

EMC TEST REPORT



Standard(s):

**47 CFR FCC Part 15.519
RSS 220, Issue 1, 2009, Am1:2018**

**FCC ID: DGFPD202406
IC: 458A-PSD202406**

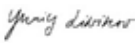
**Product: 3M™ Scott™ XT PRO PASS Alarm (UWB)
Model(s): 202406-01**

**Company Name:
3M Company**

**Address:
Fire & SCBA Solutions
4320 Goldmine Road, Monroe, NC 28110**

**Report Number: HRE202510498-8
Report Issue Date: October 1, 2026**

Report Prepared by:

Signature: 
**Yuriy Litvinov
Lead EMC Engineer**

**Tested by:
3M Company, Hardgoods Regulatory Engineering Laboratory
410 E. Fillmore Avenue, Building 76
St. Paul, Minnesota 55107-1208, USA**



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1.0 Test Summary

Based on the results of our investigation, we have concluded the product tested **comply** with the requirements of the standard(s) indicated. The results obtained in this test report pertain only to the item(s) tested.

	Requirement – Test	Test Description	Result	Comments
4.1	FCC Part 15.519(b) RSS-220 (2.0)	UWB Bandwidth (10 dB Bandwidth)	pass	
4.2	FCC Part 15.519(a)(1) RSS-220 (5.3.1(b))	Cessation Time	pass	
4.3	FCC Part 15.519(e) RSS-220, (5.3.1 (g))	Peak Power Radiated Emissions	pass	
4.4	FCC Part 15.519(d)(c) RSS-220(5.3.1 (c)/(d))	Transmitter Radiated Emissions and Spurious Emissions	pass	
4.5	FCC Part 15.207/ RSS-Gen (8.8)	Conducted Emissions	N/A	

Note:	Device is battery operated.
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1.1 Measurement Uncertainty

The measured value related to the corresponding limit will be used to decide whether the equipment meets the requirements. The measurement uncertainty figures were calculated and correspond to a coverage factor of k=2, providing a confidence level of respectively 95.45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian).

Radiated emissions 30MHz to 1000MHz	4.9 dB
Radiated emissions 1GHz to 18GHz	4.6 dB
Conducted emissions 150KHz to 30MHz (AMN)	2.7 dB
Conducted emissions 150KHz to 30MHz (AAN)	1.92 dB
RF frequency	$\pm 3 \times 10^{-8}$
RF power, conducted	1.4 dB
RF Power Spectral Density	0.96 dB

1.2 Test Facility

Test Facility Accreditations:	ISO/IEC 17025:2017, NVLAP LAB CODE: 200033-0
	FCC US502
	ISED Canada CAB identifier: US0012



2.0 Equipment Description

2.1	Equipment Under Test			
Description:	Sensor Module Assembly: Electronics control module for battery power, audio (alarm tones), the Integrated Pak-Tracker 2.0 PCBA, Ultra-Wide Band PCBA, data logging, and the motion sensor. Sensor Module contains two antennas (IPT&BFE) controlled by RF Switch.			
Model(s):	202406-01			
Serial number:	N/A			
3M Division:	Personal Safety			
Modifications and Special Measures:	none			
Frequency Range:	6489.6 MHz			
Channel No.:	CH5			
Modulation Type:	Burst Position Modulation (BPSK)			
FCC Classification:	Ultra-Wideband Transmitter (UWB)			
Maximum Field Strength Rating:	48dBuV@3m(-49.4dBm EIRP)			
Antenna Type and Antenna Assembly Gain (MOD1000 and UWB RF2):	☐ External	☒ Integral PCB Antenna	☒ Dedicated	
	☒ 4.16dBi	☒ Declared	☐ Measured	
Test Deviations or Exclusions	☐ Yes	☒ No		
Rated Power:	Voltage:	☐ 120VAC	☐ 230VAC	☒ 7.4VDC
	Phase:	☐ 1ph	☐ 3ph	☒ Li-ion Battery
	Frequency:	☐ 50Hz	☐ 60Hz	
	Current:	N/A		
Test Dates:	14/07-14/08/2026			
Received Date:	13/07/2026			
Received Conditions:	☐ Poor	☒ Good		
	☒ Prototype	☐ Production		

3.0 EUT Configuration

3.1 System Configuration

No.	Product Type	Manufacturer	Model	Comments
1	EUT	3M	202406-01	
2	Battery	Inventus Power	902-09531-001	Li-ion/7.4VDC
3	Notebook PC	HP	Zbook	Support Equipment

3.2 Input/Output Ports of EUT

No.	Description	Type	Comments
1	Pressure Transducer	12 pin	Bulkhead Mount Circular Connector
2	Sensor Module, Console	11 pin	Bulkhead Mount Circular Connector

3.3 Cables

No.	Description	Type	Length	Shielding	Comments
1	Control Cables	Twisted Pair	1m	Yes	
2					

3.4 Measurement Arrangements of EUT

	Intended Operational Arrangement(s)	Comments
☒	Table-top only	
☐	Floor-standing only	
☐	Floor-standing or table-top	
☒	Other	Body-worn

