



REPORT No.: SZ25010011W01

TEST REPORT

APPLICANT : Third Coast Wireless LCC

PRODUCT NAME : Pendant

MODEL NAME : PD1501

BRAND NAME : Third Coast Wireless

FCC ID : 2BNRX-PD1501

STANDARD(S) : 47 CFR Part 15 Subpart C

RECEIPT DATE : 2025-01-24

TEST DATE : 2025-02-22 to 2025-09-22

ISSUE DATE : 2025-11-04



Edited by:

Peng Mi

Peng Mi (Rapporteur)

Approved by:

Shen Junsheng

Shen Junsheng (Supervisor)

NOTE: This document is issued by Shenzhen Morlab Communications Technology Co., Ltd., the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.

MORLAB

Shenzhen Morlab Communications Technology Co., Ltd.
FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen, Guangdong Province, P. R. China

Tel: 86-755-36698555

Http://www.morlab.cn

Fax: 86-755-36698525

E-mail: service@morlab.cn





DIRECTORY

1. Technical Information	3
1.1. Applicant and Manufacturer Information	3
1.2. Equipment Under Test (EUT) Description	3
1.3. The Channel Number and Frequency	4
1.4. Test Standards and Results	5
1.5. Environmental Conditions	6
2. 47 CFR Part 15C Requirements	7
2.1. Antenna Requirement	7
2.2. Hopping Mechanism	8
2.3. Number of Hopping Frequency	9
2.4. Duty Cycle of Test Signal	11
2.5. Maximum Peak Conducted Output Power	12
2.6. Maximum Average Conducted Output Power	15
2.7. 20 dB Bandwidth	18
2.8. Carried Frequency Separation	21
2.9. Time of Occupancy (Dwell time)	23
2.10. Conducted Spurious Emissions	26
2.11. Conducted Emission	31
2.12. Radiated Emission	33
Annex A Test Uncertainty	49
Annex B Testing Laboratory Information	50

Change History		
Version	Date	Reason for change
1.0	2025-11-04	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Third Coast Wireless LCC
Applicant Address:	2033 Coldwater Creek Drive Waukesha Wisconsin, 53188 USA
Manufacturer:	KAYI BILISIM ELEKTRONIK ENERJI MAD. VE DAN. LTD. STI.
Manufacturer Address:	Ivedik OSB. 2224. Cad. No 1 Teknopark Ankara C Blok Kat 10 Yenimahalle/Ankara/Turkiye

1.2. Equipment Under Test (EUT) Description

Product Name:	Pendant
Sample No.:	4#, 5#
Hardware Version:	3.09
Software Version:	2.14
Modulation Technology:	FHSS
Modulation Type:	LORA (Chirp Spread Spectrum (CSS))
Operating Frequency Range:	913.2MHz–925.8MHz
Antenna Type:	PCB Antenna
Antenna Gain:	-1.70dBi

Note 1: The EUT description presented in the report are provided by applicant and/or manufacturer, and the test laboratory is not responsible for the accuracy of the information. For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



1.3. The Channel Number and Frequency

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	913.2	17	916.4	33	919.6	49	922.8
2	913.4	18	916.6	34	919.8	50	923
3	913.6	19	916.8	35	920	51	923.2
4	913.8	20	917	36	920.2	52	923.4
5	914	21	917.2	37	920.4	53	923.6
6	914.2	22	917.4	38	920.6	54	923.8
7	914.4	23	917.6	39	920.8	55	924
8	914.6	24	917.8	40	921	56	924.2
9	914.8	25	918	41	921.2	57	924.4
10	915	26	918.2	42	921.4	58	924.6
11	915.2	27	918.4	43	921.6	59	924.8
12	915.4	28	918.6	44	921.8	60	925
13	915.6	29	918.8	45	922	61	925.2
14	915.8	30	919	46	922.2	62	925.4
15	916	31	919.2	47	922.4	63	925.6
16	916.2	32	919.4	48	922.6	64	925.8

Note 1: The black bold channels were selected for test.



1.4. Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Test Engineer	Result	Remark
1	15.203	Antenna Requirement	N/A	N/A	PASS	/
2	15.247(a) 15.247(h)	Hopping Mechanism	N/A	N/A	PASS	/
3	15.247(a)	Number of Hopping Frequency	Aug. 05, 2025	Zhu Peihong	PASS	/
4	ANSI C63.10	Duty Cycle	Oct. 01, 2025	Zhu Peihong	PASS	/
5	15.247(b)	Maximum Peak Conducted Output Power	Oct. 01, 2025	Zhu Peihong	PASS	/
6	15.247(b)	Maximum Average Conducted Output Power	Oct. 01, 2025	Zhu Peihong	PASS	/
7	15.247(a)	20dB Bandwidth	Sep. 12, 2025	Zhu Peihong	PASS	/
8	15.247(a)	Carrier Frequency Separation	Aug. 05, 2025	Zhu Peihong	PASS	/
9	15.247(a)	Time of Occupancy (Dwell time)	Aug. 07, 2025	Zhu Peihong	PASS	/
10	15.247(d)	Conducted Spurious Emission	Aug. 07, 2025	Zhu Peihong	PASS	/
11	15.207	Conducted Emission	N/A	N/A	N/A ^{Note1}	/
12	15.209, 15.247(d)	Radiated Emission	Feb. 22, 2025 to Sep. 22, 2025	Gao Jianrou	PASS	/



Note 1: Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.

Note 2: The tests were performed according to the method of measurements prescribed in ANSI C63.10-2020, KDB 558074 D01 v05r02 and DA 00-075.

Note 3: Any additions, deviation, or exclusions from the method shall be noted in the "Remark".

1.5. Environmental Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15-35
Relative Humidity (%):	30-60
Atmospheric Pressure (kPa):	86-106



2. 47 CFR Part 15C Requirements

2.1. Antenna Requirement

2.1.1. Applicable Standard

According to FCC 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.

2.1.2. Test Result: Compliant

Antenna location	Antenna Type	Coupling Method
☒ Internal ☐ External	☐ FPC Antenna ☐ Spring Antenna ☐ Ceramic Antenna ☐ Integrated Antenna ☐ Dipole Antenna ☒ PCB Antenna ☐ PIFA Antenna	☐ I-PEX Connector ☐ SMA Connector ☐ RP-SMA Connector ☐ Metal Shrapnel ☒ Layout



2.2. Hopping Mechanism

2.2.1. Requirement

According to FCC §15.247(a)(1), a frequency hopping spread spectrum system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

According to FCC §15.247(h), the incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

2.2.2. Result: Compliant

The hopping mechanism of the EUT is based on the protocol that "**LoRaWAN**".

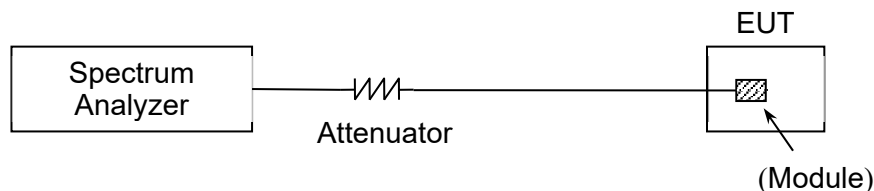
2.3. Number of Hopping Frequency

2.3.1. Requirement

According to FCC section 15.247(a)(1)(i), frequency hopping systems operating in the 902MHz to 928MHz bands shall use at least 50 hopping frequencies if the 20dB bandwidth of the hopping channel is less than 250KHz; or at least 25 hopping frequencies if the 20dB bandwidth of the hopping channel is 250KHz or greater.

2.3.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.

2.3.3. Test Procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = the frequency band of operation

RBW $\geq$ 1% of the span

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize

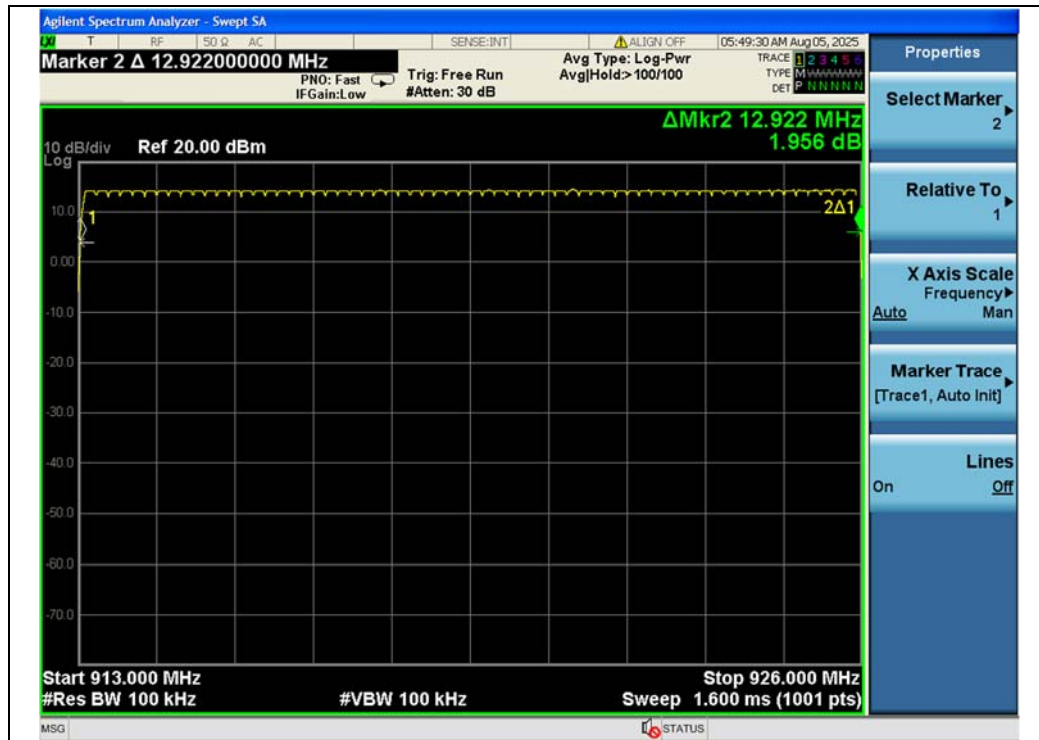


2.3.4. Test Result

A. Test Verdict:

Frequency Block (MHz)	Measured Channel Numbers	Min. Limit	Verdict
902-928	64	50	PASS

B. Test Plots:



2.4. Duty Cycle of Test Signal

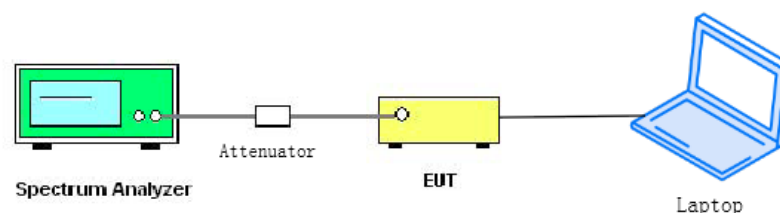
2.4.1. Requirement

Preferably, all measurements of maximum conducted (average) output power will be performed with the EUT transmitting continuously (i.e., with a duty cycle of greater than or equal to 98%). When continuous operation cannot be realized, then the use of sweep triggering/signal gating techniques can be used to ensure that measurements are made only during transmissions at the maximum power control level. Such sweep triggering/signal gating techniques will require knowledge of the minimum transmission duration (T) over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation. Sweep triggering/signal gating techniques can then be used if the measurement/sweep time of the analyzer can be set such that it does not exceed T at any time that data are being acquired (i.e., no transmitter OFF-time is to be considered).

When continuous transmission cannot be achieved and sweep triggering/signal gating cannot be implemented, alternative procedures are provided that can be used to measure the average power; however, they will require an additional measurement of the transmitter duty cycle (D). Within this sub clause, the duty cycle refers to the fraction of time over which the transmitter is ON and is transmitting at its maximum power control level. The duty cycle is considered to be constant if variations are less than $\pm 2\%$; otherwise, the duty cycle is considered to be nonconstant.

2.4.2. Test Description

Test Setup:



ANSI C63.10 2013 Clause 11.6 was used in order to prove compliance.

2.4.3. Test Result

Duty Cycle (%) (D)	Duty Factor ($10 \cdot \lg[1/D]$)
100	0

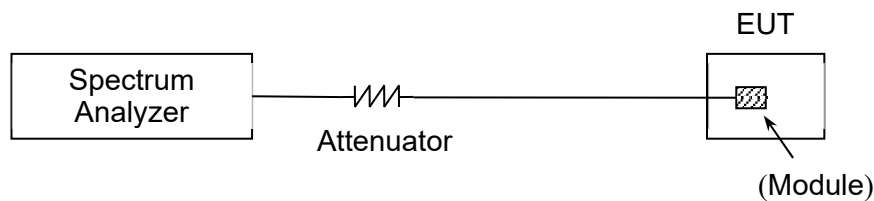
2.5. Maximum Peak Conducted Output Power

2.5.1. Requirement

According to FCC section 15.247(b)(2), for frequency hopping systems that operates in the 902MHz to 928MHz band employing at least 50 hopping channels, the maximum peak output power of the intentional radiator shall not exceed 1Watt, and 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

2.5.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.

