



FCC Radio Test Report

FCC ID: RI7ATD551

This report concerns: Class II permissive Change

Project No.	:	2412C414
Equipment	:	LTE Cat-M1 Tracker
Brand Name	:	1. Telit Cinterion 2. DeWALT
Test Model	:	ATD551
Series Model	:	N/A
Applicant	:	Telit Communications S.p.A.
Address	:	Via Stazione di Prosecco 5/b, 34010 Sgonico, Trieste, Italy
Manufacturer	:	Telit Communications S.p.A.
Address	:	Via Stazione di Prosecco 5/b, 34010 Sgonico, Trieste, Italy
Factory	:	Fushan Technology (Vietnam)Limited Liability Company
Address	:	No. 8, Road 6, VSIP Bac Ninh, Phu Chan, Tu Son, Bac Ninh, Vietnam
Date of Receipt	:	Jan. 02, 2025
Date of Test	:	Jan. 03, 2025 ~ Mar. 11, 2025
Issued Date	:	Mar. 13, 2025
Report Version	:	R00
Test Sample	:	Engineering Sample No.: DG20250102158, DG20250102157 for power, DG20250102159, DG20250102160 for others.
Standard(s)	:	47 CFR FCC Part 27 Subpart L, 47 CFR FCC Part 27 Subpart N, 47 CFR FCC Part 27 Subpart H, 47 CFR FCC Part 27 Subpart F, 47 CFR FCC Part 2

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. BTL assumes no responsibility for the data provided by the customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by BTL.

The report must not be used by the client to claim product certification, approval, or endorsement by A2LA or any agency of the U.S. Government.

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BTL's laboratory quality assurance procedures are in compliance with the ISO/IEC 17025: 2017 requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

Table of Contents	Page
REPORT ISSUED HISTORY	4
1 . APPLICABLE STANDARDS	5
2 . SUMMARY OF TEST RESULTS	5
2.1 TEST FACILITY	7
2.2 MEASUREMENT UNCERTAINTY	7
2.3 TEST ENVIRONMENT CONDITIONS	8
3 . GENERAL INFORMATION	9
3.1 GENERAL DESCRIPTION OF EUT	9
3.2 DESCRIPTION OF TEST MODES	13
3.3 BLOCK DIGRAM SHOWING THE CONFIGURATIONOFSYSTEMTESTED	15
3.4 DESCRIPTION OF SUPPORT UNITS	15
4 . TEST RESULT	16
4.1 OUTPUT POWER MEASUREMENT	16
4.1.1 LIMIT	16
4.1.2 TEST PROCEDURE	16
4.1.3 TEST SETUP LAYOUT	17
4.1.4 TEST DEVIATION	17
4.1.5 TEST RESULTS	17
4.2 RADIATED SPURIOUS EMISSIONS MEASUREMENT	18
4.2.1 LIMIT	18
4.2.2 TEST PROCEDURES	18
4.2.3 TEST SETUP LAYOUT	18
4.2.4 TEST RESULTS (9KHZ TO 30MHZ)	19
4.2.5 TEST RESULTS (30MHZ TO 1000MHZ)	19
4.2.6 TEST RESULTS (ABOVE 1000MHZ)	19
5. LIST OF MEASUREMENT EQUIPMENTS	20
6. EUT TEST PHOTO	24
APPENDIX A - OUTPUT POWER	31
APPENDIX B - RADIATED SPURIOUS EMISSIONS (9KHZ TO 30MHZ)	42
APPENDIX C - RADIATED SPURIOUS EMISSIONS (30MHZ TO 1GHZ)	44
APPENDIX D - RADIATED SPURIOUS EMISSIONS (ABOVE 1GHZ)	58

REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-3-2412C414	R00	This is a supplementary report to the original test report (BTL-FCCP-3-2404C168). The changes are shown in below table so the radiated emissions and power are retested and recorded in the report, the original test results please refer to original report.	Mar. 13, 2025	Valid

No.	Workstream	Change Description	Updates / Notes
1	Hardware-LTE Antenna	KAVX Solution#3 implementing	Matching change + cutting tuning trace + adding tuning trace
2	Hardware-GNSS Filter	GNSS Filter	Add SAW filter to GNSS, between module pin and passive tuning components
3	Hardware-Modem Supply Filter	ME310G1WW05R060400 supply filtering	Add EMI filter 120 R to modem supply pins
4	Hardware-GND Copper	Thermal relief for SMD pads on copper GND	Modified copper GND for thermal relief when connecting to SMD pads
5	Hardware Version	V0.6 to V0.7	V0.6 to V0.7

1. APPLICABLE STANDARDS

The following reference test guidance is not within the scope of accreditation of A2LA:
ANSI C63.26-2015
FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 27 Subpart L, N, H, F & Part 2			
Standard(s) Section	Test Item	Judgment	Remark
2.1046	Output Power	PASS	Note(1)
27.50(d)(4) 27.50(c)(10) 27.50(b)(10)	Equivalent Isotropic Radiated Power & Equivalent Radiated Power	PASS	Note(1)
2.1049	Occupied Bandwidth	PASS	Note(1)
2.1051 27.53(h) 27.53(g) 27.53(c)(2)(f)	Conducted Spurious Emissions	PASS	Note(1)
2.1053 27.53(h) 27.53(g) 27.53(c)(2)(f)	Radiated Spurious Emissions	PASS	-----
2.1051 27.53(h) 27.53(g) 27.53(c)(2)(f)	Band Edge Measurements	PASS	Note(1)
27.50(d)(5)	Peak To Average Ratio	PASS	Note(1)
2.1055 27.54	Frequency Stability	PASS	Note(1)

Note:

1. The RF module of this LTE Cat-M1 Tracker has been tested and certified. Please refer to the module report as listed in the below table for the test results of the RF module.

RF Module	Module Function	Report Number	Standard	
Model: ME310G1-WW FCC ID: RI7ME310G1WW	GSM	60356613 003	47 CFR FCC Part 22	RSS-132 Issue 3
			47 CFR FCC Part 24	RSS-133 Issue 6
			47 CFR FCC Part 2	RSS-Gen Issue 5
	LTE	60356613 002	47 CFR FCC Part 22	RSS-132 Issue 3
			47 CFR FCC Part 24	RSS-133 Issue 6
			47 CFR FCC Part 27	RSS-130 Issue 2
		60356613 001	47 CFR FCC Part 90	RSS-139 Issue 3
			47 CFR FCC Part 2	RSS-Gen Issue 5
			47 CFR FCC Part 22	RSS-132 Issue 3
			47 CFR FCC Part 24	RSS-133 Issue 6
			47 CFR FCC Part 27	RSS-130 Issue 2
			47 CFR FCC Part 90	RSS-139 Issue 3
			47 CFR FCC Part 2	RSS-Gen Issue 5

- 1) The band 4 and band 66 antenna gain of LTE Cat-M1 Tracker was greater than that of module, so output power and EIRP were tested and recorded. The band 12, band 13, band 71 and band 85 antenna gain of LTE Cat-M1 Tracker was smaller than that of antenna gain of module, so output power and ERP refer to module test report. Thus, only the radiated spurious emissions were evaluated and recorded in this report. For the test results of all other test items please refer to above module test report.

2. Table for Filed Antenna:

Brand	P/N	Antenna Type	Connector	Gain (dBi)	Note
 ethertronics AN AVIX GROUP COMPANY	1004795/1004796	PCB	N/A	3.1	LTE Band 4
				1.6	LTE Band 12
				1.6	LTE Band 13
				3.1	LTE Band 66
				1.6	LTE Band 71
				1.6	LTE Band 85

- 1) The antenna gain is provided by the manufacturer.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of:

1# Room 108-116, 309-310, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China.

2# 1-2/F, 4/F, Building A, 1-2/F, Building B, 3/F, Building C, No.3, Jinshagang 1st Road, Dalang Town, Dongguan City, Guangdong People's Republic of China.

BTL's Registration Number for FCC: 747969

BTL's Designation Number for FCC: CN1377

2.2 MEASUREMENT UNCERTAINTY

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

The BTL measurement uncertainty as below table:

A. Radiated Measurement:

Test Site	Method	Measurement Frequency Range	U_1 (dB)
DG-CB01	CISPR	9kHz ~ 30MHz	2.36

Test Site	Method	Measurement Frequency Range	Ant. H / V	U_1 (dB)
DG-CB03 (3m)	CISPR	30MHz ~ 200MHz	V	4.40
		30MHz ~ 200MHz	H	3.62
		200MHz ~ 1,000MHz	V	4.58
		200MHz ~ 1,000MHz	H	3.98

Test Site	Method	Measurement Frequency Range	U_1 (dB)
DG-CB03 (3m)	CISPR	1GHz ~ 6GHz	4.08
		6GHz ~ 18GHz	4.62

Test Site	Method	Measurement Frequency Range	U_1 (dB)
DG-CB03 (1m)	CISPR	18 ~ 26.5 GHz	3.36

Test Site	Method	Measurement Frequency Range	Ant. H / V	U_1 (dB)
SSL-CB01 (3m)	CISPR	30MHz ~ 200MHz	V	4.70
		30MHz ~ 200MHz	H	3.56
		200MHz ~ 1,000MHz	V	4.92
		200MHz ~ 1,000MHz	H	4.54

Test Site	Method	Measurement Frequency Range	U_i (dB)
SSL-CB01 (3m)	CISPR	1GHz ~ 6GHz	4.56
		6GHz ~ 18GHz	5.14

Test Site	Method	Measurement Frequency Range	U_i (dB)
SSL-CB01 (1m)	CISPR	18 ~ 26.5 GHz	3.30

B. Other Measurement:

Parameter	Uncertainty
Maximum Output Power	± 0.87 dB
Temperature	± 0.48 °C
Humidity	± 1.37 %

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

2.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By	Test Date
Output Power & EIRP	22.4°C	31%	DC 3.7V	Gavin Ge	Jan. 02, 2025- Mar. 11, 2025
Radiated Spurious Emissions (9 kHz to 30 MHz)	26°C	47%	AC 120V/60Hz	Hayden Chen	Jan. 08, 2025
Radiated Spurious Emissions (30 MHz to 1000 MHz)	23°C	42-47%	AC 120V/60Hz	Drew Tan Young Zou	Jan. 24, 2025- Feb. 11, 2025
Radiated Spurious Emissions (Above 1000 MHz)	23°C	42-47%	AC 120V/60Hz	Drew Tan Calvin Wen Allen Tong Young Zou	Jan. 26, 2025- Feb. 11, 2025

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	LTE Cat-M1 Tracker			
Brand Name	1. Telit Cinterion 2. DeWALT			
Test Model	ATD551			
PMN	LTE Cat-M1 Tracker(C1) will use Brand:DeWALT LTE Cat-M1 Tracker(S0) will use Brand:Telit Cinterion LTE Cat-M1 Tracker(S1) will use Brand:Telit Cinterion LTE Cat-M1 Tracker(C2)			
Model Difference(s)	Logo, some mechanical parts color, label, accesories are different.			
Hardware Version	V0.7			
Software Version	V03.05			
Power Source	1# DC Voltage supplied from AC adapter. Model: ADS-10LA-06 05010EPCU 2# Supplied from battery.			
Power Rating	1# I/P: 100-240V ~ 50/60Hz MAX 0.3A O/P: 5V  2.0A 2# DC 3.7V / 3000mAh			
IMEI No.	Radiated		350903789416261, 350903789452092	
	Conducted		350903789431559, 350903789405702	
Modulation Type	LTE(eMTC)		UL: QPSK,16QAM	
	LTE(NB-IoT)		UL: BPSK, QPSK	
Max. EIRP	LTE (eMTC)	Channel Bandwidth (MHz)	QPSK (dBm)	16QAM (dBm)
	Band 4	1.4	22.54	21.66
		3	22.53	21.85
		5	22.62	22.84
		10	22.83	22.95
		15	22.68	23.01
		20	22.74	22.96
	Band 66	1.4	22.91	22.03
		3	22.59	21.72
		5	22.61	22.82
		10	22.62	22.72
		15	22.68	22.82
		20	22.77	22.81
	LTE (NB-IoT)	Sub-carrier Spacing (kHz)	BPSK (dBm)	QPSK (dBm)
	Band 4	3.75	24.79	24.73
		15	25.25	25.30
	Band 66	3.75	24.81	24.52
		15	25.00	25.20

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

LTE Band 4(eMTC)					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1740	2300	2145

LTE Band 4(NB-IoT)					
Test Frequency ID	Bandwidth (kHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	200	19951	1710.1	1951	2110.1
Mid Range	200	20175	1732.5	2175	2132.5
High Range	200	20399	1754.9	2399	2154.9

LTE Band 12(eMTC)					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	23017	699.7	5017	729.7
	3	23025	700.5	5025	730.5
	5	23035	701.5	5035	731.5
	10	23060	704.0	5060	734
Mid Range	1.4/3/5/10	23095	707.5	5095	737.5
High Range	1.4	23173	715.3	5173	745.3
	3	23165	714.5	5165	744.5
	5	23155	713.5	5155	743.5
	10	23130	711.0	5130	741

LTE Band 12(NB-IoT)					
Test Frequency ID	Bandwidth (kHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	200	23011	699.1	5011	729.1
Mid Range	200	23095	707.5	5095	737.5
High Range	200	23179	715.9	5179	745.9

LTE Band 13(eMTC)					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	5	23205	779.5	5205	748.5
Mid Range	5/10	23230	782.0	5230	751
High Range	5	23255	784.5	5255	753.5

LTE Band 13(NB-IoT)					
Test Frequency ID	Bandwidth (kHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	200	23181	777.1	5181	746.1
Mid Range	200	23230	782.0	5230	751.0
High Range	200	23279	786.9	5279	755.9

LTE Band 66(eMTC)					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	131979	1710.7	66443	2110.7
	3	131987	1711.5	66451	2111.5
	5	131997	1712.5	66461	2112.5
	10	132022	1715	66486	2115
	15	132047	1717.5	66511	2117.5
	20	132072	1720	66536	2120
Mid Range	1.4/3/5/10/15/20	132322	1745	66786	2145
High Range	1.4	132665	1779.3	67129	2179.3
	3	132657	1778.5	67121	2178.5
	5	132647	1777.5	67111	2177.5
	10	132622	1775	67086	2175
	15	132597	1772.5	67061	2172.5
	20	132572	1770	67036	2170

LTE Band 66(NB-IoT)					
Test Frequency ID	Bandwidth (kHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	200	131973	1710.1	66437	2110.10
Mid Range	200	132322	1745.0	66786	2145.0
High Range	200	132671	1779.9	67135	2179.9

LTE Band 71(NB-IoT)					
Test Frequency ID	Bandwidth (kHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	200	133123	663.1	68587	617.1
Mid Range	200	133297	680.5	68761	634.5
High Range	200	133471	697.9	68935	651.9

LTE Band 85(eMTC)					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	5	134027	700.5	70391	730.5
	10	134052	703	70416	733
Mid Range	5	134092	707	70456	737
	10	134092	707	70456	737
High Range	5	134157	713.5	70521	743.5
	10	134132	711	70496	741

LTE Band 85(NB-IoT)					
Test Frequency ID	Bandwidth (kHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	200	134003	698.1	70367	728.1
Mid Range	200	134092	707.0	70456	737.0
High Range	200	134181	715.9	70545	745.9

3.2 DESCRIPTION OF TEST MODES

Following mode(s) is (were) found to be the worst case(s) and selected for the final test.

LTE BAND 4 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB
Output Power & EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1RB/5RB/6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1RB/5RB/6RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1RB/5RB/6RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1RB/5RB/6RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1RB/5RB/6RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1RB/5RB/6RB
Test Item	Available Channel	Tested Channel	Sub-carrier Spacing(kHz)	Modulation	Mode
Radiated Spurious Emissions	19951 to 20399	20175	3.75	QPSK	1RB
	19951 to 20399	20175	15	QPSK	1RB
Output Power & EIRP	19951 to 20399	20175	3.75	BPSK, QPSK	1RB
	19951 to 20399	20175	15	BPSK, QPSK	1RB/3RB

LTE BAND 12 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Emission	23017 to 23173	23095	1.4MHz	QPSK	1RB
	23035 to 23155	23095	5MHz	QPSK	1RB
	23060 to 23130	23095	10MHz	QPSK	1RB
Test Item	Available Channel	Tested Channel	Sub-carrier Spacing(kHz)	Modulation	Mode
Radiated Emission	23011 to 23179	23095	3.75	QPSK	1RB
	23011 to 23179	23095	15	QPSK	1RB

LTE BAND 13 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Emission	23205 to 23255	23230	5MHz	QPSK	1RB
	23230	23230	10MHz	QPSK	1RB
Test Item	Available Channel	Tested Channel	Sub-carrier Spacing(kHz)	Modulation	Mode
Radiated Emission	23181 to 23279	23230	3.75	QPSK	1RB
	23181 to 23279	23230	15	QPSK	1RB

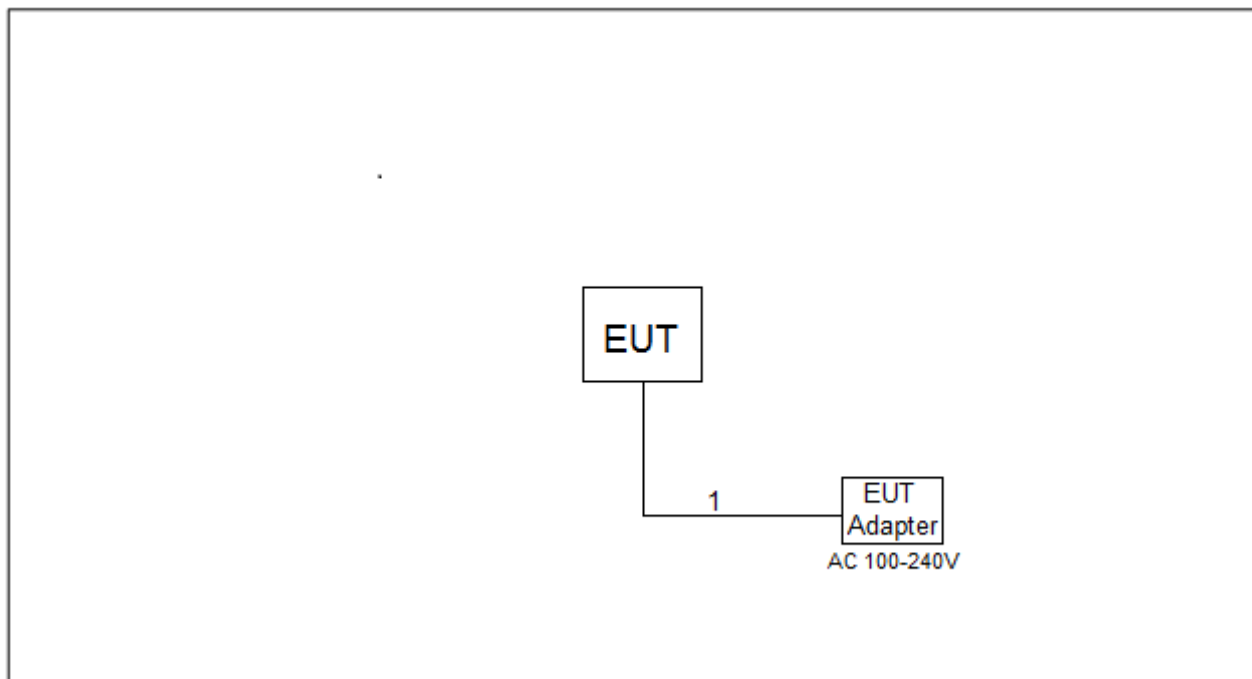
LTE BAND 66 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions	131979 to 132665	132322	1.4MHz	QPSK	1RB
	131997 to 132647	132322	5MHz	QPSK	1RB
	132072 to 132572	132322	20MHz	QPSK	1RB
Output Power & EIRP	131979 to 132665	131979, 132322, 132665	1.4MHz	QPSK, 16QAM	1RB/5RB/6RB
	131987 to 132657	131987, 132322, 132657	3MHz	QPSK, 16QAM	1RB/5RB/6RB
	131997 to 132647	131997, 132322, 132647	5MHz	QPSK, 16QAM	1RB/5RB/6RB
	132022 to 132622	132022, 132322, 132622	10MHz	QPSK, 16QAM	1RB/5RB/6RB
	132047 to 132597	132047, 132322, 132597	15MHz	QPSK, 16QAM	1RB/5RB/6RB
	132072 to 132572	132072, 132322, 132572	20MHz	QPSK, 16QAM	1RB/5RB/6RB
Test Item	Available Channel	Tested Channel	Sub-carrier Spacing(kHz)	Modulation	Mode
Radiated Spurious Emissions	131973 to 132671	132322	3.75	QPSK	1RB
	131973 to 132671	132322	15	QPSK	1RB
Output Power & EIRP	131973 to 132671	132322	3.75	BPSK, QPSK	1RB
	131973 to 132671	132322	15	BPSK, QPSK	1RB/3RB

LTE BAND 71 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions	133123 to 133471	133297	3.75	QPSK	1RB
	133123 to 133471	133297	15	QPSK	1RB

LTE BAND 85 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Radiated Spurious Emissions	134027 to 134157	134092	5MHz	QPSK	1RB
	134052 to 134132	134092	10MHz	QPSK	1RB
Test Item	Available Channel	Tested Channel	Sub-carrier Spacing(kHz)	Modulation	Mode
Radiated Spurious Emissions	134003 to 134181	134092	3.75	QPSK	1RB
	134003 to 134181	134092	15	QPSK	1RB

Note: For radiated spurious emissions, all modes had been pre-tested and in this report only recorded the worst case.

