



Test report No. : 4790239884-US-R5-V0
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Issued date : 2022/2/17
FCC ID : 2A3HV-CIC15A

RADIO TEST REPORT

Product : Wireless console module

Model Name : CIC15101

FCC ID : 2A3HV-CIC15A

Test Regulation : FCC 47 CFR Part 15 Subpart C (Section 15.249)

Received Date : 2021/12/23

Test Date : 2021/12/27 ~ 2022/1/21

Issued Date : 2022/2/17

Applicant : Hydrow, Inc.
10 Summer St, 5th Floor Boston MA 02110

Issued By : Underwriters Laboratories Taiwan Co., Ltd.
Building B and Building E, No. 372-7, Sec. 4, Zhongxing
Rd., Zhudong Township, Hsinchu County, Taiwan



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Doc No: 17-EM-F0877 / 5.0



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REVISION HISTORY

Original Test Report No.: 4790239884-US-R5-V0

[illegible]

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1. Attestation of Test Results

APPLICANT: Hydrow, Inc.
10 Summer St, 5th Floor Boston MA 02110

MANUFACTURER: InnoComm Mobile Technology Corporation
3F, No. 6, Hsin Ann Rd., Hsinchu Science Park, Hsinchu 300092,
Taiwan

EUT DESCRIPTION: Wireless console module

BRAND: Hydrow, Inc.

MODEL: CIC15101

SAMPLE STAGE: Design Verification Test sample

DATE of TESTED: 2021/12/27 ~ 2022/1/21

APPLICABLE STANDARDS

STANDARD	Test Results
FCC 47 CFR PART 15 Subpart C (Section 15.249)	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:

Sally Lu
Project Handler

Date : 2022/2/17

Approved and Authorized By:

Waternil Guan
Engineer

Date : 2022/2/17

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2. Summary of Test Results

FCC Clause	Test Item	Result
15.203	Antenna requirement	PASS
15.207	AC Power Conducted Emission	PASS
15.209 15.249 15.249 (d)	Radiated Emission Test Band Edge Measurement Limit: 50dB less than the peak value of fundamental frequency or meet radiated emission limit in section 15.209	PASS

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3. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2, KDB414788 D01 Radiated Test Site v01r01 and ANSI C63.10-2013.

4. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398.

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5. Measurement Uncertainty

For statement of conformity, accuracy method (Section 8.2.4 and 8.2.5 of ISO Guide 98-4) was applied as decision rule for measurement in this test report.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k=2$.

Measurement	Frequency	Uncertainty
Conducted disturbance at mains terminals ports	150kHz ~ 30MHz	± 3.1 dB
RF Conducted	9 kHz - 40GHz	± 1.9 dB
Radiated disturbance below 30MHz	9 kHz - 30 MHz	± 1.9 dB
Radiated disturbance below 1 GHz	30MHz ~ 1GHz	± 5.4 dB
Radiated disturbance above 1 GHz	1GHz ~ 40GHz	± 4.7 dB

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6. Equipment under Test

6.1. Description of EUT

Product	Wireless console module
Brand Name	Hydrow, Inc.
Model Name	CIC15101
Operating Frequency	2402MHz ~ 2480MHz
Modulation	GFSK
Normal Voltage	120Vac/ 60Hz
Sample ID	4602151
Software Version	Android version 11
Maximum Field Strength (dBuV/m)	92.17 dBuV/m

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.

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6.2. Test Condition

Test Item	Test Site No.	Environmental Condition	Input Power	Test Date	Tested by
Radiated Spurious Emission	9662	20~26°C/ 62~68%RH	120Vac/ 60Hz	2021/12/27~ 2022/01/21	Mike Cai
AC power Line Conducted Emission	SR1	20~26°C/ 62~68%RH	120Vac/ 60Hz	2021/12/27~ 2022/01/20	Mike Cai

FCC Test Firm Registration Number: 498077

6.3. Channel List

40 channels are provided to this EUT:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2402	11	2422	21	2442	31	2462
2	2404	12	2424	22	2444	32	2464
3	2406	13	2426	23	2446	33	2466
4	2408	14	2428	24	2448	34	2468
5	2410	15	2430	25	2450	35	2470
6	2412	16	2432	26	2452	36	2472
7	2414	17	2434	27	2454	37	2474
8	2416	18	2436	28	2456	38	2476
9	2418	19	2438	29	2458	39	2478
10	2420	20	2440	30	2460	40	2480

6.4. Description of Available Antennas

Ant. No.	Transmitter Circuit	Ant. Type	Maximum Gain (dBi)
1	Chain (0)+(1)	PCB	2.4GHz: 3.14

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual.

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6.5. Test Mode Applicability and Tested Channel Detail

- The fundamental of the EUT's Antenna was investigated in three orthogonal axes X-Y/Y-Z/X-Z, it was determined that Y-Z plane was worst-case. Therefore, all final radiated testing was performed with the Y-Z plane at Antenna.
- For below 30MHz testing, investigation was done on three antenna orientations (parallel, perpendicular, and ground-parallel), parallel and perpendicular are the worst orientations, therefore testing was performed on these two orientations only.
- For below 1 GHz radiated emission and AC power line conducted emission have performed all modes of operation were investigated and the worst-case emissions are reported.
- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).

Test item	Modulation Type	Available Channel	Test Channel
Radiated Emissions	GFSK	1 to 40	1, 20, 40
Radiated Emissions (Below 1GHz)	GFSK	1 to 40	40
AC Power Line Conducted Emission	GFSK	1 to 40	40