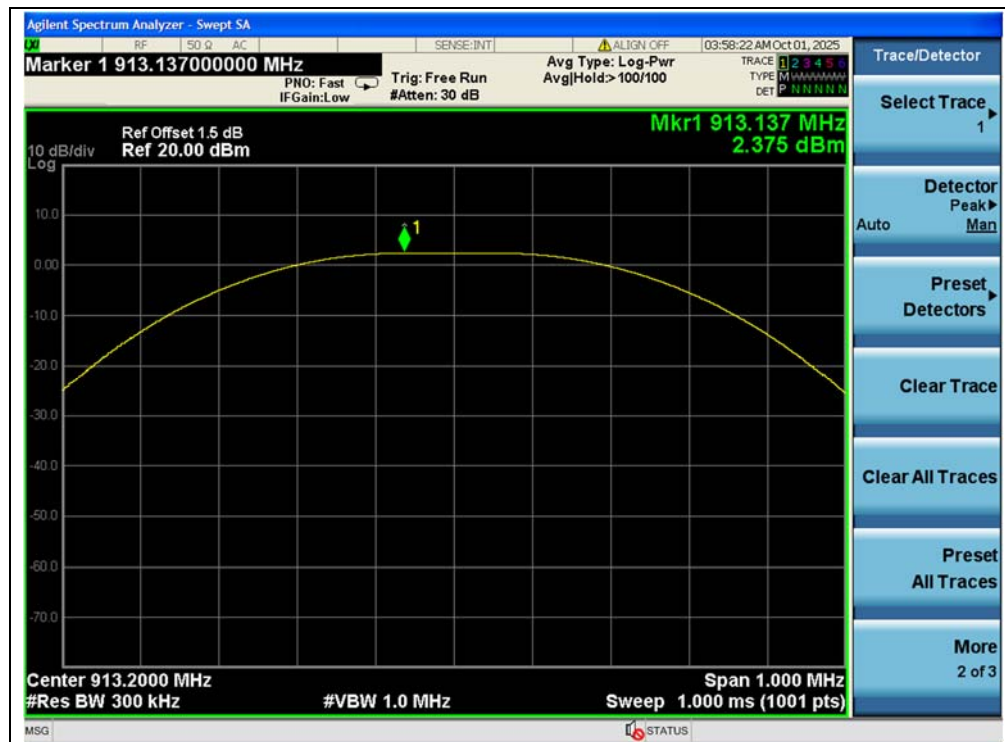


2.5.3. Test Result

A. Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power		Limit		Verdict
		dBm	W	dBm	W	
1	913.2	2.38	0.0017	30	1	PASS
32	919.4	2.10	0.0016			PASS
64	925.8	1.95	0.0016			PASS

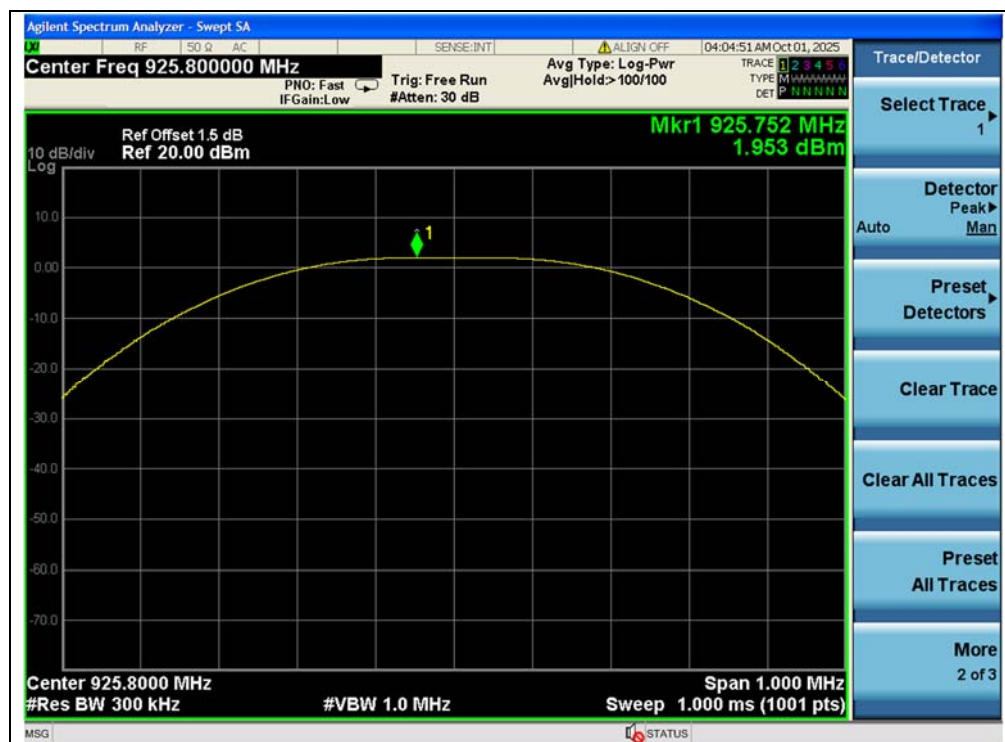
B. Test Plot:



(Channel 1)



(Channel 32)



(Channel 64)

2.6. Maximum Average Conducted Output Power

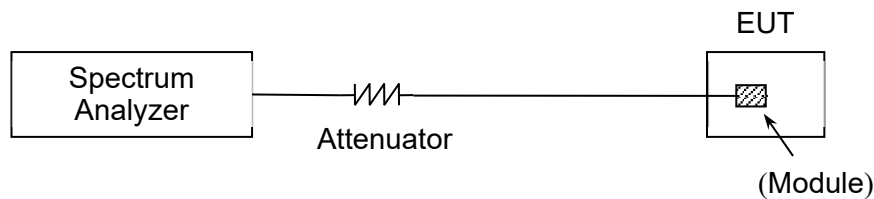
2.6.1. Requirement

According to FCC section 15.247(b)(2), for frequency hopping systems that operates in the 902MHz to 928MHz band employing at least 50 hopping channels, the maximum peak output power of the intentional radiator shall not exceed 1Watt, and 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels.

2.6.2. Test Description

The measured output power was calculated by the reading of the USB Wideband Power Sensor and calibration.

Test Setup:



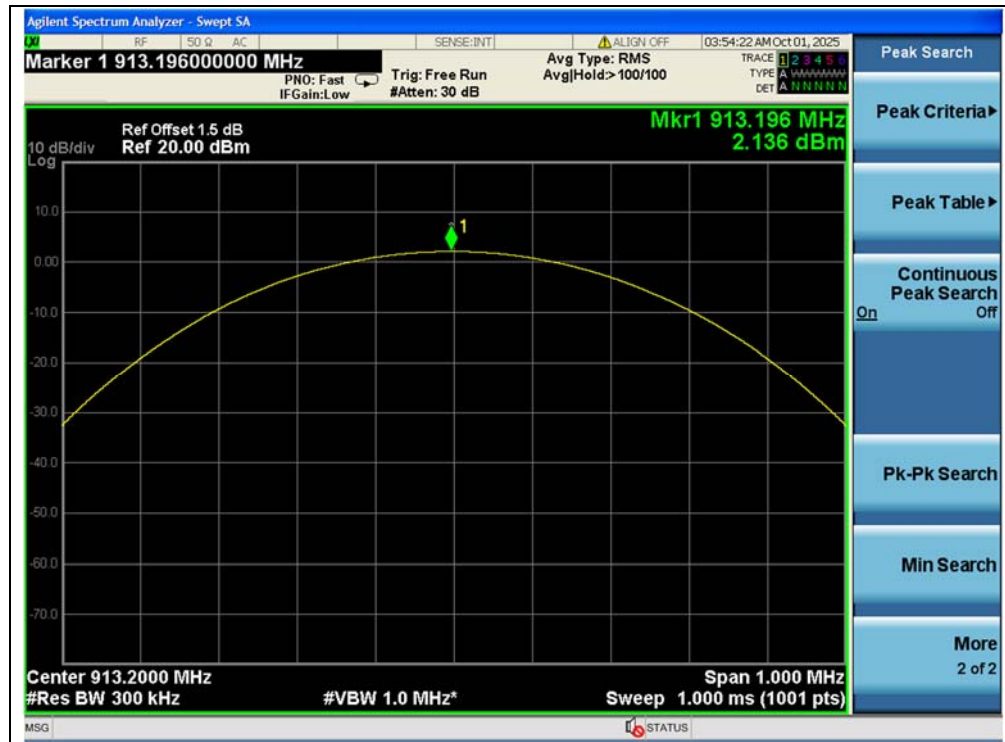
The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.



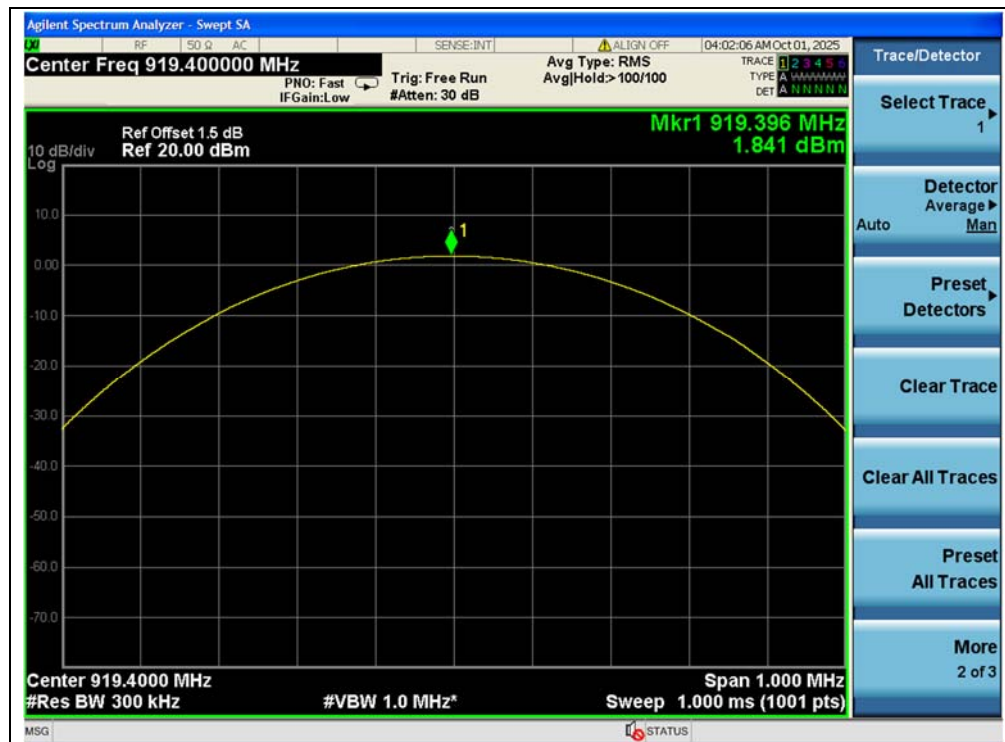
2.6.3. Test Result

Channel	Frequency (MHz)	Measured dBm	Average Power			Limit		Verdict
			Duty Factor	Duty Factor Calculated		dBm	W	
1	913.2	2.14	0.00	2.14	0.0016	30	1	PASS
32	919.4	1.84		1.84	0.0015			PASS
64	925.8	1.70		1.70	0.0015			PASS

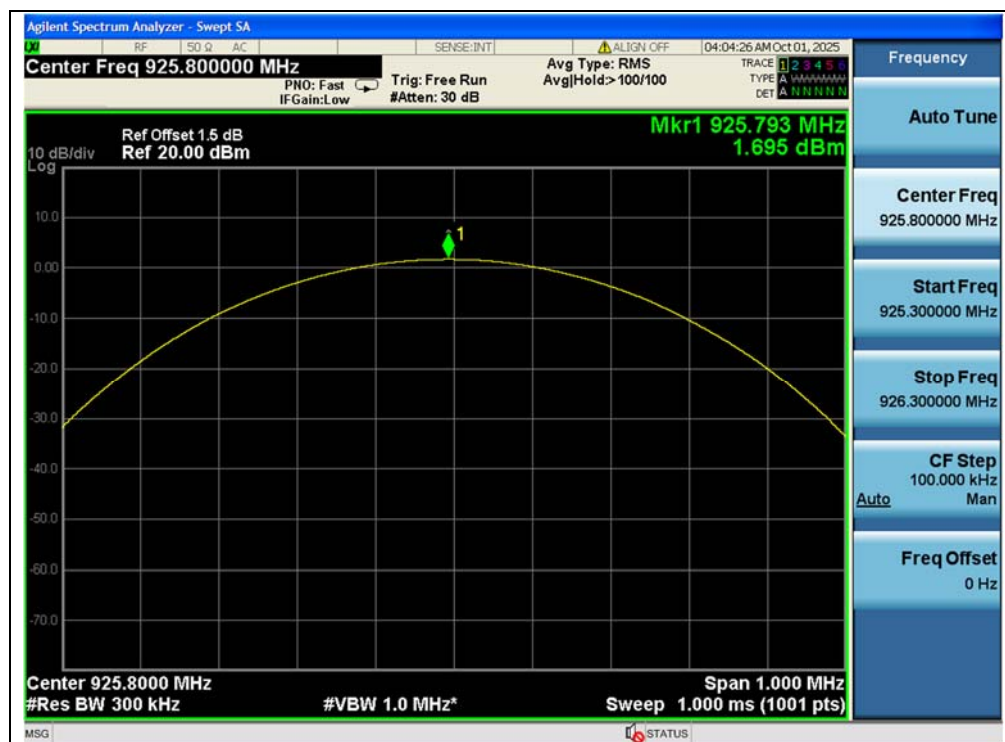
Test Plot:



(Channel 1)



(Channel 32)



(Channel 64)

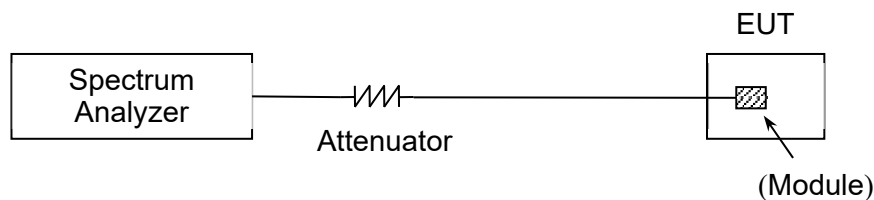
2.7. 20 dB Bandwidth

2.7.1. Definition

According to FCC §15.247(a)(1), the 20dB bandwidth is known as the 99% emission bandwidth, or 20 dB bandwidth ($10 \cdot \log 1\% = 20\text{dB}$) taking the total RF output power.

2.7.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.