3.5 Exercising of EUT and Interfaces

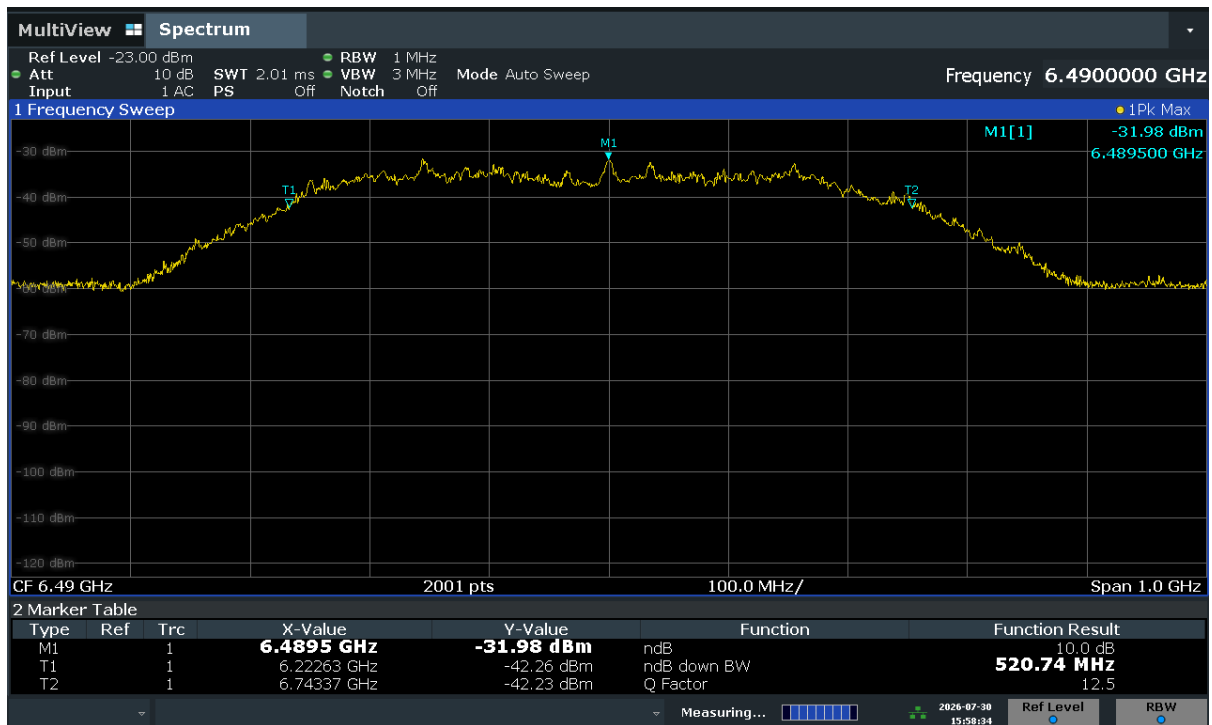
No.	Mode of Operation			
	UWB Channel	Frequency MHz	Data Rate	Modulation
1	5	6489.6	850kbits/s	BPM/BPSK
2	5	6489.6	6.8mbits/s	BPM/BPSK
3	Device programming over Python 3.14.0 Terminal Software using SCBA Radio Testing GUI ver. 1.2.0 provided by the manufacturer for continuous transmission of modulated carrier at maximum rated RF output power and Duty Cycle.			

4.0 Test Conditions and Results

4.1	10dB Bandwidth		
		Laboratory Ambient Temperature:	23°C
		Relative Humidity:	48%
		Atmospheric Pressure:	1011 mbars
Reference Standard(s):	☒ ANSI C63.10:2020, Section 10.1 ☒ FCC Part 15.519/RSS 220 ☒ KDB 558074	Measurement Point ☐ Conducted ☒ Radiated	
Frequency Range:	☒ 6489.6 MHz ☐	RBW = 1MHz VBW ≥ 3 x RBW	
UWB Bandwidth Limit:	☐ ≥ 0.2 (Fractional Bandwidth)		
	☒ ≥ 500MHz (10dB UWB)		
Nominal Voltage:	☐ 120VAC ☒ 7.4VDC		
Test Personnel:	Jayden Alstad <i>J.A.</i>		Date: 07/30/2026

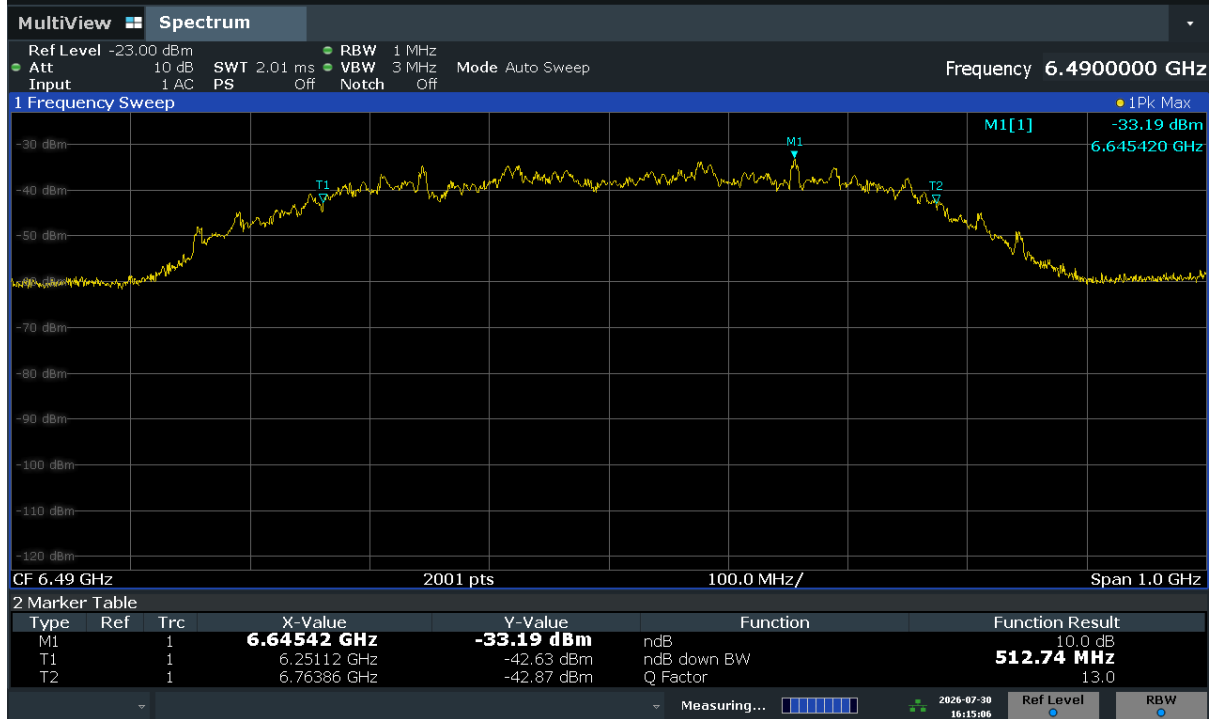
Note:	10dB BW was checked for both antenna polarizations, The worst case is reported. BW measurements were performed @2m distance.
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Pol.	Antenna	CH/ mbit/s	Highest Radiated Emission F _M (MHz)	10dB Upper Boundary, F _H (MHz)	10 dB Lower Boundary, F _L (MHz)	Center Frequency, F _C = (F _H + F _L)/2 (MHz)	10dB UBW F _H – F _L (MHz)	Limit (MHz)
H	MOD	5/0.85	6489.5	6743	6226	6484.5	517	>500
H	MOD	5/6.8	6645.4	6763	6251	6507	512	>500
H	RF2	5/0.85	6489.5	6755	6222	6488.5	533	>500
H	RF2	5/6.8	6489	6791	6272	6531.5	519	>500