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATIONOFSYSTEMTESTED



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
-	-	-	-	-

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	USB Cable	YES	NO	1m

4. TEST RESULT

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMIT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695–1710 MHz and 1755–1780 MHz bands are limited to 1 watt EIRP.

Mobile stations of BRS/EBS are operating in the 2496–2690 MHz band limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Control stations and mobile stations transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands and fixed stations transmitting in the 787–788 MHz and 805–806 MHz bands are limited to 30 watts ERP.

Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

Control and mobile stations in the 698–746 MHz band are limited to 30 watts ERP.

Portable stations (hand-held devices) in the 600 MHz uplink band and the 698–746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

For mobile and portable stations transmitting in the 2305–2315 MHz band or the 2350–2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, except that for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305–2315 MHz and 2350–2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305–2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

4.1.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5 or ANSI C63.26-2015 Section 5.2.

EIRP:

$\text{EIRP} = \text{Output Power} + \text{Antenna gain}$

ERP:

$\text{ERP} = \text{EIRP} - 2.15$

Output Power:

The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TEST SETUP LAYOUT

Output Power Measurement

**4.1.4 TEST DEVIATION**

No deviation.

4.1.5 TEST RESULTS

Please refer to the APPENDIX A.

4.2 RADIATED SPURIOUS EMISSIONS MEASUREMENT

4.2.1 LIMIT

For band 4,12,13 ,66, 71, 85, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

$E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8$; where D is the measurement distance in meters. The emission limit equal to 82.26dB μ V/m or 70.26dB μ V/m or 55.26dB μ V/m.

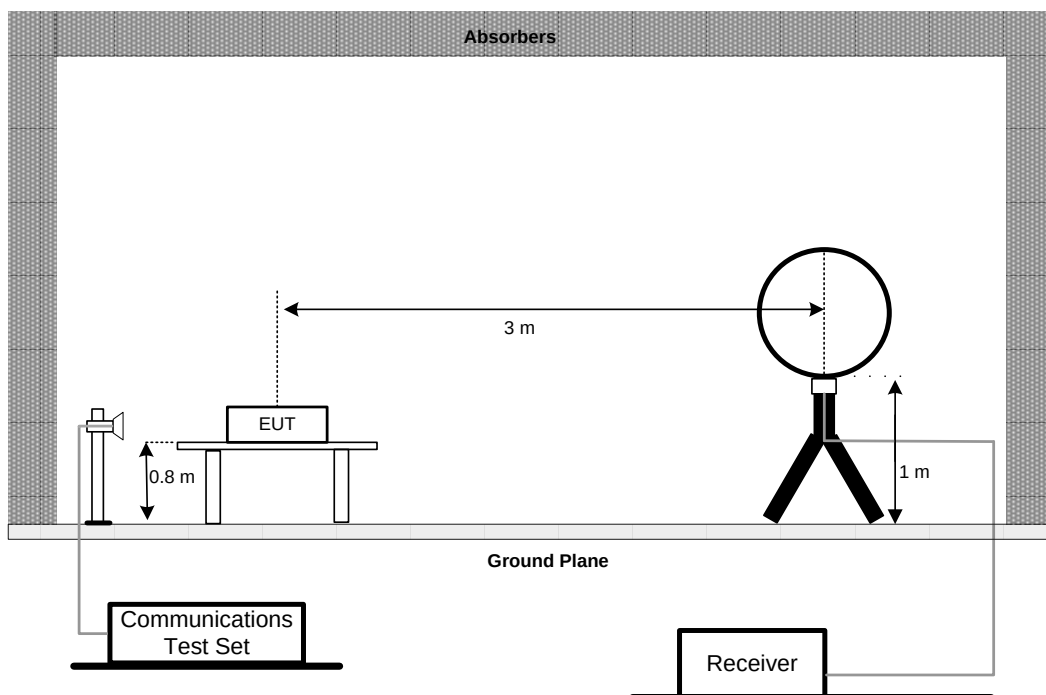
4.2.2 TEST PROCEDURES

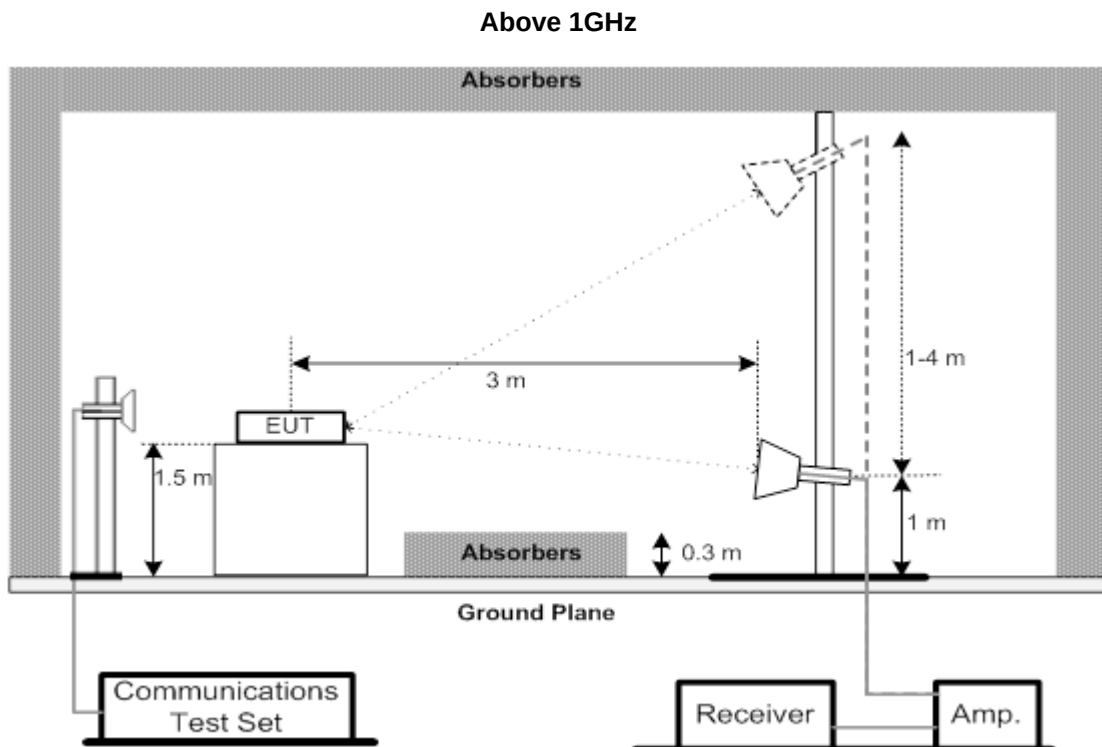
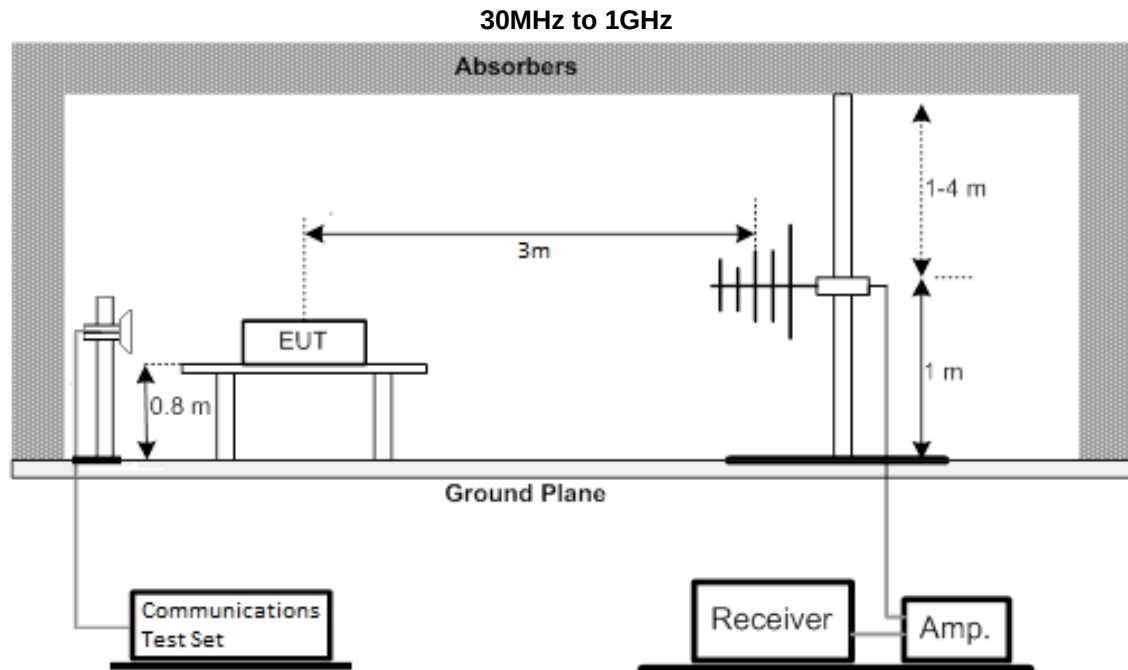
The testing follows FCC KDB 971168 v03r01 Section 6.2 or ANSI C63.26-2015 Section 5.5.

1. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
4. Start the test, rotate the table 360° to find the worst Angle, maintain the worst Angle, raise the antenna to 1-4m to find the worst height, maintain the worst height, then rotate the table to determine the final worst Angle, grab the spectrum diagram.
5. EUT shall be placed in accordance with X,Y,Z as required by Figure 5 in ANSI C63.26. Repeat Step 5 above to find the worst placement. Test all bands according to the worst placement.
6. Then EIRP is then converted to field strength as follows in Equation
7. $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log(D) + 104.8$; where D is the measurement distance (in the far field region) in m. The emission limit equal to 82.26dB μ V/m or 70.26dB μ V/m or 55.26dB μ V/m.

4.2.3 TEST SETUP LAYOUT

Below 30MHz





4.2.4 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the APPENDIX B.

4.2.5 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the APPENDIX C.

4.2.6 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the APPENDIX D.

5. LIST OF MEASUREMENT EQUIPMENTS

Conducted Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wideband Radio Communication Tester	R&S	CWM 500	165578	Jan. 19, 2025 Jan. 10, 2026
2	Radio Communication Analyzer	Anristu	MT8821C	6261915479	Jun. 28, 2025
3	8960 SERIES 10 Wireless Communications Test Set	Agilent Technologies	E5515E	MY54491001	Jun. 28, 2025

Radiated Emissions - 9 kHz to 30 MHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Active Loop Antenna	Schwarzbeck	FMZB 1513-60B	1513-60 B-034	Mar. 30, 2025
2	MXE EMI Receiver	Keysight	N9038A	MY56400091	Dec. 22, 2024 Dec. 06, 2025
3	Cable	N/A	RW4950-3.8A-N MSM-1.5	N/A	Nov. 12, 2025
4	Cable	N/A	LMR400-NMNM -8M	N/A	Nov. 12, 2025
5	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
6	966 Chamber room	ETS	9*6*6	N/A	May 16, 2025
7	wideband radio communication tester	R&S	CMW500	152372	Dec. 06, 2025

Radiated Emissions - 30 MHz to 1 GHz CB03					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	587	May 12, 2025
2	Attenuator	SHX	TS2-6-6-A	240124196	May 12, 2025
3	Preamplifier	EMC INSTRUMENT	EMC001330	980998	May 31, 2025
4	Cable	RegalWay	LMR400-NMNM -12.5m	N/A	Jun. 06, 2025
5	Cable	RegalWay	LMR400-NMNM -3m	N/A	Jun. 06, 2025
6	Cable	RegalWay	LMR400-NMNM -0.5m	N/A	Jun. 06, 2025
7	MXE EMI Receiver	KEYSIGHT	N9038B	MY62210123	Oct. 29, 2025
8	Attenuator	Talent Microwave	TA10A2-S-18	N/A	N/A
9	Positioning Controller	MF	MF-7802	N/A	N/A
10	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
11	966 Chamber room	CM	9*6*6	N/A	May 16, 2025
12	Broadband double ridged horn antenna	Regalway	RW10180-N	1911004	N/A
13	wideband radio communication tester	R&S	CMW500	152372	Dec. 06, 2025

Radiated Emissions - 30 MHz to 1 GHz_SSL-CB01					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	01269	May 18, 2025
2	Attenuator	EMCI	EMCI-N-6-06	AN-N0697	May 18, 2025
3	MXE EMI Receiver	Keysight	N9038A	MY59050118	Jun. 28, 2025
4	Preamplifier	EMC INSTRUMENT	EMC001330	980825	Jan. 10, 2026
5	Cable	EMC INSTRUMENT	EMCCFD400-N M-NM-2500	N/A	Jun. 06, 2025
6	Cable	EMC INSTRUMENT	EMCCFD400-N M-NM-7000	N/A	Jun. 06, 2025
7	Cable	EMC INSTRUMENT	EMCCFD400-N M-NM-3000	N/A	Jun. 06, 2025
8	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
9	Attenuator	Talent Microwave	ATT-18G2W-10	N/A	N/A
10	966 Chamber room	Tai He	9*6*6 (NSA&VSWR)	N/A	Jun. 06, 2025
11	Wideband Radio Communication Tester	R&S	CWM 500	165578	Jan. 19, 2025 Jan. 10, 2026

Radiated Emissions - Above 1 GHz_CB03					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Receiver	Agilent	N9038A	MY52130039	Jan. 10, 2026
2	Preamplifier	EMC INSTRUMENT	EMC118A45SE	980878	Nov. 25, 2025
3	Double Ridged Guide Antenna	ETS	3115	75789	Jun. 15, 2025
4	Cable	RegalWay	RWLP50-4.0A-SMS M-12.5M	N/A	Jul. 03, 2025
5	Cable	RegalWay	RWLP50-4.0A-NM RASM-2.5M	N/A	Jul. 03, 2025
6	Cable	RegalWay	RWLP50-4.0A-NM RASMRA-0.8M	N/A	Jul. 03, 2025
7	966 Chamber room	CM	9*6*6	N/A	Dec. 28, 2025
8	Positioning Controller	MF	MF-7802	N/A	N/A
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
10	Filter	STI	STI15-9912	N/A	May 31, 2025
11	Filter	Wairwright Instruments Gmbh	WHK 1.5/15G-10ST	N/A	Dec. 06, 2025
12	Broadband double ridged horn antenna	Regalway	RW10180-N	1911004	N/A
13	MXA Signal Analyzer	KEYSIGHT	N9020B	MY63380204	Oct. 29, 2025
14	Preamplifier	EMC INSTRUMENT	EMC184045SE	980905	Oct. 29, 2025
15	Cable	RegalWay	RWLP50-2.6A-2.92 M2.92M-1.1M	N/A	Jul. 25, 2025
16	Cable	Tonscend	HF160-KMKM-3M	N/A	Jul. 25, 2025
17	Broad-Band Horn Antenna	Schwarzbeck	BBHA9170(3m)	9170-319	Jun.16, 2025
18	wideband radio communication tester	R&S	CMW500	152372	Jan. 19, 2025 Jan. 10, 2026

Radiated Emissions - Above 1 GHz SSL-CB01					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	MXE EMI Receiver	Keysight	N9038A	MY59050118	Jun. 28, 2025
2	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
3	Preamplifier	EMC INSTRUMENT	EMC118A45SE	980739	Jan. 11, 2026
4	Cable	EMC INSTRUMENT	EMC104-SM-SM-1 0000	N/A	Dec. 09, 2025
5	Cable	EMC INSTRUMENT	EMC104-SM-SM-3 000	N/A	Dec. 09, 2025
6	Cable	EMC INSTRUMENT	EMC104-SM-SM-1 000	N/A	Dec. 09, 2025
7	Double Ridged Broadband Horn Antenna	RF SPIN	DRH18-E	210106A18E	Jul. 17, 2025
8	Preamplifier	EMC INSTRUMENT	EMC184045SE	980793	Jan. 10, 2026
9	Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	01046	Jul. 22, 2025
10	Cable	RegalWay	RWLP50-3.6A-2.92 M2.92M-6M	20241119-001	Nov. 26, 2025
11	Cable	RegalWay	RWLP50-3.6A-2.92 M2.92M-0.8M	20241119-001	Nov. 26, 2025
12	Band Reject Filter	COM-MW	ZHPF6-C3000-180 00-174	7213126	Jun. 28, 2025
13	Band Reject Filter	COM-MW	ZHPF6-M1000-150 00-533	7213127	Jun. 28, 2025
14	966 Chamber room	Tai He	9*6*6 (NSA&VSWR)	N/A	Jun. 06, 2025
15	Wideband Radio Communication Tester	R&S	CWM 500	165578	Jan. 19, 2025

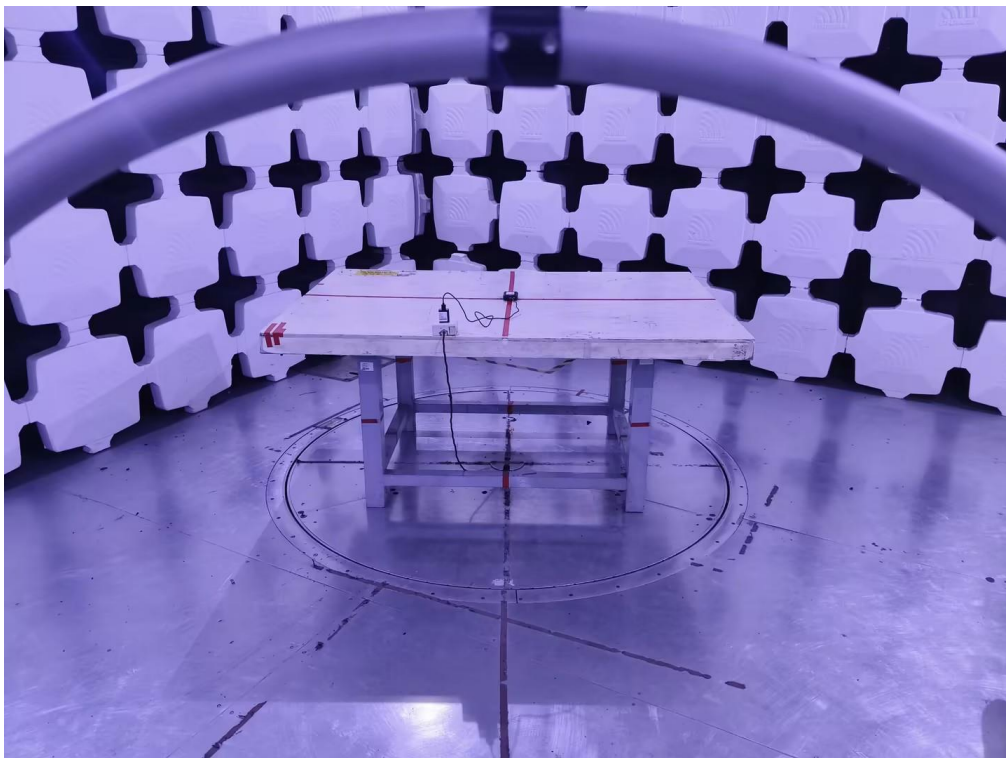
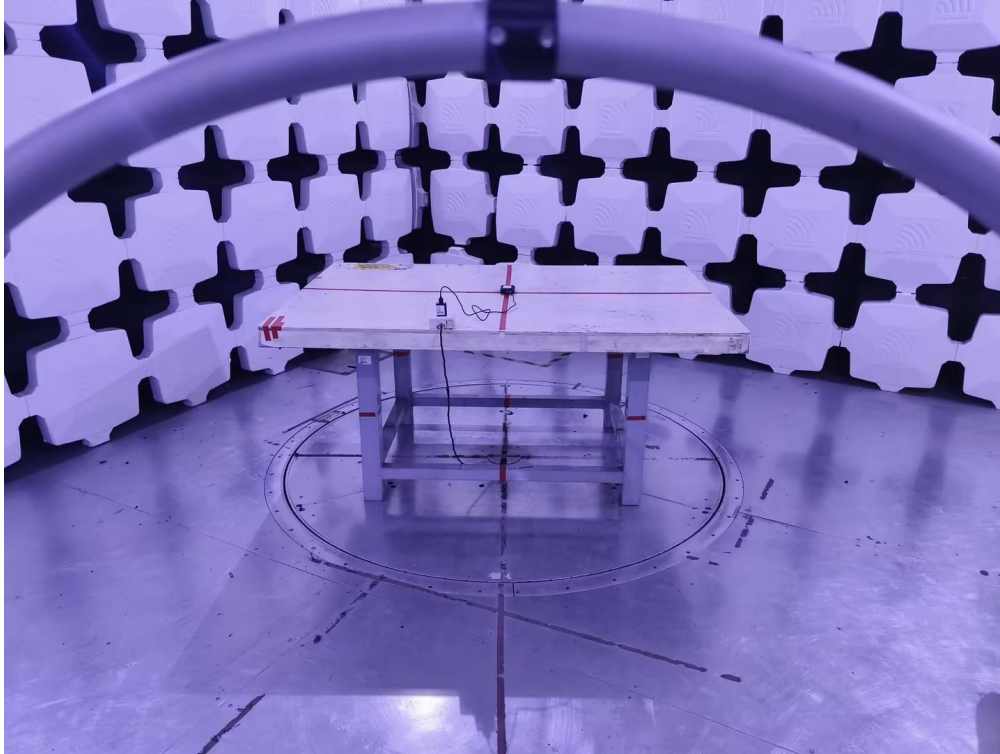
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

