FCC PART 15F

TEST REPORT

For

Woxu Wireless Co., Ltd.

No.9 Building Xuzhuang Software Industry Base No 699 8 XuanWu Avenue, Nanjing, China

FCC ID: 2AKVA-UG230C

Report Type:	Product Type:
Original Report	UWB Gateway

Report Number:	SZNS210819-35160E-RF
Report Date:	2021-11-08
Reviewed By:	Candy Li RF Engineer
Prepared By:	Shenzhen Accurate Technology Co., Ltd. 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396 Http://www.atc-lab.com

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	UWB Gateway
Tested Model	UG-230-C
Frequency range	6240MHz-6740MHz
Modulation	BPSK
Antenna Specification▲	5dBi
Voltage Range	DC 12-48V from adapter
Date of Test	2021-09-09 to 2021-10-27
Sample serial number	SZNS210819-35160E-RF-S1
Received date	2021-08-19
Sample/EUT Status	Good condition

Objective

This report is in accordance with Part 2-Subpart J, Part 15-Subparts A and F of the Federal Communication Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart F, and section 15.203, 15.205, 15.207, 15.209 and 15.517 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz - 26.5GHz	5.06dB
	26.5GHz - 40GHz	4.72dB
Temperature		1℃
Humidity		6%
Supply voltages		0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISEDC), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

Radio	Channel	Frequency (MHz)	Rate (Mbps)	Power Setting▲
UWB	5	6489.6	6.8	192

Note 1: This product is indoor UWB device, which declared by the manufacturer.
Note 2: This product is employing one power splitter to deliver the RF signal into two paths, then using two external antennas to transmit at the same time.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

No exercise software was used.

Support Equipment List and Details

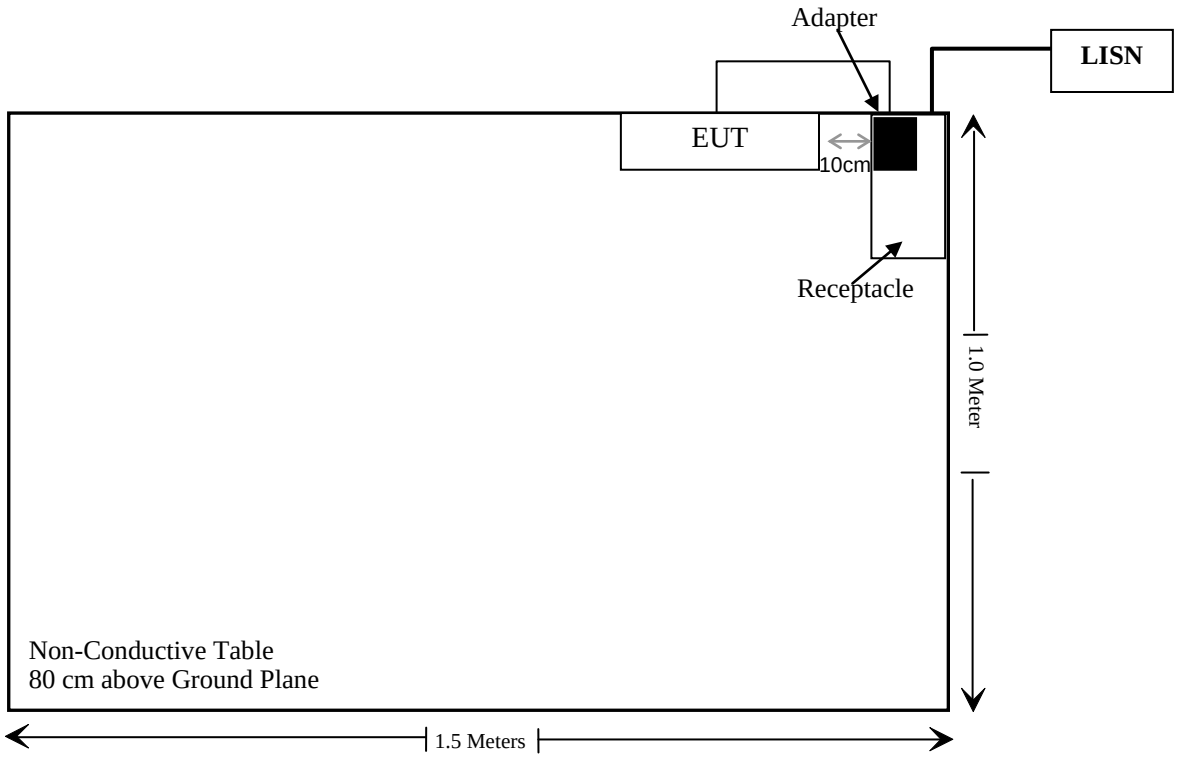
Manufacturer	Description	Model	Serial Number
GELEITE	Adapter (Auxiliary)	GRT-480050	2006240425

External I/O Cable

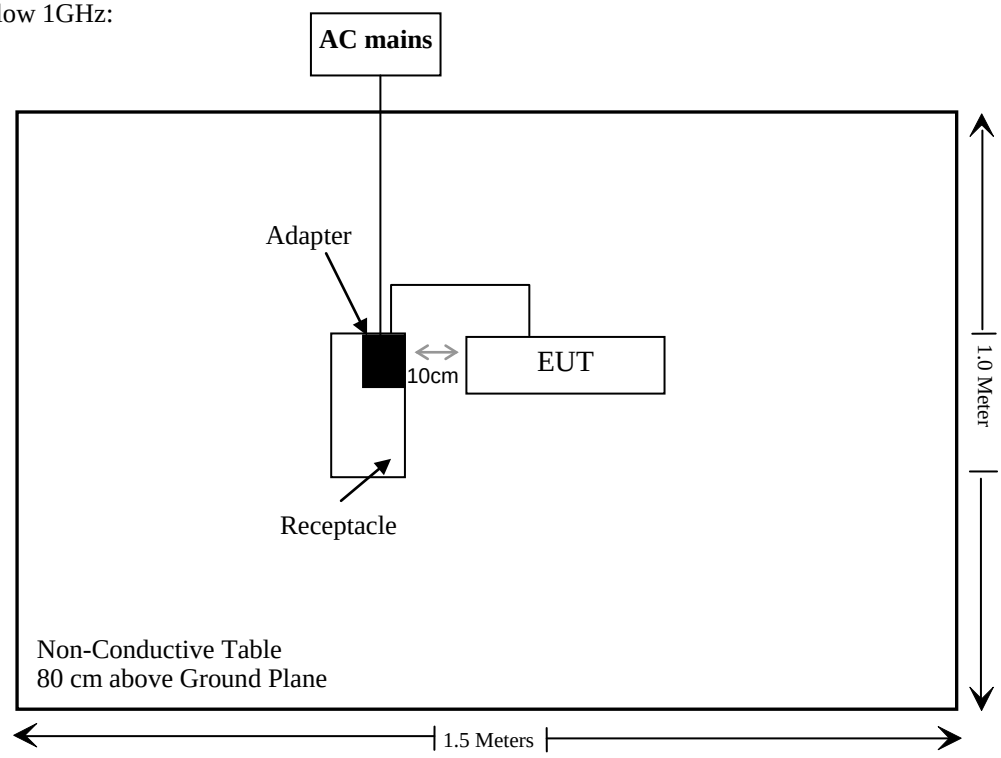
Cable Description	Length (m)	From Port	To
Unshielded Detachable DC Cable	1.0	Adapter	EUT

