Testing Tomorrow's Technology

Class II Permissive Change Application

For

Part 2, Subpart J, Paragraph 2.907 Equipment Authorization of Certification for an Intentional Radiator per Part 15, Subpart B, paragraph 15.109, Subpart C, paragraphs 15.209, and 15.249

And

Innovation Science and Economic Development Canada Certification Per
IC RSS-Gen General Requirements for Radio Apparatus (Issue 5)
And
RSS-210, License Exempt Radio Apparatus Category I Equipment (Issue 10)

For the

Inventek Systems
Model: ISM4343-X

FCC ID: O7P-4343
IC ID: 10147A-4343

UST Project: 22-0116
Issue Date: April 4, 2022

Total Pages in This Report: 25

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Testing Tomorrow's Technology

I certify that I am authorized to sign for the Test Agency and that all of the statements in this report and in the Exhibits attached hereto are true and correct to the best of my knowledge and belief:

US TECH (Agent Responsible For Test):

By: George Yang

Name: 

Title: Laboratory Manager

Date April 4, 2022

NVLAP LAB CODE 200162-0

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MEASUREMENT TECHNICAL REPORT

COMPANY NAME: Inventek Systems

MODEL: ISM4343-X

FCC ID: O7P-4343

IC ID: 10147A-4343

DATE: April 4, 2022

This report concerns (check one): Original grant
Class II change X

Equipment type: 2402 – 2480 MHz Transmitter Module

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes_____ No X

If yes, defer until: _____N/A_____
date
agrees to notify the Commission by N/A
date
of the intended date of announcement of the product so that the grant can be issued on that date.

Report prepared by:

US Tech
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Alpharetta, GA 30004
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Table of Contents

List of Figures

Figures **Title** **Page**

List of Tables

Table **Title** **Page**

List of Attachments

FCC Agency Agreement
IC Agency Agreement
FCC Application Forms
IC Application Forms
Equipment Label(s)
User's Manual
IC Cross Reference

1 General Information

1.1 Purpose of this Report

This report is generated to include the addition of two sub-model variants for this radio module. The two sub-models are identical to the originally certified module. The only difference is that the antenna path circuity will be a trace design to allow the module to be sold as a SIP module. Additional details regarding the trace design will provided to support the trace design approval. No other changes are made. The new sub-models remain electrically identical to the originally certified module therefore no additional testing was deemed necessary.

The previous test results are presented below so that it can be used as representative test data for the two sub models.

The sub-model numbers are: ISM4343-WBM-L151 and ISM4343-WB-L151.

1.2 Characterization of Test Sample

The sample used for testing was received by US Tech on September 15, 2018 in good operating condition.

1.3 Product Description

The Equipment Under Test (EUT) is the Inventek eS-WiFi SIP/Module:

- Models
  - ISM4343-X
  - ISM4343-WBM-L54
  - ISM4343-WBM-L151
  - ISM4343-WB-L151

The ISM4343-WBM-L54, ISM4343-WBM-L151 and ISM4343-WB-L151 is part of the Inventek Systems eS-WiFi family of SIPs/Modules targeting embedded Wi-Fi 802.11 b/g/n and BT/BLE applications. Inventek eS-WiFi SIPs/Modules offer a plug-and-play solutions that enables the embedded sector to integrated Wi-Fi and BT/BLE. The eS-WiFi SIP hardware system consists of Infineon CYW4343W Wi-Fi/BT/BLE radio, and a ST Micro host MCU. The module provides SPI and UART interfaces, enabling easy connection to an embedded design.

eS-WiFi ISM4343-X SIPs/Modules are offered in multiple configurations:

1. SIP, 10mm x10mm, must use same antenna designs (per Layout Guidelines, DOC-AN-20117) as the -C and -U modules below
    a. ISM4343-WBM-L151
        i. WiFi/BT/BLE with integrated MCU
    b. ISM4343-WB-L151
        i. WiFi/BT/BLE no integrated MCU
2. Module (SIP with Antenna), 15mm x 34mm, both configurations use ISM4343-WBM-L151 core
    a. ISM4343-WBM-L54-C
        i. WiFi/BT/BLE module with integrated antenna.
        ii. Uses chip antenna with Inventek P/N W245-SC.
    b. ISM4343-WBM-L54-U
        i. WiFi/BT/BLE module with U.FL connector.
        ii. Designs must use the Inventek W24P-U external antenna.

In addition, Inventek offers an evaluation board (ISMART4343) for customer evaluation and integration of the eS-WiFi module into their system.

The Bluetooth Low Energy feature was tested in this report. The technical specs for this feature are presented below:

Radio: Bluetooth v4.1 Spec. (Low Energy, Single mode)
Range: 2400-2500 MHz ISM Band
Modulation: GFSK
RF Output Power (EIRP): +0 dBm
Data Rate: Mbps (Max): 1 Mbps
Channels: 40

1.4 Configuration of Tested System

The Test Sample was tested per *ANSI C63.4:2014, Methods of Measurement of Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (2014)*, and *ANSI C63.10.2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices*.

