

Annex 1: Measurement diagrams to

TEST REPORT No.: 17-1-0172601T18a-C3

> According to: FCC Regulations Part 22, Part 24, Part 27

ISED-Regulations

RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 2, RSS-Gen Issue 4 RSS-130 Issue 1

for Robert Bosch Tool Corporation

MI2C001-001-US
With integrated SARA-R410M LTE Cat-M1 Module

FCC ID: TXTGSH27 ISED: 909H-TXTGSH27

Laboratory Accreditation



accredited according to DIN EN ISO/IEC 17025

CETECOM GmbH

Laboratory Radio Communications & Electromagnetic Compatibility Im Teelbruch 116 • 45219 Essen • Germany Registered in Essen, Germany, Reg. No.: HRB Essen 8984 Tel.: + 49 (0) 20 54 / 95 19-954 • Fax: + 49 (0) 20 54 / 95 19-964 E-mail: info@cetecom.com • Internet: www.cetecom.com



Table of contents

1. MEASUREMENT DIAGRAMS LTE-MODE	3
1.1. Power conducted	3
1.2. PAPR-Value (CCDF plots)	5
1.3. AC-Power Lines_Emissions Conducted(0,15 - 30 MHz)	17
1.4. Spurious emissions radiated (LTE Band 2)	21
1.5. Spurious emissions radiated (LTE Band 4)	23
1.6. Spurious emissions radiated (LTE Band 5)	
1.7. Spurious emissions radiated (LTE Band 12)	28
1.8. Radiated emissions – band-edge (LTE Band 2)	30
1.9. Radiated emissions – band-edge (LTE Band 4)	
1.10. Radiated emissions – band-edge (LTE Band 5)	38
1.11. Radiated emissions – band-edge (LTE Band 12)	42



1. Measurement diagrams LTE-mode

1.1. Power conducted

1.1.1. Power conducted LTE-Band 2

LTE-Band 2				Q	PSK-Modulati	on	16-	QAM-Modulatio	on				
channel bandwidth	ARFCN ch. no.	ARFCN- Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	max- modulation QPSK	max. modulation 16QAM	max. bandwidth	absolute max. value channels/bandwidths
			1 RB low	27,22	22,98	4,24	27,62	23,18	4,44				
	18607	1850,7	1 RB high	27,32	23	4,32	27,72	23,28	4,44	23	23,37		
	18007	1830,7	50% RB mid	26,47	22,69	3,78	27,05	23,29	3,76	23	23,37		
			100% RB	25,94	22,69	3,25	27,28	23,37	3,91				
			1 RB low	27,41	22,92	4,49	27,92	23,84	4,08				
1.4 MHz	18900	1880	1 RB high	27,5	22,97	4,53	27,96	23,8	4,16	22.97	23,84	24,99	24,99
1.4 (4)12	18300	1000	50% RB mid	26,68	22,84	3,84	27,22	23,43	3,79	22,51	23,04	24,55	24,55
			100% RB	26,06	22,78	3,28	27,57	23,33	4,24				
			1 RB low	29,55	24,77	4,78	27,99	23,31	4,68				
	19193	1909 3	1 RB high	29,58	24,99	4,59	28,11	23,32	4,79	24,99	23,32		
	13133	1909,3	50% RB mid	28,85	24,98	3,87	27,33	23,32	4,01	2.,55	23,32		
			100% RB	28,81	24,78	4,03	27,55	23,32	4,23				

1.1.2. Power conducted LTE-Band 4

LTE-Band 4				Q	PSK-Modulati	on	16-	QAM-Modulatio	on		M		
channel bandwidth	ARFCN ch. no.	ARFCN- Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	max- modulation QPSK	max. modualtion 16-QAM	max. channel	absolute max. value
			1 RB low	28,22	23,81	4,41	28,17	23,74	4,43				
	19957	4740.7	1 RB high	28,48	23,67	4,81	28,32	23,74	4,58	22.02	22.04		
	19957	1710,7	50% RB mid	27,37	23,93	3,44	27,54	23,74	3,8	23,93	23,81		
			100% RB	27,35	23,85	3,5	27,9	23,81	4,09				
			1 RB low	27,94	23,51	4,43	27,96	24,07	3,89				
1.4 MHz	20175	1732,5	1 RB high	28,09	23,58	4,51	28,07	24,01	4,06	23,58	24,07	24,07	24,070
1.4 WITZ	20175	1732,5	50% RB mid	27,34	23,51	3,83	27,28	23,55	3,73	23,36	24,07	24,07	24,070
			100% RB	26,73	23,44	3,29	27,73	23,46	4,27				
			1 RB low	27,95	23,54	4,41	27,93	23,66	4,27				
	20393	1754,3	1 RB high	28,14	23,63	4,51	28,06	23,65	4,41	23,63	23,69		
	20393	1734,3	50% RB mid	27,38	23,55	3,83	27,47	23,55	3,92	25,05	23,69		
			100% RB	27,04	23,55	3,49	27,78	23,69	4,09				



1.1.3. Power conducted LTE-Band 5

LTE-Band 5				q	PSK-Modulati	ion	16-	QAM-Modulatio	on		-		
channel bandwidth	ARFCN ch. no.	ARFCN- Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	max- modulation QPSK	max. modulation 16-QAM	max. channel	absolute max. value
			1 RB low	27,06	21,6	5,46	27,94	23,49	4,45				
	20407	0247	1 RB high	28,14	23,41	4,73	28	23,48	4,52	23,42	22.40		
	20407	824.7	50% RB mid	27,31	23,37	3,94	27,16	23,29	3,87	23,42	23,49		
			100% RB	26,99	23,42	3,57	27,74	23,41	4,33				
			1 RB low	28,16	23,42	4,74	28,17	23,56	4,61				
1.4 MHz	20525	836.5	1 RB high	28,15	23,42	4,73	28,07	23,56	4,51	23,45	23,80	23,80	23,80
1.4 IVID2	20323	830.5	50% RB mid	27,39	23,42	3,97	27,57	23,54	4,03	23,43	23,60	23,60	23,60
			100% RB	27,01	23,45	3,56	27,71	23,8	3,91				
			1 RB low	28,35	23,55	4,8	28,23	23,44	4,79				
	20643	20643 848.3 -	1 RB high	28,35	23,54	4,81	28,22	23,57	4,65	23,56	23,72		
	20043		50% RB mid	27,4	23,55	3,85	27,66	23,58	4,08	23,30	23,72		
İ			100% RB	27,1	23,56	3,54	27,86	23,72	4,14				

1.1.4. Power conducted LTE-Band 12

LTE-Band 12				QF	SK-Modula	tion	16-C	AM-Modula	tion	~	AM		
channel bandwidth	ARFCN ch. no.	ARFCN- Frequency [MHz]	Resource block allocation	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	Peak detektor [dBm]	RMS detektor [dBm]	PAR Faktor [dB]	max-modulation QPSK	max. modulation 16-QAM	max. channel	absolute max. value
			1 RB low	28,46	23,83	4,63	28,47	24,22	4,25				
	23017	699.7	1 RB high	28,49	23,85	4,64	28,48	24,19	4,29	23,86	24,22		
	23017	699.7	50% RB mid	27,76	23,86	3,90	27,73	23,81	3,92	23,00	24,22		
			100% RB	26,85	23,73	3,12	28,18	23,71	4,47				
			1 RB low	28,63	24,17	4,46	28,43	23,76	4,67				
1.4 MHz	23095	707.5	1 RB high	28,68	24,10	4,58	28,42	23,76	4,66	24,17	23,92	24,22	24,22
1.4 (VIII)2	23093	707.3	50% RB mid	27,73	23,83	3,90	27,94	23,82	4,12	24,17	23,32	24,22	24,22
			100% RB	27,28	23,96	3,32	28,00	23,92	4,08				
			1 RB low	28,44	23,73	4,71	28,32	23,73	4,59				
	23173	715.3	1 RB high	28,45	23,89	4,56	28,35	23,63	4,72	23,89	23,96		
	231/3	/15.5	50% RB mid	27,54	23,73	3,81	27,69	23,72	3,97	23,09	23,90		
			100% RB	27,16	23,75	3,41	27,92	23,96	3,96				



