

Project No.: TM-2405000397P
Report No.: TMWK2405001768KR

FCC ID: P4Q-N702
IC: 2420C-N702

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Rev.: 01

RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C

INDUSTRY CANADA RSS-247

(CLASS II PERMISSIVE CHANGE)

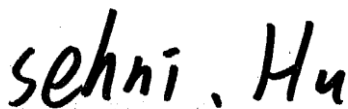
Test Standard	FCC Part 15.247 RSS-247 issue 3 and RSS-GEN issue 5
Product name	Connected Digital Recorder
Brand Name	MiTAC, Mio, MAGELLAN, Navman, SMARTER AI, Webfleet, Azuga
Model No.	N702, N702B, CAMPro US, SafetyCam Pro
Test Result	Pass
Statements of Conformity	Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory)

Approved by:



Sehni Hu
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.
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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 31, 2024	Initial Issue	ALL	Peggy Tsai
01	August 14, 2024	See the following Note Rev. (01)	P. 4, 7, 8, 11, 13, 21, 23, 26, 27, A-2	Peggy Tsai

Note:

Rev. (01)

1. Modify date of test in section 1.1.
2. Modify measurement uncertainty in section 1.4.
3. Modify facilities and test location in section 1.5.
4. Modify instrument calibration in section 1.6.
5. Modify note in section 2.
6. Modify the worst mode of measurement in section 3.2.
7. Modify radiation bandedge and spurious emission in section 4.2.
8. Modify appendix-A test photo.

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APPENDIX A - PHOTOGRAPHS OF EUT		



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1. GENERAL INFORMATION

1.1 EUT INFORMATION

FCC Applicant	Mitac Digital Technology Corporation 4F., No. 1, R&D Road 2, Hsinchu Science Park, Hsinchu 30076 Taiwan
FCC Manufacturer	MITAC COMPUTER (KUNSHAN) CO., LTD. No. 269, 2nd Avenue, District A, Comprehensive Free Trade Zone, Kunshan, Jiangsu, P.R. China
IC Applicant	MiTAC Digital Technology Corporation 4F., No. 1, R&D Road 2, Hsinchu Science Park, Hsinchu 30076 Taiwan
IC Manufacturer	MITAC COMPUTER (KUNSHAN) CO., LTD. No. 269, 2nd Rd, Export Processing Zone Changjiang South Road Kushan, Jiangsu China (Peoples Republic Of)
Equipment	Connected Digital Recorder
Model Name	N702, N702B, CAMPro US, SafetyCam Pro
Model Discrepancy	Difference of the those model number / trademarks (list on this report) are just for marketing purpose only.
Brand Name	MiTAC, Mio, MAGELLAN, Navman, SMARTER AI, Webfleet, Azuga
Received Date	May 31, 2024
Date of Test	July 3 ~ August 13, 2024
Power Supply	Power from power supply. (DC 12~24V)
PMN	K244s
EUT Serial #	HDR2CE00
HW Version	R03
SW Version	R01

Class II Permissive Change	1. Adding the N702B series model, the only difference from the original model is the replacement of a larger speaker, which also results in a different appearance due to the larger speaker. 2. Adding an additional series, CAMPro US, SafetyCam Pro (market segmentation), and new brand names: SMARTER AI, Webfleet, Azuga. 3. Adding the following accessories and cables. (1) A60 Camera (2) Panic button (3) AE-CM30HB (TVI camera) (4) AE-CH11A (TVI camera) (5) ODB Transfer Cable (6) Open wire power cable (7) 12V TVI cables (8) OBDII power cable for 12V TVI cable (9) Hardwire power cable for 12V TVI cable (10) Clean installation V.2 cable (11) A60 Power cable (12) Mini USB Relay 4. Update HW version to R03.
--	--

Remark:

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
3. Disclaimer: Variant information between/among model numbers / trademarks is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.

1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20: 2412MHz ~ 2462MHz 802.11n HT 40: 2422MHz ~ 2452MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 Mode: OFDM 4. IEEE 802.11n HT 40 MHz mode: OFDM
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 Mode : 11 Channels 4. IEEE 802.11n HT 40 MHz mode: 7 Channels

Remark:

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 and RSS-GEN Table 1 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Specification	☐ PIFA ☐ PCB ☒ Dipole ☐ Coils
Antenna Gain	Gain: 4.2 dBi
Antenna connector	I-PEX

Notes:

1. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203 and RSS-Gen 6.8.



