

Prüfbericht-Nr.: <i>Test report no.:</i>	CN24BP3U 001	Auftrags-Nr.: <i>Order no.:</i>	48252376	Seite 1 von 33 Page 1 of 33
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2024-09-18	
Auftraggeber: <i>Client:</i>	Microchip Technology Inc. 2355 West Chandler Blvd. Chandler, Arizona 85224-6199, United States			
Prüfgegenstand: <i>Test item:</i>	Wireless MCU module with BLE 5.2 compliant and Zigbee 3.0 Radio			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	WBZ451PE-E			
Auftrags-Inhalt: <i>Order content:</i>	FCC Part 15C Test report (BLE)			
Prüfgrundlage: <i>Test specification:</i>	FCC 47CFR Part 15: Subpart C Section 15.247			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2024-08-21			
Prüfmuster-Nr.: <i>Test sample no:</i>	A003840531-001 A003799137-003~005			
Prüfzeitraum: <i>Testing period:</i>	2024-08-27 - 2024-10-17			
Ort der Prüfung: <i>Place of testing:</i>	EMC/RF Taipei Testing Site			
Prüflaboratorium: <i>Testing laboratory:</i>	Taipei Testing Laboratories			
Prüfergebnis*: <i>Test result*:</i>	Pass			
zusammengestellt von: <i>compiled by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i>	2024-10-18	Ausstellungsdatum: <i>Issue date:</i>	2024-10-18	
Stellung / Position:	David Huang Project Manager	Stellung / Position:	Ryan Chen Senior Project Manager	
Sonstiges / Other:	This report is issued as a supplementary report to TUV report no.: CN212GHJ(P15C-BLE) 001 and CN212GHJ(P15C-BLE) 002. The difference compared with original report is adding series model which changes the high operating temperature. Some components change from 0201 to 0402 with slight layout changes but do not affect the RF part. Hence, we only evaluated the output power and RSE tests in this report.			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Anmerkungen
Remarks

- | | |
|----------|--|
| 1 | <p>Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben.
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Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt.</p> <p><i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.
Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i></p> |
| 4 | <p>Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019.</p> <p><i>The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.</i></p> |

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TEST SUMMARY

Report Section	FCC Clause	Test Item	Result
5.1.1	15.247(b) & 15.203	Antenna Requirement	Pass
5.1.2	15.247(b)(3)	Peak Output Power	Pass
5.1.3	15.247(a)(2)	6 dB Bandwidth	Refer to CN212GHJ(P15C-BLE) 001
5.1.3	2.1049	99% Occupied Bandwidth	
5.1.4	15.247(e)	Power Spectral Density	
5.1.5	15.247(d)	Conducted Spurious Emissions and Band Edges	
5.1.6	15.247(d) & 15.205 & 15.209	Radiated Spurious Emissions and Band Edges	Pass
5.2.1	15.207	Mains Conducted Emission	Refer to CN212GHJ(P15C-BLE) 001

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

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APPENDIX A - TEST RESULT OF RADIATED EMISSIONS FOR MAIN SOURCE

APPENDIX B - TEST RESULT OF RADIATED EMISSIONS FOR 2ND SOURCE

APPENDIX SP - PHOTOGRAPHS OF TEST SETUP

APPENDIX EP - PHOTOGRAPHS OF EUT

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HISTORY OF THIS TEST REPORT

Revision	Description	Date Issued
R01	Original Release	2024-10-18

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1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A - Test Result of Radiated Emissions for Main Source

Appendix B - Test Result of Radiated Emissions for 2nd Source

Appendix SP - Photographs of Test Setup

Appendix EP - Photographs of EUT

Applied Standard and Test Levels

Radio
FCC 47CFR Part 15: Subpart C Section 15.247
FCC 47CFR Part 2: Subpart J Section 2.1049
ANSI C63.10:2013
KDB 558074 D01 15.247 Meas Guidance v05r02

1.2 Decision Rule of Conformity

The decision rule of conformity of this test report is following the requirements of the requested standard in the quotation, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty, unless it is required by the specific standard.

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2. Test Sites

2.1 Test Laboratory

Taipei Testing Laboratories

11F. No.758, Sec. 4, Bade Rd., Songshan Dist.
Taipei City 105
Taiwan (R.O.C.)

2.2 Test Facility

Taipei Testing Laboratories

No.458-18, Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244
Taiwan (R.O.C.)
FCC Registration No.: 180491
ISED Registration No.: 25563

2.3 Traceability

All measurement equipment calibrations are traceable to NML(Taiwan)/NIST(USA) or where calibration is performed outside Taiwan, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically in a suitably accredited Calibration Lab. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95% level of confidence.

Emission Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission (9 kHz ~ 30 MHz)	± 1.15 dB
Radiated Emission (30 MHz ~ 200 MHz)	± 1.32 dB
Radiated Emission (200 MHz ~ 1 GHz)	± 1.31 dB
Radiated Emission (1 GHz ~ 18 GHz)	± 1.53 dB
Radiated Emission (18 GHz ~ 40 GHz)	± 2.50 dB
Mains Conducted Emission	± 1.65 dB

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3. General Product Information

3.1 Product Function and Intended Use

The EUT is a Wireless MCU module with BLE 5.2 compliant and Zigbee 3.0 Radio. It contains a Bluetooth compatible module enabling the user to communicate data through a Wireless interface. For details refer to the User Guide, Data Sheet and Circuit Diagram.

3.2 System Details and Ratings

Basic Information of EUT

Item	EUT information
Kind of Equipment/Test Item	Wireless MCU module with BLE 5.2 compliant and Zigbee 3.0 Radio
Type Identification	WBZ451PE-E
FCC ID	2ADHKWBZ451

Technical Specification of EUT

Item	EUT information
Operating Frequency	2402 MHz ~ 2480 MHz
Channel Spacing	2 MHz
Channel Number	40
Data Rate	1Mbps, 2Mbps, 125kbps, 500kbps
Operation Voltage	Non ECC variants: 1.9Vdc to 3.6Vdc
Modulation	GFSK
Maximum Output Power (mW)	24.38
Antenna Information	Refer to 5.1.1
Accessory Device	Refer to 4.4

Note:

1. All models are listed as below.

Model Type	Type Identification	Difference
Main	WBZ451PE	WBZ451PE operation temperature is -40 ~ 85°C
Series	WBZ451PE-E	WBZ451PE-E operation temperature is -40 ~ 125°C

2. Antenna List:

ANT No.	SN/Model #	Cable Length(mm)	Type	Gain(dBi)	Placement
9	WBZ451 LGA	-	PCB	2.36	Internal

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3.3 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.4 Submitted Documents

- Circuit Diagram
- Instruction Manual
- Rating Label
- Technical Description

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The test modes were adapted accordingly in reference to the instructions for use.

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output expected by the customer and is going to be fixed on the firmware of the final end product.

Table for Parameters of Test Software Setting

For Main Source:

<1Mbps, PCB Antenna>

Mode	MPA			LPA		
With Digital Gain	45	49	53	-		
Frequency (MHz)	2402	2440	2480	2402	2440	2480
Power Setting	Disable	Disable	Disable	Disable	Disable	Disable

<2Mbps, PCB Antenna>

Mode	MPA			LPA		
With Digital Gain	44	47	49	-		
Frequency (MHz)	2404	2440	2478	2404	2440	2478
Power Setting	Disable	Disable	Disable	Disable	Disable	Disable

<125kbps, 500kbps, PCB Antenna>

Mode	MPA			LPA		
With Digital Gain	45	49	51	-		
Frequency (MHz)	2402	2440	2480	2402	2440	2480
Power Setting	Disable	Disable	Disable	Disable	Disable	Disable

For 2nd Source:

<1Mbps, PCB Antenna>

Mode	MPA			LPA		
With Digital Gain	50	53	56	60	58	55
Frequency (MHz)	2402	2440	2480	2402	2440	2480
Power Setting	Disable	Disable	Disable	Disable	Disable	Disable

<2Mbps, PCB Antenna>

Mode	MPA			LPA		
With Digital Gain	49	51	52	60	58	55
Frequency (MHz)	2404	2440	2478	2404	2440	2478
Power Setting	Disable	Disable	Disable	Disable	Disable	Disable

<125kbps, 500kbps, PCB Antenna>

Mode	MPA			LPA		
With Digital Gain	50	53	54	60	58	55
Frequency (MHz)	2402	2440	2480	2402	2440	2480
Power Setting	Disable	Disable	Disable	Disable	Disable	Disable

Note: Disable means the default setting which is the highest possible transmit power.

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4.2 Carrier Frequency and Channel

Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
0	2402	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	19	2440	29	2460	39	2480

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4.3 Test Operation and Test Software

Setup for testing: Test samples are provided with a USB interface which makes it possible to control them through a test software installed on a notebook computer.

This software was running on the laptop computer connected to the EUT. It was used to enable the operation modes listed as below.

Test Software	MCHPRT3_v1.0.1.6812
---------------	---------------------

The samples were used as follows:

A003840531-001, A003799137-004 for radiated test

A003799137-003, A003799137-005 for conducted test

Full test was applied on all test modes, but only worst case was shown.

EUT Configure Mode	Applicable To				Description
	Antenna Port Conducted Measurement	Radiated Spurious Emissions above 1 GHz	Radiated Spurious Emissions below 1 GHz	Mains Conducted Emission	
MPA, LPA	√	√	√	-	-

Note:

1. The EUT had been pre-tested on the positioned of each 3 axis. The worst case was found when position on **Z-plane**.
2. "-" means no effect.
3. MPA means Maximum Power Amplifier.
4. LPA means Lower Power Amplifier.

Antenna Port Conducted Measurement

- ☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)	Date Rate
MPA, LPA	2402 to 2480	2402, 2440, 2480	1 Mbps
	2404 to 2478	2404, 2440, 2478	2 Mbps
	2402 to 2480	2402, 2440, 2480	125 kbps
	2402 to 2480	2402, 2440, 2480	500 kbps

Note:

1.125kbps, 500kbps output power only.

Radiated Spurious Emissions (Above 1 GHz)

- ☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)	Date Rate (Mbps)
MPA, LPA	2402 to 2480	2402, 2440, 2480	1
	2404 to 2478	2404, 2440, 2478	2

Radiated Spurious Emissions (Below 1 GHz)

- ☒ Pre-Scan full test was applied on all test modes, but only worst case was shown.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Available Frequency (MHz)	Tested Frequency (MHz)	Date Rate (Mbps)
MPA, LPA	2404 to 2478	2404	2

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Test Condition

Test Item	Ambient Temperature	Relative Humidity	Tested by
Conducted Measurement	24.5~25.1 °C	60.7~62.3 %	Andy Chen
Radiated Spurious Emissions above 1 GHz	22.6~24.5 °C	52~54 %	Ray Huang
Radiated Spurious Emissions below 1 GHz	22.6~24.5 °C	52~54 %	Ray Huang

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

Accessory of EUT

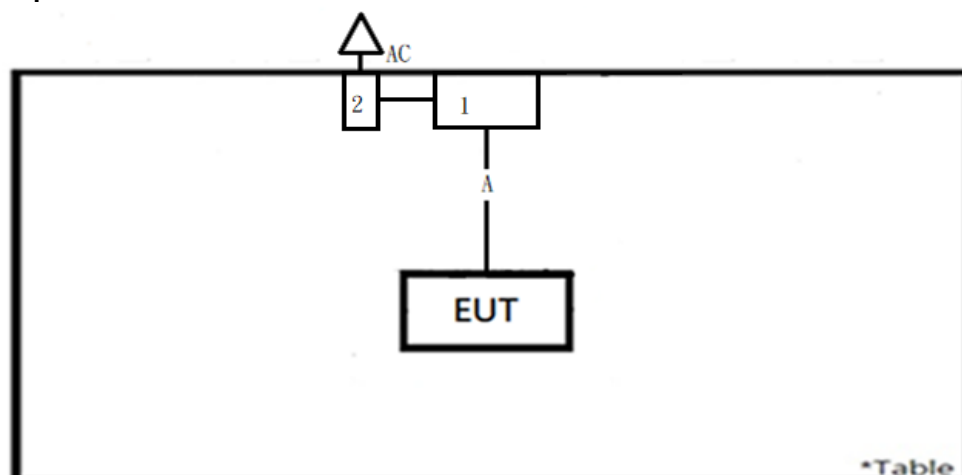
None.

Support Unit

Support Unit								
No.	Description	Brand	Model	S/N	Shielded	Ferrite Core (Qty)	Length (cm)	Remark
Radiated Test								
A	MicroUSB Cable	Microchip	--	--	NO	NO	100	A003799137-006
1	Notebook	HP	15-da1046TX	CND9111RJB	-	-	-	-
2	Adapter	HP	TPN-DA17	N/A	NO	NO	180	-
Conducted Test								
-	Notebook	LENOVO	TP00094A	PF-1GT015	-	-	-	-
-	MicoUSB To USB TypeA	TUV	NA	1	NO	NO	150	-

4.5 Test Setup Diagram

<Radiated Spurious Emissions mode>



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5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

Requirement Use of approved antennas only

According to the manufacturer declaration, the antenna information is as listed below.
The antenna is with no possibility of replacement with a non-approved antenna by the end-user.
Therefore, the EUT is considered to comply with this provision.

ANT No.	SN/Model #	Cable Length(mm)	Type	Gain(dBi)	Placement
9	WBZ451 LGA	-	PCB	2.36	Internal

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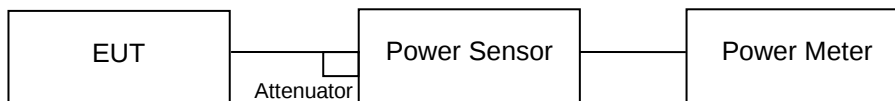
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5.1.2 Peak Output Power

Limit 1 watt (30 dBm)

Kind of Test Site Shielded room

Test Setup



Test Instruments

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date	Test Date	
						From	Until
Power Meter	Anritsu	ML2495A	1901008	2024/03/12	2025/03/11	2024/9/20	2024/10/17
Power Sensor	Anritsu	MA2411B	1725269	2024/03/12	2025/03/11	2024/9/20	2024/10/17

Test Procedures

A peak power sensor was used on the output port of the EUT. A power meter was used to read the response of the peak power sensor. Record the power level.

Average power sensor was used to perform output power measurement, trigger and gating function of wide band power meter is enabled to measure max output power of TX on burst. Duty factor is not added to measured value.

