Amber Helm Development L.C.
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VTHFA-WR2320TX
Issued: **September 18, 2023**

RF Test Report

regarding

USA:	**CFR Title 47, Part 15.249**	(Emissions)
Canada:	**ISED RSS-210v10**	(Emissions)

for

HFA30

Category: 24.2 GHz Kick Sensor

Judgments:
Aligns with FCC 15.249, ISED RSS-210v10
Testing Completed: September 10, 2023

TESTING
NVLAP LAB CODE 200129-0

Prepared for:

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Revision History

Rev. No.	Date	Details	Revised By
r0	September 18, 2023	Initial Release.	J. Brunett

Contents

List of Tables

List of Figures

1 Test Report Scope and Limitations

1.1 Laboratory Authorization

Test Facility description and attenuation characteristics are on file with the FCC Laboratory, Columbia, Maryland (FCC Reg. No: US5348 and US5356) and with ISED Canada, Ottawa, ON (File Ref. No: 3161A and 24249). Amber Helm Development L.C. holds accreditation under NVLAP Lab Code 200129-0.

1.2 Report Retention

For equipment verified to comply with the regulations herein, the manufacturer is obliged to retain this report with the product records for the life of the product, and no less than ten years. A copy of this Report will remain on file with this laboratory until October 2033.

1.3 Subcontracted Testing

This report does not contain data produced under subcontract.

1.4 Test Data

This test report contains data included within the laboratory's scope of accreditation. Any data in this report that is not covered under the laboratory's scope is clearly identified.

1.5 Limitation of Results

The test results contained in this report relate only to the item(s) tested. Any electrical or mechanical modification made to the test item subsequent to the test date shall invalidate the data presented in this report. Any electrical or mechanical modification made to the test item subsequent to this test date shall require reevaluation.

1.6 Copyright

This report shall not be reproduced, except in full, without the written approval of Amber Helm Development L.C.

1.7 Endorsements

This report shall not be used to claim product endorsement by any accrediting, regulatory, or governmental agency.

1.8 Test Location

The EUT was fully tested by **Amber Helm Development L.C.**, headquartered at 92723 Michigan Hwy-152, Sister Lakes, Michigan 49047 USA. Table 1 lists all sites employed herein. Specific test sites utilized are also listed in the test results sections of this report where needed.

Table 1: Test Site List.

Description	Location	Quality Num.
OATS (3 meter)	3615 E Grand River Rd., Williamston, Michigan 48895	OATSC

1.9 Traceability and Equipment Used

Pertinent test equipment used for measurements at this facility is listed in Table 2. The quality system employed at Amber Helm Development L.C. has been established to ensure all equipment has a clearly identifiable classification, calibration expiry date, and that all calibrations are traceable to the SI through NIST, other recognized national laboratories, accepted fundamental or natural physical constants, ratio type of calibration, or by comparison to consensus standards.

Table 2: Equipment List.

Description	Manufacturer/Model	SN	Quality Num.	Cal/Ver By / Date Due
EMI Receiver	R & S / ESW26	101313	RSESW2601	RS / October-2023
Spectrum Analyzer	R & S / FSV30	101660	RSFSV3001	RS / Apr-2024
Harmonic Mixer	Hewlett Packard / 11970U	2332A01153	MIX40TO7001	AHD / CNR
Harmonic Mixer	VDI / SAX 108	A30316	MIX60TO9001	AHD / On-use
Biconical	EMCO / 93110B	9802-3039	BICEMCO01	Keysight / Aug-2025
Log Periodic Antenna	EMCO / 3146	9305-3614	LOGEMCO01	Keysight / Aug-2025
Quad Ridge Horn	Singer / A6100	C35200	HQR1TO18S01	Keysight / Aug-2024
K-Band Horn	JEF / NRL Std.	001	HRNK01	AHD / Jul-2024
Ka-Band Horn	JEF / NRL Std.	001	HRNKA001	AHD / Jul-2024
U-Band Horn	Cust. Micro. / HO19R	-	HRNU01	Cust.M. / On-Use
E-Band Horn	Flann / 26240-25-1030B	250901	HRNE01	Flann / On-Use
W-Band Horn	Cust. Micro. / HO10R	-	HRNW01	Cust.M. / On-Use

2 Test Specifications and Procedures

2.1 Test Specification and General Procedures

The goal of Vitesco Technologies GmbH is to demonstrate that the Equipment Under Test (EUT) complies with the Rules and/or Directives below. Detailed in this report are the results of testing the Vitesco Technologies GmbH HFA30 for compliance to:

Country/Region	Rules or Directive	Referenced Section(s)
United States	Code of Federal Regulations	CFR Title 47, Part 15.249
Canada	ISED Canada	ISED RSS-210v10

It has been determined that the equipment under test is subject to the rules and directives above at the date of this testing. In conjunction with these rules and directives, the following specifications and procedures are followed herein to demonstrate compliance (in whole or in part) with these regulations.