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1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
RF output power (Power Meter + Power sensor)	± 0.243 dB
Radiated Emission_9kHz-30MHz	± 3.761 dB
Radiated Emission_30MHz-200MHz	± 3.473 dB
Radiated Emission_200MHz-1GHz	± 3.946 dB
Radiated Emission_1GHz-6GHz	± 4.797 dB

Remark:

- 1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer	Remark
Radiation	Ray Li, Tony Chao	-
RF Conducted	Jerry Chang	-

Remark: 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. :444940, the FCC Designation No.:TW1309.

1.6 INSTRUMENT CALIBRATION

Conducted FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Supply	GWINSTEK	SPS-3610	GPE880163	2023-11-16	2024-11-15
Power Sensor	Anritsu	MA2411B	1726104	2024-04-16	2025-04-15
Power Sensor	Anritsu	MA2411B	1726107	2024-04-16	2025-04-15
Power Meter	Anritsu	ML2496A	1804001	2024-04-16	2025-04-15
Signal Analyzer	KEYSIGHT	N9030B	MY62291089	2023-10-13	2024-10-12
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2023-11-07	2024-11-06
Software	Radio Test Software Ver. 21				

966A Radiated					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Signal Analyzer	KEYSIGHT	N9010A	MY52220817	2024-03-15	2025-03-14
Thermo-Hygro Meter	WISEWIND	1206	D07	2023-12-07	2024-12-06
Active Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2023-12-13	2024-12-12
Bi-Log Antenna	Sunol Sciences	JB1	A052609	2024-02-02	2025-02-01
Preamplifier	EMEC	EM330	060609	2024-02-21	2025-02-20
Cable	Huber+Suhner	104PEA	20995+21000+182330	2024-02-21	2025-02-20
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2023-12-28	2024-12-27
Preamplifier	HP	8449B	3008A00965	2023-12-22	2024-12-21
Cable	EMCI	EMC101G	221213+221011+221012	2023-10-17	2024-10-16
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Software	e3 V9-210616c				

Remark:

- Each piece of equipment is scheduled for calibration once a year.
- N.C.R. = No Calibration Required.



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1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

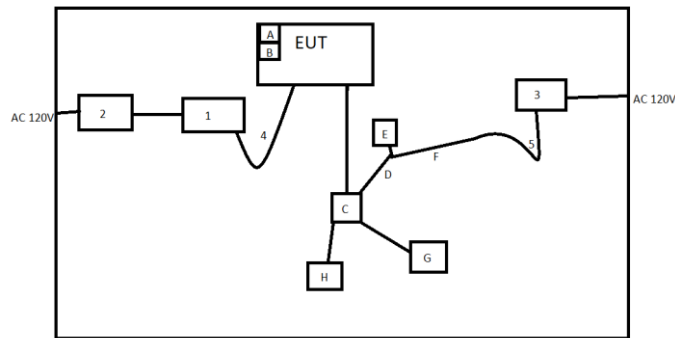
EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
	N/A					

Support Equipment (Conducted)						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
1	NB(I)	Lenovo	X260	N/A	N/A	N/A
2	Mini USB	RS Pro	2369084	N/A	N/A	N/A
3	DC Power Cable	MISUMI	MCR3S-RE	N/A	N/A	N/A
A	Main entry cable	N/A	N/A	N/A	N/A	N/A

Support Equipment (RSE)							
No.	Equipment	Brand	Model	Series No.	FCC ID	IC	
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A	N/A	
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A	N/A	
3	Power Supply	ABM	9603D	D011314	N/A	N/A	
4	Cable TypeA to TypeC	Silicon-Power	SP BOOST LINK LK10AC	N/A	N/A	N/A	
5	DC Cable	MISUMI	MCR3S-RE	N/A	N/A	N/A	
A	Micro SD Card	SP	N/A	N/A	N/A	N/A	
B	Micro SD Card	SP	N/A	N/A	N/A	N/A	
C	12V TVI cable	N/A	N/A	N/A	N/A	N/A	
D	OBDII power cable for 12V TVI cable	N/A	N/A	N/A	N/A	N/A	
E	Panic button	N/A	Panic button	N/A	N/A	N/A	
F	ODB Transfer Cable	N/A	ODB Transfer Cable	N/A	N/A	N/A	
G	AE-CH11A (TVI camera)	N/A	AE-CH11A	N/A	N/A	N/A	
H	AE-CM30HB (TVI camera)	N/A	AE-CM30HB	N/A	N/A	N/A	

1.8 TEST SETUP DIAGRAM

RSE:



1.9 TEST PROGRAM

The EUT connection corresponds to the surrounding fixture control board. This EUT uses "QRCT4" software to set the frequency, modulation, and power to allow the sample to continuously transmit (including frequency hopping mode).

