

Annex 1: Measurement diagrams 20-1-0060701T57a-C1-A1

Number of pages:	46	Date of Report:	2021-Jul-28
Testing company:	CETECOM GmbH Im Teelbruch 116 45219 Essen Germany Tel. + 49 (0) 20 54 / 95 19-0 Fax: + 49 (0) 20 54 / 95 19-150	Applicant:	VALEO Telematik und Akustik GmbH
Product: Model:	Telematic Device ATM-02-US-R1		
FCC ID:	QWY-ATM2-R-11	IC:	6588A-ATM2R11
Testing has been carried out in accordance with:	Title 47 CFR, Chapter I FCC Regulations, Subchapter B Part 22 Subpart H, Part 24 Subpart E, Part 27 Subpart C, Part 90 Subpart S, Part 15, Subpart C, §15.209 RSS-132, Issue 3; RSS-133, Issue 6; RSS-130, Issue 2, RSS-139, Issue 3, RSS-199, Issue 3, RSS-Gen, Issue 5 Deviations, modifications or clarifications (if any) to above mentioned documents are written in each section under "Test method and limit".		



Table of Contents

1 Measurement diagrams.....3

1.1 Radiated field strength emissions below 30 MHz3

1.2 Radiated Spurious Emissions5

1.3 Radiated Band-Edge17

1.4 Band-Edge LTE Band 733

1 Measurement diagrams

1.1 Radiated field strength emissions below 30 MHz

2.201_H_field_LTE_FDD_B02_CH_18700

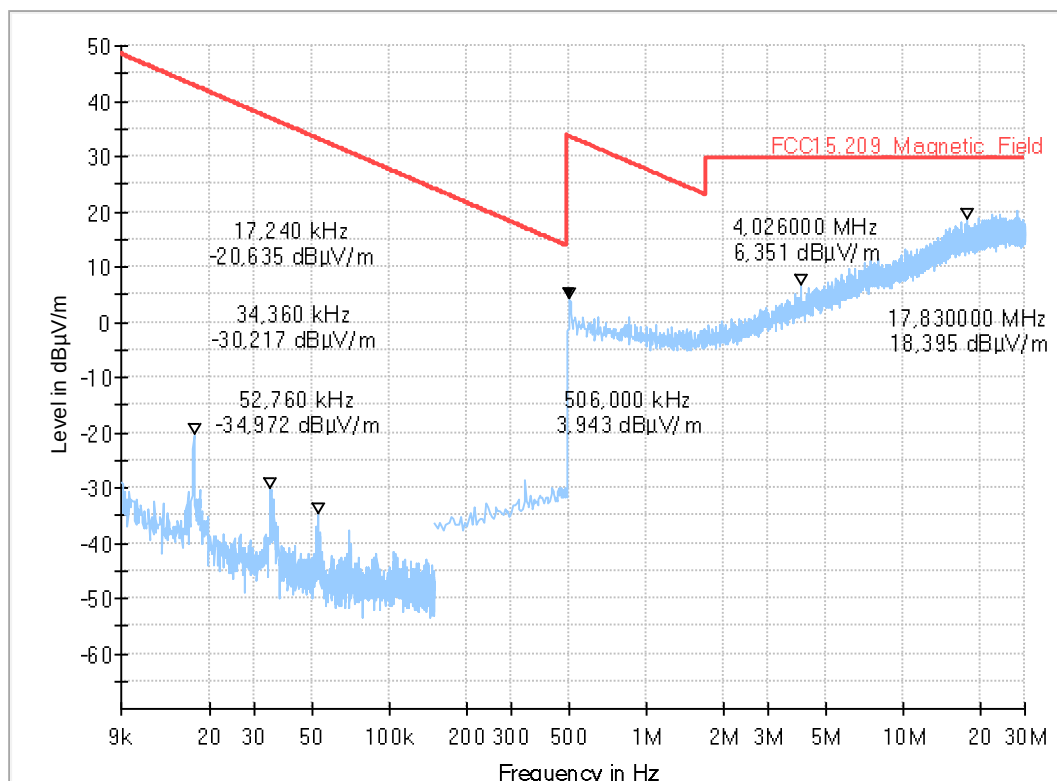
Common Information

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 V10.50.0
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 4
Operator:	Aho
Operating Mode:	LTE_FDD_B02_CH_19100_RB_1_high_bw_20MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel 18700
Environmental Conditions:	Humidity : 40% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



2.1201_H_field_LTE_FDD_B02_CH_23155

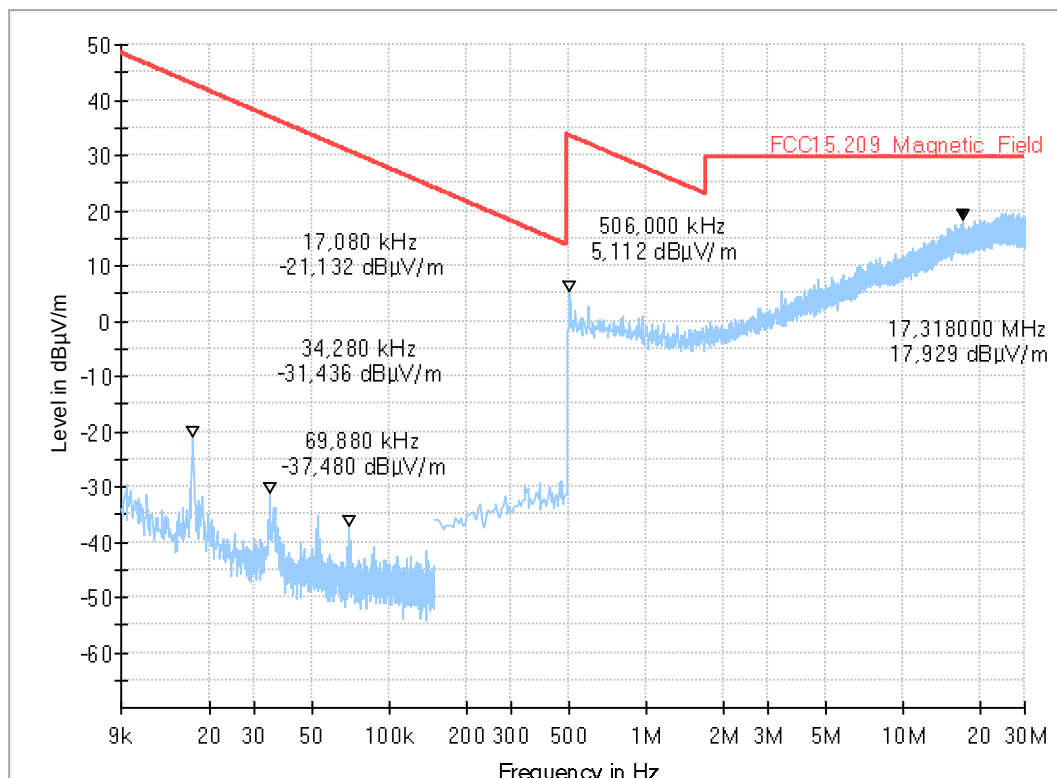
Common Information

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 V10.50.0
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 4
Operator:	Aho
Operating Mode:	LTE_FDD_B12_CH_23035_RB_1_high_bw_5MHz
Power during tests:	12V DC, 110V/60Hz, full loaded batteries
Comment 1:	Channel 23155
Environmental Conditions:	Humidity : 41% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



1.2 Radiated Spurious Emissions

8.01_Traffic_mode_LTE_FDD_B02_CH_18700_Standing

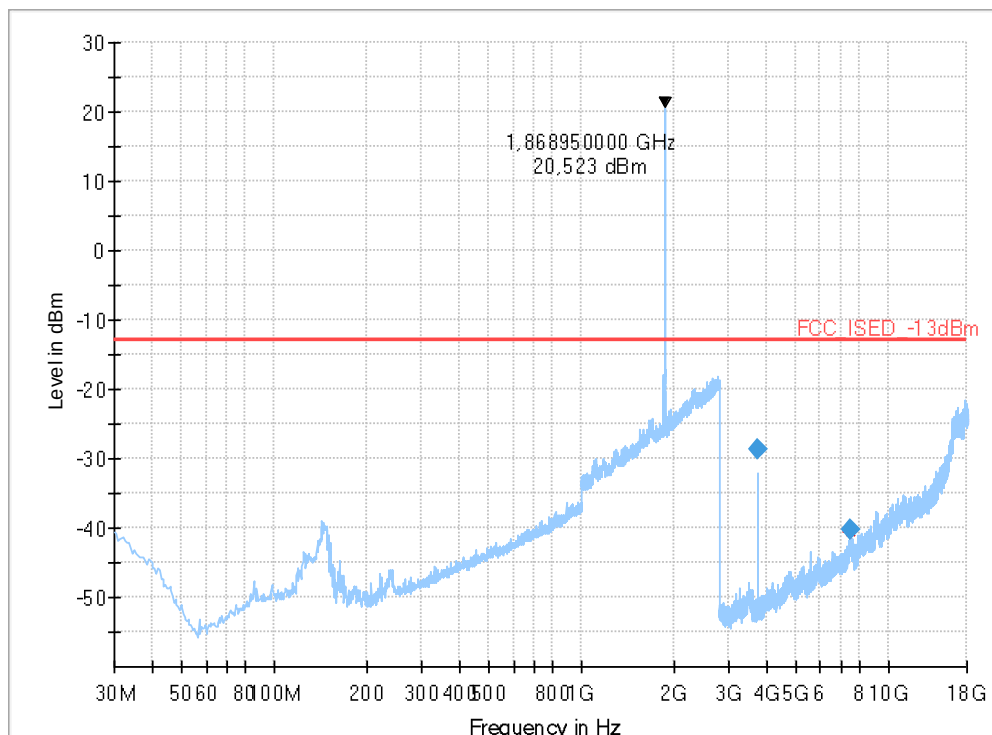
Common Information

Test Description:	Radiated emission
Test Site:	Fully-Anechoic Chamber
Test Standard:	FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3
Antenna polarisation:	vertical / horizontal
Measurement software version	EMC32 V10.60.20
Operating Mode:	LTE_FDD02 BW=20MHz CH_18700 RB:1 High QPSK
Operator:	HEI
Comment:	--
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number	20-1-0060701S219_C01
Comment:	12 V DC

Full Spectrum



Remark: Emission at 1.86895 GHz is uplink frequency of LTE FDD 2 and not related to result.

Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3737.848333	-28.67	-13.00	15.67	100.0	1000.000	155.0	H	278.0	0.0	-93
7475.710000	-40.22	-13.00	27.22	100.0	1000.000	155.0	H	114.0	0.0	-80

8.02_Traffic_mode_LTE_FDD_B02_CH_18700_Laying

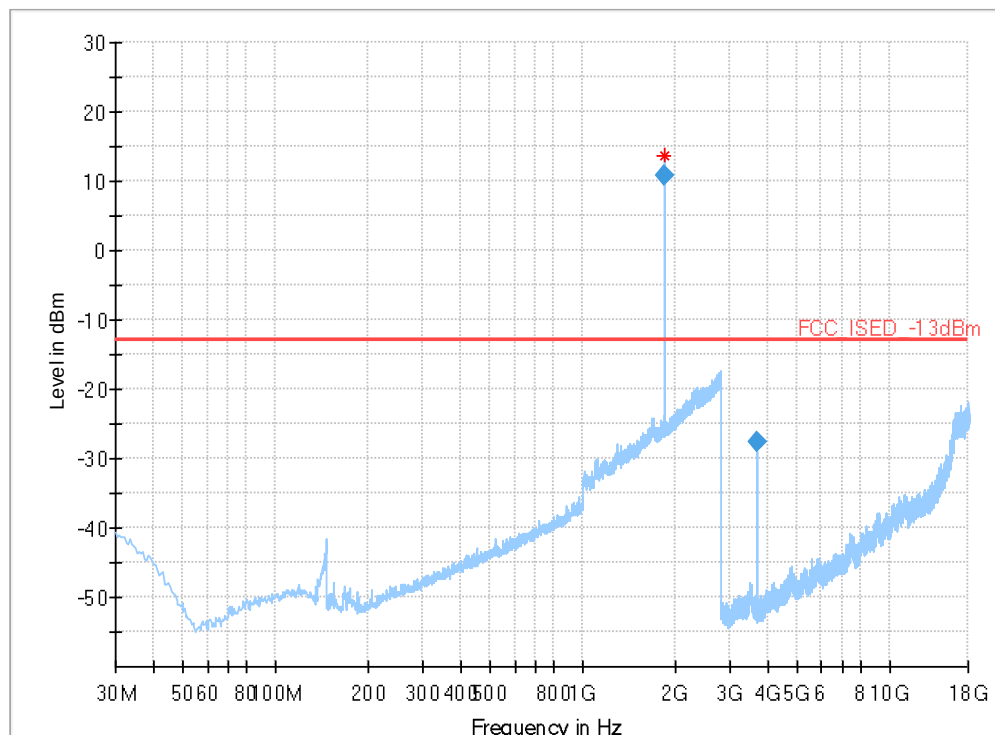
Common Information

Test Description:	Radiated emission
Test Site:	Fully-Anechoic Chamber
Test Standard:	FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3
Antenna polarisation:	vertical / horizontal
Measurement software version	EMC32 V10.60.20
Operating Mode:	LTE_FDD2 BW=20 MHz CH_18700 RB_1_high QPSK
Operator:	WAbdellatif
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Remark: Emission at 1851.05 MHz is uplink frequency of LTE FDD 2 and not related to result.

Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1851.050000	10.89	-13.00	-23.89	100.0	1000.000	155.0	V	303.0	0.0	-62
3702.170000	-27.63	-13.00	14.63	100.0	1000.000	155.0	V	114.0	0.0	-93

(continuation of the "Final_Result" table from column 17 ...)

Frequency (MHz)	Comment
1851.050000	19:44:00 - 09.07.2021
3702.170000	19:55:45 - 09.07.2021

8.03_Traffic_mode_LTE_FDD_B04_CH_20350_Standing

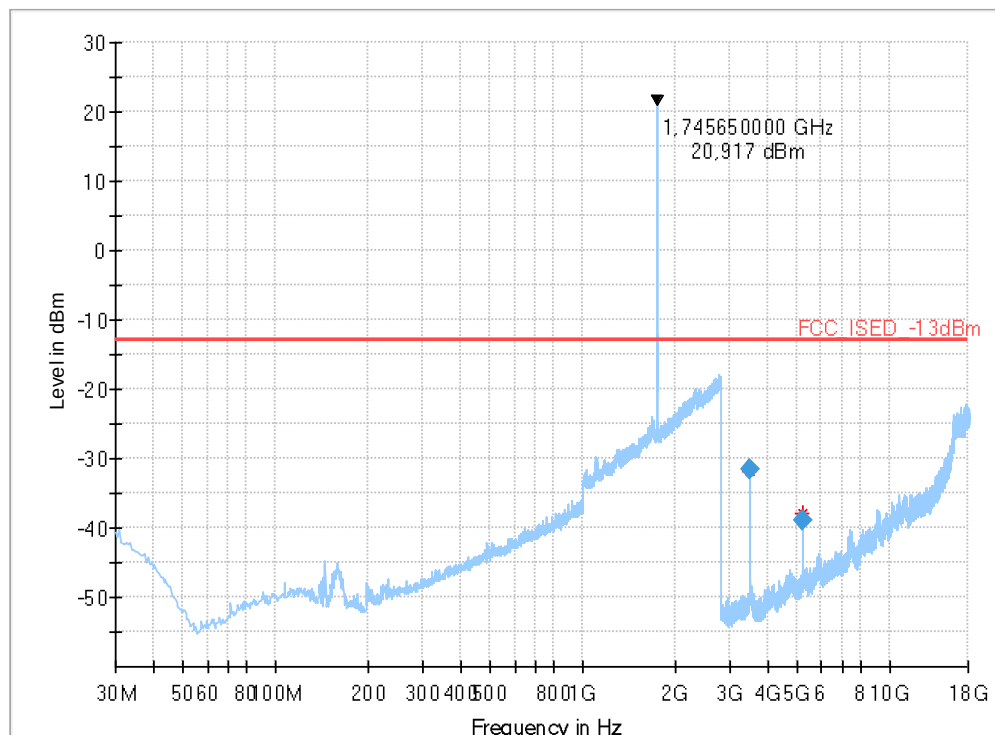
Common Information

Test Description:	Radiated emission
Test Site:	Fully-Anechoic Chamber
Test Standard:	FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3
Antenna polarisation:	vertical / horizontal
Measurement software version	EMC32 V10.60.20
Operating Mode:	LTE_FDD04 BW=10MHz CH_20350 RB:1 low QPSK
Operator:	HEI
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Remark: Emission at 1.74565 GHz is uplink frequency of LTE FDD 4 and not related to result.

Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3491.166667	-31.54	-13.00	18.54	100.0	1000.000	155.0	H	75.0	0.0	-91.1
5236.786667	-38.92	-13.00	25.92	100.0	1000.000	155.0	V	117.0	0.0	-87.3

8.04_Traffic_mode_LTE_FDD_B04_CH_20350_Laying

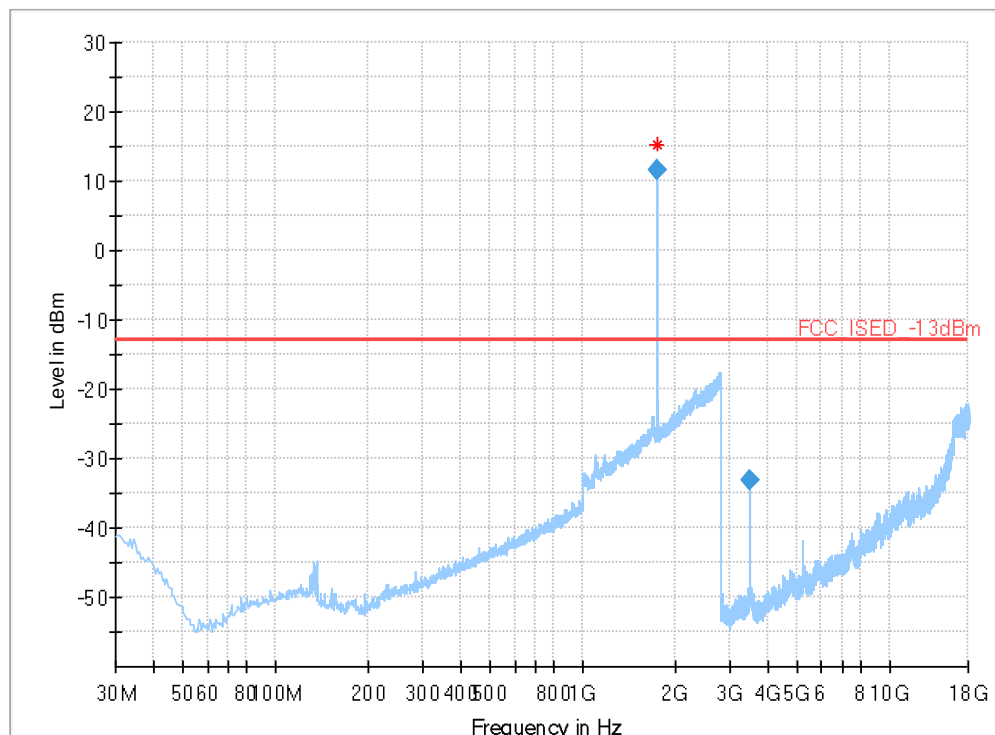
Commo Information

Test Description:	Radiated emission
Test Site:	Fully-Anechoic Chamber
Test Standard:	FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3
Antenna polarisation:	vertical / horizontal
Measurement software version	EMC32 V10.60.20
Operating Mode:	LTE_FDD4 BW=10 MHz CH_20350 RB_1_low QPSK
Operator:	WAbdellatif
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Remark: Emission at 1745.575 MHz is uplink frequency of LTE FDD 4 and not related to result.

Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1745.575000	11.66	-13.00	-24.66	100.0	1000.000	155.0	V	235.0	0.0	-62
3491.186666	-33.20	-13.00	20.20	100.0	1000.000	155.0	V	23.0	0.0	-91

(continuation of the "Final_Result" table from column 17 ...)

Frequency (MHz)	Comment
1745.575000	20:26:36 - 09.07.2021
3491.186666	20:38:57 - 09.07.2021

8.05_Traffic_mode_LTE_FDD_B05_CH_20525_Standing

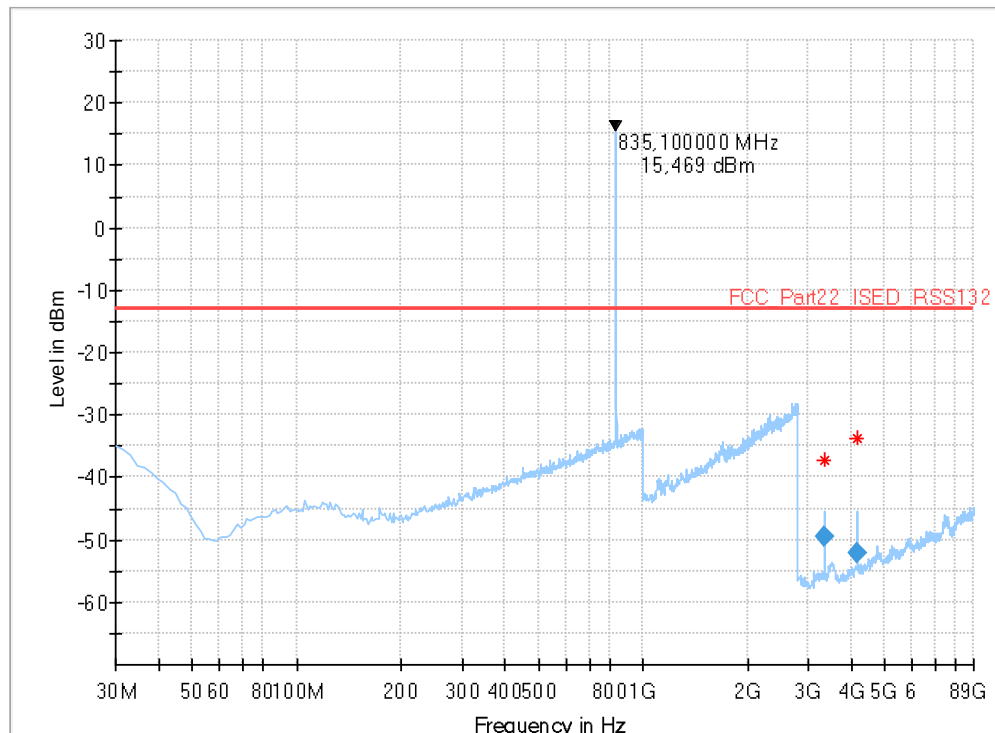
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operating Mode:	LTE_FDD05 BW=5MHz CH_20525 RB:1 low QPSK
Operator:	HEI
Environmental Conditions::	Humidity : 70% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Remark: Emission at 835.1 MHz is uplink frequency of LTE FDD 5 and not related to result.

Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3337.483333	-49.46	-13.00	36.46	100.0	100.000	155.0	H	4.0	-93
4171.450000	-52.21	-13.00	39.21	100.0	100.000	155.0	H	278.0	-90

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
3337.483333	10:59:17 - 10.07.2021
4171.450000	10:56:54 - 10.07.2021

8.06_Traffic_mode_LTE_FDD_B05_CH_20525_Laying

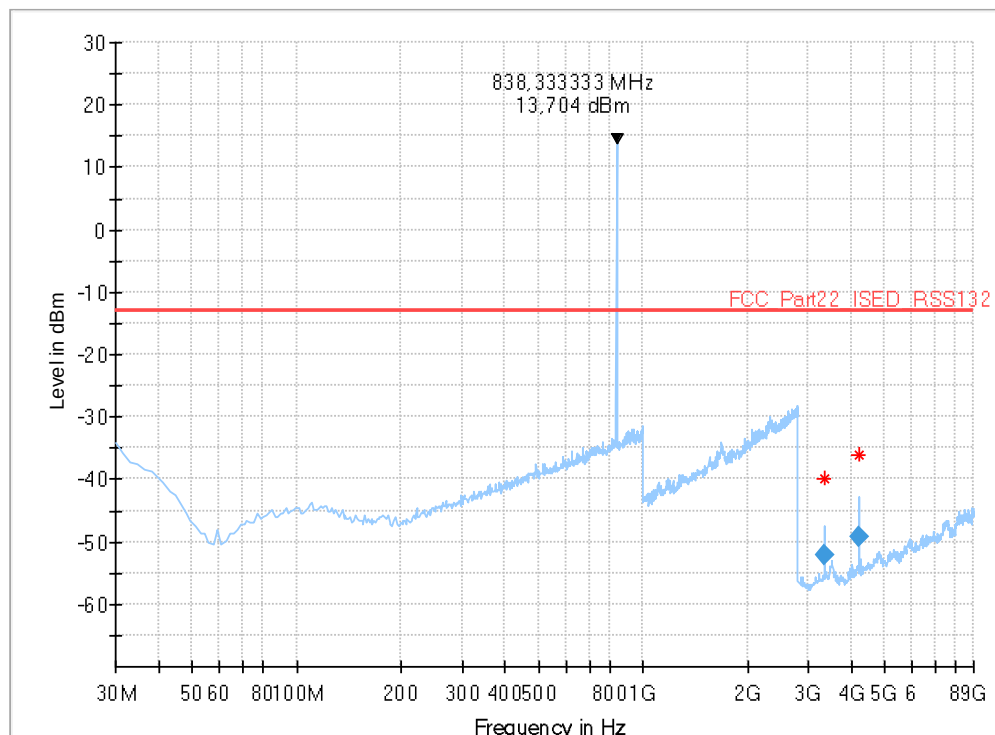
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operating Mode:	LTE_FDD5 BW=5 MHz CH_20525 RB_1_low QPSK
Operator:	WAbdellatif
Environmental Conditions:	Humidity : 70% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Remark: Emission at 838.333333 MHz is uplink frequency of LTE FDD 5 and not related to result.

Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin	Meas. Time (ms)	Bandwidth (MHz)	Height	Pol	Azimuth (h)	Corr. (dB)
3354.666667	-52.19	-13.00	39.19	100.0	100.000	155.0	V	103.0	-93
4193.175000	-49.26	-13.00	36.26	100.0	100.000	155.0	V	0.0	-91

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
3354.666667	21:09:17 - 09.07.2021
4193.175000	21:12:03 - 09.07.2021

8.07_Traffic_mode_LTE_FDD_B07_CH_20800_Standing

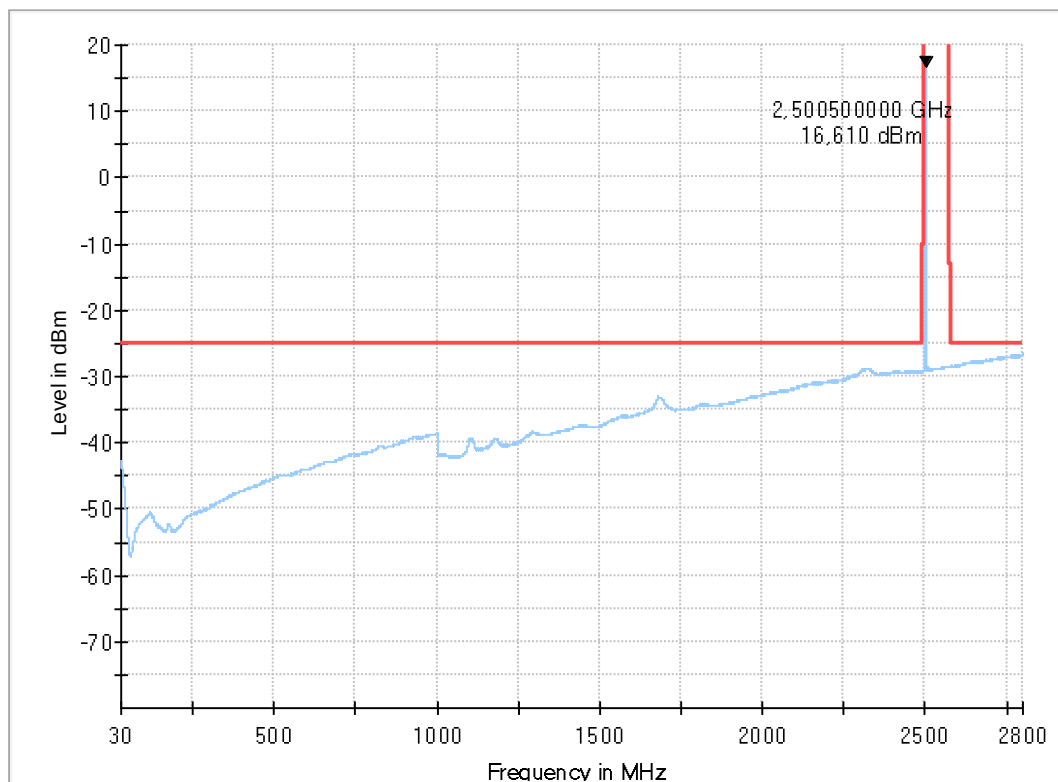
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 27.53(l)(4) / RSS-130 Mobile stations limits
Operating Mode:	LTE_FDD07 BW=10MHz CH_20800 RB:1 low QPSK
Environmental Conditions::	Humidity : 70% rH; Temperature: 19 °C
Test SW Version:	EMC32 V10.60.20
Operator:	HEI
Remarks:	EUT - laying/standing position
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



8.08_Traffic_mode_LTE_FDD_B07_CH_20800_Standing

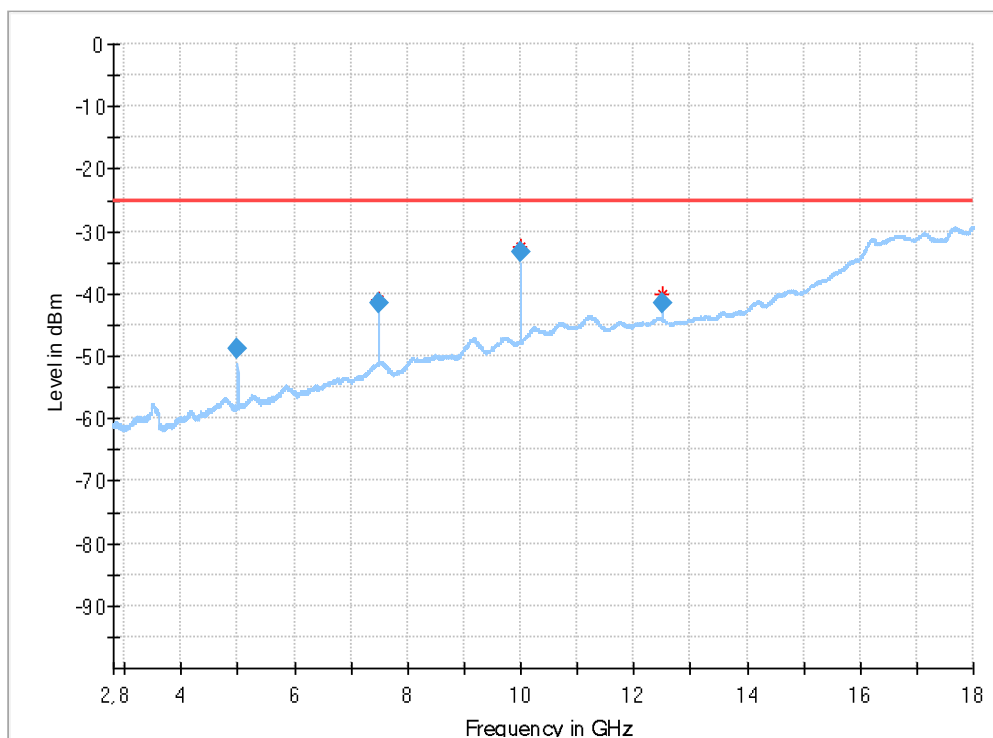
Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	-
Test Case:	-
Operating Mode:	LTE_FDD07 BW=10MHz CH_20800 RB:1 low QPSK
Environmental Conditions::	Humidity : 70% rH; Temperature: 19 °C
Operator:	HEI
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
5001.248000	-48.73	-25.00	23.73	1000.0	1000.000	V	193.0	0.0	-89
7501.926250	-41.39	-25.00	16.39	1000.0	1000.000	V	146.0	0.0	-80
10002.277000	-33.23	-25.00	8.23	1000.0	1000.000	V	195.0	0.0	-77
12503.100000	-41.54	-25.00	16.54	1000.0	1000.000	V	125.0	0.0	-73

