

Annex 1: Measurement diagrams

1-2154-25-01-15_TR1-A201-R03

Number of pages:	13	Date of Report:	2026-Sep-28
Testing company:	cetecom advanced GmbH Untertuerkheimer Str. 6-10 66117 Saarbruecken GERMANY	Applicant:	Metrohm AG
Product:	IONIC Titrator		
Model:	IONIC Titrator		
FCC ID:	2ACG6-CCIMX8	IC:	12034A-CCIMX8
		HVIN:	CC8X
		PMN:	CC8X
		HMN:	IONIC Titrator
Testing has been carried out in accordance with:	FCC Regulations Title 47 CFR, Chapter I, Subchapter A Part 15, Subpart C Intentional Radiators; § 15.209 Radiated emission limits; general requirements Title 47 CFR, Chapter I, Subchapter B Part 27, Subpart C Miscellaneous Wireless Communications Services Title 47 CFR, Chapter I, Subchapter A, Part 15 Subpart C Intentional Radiators § 15.247 Operation within the bands 2400-2483.5 MHz Subpart E Unlicensed National Information Infrastructure Devices § 15.407 General technical requirements ISED-Regulations, Radio Standards Specification RSS-Gen, Issue 5 General Requirements for Compliance of Radio Apparatus RSS-130, Issue 2 Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz RSS-199, Issue 4 Broadband Radio Service (BRS) Equipment Operating in the Band 2500–2690 MHz RSS-247, Issue 4 Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Device		

Measurement diagrams

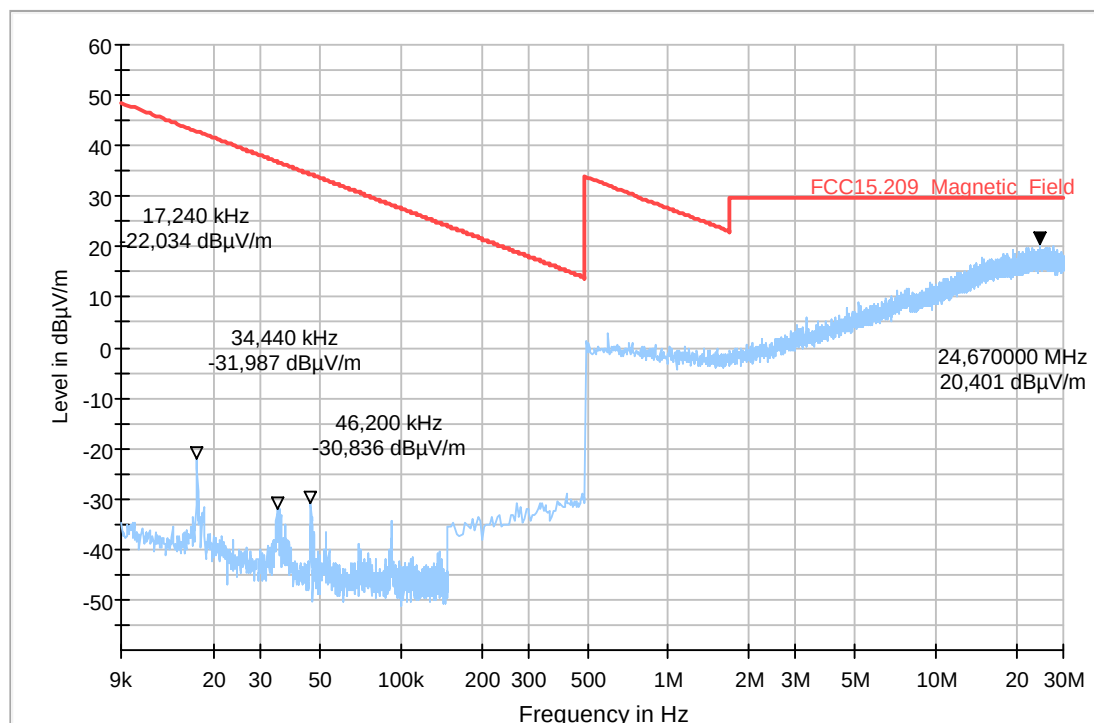
1 Radiated field strength emissions below 30 MHz

2.11_LTE-BLE-WLAN2G4

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.20
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	MNu
Operating Mode:	LTE B7 + BLE + WLAN 2G4
Power during tests:	120 V AC
Environmental Conditions:	Humidity: 50 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed

Full Spectrum

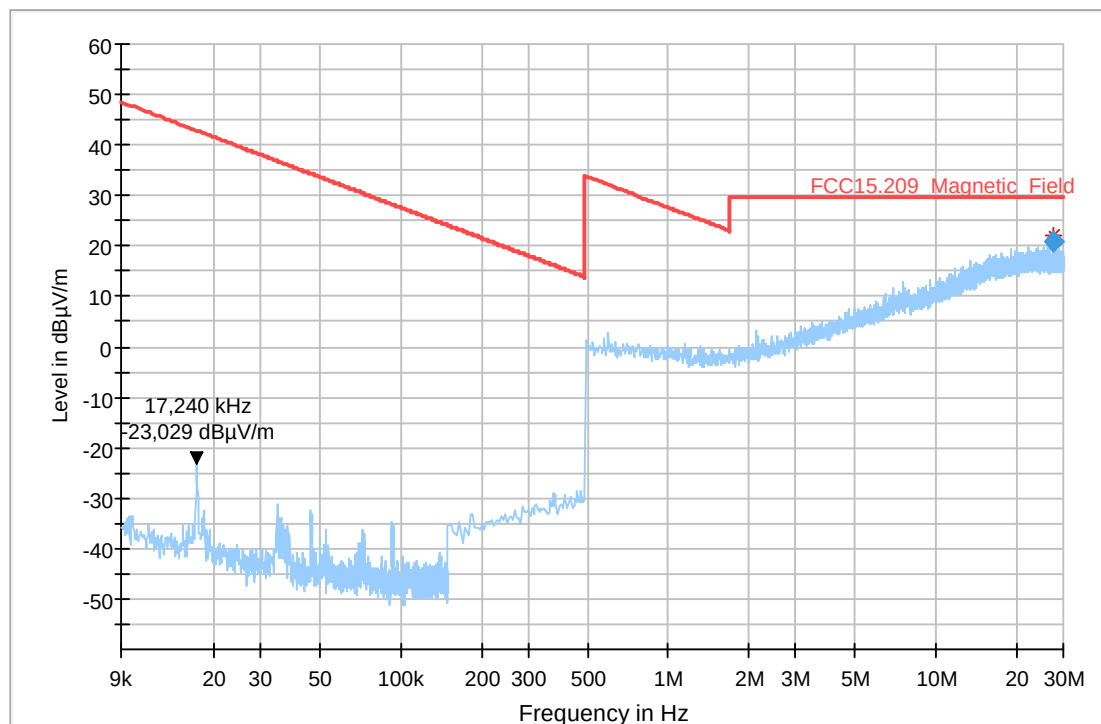


2.21_LTE-BLE-WLAN5G

Common Information

Test description:	Magnetic Field Strength Measurement related to 30/300 m distance
Test Site Location:	Ref.-Nr. 441 Semi Anechoic Chamber (SAC1) with 3 m measurement distance
Version of Testsoftware:	EMC32 V10.60.20
Distance correction:	used accord. table, pls. see test report
Technical Data:	Please see page 2 for detailed data of measurement setup
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test Standard:	FCC 15.205 § 15.209; RSS-Gen: Issue 5
Operator:	MNu
Operating Mode:	LTE B13 + BLE + WLAN 5G
Power during tests:	120 V AC
Environmental Conditions:	Humidity: 50 % rH; Temperature: 21 °C
EUT Setup:	1
Verdict:	Passed

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Bandwidth (kHz)	Pol	Azimuth (deg)	Corr. (dB/m)	Comment
27.798000	20.72	29.54	8.82	9.000	V	258.0	2.0	22:06:42 - 09.07.2026