2.7.3. Test Procedure

Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW $\geq$ 1% of the 20 dB bandwidth

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

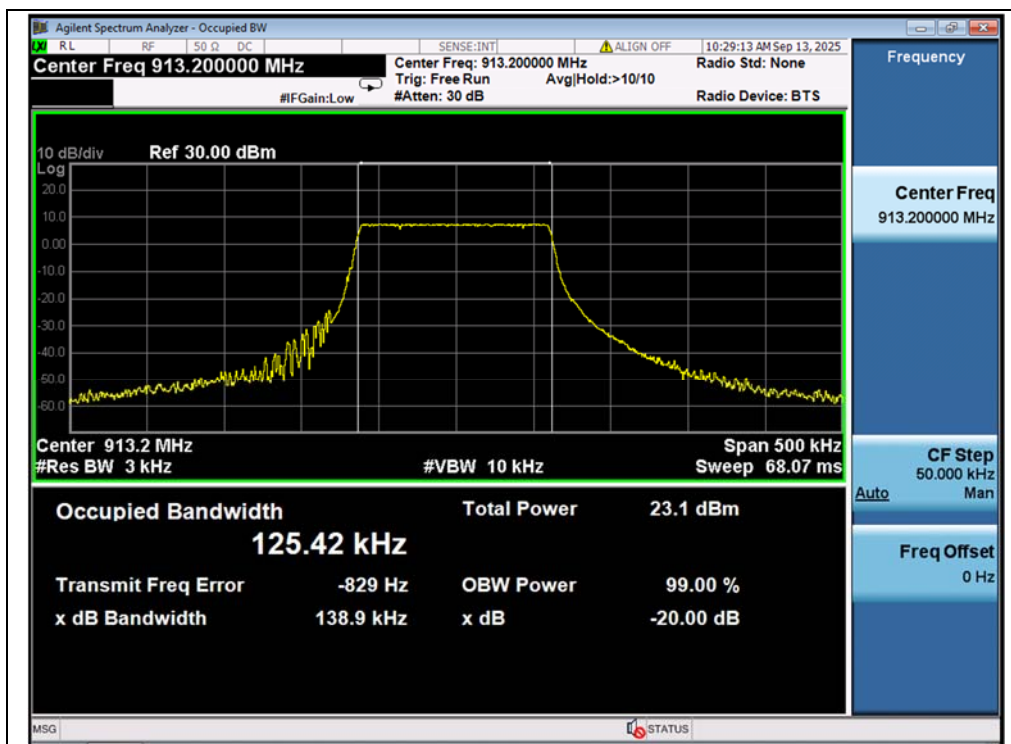


2.7.4. Test Result

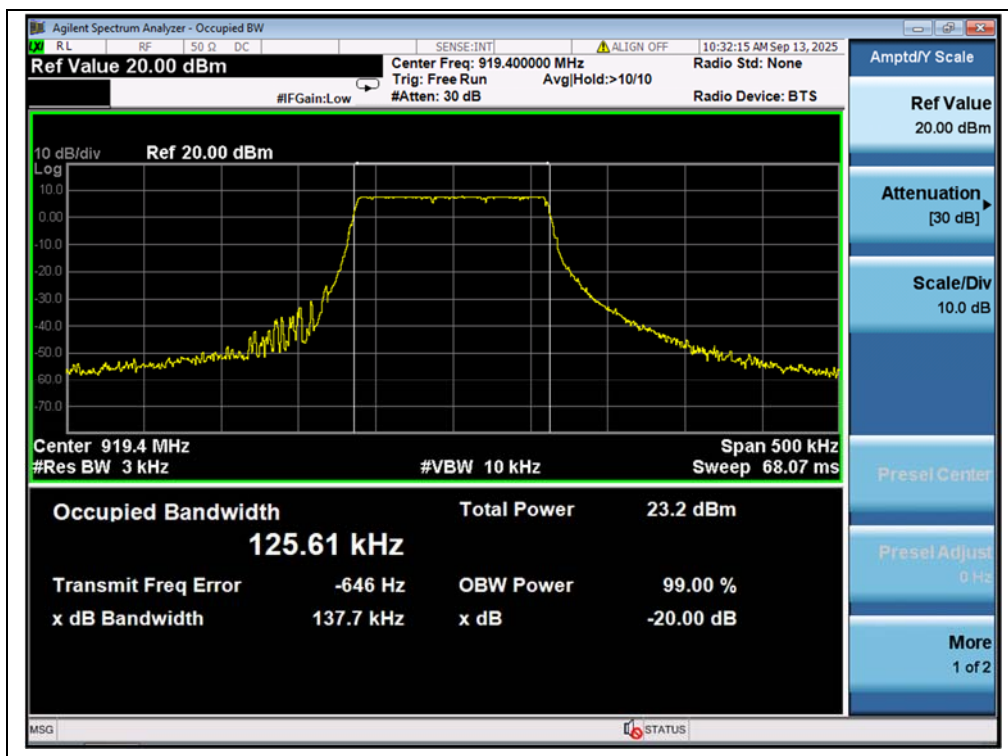
A. Test Verdict:

Channel	Frequency (MHz)	20 dB Bandwidth (kHz)	Result
1	913.2	138.9	PASS
32	919.4	137.7	PASS
64	925.8	137.4	PASS

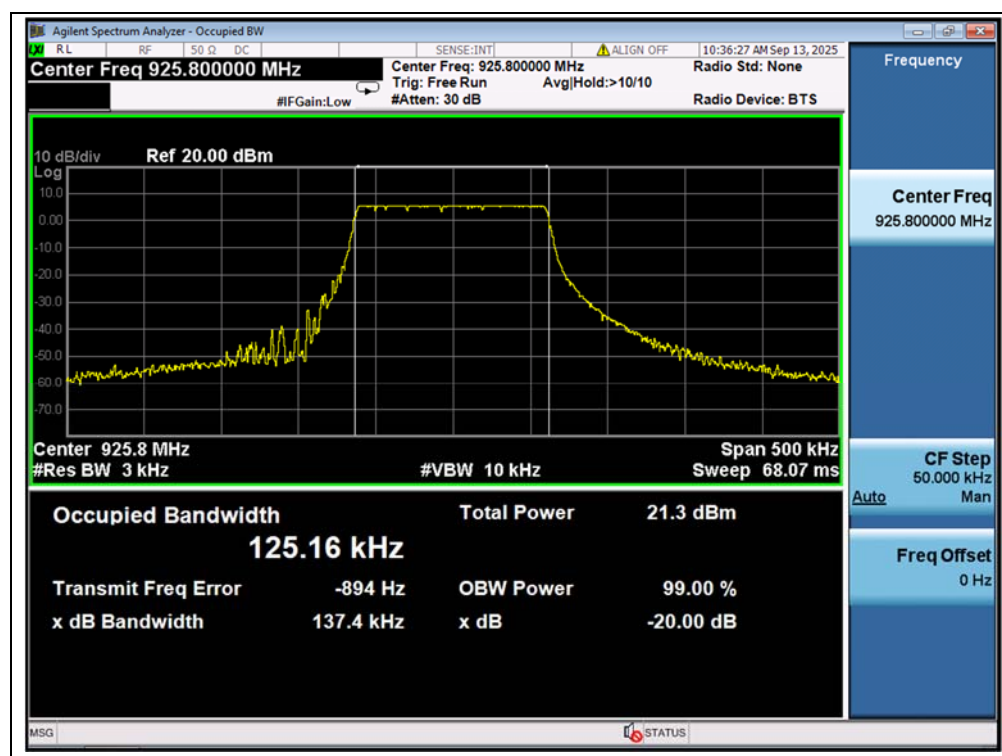
B. Test Plot:



(Channel 1)



(Channel 32)



(Channel 64)

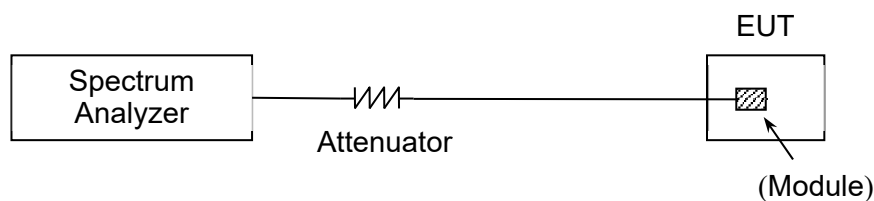
2.8. Carried Frequency Separation

2.8.1. Definition

According to FCC §15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25kHz or 20dB bandwidth of the hopping channel, whichever is greater.

2.8.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.

2.8.3. Test Procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

Span = wide enough to capture the peaks of two adjacent channels

Resolution (or IF) Bandwidth (RBW) $\geq 1\%$ of the span

Video (or Average) Bandwidth (VBW) $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

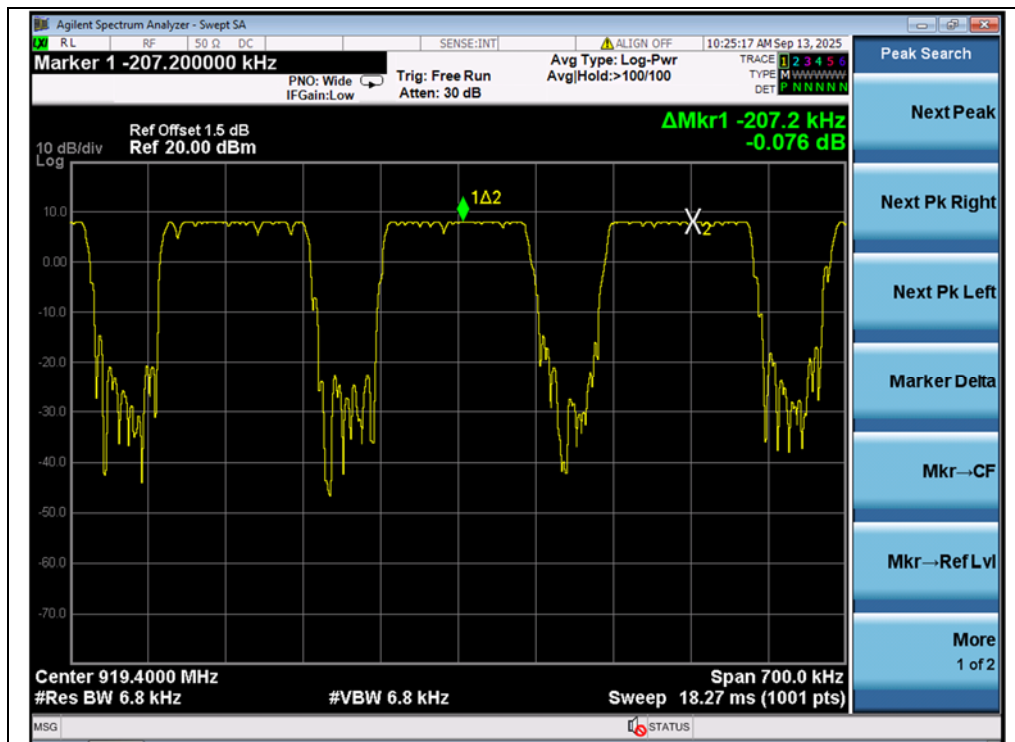


2.8.4. Test Result

A.Test Verdict:

Test Mode	Measured Channel Numbers	Carried Frequency Separation (kHz)	20dB bandwidth (kHz)	Min. Limit	Verdict
LoRa	31 and 32	207.2	138.9	20dB bandwidth	PASS

B.Test Plot:



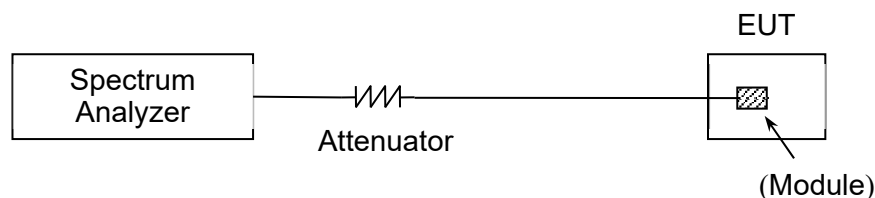
2.9. Time of Occupancy (Dwell time)

2.9.1. Requirement

According to FCC §15.247(a) (1) (iii), frequency hopping systems in the 2400 - 2483.5MHz band shall use at least 15 non-overlapping channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

2.9.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.

2.9.3. Test Procedure

The transmitter output is connected to a spectrum analyzer. The span is set to 0 Hz, centered on a single, selected hopping channel. The width of a single pulse is measured in a fast scan. The number of pulses is measured in 10 second scan, to enable resolution of each occurrence. The average time of occupancy in the specified 20 second period is equal to (# of pulses in 20s) * pulse width.



2.9.4. Test Result

GFSK Mode

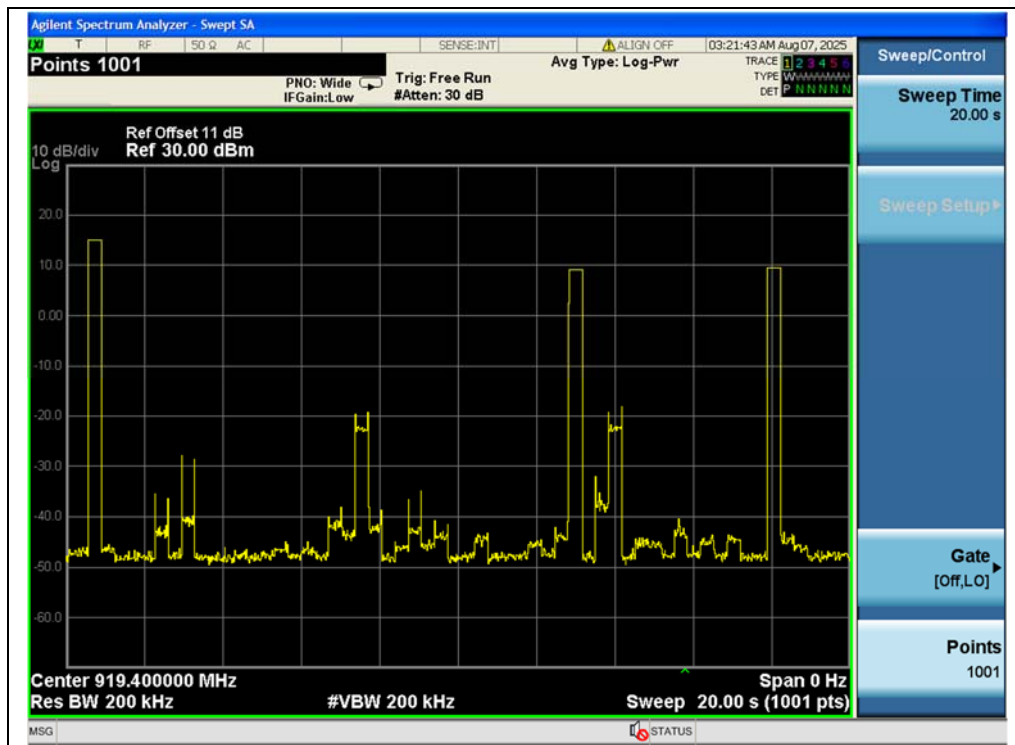
A.Test Verdict:

Frequency (MHz)	Pulse Width (sec)	Number of pulse in 20 seconds	Average Time of Occupancy (sec)	Limit (sec)	Verdict
919.4	0.33	1	0.33	0.4	PASS

B.Test Plot:



(Dwell time_ Pulse Width)



(Dwell time_ Number of pulse)

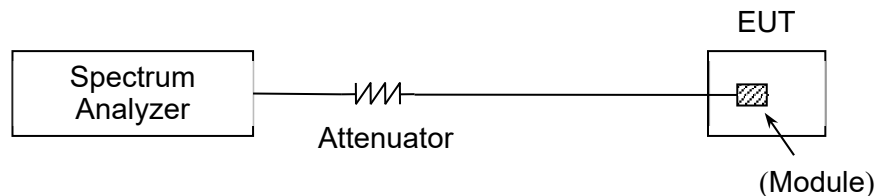
2.10. Conducted Spurious Emissions

2.10.1. Requirement

According to FCC §15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.10.2. Test Description

Test Setup:



The EUT is coupled to the Spectrum Analyzer (SA) with Attenuators the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. During the measurement, the EUT is activated by the PC via Lan port.