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Test Result

Peak Output Power, PCB Antenna

For Main Source:

<1Mbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	13.72	23.55	30
Middle Channel	2440	13.87	24.38	30
High Channel	2480	13.82	24.10	30

<2Mbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2404	13.77	23.82	30
Middle Channel	2440	13.86	24.32	30
High Channel	2478	13.70	23.44	30

<125kbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	13.69	23.39	30
Middle Channel	2440	13.85	24.27	30
High Channel	2480	13.69	23.39	30

<500kbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	13.70	23.44	30
Middle Channel	2440	13.85	24.27	30
High Channel	2480	13.68	23.33	30

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<1Mbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	6.00	3.98	30
Middle Channel	2440	5.76	3.77	30
High Channel	2480	5.37	3.44	30

<2Mbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2404	6.08	4.06	30
Middle Channel	2440	5.85	3.85	30
High Channel	2478	5.54	3.58	30

<125kbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	6.03	4.01	30
Middle Channel	2440	5.78	3.78	30
High Channel	2480	5.39	3.46	30

<500kbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	6.01	3.99	30
Middle Channel	2440	5.75	3.76	30
High Channel	2480	5.38	3.45	30

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For 2nd Source:

<1Mbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	13.70	23.44	30
Middle Channel	2440	13.86	24.32	30
High Channel	2480	13.79	23.93	30

<2Mbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2404	13.76	23.77	30
Middle Channel	2440	13.85	24.27	30
High Channel	2478	13.67	23.28	30

<125kbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	13.68	23.33	30
Middle Channel	2440	13.84	24.21	30
High Channel	2480	13.64	23.12	30

<500kbps, MPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	13.69	23.39	30
Middle Channel	2440	13.84	24.21	30
High Channel	2480	13.63	23.07	30

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<1Mbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	5.87	3.86	30
Middle Channel	2440	5.69	3.71	30
High Channel	2480	5.32	3.40	30

<2Mbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2404	6.02	4.00	30
Middle Channel	2440	5.84	3.84	30
High Channel	2478	5.49	3.54	30

<125kbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	5.89	3.88	30
Middle Channel	2440	5.71	3.72	30
High Channel	2480	5.33	3.41	30

<500kbps, LPA Mode>

Channel	Channel Frequency	Peak Output Power		Limit (dBm)
	(MHz)	(dBm)	(mW)	
Low Channel	2402	5.88	3.87	30
Middle Channel	2440	5.70	3.72	30
High Channel	2480	5.32	3.40	30

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Average Power, PCB Antenna

For Main Source:

<1Mbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	13.42	21.98
Middle Channel	2440	13.61	22.96
High Channel	2480	13.54	22.59

<2Mbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2404	13.47	22.23
Middle Channel	2440	13.60	22.91
High Channel	2478	13.42	21.98

<125kbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	13.40	21.88
Middle Channel	2440	13.59	22.86
High Channel	2480	13.39	21.83

<500kbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	13.41	21.93
Middle Channel	2440	13.59	22.86
High Channel	2480	13.38	21.78

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<1Mbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.63	3.66
Middle Channel	2440	5.42	3.48
High Channel	2480	5.03	3.18

<2Mbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2404	5.73	3.74
Middle Channel	2440	5.51	3.56
High Channel	2478	5.15	3.27

<125kbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.66	3.68
Middle Channel	2440	5.43	3.49
High Channel	2480	5.05	3.20

<500kbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.64	3.66
Middle Channel	2440	5.41	3.48
High Channel	2480	5.04	3.19

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For 2nd Source:

<1Mbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	13.37	21.73
Middle Channel	2440	13.57	22.75
High Channel	2480	13.48	22.28

<2Mbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2404	13.44	22.08
Middle Channel	2440	13.56	22.70
High Channel	2478	13.37	21.73

<125kbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	13.35	21.63
Middle Channel	2440	13.55	22.65
High Channel	2480	13.34	21.58

<500kbps, MPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	13.36	21.68
Middle Channel	2440	13.55	22.65
High Channel	2480	13.33	21.53

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<1Mbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.54	3.58
Middle Channel	2440	5.39	3.46
High Channel	2480	5.00	3.16

<2Mbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2404	5.62	3.65
Middle Channel	2440	5.48	3.53
High Channel	2478	5.12	3.25

<125kbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.56	3.60
Middle Channel	2440	5.41	3.48
High Channel	2480	5.01	3.17

<500kbps, LPA Mode>

Channel	Channel Frequency	Average Power	
	(MHz)	(dBm)	(mW)
Low Channel	2402	5.55	3.59
Middle Channel	2440	5.40	3.47
High Channel	2480	5.00	3.16

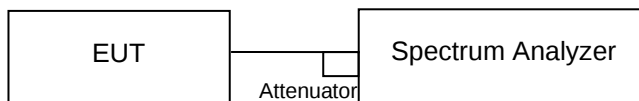
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5.1.3 6 dB Bandwidth and 99% Occupied Bandwidth

Limit The minimum 6 dB bandwidth shall be at least 500 kHz.

Kind of Test Site Shielded room

Test Setup



Test Instruments

N/A

Test Procedure

- Set resolution bandwidth (RBW) = 100 kHz
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW, Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.
- Measure the maximum width of the emission that is constrained by the frequencies associated with the two amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
- For 99% occupied bandwidth measurement, the transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with resolution bandwidth in the range of 1% to 5% of the anticipated emission bandwidth, and a video bandwidth at least 3x the resolution bandwidth and set the detector to PEAK. The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean power of a given emission.

Test Results

Refer to original report no.: CN212GHJ(P15C-BLE) 001.

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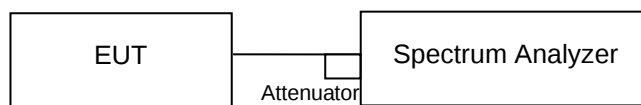
5.1.4 Power Spectral Density

Limit

The power spectral density shall not be greater than 8 dBm in any 3 kHz band.

Kind of Test Site Shielded room

Test Setup



Test Instruments

N/A

Test Procedure

- Set analyzer center frequency to DTS channel center frequency.
- Set the span to 1.5 times the DTS bandwidth.
- Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq 3 \times \text{RBW}$.
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.

Test Results

Refer to original report no.: CN212GHJ(P15C-BLE) 001.

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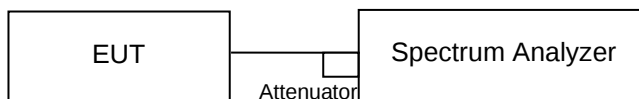
5.1.5 Conducted Spurious Emissions and Frequency Band Edges Measured in 100kHz Bandwidth

Limit

20dB (below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.)

Kind of Test Site Shielded room

Test Setup



Test Instruments

N/A

Test Procedure

Measurement procedure REF

1. Set the RBW = 100 kHz.
2. Set the VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep time = auto couple.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.

Measurement procedure OOBE

1. Set RBW = 100 kHz.
2. Set VBW $\geq$ 300 kHz.
3. Detector = peak.
4. Sweep = auto couple.
5. Trace Mode = max hold.
6. Allow trace to fully stabilize.
7. Use the peak marker function to determine the maximum amplitude level.

Test Results

Refer to original report no.: CN212GHJ(P15C-BLE) 001.

5.1.6 Radiated Spurious Emissions and Band Edges

Limit

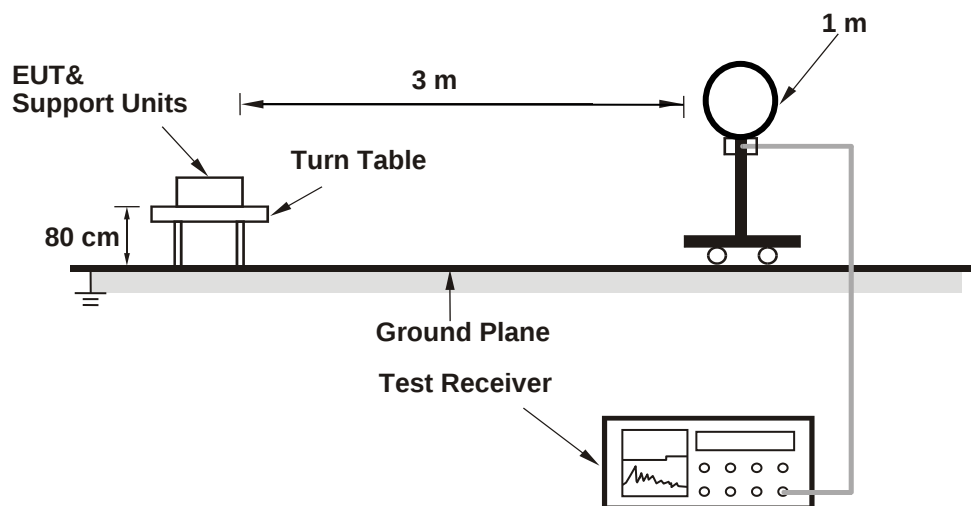
Radiated emissions which fall in the restricted bands, as defined in §15.205(a), must comply with the radiated emission limits specified in §15.209(a).

Emissions radiated outside the restricted and authorized frequency bands must either comply with the radiated emission limits specified for the restricted bands or in §15.247(d).

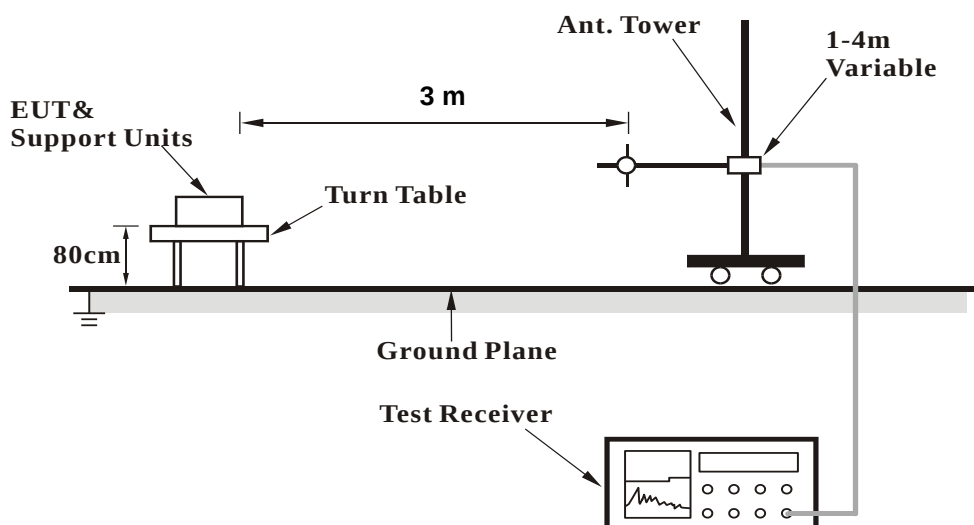
Kind of Test Site 3m Semi-Anechoic Chamber

Test Setup

<Radiated Emissions below 30 MHz>

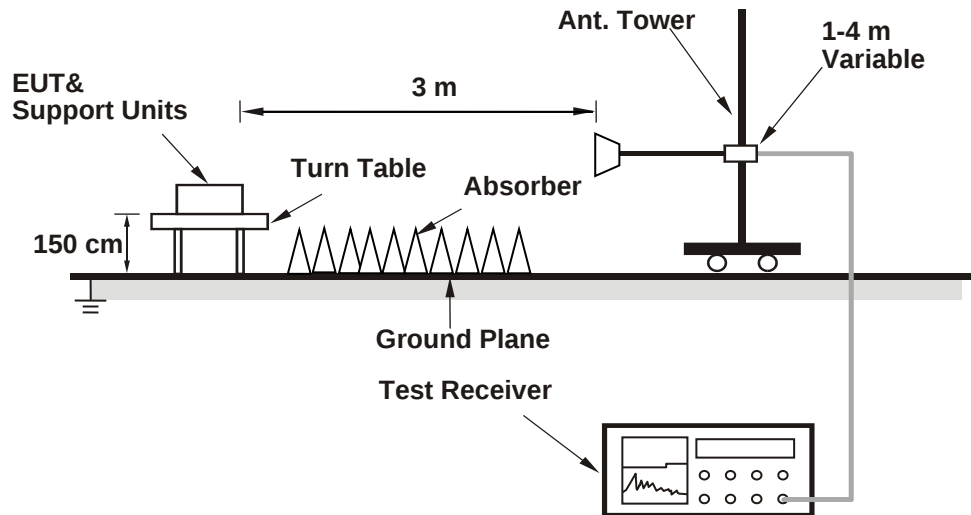


<Radiated Emissions 30 MHz to 1 GHz>



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<Radiated Emissions above 1 GHz>


For the actual test configuration, please refer to the attached file (Test Setup Photo).

Test Instruments

Test date: 2024-08-27 ~ 2024-10-04

Kind of Equipment	Manufacturer	Type	S/N	Calibration Date	Calibration Due Date
Above 1GHz					
Signal Analyzer	R&S	FSV40	101509	2024/4/30	2025/4/29
Horn Antenna	ETS-Lindgren	3117	00218929	2023/11/17	2024/11/15
Horn Antenna	SCHWARZBECK	BBHA 9170	00890	2024/4/30	2025/4/29
HF-AMP + AC source	EMCI	EMC051845SE	980633	2024/1/24	2025/1/22
HF-AMP + AC source	EMCI	EMC184045SE	980656	2024/1/18	2025/1/16
Test Software	Audix E3	15914a_20191106_tuv	PK-001087	N/A	N/A
30MHz ~ 1GHz					
Receiver	R&S	ESR7	102109	2024/2/22	2025/2/20
Bilog Antenna	SCHWARZBECK	VULB-9168	00951	2024/3/21	2025/3/20
LF-AMP	Agilent	8447D	2727A05146	2024/1/24	2025/1/22
Test Software	Audix E3	15914a_20191106_tuv	PK-001087	N/A	N/A
Below 30MHz					
Receiver	R&S	ESR7	102109	2024/2/22	2025/2/20
Loop Antenna	SCHWARZBECK	FMZB 1519B	00215	2024/1/4	2025/1/2
Test Software	Audix E3	15914a_20191106_tuv	PK-001087	N/A	N/A

Test Procedures**For Radiated Emissions below 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 (OPEN), perpendicular (CLOSE), and ground-parallel (GROUND) 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. The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9 kHz at frequency below 30 MHz.
2. All modes of operation were investigated and the worst-case emissions are reported.

For Radiated Emissions above 30 MHz

- a. The EUT was placed on the top of a rotating table 0.8 meters (for 30 MHz ~ 1 GHz) / 1.5 meters (for above 1 GHz) 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. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detected 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.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1 GHz.
2. 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 1 GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10 Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1 GHz.
4. All modes of operation were investigated and the worst-case emissions are reported.
5. The Radiated Emissions testing was performed in the X(E1), Y(H) and Z(E2) axis orientation. The worst-case Axis orientation is recorded in this test report.
6. The emission levels of other frequencies (including the 10th harmonic of the highest fundamental frequency) are very lower than the limit and are not shown in the test report.

