

Annex 1: Measurement diagrams to
PARTIAL TEST REPORT
No.: 6-0744/15-3-1a

According to:
FCC Regulations:
Part 22, Part 24, Part27

IC-Regulations:
RSS-130, Issue 1, RSS-132 Issue 3
RSS-133 Issue 6, RSS-139 Issue 3
RSS-Gen Issue 4

for

Gemalto M2M GmbH

Wireless Module ALS3-US R3
FCC-ID: QIPALS3-USR3
IC: 7830A-ALS3USR3
PMN: Cinterion ALS3-US R3, HVIN: ALS3-US R3

Laboratory Accreditation and Listings			
 DAkkS Deutsche Akkreditierungsstelle D-PL-12047-01-01	 FEDERAL COMMUNICATIONS FC COMMISSION • USA • MRA US-EU 0003	 Industry Canada Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	 Voluntary Controls for Electromagnetic Emissions Reg. No.: R-2666 C-2914, T-1967, G-301
 WiFi ALLIANCE AUTHORIZED RF LABORATORY	 CTIA Authorized Test Lab LAB CODE 20011130-00		
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			

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1. Measurement diagrams

1.1. Spurious emissions radiated (LTE Band V)

8.01_CH20525_BW-10MHz_QPSK

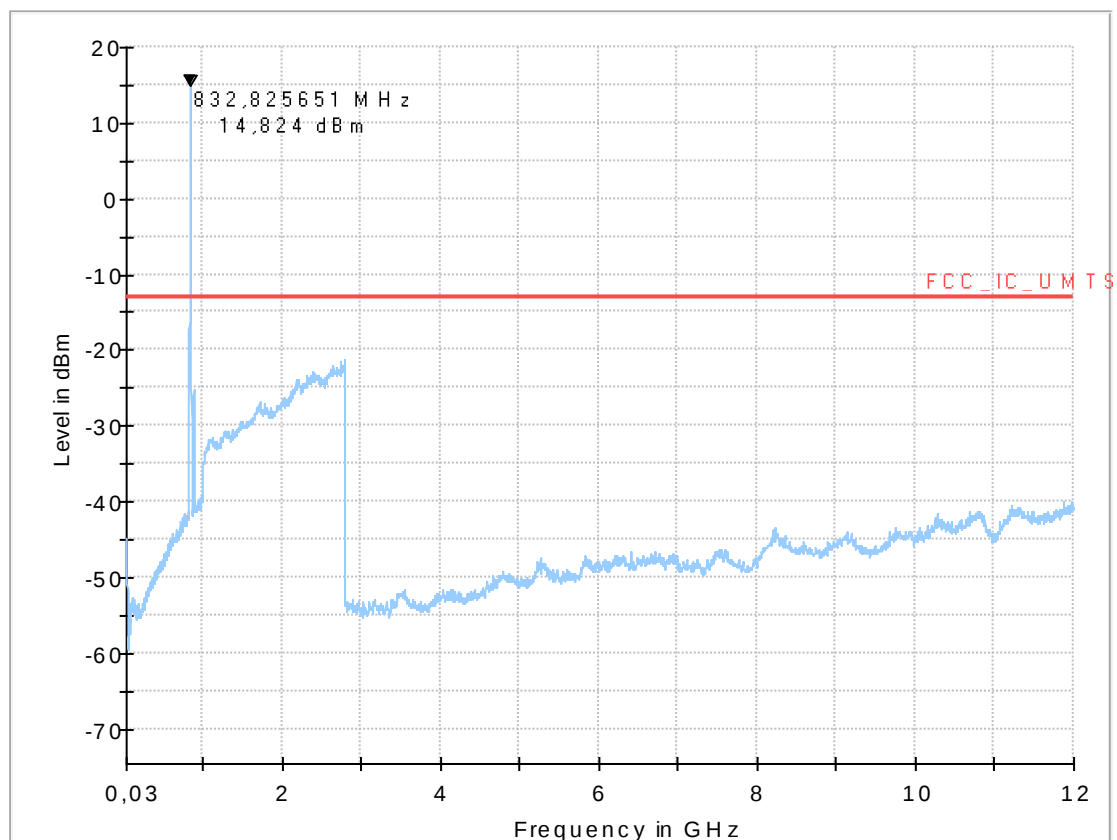
Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a) / RSS-132, Issue 3
Operating Mode:	UE allocated channel 20525/4182/4233 (fc = 836.5 MHz), BW=10MHz, RB=50
Environmental Conditions:	Humidity: 38%rH; Temperature: 24°C
Operator:	AHO

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
-----	-----
HW	Rev. 2.3
Version:	Config C01
SW Version:	Rev.03.004
Serial Number:	004401-08-1453421
Connected Interfaces:	Audio, USB, RF
Power Supply:	12V DC
Comments:	--

Full Spectrum



8.02_CH20525_BW-10MHz_16QAM

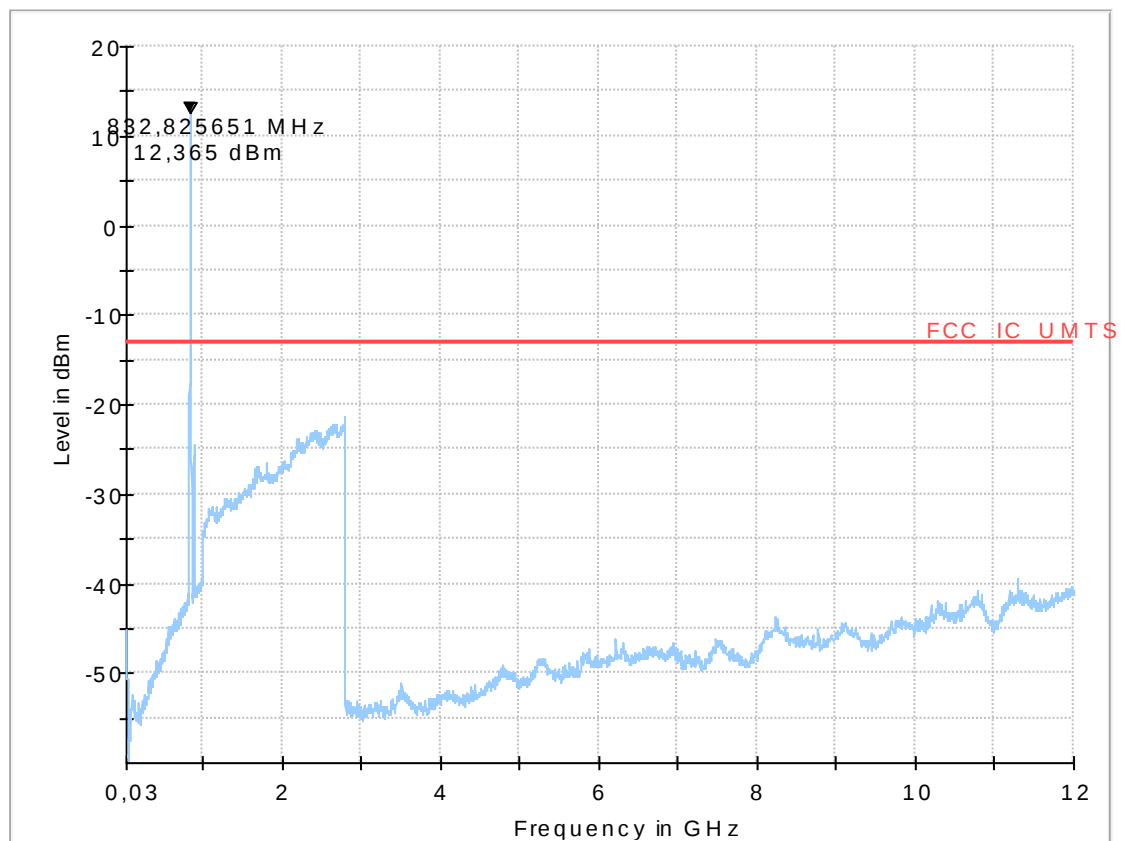
Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a) / RSS-132, Issue 3
Operating Mode:	UE allocated channel 20525/4182/4233 (fc = 836.5 MHz), BW=10MHz, RB=50_16QAM
Environmental Conditions:	Humidity: 38%rH; Temperature: 24°C
Operator:	AHo_/MRa