Block Diagram of Test Setup

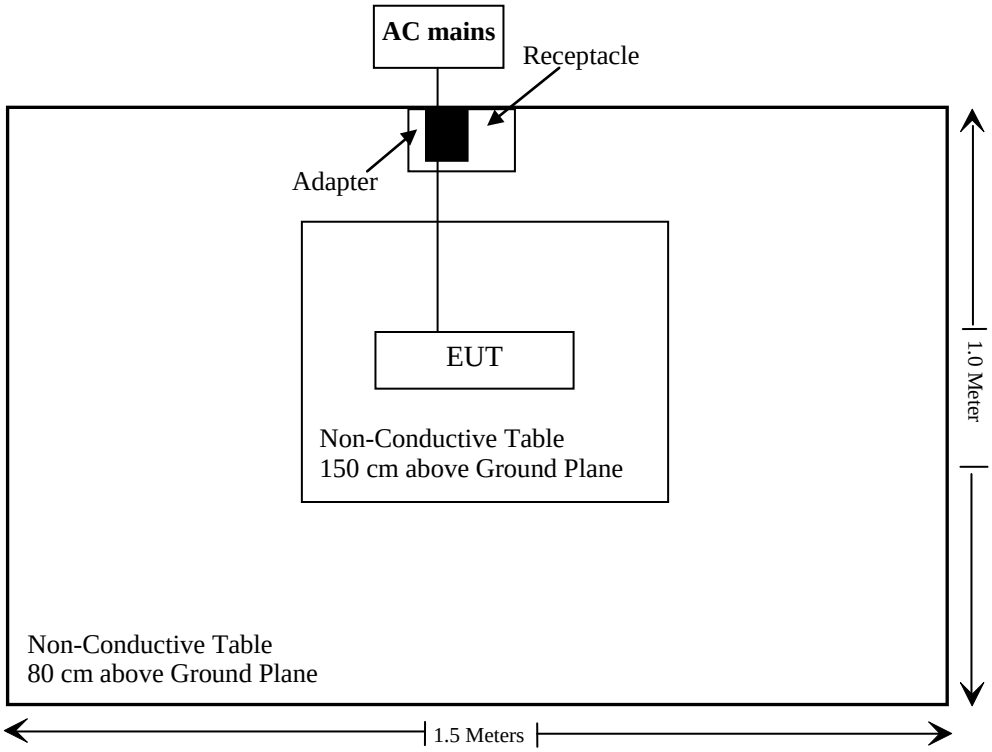
For conducted emission:



For radiated emission:
Below 1GHz:



Above 1GHz:


AC mains
Receptacle
Adapter
EUT
Non-Conductive Table
150 cm above Ground Plane
Non-Conductive Table
80 cm above Ground Plane
1.0 Meter
1.5 Meters

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b) (1) & §2.1091	Maximum Permissible Exposure	Compliant
§15.517(a)	Limited to UWB transmitters employed solely for indoor operation	Compliant
§15.203, §15.517(a)(3)	Antenna Requirement	Compliant
§15.207(a)	AC Line Conducted Emissions	Compliant
§15.503 (a)(d), §15.517(b)	UWB Operation bandwidth	Compliant
§15.209, §15.517(c)(d)	Radiated Emissions	Compliant
§15.517(e)	Peak Emission in a 50 MHz bandwidth	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde& Schwarz	EMI Test Receiver	ESCI	100784	2021/02/03	2022/02/02
R & S	L.I.S.N.	ENV216	101314	2020/12/25	2021/12/24
Anritsu Corp	50Ω Coaxial Switch	MP59B	6200506474	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-2m	No.2	2020/12/25	2021/12/24
Conducted Emission Test Software: ES-K1 V1.71					
Radiated Emissions Test					
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
Rohde&Schwarz	Spectrum Analyzer	FSV40	101495	2020/12/24	2021/12/23
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
A.H. Systems, inc.	Preamplifier	PAM-0118P	531	2021/07/08	2022/07/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
SCHWARZBECK	LOOP ANTENNA	FMZB1516	1516131	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
Schwarzbeck	HORN ANTENNA	BBHA9170	9170-359	2020/01/05	2023/01/04
OREGON SCIENTIFIC	Temperature & Humidity Meter	JB913R	GZ-WS004	2020/01/02	2023/01/01
Unknown	RF Coaxial Cable	N-5m	No.3	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.5	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-5m	No.4	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.6	2020/12/25	2021/12/24
Radiated Emission Test Software: EZ_EMC V 1.1.4.2					

*** Statement of Traceability:** Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

§1.1307 (B) (1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1307 (b)(1), 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (Minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For worst case:

Frequency (MHz)	Tune up EIRP		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
	(dBm)	(mW)			
6489.6	-55	0.000003	20	0.0000000006	1.0

Note: The tune up EIRP was declared by the applicant.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

FCC§15.517(a) – GENERAL REQUIREMENT

Applicable Standard

(a) Operation under the provisions of this section is limited to UWB transmitters employed solely for indoor operation.

(1) Indoor UWB devices, by the nature of their design, must be capable of operation only indoors. The necessity to operate with a fixed indoor infrastructure, e.g., a transmitter that must be connected to the AC power lines, may be considered sufficient to demonstrate this.

(2) The emissions from equipment operated under this section shall not be intentionally directed outside of the building in which the equipment is located, such as through a window or a doorway, to perform an outside function, such as the detection of persons about to enter a building.

(3) The use of outdoor mounted antennas, e.g., antennas mounted on the outside of a building or on a telephone pole, or any other outdoors infrastructure is prohibited.

(4) Field disturbance sensors installed inside of metal or underground storage tanks are considered to operate indoors provided the emissions are directed towards the ground.

(5) A communications system shall transmit only when the intentional radiator is sending information to an associated receiver.

Compliant, please see the below information:

(1) The EUT was used only indoors, it was powered by the DC port from the adapter which connects indirectly to the AC power line, please refer to the test setup photos and details in the user manual.

(2) The EUT was never used outdoors, only used in large crane warehouses.
It was showed in the user manual.

(3) The EUT is already equipped with two antennas, which is not outdoor mounted antenna,
please refer to the EUT photos.

(4) The EUT is not a field disturbance sensor.

(5) The EUT send a message to the receiver only when the associated receiver is turned on; The EUT will not send messages when the associated receiver is turned off.

FCC §15.203, §15.517(a)(3) - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, 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 user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

(3) The use of outdoor mounted antennas, e.g., antennas mounted on the outside of a building or on a telephone pole, or any other outdoors infrastructure is prohibited.

Antenna Connector Construction

The EUT used two external antennas configuration, which will be required professional installation and the antenna gain is 5dBi, fulfill the requirement of this section. Please refer to the EUT photos.

The antenna port is a conventional SMA interface with an impedance of 50 ohm.

The two antennas transmit at the same time.

