TEST REPORT

Applicant Name:	Dongguan IMLONG Electronic Co., Ltd.
Address:	No.5, Huixiang Road, Jinglian Community, Qiaotou Town, Dongguan City, Guangdong Province, China.
Report Number:	2501V16354E-RF-00A
FCC ID:	2AH9Y-0850

Test Standard (s)

FCC PART 15.247

Sample Description

Product Type:	Mouse
Model No.:	UPT-1698
Multiple Model(s) No.:	UPT-1696, UPT-COMPC04
Trade Mark:	UP-TECH
Date Received:	2025/07/07
Issue Date:	2025/10/01

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Allen Bai
RF Engineer

Approved By:

Nancy Wang
RF Supervisor

Note: The information marked# is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.
This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP or any agency of the U.S. Government.
This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "▼".

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY **3**
GENERAL INFORMATION **4**
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 4
OBJECTIVE 4
TEST METHODOLOGY 4
MEASUREMENT UNCERTAINTY 5
TEST FACILITY 5
SYSTEM TEST CONFIGURATION **6**
SUMMARY OF TEST RESULTS **8**
TEST EQUIPMENT LIST **9**
REQUIREMENTS AND TEST PROCEDURES **10**
RADIATED EMISSIONS 10
20 DB EMISSION BANDWIDTH & 99% OCCUPIED BANDWIDTH 13
CHANNEL SEPARATION TEST 15
QUANTITY OF HOPPING CHANNEL TEST 16
TIME OF OCCUPANCY (DWELL TIME) 17
PEAK OUTPUT POWER MEASUREMENT 19
BAND EDGES 20
CONDUCTED SPURIOUS EMISSION 21
ANTENNA REQUIREMENT **22**
TEST DATA AND RESULTS **23**
RADIATED EMISSIONS 23
20 DB EMISSION BANDWIDTH 43
99% OCCUPIED BANDWIDTH 45
CHANNEL SEPARATION 47
NUMBER OF HOPPING FREQUENCY 48
MAXIMUM CONDUCTED OUTPUT POWER 49
100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE 51
TIME OF OCCUPANCY (DWELL TIME) 52
CONDUCTED SPURIOUS EMISSION 54
RF EXPOSURE EVALUATION **55**
RESULT 55
EUT PHOTOGRAPHS **56**
TEST SETUP PHOTOGRAPHS **57**

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	2501V16354E-RF-00A	Original Report	2025/10/01

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mouse
Tested Model	UPT-1698
Multiple Model(s)	UPT-1696, UPT-COMPC04
UPC	842100158188
Frequency Range	2402~2480MHz
Transmit Peak Power	-2.21dBm
Modulation Technique	Bluetooth: GFSK
Antenna Specification#	2.34dBi (provided by the applicant)
Voltage Range	DC 1.5V from battery
Sample serial number	364U-1 for Radiated Emissions Test 364U-2 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A
Note: The Multiple models are electrically identical with the test model except for model number and appearance color. Please refer to the declaration letter# for more detail, which was provided by manufacturer.	

Objective

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

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		109.2kHz(k=2, 95% level of confidence)
RF output power, conducted		0.86dB(k=2, 95% level of confidence)
Dwell Time		±1%(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9kHz-150kHz	3.63dB(k=2, 95% level of confidence)
	150kHz-30MHz	3.66dB(k=2, 95% level of confidence)
Radiated Emissions	0.009MHz~30MHz	3.60dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	5.32dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	5.43dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	5.77dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.73dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.34dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.40dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.64dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
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 Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	**2402**	40	2442
1	2403	41	2443
2	2404	42	2444
…	…	…	…
…	…	…	…
36	2438	75	2477
37	2439	76	2478
38	2440	77	2479
39	**2441**	**78**	**2480**
EUT was tested with Channel 0, 39 and 78.			

EUT Exercise Software

Exercise Software#	FCC_test_tool.exe
Power Level#	Default

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

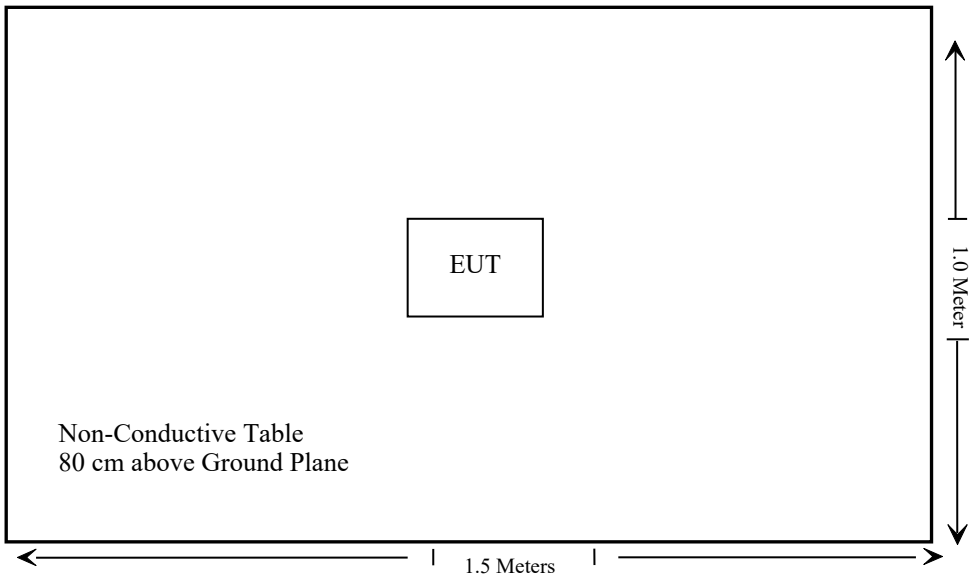
Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

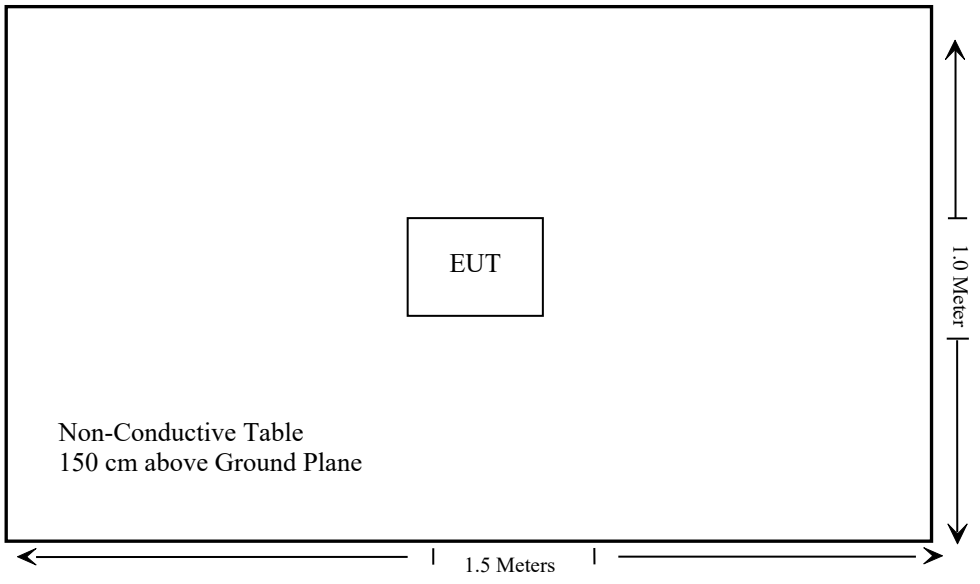
Cable Description	Length (m)	From Port	To
/	/	/	/

Block Diagram of Test Setup

For Radiated Emissions below 1GHz:



For Radiated Emissions above 1GHz:



SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC §15.203	Antenna Requirement	Compliant
FCC §15.207(a)	AC Line Conducted Emissions	Not Applicable
FCC §15.205, §15.209, §15.247(d)	Radiated Emissions	Compliant
FCC §15.247(a)(1)	20 dB Emission Bandwidth & 99% Occupied Bandwidth	Compliant
FCC §15.247(a)(1)	Channel Separation Test	Compliant
FCC §15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliant
FCC §15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliant
FCC §15.247(b)(1)	Peak Output Power Measurement	Compliant
FCC §15.247(d)	Band edges	Compliant
FCC §15.247(d)	Conducted Spurious Emission	Compliant
§1.1307(b)&§2.1093&§15.247 (i)	RF Exposure Evaluation	Compliant

Not Applicable: The EUT powered by battery only.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2024/12/04	2025/12/03
Sonoma instrument	Pre-amplifier	310N	186238	2025/04/29	2026/04/28
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2026/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2025/04/29	2026/04/28
Unknown	Cable	XH500C	J-10M-A	2025/04/29	2026/04/28
BACL	Active Loop Antenna	1313-1A	4031911	2024/05/14	2027/05/13
unknown	Cable	PNG214	1354	2024/12/04	2025/12/03
Unknown	Cable	2Y194	0735	2024/12/04	2025/12/03
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde&Schwarz	Spectrum Analyzer	FSV40	101605	2025/03/26	2026/03/25
A.H.System	Preamplifier	PAM-0118P	489	2024/11/15	2025/11/14
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2026/07/25
Unknown	RF Cable	KMSE	0735	2024/12/06	2025/12/05
Unknown	RF Cable	UFA147	219661	2024/12/06	2025/12/05
Unknown	RF Cable	XH750A-N	J-10M	2024/12/06	2025/12/05
JD	Filter Switch Unit	DT7220FSU	DS79906	2024/09/09	2025/09/08
JD	Multiplex Switch Test Control Set	DT7220SCU	DS79903	2024/09/09	2025/09/08
A.H.System	Pre-amplifier	PAM-1840VH	190	2025/04/29	2026/04/28
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2024/12/18	2025/12/17
Audix	EMI Test software	E3	191218(V9)	NCR	NCR
RF Conducted Test					
R&S	Spectrum Analyzer	FSU26	200120	2024/12/04	2025/12/03
Unknown	10dB Attenuator	Unknown	F-03-EM190	2025/06/26	2026/06/25

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

REQUIREMENTS AND TEST PROCEDURES

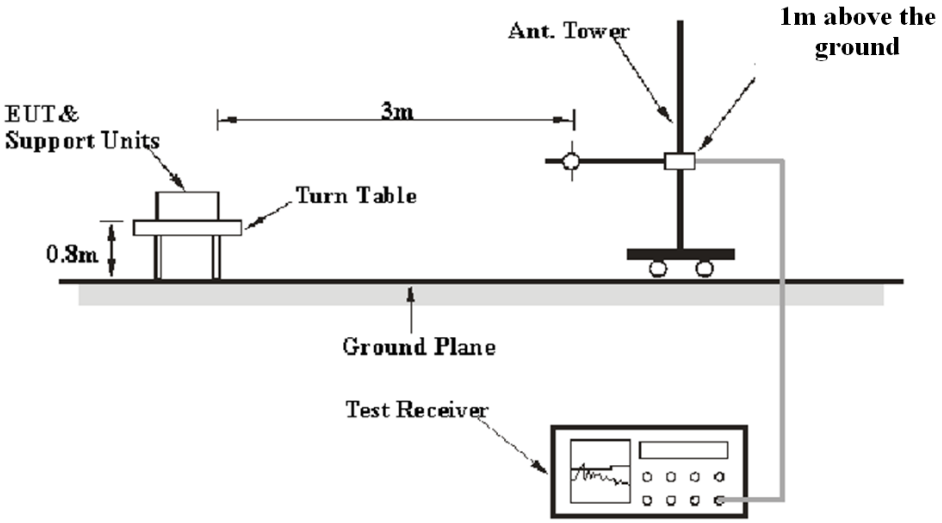
Radiated Emissions

Applicable Standard

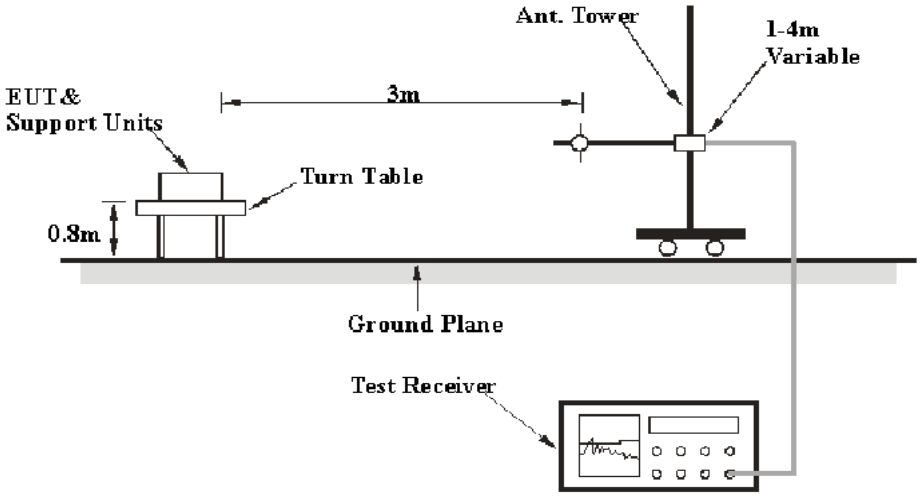
FCC §15.205; §15.209; §15.247(d)

