TEST REPORT

		Dt&C Co., Lt	d.	
U	Dt&C		eon-gil, Cheoin-gu, Yongin-si, Tel : 031-321-2664, Fax : 031-	
1. Report N	lo : DRTFCC2402-0008			
2. Custome	er			
• Name (F	CC) : Point Mobile Co., LTD			
 Address 	(FCC) : B-9F Kabul Great Va	alley, 32, Digital-ro 🤅	9-gil, Geumcheon-gu, Seou	l South Korea 08512
3. Use of R	eport : FCC Certification			
8 8	Name / Model Name : Mobile V2X-PM84	Computer / PM84		
-	gulation(s): Part 15.247 hod used: KDB558074 D01v	05r02, ANSI C63.1	0-2013	
6. Date of T	est : 2023.11.27 ~ 2024.01.0	05		
7. Location	of Test : 🛛 Permanent Tes	ting Lab] On Site Testing	
8. Testing E	Environment : See appended	test report.		
9. Test Res	ult : Refer to the attached tes	st result.		
	shown in this test report refe port is not related to KOLAS		e(s) tested unless otherwise	estated.
Affirmation	Tested by	۵	Technical Manager	RE
	Name : SeungMin Gil	(Signature)	Name : JaeJin Lee	Signature)
				1

2024.02.05.

Dt&C Co., Ltd.

If this report is required to confirmation of authenticity, please contact to report@dtnc.net

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Test Report Version

Test Report No.	Date	Description	Revised by	Reviewed by
DRTFCC2402-0008	Feb, 05. 2024	Initial issue	SeungMin Gil	JaeJin Lee

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1. General Information

1.1. Description of EUT

Equipment Class	Digital Transmission System (DTS)
Product Name	Mobile Computer
Model Name	PM84
Add Model Name	-
Firmware Version Identification Number	84.01
EUT Serial Number	Conducted : 23287A0055, Radiated : 23287A0058
Power Supply	DC 3.87 V
Modulation Technique	• 802.11b: CCK, DSSS • 802.11g/n: OFDM
Antenna Specification	Antenna Type: FPC Antenna Gain: 0.3 dBi (PK)

Band	Mode	Tx. frequency(MHz)	Max. conducted power(dBm)	Antenna gain(dBi)	Max. e.i.r.p (dBm)
	802.11b	2 412 ~ 2 462	22.51	0.3	22.81
2.4 GHz	802.11g	2 412 ~ 2 462	25.85	0.3	26.15
	802.11n (HT20)	2 412 ~ 2 462	25.87	0.3	26.17
	802.11n (HT40)	2 422 ~ 2 452	25.15	0.3	25.45

Note: e.i.r.p = P_{cond} + G_{EUT}

 P_{cond} = measured power at feedpoint of the EUT antenna, in dBm (Peak Conducted Output Power) G_{EUT} = gain of the EUT radiating element (antenna), in dBi

1.2. Declaration by the applicant / manufacturer

N/A

1.3. Testing Laboratory

Dt&C Co., Ltd.

The 3 m test site and conducted measurement facility used to collect the radiated data are located at the 42, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 17042.

The test site complies with the requirements of Part 2.948 according to ANSI C63.4-2014.

- FCC & IC MRA Designation No. : KR0034

- ISED#: 5740A

www.dtnc.net		
Telephone	:	+ 82-31-321-2664
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1.4. Testing Environment

Ambient Condition		
 Temperature 	+19 ℃ ~ +25 ℃	
 Relative Humidity 	+30 % ~ +35 %	

1.5. Measurement Uncertainty

The measurement uncertainties shown below were calculated in accordance with requirements of ANSI C63.4-2014 and ANSI C63.10-2013. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence.

Parameter	Measurement uncertainty
Antenna-port conducted emission	1.0 dB (The confidence level is about 95 %, $k = 2$)
AC power-line conducted emission	3.4 dB (The confidence level is about 95 %, $k = 2$)
Radiated emission (1 GHz Below)	4.8 dB (The confidence level is about 95 %, $k = 2$)
Radiated emission (1 GHz ~ 18 GHz)	4.8 dB (The confidence level is about 95 %, k = 2)
Radiated emission (18 GHz Above)	4.9 dB (The confidence level is about 95 %, k = 2)