1.2. PAPR-Value (CCDF plots)

1.2.1. LTE Band 2

Worst-Case of each maximum Peak power value was tested with the CCDF method 1.2.1.1. 1.4MHz signal bandwidth



Diagram: Channel_18607_1RB high_Modulation_QPSK



Diagram: Channel_18607_100%RB_Modulation_16QAM





Diagram: Channel_18900_1RB high_Modulation_QPSK



Diagram: Channel_18900_1RB Low_Modulation_16QAM





Diagram: Channel_19193_1RB high_Modulation_QPSK



Diagram: Channel_19193_1RB high_Modulation_16QAM



1.2.2. LTE Band 4

Worst-Case of each maximum Peak power value was tested with the CCDF method 1.2.2.1. 1.4MHz signal bandwidth



Diagram: Channel_19957_50%RB_Modulation_QPSK

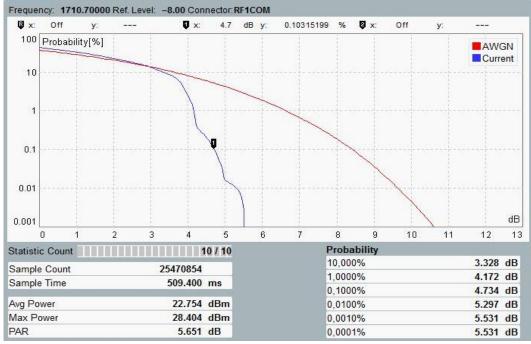


Diagram: Channel_19957_100%RB_Modulation_16QAM





Diagram: Channel_20175_1RB high_Modulation_QPSK

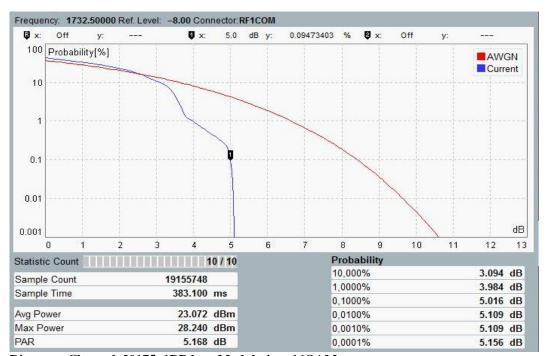


Diagram: Channel_20175_1RB low_Modulation_16QAM





Diagram: Channel_20393_1RB high_Modulation_QPSK



Diagram: Channel_20393_100%RB_Modulation_16QAM



1.2.3. LTE Band 5

Worst-Case of each maximum Peak power value was tested with the CCDF method 1.2.3.1. 1.4MHz signal bandwidth



Diagram: Channel_20407_100%RB_Modulation_QPSK



Diagram: Channel_20407_1RB Low_Modulation_16QAM





Diagram: Channel_20525_100% RB_Modulation_QPSK



Diagram: Channel_20525_100%RB_Modulation_16QAM





Diagram: Channel_20643_100%RB_Modulation_QPSK



Diagram: Channel_20643_100%RB_Modulation_16QAM



1.2.4. LTE Band 12

Worst-Case of each maximum Peak power value was tested with the CCDF method 1.2.4.1. 1.4MHz signal bandwidth



Diagram: Channel_23017_50%RB_Modulation_QPSK



Diagram: Channel_23017_1RB low_Modulation_16QAM





Diagram: Channel_23095_1RB low_Modulation_QPSK

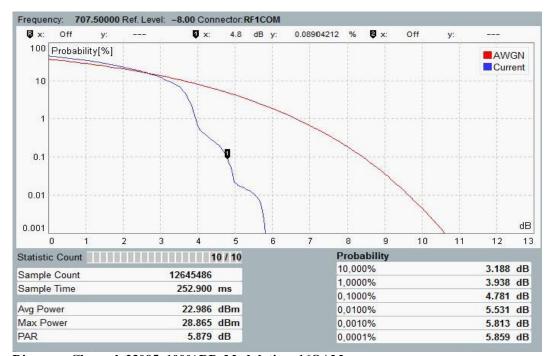


Diagram: Channel_23095_100%RB_Modulation_16QAM





Diagram: Channel_23173_1RB high_Modulation_QPSK



Diagram: Channel_23173_100%RB_Modulation_16QAM



1.3. AC-Power Lines_Emissions Conducted(0,15 - 30 MHz)

1.01

Common Information

Test Description: Conducted Voltage Measurement Class B
Test Site & Location: Conducted Emission, CETECOM GmbH Essen

Test Software: R&S EMC32 v9.15 Test Specification: FCC 15.107, FCC 15.207

Operating Mode: LTE_band2_19193_1RB_high,bw_1,4_QPSK

Measured on line: N/L1

Diagram details: Shows the peak values as a sum of measured ports in maxhold mode

Environmental Conditions: Humidity: 40%rH; Temperature: 22°C

Operator: Ah

EUT Information

Manufacturer: Robert Bosch Power Tools GmbH Model: SARA-R410M LTE Cat-M1 Module

 EUT:
 MI2C001-001-US

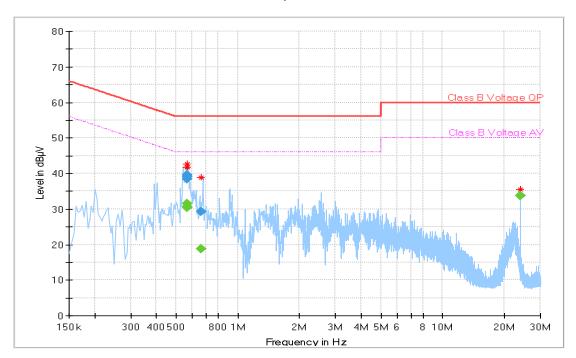
 HW version:
 MI2C001-001-US #200

 SW version:
 Doberman-intern-US-1.0.0

 Serial number:
 IMEI-No: 352753090048834

Power Supply: 120V AC

Full Spectrum



Frequency (MHz)	QuasiP eak (dBµV)	CAvera ge (dBµV)	Limit (dBµV)
0.562656		31.61	46.00
0.562656	39.63		56.00
0.563125	38.54		56.00
0.563125		30.47	46.00
0.565469		30.65	46.00
0.565469	39.10		56.00
0.660938		18.78	46.00
0.660938	29.34		56.00
23.999063	33.68		60.00
23.999063		33.71	50.00



1.02

Common Information

Test Description: Conducted Voltage Measurement Class B
Test Site & Location: Conducted Emission, CETECOM GmbH Essen

Test Software: R&S EMC32 v9.15
Test Specification: FCC 15.107, FCC 15.207

Operating Mode: LTE_band4_20175_1RB_low,bw_1,4_16QAM

Measured on line: N/L1

Diagram details: Shows the peak values as a sum of measured ports in maxhold mode

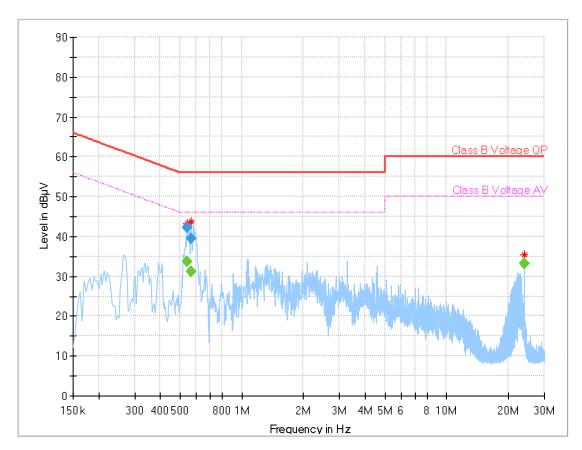
Environmental Conditions: Humidity: 40%rH; Temperature: 22°C

