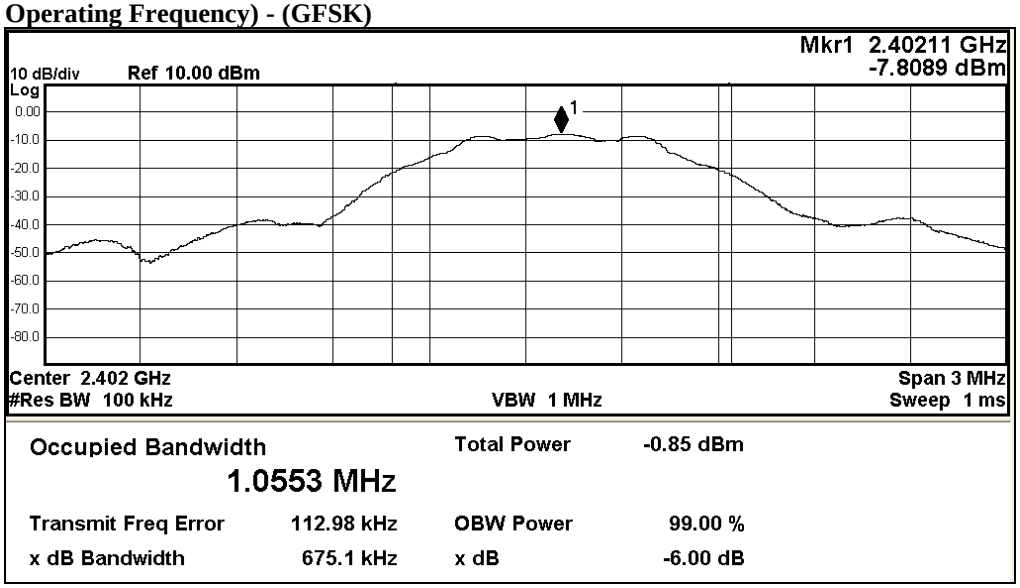
The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Test Setup:

As Test Setup of clause 3.1.3 in this test report.

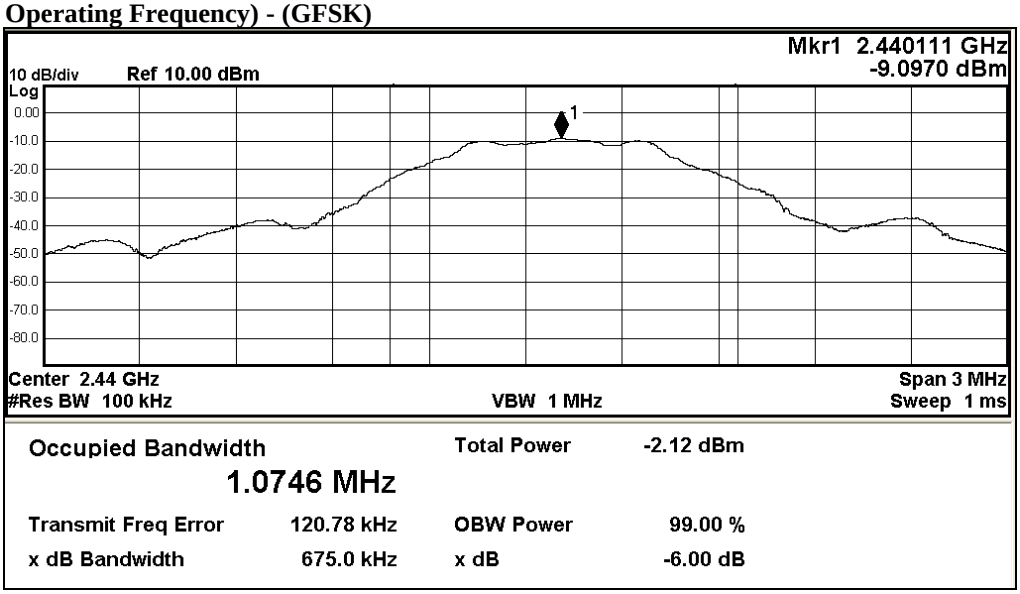
Fundamental Frequency [MHz]	6dB Bandwidth [kHz]	FCC Limits [kHz]
2402	675.1	>500kHz