A list of EUT and Peripherals is found in Table 1 below. A block diagram of the tested system is shown in Figure 1. Test configuration photographs are provided in separate Appendices

1.5 Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA 30004. This site has been fully described and registered with the FCC under designation number US5301. Additionally, this site has also been fully described and submitted to Industry Canada (IC), and has been approved under file number 9900A-1.

1.6 Related Submittals

The EUT is subject to the following FCC authorizations:

a) Certification under section 15.249 as a transmitter.

Table 1. EUT and Peripherals

PERIPHERAL MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC/IC ID	CABLES P/D
Inventek	ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151	Engineering Sample	FCC ID: O7P-4343 IC ID: 10147A-4343	UD
Hewlett-Packard (Laptop)	EliteBook 8530p	2CE010000TG	Unknown	-
Hewlett-Packard (Power Supply Adapter)	384020-001	PA-1900-08H2	Not Applicable	3.0 m UP
Antenna See antenna details	--	--	--	--

U= Unshielded
S= Shielded
P= Power
D= Data

2 Tests and Measurements

2.1 Test Equipment

The table below lists test equipment used to evaluate this product. Model numbers, serial numbers and their calibration status are indicated.

Table 2. Test Instruments

TEST INSTRUMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
Spectrum Analyzer	Agilent	E4407B	US41442935	8/17/2020
Spectrum Analyzer	Hewlett-Packard	8593E	3205A00124	01/25/2019
Loop Antenna	A. H. Systems	SAS-200/562	142	1/22/2020 2 yr.
Biconical Antenna	EMCO	3110B	9307-1431	5/2/2019 2 yr
Log Periodic Antenna	EMCO	3146	9305-3600	5/1/2019 2 yr
Horn Antenna	EMCO	3115	9107-3723	12/22/2018
RF Preamp 100 kHz To 1.3 GHz	Hewlett-Packard	8447D	1937A02980	3/7/2019
Preamp 1.0 GHz To 26.0 GHz	Hewlett-Packard	8449B	3008A00480	2/28/2019
High Pass Filter	Microwave Chircuits	H3R020G2	001DC9528	3/8/2019
8 Db ATTENUATOR	Mini-Circuits	VAT-8 15542	30519	3/8/2019

Note: The calibration interval of the above test instruments are 12 months unless stated otherwise and all calibrations are traceable to NIST/USA.

2.2 Modifications to EUT Hardware

No physical modifications were made by US Tech in order to bring the EUT into compliance with FCC Part 15, Subpart C Intentional Radiator Limits for the transmitter portion of the EUT or the Subpart B Unintentional Radiator Limits (Receiver and Digital Device) Requirements.

2.3 Number of Measurements for Intentional Radiators (CFR 15.31(m), RSS-Gen 6.8)

Measurements of intentional radiators or receivers shall be performed and reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in Table 3 below.

Table 3. Number of Test Frequencies for Intentional Radiators

Frequency Range over which the device operates	Number of Frequencies	Location in the Range of Operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near the top 1 near the bottom
Greater than 10 MHz	3	1 near top 1 near middle 1 near bottom

Because the EUT operates at 2402 MHz to 2480 MHz, 3 test frequencies were used.

2.4 Frequency Range of Radiated Measurements (CFR 15.33, RSS-Gen 6.13)

2.4.1 Intentional Radiator

The spectrum was investigated for the intentional radiator from the lowest RF signal generated in the EUT, without going below 9 kHz to the 10th harmonic of the highest fundamental frequency generated or 40 GHz, whichever is the lowest.

2.4.2 Unintentional Radiator

For the digital device, an unintentional radiator, the frequency range tested was 30 MHz to 1000 MHz, or to 5 times the highest internal clock frequency.

2.5 Measurement Detector Function and Bandwidth (CFR 15.35, RSS-Gen 6.9, 6.13)

The radiated and conducted emissions limits shown herein are based on the parameters listed below.

2.5.1 Detector Function and Associated Bandwidth

On frequencies below 1000 MHz, the limits herein are based upon measurement equipment employing a CISPR Quasi-peak detector function and related measurement bandwidths (i.e. 9 kHz from 150 kHz to 30 MHz and 120 kHz from 30 MHz to 1000 MHz). Alternatively, measurements may be made with equipment employing a peak detector function as long as the same bandwidths specified for the Quasi-peak device are used.

2.5.2 Corresponding Peak and Average Requirements

Above 1000 MHz, radiated limits are based on measuring instrumentation employing an average detector function. When average radiated emissions are specified there is also a corresponding Peak requirement, as measured using a peak detector, of 20 dB greater than the average limit. For all measurements above 1000 MHz the Resolution Bandwidth shall be at least 1 MHz.