2 Radiated spurious emissions

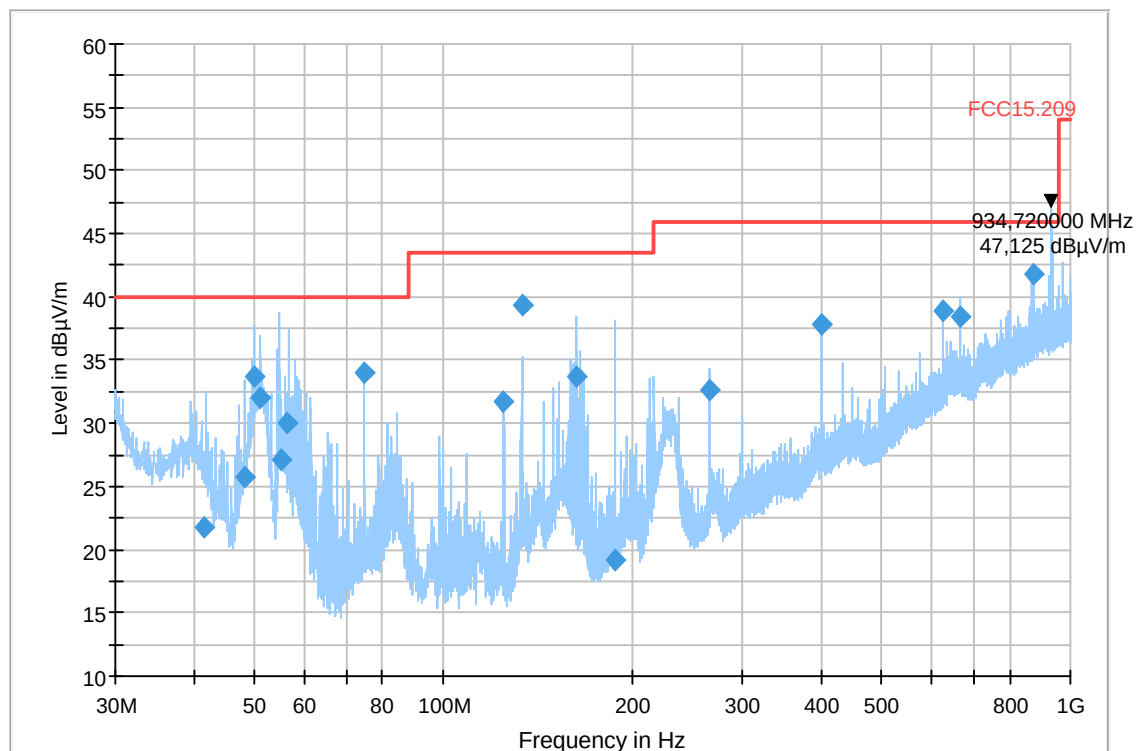
3.11_LTE-BLE-WLAN2G4

Common Information

Test Description:	Radiated field strength emission in 3m distance in SAC3 anechoic-chamber
Test Site:	cetekom advanced GmbH (Lab location: Essen)
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity: 45 %rH, Temperature: 21 °C
Operator Name:	MNu
Operating Mode:	LTE B7 + BLE + WLAN 2G4
Power supply:	120V AC / 60 Hz
Comment:	Emission at frequency 934.72MHz due external cellular interferers, not relevant for results verdict
Verdict:	Passed

EUT Information

Sample:	72.293
Power supply:	120 V AC / 60Hz



Final_Result

Frequency (MHz)	Quasi Peak (dBμV /m)	Limit (dBμV /m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamp (dB)
41.666000	21.75	40.00	18.25	120.000	127.0	V	168.0	15.2	0.0	0.6
48.206000	25.75	40.00	14.25	120.000	105.0	V	170.0	12.8	0.0	0.7
49.998000	33.65	40.00	6.35	120.000	122.0	V	216.0	12.2	0.0	0.7
50.946000	32.05	40.00	7.95	120.000	109.0	V	248.0	11.8	0.0	0.7
55.002000	27.06	40.00	12.94	120.000	146.0	V	263.0	10.3	0.0	0.7
56.554000	29.96	40.00	10.04	120.000	144.0	V	213.0	9.8	0.0	0.7
74.998000	34.02	40.00	5.98	120.000	144.0	V	301.0	6.3	0.0	0.9
124.998000	31.68	43.50	11.82	120.000	111.0	V	51.0	7.6	0.0	1.1
133.330000	39.34	43.50	4.16	120.000	111.0	V	127.0	9.4	0.0	1.1
162.622000	33.67	43.50	9.83	120.000	105.0	V	4.0	9.2	0.0	1.3
187.726000	19.15	43.50	24.35	120.000	105.0	V	129.0	10.8	0.0	1.3
266.666000	32.67	46.00	13.33	120.000	118.0	V	301.0	14.0	0.0	1.6
399.998000	37.89	46.00	8.11	120.000	105.0	V	104.0	19.3	0.0	2.0
624.994000	38.96	46.00	7.04	120.000	108.0	V	189.0	22.9	0.0	2.6
666.662000	38.44	46.00	7.56	120.000	171.0	V	91.0	24.0	0.0	2.8
874.994000	41.73	46.00	4.27	120.000	134.0	V	85.0	26.9	0.0	3.4