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7. Test Equipment

Test Equipment List					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Expired date
Radiated Spurious Emission					
Spectrum Analyzer	Keysight	N9010A	MY56070827	2021/11/9	2022/11/8
EMI Test Receiver	Rohde & Schwarz	ESR7	101754	2021/12/10	2022/12/9
Loop Antenna	ETS lindgren	6502	00213440	2021/12/23	2022/12/22
Trilog-Broadband Antenna with 5dB Attenuator	Schwarzbeck & EMCI	VULB 9168 & N-6-05	9168-773 & AT-N0539	2021/3/11	2022/3/10
Horn Antenna (1-18 GHz)	Schwarzbeck	BBHA 9120 D	01690	2021/12/13	2022/12/12
Horn Antenna (18-40 GHz)	Schwarzbeck	BBHA 9170	781	2021/12/17	2022/12/16
Preamplifier (30-1000 MHz)	EMCI	EMC330E	980405	2021/6/8	2022/6/7
Preamplifier (1-18 GHz)	EMCI	EMC051835BE	980406	2021/2/3	2022/2/2
Preamplifier (18-40GHz)	EMCI	EMC184040SEE	980426	2021/5/19	2022/5/18
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-4 & 170425-2	2021/1/22	2022/1/21
Cables	Hanyitek	K1K50-UP0264-K1K50-2500	170214-1 & 170214-2	2021/1/22	2022/1/21
AC power Line Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESR7	101753	2021/11/15	2022/11/14
Two-Line V-Network	Rohde & Schwarz	ENV216	102136	2021/8/30	2022/8/29
Impuls-Begrenzer Pulse Limiter	Rohde & Schwarz	ESH3-Z2	102219-Qt	2021/8/26	2022/8/25
Cables	TITAN	CFD200	T0732ACFD2 0020A300-1	2021/3/2	2022/3/1

UL Software		
Description	Name	Version
Radiated measurement	e3	6.191211 (V6)
AC power Line Conducted Emission	EZ EMC	UL-3A1.2

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8. Description of Test Setup

Support Equipment

ID	Equipment	Brand Name	Model Name	S/N	Remark
A	Laptop	Lenovo	T460	PC0FWU5Y	Provide by lab
B	Test tool	GoldenCrow	MB-R002	NA	Supplied by client
C	Adapter	TECH	ATS050-P121	NA	Supplied by client

I/O Cables

ID	Equipment	Brand Name	Model Name	Length (m)	Remark
1	Type C to USB Cable	UGREEN	US287	1	Provide by lab
2	Micro USB Cable	fujiei	Z08145	1	Provide by lab
3	DC Cable	TECH	ATS050-P121	1.5	with one core, Supplied by client
4	AC Cable	NA	NA	1.75	Supplied by client
5	RJ45	Fastlink	FL-61STU-04	10	Provide by lab

Test Setup

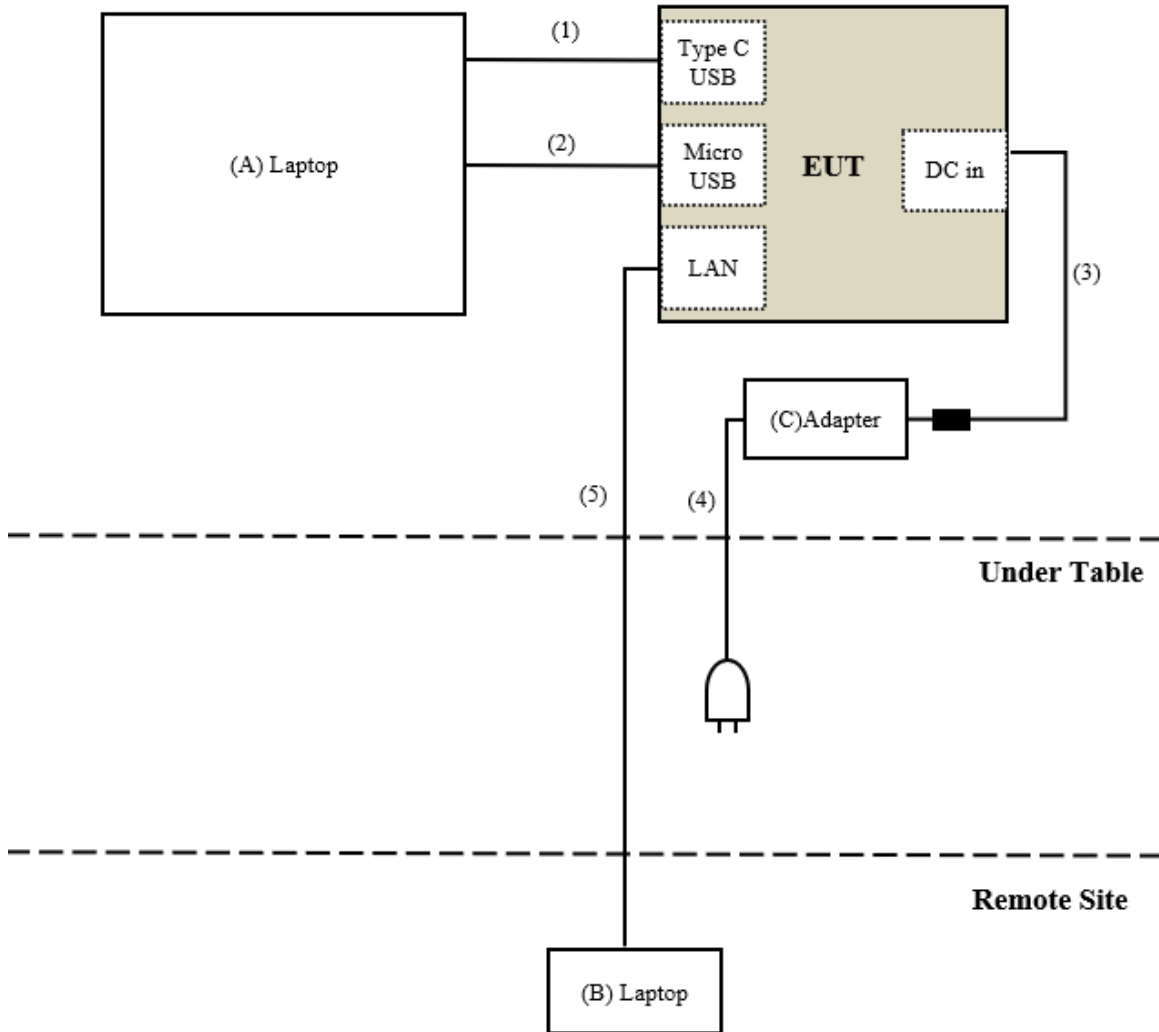
The EUT was worked in engineering mode to transmit signal.