1.10 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074, RSS-247 Issue 3 and RSS-GEN Issue 5

2. TEST SUMMARY

FCC Standard Section	IC Standard Section	Report Section	Test Item	Result
15.203	RSS-GEN 6.8	1.3	Antenna Requirement	Pass
15.247(b)(3)	RSS-247(5.4)(d)	4.1	Output Power Measurement	Verify
15.247(d) 15.209 15.205	RSS-GEN 8.9, 8.10	4.2	Radiation Spurious Emission	Pass

Verify: Verify RF power and confirm it does not exceed Tune power.

Note: For new changes, adding accessories and replacing speakers do not modify the RF part, so the original RF performance and characteristics are not affected. Therefore, the maximum power mode is selected for verification power. In this mode, the radiation is evaluated 30MHz to 6GHz. For other projects, refer to the original ID. Bring products into compliance.

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	IEEE 802.11b mode :1Mbps IEEE 802.11g mode :6Mbps IEEE 802.11n HT20 mode :MCS0 IEEE 802.11n HT40 mode: MCS0
Test Channel Frequencies	IEEE 802.11b mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11g mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT20 mode : 1. Lowest Channel : 2412MHz 2. Middle Channel : 2437MHz 3. Highest Channel : 2462MHz IEEE 802.11n HT40 mode : 1. Lowest Channel: 2422MHz 2. Middle Channel: 2437MHz 3. Highest Channel: 2452MHz
Operation Transmitter	IEEE 802.11b mode : 1T1R IEEE 802.11g mode : 1T1R IEEE 802.11n HT20 mode : 1T1R IEEE 802.11n HT40 mode : 1T1R

Remark:

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

3.2 THE WORST MODE OF MEASUREMENT

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Power supply (SD+12V TVI cable+OBDII power cable for 12V TVI cable+ Panic button +ODB Transfer Cable+AE-CH11A (TVI camera)+ AE-CM30HB (TVI camera))
	Mode2: EUT power by Power supply (SD+12V TVI cable+ Hardwire power cabel for 12V TVI cable+ Panic button +ODB Transfer Cable+AE-CH11A (TVI camera)+ AE-CM30HB (TVI camera))
	Mode 3: EUT power by Power supply (SD+Mini USB Relay+A60 Camera+ A60 power cable+ Open wire power cable+ Panic button)
	Mode 4: EUT power by Power supply (SD+Mini USB Relay+A60 Camera+ A60 power cable+ Clean installation V.2 cable + ODB Transfer Cable + Panic button)
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Power supply (SD+12V TVI cable+OBDII power cable for 12V TVI cable+ Panic button +ODB Transfer Cable+AE-CH11A (TVI camera)+ AE-CM30HB (TVI camera))
Worst Mode	☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4

Remark:

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Y-Plane) were recorded in this report
3. The device supports 12V or 24V. The original ID has been fully evaluated as 12V as the worst mode. In this accessory combination, 12V is used as the worst mode evaluation.
4. Variations between models/brands are evaluated by laboratories and the test results reported here apply to the worst model.

4. TEST RESULT

4.1 OUTPUT POWER MEASUREMENT

4.1.1 Test Limit

According to §15.247(b) and RSS-247 section 5.4(d),

Peak output power :

FCC

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] ☐ Point-to-point operation :
-------	---

IC

DTSS employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

Limit	☒ Antenna not exceed 6 dBi : 30dBm ☐ Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] ☐ Point-to-point operation :
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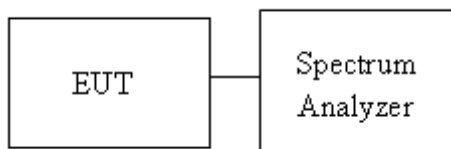
Average output power : For reporting purposes only

4.1.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10:2013.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

4.1.3 Test Setup



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4.1.4 Test Result

Temperature: 21.8 ~ 23.8℃
Humidity: 53 ~ 58% RH

Test date: July 3 ~ 12, 2024
Tested by: Jerry Chang

Peak & Average output power :

802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	367.28	25.65	30.00	PASS
6	2437	1	662.22	28.21	30.00	PASS
11	2462	1	265.46	24.24	30.00	PASS
802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	214.10	23.31	30.00	PASS
6	2437	1	395.02	25.97	30.00	PASS
11	2462	1	157.99	21.99	30.00	PASS

