

Test Report

Report No. : MTi250716001-0102E1
Date of issue : 2025-11-06
Applicant : Holley Technology Ltd.
Product : WISUN module
Model(s) : ESWL67-WISUN-HL-2SYB
FCC ID : 2BRB5-HL-2SYB

Shenzhen Microtest Co., Ltd.

TEST REPORT

Report No.: MTi250716001-0102E1

Table of contents

1	General Description	4
1.1	Description of the EUT	4
1.2	Description of test modes.....	4
1.3	Environmental Conditions	7
1.4	Description of support units	7
1.5	Measurement uncertainty.....	7
2	Summary of Test Result	8
3	Test Facilities and accreditations	9
3.1	Test laboratory.....	9
4	List of test equipment	10
5	Evaluation Results (Evaluation)	12
5.1	Antenna requirement.....	12
6	Radio Spectrum Matter Test Results (RF)	13
6.1	20dB Bandwidth	13
6.2	Maximum Conducted Output Power	15
6.3	Channel Separation	17
6.4	Number of Hopping Frequencies.....	18
6.5	Dwell Time	20
6.6	RF conducted spurious emissions and band edge measurement	22
6.7	Band edge emissions (Radiated).....	24
6.8	Radiated emissions (below 1GHz).....	26
6.9	Radiated emissions (above 1GHz)	34
	Photographs of the test setup	38
	Photographs of the EUT	39
	Appendix A: 20dB Emission Bandwidth.....	41
	Appendix B: Maximum conducted output power	43
	Appendix C: Carrier frequency separation.....	46
	Appendix D: Time of occupancy	48
	Appendix E: Number of hopping channels	50
	Appendix F: Band edge measurements	52
	Appendix G: Conducted Spurious Emission	54

TEST REPORT

Report No.: MTi250716001-0102E1

Test Result Certification		
Applicant	Holley Technology Ltd.	
Applicant Address	No.181 Wuchang Avenue, Yuhang District, Hangzhou, China	
Manufacturer	Holley Technology Ltd.	
Manufacturer Address	No.181 Wuchang Avenue, Yuhang District, Hangzhou, China	
Factory	Holley Technology Ltd.	
Factory Address	No.181 Wuchang Avenue, Yuhang District, Hangzhou, China	
Product description		
Product name	WISUN module	
Trademark	N/A	
Model name	ESWL67-WISUN-HL-2SYB	
Series Model(s)	N/A	
Standards	47 CFR Part 15.247	
Test Method	KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10-2020	
Testing Information		
Date of test	2025-08-20 to 2025-11-03	
Test result	Pass	
Prepared by:	Yanice.Xie	
Reviewed by:	David Lee	
Approved by:	Lewis Lian	

TEST REPORT

Report No.: MTi250716001-0102E1

1 General Description

1.1 Description of the EUT

Product name:	WISUN module
Model name:	ESWL67-WISUN-HL-2SYB
Series Model(s):	N/A
Model difference:	N/A
Electrical rating:	Working power supply: DC 12V
Accessories:	N/A
Hardware version:	ESWL67-WISUN-HL-SYB (V1.01) 20240821
Software version:	SSC1667-V0CDF6766(241011)-200-PA2.bin
Test sample(s) number:	MTi250716001-01-R001
RF specification	
Operating frequency range:	915.2-925MHz
Channel number:	50
Modulation type:	GFSK
Antenna(s) type:	Spring antenna
Antenna(s) gain:	0 dBi

1.2 Description of test modes

No.	Emission test modes
Mode1	TX

1.2.1 Operation channel list

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	915.2	18	918.6	35	922
2	915.4	19	918.8	36	922.2
3	915.6	20	919	37	922.4
4	915.8	21	919.2	38	922.6
5	916	22	919.4	39	922.8
6	916.2	23	919.6	40	923
7	920	24	919.8	41	923.2
8	916.6	25	920	42	923.4
9	916.8	26	920.2	43	923.6

TEST REPORT

Report No.: MTi250716001-0102E1

10	917	27	920.4	44	923.8
11	917.2	28	920.6	45	924
12	917.4	29	920.8	46	924.2
13	917.6	30	921	47	924.4
14	917.8	31	921.2	48	924.6
15	918	32	921.4	49	924.8
16	918.2	33	921.6	50	925
17	918.4	34	921.8	/	/

TEST REPORT

Report No.: MTi250716001-0102E1

Test Channel List Operation Band:

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
/	915.2	920	925

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

Test Software: Serial-COM7 - SecureCRT

For power setting, refer to below table.