EUT Setup

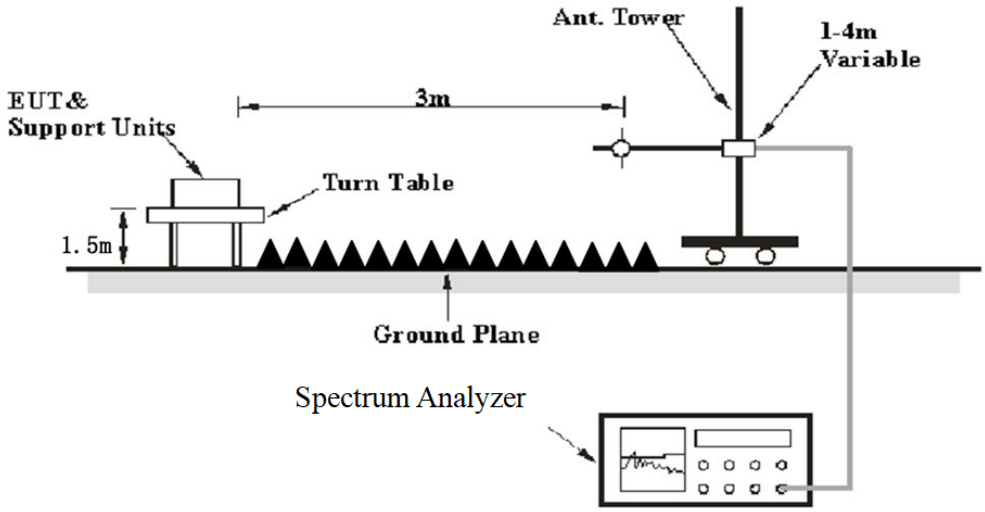
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209 and FCC 15.247 limits.

EMI Test Receiver & Spectrum Analyzer Setup

The EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement	Detector
9 kHz – 150 kHz	/	/	200 Hz	QP	QP
	300 Hz	1 kHz	/	PK	Peak
150 kHz – 30 MHz	/	/	9 kHz	QP	QP
	10 kHz	30 kHz	/	PK	Peak
30 MHz – 1000 MHz	/	/	120 kHz	QP	QP
	100 kHz	300 kHz	/	PK	Peak
Above 1 GHz	Harmonics				
	1MHz	3 MHz	/	PK	Peak
	Average Emission Level=Peak Emission Level+20*log(Duty cycle)				
	Band Edge & Other Emissions				
	1MHz	3 MHz	/	PK	Peak
	1MHz	≥10 Hz	/	Average	Peak

For Duty cycle measurement:

Use the duty cycle factor correction factor method per 15.35(c).
Duty cycle=On time/100milliseconds, On time=N1*L1+N2*L2+…Nn-1*Ln-1+Nn*Ln,
Where N1 is number of type 1 pulses, L1 is length of type 1 pulse, etc.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

For 9 kHz-30MHz, the report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground-parallel) unless the margin is greater than 20 dB.

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

All emissions under the average limit and under the noise floor have not recorded in the report.

Factor & Over Limit/Margin Calculation

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

Factor = Antenna Factor + Cable Loss - Amplifier Gain

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

Over Limit/Margin = Level/Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

20 dB Emission Bandwidth & 99% Occupied Bandwidth

Applicable Standard

Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 6.9.2

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be at least three times RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.6.2.

d) Steps a) through c) might require iteration to adjust within the specified tolerances.

e) The dynamic range of the instrument at the selected RBW shall be more than 10 dB below the target "−xx dB down" requirement; that is, if the requirement calls for measuring the −20 dB OBW, the instrument noise floor at the selected RBW shall be at least 30 dB below the reference value.

f) Set detection mode to peak and trace mode to max-hold.

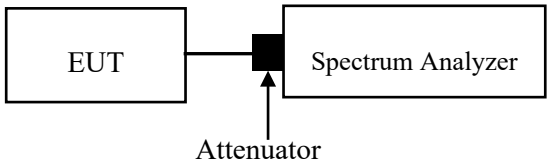
g) Determine the reference value: Set the EUT to transmit an unmodulated carrier or modulated signal, as applicable. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

h) Determine the "−xx dB down amplitude" using [(reference value) - xx]. Alternatively, this calculation may be made by using the marker-delta function of the instrument.

i) If the reference value is determined by an unmodulated carrier, then turn the EUT modulation ON, and either clear the existing trace or start a new trace on the spectrum analyzer and allow the new trace to stabilize. Otherwise, the trace from step g) shall be used for step j).

j) Place two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "−xx dB down amplitude" determined in step h). If a marker is below this "−xx dB down amplitude" value, then it shall be as close as possible to this value. The dBc bandwidth is the frequency difference between the two markers. Alternatively, set a marker at the lowest frequency of the envelope of the spectral display, such that the marker is at or slightly below the "−xx dB down amplitude" determined in step h). Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude. The marker-delta frequency reading at this point is the specified emission bandwidth.

k) The dBc bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).



Note 1: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Channel Separation Test

Applicable Standard

Frequency hopping systems shall have hoping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW. The 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.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.2

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

a) Span: Wide enough to capture the peaks of two adjacent channels.

b) RBW: Start with the RBW set to approximately 30% of the channel spacing; adjust as necessary to best identify the center of each individual channel.

c) Video (or average) bandwidth (VBW) ≥ RBW.

d) Sweep: No faster than coupled (auto) time.

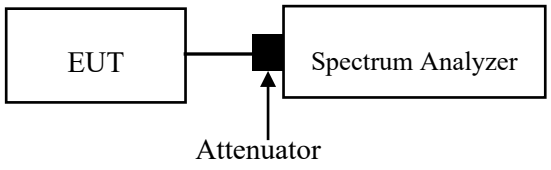
e) Detector function: Peak.

f) Trace: Max-hold.

g) Allow the trace to stabilize.

Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Compliance of an EUT with the appropriate regulatory limit shall be determined. A spectral plot of the data shall be included in the test report.

Where the device shares the same channel plan (carrier frequencies and number of channels) across multiple data rates or modulation schemes then the carrier separation need only be measured for one of those modulation schemes or data rates.



Note 1: The limit is 2/3*20 dB bandwidth
Note 2: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 3: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Quantity of Hopping Channel Test

Applicable Standard

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 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.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.3

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

a) Span: The frequency band of operation. Depending on the number of channels the device supports, it could be necessary to divide the frequency range of operation across multiple spans, to allow the individual channels to be clearly seen.

b) RBW: To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.

c) VBW $\geqslant$ RBW.

d) Sweep: No faster than coupled (auto) time.

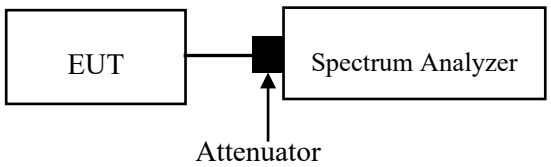
e) Detector function: Peak.

f) Trace: Max-hold.

g) Allow the trace to stabilize.

It might prove necessary to break the span up into subranges to show clearly all of the hopping frequencies.
Compliance of an EUT with the appropriate regulatory limit shall be determined for the number of hopping channels. A spectral plot of the data shall be included in the test report.

Where the device shares the same channel plan (carrier frequencies and number of channels) across multiple data rates or modulation schemes then the number of channels need only be measured for one of those modulation schemes or data rates.



Note 1: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Time of Occupancy (Dwell Time)

Applicable Standard

Frequency hopping systems in the 2400-2483.5 MHz shall use at least 15 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.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.4

Use the following spectrum analyzer settings to determine the dwell time per hop:

a) Span: Zero span, centered on a hopping channel.

b) RBW shall be ⩽ channel spacing and where possible RBW should be set >> 1 / T, where T is the expected transmission time per hop.

c) Sweep time: Set so that the start of the first transmission and end of the last transmission for the hop are clearly captured. Setting the sweep time to be slightly longer than the hopping period per channel (hopping period = 1/hopping rate) should achieve this.

d) Use a video trigger, where possible with a trigger delay, so that the start of the transmission is clearly observed. The trigger level might need adjustment to reduce the chance of triggering when the system hops on an adjacent channel.

e) Detector function: Peak.

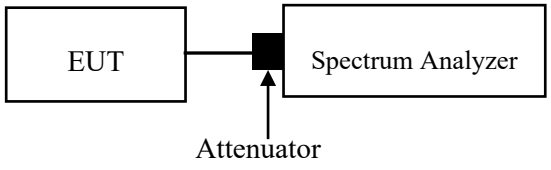
f) Trace: Clear-write, single sweep.

g) Place markers at the start of the first transmission on the channel and at the end of the last transmission. The dwell time per hop is the time between these two markers.

To determine the number of hops on a channel in the regulatory observation period repeat the measurement using a longer sweep time. When the device uses a single hopping sequence the period of measurement should be sufficient to capture at least 2 hops. When the device uses a dynamic hopping sequence, or the sequence varies, the period of measurement may need to capture multiple hops to better determine the average time of occupancy. Count the number of hops on the channel across the sweep time.

The average number of hops on the same channel within the regulatory observation period is calculated from the number of hops on the channel divided by the spectrum analyzer sweep time multiplied by the regulatory observation period. For example, if three hops are counted with an analyzer sweep time of 500 ms and the regulatory observation period is 10 s, then the number of hops in that ten seconds is 3 / 0.5 × 10, or 60 hops.

The average time of occupancy is calculated by multiplying the dwell time per hop by the number of hops in the observation period.



Note 1: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Peak Output Power Measurement

Applicable Standard

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. And for all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.5

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. Frequency hopping shall be disabled for this test. Use the following spectrum analyzer settings:

a) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.

b) RBW > 20 dB bandwidth of the emission being measured.

c) VBW ⩾ RBW.

d) Sweep: No faster than coupled (auto) time.

e) Detector function: Peak.

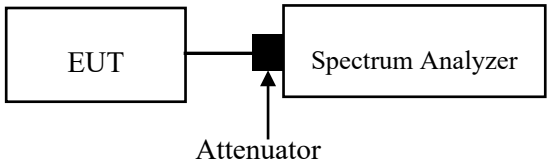
f) Trace: Max-hold.

g) Allow trace to stabilize.

h) Use the marker-to-peak function to set the marker to the peak of the emission.

i) The indicated level is the peak output power, after any corrections for external attenuators and cables.

j) A spectral plot of the test results and setup description shall be included in the test report.