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
-----	-----
HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum



1.2. Spurious emissions radiated (LTE Band II)

Diagram 8.03_CH18900_BW-10MHz_QPSK

Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24 / RSS-133, Issue 6
Operating Mode:	UE allocated channel 18900 (fc = 1880 MHz), BW=10MHz, RB=50_QPSK
Environmental Conditions:	Humidity: 38%rH; Temperature: 24°C
Operator:	AHo_/MRa

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum

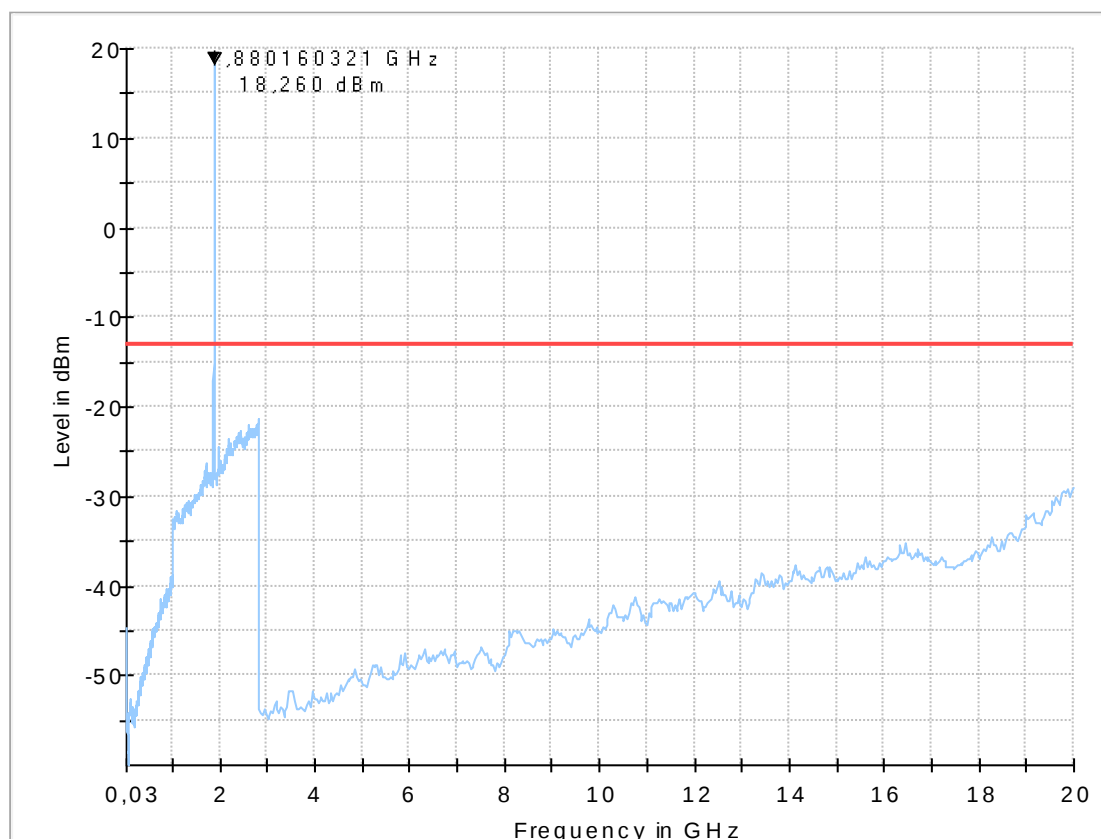


Diagram 8.04_CH18900_BW-10MHz_16QAM**Common Information**

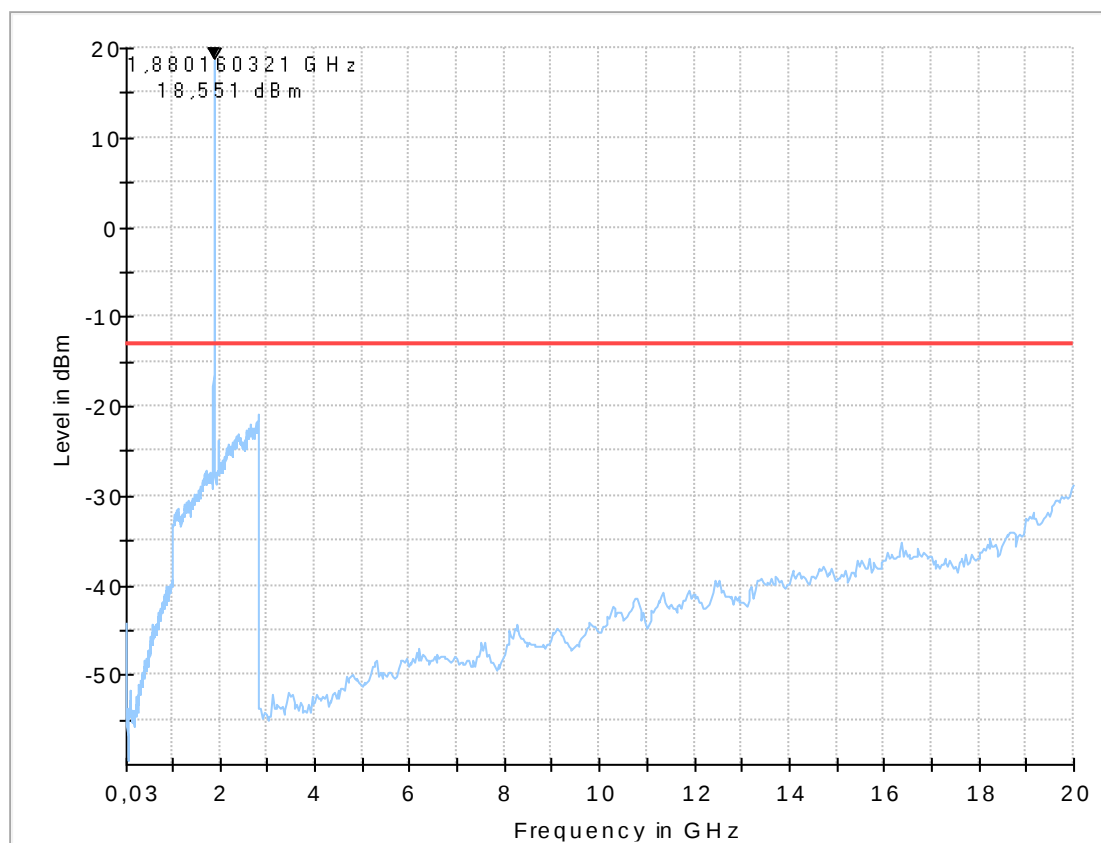
Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24 / RSS-133, Issue 6
Operating Mode:	UE allocated channel 18900 (fc = 1880 MHz), BW=10MHz, RB=50_16QAM
Environmental Conditions:	Humidity: 38%rH; Temperature: 24°C
Operator:	AHo_/MRa

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)

HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum



1.3. Spurious emissions radiated (LTE Band IV)

Diagram 8.05_CH20175_BW-10MHz_QPSK

Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53 / RSS-139, Issue 3
Operating Mode:	UE allocated channel 20175 (fc = 1723,5MHz), BW=10MHz, RB=50_QPSK
Environmental Conditions:	Humidity: 38%rH; Temperature: 24°C
Test SW Version:	EMC32 V9.15.0
Operator:	HLa/MRa

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
-----	-----
HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum

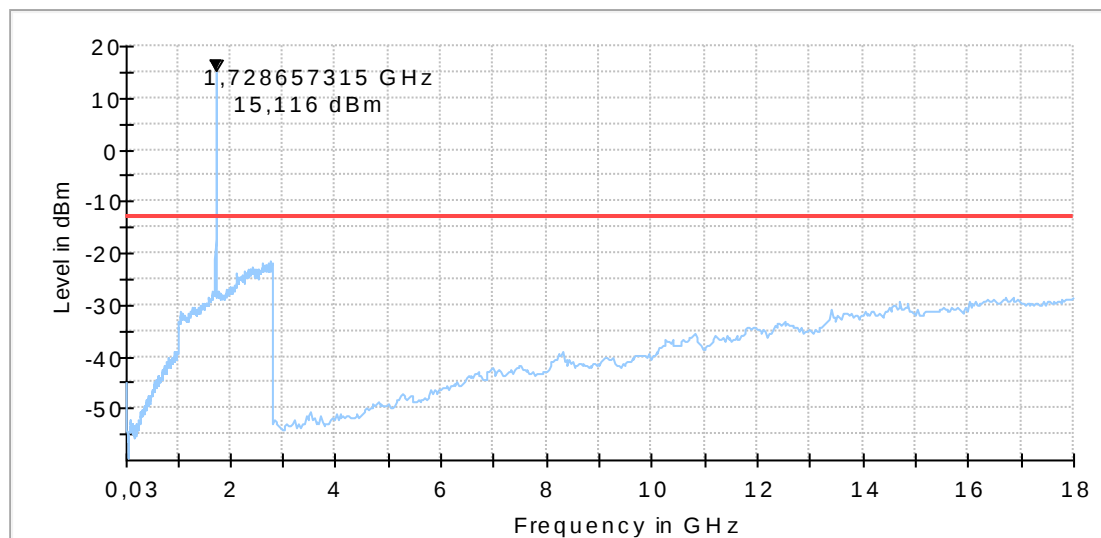


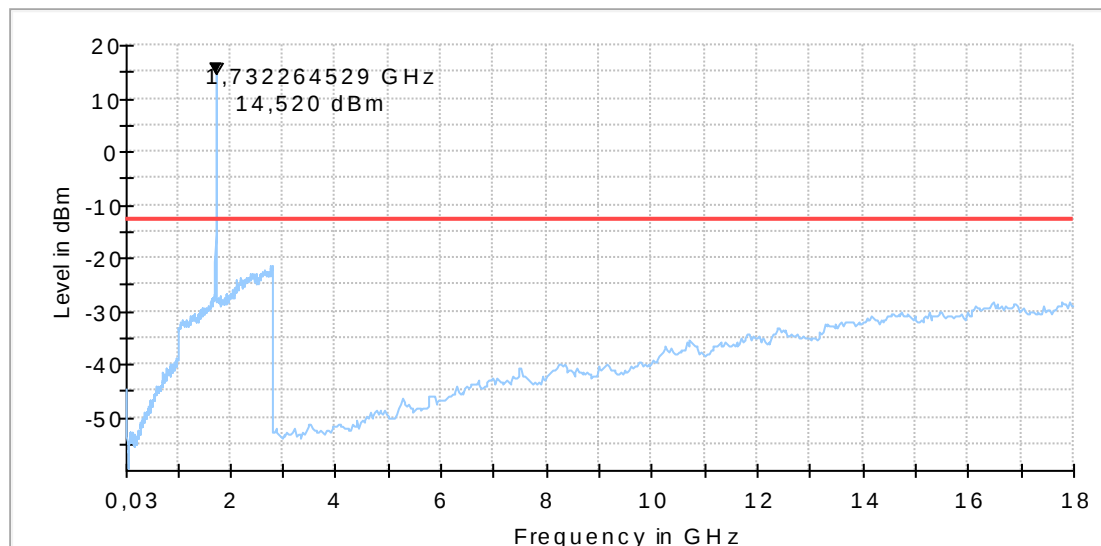
Diagram 8.06_CH20175_BW-10MHz_16QAM**Common Information**

Test Description:	Band-Edge low - Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53 / RSS-139, Issue 3
Operating Mode:	UE allocated channel 20175 (fc = 1723,5MHz), BW=10MHz, RB=50_16QAM
Environmental Conditions:	Humidity: 38%rH; Temperature: 24°C
Operator:	HLA/MRa

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
-----	-----
HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum



1.4. Spurious emissions radiated (LTE Band XVII)

Diagram 8.07_CH23790_BW-10MHz_QPSK

Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDXVII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.53 / RSS-130, Issue 1
Operating Mode:	UE allocated channel 23790 (fc = 710 MHz), BW = 10MHz, RB=50, QPSK
Environmental Conditions:	Humidity:32%rH; Temperature: 23°C
Operator:	HLA
	EMC32 V9.15.0

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
-----	-----
HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum

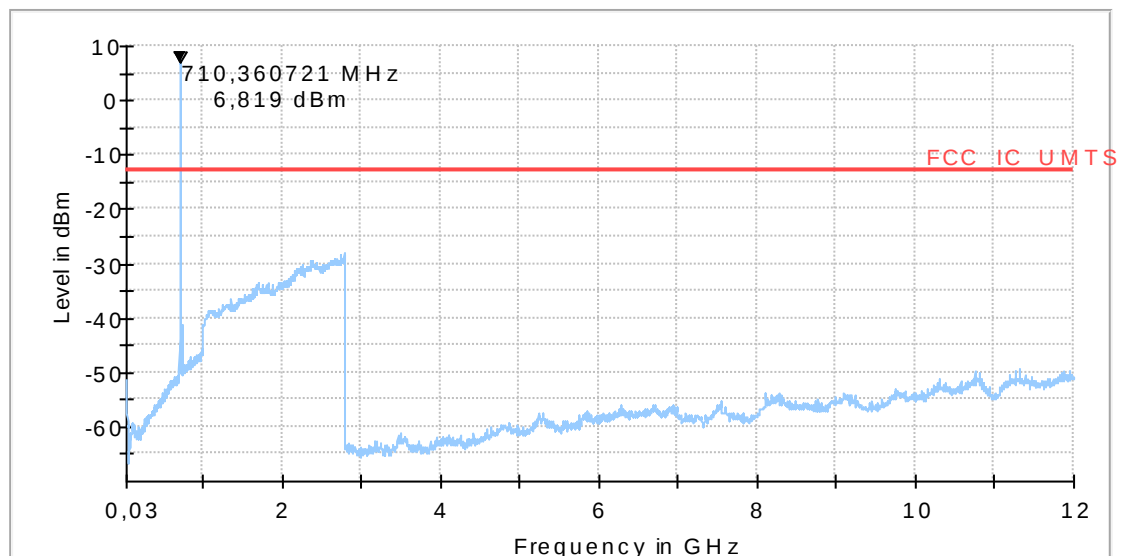


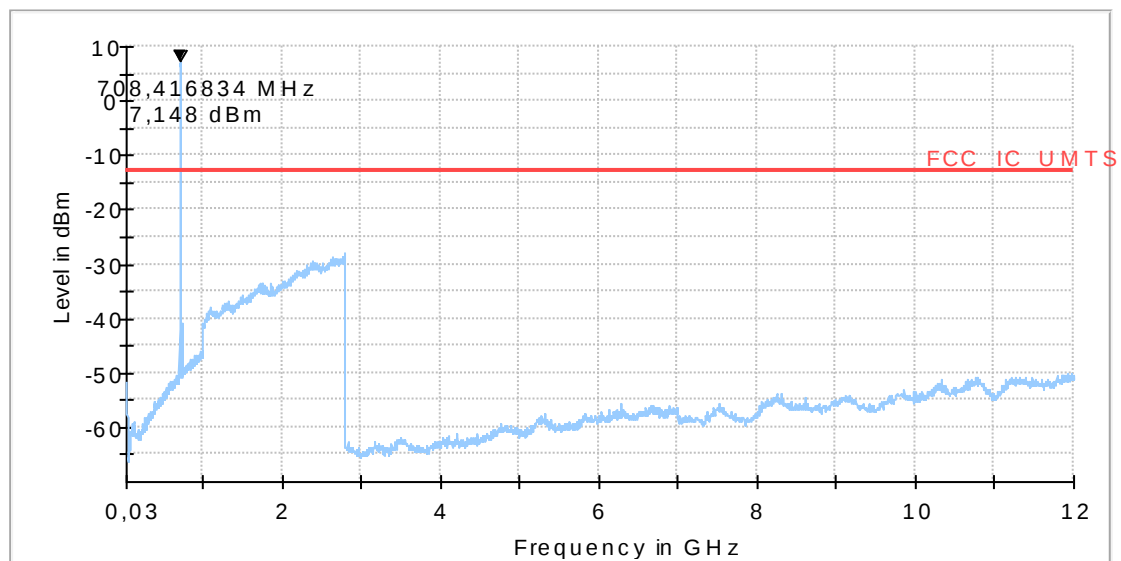
Diagram 8.08_CH23790_BW-10MHz_16QAM**Common Information**