6. EUT TEST PHOTO

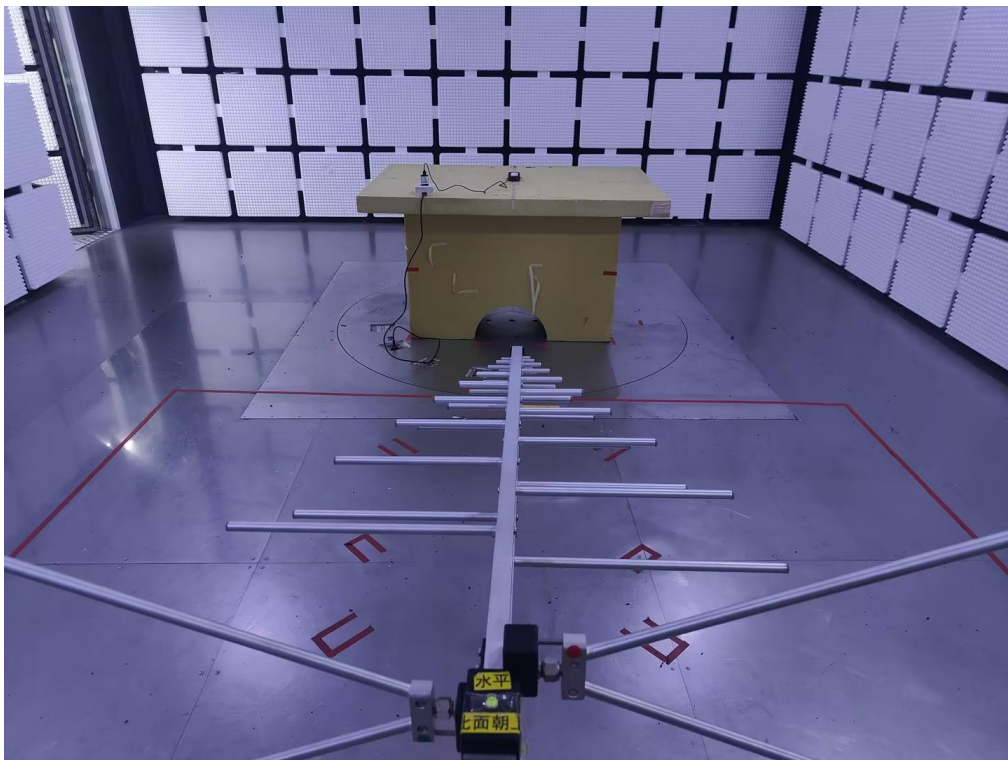
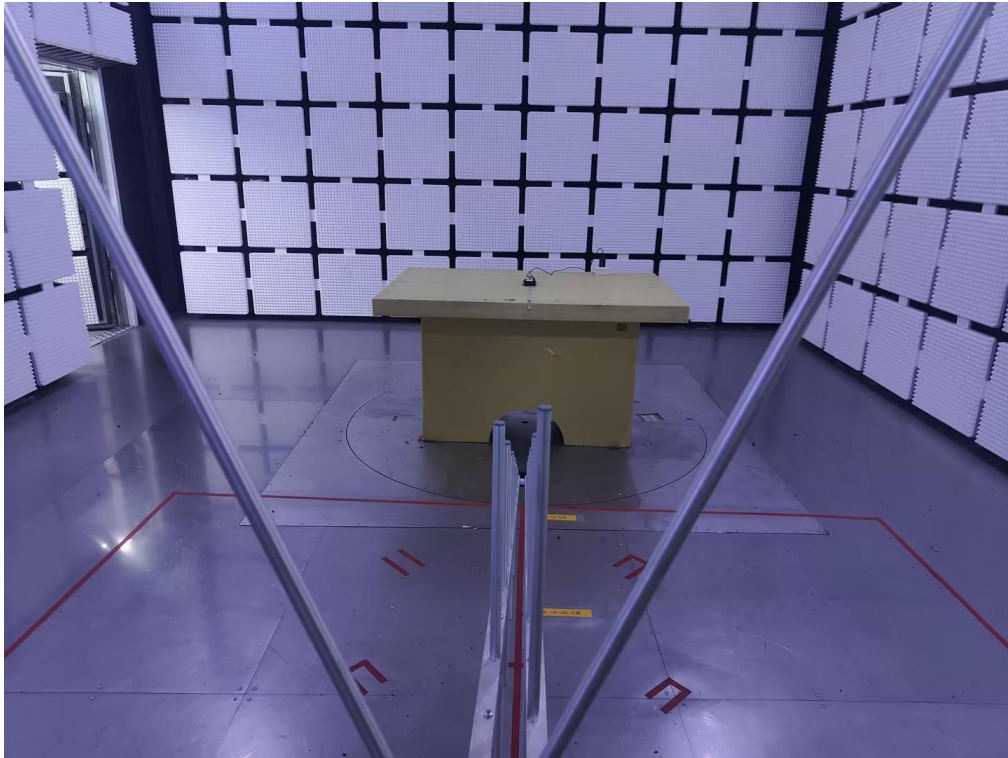
Radiated Emissions Test Photos

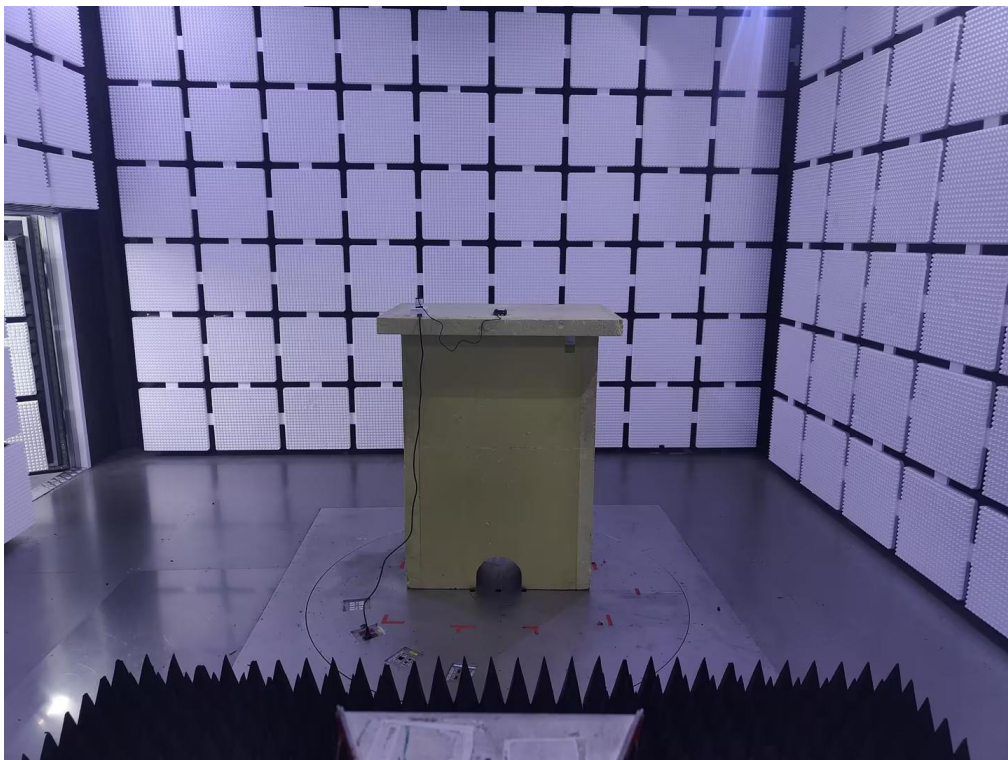
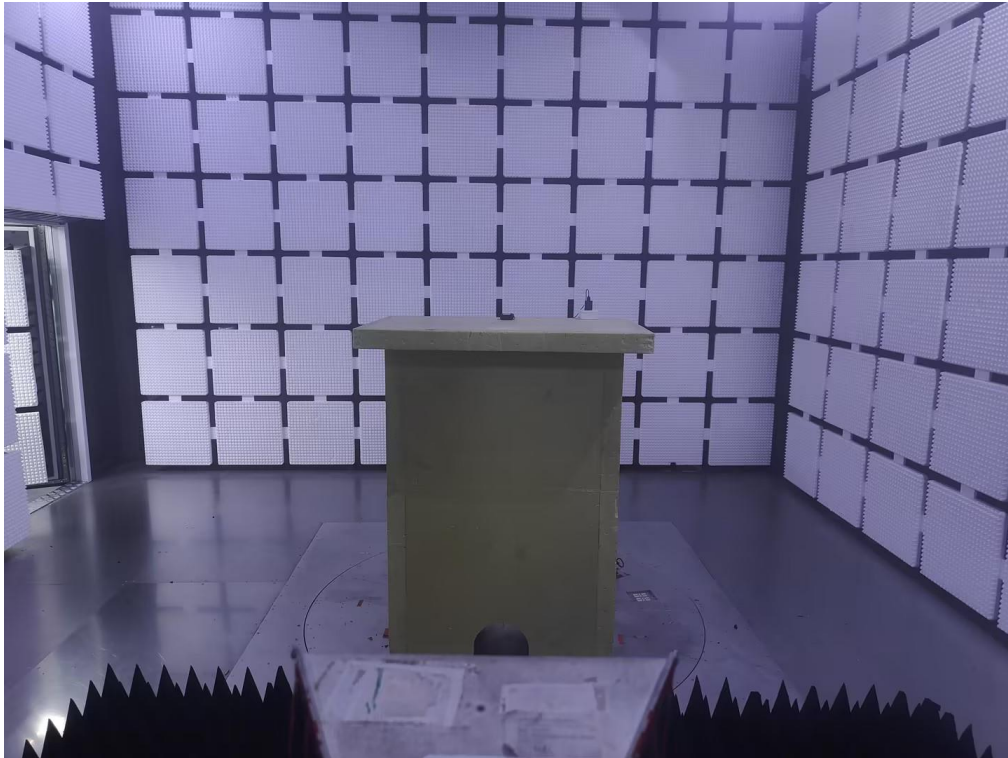
9 kHz to 30 MHz

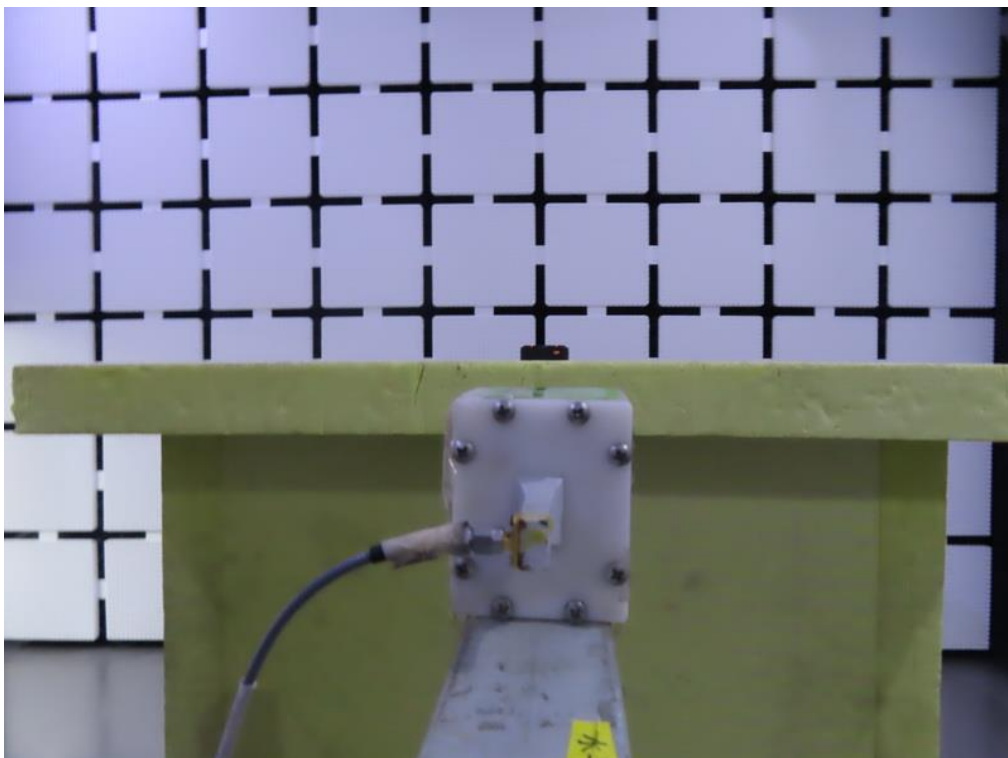
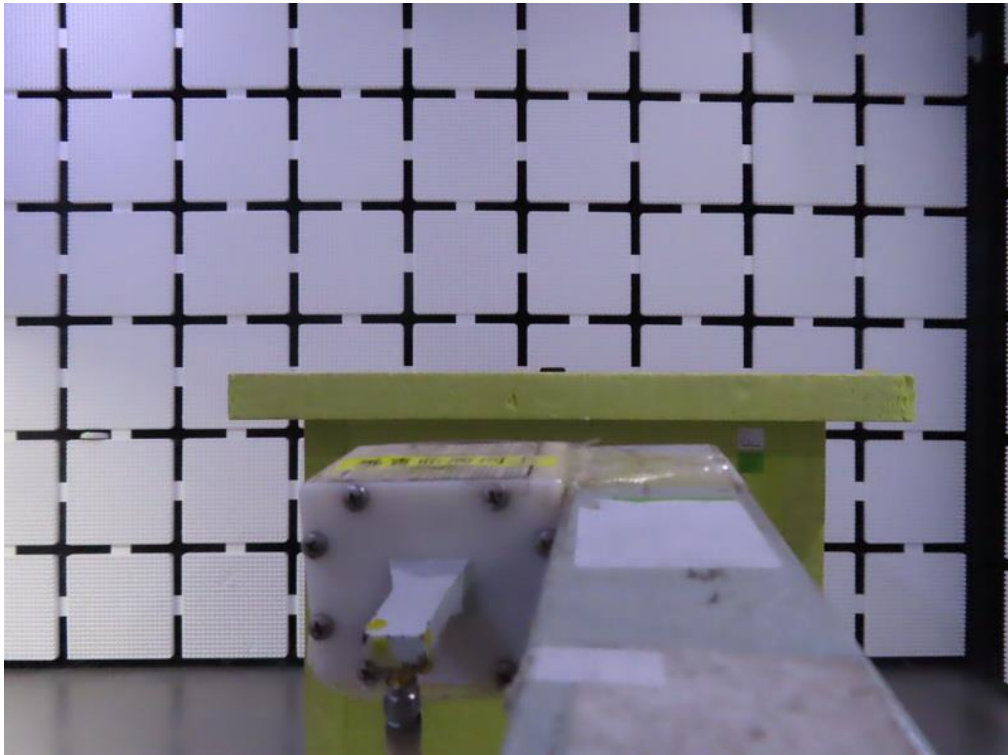


Radiated Emissions Test Photos

30 MHz to 1 GHz-CB03

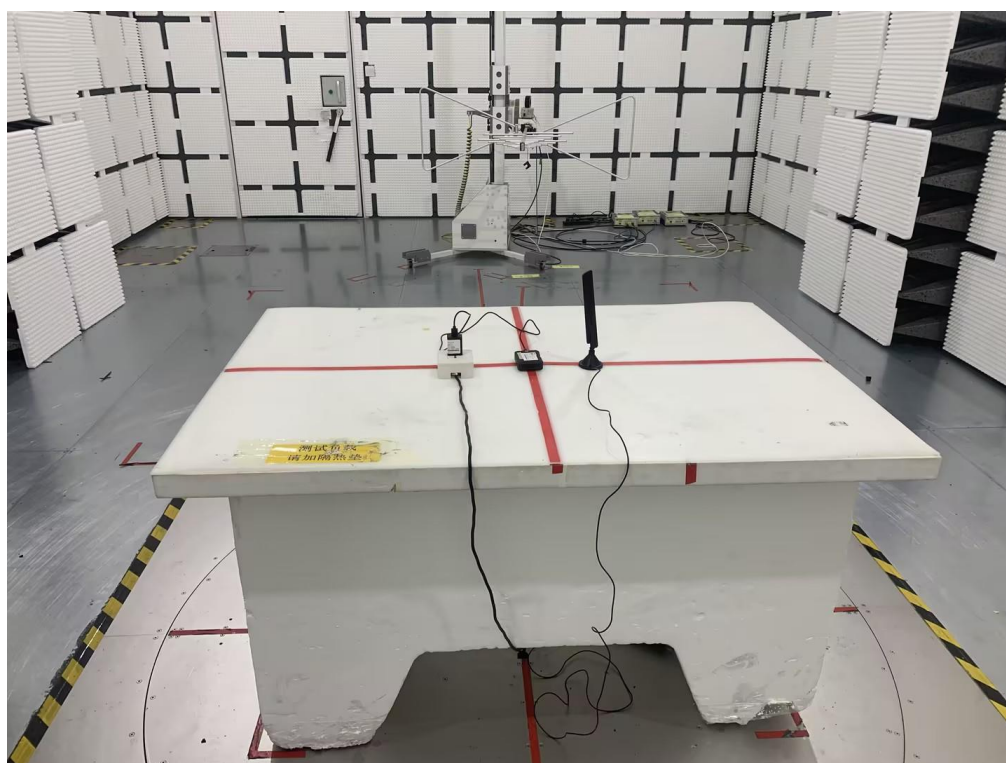
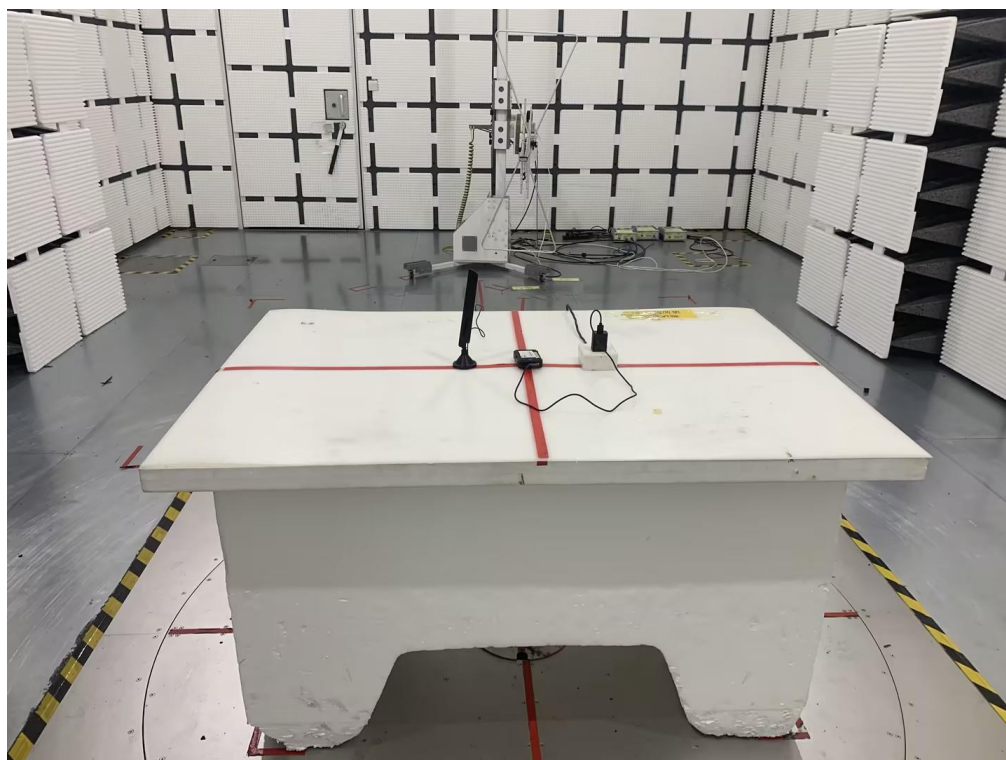


