HCT CO.,LTD. 2-6, 73, 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383 KOREA
TEL: +82-31-645-6300 FAX: +82-31-645-6401

EVALUATION REPORT

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Address:
129, Samsung-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:
May 14, 2024

Location:
HCT CO., LTD.,
74, Seoicheon-ro 578beon-gil, Majang-myeon,
Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

FCC ID:	**A3LSMF741B**
APPLICANT:	**SAMSUNG Electronics Co., Ltd.**

Equipment Class(es) :	PCE, DSS, DTS, UNII, DCD, DXX, 6CD
Rule Part(s) :	2, 15, 22, 24, 27, 90
Application's Statement :	The applicant takes full responsibility that the test data referenced below Represents compliance for this FCC ID.
Test Reference :	KDB 484596 D01 Reference Test Data v02r03

The detail test data can be found in this documents, Appendix A.

Category	Spot Check	Verdict
Licensed EMC	ERP / EIRP	Share
	RSE	Share
Unlicensed EMC	Band Edge	Share
	Spurious Emissions	Share
	Field Strength	Share

The data from that application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the Cross Reference Table. The detail test data can be found in this documents, Appendix A.

Report prepared by : Jeong Ho Kim

Engineer of Telecommunication testing center

Approved by : Jong Seok Lee

Manager of Telecommunication testing center

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REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	May 03, 2024	Initial Release
1	May 14, 2024	- Revised the Cross Reference Table.(page 3) - Revised the Appendix A. The Spot check test data.(page 9,12,13)

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1. Cross Reference Table (Licensed EMC)

1) Data referencing band

- 2G3G: GSM1900(Ant A), WCDMA B4(Ant A), WCDMA B5(Ant A)
- 4G: LTE B12(17)_(Ant A), LTE B25_(ANT A), LTE B26_(ANT A), LTE B26(part90)_(ANT A), LTE B41(PC2,PC3)_(ANT B,I), LTE B66_(ANT A,I)
- 5G: NR n5(ANT A), NR n25(2)_(Ant A), NR n66(ANT A,I)

2) Full test band

- 2G3G: GSM850(Ant A), WCDMA B2(Ant A)
- 4G: LTE B2(ANT A,I), LTE B4(ANT A,I), LTE B5(ANT A), LTE B13(Ant A), LTE B25_(ANT I)
- 5G: NR n25(2)_(Ant I), NR n41_PC3(Ant I), NR n77_PC3(Ant F)

Rule Part	Test item	Data Referencing	Comments
N/A	Occupied Bandwidth	Y	-
§ 2.1046	Conducted Output Power	Y	
§ 22.917(a)	Band Edge / Conducted Spurious Emissions	Y	-
§ 22.913(d)	Peak- to- Average Ratio	Y	-
§ 22.355	Frequency stability	Y	-
§ 22.913(a)(5) § 27.50(c)(10)	Effective Radiated Power	Y	Spot-check
§ 22.917(a)	Radiated Spurious Emissions	Y	Spot-check

Rule Part	Test item	Data Referencing	Comments
N/A	Occupied Bandwidth	Y	-
§ 2.1046	Conducted Output Power	Y	
§ 24.238(a)	Band Edge / Conducted Spurious Emissions	Y	-
§ 24.232(d)	Peak- to- Average Ratio	Y	-
§ 24.235	Frequency stability	Y	-
§ 24.232(c)	Equivalent Isotropic Radiated Power	Y	Spot-check
§ 24.238(a)	Radiated Spurious Emissions	Y	Spot-check

Rule Part	Test item	Data Referencing	Comments
N/A	Occupied Bandwidth	Y	-
§ 2.1046	Conducted Output Power	Y	
§ 27.53(h) § 27.53(g) § 27.53(n)(2) § 27.53(l)(2)	Band Edge / Conducted Spurious Emissions	Y	-
§ 27.50(d)(5) § 27.50(j)(4) § 27.50(k)(4)	Peak- to- Average Ratio	Y	-
§ 27.54	Frequency stability	Y	-
§ 27.50(d)(4) § 27.50(k)(3)	Equivalent Isotropic Radiated Power	Y	Spot-check
§ 27.53(g) § 27.53(h) § 27.53(n)(2) § 27.53(l)(2)	Radiated Spurious Emissions	Y	Spot-check

Rule Part	Test item	Data Referencing	Comments
N/A	Occupied Bandwidth	Y	-
§ 90.635	Conducted Output Power	Y	
§ 90.691	Band Edge / Conducted Spurious Emissions	Y	-
§ 90.213	Frequency stability	Y	-
§ 90.691	Radiated Spurious Emissions	Y	Spot-check

2. Cross Reference Table (Unlicensed EMC)

1) Data referencing
- [BT], [BT LE 5.3], [UNII], [UNII ax], [UNII 6e], [DTS], [DTS ax], [NFC], [WPT], [DFS] Test Report

2) Full test
- [DTS], [DTS ax] Test Report ➔ additional test: 802.11b,g,n,ac,ax Ch. 12, Ch. 13

Equipment Class	Rule Part	Test item	Data Referencing	Comments
DSS	15.247(a)(1)	20 dB Bandwidth	Y	-
	N/A	Occupied Bandwidth	Y	-
	15.247(b)(1)	Conducted Maximum Peak Output Power	Y	-
	15.247(a)(1)	Carrier Frequency Separation	Y	-
	15.247(a)(1)(iii)	Number of Hopping Frequencies	Y	-
	15.247(a)(1)(iii)	Time of Occupancy	Y	-
	15.247(d)	Conducted Spurious Emissions	Y	-
	15.247(d)	Band Edge (Out of Band Emissions)	Y	-
	15.207(a)	AC Power line Conducted Emissions	Y	-
	15.247(d), 15.205, 15.209	Radiated Spurious Emissions	Y	Spot-check
	15.247(d), 15.205, 15.209	Radiated Restricted Band Edge	Y	Spot-check

Equipment Class	Rule Part	Test item	Data Referencing	Comments
DTS	15.247(a)(2)	6 dB Bandwidth	Y	
	15.247(b)(3)	Conducted Maximum output power	Y	
	15.247(e).	Power Spectral Density	Y	
	15.247(d)	Band Edge (Out of Band Emissions)	Y	
	15.207	AC Power line conducted Emissions	Y	
	15.247(d) 15.205 15.209	Radiated Spurious Emissions	Y	Spot-check
	15.247(d) 15.205 15.209	Radiated Restricted Band Edge	Y	Spot-check

Equipment Class	Rule Part	Test item	Data Referencing	Comments
DCD	2.1049	Emission bandwidth.	Y	-
	15.209	Radiated emission	Y	Spot-check
	15.207	AC Power Line Conducted Emission	Y	-
DXX	Part 15.225 (a), (b), (c)	Radiated Electric Field Emissions	Y	Spot-check
	Part 15.209	Radiated Electric Field Emissions	Y	Spot-check
	Part 15.225 (e)	Frequency Stability	Y	-
	Part 15.207	AC power conducted emissions	Y	-
	Part 15.215 (c)	20 dB Bandwidth	Y	-

Equipment Class	Rule Part	Test item	Data Referencing	Comments
NII	15.407	26 dB Bandwidth	Y	-
	15.407(e)	6 dB Bandwidth	Y	-
	15.407(a)	Maximum Conducted output power	Y	-
	15.407(a)	Maximum EIRP Output Power	Y	-
	15.407(a)	Maximum Power Spectral Density	Y	-
	15.207 15.407(b)(9)	AC conducted Emission	Y	-
	15.407(g)	Frequency Stability	Y	-
	15.407(b)	Undesirable Emissions	Y	Spot-check
	15.205 15.407(b)	General Field Strength (Restricted bands and Radiated emission)	Y	Spot-check
	15.407(h)	DFS	Y	-

Equipment Class	Rule Part	Test item	Data Referencing	Comments
6CD	§ 15.407(a)(10)	26dB Bandwidth	Y	-
	§ 15.407(a)(10)	99% Bandwidth	Y	-
	§ 15.407(a)(4)	Output Power Maximum EIRP	Y	-
	§ 15.407(a)(4)	Output Power Maximum EIRP Power Spectral Density	Y	-
	15.407 (b)(9)	AC Conducted Emissions	Y	-
	§ 15.407(d)(6)	Contention Based Protocol	Y	-
	§ 15.407(g)	Frequency Stability	Y	-
	§ 15.407(a)(7)	Proper Power Adjustment, Client Devices Connected to a Standard Power Access Point	Y	-
	§ 15.407(a)(7) § 15.407(a)(8)	Dual Client Test, Demonstration of Proper Power Adjustment based on Associated AP	Y	-
	§ 15.407(b)(7)	In-Band Emissions (Emissions Mask)	Y	-
	§ 15.407(b)	Undesirable Emissions	Y	Spot-check
	15.205, 15.407(b)(9),(10)	General Field Strength Limits(Restricted Bands and Radiated Emission Limits)	Y	Spot-check