Operator: A

EUT Information

Please see Diagram 1.01

Full Spectrum



Frequency (MHz)	QuasiP eak (dBµV)	CAvera ge (dBµV)	Limit (dBµV)
0.543125		33.68	46.00
0.543125	42.23		56.00
0.565469	39.48		56.00
0.565469		31.09	46.00
24.004063	33.10		60.00
24.004063	-	33.13	50.00



1.03

Common Information

Test Description: Conducted Voltage Measurement Class B
Test Site & Location: Conducted Emission, CETECOM GmbH Essen

Test Software: R&S EMC32 v9.15
Test Specification: FCC 15.107, FCC 15.207

Operating Mode: LTE_band5_20525_100%RB_bw_1,4_16QAM

Measured on line: N/L1

Diagram details: Shows the peak values as a sum of measured ports in maxhold mode

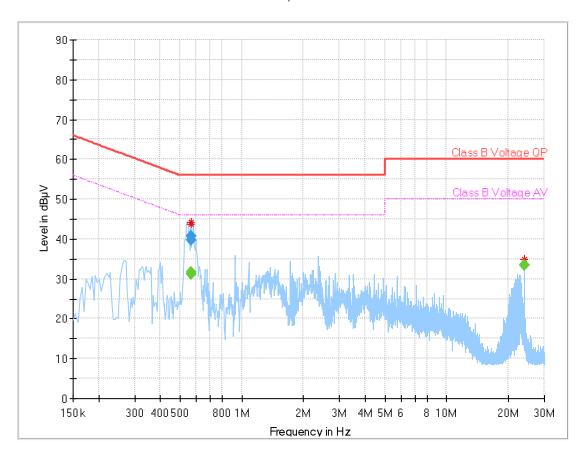
Environmental Conditions: Humidity: 40%rH; Temperature: 22°C

Operator:

EUT Information

Please see Diagram 1.01

Full Spectrum



Frequency (MHz)	QuasiP eak (dBµV)	CAvera ge (dBµV)	Limit (dBµV)
0.563125		31.09	46.00
0.563125	39.61		56.00
0.567188		31.63	46.00
0.567188	40.77		56.00
24.004063		33.37	50.00
24.004063	33.32	-	60.00



1.04

Common Information

Test Description: Conducted Voltage Measurement Class B
Test Site & Location: Conducted Emission, CETECOM GmbH Essen

Test Software: R&S EMC32 v9.15
Test Specification: FCC 15.107, FCC 15.207

Operating Mode: LTE_band12_23017_1RB_Low_bw_1,4_16QAM

Measured on line: N/L

Diagram details: Shows the peak values as a sum of measured ports in maxhold mode

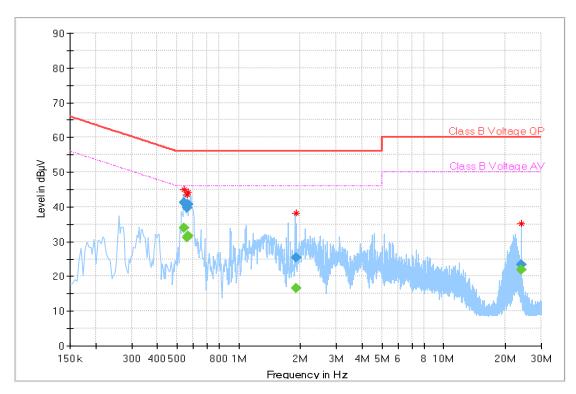
Environmental Conditions: Humidity: 40%rH; Temperature: 22°C

Operator: Al

EUT Information

Please see Diagram 1.01

Full Spectrum



Frequency (MHz)	QuasiP eak (dBµV)	CAvera ge (dBµV)	Limit (dBµV)
0.542031		33.87	46.00
0.542031	41.23		56.00
0.562188		31.18	46.00
0.562188	39.72	-	56.00
0.567656	40.61		56.00
0.567656		31.67	46.00
1.899063	25.41		56.00
1.899063		16.48	46.00
24.004063		21.99	50.00
24.004063	23.44		60.00



1.4. Spurious emissions radiated (LTE Band 2)

1.4.1. Magnetic field strength radiated (LTE Band 2)

2.01

Common Information

Test description: Magnetic Field Strength Measurement related to 30/300 m distance Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance

Version of Testsoftware: EMC32 V9.25.0

Distance correction: used accord. table, pls. see test report Technical Data:

Please see page 2 for detailed data of measurement setup

height 1.00 m, parallel and 90° to EUT polarisation Rec. antenna (pre-scan): Test specification: FCC 15.205 § 15.209; RSS-Gen: Issue 4

SLo

 $LTE_band2_19193_1RB_high,bw_1,4_QPSK$

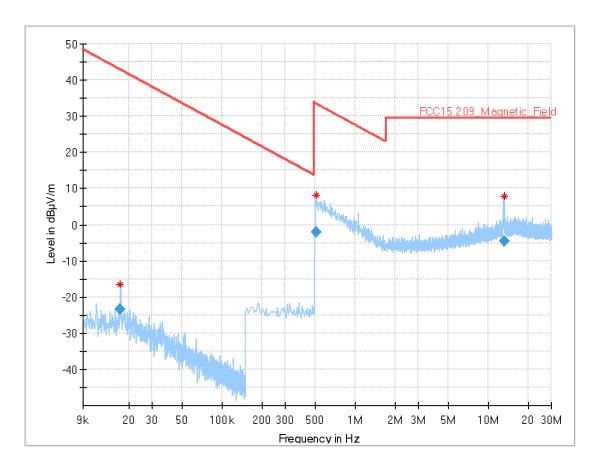
Operating conditions: Humidity: 48%rH; Temperature: 20°C

EUT Information

Operation Mode

Operator:

Please see Diagram 1.01



Frequency (MHz)	RMS (dBµV/m)	Limit (dBµV/m)	Margi n (dB)	Meas. Time (ms)	Bandwidt h (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Corr. (dB)
0.017160	-23.37	42.91	66.28	1000.0	0.200	100.0	V	335.0	-64.5
0.510000	-2.02	33.45	35.47	1000.0	10.000	100.0	V	0.0	-28.8
13.194000	-4.65	29.54	34.19	1000.0	10.000	100.0	Н	267.0	-12.0



1.4.2. Emissions above 30MHz (LTE Band 2)

8.01

Common Information

Test Description:
Test Site:
Test Standard:
Antenna polarisation:

Measurement software version **Operation mode:**

Operation mode:
Operator Name:

Radiated emission

Fully-Anechoic Room FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3

vertical / horizontal EMC32 V9.26.0

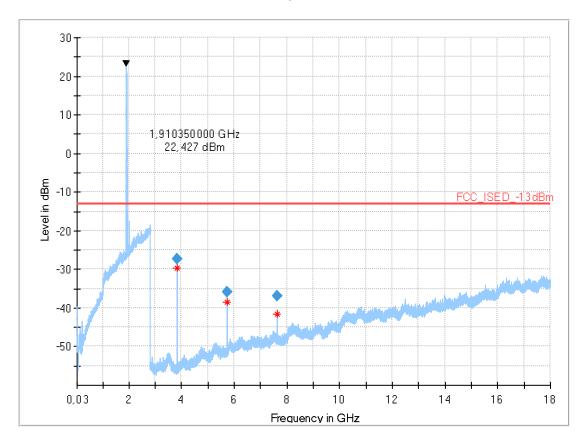
LTE Band 2, channel no=19193 BW=1.4 RB=1 high Modulation=QPSK

DLe

EUT Information

Please see Diagram 1.01

Full Spectrum



Final_Result

Frequenc (MHz)	су	RMS (dBm)	Limit (dBm)	Margi n (dB)	Meas Time	Bandwidt h (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Elevatio n (deg)	Corr. (dB)
3819.530	000	-27.19	-13.00	14.19	100.0	1000.000	154.0	Н	90.0	90.0	-95.1
5729.291	667	-35.94	-13.00	22.94	100.0	1000.000	154.0	V	305.0	0.0	-89.4
7638.865	000	-36.98	-13.00	23.98	100.0	1000.000	154.0	Н	240.0	90.0	-84.0