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Test Results

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) – Amplifier (dB)

Level (dBuV/m) = Reading (dBuV) + Factor (dB/m)

Please refer to Appendix A and Appendix B.

5.2 Mains Emission

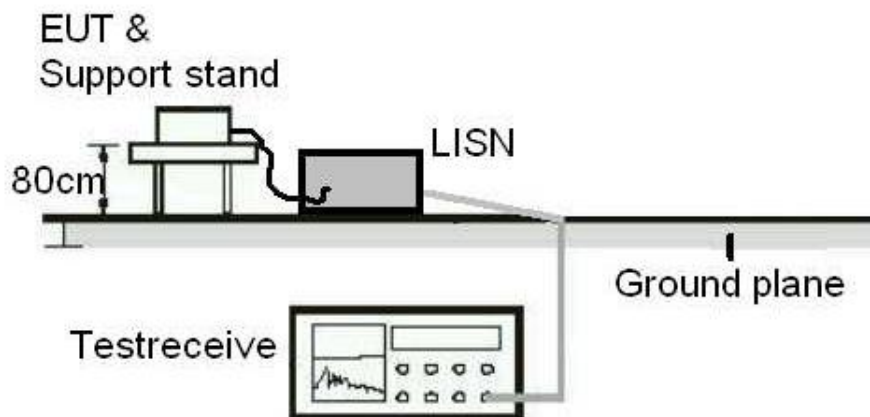
5.2.1 Mains Conducted Emission

Limit

Mains Conducted Emission as defined in §15.207 must comply with the mains conducted emission limits.

Kind of Test Site Shielded room

Test Setup



Test Instruments

N/A

Test Procedures

- 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/50 uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit – 20 dB) was not recorded.

Note: The resolution bandwidth and video bandwidth of test receiver is 9 kHz for quasi-peak detection (QP) and average detection (AV) at frequency 0.15 MHz – 30 MHz.

Test Results

Refer to original report no.: CN212GHJ(P15C-BLE) 001.

Appendix A: Test Results of Radiated Spurious Emissions for Main Source

MPA Mode

Band Edges, 2.31GHz ~ 2.5GHz

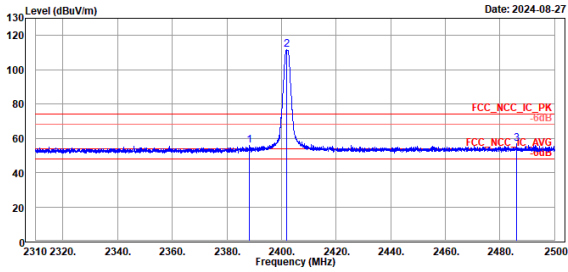
1Mbps

Low Channel (Horizontal) Peak

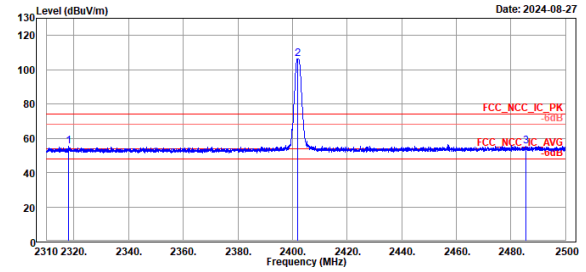
Low Channel (Vertical) Peak



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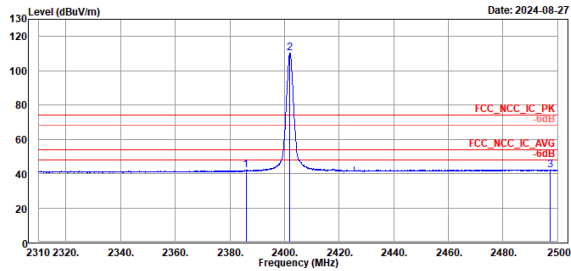


1Mbps

Low Channel (Horizontal) Average



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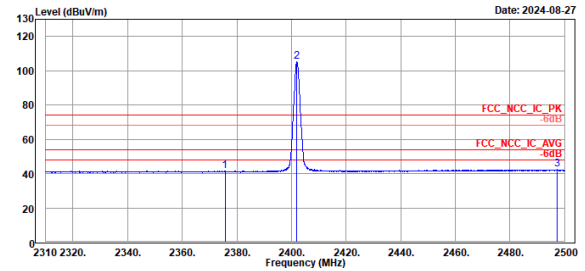


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2385.91	42.10	4.09	38.01	54.00	-11.90	152	63	Average	Horizontal		
2 *	2402.00	110.23	72.16	38.07	54.00	56.23	152	63	Average	Horizontal		
3	2497.15	42.22	3.94	38.28	54.00	-11.78	152	63	Average	Horizontal		

Low Channel (Vertical) Average



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2375.65	41.53	3.55	37.98	54.00	-12.47	156	331	Average	Vertical		
2 *	2402.00	105.08	67.01	38.07	54.00	51.08	156	331	Average	Vertical		
3	2497.15	42.27	3.99	38.28	54.00	-11.73	156	331	Average	Vertical		

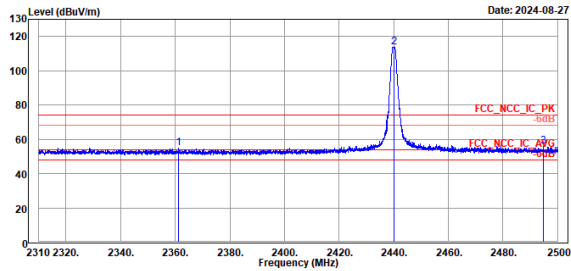
1Mbps

Middle Channel (Horizontal) Peak

Middle Channel (Vertical) Peak



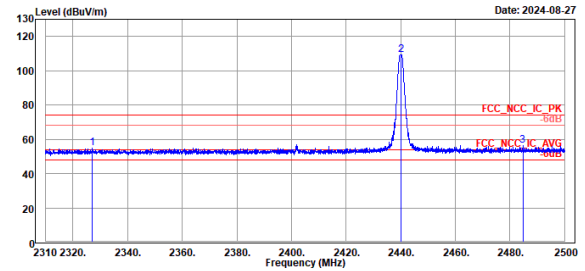
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2361.35	54.98	16.97	37.93	74.00	-19.10	322	289	Peak	Horizontal		
2 *	2440.00	113.84	75.58	38.26	74.00	39.84	322	289	Peak	Horizontal		
3	2494.87	55.67	17.40	38.27	74.00	-18.33	322	289	Peak	Horizontal		



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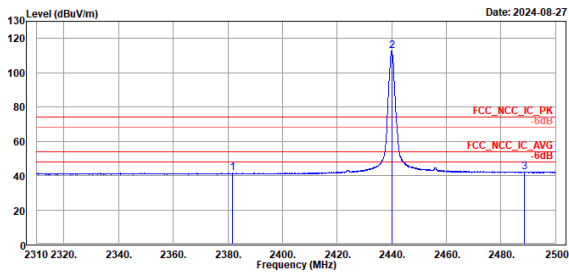
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2326.96	54.71	16.93	37.78	74.00	-19.29	320	54	Peak	Vertical		
2 *	2440.00	109.07	78.81	38.26	74.00	35.07	320	54	Peak	Vertical		
3	2484.71	56.45	18.17	38.28	74.00	-17.55	320	54	Peak	Vertical		

1Mbps

Middle Channel (Horizontal) Average



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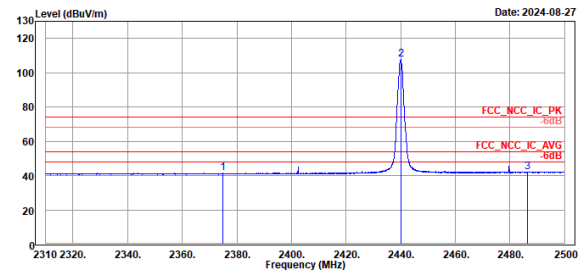


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2381.82	41.48	3.48	38.00	54.00	-12.60	322	289	Average	Horizontal		
2 *	2440.00	112.71	74.45	38.26	54.00	58.71	322	289	Average	Horizontal		
3	2488.60	42.19	3.91	38.28	54.00	-11.81	322	289	Average	Horizontal		

Middle Channel (Vertical) Average



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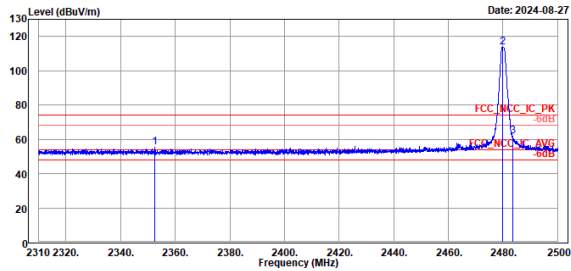
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2374.74	41.48	3.58	37.98	54.00	-12.52	320	54	Average	Vertical		
2 *	2440.00	107.91	69.65	38.26	54.00	53.91	320	54	Average	Vertical		
3	2486.37	42.22	3.94	38.28	54.00	-11.78	320	54	Average	Vertical		

1Mbps

High Channel (Horizontal) Peak



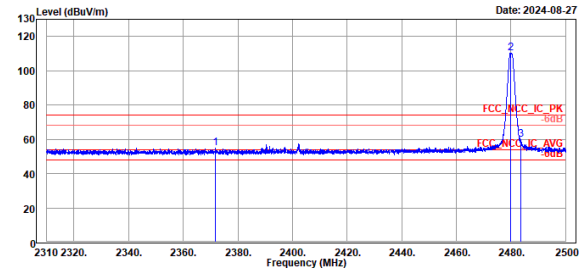
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2352.51	55.24	17.33	37.91	74.00	-18.76	282	288	Peak	Horizontal		
2 *	2480.00	113.66	75.37	38.29	74.00	39.66	282	288	Peak	Horizontal		
3	2483.50	61.75	23.47	38.28	74.00	-12.25	282	288	Peak	Horizontal		



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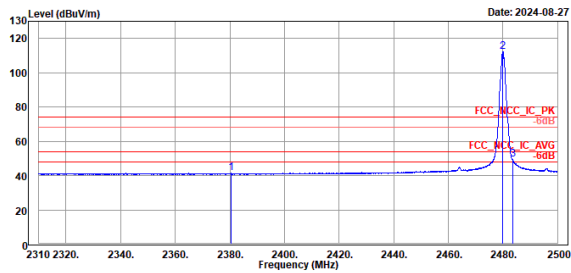
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2371.85	55.01	17.05	37.96	74.00	-18.99	264	182	Peak	Vertical		
2 *	2480.00	110.12	71.83	38.29	74.00	36.12	264	182	Peak	Vertical		
3	2483.50	59.67	21.39	38.28	74.00	-14.33	264	182	Peak	Vertical		

1Mbps

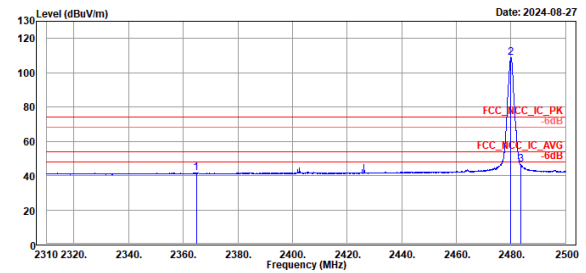
High Channel (Horizontal) Average



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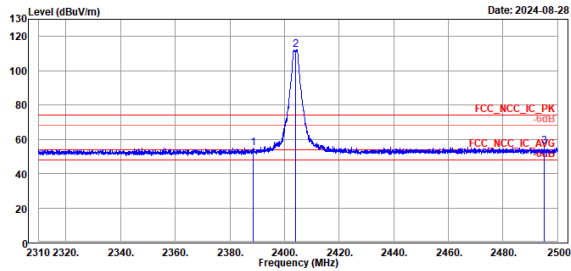


2Mbps

Low Channel (Horizontal) Peak



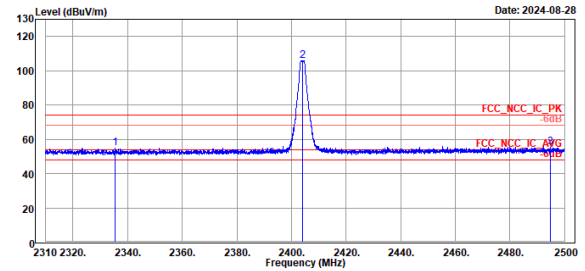
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2388.57	55.02	17.00	38.02	74.00	-18.98	153	61 Peak		Horizontal		
2 *	2404.00	112.03	73.95	38.08	74.00	38.03	153	61 Peak		Horizontal		
3	2495.06	55.64	17.37	38.27	74.00	-18.36	153	61 Peak		Horizontal		



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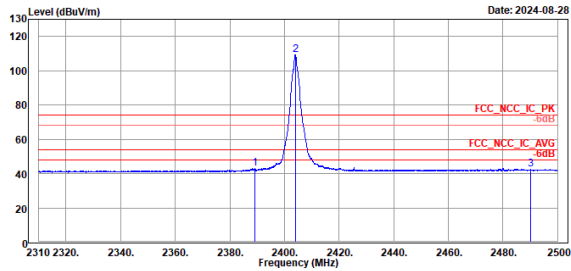
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2335.51	54.93	17.11	37.82	74.00	-19.07	156	333 Peak		Vertical		
2 *	2404.00	106.00	67.92	38.08	74.00	32.00	156	333 Peak		Vertical		
3	2494.87	55.39	17.12	38.27	74.00	-18.61	156	333 Peak		Vertical		

2Mbps

Low Channel (Horizontal) Average



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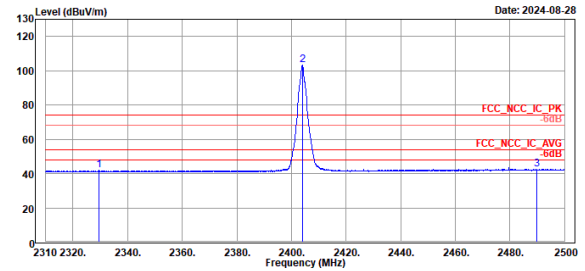


	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2389.04	42.00	4.78	38.02	54.00	-11.20	153	61 Average	Horizontal	
2 *	2404.00	109.13	71.05	38.08	54.00	55.13	153	61 Average	Horizontal	
3	2490.26	42.43	4.15	38.28	54.00	-11.57	153	61 Average	Horizontal	