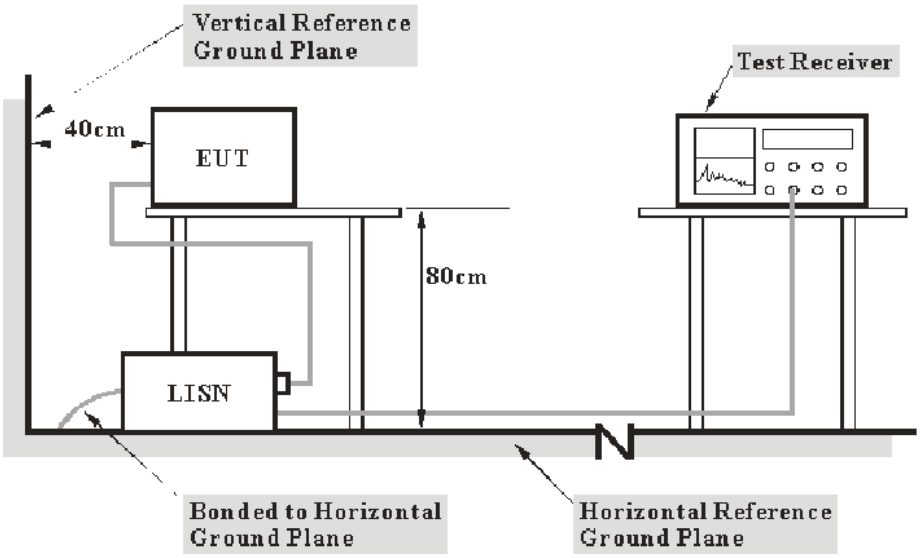
Result: Compliant.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC §15.207(a)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The measurement procedure of EUT setup is according with ANSI C63.10-2013. The related limit was specified in FCC Part 15.207.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Corrected Factor & Margin Calculation

The Transd factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Transd Factor = LISN VDF + Cable Loss

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – level
Level= reading level+ Transd Factor

Test Results Summary

According to the EUT complied with the FCC Part 15.207,

Test Data

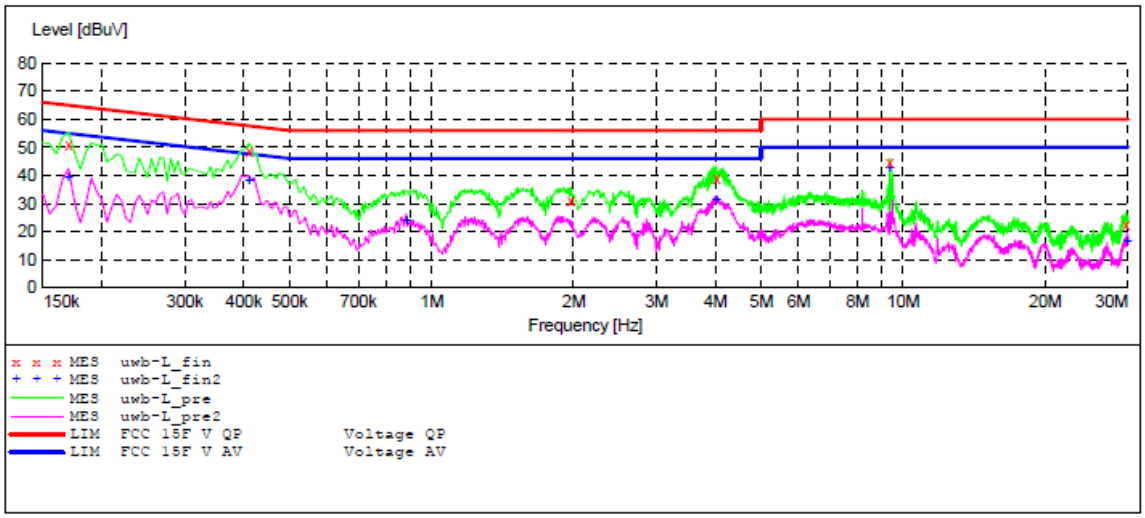
Environmental Conditions

Temperature:	24 °C
Relative Humidity:	53 %
ATM Pressure:	101.0 kPa
Tester:	Black Ding
Test Date:	2021-09-28

EUT operation mode: Transmitting

Note: Two antennas transmit at the same time.

AC 120V/60 Hz, Line



MEASUREMENT RESULT: "uwb-L_fin"

2021-9-28 10:47

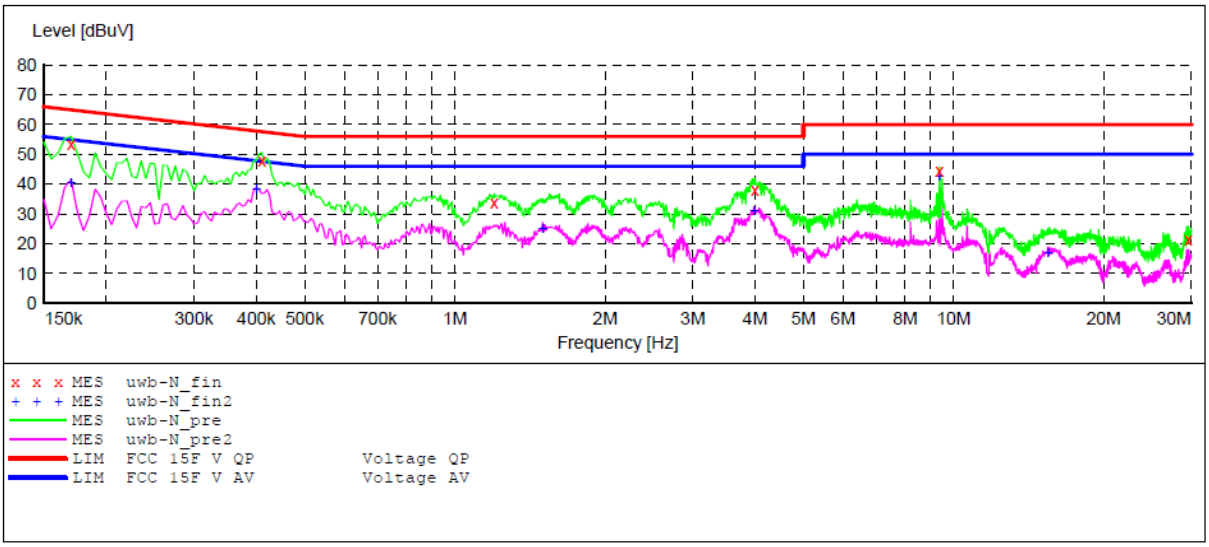
Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.170000	51.00	10.8	65	14.0	QP	L1	GND
0.410000	48.70	11.0	58	9.3	QP	L1	GND
1.975000	31.20	11.3	56	24.8	QP	L1	GND
4.020000	38.80	11.4	56	17.2	QP	L1	GND
9.370000	44.50	11.6	60	15.5	QP	L1	GND
29.700000	22.10	11.8	60	37.9	QP	L1	GND

MEASUREMENT RESULT: "uwb-L_fin2"

2021-9-28 10:47

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.170000	39.60	10.8	55	15.4	AV	L1	GND
0.410000	38.40	11.0	48	9.6	AV	L1	GND
0.885000	24.20	11.1	46	21.8	AV	L1	GND
4.020000	31.30	11.4	46	14.7	AV	L1	GND
9.370000	43.00	11.6	50	7.0	AV	L1	GND
29.850000	16.60	11.8	50	33.4	AV	L1	GND