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Appendix A. The Spot check test data

1. Summary of the spot check for Licensed EMC

1.1 EFFECTIVE RADIATED POWER

Mode	Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	Limit	ERP	
	channel	Freq.(MHz)						W	W	dBm
WCDMA850	4233	846.6	-30.02	31.62	-10.05	1.41	H	< 7.00	0.104	20.16
LTE B26(22)	27015	846.5	-29.94	31.74	-10.05	1.41	V		0.107	20.28
Sub6 n5	169300	846.5	-29.70	31.98	-10.05	1.41	V		0.113	20.52

Mode	Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	Limit	ERP	
	channel	Freq.(MHz)						W	W	dBm
LTE B12(17)	23017	699.7	-28.94	30.18	-9.55	1.28	V	< 3.00	0.086	19.35

Mode	Frequency (MHz)		Mode	A3LSMF741U (dBm)	A3LSMF741B (dBm)	Deviation (dB)
	MHz	Ch.				
WCDMA850	846.6	4233	RMC	19.53	20.16	-0.63
LTE B12(17) (B.W 1.4 MHz)	699.7	23017	QPSK	19.49	19.35	0.14
LTE B13 (B.W 10 MHz)	782.0	23230	QPSK	20.44	20.76	-0.32
LTE B26(22) (B.W 5 MHz)	846.5	27015	QPSK	19.89	20.28	-0.39

1.2 EQUIVALENT ISOTROPIC RADIATED POWER

Mode	Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	Limit	EIRP	
	channel	Freq.(MHz)						W	W	dBm
GSM1900	661	1880.0	-13.58	21.12	10.35	2.33	H	< 2.00	0.820	29.14
LTE B25 (Main 1 ant)	26365	1882.5	-19.30	15.40	10.35	2.33	H		0.220	23.42
LTE B41(PC2) (Main 2 ant)	40620	2593.0	-22.42	14.80	10.64	2.71	H		0.187	22.73
LTE B41(PC2) (Sub 5 ant)	40620	2593.0	-20.76	16.46	10.64	2.71	H		0.275	24.39
LTE B41(PC3) (Main 2 ant)	40620	2593.0	-25.20	12.02	10.64	2.71	H		0.099	19.95
LTE B41(PC3) (Sub 5 ant)	40620	2593.0	-21.93	15.29	10.64	2.71	H		0.210	23.22
Sub6 n25 (ANT A)	379000	1895.0	-18.55	15.53	10.01	2.16	H		0.218	23.38

Mode	Ch./ Freq.		Measured Level (dBm)	Substitute Level (dBm)	Ant. Gain (dBd)	C.L	Pol.	Limit	EIRP	
	channel	Freq.(MHz)						W	W	dBm
WCDMA1700	1513	1752.6	-19.42	14.29	10.17	2.15	V	< 1.00	0.170	22.31
LTE B66 (Main 1 ant)	132322	1745.0	-18.75	14.93	10.15	2.15	V		0.196	22.93
LTE B66 (Sub 5 ant)	132322	1745.0	-18.51	15.17	10.15	2.15	H		0.208	23.17
Sub6 n66 (ANT A)	353000	1765.0	-19.57	13.91	9.90	2.09	V		0.149	21.72
Sub6 n66 (ANT I)	345000	1725.0	-19.64	13.92	9.60	2.01	H		0.142	21.51

Modulation	Frequency		Mode	A3LSMF741U (dBm)	A3LSMF741B (dBm)	Deviation (dB)
	MHz	Ch.				
GSM1900	1880.0	661	VOICE	28.79	29.14	-0.35
WCDMA1700	1752.6	1513	RMC	22.33	22.31	0.02
LTE B25 (Main 1 ant) (B.W 15 MHz)	1882.5	26365	QPSK	23.61	23.42	0.19
LTE B41(PC2) (Main 2 ant) (B.W 10 MHz)	2593.0	40620	QPSK	23.00	22.73	0.27
LTE B41(PC2) (Sub 5 ant) (B.W 5 MHz)	2593.0	40620	QPSK	25.77	24.39	1.38
LTE B41(PC3) (Main 2 ant) (B.W 15 MHz)	2593.0	40620	QPSK	19.96	19.95	0.01
LTE B41(PC3) (Sub 5 ant) (B.W 5 MHz)	2593.0	40620	QPSK	24.42	23.22	1.20
LTE B66 (Main 1 ant) (B.W 15 MHz)	1745.0	132322	QPSK	22.47	22.93	-0.46
LTE B66 (Sub 5 ant) (B.W 15 MHz)	1745.0	132322	QPSK	22.18	23.17	-0.99
n5 (B.W 40 MHz)	846.5	169300	PI/2 BPSK	20.49	20.52	-0.03
n25 (ANT A) (B.W 40 MHz)	1895.0	379000	PI/2 BPSK	23.53	23.38	0.15
n66 (ANT A) (B.W 30 MHz)	1765.0	353000	PI/2 BPSK	22.79	21.72	1.07
n66 (ANT I) (B.W 30 MHz)	1725.0	345000	PI/2 BPSK	22.00	21.51	0.49

1.3 RADIATED SPURIOUS EMISSIONS

Mode, Channel, (Frequency)	Freq. (MHz)	Measured Level (dBm)	Ant. Gain (dBd)	Substitute Level (dBm]	C.L	Pol.	Result (dBm)
GSM1900 CH 512 (1850.2)	7 400.80	-54.89	10.80	-44.67	4.68	H	-38.55
WDMA850 CH 4183 (836.6)	5 019.60	-60.52	10.70	-55.46	3.55	V	-48.31
WDMA1700 CH 1513 (1752.6)	7 010.40	-57.93	11.26	-49.95	4.56	V	-43.25
LTE B12(17) CH 23173 (715.3)	4 291.80	-60.75	11.20	-59.51	3.33	V	-51.64
LTE B25 (Main 1 ant) CH 26365 (1882.5)	7 530.00	-58.13	10.85	-47.42	4.72	H	-41.29
LTE B26(part22) CH 27015 (846.5)	5 079.00	-61.97	10.70	-56.81	3.61	V	-49.72
LTE B41(PC2) (Main 2 ant) CH 41490 (2680.0)	10 720.00	-55.36	11.33	-50.99	5.81	V	-45.47
LTE B41(PC2) (Sub 5 ant) CH 40620 (2593.0)	7 779.00	-46.80	11.41	-46.97	4.79	H	-40.35
LTE B41(PC3) (Main 2 ant) CH 40620 (2593.0)	10 372.00	-59.25	11.43	-53.80	5.59	H	-47.96
LTE B41(PC3) (Sub 5 ant) CH 40620 (2593.0)	7 779.00	-48.51	11.41	-48.68	4.79	H	-42.06
LTE B66 (Main 1 ant) CH 132597 (1772.5)	7 090.00	-57.55	10.91	-48.37	4.59	V	-42.05
LTE B66 (Sub 5 ant) CH 132597 (1772.5)	7 090.00	-57.98	10.91	-48.80	4.59	H	-42.48
Sub6 n5 CH 167300 (836.5)	5 019.00	-60.60	10.70	-55.54	3.55	V	-48.39
Sub6 n25 (ANT A) CH 376500 (1882.5)	11 295.00	-62.45	11.35	-44.12	5.64	V	-38.41
Sub6 n66 (ANT A) CH 349000 (1745.0)	10 470.00	-62.60	11.30	-44.87	5.43	V	-39.00
Sub6 n66 (ANT I) CH 349000 (1745.0)	5 235.00	-56.87	11.10	-51.94	3.70	H	-44.54

Modulation	Frequency		Mode	A3LSMF741U (dBm)	A3LSMF741B (dBm)	Deviation (dB)
	MHz	Ch.				
GSM1900	1850.2	512	VOICE	-39.78	-38.55	-1.23
WDMA850	836.6	4183	RMC	-49.27	-48.31	-0.96
WDMA1700	1752.6	1513	RMC	-40.85	-43.25	2.40
LTE B12(17) (B.W 3 MHz)	715.3	23173	QPSK	-52.37	-51.64	-0.73
LTE B25 (Main 1 ant) (B.W 3 MHz)	1882.5	26365	QPSK	-40.84	-41.29	0.45
LTE B26(part22) (B.W 1.4 MHz)	846.5	27015	QPSK	-47.72	-49.72	2.00
LTE B41(PC2) (Main 2 ant) (B.W 5 MHz)	2680.0	41490	QPSK	-45.69	-45.47	-0.22
LTE B41(PC2) (Sub 5 ant) (B.W 5 MHz)	2593.0	40620	QPSK	-39.88	-40.35	0.47
LTE B41(PC3) (Main 2 ant) (B.W 5 MHz)	2593.0	40620	QPSK	-47.82	-47.96	0.14
LTE B41(PC3) (Sub 5 ant) (B.W 5 MHz)	2593.0	40620	QPSK	-39.75	-42.06	2.31
LTE B66 (Main 1 ant) (B.W 1.4 MHz)	1772.5	132597	QPSK	-41.89	-42.05	0.16
LTE B66 (Sub 5 ant) (B.W 1.4 MHz)	1772.5	132597	QPSK	-41.95	-42.48	0.53
Sub6 n5 (B.W 5 MHz)	836.5	167300	PI/2 BPSK	-49.09	-48.39	-0.70
Sub6 n25 (ANT A) (B.W 40 MHz)	1882.5	376500	PI/2 BPSK	-38.73	-38.41	-0.32
Sub6 n66 (ANT A) (B.W 30 MHz)	1745.0	349000	PI/2 BPSK	-38.86	-39.00	0.14
Sub6 n66 (ANT I) (B.W 30 MHz)	1745.0	349000	PI/2 BPSK	-40.51	-44.54	4.03

