



# **Test Report**

**Prepared for: Suntech Medical** 

Model: WK100

# Serial Number: M00127246

# Project No: p2430014

# **Test Results: Pass**

То

FCC Part 15.249: 2024 and RSS-210: Issue 10 (December 2019)

Date of Issue: May 2, 2024

On the behalf of the applicant:

Suntech Medical 5827 S. Miami Blvd. Suite 100 Morrisville, NC 27560

Attention of:

Prepared By:

Philip Schmidt, Sr. Director of Engineering Ph: (919)654-2300 E-Mail: pschmidt@suntechmed.com

Compliance Testing, LLC Mesa, AZ 85204 (480) 926-3100 phone / (480) 926-3598 fax www.compliancetesting.com ANAB Cert#: AT-2901 FCC Site Reg. #US2901 ISED Site Reg. #2044A-2

**Reviewed / Authorized By:** 

Jeremiah Darden, Principal Engineer

This report may not be reproduced, except in full, without written permission from Compliance Testing. All results contained herein relate only to the sample tested. All samples were selected by the customer.





# Test Results Summary

Test Date Range: May 1 – May 2, 2024

Specification		Test Name	Pass,	Commonto	
FCC	RSS	Test Name	Fail, N/A	Comments	
15.249(a)	Annex B.10	Field Strength of Fundamental	Pass		
15.249(a), 15.249(d), 15.209(a), 15.205	Annex B.10, Section 7.1, 7.2, 7.3 / RSS-GEN 8.9 and 8.10	General Field Strength Emissions, Spurious Harmonic Emission, Restricted Bands	Pass		
-	Section 5 / RSS-Gen 6.7	99% Occupied Bandwidth	Complete		
15.207	RSS-GEN Section 8.8	A/C Powerline Conducted Emissions	N/A	Battery Powered. No AC input	
Method Deviations/A	dditions: No				

Statements of conformity are reported as:

- Pass the measured value is below the acceptance limit, acceptance limit = test limit.
- Fail the measured value is above the acceptance limit, acceptance limit = test limit.

References/Methods	Description
ANSI C63.4-2014	Method and Measurements of Radio-Noise Emissions from low-Voltage Electrical and Electronic Equipment in the range 9kHz to 40GHz.
ANSI C63.10:2020	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
558074 D01 15.247 Meas Guidance v05r02	Guidance for Compliance Measurements on DTS, FHSS, and Hybrid System Devices Operating Under Section 15.247 of the FCC Rules
RSS-GEN Issue 5: 2018	General Requirements for Compliance of Radio Apparatus
ISO/IEC 17025:2017	General requirements for the Competence of Testing and Calibrations Laboratories



# **Table of Contents**

# **Description**

# Page

Test Results Summary	2
Test Report Revision History	4
EUT Description	5
Test and Measurement Data	7
Test Setup and Modes of Operation	8
Field Strength of Fundamental	10
General Field Strength Emissions / Spurious Harmonic Emissions / Restricted Bands	14
99% Occupied Bandwidth	25
Measurement Uncertainty	28



# **Test Report Revision History**

Revision	Date	Revised By	Reason for Revision
1.0	May 2, 2024	Jeremiah Darden	Original Document
2.0	May 16, 2024	Racheal Roberts	Updated attention of, and added Firmware information
3.0	June 12, 2024	Racheal Roberts	Removed unnecessary bandwidth measurement data

Current revision of the test report replaces any prior versions. Only the current version of the test report is valid.



# **EUT Description**

Model:	WK100
Serial:	M00127246
Firmware:	WK100 UI Firmware
Software:	N/A
Description:	Blood Pressure Monitor
Additional	
Information:	Radio Frequency Range and Operational Info: 2401-2481MHz, GFSK, 41 channels, 250kbs data rate
	EUT operates on removeable Li-Ion Battery (7.2VDC) Usage: Portable
Receipt of Sample(s):	April 17, 2024
EUT Condition:	
	Visual Damage No
	State of Development Production/Production Equivalent



# The applicant has been cautioned as to the following

### 15.21 - Information to User

The user's manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

# 15.27(a) - Special Accessories

Equipment marked to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer without an additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

#### **Authorization Requirements**

Intentional Radios may require authorization covered under the following rule parts or standards:

-47 CFR Part 2 Subpart J

-RSS-Gen — General Requirements for Compliance of Radio Apparatus

Note: These notices are specific to the methods and standards related to the testing within this report. Customers should also consider and review additional legal regulations for import/export documentation and labeling for the countries and geographies under consideration by the manufacturer.