2.10.3. Test Procedure

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.

RBW = 100 kHz

VBW $\geq$ RBW

Sweep = auto

Detector function = peak

Trace = max hold

Allow the trace to stabilize



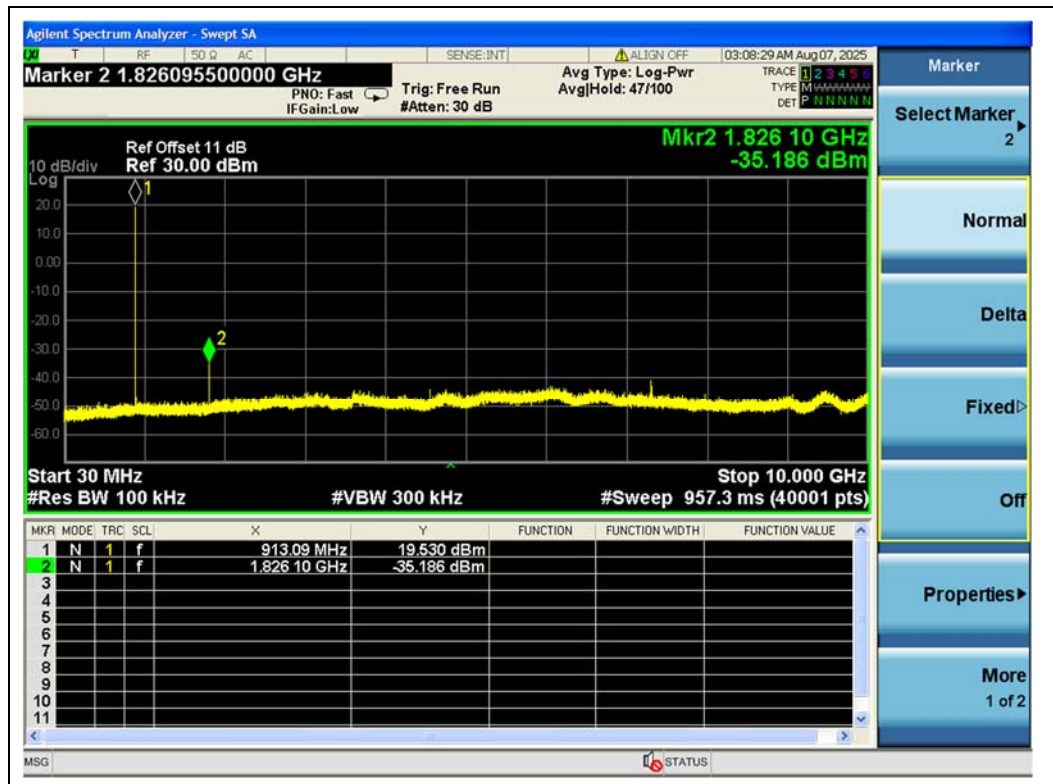
2.10.4. Test Result

GFSK Mode

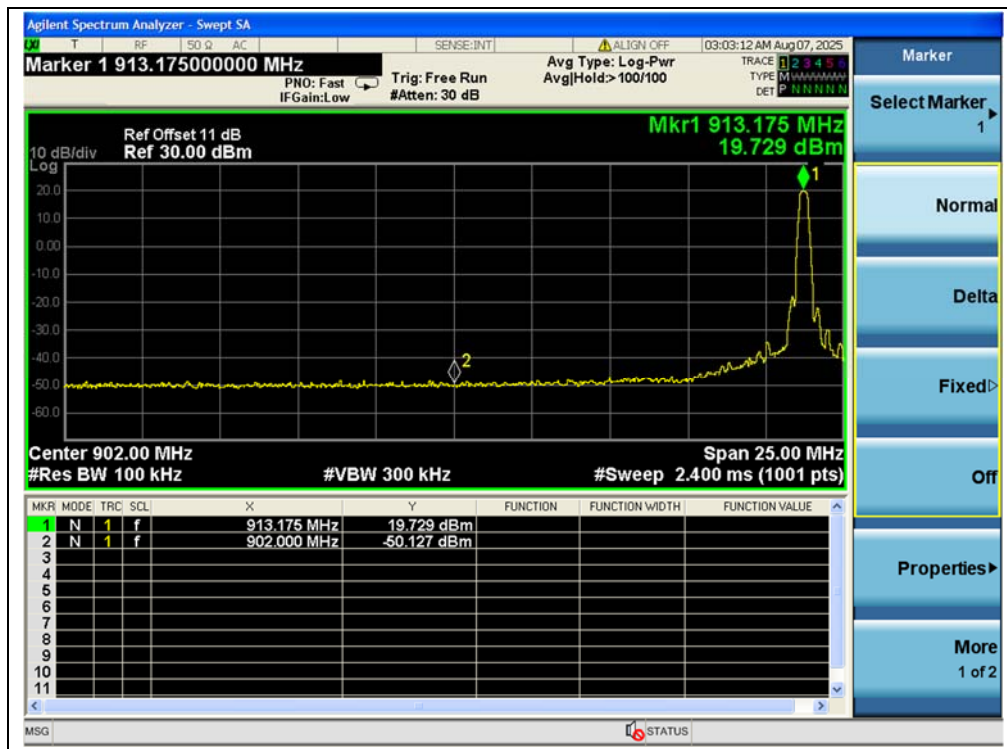
A.Test Verdict:

Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Limit (dBm)		Verdict
			Carrier Level	Calculated - 20dBc Limit	
1	913.2	-35.19	19.53	-0.47	PASS
32	919.4	-35.19	19.53	-0.47	PASS
64	925.8	-32.13	19.68	-0.32	PASS

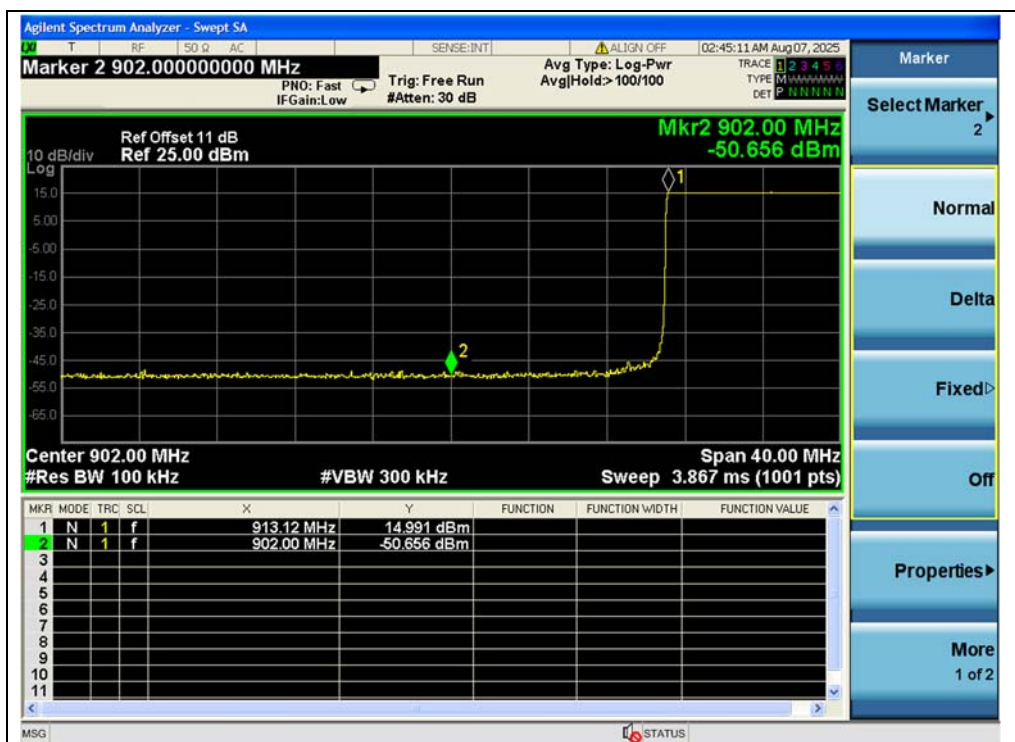
B.Test Plot:



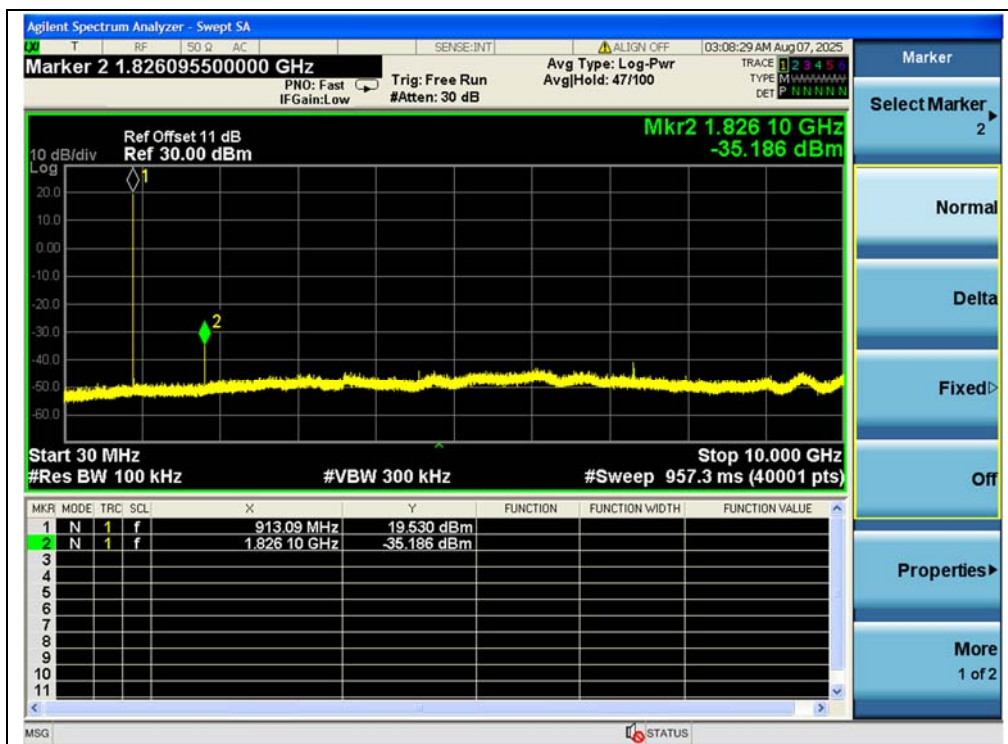
(30MHz to 10GHz, Channel 1, GFSK)



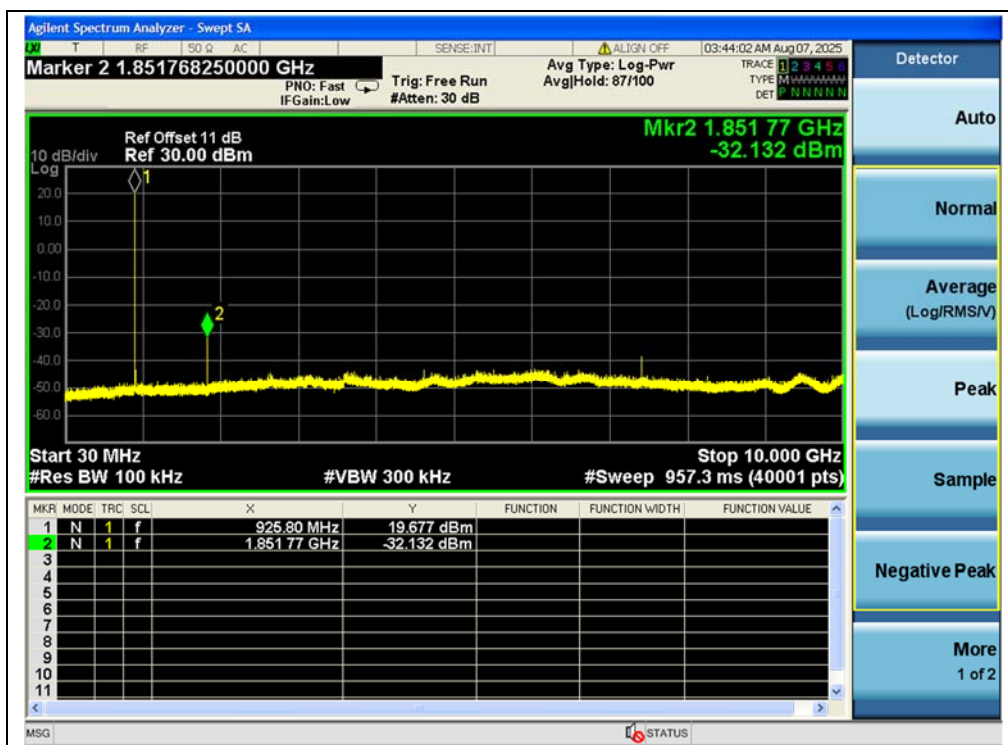
(Band edge, Channel 1, GFSK)



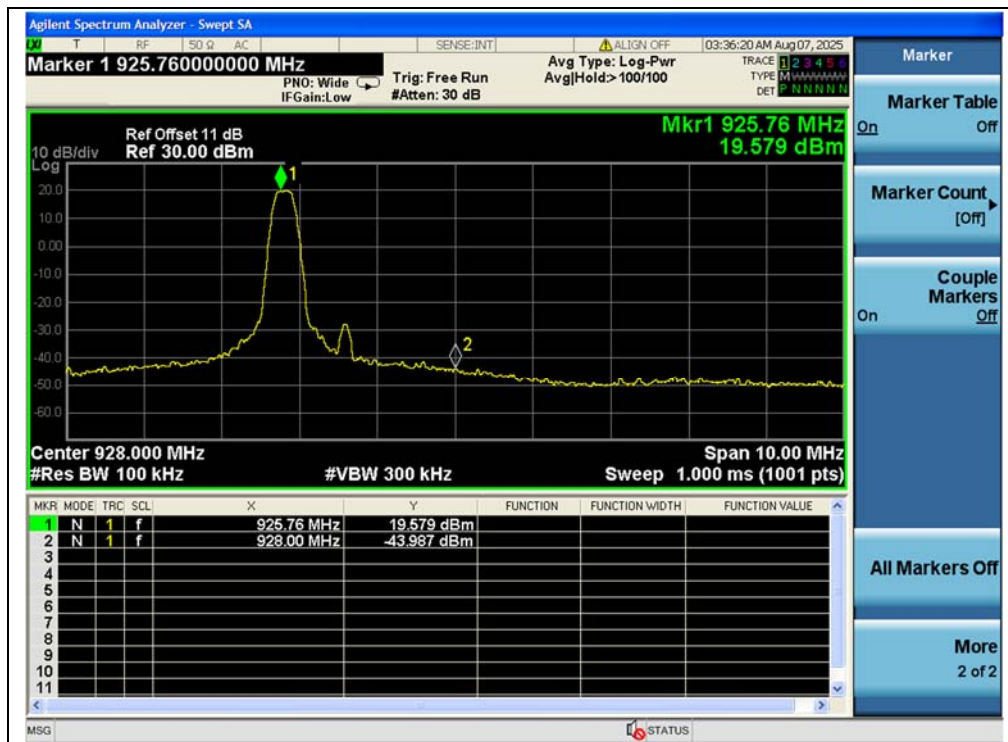
(Band edge with hopping on, Channel 1, GFSK)