2. Summary of the spot check for Unlicensed EMC

Report	Test Item	Mod/Channel	Measured Frequency [MHz]	A3LSMF741U Result [dBμV/m]		A3LSMF741B Result [dBμV/m]		Deviation (dB)	
				Peak	Average	Peak	Average	Peak	Average
BT	Band Edge	Ant1/DH5/Ch.78	2483.5 MHz~2500 MHz	61.03	36.30	58.42	33.69	-2.61	-2.61
	RSE	Ant1/DH5/Ch.78	7440 MHz (3rd Harmonic)	53.26	28.53	54.62	29.89	1.36	1.36
DTS	Band Edge (ANT ALL)	802.11ac(20M) MCS0/ch.11	#2483.5 MHz~2500 MHz	61.04	51.37	59.62	50.01	-1.42	-1.36
	RSE (ANT ALL)	802.11b 1Mbps/ch.6	7311 MHz (3rd Harmonic)	51.78	40.14	51.97	40.78	0.19	0.64
DTS(ax)	Band Edge	ANT ALL 802.11ax_HE20(242T_RU61)_MCS0/ch.11	#2483.5 MHz~2500 MHz	61.44	51.26	60.46	50.17	-0.98	-1.09
	RSE	ANT ALL 802.11ax_HE20(106T_RU53)_MCS0/ch.11	7386 MHz (3rd Harmonic)	52.20	40.54	52.06	40.33	-0.14	-0.21
BT(LE)	Band Edge	Ant1/1M37/Ch.39	2483.5 MHz~2500 MHz	63.82	44.11	61.03	43.30	-2.79	-0.81
	RSE	Ant1/1M37/Ch.39	7440 MHz (3rd Harmonic)	53.18	41.47	53.91	41.21	0.73	-0.26
UNII	Band Edge (ANT ALL)	802.11ac(40M)_ MCS0/ch.102	5350 MHz ~ 5460 MHz	58.39	41.59	58.05	41.84	-0.34	0.25
			5460 MHz ~ 5470 MHz	60.98	-	61.48	-	0.50	-
	RSE (ANT ALL)	802.11a 6Mbps/ch.177	17655 MHz (3rd Harmonic)	56.54	-	57.10	-	0.56	-
UNII(ax)	Band Edge (ANT ALL)_Peak	802.11ax(HE160_80L)_996T RU0 MCS0/ch.50	4500 MHz~5150 MHz	70.31	46.65	69.33	46.65	-0.98	0.00
	Band Edge (ANT ALL)_Avg	802.11ax(HE80)_996T RU67 MCS0/ch.42	4500 MHz~5150 MHz	68.55	51.37	66.84	51.59	-1.71	0.22
	RSE (ANT ALL)	802.11ax(HE20)_106T RU53 MCS0/ch.36	15540 MHz (3rd Harmonic)	60.01	44.12	61.45	45.44	1.44	1.32
6e (NII5,6,7,8) (LPI/SP)	Band Edge (LPI/SP)	802.11ax HE20(106T_RU53)_MCS0/Ch.2	# 5924.5 MHz	77.63	65.36	77.21	65.91	-0.42	0.55
	RSE (ANT ALL) (LPI/SP)	802.11ax HE40(484T_RU65)_MCS0/Ch.3	17895 MHz (3rd Harmonic)	57.78	45.91	57.75	45.75	-0.03	-0.16
WPT	Field Strength	Power Sharing	110 - 148 kHz	11.95		9.54		-2.41	
	RSE		490 kHz - 1.705 MHz	18.43		16.85		-1.58	
NFC	Field Strength	Type A, 106 kbps	13.56 MHz	18.56		18.60		0.04	
	RSE		30 MHz - 1 GHz	34.04		33.58		-0.46	

3. TEST RESULT

BT Band Edge (Ant1/DH5/Ch.78)

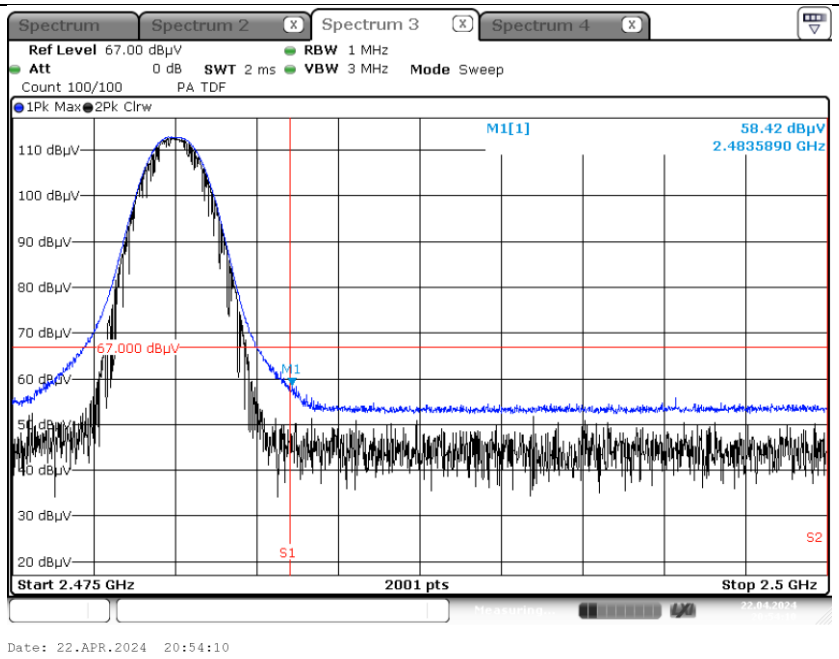
Frequency	Measured Value	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[H/V]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	
2483.5	58.42	H	0.00	58.42	73.98	15.56	PK
2483.5	58.42	H	-24.73	33.69	53.98	20.29	AV

Note:

- We apply to the offset in range 1 GHz - 18 GHz
- The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

▣ Test Plot

[Peak & Average Result]

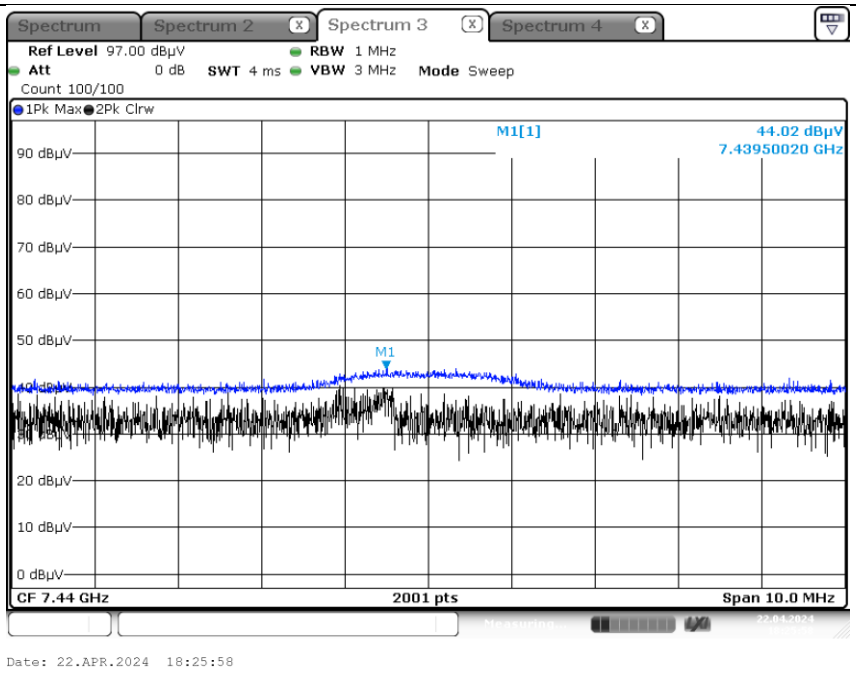


BT R.S.E Harmonic(Ant1/DH5/Ch.78)

Frequency	Measured Value	AF+CL-AG+DF	ANT. POL	Duty Cycle Correction	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	
7440	44.02	10.60	H	0.00	54.62	73.98	19.36	PK
7440	44.02	10.60	H	-24.73	29.89	53.98	24.09	AV