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Setup Diagram for Test



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9. Test Result

9.1. Radiated Spurious Emission

Requirements

The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following

Fundamental Frequency (MHz)	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902 ~ 928 MHz	50	500
2400 ~ 2483.5 MHz	50	500
5725 ~ 5875 MHz	50	500
24 ~ 24.25 GHz	250	2500

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits as below table, whichever is the lesser attenuation

Frequencies (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

Note :

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

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Test Procedures

[For 9 kHz ~ 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 30MHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

[For above 30 MHz]

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
- f. The test-receiver system was set to peak and average detects function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

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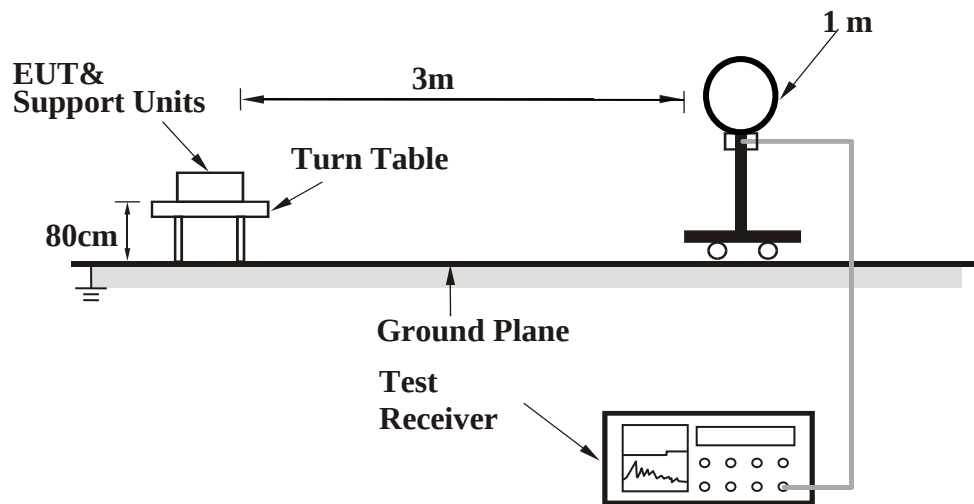


Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
- All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
- Test data of Result value (dBuV/m) = Reading value (dBuV/m) + Correction Factor (dB/m).
- Test data of Margin(dB) = Result value (dBuV/m) - Limit value (dBuV/m).
- Test data of Correction Factor (dB/m) = Antenna Factor (dBuV/m) + Cable Loss (dB) - Preamp Factor (dB).
- Test data of Notation "@" = Fundamental Frequency
- Test data of Notation "*" = The peak result under 20 dB above and complies with AVG limit, AVG result is deemed to comply with AVG limit.

Test Setup

<Frequency Range 9 kHz ~ 30 MHz>

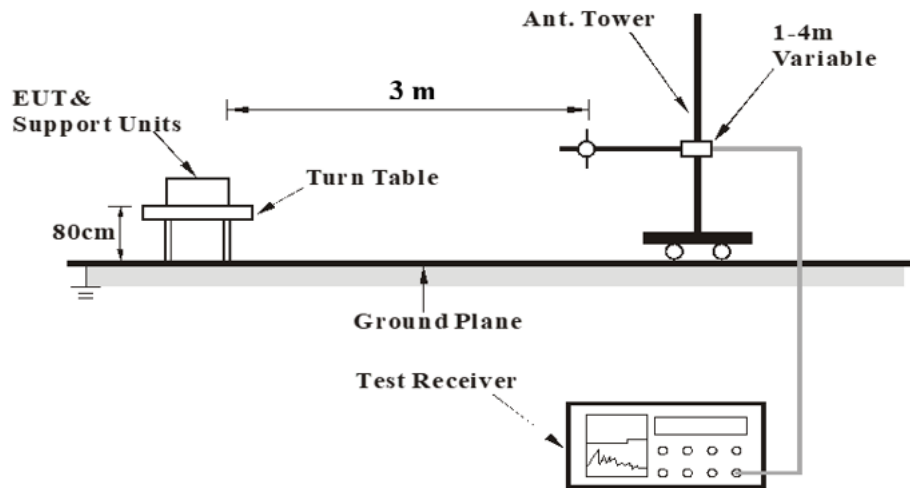


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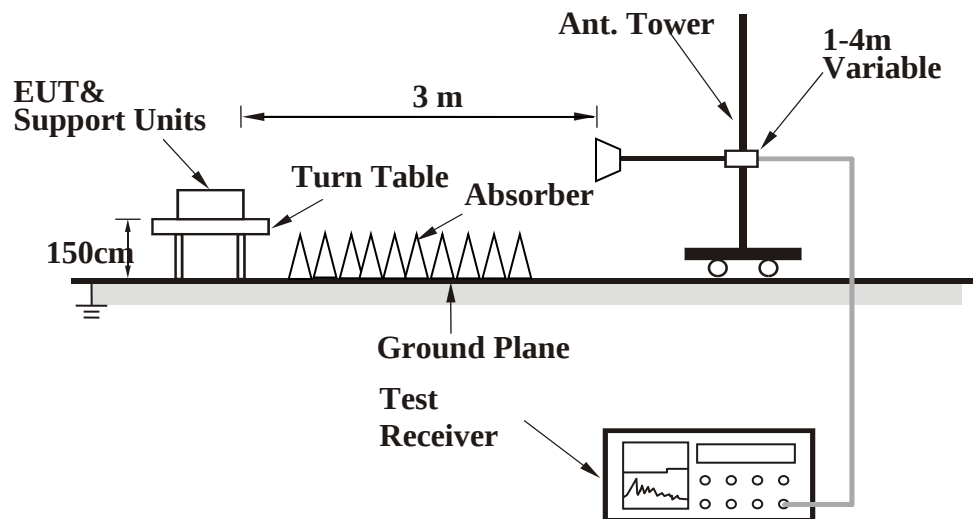
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<Frequency Range 30 MHz ~ 1 GHz >



<Frequency Range above 1 GHz>



For the actual test configuration, please refer to the Setup Configurations.