AC 120V/60 Hz, Neutral



MEASUREMENT RESULT: "uwb-N_fin"

2021-9-28 10:38

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.170000	53.40	10.8	65	11.6	QP	N	GND
0.410000	47.90	11.0	58	10.1	QP	N	GND
1.200000	33.90	11.2	56	22.1	QP	N	GND
4.000000	37.90	11.4	56	18.1	QP	N	GND
9.370000	44.50	11.6	60	15.5	QP	N	GND
29.575000	21.20	11.8	60	38.8	QP	N	GND

MEASUREMENT RESULT: "uwb-N_fin2"

2021-9-28 10:38

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.170000	40.60	10.8	55	14.4	AV	N	GND
0.400000	38.60	11.0	48	9.4	AV	N	GND
1.500000	25.30	11.2	46	20.7	AV	N	GND
3.980000	31.20	11.4	46	14.8	AV	N	GND
9.370000	42.90	11.6	50	7.1	AV	N	GND
15.500000	17.00	11.7	50	33.0	AV	N	GND

§15.503 (a)(d), §15.517(b) –UWB OPEARTION BANDWIDTH

Applicable Standard

(a) UWB bandwidth. For the purpose of this subpart, the UWB bandwidth is the frequency band bounded by the points that are 10 dB below the highest radiated emission, as based on the complete transmission system including the antenna. The upper boundary is designated f_H and the lower boundary is designated f_L. The frequency at which the highest radiated emission occurs is designated f_M.

(d) Ultra-wideband (UWB) transmitter. An intentional radiator that, at any point in time, has a fractional bandwidth equal to or greater than 0.20 or has a UWB bandwidth equal to or greater than 500 MHz, regardless of the fractional bandwidth.

(b) The UWB bandwidth of a UWB system operating under the provisions of this section must be contained between 3100 MHz and 10,600 MHz.

Test Procedure

Refer to the C63.10-2013 Section 10.1

Test Data

Environmental Conditions

Temperature:	25°C
Relative Humidity:	52 %
ATM Pressure:	101.0kPa
Tester:	Black Ding
Test Date:	2021-09-09

Test Result: Pass.

EUT operation mode: Transmitting

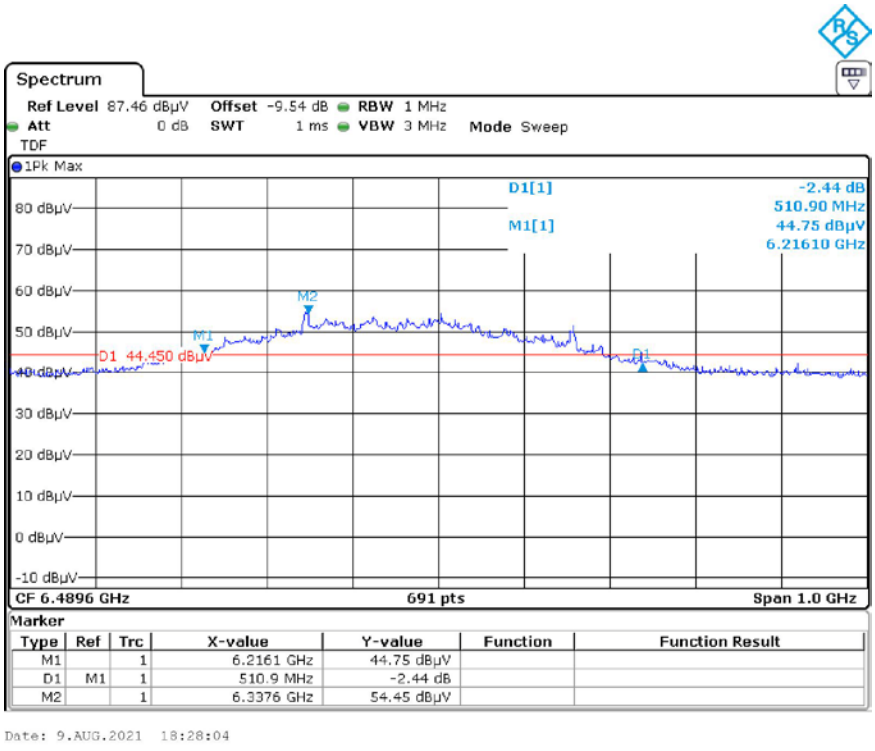
Please refer to the following table and plots.

Test distance is 1m for Radiated emission.

Note: Two antennas transmit at the same time.

Item		Result	Limit (MHz)
f_M(MHz)	The highest emission frequency	6337.6	/
f_L(MHz)	10dB below the highest emission	6216.1	>3100
f_H(MHz)	10dB above the highest emission	6727	<10600
f_C(MHz)	$(f_H + f_L)/2$	6471.550	/
10dB bandwidth(MHz)	$f_H - f_L$	510.9	≥500
Fractional bandwidth	$2(f_H - f_L)/(f_H + f_L)$	0.079	/

10dB Bandwidth



FCC §15.209, §15.517(c)(d)- SPURIOUS EMISSIONS

Applicable Standard

FCC §15.209; §15.517(c)(d);

(c) The radiated emissions at or below 960 MHz from a device operating under the provisions of this section shall not exceed the emission levels in §15.209. The radiated emissions above 960 MHz from a device operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of 1 MHz:

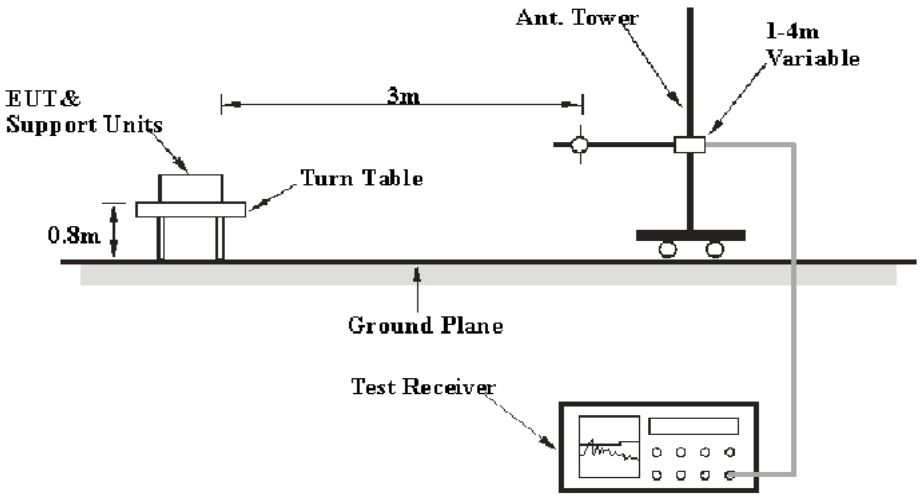
Frequency in MHz	EIRP in dBm
960-1610	−75.3
1610-1990	−53.3
1990-3100	−51.3
3100-10600	−41.3
Above 10600	−51.3

(d) In addition to the radiated emission limits specified in the table in paragraph (c) of this section, UWB transmitters operating under the provisions of this section shall not exceed the following average limits when measured using a resolution bandwidth of no less than 1 kHz:

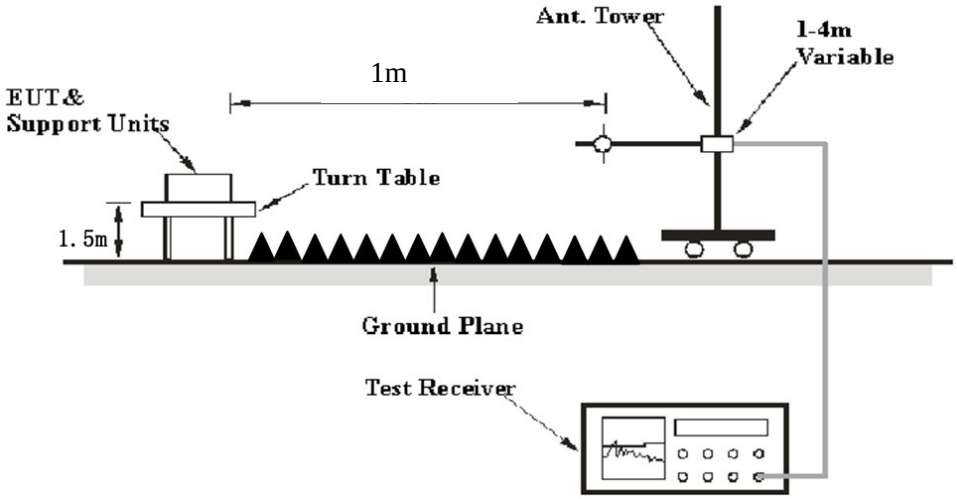
Frequency in MHz	EIRP in dBm
1164-1240	−85.3
1559-1610	−85.3

EUT Setup

Below 960MHz:



Above 960MHz:



The radiated emission tests were performed in the 3 meters chamber, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.517 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 960 MHz	100 kHz	300 kHz	120 kHz	QP
Above 960 MHz	1MHz	3 MHz	/	Average
	1kHz	3kHz	/	Average*

Note: * For the radiated spurious emission in the GPS band.

Test Procedure

Refer to the C63.10-2013 Section 10.2 & 10.3

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Result - Limit

Test Results Summary

According to the EUT complied with the FCC Title 47, Part 15, Subpart F, section 15.205, 15.209 and 15.517.

Test Data

Environmental Conditions

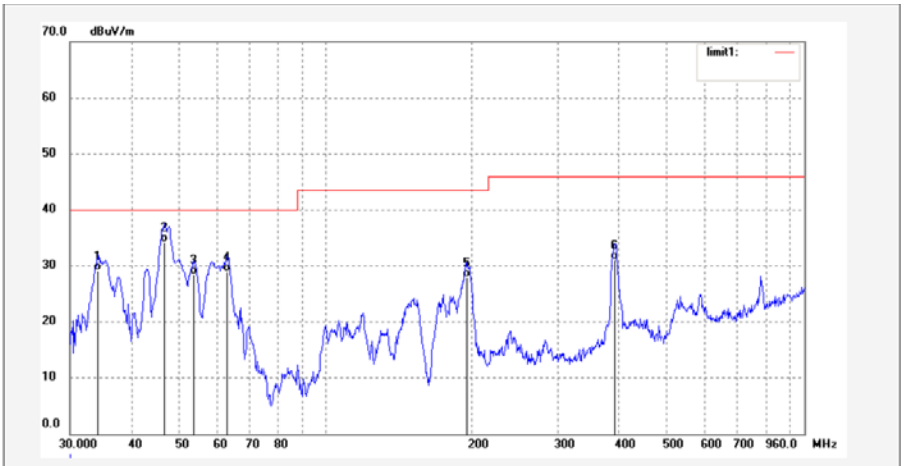
Test Items	Radiation Below 960MHz	Radiation Above 960MHz
Temperature:	23°C	23°C
Relative Humidity:	48%	52%
ATM Pressure:	101.0kPa	101.1kPa
Tester:	Black Ding	Black Ding
Test Date:	2021-09-27	2021-09-09 to 2021-10-27

EUT operation mode: Transmitting

Note: Two antennas transmit at the same time.

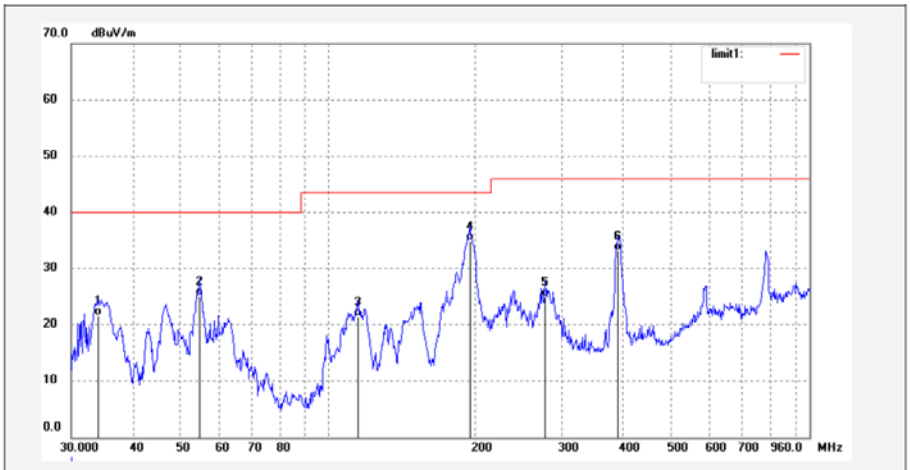
30 MHz~960MHz:

Horizontal



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.2229	49.02	-19.94	29.08	40.00	-10.92	QP			
2	46.7499	51.33	-17.14	34.19	40.00	-5.81	QP			
3	53.7015	45.72	-17.33	28.39	40.00	-11.61	QP			
4	62.9829	47.93	-18.92	29.01	40.00	-10.99	QP			
5	194.9406	45.46	-17.63	27.83	43.50	-15.67	QP			
6	392.5930	43.77	-12.72	31.05	46.00	-14.95	QP			

Vertical



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	34.1045	36.35	-14.79	21.56	40.00	-18.44	QP			
2	54.8299	42.78	-17.66	25.12	40.00	-14.88	QP			
3	115.1116	39.61	-18.11	21.50	43.50	-22.00	QP			
4	194.9405	52.46	-17.63	34.83	43.50	-8.67	QP			
5	277.6051	40.32	-15.35	24.97	46.00	-21.03	QP			
6	391.2346	45.93	-12.78	33.15	46.00	-12.85	QP			

Spurious radiated emission above 960MHz in non GPS band:

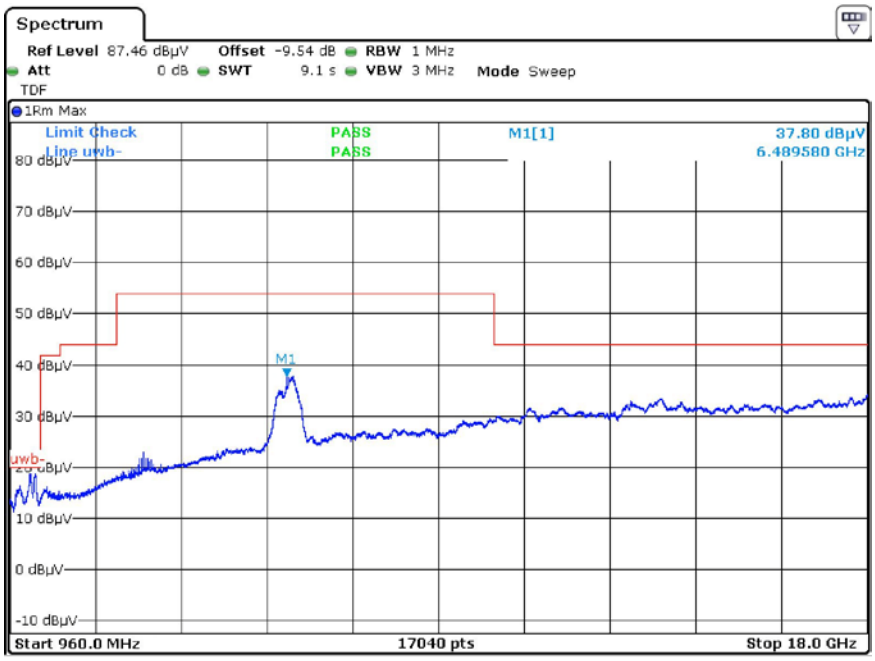
1. The test distance is 1m, so the correct factor from 3m to 1m is 20log(3/1)=9.54dB which was added into the offset on the spectrum analyzer.

2. E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

3. The antenna factor, cable loss and preamplifier gain have been entered into the analyzer as the transducer factor.

Frequency	Corrected Amplitude (dBμV/m)	EIRP (dBm)	Detector	Turntable	Rx Antenna		Part 15.517	
(MHz)				Degree	Height (m)	Polar (H / V)	EIRP Limit (dBm)	Margin (dB)
6489.58	37.80	-57.40	RMS	143	1.60	H	-41.30	-16.10
33143.50	32.53	-62.67	RMS	323	1.70	H	-51.30	-11.37
6489.58	39.45	-55.75	RMS	325	1.90	V	-41.30	-14.45
33143.50	32.53	-62.67	RMS	105	1.70	V	-51.30	-11.37

Horizontal



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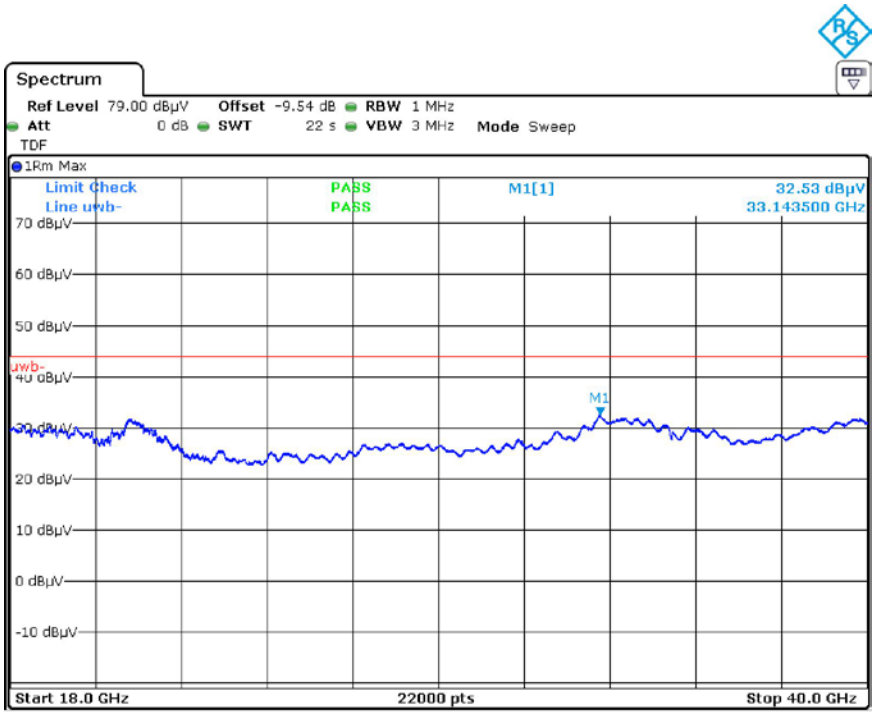

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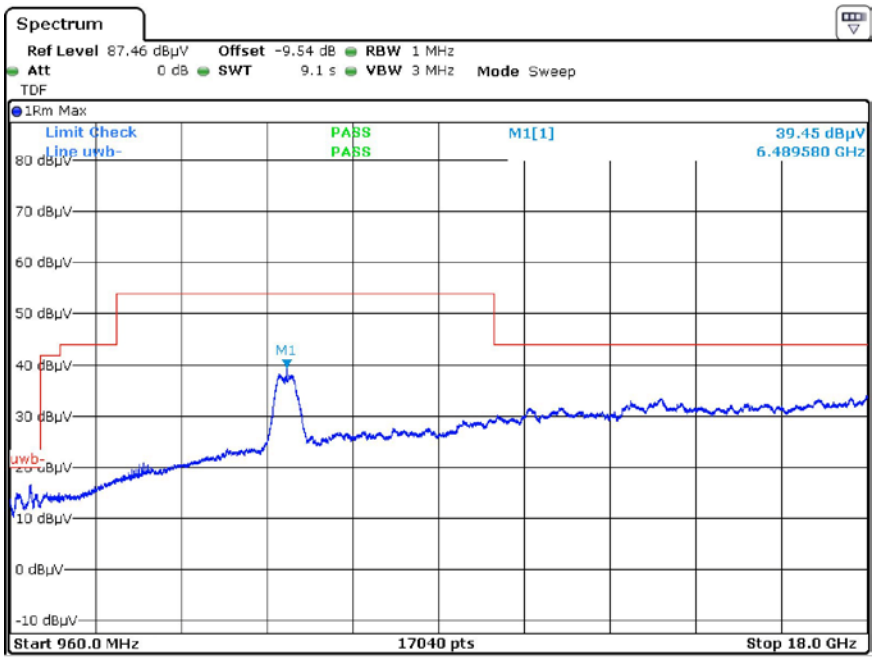
Vertical