8.09_Traffic_mode_LTE_FDD_B07_CH_20800_Laying

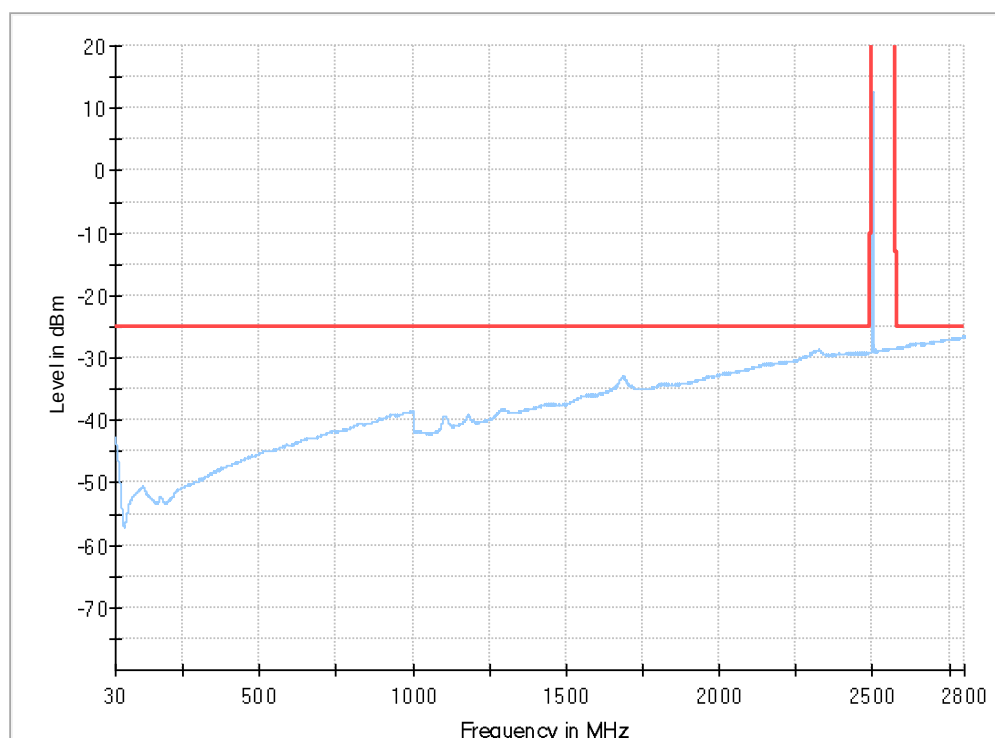
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 27.53(l)(4) / RSS-130 Mobile stations limits
Operating Mode:	LTE_FDD7 BW=10MHz CH_20800 RB_1_low QPSK
Environmental Conditions::	Humidity : 70% rH; Temperature: 20 °C
Test SW Version:	EMC32 V10.60.20
Operator:	WAbdellatif
Remarks:	EUT - laying/standing position
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



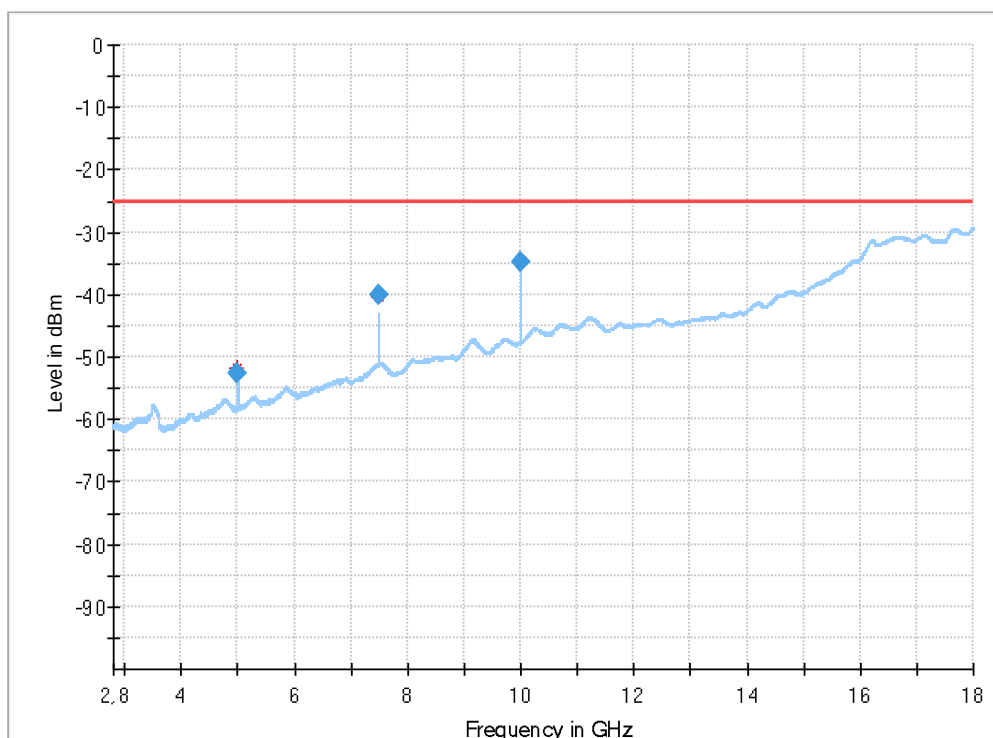
8.10_Traffic_mode_LTE_FDD_B07_CH_20800_Laying

Common Information

Test Description:	Radiated Spurious Emissions LTE FDD7
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC Part 27.53 / RSS-130
Test Case:	-
Operating Mode:	LTE_FDD7 BW=10MHz CH_20800 RB_1_low QPSK
Environmental Conditions:	Humidity : 55% rH; Temperature: 20 °C
Operator:	TFra
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number	20-1-00607S219_C01
Power Supply:	12 V DC
	Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
5001.232000	-52.67	-25.00	27.67	1000.0	1000.000	V	192.0	0.0	-89
7501.675000	-40.15	-25.00	15.15	1000.0	1000.000	V	187.0	0.0	-80
10002.449500	-34.85	-25.00	9.85	1000.0	1000.000	V	134.0	0.0	-77

8.11_Traffic_mode_LTE_FDD_B12_CH_23035_Standing

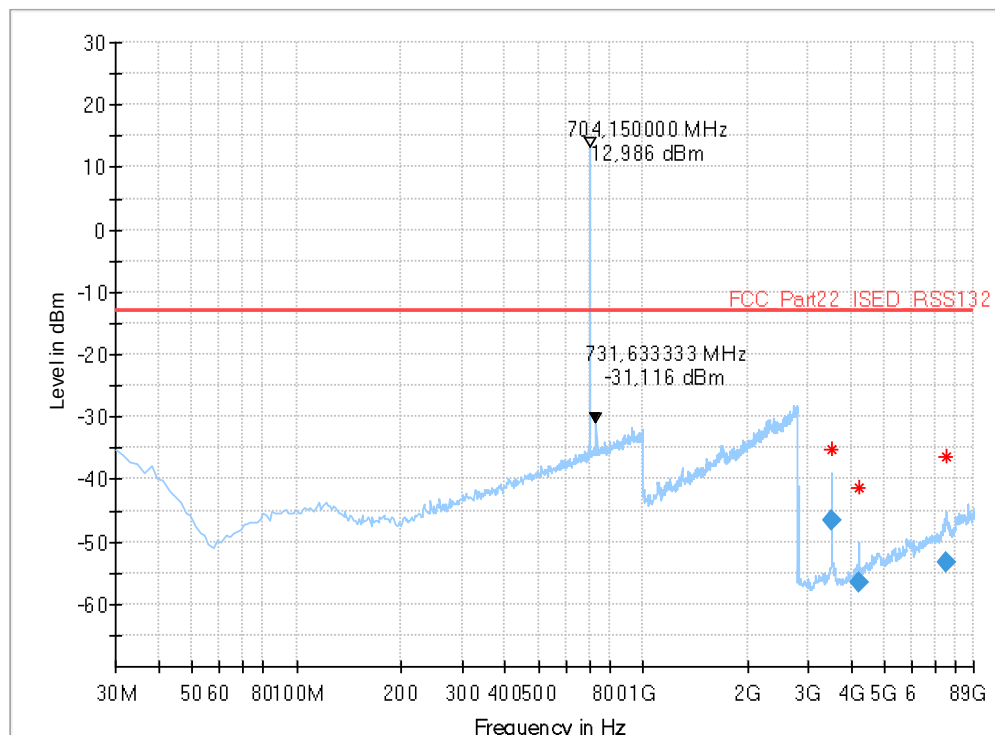
Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operating Mode:	LTE_FDD12 BW=5MHz CH_23035 RB:1 High QPSK
Operator:	HEI
Environmental Conditions::	Humidity : 70% rH; Temperature: 19 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC

Full Spectrum



Remark: Emission at 704.15 MHz is uplink frequency of LTE FDD 12 and not related to result.

Final_Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3518.325000	-46.70	-13.00	33.70	100.0	100.000	155.0	H	70.0	0.0	-91
4222.041667	-56.44	-13.00	43.44	100.0	100.000	155.0	H	277.0	0.0	-91
7491.233333	-53.34	-13.00	40.34	100.0	100.000	155.0	H	146.0	0.0	-80

(continuation of the "Final_Result" table from column 17 ...)

Frequency (MHz)	Comment
3518.325000	14:52:43 - 10.07.2021
4222.041667	14:56:57 - 10.07.2021
7491.233333	14:54:47 - 10.07.2021

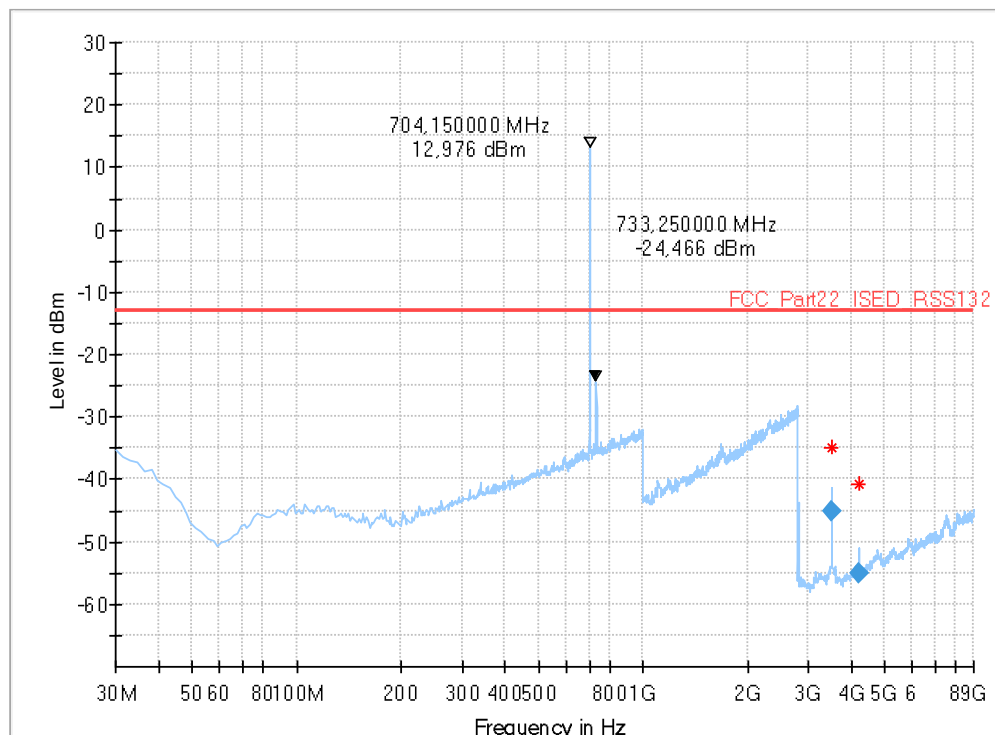
8.12_Traffic_mode_LTE_FDD_B12_CH_23035_laying

Common Information

Test Description:	Radiated emission related to 1m
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.60.20
Test Standard:	FCC FCC Part 24.238 Broadband PCS
Antenna polarisation:	vertical / horizontal
Operating Mode:	LTE_FDD12 BW=5 MHz CH_23035 RB_1_high QPSK
Operator:	TFra
Environmental Conditions:	Humidity : 55% rH; Temperature: 20 °C
EUT Setup:	2
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S219_C01
Power Supply:	12 V DC
	Full Spectrum



Remark: Emission at 704.15 MHz is uplink frequency of LTE FDD 12 and not related to result.

Final Result

Frequency (MHz)	MaxPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
3518.300000	-45.21	-13.00	32.21	100.0	100.000	155.0	V	21.0	0.0	-91
4221.966667	-55.17	-13.00	42.17	100.0	100.000	155.0	V	357.0	0.0	-91

(continuation of the "Final_Result" table from column 17 ...)

Frequency (MHz)	Comment
3518.300000	21:11:45 - 06.07.2021
4221.966667	21:14:03 - 06.07.2021

1.3 Radiated Band-Edge

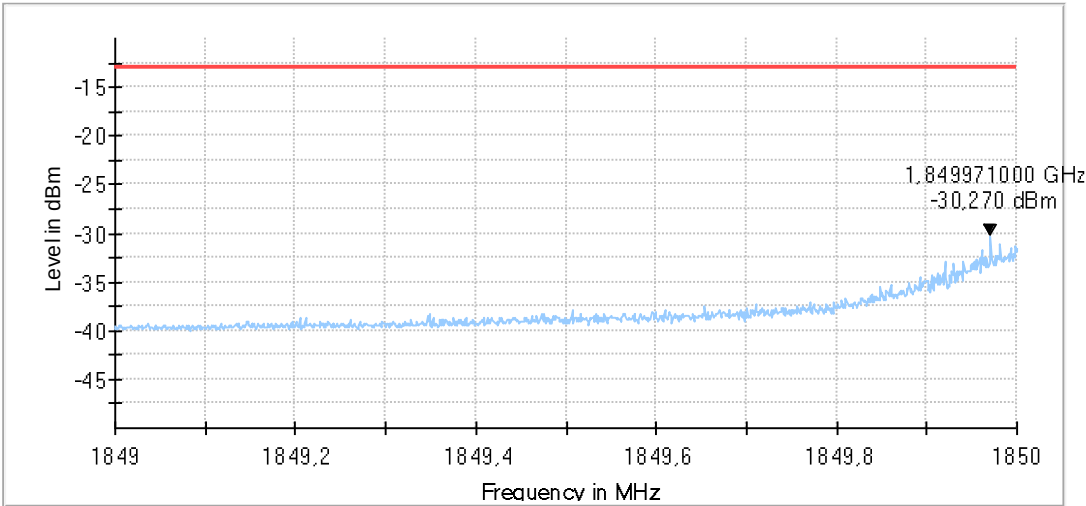
9.201_Bandedge_low_LTE_FDD_B02_CH_low

Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	-
Test Case:	-
Operating Mode:	FDD2 BW=20MHz CH_18700 RB_1 RB_Start low QPSK
Environmental Conditions::	Humidity : 42% rH; Temperature: 20 °C
Operator:	MNu
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC
Full Spectrum	



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---	---	---	---	---

9.202_Bandedge_low_LTE_FDD_B02_CH_low

Common Information

Test Description:
Test Site Location:
Test Site:
Test Standard:
Test Case:
Operating Mode:
Environmental Conditions::
Operator:
EUT Setup:
Verdict:

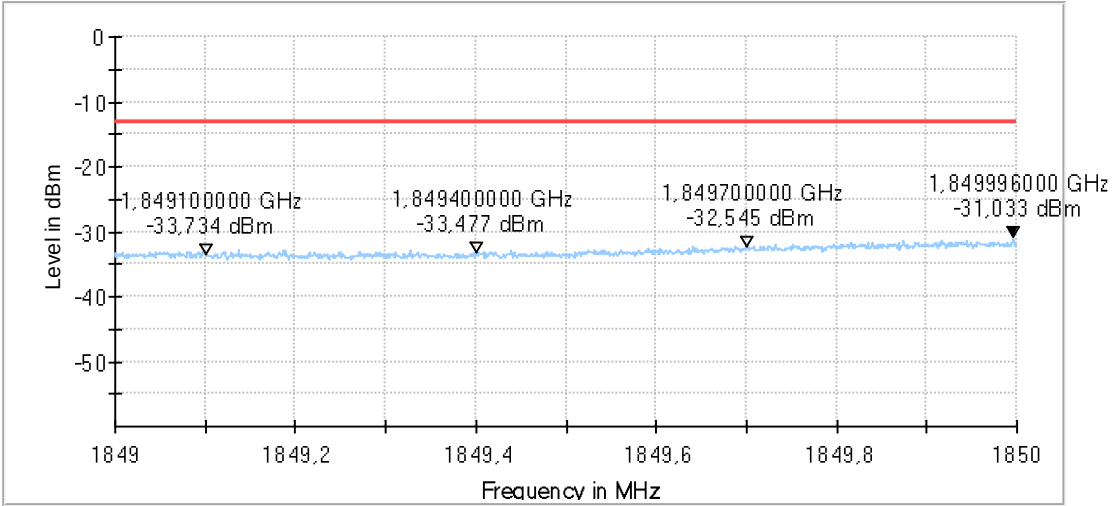
-
CETECOM GmbH Essen
Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
FCC Part 27
Radiated Band Edge
FDD2 | BW=20MHz | CH_18700 | RB_100 | QPSK
Humidity : % rH; Temperature: °C
MNu
1
Passed