Low Channel (Vertical) Average



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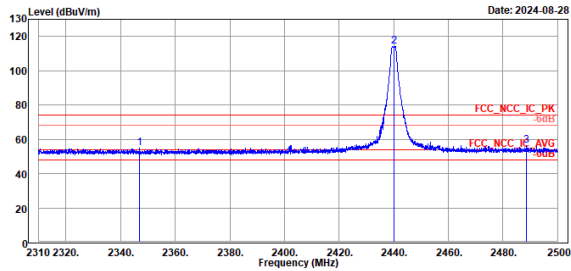
	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2329.62	41.78	3.98	37.00	54.00	-12.22	156	333 Average	Vertical	
2 *	2404.00	103.15	65.07	38.08	54.00	49.15	156	333 Average	Vertical	
3	2489.84	42.66	4.38	38.28	54.00	-11.34	156	333 Average	Vertical	

2Mbps

Middle Channel (Horizontal) Peak



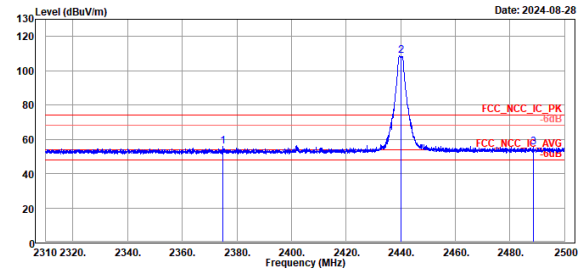
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2346.91	54.94	17.05	37.89	74.00	-19.06	290	293	Peak	Horizontal		
2 *	2440.00	114.09	75.83	38.26	74.00	40.09	290	293	Peak	Horizontal		
3	2488.60	56.11	17.83	38.28	74.00	-17.89	290	293	Peak	Horizontal		



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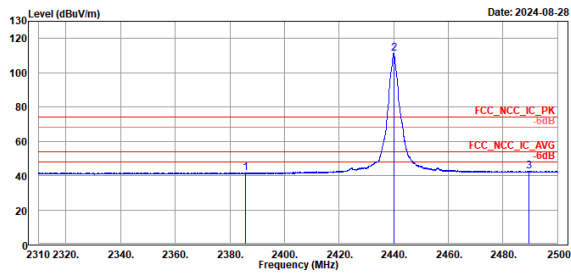
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2374.84	55.94	17.96	37.98	74.00	-18.06	290	88	Peak	Vertical		
2 *	2440.00	108.50	70.24	38.26	74.00	34.50	290	88	Peak	Vertical		
3	2488.46	55.24	16.96	38.28	74.00	-18.76	290	88	Peak	Vertical		

2Mbps

Middle Channel (Horizontal) Average



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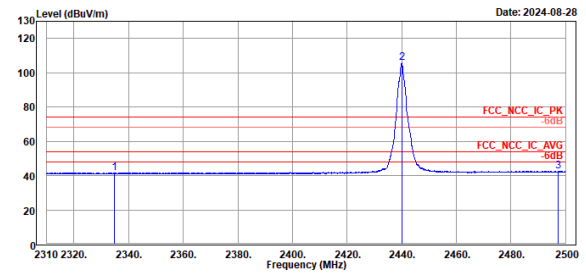


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2385.76	41.76	3.75	38.01	54.00	-12.24	290	293	Average	Horizontal		
2 *	2440.00	111.21	72.95	38.26	54.00	57.21	290	293	Average	Horizontal		
3	2489.60	42.46	4.18	38.28	54.00	-11.54	290	293	Average	Horizontal		

Middle Channel (Vertical) Average



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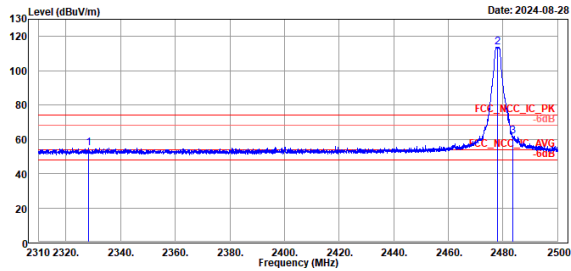
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2334.89	41.74	3.92	37.82	54.00	-12.26	290	88	Average	Vertical		
2 *	2440.00	105.62	67.36	38.26	54.00	51.62	290	88	Average	Vertical		
3	2497.34	42.54	4.26	38.28	54.00	-11.46	290	88	Average	Vertical		

2Mbps

High Channel (Horizontal) Peak



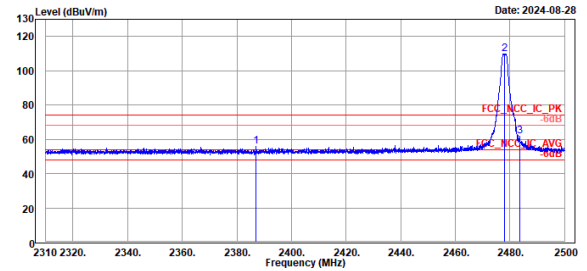
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2328.15	55.09	17.31	37.78	74.00	-18.91	286	78	Peak	Horizontal		
2 *	2478.00	113.91	75.63	38.28	74.00	39.91	286	78	Peak	Horizontal		
3	2483.50	61.95	23.67	38.28	74.00	-12.05	286	78	Peak	Horizontal		



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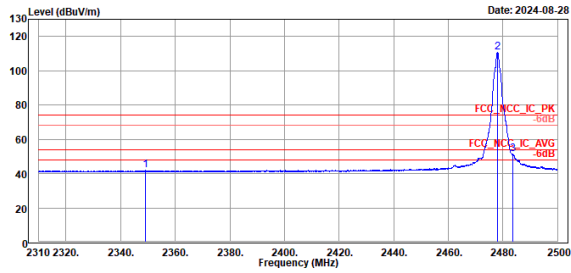
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2386.90	56.07	18.06	38.01	74.00	-17.93	299	155	Peak	Vertical		
2 *	2478.00	109.84	71.56	38.28	74.00	35.84	299	155	Peak	Vertical		
3	2483.52	61.54	23.26	38.28	74.00	-12.46	299	155	Peak	Vertical		

2Mbps

High Channel (Horizontal) Average



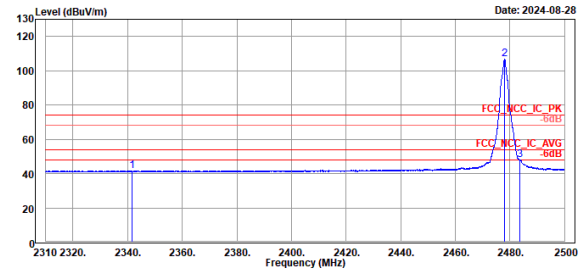
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2349.00	41.88	3.90	37.98	54.00	-12.20	286	78	Average	Horizontal		
2 *	2478.00	110.96	72.68	38.28	54.00	56.96	286	78	Average	Horizontal		
3 !	2483.50	51.25	12.97	38.28	54.00	-2.75	286	78	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2341.64	41.71	3.85	37.86	54.00	-12.29	299	155	Average	Vertical		
2 *	2478.00	106.67	68.59	38.28	54.00	52.67	299	155	Average	Vertical		
3	2483.71	47.97	9.69	38.28	54.00	-6.03	299	155	Average	Vertical		

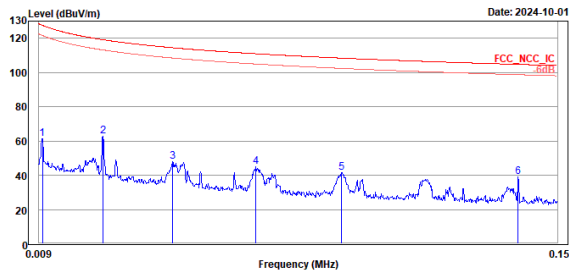
Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

2Mbps

Low Channel (Open) 9kHz~150kHz



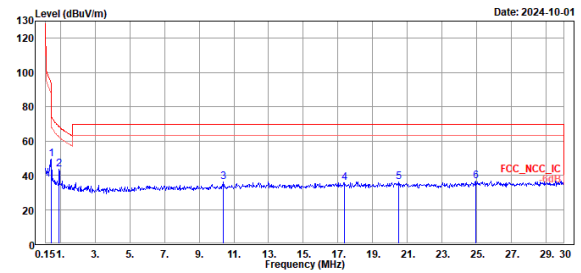
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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.01	61.42	43.11	18.31	127.60	-66.18	100	118 Peak	Open	
2	0.03	62.57	42.76	19.81	119.13	-56.56	100	25 Peak	Open	
3	0.05	48.07	28.55	19.52	114.46	-66.39	100	230 Peak	Open	
4	0.07	45.22	26.48	18.74	110.93	-65.71	100	246 Peak	Open	
5	0.09	41.69	23.08	18.61	108.40	-66.71	100	246 Peak	Open	
6	0.14	38.99	20.22	18.77	104.72	-65.73	100	202 Peak	Open	



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.48	49.65	30.49	19.16	94.01	-44.36	100	167 Peak	Open	
2	0.93	43.41	24.26	19.15	68.27	-24.86	100	153 Peak	Open	
3	10.39	35.86	14.45	21.41	69.50	-33.64	100	149 Peak	Open	
4	17.37	35.67	13.28	22.39	69.50	-33.83	100	175 Peak	Open	
5	20.48	36.05	13.49	22.56	69.50	-33.45	100	322 Peak	Open	
6	24.96	36.62	13.46	23.16	69.50	-32.88	100	184 Peak	Open	

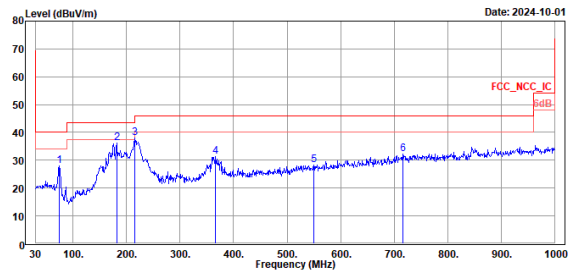
Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

2Mbps

Low Channel (Horizontal)



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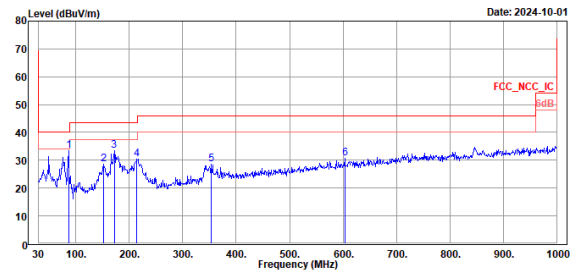


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	74.62	27.84	37.65	-9.81	40.00	-12.16	100	191	Peak	Horizontal		
2	181.32	36.12	43.17	-7.05	43.50	-7.38	100	213	Peak	Horizontal		
3	215.27	37.99	46.37	-8.38	43.50	-5.51	100	204	Peak	Horizontal		
4	366.59	31.21	35.04	-3.83	46.00	-14.79	100	168	Peak	Horizontal		
5	549.92	28.37	28.71	-0.34	46.00	-17.63	100	192	Peak	Horizontal		
6	715.79	32.10	29.52	2.58	46.00	-13.90	100	315	Peak	Horizontal		

Low Channel (Vertical)



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	86.26	33.36	45.58	-12.22	40.00	-6.64	100	256	Peak	Vertical		
2	151.25	28.60	34.58	-5.98	43.50	-14.90	100	245	Peak	Vertical		
3	171.62	33.31	39.11	-5.80	43.50	-10.19	100	73	Peak	Vertical		
4	214.30	30.40	38.82	-8.42	43.50	-13.10	100	158	Peak	Vertical		
5	353.98	28.56	32.81	-4.25	46.00	-17.44	100	235	Peak	Vertical		
6	603.27	30.58	29.76	0.82	46.00	-15.42	100	56	Peak	Vertical		

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

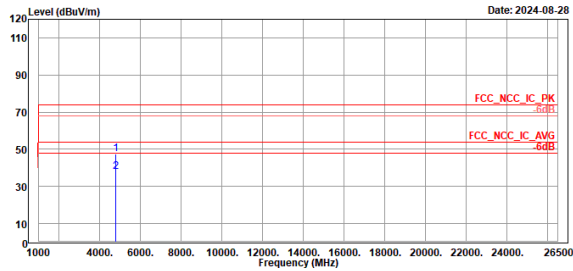
1Mbps

Low Channel (Horizontal)

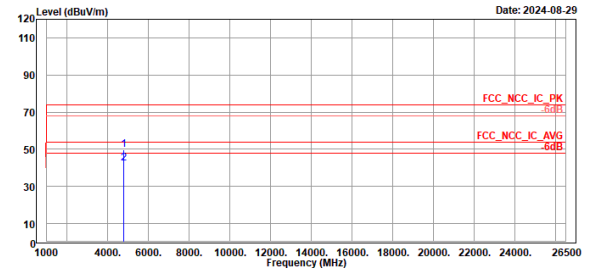
Low Channel (Vertical)



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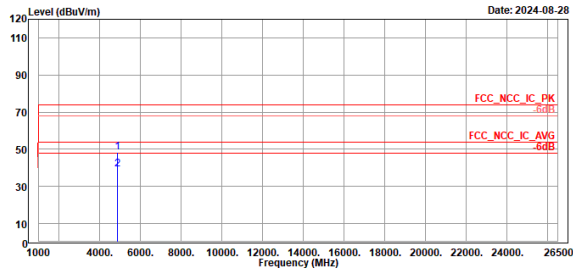
1Mbps

Middle Channel (Horizontal)

Middle Channel (Vertical)



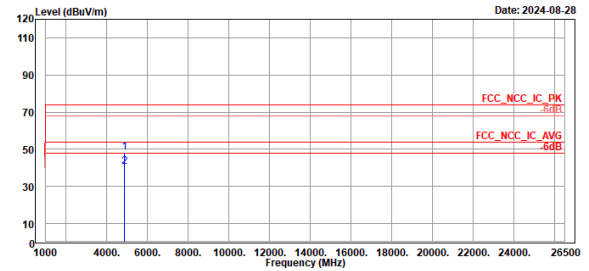
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	48.28	56.43	-8.15	74.00	-25.72	119	299	Peak	Horizontal		
2	4880.00	39.21	47.36	-8.15	54.00	-14.79	119	299	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	48.55	56.70	-8.15	74.00	-25.45	269	291	Peak	Vertical		
2	4880.00	40.44	48.59	-8.15	54.00	-13.56	269	291	Average	Vertical		