ANSI C63.4:2014	"Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz"
ANSI C63.10:2013	"American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices"
TP0102RA	"AHD Internal Document TP0102 - Radiated Emissions Test Procedure"

3 Configuration and Identification of the Equipment Under Test

3.1 Description and Declarations

The EUT is an automotive kick sensor radar used for vehicle door access. The EUT is approximately 13 x 5 x 2 cm (approx.) in dimension, and is depicted in Figure 1. It is powered by 13.4 VDC vehicle power system. In use, this device is permanently affixed in a motor vehicle. Table 3 outlines provider declared EUT specifications.

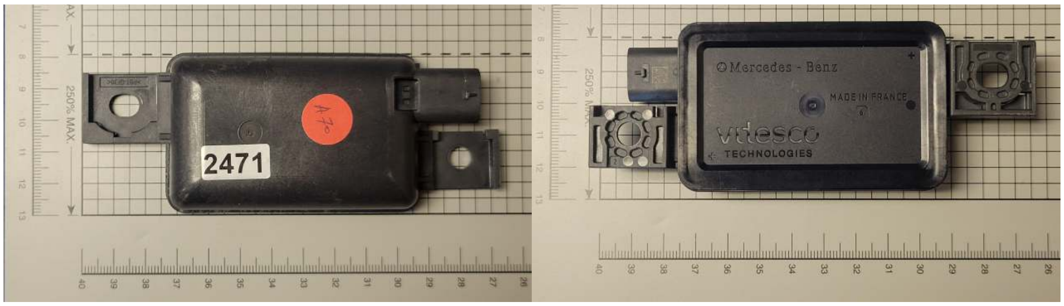


Figure 1: Photos of EUT.

Table 3: EUT Declarations.

General Declarations	
Equipment Type:	24.2 GHz Kick Sensor
Country of Origin:	Not Declared
Nominal Supply:	13.4 VDC
Oper. Temp Range:	-40^o C to $+85^o$ C
Frequency Range:	24.05 – 24.25 GHz
Antenna Dimension:	Not Declared
Antenna Type:	integral monopole antennas
Antenna Gain:	Not Declared
Number of Channels:	1
Channel Spacing:	Not Applicable
Alignment Range:	Not Declared
Type of Modulation:	CW Burst Radar
United States	
FCC ID Number:	2A6TC-HFA30
Classification:	DXX
Canada	
IC Number:	28616-HFA30
Classification:	Automotive Radar, Vehicular Device

3.1.1 EUT Configuration

The EUT is configured for testing as depicted in Figure 2.

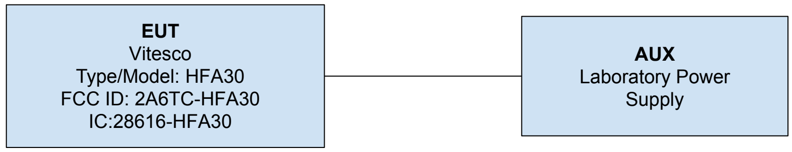


Figure 2: EUT Test Configuration Diagram.

3.1.2 Modes of Operation

The EUT is capable of a low duty cycle SLEEP mode where is sends CW burst transmissions infrequently looking for motion. Once motion is detected, the EUT switches into ACTIVE mode where it transmits the same short CW bursts more frequently. Every CW burst transmission is a single 60us transmission simultaneously emanating from both integral transmit antennas. Both SLEEP and ACTIVE modes are detailed and tested herein.

3.1.3 Variants

There is only a single variant of the EUT, as tested.

3.1.4 Test Samples

Three samples were provided, one capable of sleep mode (SN: 2468), one capable of active mode (SN: 2471) and one capable of continuously modulated (CM) transmission (SN: 2469) all of which were tested herein.

3.1.5 Functional Exerciser

Normal operating EUT functionality was verified prior to testing by observation of the emissions spectrum.

3.1.6 Modifications Made

There were no modifications made to the EUT by this laboratory.

3.1.7 Production Intent

The EUT appears to be a production ready sample.

3.1.8 Declared Exemptions and Additional Product Notes

The EUT is permanently installed in a transportation vehicle. As such, digital emissions are exempt from US and Canadian digital emissions regulations (per FCC 15.103(a) and IC correspondence on ICES-003). In the mm-wave band, narrow encoded pulses arise both as part of the communications encoding and as the signal chirps past the receiver tuned frequency. To avoid amplitude measurement error due to Pulse Desensitization, we measure peak emissions only when the radar is either placed into CW mode or when the signal “Dwells” at a single frequency for an extended period of time. Duty cycle (peak-to-average ratio) for the fundamental emission is measured as the difference between the peak emission observed in the operating band relative to the highest average emission measured in the operating band.