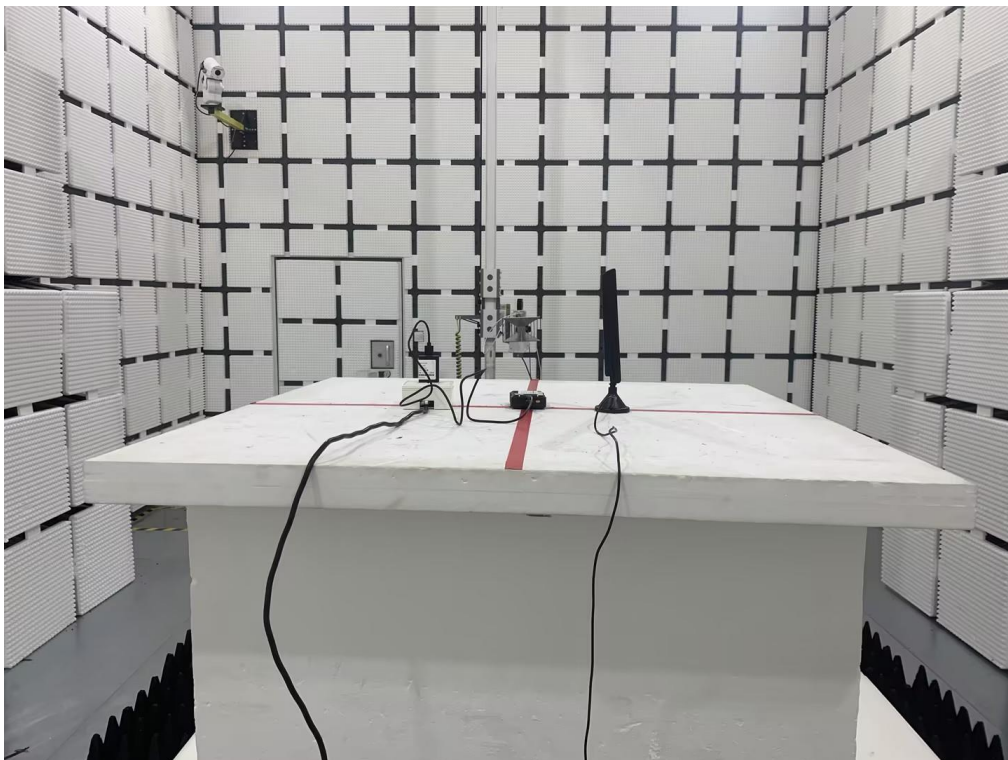
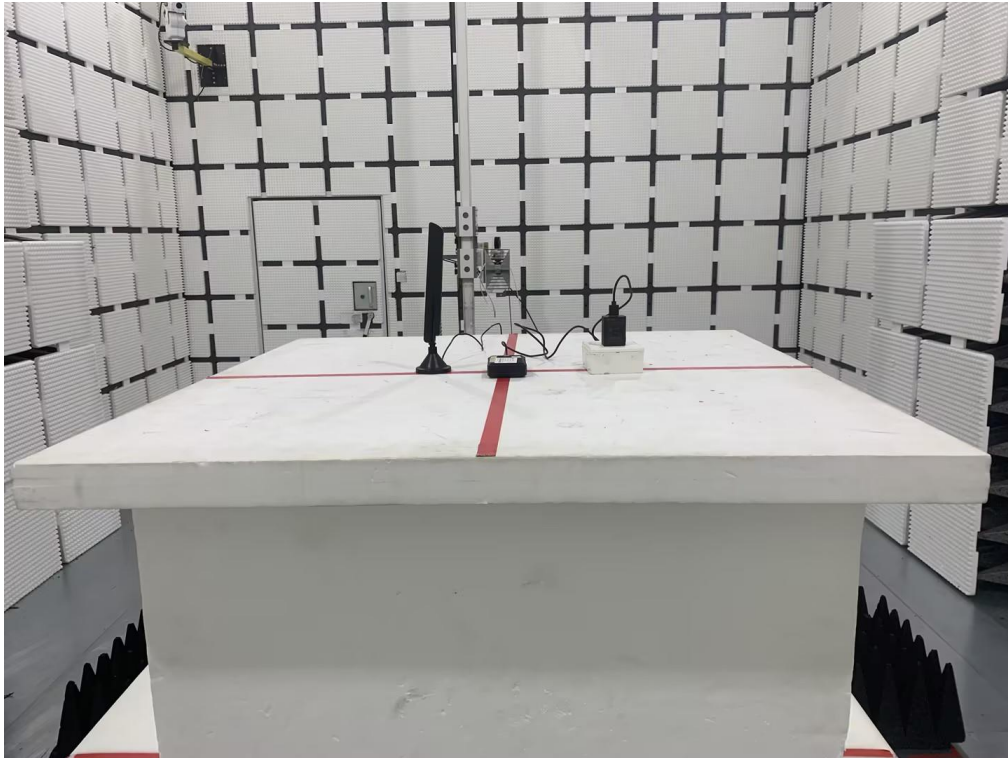
Radiated Emissions Test Photos**1 GHz – 18 GHz-CB03**

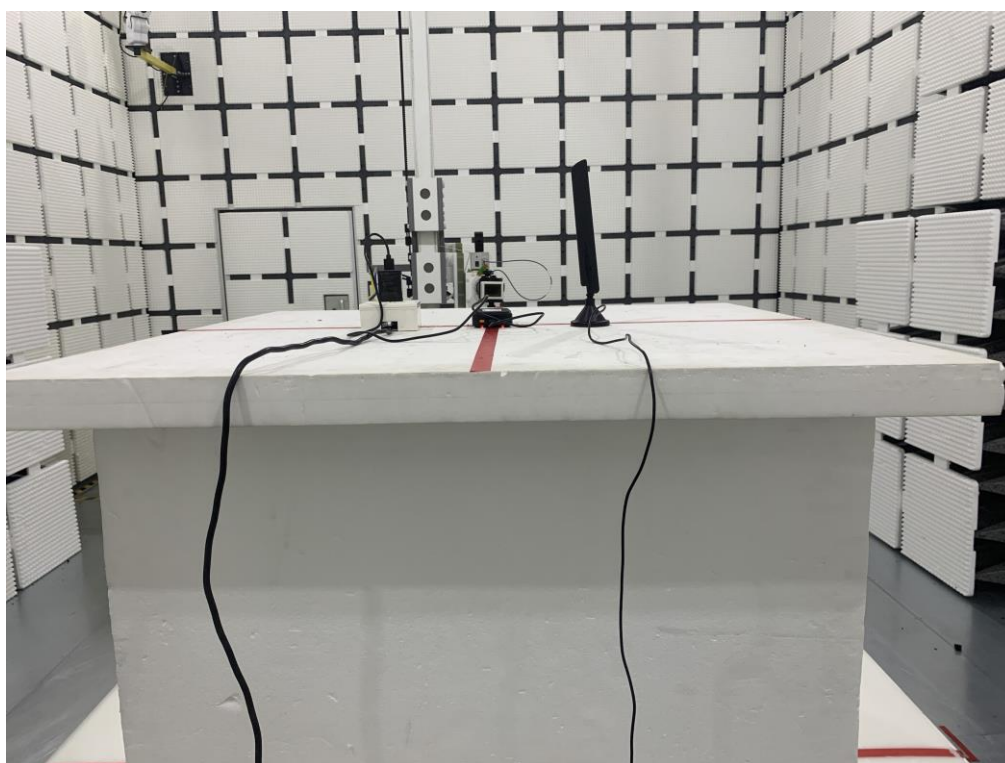
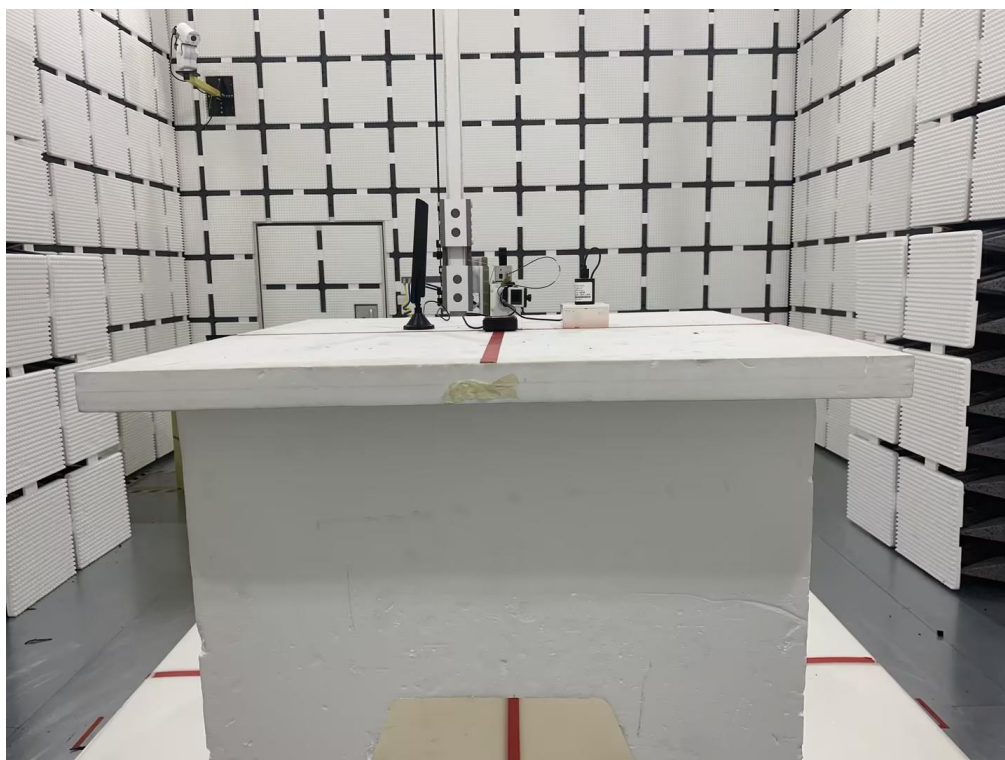
Radiated Emissions Test Photos**Above 18 GHz-CB03**

Radiated Emissions Test Photos

30 MHz to 1 GHz-SSL CB01



Radiated Emissions Test Photos**1 GHz – 18 GHz-SSL CB01**

Radiated Emissions Test Photos**Above 18 GHz-SSL CB01**

APPENDIX A - OUTPUT POWER

Output Power (dBm)

For eMTC:

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19957	CH20175	CH20393
				1710.7MHz	1732.5MHz	1754.3MHz
4 / 1.4MHz	QPSK	1	0	19.28	19.44	19.42
		1	5	19.14	19.39	19.33
		6	0	18.24	18.37	18.23
	16QAM	1	0	18.34	18.56	18.41
		1	5	18.23	18.37	18.46
		5	0	17.13	17.22	17.23

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965	CH20175	CH20385
				1711.5MHz	1732.5MHz	1753.5MHz
4 / 3MHz	QPSK	1	0	19.35	19.39	19.42
		1	5	19.24	19.18	19.43
		6	0	18.13	18.34	18.45
	16QAM	1	0	18.49	18.62	18.75
		1	5	18.31	18.45	18.63
		5	0	17.29	17.23	17.46

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19975	CH20175	CH20375
				1712.5MHz	1732.5MHz	1752.5MHz
4 / 5MHz	QPSK	1	0	19.49	19.52	19.51
		1	5	19.37	19.39	19.29
		6	0	18.49	18.56	18.38
	16QAM	1	0	19.74	19.69	19.68
		1	5	19.52	19.62	19.46
		5	0	17.44	17.47	17.43

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH20000	CH20175	CH20350
				1715MHz	1732.5MHz	1750MHz
4 / 10MHz	QPSK	1	0	19.64	19.56	19.73
		1	5	19.46	19.36	19.52
		6	0	18.53	18.48	18.51
	16QAM	1	0	19.85	19.67	19.83
		1	5	19.68	19.61	19.59
		5	0	18.61	18.52	18.44

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH20025	CH20175	CH20325
				1717.5MHz	1732.5MHz	1747.5MHz
4 / 15MHz	QPSK	1	0	19.52	19.36	19.58
		1	5	19.23	19.47	19.33
		6	0	19.37	19.41	19.55
	16QAM	1	0	19.58	19.67	19.83
		1	5	19.61	19.65	19.91
		6	0	19.63	19.69	19.71

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH20050	CH20175	CH20300
				1720MHz	1732.5MHz	1745MHz
4 / 20MHz	QPSK	1	0	19.59	19.48	19.56
		1	5	19.46	19.35	19.42
		6	0	19.58	19.55	19.64
	16QAM	1	0	19.75	19.67	19.78
		1	5	19.71	19.65	19.73
		5	0	19.54	19.39	19.86

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131979	CH132322	CH132665
				1710.7MHz	1745MHz	1779.3MHz
66 / 1.4MHz	QPSK	1	0	19.01	19.81	19.68
		1	5	18.87	19.65	19.35
		6	0	17.83	18.61	18.55
	16QAM	1	0	18.09	18.93	18.64
		1	5	17.85	18.76	18.41
		5	0	16.56	17.48	17.64

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131987	CH132322	CH132657
				1711.5MHz	1745MHz	1778.5MHz
66 / 3MHz	QPSK	1	0	18.96	19.32	19.49
		1	5	18.84	19.16	19.24
		6	0	17.77	18.06	18.44
	16QAM	1	0	18.23	18.44	18.62
		1	5	18.04	18.22	18.37
		5	0	16.83	17.01	17.55

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131997	CH132322	CH132647
				1712.5MHz	1745MHz	1777.5MHz
66 / 5MHz	QPSK	1	0	18.92	19.26	19.51
		1	5	18.68	19.02	19.27
		6	0	18.02	18.29	18.55
	16QAM	1	0	19.23	19.42	19.72
		1	5	19.12	19.28	19.42
		5	0	16.96	17.13	17.55

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH132022	CH132322	CH132622
				1715MHz	1745MHz	1775MHz
66 / 10MHz	QPSK	1	0	19.04	19.21	19.52
		1	5	18.93	19.14	19.24
		6	0	18.06	18.35	18.43
	16QAM	1	0	19.28	19.41	19.62
		1	5	19.19	19.29	19.32
		5	0	18.09	18.32	18.41

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH132047	CH132322	CH132597
				1717.5MHz	1745MHz	1772.5MHz
66 / 15MHz	QPSK	1	0	19.23	19.24	19.58
		1	5	19.07	19.11	19.31
		6	0	19.14	19.14	19.41
	16QAM	1	0	19.15	19.31	19.72
		1	5	19.11	19.18	19.35
		5	0	19.06	19.16	19.43

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH132072	CH132322	CH132572
				1720MHz	1745MHz	1770MHz
66 / 20MHz	QPSK	1	0	19.15	19.33	19.67
		1	5	19.01	19.04	19.38
		6	0	19.06	19.24	19.55
	16QAM	1	0	19.35	19.43	19.71
		1	5	19.19	19.25	19.38
		5	0	19.07	19.16	19.47

For NB-IoT:

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19951	CH20175	CH20399
				1710.1MHz	1732.5MHz	1754.9MHz
4 / 3.75kHz	BPSK	1	0	4.85	21.69	4.97
		1	47	4.75	21.53	4.85
	QPSK	1	0	4.90	21.63	5.02
		1	47	4.82	21.42	4.90

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19951	CH20175	CH20399
				1710.1MHz	1732.5MHz	1754.9MHz
4 / 15kHz	BPSK	1	0	4.74	22.15	4.99
		1	11	4.69	22.09	4.88
	QPSK	1	0	4.82	22.02	4.85
		1	11	4.72	21.99	4.88
		3	3	4.98	22.20	5.10

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131973	CH132322	CH132671
				1710.1MHz	1745MHz	1779.9MHz
66 / 3.75kHz	BPSK	1	0	4.44	21.71	4.34
		1	47	4.30	21.10	4.33
	QPSK	1	0	4.32	21.42	4.33
		1	47	4.41	21.10	4.32

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131973	CH132322	CH132671
				1710.1MHz	1745MHz	1779.9MHz
66 / 15kHz	BPSK	1	0	4.38	21.90	4.27
		1	11	4.47	21.84	4.31
	QPSK	1	0	4.31	21.96	4.41
		1	11	4.47	21.68	4.40
		3	3	4.26	22.10	4.35

EIRP (dBm)

For eMTC:

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19957	CH20175	CH20393
				1710.7MHz	1732.5MHz	1754.3MHz
4 / 1.4MHz	QPSK	1	0	22.38	22.54	22.52
		1	5	22.24	22.49	22.43
		6	0	21.34	21.47	21.33
	16QAM	1	0	21.44	21.66	21.51
		1	5	21.33	21.47	21.56
		5	0	20.23	20.32	20.33

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965	CH20175	CH20385
				1711.5MHz	1732.5MHz	1753.5MHz
4 / 3MHz	QPSK	1	0	22.45	22.49	22.52
		1	5	22.34	22.28	22.53
		6	0	21.23	21.44	21.55
	16QAM	1	0	21.59	21.72	21.85
		1	5	21.41	21.55	21.73
		5	0	20.39	20.33	20.56

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19975	CH20175	CH20375
				1712.5MHz	1732.5MHz	1752.5MHz
4 / 5MHz	QPSK	1	0	22.59	22.62	22.61
		1	5	22.47	22.49	22.39
		6	0	21.59	21.66	21.48
	16QAM	1	0	22.84	22.79	22.78
		1	5	22.62	22.72	22.56
		5	0	20.54	20.57	20.53

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH20000	CH20175	CH20350
				1715MHz	1732.5MHz	1750MHz
4 / 10MHz	QPSK	1	0	22.74	22.66	22.83
		1	5	22.56	22.46	22.62
		6	0	21.63	21.58	21.61
	16QAM	1	0	22.95	22.77	22.93
		1	5	22.78	22.71	22.69
		5	0	21.71	21.62	21.54

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH20025	CH20175	CH20325
				1717.5MHz	1732.5MHz	1747.5MHz
4 / 15MHz	QPSK	1	0	22.62	22.46	22.68
		1	5	22.33	22.57	22.43
		6	0	22.47	22.51	22.65
	16QAM	1	0	22.68	22.77	22.93
		1	5	22.71	22.75	23.01
		6	0	22.73	22.79	22.81

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH20050	CH20175	CH20300
				1720MHz	1732.5MHz	1745MHz
4 / 20MHz	QPSK	1	0	22.69	22.58	22.66
		1	5	22.56	22.45	22.52
		6	0	22.68	22.65	22.74
	16QAM	1	0	22.85	22.77	22.88
		1	5	22.81	22.75	22.83
		5	0	22.64	22.49	22.96

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131979	CH132322	CH132665
				1710.7MHz	1745MHz	1779.3MHz
66 / 1.4MHz	QPSK	1	0	22.11	22.91	22.78
		1	5	21.97	22.75	22.45
		6	0	20.93	21.71	21.65
	16QAM	1	0	21.19	22.03	21.74
		1	5	20.95	21.86	21.51
		5	0	19.66	20.58	20.74