03:58:35 PM 07/30/2026

UWB MOD1000 Antenna 10dB BW CH5 0.85mbit/s



04:15:07 PM 07/30/2026

UWB MOD1000 Antenna 10dB BW CH5 6.8mbit/s



04:19:03 PM 07/30/2026

UWB RF2 Antenna 10dB BW CH5 0.85mbit/s



04:36:36 PM 07/30/2026

UWB RF2 Antenna 10dB BW CH5 6.8mbit/s

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4.2	Peak Power Radiated Emissions		
Method:	Measurements were performed with UWB broadband carrier at the highest power level at which the transmitter is intended to operate. The analyzer offset was adjusted to compensate for the attenuator and other losses.		
	Laboratory Ambient Temperature:	23°C	
	Relative Humidity:	48%	
	Atmospheric Pressure:	1011 mbars	
Reference Standard(s):	☒ ANSI C63.10:2020, Section 10.3.5 ☒ FCC Part 15.519/RSS 220 ☒	Measurement Point ☐ Conducted ☒ Radiated	
Frequency Range:	☒ 6489.6 MHz ☐		
Antenna Gain:	4.16dBi		
EIRP Limit:	☐ 0 dBm/50MHz* ☒ -14dBm/10MHz (81.2dBμV/m/10MHz)*	RBW = 10MHz VBW ≥ 3 x RBW	
Nominal Voltage:	☐ 120VAC ☒ 7.4VDC		
Test Personnel:	Yuriy Litvinov <i>Yuriy Litvinov</i>		Date: 07/30/2026

Note:	EIRP Limit (dBm) = EIRP_{50MHz} + 20log 10 MHz/50 MHz = 0 dBm + (-14 dB) = -14dBm (81.2dBuV@3m) *The peak level of the transmissions shall not exceed the peak equivalent of the average limit contained within any 50 MHz bandwidth. Worst case combinations are reported for each antenna.
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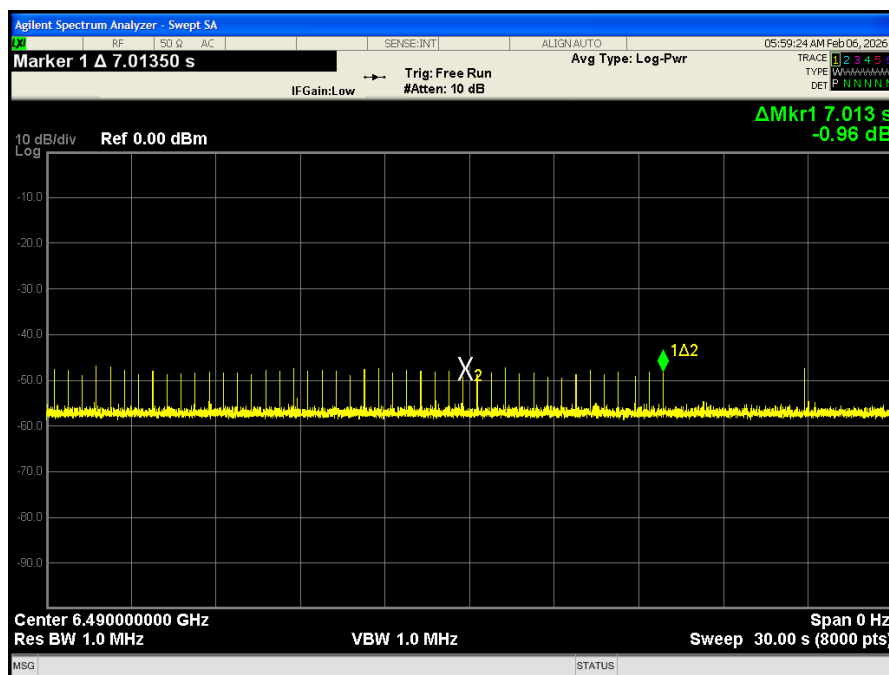


Pol	Frequency (MHz)	Peak Level dB μ V/m	Total CF dB	Net PK @3m dB μ V/m	Peak Level Limit dB μ V/m	Margin dB	Comments
V	6489.50	77.28	-2.76	74.52	81.20	-6.68	CH5, RF2, 850kb
H	6489.50	80.10	-2.76	77.34	81.20	-3.86	CH5, RF2, 850kb
V	6489.50	78.58	-2.76	75.82	81.20	-5.38	CH5, MOD1000, 850kb
H	6489.50	76.14	-2.76	73.38	81.20	-7.82	CH5, MOD1000, 850kb
V	6489.50	75.50	-1.20	74.30	81.20	-6.90	CH5, RF2, 6.8Mb
H	6489.50	78.66	-1.20	77.46	81.20	-3.74	CH5, RF2, 6.8Mb
V	6489.50	77.02	-3.54	73.48	81.20	-7.72	CH5, MOD1000, 6.8Mb
H	6489.50	74.24	-3.54	70.70	81.20	-10.50	CH5, MOD1000, 6.8Mb
Notes:		Net Reading (dBuV) = Reading (dB μ V) + Antenna CF(dB)+Cable CF(dB) – Amp Gain(dB)					
		UWB CH5					

Pol	Frequency (MHz)	AVG dB μ V/m	Total CF dB	Net AVG @3m dB μ V/m	AVG Limit dB μ V/m	Margin dB	Comments
V	6489.50	49.3	-2.76	46.51	54.00	-7.49	CH5, RF2, 850kb
H	6489.50	49.5	-2.76	46.77	54.00	-7.23	CH5, RF2, 850kb
V	6489.50	49.5	-2.76	46.77	54.00	-7.23	CH5, MOD1000, 850kb
H	6489.50	48.2	-2.76	45.48	54.00	-8.52	CH5, MOD1000, 850kb
V	6489.50	48.7	-1.20	47.45	54.00	-6.55	CH5, RF2, 6.8Mb
H	6489.50	49.0	-1.20	47.82	54.00	-6.18	CH5, RF2, 6.8Mb
V	6489.50	47.4	-3.54	43.89	54.00	-10.11	CH5, MOD1000, 6.8Mb
H	6489.50	46.8	-3.54	43.29	54.00	-10.71	CH5, MOD1000, 6.8Mb
Notes:		Net Reading (dBuV) = Reading (dB μ V) + Antenna CF(dB)+Cable CF(dB) – Amp Gain(dB)					
		UWB CH5 RBW1MHz/VBW10Hz					