802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	506.99	27.05	30.00	PASS
6	2437	6	676.08	28.30	30.00	PASS
11	2462	6	485.29	26.86	30.00	PASS
802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	181.85	22.60	30.00	PASS
6	2437	6	276.51	24.42	30.00	PASS
11	2462	6	178.53	22.52	30.00	PASS

802.11n_HT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	512.86	27.10	30.00	PASS
6	2437	MCS0	683.91	28.35	30.00	PASS
11	2462	MCS0	488.65	26.89	30.00	PASS
802.11n_HT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	175.50	22.44	30.00	PASS
6	2437	MCS0	274.34	24.38	30.00	PASS
11	2462	MCS0	173.49	22.39	30.00	PASS
802.11n_HT_40M Ch0						
CH	Freq. (MHz)	Data Rate	Peak Output Power (mW)	Peak Output Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	622.30	27.94	30.00	PASS
6	2437	MCS0	772.68	28.88	30.00	PASS
9	2452	MCS0	522.40	27.18	30.00	PASS
802.11n_HT_40M Ch0						
CH	Freq. (MHz)	Data Rate	Avg. Output Power (mW)	Avg. Output Power (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	179.80	22.55	30.00	PASS
6	2437	MCS0	280.40	24.48	30.00	PASS
9	2452	MCS0	138.29	21.41	30.00	PASS

EIRP :

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	1	23.31	4.20	27.51	36	PASS
6	2437	1	25.97	4.20	30.17	36	PASS
11	2462	1	21.99	4.20	26.19	36	PASS

802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	6	22.60	4.20	26.80	36	PASS
6	2437	6	24.42	4.20	28.62	36	PASS
11	2462	6	22.52	4.20	26.72	36	PASS

802.11n_HT_20M Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	22.44	4.20	26.64	36	PASS
6	2437	MCS0	24.38	4.20	28.58	36	PASS
11	2462	MCS0	22.39	4.20	26.59	36	PASS

802.11n_HT_40M Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
3	2422	MCS0	22.55	4.20	26.75	36	PASS
6	2437	MCS0	24.48	4.20	28.68	36	PASS
9	2452	MCS0	21.41	4.20	25.61	36	PASS

4.2 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.2.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30 MHz

Frequency	Field Strength (microvolts/m)	Measurement Distance (metres)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

RSS-Gen Table 3 and Table 5 – General Field Strength Limits for Transmitters and Receivers at Frequencies Above 30 MHz ^(Note)

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Note: Measurements for compliance with the limits in table 3 may be performed at distances other than 3 metres, in accordance with Section 6.6.

RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

Frequency	Magnetic field strength (H-Field) ($\mu\text{A/m}$)	Measurement Distance (m)
9-490 kHz ^{Note}	6.37/F (F in kHz)	300
490-1,705 kHz	63.7/F (F in kHz)	30
1.705-30 MHz	0.08	30

Note: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

4.2.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.
3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 1GHz set to the max power channels with the EUT transmit.
4. No emission found between lowest internal used/generated frequency to 30MHz (9KHz~30MHz).

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-ane choic chamber, the measurements correspond to those obtained at an open-field test site. There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

5. The SA setting following :

(1) Below 30MHz :

(1.1) 9KHz-490KHz : RBW=200Hz / VBW=1kHz / Sweep=AUTO

(1.2) 490KHz-30MHz : RBW=10kHz / VBW=30kHz / Sweep=AUTO

(2) 30MHz to 1GHz : RBW = 100kHz, VBW $\geq 3 \times$ RBW, Sweep = Auto,

Detector = Peak, Trace = Max hold.

(3) Above 1G :

(2.1) For Peak measurement : RBW = 1MHz, VBW $\geq 3 \times$ RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2.2) For Average measurement : RBW = 1MHz, VBW

·If Duty Cycle $\geq 98\%$, VBW=10Hz.

·If Duty Cycle $< 98\%$, VBW $\geq 1/T$.