4 Emissions

4.1 General Test Procedures

4.1.1 Radiated Test Setup and Procedures

Radiated electromagnetic emissions from the EUT are first pre-scanned in our screen room. Spectrum and modulation characteristics of all emissions are recorded. Instrumentation, including spectrum analyzers and other test equipment as detailed in Section 1.8 are employed. After pre-scan, emission measurements are made on the test site of record. If the EUT connects to auxiliary equipment and is table or floor standing, the configurations prescribed in relevant test standards are followed. Alternatively, a layout closest to normal use (as declared by the provider) is employed if the resulting emissions appear to be worst-case in such a configuration. See Figure 3. All intentionally radiating elements that are not fixed-mounted in use are placed on the test table lying flat, on their side, and on their end (3-axes) and the resulting worst case emissions are recorded. If the EUT is fixed-mounted in use, measurements are made with the device oriented in the manner consistent with installation and then emissions are recorded. If the EUT exhibits spurious emissions due to internal receiver circuitry, such emissions are measured with an appropriate carrier signal applied.

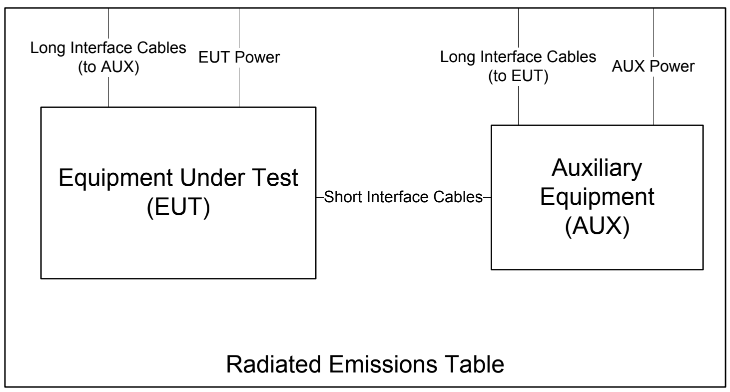


Figure 3: Radiated Emissions Diagram of the EUT.

For devices with intentional emissions below 30 MHz, a shielded loop antenna and/or E-field and H-Field broadband probes are used depending on the regulation. Shielded loops are placed at a 1 meter receive height at the desired measurement distance. For exposure in this band, 10cm diameter single-axis broadband probes meeting the requirements of ISED SPR-002 section 5.2 are employed. Measurements are repeated and summed over three axes, and the entire frequency range is measured with and without the EUT transmitting.

Emissions between 30 MHz and 1 GHz are measured using calibrated broadband antennas. For both horizontal and vertical polarizations, the test antenna is raised and lowered from 1 to 4 m in height until a maximum emission level is detected. The EUT is then rotated through 360^o in azimuth until the highest emission is detected. The test antenna is then raised and lowered one last time from 1 to 4 m and the worst case value is recorded. Emissions above 1 GHz are characterized using standard gain or broadband ridge-horn antennas on our OATS with a 4×5 m rectangle of ECCOSORB absorber covering the OATS ground screen and a 1.5m table height. Care is taken to ensure that test receiver resolution and video bandwidths meet the regulatory requirements, and that the emission bandwidth of the EUT is not reduced. Photographs of the test setup employed are depicted in Figure 4.

Where regulations allow for direct measurement of field strength, power values (dBm) measured on the test receiver / analyzer are converted to dBμV/m at the regulatory distance, using

$$E_{dist} = 107 + P_R + K_A - K_G + K_E - C_F$$

where P_R is the power recorded on spectrum analyzer, in dBm, K_A is the test antenna factor in dB/m, K_G is the combined pre-amplifier gain and cable loss in dB, K_E is duty correction factor (when applicable) in dB, and C_F is a distance conversion (employed only if limits are specified at alternate distance) in dB. This field strength value is then compared with the regulatory limit. If effective isotropic radiated power (EIRP) is computed, it is computed as

$$EIRP(dBm) = E_{3m}(dB\mu V/m) - 95.2.$$

When presenting data at each frequency, the highest measured emission under all possible EUT orientations (3-axes) is reported.

Where regulations call for substitution method measurements, the EUT is replaced by a substitution antenna if field strength measurements indicate the emission is close to the regulatory limit. This antenna is co-polarized with the test antenna and tuned (when necessary) to the emission frequency, after which the test antenna height is again optimized. The substitution antenna's signal level is adjusted such that its emission is equal to the level measured from the EUT. The signal level applied to the substitution antenna is then recorded. Effective isotropic radiated power (EIRP) and effective radiated power (ERP) in dBm are formulated from

$$EIRP = P_T - G_A = ERP + 2.16, \tag{1}$$

where P_T is the power applied to substitution antenna in dBm, including correction for cable loss, and G_A is the substitution antenna gain, in dBi.