4.3	Cessation Time		
Method:	Measurements were performed with UWB broadband carrier at the highest power level at which the transmitter is intended to operate. The analyzer offset was adjusted to compensate for the attenuator and other losses.		
		Laboratory Ambient Temperature:	23°C
		Relative Humidity:	48%
		Atmospheric Pressure:	1011 mbars
Reference Standard(s):	☒ ANSI C63.10:2020, Section 10.3.5 ☒ FCC Part 15.519/RSS 220 ☒	Measurement Point ☐ Conducted ☒ Radiated	
Frequency Range:	☒ 6489.6 MHz		
EIRP Limit:	☒ Transmission shall cease in less than 10s ☐	7.01sec	
Nominal Voltage:		☐ 120VAC ☒ 7.4VDC	
Test Personnel:		Yuriy Litvinov <i>Yuriy Litvinov</i>	Date: 02/06/2026

Note:	X2 represents the EUT for UWB stop receiving, and 1Δ2 shows the EUT for UWB cease transmitting. The session time data was used from 3M Company EMC Test Report #HRE202510498-2/FCC ID:DGFPD20184602. The device functionality is electrically identical to previously certified model.
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4.3	Radiated Emissions				
Method:	Measurements were made in a 3-meter semi-anechoic chamber that complies to CISPR 16/ANSI C63.4 standards. EUT was rotated through three orthogonal axes to determine which attitude (orientation) and arrangement produces the highest emission relative to the limit; the attitude and device arrangement that produces the highest emission relative to the limit was used in making final radiated emission measurements. Spurious Radiated emissions measurements were performed with external preamp and a high pass filter. Final measurements were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.				
Test Verification: ☒	Laboratory Ambient Temperature:		23°C		
	Relative Humidity:		55%		
	Atmospheric Pressure:		1011 mbars		
Reference Standard(s):	☒ ANSI C63.10:2020, Section 10.2&10.3 ☒ FCC Part 15.519/RSS 220 ☐		Measurement Distance		
			☒ 3 Meters ☐		
Frequency Range:	☒ 30 MHz to 1 GHz		RBW = 100KHz, VBW ≥ 3 x RBW		
	☒ 1 GHz to 40 GHz		RBW = 1MHz, VBW ≥ 3 x RBW		
	☒ 1.164GHz to 1.610 GHz		RBW = 1KHz, VBW ≥ 3 x RBW		
Nominal Voltage:	☐ 120VAC ☒ 7.4VDC				
Test Personnel:	Jayden Alstad <i>J.A.</i>		Date: 07/30/2026		
Limits –15.209 and RSS Gen					
Frequency (MHz)	Limit (dBµV/m)				
	Quasi-Peak	Average	Peak	Distance	Results
0.009-0.490		2400/F(KHz)		300	N/A
0.490-1.705	24000/F(KHz)			30	N/A
1.705-30	30			30	N/A
30 to 88	40			3	pass
88 to 216	43.5			3	pass
216 to 960	46			3	pass
Limits –15.519(c)(d) – EIRP dBm (dBµV/m)					
960-1610		-75.3(20)		3	pass
1610-1990		-63.3(32)		3	pass
1990-3100		-61.3(34)		3	pass
3100-10600		-41.3(54)		3	pass
Above 10600		-61.3(34)		3	pass
1164-1240		-85.3(10)		3	pass
1559-1610		-85.3(10)		3	pass
RSS 220, 5.3.1(d) - EIRP dBm (dBµV/m)					
960-1610		-75.3(20)		3	pass
1610-4075		-70(25.2)		3	pass
4075-10600		-41.3(54)		3	pass
Above 10600		-61.3(44)		3	pass

Modifications:	
Note:	The lower limit applies at the transition frequency. An inverse proportionality factor of 20 dB per decade has been used to normalize the measured data to the specified distance for determining compliance For emission in the restricted bands, the limit of 15.209 was used. $EIRP\ (dB\mu V/m) = EIRP\ (dBm) + 95.3$ Worst case radiated emissions were tested at CH5@850kbits No radiated spurious emissions were detected above 18GHz

FCC Part 15.519(c) - Radiated Emissions

Frequency (MHz)	Pol.	QP Reading dBμV/m	Total CF dB	Net at 3 m dBμV/m	Limit (dBμV/m)	Margin dB
197.06	H	6.2	15.1	21.3	43.5	-22.2
337.28	H	8.9	19.8	28.7	46	-17.3
747.95	H	4.9	28	32.9	46	-13.1
930.17	H	3.9	30	33.9	46	-12.1
Notes:	Net Reading (dBuV) = Reading (dBμV) + Antenna CF(dB)+Cable CF(dB) – Amp Gain(dB) CH5. MOD1000 Antenna 850kbps					

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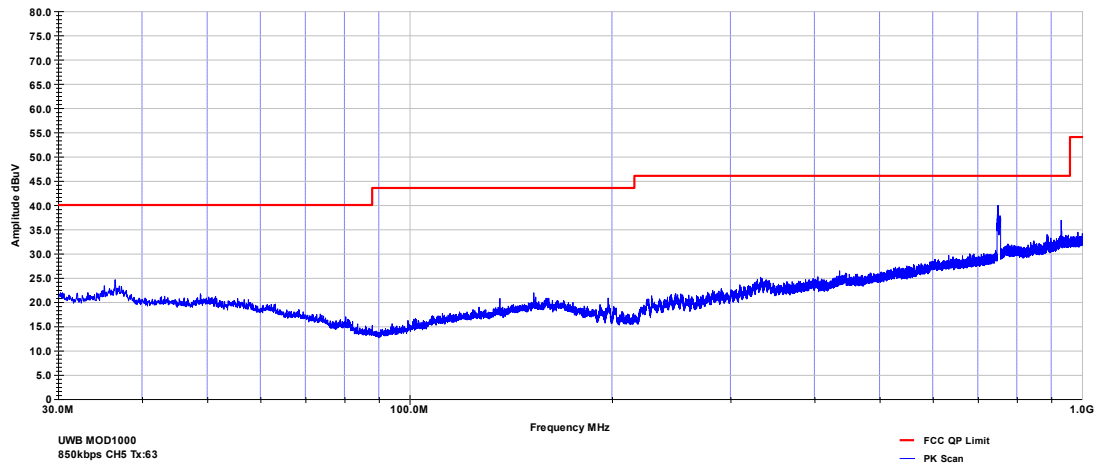
FCC Part 15.510(d) Radiated Emissions in 1164 – 1240 MHz and 1559 – 1610 MHz