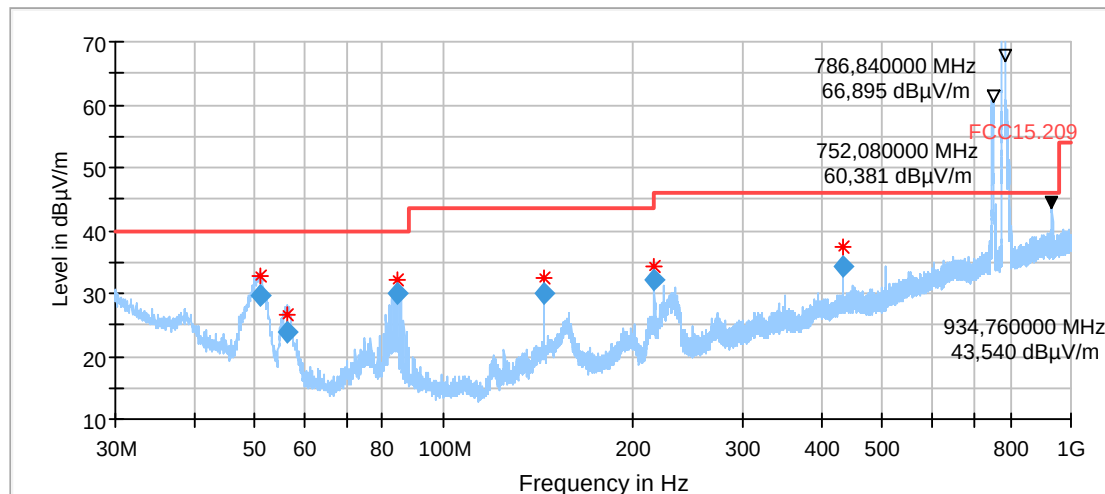
3.21_LTE-BLE-WLAN5G

Common Information

Test Description:	Radiated field strength emission in 3m distance in SAC3 anechoic-chamber
Test Site:	cetekom advanced GmbH (Lab location: Essen)
Test Standard:	FCC 15.205&15.209 & RSS Gen. Issue 5
Antenna polarisation:	horizontal/vertical
Environmental Conditions:	Humidity: 45 %rH, Temperature: 21 °C
Operator Name:	MNu
Operating Mode:	LTE B13 + BLE + WLAN 5G
Power supply:	120V AC / 60 Hz
Comment:	Emissions at frequencies 934MHz, 752MHz, and 786MHz(LTE13 UL) due external cellular interferers, not relevant for results verdict
Verdict:	Passed

EUT Information

Sample:	72.293
Power supply:	120 V AC / 60Hz



Final Result

Frequency (MHz)	Quasi Peak (dBµV /m)	Limit (dBµV /m)	Margin (dB)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)	Sig Path (dB)	Preamp (dB)
50.854000	29.73	40.00	10.27	120.000	109.0	V	239.0	11.8	0.0	0.7
56.338000	23.71	40.00	16.29	120.000	111.0	V	189.0	9.9	0.0	0.7
84.670000	29.88	40.00	10.12	120.000	224.0	H	76.0	7.4	0.0	0.9
144.794000	30.14	43.50	13.36	120.000	111.0	V	25.0	8.0	0.0	1.1
217.190000	32.06	46.00	13.94	120.000	151.0	H	258.0	11.6	0.0	1.4
434.382000	34.22	46.00	11.78	120.000	200.0	H	326.0	20.2	0.0	2.2