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

Frequency (MHz)	Comment
3819.530000	13:03:32 - 18.04.2018
5729.291667	13:00:00 - 18.04.2018
7638.865000	13:06:37 - 18.04.2018



1.5. Spurious emissions radiated (LTE Band 4)

1.5.1. Magnetic field strength radiated (LTE Band 4)

2.02

Common Information

Test description: Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance

Version of Testsoftware: EMC32 V9.25.0

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 specification: FCC 15.205 § 15.209; RSS-Gen: Issue 4

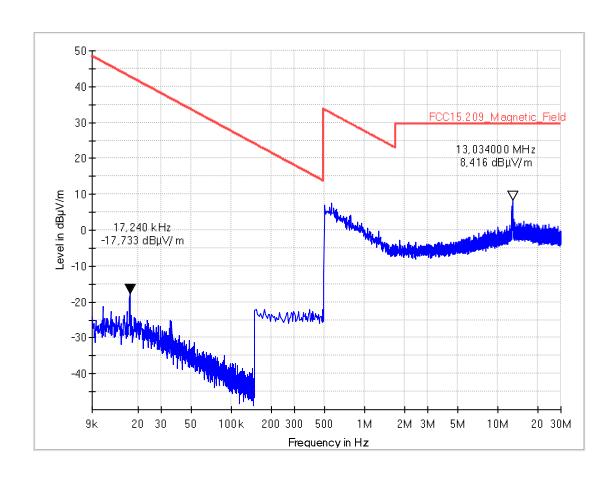
Operator:

Operation Mode LTE_band4_bw:.1,4MHz, ch:.20175, 16QAM, 1RB Low

Operating conditions: Humidity: 48%rH; Temperature: 20°C

EUT Information

Please see Diagram 1.01





1.5.2. Emissions above 30MHz (LTE Band 4)

8.02a

Common Information

Test Description: Radiated emission
Test Site: Radiated emission
Fully-Anechoic Room

Test Standard: FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3

Antenna polarisation: vertical / horizontal Measurement software version EMC32 V9.26.0

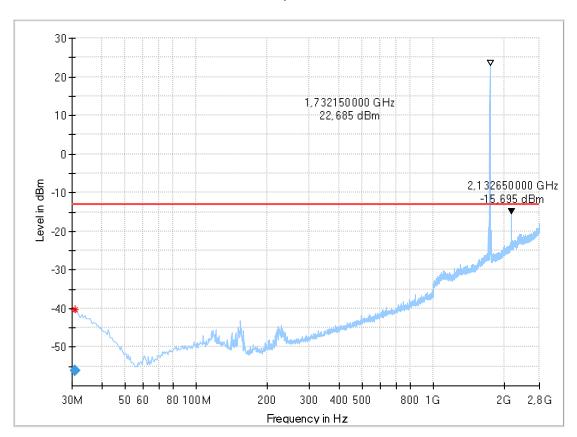
Operation mode: LTE Band 4, channel no 20175 BW=1,4 RB=1 low Modulation=16 QAM

Operator Name: S

EUT Information

Please see Diagram 1.01

Full Spectrum



-											
	Frequency	RMS	Limit	Margi	Meas	Bandwidt	Heigh	Pol	Azimut	Elevatio	Corr.
	(MHz)	(dBm)	(dBm)	n		h	t		h	n	(dB)
				(dB)	Time	(kHz)	(cm)		(deg)	(deg)	
ĺ	30.887500	-55.99	-13.00	42.99	100.0	1000.000	155.0	V	161.0	90.0	-76.8



8.02b

Common Information

Test Description: Radiated emission Test Site: Fully-Anechoic Room

Test Standard: FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3

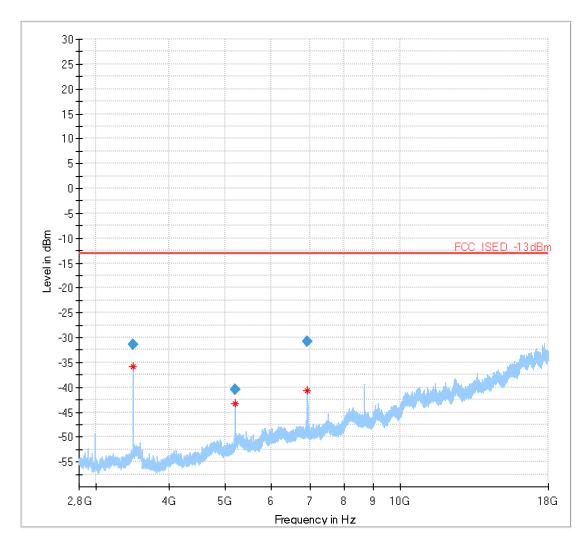
Antenna polarisation: vertical / horizontal Measurement software version EMC32 V9.26.0

Operation mode: LTE Band 4, channel no 20175 BW=1,4 RB=1 low Modulation=16 QAM Operator Name:

EUT Information

Please see Diagram 1.01

Full Spectrum



	Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margi n (dB)	Meas Time	Bandwidt h (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Elevatio n (deg)	Corr. (dB)
;	5196.21333 3	-40.51	-13.00	27.51	100.0	1000.000	154.0	Н	22.0	0.0	-89.5
(6928.12166 7	-30.76	-13.00	17.76	100.0	1000.000	154.0	V	45.0	0.0	-85.0
;	3465.83000 0	-31.44	-13.00	18.44	100.0	1000.000	154.0	٧	277.0	0.0	-94.1



1.6. Spurious emissions radiated (LTE Band 5)

1.6.1. Magnetic field strength radiated (LTE Band 5)

2.03

Common Information

Test description: Magnetic Field Strength Measurement related to 30/300 m distance

Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance

Version of Testsoftware: EMC32 V9.25.0

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: bypa

Test specification: FCC 15.205 § 15.209; RSS-Gen: Issue 4

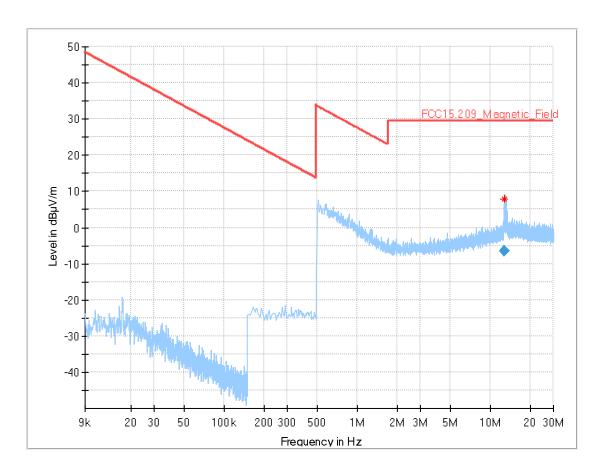
Operator: SLo

Operation Mode LTE_band5_bw:.1,4MHz, ch:.20525, 16QAM, 100%RB

Operating conditions: Humidity: 48%rH; Temperature: 20°C

EUT Information

Please see Diagram 1.01



Frequency (MHz)	RMS (dBµV/m)	Limit (dBµV/m)	Margi n (dB)	Meas. Time (ms)	Bandwidt h (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Corr. (dB)
12.886000	-6.56	29.54	36.10	1000.0	10.000	100.0	V	97.0	-12.1



1.6.2. Emissions above 30MHz (LTE Band 5)

8.03

Common Information

Test Description: Radiated Spurious Emissions LTE Band 5

Test Site Location: CETECOM GmbH Essen
Test Site: Fully Anechoic Room (FAR)