Mode	915.2MHz	920MHz	925MHz
GFSK	7	7	7

TEST REPORT

Report No.: MTi250716001-0102E1

1.3 Environmental Conditions

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

Temperature:	15°C ~ 35°C
Humidity:	20% RH ~ 75% RH
Atmospheric pressure:	98 kPa ~ 101 kPa

1.4 Description of support units

Support equipment list			
Description	Model	Serial No.	Manufacturer
/	/	/	/
Support cable list			
Description	Length (m)	From	To
/	/	/	/

1.5 Measurement uncertainty

Measurement	Uncertainty
Occupied channel bandwidth	±3 %
RF output power, conducted	±1 dB
Time	±1 %
Unwanted Emissions, conducted	±1 dB
Radiated spurious emissions (9kHz~30MHz)	±4.3dB
Radiated spurious emissions (30MHz~1GHz)	±4.7dB
Radiated spurious emissions (above 1GHz)	±5.3dB
Temperature	±1 °C
Humidity	± 5 %

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

TEST REPORT

Report No.: MTI250716001-0102E1

2 Summary of Test Result

No.	Item	Standard	Requirement	Result
1	Antenna requirement	47 CFR Part 15.247	47 CFR 15.203	Pass
2	Conducted Emission at AC power line	47 CFR Part 15.247	47 CFR 15.207(a)	N/A
3	20dB Bandwidth	47 CFR Part 15.247	47 CFR 15.247(a)(1)(i)	Pass
4	Maximum Conducted Output Power	47 CFR Part 15.247	47 CFR 15.247(b)(2)	Pass
5	Channel Separation	47 CFR Part 15.247	47 CFR 15.247(a)(1)	Pass
6	Number of Hopping Frequencies	47 CFR Part 15.247	47 CFR 15.247(a)(1)(i)	Pass
7	Dwell Time	47 CFR Part 15.247	47 CFR 15.247(a)(1)(i)	Pass
8	RF conducted spurious emissions and band edge measurement	47 CFR Part 15.247	47 CFR 15.247(d)	Pass
9	Band edge emissions (Radiated)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Init
10	Radiated emissions (below 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass
11	Radiated emissions (above 1GHz)	47 CFR Part 15.247	47 CFR 15.247(d), 15.209, 15.205	Pass

Note: Since the EUT is DC power supply, therefore AC power line conducted emissions test is not required.

TEST REPORT

Report No.: MTi250716001-0102E1

3 Test Facilities and accreditations

3.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573
IC Registration No.:	21760
CABID:	CN0093

TEST REPORT

Report No.: MTi250716001-0102E1

4 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
Conducted Emission at AC power line						
1	EMI Test Receiver	Rohde&schwarz	ESCI3	101368	2025-03-14	2026-03-13
2	Single path vehicle AMN	Schwarzbeck	NNBN 8124	1174	2025-03-18	2026-03-17
3	Single path vehicle AMN	Schwarzbeck	NNBN 8124	1175	2025-03-18	2026-03-17
Dwell Time Emissions in non-restricted frequency bands 20dB Bandwidth Maximum Conducted Output Power Channel Separation Number of Hopping Frequencies						
1	Wideband Radio Communication Tester	Rohde&schwarz	CMW500	149155	2025-03-18	2026-03-17
2	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2025-03-14	2026-03-13
3	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2025-03-14	2026-03-13
4	Synthesized Sweeper	Agilent	83752A	3610A01957	2025-03-14	2026-03-13
5	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2025-03-14	2026-03-13
6	RF Control Unit	Tonscend	JS0806-1	19D8060152	2025-03-18	2026-03-17
7	Band Reject Filter Group	Tonscend	JS0806-F	19D8060160	2025-03-14	2026-03-13
8	ESG Vector Signal Generator	Agilent	N5182A	MY50143762	2025-03-14	2026-03-13
9	DC Power Supply	Agilent	E3632A	MY40027695	2025-03-18	2026-03-17
Band edge emissions (Radiated)						
Emissions in frequency bands (below 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2025-03-14	2026-03-13
2	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2025-05-23	2027-05-22
3	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00066	2024-03-23	2026-03-22
4	Amplifier	Hewlett-Packard	8447F	3113A06184	2025-03-18	2026-03-17
Emissions in frequency bands (above 1GHz)						
1	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2025-03-14	2026-03-13
2	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	2278	2025-05-27	2027-05-26
3	Amplifier	Agilent	8449B	3008A01120	2025-03-18	2026-03-17
4	MXA signal analyzer	Agilent	N9020A	MY54440859	2025-03-14	2026-03-13