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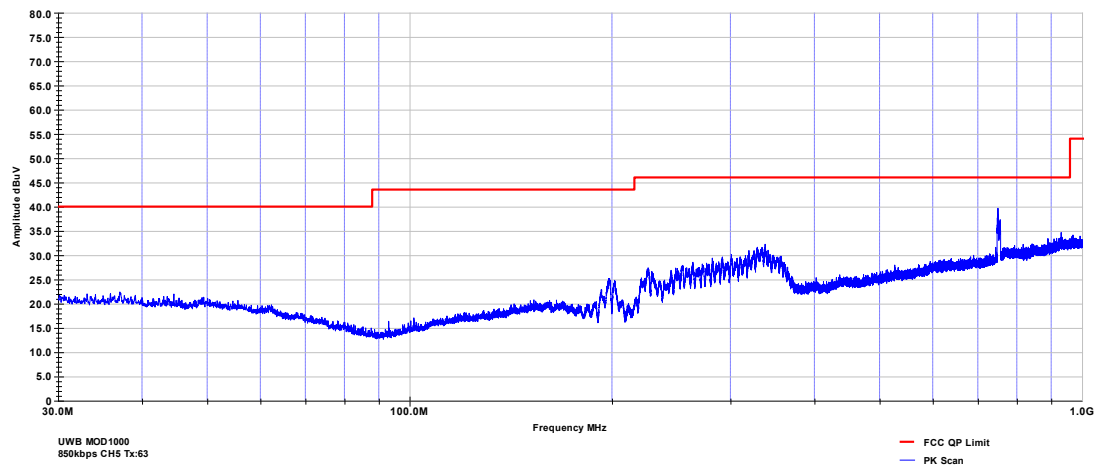
3M Company
Radiated Emissions Pre-scan
FCC Part 15, Class B, Vertical

Project# - HRE202510498
Model # - XT2025
Serial # - N/A
EUT Power - 7.4VDC (Li-Ion battery)

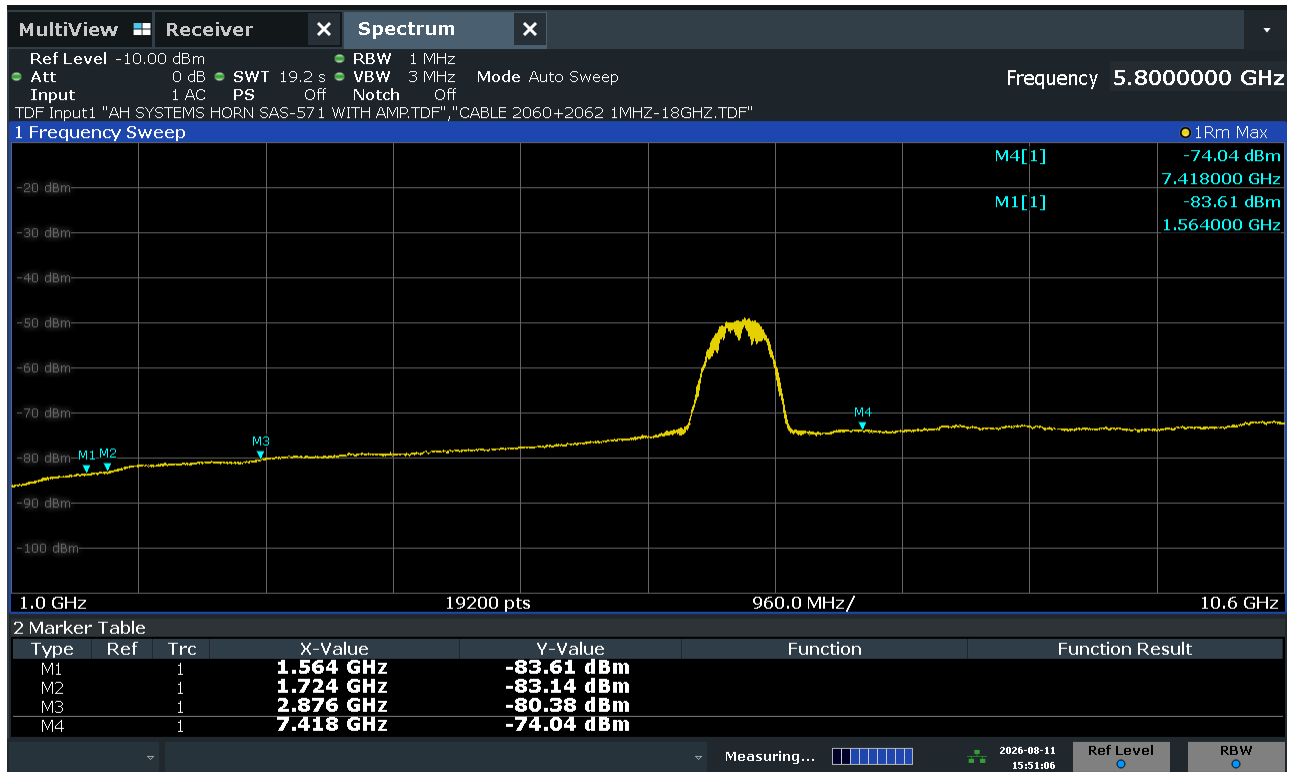


3M Company
Radiated Emissions Pre-scan
FCC Part 15, Class B, Horizontal

Project # - HRE202510498
Model # - XT2025
Serial # - N/A
EUT Power - 7.4VDC (Li-Ion battery)