Test Description:	Radiated Spurious Emissions UMTS FDDXVII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 27.53 / RSS-130, Issue 1
Operating Mode:	UE allocated channel 23790 (fc = 710 MHz), BW = 10MHz, RB=50, 16QAM
Environmental Conditions:	Humidity:32%rH; Temperature: 23°C
Operator:	HLA
	EMC32 V9.15.0

EUT Information

Manufacturer:	
EuT:	WMC0434AL3(c)
-----	-----
HW	Rev.2.3
Version:	
SW Version:	Rev.03.004
Serial Number:	004401081453421
Connected Interfaces:	Audio,RF,USB
Power Supply:	12vDC
Comments:	

Full Spectrum



1.5. Radiated emissions – band-edge (LTE Band II)

1.5.1. Low Band-Edge

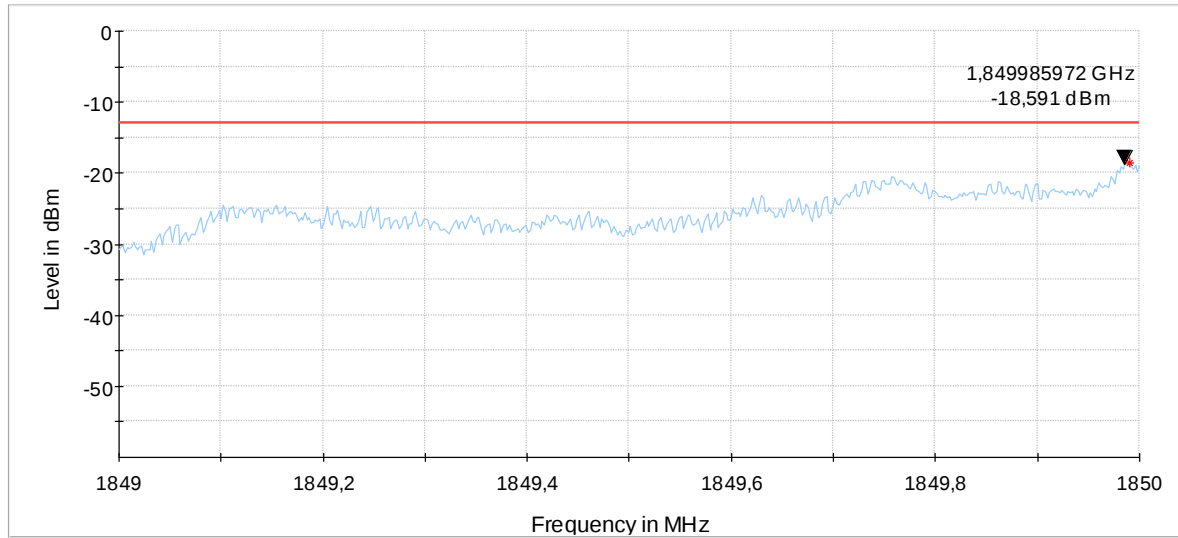


Diagram 9.202a, Channel 18607, QPSK, 6RBs

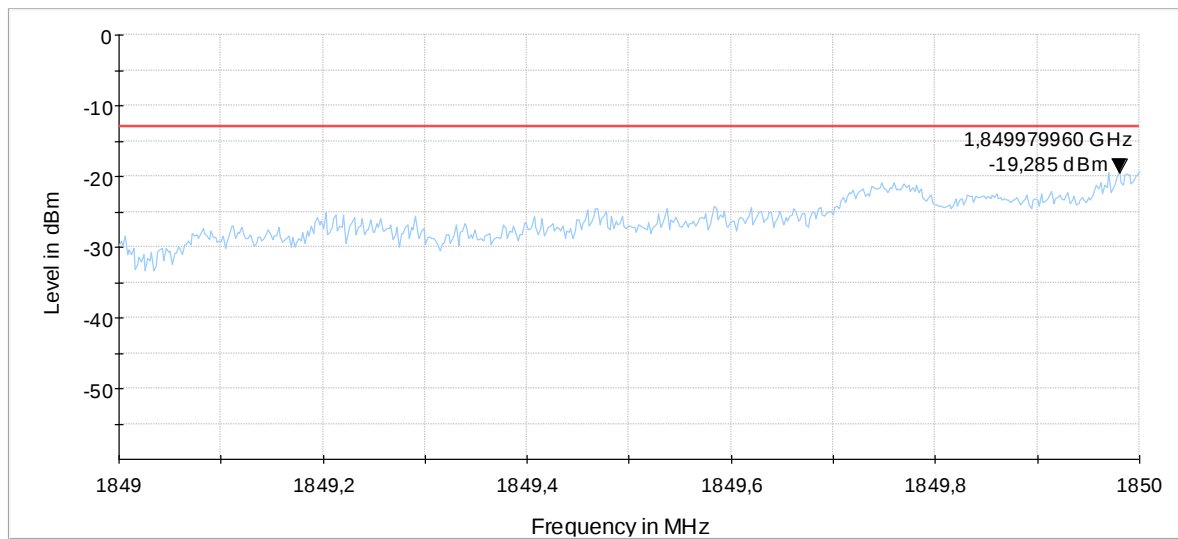
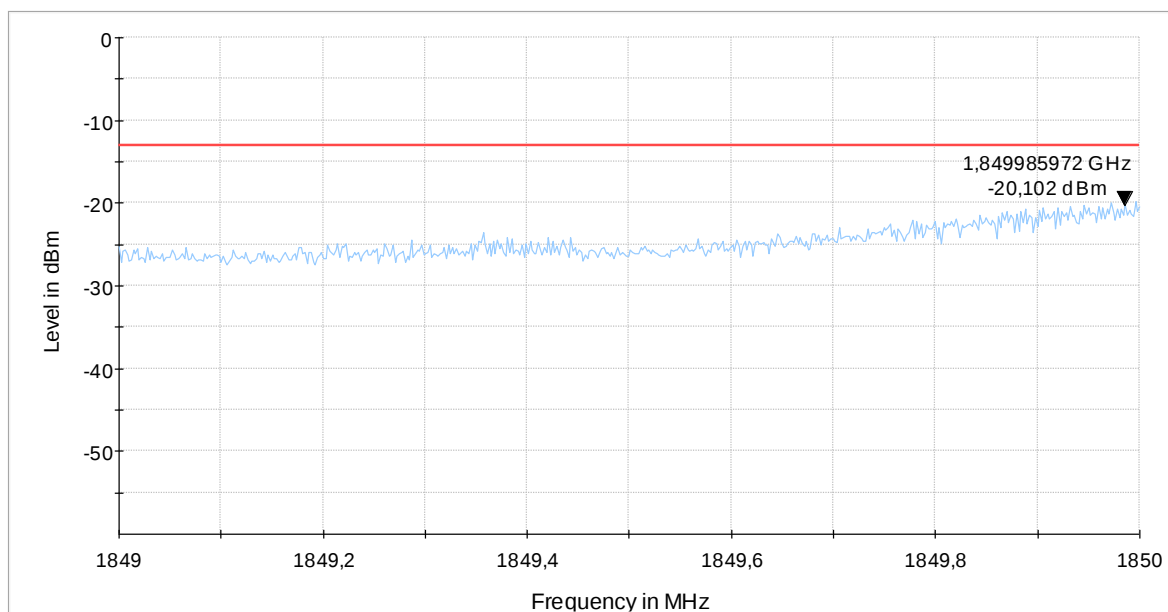
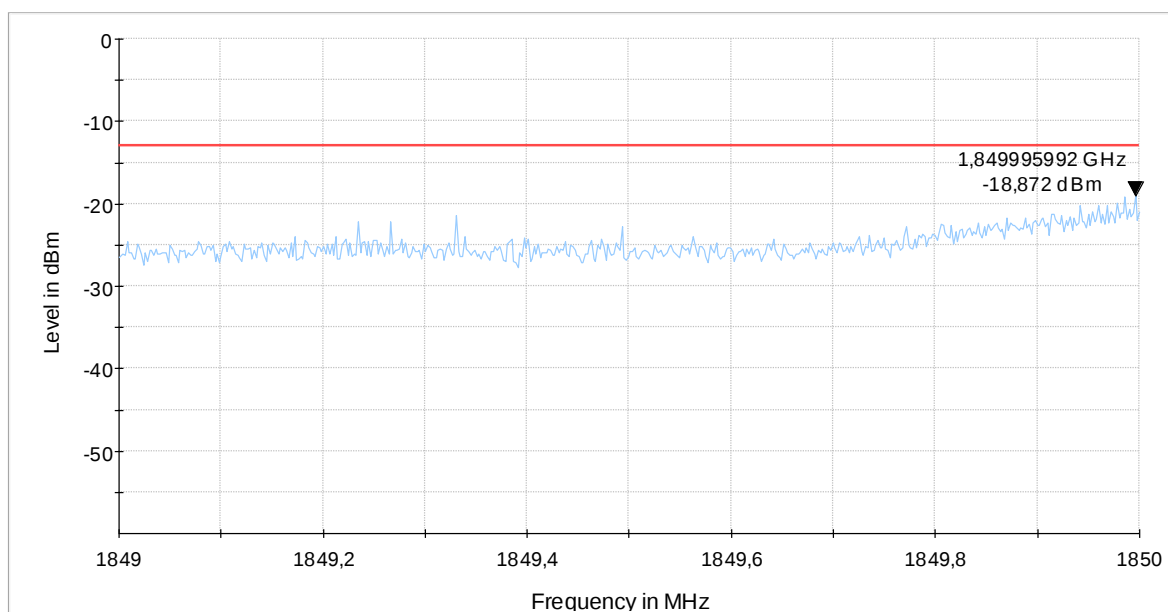