TEST REPORT

Report No.: MTi250716001-0102E1

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
5	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2025-03-14	2026-03-13
6	Horn antenna	Schwarzbeck	BBHA 9170	00987	2025-05-27	2027-05-26
7	Pre-amplifier	Space-Dtronics	EWLAN1840G	210405001	2025-03-19	2026-03-18

TEST REPORT

Report No.: MTi250716001-0102E1

5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Test Requirement:	Refer to 47 CFR Part 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.
-------------------	---

5.1.1 Conclusion:

The antenna of the EUT is permanently attached.
The EUT complies with the requirement of FCC PART 15.203.

TEST REPORT

Report No.: MTi250716001-0102E1

6 Radio Spectrum Matter Test Results (RF)

6.1 20dB Bandwidth

Test Requirement:	47 CFR 15.247(a)(1)(i)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(i), for frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
Test Method:	ANSI C63.10-2020, section 7.8.6, For occupied bandwidth measurements, use the procedure in 6.9.3. Frequency hopping shall be disabled for this test. KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission. The following procedure shall be used for measuring 99% power bandwidth: a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 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 VBW shall be at least three times the 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) Step a) through step c) might require iteration to adjust within the specified range. e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used. f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies. h) The occupied 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).

6.1.1 E.U.T. Operation:

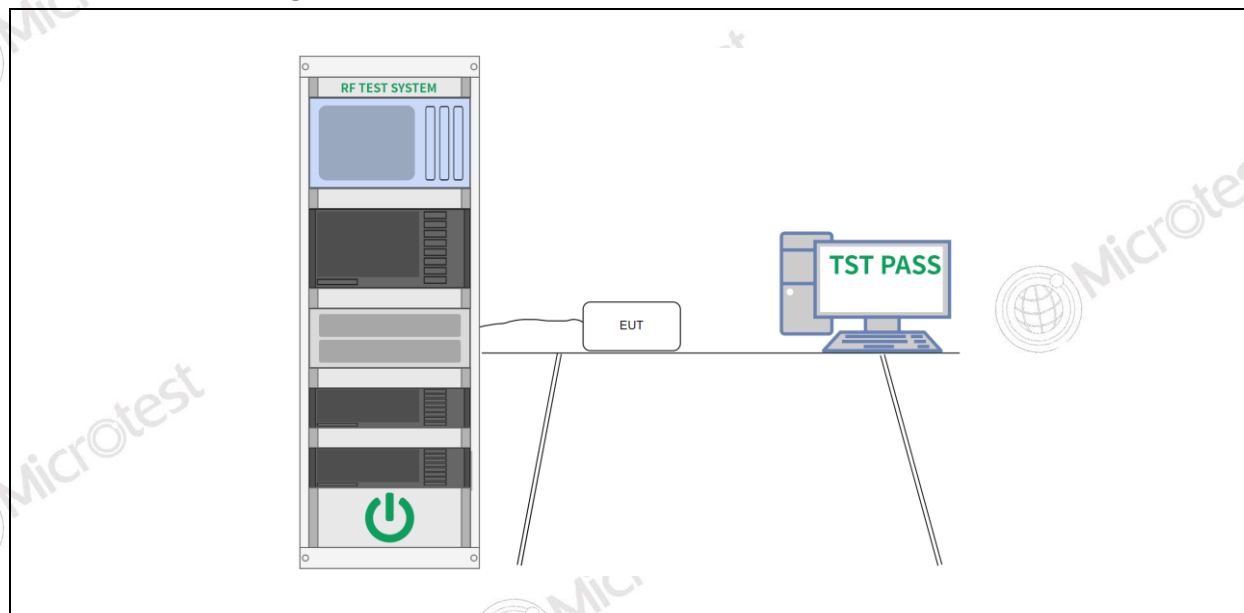
Operating Environment:

TEST REPORT

Report No.: MTi250716001-0102E1

Temperature:	23.1 °C	Humidity:	47.3 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.1.2 Test Setup Diagram:



6.1.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTI250716001-0102E1

6.2 Maximum Conducted Output Power

Test Requirement:	47 CFR 15.247(b)(2)
Test Limit:	Refer to 47 CFR 15.247(b)(2), For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.
Test Method:	ANSI C63.10-2020, section 7.8.5 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	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—A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.

6.2.1 E.U.T. Operation:

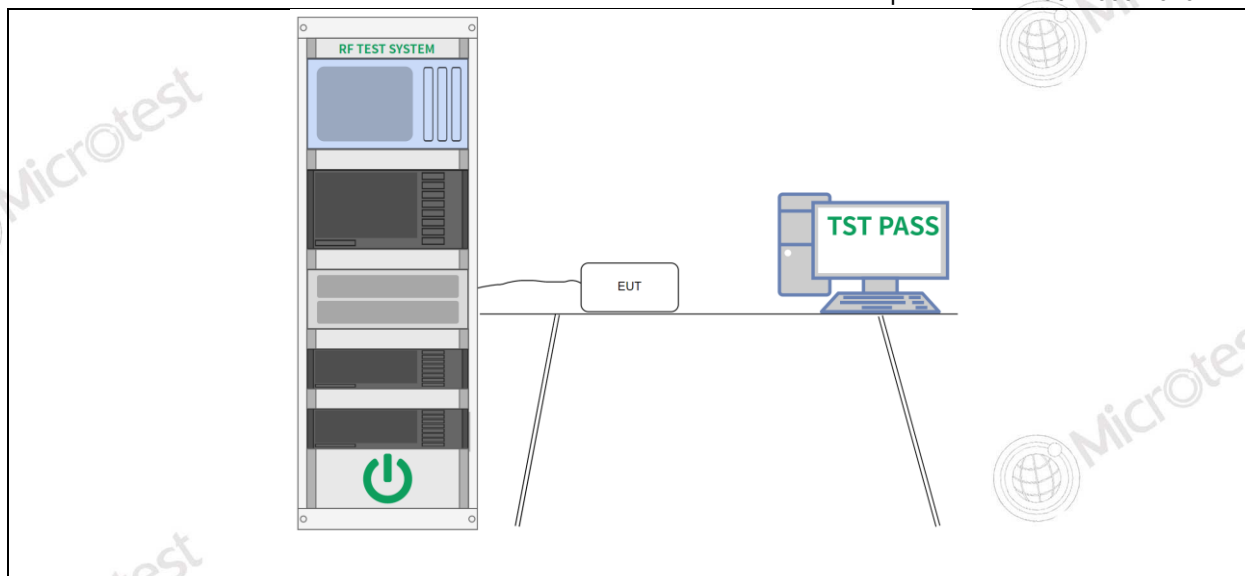
Operating Environment:					
Temperature:	23.1 °C	Humidity:	47.3 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.2.2 Test Setup Diagram:

--

TEST REPORT

Report No.: MTi250716001-0102E1



6.2.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTi250716001-0102E1

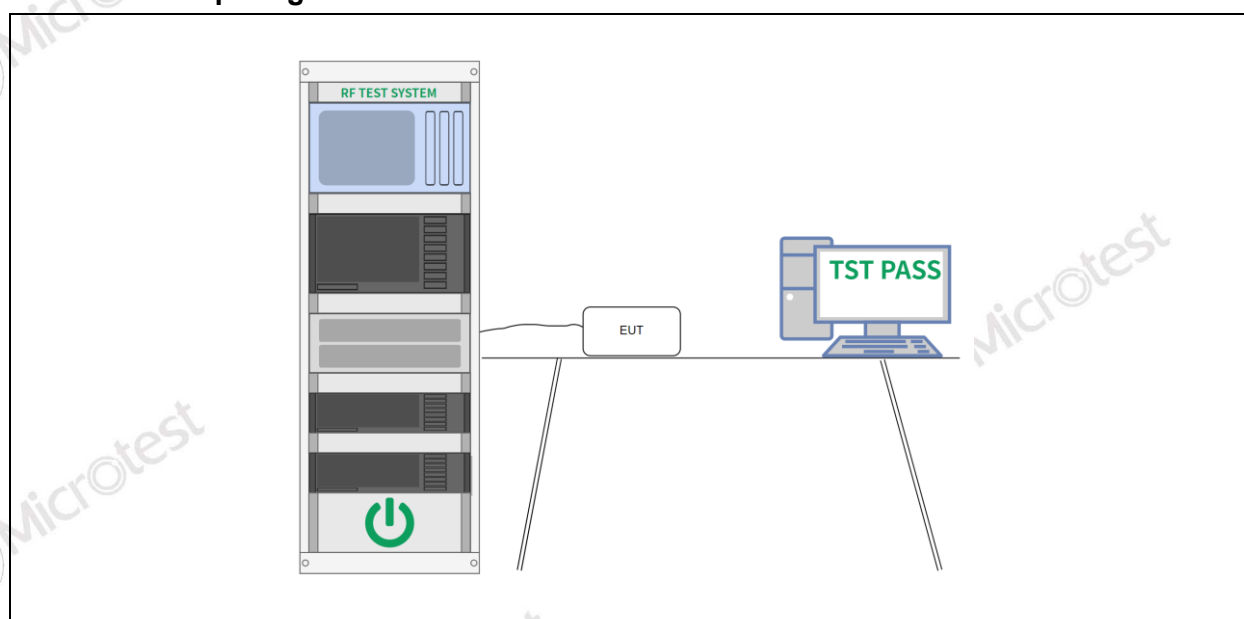
6.3 Channel Separation

Test Requirement:	47 CFR 15.247(a)(1)
Test Limit:	Refer to 47 CFR 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.
Test Method:	ANSI C63.10-2020, section 7.8.2 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	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) $\geq$ 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.

6.3.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.1 °C	Humidity:	47.3 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.3.2 Test Setup Diagram:



6.3.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTi250716001-0102E1

6.4 Number of Hopping Frequencies

Test Requirement:	47 CFR 15.247(a)(1)(i)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(i), For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
Test Method:	ANSI C63.10-2020, section 7.8.3 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	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 $\geq$ 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.

6.4.1 E.U.T. Operation:

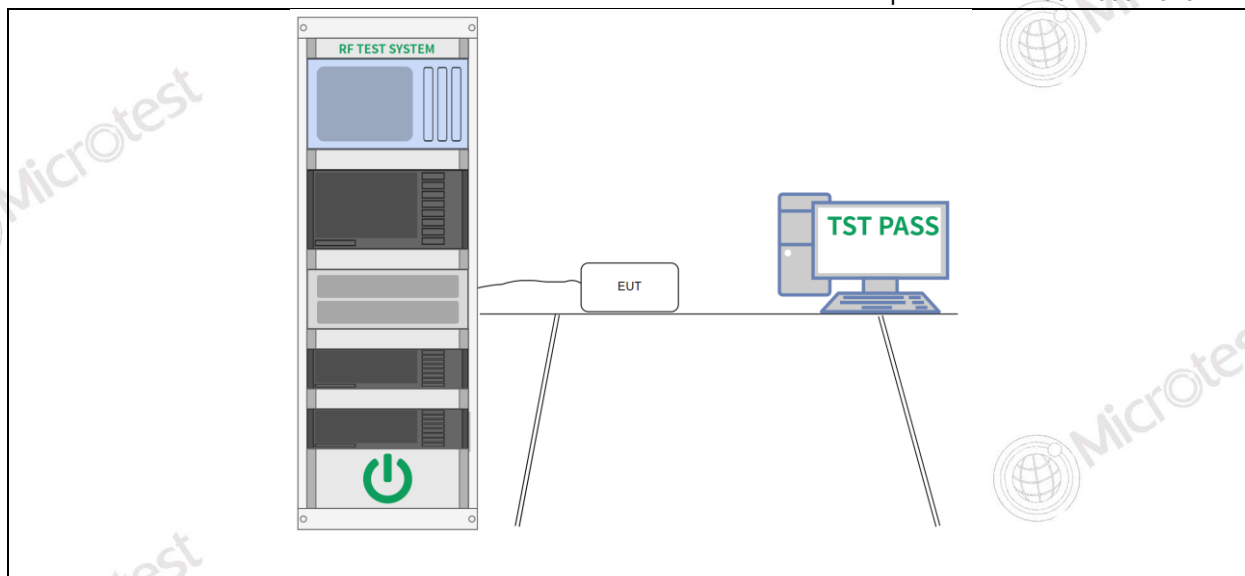
Operating Environment:					
Temperature:	23.1 °C	Humidity:	47.3 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.4.2 Test Setup Diagram:

--

TEST REPORT

Report No.: MTi250716001-0102E1



6.4.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTI250716001-0102E1

6.5 Dwell Time

Test Requirement:	47 CFR 15.247(a)(1)(i)
Test Limit:	Refer to 47 CFR 15.247(a)(1)(i), For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
Test Method:	ANSI C63.10-2020, section 7.8.4 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	The dwell time per hop on a channel is the time from the start of the first transmission to the end of the last transmission for that hop. If the device has a single transmission per hop then the dwell time is the duration of that transmission. If the device has a multiple transmissions per hop then the dwell time is measured from the start of the first transmission to the end of the last transmission. The time of occupancy is the total time that the device dwells on a channel over an observation period specified in the regulatory requirement. To determine the time of occupancy the spectrum analyzer will be configured to measure both the dwell time per hop and the number of times the device transmits on a specific channel in a given period. The EUT shall have its hopping function enabled. Compliance with the requirements shall be made with the minimum and with the maximum number of channels enabled. If the dwell time per channel does not vary with the number of channels then compliance with the requirements may be based on the minimum number of channels. If the device supports different dwell times per channel (example Bluetooth devices can dwell on a channel for 1, 3 or 5 time slots) then measurements can be limited to the longest dwell time with the minimum number of channels. 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 $\leq$ channel spacing and where possible RBW should be set $\gg 1/T$, 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 = $1/\text{hopping rate}$) 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.