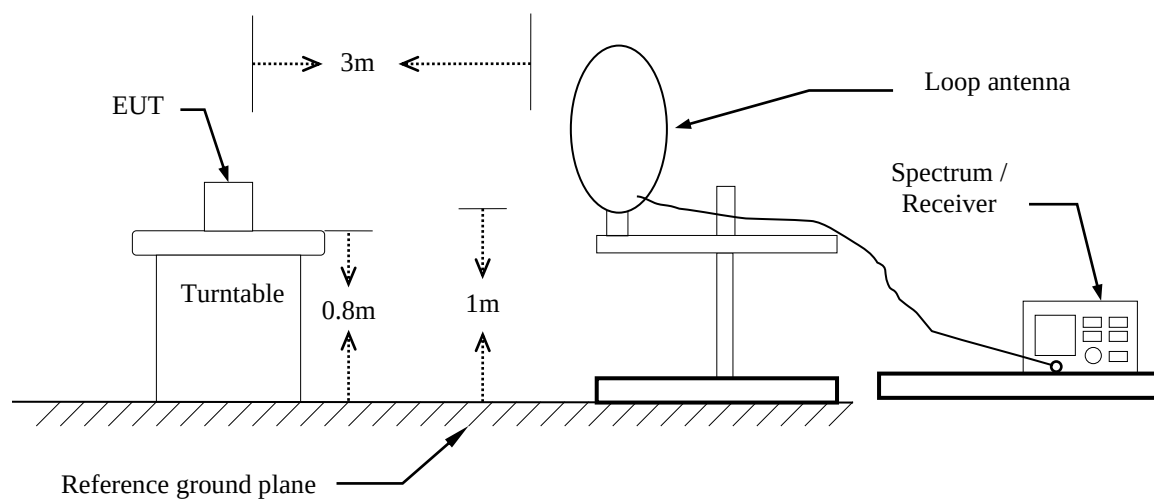
6. Data result :