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131987	CH132322	CH132657
				1711.5MHz	1745MHz	1778.5MHz
66 / 3MHz	QPSK	1	0	22.06	22.42	22.59
		1	5	21.94	22.26	22.34
		6	0	20.87	21.16	21.54
	16QAM	1	0	21.33	21.54	21.72
		1	5	21.14	21.32	21.47
		5	0	19.93	20.11	20.65

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131997	CH132322	CH132647
				1712.5MHz	1745MHz	1777.5MHz
66 / 5MHz	QPSK	1	0	22.02	22.36	22.61
		1	5	21.78	22.12	22.37
		6	0	21.12	21.39	21.65
	16QAM	1	0	22.33	22.52	22.82
		1	5	22.22	22.38	22.52
		5	0	20.06	20.23	20.65

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH132022	CH132322	CH132622
				1715MHz	1745MHz	1775MHz
66 / 10MHz	QPSK	1	0	22.14	22.31	22.62
		1	5	22.03	22.24	22.34
		6	0	21.16	21.45	21.53
	16QAM	1	0	22.38	22.51	22.72
		1	5	22.29	22.39	22.42
		5	0	21.19	21.42	21.51

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH132047	CH132322	CH132597
				1717.5MHz	1745MHz	1772.5MHz
66 / 15MHz	QPSK	1	0	22.33	22.34	22.68
		1	5	22.17	22.21	22.41
		6	0	22.24	22.24	22.51
	16QAM	1	0	22.25	22.41	22.82
		1	5	22.21	22.28	22.45
		5	0	22.16	22.26	22.53

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH132072	CH132322	CH132572
				1720MHz	1745MHz	1770MHz
66 / 20MHz	QPSK	1	0	22.25	22.43	22.77
		1	5	22.11	22.14	22.48
		6	0	22.16	22.34	22.65
	16QAM	1	0	22.45	22.53	22.81
		1	5	22.29	22.35	22.48
		5	0	22.17	22.26	22.57

For NB-IoT:

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19951	CH20175	CH20399
				1710.1MHz	1732.5MHz	1754.9MHz
4 / 3.75kHz	BPSK	1	0	7.95	24.79	8.07
		1	47	7.85	24.63	7.95
	QPSK	1	0	8.00	24.73	8.12
		1	47	7.92	24.52	8.00

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH19951	CH20175	CH20399
				1710.1MHz	1732.5MHz	1754.9MHz
4 / 15kHz	BPSK	1	0	7.84	25.25	8.09
		1	11	7.79	25.19	7.98
	QPSK	1	0	7.92	25.12	7.95
		1	11	7.82	25.09	7.98
		3	3	8.08	25.30	8.20

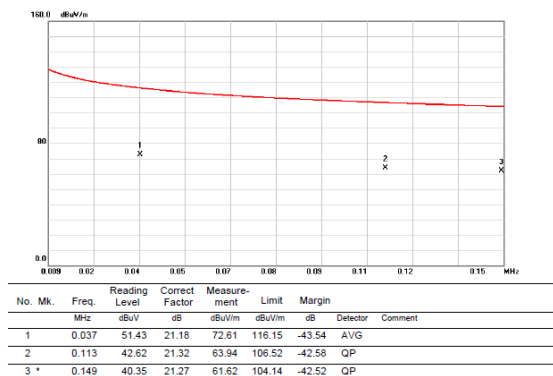
LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131973	CH132322	CH132671
				1710.1MHz	1745MHz	1779.9MHz
66 / 3.75kHz	BPSK	1	0	7.54	24.81	7.44
		1	47	7.40	24.20	7.43
	QPSK	1	0	7.42	24.52	7.43
		1	47	7.51	24.20	7.42

LTE Band / Sub-carrier Spacing(kHz)	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				CH131973	CH132322	CH132671
				1710.1MHz	1745MHz	1779.9MHz
66 / 15kHz	BPSK	1	0	7.48	25.00	7.37
		1	11	7.57	24.94	7.41
	QPSK	1	0	7.41	25.06	7.51
		1	11	7.57	24.78	7.50
		3	3	7.36	25.20	7.45

APPENDIX B - RADIATED SPURIOUS EMISSIONS (9KHZ TO 30MHZ)

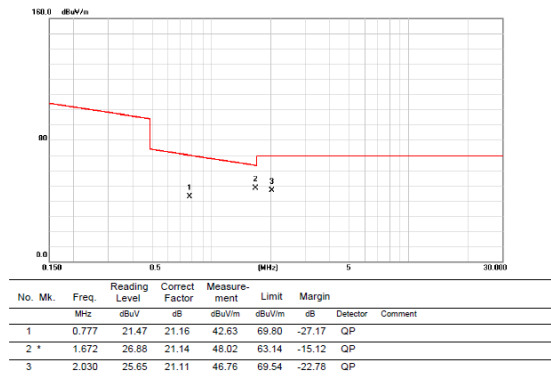
Test Mode : TX Mode

Ant 0°



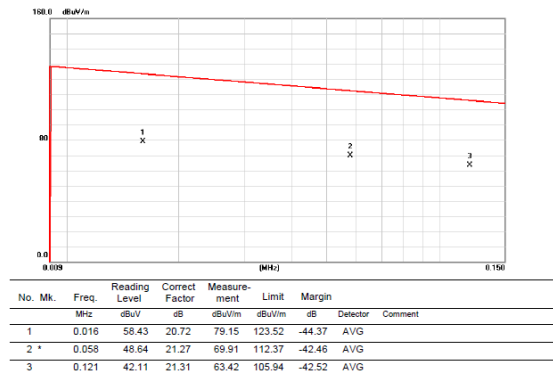
Test Mode : TX Mode

Ant 0°



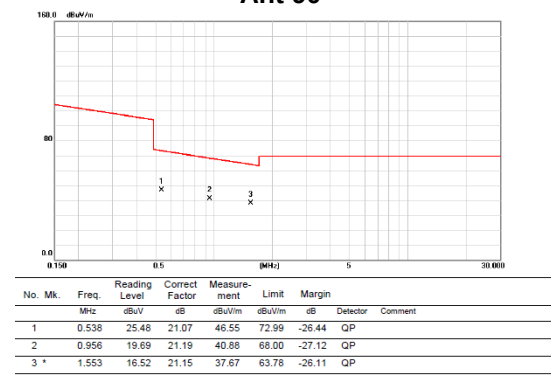
Test Mode : TX Mode

Ant 90°



Test Mode : TX Mode

Ant 90°



APPENDIX C - RADIATED SPURIOUS EMISSIONS (30MHZ TO 1GHZ)

For eMTC:

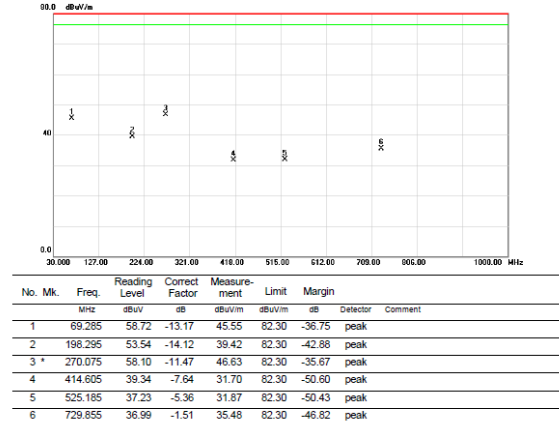
Test Mode : LTE Band 4_TX CH20175_1.4MHz

Test Mode : LTE Band 4_TX CH20175_1.4MHz

Vertical



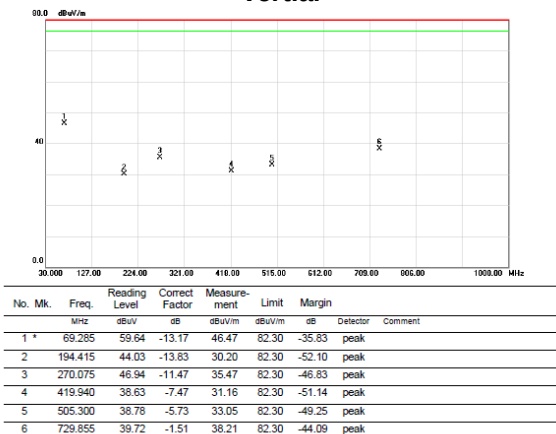
Horizontal



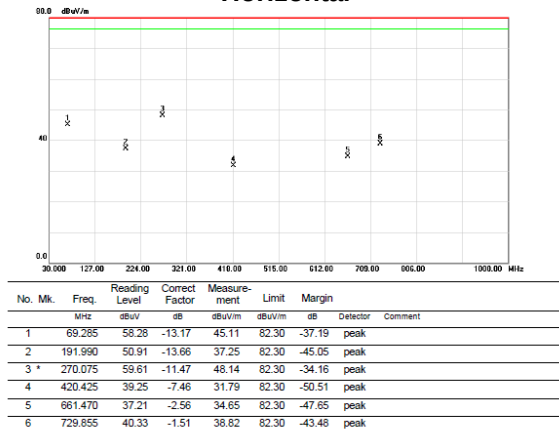
Test Mode : LTE Band 4_TX CH20175_5MHz

Test Mode : LTE Band 4_TX CH20175_5MHz

Vertical



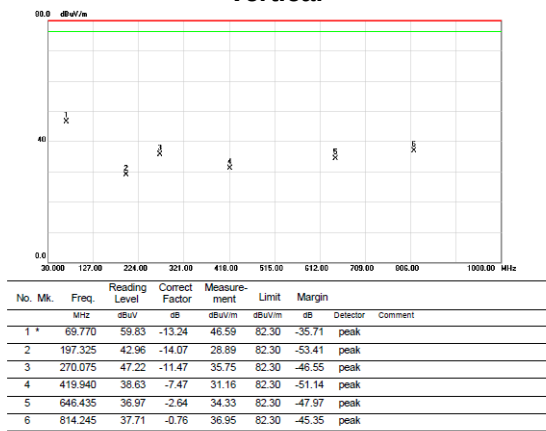
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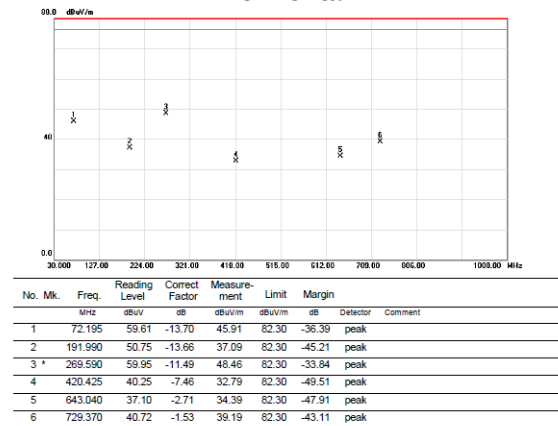
Test Mode : LTE Band 4_TX CH20175_20MHz

Test Mode : LTE Band 4_TX CH20175_20MHz

Vertical



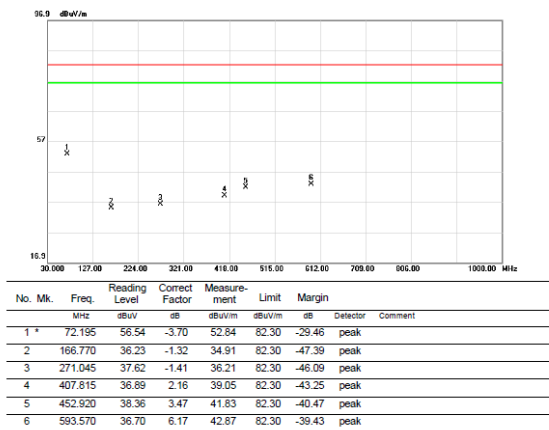
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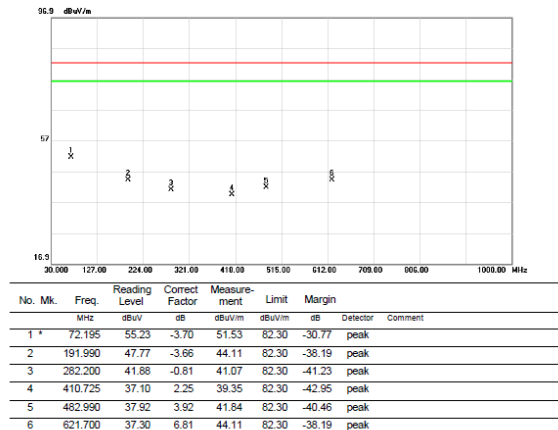
Test Mode : LTE Band 12_TX CH23095_1.4MHz

Test Mode : LTE Band 12_TX CH23095_1.4MHz

Vertical

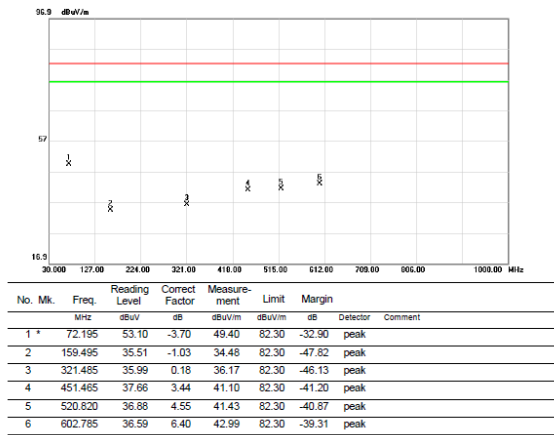


Horizontal



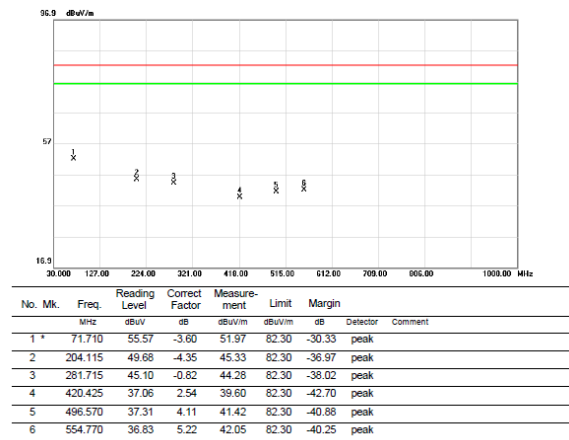
Test Mode : LTE Band 12_TX CH23095_5MHz

Vertical



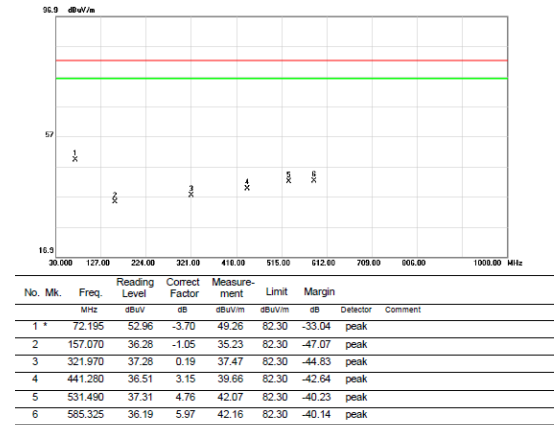
Test Mode : LTE Band 12_TX CH23095_5MHz

Horizontal



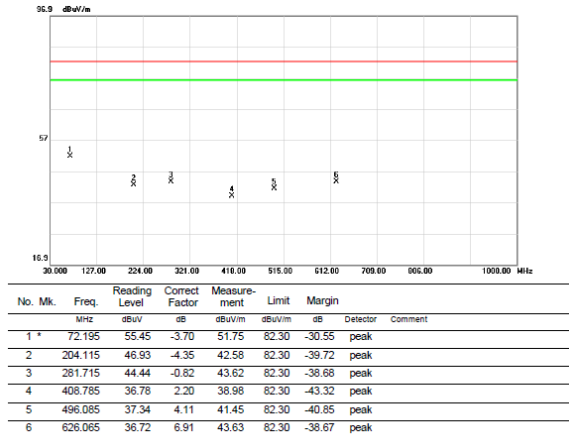
Test Mode : LTE Band 12_TX CH23095_10MHz

Vertical



Test Mode : LTE Band 12_TX CH23095_10MHz

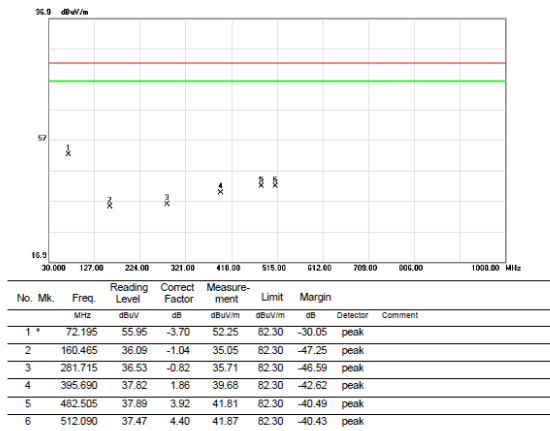
Horizontal



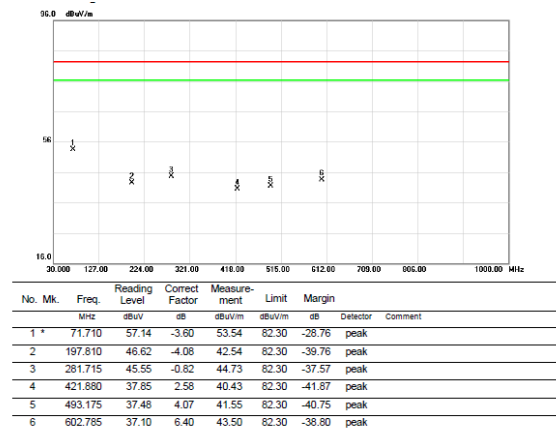
Test Mode : LTE Band 13_TX CH23230_5MHz

Test Mode : LTE Band 13_TX CH23230_5MHz

Vertical



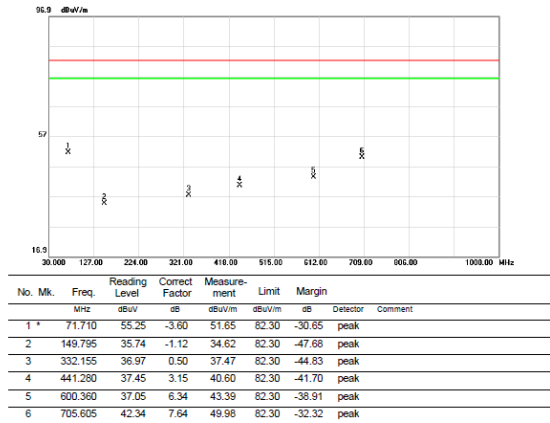
Horizontal



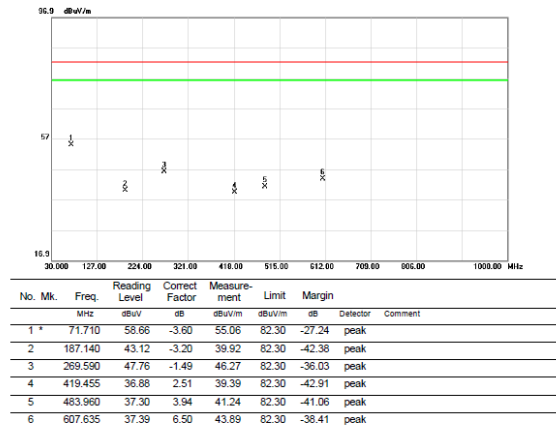
Test Mode : LTE Band 13_TX CH23230_10MHz