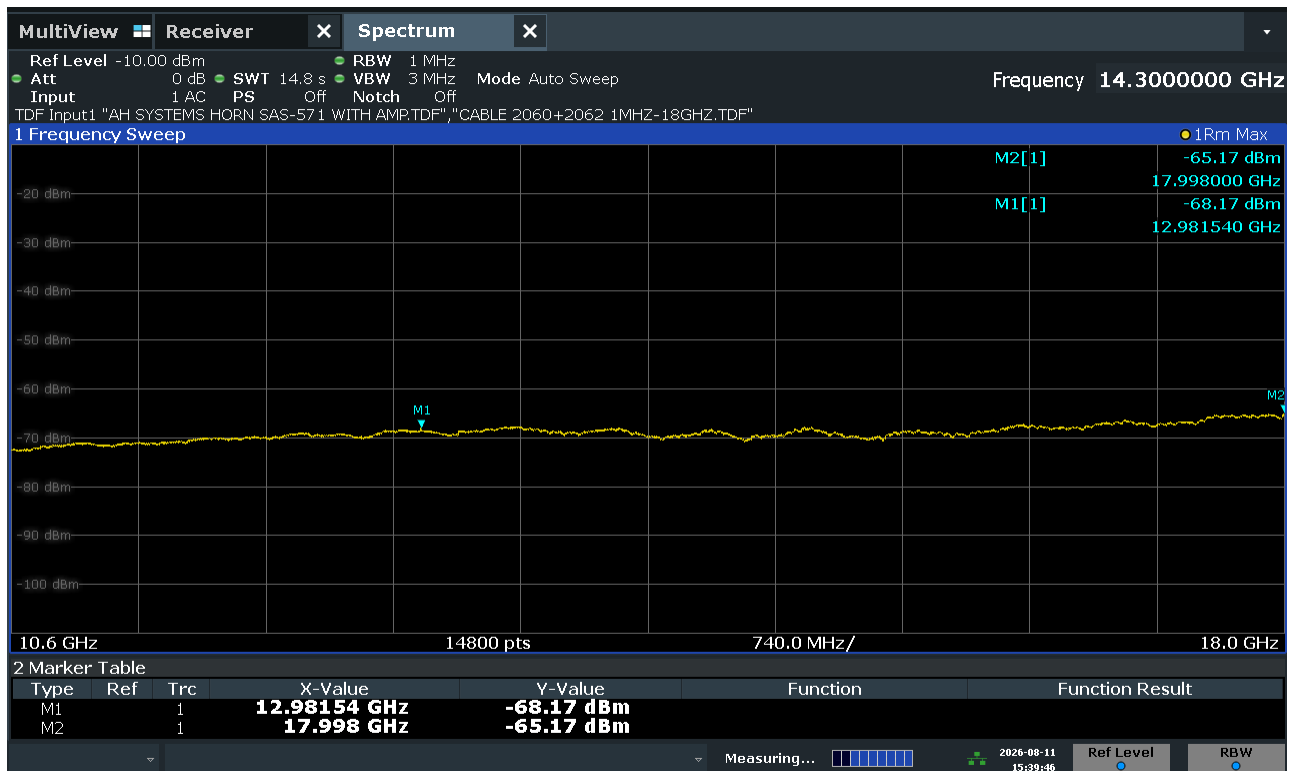


FCC Part 15.209 Radiated Emissions CH5, MOD1000 Antenna – 30-1000MHz



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FCC Part 15.519(c) Radiated Emissions CH5, MOD1000 Antenna – 1-10.6GHz



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FCC Part 15.519(c) Radiated Emissions CH5, MOD1000 Antenna – 10.6-18GHz

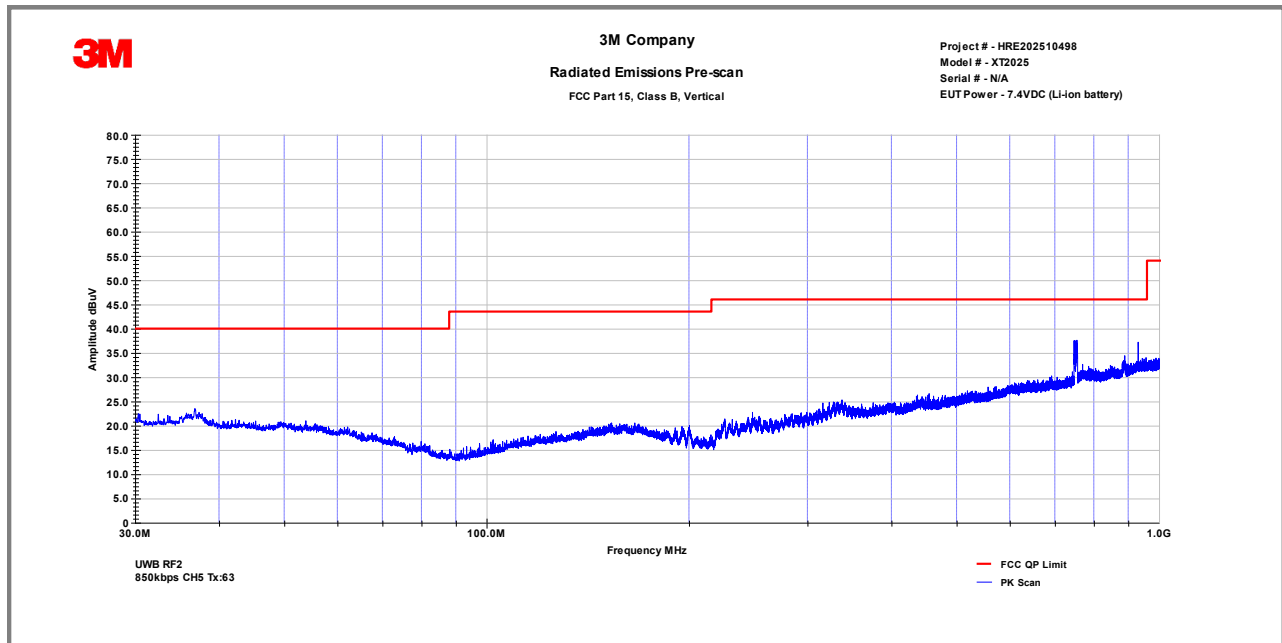
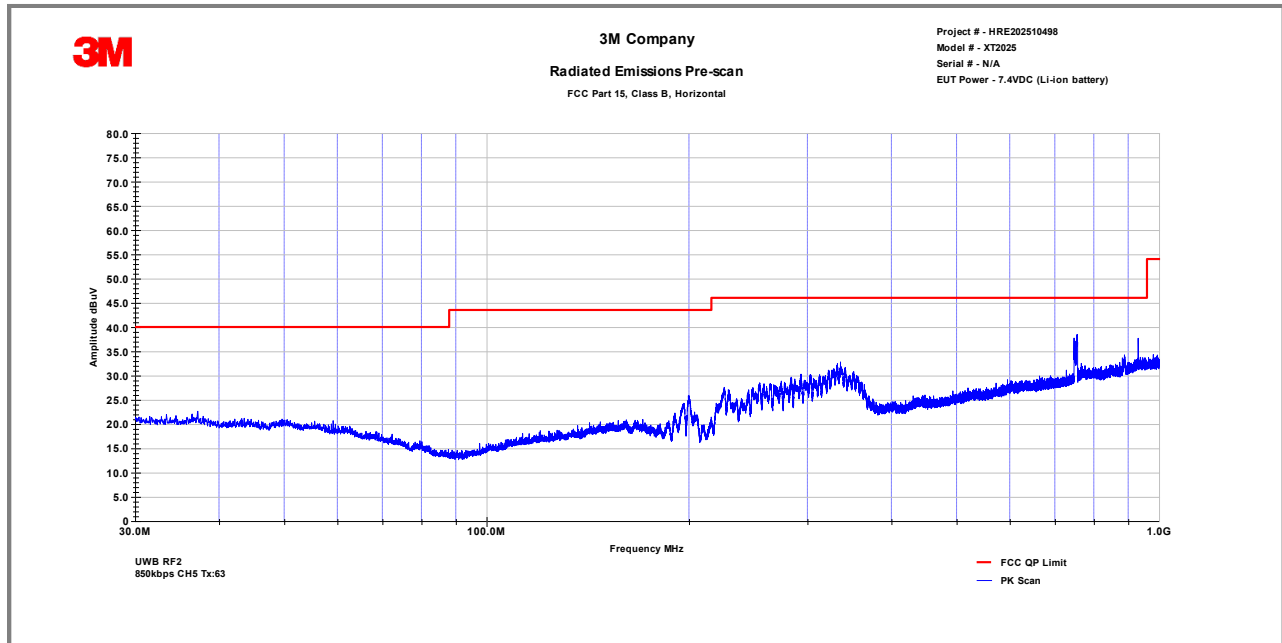
FCC Part 15.519(c) - Radiated Emissions