# **Test and Measurement Data**

Subpart 2.1033(b)

All tests and measurement data shown were performed in accordance with FCC Rule Parts: 15.249.

All tests and measurement data shown are deemed satisfactory evidence of compliance with Industry Canada Radio Standards Specification RSS-Gen and RSS-210.

#### **Standard Engineering Practices**

Unless otherwise indicated, the procedures contained in ANSI C63.10 and ANSI C63.4 were observed during testing.

Prior to testing, the EUT was tuned up in accordance with the manufacturer's alignment procedures. All external gain controls were maintained at the position of maximum and/or optimum gain throughout the testing. Measurement results, unless otherwise noted, are worst case measurement.

#### **Standard Test Conditions and Engineering Practices**

Unless otherwise indicated in the specific measurement results, the ambient temperature was maintained within the range of 10° to 40°C (50° to 104°F) and the relative humidity levels were in the range of 10% to 90%.

Environmental Conditions						
Temperature (°C)	Humidity (%)	Barometric Pressure (mbar)				
26.56 - 27.22	26.5 – 26.9	963.9 – 966.9				



# **Test Setup and Modes of Operation**

# **EUT Operation during Tests**

EUT was tested by using radio test modes pre-programmed into the firmware of the EUT that allowed continuous >98% duty cycle at the low, mid and high channel frequencies. The EUT is powered by a detachable lithium ion battery.

#### EUT:

Qty	Description	Manufacturer	Model	S/N
1	Blood Pressure Monitor	Suntech Medical	WK100	M00127246

### Accessories:

Qty	Description	Manufacturer	Model	S/N
1	Li-Ion Battery	Suntech Medical	97-0242-00	LOT 2023- 09-26

#### Cables: N/A

Name	Description	Version	Installation Info
WK100 UI Firmware	System FW	UI124	Installed on EUT

# Modifications to EUT(s) (Y/N): N



# 15.203: Antenna Requirement:



The antenna gain stated by the manufacturer is  $\underline{2} \text{ dBi}$ 



# **Field Strength of Fundamental**

Engineer: Jeremiah Darden Test Date: May 1, 2024

### **Test Procedure**

# RADIATED METHOD

The EUT was setup in a semi-anechoic test chamber set 3m from the receiving antenna. The EUT was set to transmit on the lowest, middle and highest frequency of operation at the maximum power level. The EUT was tested, in 3 orthogonal axis, by rotating it 360° with the receive antenna in both the vertical and horizontal orientation while raised from 1 to 4 meters to ensure the TX signal levels were maximized. A spectrum analyzer was used to verify that the EUT met the requirements for Output Power.



The Spectrum Analyzer was set to the following:

 $RBW \ge DTS$  Bandwidth  $VBW \ge 3 \times RBW$ Span  $\ge 3 \times RBW$ Sweep time = auto couple Detector = peak Trace Mode = max hold

Field Strength of Fundamental Summary	y Table (worse case axis and polarity)
---------------------------------------	--

Tuned Frequency (MHz)	Mode of Operation	AVG Measured Value (dBuV/m)	PK Measured Value (dBuV/m)	AVG / PK Specification Limit (dBuV/m)	Result
2401	Continuous TX Low Ch	90.89	91.01	94 / 114	Pass
2441	Continuous TX Mid Ch	92.05	92.12	94 / 114	Pass
2481	Continuous TX High Ch	90.10	90.29	94 / 114	Pass



# **Field Strength of Fundamental Plots**

#### Low Channel



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.40098	52.00	100.00	79.92	79.70	7.50	87.42	73.98	13.44	87.20	53.98	33.22
Final = Raw	+ Path Lo	SS									
Margin = Fi	nal - Limit										



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.400985	204.00	400.00	83.51	83.38	7.50	91.01	73.98	17.03	90.89	53.98	36.91
Final = Raw	+ Path Lo	ss									
Margin = Fi	nal - Limit										

Mid Channel





Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.4409935	5.00	100.00	78.93	78.75	7.71	86.64	114.98	-28.34	86.46	94.98	-8.52
Final = Raw	+ Path Lo	ss									
Margin = Final - Limit											



Frequency MHz
---------------

Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.4409875	211.00	105.00	84.41	84.34	7.71	92.12	114.98	-22.86	92.05	94.98	-2.93
Final = Raw + Path Loss											
Margin = Final - Limit											