Note 1: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Band Edges

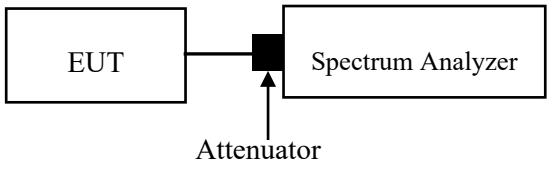
Applicable Standard

In any 100 kHz 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 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.7.2 & Clause 6.10

1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band-edge, as well as any modulation products that fall outside of the authorized band of operation.
2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.6.2.
3) Attenuation: Auto (at least 10 dB preferred).
4) Sweep time: No faster than coupled (auto) time.
5) Resolution bandwidth: 100 kHz.
6) Video bandwidth: 300 kHz.
7) Detector: Peak.
8) Trace: Max-hold.



Note 1: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

Conducted Spurious Emission

Applicable Standard

In any 100 kHz 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 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

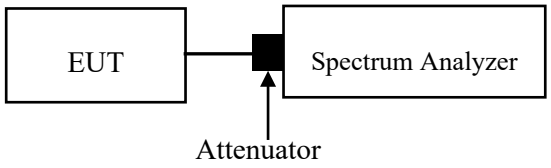
Test Procedure

Test Method: ANSI C63.10-2020 Clause 7.8.7.1

To demonstrate compliance with the relative out-of-band emissions requirements conducted spurious emissions shall be measured for the transmit frequencies, per 5.5 and 5.6, and at the maximum transmit powers. Frequency hopping shall be disabled for this test with the exception of measurements at the allocated band-edges which shall be repeated with hopping enabled.

Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The frequency range of testing shall span 30 MHz to 10 times the operating frequency and this may be done in a single sweep or, to aid resolution, across a number of sweeps. The resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector.

The limit is based on the highest in-band level across all channels measured using the same instrument settings (resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector). To help clearly demonstrate compliance a display line may be set at the required offset (typically 20 dB) below the highest in-band level. Where the highest in-band level is not clearly identified in the out-of-band measurements a separate spectral plot showing the in-band level shall be provided.



Note 1: A short RF cable with low cable loss connected to the EUT antenna port, which was provided by client or lab, the worst case cable loss was add with offset into test equipment, the total offset consists of attenuator and/or RF cable and/or power splitter loss
Note 2: Offset (10.5dB) = Attenuator (10dB) + Cable loss (0.5dB)

ANTENNA REQUIREMENT

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. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with § 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

Antenna Connector Construction

The EUT has one internal antenna arrangement, which was permanently attached, the antenna gain[#] is 2.34dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliant

TEST DATA AND RESULTS

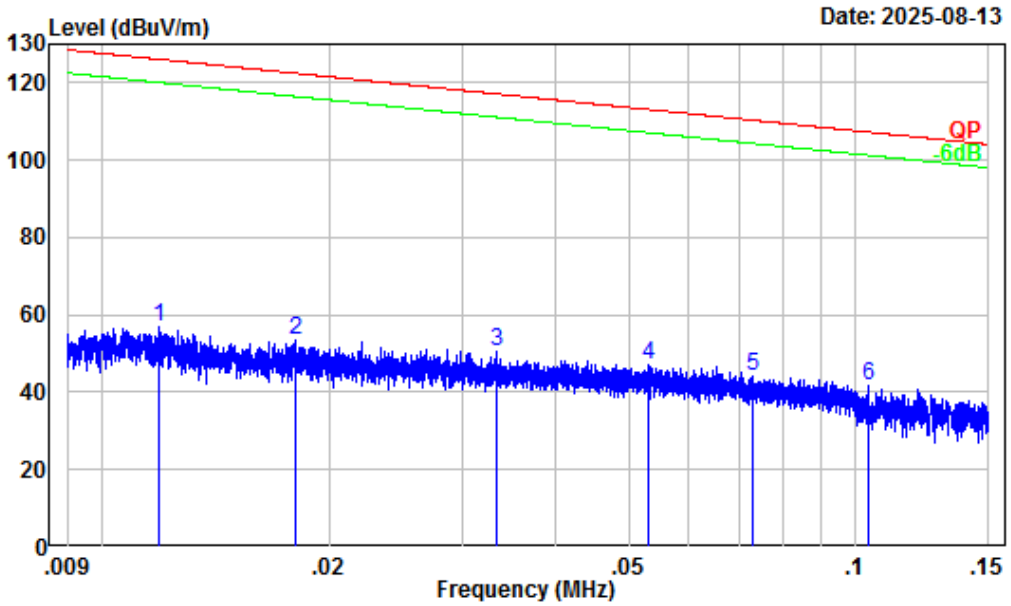
Radiated Emissions

Environmental Conditions

Temperature (℃)	21.9-23.5	**Relative Humidity (%)**	52-64
ATM Pressure (kPa):	100.2-100.9	**Test engineer:**	Alex Yan & Wing K Ji
Test date:	2025/07/22-2025/08/13		
EUT operation mode:	Below 1GHz: Transmitting (Maximum output power mode, BDR (GFSK) High Channel) Above 1GHz: Transmitting		
Note:	1. For the radiated spurious emission below 30MHz, only the worst case (parallel) was recorded. 2. For the radiated spurious emission below 1GHz, When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded. 3. After pre-scan in the X, Y and Z axes of orientation, the worst case z-axis of orientation were recorded.		

Below 1GHz:

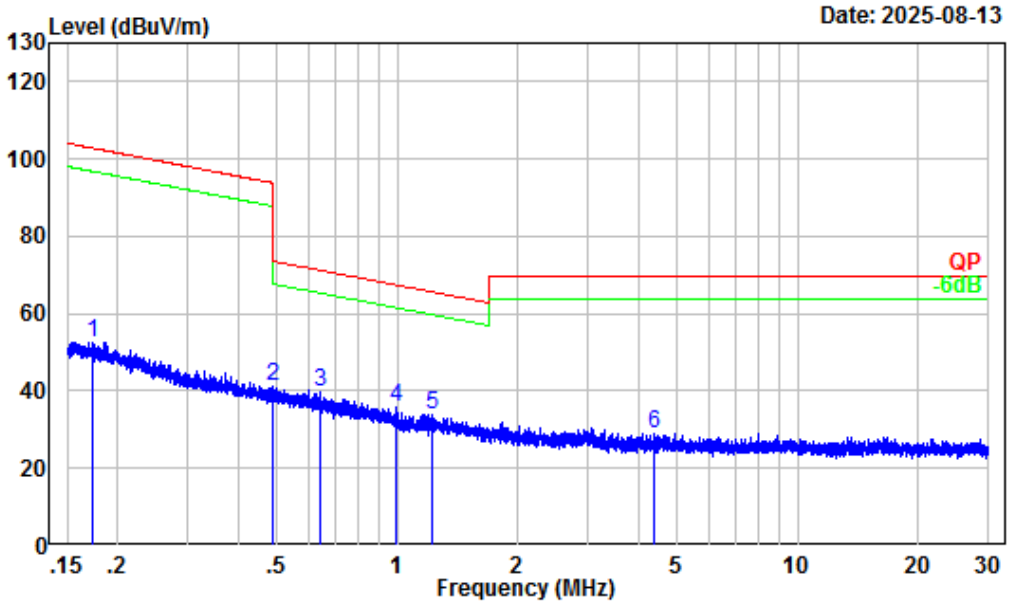
9kHz-150kHz



Site : Chamber A
Condition : 3m
Project Number : 2501V16354E-EM
Test Mode : BT Transmitting
Detector: Peak RBW/VBW: 0.3/1kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.012	31.94	25.02	56.96	126.09	-69.13	Peak
2	0.018	30.77	22.67	53.44	122.48	-69.04	Peak
3	0.033	28.15	22.35	50.50	117.14	-66.64	Peak
4	0.053	26.10	21.03	47.13	113.12	-65.99	Peak
5	0.073	24.09	20.13	44.22	110.33	-66.11	Peak
6	0.104	21.78	20.05	41.83	107.28	-65.45	Peak

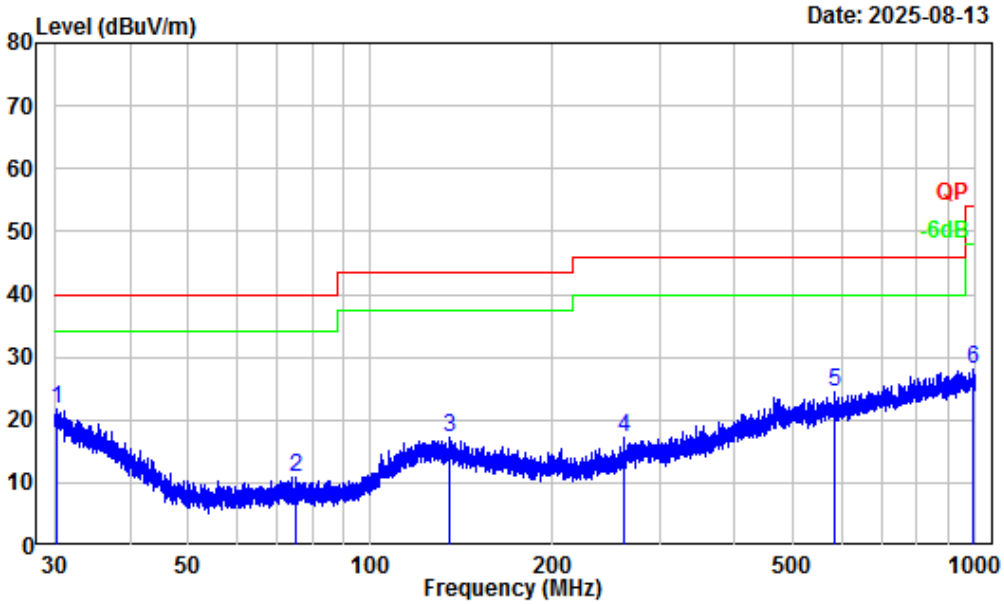
150kHz-30MHz



Site : Chamber A
Condition : 3m
Project Number : 2501V16354E-EM
Test Mode : BT Transmitting
Detector: Peak RBW/VBW: 10/30kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.173	17.67	35.00	52.67	102.82	-50.15	Peak
2	0.490	6.59	34.83	41.42	93.80	-52.38	Peak
3	0.645	4.61	35.25	39.86	71.36	-31.50	Peak
4	0.997	1.22	34.41	35.63	67.50	-31.87	Peak
5	1.219	0.59	33.45	34.04	65.71	-31.67	Peak
6	4.390	-2.74	31.92	29.18	69.54	-40.36	Peak

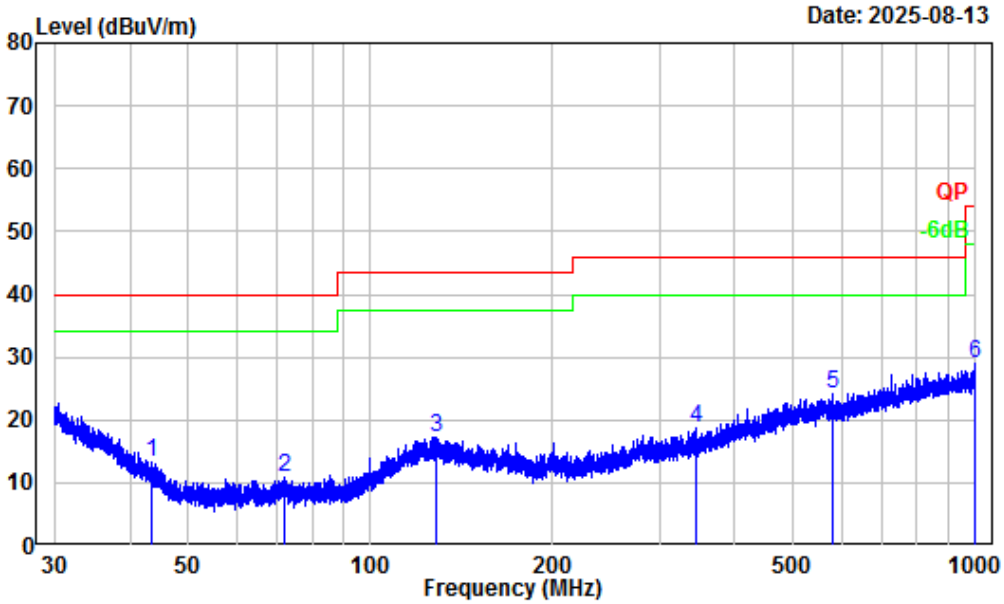
30MHz-1GHz_Horizontal



Site : Chamber A
Condition : 3m Horizontal
Project Number : 2501V16354E-EM
Test Mode : BT Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	30.32	-6.12	27.78	21.66	40.00	-18.34	Peak
2	75.45	-17.83	28.58	10.75	40.00	-29.25	Peak
3	135.33	-11.53	28.65	17.12	43.50	-26.38	Peak
4	261.86	-12.58	29.92	17.34	46.00	-28.66	Peak
5	584.79	-5.27	29.82	24.55	46.00	-21.45	Peak
6	993.88	-0.52	28.49	27.97	54.00	-26.03	Peak