1.6. Test Equipment List

Туре	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
Spectrum Analyzer	Agilent Technologies	N9020A	22/12/16 23/12/15	23/12/16 24/12/15	MY48011700
Spectrum Analyzer	Agilent Technologies	N9020A	23/06/23	24/06/23	US47360812
Spectrum Analyzer	Agilent Technologies	N9020A	22/12/16 23/12/15	23/12/16 24/12/15	MY50110097
DC Power Supply	Agilent Technologies	66332A	22/12/16 23/12/15	23/12/16 24/12/15	GB37470191
Multimeter	FLUKE	17B+	22/12/16 23/12/15	23/12/16 24/12/15	36390701WS
Signal Generator	Rohde Schwarz	SMBV100A	22/12/16 23/12/15	23/12/16 24/12/15	255571
Signal Generator	ANRITSU	MG3695C	22/12/16 23/12/15	23/12/16 24/12/15	173501
Thermohygrometer	BODYCOM	BJ5478	22/12/16 23/12/15	23/12/16 24/12/15	120612-1
Thermohygrometer	BODYCOM	BJ5478	22/12/16 23/12/15	23/12/16 24/12/15	120612-2
Thermohygrometer	BODYCOM	BJ5478	23/06/23	24/06/23	N/A
Loop Antenna	ETS-Lindgren	6502	22/04/22	24/04/22	203480
Hybrid Antenna	Schwarzbeck	VULB 9160	22/12/16 23/12/15	23/12/16 24/12/15	3362
Horn Antenna	ETS-Lindgren	3117	23/06/23	24/06/23	00143278
Horn Antenna	A.H.Systems Inc.	SAS-574	23/06/23	24/06/23	155
PreAmplifier	tsj	MLA-0118-B01-40	22/12/16 23/12/15	23/12/16 24/12/15	1852267
PreAmplifier	tsj	MLA-1840-J02-45	23/06/23	24/06/23	16966-10728
PreAmplifier	H.P	8447D	22/12/16 23/12/15	23/12/16 24/12/15	2944A07774
High Pass Filter	Wainwright Instruments	WHKX12-935-1000- 15000-40SS	23/06/23	24/06/23	8
High Pass Filter	Wainwright Instruments	WHKX10-2838-3300- 18000-60SS	23/06/23	24/06/23	1
High Pass Filter	Wainwright Instruments	WHNX8.0/26.5-6SS	23/06/23	24/06/23	3
Attenuator	Hefei Shunze	SS5T2.92-10-40	23/06/23	24/06/23	16012202
Attenuator	Aeroflex/Weinschel	56-3	23/06/23	24/06/23	Y2370
Attenuator	SMAJK	SMAJK-2-3	23/06/23	24/06/23	3
Attenuator	SMAJK	SMAJK-2-3	23/06/23	24/06/23	2
Attenuator	Aeroflex/Weinschel	86-10-11	23/06/23	24/06/23	408
Power Meter & Wide Bandwidth Sensor	Anritsu	ML2496A MA2411B	22/12/16 23/12/15	23/12/16 24/12/15	1338004 1911481
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	23/02/24	24/02/24	100364
PULSE LIMITER	ROHDE&SCHWARZ	ESH3-Z2	23/08/21	24/08/21	101333
LISN	SCHWARZBECK	NSLK 8128 RC	23/10/26	24/10/26	8128 RC-387
Thermo Hygro Meter	TESTO	608-H1	23/01/13	24/01/13	45084791
Cable	DT&C	Cable	23/01/04 24/01/03	24/01/04 25/01/03	G-2
Cable	HUBER+SUHNER	SUCOFLEX 100	23/01/04 24/01/03	24/01/04 25/01/03	G-3
Cable	DT&C	Cable	23/01/04 24/01/03	24/01/04 25/01/03	G-4
Cable	OMT	YSS21S	23/01/04 24/01/03	24/01/04 25/01/03	G-5
Cable	Junkosha	MWX241	23/01/03 24/01/03	24/01/03 25/01/03	mmW-1
Cable	Junkosha	MWX241	23/01/03 24/01/03	24/01/03 25/01/03	mmW-4
Cable	HUBER+SUHNER	SUCOFLEX100	23/01/04 24/01/03	24/01/04 25/01/03	M-1
Cable	HUBER+SUHNER	SUCOFLEX100	23/01/04 24/01/03	24/01/04 25/01/03	M-2
Cable	JUNKOSHA	MWX241/B	23/01/04 24/01/03	24/01/04 25/01/03	M-3
Cable	JUNKOSHA	J12J101757-00	23/01/04 24/01/03	24/01/04 25/01/03	M-7
Cable	HUBER+SUHNER	SUCOFLEX106	23/01/04 24/01/03	24/01/04 25/01/03	M-9
Cable	DT&C	Cable	23/01/04	24/01/04	RFC-42



Cable	Dt&C	Cable	23/01/04 24/01/03	24/01/04 25/01/03	RFC-69
Test Software	tsj	Radiated Emission Measurement	NA	NA	Version 2.00.0185
Test Software	tsj	Noise Terminal Measurement	NA	NA	Version 2.00.0185

Note1: The measurement antennas were calibrated in accordance to the requirements of ANSI C63.5-2017.

Note2: The cable is not a regular calibration item, so it has been calibrated by Dt&C itself.

2. Test Methodology

The measurement procedures described in the ANSI C63.10-2013 and the guidance provided in KDB558074 D01v05r02 were used in measurement of the EUT.

The EUT was tested per the guidance of KDB558074 D01v05r02. And ANSI C63.10-2013 was used to reference appropriate EUT setup and maximizing procedures of radiated spurious emission and AC line conducted emission testing.

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT was operated in the test mode to fix the TX frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

2.3. General Test Procedures

Conducted Emissions

The power-line conducted emission test procedure is not described on the KDB558074 D01v05r02.

So this test was fulfilled with the requirements in Section 6.2 of ANSI C63.10-2013.

The EUT is placed on the wooden table, which is 0.8 m above ground plane and the conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-peak and Average detector.

Radiated Emissions

Basically the radiated tests were performed with KDB558074 D01v05r02. But some requirements and procedures like test site requirements, EUT setup and maximizing procedure were fulfilled with the requirements in Section 5 and 6 of the ANSI C63.10-2013 as stated on section 12.1 of the KDB558074 D01v05r02.

The EUT is placed on a non-conductive table. For emission measurements at or below 1 GHz, the table height is 80 cm. For emission measurements above 1 GHz, the table height is 1.5 m. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

2.4. Instrument Calibration

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.5. Description of Test Modes

The EUT has been tested with the operating condition for maximizing the emission characteristics. A test program is used to control the EUT for staying in continuous transmitting.

Transmitting Configuration of EUT

Mode	Data rate
802.11b	1 Mbps ~ 11 Mbps
802.11g	6 Mbps ~ 54 Mbps
802.11n(HT20)	MCS 0 ~ MCS 7
802.11n(HT40)	MCS 0 ~ MCS 7

EUT Operation test setup

- Test Software: AP META Tool_3.2152.00

- Power setting: Refer to the table below.