4.11_LTE-BLE-WLAN2G4

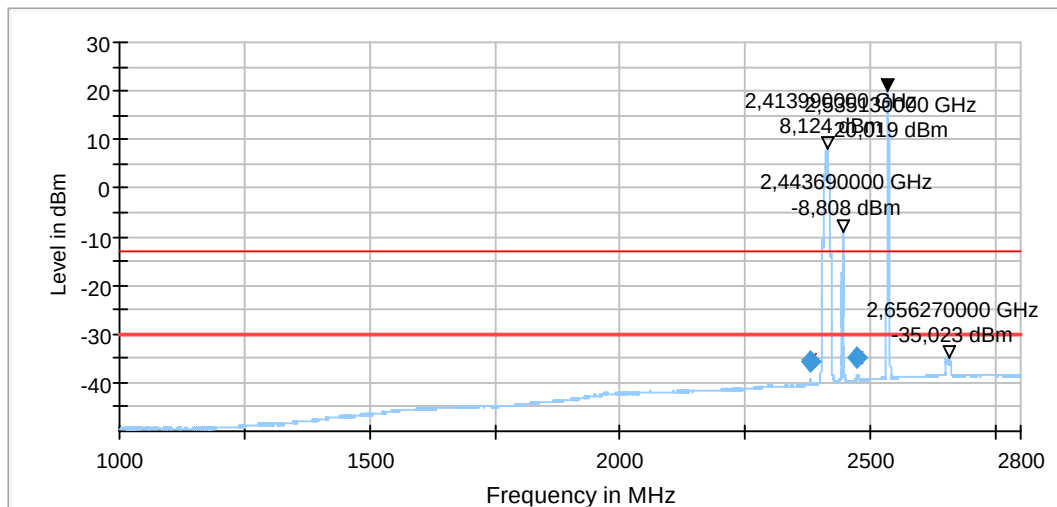
Common Information

Test Description:	Radiated Spurious Emissions
Test Site Location:	cetecom advanced GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	KDB
Operating Mode:	LTE + WLAN2G4 + BLE
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Test SW Version:	EMC32 V10.60.20
Operator:	MNu
Remarks:	EUT - laying position
EUT Setup:	1
Verdict:	Passed
Comments:	Emissions at 2413MHz(WLAN2G4), 2443MHz(BLE), 2535MHz(FDD7 UL), and 2656MHz(FDD7 DL) are not relevant to the limit

EUT Information

Sample:	72.293
Power Supply :	120 V AC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
2380.142500	-35.87	-30.00	5.87	1000.0	1000.000	V	0.0	0.0	-60
2473.292500	-34.87	-30.00	4.87	1000.0	1000.000	V	-8.0	0.0	-59

4.12_LTE-BLE-WLAN2G4

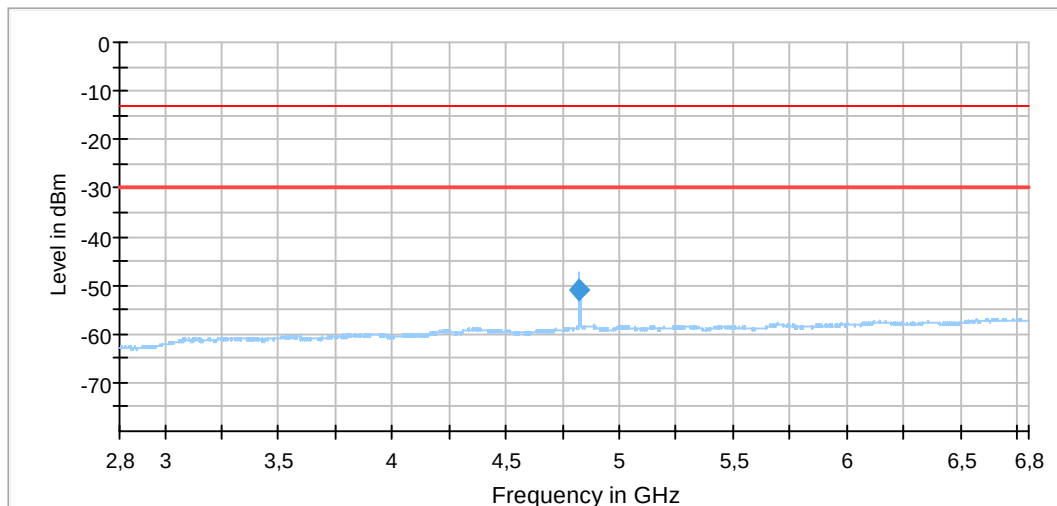
Common Information

Test Description:	Radiated Spurious Emissions
Test Site Location:	cetekom advanced GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	KDB
Operating Mode:	LTE + WLAN2G4 + BLE
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	MNu
EUT Setup:	1
Verdict:	Passed

EUT Information

Sample:	72.293
Power Supply :	120 V AC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
4823.898667	-50.77	-30.00	20.77	1000.0	1000.000	V	36.0	0.0	-84