Test Standard: FCC Part 22

Operating Mode: UE allocated channel 20425; BW 1,4; RB 100%; Modulation: 16-QAM

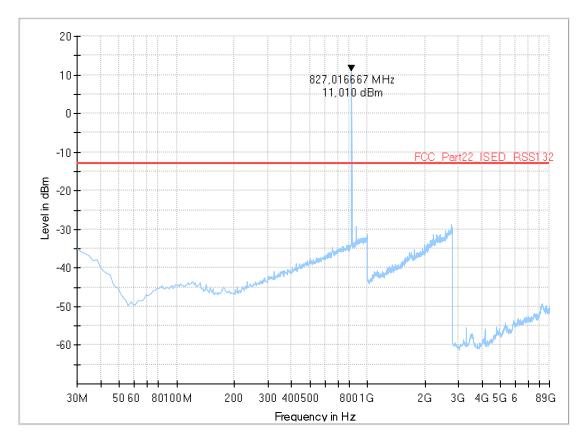
Environmental Conditions: Humidity: 48%rH; Temperature: 20°C

Operator: SRa

EUT Information

Please see Diagram 1.01

Full Spectrum





1.7. Spurious emissions radiated (LTE Band 12)

1.7.1. Magnetic field strength radiated (LTE Band 12)

2.04

Common Information

Test description: Magnetic Field Strength Measurement related to 30/300 m distance
Test site and distance: Ref.-Nr. 441 Semi Anechoic Room (SAR) with 3 m measurement distance

Version of Testsoftware: EMC32 V9.25.0

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 specification: FCC 15.205 § 15.209; RSS-Gen: Issue 4

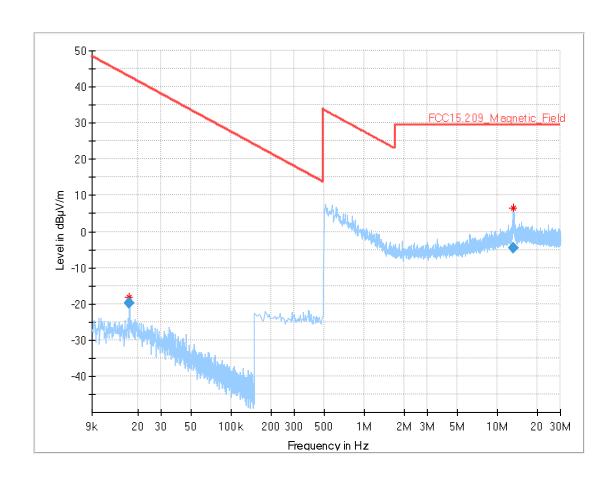
Operator: SLo

Operation Mode LTE_band12_bw:.1,4MHz, ch:.23017, 16QAM, 1RBLow

Operating conditions: Humidity: 48%rH; Temperature: 20°C

EUT Information

Please see Diagram 1.01



Frequency (MHz)	RMS (dBµV/m)	Limit (dBµV/m)	Margi n (dB)	Meas. Time (ms)	Bandwidt h (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Corr. (dB)
0.017160	-19.80	42.91	62.71	1000.0	0.200	100.0	Н	270.0	-64.5
13.390000	-4.50	29.54	34.04	1000.0	10.000	100.0	Н	222.0	-11.9



1.7.2. Emissions above 30MHz (LTE Band 12)

8.04

Common Information

Test Description: Radiated emission Test Site: Fully-Anechoic Room

Test Standard: FCC FCC Part 27.53(h) AWS emission limits / RSS-139, Issue 3

Antenna polarisation: vertical / horizontal Measurement software version EMC32 V9.26.0

UE allocated channel 23017/ BW:1.4MHz/ 1RB low/ Position16QAM Operation mode:

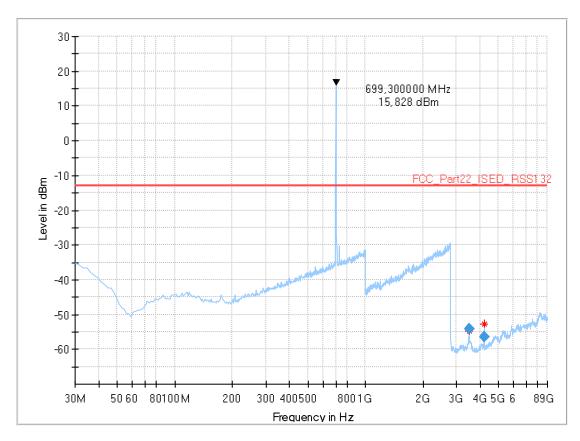
Environmental Conditions: Humidity: 48%rH; Temperature: 20°C HEI

Operator Name:

EUT Information

Please see Diagram 1.01

Full Spectrum



_	quency MHz)	MaxPea k (dBm)	Limit (dBm)	Margi n (dB)	Meas Time	Bandwidt h (kHz)	Heigh t (cm)	Pol	Azimut h (deg)	Elevatio n (deg)	Corr. (dB)
349	6.333333	-54.05	-13.00	41.05	100.0	100.000	154.0	V	177.0	90.0	-93.5
420	1.000000	-56.51	-13.00	43.51	100.0	100.000	154.0	Н	274.0	0.0	-93.4