(Lowest Operating Frequency) - (GFSK)



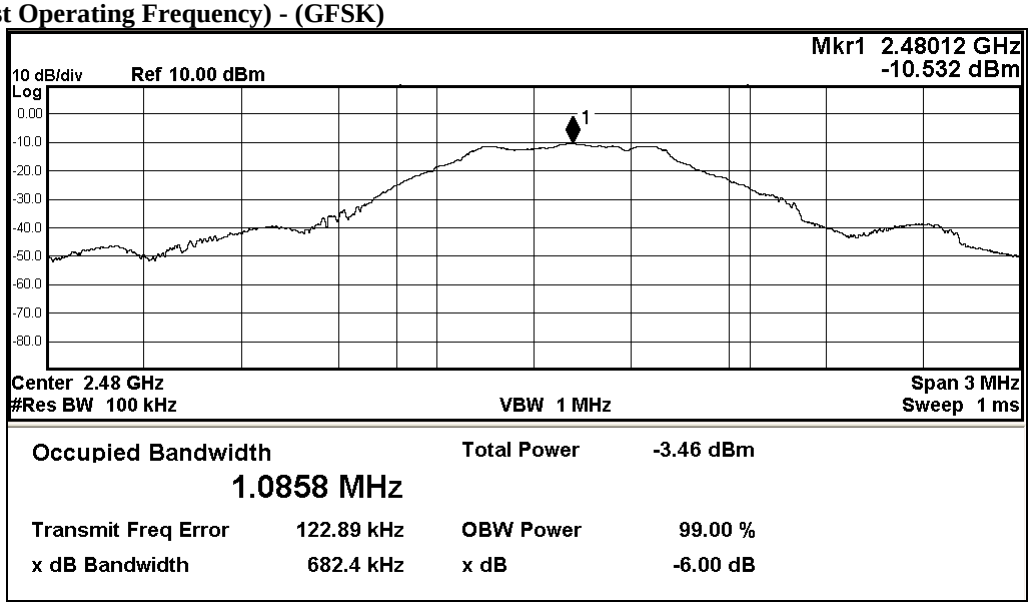
Fundamental Frequency [MHz]	6dB Bandwidth [kHz]	FCC Limits [kHz]
2440	675.0	>500kHz

(Middle Operating Frequency) - (GFSK)



Fundamental Frequency [MHz]	6dB Bandwidth [kHz]	FCC Limits [kHz]
2480	682.4	>500kHz

(Highest Operating Frequency) - (GFSK)