When microwave measurements are made at a range different than the regulatory distance or made at close-range to improve receiver sensitivity, the reading is corrected back to the regulatory distance. This is done using a 20 dB/decade field behavior as dictated by the test procedures. When measurements are made in the near-field, the near-field/far-field boundary (N/F) is reported. It is computed as

$$N/F = 2D^2/\lambda$$

where D is the maximum dimension of the transmitter or receive antenna, and λ is the wavelength at the measurement frequency. Typically for high frequency measurements the receive antenna is connected to test receiver / analyzer through an external mixer. In this case, cable loss, IF amplifier gain, and mixer conversion losses are corrected for in the data table, or directly in the analyzer.

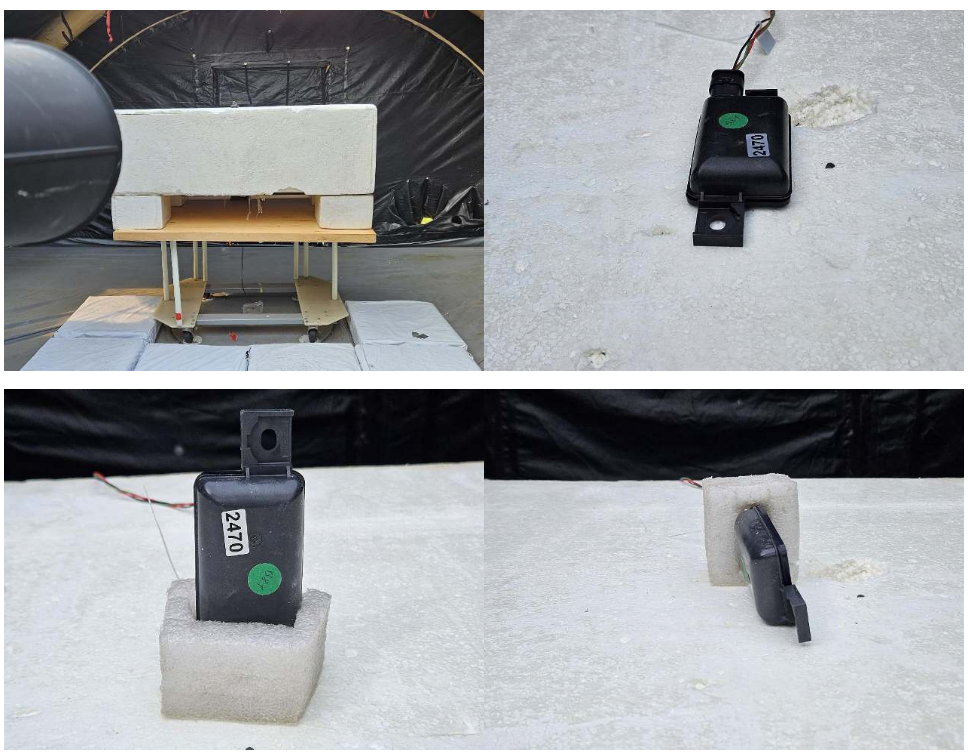


Figure 4: Radiated Emissions Test Setup Photograph(s).

4.1.2 Conducted Emissions Test Setup and Procedures

4.1.3 Power Supply Variation

Tests at extreme supply voltages are made if required by the procedures specified in the test standard, and results of this testing are detailed in this report.

4.2 Intentional Emissions

4.2.1 Fundamental Emission Pulsed Operation

The details and results of testing the EUT for pulsed operation are summarized in Table 4. Plots showing the measurements made to obtain these values are provided in Figure 5.

Table 4: Pulsed Emission Characteristics (Duty Cycle).

IF Bandwidth	28 MHz
Video Bandwidth	28 MHz
Test Date:	19-Aug-23
Test Engineer:	John Nantz
EUT:	HFA30
Meas. Distance:	2 m

FCC/IC

#	EUT Test Mode	Overall Transmission			Internal Frame Characteristics			Calculated Duty Cycle	
		Min. Repetition Rate (sec)	Max. No. of Frames	Total Transmission Length (sec)	Max. Frame Length (ms)	Min. Frame Period (ms)	Frame Encoding	(%)	(dB)
R1	No-Movement (SLEEP)	0.100			0.0628	100.1280	Max Tx when in sleep mode is 62.8us on time every 100.13ms.	0.06	-20.0
R2	Movement (ACTIVE)	-			0.0578	1.0004	Max Tx when motion is detected is 57.8us on time every 1ms.	5.78	-20.0
#	C1	C2	C3	C4	C5	C6	C7	C8	C9