EUT Information

PMT number:
Power Supply:

20-1-00607S215_C01
12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.203_Bandedge_high_LTE_FDD_B02_CH_high

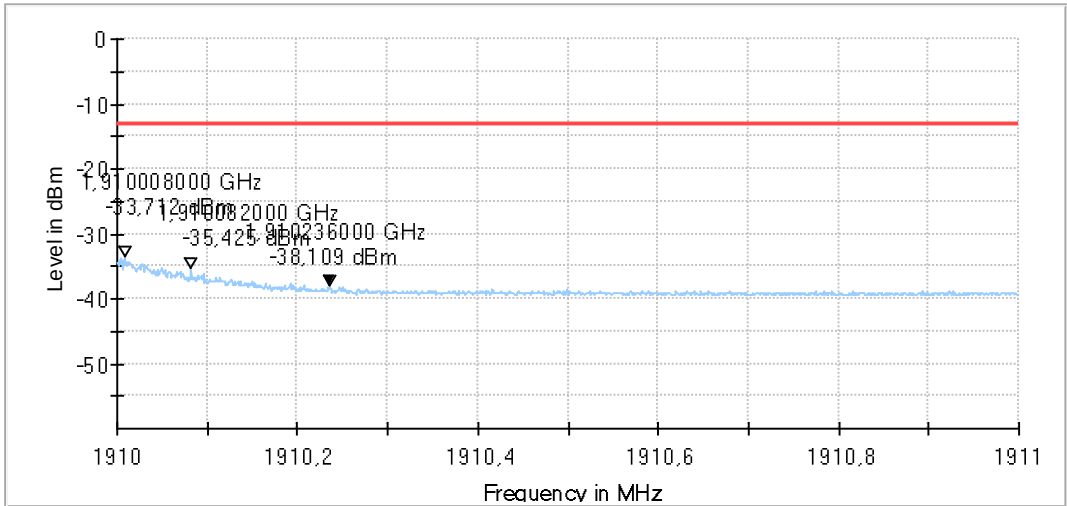
Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 24
Test Case:	Radiated Band Edge
Operating Mode:	FDD2 BW=20MHz CH_19100 RB_1 RB_Start high QPSK
Environmental Conditions::	Humidity : 44 % rH; Temperature: 20 °C
Operator:	MNu
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---	---	---	---	---

9.204_Bandedge_high_LTE_FDD_B02_CH_high

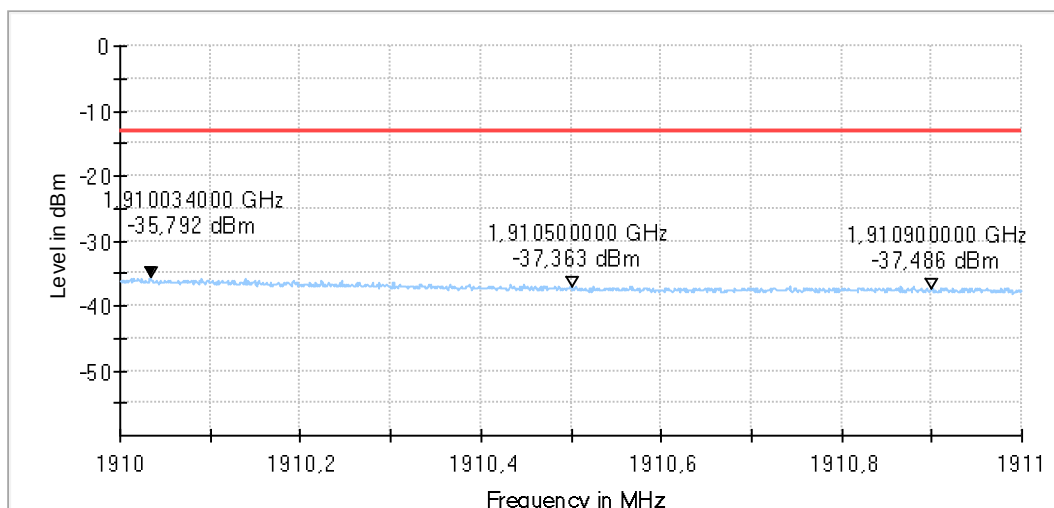
Common Information

Test Description: -
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: FCC Part 24
 Test Case: Radiated Band Edge
 Operating Mode: FDD2 | BW=20MHz | CH_19100 | RB_100 | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 20 °C
 Operator: MNu
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.401_Bandedge_low_LTE_FDD_B04_CH_low

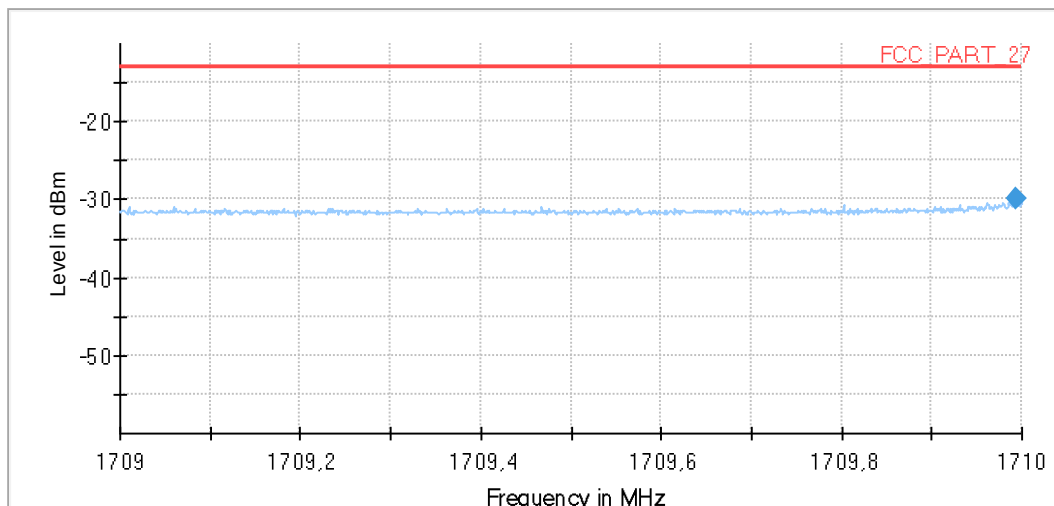
Common Information

Test Description: -
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: -
 Test Case: Radiated Band Edge
 Operating Mode: FDD4 | BW=10MHz | CH_20000 | RB_1 | RB_Start low | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 20 °C
 Operator: MNu
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1709.994000	-29.99	-13.00	16.99	700.0	100.000	H	22.0	90.0	-63

9.402_Bandedge_low_LTE_FDD_B04_CH_low

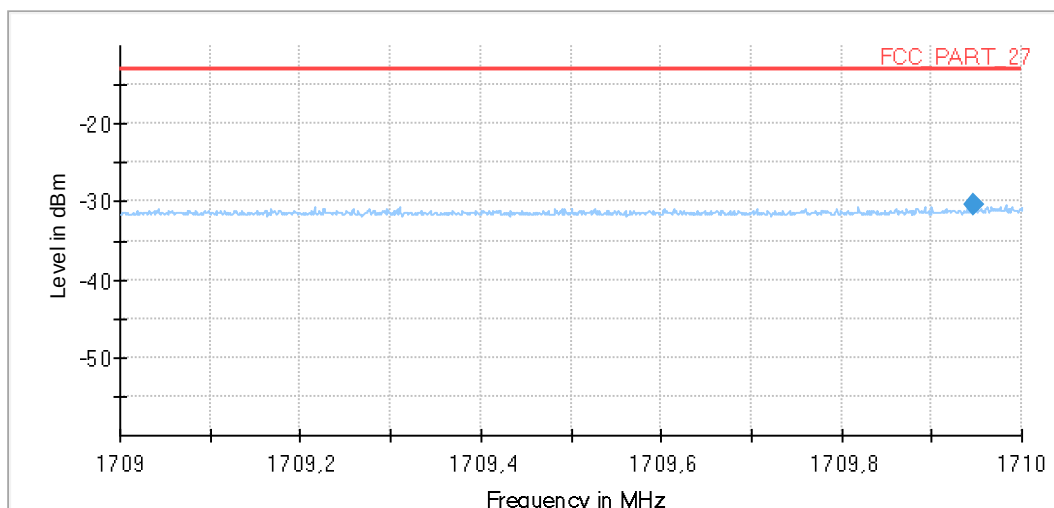
Common Information

Test Description: -
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: -
 Test Case: Radiated Band Edge
 Operating Mode: FDD4 | BW=10MHz | CH_20000 | RB_50 | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 20 °C
 Operator: MNu
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1709.947000	-30.46	-13.00	17.46	700.0	100.000	H	29.0	90.0	-63

9.403_Bandedge_high_LTE_FDD_B04_CH_high

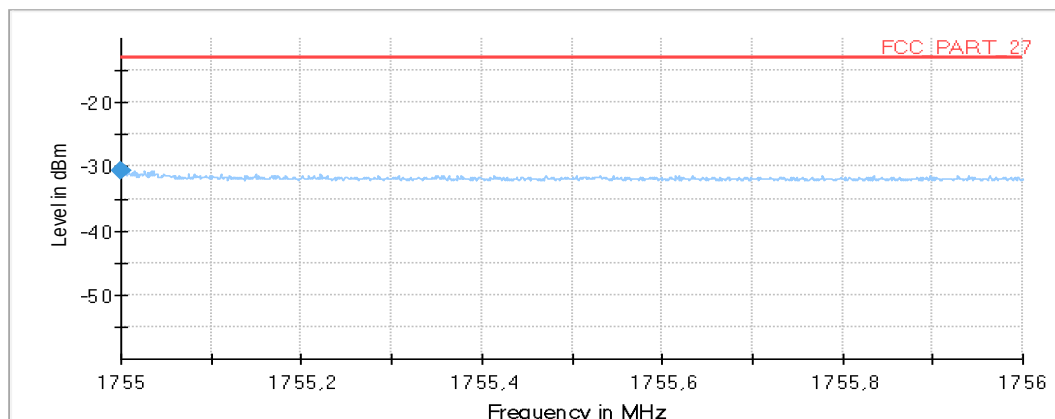
Common Information

Test Description:	-
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	-
Test Case:	Radiated Band Edge
Operating Mode:	FDD4 BW=10MHz CH_20350 RB_1 RB_Start high QPSK
Environmental Conditions::	Humidity : 44% rH; Temperature: 22 °C
Operator:	MNu
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC

Full Spectrum



Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1755.000000	-30.56	-13.00	17.56	700.0	100.000	H	30.0	90.0	-63

9.404_Bandedge_high_LTE_FDD_B04_CH_high

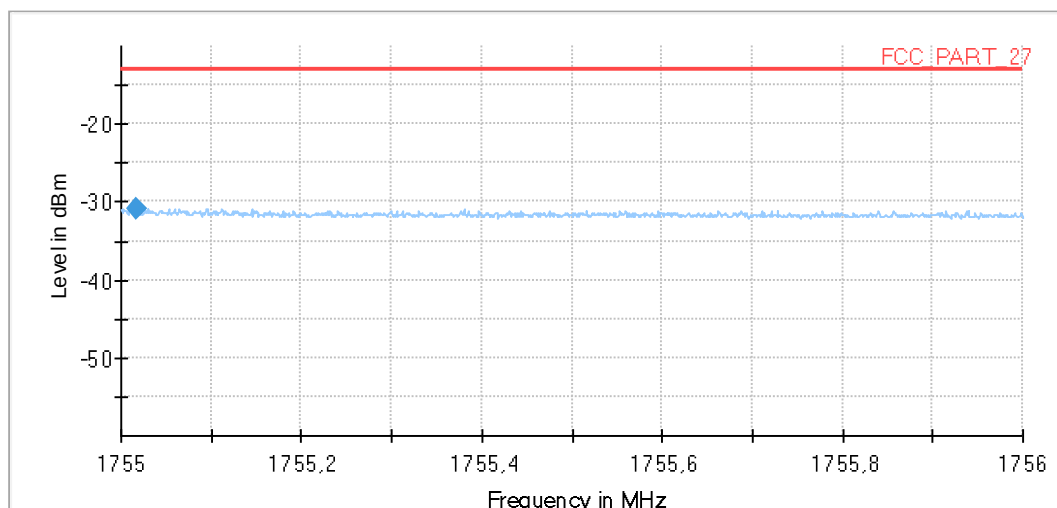
Common Information

Test Description: -
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: -
 Test Case: Radiated Band Edge
 Operating Mode: FDD4 | BW=10MHz | CH_20350 | RB_50 | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 20 °C
 Operator: MNu
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1755.018000	-30.82	-13.00	17.82	700.0	100.000	H	329.0	90.0	-63

9.501_Bandedge_low_LTE_FDD_B05_CH_low

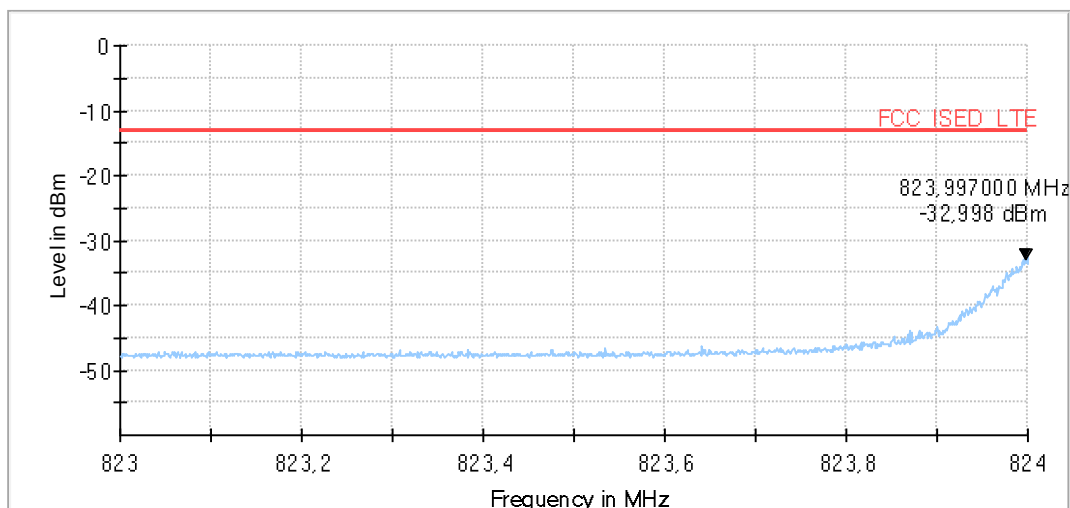
Common Information

Test Description: Band-Edge low - Radiated Spurious Emissions LTE Band V
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: FCC Part 22.917(a) / RSS-132
 Operating Mode: FDD5 | BW=5MHz | CH_20425 | RB_1 | RB_Start low | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 20 °C
 Test SW Version: EMC32 V10.50.0
 Operator: MNu
 Remarks: EUT - laying/standing position
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.502_Bandedge_low_LTE_FDD_B05_CH_low