▣ Test Plot

[Peak & Average Result]



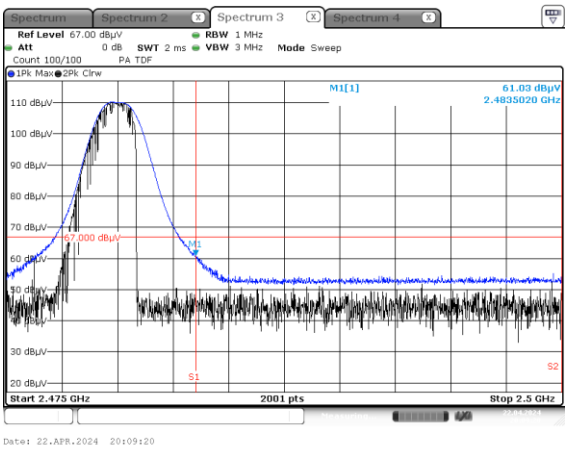
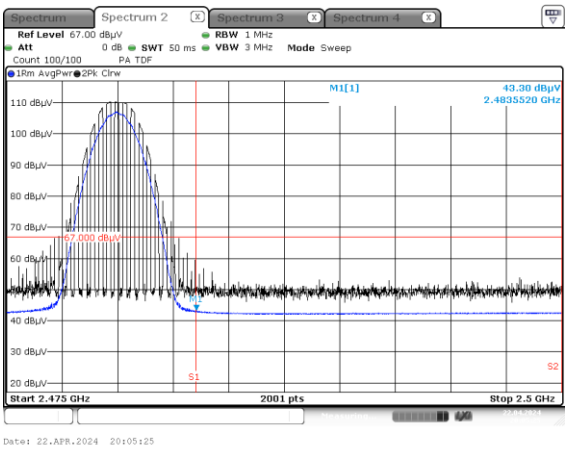
BT LE Band Edge (Ant1/1M37/Ch.39)

Frequency	Measured Value	ANT. POL.	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
2483.5	61.03	H	61.03	73.98	12.95	PK
2483.5	43.30	H	43.30	53.98	10.68	AV

Note:

- We apply to the offset in range 1 GHz - 18 GHz
- The offset = Antenna Factor(A.F) + Cable Loss(C.L) + Distance Factor(D.F)

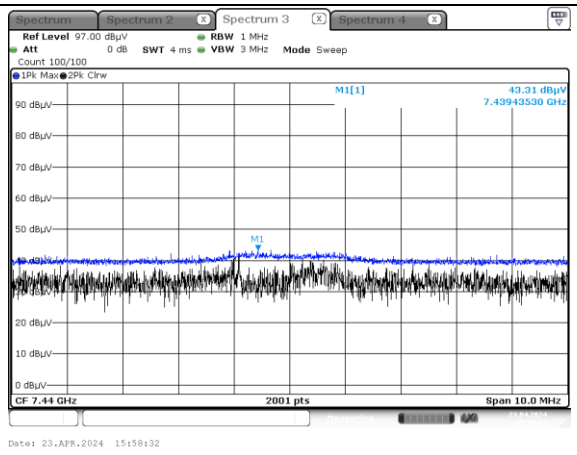
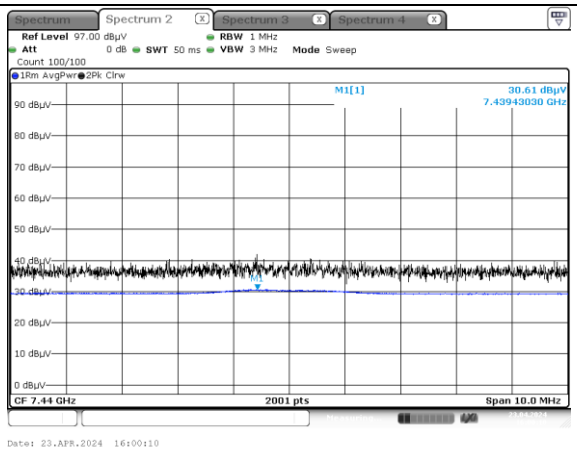
▣ Test Plot

[Peak Result]	[Average Result]
	

BT LE R.S.E Harmonic (Ant1/1M37/Ch.39)

Frequency	Measured Value	AF+CL-AG+DF	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
7440	43.31	10.60	H	53.91	73.98	20.07	PK
7440	30.61	10.60	H	41.21	53.98	12.77	AV

▣ Test Plot

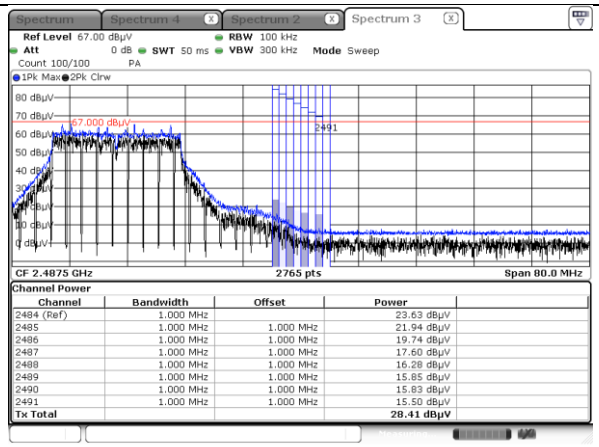
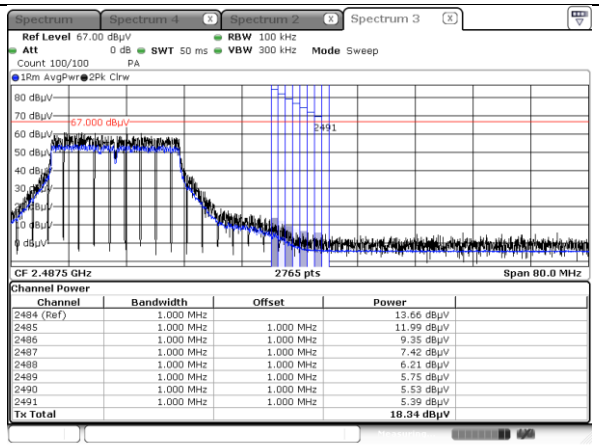
[Peak Result]	[Average Result]
	

DTS Band Edge (ANT ALL) (802.11ac(20M) MCS0/ch.11)

Frequency	Measured Value	Duty Cycle Factor	A.F.+C.L+D.F	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	
# 2483.5	23.63	0.00	35.99	H	59.62	73.98	14.36	PK
# 2483.5	13.66	0.36	35.99	H	50.01	53.98	3.97	AV

Note : integration method Used (ANSI C63.10 Section11.13.3)

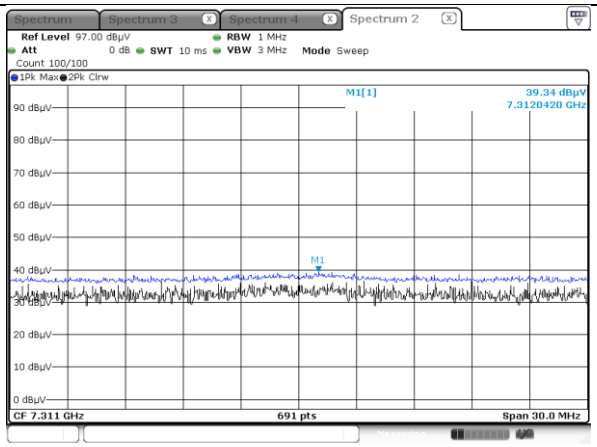
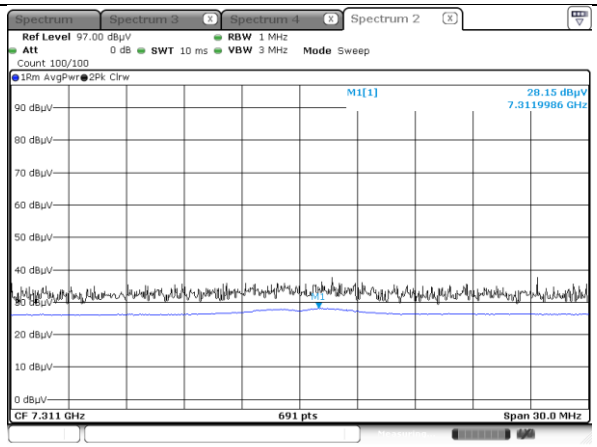
▣ Test Plot

[Peak Result] Integration method Used	[Average Result] Integration method Used
	

DTS R.S.E Harmonic (ANT ALL) (802.11b 1Mbps/ch.6)

Frequency	Measured Value	A.F+C.L-A.G+D.F	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBμV]	[dB/m]	[H/V]	[dBμV/m]	[dBμV/m]	[dB]	
7311	39.34	12.63	H	51.97	73.98	22.01	PK
7311	28.15	12.63	H	40.78	53.98	13.20	AV