Actual FS=Spectrum Reading Level + Factor

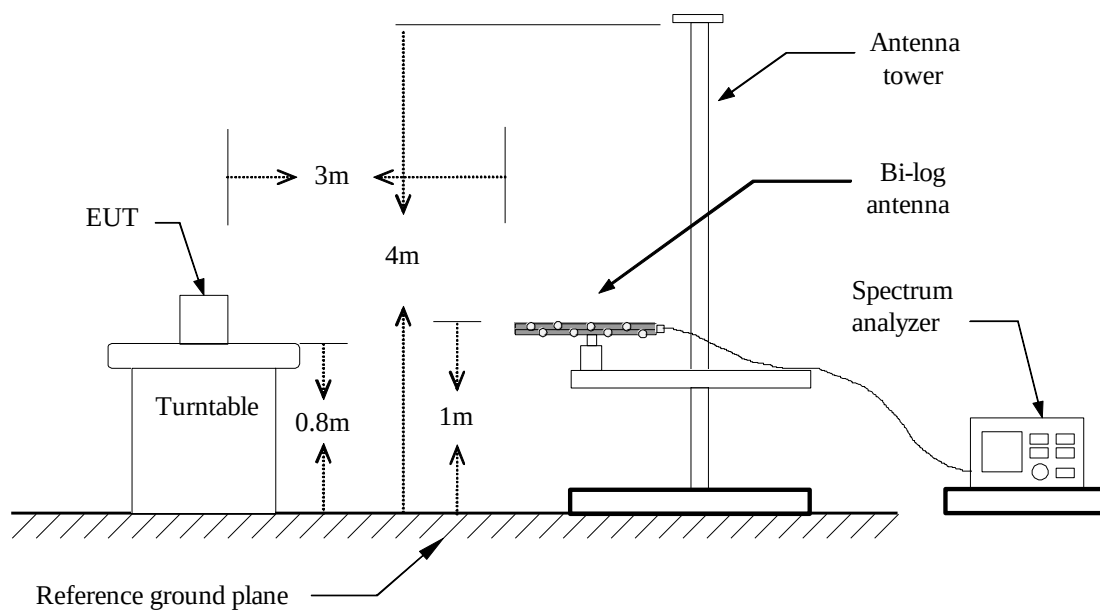
Margin=Actual FS- Limit

4.2.3 Test Setup

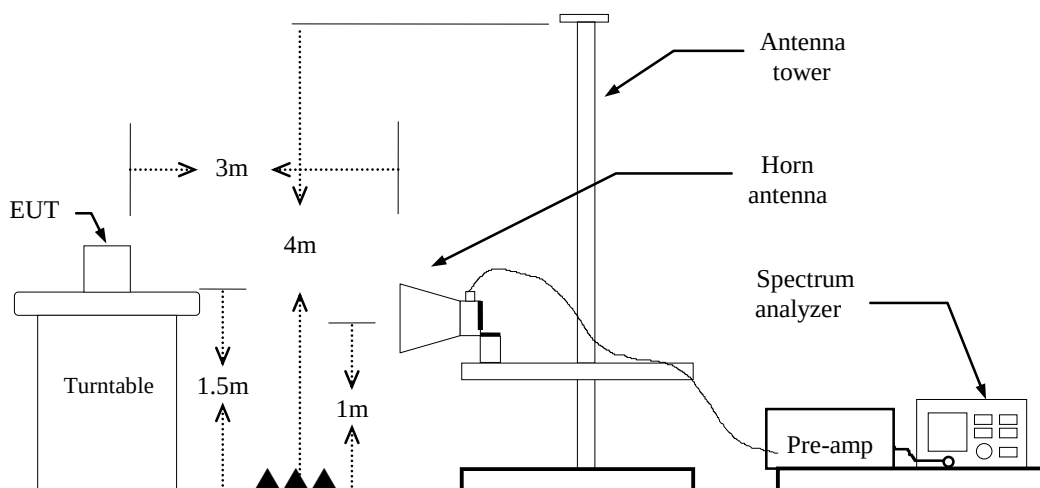
9kHz ~ 30MHz



30MHz ~ 1GHz

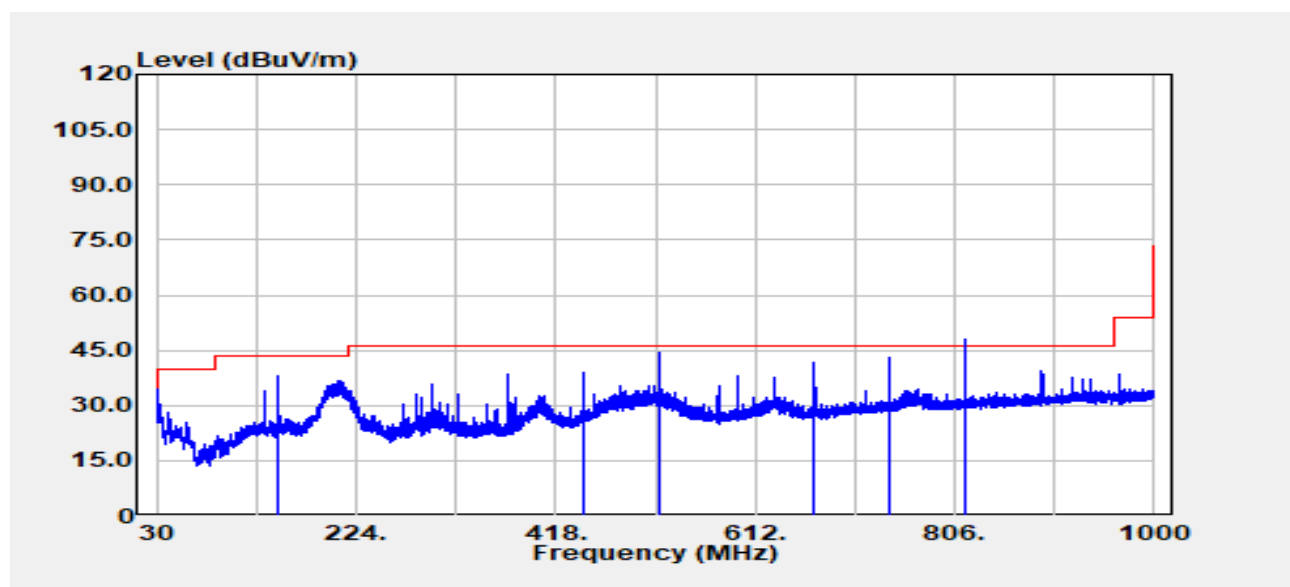


Above 1 GHz



4.2.4 Test Result

Project No	:TM-2405000397P	Test Date	:2024-07-12
Operation Band	:802.11n40	Temp./Humi.	:23.9/55
Frequency	:2422 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E1	Test Chamber	: 966A
Setting	:		