3.1.6 Band-edge Compliance of RF Radiated Emissions Measurement:

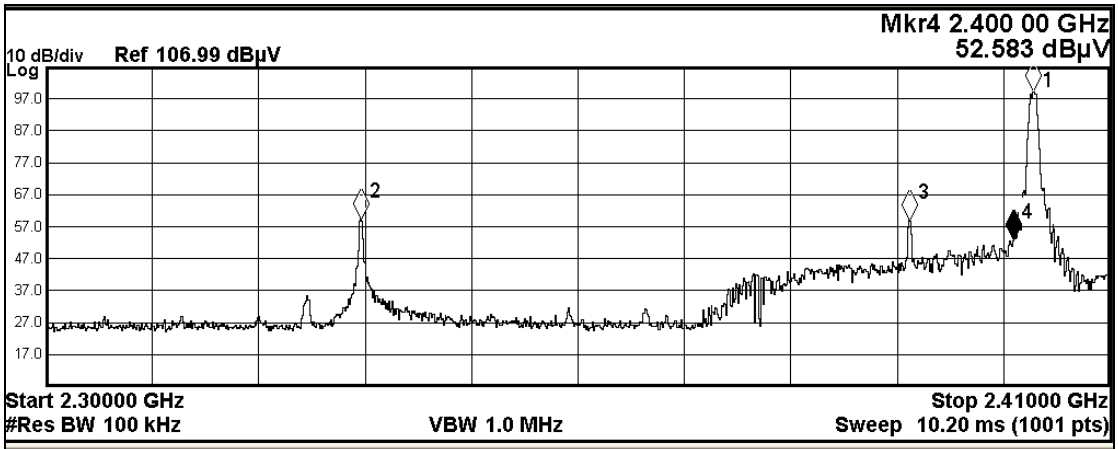
Limit：

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Band-edge Compliance of RF Radiated Emissions Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
2400 - Lowest Fundamental (2402)	40.2

Band-edge Compliance of RF Radiated Emissions (Bluetooth Lowest frequency channel)

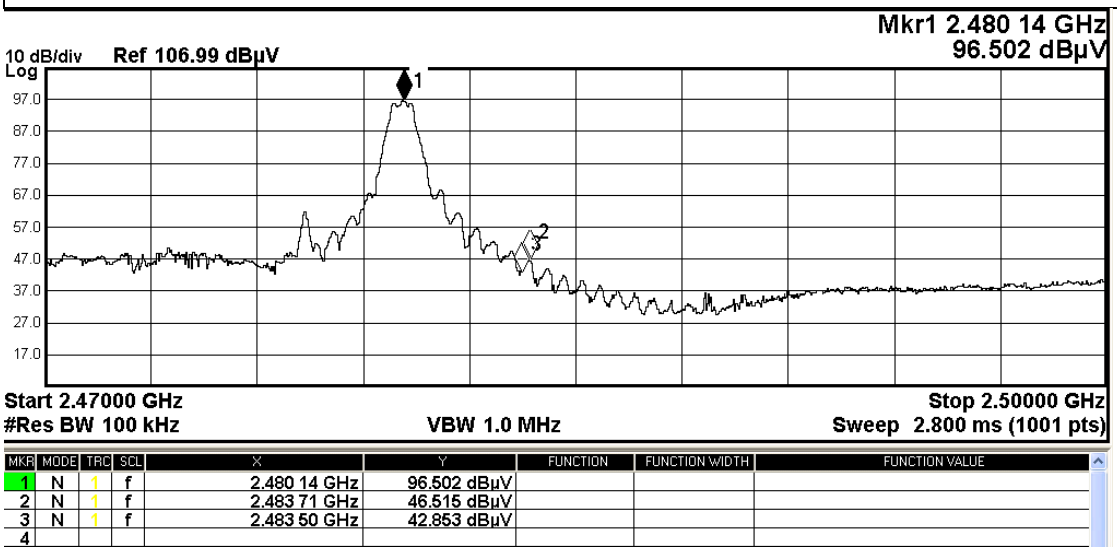


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.402 08 GHz	99.146 dBµV			
2	N	1	f	2.332 56 GHz	59.304 dBµV			
3	N	1	f	2.389 32 GHz	58.960 dBµV			
4	N	1	f	2.400 00 GHz	52.583 dBµV			

Band-edge Compliance of RF Radiated Emissions Measurement:

Frequency Range [MHz]	Radiated Emission Attenuated below the Fundamental [dB]
Highest Fundamental (2480) - 2483.5	50.0

Band-edge Compliance of RF Radiated Emissions (Bluetooth Highest frequency channel)



Field Strength of Band-edge Emissions Peak Value						
Frequency MHz	Measured Level @3m dBµV/m	Correction Factor dBµV/m	Field Strength dBµV/m	Field Strength µV/m	Limit @3m µV/m	E-Field Polarity
2389.3	31.1	27.8	58.9	881.0	5,000	Horizontal
2332.7	32.8	27.1	59.9	988.6	5,000	Horizontal
2483.7	18.7	27.8	46.5	211.3	5,000	Horizontal