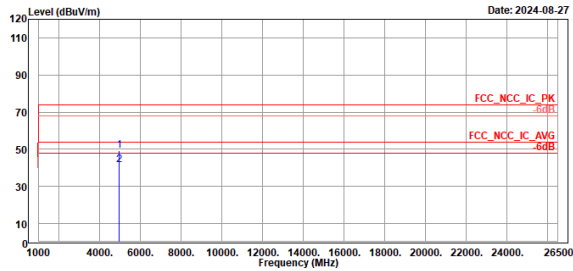
1Mbps

High Channel (Horizontal)

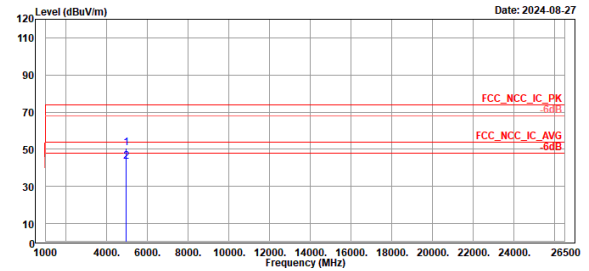
High Channel (Vertical)



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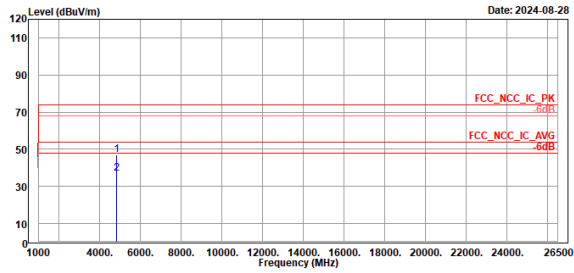
2Mbps

Low Channel (Horizontal)

Low Channel (Vertical)



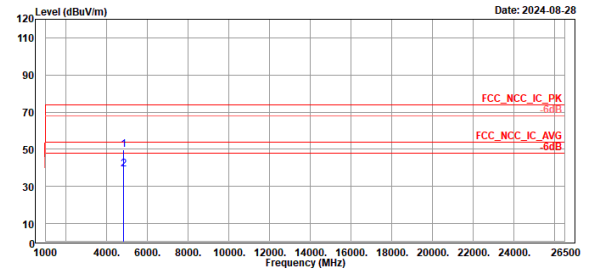
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	46.83	55.04	-8.21	74.00	-27.17	100	300	Peak	Horizontal		
2	4880.00	36.73	44.94	-8.21	54.00	-17.27	100	300	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	49.66	57.87	-8.21	74.00	-24.34	367	295	Peak	Vertical		
2	4880.00	39.23	47.44	-8.21	54.00	-14.77	367	295	Average	Vertical		

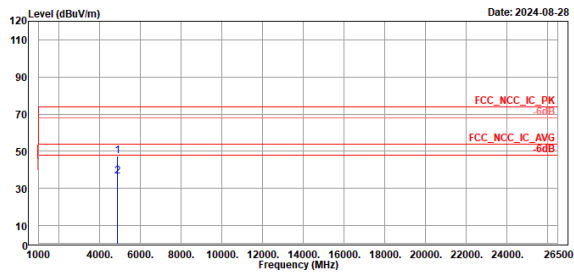
2Mbps

Middle Channel (Horizontal)

Middle Channel (Vertical)



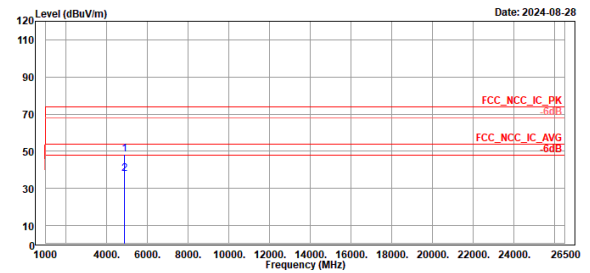
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	47.48	55.63	-8.15	74.00	-26.52	100	300	Peak	Horizontal		
2	4880.00	36.71	44.86	-8.15	54.00	-17.29	100	300	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	48.37	56.52	-8.15	74.00	-25.63	339	295	Peak	Vertical		
2	4880.00	38.04	46.19	-8.15	54.00	-15.96	339	295	Average	Vertical		

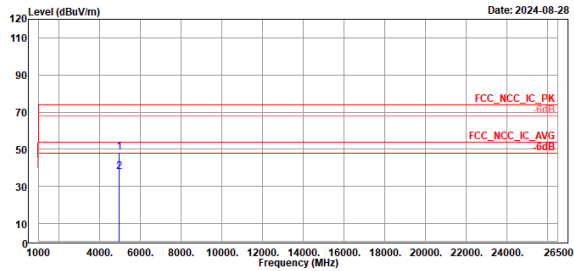
2Mbps

High Channel (Horizontal)

High Channel (Vertical)



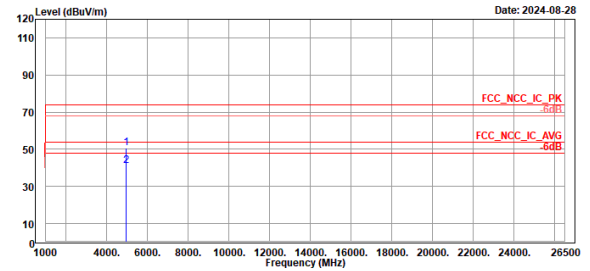
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4956.00	48.39	56.32	-8.02	74.00	-25.70	100	270	Peak	Horizontal		
2	4956.00	37.83	45.65	-8.02	54.00	-16.17	100	270	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4956.00	50.78	58.80	-8.02	74.00	-23.22	100	293	Peak	Vertical		
2	4956.00	41.13	49.15	-8.02	54.00	-12.87	100	293	Average	Vertical		

LPA Mode

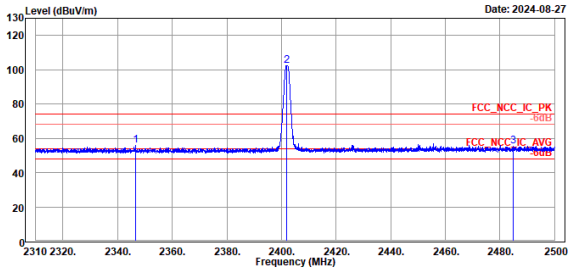
Band Edges, 2.31GHz ~ 2.5GHz

1Mbps

Low Channel (Horizontal) Peak



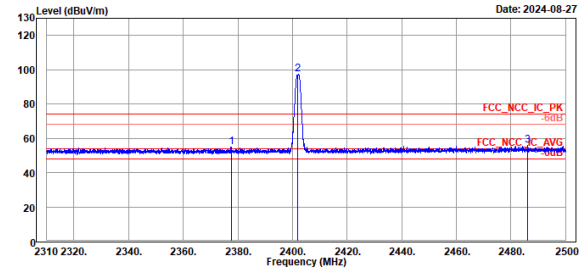
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2346.67	55.63	17.74	37.89	74.00	-18.37	152	63	Peak	Horizontal		
2 *	2402.00	102.30	64.23	38.07	74.00	28.30	152	63	Peak	Horizontal		
3	2484.94	55.49	17.21	38.28	74.00	-18.51	152	63	Peak	Horizontal		



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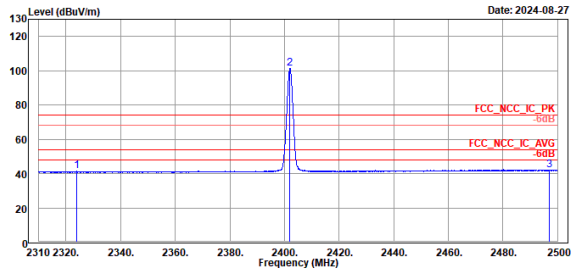
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2377.55	54.70	16.71	37.99	74.00	-19.30	156	331	Peak	Vertical		
2 *	2402.00	97.15	59.08	38.07	74.00	23.15	156	331	Peak	Vertical		
3	2485.99	55.79	17.51	38.28	74.00	-18.21	156	331	Peak	Vertical		

1Mbps

Low Channel (Horizontal) Average



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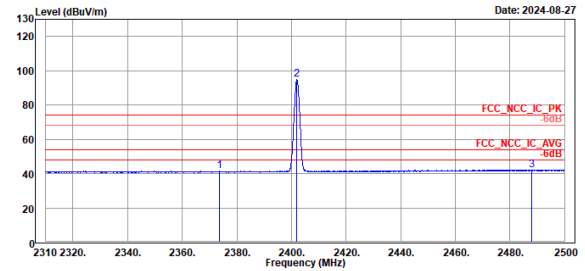


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2323.07	41.41	3.64	37.77	54.00	-12.59	152	63	Average	Horizontal		
2 *	2402.00	101.17	63.19	38.07	54.00	47.17	152	63	Average	Horizontal		
3	2497.01	42.18	3.90	38.28	54.00	-11.82	152	63	Average	Horizontal		

Low Channel (Vertical) Average



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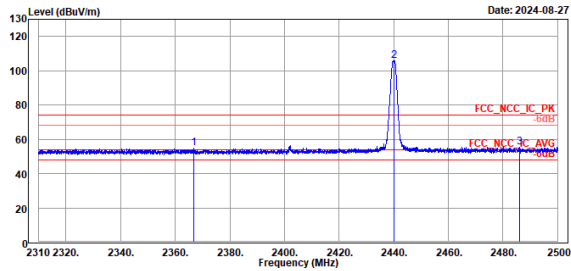
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2373.56	41.44	3.46	37.98	54.00	-12.56	156	331	Average	Vertical		
2 *	2402.00	94.99	56.92	38.07	54.00	40.99	156	331	Average	Vertical		
3	2488.03	42.24	3.96	38.28	54.00	-11.76	156	331	Average	Vertical		

1Mbps

Middle Channel (Horizontal) Peak



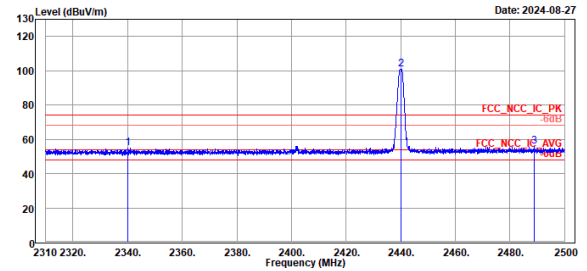
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2366.91	54.76	16.81	37.95	74.00	-19.24	322	289	Peak	Horizontal		
2 *	2440.00	105.58	67.32	38.26	74.00	31.58	322	289	Peak	Horizontal		
3	2485.99	55.47	17.19	38.28	74.00	-18.53	322	289	Peak	Horizontal		



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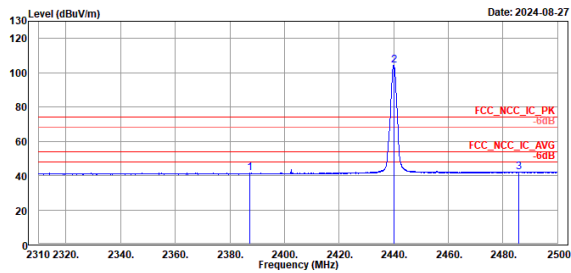
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1	2340.16	54.90	17.05	37.85	74.00	-19.10	320	54	Peak	Vertical		
2 *	2440.00	100.80	62.54	38.26	74.00	26.80	320	54	Peak	Vertical		
3	2488.79	55.91	17.63	38.28	74.00	-18.09	320	54	Peak	Vertical		

1Mbps

Middle Channel (Horizontal) Average



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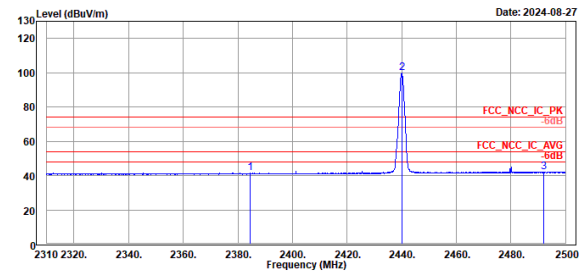


Peak	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dBm	dBuV/m	dB	cm	deg		
1	2387.43	41.35	3.34	38.01	54.00	-12.65	322	289 Average	Horizontal	
2	2440.00	104.30	66.04	38.26	54.00	50.30	322	289 Average	Horizontal	
3	2485.89	42.21	3.93	38.28	54.00	-11.79	322	289 Average	Horizontal	

Middle Channel (Vertical) Average



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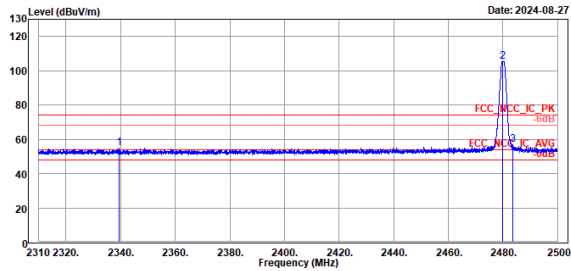
Peak	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dBm	dBuV/m	dB	cm	deg		
1	2384.53	41.41	3.40	38.01	54.00	-12.59	320	54 Average	Vertical	
2	2440.00	99.65	61.39	38.26	54.00	45.65	320	54 Average	Vertical	
3	2492.07	42.18	3.90	38.28	54.00	-11.82	320	54 Average	Vertical	

1Mbps

High Channel (Horizontal) Peak



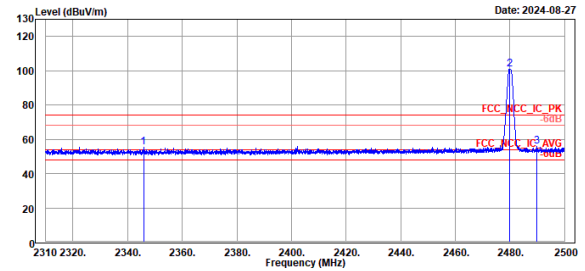
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2339.31	54.83	16.98	37.85	74.00	-19.17	282	289	Peak	Horizontal		
2 *	2480.00	105.39	67.19	38.29	74.00	31.39	282	289	Peak	Horizontal		
3	2483.71	56.64	18.36	38.28	74.00	-17.36	282	289	Peak	Horizontal		



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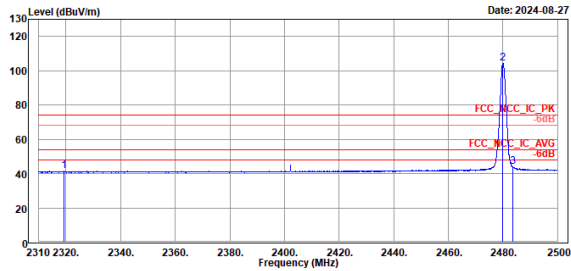
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1	2345.82	55.21	17.34	37.87	74.00	-18.79	262	152	Peak	Vertical		
2 *	2480.00	100.75	62.46	38.29	74.00	26.75	262	152	Peak	Vertical		
3	2489.74	55.78	17.50	38.28	74.00	-18.22	262	152	Peak	Vertical		