Test Mode : LTE Band 13_TX CH23230_10MHz

Vertical



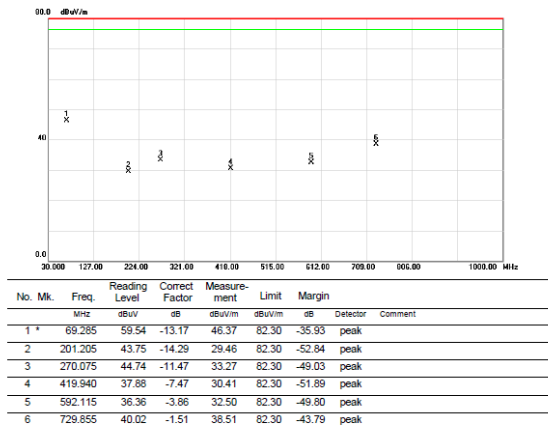
Horizontal



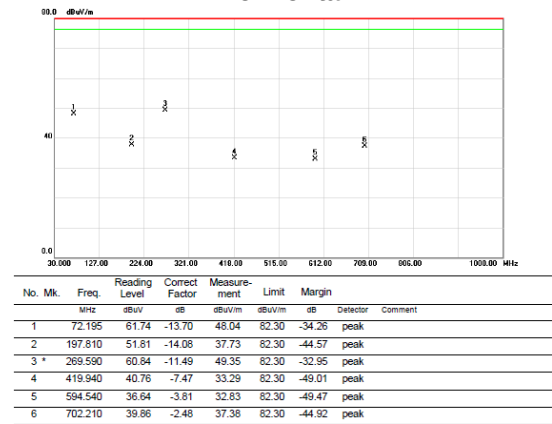
Test Mode : LTE Band 66_TX CH132322_1.4MHz

Test Mode : LTE Band 66_TX CH132322_1.4MHz

Vertical



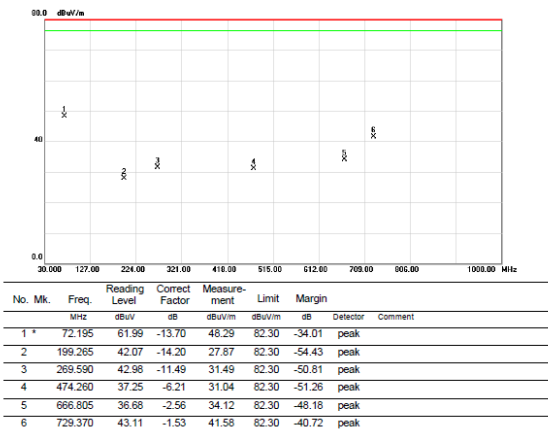
Horizontal



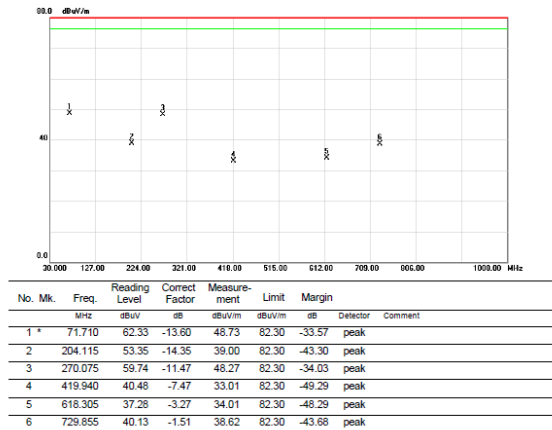
Test Mode : LTE Band 66_TX CH132322_5MHz

Test Mode : LTE Band 66_TX CH132322_5MHz

Vertical



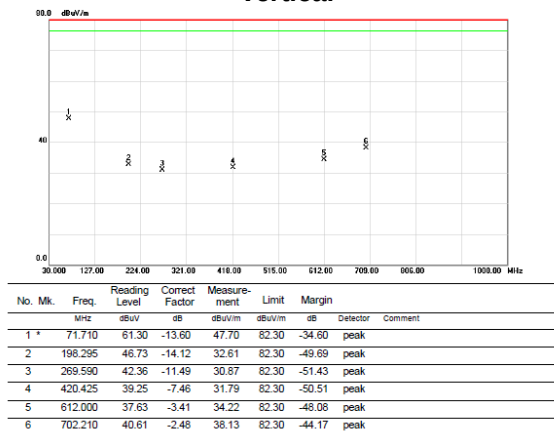
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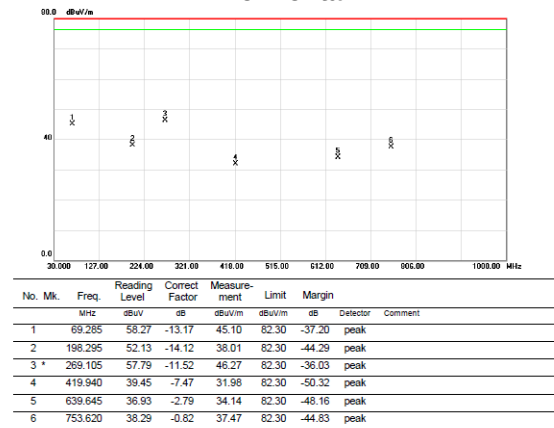
Test Mode : LTE Band 66_TX CH132322_20MHz

Test Mode : LTE Band 66_TX CH132322_20MHz

Vertical



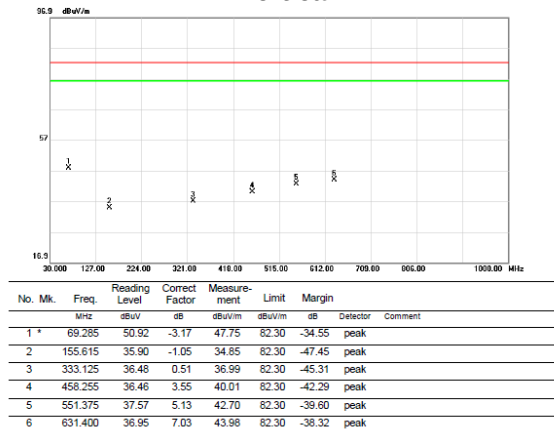
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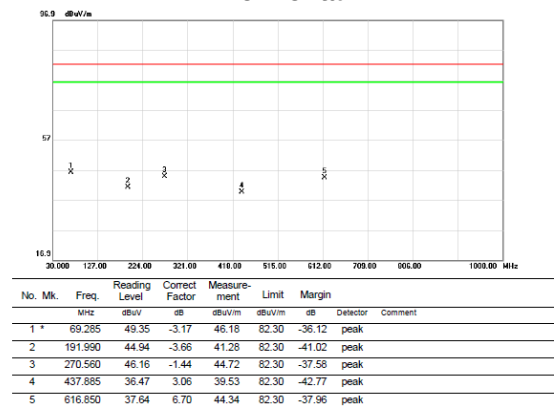
Test Mode : LTE Band 85_TX CH134092_5MHz

Test Mode : LTE Band 85_TX CH134092_5MHz

Vertical



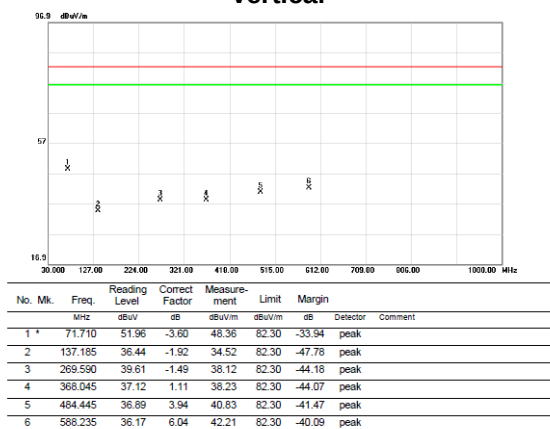
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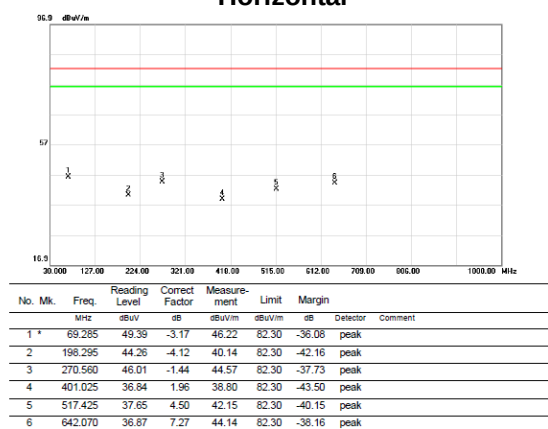
Test Mode : LTE Band 85_TX CH134092_10MHz

Test Mode : LTE Band 85_TX CH134092_10MHz

Vertical



Horizontal

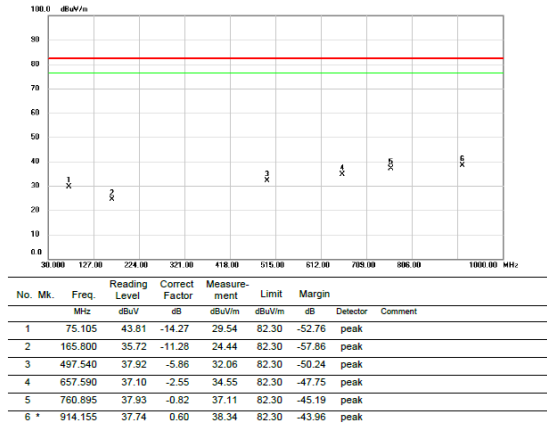


For NB-IoT:

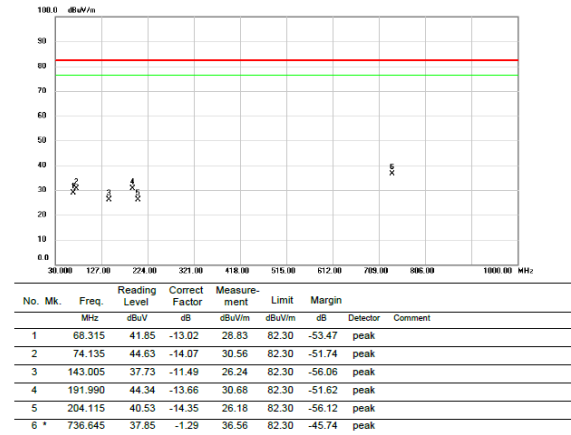
Test Mode : LTE Band 4_TX CH20175_3.75kHz

Test Mode : LTE Band 4_TX CH20175_3.75kHz

Vertical



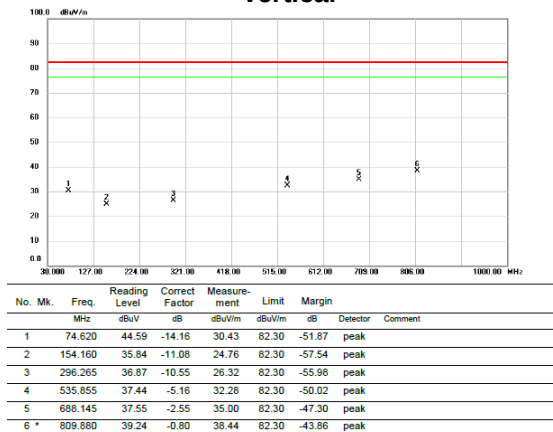
Horizontal



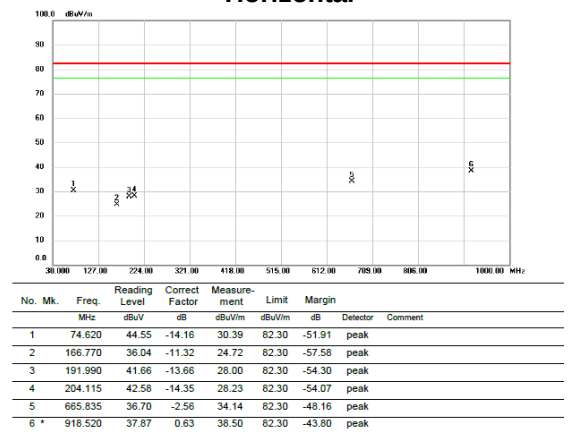
Test Mode : LTE Band 4_TX CH20175_15kHz

Test Mode : LTE Band 4_TX CH20175_15kHz

Vertical



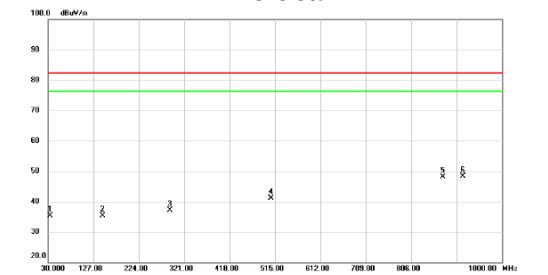
Horizontal



Test Mode : LTE Band 12_TX CH23095_3.75kHz

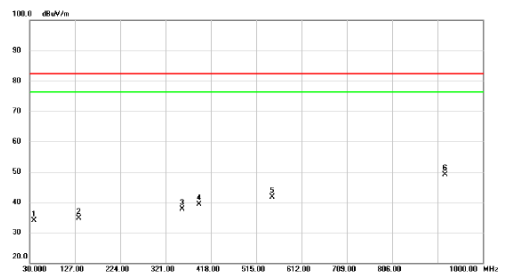
Test Mode : LTE Band 12_TX CH23095_3.75kHz

Vertical



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm/Hz	Limit dBm/Hz	Margin dB	Detector	Comment
1	34.365	37.68	-2.45	35.23	82.30	-47.07	peak	
2	146.400	36.69	-1.31	35.38	82.30	-46.92	peak	
3	290.930	37.67	-0.59	37.08	82.30	-45.22	peak	
4	506.755	36.74	4.30	41.04	82.30	-41.26	peak	
5	873.900	38.04	9.98	48.02	82.30	-34.28	peak	
6 *	916.095	37.79	10.61	48.40	82.30	-33.90	peak	

Horizontal

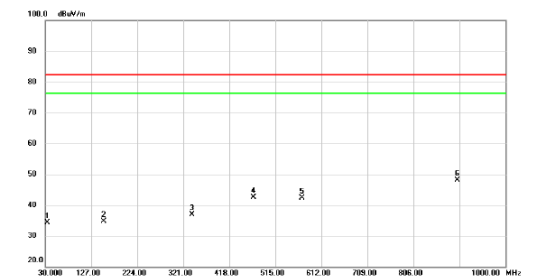


No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm/Hz	Limit dBm/Hz	Margin dB	Detector	Comment
1	39.700	35.81	-1.86	33.95	82.30	-48.35	peak	
2	134.760	36.87	-2.14	34.73	82.30	-47.57	peak	
3	355.920	36.98	0.72	37.70	82.30	-44.60	peak	
4	392.780	37.44	1.80	39.24	82.30	-43.06	peak	
5	549.920	36.67	5.10	41.77	82.30	-40.53	peak	
6 *	916.520	38.47	10.63	49.10	82.30	-33.20	peak	

Test Mode : LTE Band 12_TX CH23095_15kHz

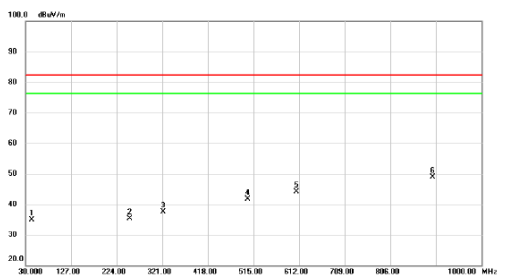
Test Mode : LTE Band 12_TX CH23095_15kHz

Vertical



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm/Hz	Limit dBm/Hz	Margin dB	Detector	Comment
1	34.850	36.61	-2.40	34.21	82.30	-48.09	peak	
2	153.675	35.80	-1.08	34.72	82.30	-47.58	peak	
3	339.915	36.32	0.59	36.91	82.30	-45.39	peak	
4	468.925	38.86	3.70	42.56	82.30	-39.74	peak	
5	571.260	36.66	5.62	42.28	82.30	-40.02	peak	
6 *	898.150	37.64	10.48	48.12	82.30	-34.18	peak	

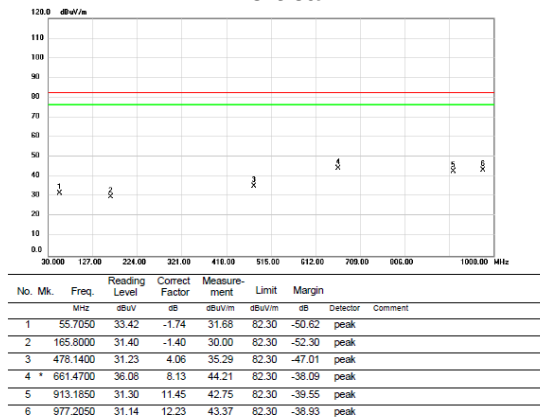
Horizontal



No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measurement dBm/Hz	Limit dBm/Hz	Margin dB	Detector	Comment
1	44.065	36.39	-1.49	34.90	82.30	-47.40	peak	
2	252.130	37.47	-2.10	35.37	82.30	-46.93	peak	
3	322.455	37.31	0.21	37.52	82.30	-44.78	peak	
4	502.875	37.40	4.23	41.63	82.30	-40.67	peak	
5	608.180	37.62	6.47	44.09	82.30	-38.21	peak	
6 *	895.725	38.56	10.42	48.98	82.30	-33.32	peak	

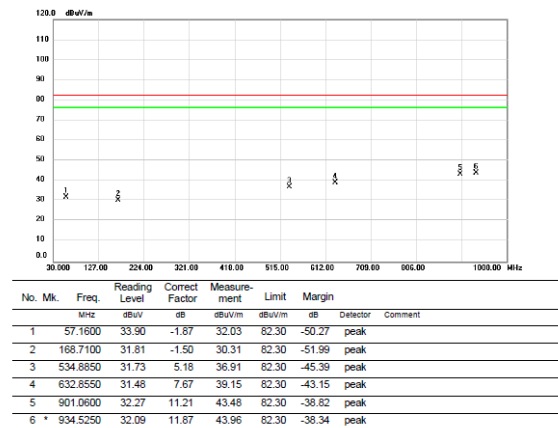
Test Mode : LTE Band 13_TX CH23230_3.75kHz

Vertical



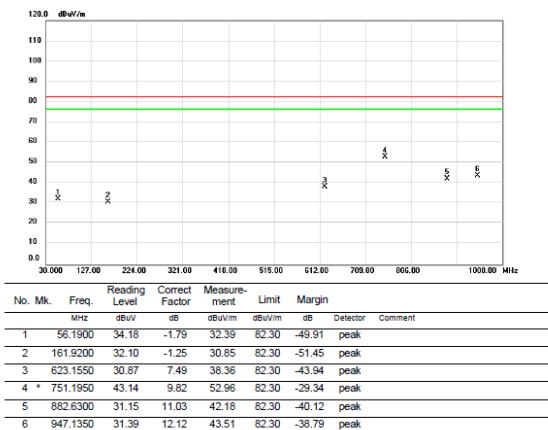
Test Mode : LTE Band 13_TX CH23230_3.75kHz

Horizontal



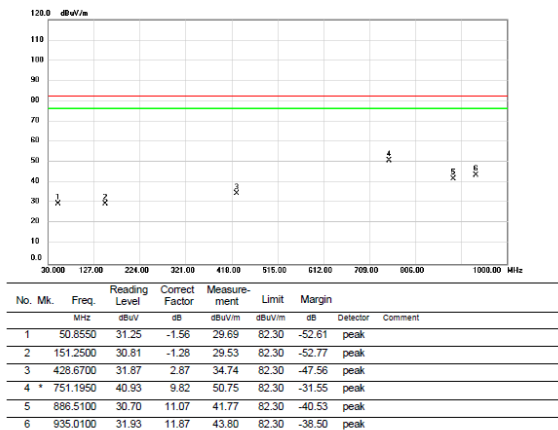
Test Mode : LTE Band 13_TX CH23230_15kHz

Vertical



Test Mode : LTE Band 13_TX CH23230_15kHz

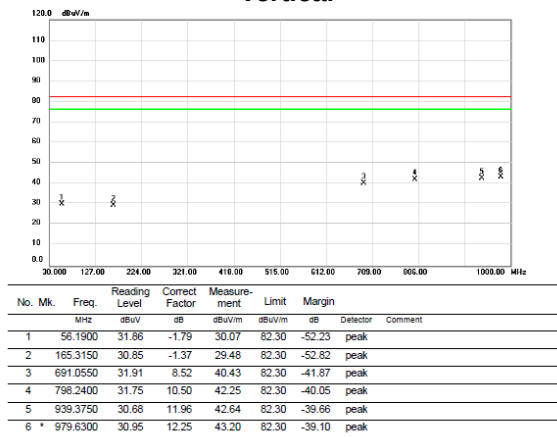
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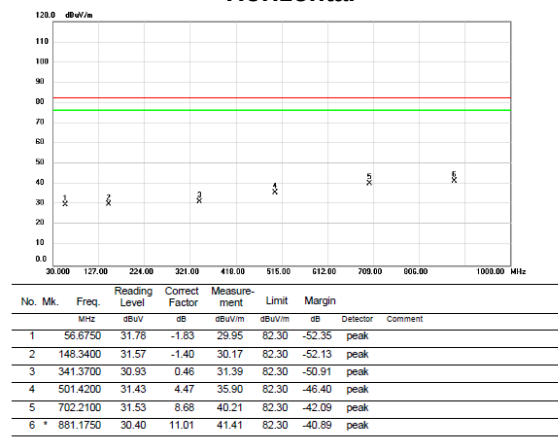
Test Mode : LTE Band 66_TX CH132322_
3.75kHz