**High Channel** 





Frequency MHz

Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	<b>Final Avg</b>	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.48097075	57.00	100.00	81.88	81.69	8.02	89.90	114.98	-25.08	89.71	94.98	-5.27
Final = Raw + Path Loss		S									
Margin = Final - Limit											



Frequency MHz

Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.481011	207.00	100.00	82.26	82.08	8.02	90.29	114.98	-24.69	90.10	94.98	-4.88
Final = Raw	+ Path Lo	ss									
Margin = Final - Limit											



General Field Strength Emissions / Spurious Harmonic Emissions / Restricted Bands Engineer: Jeremiah Darden Test Date: May 1, 2024

# Test Procedure Radiated Spurious Emissions: 30 – 1000 MHz and Above 1GHz

The EUT was setup in a semi-anechoic test chamber set 3m from the receiving antenna. The EUT was set to transmit on the lowest, middle and highest frequency of operation at the maximum power level into its permanently attached antenna. The EUT was tested, in 3 orthogonal axis, by rotating it 360° with the receive antenna in both the vertical and horizontal orientation while raised from 1 to 4 meters to ensure the TX signal levels were maximized. A spectrum analyzer was used to verify that the EUT met the requirements for Radiated Spurious Emissions. All emissions across the required range were evaluated.



# **Basic Test Setup**

	Settings Below 1GHz	Settings Above 1GHz
RBW	120 kHz	1 MHz
VBW	300 kHz	3 MHz
Detector	Quasi Peak	Peak / Average

# **Sample Calculations**

Corrected Value = Measured Value + Correction factor

Correction factor = Antenna Correction Factor + Cable loss + Preamp/Attenuator Factor



# Radiated Emissions 9kHz-30MHz

### No Emissions to measure within scanned frequency range





# Radiated Emissions 30-1000MHz



Azimuun	Height	Raw QP	Correction	Final QP	Limit	<b>QP</b> Margin
deg	cm	dBuV	dB	dBuV/m	dBuV/m	dB
183.00	277.00	38.26	-15.57	22.70	40.00	-17.30
89.00	127.00	33.96	-16.92	17.00	46.00	-29.00
33.00	359.00	32.86	-8.44	24.40	46.00	-21.60
33.00	359.00	32.86	-8.44	24.40	46.00	-21.60
52.00	325.00	32.89	-8.49	24.40	46.00	-21.60
33.00	359.00	32.86	-8.44	24.40	46.00	-21.60
355.00	389.00	33.05	-7.90	25.10	46.00	-20.90
198.00	230.00	33.09	-7.28	25.80	46.00	-20.20
+ Path Los	SS					
	deg 183.00 89.00 33.00 52.00 33.00 355.00 198.00 + Path Los	deg  cm    183.00  277.00    89.00  127.00    33.00  359.00    33.00  359.00    52.00  325.00    33.00  359.00    33.00  359.00    33.00  359.00    355.00  389.00    198.00  230.00    + Path Loss	deg  cm  dBuV    183.00  277.00  38.26    89.00  127.00  33.96    33.00  359.00  32.86    33.00  359.00  32.86    33.00  359.00  32.86    52.00  325.00  32.89    33.00  359.00  32.86    52.00  325.00  32.89    33.00  359.00  32.86    355.00  389.00  33.05    198.00  230.00  33.09    + Path Loss	deg  cm  dBuV  dB    183.00  277.00  38.26  -15.57    89.00  127.00  33.96  -16.92    33.00  359.00  32.86  -8.44    33.00  359.00  32.86  -8.44    52.00  325.00  32.89  -8.49    33.00  359.00  32.86  -8.44    52.00  325.00  32.86  -8.44    355.00  389.00  33.05  -7.90    198.00  230.00  33.09  -7.28    + Path Loss	deg  cm  dBuV  dB  dBuV/m    183.00  277.00  38.26  -15.57  22.70    89.00  127.00  33.96  -16.92  17.00    33.00  359.00  32.86  -8.44  24.40    33.00  359.00  32.86  -8.44  24.40    52.00  325.00  32.89  -8.49  24.40    33.00  359.00  32.86  -8.44  24.40    33.00  359.00  32.86  -8.44  24.40    35.00  32.80  -8.49  24.40    355.00  389.00  33.05  -7.90  25.10    198.00  230.00  33.09  -7.28  25.80    + Path Loss	deg  cm  dBuV  dB  dBuV/m  dBuV/m    183.00  277.00  38.26  -15.57  22.70  40.00    89.00  127.00  33.96  -16.92  17.00  46.00    33.00  359.00  32.86  -8.44  24.40  46.00    33.00  359.00  32.86  -8.44  24.40  46.00    33.00  359.00  32.86  -8.44  24.40  46.00    52.00  325.00  32.89  -8.49  24.40  46.00    33.00  359.00  32.86  -8.44  24.40  46.00    33.00  359.00  32.86  -8.44  24.40  46.00    35.00  389.00  33.05  -7.90  25.10  46.00    355.00  389.00  33.09  -7.28  25.80  46.00    198.00  230.00  33.09  -7.28  25.80  46.00    + Path Loss