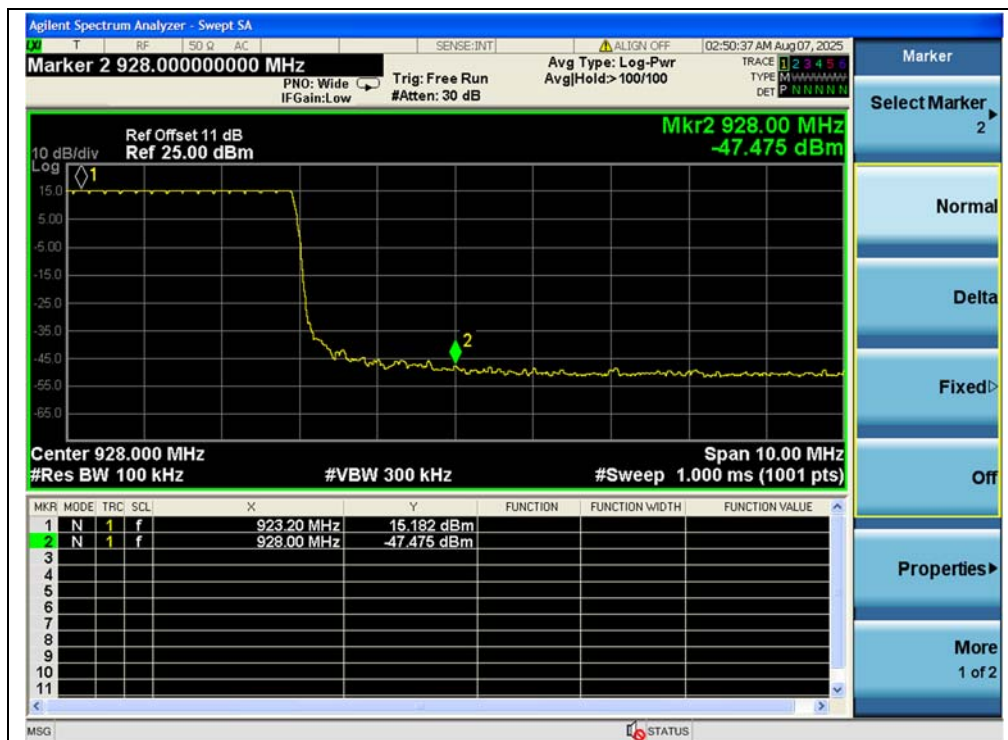
(30MHz to 10GHz, Channel 32, GFSK)



(30MHz to 10GHz, Channel 64, GFSK)



(Band edge, Channel 64, GFSK)



(Band edge with hopping on, Channel 64, GFSK)

2.11. Conducted Emission

2.11.1. Requirement

According to FCC section 15.207, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150kHz to 30MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

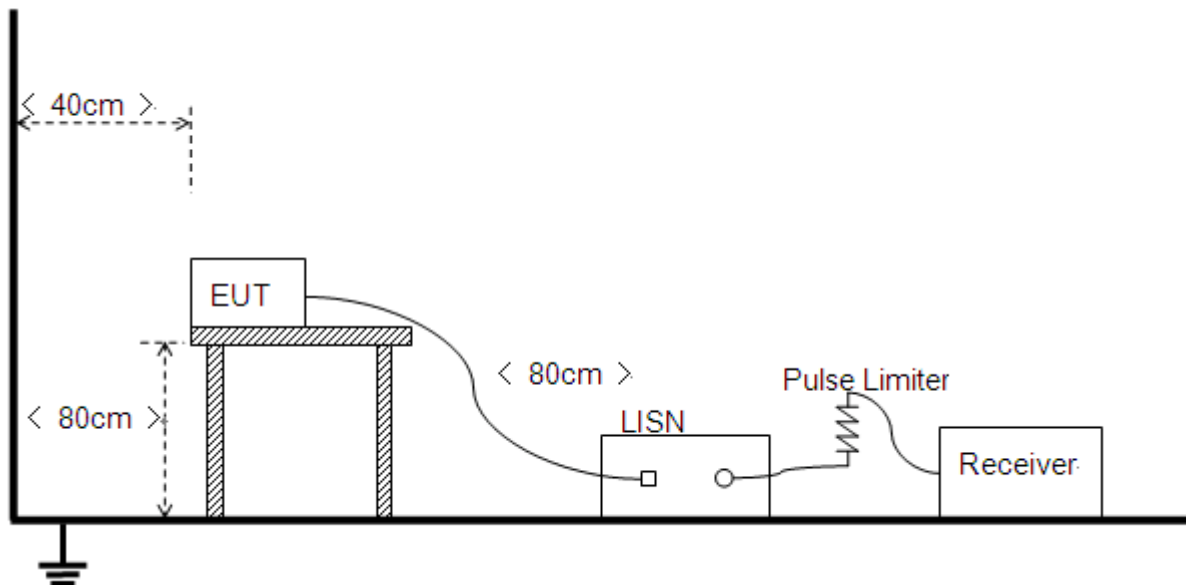
Frequency Range (MHz)	Conducted Limit (dB μ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5- 30	60	50

Note:

- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

2.11.2. Test Description

Test Setup:



The Table-top EUT was placed upon a non-metallic table 0.8m above the horizontal metal reference ground plane. EUT was connected to LISN and LISN was connected to reference Ground Plane. EUT was 80cm from LISN. The set-up and test methods were according to ANSI C63.10.



REPORT No.: SZ25010011W01

2.11.3. Test Result

This test case does not apply this kind of EUT.

2.12. Radiated Emission

2.12.1. Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V}/\text{m}$)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

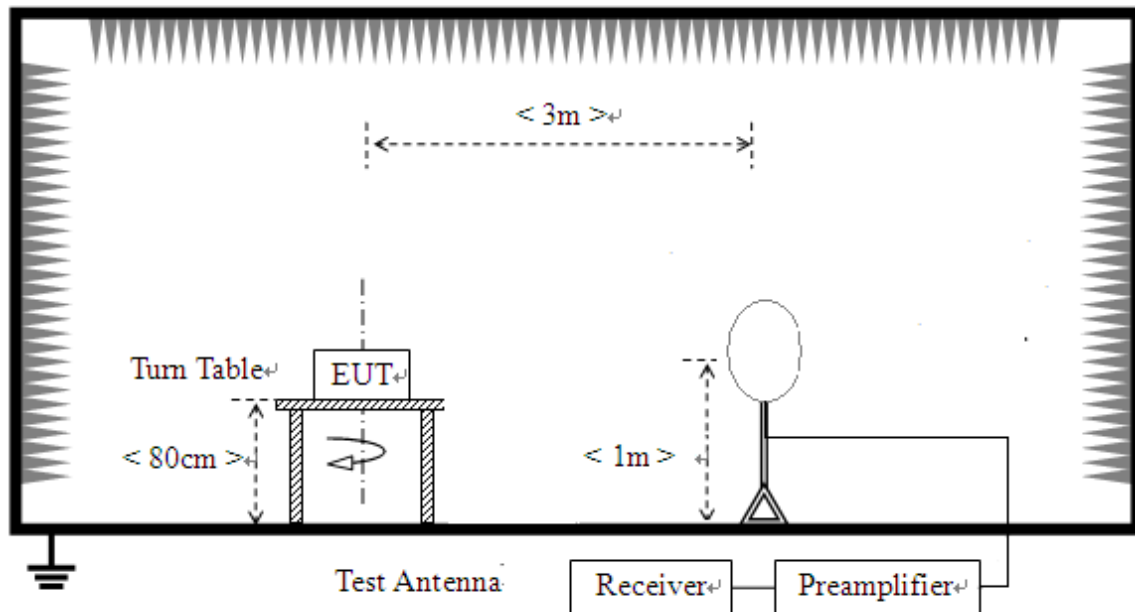
Note1: For above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.

Note2: For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK). In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table).

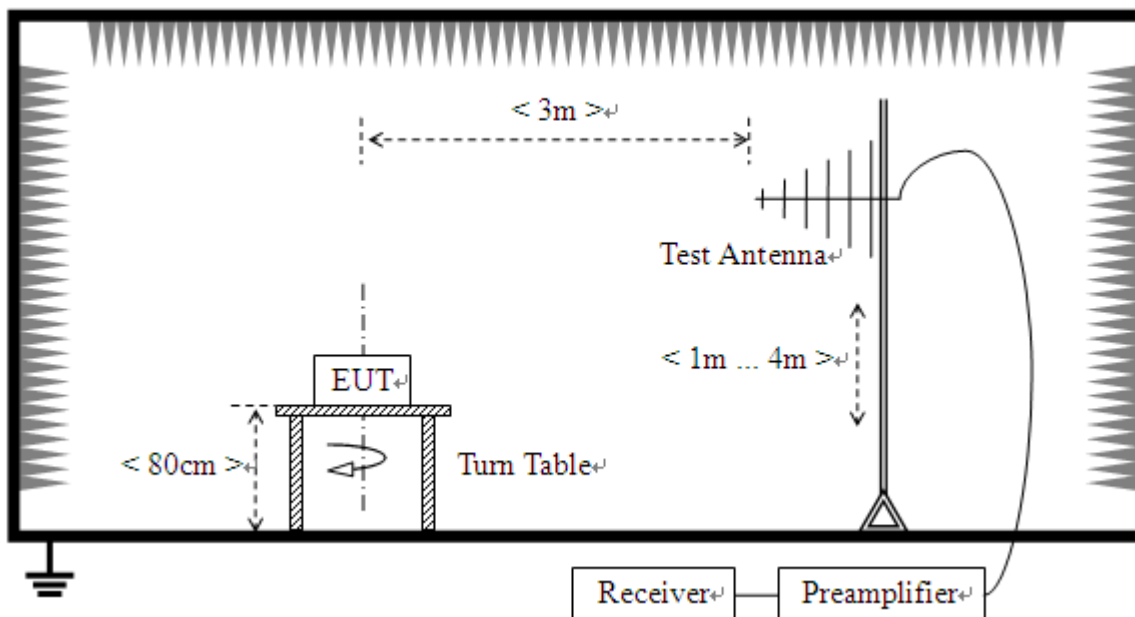
2.12.2. Test Description

Test Setup:

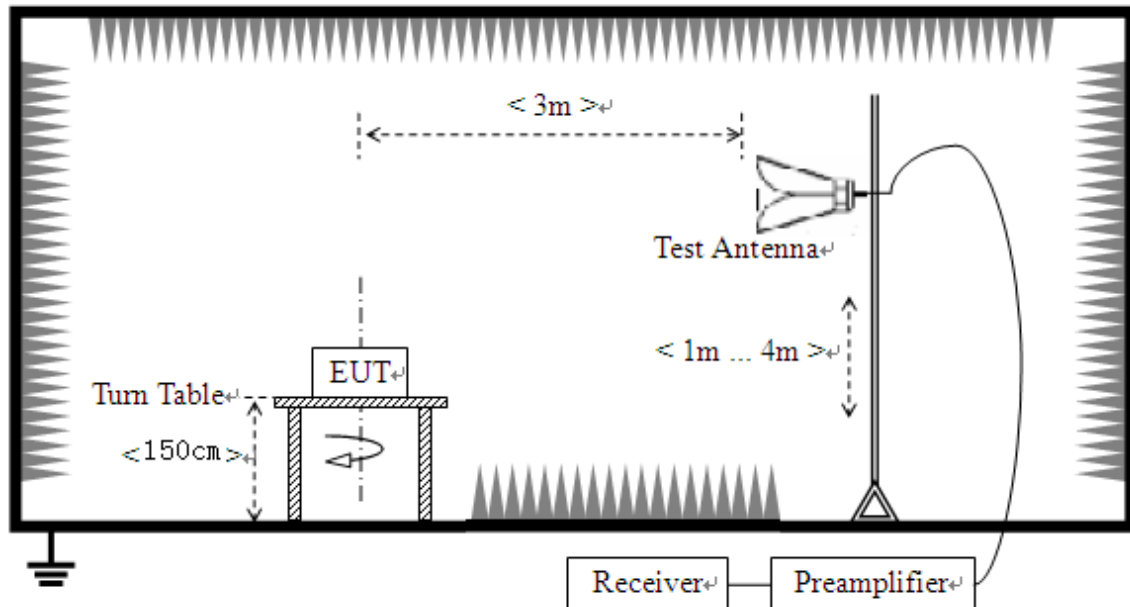
- 1) For radiated emissions from 9kHz to 30MHz



- 2) For radiated emissions from 30MHz to 1GHz



3) For radiated emissions above 1GHz



The EUT is placed on a non-conducting table 80 cm above the ground plane for measurement below 1GHz; 1.5 m above the ground plane for measurement above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 30MHz, the emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9kHz-90 kHz, 110kHz-490 kHz. Radiated emission limits in these two bands are based on measurements employing an average detector.

For measurements below 1GHz the resolution bandwidth is set to 100kHz for peak detection measurements or 120kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1GHz the resolution bandwidth is set to 1MHz, the video band width is set to 3MHz for peak measurements and as applicable for average measurements.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.



2.12.3. Test Result

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak (or average) limit, it is unnecessary to perform an quasi-peak measurement (or average).

The measurement results are obtained as below:

$$E [\text{dB}\mu\text{V/m}] = U_R + A_T + A_{\text{Factor}} [\text{dB}]; A_T = L_{\text{Cable loss}} [\text{dB}] - G_{\text{preamp}} [\text{dB}]$$

A_T : Total correction Factor except Antenna

U_R : Receiver Reading

G_{preamp} : Preamplifier Gain

A_{Factor} : Antenna Factor at 3m

During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note 1: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

Note 2: For the frequency, which started from 9kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit was not recorded.