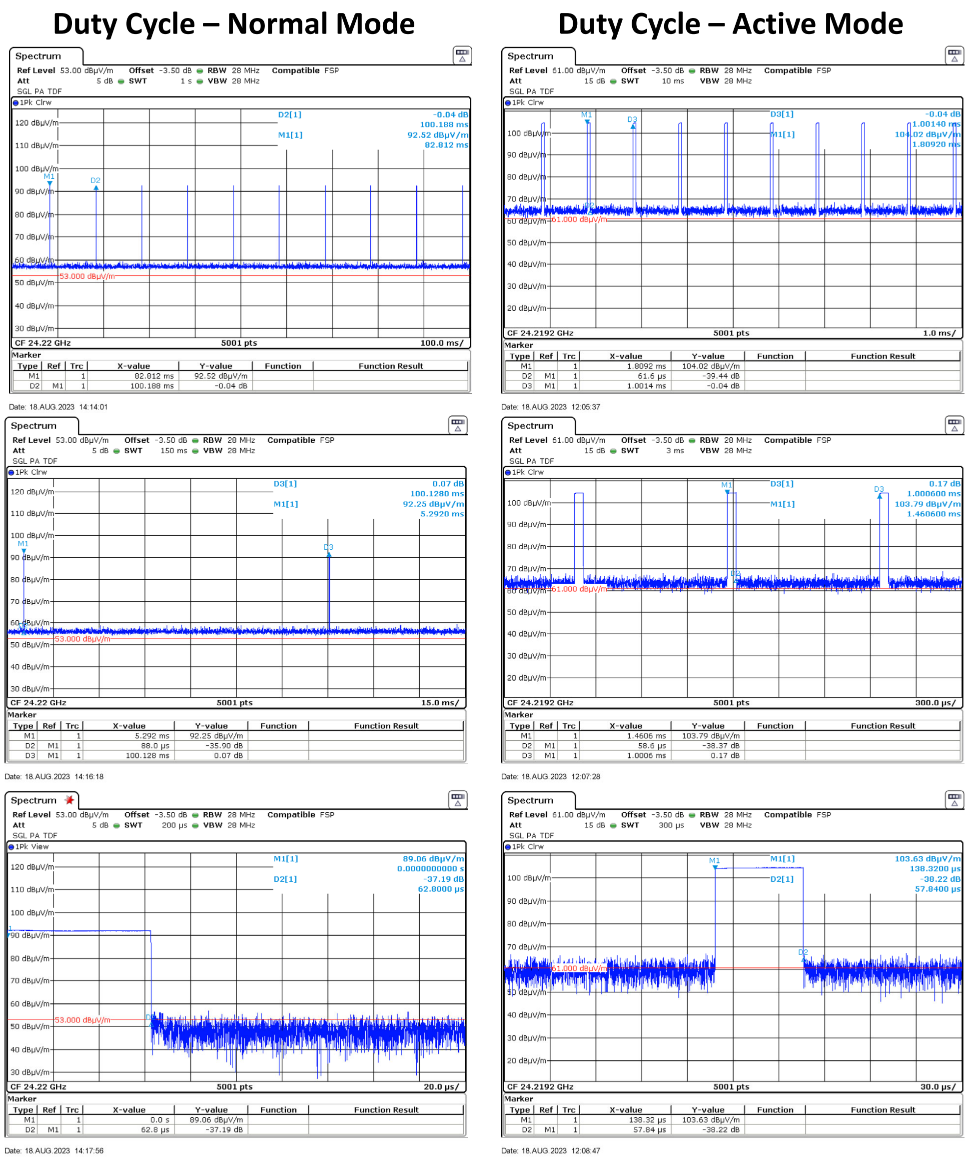


Figure 5: Example Pulsed Emission Characteristics (Duty Cycle).

4.2.2 Fundamental Emission Bandwidth

Emission bandwidth (EBW) of the EUT is measured with the device placed in the test mode(s) with the shortest available frame length and minimum frame spacing. Radiated emissions are recorded following the test procedures listed in Section 2.1. The 20 dB EBW is measured as the max-held peak-detected signal when the IF bandwidth is greater than or equal to 1% of the receiver span. The 99% emission bandwidth is also reported. The results of EBW testing are summarized in Table 5. Plots showing measurements employed to obtain the emission bandwidth reported are provided in Figure 6.

Table 5: Intentional Emission Bandwidth.

Detector	IF Bandwidth	Video Bandwidth
Pk	300 kHz	3 MHz

Test Date:	18-Aug-23
Test Engineer:	J. Nantz
EUT:	HFA30
EUT Mode:	See Below
Meas. Distance:	1m

							FCC/IC
#	Mode	Center Frequency (GHz)	99% OBW (MHz)	fL (MHz)	fL Limit (MHz)	fH (MHz)	fH Limit (MHz)
R1	SENSE + ACTIVE	24.214	5.45	24216.08	24000	24221.54	24250
R2							
#	C1	C2	C3	C4	C5	C6	C7

NOTE: EUT EXHIBITS MINOR DRIFT IN DOPPLER CW FREQUENCY RESULTING IN OBW AS MEASURED.