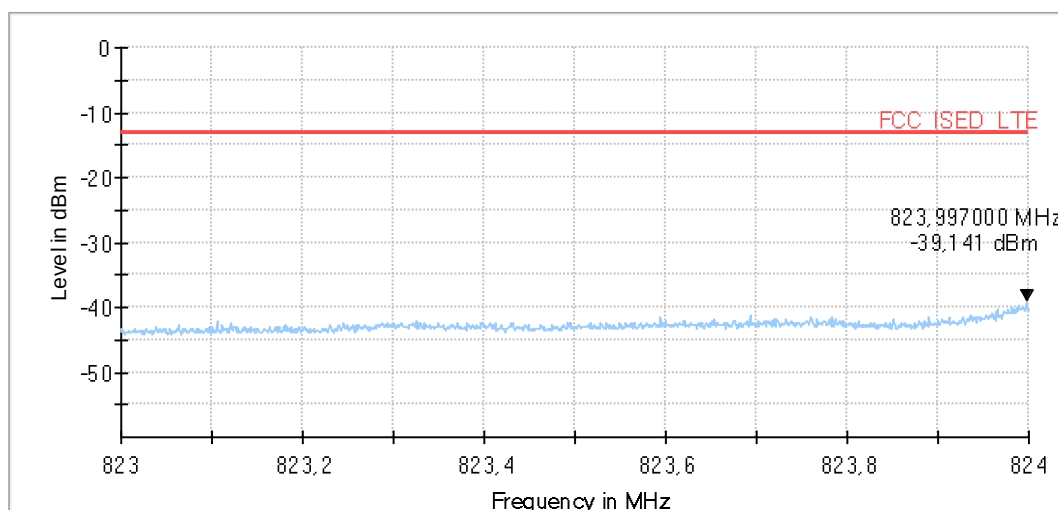
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	LTE FDD5 BW=5MHz CH_20425 RB_25 QPSK
Environmental Conditions::	Humidity : 44% rH; Temperature: 20 °C
Test SW Version:	EMC32 V10.50.0
Operator:	MNu
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.503_Bandedge_low_LTE_FDD_B05_CH_high

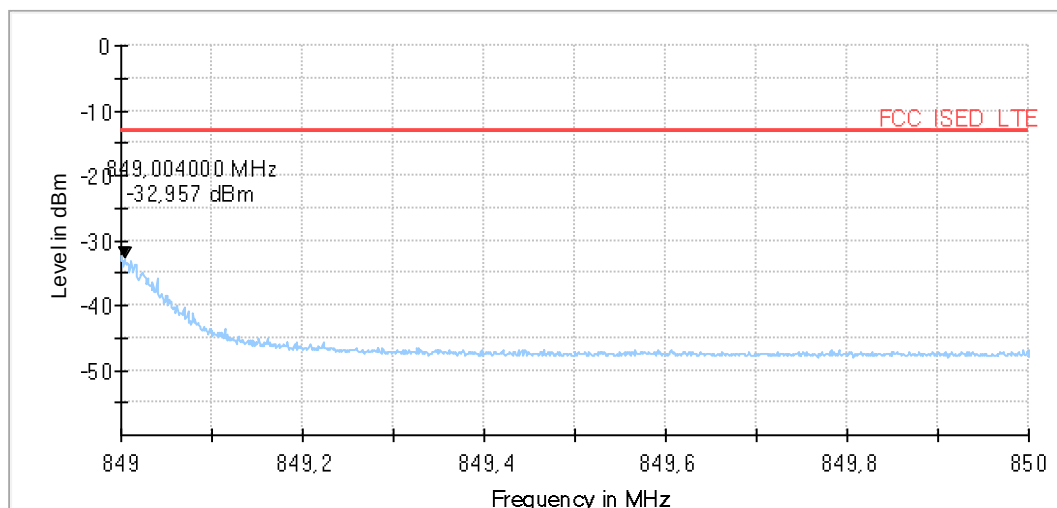
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	LTE FDD5 BW=5MHz CH_20625 RB_1 RB_HIGH QPSK
Environmental Conditions::	Humidity : 44% rH; Temperature: 20 °C
Test SW Version:	EMC32 V10.50.0
Operator:	MNu/ WAbdellatif
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.504_Bandedge_high_LTE_FDD_B05_CH_high

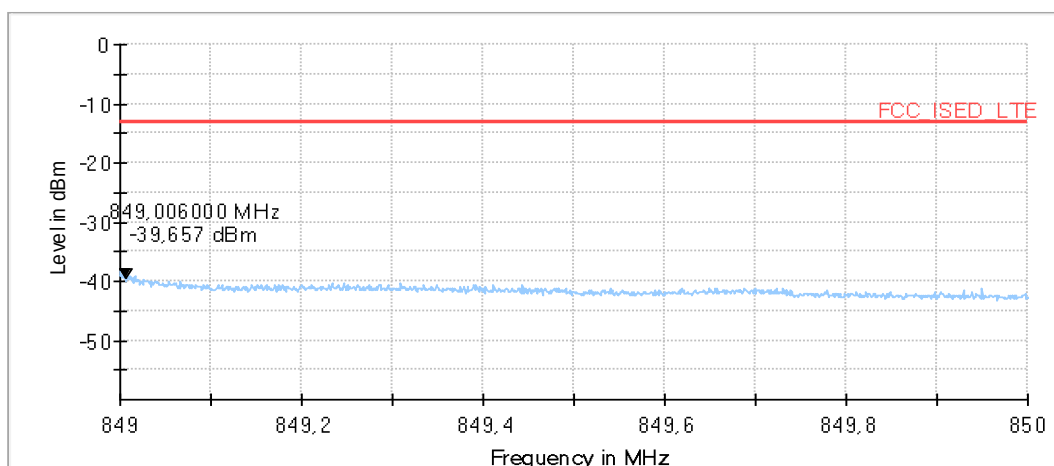
Common Information

Test Description: Band-Edge low - Radiated Spurious Emissions LTE Band V
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: FCC Part 22.917(a) / RSS-132
 Operating Mode: LTE FDD5 | BW=5MHz | CH_20625 | RB_25 | RB_HIGH | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 20 °C
 Test SW Version: EMC32 V10.50.0
 Operator: WAbdellatif
 Remarks: EUT - laying/standing position
 EUT Setup: 1
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---	---	---	---	---

9.1201_Bandedge_low_LTE_FDD_B12_CH_low

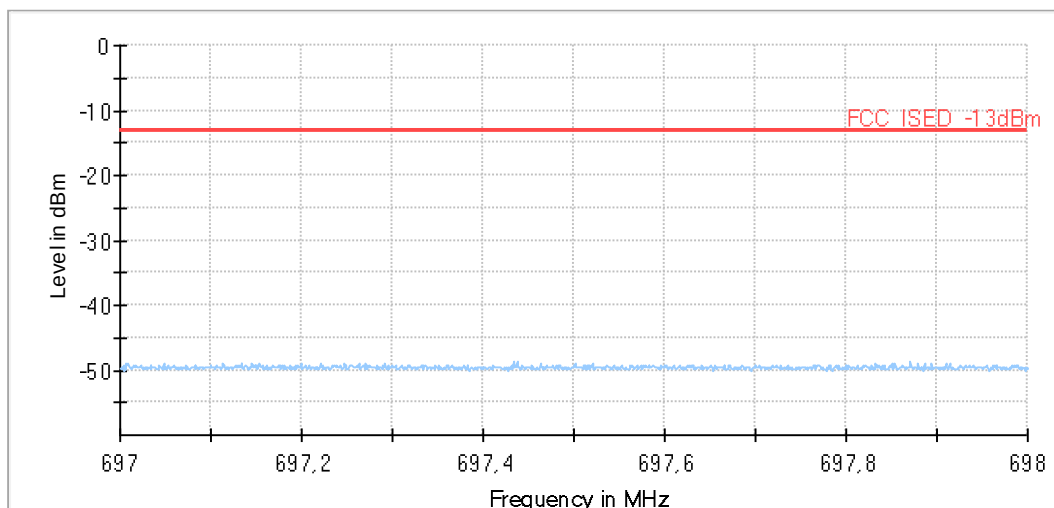
Common Information

Test Description: Band-Edge low - Radiated Spurious Emissions LTE Band V
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
 Test Standard: FCC Part 22.917(a) / RSS-132
 Operating Mode: LTE FDD12 | BW=5MHz | CH_23035 | RB_1 | RB_low | QPSK
 Environmental Conditions: Humidity : 44% rH; Temperature: 18 °C
 Test SW Version: EMC32 V10.50.0
 Operator: WAbdellatif
 Remarks: EUT - laying/standing position
 EUT Setup: 2
 Verdict: Passed

EUT Information

PMT number: 20-1-00607S215_C01
 Power Supply: 12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.1202_Bandedge_low_LTE_FDD_B12_CH_low

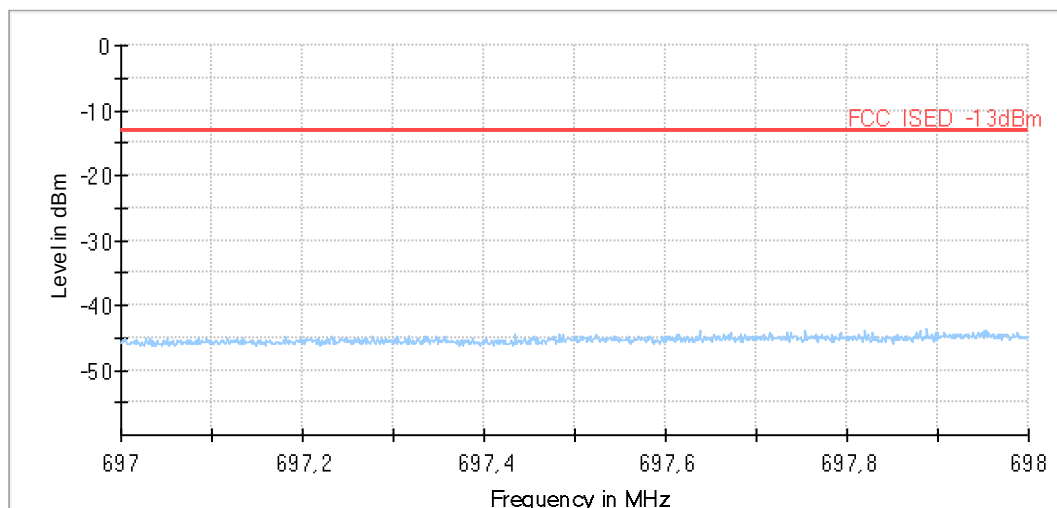
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	LTE FDD12 BW=5MHz CH_23035 RB_25 QPSK
Environmental Conditions::	Humidity : 44% rH; Temperature: 18 °C
Test SW Version:	EMC32 V10.50.0
Operator:	WAbdellatif
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
---	---	---	---	---	---		---	---	---

9.1203_Bandedge_high_LTE_FDD_B12_CH_high

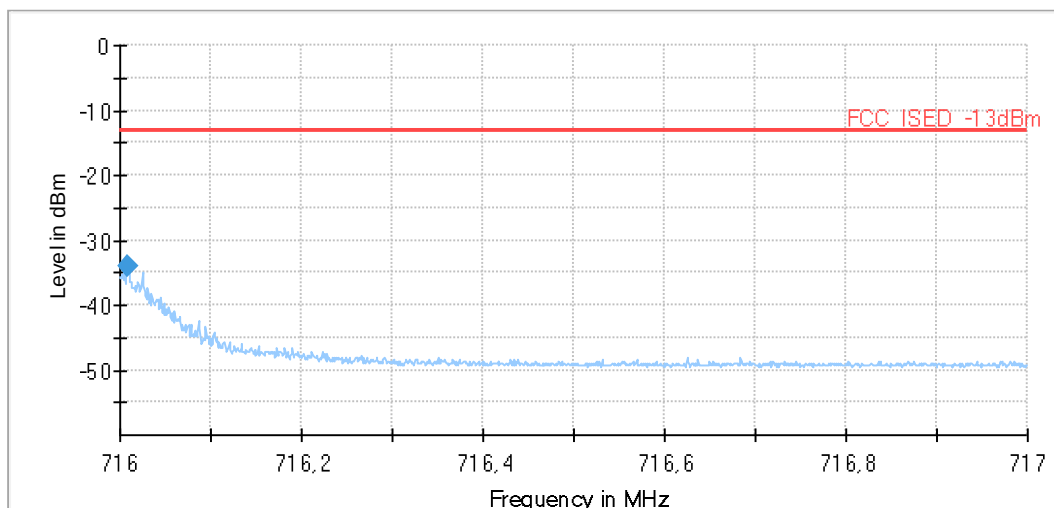
Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	LTE FDD12 BW=5MHz CH_23155 RB_1 RB_high QPSK
Environmental Conditions::	Humidity : 44% rH; Temperature: 18 °C
Test SW Version:	EMC32 V10.50.0
Operator:	WAbdellatif
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
Power Supply:	12 V DC

Full Spectrum



Final_Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
716.009000	-33.93	-13.00	20.93	700.0	50.000	H	42.0	90.0	-76

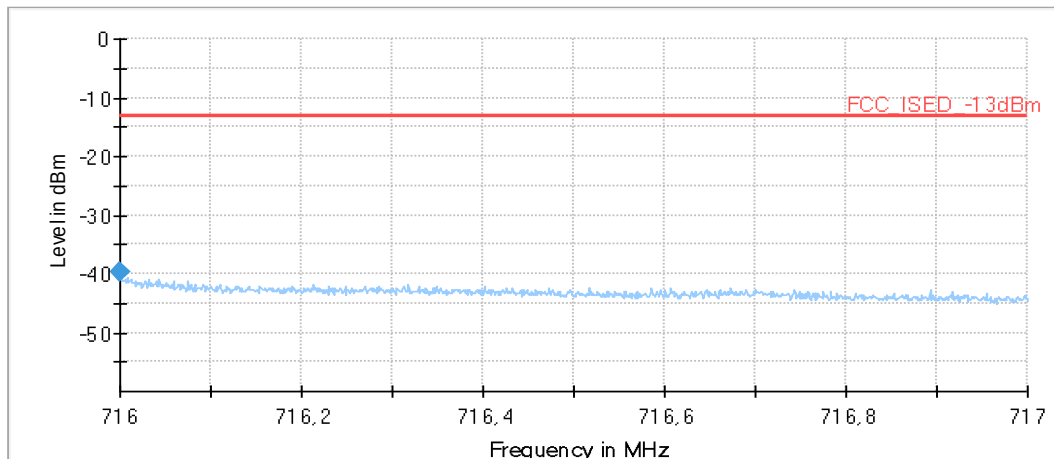
9.1204_Bandedge_high_LTE_FDD_B12_CH_high

Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band V
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Chamber (FAC1) - EMC32 V10.50.0
Test Standard:	FCC Part 22.917(a) / RSS-132
Operating Mode:	LTE FDD12 BW=5MHz CH_23155 RB_25 RB_high QPSK
Environmental Conditions::	Humidity : 44% rH; Temperature: 18 °C
Test SW Version:	EMC32 V10.50.0
Operator:	WAbdellatif
Remarks:	EUT - laying/standing position
EUT Setup:	1
Verdict:	Passed