Field Strength of Band-edge Emissions Average Value						
Frequency MHz	Measured Level @3m dBµV/m	Correction Factor dBµV/m	Field Strength dBµV/m	Field Strength µV/m	Limit @3m µV/m	E-Field Polarity
2389.3	18.9	27.8	46.7	216.3	500	Horizontal
2332.7	20.3	27.1	47.4	234.4	500	Horizontal
2483.7	8.9	27.8	36.7	68.4	500	Horizontal

3.1.11 Antenna Requirement

Test Requirements: § 15.203

Test Specification:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Results:

Bluetooth:
This is Circuit printed - Inverted-F Antenna. There is no external antenna, the antenna gain = 1dBi. User is unable to remove or changed the Antenna.

Appendix A

List of Measurement Equipment

LIST OF MEASUREMENT EQUIPMENT

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-LINDGREN	FACT-3	--	2017/04/24	2018/04/24
EM356	ANTENNA POSITIONING TOWER	ETS-LINDGREN	2171B	00150346	N/A	N/A
EM354	BICONILOG ANTENNA	ETS-LINDGREN	3143B	00142073	2016/02/29	2018/02/29
EM229	EMI TEST RECEIVER	R&S	ESIB40	100248	2017/06/01	2018/06/01
EM299	DOUBLE-RIDGED WAVEGUIDE HORN ANTENNA	ETS-LINDGREN	3115	00114120	2016/04/27	2018/04/27
EM300	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	2016/05/13	2018/05/13
EM301	PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-10	00130988	2016/05/13	2018/05/13
EM302	PRECISION OMNIDIRECTIONAL DIPOLE (1 – 6GHZ)	SEIBERSDORF LABORATORIES	POD 16	161806/L	2016/05/11	2018/05/11
EM303	PRECISION OMNIDIRECTIONAL DIPOLE (6 – 18GHZ)	SEIBERSDORF LABORATORIES	POD 618	6181908/L	2016/05/11	2018/05/11
EM318	USB WIDEBAND POWER SENSOR	AGILENT	U2022XA	MY53470001	2017/03/23	2018/03/23
EM353	LOOP ANTENNA	ETS_LINDGREN	6502	00206533	2016/03/16	2018/03/16