30MHz-1GHz_Vertical



Site : Chamber A
Condition : 3m Vertical
Project Number : 2501V16354E-EM
Test Mode : BT Transmitting
Detector: Peak RBW/VBW: 100/300kHz
Tester : Alex Yan

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	43.41	-14.82	28.05	13.23	40.00	-26.77	Peak
2	71.86	-17.85	28.77	10.92	40.00	-29.08	Peak
3	128.23	-11.14	28.47	17.33	43.50	-26.17	Peak
4	345.14	-10.29	28.95	18.66	46.00	-27.34	Peak
5	580.45	-5.26	29.37	24.11	46.00	-21.89	Peak
6	999.12	-0.42	29.47	29.05	54.00	-24.95	Peak

Above 1GHz:

Frequency (MHz)	Reading (dBµV)	PK/Ave	Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
GFSK							
Low Channel							
4804	74.36	PK	H	-7.79	66.57	74	-7.43
4804	68.33	PK	V	-7.79	60.54	74	-13.46
Middle Channel							
4882	72.90	PK	H	-7.58	65.32	74	-8.68
4882	67.54	PK	V	-7.58	59.96	74	-14.04
High Channel							
4960	67.93	PK	H	-7.56	60.37	74	-13.63
4960	65.66	PK	V	-7.56	58.10	74	-15.90

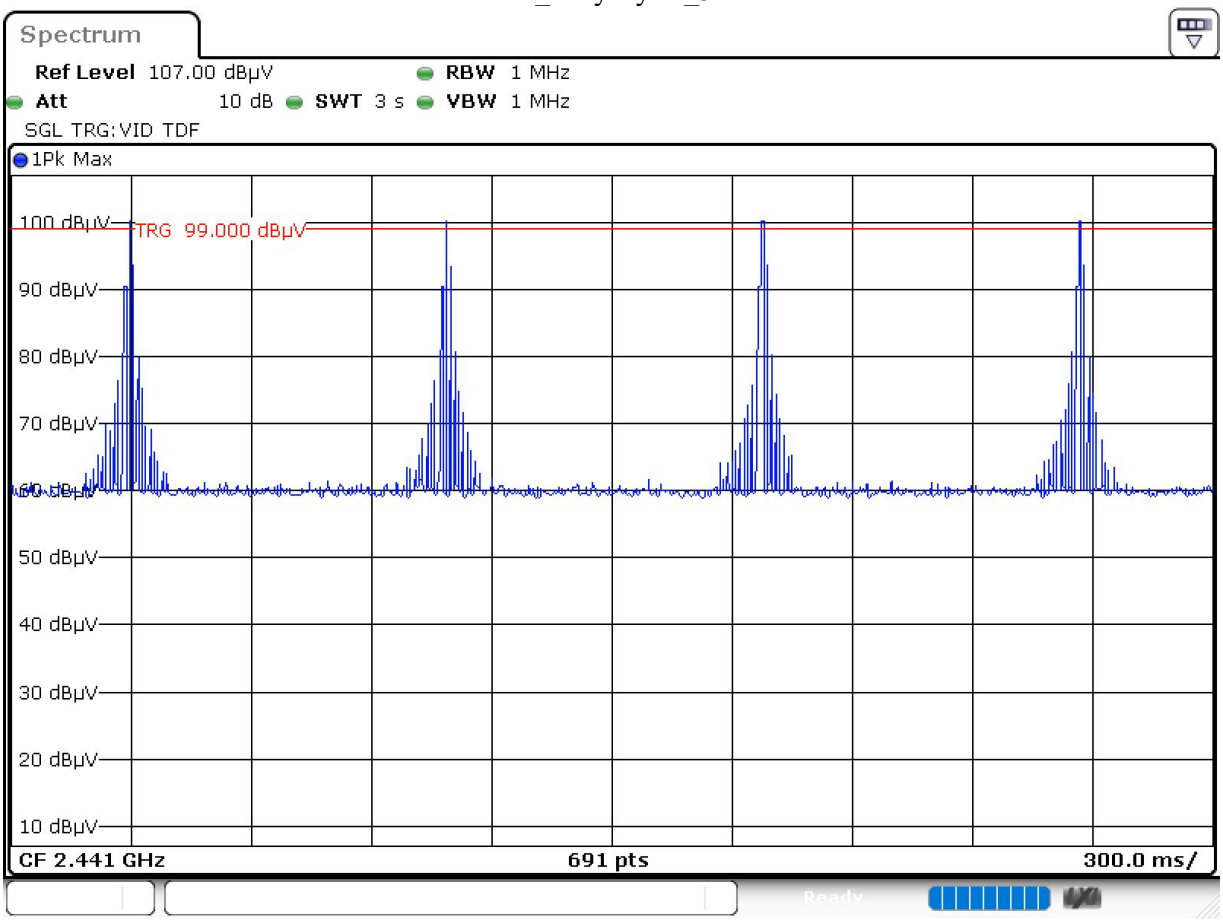
Note:
Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.The test result of peak was less than the limit of average, so just peak values were recorded.

Field Strength of Average							
Frequency (MHz)	Peak Measurement @3m (dBµV/m)	Polar (H/V)	Duty Cycle Correction Factor (dB)	Average Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Comment
Low Channel							
4804	66.57	H	-30.76	35.81	54.00	-18.19	Harmonic
4804	60.54	V	-30.76	29.78	54.00	-24.22	Harmonic
Middle Channel							
4882	65.32	H	-30.76	34.56	54.00	-19.44	Harmonic
4882	59.96	V	-30.76	29.20	54.00	-24.80	Harmonic
High Channel							
4960	60.37	H	-30.76	29.61	54.00	-24.39	Harmonic
4960	58.10	V	-30.76	27.34	54.00	-26.66	Harmonic

Note: Average level= Peak level + Duty Cycle Corrected Factor

Worst case duty cycle:
Duty cycle = Ton/100ms = 2.899/100=0.02899
Duty Cycle Corrected Factor = 20lg (Duty cycle) = 20lg0.02899= -30.76

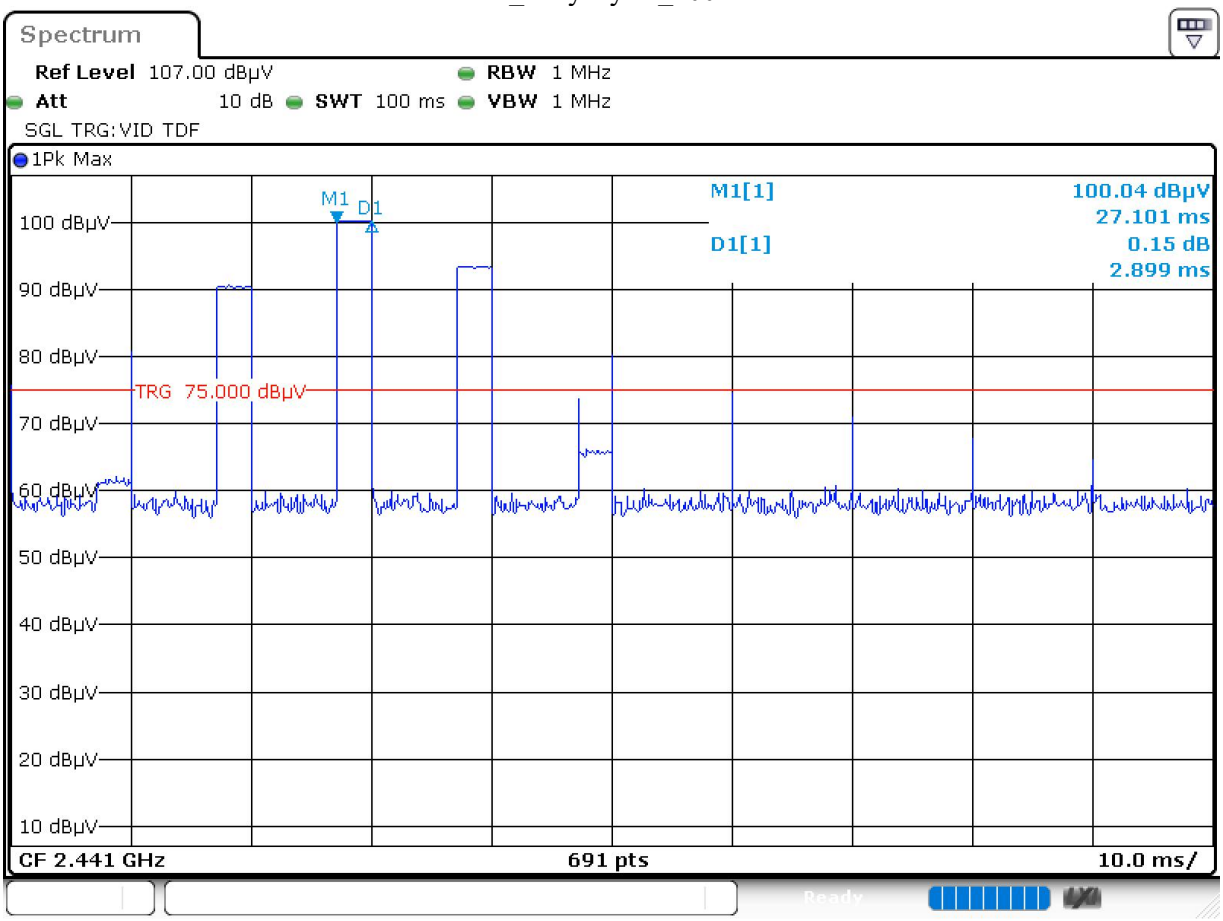
BT_Duty Cycle_3s



ProjectNo.:2501V16354E-RF Tester:WIng K Ji

Date: 22.JUL.2025 10:55:31

BT_Duty Cycle_100ms



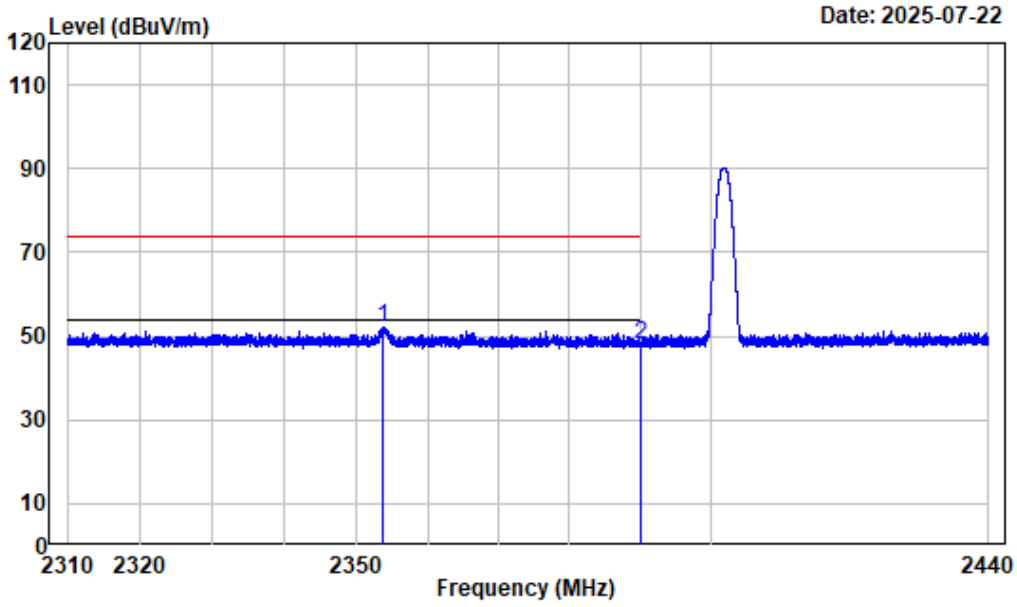
ProjectNo.:2501V16354E-RF Tester:WIng K Ji