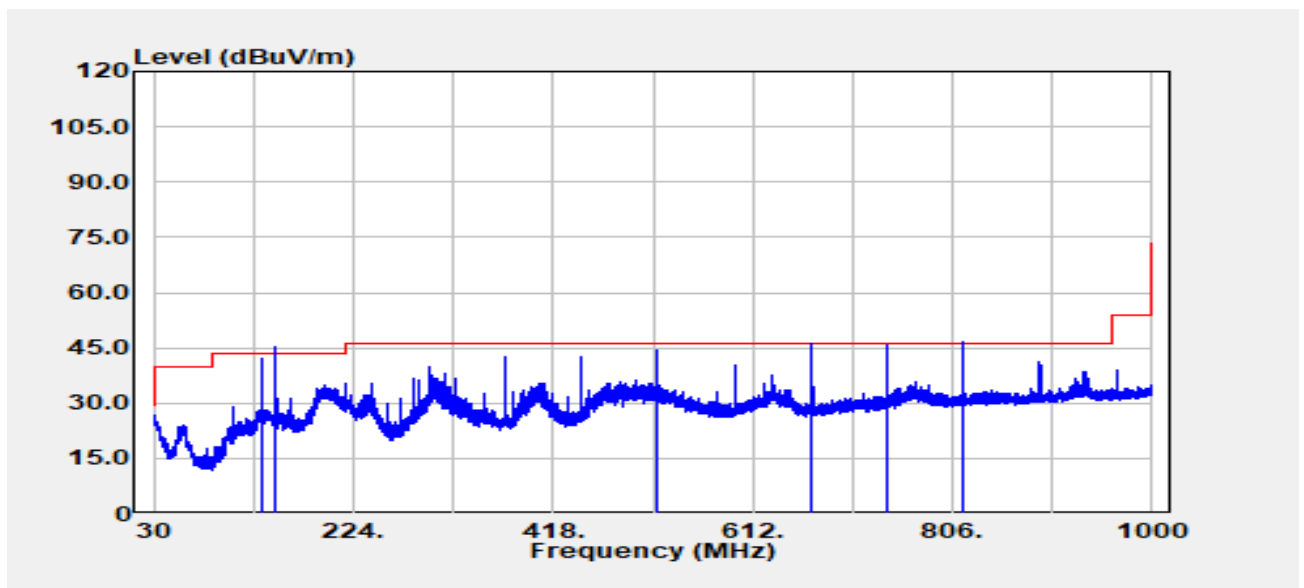


Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
148.50	Peak	48.39	-10.43	37.96	43.50	-5.54
445.50	Peak	43.04	-4.27	38.77	46.00	-7.23
519.80	Peak	47.05	-2.75	44.30	46.00	-1.70
668.30	Peak	42.07	-0.32	41.75	46.00	-4.25
742.50	Peak	41.99	1.17	43.16	46.00	-2.84
816.80	QP	43.32	2.54	45.86	46.00	-0.14

Report No.: TMWK2405001768KR

Project No :TM-2405000397P
Operation Band :802.11n40
Frequency :2422 MHz
Operation Mode :TX
EUT Pol :E1
Setting :

Test Date :2024-07-12
Temp./Humi. :23.9/55
Antenna Pol. :HORIZONTAL
Engineer :Ray Li
Test Chamber : 966A