Diagram 9.202b, Channel 18607, 16-QAM, 6RBs

**Diagram 9.212a, Channel 18700, QPSK, 100RBs****Diagram 9.212b, Channel 18700, 16-QAM, 100RBs**

1.5.2. High Band-Edge

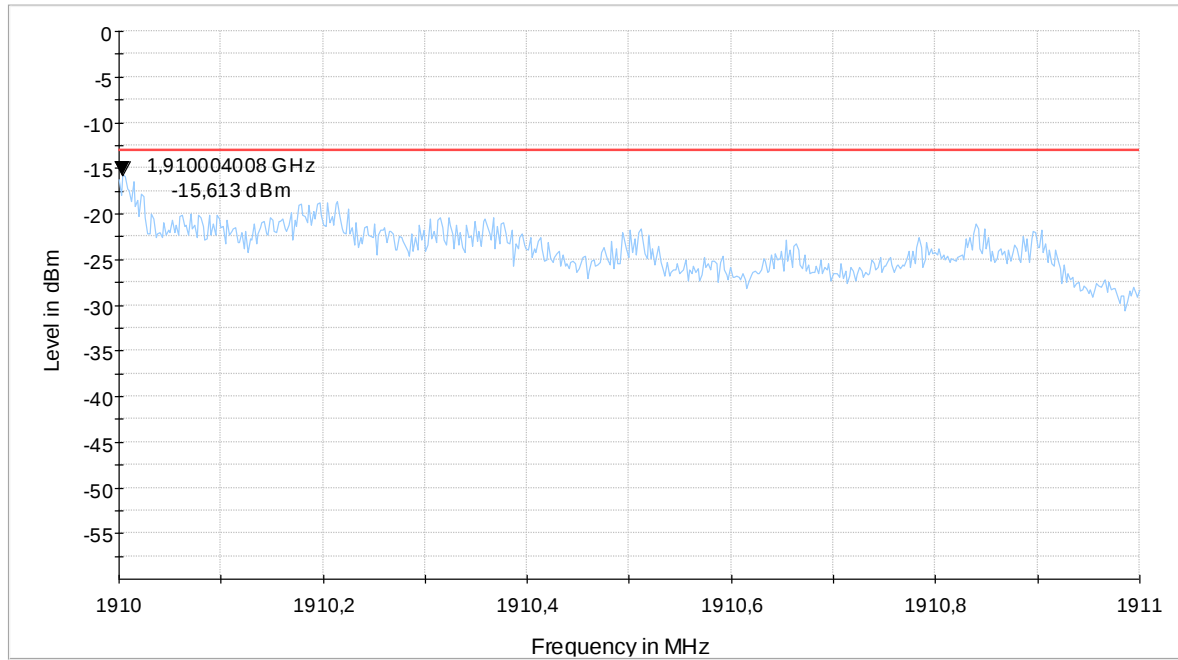


Diagram 9.214a, Channel 19193, QPSK, 6RBs

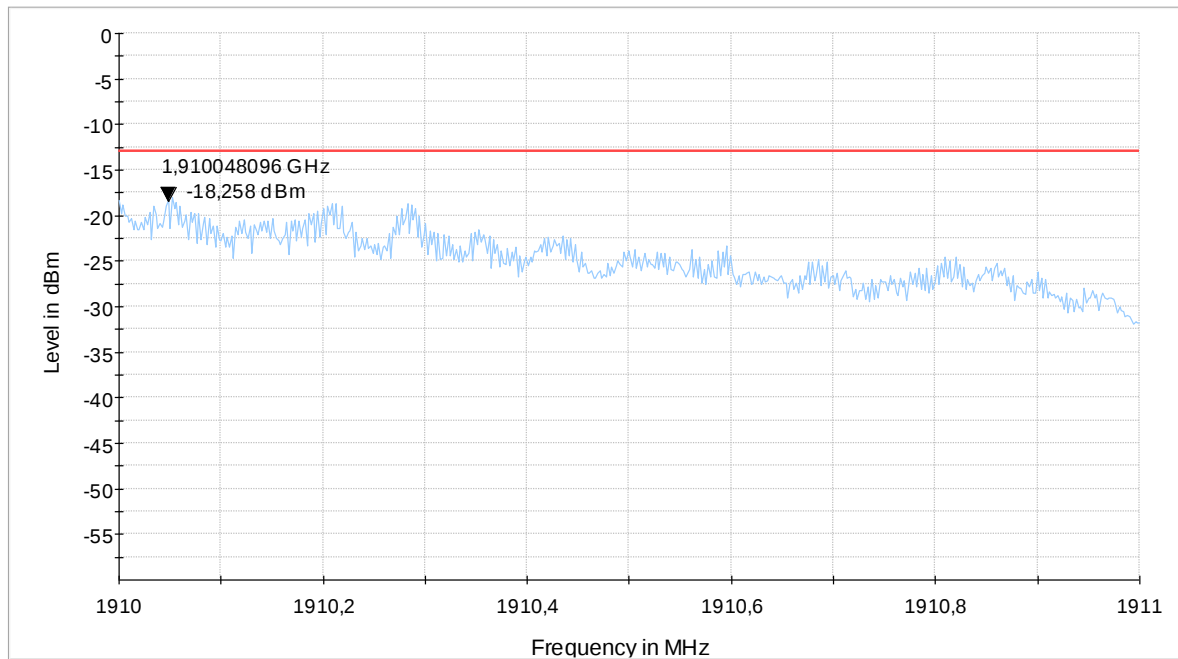
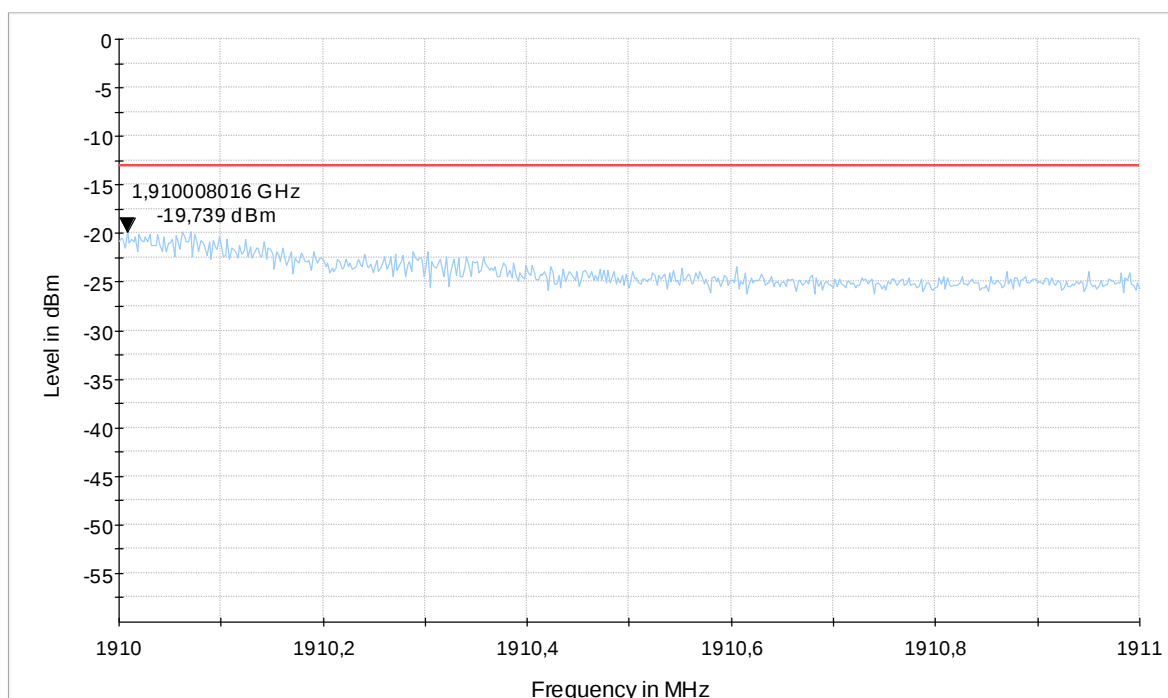
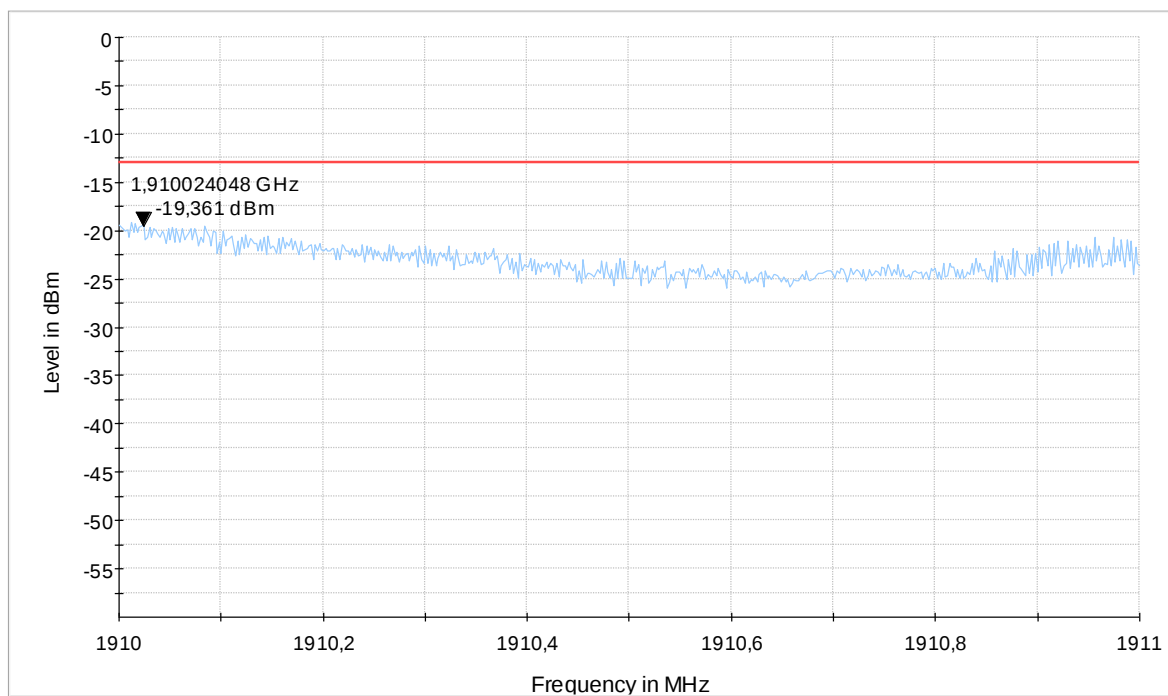