2.5.3 Pulsed Transmitter Averaging

When the radiated emissions limit is expressed as an average value, and the transmitter is pulsed, the measured field strength shall be determined by applying a Duty Cycle Correction Factor based upon dividing the total ON time during the first 100 ms period by 100 ms (or by the period if less than 100 ms). The duty cycle may be expressed logarithmically in dB.

NOTE: If the transmitter was programmed to transmit at >98% duty cycle, then, wherever applicable (where the detection mode was AVG), the duty cycle factor calculated will be applied.

2.6 EUT Antenna Requirements (CFR 15.203, RSS-Gen 6.7)

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. Only the antenna(s) listed in Table 4 will be used with this device.

Table 4. Allowed Antenna(s)

REPORT REFERENCE	MANUFACTURER	TYPE OF ANTENNA	MODEL	GAIN dB_i	TYPE OF CONNECTOR
Chip Antenna	Inventek Systems	Chip	W245-SC	+1.4	U.FL

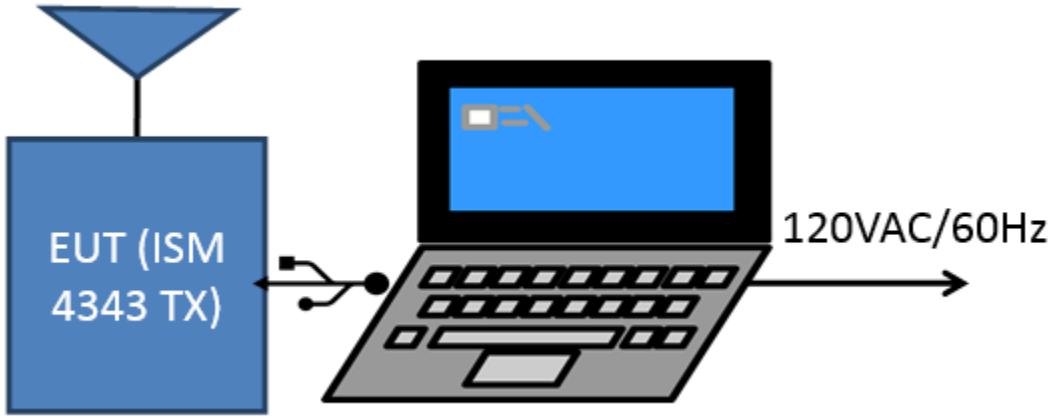


Figure 1. Block Diagram of Test Configuration

Note: The laptop is used for programming the radio module only.

2.7 Restricted Bands of Operation (CFR 15.205, RSS-Gen 8.10)

Only spurious emissions can fall in the frequency bands of CFR 15.205. The field strength of these spurious emissions cannot exceed the limits of 15.209. Radiated harmonics and other spurious emissions are examined for this requirement see paragraph 2.1

2.8 Intentional Radiator, Radiated Emissions (CFR 15.209, 15.249(a),(c), RSS 210, A2.9 (a))

Radiated Spurious measurements: the EUT was placed into a continuous transmit mode of operation transmitting at >98% duty cycle and tested per ANSI C63.10:2013. A preliminary scan was performed on the EUT to find signal frequencies that were caused by the transmitter part of the device. To obtain worse case results the EUT was tested in X, Y and Z axes or in the orientation of normal operation if the device is designed to operation in a fixed position.

Radiated measurements were then conducted between the frequency range of 9 KHz (or lowest frequency used/generated by the device) up to the tenth harmonic of the device (no greater than 40 GHz). In the band below 30 MHz a resolution bandwidth (RBW) of 9 kHz was used; emissions below 1 GHz were tested with a RBW of 120 KHz and emissions above 1 GHz were tested with a RBW of 1 MHz. All video bandwidth settings were at least three times the RBW value.

The EUT was investigated to CFR 15.209, General requirements for unwanted spurious emissions.

Table 5. Spurious Radiated Emissions Below 30 MHz

9 kHz to 30 MHz, 15.209 limits							
Test: Radiated Emissions				**Client:** Inventek Systems			
Project: 18-0330				**Model:** ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151			
Frequency (MHz)	**Test Data (dBuv)**	**AF+CA-AMP (dB/m)**	**Results (dBuV/m)**	**QP Limits (dBuV/m)**	**Antenna Distance/ Polarization**	**Margin (dB)**	**Detector PK, or AVG**
No emissions seen greater than 20 dB from the applicable limit.							