Date: 22.JUL.2025 10:53:48

Test plots:

Band Edge

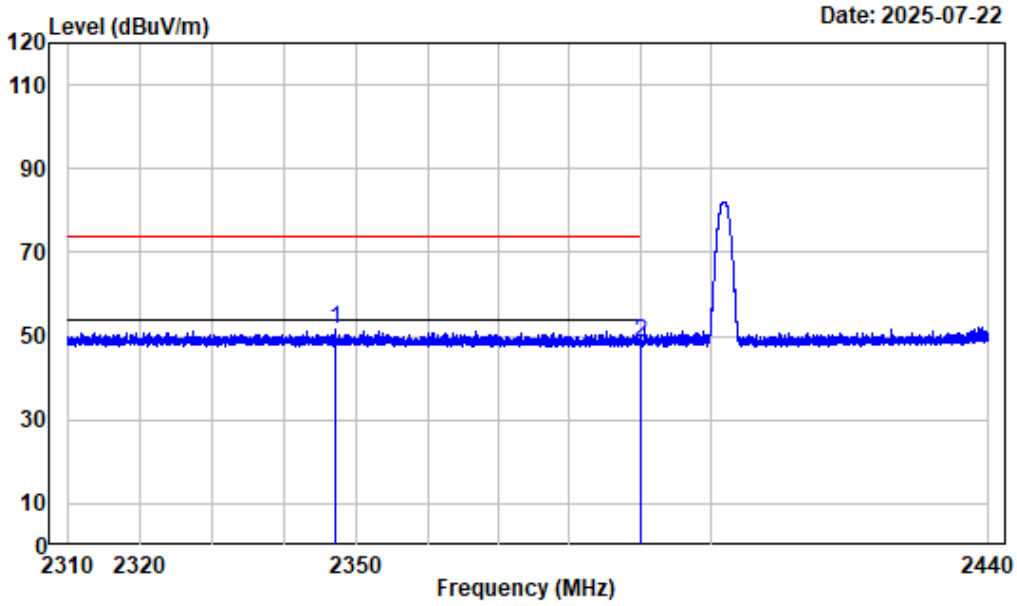
Left Band edge_Horizontal



Condition : Horizontal
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2353.620	-10.89	62.85	51.96	74.00	-22.04	Peak
2	2390.000	-10.98	58.92	47.94	74.00	-26.06	Peak

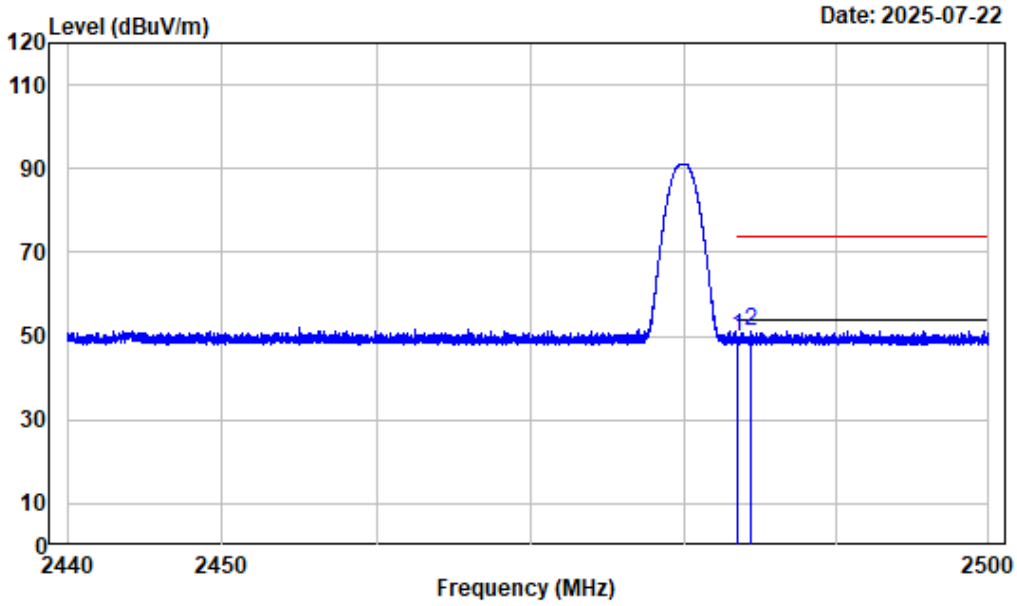
Left Band edge_Vertical



Condition : Vertical
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2347.120	-10.88	62.28	51.40	74.00	-22.60	Peak
2	2390.000	-10.98	59.60	48.62	74.00	-25.38	Peak

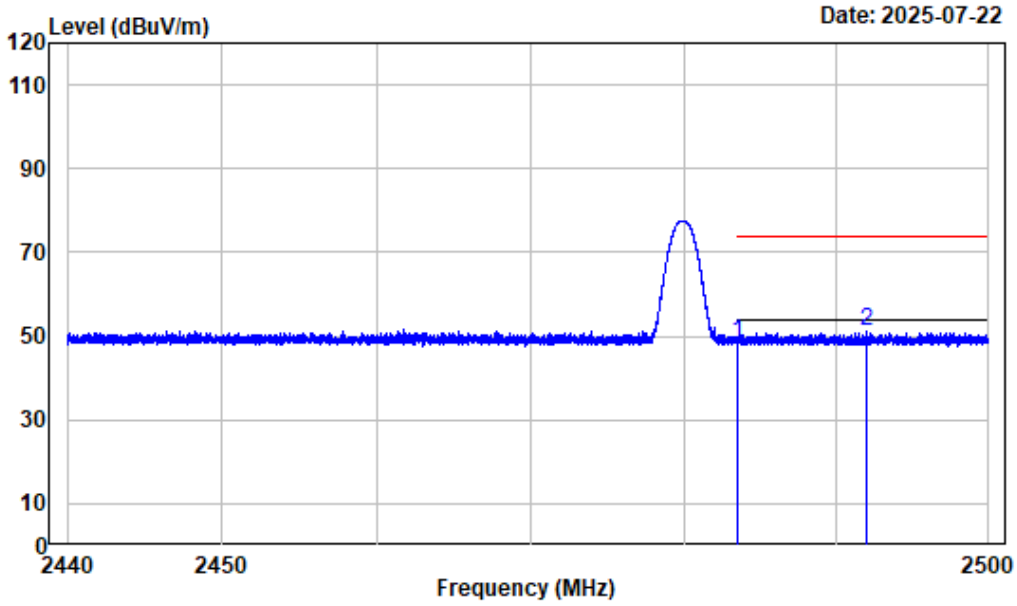
Right Band edge_Horizontal



Condition : Horizontal
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2480

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2483.500	-10.97	60.61	49.64	74.00	-24.36	Peak
2	2484.345	-10.97	62.35	51.38	74.00	-22.62	Peak

Right Band edge_Vertical

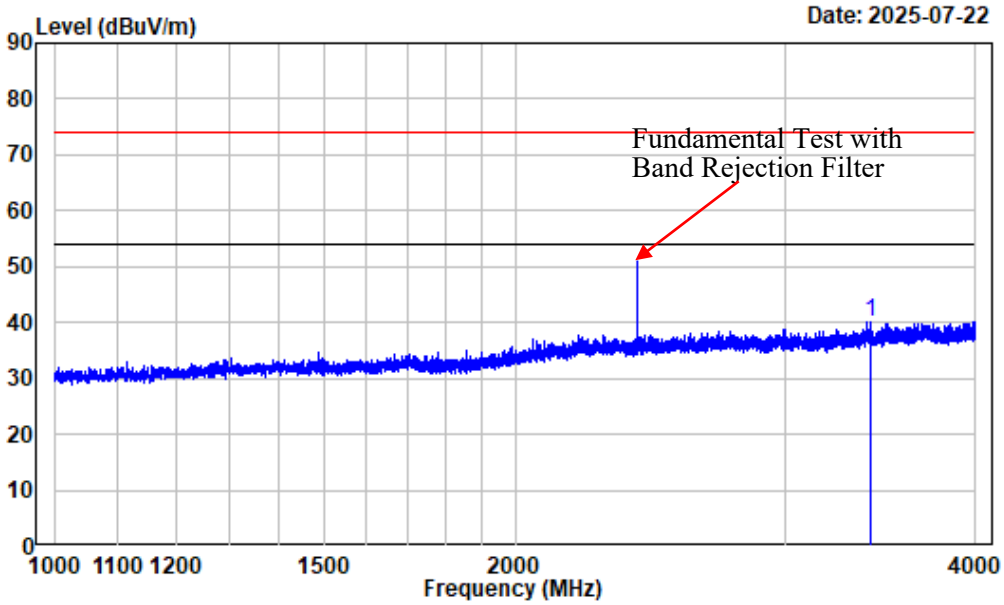


Condition : Vertical
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2480

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	2483.500	-10.97	59.61	48.64	74.00	-25.36	Peak
2	2492.019	-10.98	61.95	50.97	74.00	-23.03	Peak

1-18GHz (Listed with the worst harmonic margin test plot)
18-25GHz (Only Listed with the worst harmonic margin test plot)

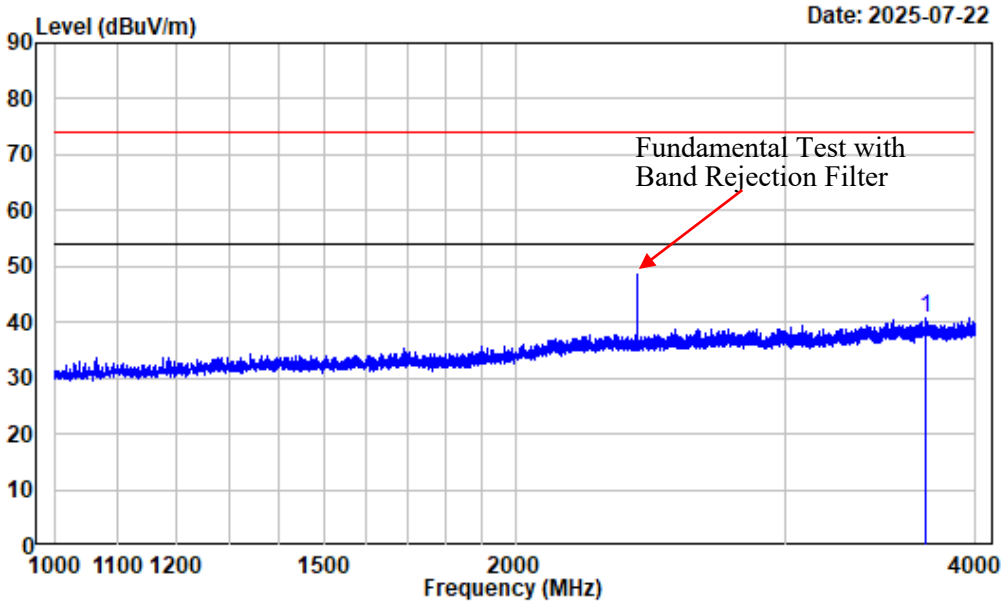
1-4GHz_Horizontal



Condition : Horizontal
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3414.927	-10.34	50.52	40.18	74.00	-33.82	Peak