1Mbps

High Channel (Horizontal) Average



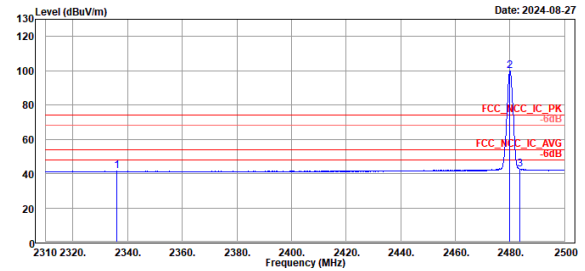
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2319.12	41.44	3.79	37.74	54.00	-12.56	282	289	Average	Horizontal		
2 *	2480.00	104.26	65.97	38.29	54.00	50.26	282	289	Average	Horizontal		
3	2483.66	43.99	5.71	38.28	54.00	-10.01	282	289	Average	Horizontal		



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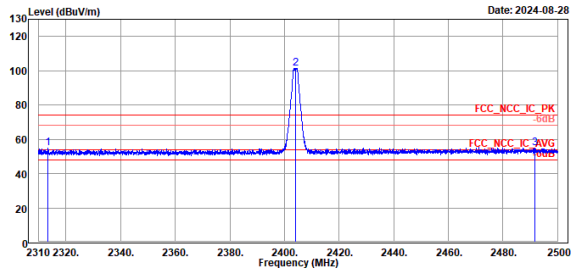
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1	2336.13	41.44	3.62	37.82	54.00	-12.56	262	152	Average	Vertical		
2 *	2480.00	99.66	61.37	38.29	54.00	45.66	262	152	Average	Vertical		
3	2483.52	42.70	4.42	38.28	54.00	-11.30	262	152	Average	Vertical		

2Mbps

Low Channel (Horizontal) Peak



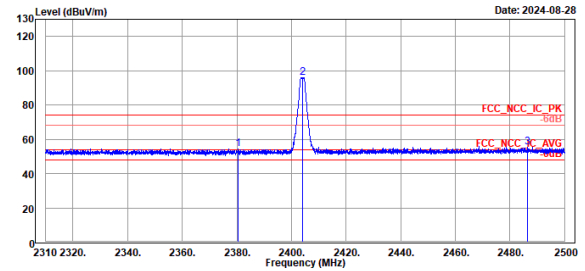
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2313.28	54.73	17.02	37.71	74.00	-19.27	153	61	Peak	Horizontal		
2 *	2404.00	101.33	63.25	38.08	74.00	27.33	153	61	Peak	Horizontal		
3	2491.55	54.96	16.68	38.28	74.00	-19.04	153	61	Peak	Horizontal		



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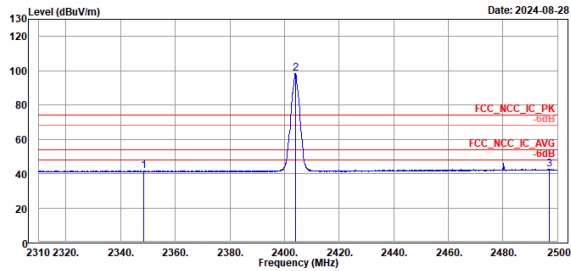
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2380.59	54.55	16.56	37.99	74.00	-19.45	156	333	Peak	Vertical		
2 *	2404.00	95.93	57.85	38.08	74.00	21.93	156	333	Peak	Vertical		
3	2486.42	55.51	17.23	38.28	74.00	-18.49	156	333	Peak	Vertical		

2Mbps

Low Channel (Horizontal) Average



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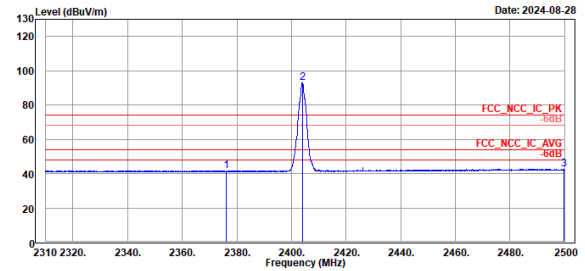


	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2348.52	41.69	3.00	37.89	54.00	-12.31	153	61 Average	Horizontal	
2 *	2404.00	98.30	60.22	38.08	54.00	44.30	153	61 Average	Horizontal	
3	2497.06	42.50	4.22	38.28	54.00	-11.50	153	61 Average	Horizontal	

Low Channel (Vertical) Average



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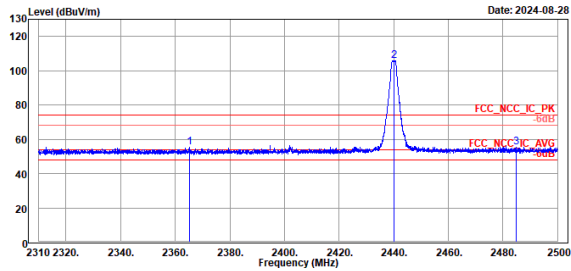
	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	2375.98	41.76	3.78	37.98	54.00	-12.24	156	333 Average	Vertical	
2 *	2404.00	93.05	54.97	38.08	54.00	39.05	156	333 Average	Vertical	
3	2499.67	42.52	4.25	38.27	54.00	-11.48	156	333 Average	Vertical	

2Mbps

Middle Channel (Horizontal) Peak



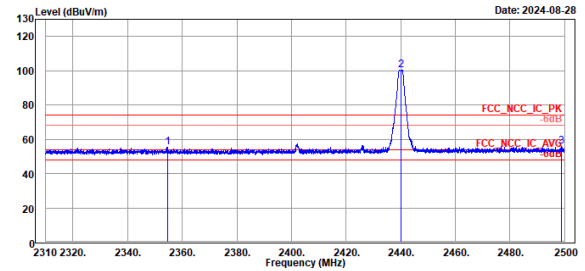
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2365.39	55.58	17.63	37.95	74.00	-18.42	290	293	Peak	Horizontal		
2 *	2440.00	105.84	67.58	38.26	74.00	31.84	290	293	Peak	Horizontal		
3	2484.75	55.42	17.14	38.28	74.00	-18.58	290	293	Peak	Horizontal		



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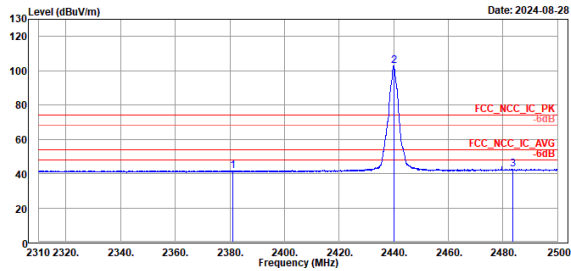
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2354.56	55.15	17.24	37.91	74.00	-18.85	290	88	Peak	Vertical		
2 *	2440.00	100.28	62.82	38.26	74.00	26.28	290	88	Peak	Vertical		
3	2498.96	55.64	17.37	38.27	74.00	-18.36	290	88	Peak	Vertical		

2Mbps

Middle Channel (Horizontal) Average



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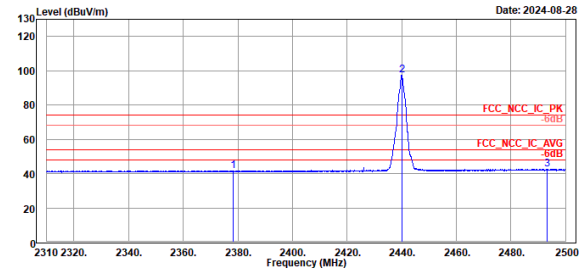


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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2381.01	41.74	3.75	37.99	54.00	-12.26		290	293	Average	Horizontal	
2 *	2440.00	103.01	64.75	38.26	54.00	49.01		290	293	Average	Horizontal	
3	2483.71	42.48	4.20	38.28	54.00	-11.52		290	293	Average	Horizontal	

Middle Channel (Vertical) Average



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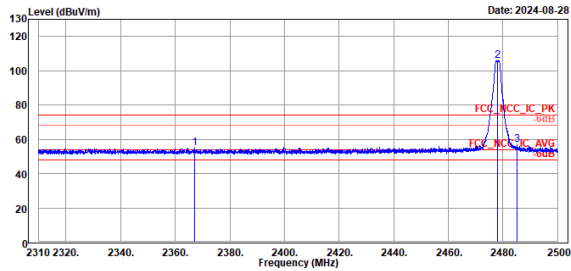
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2378.35	41.70	3.71	37.99	54.00	-12.30		290	88	Average	Vertical	
2 *	2440.00	97.41	59.15	38.26	54.00	43.41		290	88	Average	Vertical	
3	2493.16	42.63	4.36	38.27	54.00	-11.37		290	88	Average	Vertical	

2Mbps

High Channel (Horizontal) Peak



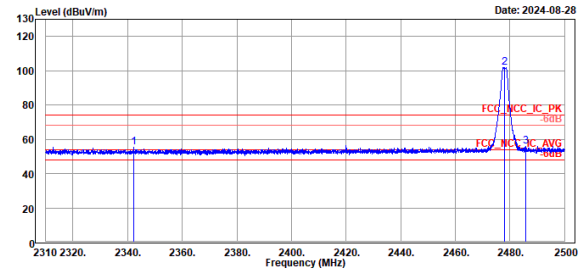
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2367.19	55.04	17.09	37.95	74.00	-18.96	286	78	Peak	Horizontal		
2 *	2478.00	105.83	67.55	38.28	74.00	31.83	286	78	Peak	Horizontal		
3	2485.09	56.64	18.36	38.28	74.00	-17.36	286	78	Peak	Horizontal		



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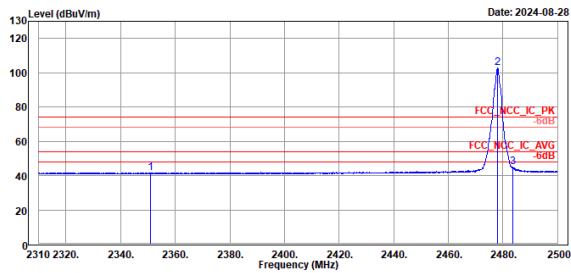
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2342.21	55.55	17.69	37.86	74.00	-18.45	299	155	Peak	Vertical		
2 *	2478.00	101.79	63.51	38.28	74.00	27.79	299	155	Peak	Vertical		
3	2485.66	56.08	17.80	38.28	74.00	-17.92	299	155	Peak	Vertical		

2Mbps

High Channel (Horizontal) Average



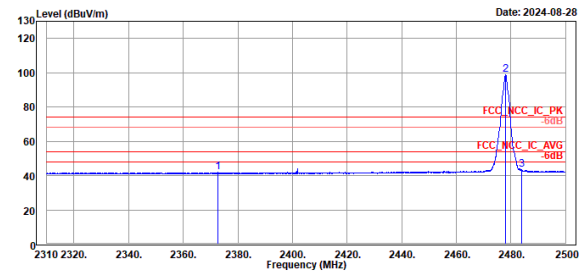
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2359.00	41.74	3.84	37.90	54.00	-12.26	286	78	Average	Horizontal		
2 *	2478.00	102.94	64.66	38.28	54.00	48.94	286	78	Average	Horizontal		
3	2483.61	44.96	6.68	38.28	54.00	-9.04	286	78	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2372.75	41.81	3.84	37.97	54.00	-12.19	299	155	Average	Vertical		
2 *	2478.00	98.88	60.60	38.28	54.00	44.88	299	155	Average	Vertical		
3	2483.99	43.46	5.18	38.28	54.00	-10.54	299	155	Average	Vertical		

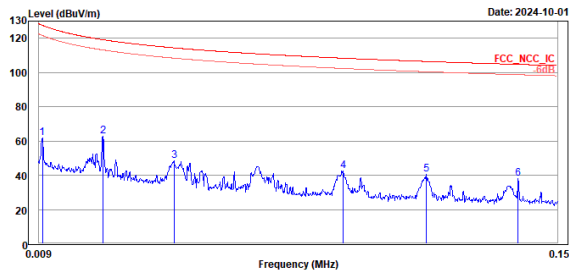
Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

2Mbps

Low Channel (Open) 9kHz~150kHz



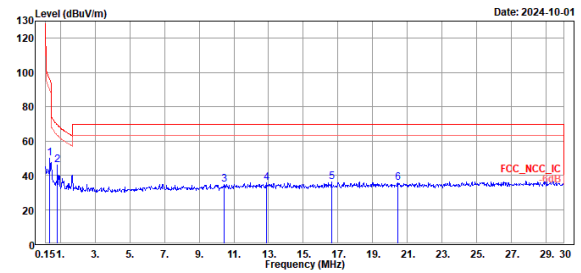
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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.01	61.82	43.51	18.31	127.60	-65.78	100	196 Peak	Open	
2	0.03	62.72	42.91	19.81	119.13	-56.41	100	260 Peak	Open	
3	0.05	48.56	29.04	19.52	114.38	-65.82	100	250 Peak	Open	
4	0.09	42.55	23.95	18.60	108.36	-65.81	100	265 Peak	Open	
5	0.11	40.51	21.89	18.62	106.43	-65.92	100	250 Peak	Open	
6	0.14	38.01	19.24	18.77	104.72	-66.71	100	199 Peak	Open	



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.39	49.76	30.62	19.14	95.81	-46.05	100	235 Peak	Open	
2	0.84	46.06	26.89	19.17	69.15	-23.09	100	151 Peak	Open	
3	10.42	34.76	13.35	21.41	69.50	-34.74	100	111 Peak	Open	
4	12.90	35.54	13.97	21.57	69.50	-33.96	100	288 Peak	Open	
5	16.63	36.05	13.85	22.20	69.50	-33.45	100	196 Peak	Open	
6	20.45	35.64	13.07	22.57	69.50	-33.86	100	22 Peak	Open	

Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

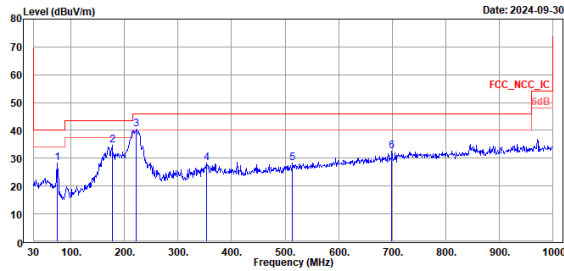
2Mbps

Low Channel (Horizontal)