TEST REPORT

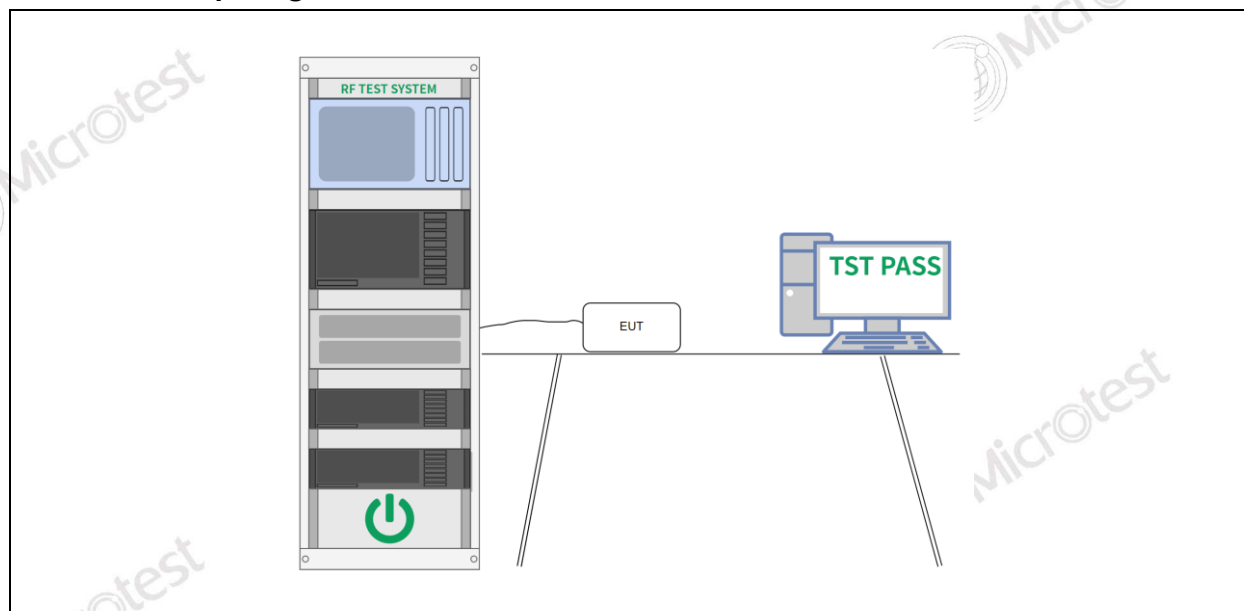
Report No.: MTi250716001-0102E1

	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 $3 / 0.5 \times 10$, 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.
--	--

6.5.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.1 °C	Humidity:	47.3 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.5.2 Test Setup Diagram:



6.5.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTi250716001-0102E1

6.6 RF conducted spurious emissions and band edge measurement

Test Requirement:	47 CFR 15.247(d)
Test Limit:	Refer to 47 CFR 15.247(d), 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.
Test Method:	ANSI C63.10-2020 section 7.8.7 KDB 558074 D01 15.247 Meas Guidance v05r02
Procedure:	7.8.7.1 General considerations 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. When conducted measurements cannot be made (for example a device with integrated, non-removable antenna) radiated measurements shall be used. The reference level for determining the limit shall be established by maximizing the field strength from the highest power channel and measuring using the resolution and video bandwidth settings and peak detector as described above. The field strength limit for spurious emissions outside of restricted-bands shall then be set at the required offset (typically 20 dB) below the highest in-band level. Radiated measurements will follow the standards measurement procedures described in Clause 6 with the exception that the resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector. Note that use of wider