Test Mode

Test mode	Worst case data rate	Power setting	Tested Frequency (MHz)		
TM 1	802.11b 1 Mbps	19	2 412	2 437	2 462
TM 2	802.11g 6 Mbps	15	2 412	2 437	2 462
ТМ 3	802.11n(HT20) MCS 0	14	2 412	2 437	2 462
TM 4	802.11n(HT40) MCS 0	12.5	2 422	2 437	2 452

Note1: The worst case data rate was determined according to the power measurements.

Note2: The power measurement results for all modes and data rate were reported.

3. Antenna Requirements

According to Part 15.203

"An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section."

The antenna is attached on the device by means of unique coupling method. Therefore this E.U.T complies with the requirement of Part 15.203

4. Summary of Test Result

FCC part section(s)	Test Description	Limit	Test Condition	Status Note 1
15.247(a)	6 dB Bandwidth	> 500 kHz		С
15.247(b)	Maximum Peak Output Power	< 1 Watt (conducted), FCC		С
15.247(d)	Unwanted Emissions(Conducted)	20 dBc in any 100 kHz BW	Conducted	С
15.247(e)	Power Spectral Density	< 8 dBm / 3 kHz		С
-	Occupied Bandwidth (99 %)	NA		С
15.247(d) 15.205 15.209	Unwanted Emissions(Radiated)	Part 15.209 limits (Refer to section 5.5)	Radiated	C Note 3
15.207	AC Power-Line Conducted Emissions	Part 15.207 limits (Refer to section 5.6)	AC Line Conducted	С
15.203	Antenna Requirements	Part 15.203 (Refer to section 3)	-	С
Note 1: C=Comp Note 2: For radi OATS.	NC=Not Comply NT=Not Tested ated emission tests below 30 MHz were	NA=Not Applicable performed on semi-anechoic cha	amber which is co	orrelated with

Note 3: This test item was performed in three orthogonal EUT positions and the worst case data was reported.

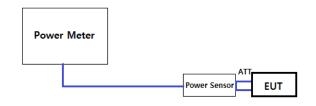


5. Test Result

- 5.1. Maximum Peak Output Power
- Test Requirements and limit, Part 15.247(b)

The maximum permissible conducted output power is 1 Watt.

5.1.1. Test Setup



5.1.2. Test Procedures

- KDB558074 D01v05r02 Section 8.3.1.3
- ANSI C63.10-2013 Section 11.9.1.3

RBW ≥ DTSPKPM1 Peak-reading power meter method

The maximum conducted output powers were measured using a broadband peak RF power meter which has greater video bandwidth than DUT's DTS bandwidth and utilize a fast-responding diode detector.

- KDB558074 D01v05r02 Section 8.3.2.3
- ANSI C63.10-2013 Section 11.9.2.3

Method AVGPM-G

The average conducted output powers were measured using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

5.1.3. Test Results

- Refer to the next page



			Maximum Peak Conducted Output Power (dBm)									
Mode	Freq. (MHz)	Det.		Data Rate (Mbps)								
	(11112)		1	2	5.5	11	-	-	-	-		
	2 412	PK	22.22	22.19	22.16	22.19	-	-	-	-		
	2412	AV	19.73	19.70	19.69	19.72	-	-	-	-		
802.11b	0.407	PK	22.49	22.40	22.39	22.41	-	-	-	-		
002.110	2 437	AV	20.00	19.88	19.93	19.95	-	-	-	-		
	2.462	PK	22.51	22.49	22.44	22.48	-	-	-	-		
	2 462	AV	20.02	19.99	20.01	20.01	-	-	-	-		

	_				Maximum P	eak Conduc	ted Output F	ower (dBm)					
Mode	Freq. (MHz)	Det.		Data Rate (Mbps)									
	(11112)		6	9	12	18	24	36	48	54			
	2 412	PK	25.77	25.66	25.22	25.38	25.65	25.12	25.33	25.14			
	2412	AV	16.05	16.00	16.01	16.03	16.02	15.99	15.78	15.81			
902 11a	2 437	PK	25.85	25.64	25.52	25.50	25.61	25.62	25.55	25.38			
802.11g	2 437	AV	16.15	16.08	16.08	16.10	16.13	16.11	15.83	15.91			
	2 462	PK	25.39	25.31	25.10	25.09	25.17	25.28	24.78	25.11			
2 462	2 402	AV	15.93	15.82	15.85	15.87	15.92	15.92	15.52	15.61			

	_				Maximum P	eak Conduc	ted Output F	ower (dBm)				
Mode	Freq. (MHz)	Det.		Data Rate (MCS)								
	(11112)		0	1	2	3	4	5	6	7		
	2 412	PK	25.83	25.48	25.51	25.36	25.81	25.29	25.41	25.56		
	2412	AV	15.02	14.92	14.99	15.00	15.01	14.75	14.68	14.70		
802.11n	2 437	PK	25.87	25.44	25.51	25.67	25.86	25.33	25.29	25.38		
(HT20)	2 437	AV	15.20	15.03	15.10	15.13	15.17	14.89	14.76	14.80		
	2 462	PK	25.48	24.58	24.63	24.63	24.88	24.59	24.65	24.66		
	2 402	AV	14.96	14.77	14.79	14.80	14.90	14.35	14.33	14.38		