Sample Calculation: N/A

Test Date: November 1, 2018
Tested By

Signature: _____ Name: Afzal Fazal

Table 6. Spurious Radiated Emissions (other than Fundamental & Harmonics)

Test: FCC Part 15, Paragraph 15.209, 15.249(a)					**Client:** Inventek Systems			
Project: 18-0330					**Model:** ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151			
Frequency (MHz)	**Test Data (dBuV)**	**Factor (dB)**	**AF+CA -AMP (dB/m)**	**Results (dBuV/m)**	**Limits (dBuV/m)**	**Antenna Distance/ Polarization**	**Margin (dB)**	**Detector Mode**
69.44	39.10	-	-17.57	21.53	40.0	3m./HORZ	18.5	**PK**
139.20	47.45	-	-13.79	33.66	43.5	3m./HORZ	9.8	**PK**
200.96	37.87	-	-13.59	24.28	43.5	3m./HORZ	19.2	**PK**
710.00	41.75	-	-2.04	39.71	46.0	3m./HORZ	6.3	**PK**
1005.00	49.79	-	-10.63	39.16	54.0	3.0m./HORZ	14.8	**PK**
3143.00	47.76	-	-0.95	46.81	54.0	3.0m./HORZ	7.2	**PK**
11411.00	28.45	-	14.16	42.61	54.0	1.0m./HORZ	11.4	**AVG**
69.44	47.85	-	-18.37	29.48	40.0	3m./VERT	10.5	**PK**
139.00	47.43	-	-13.39	34.04	43.5	3m./VERT	9.5	**PK**
501.90	35.03	-	-6.12	28.91	46.0	3m./VERT	17.1	**PK**
1242.00	50.82	-	-8.76	42.06	54.0	3.0m./VERT	11.9	**PK**
3225.00	47.46	-	-0.46	47.00	54.0	3.0m./VERT	7.0	**PK**
8235.00	39.81	-	8.17	47.98	54.0	1.0m./VERT	6.0	**PK**

Notes:
1. No other signals detected within 20 dB of specification limit. Harmonics investigated up to the 10th harmonic
2. The EUT was placed in three orthogonal positions and the transmitter was in constant broadcast mode, with the duty cycle programmed for >98% ON time in continuous transmit mode.
3. The emissions were measured with the receive antenna in vertical and horizontal polarizations. The data listed in the above table was worst case.

Sample Calculation at: 69.44 MHz

Magnitude of Measured Frequency	39.10	dBuV
+Antenna Factor + Cable Loss+ Amplifier Gain	-17.57	dB/m
Duty Cycle Correction Factor	None	dB
Corrected Result	21.53	dBuV/m

Test Date: November 1, 2018
Tested By

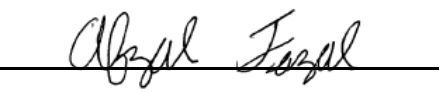
Signature:  Name: Afzal Fazal

Table 7. Fundamental Emissions – Chip Antenna (Peak & AVG)

Test: FCC Part 15, Paragraph 15.209, 15.249(a)					**Client:** Inventek Systems			
Project: 18-0330					**Model:** ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151			
Frequency (MHz)	**Test Data (dBuV)**	**Factor (dB)**	**AF+CA -AMP (dB/m)**	**Results (dBuV/m)**	**AVG Limits (dBuV/m)**	**Antenna Distance/ Polarization**	**Margin (dB)**	**Detector Mode**
Low - Channel								
2402.00	58.45	-	30.35	88.80	-	3.0m./HORZ	-	**PK**
2402.00	42.54	-	30.35	72.89	-	3.0m./HORZ	-	**AVG**
Mid – Channel								
2426.00	62.63	-	30.35	92.98	-	3.0m./HORZ	-	**PK**
2426.00	46.23	-	30.35	76.58	-	3.0m./HORZ	-	**AVG**
High – Channel								
2480.00	69.13	-	30.38	99.51	-	3.0m./HORZ	-	**PK**
2480.00	51.53	-	30.38	81.91	-	3.0m./HORZ	-	**AVG**

Notes:
1. No other signals detected within 20 dB of specification limit. Harmonics investigated up to the 10th harmonic
2. The EUT was placed in three orthogonal positions and the transmitter was in constant broadcast mode, with the duty cycle programmed for >98% ON time in continuous transmit mode.
3. The emissions were measured with the receive antenna in vertical and horizontal polarizations. The data listed in the above table was worst case.

Sample Calculation at: 2402.00

Magnitude of Measured Frequency	58.45	dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	30.35	dB/m
Corrected Result	88.80	dBuV/m

Test Date: October 29, 2018
Tested By

Signature: Afzal Fazal Name: Afzal Fazal

Table 8. Harmonics Emissions – Chip Antenna (Peak & AVG)