▣ Test Plot

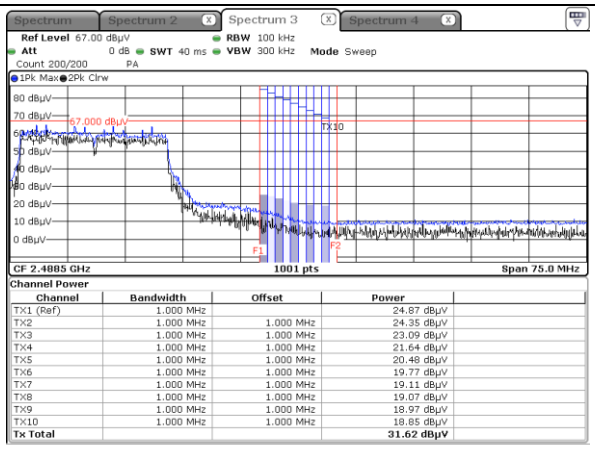
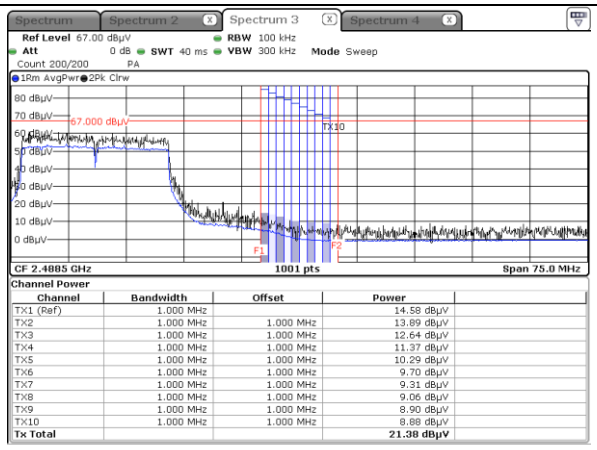
[Peak Result]	[Average Result]
	

DTS ax Band Edge (ANT ALL) (802.11ax_HE20(242T_RU61)_MCS0/ch.11)

Frequency	Measured Value	Duty Cycle Factor	A.F.+C.L+D.F	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
#2483.5~2493.5	24.87	0.00	35.59	H	60.46	73.98	13.52	PK
#2483.5~2493.5	14.58	0.00	35.59	H	50.17	53.98	3.81	AV
2493.5~2500	21.13	0.00	35.59	H	56.72	73.98	17.26	PK
2493.5~2500	9.37	0.00	35.59	H	44.96	53.98	9.02	AV

Note : integration method Used (ANSI C63.10 Section11.13.3)

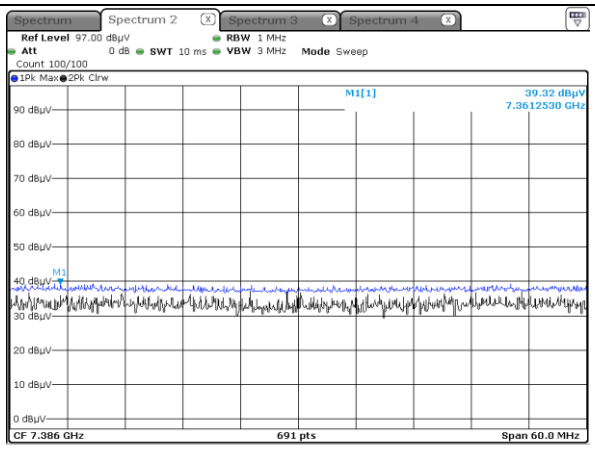
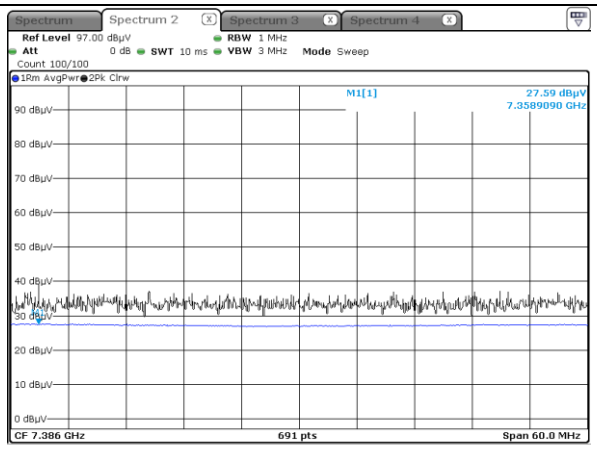
▣ Test Plot

[Peak Result] Integration method Used	[Average Result] Integration method Used
	

DTS ax R.S.E Harmonic (ANT ALL) (802.11ax_HE20(106T_RU53)_MCS0/ch.11)

Frequency	Measured Value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
4924	43.20	5.10	V	48.30	73.98	25.68	PK
4924	32.16	5.10	V	37.26	53.98	16.72	AV
7386	39.32	12.74	V	52.06	73.98	21.92	PK
7386	27.59	12.74	V	40.33	53.98	13.65	AV

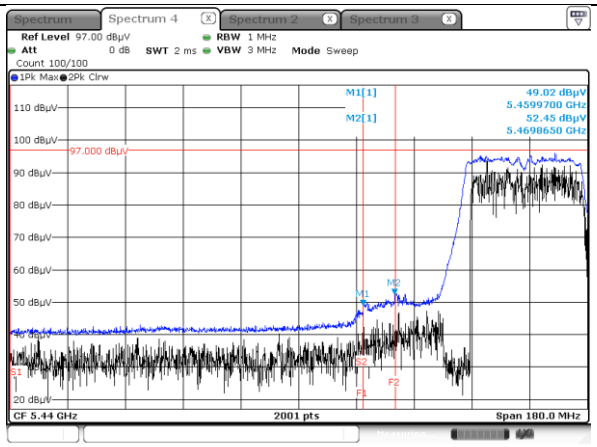
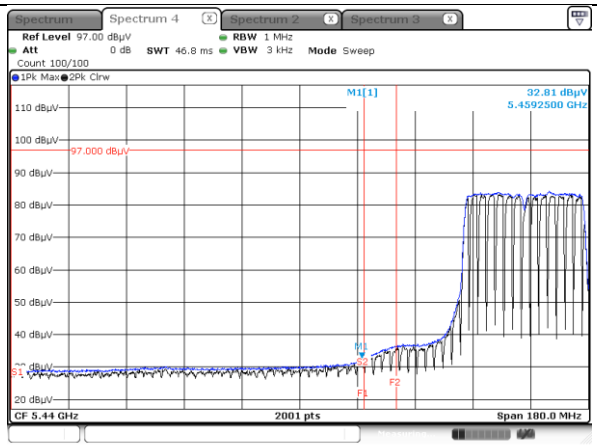
▣ Test Plot

[Peak Result]	[Average Result]
	

UNII Band Edge (ANT ALL) (802.11ac(40M)_ MCS0/ch.102)

Frequency	Measured Value	CL+AF+DF -AG+ATT	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
5460	49.02	9.03	V	58.05	73.98	15.93	PK
5460	32.81	9.03	V	41.84	53.98	12.14	AV
5470	52.45	9.03	V	61.48	68.20	6.72	PK

▣ Test Plot

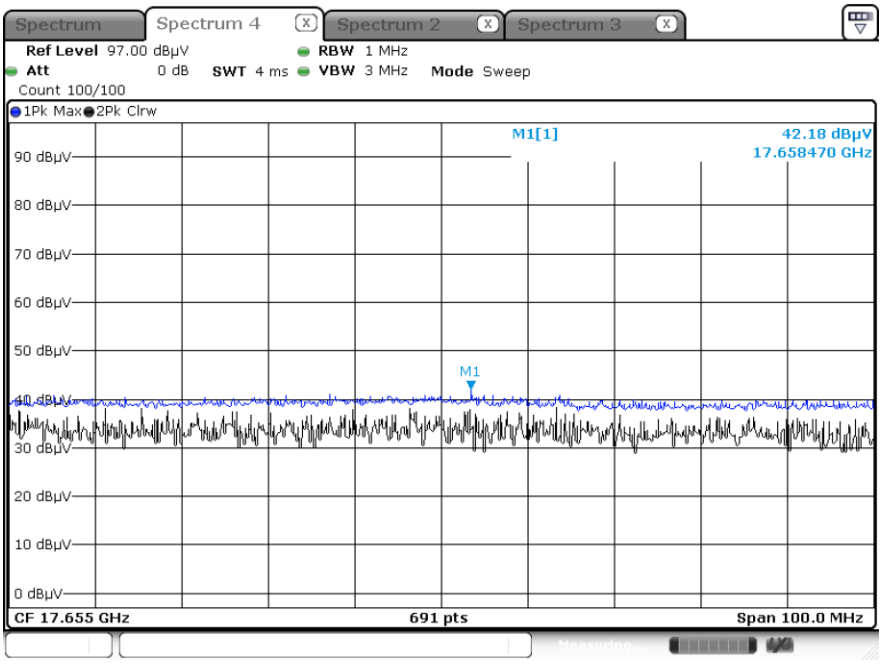
[Peak Result]	[Average Result]
	