EUT Information

PMT number:	20-1-00607S215_C01
	Full Spectrum



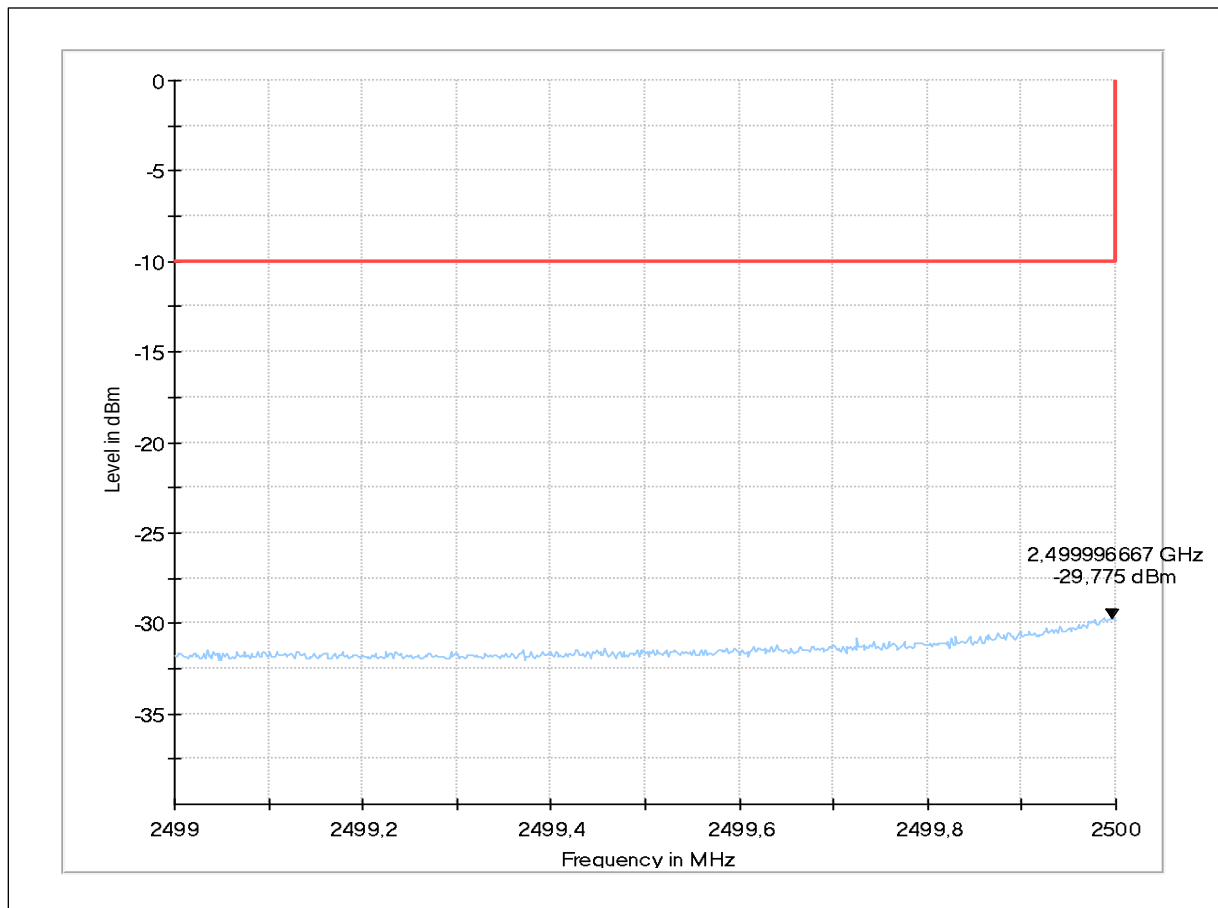
Final_Result

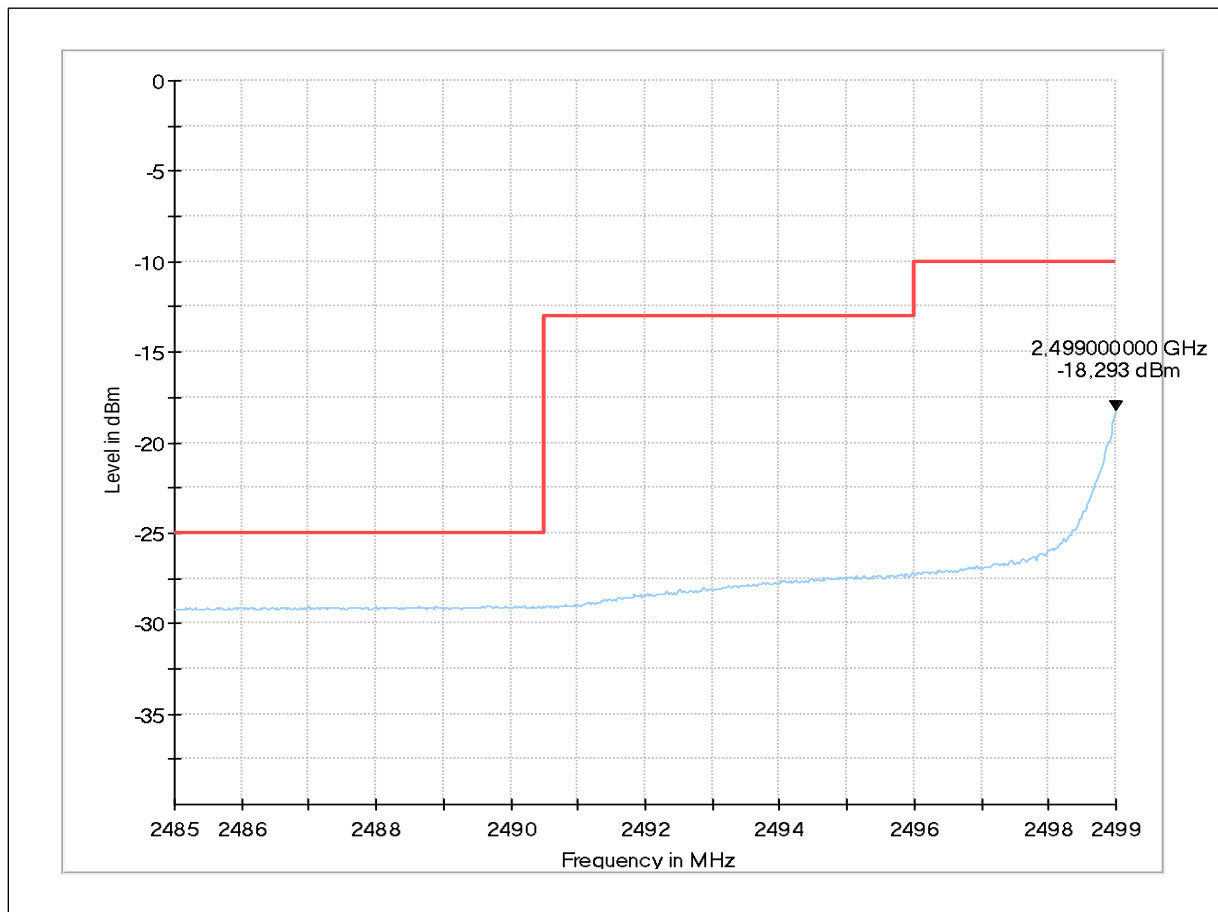
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)
716.000000	-39.83	-13.00	26.83	700.0	50.000	H	57.0	90.0	-76

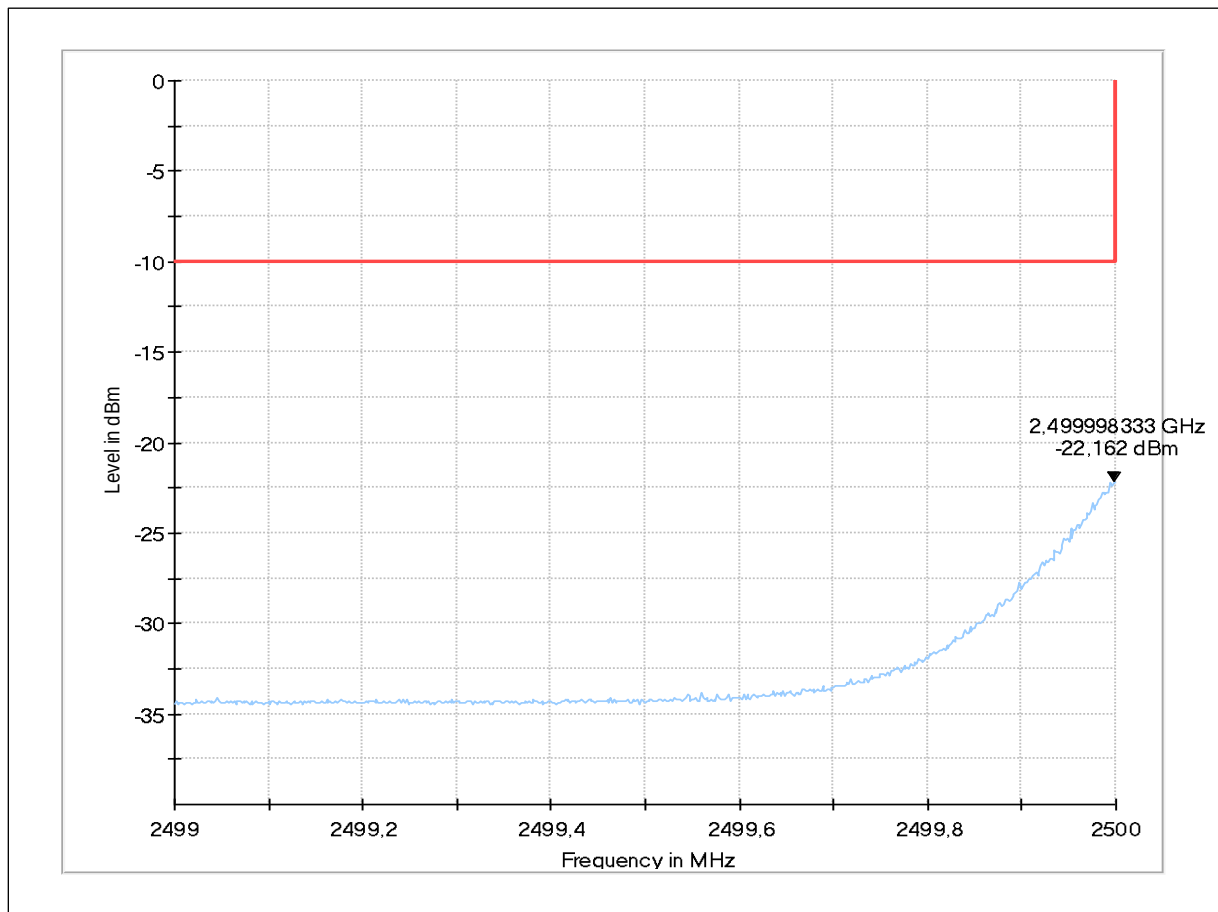
1.4 Band-Edge LTE Band 7

1.4.1 Band-Edge low, Channel 20800

D9.7_001_BE_Bd7_Sweep1_ch20800_BW10_50RBs_QPSK_EUTstanding

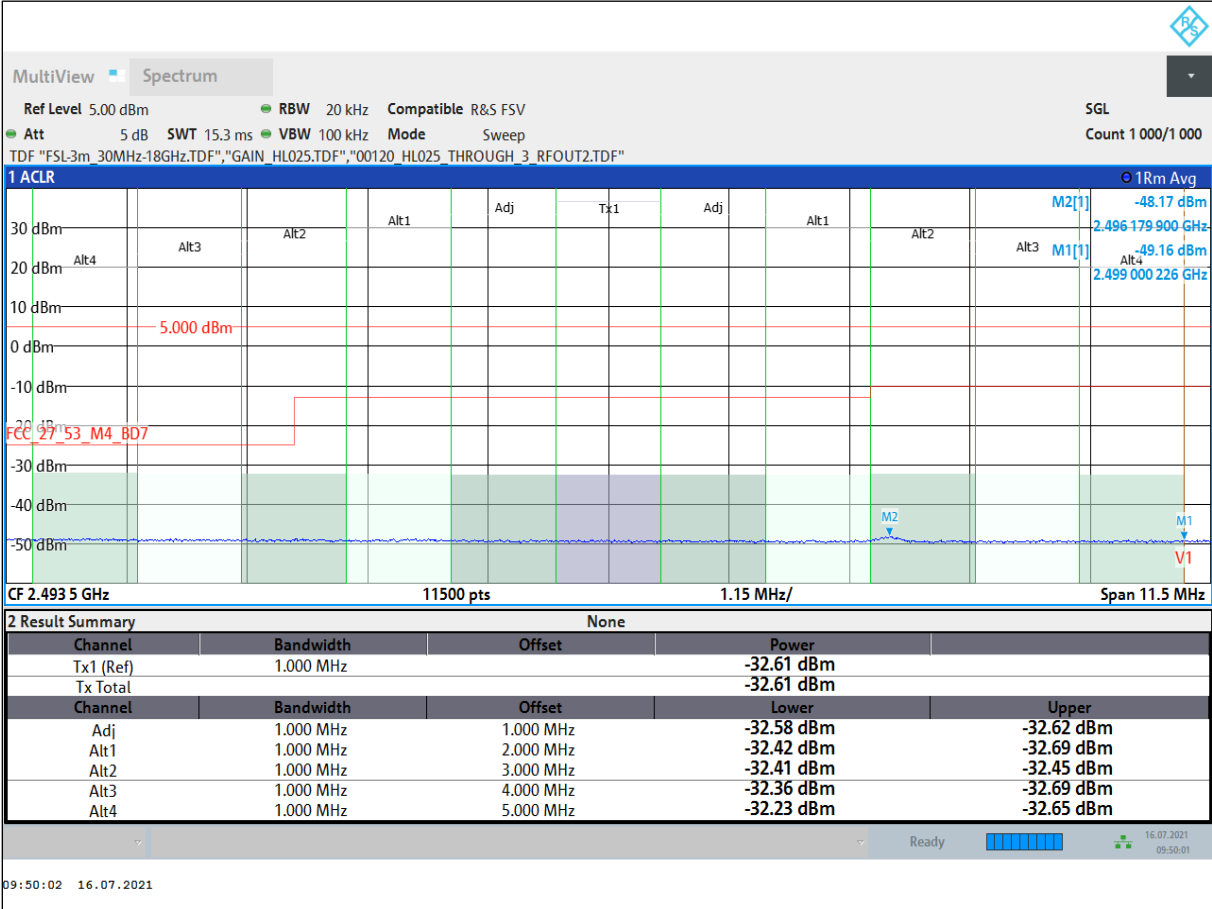


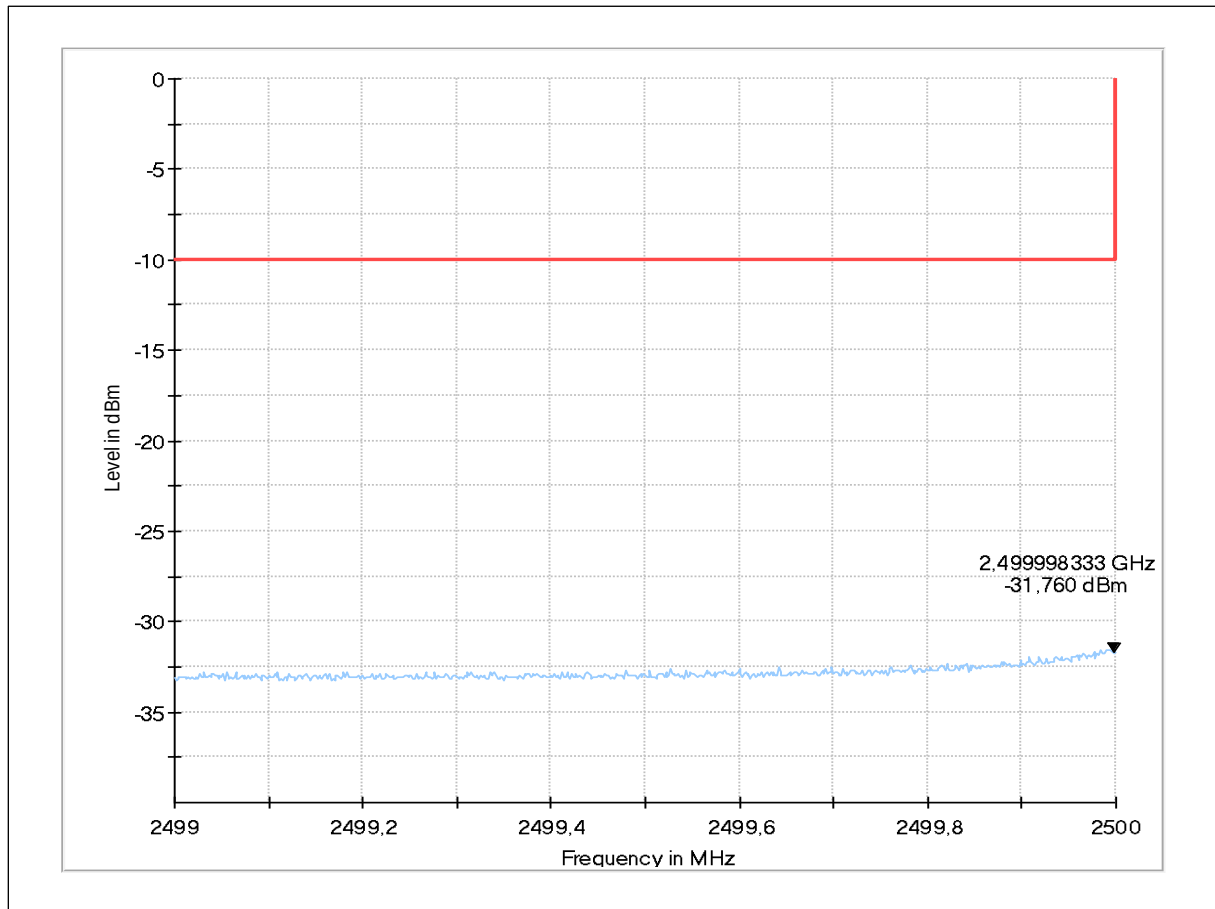
D9.7_002_BE_Bd7_Sweep2_ch20800_BW10_50RBs_QPSK_EUTstanding