Margin = Final - Limit





Frequency	Azimuth	Height	Raw QP	Correction	Final QP	Limit	<b>QP</b> Margin
MHz	deg	cm	dBuV	dB	dBuV/m	dBuV/m	dB
30.097	15.00	294.00	38.29	-16.81	21.50	40.00	-18.50
398.235	192.00	100.00	45.83	-17.47	28.40	46.00	-17.60
837.595	210.00	252.00	33.14	-8.86	24.30	46.00	-21.70
842.936	263.00	100.00	32.94	-8.74	24.20	46.00	-21.80
902.457	340.00	352.00	32.96	-8.54	24.40	46.00	-21.60
929.014	148.00	373.00	33.37	-7.55	25.80	46.00	-20.20
Final = Raw + Path Los		ss					
Margin = Fi	nal - Limit						



# **Radiated Emissions Above 1000MHz**

Band Edge Using Integration Method – ANSI 11.13.3.2 and 11.13.3.3

# Band Edge Summary Table

Tuned Frequency (MHz)	Mode of Operation	AVG Measured Value (dBuV/m)	PK Measured Value (dBuV/m)	AVG / PK Specification Limit (dBuV/m)	Result
2401	Continuous TX Low Ch	48.72	64.28	54 / 74	Pass
2481	Continuous TX High Ch	47.05	56.85	54 / 74	Pass

# Band Edge - Low Ch (Peak | AVG)



# Band Edge – High Ch (Peak | AVG)





# 1-4GHz - Low Ch





Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.39004885	308.00	400.00	50.09	36.65	7.46	57.55	73.98	-16.43	44.11	53.98	-9.87
Final = Raw	+ Path Los	s									
Margin = Fin	al - Limit										



# 1-4Ghz - High ch



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	<b>Pk Limit</b>	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.483907925	30.00	364.00	50.96	36.45	8.05	59.01	73.98	-14.97	44.50	53.98	-9.48
Final = Raw +	Path Loss										
Margin = Fina	ıl - Limit										



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
2.483571025	281.00	175.00	49.96	36.46	8.05	58.00	73.98	-15.98	44.50	53.98	-9.48
Final = Raw +	Path Loss										
Margin = Fina	ıl - Limit										



# 4-18GHz (Low ch)



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	<b>Pk Limit</b>	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
4.801953	83.00	100.00	59.96	57.44	-7.19	52.77	74.00	-21.23	50.25	54	-3.75
Final = Raw	+ Path Lo	SS									
Margin = Fi	nal - Limit										



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
4.80199025	0.00	100.00	55.31	50.99	-7.19	48.12	74.00	-25.88	43.80	54	-10.20
Final = Raw ·	+ Path Los	s									
Margin = Fin	al - Limit										



# 4-18GHz (Mid ch)



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	<b>Pk Limit</b>	Pk Margin	<b>Final Avg</b>	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
4.8820375	134.00	100.00	58.08	55.14	-7.09	50.99	74.00	-23.01	48.04	54	-5.96
7.322922	171.00	105.00	50.35	44.05	-0.55	49.81	74.00	-24.19	43.51	54	-10.49
Final = Raw	+ Path Lo	ss									
Margin = Fi	nal - Limit										



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
4.88198425	47.00	325.00	55.05	51.01	-7.09	47.96	74.00	-26.04	43.92	54	-10.08
7.32306475	359.00	400.00	49.76	41.34	-0.55	49.22	74.00	-24.78	40.79	54	-13.21
Final = Raw	+ Path Los	s									
Margin = Fin	al - Limit										



# 4-18GHz (High ch)



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
7.442819	47.00	395.00	54.96	52.07	-1.07	53.89	74.00	-20.11	51.00	54	-3.01
Final = Raw	+ Path Lo	ss									
Margin = Fi	nal - Limit										