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Test Data

Above 1 GHz

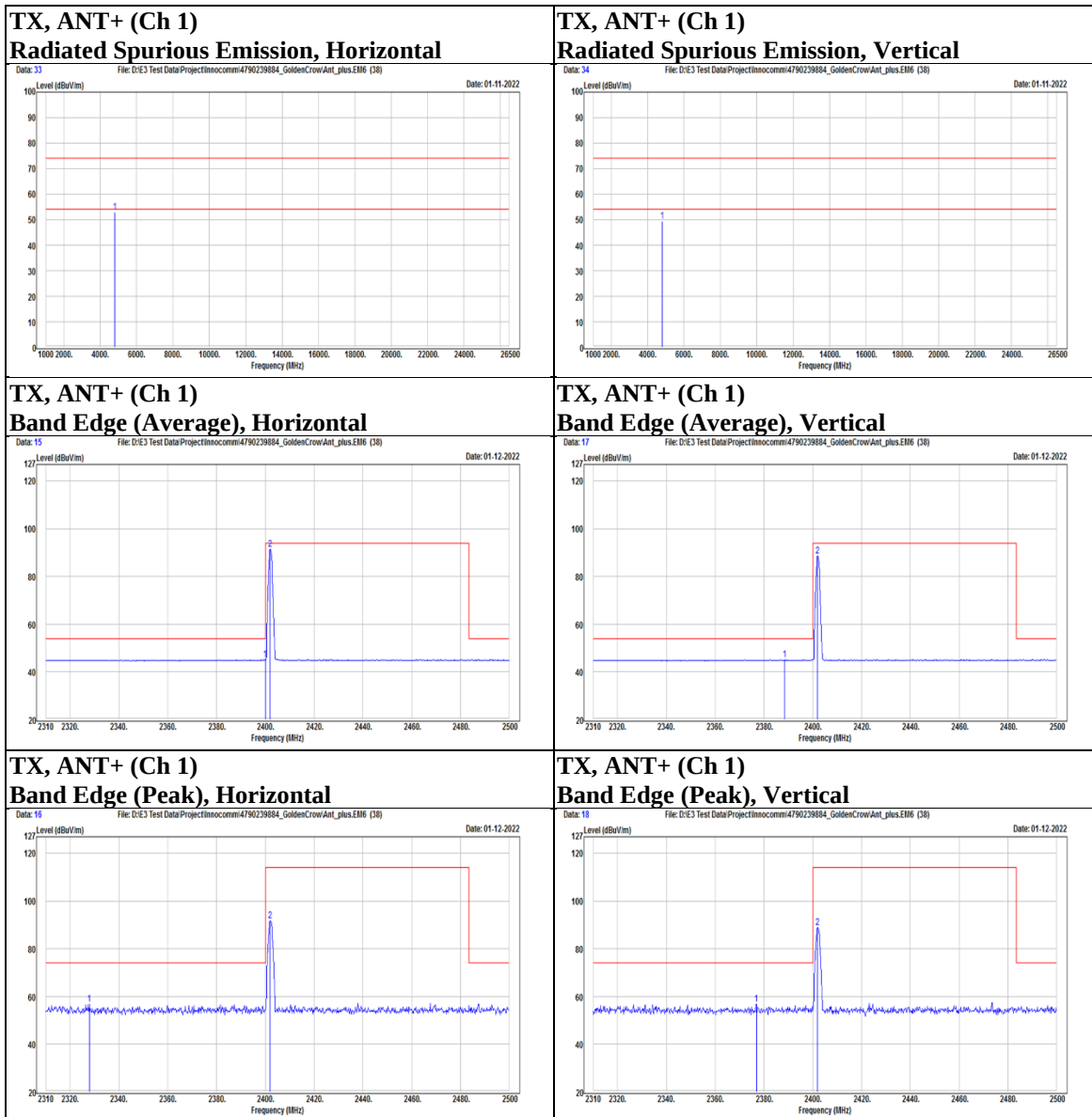
Mode	ANT+	Channel	1
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		2327.86	40.73	16.11	56.84	74	-17.16	PK
		2400	29	16.12	45.12	54	-8.88	AVG
	@	2402	75.72	16.13	91.85	114	-22.15	PK
	@	2402	75.34	16.13	91.47	94	-2.53	AVG
	*	4804	50.34	2.46	52.8	74	-21.2	PK
Vertical		2376.88	40.85	16.08	56.93	74	-17.07	PK
		2388.47	28.99	16.1	45.09	54	-8.91	AVG
	@	2402	72.8	16.13	88.93	114	-25.07	PK
	@	2402	72.36	16.13	88.49	94	-5.51	AVG
	*	4804	47.07	2.46	49.53	74	-24.47	PK

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Mode	ANT+	Channel	20
------	------	---------	----

Polarization	Notation	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
Horizontal		2322.35	40.74	16.15	56.89	74	-17.11	PK
		2399.11	28.96	16.12	45.08	54	-8.92	AVG
	@	2440	75.82	16.11	91.93	114	-22.07	PK
	@	2440	75.43	16.11	91.54	94	-2.46	AVG
		2496.39	41.2	16.1	57.3	74	-16.7	PK
		2497.72	29.11	16.1	45.21	54	-8.79	AVG
	*	4880	48.42	2.66	51.08	74	-22.92	PK
Vertical		2387.9	41.2	16.1	57.3	74	-16.7	PK
		2399.68	28.96	16.12	45.08	54	-8.92	AVG
	@	2440	72.48	16.11	88.59	114	-25.41	PK
	@	2440	71.42	16.11	87.53	94	-6.47	AVG
		2484.23	40.5	16.1	56.6	74	-17.4	PK
		2493.54	29.2	16.1	45.3	54	-8.7	AVG
	*	4880	44.95	2.66	47.61	74	-26.39	PK