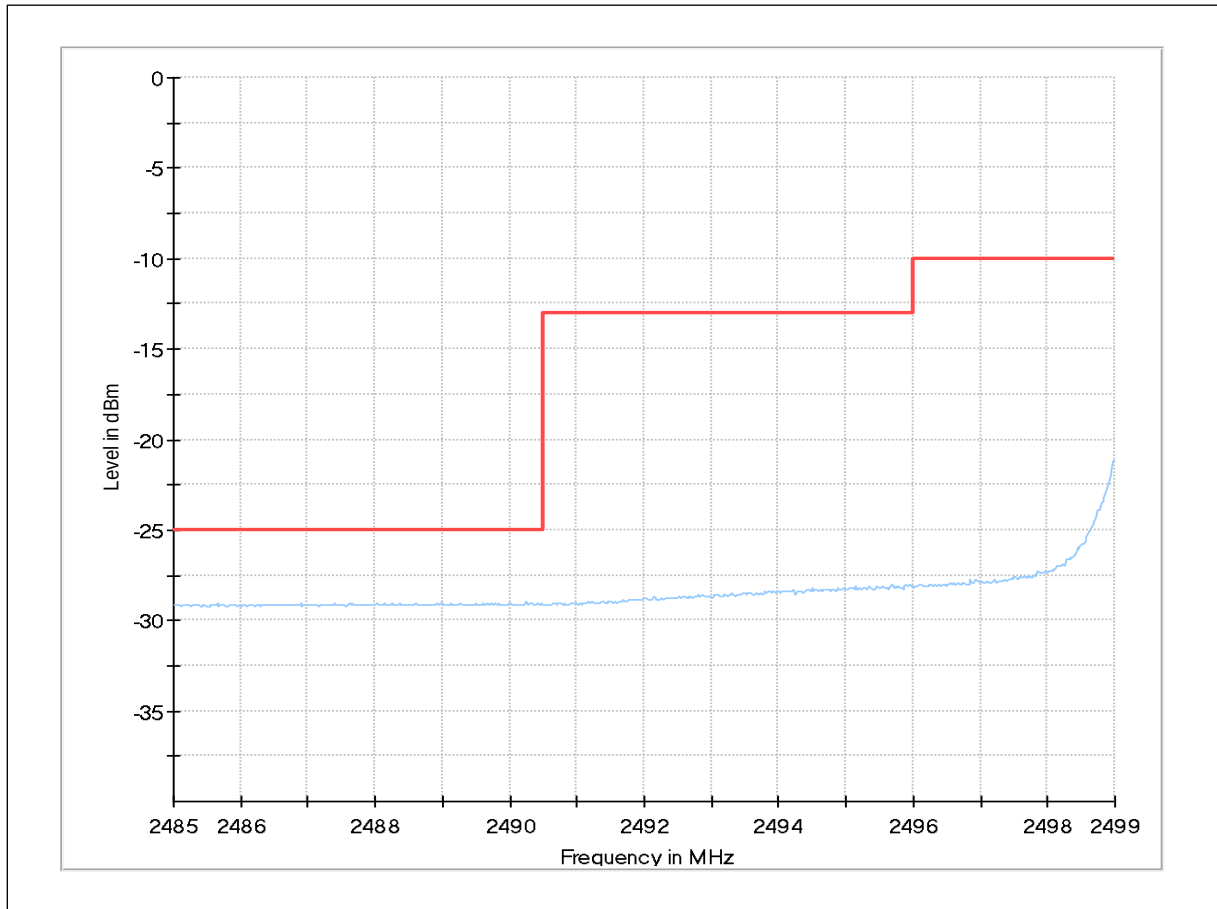
D9.7_003_BE_Bd7_Sweep1_ch20800_BW10_1RBlow_QPSK_EUTstanding

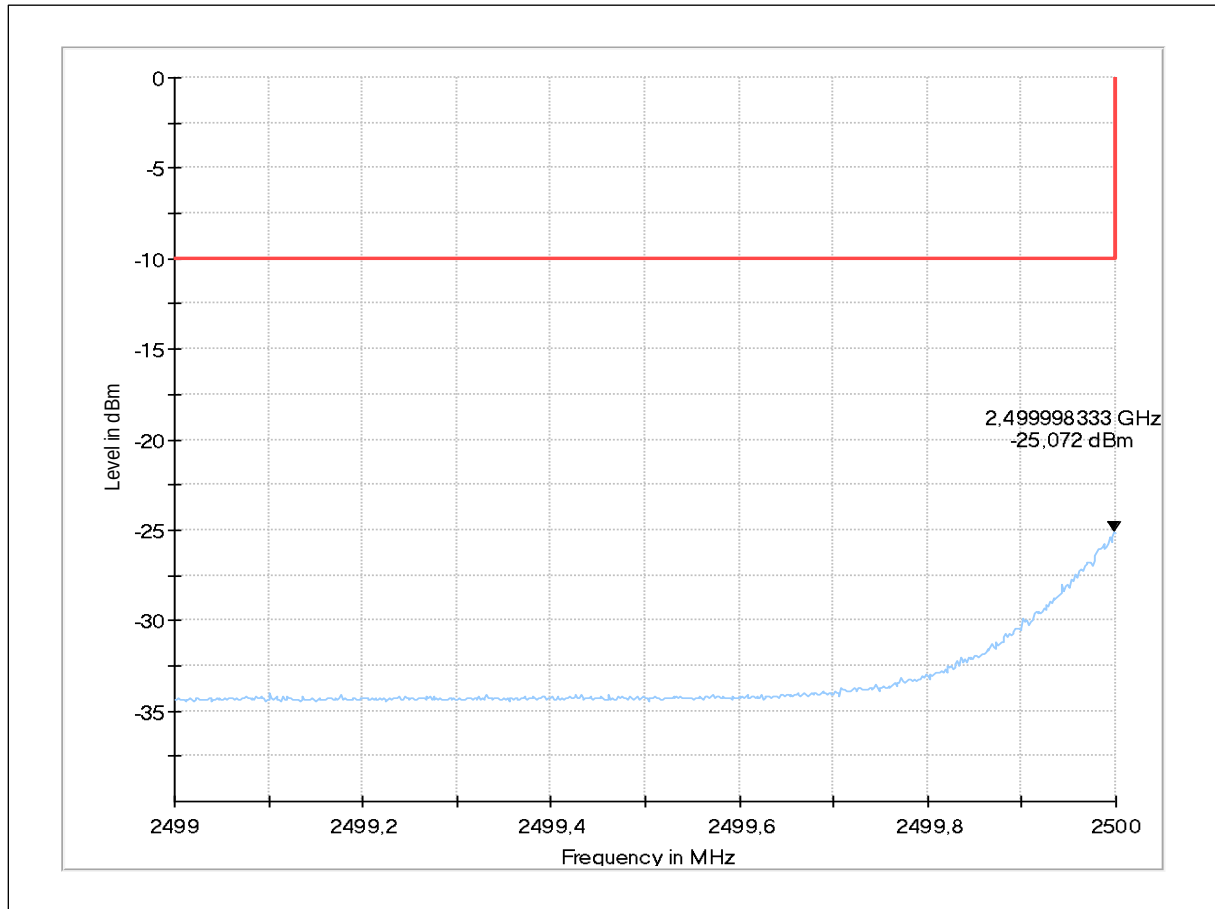


D9.7_004_BE_Bd7_Method2_Sweep2_ch20800_BW10_1RBlow_QPSK_EUTstanding



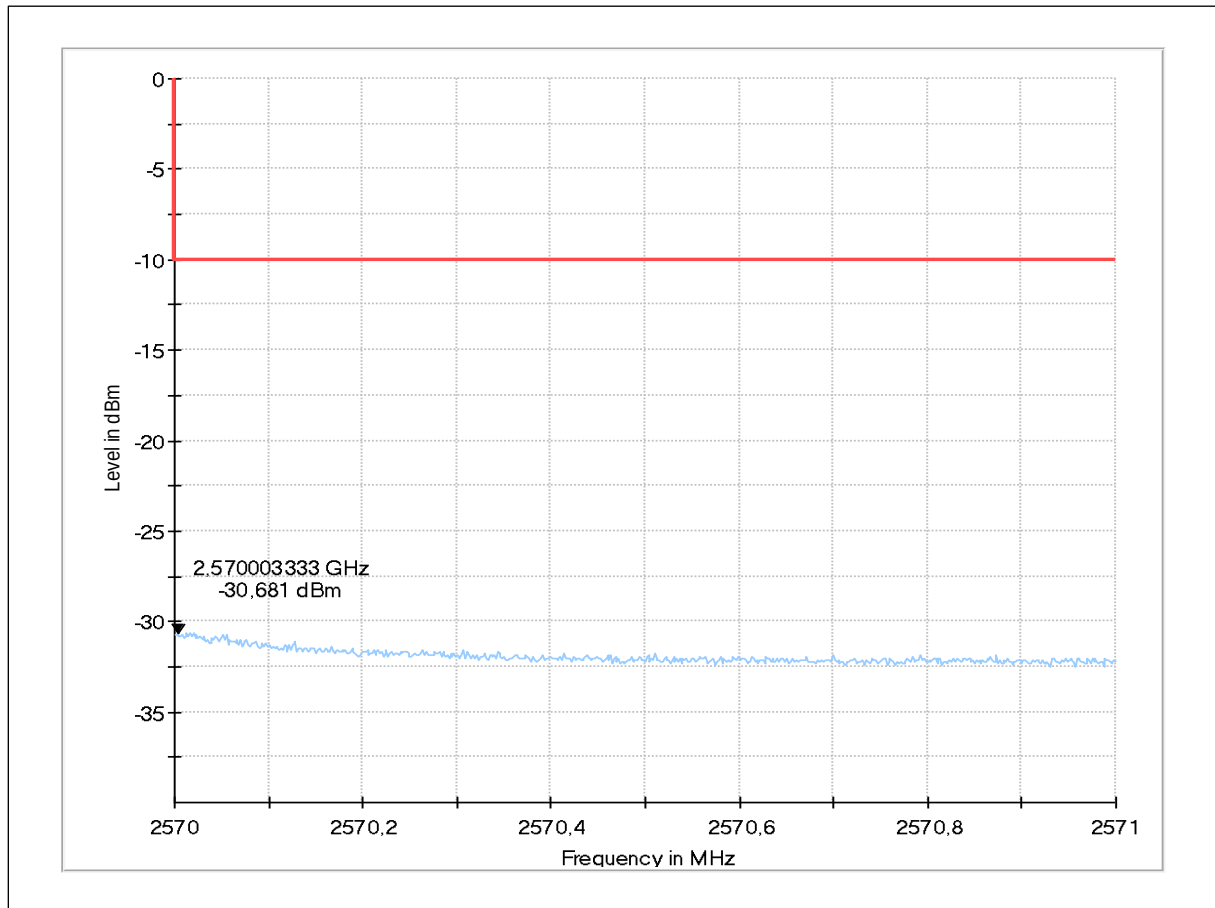
D9.7_009_BE_Bd7_Sweep1_ch20800_BW10_50RBs_QPSK_EUTlaying

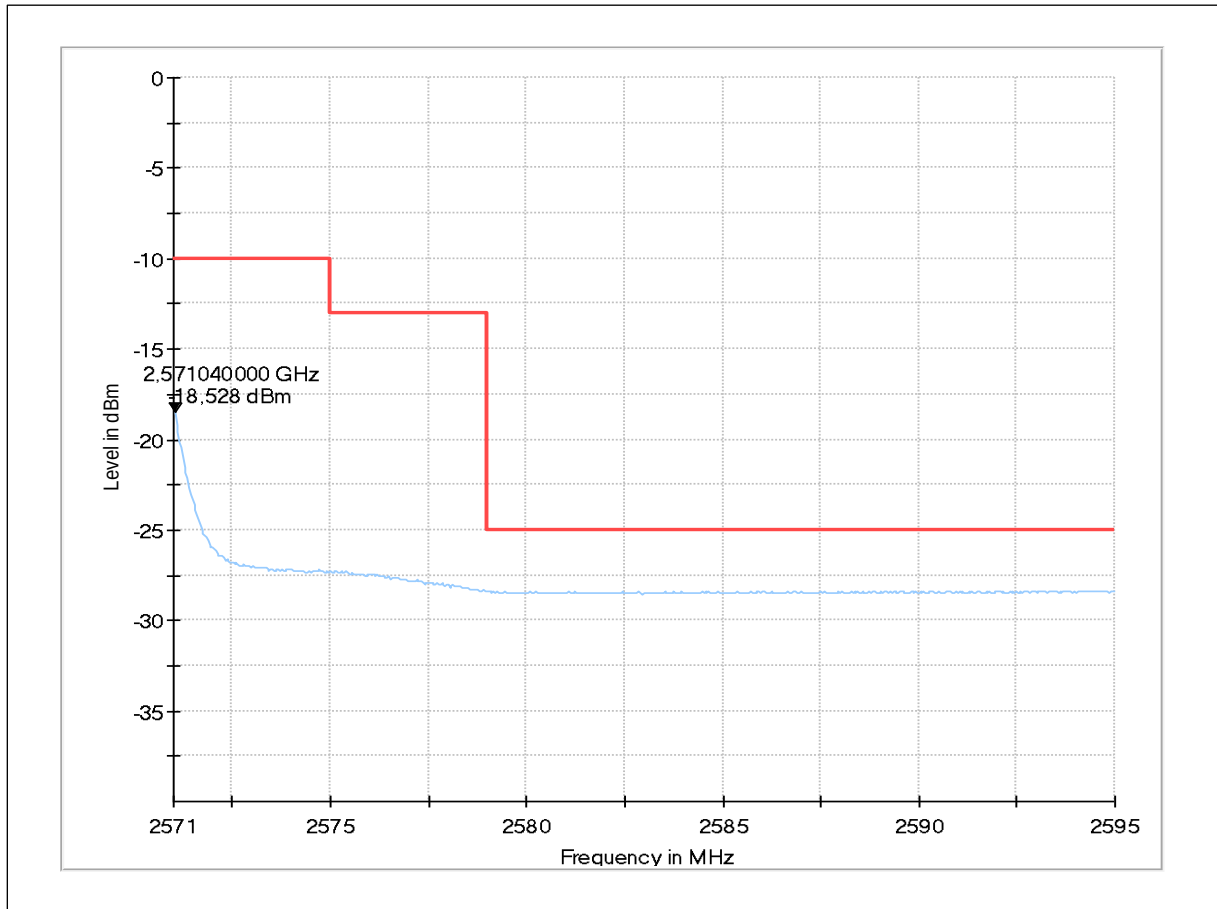
D9.7_010_BE_Bd7_Sweep2_ch20800_BW10_50RBs_QPSK_EUTlaying

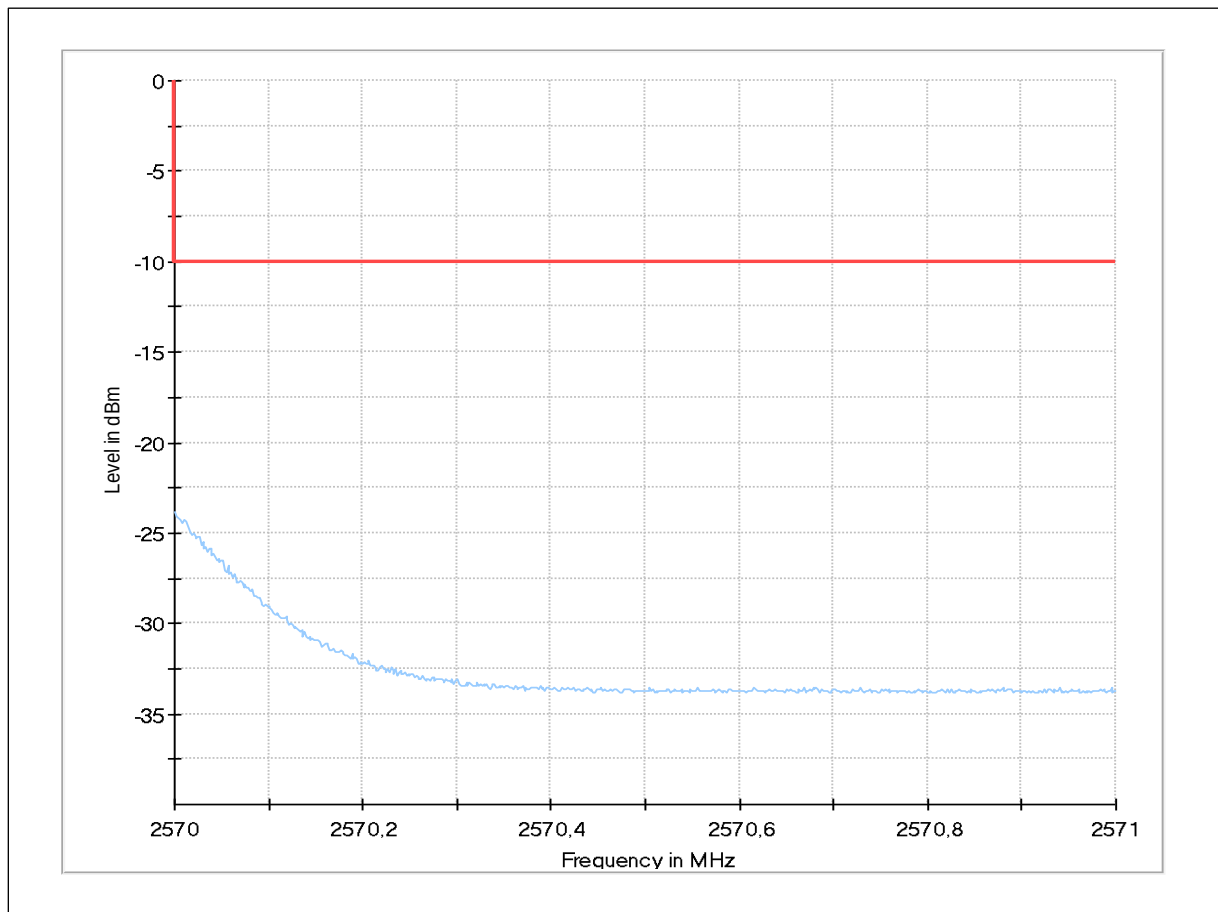
D9.7_011_BE_Bd7_Sweep1_ch20800_BW10_1RBlow_QPSK_EUTlaying