Diagram 9.214b, Channel 19193, 16-QAM, 6RBs

**Diagram 9.224a, Channel 19100, QPSK, 100RBs****Diagram 9.224b, Channel 19100, 16-QAM, 100RBs**

1.6. Radiated emissions – band-edge (LTE Band IV)

1.6.1. Low Band-Edge

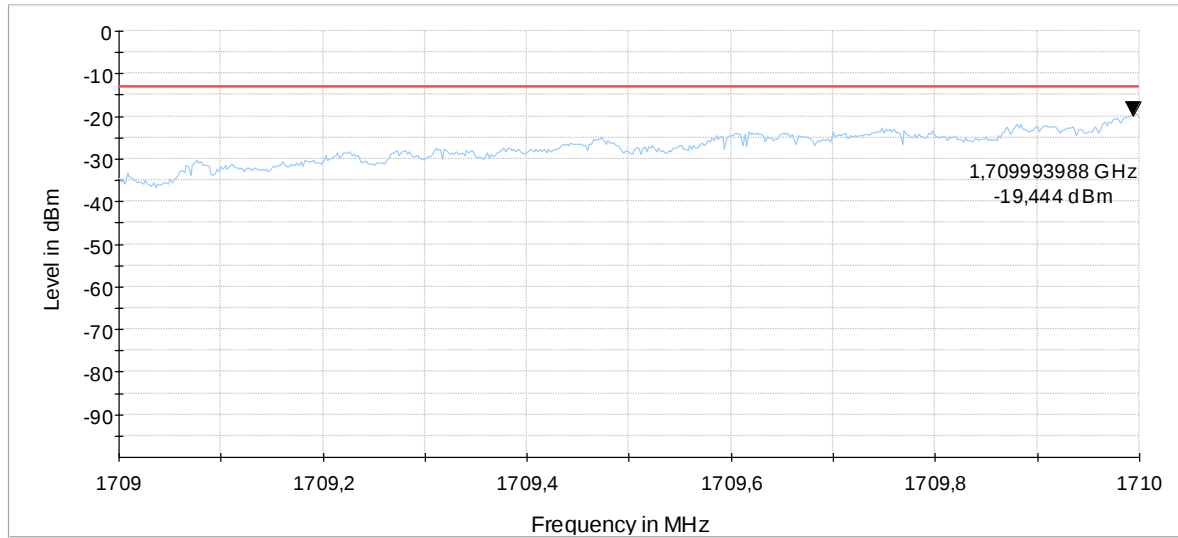


Diagram 9.519a, Channel 19957, QPSK, 6RBs

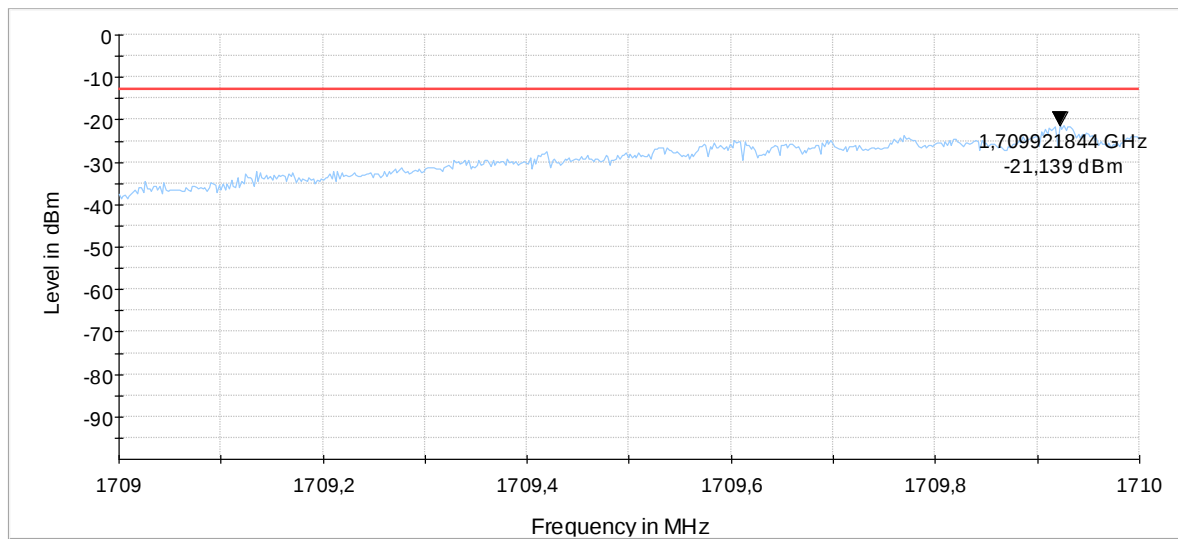
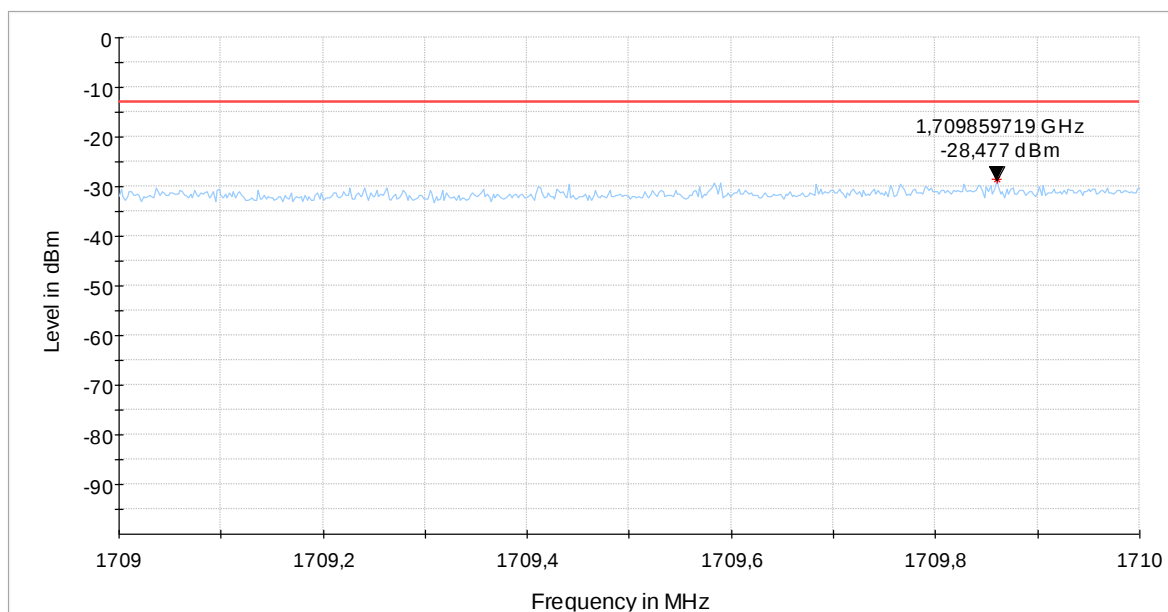
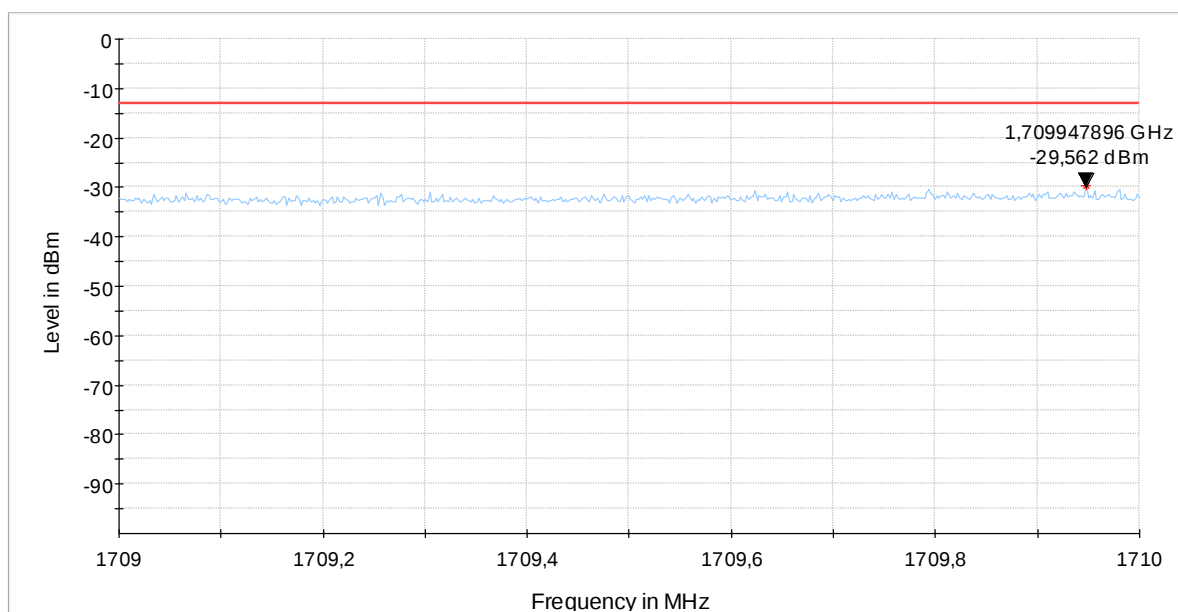