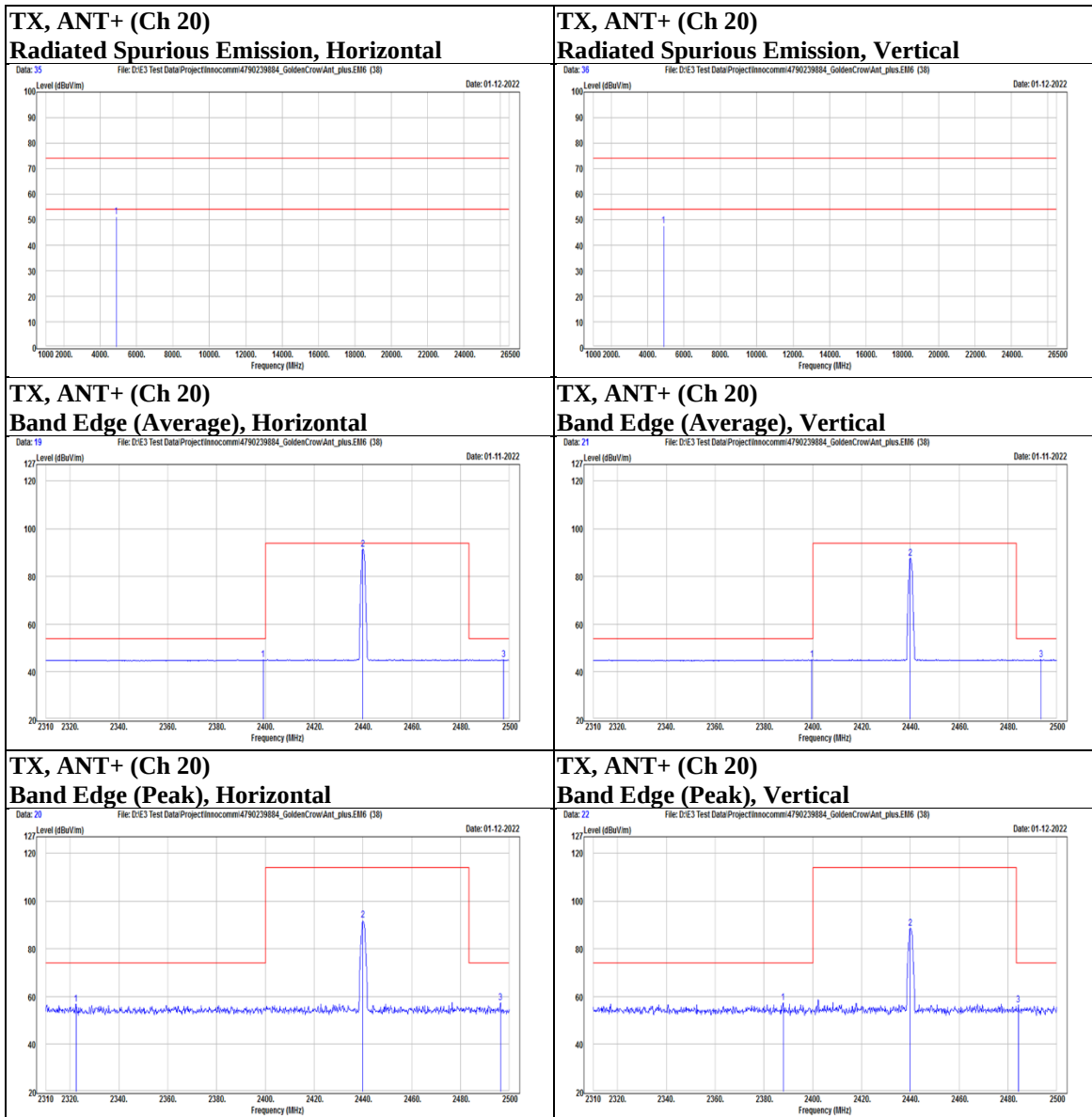
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Doc No: 17-EM-F0877 / 5.0



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FCC ID : 2A3HV-CIC15A

Mode	ANT+	Channel	40
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal	@	2480	76.07	16.1	92.17	114	-21.83	PK
	@	2480	75.7	16.1	91.8	94	-2.2	AVG
		2487.08	40.56	16.1	56.66	74	-17.34	PK
		2487.46	29.11	16.11	45.22	54	-8.78	AVG
	*	4960	45.74	2.62	48.36	74	-25.64	PK
Vertical	@	2480	70.98	16.1	87.08	114	-26.92	PK
	@	2480	70.41	16.1	86.51	94	-7.49	AVG
		2488.22	40.05	16.1	56.15	74	-17.85	PK
		2496.96	29.09	16.1	45.19	54	-8.81	AVG
	*	4960	41.85	2.62	44.47	74	-29.53	PK

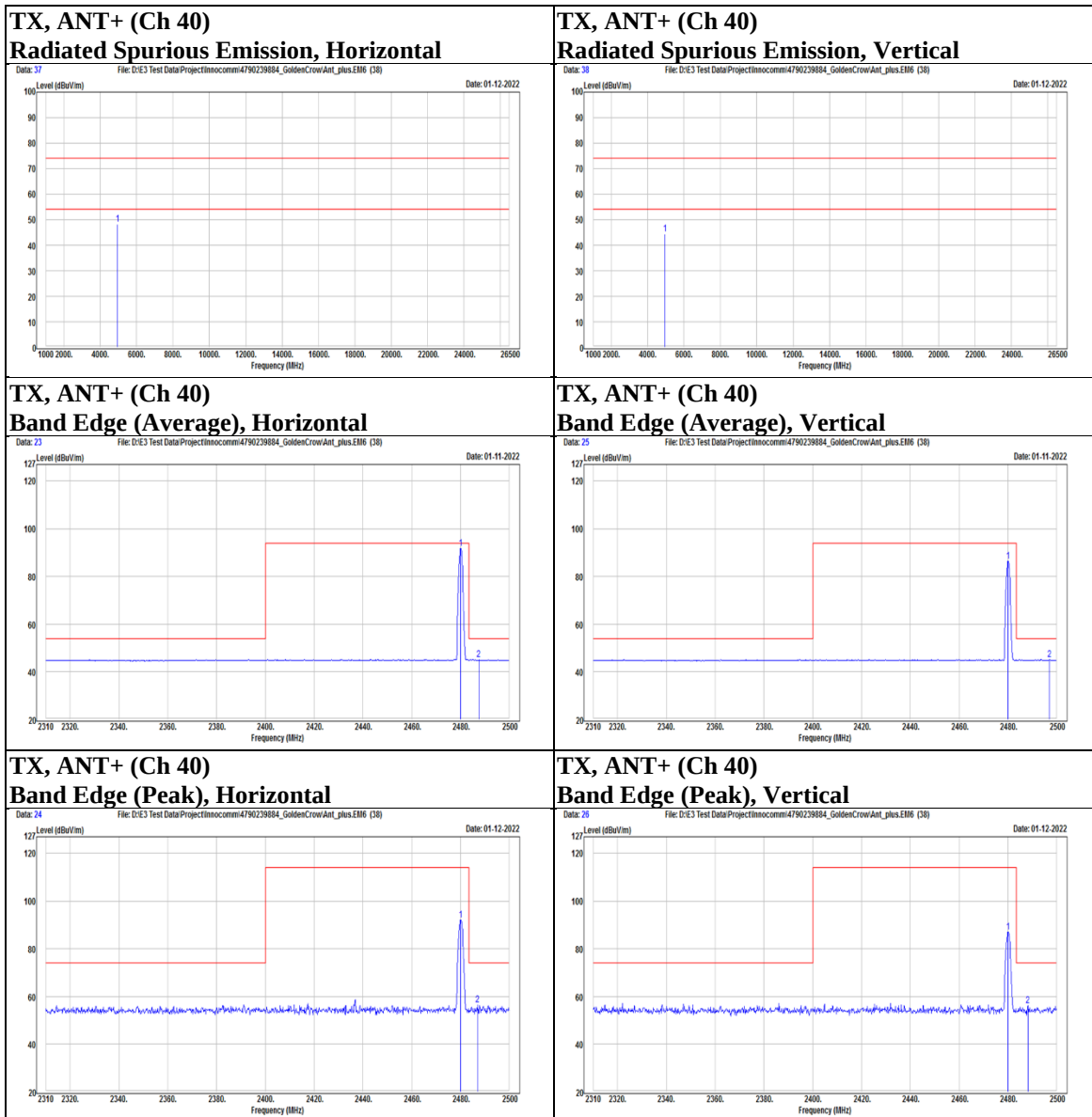
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Below 1 GHz