Test: FCC Part 15, Paragraph 15.209, 15.249(a)					**Client:** Inventek Systems			
Project: 18-0330					**Model:** ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151			
Frequency (MHz)	**Test Data (dBuV)**	**Factor (dB)**	**AF+CA -AMP (dB/m)**	**Results (dBuV/m)**	**Limits (dBuV/m)**	**Antenna Distance/ Polarization**	**Margin (dB)**	**Detector Mode**
Low - Channel								
4804.00	48.90	-	2.80	51.70	74.0	3.0m./HORZ	22.3	**PK**
4804.00	27.01	-	2.80	29.81	54.0	3.0m./HORZ	24.2	**AVG**
7206.00	49.80	-	8.21	58.01	74.0	3.0m./HORZ	16.0	**PK**
7206.00	27.54	-	8.21	35.75	54.0	3.0m./HORZ	18.2	**AVG**
Mid – Channel								
4852.00	49.66	-	1.26	50.92	74.0	3.0m./HORZ	23.1	**PK**
4852.00	28.34	-	1.26	29.60	54.0	3.0m./HORZ	24.4	**AVG**
7278.00	49.16	-	9.08	58.24	74.0	3.0m./HORZ	15.8	**PK**
7278.00	28.07	-	9.08	37.15	54.0	3.0m./HORZ	16.9	**AVG**
High – Channel								
4960.00	49.82	-	2.39	52.21	74.0	3.0m./HORZ	21.8	**PK**
4960.00	28.27	-	2.39	30.66	54.0	3.0m./HORZ	23.3	**AVG**
7440.00	50.33	-	9.36	59.69	74.0	3.0m./HORZ	14.3	**PK**
7440.00	28.56	-	9.36	37.92	54.0	3.0m./HORZ	16.1	**AVG**

Notes:
1. No other signals detected within 20 dB of specification limit. Harmonics investigated up to the 10th harmonic
2. The EUT was placed in three orthogonal positions and the transmitter was in constant broadcast mode, with the duty cycle programmed for >98% ON time in continuous transmit mode.
3. The emissions were measured with the receive antenna in vertical and horizontal polarizations. The data listed in the above table was worst case.

Sample Calculation at: 4804.00 MHz

Magnitude of Measured Frequency	48.90	dBuV
+Antenna Factor + Cable Loss+ Amplifier Gain – Duty Cycle	2.80	dB/m
Duty Cycle Correction Factor	None	dB
Corrected Result	51.70	dBuV/m

Test Date: October 29, 2018
Tested By

Signature: Afzal Fazal Name: Afzal Fazal

2.9 Band Edge Measurements (CFR 15.249(d), RSS-Gen 8.10)

Band Edge measurements are made following the guidelines in FCC KDB Publication No. 558074 with the EUT initially operating on the Lowest Channel and then operating on the Highest Channel within its band of operation. Radiated measurements are performed to demonstrate compliance with the requirement of 15.249(d) that all emissions outside of the band edges be attenuated by at least 50 dB or 15.209 limits, when compared to its highest in-band value (contained in a 100 kHz band).

To capture the band edge, set the Spectrum Analyzer frequency span to 2 MHz to capture the peak level of the emission operating on the channel closest to the band edge as well as any modulation products falling outside of the authorized band of operation. See figure and calculations following for more detail.