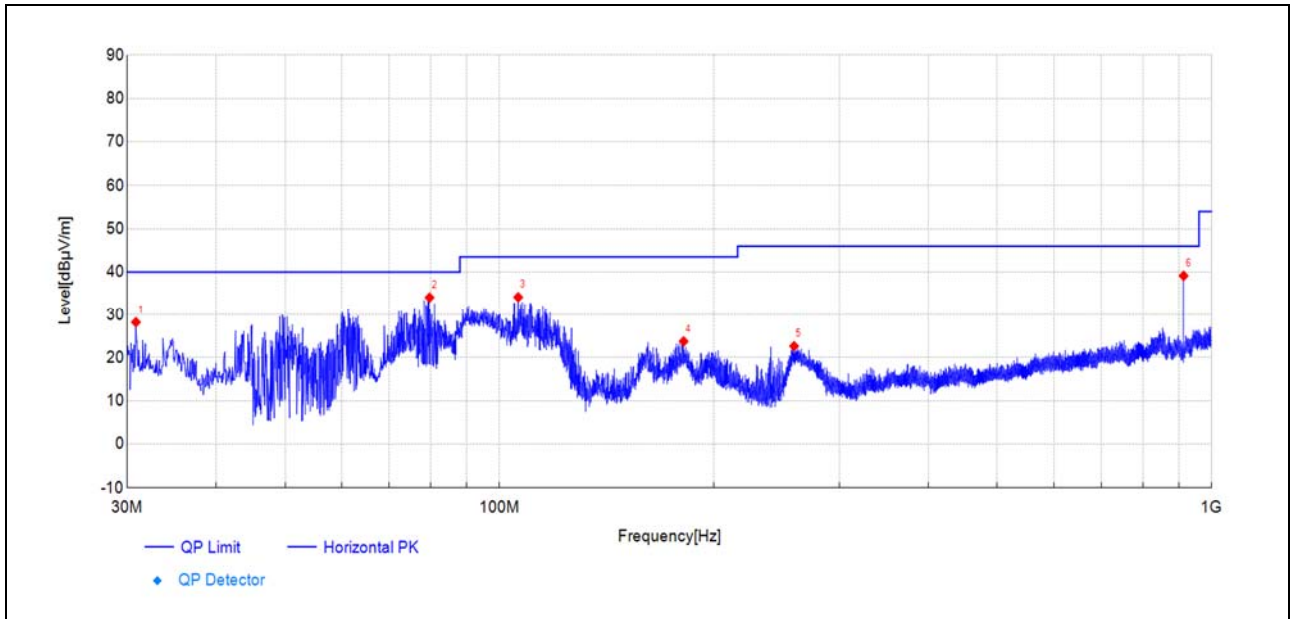
Note 3: N/A means the frequency is the basic frequency or the base station frequency, they are no need to verdict.

Field strength of fundamental:

Frequency [MHz]	Reading [dB μ V]	Level [dB μ V/m]	Factor [dB/m]	Antenna Polarity
925.80	64.7	92.57	27.920	Horizontal

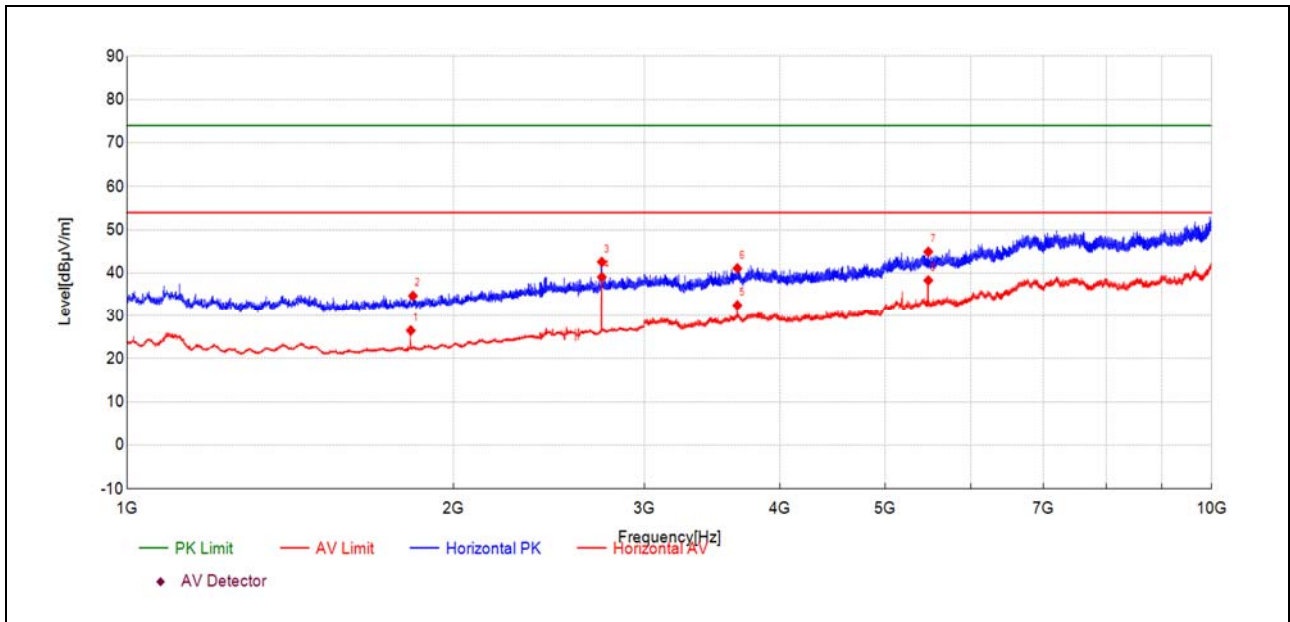
The field strength (the lowest) of fundamenta is more than 20dB higher than the unwanted emissions, in accordance with FCC part 15.215(b).

Plot for Channel 1



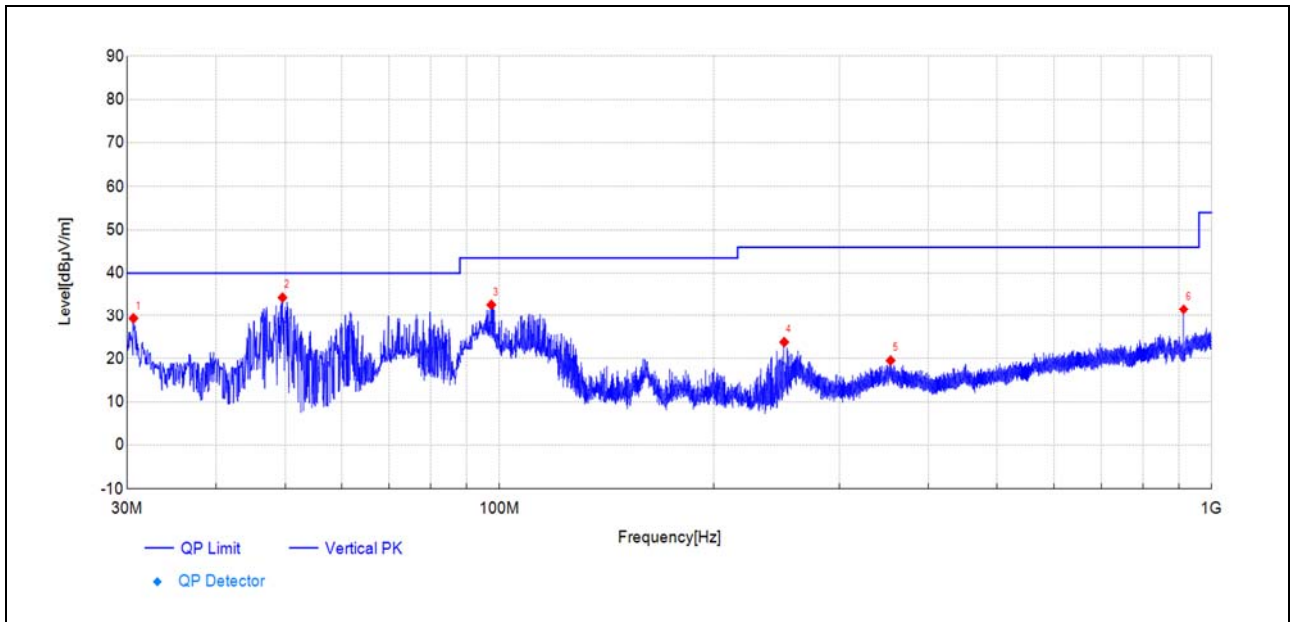
(Antenna Horizontal, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
30.87	58.8	28.21	-30.620	40.00	11.79	159	PK	Horizontal	PASS
79.76	66.6	34.07	-32.500	40.00	5.93	0	PK	Horizontal	PASS
106.25	63.6	34.15	-29.410	43.50	9.35	0	PK	Horizontal	PASS
181.38	54.0	23.75	-30.280	43.50	19.75	64	PK	Horizontal	PASS
259.22	50.3	22.63	-27.650	46.00	23.37	79	PK	Horizontal	PASS
913.23	51.5	39.13	-12.380	-	-	344	PK	Horizontal	NA



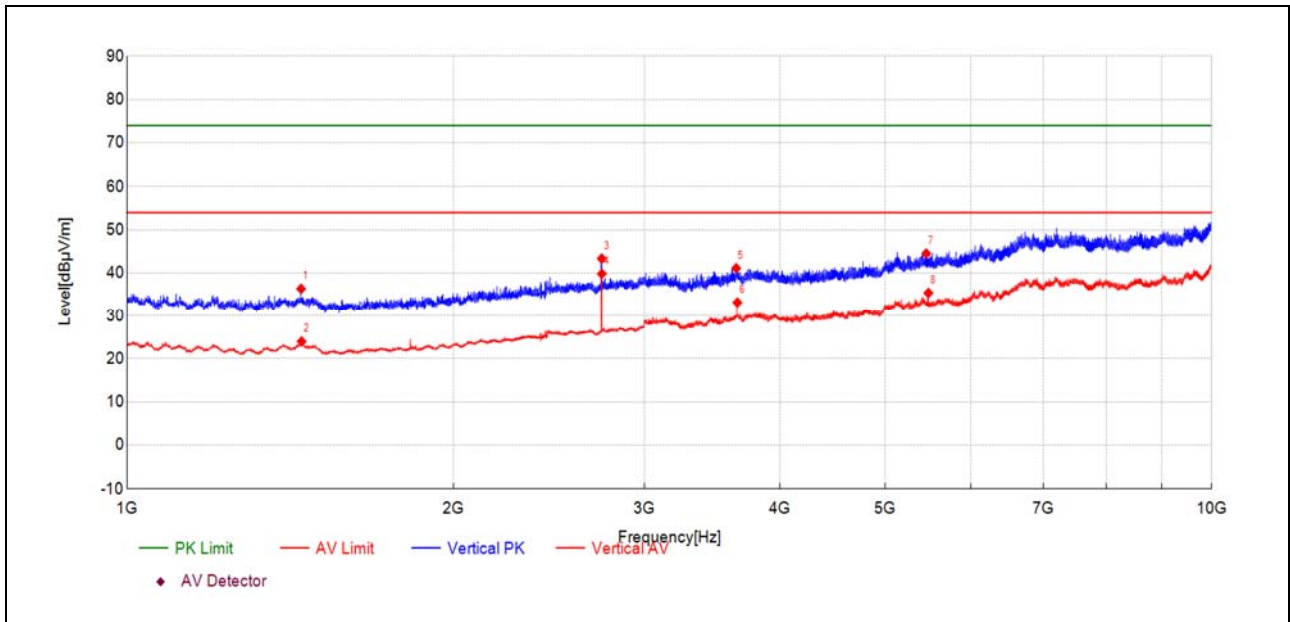
(Antenna Horizontal, 1GHz to 10GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
1826.57	44.9	26.51	-18.400	54.00	27.49	17	AV	Horizontal	PASS
1834.97	53.1	34.73	-18.360	74.00	39.27	82	PK	Horizontal	PASS
2739.95	55.4	42.57	-12.860	74.00	31.43	55	PK	Horizontal	PASS
2739.95	51.9	39.08	-12.860	54.00	14.92	77	AV	Horizontal	PASS
3653.38	41.3	32.52	-8.820	54.00	21.48	9	AV	Horizontal	PASS
3653.38	49.9	41.10	-8.820	74.00	32.90	18	PK	Horizontal	PASS
5479.10	47.0	44.94	-2.050	74.00	29.06	330	PK	Horizontal	PASS
5479.57	40.3	38.30	-2.040	54.00	15.70	26	AV	Horizontal	PASS



(Antenna Vertical, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
30.63	60.0	29.32	-30.650	40.00	10.68	159	PK	Vertical	PASS
49.59	62.4	34.35	-28.080	40.00	5.65	301	PK	Vertical	PASS
97.42	62.5	32.67	-29.840	43.50	10.83	213	PK	Vertical	PASS
251.07	50.9	23.81	-27.120	46.00	22.19	50	PK	Vertical	PASS
354.09	43.0	19.55	-23.440	46.00	26.45	206	PK	Vertical	PASS
913.13	43.9	31.50	-12.380	-	-	314	PK	Vertical	NA