Mode	ANT+	Channel	40
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Polarization	Notation	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
Horizontal		137.67	50.61	-12.33	38.28	43.5	-5.22	PK
		144.46	51.07	-11.81	39.26	43.5	-4.24	PK
		236.61	50.66	-12.2	38.46	46	-7.54	PK
		264.74	51.44	-11.17	40.27	46	-5.73	PK
		363.68	41.16	-8.05	33.11	46	-12.89	PK
		482.02	38.77	-5.1	33.67	46	-12.33	PK
Vertical		33.88	48.51	-12.23	36.28	40	-3.72	PK
		45.52	49.07	-11.25	37.82	40	-2.18	PK
		54.25	48.72	-11.15	37.57	40	-2.43	PK
		137.67	42.42	-12.33	30.09	43.5	-13.41	PK
		296.75	41.77	-10.08	31.69	46	-14.31	PK
		400.54	36.64	-6.98	29.66	46	-16.34	PK

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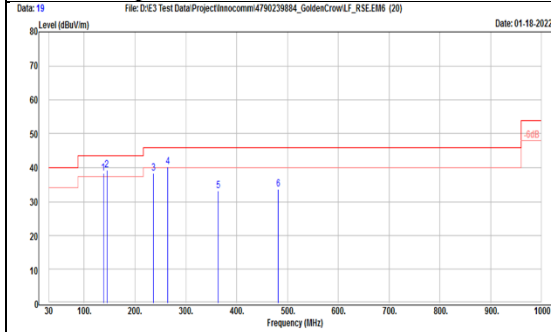
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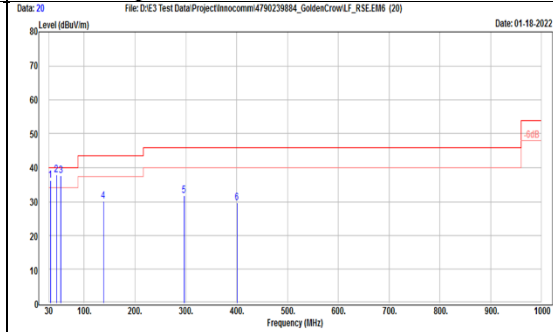


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TX, ANT+ (Ch 40)
Radiated Spurious Emission, Horizontal



TX, ANT+ (Ch 40)
Radiated Spurious Emission, Vertical



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9 kHz ~ 30 MHz Data:

For 9 kHz to 30 MHz radiated emission have performed all modes of operation were investigated. The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

No non-compliance noted:

KDB 414788 D01 OATS and Chamber Correlation Justification

- Base on FCC 15.31 (f) (2); measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

- OATs and chamber correlation testing had been performed and chamber measured test results is the worst case test result.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m 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.

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9.2. AC Power Line Conducted Emission

Requirements

Frequency (MHz)	Conducted limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Note :

1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

Test Procedures

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit - 20dB) was not recorded.

NOTE:

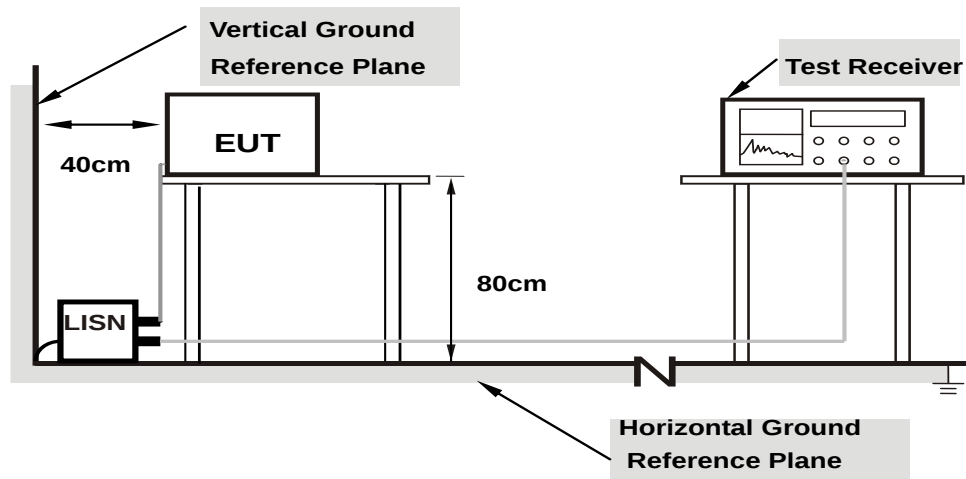
1. The resolution bandwidth and video bandwidth of test receiver is 9kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15MHz-30MHz.
2. All modes of operation were investigated (includes all external accessories) and the worst-case emissions are reported, the other emission levels were low against the limit.
3. Test data of Result value (dB μ V) = Reading value (dB μ V) + Correction Factor (dB).
4. Test data of Margin(dB) = Result value (dB μ V) - Limit value (dB μ V).
5. Test data of Correction Factor (dB) = Insertion loss(dB) + Cable loss(dB).

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Test Setup



Note: 1.Support units were connected to second LISN.

For the actual test configuration, please refer to the Setup Configurations.