					Maximum P	eak Conduc	ted Output F	ower (dBm)					
Mode	Freq. (MHz)	Det.		Data Rate (MCS)									
	(11112)		0	1	2	3	4	5	6	7			
	2 422	PK	25.12	23.89	24.00	23.56	25.06	24.13	22.55	23.03			
	2 422	AV	13.79	13.67	13.70	13.75	13.77	13.43	13.51	13.54			
802.11n	2 437	PK	24.91	23.12	23.49	23.54	24.62	23.81	22.25	22.75			
(HT40)	2 437	AV	13.60	13.43	13.46	13.47	13.55	13.17	13.24	13.26			
	2 452	PK	25.15	23.39	23.74	23.47	24.85	23.81	22.21	22.66			
		AV	13.87	13.77	13.75	13.78	13.81	13.28	13.37	13.40			

5.2. 6 dB Bandwidth

Test Requirements and limit, Part 15.247(a)

The bandwidth at 6 dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the EUT's antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The minimum permissible 6 dB bandwidth is 500 kHz.

5.2.1. Test Setup

Refer to the APPENDIX I.

5.2.2. Test Procedures

- KDB558074 D01v05r02 Section 8.2
- ANSI C63.10-2013 Section 11.8.2
- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW) \ge 3 x RBW.
- 3. Detector = **Peak**.
- 4. Trace mode = **max hold**.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Option 1 Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Option 2 - The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW \ge 3 × RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be \ge 6 dB.

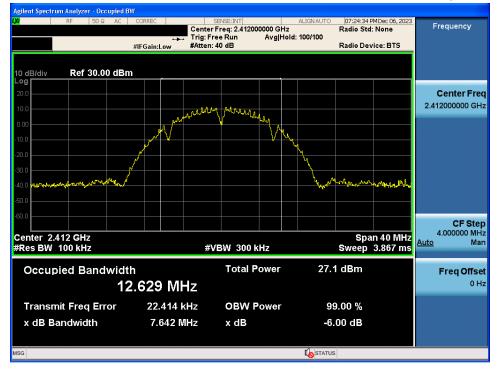
5.2.3. Test Results

Test Mode	Frequency	Test Results (MHz)
	2 412	7.64
TM 1	2 437	7.61
	2 462	7.56
	2 412	15.17
TM 2	2 437	15.06
	2 462	15.10
	2 412	15.67
ТМ 3	2 437	13.39
	2 462	14.84
	2 422	35.17
TM 4	2 437	35.17
	2 452	35.17

Dt&C

6 dB Bandwidth

TM 1 & 2412

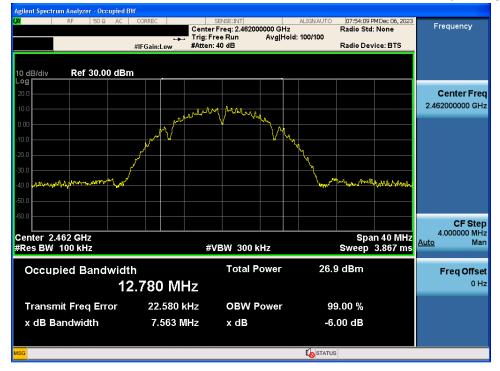


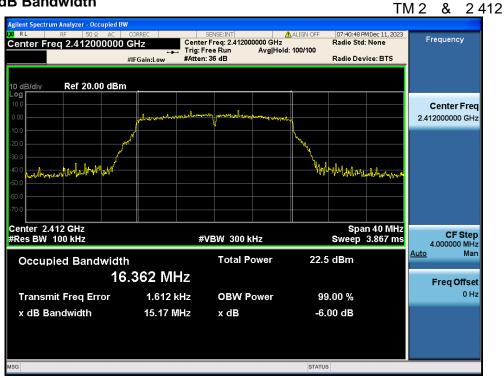
6 dB Bandwidth

TM 1 & 2437



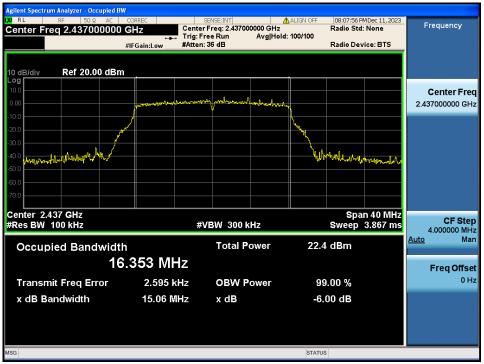
TM 1 & 2462





6 dB Bandwidth

TM 2 & 2 437

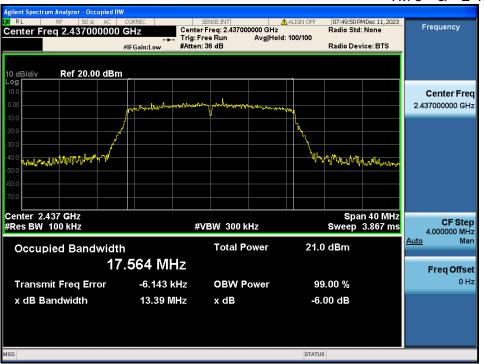






6 dB Bandwidth

<u>TM 3 & 2437</u>







6 dB Bandwidth

TM 4 & 2437







I Test requirements and limit, Part 15.247(e)

The peak power density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

5.3.1. Test Setup

Refer to the APPENDIX I.