Test Mode : LTE Band 66_TX CH132322_
3.75kHz

Vertical



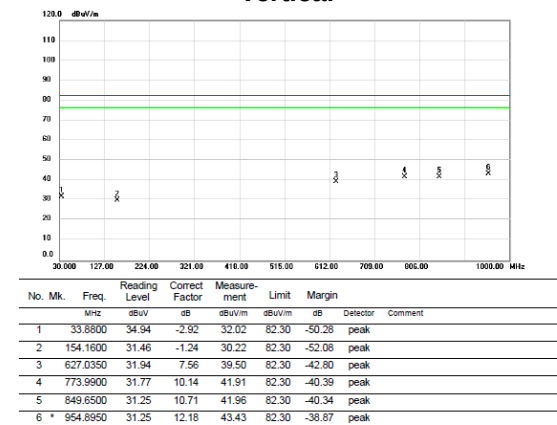
Horizontal



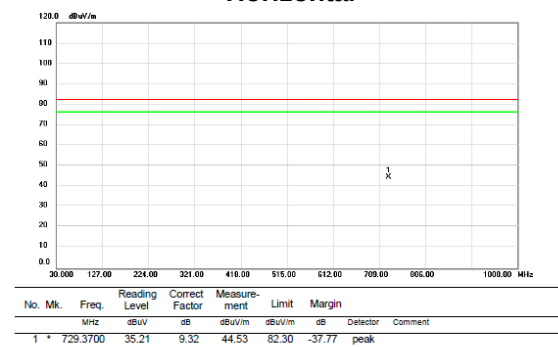
Test Mode : LTE Band 66_TX CH132322_15kHz

Test Mode : LTE Band 66_TX CH132322_15kHz

Vertical



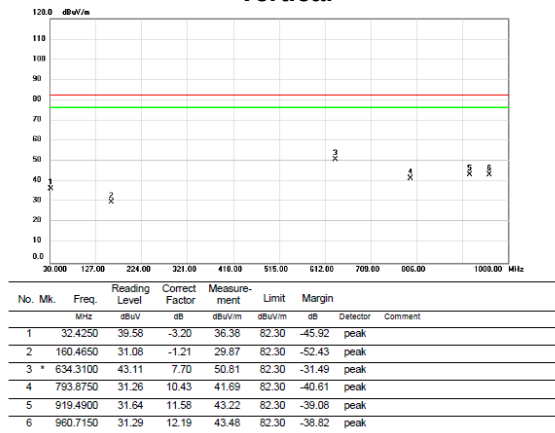
Horizontal



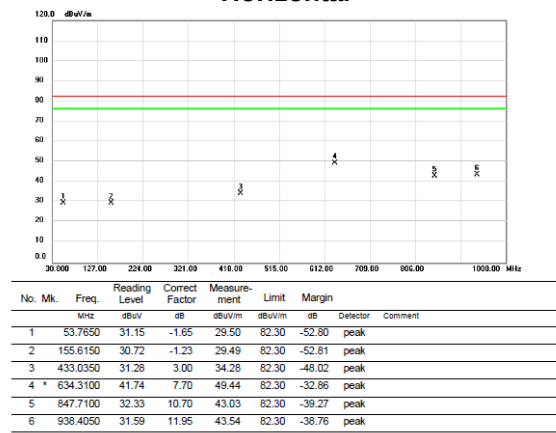
Test Mode : LTE Band 71_TX CH133297_3.75kHz

Test Mode : LTE Band 71_TX CH133297_3.75kHz

Vertical



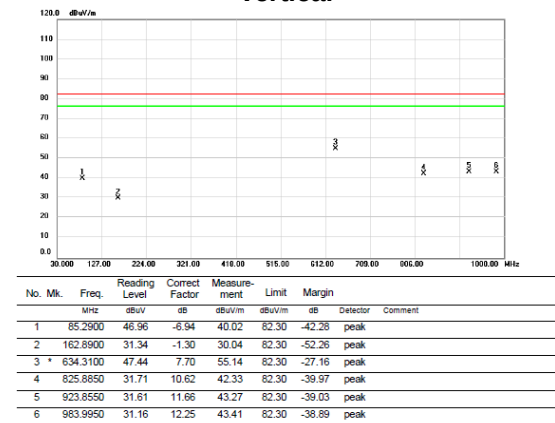
Horizontal



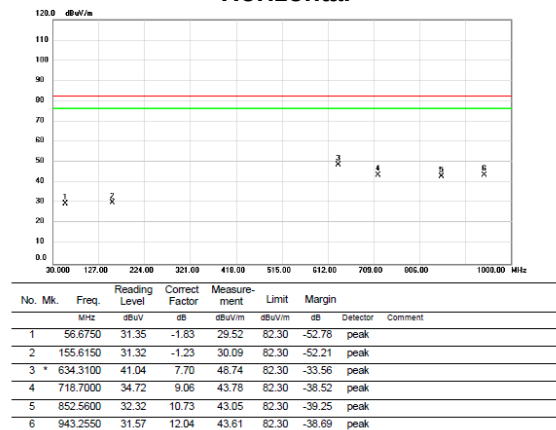
Test Mode : LTE Band 71_TX CH133297_15kHz

Test Mode : LTE Band 71_TX CH133297_15kHz

Vertical



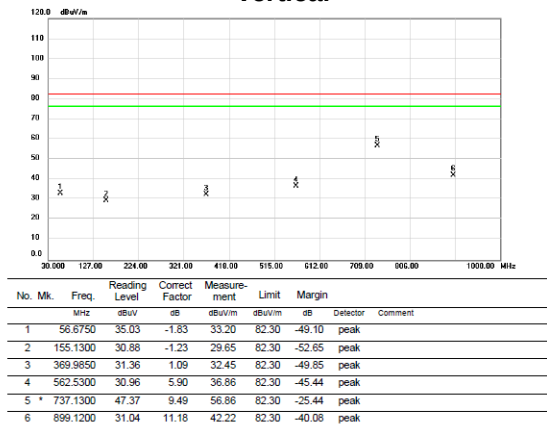
Horizontal



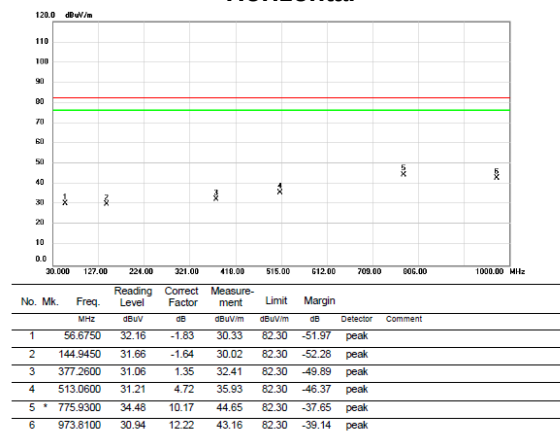
Test Mode : LTE Band 85_TX CH134092_
3.75kHz

Test Mode : LTE Band 85_TX CH134092_
3.75kHz

Vertical



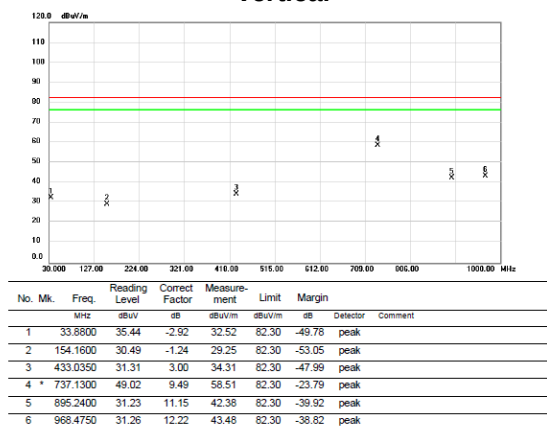
Horizontal



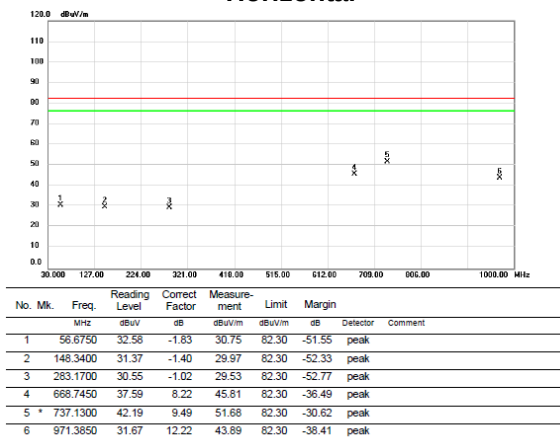
Test Mode : LTE Band 85_TX CH134092_15kHz

Test Mode : LTE Band 85_TX CH134092_15kHz

Vertical



Horizontal



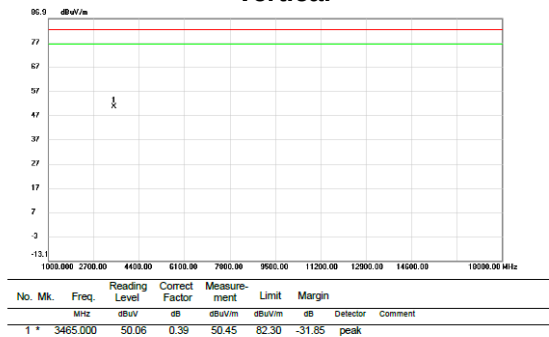
APPENDIX D - RADIATED SPURIOUS EMISSIONS (ABOVE 1GHZ)

For eMTC:

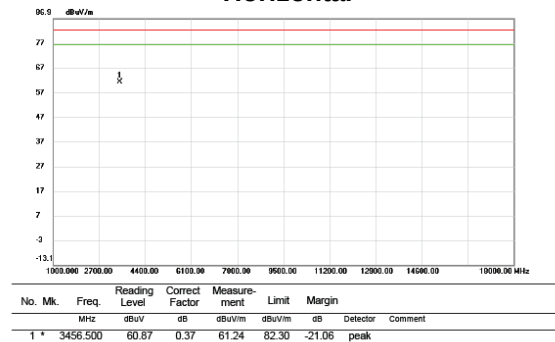
Test Mode : LTE Band 4_TX CH20175_1.4MHz

Test Mode : LTE Band 4_TX CH20175_1.4MHz

Vertical



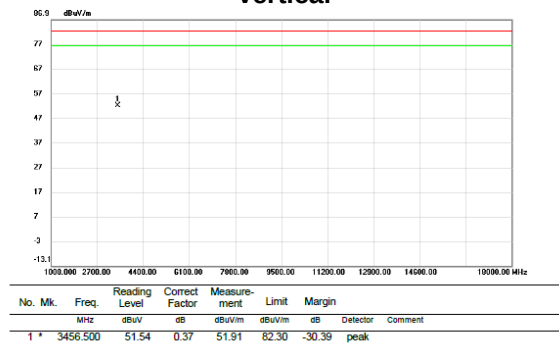
Horizontal



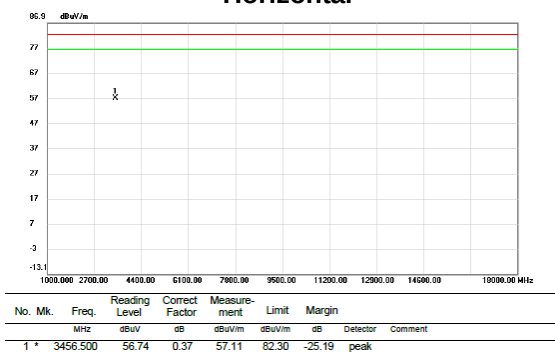
Test Mode : LTE Band 4_TX CH20175_5MHz

Test Mode : LTE Band 4_TX CH20175_5MHz

Vertical



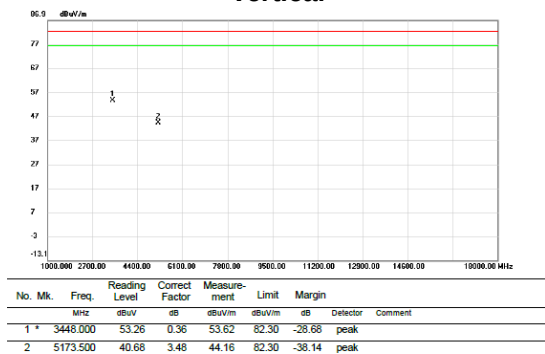
Horizontal



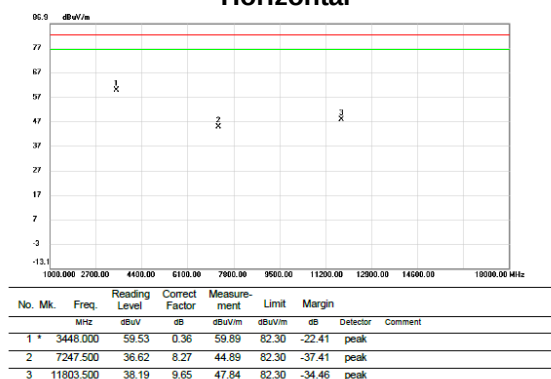
Test Mode : LTE Band 4_TX CH20175_20MHz

Test Mode : LTE Band 4_TX CH20175_20MHz

Vertical



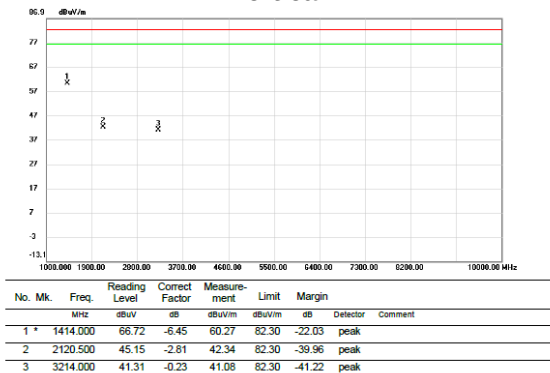
Horizontal



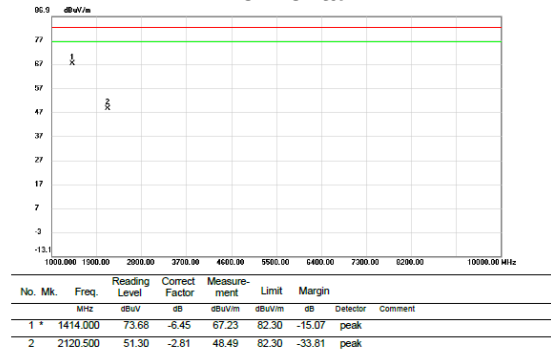
Test Mode : LTE Band 12_TX CH23095_1.4MHz

Test Mode : LTE Band 12_TX CH23095_1.4MHz

Vertical



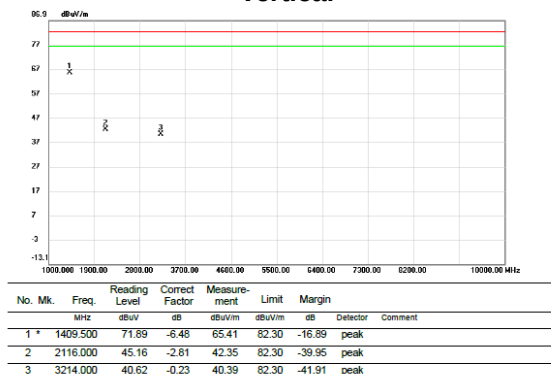
Horizontal



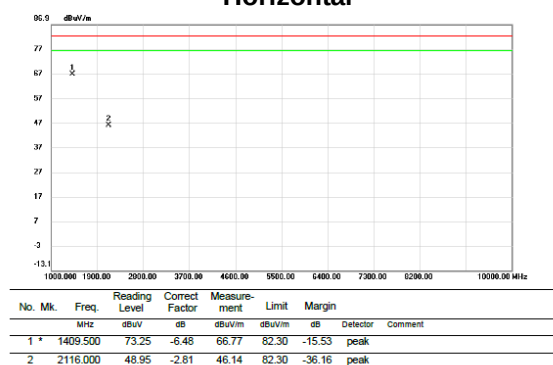
Test Mode : LTE Band 12_TX CH23095_5MHz

Test Mode : LTE Band 12_TX CH23095_5MHz

Vertical



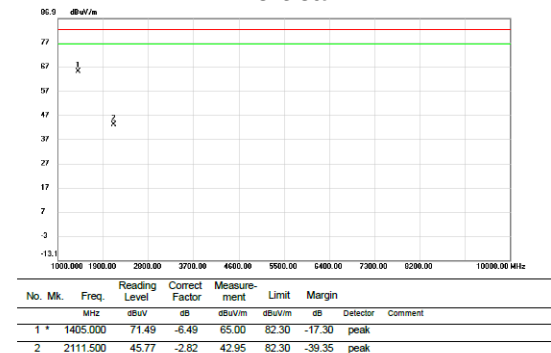
Horizontal



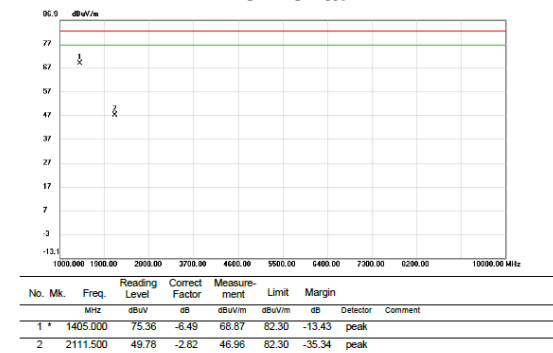
Test Mode : LTE Band 12_TX CH23095_10MHz

Test Mode : LTE Band 12_TX CH23095_10MHz

Vertical



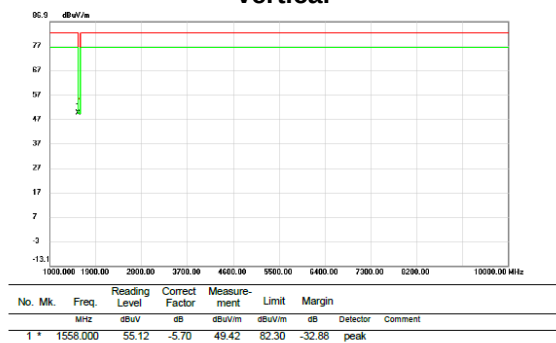
Horizontal



Test Mode : LTE Band 13_TX CH23230_5MHz

Test Mode : LTE Band 13_TX CH23230_5MHz

Vertical



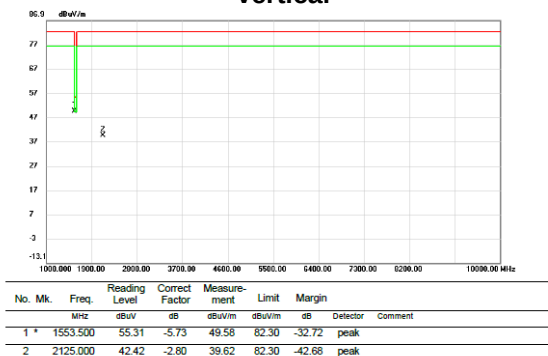
Horizontal



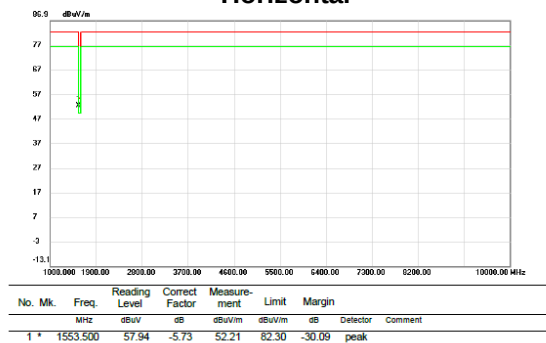
Test Mode : LTE Band 13_TX CH23230_10MHz