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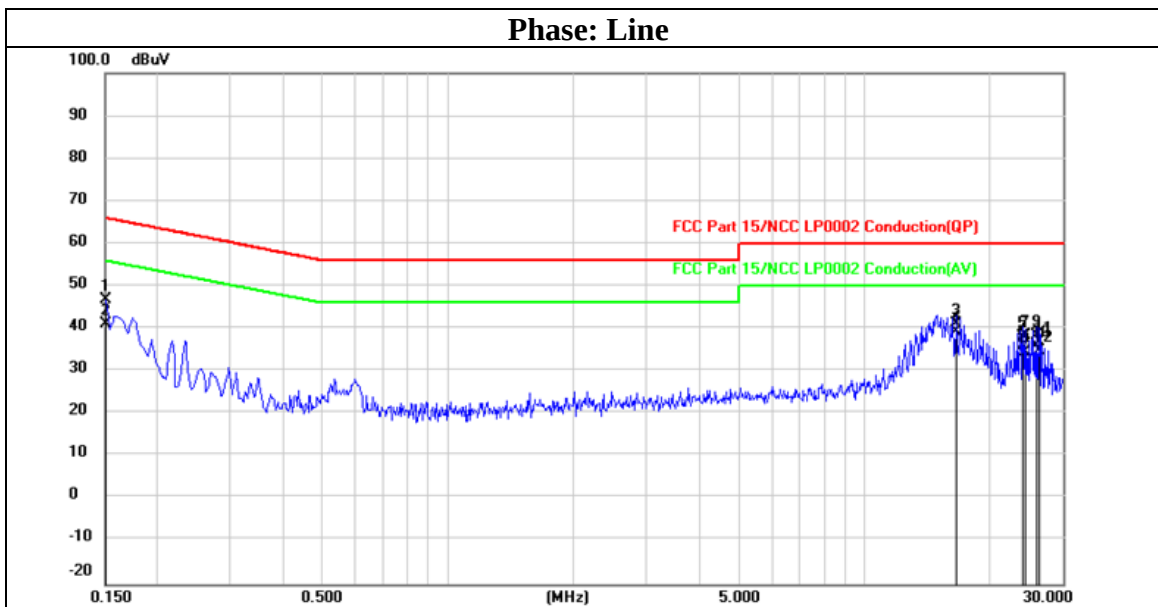
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Test Data

Mode	Ant Plus_TX2480	Channel	40
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1500	27.30	19.49	46.79	66.00	-19.21	QP
2	0.1500	21.56	19.49	41.05	56.00	-14.95	AVG
3	16.7041	21.22	19.75	40.97	60.00	-19.03	QP
4	16.7041	19.44	19.75	39.19	50.00	-10.81	AVG
5	24.0953	18.36	19.76	38.12	60.00	-21.88	QP
6	24.0953	16.33	19.76	36.09	50.00	-13.91	AVG
7	24.4635	18.55	19.76	38.31	60.00	-21.69	QP
8	24.4635	14.80	19.76	34.56	50.00	-15.44	AVG
9	25.9358	18.56	19.76	38.32	60.00	-21.68	QP
10	25.9358	16.24	19.76	36.00	50.00	-14.00	AVG
11	26.3042	17.00	19.77	36.77	60.00	-23.23	QP
12	26.3042	14.88	19.77	34.65	50.00	-15.35	AVG

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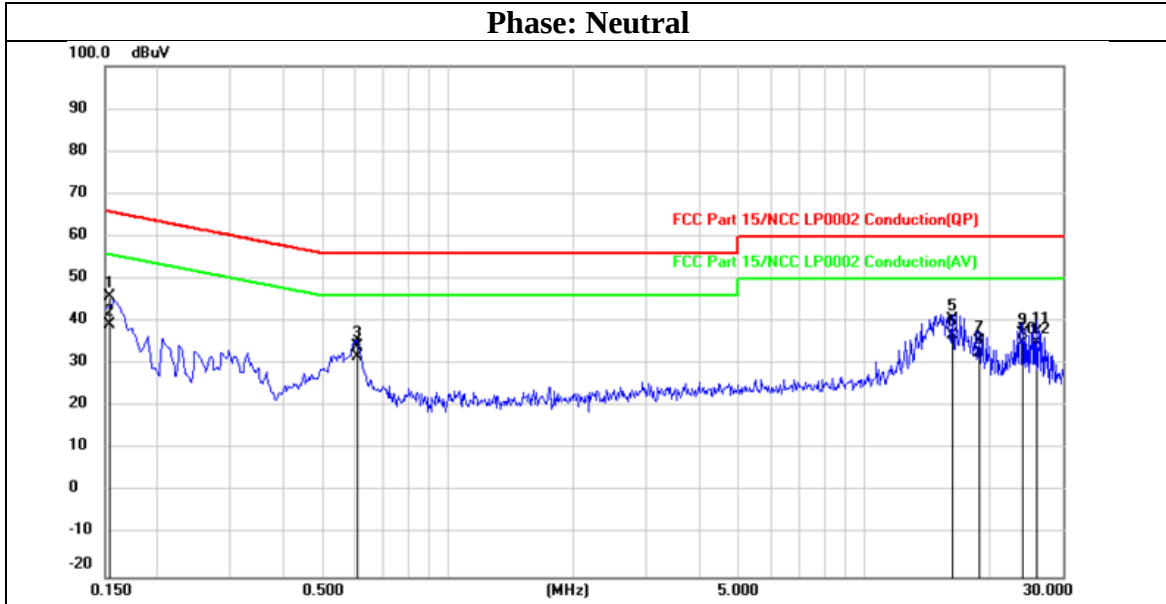
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Mode	Ant Plus_TX2480	Channel	40
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No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1531	26.25	19.49	45.74	65.83	-20.09	QP
2	0.1531	19.70	19.49	39.19	55.83	-16.64	AVG
3	0.6035	14.62	19.50	34.12	56.00	-21.88	QP
4	0.6035	12.28	19.50	31.78	46.00	-14.22	AVG
5	16.2469	20.52	19.79	40.31	60.00	-19.69	QP
6	16.2469	17.15	19.79	36.94	50.00	-13.06	AVG
7	18.9203	15.55	19.83	35.38	60.00	-24.62	QP
8	18.9203	12.94	19.83	32.77	50.00	-17.23	AVG
9	24.0952	17.27	19.86	37.13	60.00	-22.87	QP
10	24.0952	15.16	19.86	35.02	50.00	-14.98	AVG
11	25.9358	17.59	19.88	37.47	60.00	-22.53	QP
12	25.9358	15.27	19.88	35.15	50.00	-14.85	AVG