5.3.2. Test Procedures

- KDB558074 D01v05r02 Section 8.4
- ANSI C63.10-2013 Section 11.10.2

Method PKPSD (peak PSD)

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to **1.5 times** the DTS bandwidth.
- 3. Set the RBW : 3 kHz \leq RBW \leq 100 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = **peak.**
- 6. Sweep time = **auto couple.**
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the **peak marker function** to determine the maximum amplitude level within the RBW.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

5.3.3. Test Results

Test Mode	Frequency	RBW	PKPSD (dBm)	Limit (dBm / 3 kHz)
	2 412	3 kHz	-1.45	8.00
TM 1	2 437	3 kHz	-1.59	8.00
	2 462	3 kHz	-2.48	8.00
	2 412	3 kHz	-8.14	8.00
TM 2	2 437	3 kHz	-8.48	8.00
	2 462	3 kHz	-7.78	8.00
	2 412	3 kHz	-8.44	8.00
TM 3	2 437	3 kHz	-8.88	8.00
	2 462	3 kHz	-10.81	8.00
	2 422	3 kHz	-13.93	8.00
TM 4	2 437	3 kHz	-13.25	8.00
	2 452	3 kHz	-14.41	8.00

TDt&C

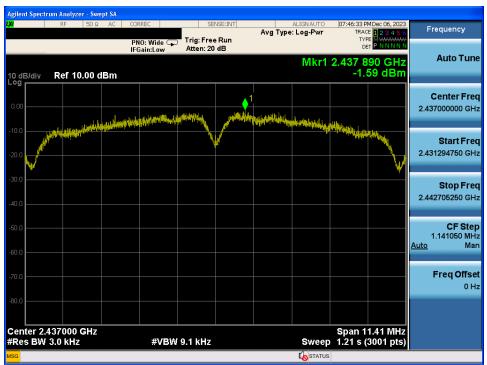
Power Spectral Density

TM 1 & 2412



Power Spectral Density

TM 1 & 2437





TM 1 & 2462





TM 2 & 2412



Power Spectral Density

TM 2 & 2437



TM 2 & 2462



TM 3 & 2412



Power Spectral Density

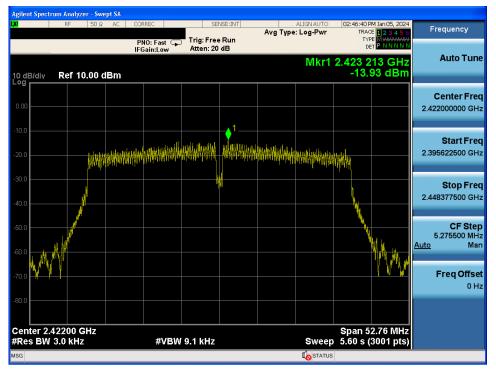
TM 3 & 2437



TM 3 & 2462



TM 4 & 2422



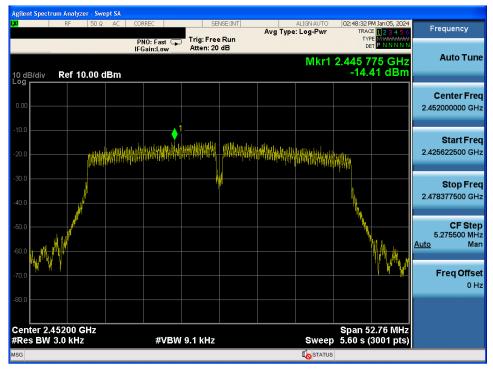
Power Spectral Density

TM 4 & 2437





TM 4 & 2452





5.4. Unwanted Emissions (Conducted)

Test requirements and limit, Part 15.247(d)

In any 100 kHz bandwidth outside of the authorized frequency band, the power shall be attenuated according to the following conditions :

If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level. If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to 15.247(b)(3) requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured inband average PSD level. In either case, attenuation to levels below the general emission limits specified in §15.209(a) is not required.

5.4.1. Test Setup

Refer to the APPENDIX I including path loss

5.4.2. Test Procedures

- KDB558074 D01v05r02 Section 8.5
- ANSI C63.10-2013 Section 11.11

Reference level measurement

- 1. Set instrument center frequency to DTS channel center frequency.
- 2. Set the span to \geq 1.5 times the DTS bandwidth.
- 3. Set the RBW = 100 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum PSD level LIMIT LINE = 20 dB below of the reference level.

LIMIT LINE = 20 GB below of the reference i

Emission level measurement

- 1. Set the center frequency and span to encompass frequency range to be measured.
- 2. Set the RBW = 100 kHz.(Actual 1 MHz , See below note)
- 3. Set the VBW \geq 3 x RBW.(Actual 3 MHz, See below note)
- 4. Detector = peak.
- 5. Ensure that the number of measurement points \geq span / RBW
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow the trace to stabilize (this may take some time, depending on the extent of the span).
- 9. Use the peak marker function to determine the maximum amplitude level.

Note: The unwanted emission(conducted) was tested with below settings.

Frequency range	RBW	VBW	Detector	Trace	Sweep Point
9 kHz ~ 30 MHz	100 kHz	300 kHz			
30 MHz ~ 10 GHz	1 MHz	3 MHz	Peak	Max Hold	40 001
10 GHz ~ 25 GHz	1 MHz	3 MHz			

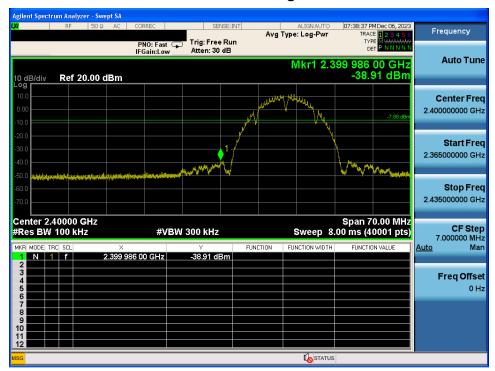
If the emission level with above setting was close to the limit (ie, less than 3 dB margin) then zoom scan is required using RBW = 100 kHz, VBW = 300 kHz, SPAN = 100 MHz and BINS = 2 001 to get accurate emission level within 100 kHz BW.