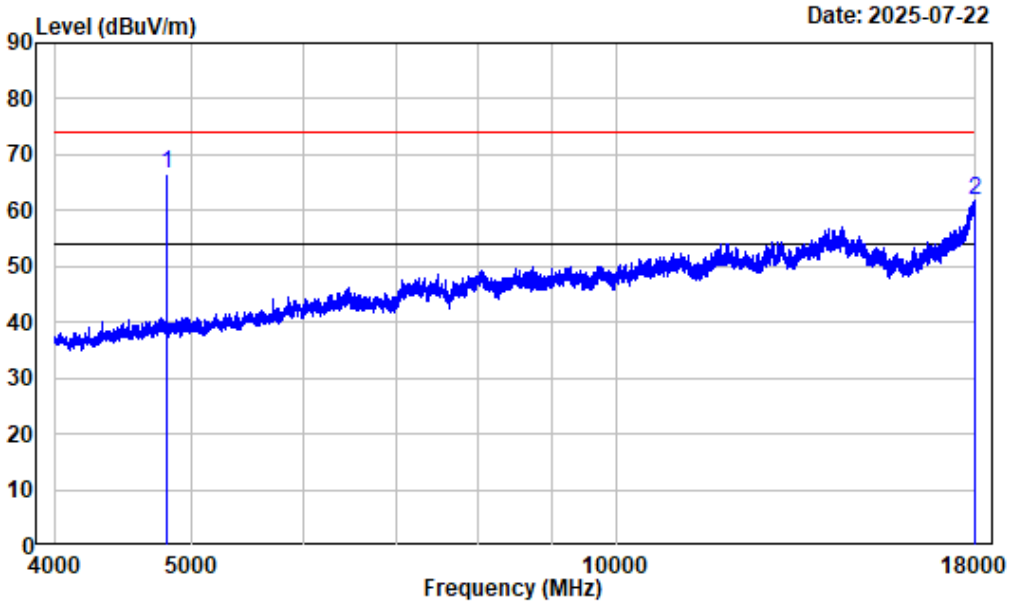
1-4GHz_Vertical



Condition : Vertical
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	3709.714	-9.51	50.25	40.74	74.00	-33.26	Peak

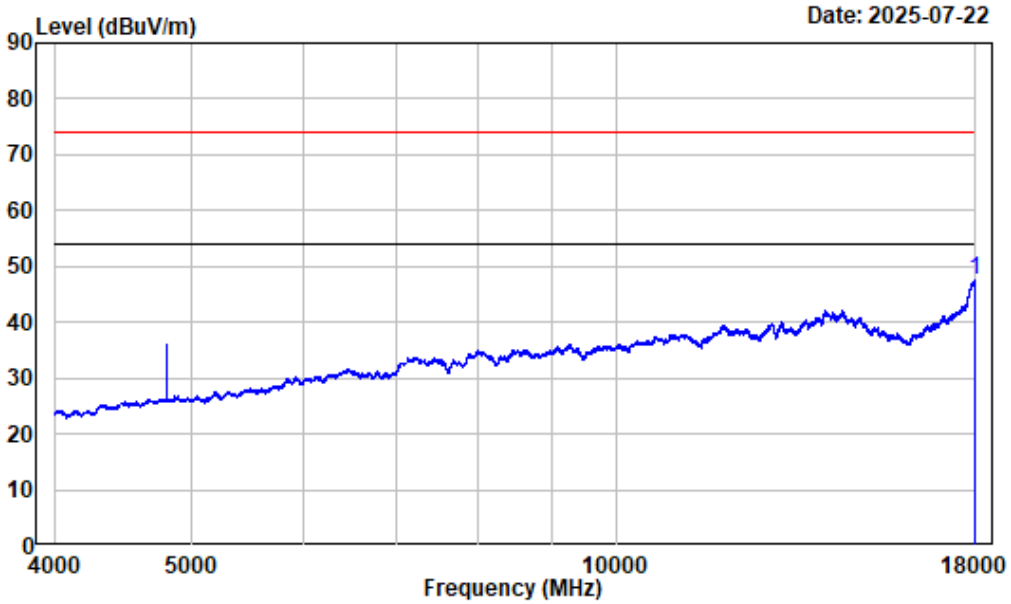
4-18GHz_Horizontal_Peak



Condition : Horizontal
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4804.000	-7.79	74.36	66.57	74.00	-7.43	Peak
2	17977.250	13.09	48.57	61.66	74.00	-12.34	Peak

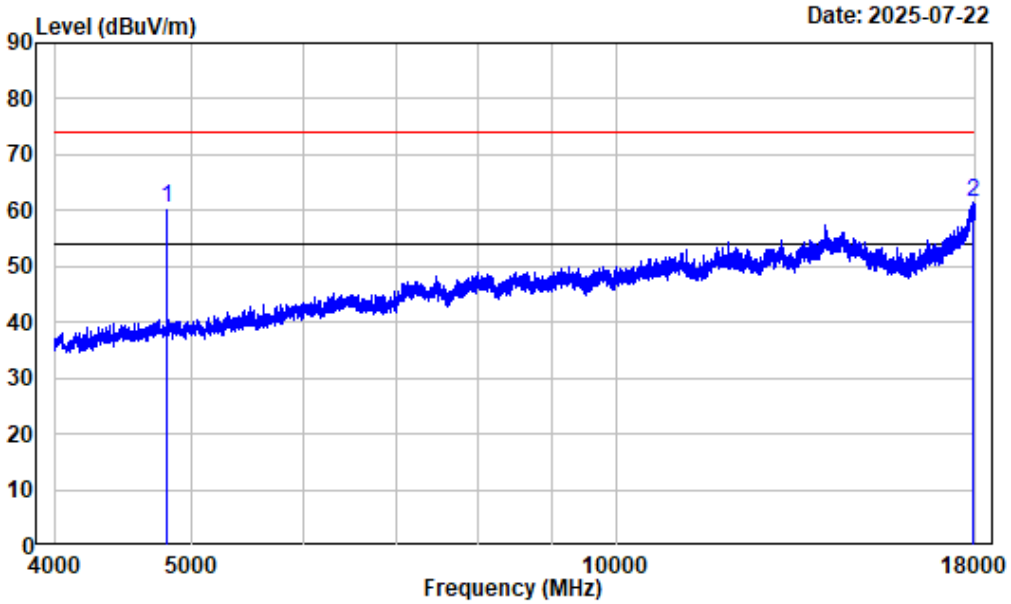
4-18GHz_Horizontal_Average



Condition : Horizontal
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17963.250	13.01	34.59	47.60	54.00	-6.40	Average

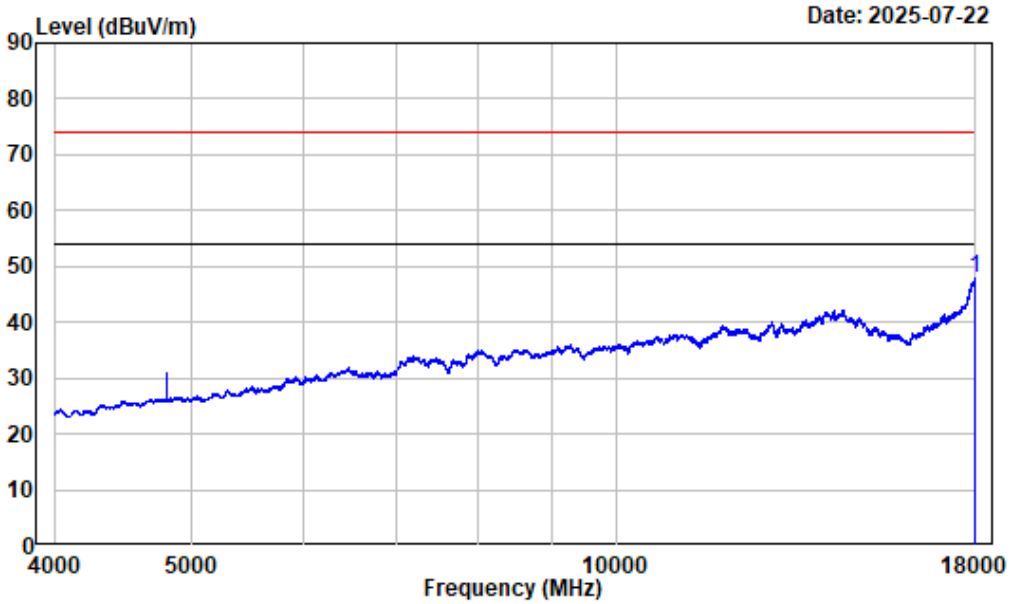
4-18GHz_Vertical_Peak



Condition : Vertical
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	4804.000	-7.79	68.33	60.54	74.00	-13.46	Peak
2	17921.240	12.81	48.53	61.34	74.00	-12.66	Peak

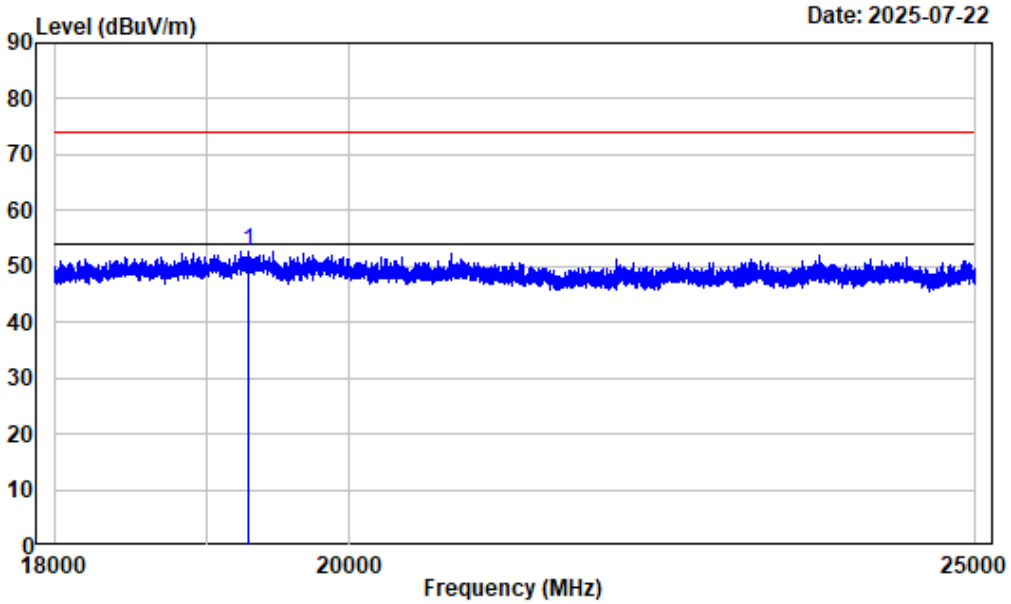
4-18GHz_Vertical_Average



Condition : Vertical
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Average reading: RBW:1MHz VBW:1kHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	17996.500	13.19	34.60	47.79	54.00	-6.21	Average