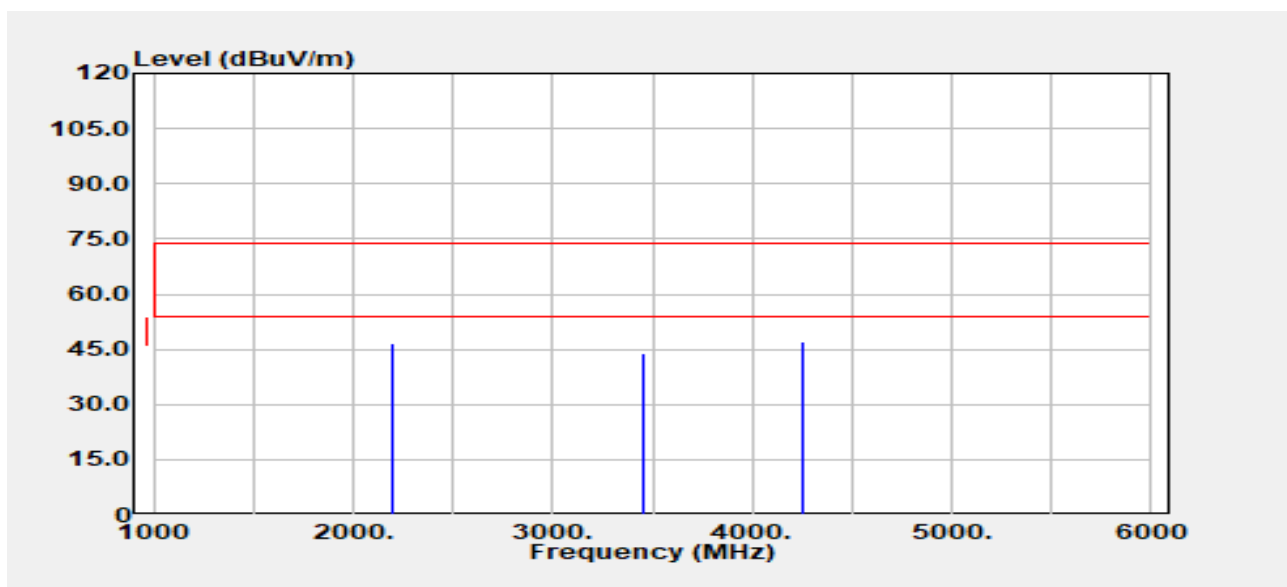


Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
135.00	Peak	51.35	-9.14	42.21	43.50	-1.29
148.50	QP	53.55	-10.43	43.12	43.50	-0.38
519.70	Peak	47.35	-2.75	44.60	46.00	-1.40
668.30	QP	44.45	-0.32	44.13	46.00	-1.87
742.50	QP	42.48	1.17	43.65	46.00	-2.35
816.80	QP	41.98	2.54	44.52	46.00	-1.48

Report No.: TMWK2405001768KR

Project No :TM-2405000397P
Operation Band :802.11n40
Frequency :2422 MHz
Operation Mode :TX
EUT Pol :E1
Setting :

Test Date :2024-08-13
Temp./Humi. :24.6/57
Antenna Pol. :VERTICAL
Engineer :Tony Chao
Test Chamber : 966A

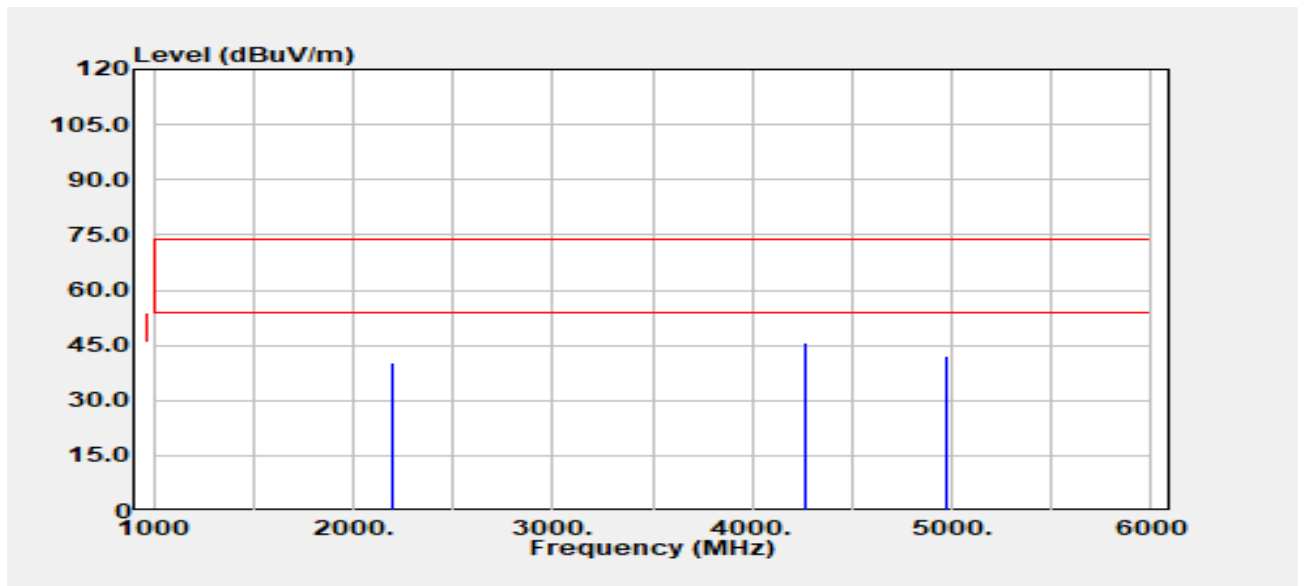


Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2199.41	Peak	49.91	-3.19	46.72	74.00	-27.28
3460.29	Peak	44.56	-0.65	43.90	74.00	-30.10
4247.06	Peak	46.05	1.23	47.28	74.00	-26.72

Report No.: TMWK2405001768KR

Project No :TM-2405000397P
Operation Band :802.11n40
Frequency :2422 MHz
Operation Mode :TX
EUT Pol :E1
Setting :

Test Date :2024-08-13
Temp./Humi. :24.6/57
Antenna Pol. :HORIZONTAL
Engineer :Tony Chao
Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2199.41	Peak	43.63	-3.19	40.44	74.00	-33.56
4267.06	Peak	44.42	1.33	45.75	74.00	-28.25
4967.35	Peak	38.97	3.26	42.23	74.00	-31.77

- End of Test Report -