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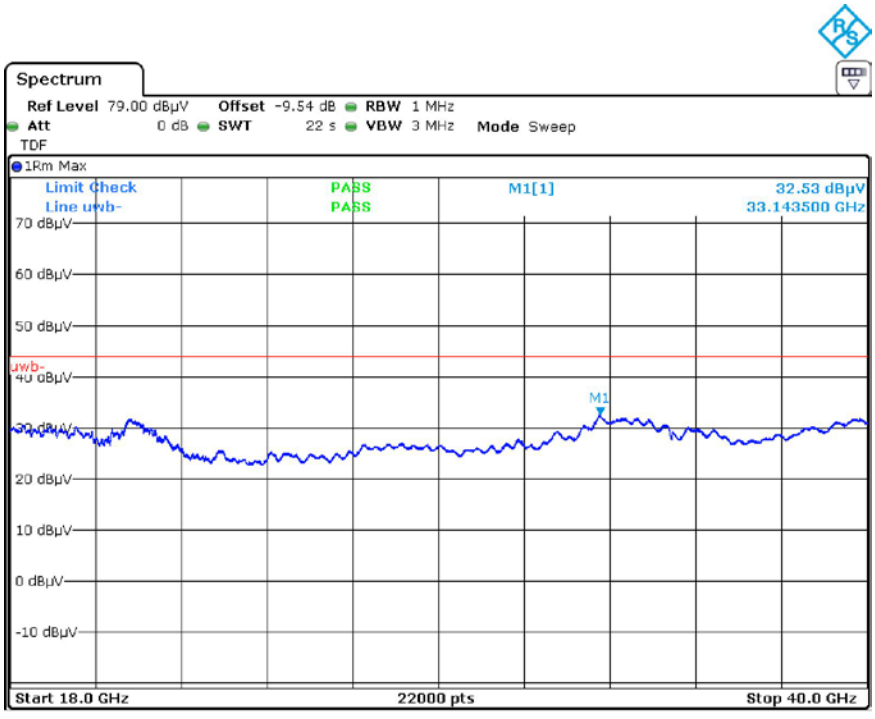

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Spurious radiated emission above 960MHz in GPS band:

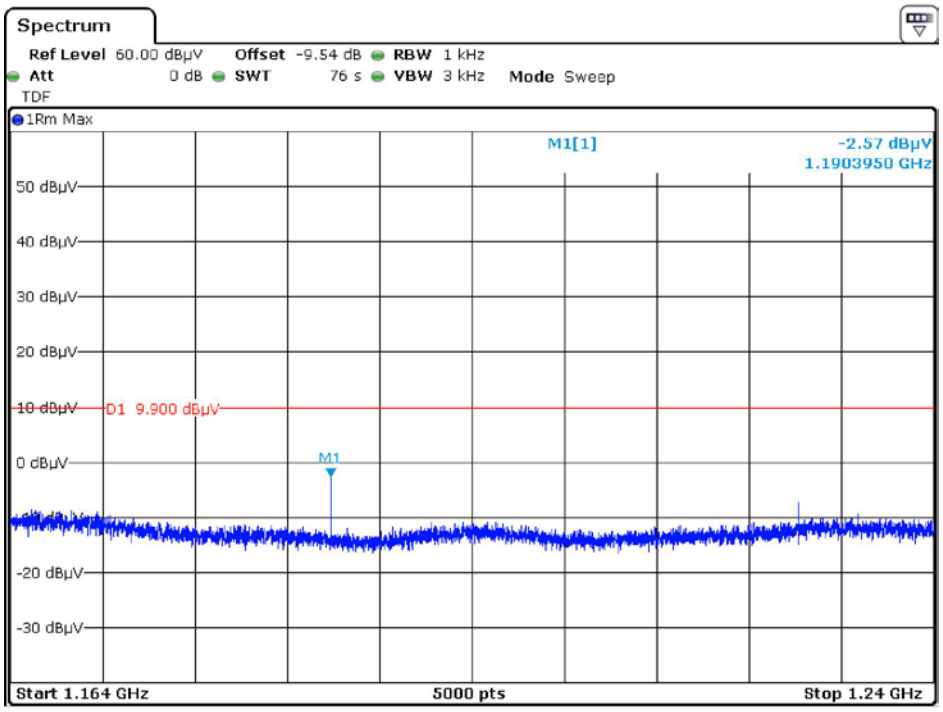
1. The test distance is 1m, so the correct factor from 3m to 1m is 20log(3/1)=9.54dB which was added into the offset on the spectrum analyzer.

2. E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

3. The antenna factor, cable loss and preamplifier gain have been entered into the analyzer as the transducer factor.

Frequency	Corrected Amplitude (dBμV/m)	EIRP (dBm)	Detector	Turntable	Rx Antenna		Part 15.517	
(MHz)				Degree	Height (m)	Polar (H / V)	EIRP Limit (dBm)	Margin (dB)
1190.39	-2.57	-97.77	RMS	306	2.00	H	-85.3	-12.47
1177.28	-5.86	-101.06	RMS	122	1.70	V	-85.3	-15.76
1600.29	-5.28	-100.48	RMS	255	1.90	H	-85.3	-15.18
1574.40	-6.03	-101.23	RMS	230	1.20	V	-85.3	-15.93

Horizontal



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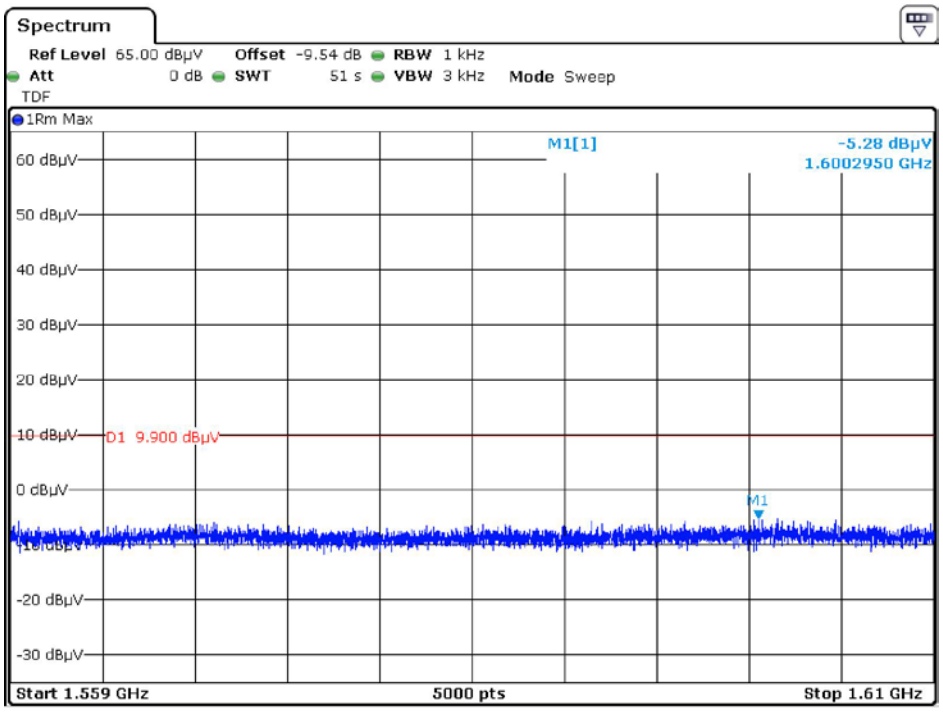