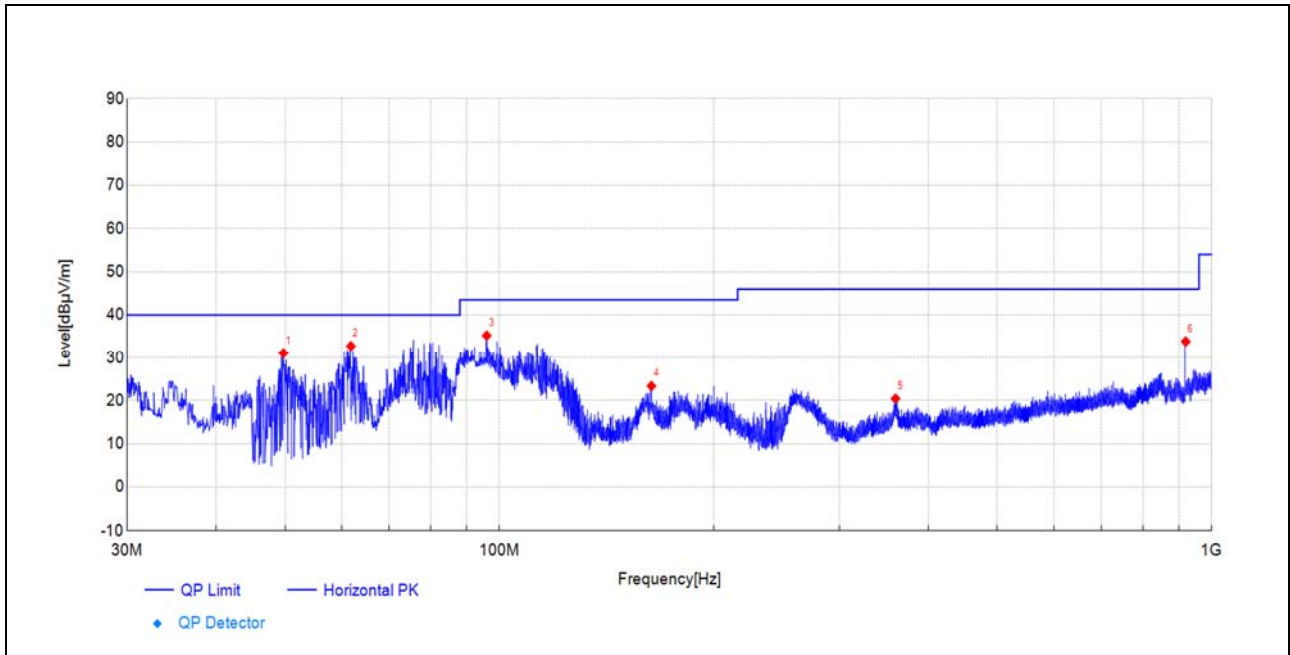


(Antenna Vertical, 1GHz to 10GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
1447.29	54.8	36.35	-18.440	74.00	37.65	328	PK	Vertical	PASS
1448.49	42.4	23.98	-18.430	54.00	30.02	81	AV	Vertical	PASS
2739.55	56.2	43.36	-12.870	74.00	30.64	114	PK	Vertical	PASS
2739.95	52.7	39.84	-12.860	54.00	14.16	114	AV	Vertical	PASS
3644.04	50.0	41.13	-8.830	74.00	32.87	275	PK	Vertical	PASS
3653.38	42.0	33.16	-8.820	54.00	20.84	162	AV	Vertical	PASS
5454.83	46.7	44.55	-2.150	74.00	29.45	33	PK	Vertical	PASS
5480.03	37.4	35.38	-2.040	54.00	18.62	114	AV	Vertical	PASS

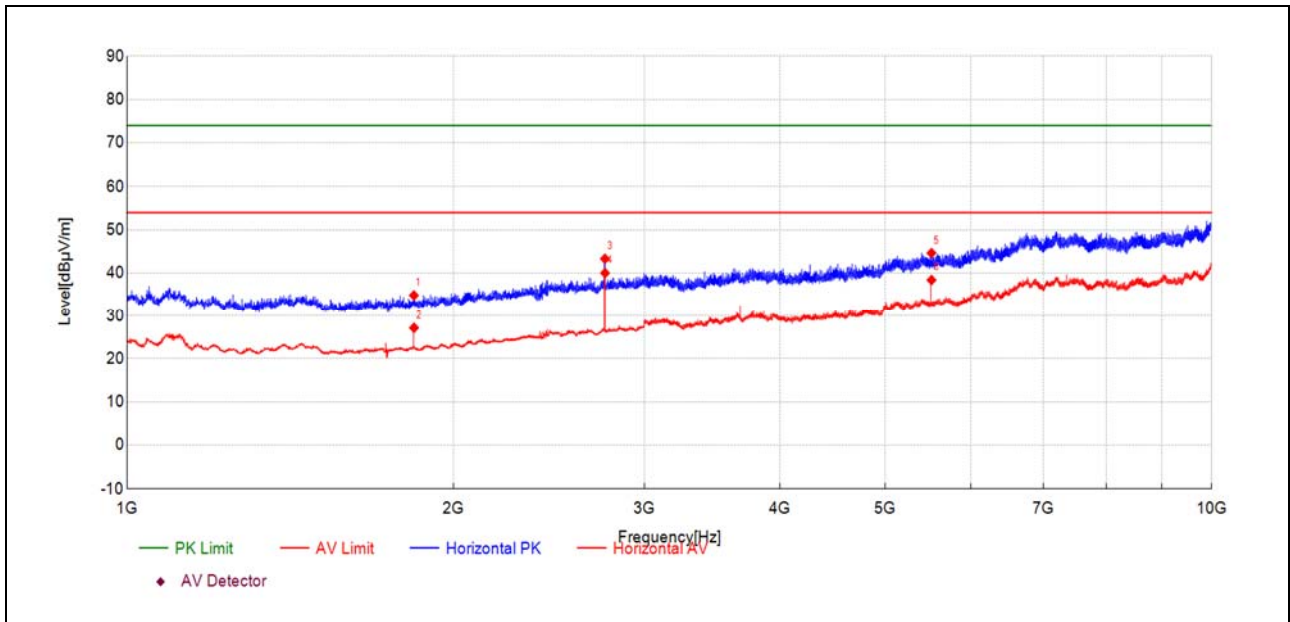


Plot for Channel 32



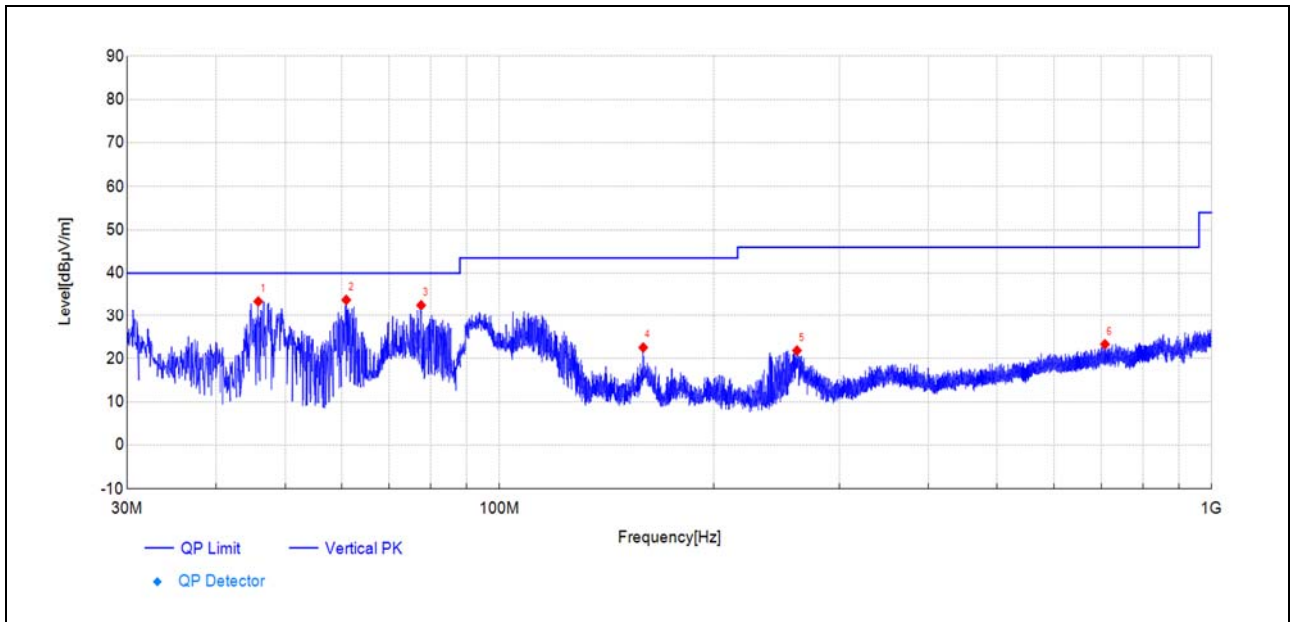
(Antenna Horizontal, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
49.74	59.1	31.06	-28.010	40.00	8.94	310	PK	Horizontal	PASS
61.87	61.2	32.75	-28.490	40.00	7.25	351	PK	Horizontal	PASS
95.96	65.4	35.21	-30.200	43.50	8.29	208	PK	Horizontal	PASS
163.43	54.4	23.37	-30.980	43.50	20.13	297	PK	Horizontal	PASS
359.82	43.6	20.43	-23.150	46.00	25.57	284	PK	Horizontal	PASS
919.44	45.6	33.84	-11.780	-	-	344	PK	Horizontal	NA



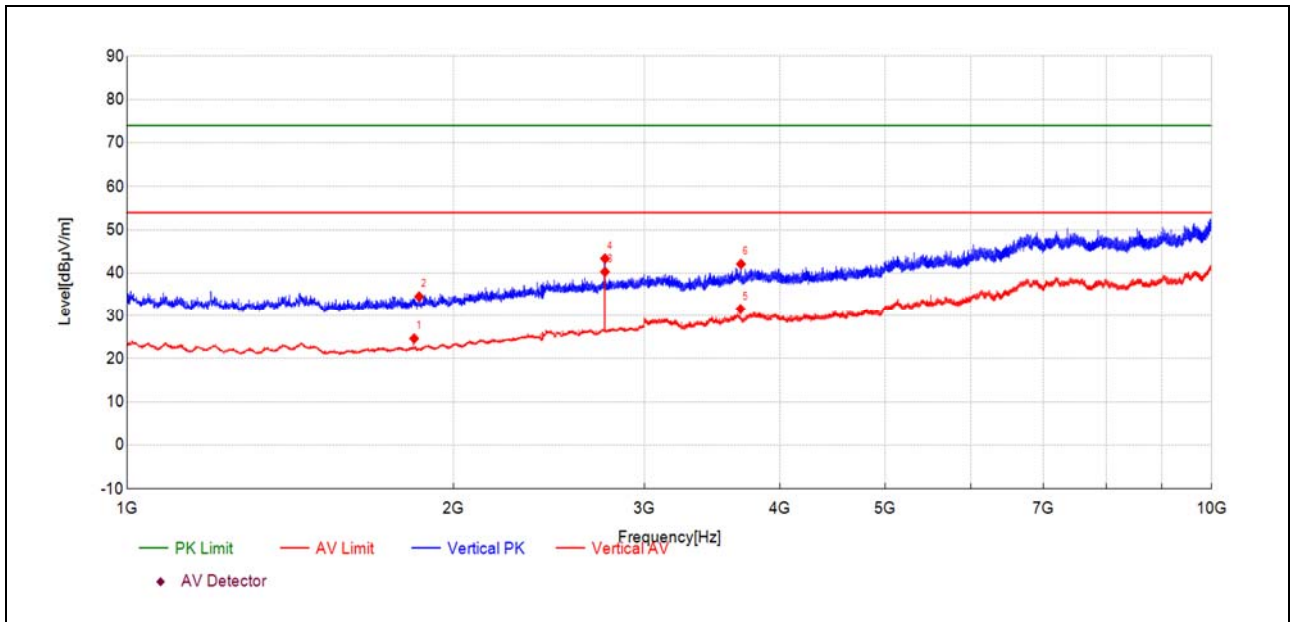
(Antenna Horizontal, 1GHz to 10GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
1838.57	53.2	34.82	-18.340	74.00	39.18	351	PK	Horizontal	PASS
1838.97	45.5	27.14	-18.340	54.00	26.86	39	AV	Horizontal	PASS
2757.95	56.1	43.33	-12.730	74.00	30.67	77	PK	Horizontal	PASS
2758.75	52.8	40.02	-12.730	54.00	13.98	71	AV	Horizontal	PASS
5516.43	46.7	44.64	-2.080	74.00	29.36	193	PK	Horizontal	PASS
5516.43	40.5	38.39	-2.080	54.00	15.61	9	AV	Horizontal	PASS



(Antenna Vertical, 30MHz to 1GHz)

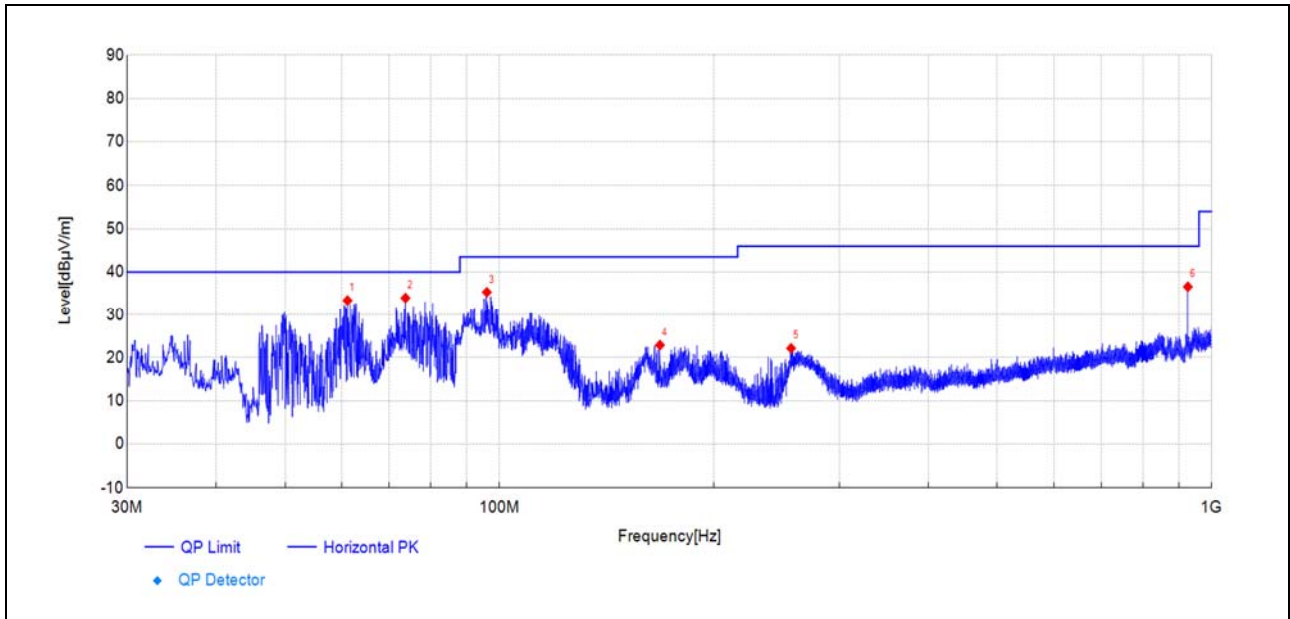
Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
45.86	61.9	33.45	-28.410	40.00	6.55	277	PK	Vertical	PASS
60.94	62.5	33.80	-28.740	40.00	6.20	311	PK	Vertical	PASS
77.63	65.2	32.56	-32.660	40.00	7.44	284	PK	Vertical	PASS
159.16	53.5	22.56	-30.950	43.50	20.94	140	PK	Vertical	PASS
261.65	49.5	21.86	-27.610	46.00	24.14	78	PK	Vertical	PASS
708.16	38.6	23.32	-15.270	46.00	22.68	243	PK	Vertical	PASS



(Antenna Vertical, 1GHz to 10GHz)