1.8. Radiated emissions – band-edge (LTE Band 2)

1.8.1. Low band-edge

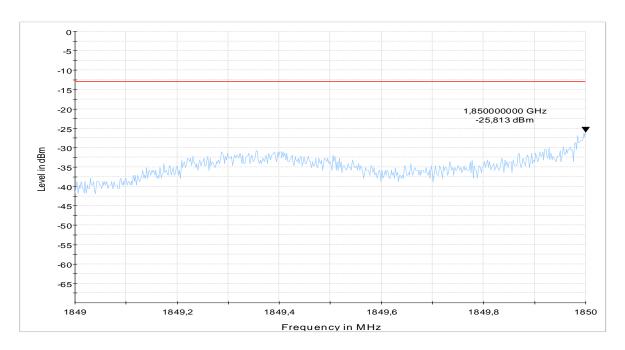


Diagram: 9.01_Ch18607_BW1.4_1RB_Low_QPSK

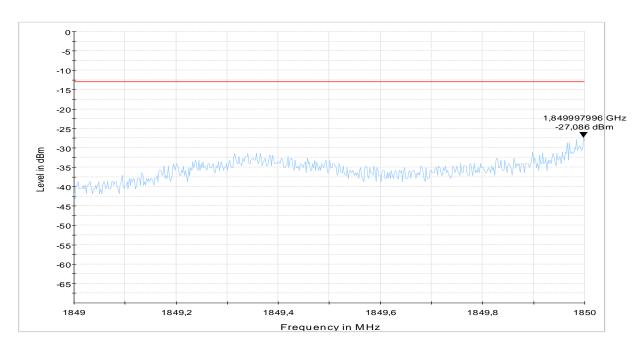


Diagram: 9.02_Ch18607_BW1.4_1RB_Low_16QAM



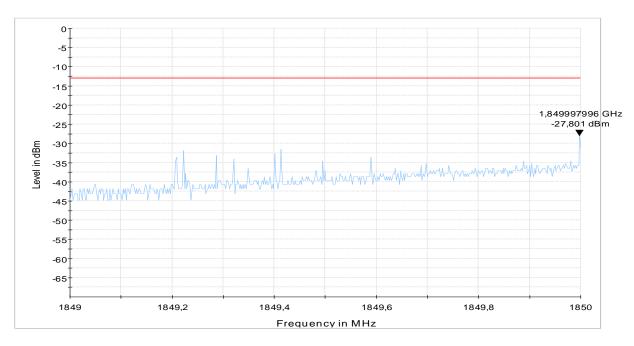


Diagram: 9.03_Ch18607_BW1.4_1RB_High_QPSK

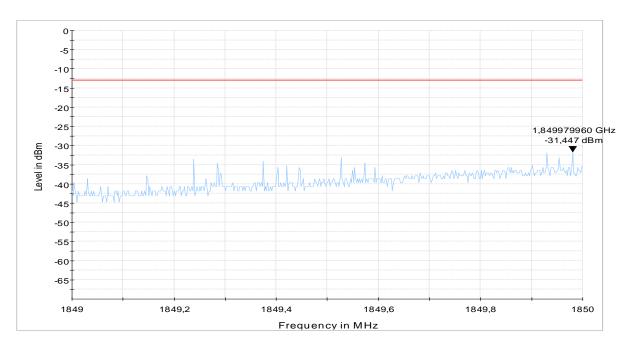


Diagram: 9.04_Ch18607_BW1.4_1RB_High_16QAM



1.8.2. High band-edge

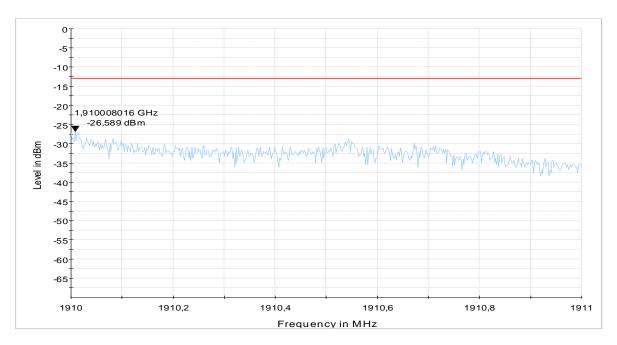


Diagram: 9.05_Ch19193_BW1.4_1RB_Low_QPSK

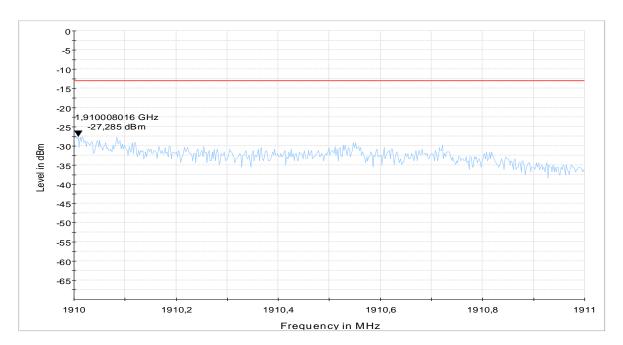


Diagram: 9.06_Ch19193_BW1.4_1RB_Low_16QAM



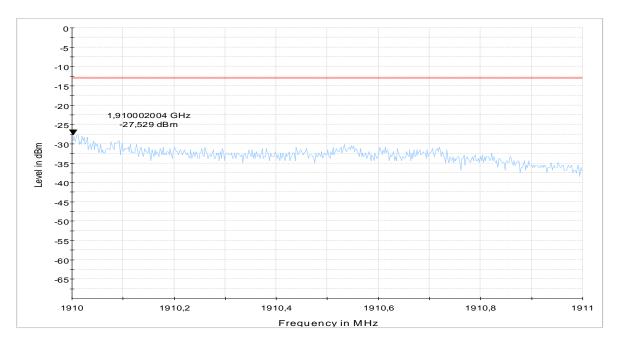


Diagram: 9.07_Ch19193_BW1.4_1RB_High_QPSK

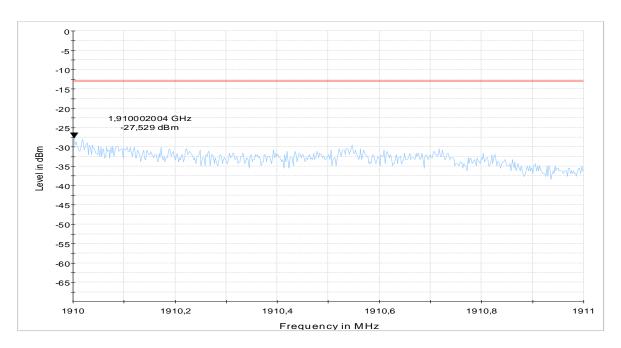


Diagram: 9.08_Ch19193_BW1.4_1RB_High_16QAM



1.9. Radiated emissions – band-edge (LTE Band 4)

1.9.1. Low Band-Edge

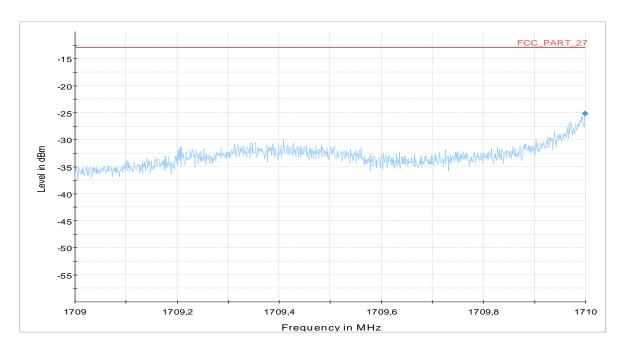


Diagram: 9.09_Ch19957_BW1.4_1RB_Low_QPSK

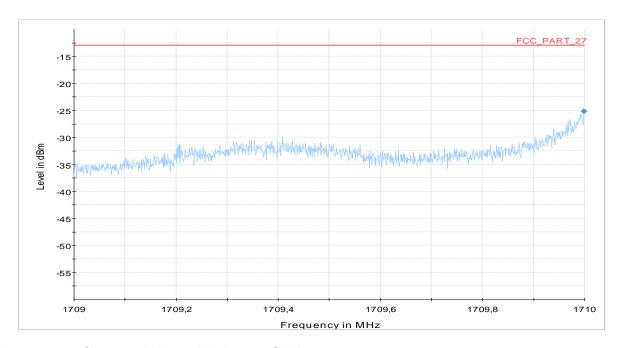


Diagram: 9.10_Ch19957_BW1.4_1RB_Low_16QAM



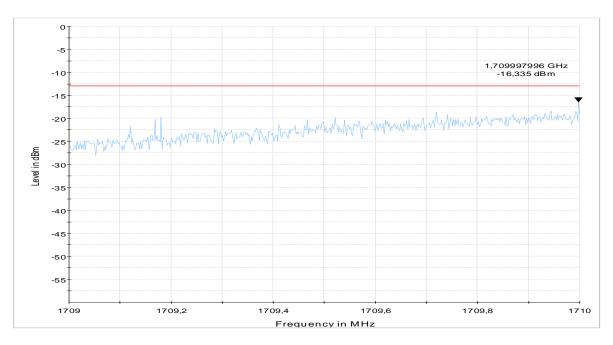