4.13_LTE-BLE-WLAN2G4

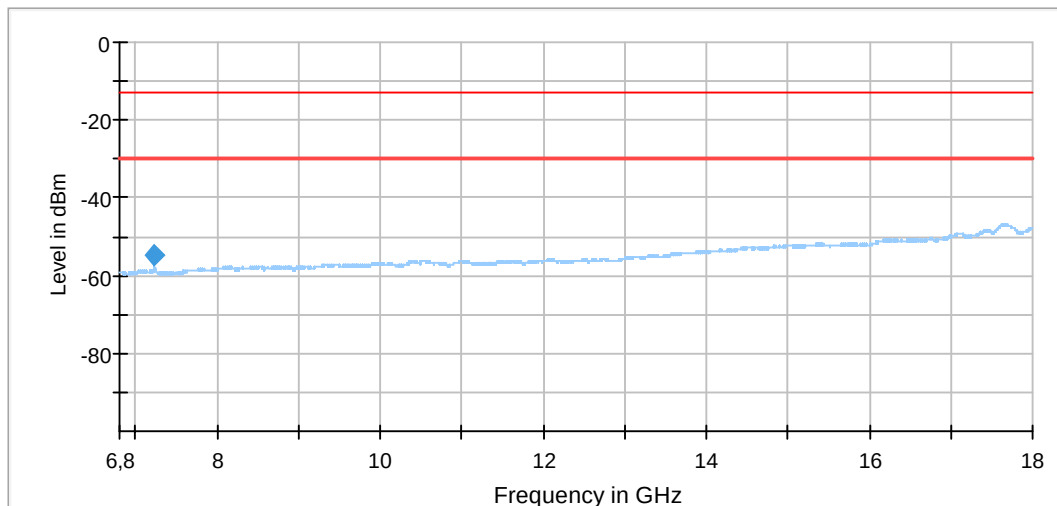
Common Information

Test Description:	Radiated Spurious Emissions
Test Site Location:	cetecom advanced GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	KDB
Operating Mode:	LTE + WLAN2G4 + BLE
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	MNu
EUT Setup:	1
Verdict:	Passed

EUT Information

Sample:	72.293
Power Supply :	120 V AC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
7236.826000	-54.96	-30.00	24.96	1000.0	1000.000	V	49.0	0.0	-99

4.14_LTE-BLE-WLAN2G4_AntHV

Common Information

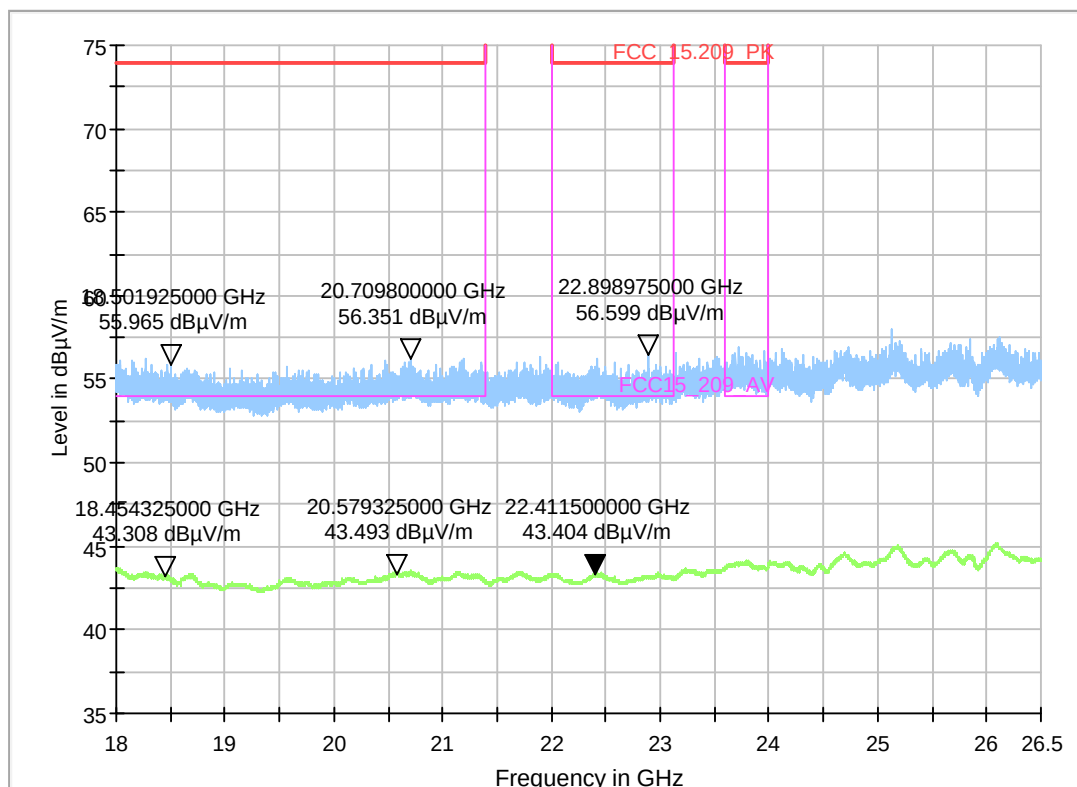
Test Description:	Radiated field strength emission in 3m distance
Test Site:	cetecom advanced GmbH (Location Essen)
Test Standard:	FCC 15.247&15.209 Intentional Radiator / RSS-Gen, Issue 5
Antenna polarisation:	horizontal/vertical