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9.3. 20dB Bandwidth

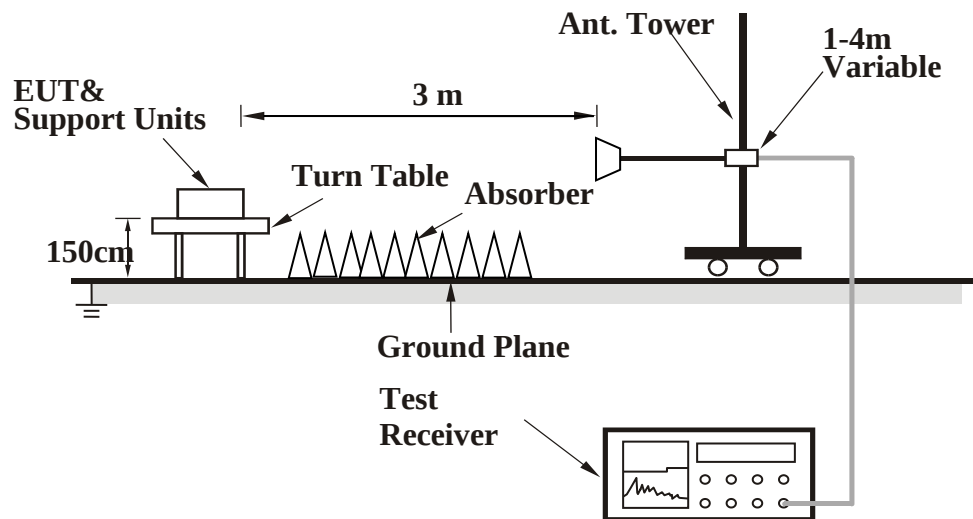
Requirements

The 20dB bandwidth shall be specified in operating frequency band.

Test Procedures

- The testing follows the guidelines in ANSI C63.10-2013.
- The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The EUT was placed on a turntable with 1.5m above ground.
- The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- The bandwidth of the fundamental frequency was measured by spectrum analyzer with 300 kHz RBW and 1 MHz VBW. The 20 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Test Setup



For the actual test configuration, please refer to the Setup Configurations.

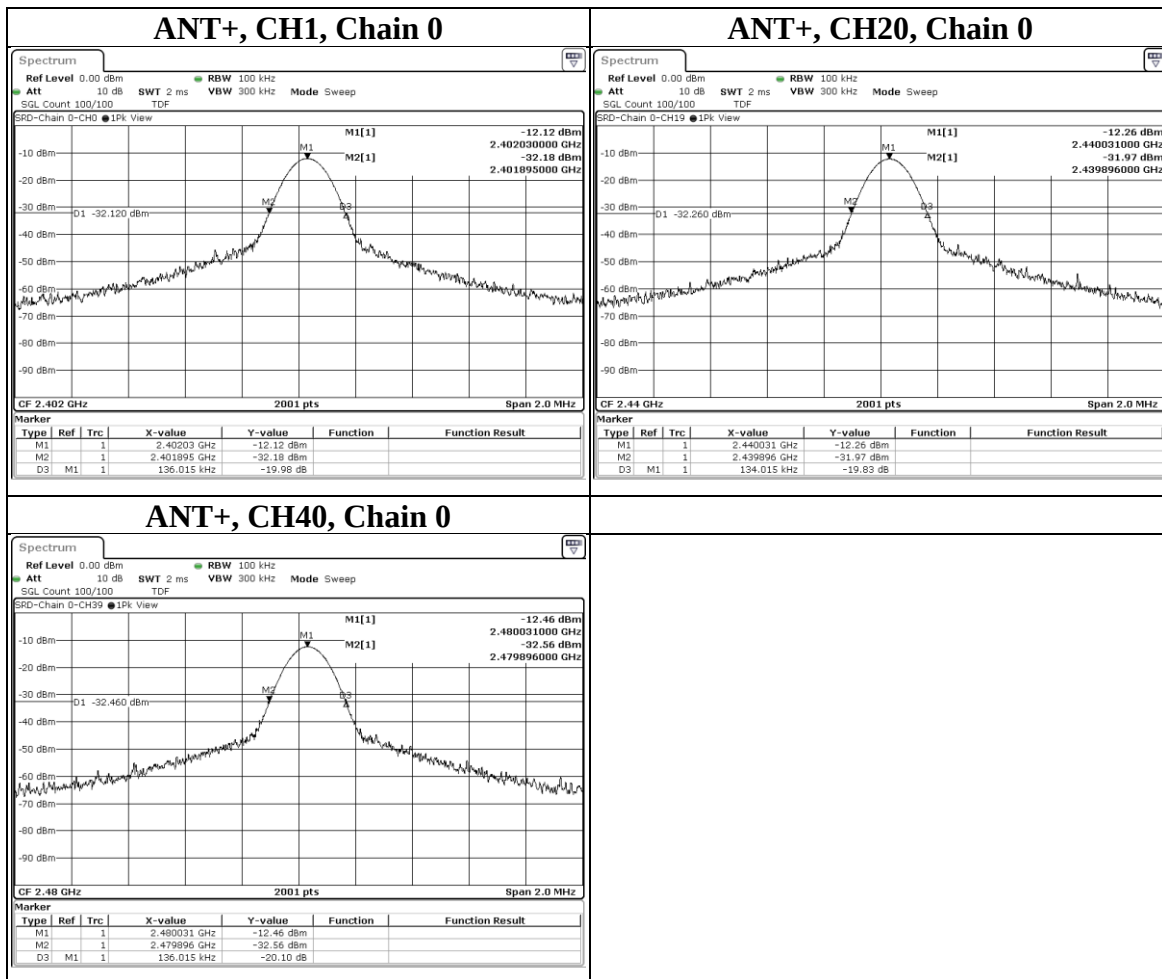
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Test Data

Mode	CH	Freq (MHz)	20dB BW (MHz)	Limit (MHz)	Result
ANT+	1	2402	0.136	N/A	Pass
ANT+	20	2440	0.134	N/A	Pass
ANT+	40	2480	0.136	N/A	Pass



END OF REPORT

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