Low Channel (Vertical)



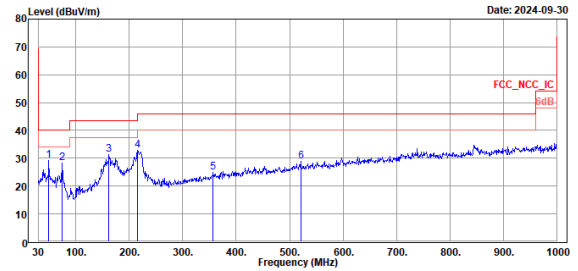
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	74.62	28.29	38.18	-9.81	40.00	-11.71	100	248	Peak	Horizontal		
2	176.47	34.55	40.76	-6.21	43.50	-8.95	100	175	Peak	Horizontal		
3	222.06	40.47	48.65	-8.18	46.00	-5.53	100	204	Peak	Horizontal		
4	353.98	28.15	32.40	-4.25	46.00	-17.85	100	164	Peak	Horizontal		
5	514.03	28.22	29.35	-1.13	46.00	-17.78	100	258	Peak	Horizontal		
6	699.38	32.48	38.27	-2.21	46.00	-13.52	100	164	Peak	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	49.40	29.25	35.19	-5.94	40.00	-10.75	100	241	Peak	Vertical		
2	74.62	28.31	38.12	-9.81	40.00	-11.69	100	170	Peak	Vertical		
3	161.92	31.45	37.14	-5.69	43.50	-12.05	100	56	Peak	Vertical		
4	215.27	32.84	41.22	-8.38	43.50	-10.66	100	173	Peak	Vertical		
5	356.89	24.83	29.00	-4.17	46.00	-21.17	100	136	Peak	Vertical		
6	528.82	29.02	29.91	-0.89	46.00	-16.98	100	10	Peak	Vertical		

Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

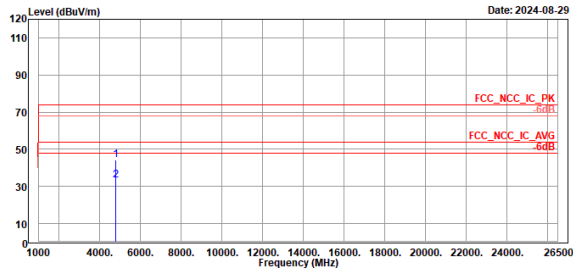
1Mbps

Low Channel (Horizontal)

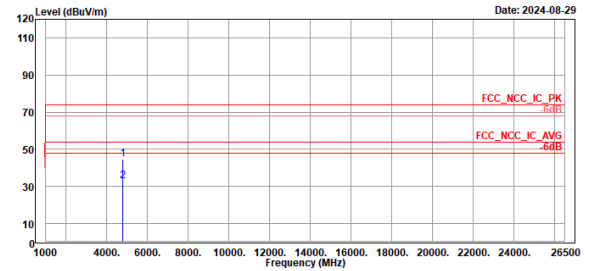
Low Channel (Vertical)



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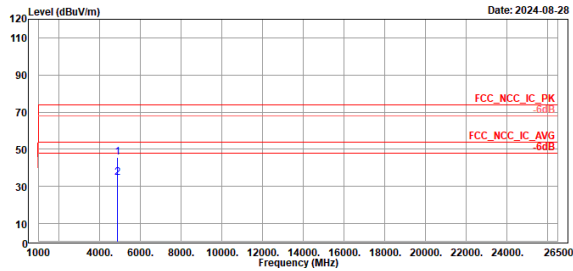
1Mbps

Middle Channel (Horizontal)

Middle Channel (Vertical)



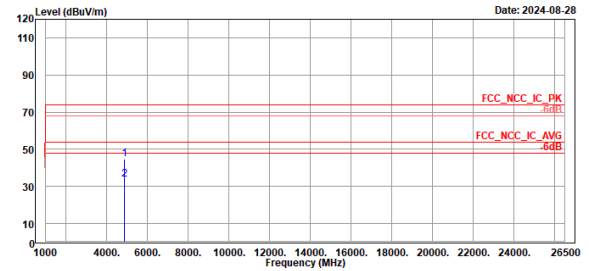
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	45.55	53.70	-8.15	74.00	-28.45	131	16	Peak	Horizontal		
2	4880.00	34.68	42.63	-8.15	54.00	-19.32	131	16	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	44.53	52.68	-8.15	74.00	-29.47	285	292	Peak	Vertical		
2	4880.00	33.67	41.82	-8.15	54.00	-20.33	285	292	Average	Vertical		

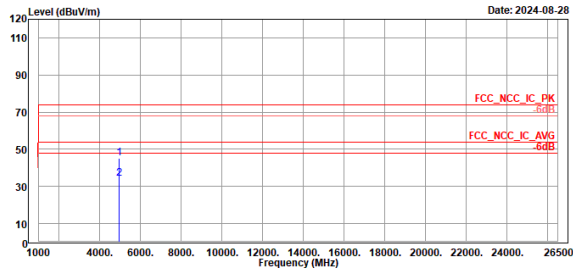
1Mbps

High Channel (Horizontal)

High Channel (Vertical)



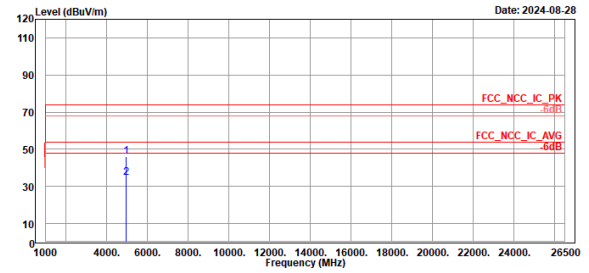
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4960.00	45.12	53.14	-8.02	74.00	-28.88	274	360	Peak	Horizontal		
2	4960.00	34.13	42.15	-8.02	54.00	-19.87	274	360	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4960.00	46.30	54.32	-8.02	74.00	-27.70	307	292	Peak	Vertical		
2	4960.00	34.86	42.88	-8.02	54.00	-19.14	307	292	Average	Vertical		

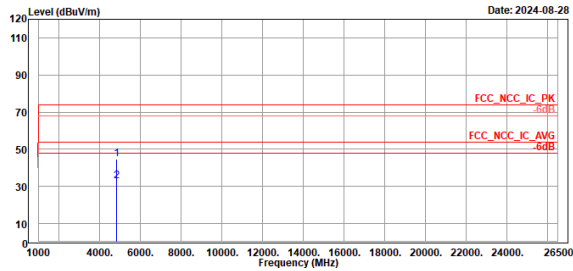
2Mbps

Low Channel (Horizontal)

Low Channel (Vertical)



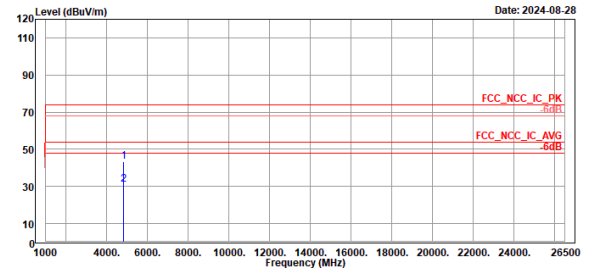
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4880.00	44.64	52.85	-8.21	74.00	-29.36	100	14	Peak	Horizontal		
2	4880.00	32.74	40.95	-8.21	54.00	-21.26	100	14	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4880.00	43.13	51.34	-8.21	74.00	-30.87	100	77	Peak	Vertical		
2	4880.00	30.97	39.18	-8.21	54.00	-23.03	100	77	Average	Vertical		

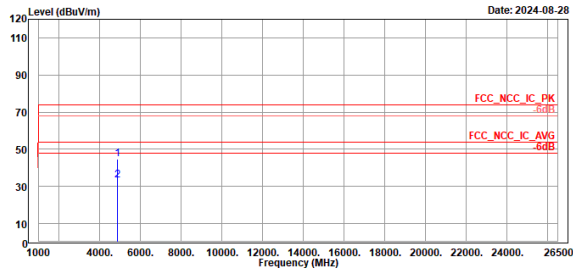
2Mbps

Middle Channel (Horizontal)

Middle Channel (Vertical)



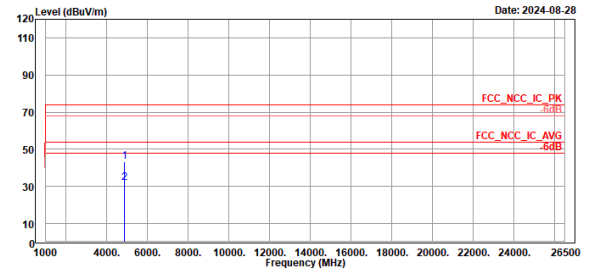
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	44.52	52.67	-8.15	74.00	-29.48	100	300	Peak	Horizontal		
2	4880.00	33.10	41.25	-8.15	54.00	-20.90	100	300	Average	Horizontal		



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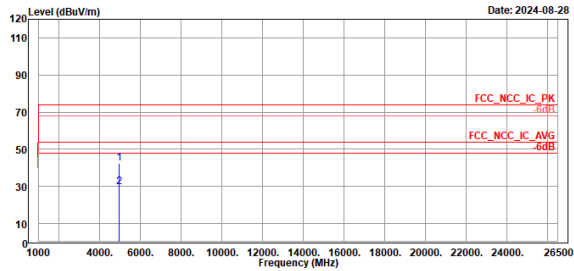
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	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	4880.00	43.33	51.48	-8.15	74.00	-30.67	339	295	Peak	Vertical		
2	4880.00	31.76	39.91	-8.15	54.00	-22.24	339	295	Average	Vertical		

2Mbps

High Channel (Horizontal)



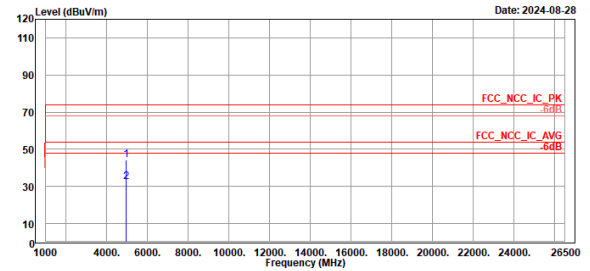
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4956.00	42.22	50.24	-8.02	74.00	-31.78	100	270	Peak	Horizontal		
2	4956.00	29.70	37.72	-8.02	54.00	-24.30	100	270	Average	Horizontal		



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	4956.00	44.33	52.35	-8.02	74.00	-29.67	100	293	Peak	Vertical		
2	4956.00	32.20	40.22	-8.02	54.00	-21.80	100	293	Average	Vertical		

Appendix B: Test Results of Radiated Spurious Emissions for 2nd

Source

MPA Mode

Band Edges, 2.31GHz ~ 2.5GHz

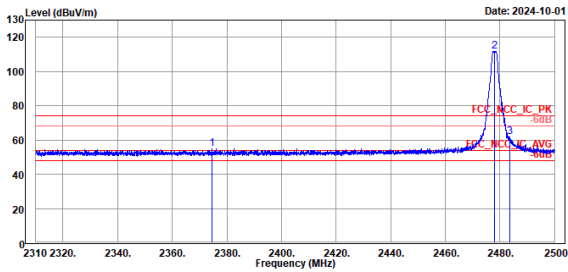
2Mbps

Middle Channel (Horizontal) Peak

Middle Channel (Vertical) Peak



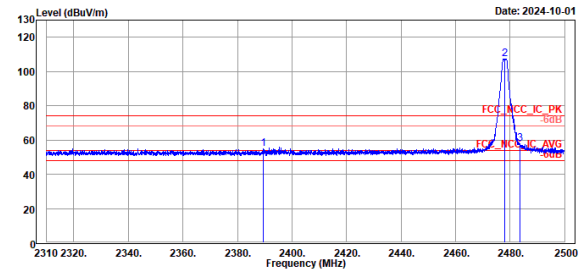
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2374.51	54.96	16.98	37.98	74.00	-19.04	250	109	Peak	Horizontal		
2 *	2478.00	111.84	73.56	38.28	74.00	37.84	250	109	Peak	Horizontal		
3	2483.71	61.59	23.31	38.28	74.00	-12.41	250	109	Peak	Horizontal		



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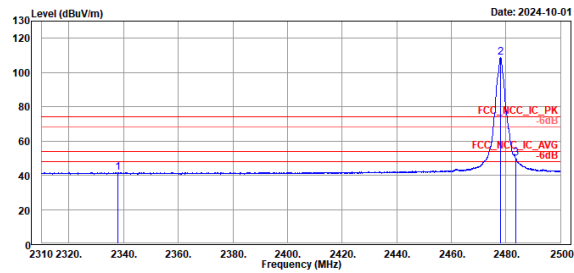
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2389.33	54.94	16.92	38.02	74.00	-19.06	292	149	Peak	Vertical		
2 *	2478.00	107.49	69.21	38.28	74.00	33.49	292	149	Peak	Vertical		
3	2483.57	57.98	19.70	38.28	74.00	-16.02	292	149	Peak	Vertical		

2Mbps

Middle Channel (Horizontal) Average



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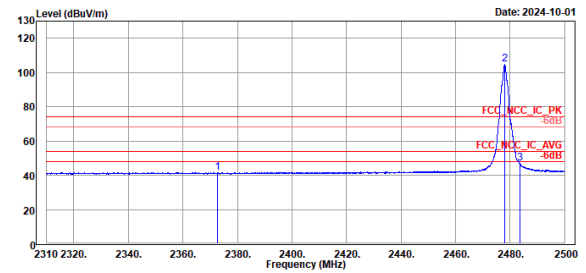


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2337.98	41.66	3.82	37.84	54.00	-12.34	250	109	Average	Horizontal		
2 *	2478.00	108.91	70.63	38.28	54.00	54.91	250	109	Average	Horizontal		
3 !	2483.50	50.07	11.79	38.28	54.00	-3.93	250	109	Average	Horizontal		

Middle Channel (Vertical) Average



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2372.00	41.49	3.52	37.97	54.00	-12.51	292	149	Average	Vertical		
2 *	2478.00	104.61	66.33	38.28	54.00	50.61	292	149	Average	Vertical		
3	2483.61	46.89	8.61	38.28	54.00	-7.11	292	149	Average	Vertical		

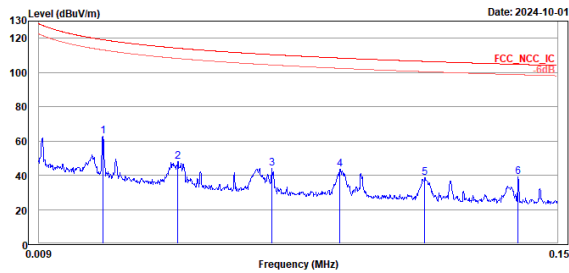
Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