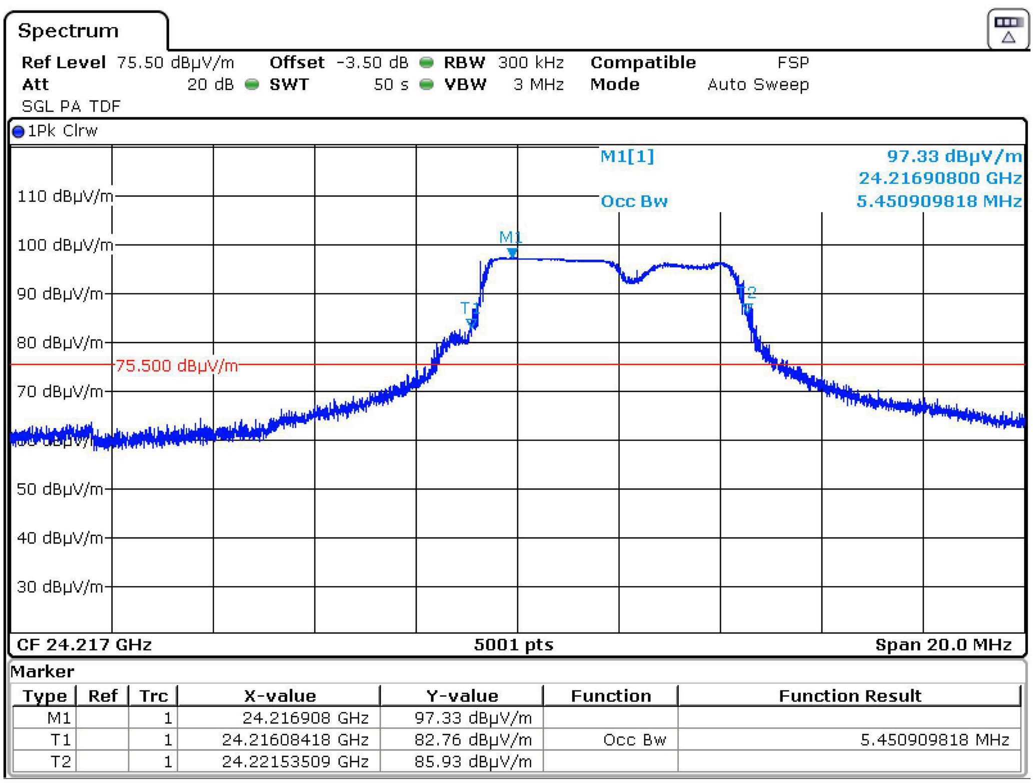


Figure 6: Example Intentional Emission Bandwidth.

4.2.3 Fundamental Emission

Following the test procedures listed in Section 2.1, field emissions measurements are made on the EUT for both Horizontal and Vertically polarized fields. Table 6 details the results of these measurements.

Table 6: Example Fundamental Radiated Emissions.

Frequency Range	Det	IF Bandwidth	Video Bandwidth
f > 1 000 MHz	Pk/Avg	1 MHz	28 MHz

Test Date:	19-Aug-23
Test Engineer:	John Nantz
EUT:	HFA30
Mode:	Continuous Modulation
Meas. Distance:	3m

FCC/IC

		Frequency Band		Test Antenna + Cable					Range Correction				E-Field @ Des.				EIRP			
				Ant.									Meas	Calc.	FCC/ISED Limit		Computed			
	Mode	Start	Stop	Quality	Pol.	Dim.	Ka	Kg	Meas.	Des.	N/F	CF	Pk	Avg	Pk	Avg	Pk	Avg	Pass By	
#		MHz	MHz	Number	H/V	cm	dB/m	dB	m	m	m	dB	dBuV/m		dBuV/m		dBm	dBm	dB	Comments
R1	CW	24214.0	24214.0	HRNK01	H/V	10.2	33.2		2.0	3.0	1.7	3.5	103.9	83.9	128.0	108.0	8.7		**24.1**	
R2																				
R3																				
R4																				
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20

(ROW)	(COLUMN)	NOTE:
R0	C9	MR is Measurement Range, which is reduced from DR to achieve necessary SNR.
R0	C10	DR is the regulatory Desired Range measurement distance.
R0	C11	N/F is Near-Field / Far-Field distance computed for max of EUT Antenna Dimension (C6) computed above 1 GHz.
R0	C12	CF is computed assuming a 20 dB/decade Far-field Decay Rate per ANSI-C63.10:2013 Test Procedures.
R0	C13	When E-field is reported directly from Spectrum Analyzer, Antenna Factors and Cable losses are included directly in SA settings.
R0	C17/C18	EIRP is computed from field strength at 3 meter distance. If emission is within 6 dB of regulatory limit, then substitution method measurement may be employed to determine exact EIRP.

4.3 Unintentional Emissions

4.3.1 Transmit Chain Radiated Spurious Emissions

The results for the measurement of transmit chain spurious emissions at the nominal voltage and temperature are provided in Table 7. Measurements are performed to 10 times the highest fundamental operating frequency.

Table 7: Transmit Chain Spurious Emissions.