Frequency	Azimuth	Height	Raw Pk	Raw Avg	Correction	Final Pk	Pk Limit	Pk Margin	Final Avg	Avg Limit	Avg Margin
GHz	deg	cm	dBuV	dBuV	dB	dBuV/m	dBuV/m	dB	dBuV/m	dBuV/m	dB
7.44298775	281.00	210.00	52.20	47.92	-1.07	51.13	74.00	-22.87	46.85	54	-7.15
Final = Raw	+ Path Los	s									
Margin = Fin	al - Limit										



# 18-25GHz

## No emissions to measure







### 99% Occupied Bandwidth

# Engineer: Jeremiah Darden Test Date: May 2, 2024

# **Test Procedure**

# CONDUCTED METHOD

An antenna probe was placed next to the permanently attached antenna and then connected to a short shielded coax Cable. A spectrum analyzer was directly connected to this cable. The EUT was set to transmit on the low, mid and high frequencies at the maximum power level. The analyzer was offset to read the maximum power measured from radiated field strength measurements. A spectrum analyzer was used to verify that the EUT met the Bandwidth requirements.





The Spectrum Analyzer was set to the following:

RBW = 1-3% of OBW VBW  $\ge 3 \times$  RBW Peak Detector Trace mode = max hold Sweep = auto couple Span =  $1.5 \times$  EBW

# 99% Bandwidth Summary

Frequency (MHz)	Mode of Operation	Measured Bandwidth (kHz)	Result
2401	Continuous TX Low Ch	650.1	Complete
2441	Continuous TX Mid Ch	637.6	Complete
2481	Continuous TX High Ch	657.5	Complete



# 99% Bandwidth Plots



#### Mid Channel





**High Channel** Agilent ⋇ Mkr1 2.480 991 576 GHz 95.85 dBµV Ref 113.5 dB**µ**V #Peak Log 10 dB/ Offst 6.5 dB #Atten 20 dB Ô  $\sim$ \* Kr  $\rightarrow$  $\sqrt{2}$ ትሎ LgAv M1 S2 Center 2.481 000 000 GHz Res BW 15 kHz Span 1.5 MHz VBW 150 kHz Sweep 6.4 ms (4001 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % x dB -26.00 dB 657.4541 kHz Transmit Freq Error x dB Bandwidth 691.674 Hz 756.411 kHz



# **Test Equipment Utilized**

Description	Manufacturer	Model #	CT Asset #	Last Cal Date	Cal Due Date
Bilog Antenna 0.030-1.0GHz	Schaffner	CBL6111C	i00349	02/07/23	02/06/25
ultra wideband LNA 10MHz- 45GHz	RF-Lambda USA	RLNA00M45GA	i00555	02/19/24	02/19/25
9kHz-44GHz CISPR comp. receiver	Keysight	N9038A	i00552	03/01/24	03/01/25
RF Amplifier 10MHz-50GHz, 40dB gain amp.	Eravant	SBB- 0115034019- 2F2F-E3	i00722	02/7/24	02/7/25
1-18GHz Horn Antenna	Antenna Research Assoc	DRG-118/A	i00271	08/11/22	08/10/24
Antenna, Horn 18-40GHz	EMCO	3116	100085	03/14/23	03/13/25
temperature/humidity/pressure probe	Omega Engineering, Inc.	iBTHX-W-5	i00629	01/25/23	01/24/25
temperature/humidity/pressure probe	Omega Engineering, Inc.	iBTHX-W	i00686	01/25/23	01/24/25
Network analyzer	HP	8753D	i00505	11/03/23	11/02/24
Spectrum Analyzer 3Hz- 13.2GHz	Agilent	E4445A	100471	01/05/24	01/05/25

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

# **Measurement Uncertainty**

Measurement Uncertainty for Compliance Testing is listed in the table below.

Measurement	U <sub>lab</sub>
Radio Frequency	± 3.3 x 10 <sup>-8</sup>
RF Power, conducted	± 1.5 dB
RF Power Density, conducted	± 1.0 dB
Conducted Emissions	± 1.8 dB
Radiated Emissions 9kHz-30MHz	± 3.6 dB
Radiated Emissions 30MHz-1000MHz	± 4.25 dB
Radiated Emissions – 1GHz-18GHz	± 4.5 dB
Temperature	± 1.5 deg C
Humidity	± 4.3 %



Measurement	U <sub>lab</sub>
DC voltage	± 0.20 VDC
AC Voltage	± 1.2 VAC

The reported expanded uncertainty +/-  $U_{lab}(dB)$  has been estimated at a 95% confidence level (k=2)  $U_{lab}$  is less than or equal to  $U_{EMC}$  therefore;

- Compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.
- Non-Compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.

END OF TEST REPORT