TEST REPORT

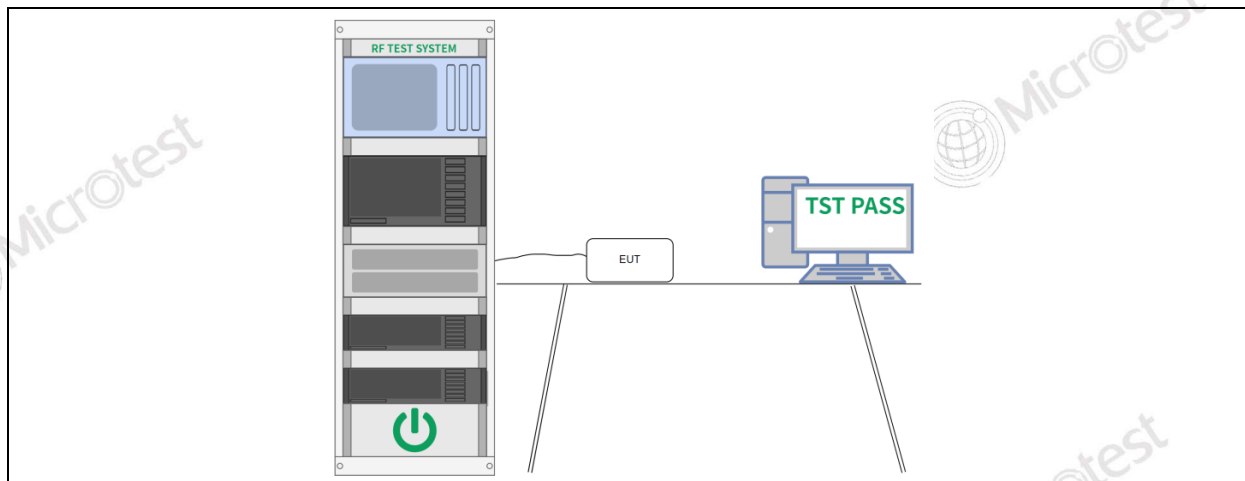
Report No.: MTi250716001-0102E1

	measurement bandwidths are acceptable for measuring the spurious emissions provided that the peak detector is used and that the measured value of spurious emissions are compared to the highest in-band level measured with the 100 kHz / 300 kHz bandwidth settings to determine compliance. 7.8.7.2 Band-edges Compliance with a relative limit at the band-edges (e.g., -20 dBc) shall be made on the lowest and on the highest channels with frequency hopping disabled and repeated with frequency hopping enabled. For the latter test the hopping sequence shall include the lowest and highest channels. For measurements with the hopping disabled the analyzer screen shall clearly show compliance with the requirement within 10 MHz of the allocated band-edge. For measurements with the hopping enabled the analyzer screen shall clearly show compliance with the requirement within 10 MHz of both of the allocated band-edges. This could require separate spectral plots for each band-edge.
--	---

6.6.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.1 °C	Humidity:	47.3 %	Atmospheric Pressure:	98 kPa
Pre test mode:	Mode1				
Final test mode:	Mode1				

6.6.2 Test Setup Diagram:



6.6.3 Test Data:

Please Refer to Appendix for Details.

TEST REPORT

Report No.: MTi250716001-0102E1

6.7 Band edge emissions (Radiated)

Test Requirement:	Refer to 47 CFR 15.247(d), 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 Limit:	Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
	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
** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. In the emission table above, the tighter limit applies at the band edges. The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.			
Test Method:	ANSI C63.10-2020 section 6.10 KDB 558074 D01 15.247 Meas Guidance v05r02		
Procedure:	ANSI C63.10-2020 section 6.10.5.2		

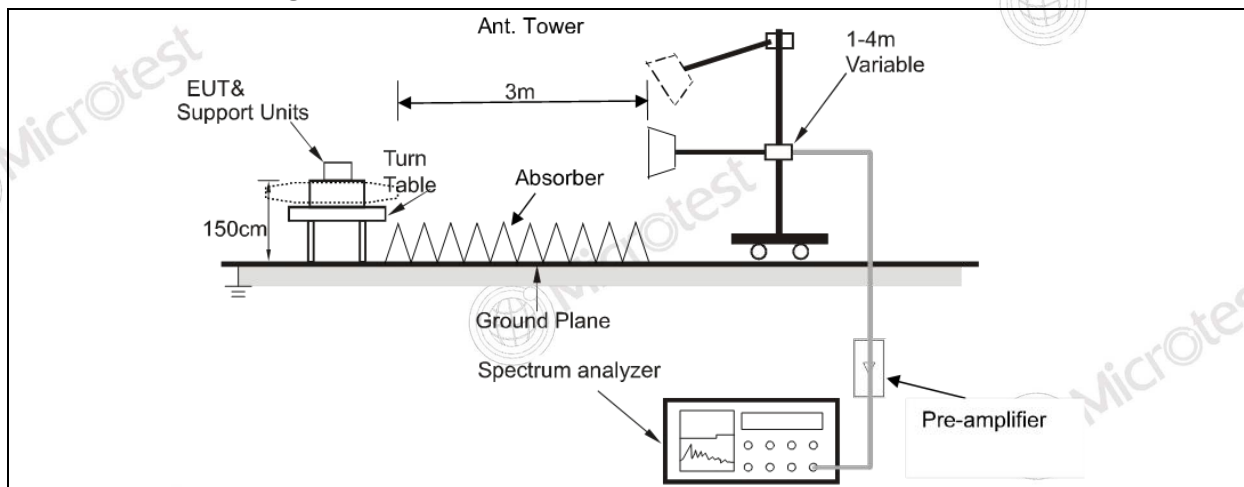
6.7.1 E.U.T. Operation:

Operating Environment:					
Temperature:	23.5 °C	Humidity:	56 %	Atmospheric Pressure:	101 kPa
Note: The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.					

TEST REPORT

Report No.: MTi250716001-0102E1

6.7.2 Test Setup Diagram:



6.7.3 Test Data:

Note: The adjacent to the restricted frequency band (608-614MHz and 960-1240MHz) is far away the fundamental, it is noise only. Please refer to section 6.8, 6.9 for the test data