Remarks:-

CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined

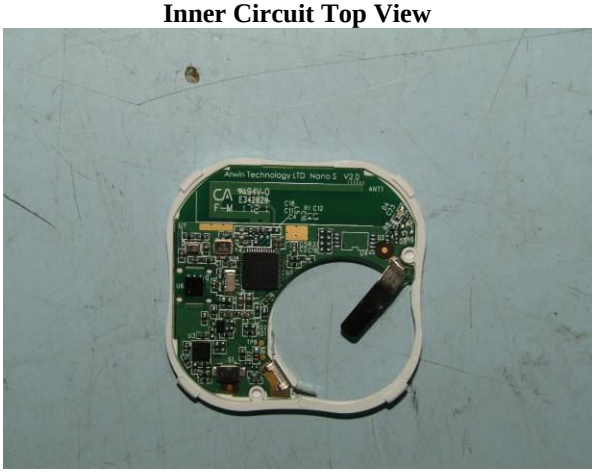
Appendix B

Photographs of EUT

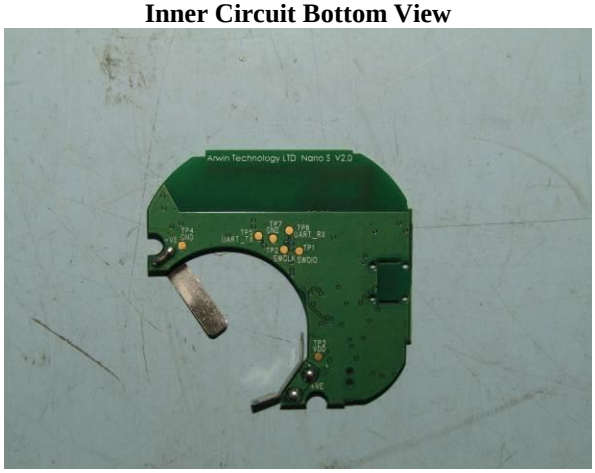
Front View of the product

Rear View of the product

Inner Circuit Top View

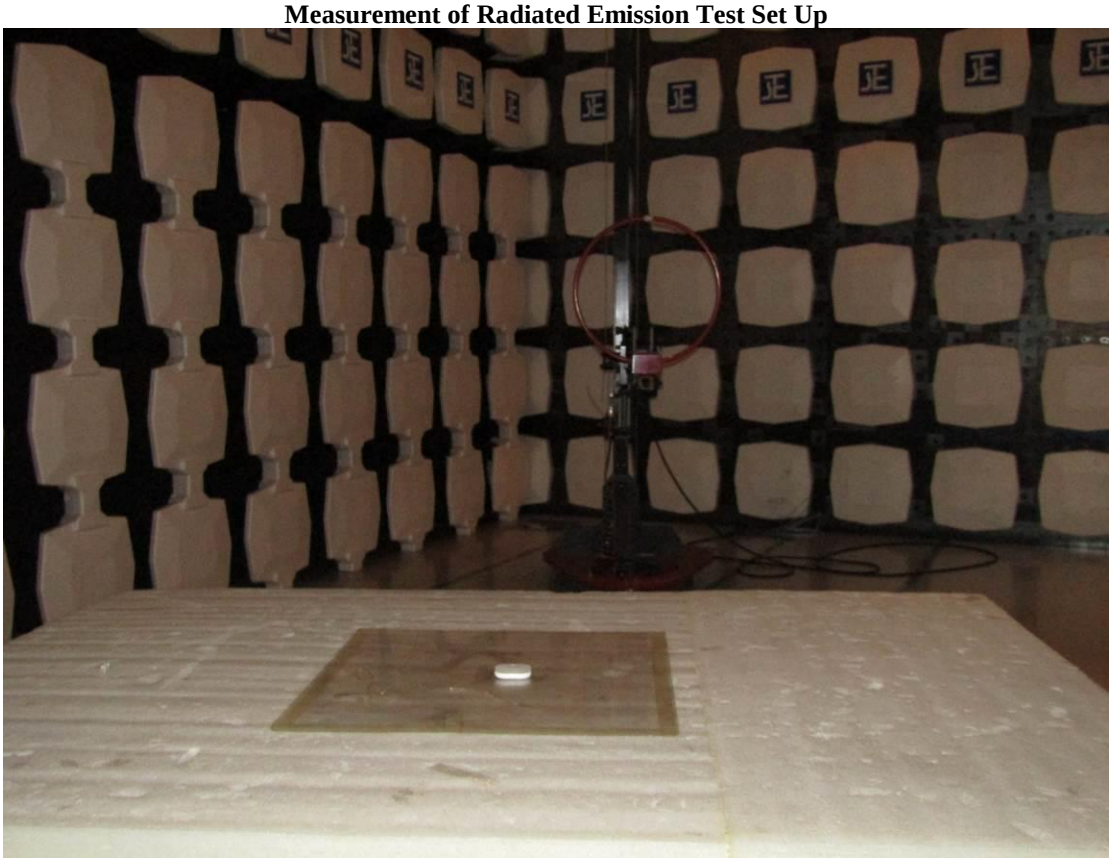


Inner Circuit Bottom View

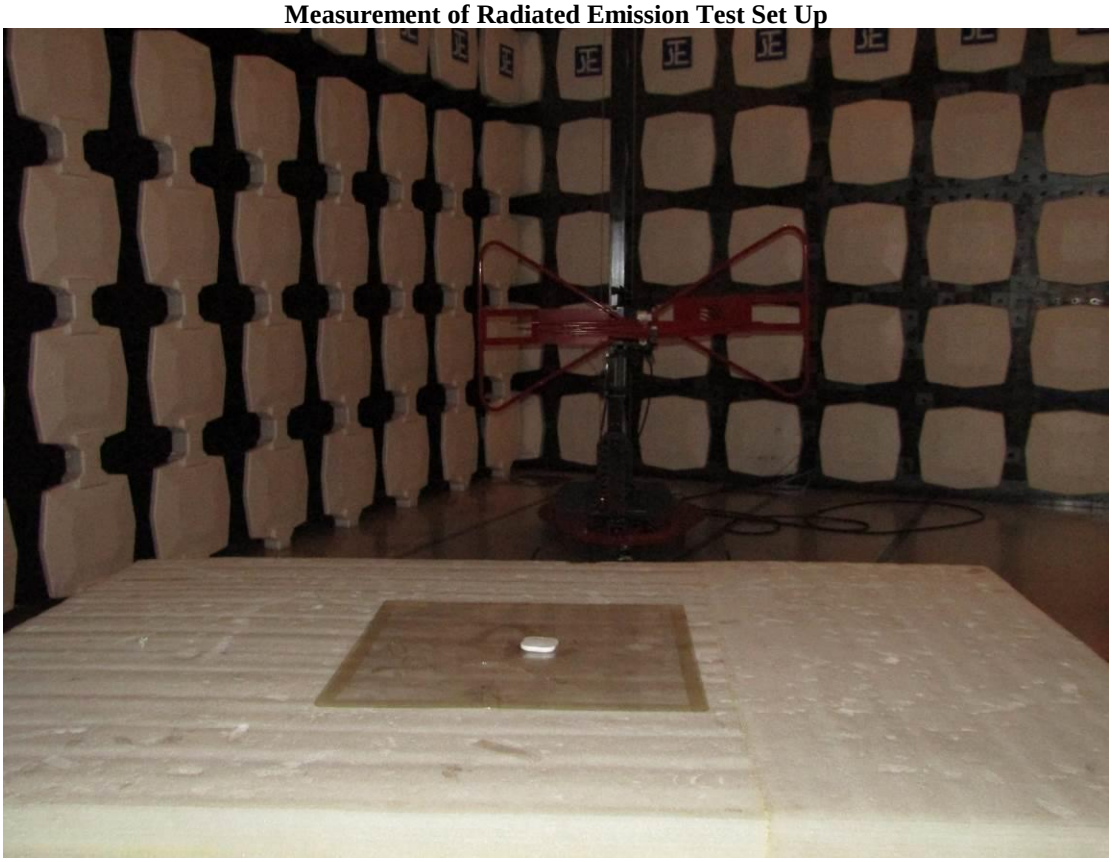


Photographs of EUT

Measurement of Radiated Emission Test Set Up



Measurement of Radiated Emission Test Set Up



Photographs of EUT

Measurement of Radiated Emission Test Set Up

******* End of Test Report *******

Conditions of Issuance of Test Reports

1. All samples and goods are accepted by The Hong Kong Standards & Testing Centre Limited (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The Company provides its services on the basis that such terms and conditions constitute express agreement between the Company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by the Company as a result of this application for testing service (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to his customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3. The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. The Report refers only to the sample tested and does not apply to the bulk, unless the sampling has been carried out by the Company and is stated as such in the Report.

5. In the event of the improper use the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

6. Sample submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

7. The Company will not be liable for or accept responsibility for any loss or damage howsoever arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

8. Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

9. Subject to the variable length of retention time for test data and report stored hereinto as to otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of this test report for a period of three years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after the retention period. Under no circumstances shall we be liable for damages of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.

10. Issuance records of the Report are available on the internet at www.stc-group.org. Further enquiry of validity or verification of the Reports should be addressed to the Company.