Test Mode : LTE Band 13_TX CH23230_10MHz

Vertical



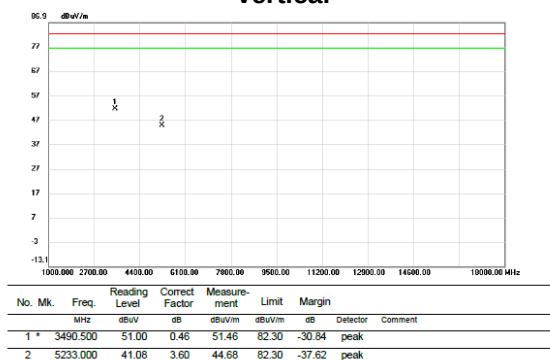
Horizontal



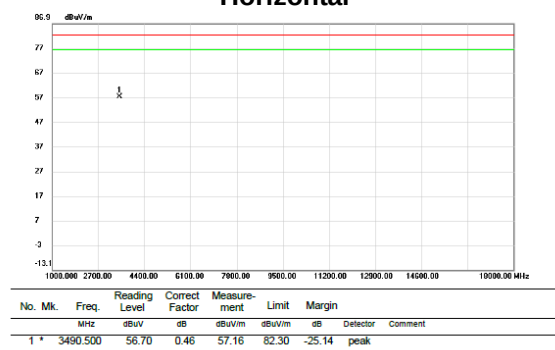
Test Mode : LTE Band 66_TX CH132322_1.4MHz

Test Mode : LTE Band 66_TX CH132322_1.4MHz

Vertical



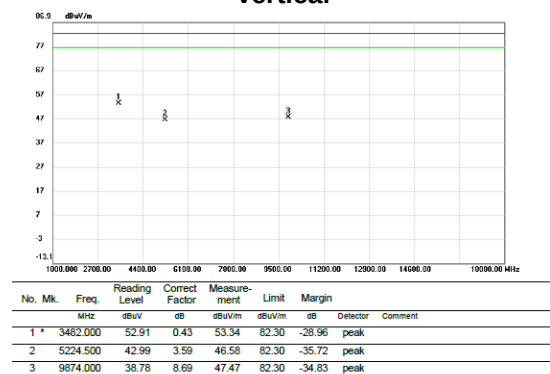
Horizontal



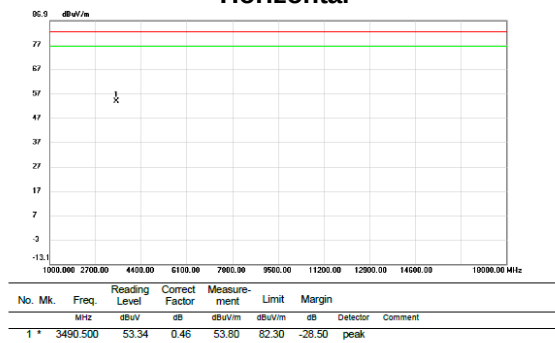
Test Mode : LTE Band 66_TX CH132322_5MHz

Test Mode : LTE Band 66_TX CH132322_5MHz

Vertical



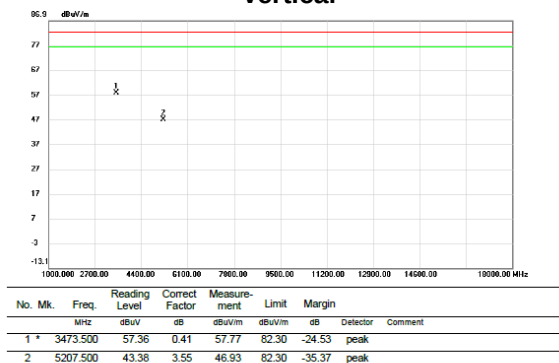
Horizontal



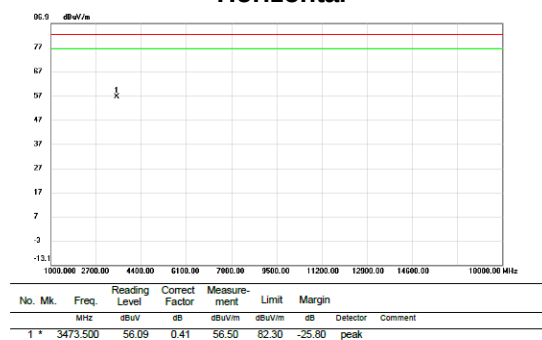
Test Mode : LTE Band 66_TX CH132322_20MHz

Test Mode : LTE Band 66_TX CH132322_20MHz

Vertical



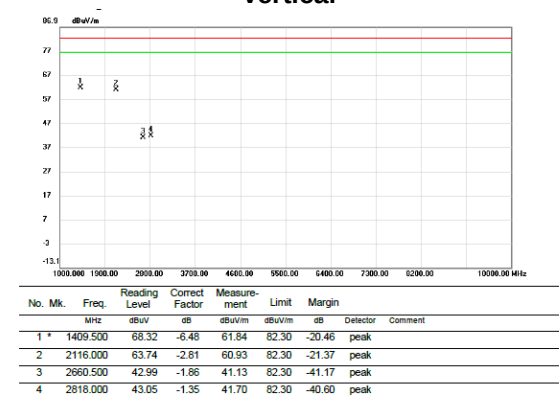
Horizontal



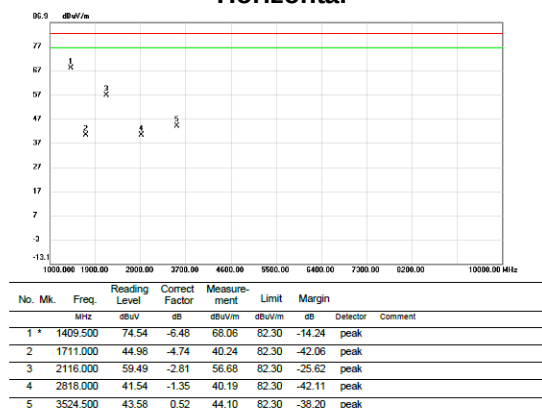
Test Mode : LTE Band 85_TX CH134092_5MHz

Test Mode : LTE Band 85_TX CH134092_5MHz

Vertical



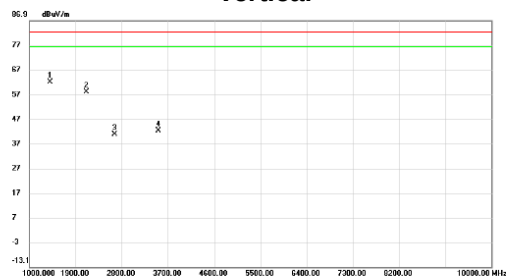
Horizontal



Test Mode : LTE Band 85_TX CH134092_10MHz

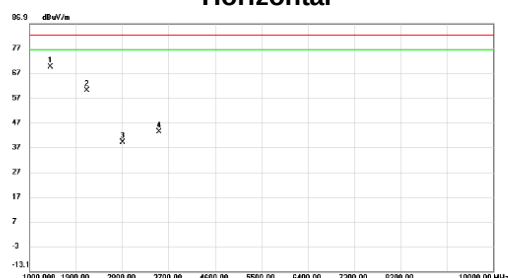
Test Mode : LTE Band 85_TX CH134092_10MHz

Vertical



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	1405.000	68.57	-6.49	62.08	82.30	-20.22	peak	
2		2107.000	60.77	-2.82	57.95	82.30	-24.35	peak	
3		2656.000	42.58	-1.88	40.70	82.30	-41.60	peak	
4		3515.500	41.74	0.50	42.24	82.30	-40.06	peak	

Horizontal



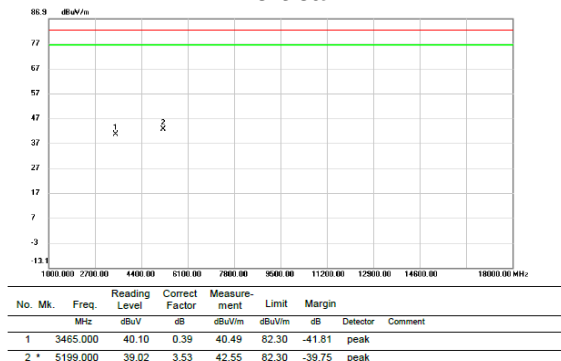
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	1405.000	76.10	-6.49	69.61	82.30	-12.69	peak	
2		2107.000	62.75	-2.82	59.93	82.30	-22.37	peak	
3		2656.000	40.53	-1.39	39.14	82.30	-43.16	peak	
4		3515.500	42.81	0.50	43.31	82.30	-38.99	peak	

For NB-IoT:

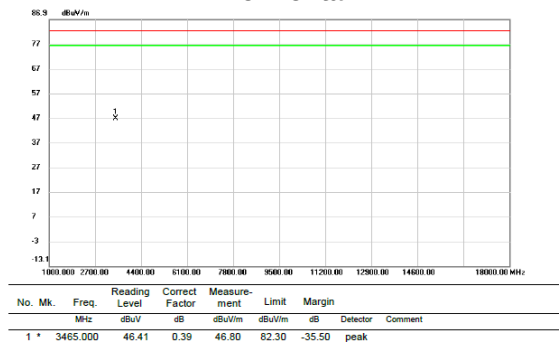
Test Mode : LTE Band 4_TX CH20175_3.75kHz

Test Mode : LTE Band 4_TX CH20175_3.75kHz

Vertical



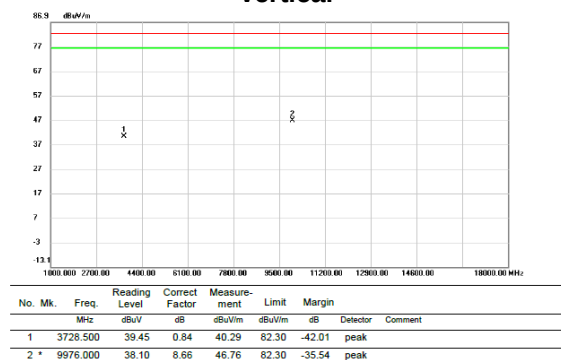
Horizontal



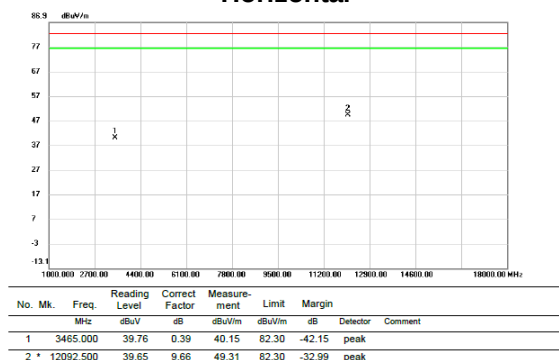
Test Mode : LTE Band 4_TX CH20175_15kHz

Test Mode : LTE Band 4_TX CH20175_15kHz

Vertical



Horizontal



Test Mode : LTE Band 12_TX CH23095_3.75kHz

Test Mode : LTE Band 12_TX CH23095_3.75kHz

Vertical



Horizontal



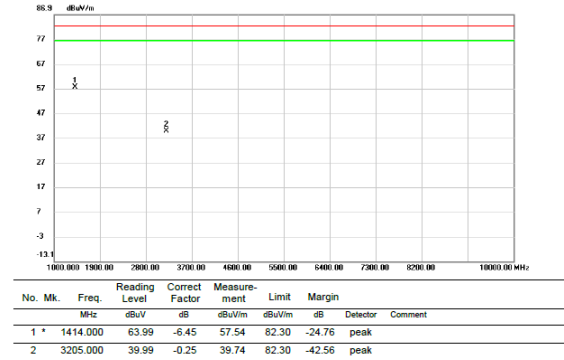
Test Mode : LTE Band 12_TX CH23095_15kHz

Test Mode : LTE Band 12_TX CH23095_15kHz

Vertical



Horizontal



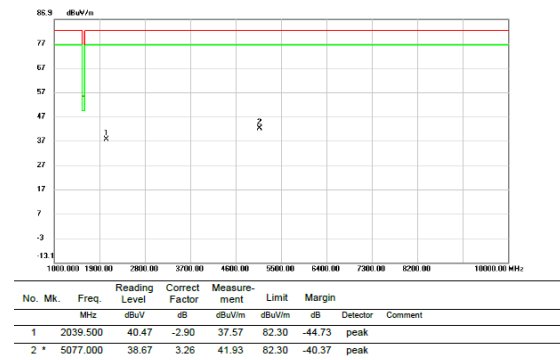
Test Mode : LTE Band 13_TX CH23230_3.75kHz

Test Mode : LTE Band 13_TX CH23230_3.75kHz

Vertical



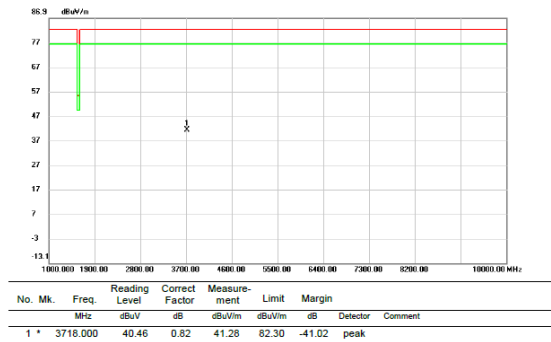
Horizontal



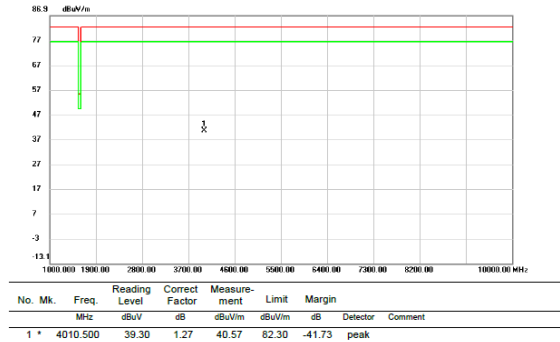
Test Mode : LTE Band 13_TX CH23230_15kHz

Test Mode : LTE Band 13_TX CH23230_15kHz

Vertical



Horizontal



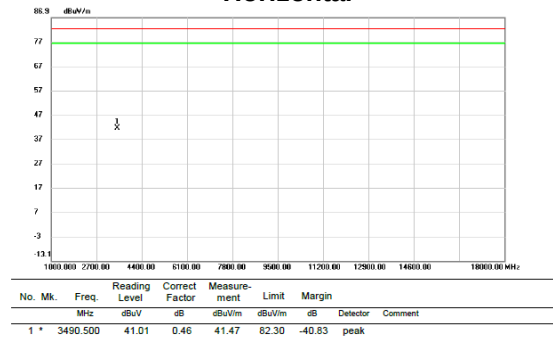
Test Mode : LTE Band 66_TX CH132322_3.75kHz

Test Mode : LTE Band 66_TX CH132322_3.75kHz

Vertical



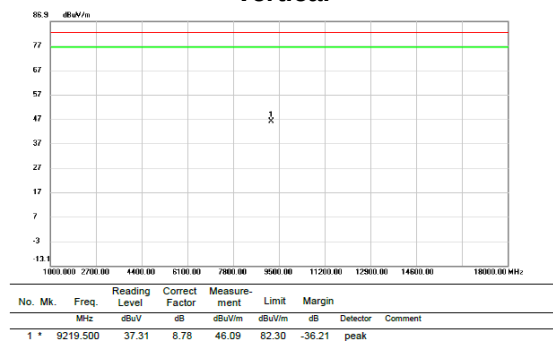
Horizontal



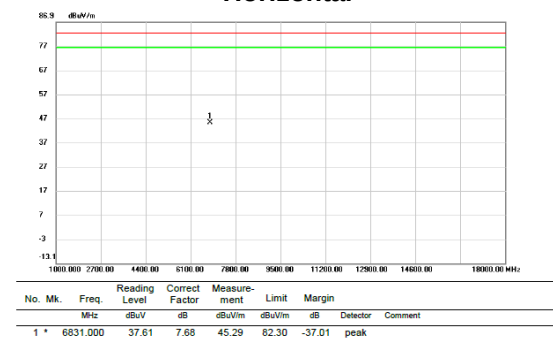
Test Mode : LTE Band 66_TX CH132322_15kHz

Test Mode : LTE Band 66_TX CH132322_15kHz

Vertical



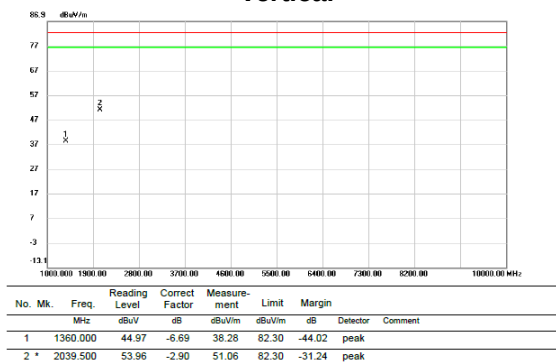
Horizontal



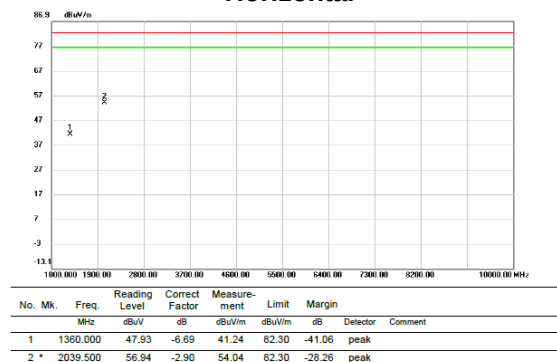
Test Mode : LTE Band 71_TX CH133297_3.75kHz

Test Mode : LTE Band 71_TX CH133297_3.75kHz

Vertical



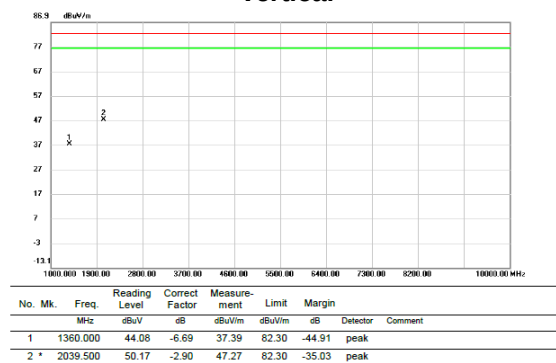
Horizontal



Test Mode : LTE Band 71_TX CH133297_15kHz

Test Mode : LTE Band 71_TX CH133297_15kHz

Vertical



Horizontal



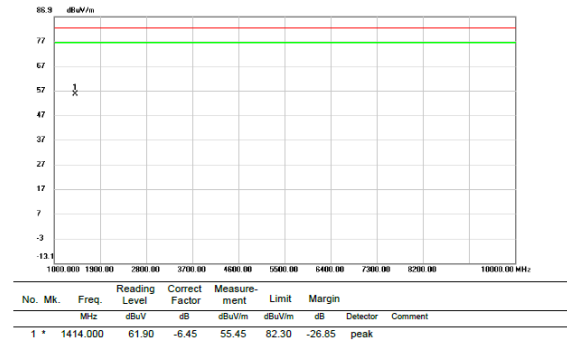
Test Mode : LTE Band 85_TX CH134092_3.75kHz

Test Mode : LTE Band 85_TX CH134092_3.75kHz

Vertical



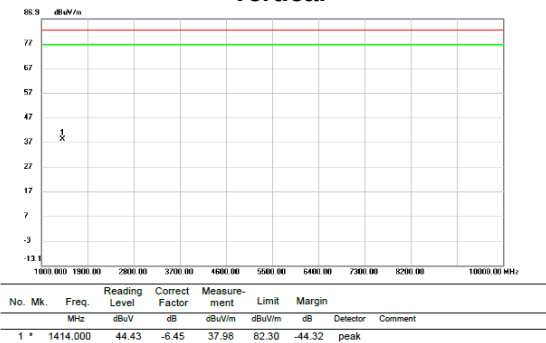
Horizontal



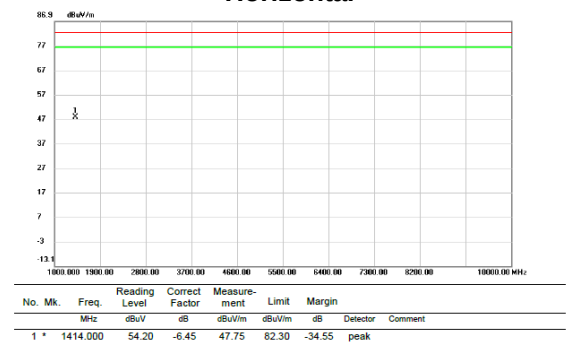
Test Mode : LTE Band 85_TX CH134092_15kHz

Test Mode : LTE Band 85_TX CH134092_15kHz

Vertical



Horizontal



End of Test Report