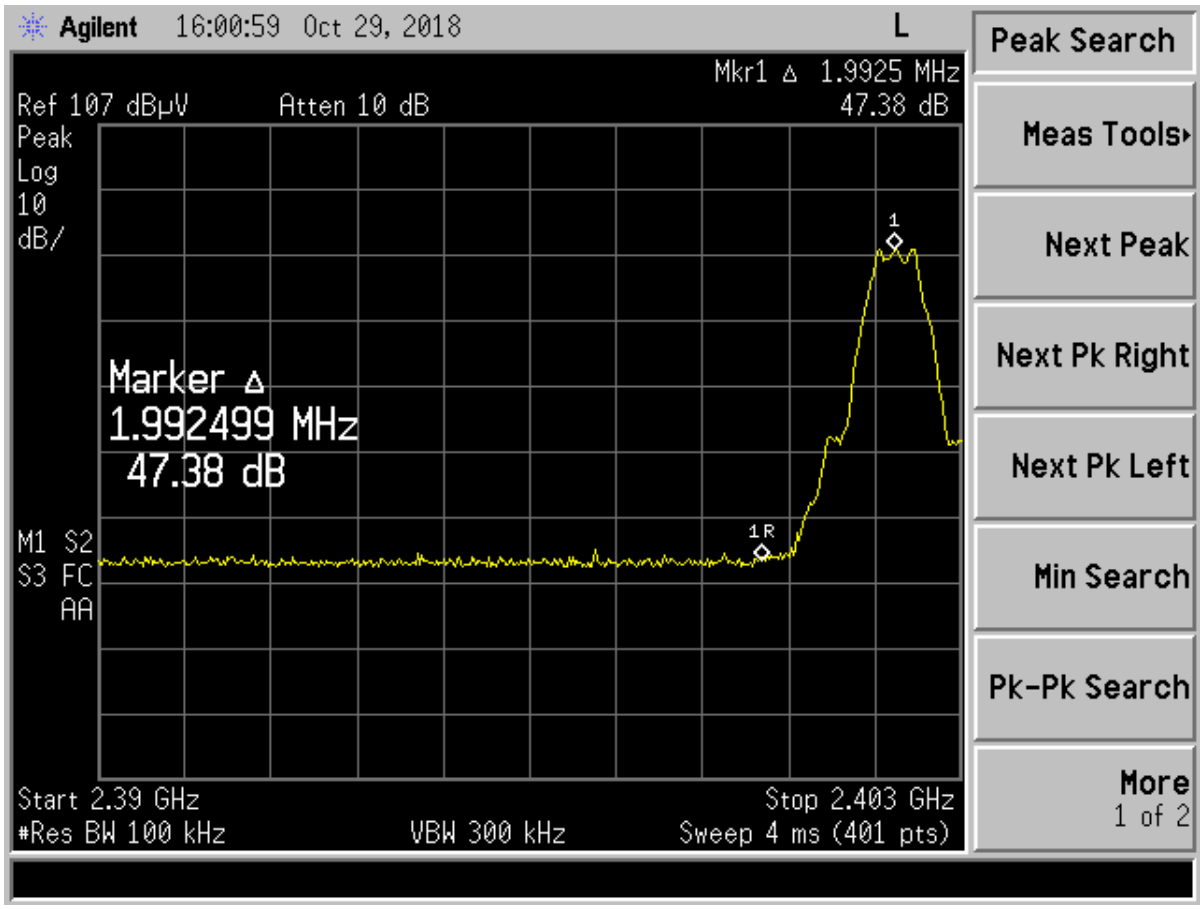


Figure 2. Band Edge Compliance (Chip Antenna) Low Channel Delta - Peak

Low Channel Corrected Measured Value from Table 8	88.80	dBuV
Low Channel Band Edge Delta from Figure 4	-47.38	dB
Calculated Result	41.42	dBuV/m
Band Edge Limit	54.00	dBuV/m
Calculated Result	41.42	dBuV/m
Band Edge Margin	12.58	dBuV/m

Peak value meets AVG limit.

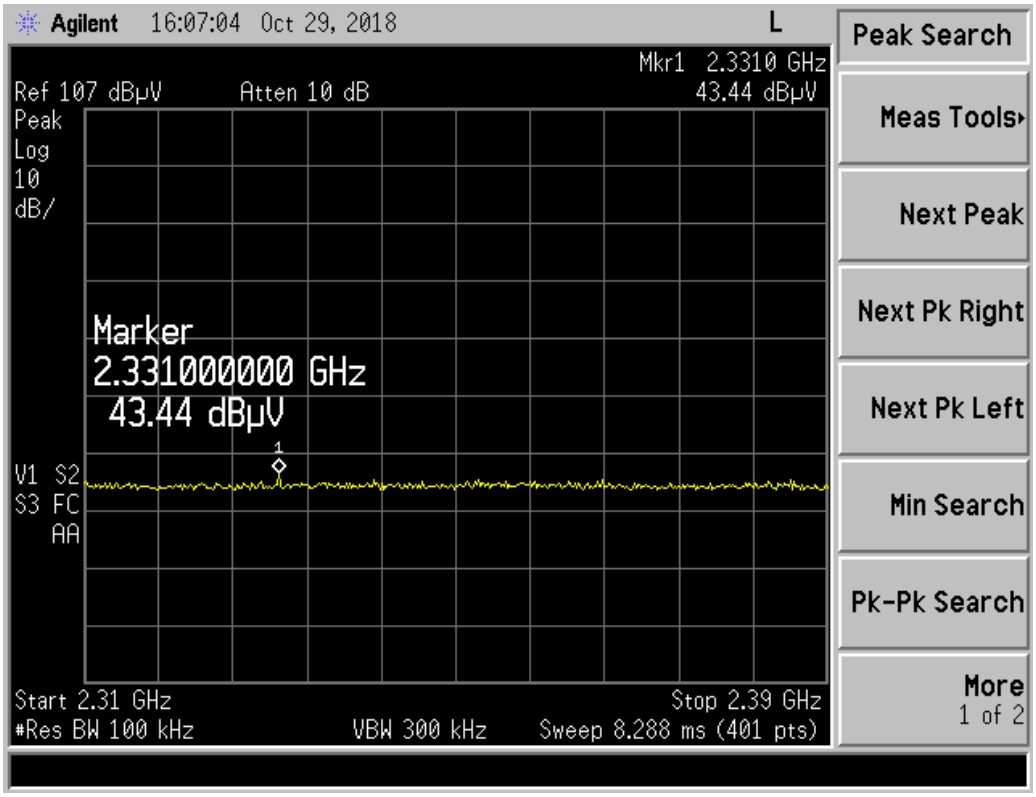


Figure 3. Radiated Restricted Band 2310 MHz to 2390 MHz (Chip Antenna) Peak

Table 9. Radiated Restricted Band 2310 MHz to 2390 MHz, Peak

2310 MHz to 2390 MHz Restricted Band Peak Measurements							
Test: Radiated Emissions				**Client:** Inventek Systems			
Project: 18-0330				**Model:** ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151			
Frequency (MHz)	**Test Data (dBuv)**	**AF+CA-AMP (dB/m)**	**Results (dBuV/m)**	**PK Limits (dBuV/m)**	**Antenna Distance/ Polarization**	**Margin (dB)**	**Detector PK, or AVG**
2331.00	43.44	-4.65	38.79	54.0	3.0m./HORZ	15.2	**PK**