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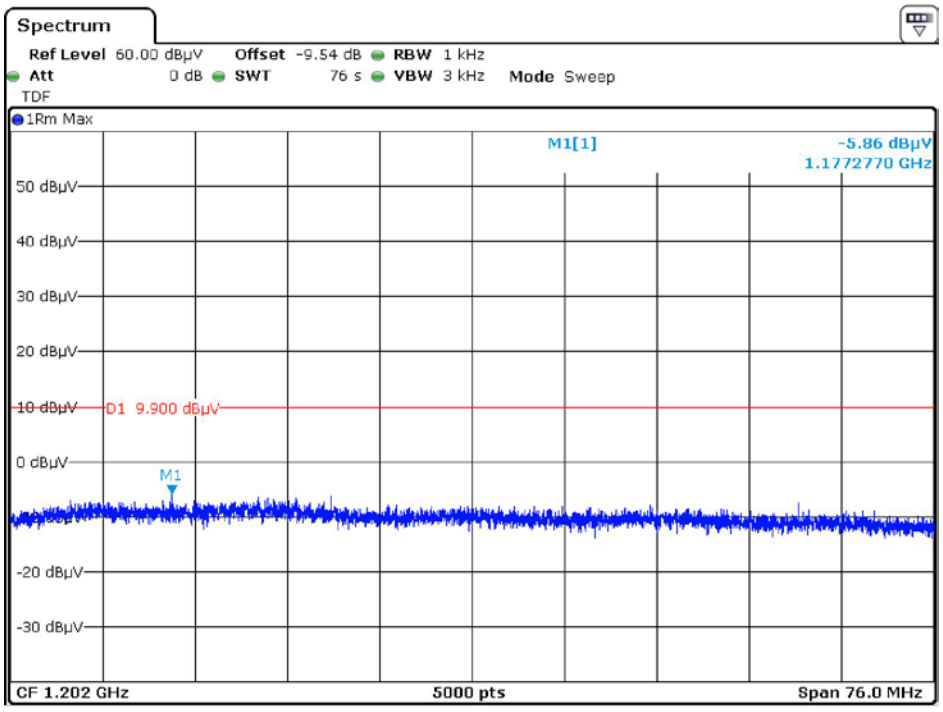

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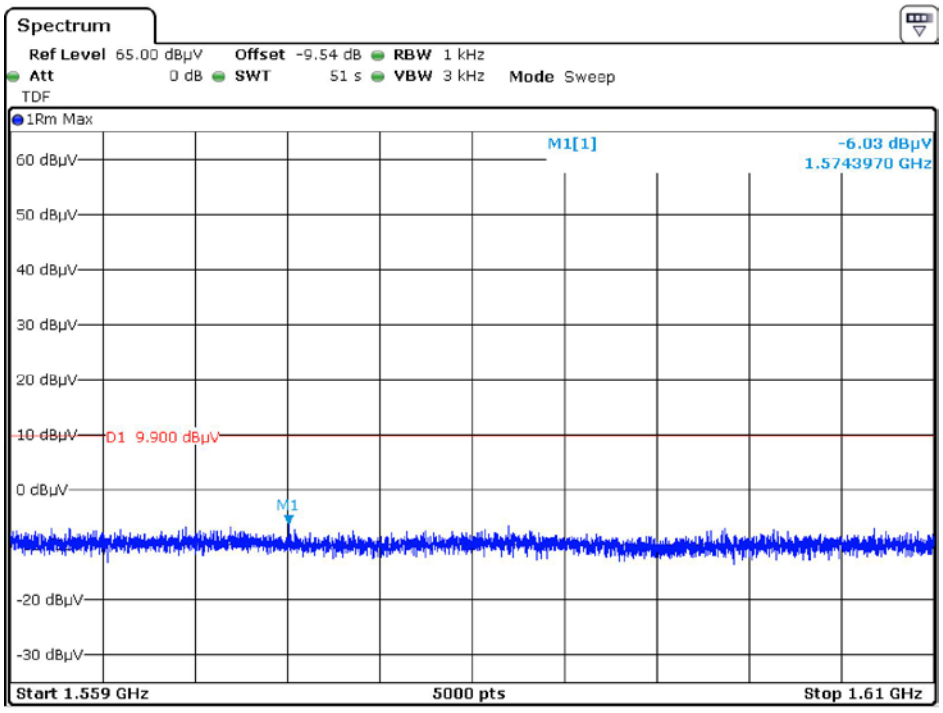

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§15.517(e) - PEAK EMISSION IN A 50 MHZ BANDWIDTH

Applicable Standard

There is a limit on the peak level of the emissions contained within a 50 MHz bandwidth centered on the frequency at which the highest radiated emission occurs, f_M. That limit is 0 dBm EIRP. It is acceptable to employ a different resolution bandwidth, and a correspondingly different peak emission limit, following the procedures described in §15.521.

Test Procedure

Refer to the C63.10-2013 Section 10.3.5.

Test Data

Environmental Conditions

Temperature:	25°C
Relative Humidity:	52 %
ATM Pressure:	101.0kPa
Tester:	Black Ding
Test Date:	2021-09-09

EUT operation mode: Transmitting

Note 1: Two antennas transmit at the same time.

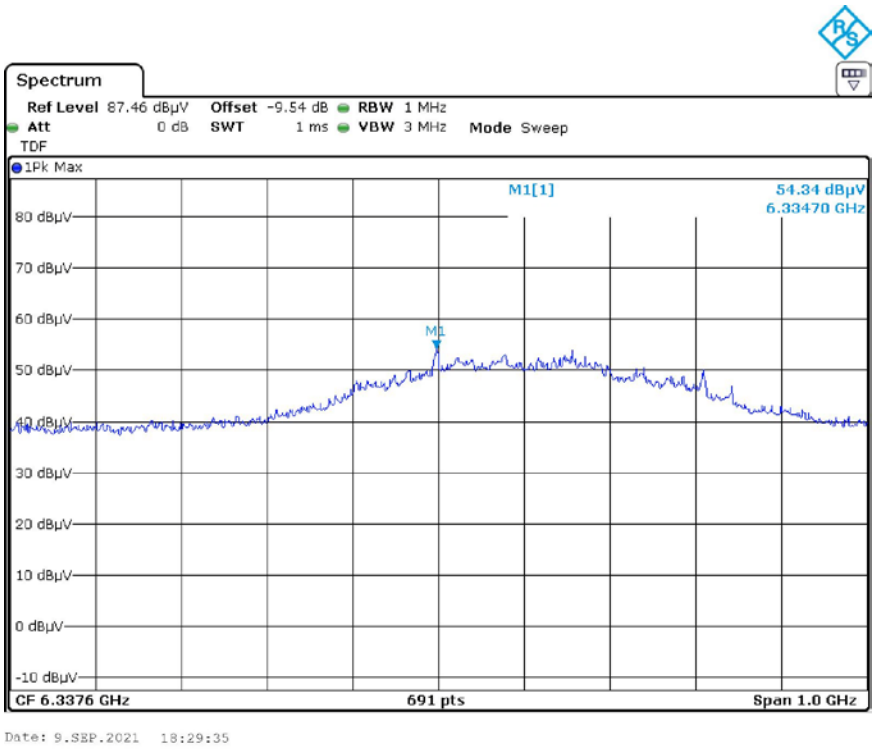
Frequency (MHz)	Reading level (dBμV/m) RBW=1MHz	EIRP (dBm/1MHz)	EIRP (dBm/50MHz)	Limit
				dBm/50MHz
6489.6	54.34	-40.86	-6.88	0

Note 2: 1. The test distance is 1m, so the correct factor from 3m to 1m is 20log(3/1)=9.54dB which was added into the offset on the spectrum analyzer.

2. The correct factor of RBW 1MHz to 50MHz is 20 log (50MHz/1MHz) =33.98

3. E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters.

The antenna factor, cable loss and preamplifier gain have been entered into the analyzer as the transducer factor.



******* END OF REPORT ******