Operating Mode:	LTE FDD7 + BLE + WLAN 2G4
Operator:	MNu
EUT Setup:	1
Environmental Conditions:	Humidity: 56 %rH; Temperature: 25°C
SW. Version:	EMC32 V10.60.20
Verdict:	Passed

EUT Information

PMT Sample Nr.:	72,293
Power:	120 V AC / 60Hz

Full Spectrum



4.21_LTE-BLE-WLAN5G

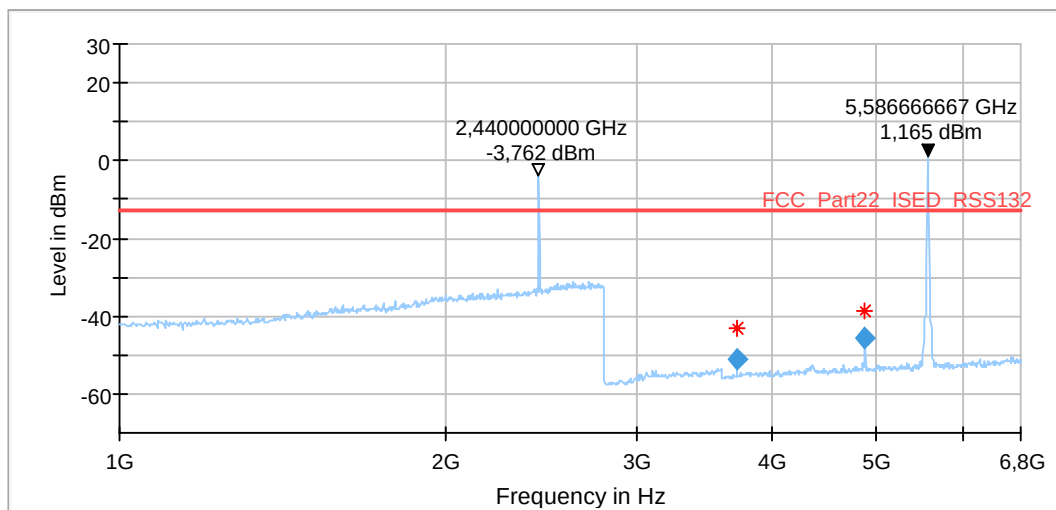
Common Information

Test Description:	Radiated Spurious Emissions
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	KDB
Operating Mode:	LTE FDD13 + WLAN5G + BLE
Operator:	MNu
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
EUT Setup:	1
Verdict:	Passed
Comments:	Emissions at 2440MHz(BLE) and 5586MHz(WLAN5G) are not relevant to the limit

EUT Information

Sample:	72.293
Power Supply :	120 V AC

Full Spectrum



Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin	Meas. Time (ms)	Bandwidth	Height	Pol	Azimuth	Elevation	Corr. (dB)
3719.975000	-51.09	-13.00	38.09	100.0	100.000	155.0	H	253.0	0.0	-89
4879.975000	-45.71	-13.00	32.71	100.0	100.000	155.0	V	73.0	0.0	-86