5.4.3. Test Results

TM 1 & 2412

Reference Frequency TRACE Avg Type: Log-Pwr PNO: Wide Trig: Free Run IFGain:Low Atten: 40 dB TYPE DET Auto Tune Mkr1 2.410 999 GHz 12.02 dBm Ref 30.00 dBm 10 dB/div **Center Freq** 2.412000000 GHz **♦**¹ Start Freq 2.406268500 GHz Stop Freq 2.417731500 GHz **CF Step** 1.146300 MHz Man <u>Auto</u> **Freq Offset** 0 Hz Center 2.412000 GHz #Res BW 100 kHz Span 11.46 MHz Sweep 1.20 ms (3001 pts) #VBW 300 kHz

Low Band-edge

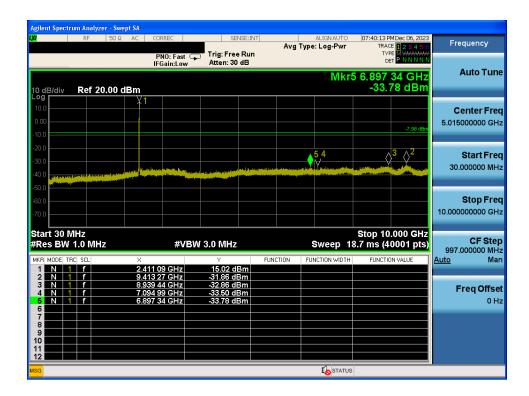


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Conducted Spurious Emissions

gilent Spectrum Analyzer - Swept					
RF 50 Ω 🧘 [SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr		Frequency
	PNO: Fast G IFGain:Low	Trig: Free Run Atten: 30 dB		DET P NNNN	
0 dB/div Ref 20.00 dB	m			Mkr1 281.9 kHz -42.73 dBm	Auto Tun
10.0					Center Fre
0.00				-7.98 dBm	15.004500 MH
20.0					
30.0					Start Fre
40.0					9.000 kH
50.0	والمتعاد الملحول الجاربية المحدو الع	ور المراجعة المحمد المارية المراجع الم	والمعالية المحافية والمحافظ	والمستر التركيمة فيتقضي وتتسمينا ويتما تعرقا فسألف وألف	
	die New York, als and a finance of a firmer of				Stop Fre 30.000000 MH
tart 9 kHz Res BW 100 kHz	#VBV	V 300 kHz	Sweep	Stop 30.00 MHz 5.33 ms (40001 pts)	CF Ste 2.999100 MH
KR MODE TRC SCL	X		FUNCTION FUNCTION WIDT	H FUNCTION VALUE	Auto Ma
1 N 1 f	281.9 kHz	-42.73 dBm			
3					Freq Offse
5 6					0 H
7 8 9					
2					
G				us 1 DC Coupled	





Conducted Spurious Emissions

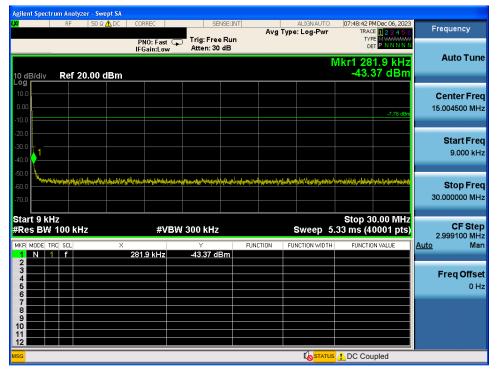


TM 1 & 2437

Reference



Conducted Spurious Emissions





Agilent Spectrum Analyzer - S					
XI RF 50	Ω AC CORREC	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	07:49:32 PM Dec 06, 2023 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast IFGain:Low	Trig: Free Run Atten: 30 dB		TYPE M WWWWWW DET P N N N N N	
	IFGain:Low	Atten: 30 dB	Mice	5 7.911 04 GHz	Auto Tune
10 dB/div Ref 20.00	dBm		IVINIS	-34.04 dBm	
Log	X1				
10.0					Center Free
0.00				-7.76 dBm	5.015000000 GH
-10.0					
-20.0				$5 \wedge^4 \wedge^3 \wedge^2$	Start Free
10.0		And a state of the	The second starting and second starting of the second starting of th		30.000000 MH
-40.0					
-50.0					Stop Free
-70.0					10.000000000 GH
Start 30 MHz				Stop 10.000 GHz	CF Ster
#Res BW 1.0 MHz	#VE	3W 3.0 MHz	-	8.7 ms (40001 pts)	997.000000 MH
MKR MODE TRC SCL	× 2.436 01 GHz	Y FU 15.16 dBm	NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mai
2 N 1 f	9.406 79 GHz	-32.13 dBm			
3 N 1 f 4 N 1 f	8.921 50 GHz 8.421 00 GHz	-32.42 dBm -33.33 dBm			Freq Offse
5 N 1 f	7.911 04 GHz	-34.04 dBm			0 H
7					
8					
10					
12					
ISG			I STATUS		