Test Date: October 29, 2018
Tested By
Signature: _____ Name: Afzal Fazal

Peak value meets AVG limit.

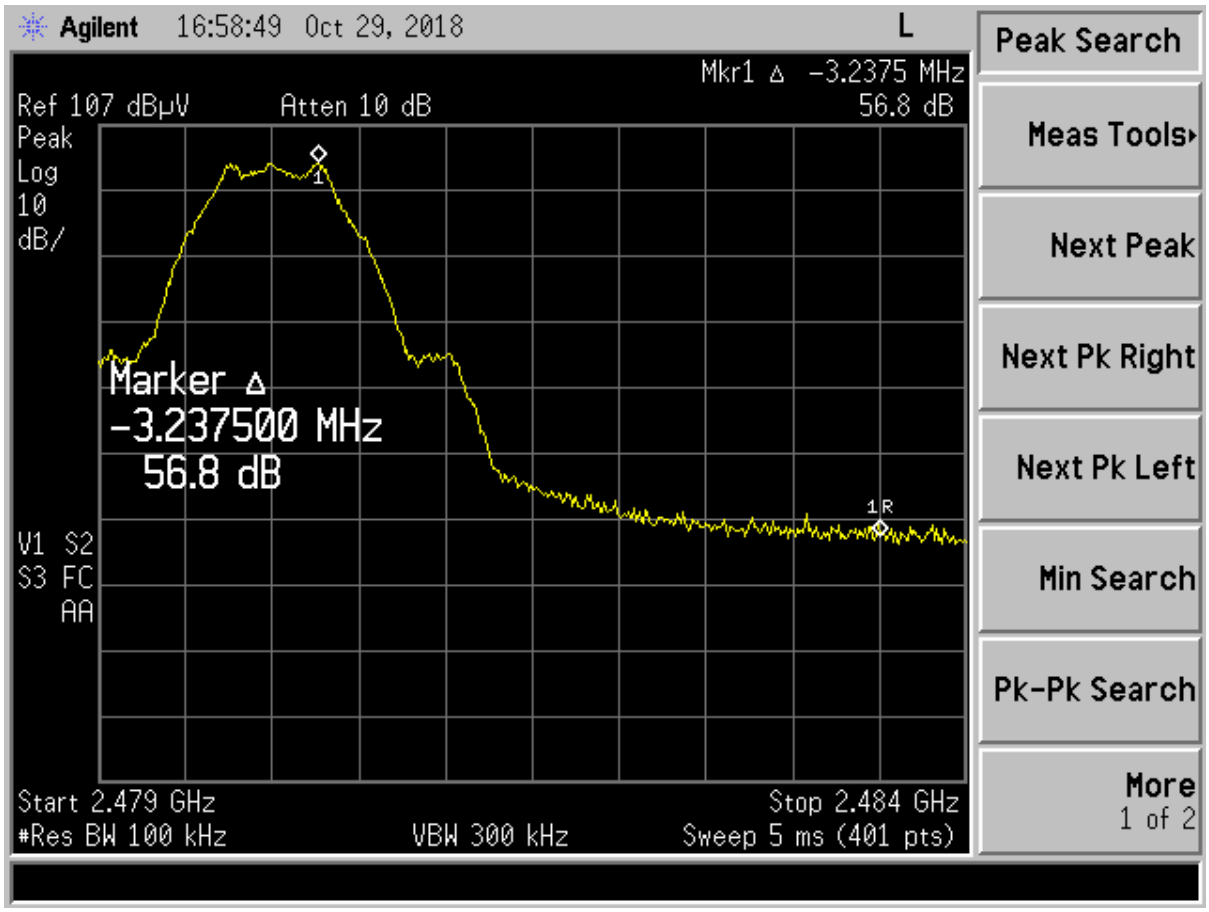


Figure 4. Band Edge Compliance (Chip Antenna) High Channel Delta – Peak

High Channel Corrected Measured Value from Table 8	99.51	dBuV
High Channel Band Edge Delta from Figure 7	-56.80	dB
Calculated Result	42.71	dBuV/m
Band Edge Limit	54.00	dBuV/m
Calculated Result	42.71	dBuV/m
Band Edge Margin	11.29	dBuV/m

Peak value meets AVG limit.