Frequency (MHz)	Pol.	QP Reading dBμV/m	Total CF dB	Net at 3 m dBμV/m	Limit (dBμV/m)	Margin dB
199.7	H	7.9	14.9	22.7	43.5	-20.8
335.66	H	9.5	19.8	29.3	46	-16.7
753.2	H	3.8	28.2	32	46	-14
929.66	H	3.8	30	33.9	46	-12.1
Notes:	Net Reading (dBuV) = Reading (dBμV) + Antenna CF(dB)+Cable CF(dB) – Amp Gain(dB) CH5, RF2 Antenna 850kbits					

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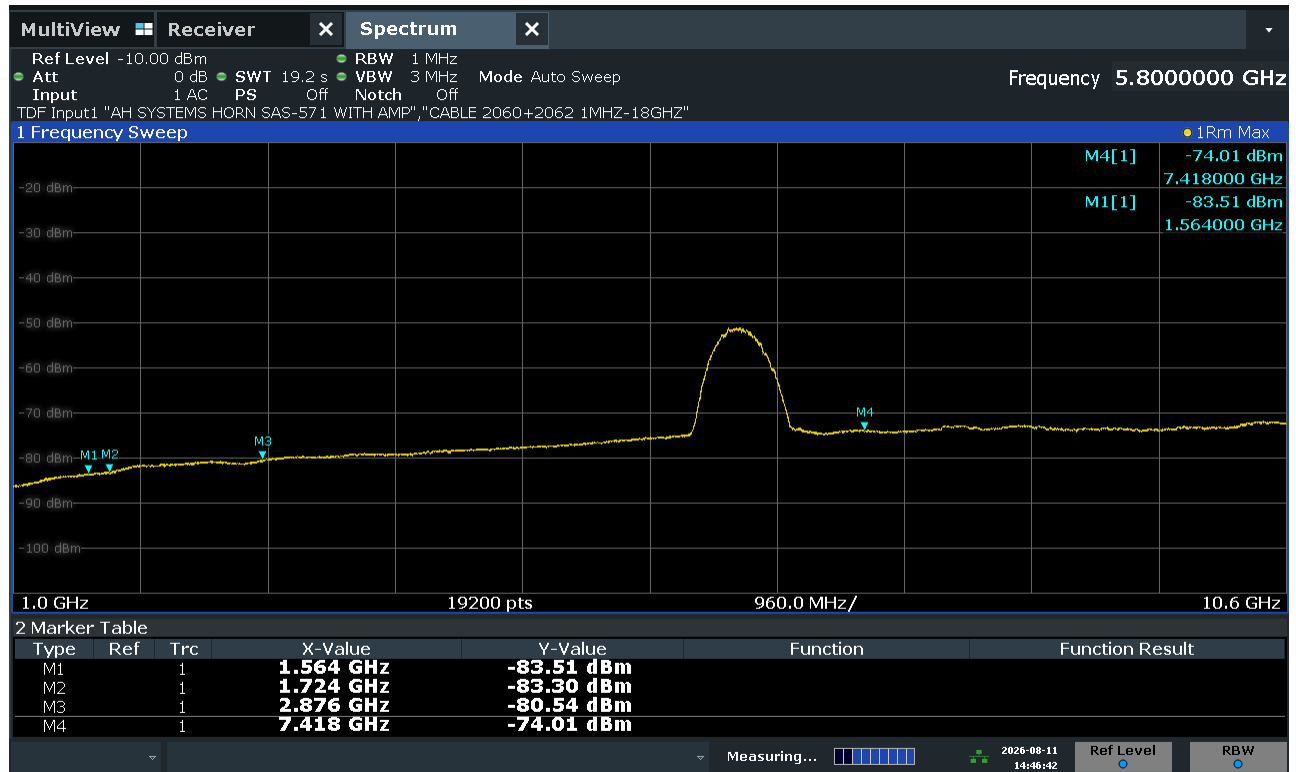
FCC Part 15.510(d)(4) Radiated Emissions in 1164 – 1240 MHz and 1559 – 1610 MHz