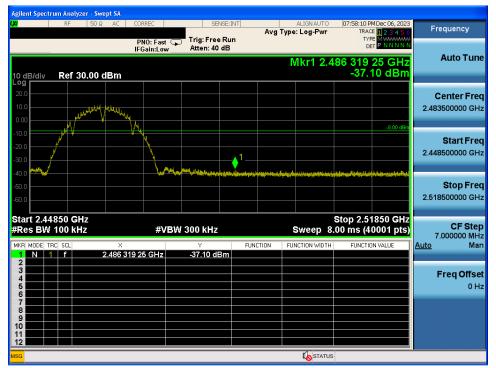


TM 1 & 2462

Reference

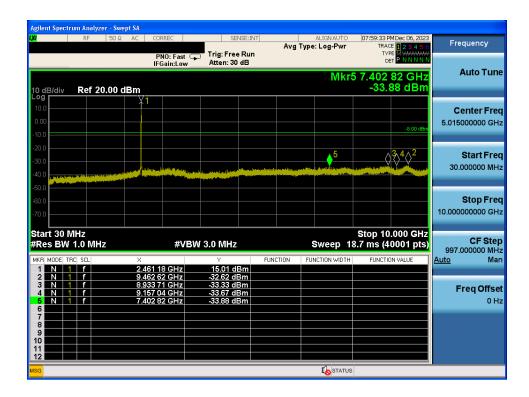


High Band-edge





gilent Spectrum Analyzer - Swept SA			-1			
RF 50 Ω 🧥 DC	CORREC	SENSE:IN		ALIGNAUTO /pe: Log-Pwr	07:58:48 PM Dec 06, 2023 TRACE 1 2 3 4 5 6 TYPE M WWWWWW	Frequency
	PNO: Fast 🖵 IFGain:Low	Trig: Free Run Atten: 30 dB			DET	
				Ν	/kr1 309.7 kHz	Auto Tun
0 dB/div Ref 20.00 dBm					-44.71 dBm	
10.0						Center Fre
1.00					-8.00 dBm	15.004500 MH
0.0						
20.0						Start Fre
40.0						9.000 kH
50.0				_		
50.0 Maran and a strate data and a law and and and and and and and and and and	Hereiter Annen Hereiter	and and the second second	election destandants	ender han produced by	werden het nieder bestellten sterne bei sollet	Stop Fre
70.0						30.000000 MH
tart 9 kHz					Stop 30.00 MHz	
Res BW 100 kHz	#VBW	300 kHz		Sweep 5.	33 ms (40001 pts)	CF Ste 2.999100 MH
KR MODE TRC SCL X	309.7 kHz	⊻ -44.71 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Ma
2	309.7 KHZ	-44.7 T UDIII				
3						Freq Offs
5 6 9						01
8						
9						
1						
G					L DC Coupled	





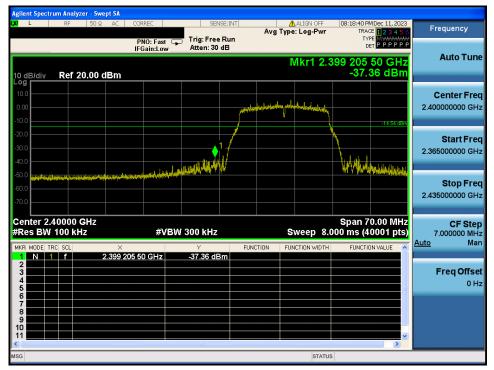
Agilent Spectrum Analyzer - Swept SA					
XI RF 50Ω AC	CORREC	SENSE:INT	ALIGNAUTO Avg Type: Log-Pwr	08:00:13 PM Dec 06, 2023 TRACE 1 2 3 4 5 6	Frequency
		rig: Free Run Atten: 30 dB	nig type. Logi wi		
10 dB/div Ref 20.00 dBm			Mkr4 2	1.154 375 GHz -19.00 dBm	Auto Tune
10.0 .000			4-		Center Fred 17.500000000 GH:
20.0 30.0 40.0					Start Free 10.000000000 GH
60.0 70.0					Stop Free 25.000000000 GH
Start 10.000 GHz Res BW 1.0 MHz	#VBW 3.		Sweep 40	Stop 25.000 GHz 0.0 ms (40001 pts) FUNCTION VALUE	CF Stej 1.50000000 GH <u>Auto</u> Mai
2 N 1 f 24.438	3 625 GHz -	15.17 dBm 16.32 dBm			
		17.34 dBm 19.00 dBm			Freq Offse 0 H
7 8 9 10					
11 12					

TM 2 & 2412

Reference

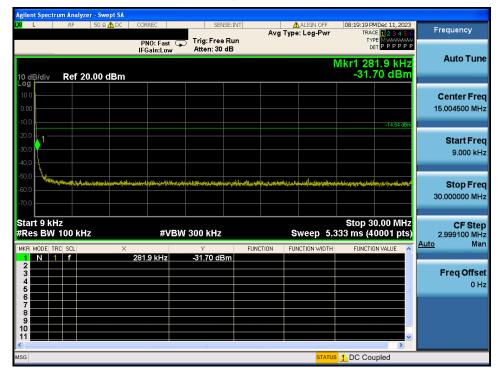


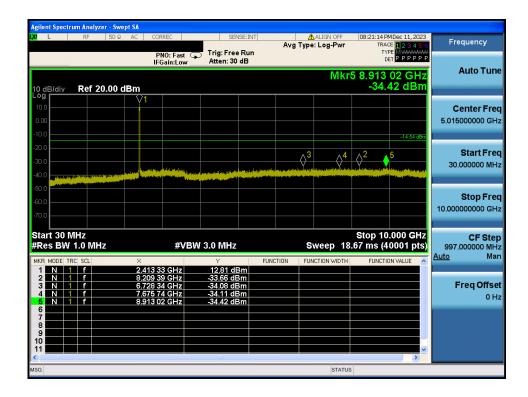
Low Band-edge



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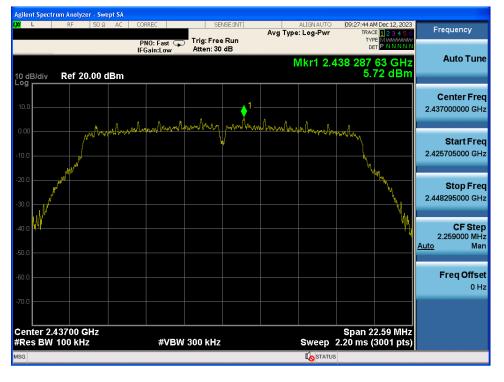