2Mbps

High Channel (Open) 9kHz~150kHz



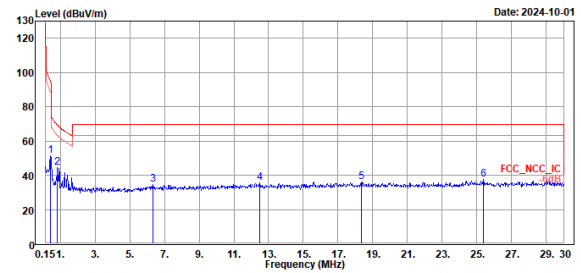
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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.03	62.77	42.96	19.81	119.13	-56.36	100	114 Peak	Open	
2	0.05	47.88	28.36	19.52	114.19	-66.31	100	250 Peak	Open	
3	0.07	44.10	25.43	18.67	110.39	-66.29	100	240 Peak	Open	
4	0.09	43.59	24.98	18.61	108.44	-64.85	100	260 Peak	Open	
5	0.11	38.68	20.07	18.61	106.47	-67.79	100	249 Peak	Open	
6	0.14	39.05	20.28	18.77	104.72	-65.67	100	208 Peak	Open	



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.45	51.28	32.13	19.15	94.57	-43.29	100	201 Peak	Open	
2	0.84	44.68	25.51	19.17	69.15	-24.47	100	176 Peak	Open	
3	6.36	34.52	13.56	20.96	69.50	-34.98	100	15 Peak	Open	
4	12.51	35.82	14.21	21.61	69.50	-33.68	100	326 Peak	Open	
5	18.33	36.13	13.56	22.57	69.50	-33.37	100	223 Peak	Open	
6	25.37	37.79	14.73	23.06	69.50	-31.71	100	138 Peak	Open	

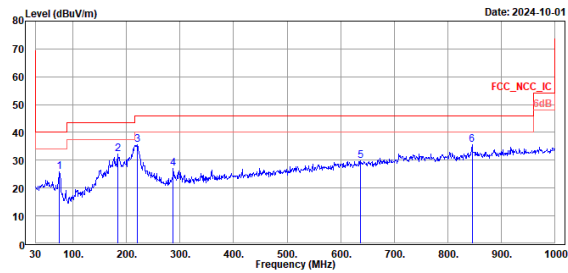
Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

2Mbps

High Channel (Horizontal)



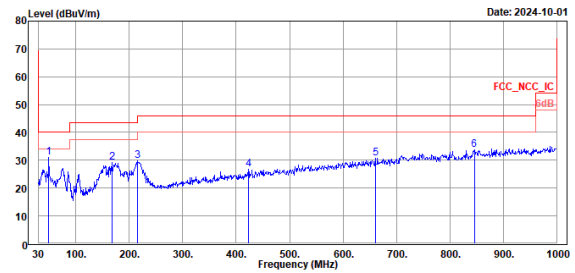
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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	74.62	25.76	35.57	-9.81	40.00	-14.24	100	332 Peak	Horizontal	
2	183.26	32.25	39.50	-7.25	43.50	-11.25	100	245 Peak	Horizontal	
3	220.12	35.54	43.83	-8.29	46.00	-10.46	100	199 Peak	Horizontal	
4	287.05	27.13	32.75	-5.62	46.00	-18.87	100	303 Peak	Horizontal	
5	637.22	29.77	28.39	1.38	46.00	-16.23	100	259 Peak	Horizontal	
6	845.77	35.45	31.03	4.42	46.00	-10.55	100	259 Peak	Horizontal	



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	49.40	30.94	36.88	-5.94	40.00	-9.06	100	317 Peak	Vertical	
2	167.74	29.11	34.75	-5.64	43.50	-14.39	100	38 Peak	Vertical	
3	215.27	29.93	38.31	-8.38	43.50	-13.57	100	131 Peak	Vertical	
4	422.85	26.62	29.38	-2.76	46.00	-19.38	100	148 Peak	Vertical	
5	660.50	30.73	29.18	1.55	46.00	-15.27	100	249 Peak	Vertical	
6	845.77	33.71	29.29	4.42	46.00	-12.29	100	308 Peak	Vertical	

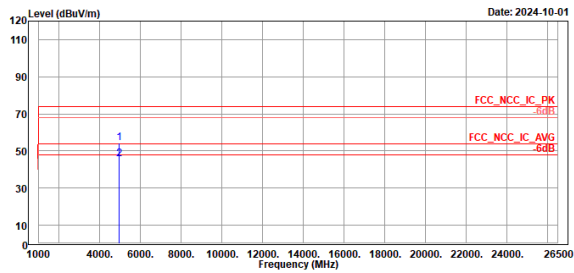
Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

2Mbps

High Channel (Horizontal)



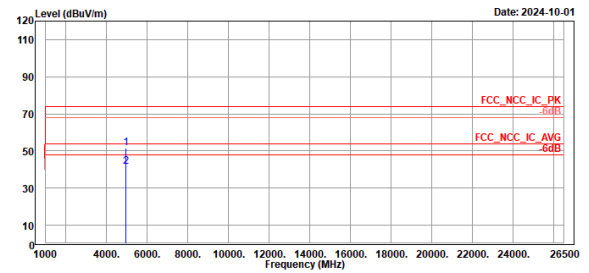
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High Channel (Vertical)



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LPA Mode

Band Edges, 2.31GHz ~ 2.5GHz

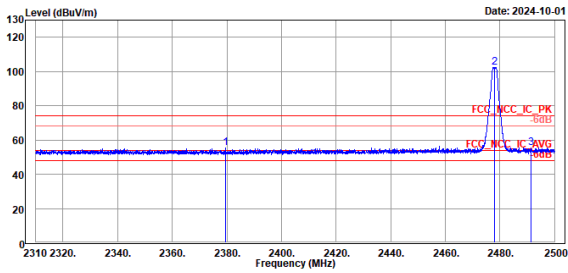
2Mbps

High Channel (Horizontal) Peak

High Channel (Vertical) Peak



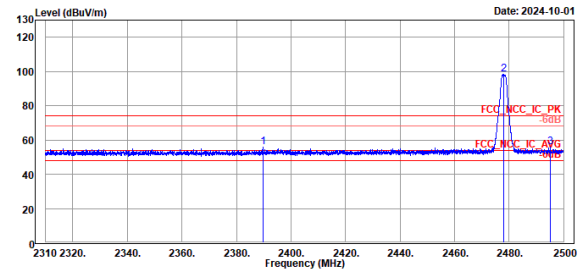
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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2379.49	55.60	17.61	37.99	74.00	-18.40		250	109	Peak	Horizontal	
2 *	2478.00	102.44	64.16	38.28	74.00	28.44		250	109	Peak	Horizontal	
3	2491.45	55.50	17.22	38.28	74.00	-18.50		250	109	Peak	Horizontal	



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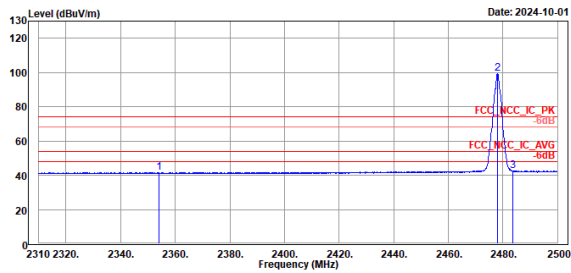
	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	dB	cm	deg			
1	2389.66	55.93	17.91	38.02	74.00	-18.07		292	149	Peak	Vertical	
2 *	2478.00	98.22	59.94	38.28	74.00	24.22		292	149	Peak	Vertical	
3	2495.01	55.70	17.43	38.27	74.00	-18.30		292	149	Peak	Vertical	

2Mbps

High Channel (Horizontal) Average



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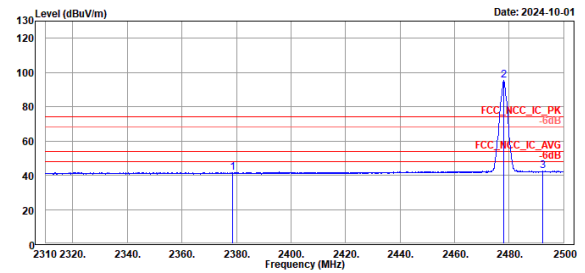


	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2353.99	41.78	3.79	37.91	54.00	-12.30	250	109	Average	Horizontal		
2 *	2478.00	99.43	61.15	38.28	54.00	45.43	250	109	Average	Horizontal		
3	2483.50	42.65	4.37	38.28	54.00	-11.35	250	109	Average	Horizontal		

High Channel (Vertical) Average



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	Freq	Level	Read	Level	Factor	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg				
1	2378.64	41.67	3.68	37.99	54.00	-12.33	292	149	Average	Vertical		
2 *	2478.00	95.20	56.92	38.28	54.00	41.20	292	149	Average	Vertical		
3	2492.40	42.45	4.17	38.28	54.00	-11.55	292	149	Average	Vertical		

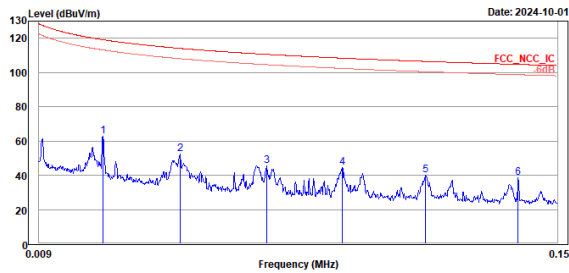
Spurious Emissions, Tx Mode, 9kHz ~ 30MHz

2Mbps

High Channel (Open) 9kHz~150kHz



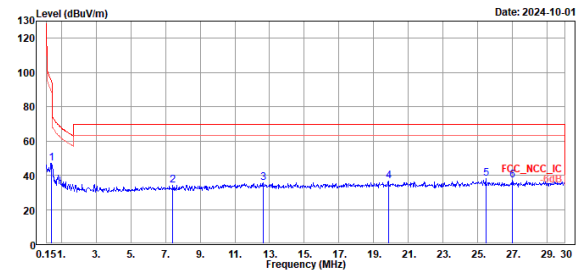
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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.03	62.79	42.98	19.81	119.13	-56.34	100	334 Peak	Open	
2	0.05	52.42	32.90	19.52	114.09	-61.67	100	239 Peak	Open	
3	0.07	45.61	26.91	18.70	110.58	-64.97	100	239 Peak	Open	
4	0.09	44.49	25.88	18.61	108.37	-63.88	100	269 Peak	Open	
5	0.11	40.05	21.43	18.62	106.44	-66.39	100	264 Peak	Open	
6	0.14	38.66	19.89	18.77	104.72	-66.06	100	198 Peak	Open	



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	0.42	47.00	27.85	19.15	95.17	-48.17	100	18 Peak	Open	
2	7.43	34.18	13.25	20.93	69.50	-35.32	100	27 Peak	Open	
3	12.63	35.47	13.87	21.60	69.50	-34.03	100	48 Peak	Open	
4	19.85	36.46	13.80	22.66	69.50	-33.04	100	198 Peak	Open	
5	25.46	37.91	14.89	23.02	69.50	-31.59	100	240 Peak	Open	
6	26.99	37.07	14.05	23.02	69.50	-32.43	100	276 Peak	Open	

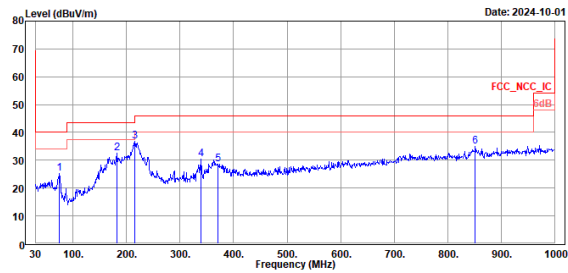
Spurious Emissions, Tx Mode, 30MHz ~ 1GHz

2Mbps

High Channel (Horizontal)



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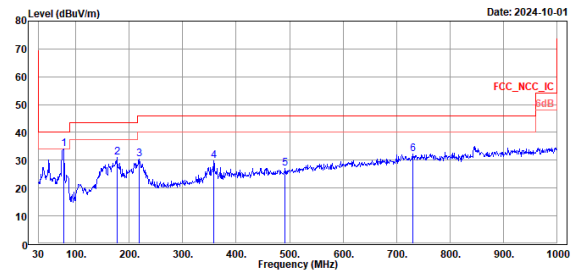


	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	74.62	25.32	35.13	-9.81	49.00	-14.68	100	198 Peak	Horizontal	
2	181.32	32.56	39.61	-7.05	43.50	-10.94	100	259 Peak	Horizontal	
3	215.27	36.78	45.16	-8.38	43.50	-6.72	100	47 Peak	Horizontal	
4	339.43	30.54	34.93	-4.39	46.00	-15.46	100	143 Peak	Horizontal	
5	371.44	28.74	32.51	-3.77	46.00	-17.26	100	175 Peak	Horizontal	
6	851.59	34.85	38.37	4.48	46.00	-11.15	100	64 Peak	Horizontal	

High Channel (Vertical)



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	Freq	Level	Read	Limit	Over	APos	TPos	Remark	Pol/Phase	Note
	MHz	dBuV/m	dBuV	dB/m	dBuV/m	dB	cm	deg		
1	76.56	34.17	44.42	-10.25	40.00	-5.83	100	326 Peak	Vertical	
2	176.47	31.04	37.25	-6.21	43.50	-12.46	100	182 Peak	Vertical	
3	219.15	30.56	38.88	-8.32	46.00	-15.44	100	143 Peak	Vertical	
4	357.86	29.69	33.84	-4.15	46.00	-16.31	100	360 Peak	Vertical	
5	491.72	27.02	28.86	-1.84	46.00	-18.98	100	35 Peak	Vertical	
6	738.34	32.15	29.62	2.53	46.00	-13.85	100	368 Peak	Vertical	

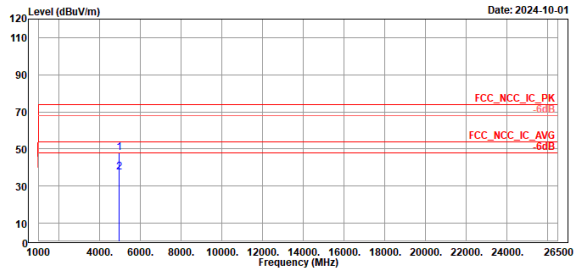
Spurious Emissions, Tx Mode, 1GHz ~ 26.5GHz

2Mbps

High Channel (Horizontal)



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