Frequency Range	**Det**	**IF Bandwidth**	**Video Bandwidth**
25 MHz ≤ f ≤ 1 000 MHz	Pk/QPk	120 kHz	300 kHz
f > 1 000 MHz	Pk	1 MHz	3 MHz
f > 1 000 MHz	Avg (RMS)	1 MHz	3 MHz

Test Date:	08/22/23
Test Engineer:	J. Nantz
EUT:	HFA30
Mode:	Continuous Modulation
Meas. Distance:	See Table.

FREQ < 40 GHZ																					
	Env.		Frequency Band		Antenna + Cable					Range Correction				Meas. E-Field @ DR		EIRP		E-Field Limit			
	Temp.	Volt.	Start	Stop	Quality	Pol.	Dim.	Ka	Kg	MR	DR	N/F	CF	Pk	Qpk	Pk	Avg	Pk	Qpk	Pass By	
#	(C)	(V)	MHz	MHz	Number	H/V	cm	dB/m	dB	m	m	m	dB	dBuV/m		dBm		dBuV/m		dB	Comments
R1	18	13.4	30.0	88.0	BICEMCO01	H/V	22.0	7.8	-0.5	3.0	3.0	0.0		37.1	25.8				40.0	14.2	max all, background
R2	18	13.4	88.0	216.0	BICEMCO01	H/V	22.0	14.8	-0.9	3.0	3.0	0.1		40.9	30.1				43.5	13.4	max all, background
R3	18	13.4	216.0	1000.0	LOGEMCO01	H/V	22.0	24.1	-3.1	3.0	3.0	0.3		39.8	29.8				46.0	16.2	max all, background
R4	Env.		Frequency Band		Antenna + Cable					Range Correction				Meas. E-Field @ DR		EIRP		E-Field Limit			
R5	Temp.	Volt.	Start	Stop	Quality	Pol.	Dim.	Ka	Kg	MR	DR	N/F	CF	Pk	Avg	Pk	Avg	Pk	Avg	Pass By	
R6	(C)	(V)	MHz	MHz	Number	H/V	cm	dB/m	dB	m	m	m	dB	dBuV/m		dBm		dBuV/m		dB	Comments
R7	18	13.4	1000.0	6000.0	HQR1TO18S01	H/V	22.0	24.1	-12.2	3.0	3.0	1.9		49.3	40.1	-45.9		74.0	54.0	13.9	max all, noise
R8	18	13.4	4800.0	4800.0	HQR1TO18S01	H/V	22.0	32.9	-10.8	3.0	3.0	1.5		49.3	40.2	-45.9		74.0	54.0	13.8	max all
R9	18	13.4	6000.0	18000.0	HQR1TO18S01	H/V	15.0	35.0	2.5	3.0	3.0	2.7		51.1	42.3	-44.1		74.0	54.0	11.7	max all
R10	18	13.4	18000.0	24000.0	HRNK01	H/V	10.2	33.2		3.0	3.0	1.7		44.2	34.9	-51.0		74.0	54.0	19.1	max all, noise
R11	18	13.4	24000.0	24050.0	HRNK01	H/V	10.2	33.2		3.0	3.0	1.7		50.0	36.2	-45.2		74.0	54.0	17.8	Low Bandedge, noise
R12	18	13.4	24250.0	24250.0	HRNK01	H/V	10.2	33.2		3.0	3.0	1.7		59.7	36.4	-35.5		74.0	54.0	14.3	High Bandedge, noise
R13	18	13.4	24250.0	26500.0	HRNK01	H/V	10.2	33.7		3.0	3.0	1.8		47.3	37.3	-47.9		74.0	54.0	16.7	max all, noise
R14	18	13.4	26500.0	40000.0	HRNKA01	H/V	9.2	37.2		3.0	3.0	2.3		47.1	38.9	-48.1		74.0	54.0	15.1	max all, noise
R15	**FREQ >= 40 GHZ**																				
R16	Env.		Frequency Band		Antenna + Cable					Range Correction				Meas. E-Field @ DR		EIRP*		E-Field Limit			
R17	Temp.	Volt.	Start	Stop	Quality	Pol.	Dim.	Ka	Kg	MR	DR	N/F	CF	Pk	Avg	Pk	Avg	Pk	Avg	Pass By	
R18	(C)	(V)	GHz	GHz	Number	H/V	cm	dB/m	dB	m	m	m	dB	dBuV/m		dBm		dBuV/m		dB	Comments
R19	20	13.4	40.0	70.0	HRNU01	H/V	6.3	45.0		3.00	3.0	1.9		50.2	40.2	-45.0		74.0	54.0	13.8	max all, noise
R20	20	13.4	48.43	48.43	HRNU01	H/V	6.3	42.3		3.00	3.0	1.3		63.2	43.2	-32.0		88.0	68.0	24.8	harmonic, 2nd
R21	20	13.4	72.64	72.64	HRNE01	H/V	6.0	42.3		3.00	3.0	1.7		74.0	54.0	-21.2		88.0	68.0	14.0	harmonic, 3rd
R22	20	13.4	70.0	110.0	HRNW01	H/V	6.0	47.7		0.60	3.0	2.6	-14.0	56.3	46.3	-38.9		74.0	54.0	7.7	max all, noise
#	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14	C15	C16	C17	C18	C19	C20	C21