UNII R.S.E Harmonic (ANT ALL) (802.11a 6Mbps/ch.177)

Frequency	Measured Value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
17655	42.18	14.92	V	57.10	68.20	11.10	PK

▣ Test Plot

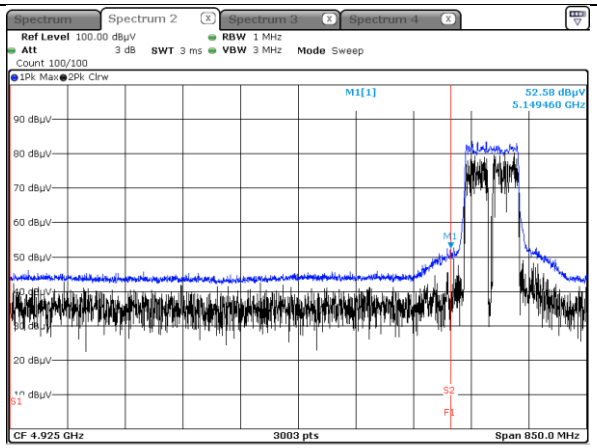
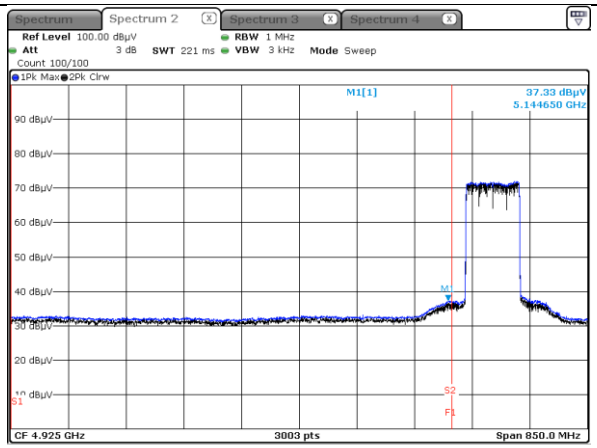
[Peak Result]



UNII ax Band Edge (ANT ALL)_Avg (802.11ax(HE80)_996T RU67 MCS0/ch.42)

Frequency	Measured Value	CL+AF+DF -AG+ATT	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
5150	52.58	14.26	H	66.84	73.98	7.14	PK
5150	37.33	14.26	H	51.59	53.98	2.39	AV

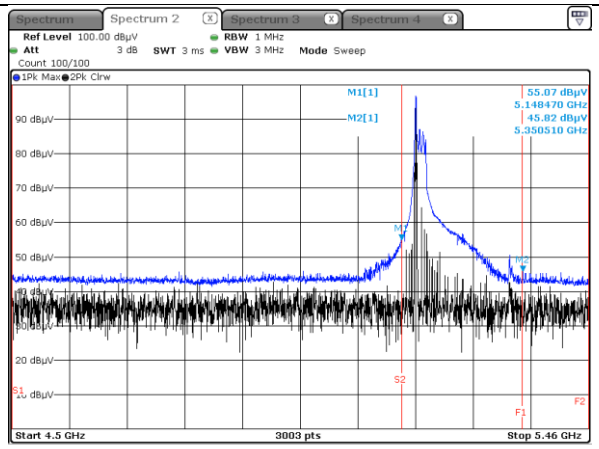
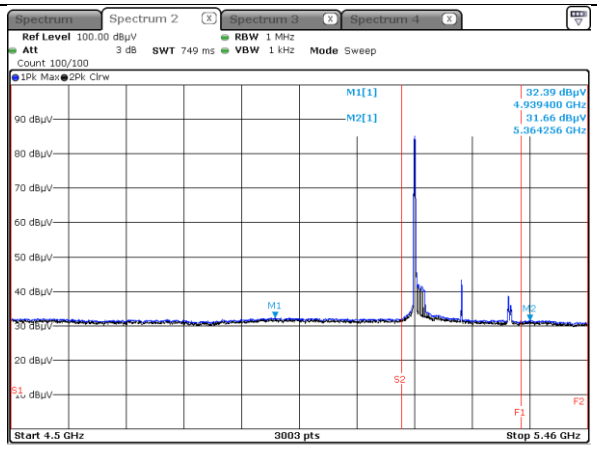
▣ Test Plot

[Peak Result]	[Average Result]
	

UNII ax Band Edge (ANT ALL)_Peak (802.11ax(HE160_80L)_996T RU0 MCS0/ch.50)

Frequency	Measured Value	CL+AF+DF -AG+ATT	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
5150	55.07	14.26	H	69.33	73.98	4.65	PK
5150	32.39	14.26	H	46.65	53.98	7.33	AV

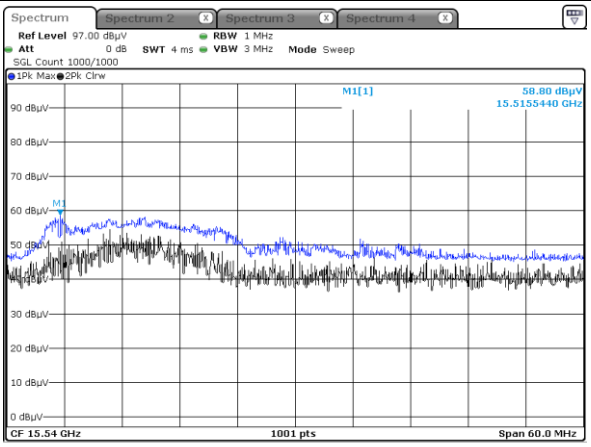
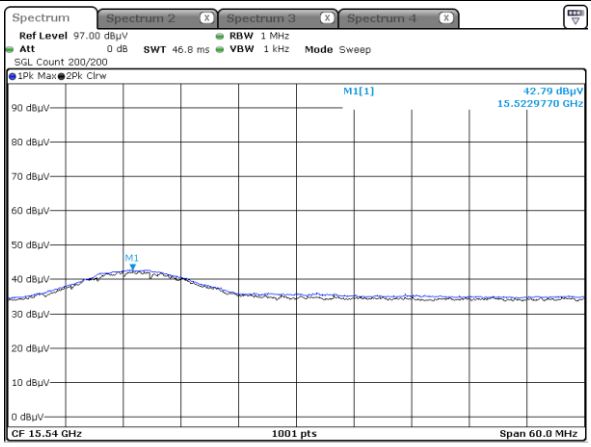
▣ Test Plot

[Peak Result]	[Average Result]
	

UNII ax R.S.E Harmonic (ANT ALL) (802.11ax(HE20)_106T RU53 MCS0/ch.36)

Frequency	Measured Value	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
10360	53.32	-0.60	H	52.72	68.20	15.48	PK
15540	58.80	2.65	H	61.45	73.98	12.53	PK
15540	42.79	2.65	H	45.44	53.98	8.54	AV

▣ Test Plot

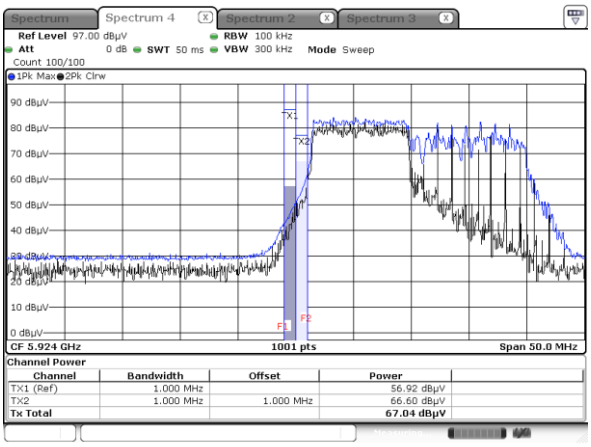
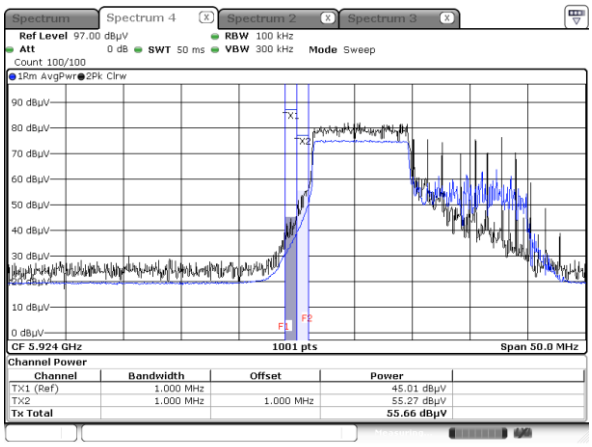
[Peak Result]	[Average Result]
	

UNII 6e Band Edge (ANT ALL) (802.11ax HE20(106T_RU53)_MCS0/Ch.2)