Diagram: 9.11_Ch19957_BW1.4_1RB_High_QPSK

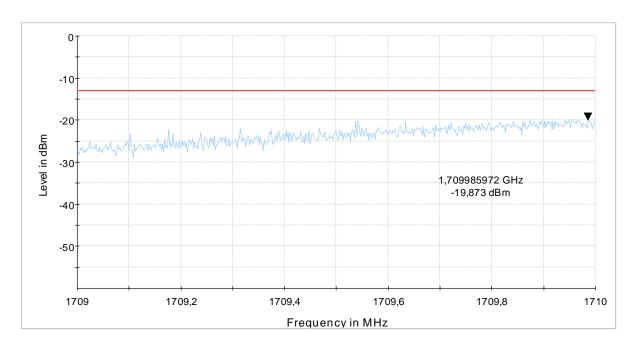


Diagram: 9.12_Ch19957_BW1.4_1RB_High_16QAM



1.9.2. High Band-Edge

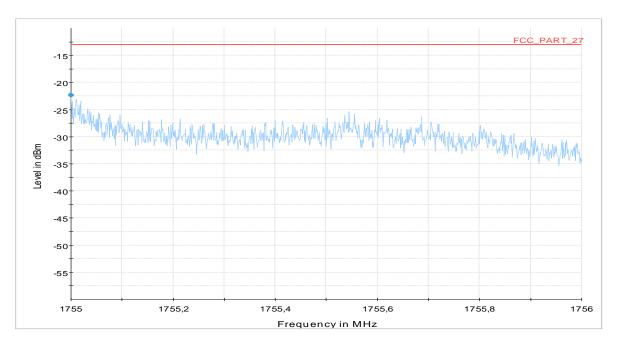


Diagram: 9.13_Ch20393_BW1.4_1RB_Low_QPSK

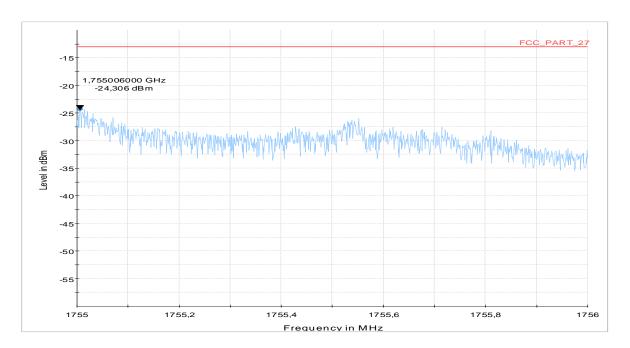


Diagram: 9.14_Ch20393_BW1.4_1RB_Low_16QAM



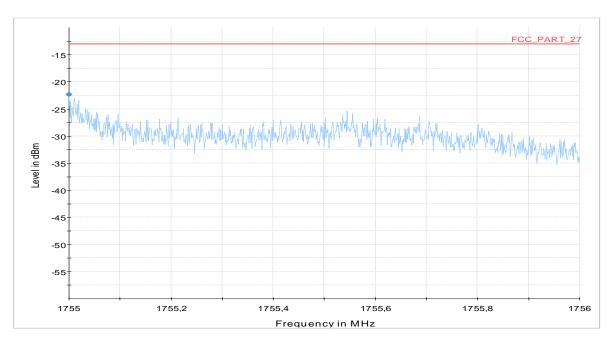


Diagram: 9.15_Ch20393_BW1.4_1RB_High_QPSK

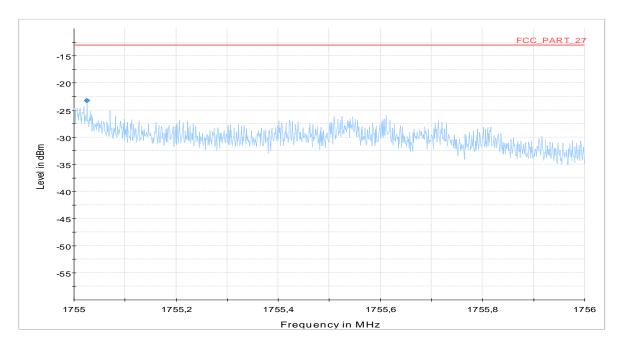


Diagram: 9.16_Ch20393_BW1.4_1RB_High_16QAM



1.10. Radiated emissions – band-edge (LTE Band 5)

1.10.1. Low Band-Edge

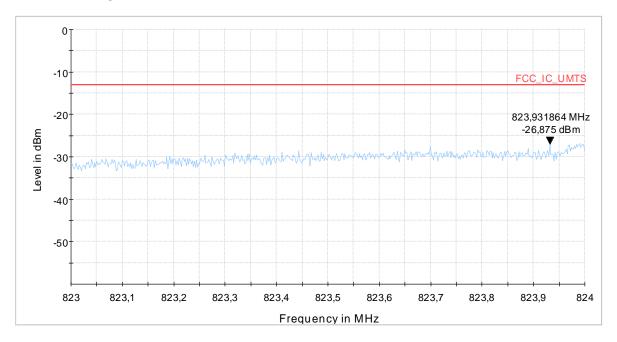


Diagram: 9.17_Ch20407_BW1.4_1RB_Low_QPSK

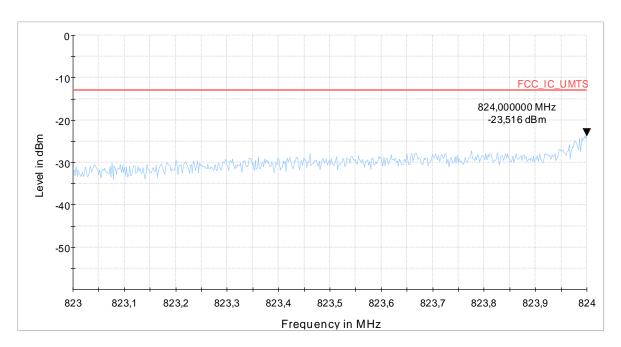


Diagram: 9.18_Ch20407_BW1.4_1RB_Low_16QAM



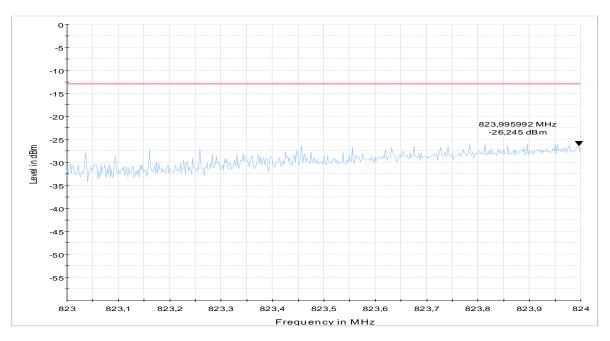


Diagram: 9.19_Ch20407_BW1.4_1RB_High_QPSK

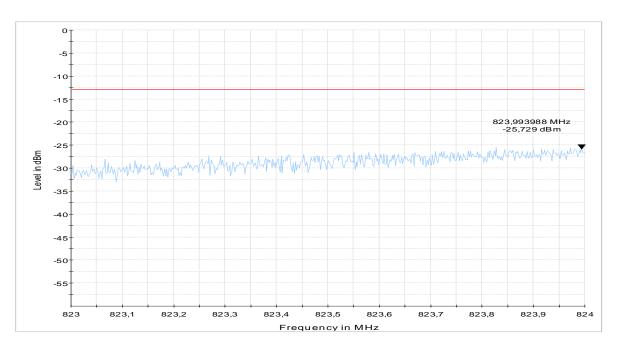


Diagram: 9.20_Ch20407_BW1.4_1RB_High_16QAM



1.10.2. High Band-Edge

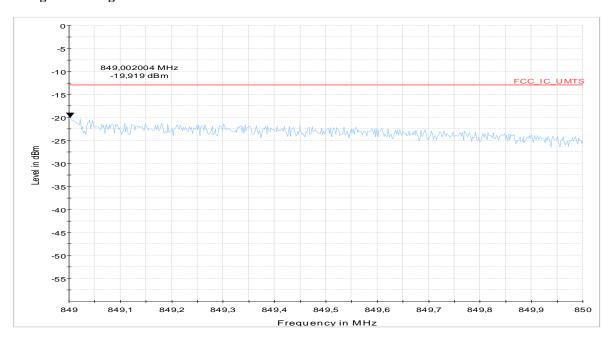


Diagram: 9.21_Ch20643_BW1.4_1RB_Low_QPSK