(ROW)	(COLUMN)	NOTE:
R0	C10/C11/C13	CF is computed assuming a 20 dB/decade Decay Rate. DR is Regulatory Range Distance. MR is Measurement Distance.
R10-R23	C15	Peak values used for calculation.
R0	C16-C17	EIRP is computed from field strength at 3 meter distance. If emission is within 6 dB of regulatory limit, then substitution method measurement is employed to determine exact EIRP.
R0	C7	Dimension of antenna is taken to be larger of the test antenna and the DUT antenna; DUT antenna is 6cm in dimension.
R0	C14-C15	For harmonics, Avg is computed from Peak via Duty Cycle correction. For Spurious, Pk and Avg/QPk are both measured values.

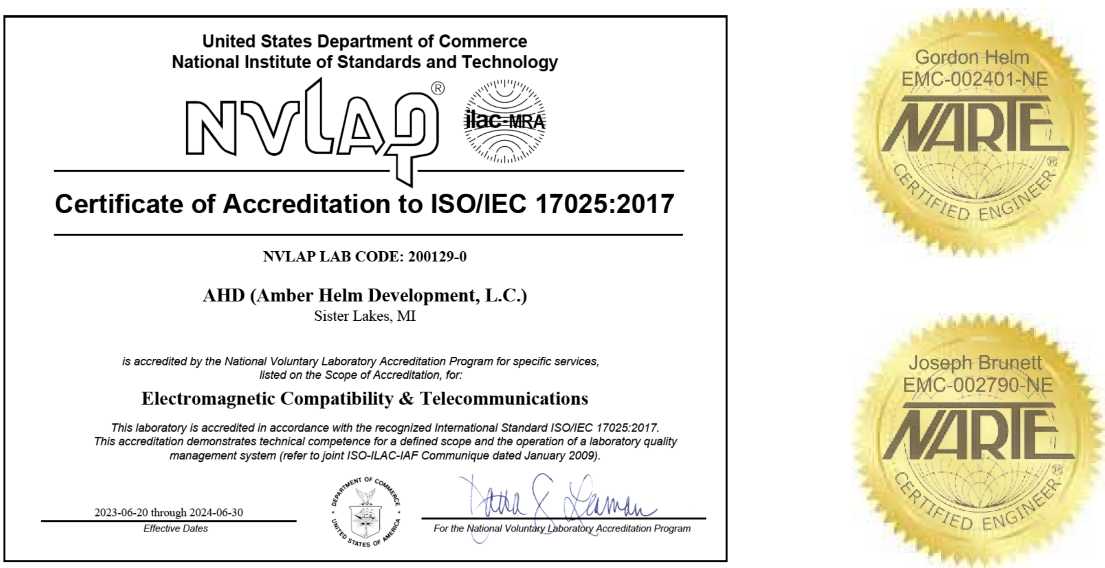
5 Measurement Uncertainty and Accreditation Documents

The maximum values of measurement uncertainty for the laboratory test equipment and facilities associated with each test are given in the table below. This uncertainty is computed for a 95.45% confidence level based on a coverage factor of $k = 2$.

Table 8: Measurement Uncertainty.

Measured Parameter	Measurement Uncertainty†
Radio Frequency	$\pm(f_{Mkr}/10^7 + RBW/10 + (SPN/(PTS-1))/2 + 1\,\mathrm{Hz})$
Conducted Emm. Amplitude	$\pm 1.9\,\mathrm{dB}$
Radiated Emm. Amplitude ($f < 30\,\mathrm{MHz}$)	$\pm 3.1\,\mathrm{dB}$
Radiated Emm. Amplitude ($30 - 200\,\mathrm{MHz}$)	$\pm 4.0\,\mathrm{dB}$
Radiated Emm. Amplitude ($200 - 1000\,\mathrm{MHz}$)	$\pm 5.2\,\mathrm{dB}$
Radiated Emm. Amplitude ($f > 1000\,\mathrm{MHz}$)	$\pm 3.7\,\mathrm{dB}$

†Ref: CISPR 16-4-2:2011+A1:2014


United States Department of Commerce
National Institute of Standards and Technology

NVLAP® ilac-MRA

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 200129-0

AHD (Amber Helm Development, L.C.)
Sister Lakes, MI

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Electromagnetic Compatibility & Telecommunications

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2023-06-20 through 2024-06-30
Effective Dates

For the National Voluntary Laboratory Accreditation Program

Figure 7: Accreditation Documents