4.22_LTE-BLE-WLAN5G

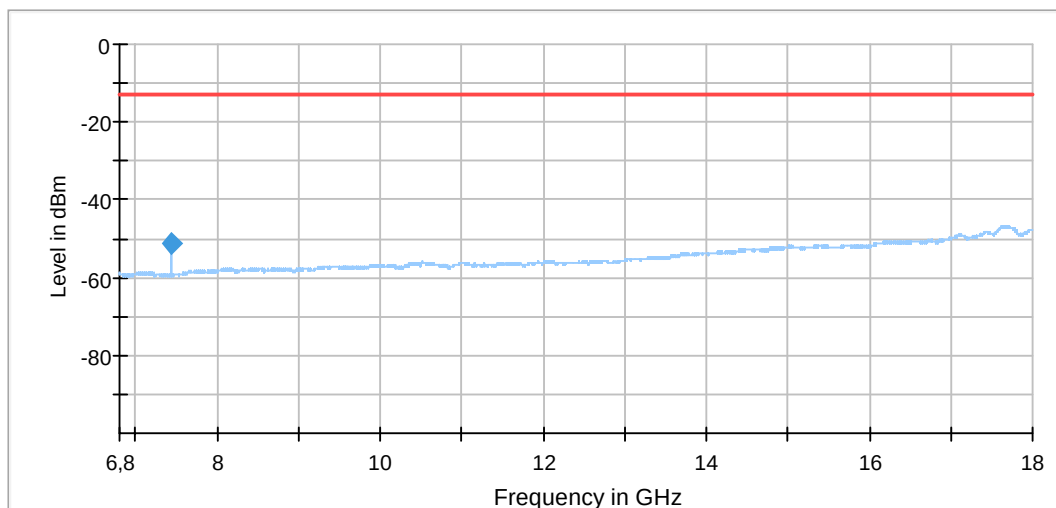
Common Information

Test Description:	Radiated Spurious Emissions
Test Site Location:	cetekom advanced GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	KDB
Operating Mode:	LTE FDD13 + WLAN5G + BLE
Environmental Conditions:	Humidity: 50%rH; Temperature: 20°C
Operator:	MNu
EUT Setup:	1
Verdict:	Passed

EUT Information

Sample:	72.293
Power Supply :	120 V AC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
7439.961333	-51.24	-13.00	38.24	1000.0	1000.000	V	37.0	0.0	-99

4.23_LTE-BLE-WLAN5G_AtnHV

Common Information

Test Description: Radiated field strength emission accord. §15.247/15.407 in 3m distance

Test Site Location: cetecom advanced GmbH Essen

Test Site: Fully Anechoic Room (FAR2)

Test Standard: FCC Part 15.247 / 15.407

Section: -

Operating Mode: LTE FDD13+ BLE + WLAN 5G

Environmental Conditions: Humidity: 56 %rH; Temperature: 25°C

Operator: MNu

EUT Setup: 1

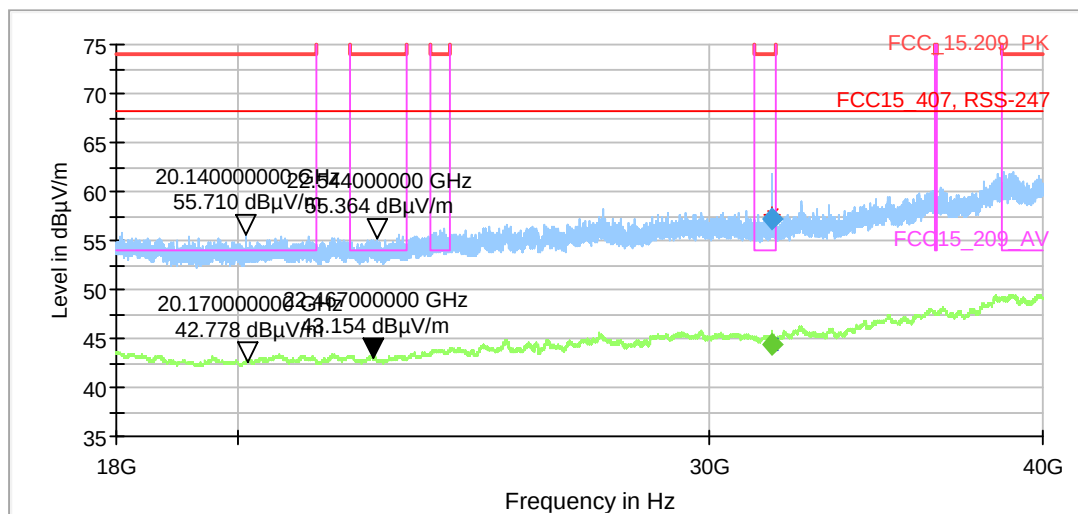
Verdict: Passed

EUT Information

PMT Sample Nr.: 72,293

Power: 120 V AC / 60Hz

Full Spectrum



Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB/m)
31648.421900	57.11	---	74.00	16.89	100.0	1000.000	H	253.0	0.0	34.4
31649.441900	---	44.31	54.00	9.69	100.0	1000.000	H	264.0	0.0	34.4

End Of Annex 1