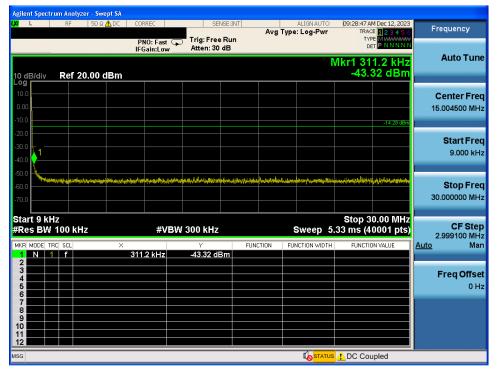




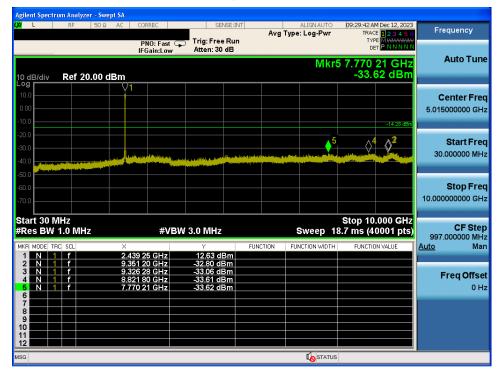
TM 2 & 2437

Reference









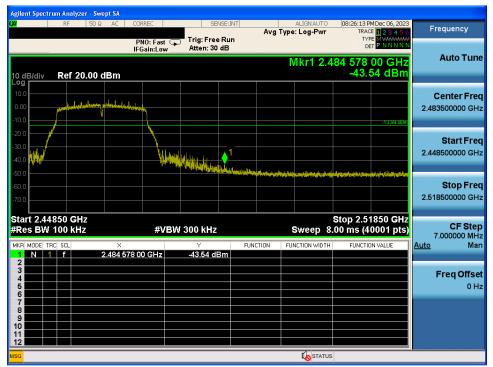


TM 2 & 2462

Reference



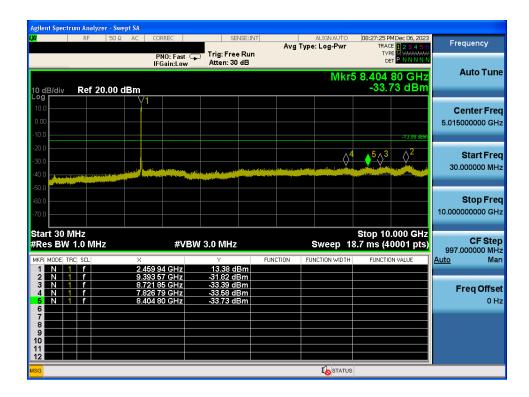
High Band-edge



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BE 50.9 ADC	CORREC	SENSE:IN		ALIGNAUTO	08:26:41 PM Dec 06, 202	22
RF 50 Ω 🚹 DC			Avg T	ype: Log-Pwr	TRACE 1 2 3 4 5 TYPE M WWWW	Frequency
	PNO: Fast 🖵 IFGain:Low	Atten: 30 dB			DET PNNNN	
0 dB/div Ref 20.00 dBm				N	/kr1 281.9 kH -41.55 dBn	2
00 10.0						Center Fre
.00						15.004500 MH
0.0					-13.99 dB	
0.0 x 1						Start Fre 9.000 kH
0.0						9.000 KI
0.0	ويرونه والمعادية والمحمد	Marthan, Israel, storage and issay.		والمجامع فالمراجع فالمالي فالمحام والمحام	and an and a star of the constraint of the start of the s	Stop Fre
0.0						30.000000 MH
tart 9 kHz					Stop 30.00 MH	7
	40 (2014	/ 300 kHz				
Res BW 100 kHz	#VBW	JUU KHZ		Sweep 5.	33 ms (40001 pts	CF Ste
Res BW 100 kHz KR MODE TRC SCL X 1 N 1 F		Y	FUNCTION	Sweep 5.	33 ms (40001 pts FUNCTION VALUE	5) CF Ste 2.999100 M⊦
KR MODE TRC SCL X	#VBW		FUNCTION			2.999100 MF Auto Ma
KR MODE TRC SCL X 1 N 1 f 2 3 4		Y	FUNCTION			2.999100 Mi Auto Ma
KR MODE TRC SCL X 1 N 1 f 2 3 4 4 4 5 6 6 6		Y	FUNCTION			CF Ste 2.999100 MH Auto Ma Freq Offso
Node TRC SCI X 1 N 1 f 2 3 - - 3 - - - 4 - - - 5 - - - 6 - - - 7 - - - 9 - - -		Y	FUNCTION			CF Ste 2.999100 MH Auto Ma Freq Offso
IMADE TRC SCL X IN I I I 2 I I I 3 I I I 4 I I I 5 I I I 6 I I I 8 I I I		Y	FUNCTION			5) CF Ste 2.999100 M⊦







🛈 Dt&C

TM 3 & 2412





Low Band-edge