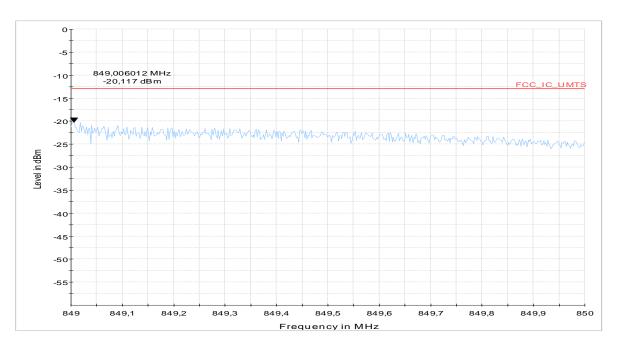


Diagram: 9.22_Ch20643_BW1.4_1RB_Low_16QAM



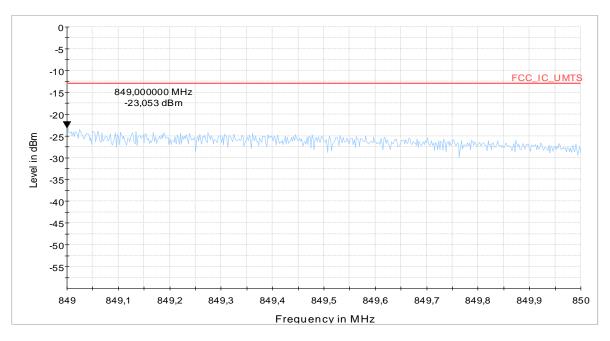


Diagram: 9.23_Ch20643_BW1.4_1RB_High_QPSK

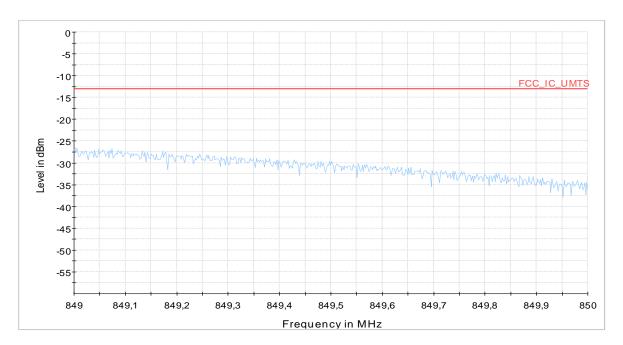


Diagram: 9.24_Ch20643_BW1.4_1RB_High_16QAM



1.11. Radiated emissions – band-edge (LTE Band 12)

1.11.1. Low Band-Edge

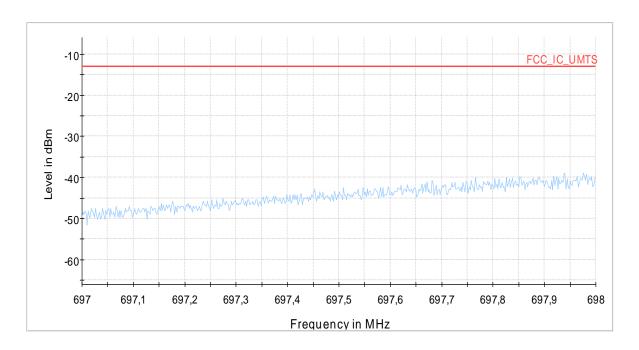


Diagram: 9.25_Ch-23017_BW1,4_1RB_Low_QPSK

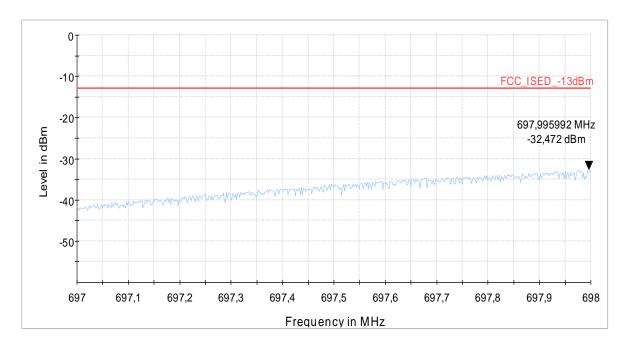


Diagram: 9.26_Ch-23017_BW1,4_1RB_Low_16QAM



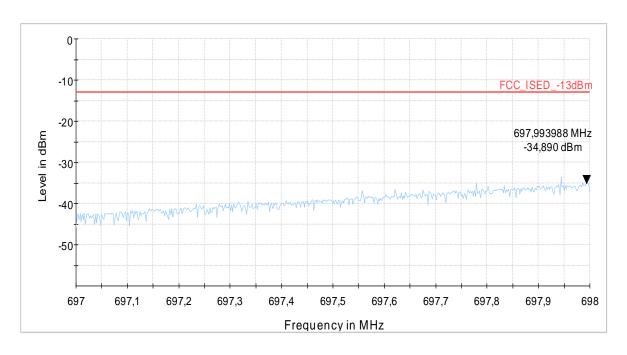


Diagram: 9.27_Ch-23017_BW1,4_1RB_High_QPSK

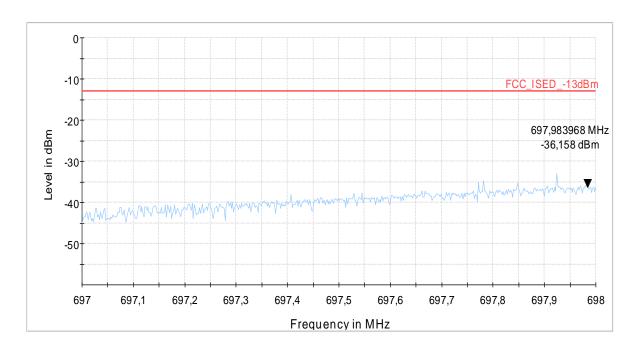


Diagram: 9.28_Ch-23017_BW1,4_1RB_High_16QAM



1.11.2. High Band-Edge

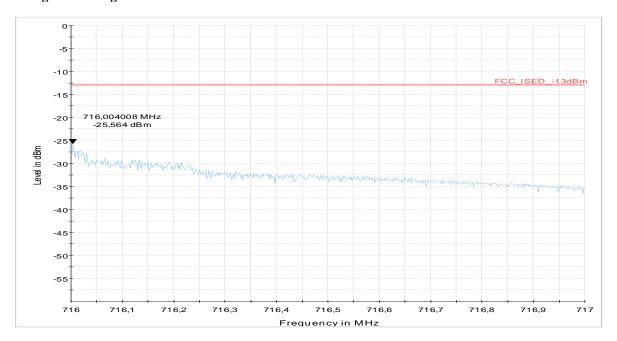


Diagram: 9.29_Ch-23173_BW1,4_1RB_Low_QPSK

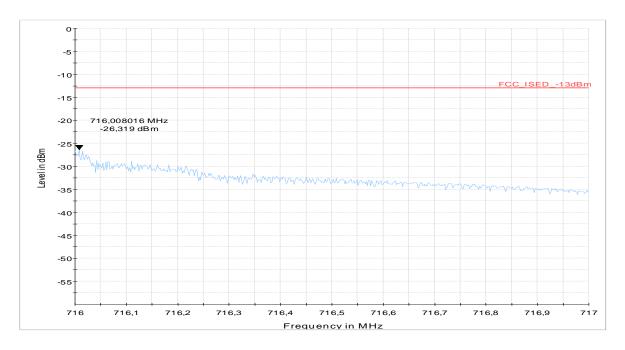


Diagram: 9.30_Ch-23173_BW1,4_1RB_Low_16QAM



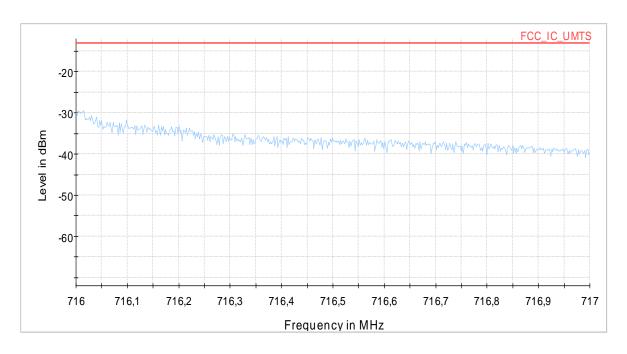


Diagram: 9.31_Ch-23173_BW1,4_1RB_High_QPSK

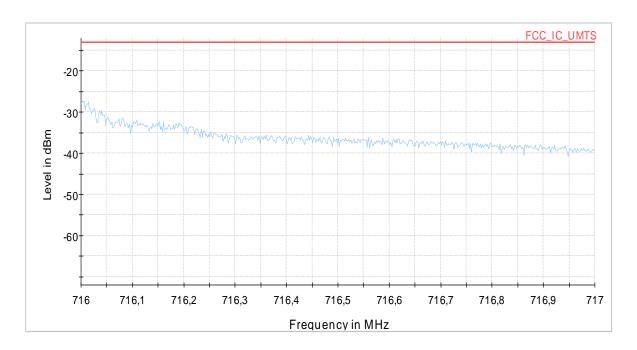


Diagram: 9.32_Ch-23173_BW1,4_1RB_High_16QAM

End Of Report