1.4.2 Band-Edge high, Channel 21400

D9.7_005_BE_Bd7_Sweep1_ch21400_BW10_50RBs_QPSK_EUTstanding

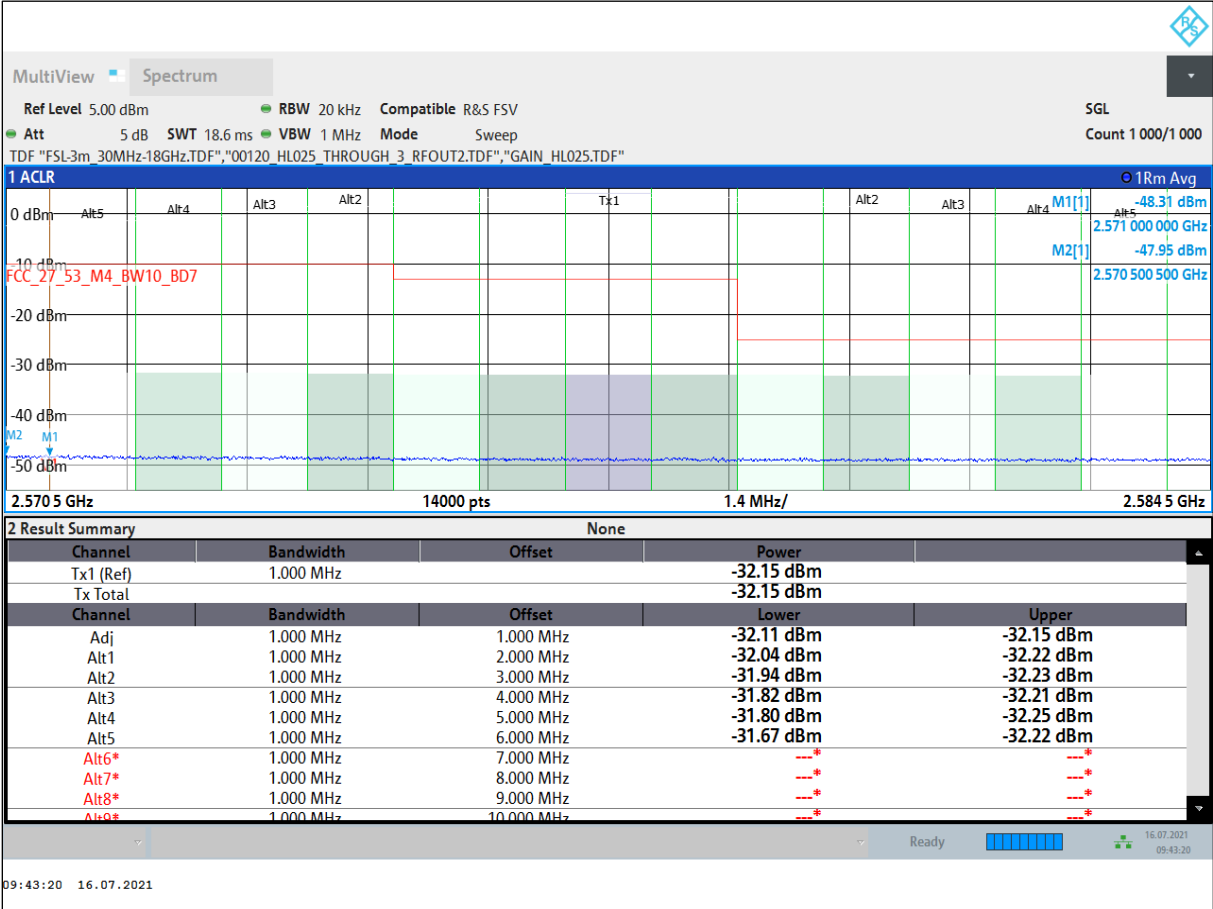


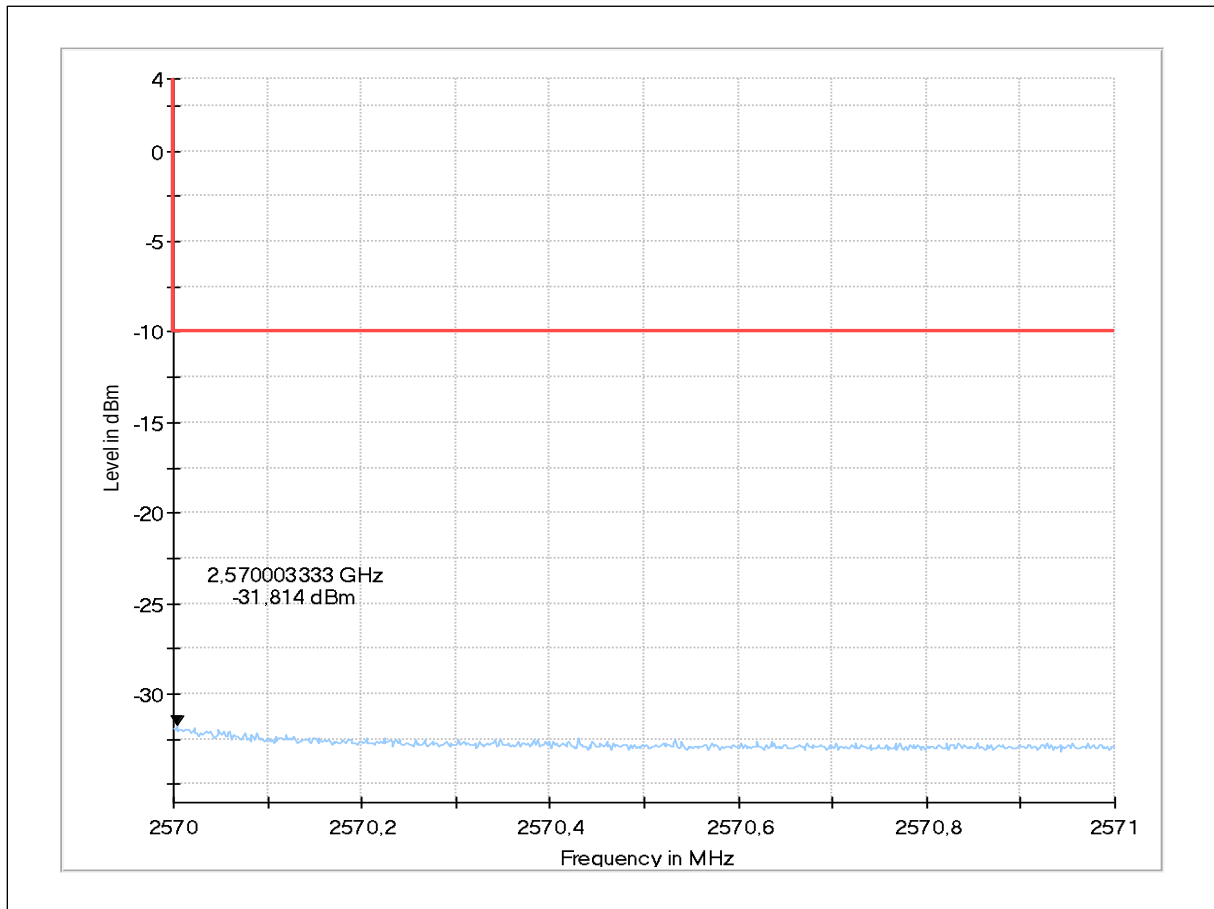
D9.7_006_BE_Bd7_Sweep2_ch21400_BW10_50RBs_QPSK_EUTstanding

D9.7_007_BE_Bd7_Sweep1_ch21400_BW10_1RBlow_QPSK_EUTstanding

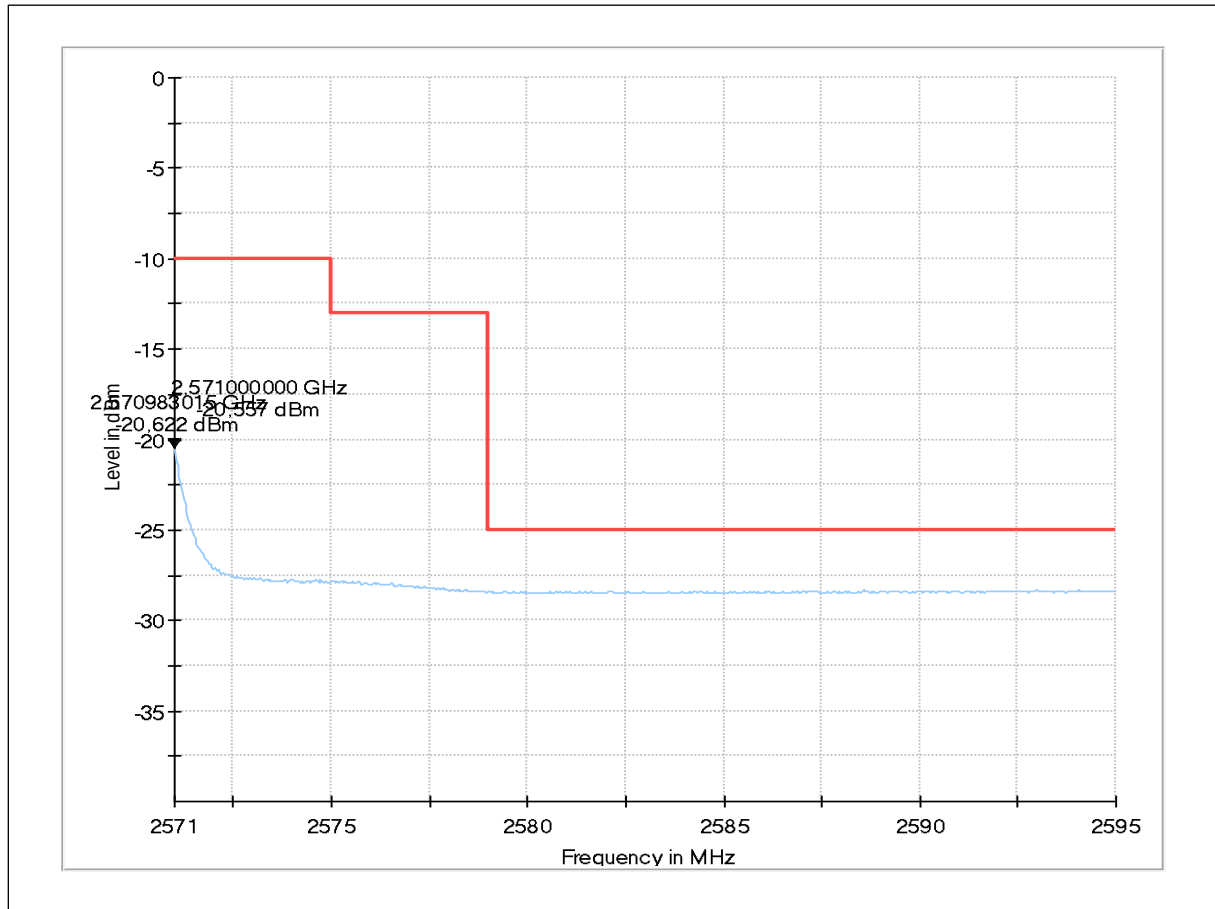


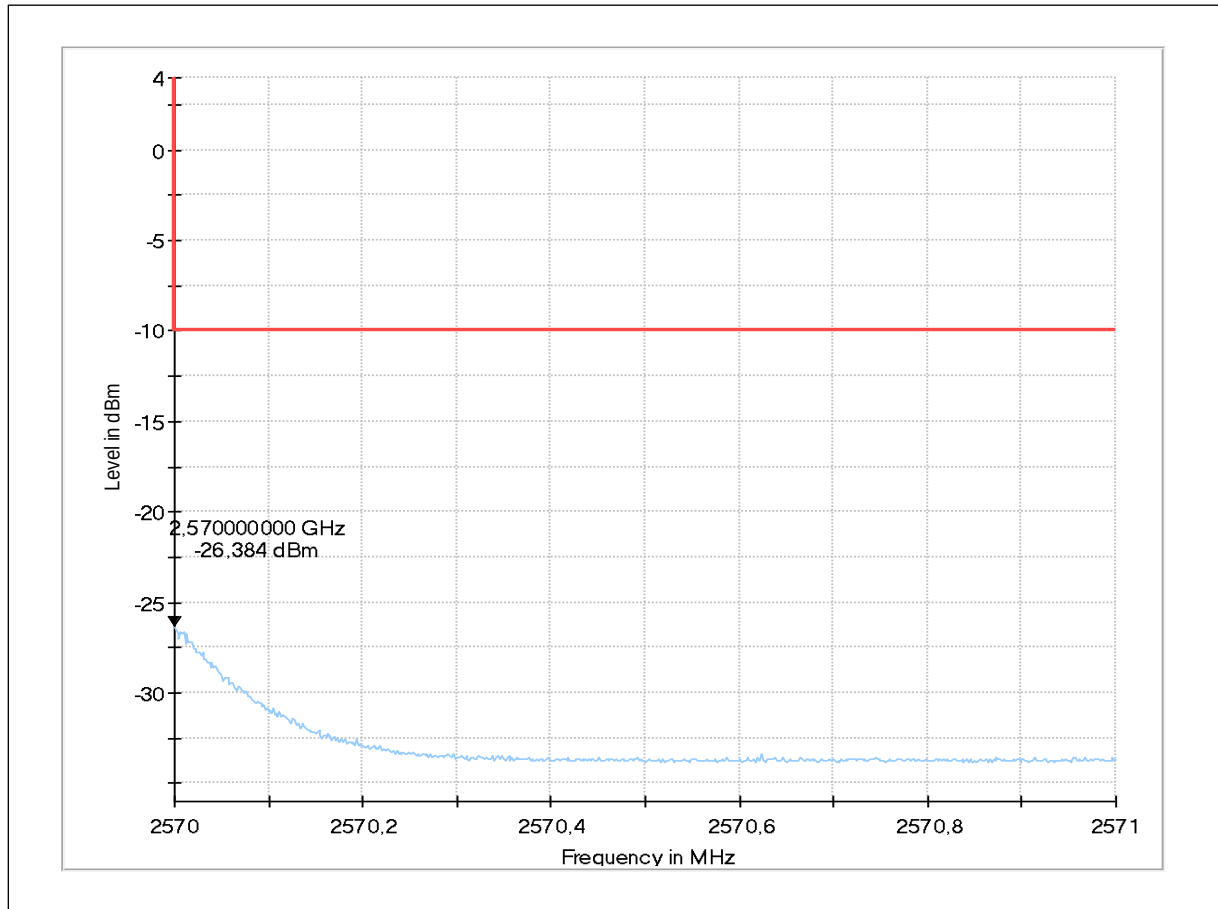
D9.7_008_BE_Bd7_Method2_Sweep2_ch21400_BW10_1RBlow_QPSK_EUTstanding



D9.7_013_BE_Bd7_Sweep1_ch21400_BW10_50RBs_QPSK_EUTlaying

D9.7_014_BE_Bd7_Sweep2_ch21400_BW10_50RBs_QPSK_EUTlaying



D9.7_015_BE_Bd7_Sweep1_ch21400_BW10_1RBlow_QPSK_EUTlaying**End Of Annex 1**