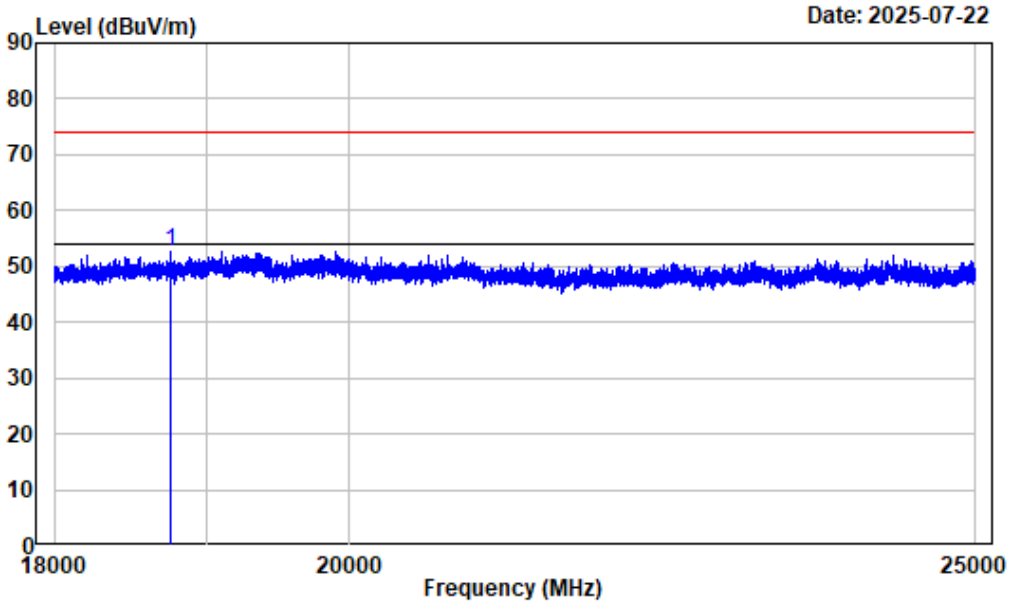
18-25GHz_Horizontal



Condition : Horizontal
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	19289.910	15.42	37.26	52.68	74.00	-21.32	peak

18-25GHz_Vertical



Condition : Vertical
Project No. : 2501V16354E-RF
Tester : Wing K Ji
Spectrum setting: Peak reading: RBW:1MHz VBW:3MHz Detector:Peak
Note : BT_DH5_2402

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	18757.850	14.90	37.66	52.56	74.00	-21.44	peak

20 dB Emission Bandwidth

Test Information:

Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

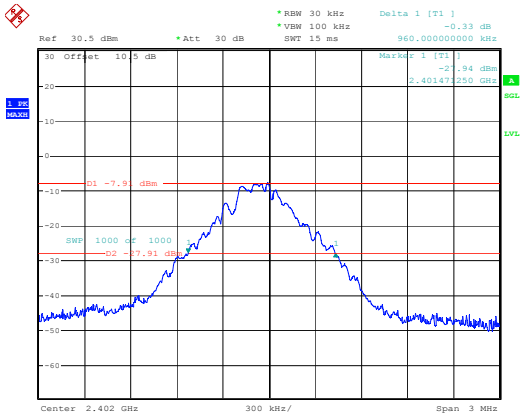
Environmental Conditions:

Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

Test Data:

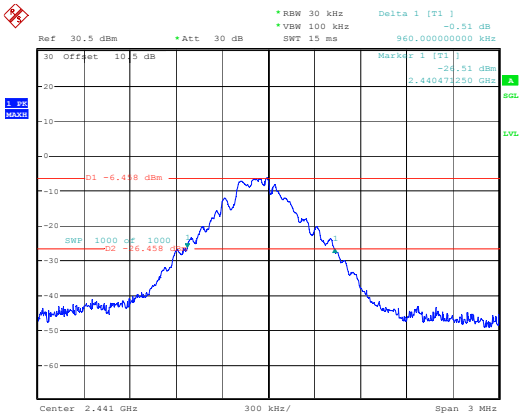
Mode	Channel	Result (MHz)
BDR(GFSK) DH1	Low Channel	**0.960**
	Middle Channel	**0.960**
	High Channel	**0.960**

BDR(GFSK) DH1_Low



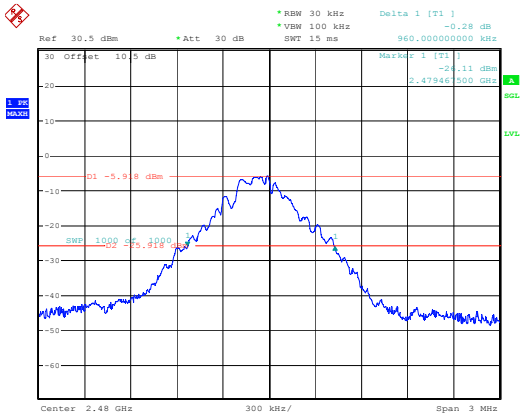
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:04:33

BDR(GFSK) DH1_Middle



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:11:12

BDR(GFSK) DH1_High



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:14:02

99% Occupied Bandwidth

Test Information:

Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

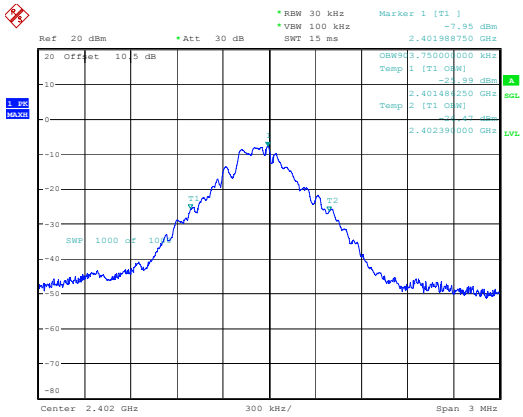
Environmental Conditions:

Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

Test Data:

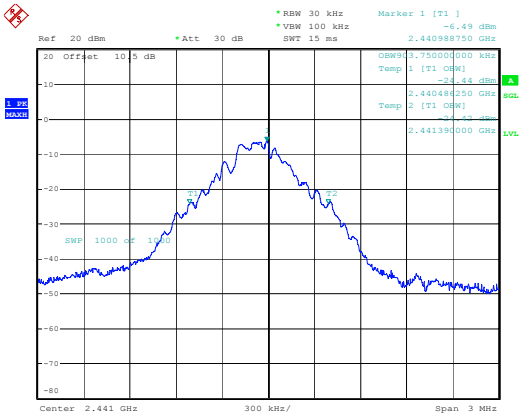
Mode	Channel	99% OBW (MHz)
BDR(GFSK) DH1	Low Channel	**0.904**
	Middle Channel	**0.904**
	High Channel	0.900

BDR(GFSK) DH1_Low



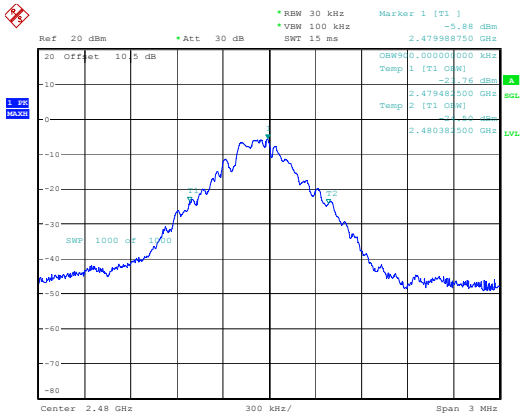
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:05:10

BDR(GFSK) DH1_Middle



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:11:47

BDR(GFSK) DH1_High



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:14:37

Channel Separation

Test Information:

Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

Environmental Conditions:

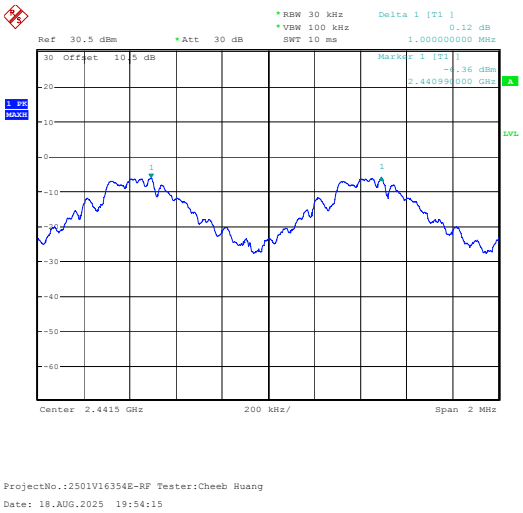
Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

Test Data:

Mode	Channel	Result (MHz)	Limit (MHz)	Verdict
BDR(GFSK) DH1	Middle Channel	**1**	0.640	Pass

Note: The limit is the maximum 20dB bandwidth *2/3.

BDR(GFSK) DH1_Middle



Number of Hopping Frequency

Test Information:

Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

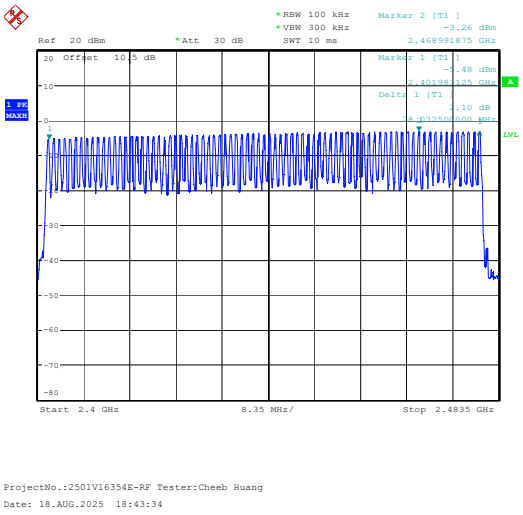
Environmental Conditions:

Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

Test Data:

Mode	Channel	Result	Limit	Verdict
BDR(GFSK) DH1	Hopping Channel	**79**	15	Pass

BDR(GFSK) DH1_Hopping



Maximum Conducted Output Power

Test Information:

Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

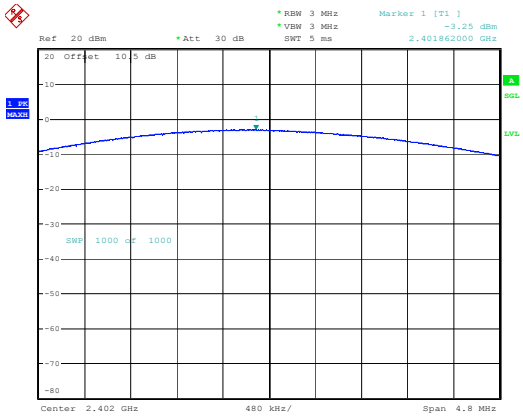
Environmental Conditions:

Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

Test Data:

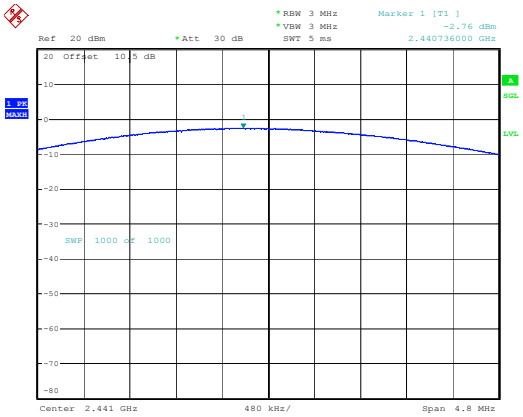
Mode	Test Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)	Verdict
BDR(GFSK) DH1	2402	-3.25	21.00	Pass
	2441	-2.76	21.00	Pass
	2480	**-2.21**	21.00	Pass

BDR(GFSK) DH1_Low



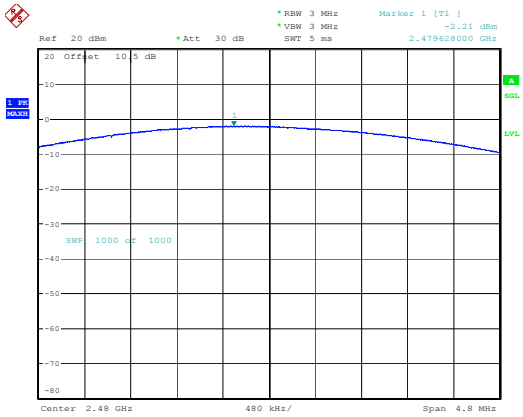
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:24:54

BDR(GFSK) DH1_Middle



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:12:14

BDR(GFSK) DH1_High



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:14:57

100 kHz Bandwidth of Frequency Band Edge

Test Information:

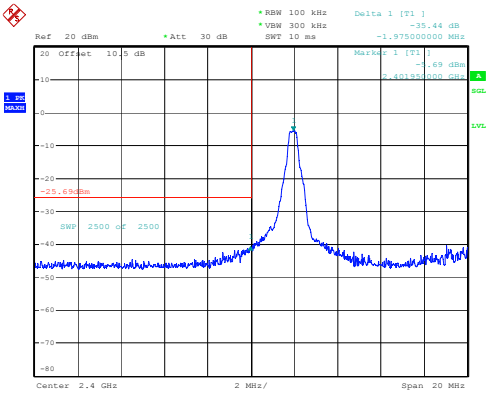
Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

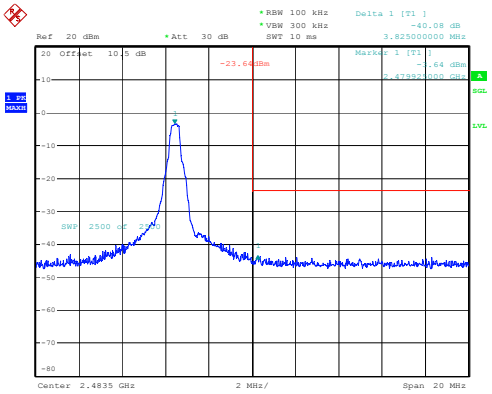
Test Data:

BDR(GFSK) DH1_Low



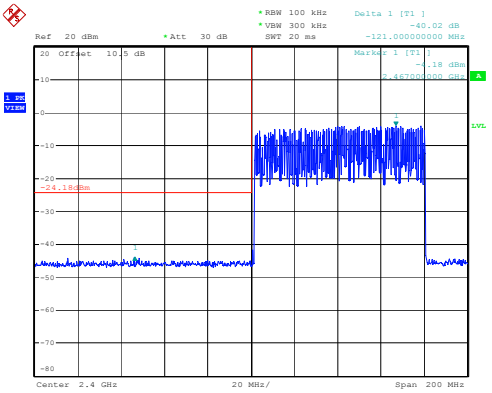
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:07:14

BDR(GFSK) DH1_High



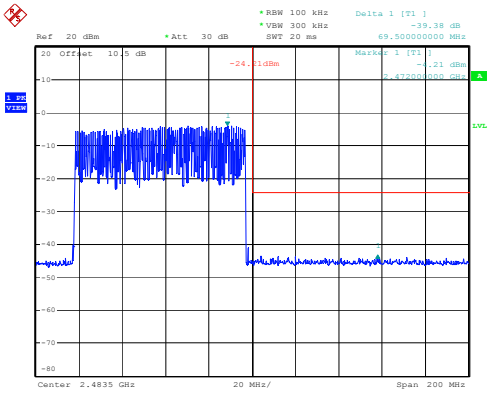
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:16:41

BDR(GFSK) DH1_Hopping_Lower



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:40:03

BDR(GFSK) DH1_Hopping_Upper



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:49:01

Time of Occupancy (dwell time)

Test Information:

Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

Environmental Conditions:

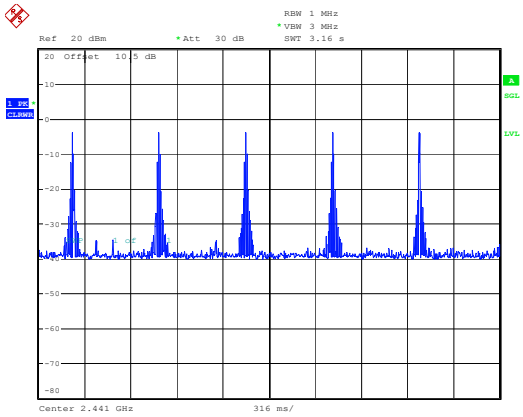
Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

Test Data:

Test Mode	Channel	BurstWidth (ms)	TotalHops (Num)	Result (s)	Limit (s)	Verdict
BDR(GFSK) DH1	Hopping Channel	0.414	50	0.021	≤ 0.4	Pass
BDR(GFSK) DH3	Hopping Channel	1.624	50	0.081	≤ 0.4	Pass
BDR(GFSK) DH5	Hopping Channel	**2.844**	40	0.114	≤ 0.4	Pass

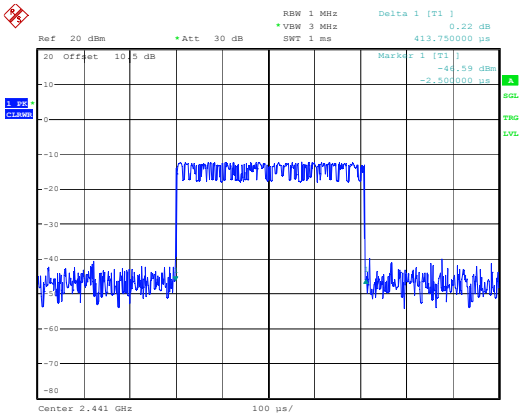
Note 1: A period time = 0.4*79 = 31.6(S), Result = BurstWidth * Totalhops
Note 2: Totalhops = Hopping Number in 3.16s*10
Note 3: Hopping Number in 3.16s = Total of highest signals in 3.16s(Second high signals were other channel)

BDR(GFSK) DH1_Hopping



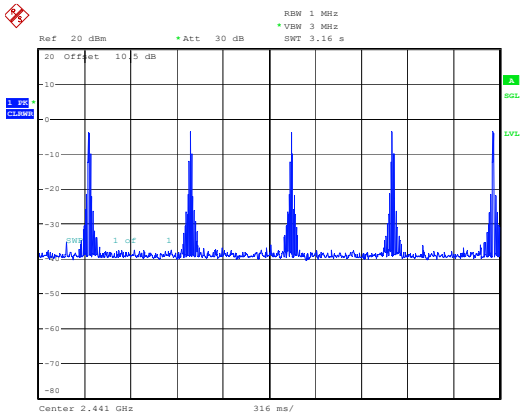
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:49:55

BDR(GFSK) DH1_Hopping



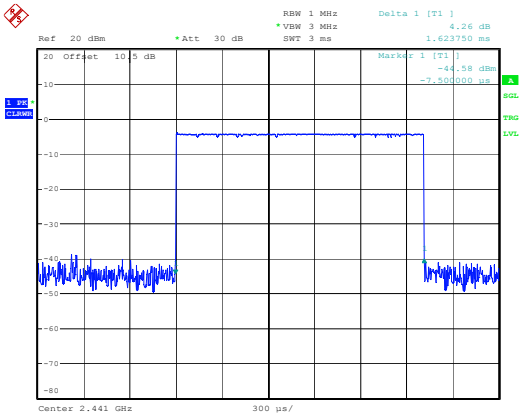
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:50:19

DH3_Hopping



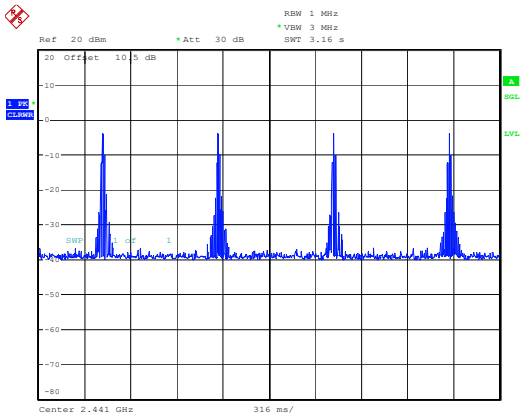
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:50:55

DH3_Hopping



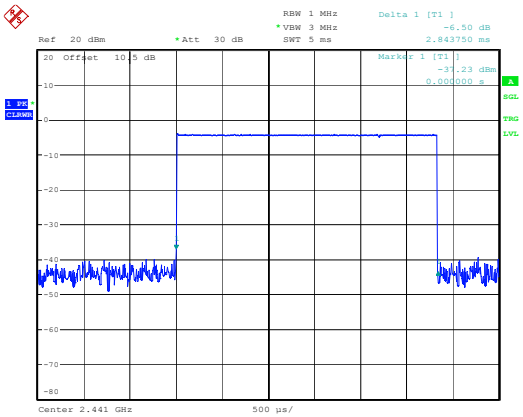
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:51:26

DH5_Hopping



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:51:46

DH5_Hopping



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 21:52:16

Conducted Spurious Emission

Test Information:

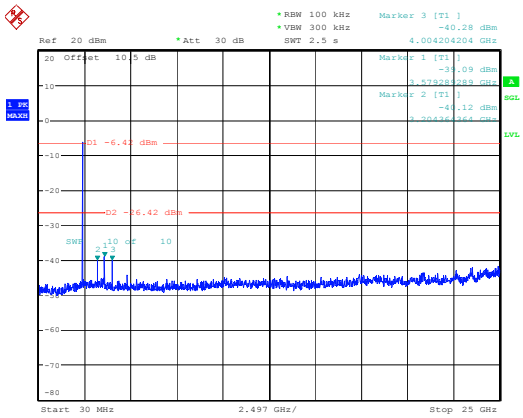
Sample No.:	364U-2	**Test Date:**	2025/08/18
Test Site:	RF	**Test Mode:**	Transmitting
Tester:	Cheeb Huang	**Test Result:**	Pass

Environmental Conditions:

Temperature: (°C)	25.9	**Relative Humidity: (%)**	59	**ATM Pressure: (kPa)**	101.2

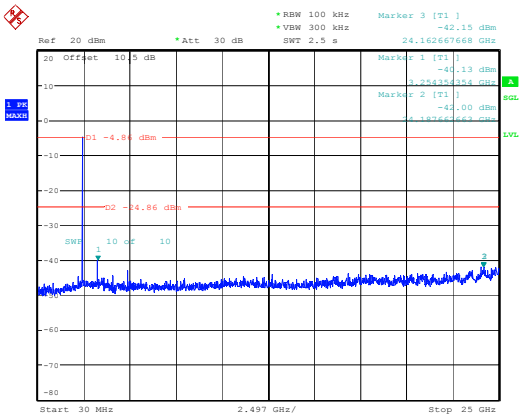
(Note: The maximum cable loss was added into the offset.)

BDR(GFSK) DH1_Low



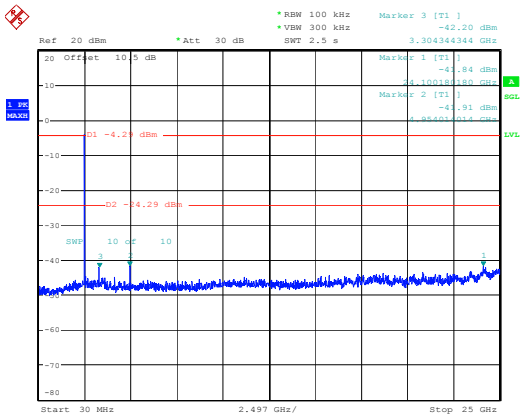
ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:07:47

BDR(GFSK) DH1_Middle



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:12:46

BDR(GFSK) DH1_High



ProjectNo.:2501V16354E-RF Tester:Cheeb Huang
Date: 18.AUG.2025 18:17:14

RF EXPOSURE EVALUATION

RF EXPOSURE

Applicable Standard

According to FCC §2.1093 and §1.1307(b)(3), systems operating under the provisions of this sectionshall be operated in a manner that ensure that the public is not exposed to radio frequency energylevel in excess of the Commission's guideline.

According to KDB 447498 D04 Interim General RF Exposure Guidance

1-mW Test Exemption:

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

Result

For worst case:

Mode	Frequency (MHz)	Antenna Gain#	Maximum Tune up conducted power#		Exemption Limit (mW)	Test Exemption
			dBm	mW		
BLE	2402-2480	2.34	-2	0.63	1	Yes
BT	2402-2480	2.34	-7	0.20	1	Yes

Result: Compliant

EUT PHOTOGRAPHS

Please refer to the attachment 2501V16354E-RF External photo and 2501V16354E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2501V16354E-RF-TSP Test Setup photo.

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