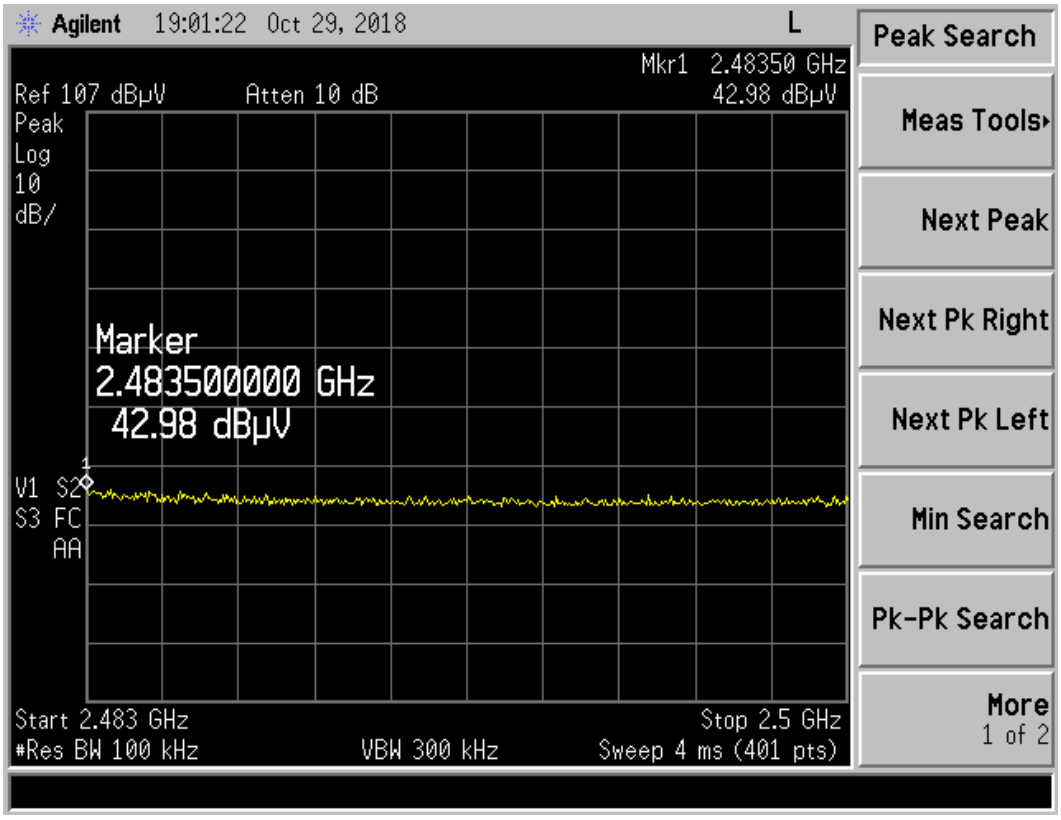


Figure 5. Radiated Restricted Band 2483.5 MHz to 2500 MHz (Chip Antenna) Peak

Table 10. Radiated Restricted Band 2483.5 MHz to 2500 MHz, Peak

2483.5 MHz to 2500 MHz Restricted Band Peak Measurements							
Test: Radiated Emissions				**Client:** Inventek Systems			
Project: 18-0330				**Model:** ISM4343-X including ISM4343-WBM-L151 and ISM4343-WB-L151			
Frequency (MHz)	**Test Data (dBuv)**	**AF+CA-AMP (dB/m)**	**Results (dBuV/m)**	**PK Limits (dBuV/m)**	**Antenna Distance/ Polarization**	**Margin (dB)**	**Detector PK, or AVG**
2484.00	45.55	-1.03	45.03	54.0	3.0m./HORZ	9.0	**PK**

Test Date: October 29, 2018
Tested By
Signature: _____ Name: Afzal Fazal

Peak value meets AVG limit.

2.10 Measurement Uncertainty

The measurement uncertainties given were calculated using the method detailed in CISPR 16-4-2:2011. A coverage factor of k=2 was used to give a level of confidence of approximately 95%.

2.10.1 Conducted Emissions Measurement Uncertainty

Measurement Uncertainty (within a 95% confidence level) for this test is ± 2.78 dB.

2.10.2 Radiated Emissions Measurement Uncertainty

For a measurement distance of 3 m the measurement uncertainty (with a 95% confidence level) for this test using a Biconical Antenna (30 MHz to 200 MHz) is ± 5.3 dB. This value includes all elements of measurement.

The measurement uncertainty (with a 95% confidence level) for this test using a Log Periodic Antenna (200 MHz to 1000 MHz) is ± 5.1 dB.

The measurement uncertainty (with a 95% confidence level) for this test using a Horn Antenna is ± 5.1 dB.

3 Conclusions

The EUT is deemed to meet the requirements of the test standards cited herein when tested in the configuration detailed in this test report.