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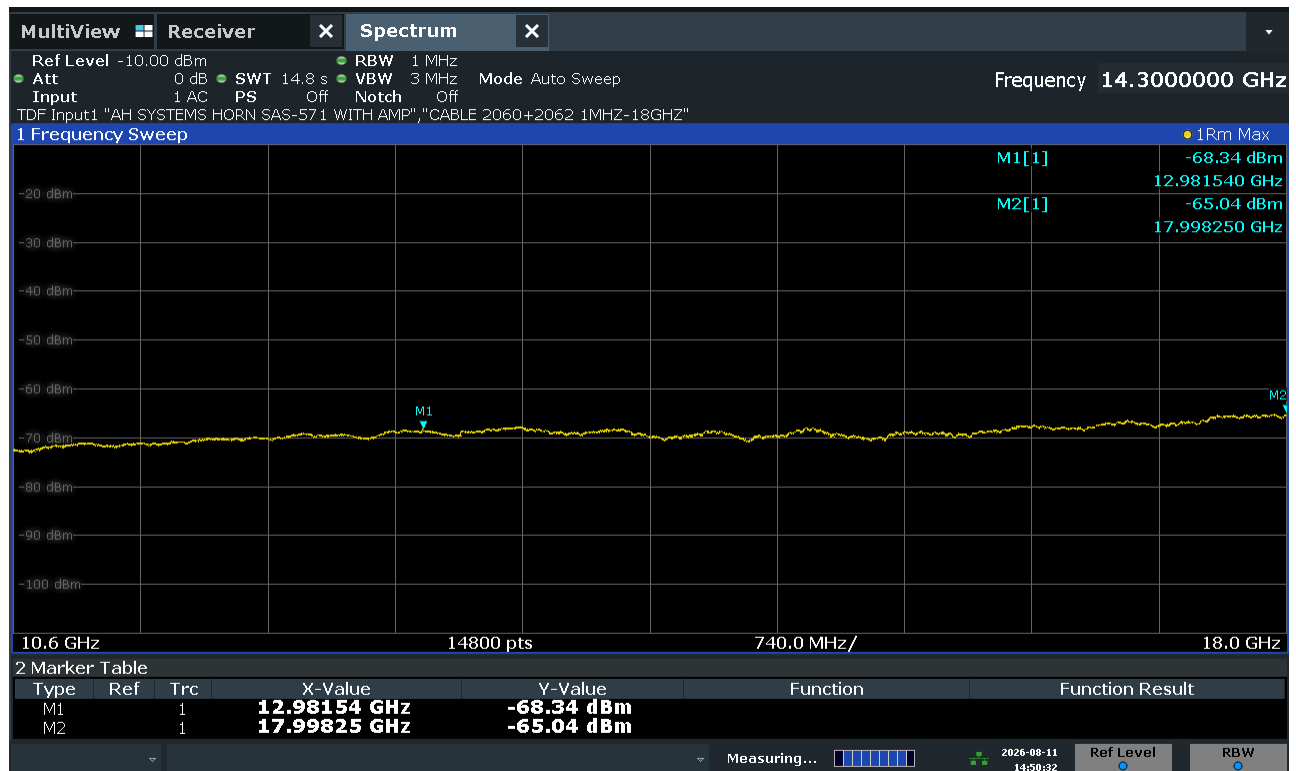
FCC Part 15.209 Radiated Emissions CH5, RF2 Antenna – 30-1000MHz

FCC Part 15.519(c) Radiated Emissions CH5, MOD1000 Antenna – 1-10.6GHz



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FCC Part 15.519(c) Radiated Emissions CH5, MOD1000 Antenna – 1-10.6GHz



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FCC Part 15.519(c) Radiated Emissions CH5, MOD1000 Antenna – 10.6-18GHz

4.4	Conducted Emissions Data			
Method:	The AMN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN). Conducted voltage measurements on mains lines were made at the output of the AMN.			
	All power was connected to the system through Artificial Mains Network (AMN). All tested telecommunications lines were connected to an Asymmetric Artificial Network (AAN) and conducted voltage measurements on telecommunications lines were made at the output of the ISN. Where an AAN was not appropriate or available measurements were made using a Capacitive Voltage Probe.			
Test Verification: ☐		Laboratory Ambient Temperature:		
		Relative Humidity:		
		Atmospheric Pressure:		
Reference Standard(s):		☐ RSS Gen/FCC 15.207 ☐ ANSI C63.4:2014 ☐ ANSI C63.10:2020	Measurement Point ☐ Mains ☐ Telecommunication ports ☐	
Nominal Voltage:		☐ 120VAC ☐ 230VAC ☐ VDC		
Test Personnel:			Date:	
Limits – Part 15.207/RSS Gen – AC Mains				
Frequency (MHz)	Limit dB (µV)			
	Quasi-Peak	Average	Result	Comments
0.15 to 0.50	66 to 56	56 to 46	N/A	
0.50 to 5	56	46	N/A	
5 to 30	60	50	N/A	

Modifications:	
Note:	

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5.0	Test Equipment				
Test Equipment Used					
Description	Manufacturer	Model	Identifier	Last Cal. Date	Check
Biconilog Antenna	Schwarzbeck	VULB 9168	9168-1070	10/20/2025	☒
Horn Antenna	A.H. Systems	SAS 571	1010	10/20/2025	☒
Loop Antenna	A.H. Systems	EHA-51B	1213E	10/20/2025	☐
EMI Receiver	Rohde & Schwarz	ESW26	101412	10/20/2025	☒
Signal Analyzer	Agilent	N9000A	MY53031040	10/20/2025	☒
EMI Receiver	Agilent	E4448A	1530975	10/20/2025	☒
LISN	TESEQ	NNB51	1130	10/20/2025	☐
Coaxial Cable	Insulated Wire	2803	CBL2039	10/20/2025	☒
EMC Software	ETS-Lindgren	TILE 7		N/A	☒
Equipment Calibration Interval:		☒ 12 months ☐ 24 months			

6.0	Report revision history		
Revision Level	Date	Report Number	Notes
0	10/01/2026	HRE202510498-10	Original Issue