Frequency	Measured Value	Duty Cycle Factor	A.F+C.L+D.F-A.G+ATT	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
#5924.5	66.60	0.00	10.61	H	77.21	88.23	11.02	PK
#5924.5	55.27	0.03	10.61	H	65.91	68.23	2.32	AV

Note : # integration method Used (KDB 789033 D02 v02r01 Section 3) d) (ii)

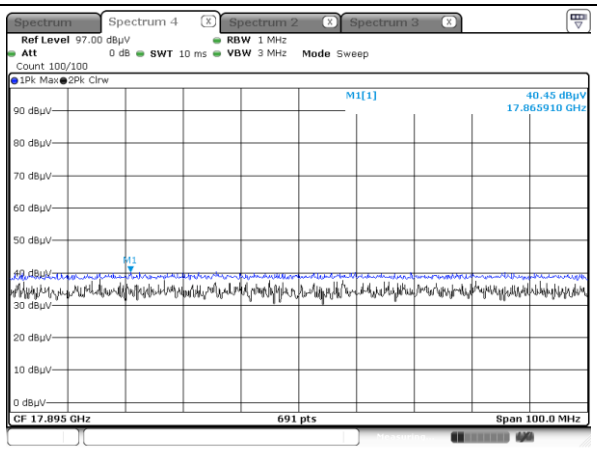
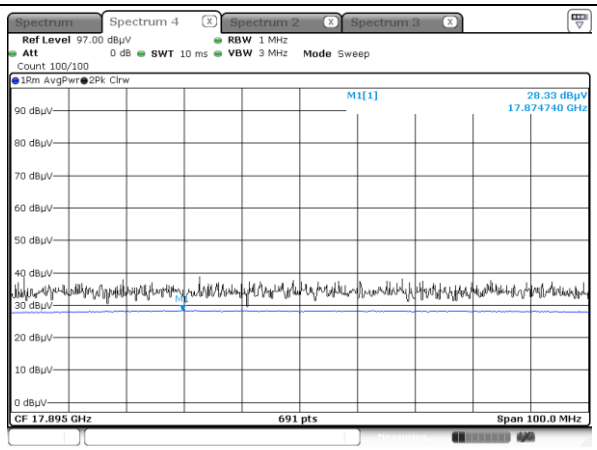
▣ Test Plot

[Peak Result]	[Average Result]
	

UNII 6e R.S.E Harmonic (ANT ALL) (802.11ax HE40(484T_RU65)_MCS0/Ch.3)

Frequency	Measured Value	Duty Cycle Factor	CL+AF+DF-AG	ANT. POL	Total	Limit	Margin	Measurement Type
[MHz]	[dBµV]	[dB]	[dB/m]	[H/V]	[dBµV/m]	[dBµV/m]	[dB]	
17895	40.45	0.00	17.30	V	57.75	73.98	16.23	PK
17895	28.33	0.12	17.30	V	45.75	53.98	8.23	AV

▣ Test Plot

[Peak Result]	[Average Result]
	

WPT Fundamental(Power Sharing)

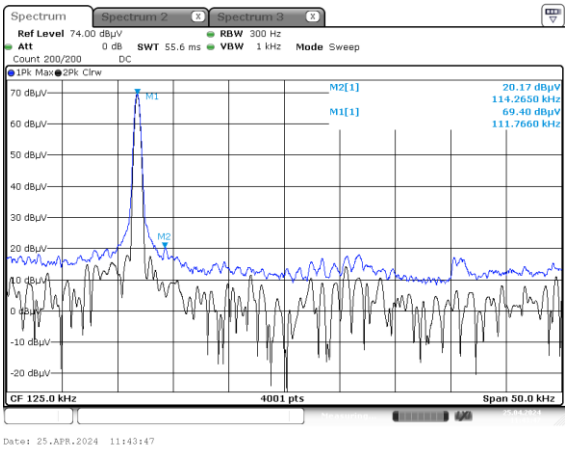
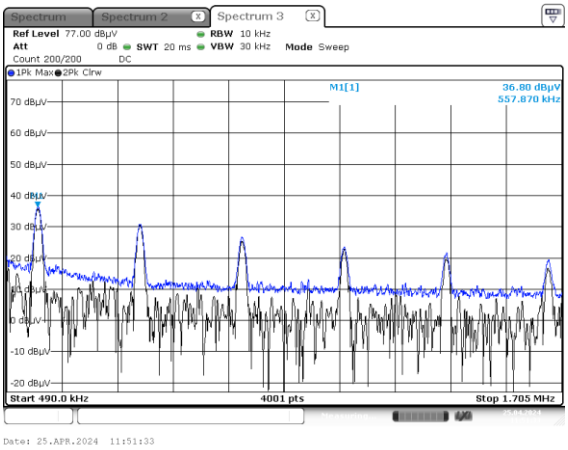
Fundamental

Frequency	Reading Value	Ant.Factor	Cable Loss	Distance Correction	Result Level	Limit	Margin
(kHz)	(dBµV/m)@3m	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)
#111.766	69.40	19.60	0.54	-80.00	9.54	26.64	17.10
114.265	20.17	19.60	0.54	-80.00	-39.69	26.45	66.14
557.870	36.80	19.50	0.55	-40.00	16.85	32.67	15.82

Note :

1. "#" Fundamental Frequency
2. EUT State : Stand alone
3. 30 MHz - 1 GHz : No Critical peaks found

▣ Test Plot

Frequency Range : 110 kHz - 148 kHz	Frequency Range : 490 kHz - 1.705 MHz
	

NFC fund (Type A, 106 kbps)

Frequency	Measured Leve	Ant.Factor + Cable Loss	Distance Correction	Result Level	Limit	Margin (dB)
(MHz)	(dBµV)@3m	(dB/m)	(dB)	(dBµV/m)@30m	(dBµV/m)@30m	
13.5598	38.01	20.59	-40.00	18.60	84.00	65.40

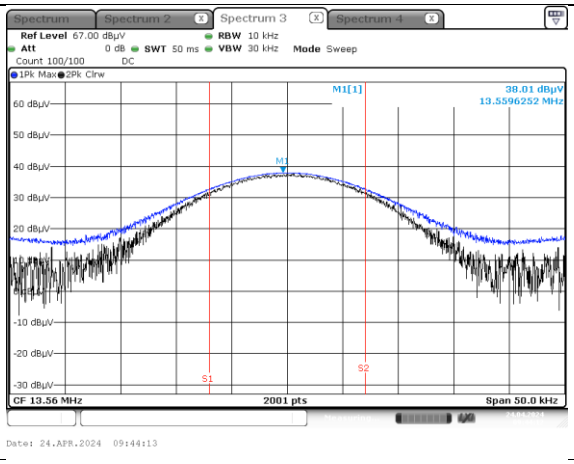
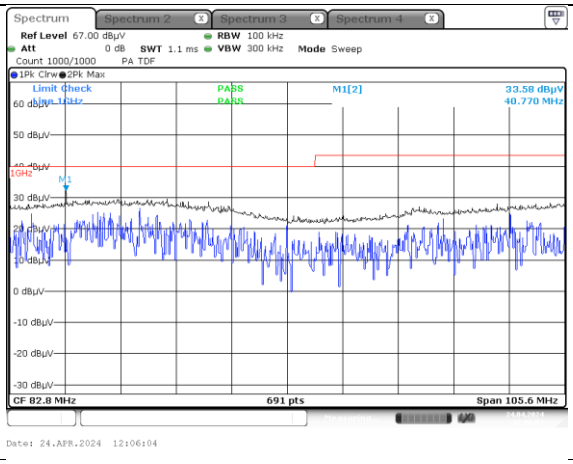
RSE

Frequency	Measured Value	Ant. factor	Cable loss	Ant. POL	Total	Limit	Margin
MHz	[dBµV]	dB /m	dB	(H/V)	dBµV/m	dBµV/m	dB
44.7500	33.58	-	-	V	33.58	40.00	6.42

Note:

- We apply to the offset in range 30 MHz - 1 GHz
- The offset = Antenna Factor(A.F) + Cable Loss(C.L)

▣ Test Plot

[Fund plot] 13.56 MHz	[Radiated Spurious Emissions plot] 30 MHz - 1 GHz
	

4. List of test equipment(Licensed)

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
RF Switching System	FBSR-02B(1.2G HPF+LNA)	T&M SYSTEM	F1L1	12/11/2024	Annual
RF Switching System	FBSR-02B(3.3G HPF+LNA)	T&M SYSTEM	F1L2	12/11/2024	Annual
Power Splitter(DC ~ 26.5 GHz)	11667B	Hewlett Packard	5001	04/17/2025	Annual
DC Power Supply	E3632A	Agilent	MY40010147	06/23/2024	Annual
Dipole Antenna	UHAP	Schwarzbeck	557	03/09/2025	Biennial
Dipole Antenna	UHAP	Schwarzbeck	558	03/09/2025	Biennial
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	147	08/17/2025	Biennial
Horn Antenna(1 ~ 18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1298	09/11/2025	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15 ~ 40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Signal Analyzer(10 Hz ~ 26.5 GHz)	N9020A	Agilent	MY52090906	04/19/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz ~ 40 GHz)	FSV40	REOHDE & SCHWARZ	100931	08/17/2024	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Loop Antenna(9 kHz ~ 30 MHz)	FMZB1513	Schwarzbeck	1513-333	03/07/2026	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	895	09/16/2024	Biennial
Trilog Broadband Antenna	VULB9168	Schwarzbeck	1135	09/16/2024	Biennial
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262094331	11/17/2024	Annual
Wideband Radio Communication Tester	MT8820C	Anritsu Corp.	6201026545	12/11/2024	Annual
SIGNAL GENERATOR (100 kHz ~ 40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz ~ 40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

2. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

Equipment	Model	Manufacture	Serial No.	Due to Calibration	Calibration Interval
Precision Dipole Antenna	UHAP	Schwarzbeck	01273	03/10/2026	Biennial
Precision Dipole Antenna	UHAP	Schwarzbeck	01274	03/10/2026	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	02289	02/14/2026	Biennial
Horn Antenna(1~18 GHz)	BBHA 9120D	Schwarzbeck	9120D-1299	04/27/2025	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Horn Antenna(15~40 GHz)	BBHA 9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Loop Antenna(9 kHz~30 MHz)	FMZB1513	Rohde & Schwarz	1513-175	01/16/2025	Biennial
Bilog Antenna	VULB9160	Schwarzbeck	3150	03/09/2025	Biennial
Hybrid Antenna	VULB9160	Schwarzbeck	760	02/24/2025	Biennial
RF Switching System	FBSR-06B (1G HPF + LNA)	T&M SYSTEM	F3L1	05/22/2024	Annual
RF Switching System	FBSR-06B (3G HPF + LNA)	T&M SYSTEM	F3L2	05/22/2024	Annual
RF Switching System	FBSR-06B (6G HPF + LNA)	T&M SYSTEM	F3L3	05/22/2024	Annual
RF Switching System	FBSR-06B (LNA)	T&M SYSTEM	F3L4	05/22/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/17/2024	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
DC Power Supply	E3632A	Hewlett Packard	MY40004427	08/25/2024	Annual
Power Splitter(DC~26.5 GHz)	11667B	Hewlett Packard	11275	02/29/2025	Annual
Chamber	SU-642	ESPEC	93008124	02/19/2025	Annual
Signal Analyzer(10 Hz~26.5 GHz)	N9020A	Agilent	MY51110063	04/04/2025	Annual
ATTENUATOR(20 dB)	8493C	Hewlett Packard	17280	04/17/2025	Annual
Spectrum Analyzer(10 Hz~40 GHz)	FSV40	REOHDE & SCHWARZ	101436	02/13/2025	Annual
Base Station	8960 (E5515C)	Agilent	MY48360800	08/10/2024	Annual
Wideband Radio Communication Tester	MT8821C	Anritsu Corp.	6262287701	05/22/2024	Annual
Wideband Radio Communication Tester	MT8000A	Anritsu Corp.	6262302511	05/23/2024	Annual
SIGNAL GENERATOR (100 kHz~40 GHz)	SMB100A	REOHDE & SCHWARZ	177633	06/22/2024	Annual
Signal Analyzer(5 Hz~40.0 GHz)	N9030B	KEYSIGHT	MY55480167	05/24/2024	Annual
4-Way Divider	ZC4PD-K1844+	Mini-Circuits	942907	09/19/2024	Annual
FCC LTE Mobile Conducted RF Automation Test Software	-	HCT CO., LTD.,	-	-	-

Note:

1. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.

2. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5 (Version : 2017).

5. List of test equipment(Unlicensed)

Radiated Test

Equipment	Model	Manufacturer	Serial No.	Due to Calibration	Calibration Interval
Controller(Antenna mast)	CO3000	Innco system	CO3000-4p	N/A	N/A
Antenna Position Tower	MA4640/800-XP-EP	Innco system	S3AM	08/03/2025	Biennial
Controller	EM1000	Audix	060520	N/A	N/A
Controller	EM2090	Emco	060520	N/A	N/A
Turn Table	N/A	Ets	N/A	N/A	N/A
Turn Table	DS2000-S-1t	Innco system	DS2000/572/54610422/P	N/A	N/A
Loop Antenna	FMZB 1513	Rohde & Schwarz	1513-333	03/07/2026	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	760	02/24/2025	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	02299	01/29/2026	Biennial
Hybrid Antenna	VULB 9168	Schwarzbeck	9168-0895	08/16/2024	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1191	11/07/2025	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-1300	01/03/2026	Biennial
Horn Antenna	BBHA 9120D	Schwarzbeck	9120D-2296	05/18/2024	Biennial
Horn Antenna(15 GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170124	03/28/2025	Biennial
Horn Antenna (15GHz ~ 40 GHz)	BBHA9170	Schwarzbeck	BBHA9170342	09/29/2024	Biennial
Spectrum Analyzer	FSV40	Rohde & Schwarz	100901	02/22/2025	Annual
Spectrum Analyzer	FSP (9 kHz ~ 40 GHz)	Rohde & Schwarz	100843	10/30/2024	Annual
Spectrum Analyzer	FSV40 (9 kHz ~ 40 GHz)	Rohde & Schwarz	100900	12/06/2024	Annual
Spectrum Analyzer	FSV(10 Hz ~ 40 GHz)	Rohde & Schwarz	101055	05/12/2024	Annual
Signal Analyzer	N9030A	Keysight	MY55410508	09/04/2024	Annual
Power Amplifier	310N	SONOMA INSTRUMENT	186169	02/14/2025	Annual
Amp & Filter Bank Switch Controller	FBSM-01A	TNM system	0	N/A	N/A
Amp & Filter Bank Switch Controller	FBSM-01B	T&M system	TM19050002	N/A	N/A
Band Reject Filter	WRCJV2400/2483.5-2370/2520-60/12SS	Wainwright Instruments	2	01/02/2025	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	5	06/12/2024	Annual
Band Reject Filter	WRCJV12-4900-5100-5900-6100-50SS	Wainwright Instruments	6	06/12/2024	Annual
Band Reject Filter	WRCJV5100/5850-40/50-8EEK	Wainwright Instruments	1	02/14/2025	Annual
RF Switching System	FMSR-05B (HPF(3~18GHz) + LNA1(1~18GHz))	T&M system	S1L1	01/02/2025	Annual
RF Switching System	FMSR -05B (ATT(10dB) + LNA1(1~18GHz))	T&M system	S1L2	01/02/2025	Annual
RF Switching System	FMSR -05B (ATT(3dB) + LNA1(1~18GHz))	T&M system	S1L3	01/02/2025	Annual
RF Switching System	FMSR -05B (LNA1(1~18GHz))	T&M system	S1L4	01/02/2025	Annual
RF Switching System	FMSR -05B (HPF(7~18GHz)	T&M system	S1L5	01/02/2025	Annual

	+ LNA2(6~18GHz))				
RF Switching System	FMSR -05B (Thru(30MHz ~ 18GHz))	T&M system	S1L6	01/02/2025	Annual
RF Switching System	FMSR-04B (3G HPF+LNA)	T&M SYSTEM	S2L1	12/27/2024	Annual
RF Switching System	FMSR-04B (10dB ATT+LNA)	T&M SYSTEM	S2L2	12/27/2024	Annual
RF Switching System	FMSR-04B (3dB ATT+LNA)	T&M SYSTEM	S2L3	12/27/2024	Annual
RF Switching System	FMSR-04B (LNA)	T&M SYSTEM	S2L4	12/27/2024	Annual
RF Switching System	FMSR-04B (7G HPF+LNA)	T&M SYSTEM	S2L5	12/27/2024	Annual
RF Switching System	FBSR-03A (3G HPF+LNA)	T&M SYSTEM	S3L1	11/17/2024	Annual
RF Switching System	FBSR-03A (10dB ATT+LNA)	T&M SYSTEM	S3L2	11/17/2024	Annual
RF Switching System	FBSR-03A (7G HPF+LNA)	T&M SYSTEM	S3L3	11/17/2024	Annual
RF Switching System	FBSR-03A (3dB ATT+LNA)	T&M SYSTEM	S3L4	11/17/2024	Annual
Power Amplifier	CBL18265035	CERNEX	22966	11/17/2024	Annual
Power Amplifier	CBL26405040	CERNEX	25956	02/26/2025	Annual
Bluetooth Tester	TC-3000C	TESCOM	3000C000175	03/19/2025	Annual
Spectrum Analyzer	FSV40 (9 kHz ~ 40 GHz)	Rohde & Schwarz	100900	12/06/2024	Annual

Note:

1. Equipment listed above that calibrated during the testing period was set for test after the calibration.
2. Equipment listed above that has a calibration due date during the testing period, the testing is completed before equipment expiration date.
3. Especially, all antenna for measurement is calibrated in accordance with the requirements of C63.5(Version : 2017).