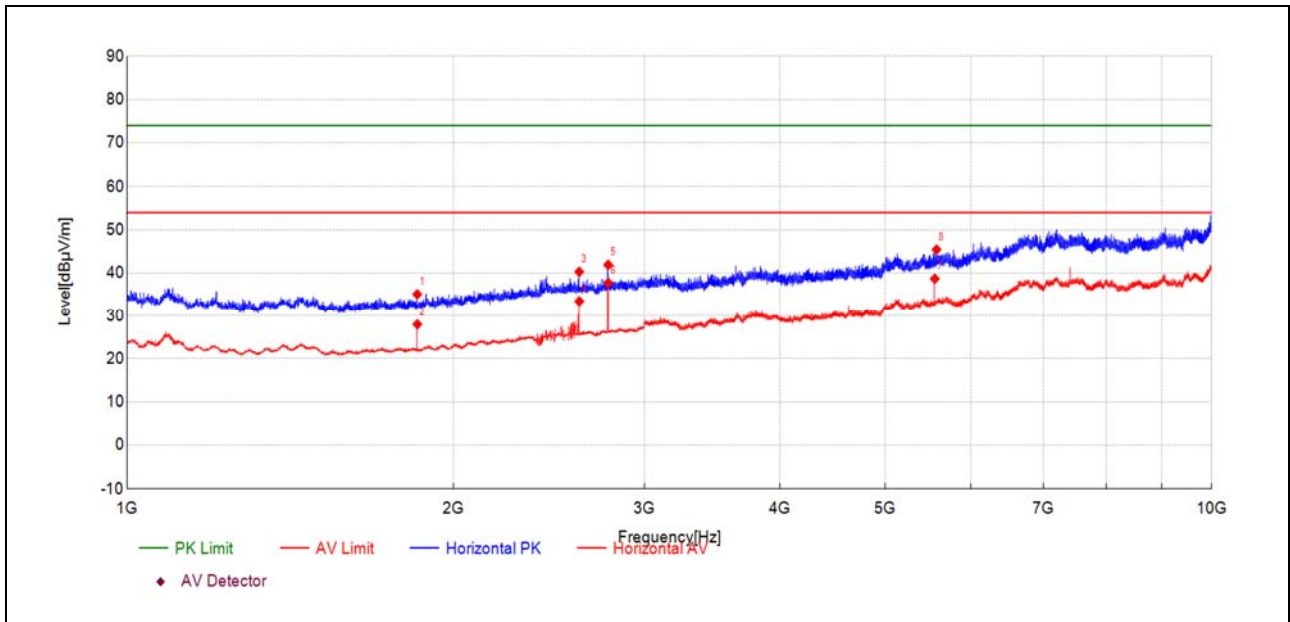
Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
1839.37	43.0	24.64	-18.330	54.00	29.36	66	AV	Vertical	PASS
1858.97	52.8	34.56	-18.240	74.00	39.44	231	PK	Vertical	PASS
2758.35	53.0	40.30	-12.730	54.00	13.70	154	AV	Vertical	PASS
2758.35	56.1	43.36	-12.730	74.00	30.64	154	PK	Vertical	PASS
3678.11	40.7	31.59	-9.060	54.00	22.41	359	AV	Vertical	PASS
3681.38	51.2	42.10	-9.090	74.00	31.90	17	PK	Vertical	PASS

Plot for Channel 64



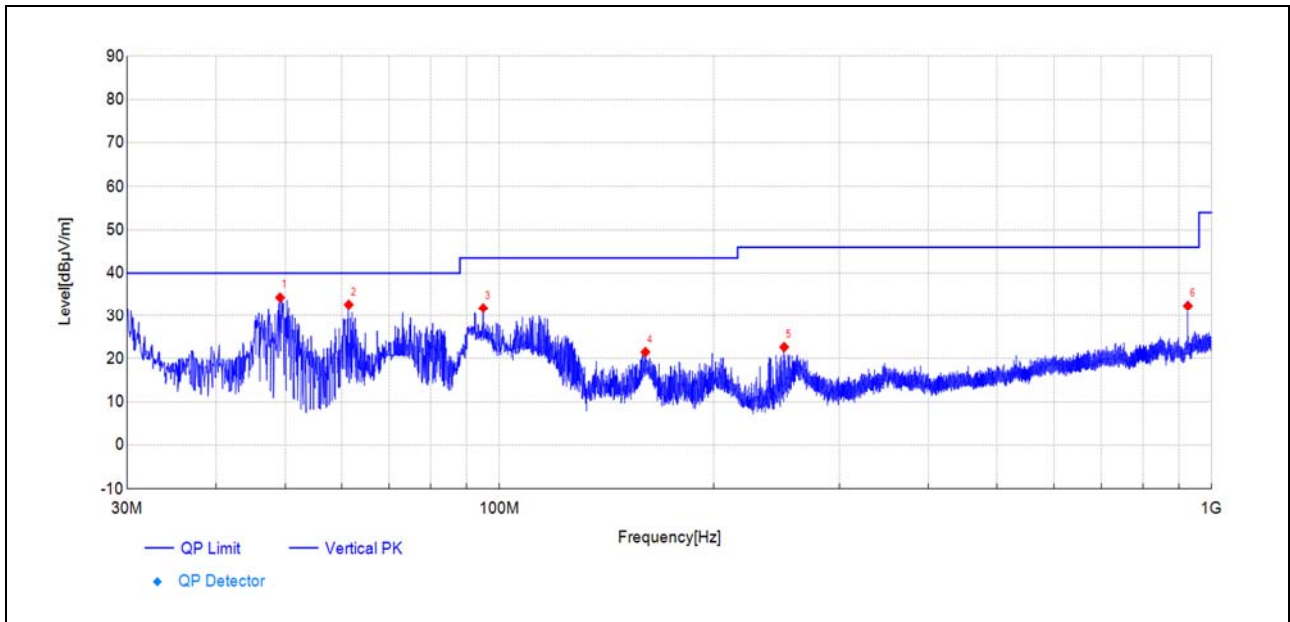
(Antenna Horizontal, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
61.19	62.1	33.40	-28.700	40.00	6.60	0	PK	Horizontal	PASS
73.80	66.3	33.96	-32.310	40.00	6.04	351	PK	Horizontal	PASS
96.01	65.5	35.32	-30.190	43.50	8.18	351	PK	Horizontal	PASS
167.99	53.6	22.88	-30.710	43.50	20.62	330	PK	Horizontal	PASS
256.70	49.4	22.15	-27.220	46.00	23.85	216	PK	Horizontal	PASS
925.79	48.7	36.59	-12.120	-	-	135	PK	Horizontal	NA



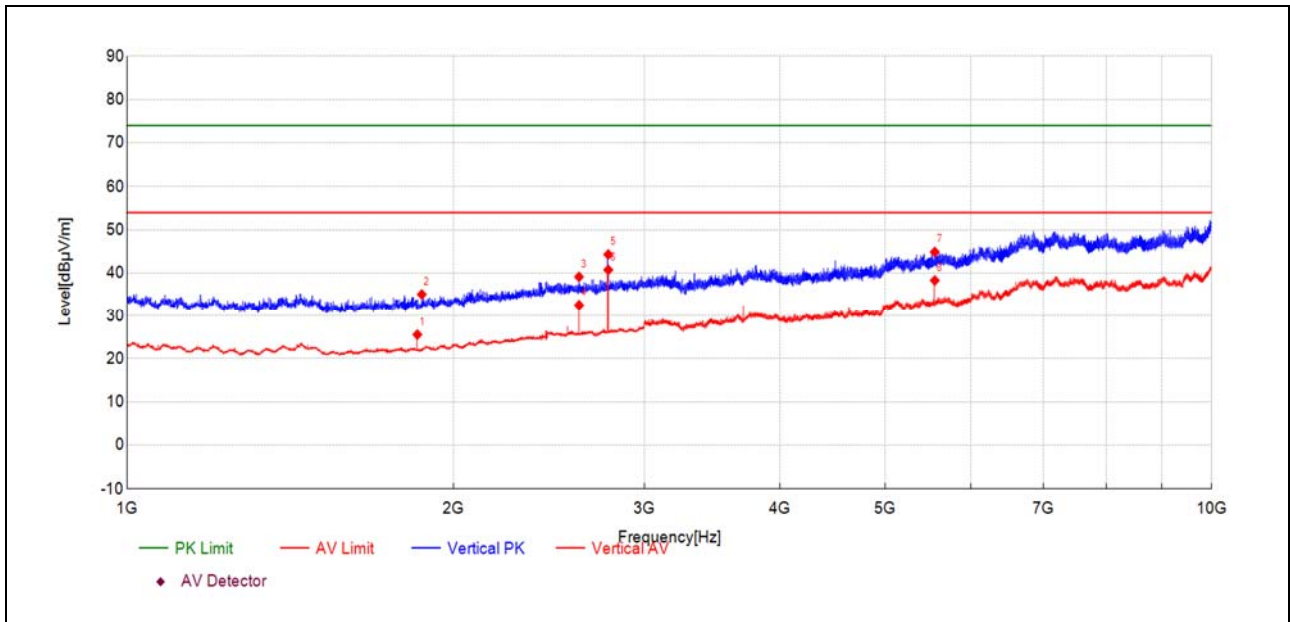
(Antenna Horizontal, 1GHz to 10GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
1851.77	53.4	35.09	-18.270	74.00	38.91	14	PK	Horizontal	PASS
1852.17	46.2	27.96	-18.270	54.00	26.04	323	AV	Horizontal	PASS
2611.52	53.4	40.30	-13.060	74.00	33.70	339	PK	Horizontal	PASS
2611.92	46.5	33.45	-13.060	54.00	20.55	339	AV	Horizontal	PASS
2777.16	54.7	41.92	-12.740	74.00	32.08	14	PK	Horizontal	PASS
2777.56	50.5	37.74	-12.750	54.00	16.26	74	AV	Horizontal	PASS
5555.64	40.9	38.68	-2.220	54.00	15.32	290	AV	Horizontal	PASS
5575.71	47.3	45.44	-1.850	74.00	28.56	98	PK	Horizontal	PASS



(Antenna Vertical, 30MHz to 1GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
49.21	62.6	34.34	-28.240	40.00	5.66	238	PK	Vertical	PASS
61.43	61.3	32.67	-28.620	40.00	7.33	279	PK	Vertical	PASS
94.90	62.4	31.81	-30.590	43.50	11.69	273	PK	Vertical	PASS
160.28	52.5	21.50	-31.010	43.50	22.00	9	PK	Vertical	PASS
251.03	49.8	22.66	-27.120	46.00	23.34	70	PK	Vertical	PASS
925.79	44.5	32.39	-12.120	-	-	131	PK	Vertical	NA



(Antenna Vertical, 1GHz to 10GHz)

Freq. [MHz]	Reading [dBμV]	Level [dBμV/m]	Factor [dB/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]	Detector	Polarity	Verdict
1852.17	43.8	25.56	-18.270	54.00	28.44	122	AV	Vertical	PASS
1869.77	53.2	35.06	-18.180	74.00	38.94	345	PK	Vertical	PASS
2610.32	52.2	39.14	-13.060	74.00	34.86	111	PK	Vertical	PASS
2610.72	45.6	32.55	-13.060	54.00	21.45	111	AV	Vertical	PASS
2777.56	57.1	44.31	-12.750	74.00	29.69	94	PK	Vertical	PASS
2777.96	53.5	40.75	-12.750	54.00	13.25	100	AV	Vertical	PASS
5554.70	47.1	44.89	-2.240	74.00	29.11	154	PK	Vertical	PASS
5555.17	40.5	38.30	-2.230	54.00	15.70	154	AV	Vertical	PASS

Annex A Test Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Test Items	Uncertainty
Number of Hopping Frequency	±5%
Peak Output Power	±2.22dB
20dB Bandwidth	±5%
Carrier Frequency Separation	±5%
Time of Occupancy (Dwell time)	±5%
Conducted Spurious Emission	±2.77dB
Restricted Frequency Bands	±5%
Radiated Emission	±2.95dB
Conducted Emission	±2.44dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

2. Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

3. Facilities and Accreditations

All measurement facilities used to collect the measurement data are located at FL.3, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10-2020 and CISPR Publication 22; the FCC designation number is CN1192, the test firm registration number is 226174.



4. Test Equipment Utilized

4.1 Conducted Test Equipment

Equipment	Serial No.	Type	Manufacturer	Cal. Date	Due Date
EXA Signal Analyzer	MY53470836	N9010A	Agilent	2025.01.15	2026.01.14
RF Cable (30MHz-26GHz)	CB01	RF01	Morlab	N/A	N/A
SMA Connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

4.2 Radiated Test Equipment

Equipment	Serial No.	Model No.	Manufacturer	Cal. Date	Due Date
Signal Analyzer	MY56060145	N9020A	Agilent	2024.05.30	2025.05.29
				2025.05.13	2026.05.12
Test Antenna - Bi-Log	9163-274	VULB 9163	Schwarzbeck	2024.06.29	2025.06.28
				2025.06.28	2026.06.27
Test Antenna - Horn	BBHA 9170#773	BBHA 9170	Schwarzbeck	2024.06.22	2025.06.21
				2025.06.20	2026.06.19
Test Antenna -Horn	9120D-963	BBHA 9120D	Schwarzbeck	2024.06.03	2025.06.02
				2025.05.16	2026.05.15
Signal Generator	203403	MG3692C	anritsu	2024.09.11	2025.09.10
				2025.09.03	2026.09.02
Preamplifier (10MHz-6GHz)	46732	S10M100L38 02	LUCIX CORP.	N/A	N/A
Preamplifier (2GHz-18GHz)	61171/61172	S020180L32 03	LUCIX CORP.	N/A	N/A
Preamplifier (18GHz-40GHz)	DS77209	DCLNA0118- 40C-S	Decentest	N/A	N/A
RF Coaxial Cable (DC-18GHz)	MRE001	PE330	Pasternack	N/A	N/A
RF Coaxial Cable (DC-18GHz)	MRE002	CLU18	Pasternack	N/A	N/A
RF Coaxial Cable (DC-18GHz)	MRE003	CLU18	Pasternack	N/A	N/A
RF Coaxial Cable (DC-40GHz)	22290045	QA360-40- KK-0.5	Qualwave	N/A	N/A



REPORT No.: SZ25010011W01

RF Coaxial Cable (DC-40GHz)	22290046	QA360-40- KKF-2	Qualwave	N/A	N/A
RF Coaxial Cable (DC-18GHz)	22120181	QA500-18- NN-5	Qualwave	N/A	N/A
Anechoic Chamber	N/A	9m*6m*6m	CRT	2022.11.30	2025.11.29

4.3 List of Software Used

Description	Manufacturer	Software Version
JS32-RE	Tonscend	5.0.0

_____ END OF REPORT _____