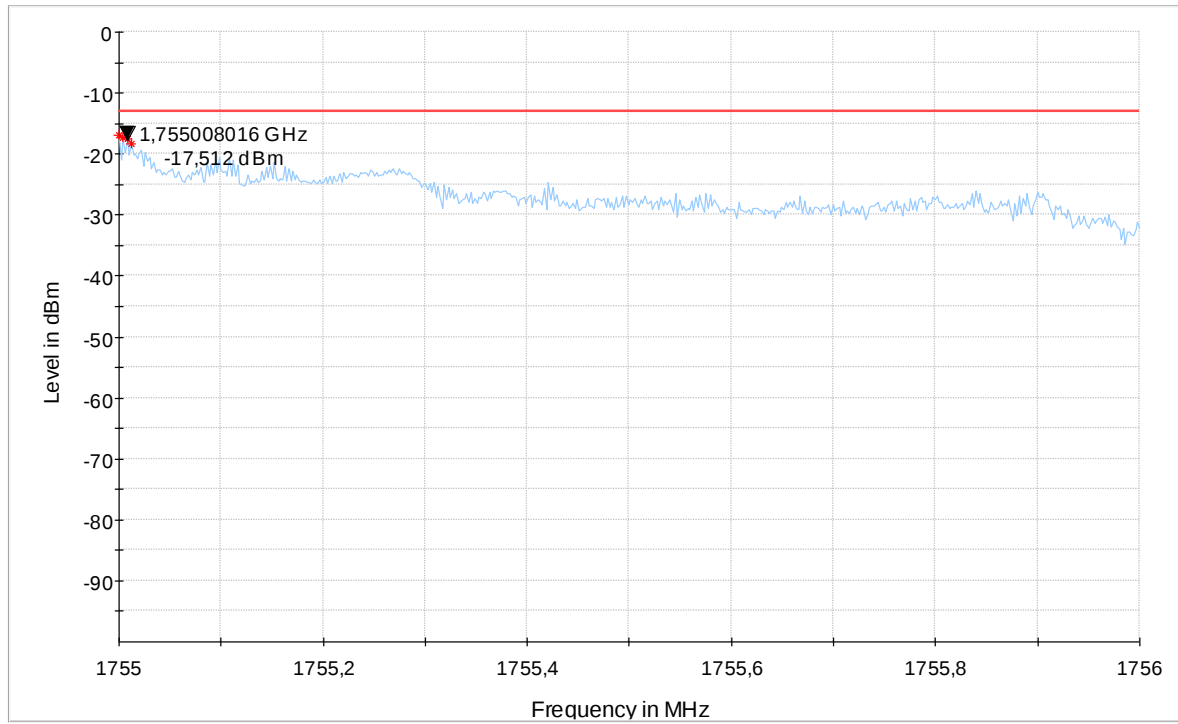
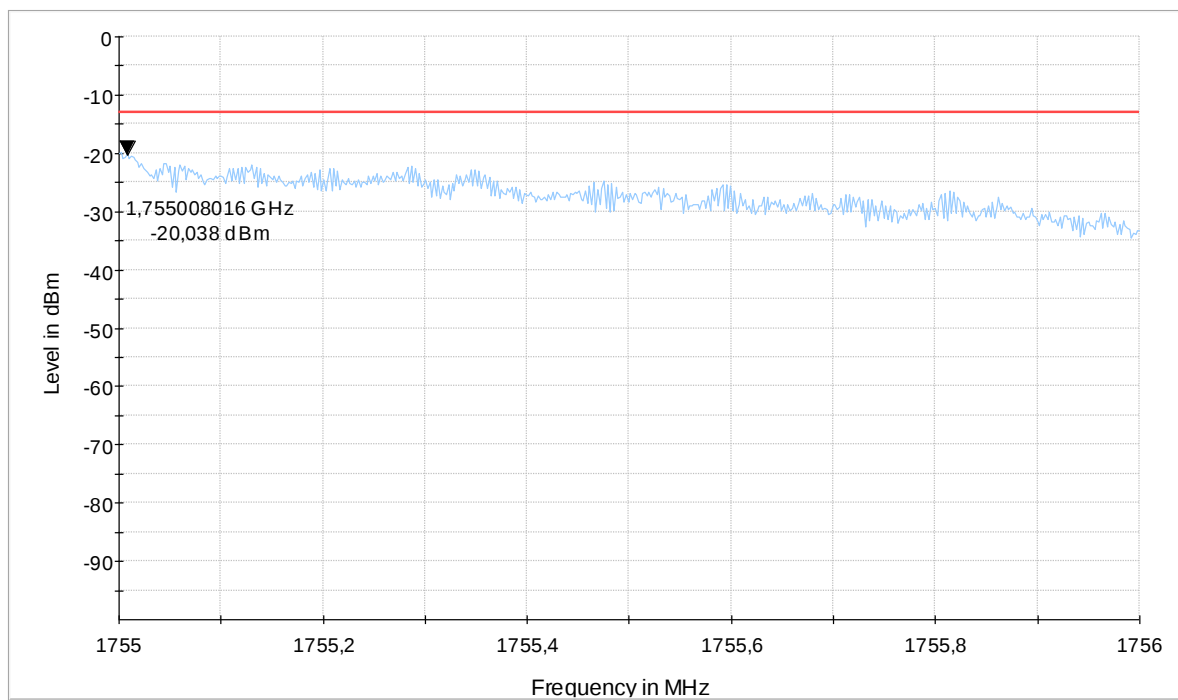
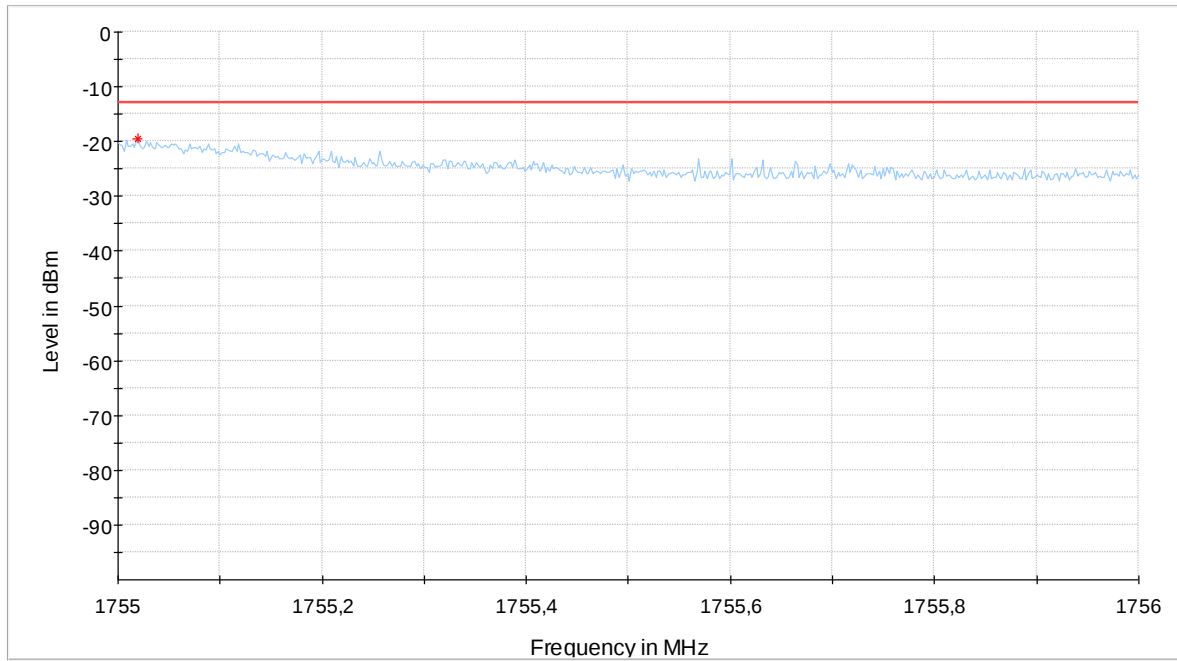
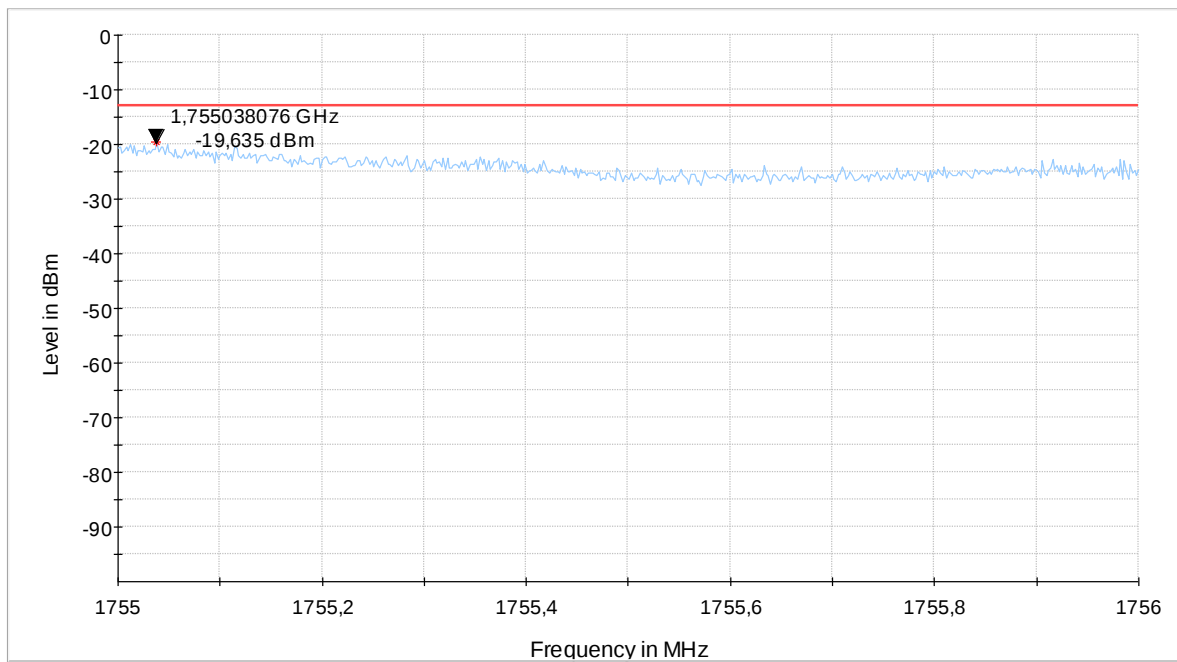


Diagram 9.519b, Channel 19957, 16-QAM, 6RBs

**Diagram 9.529a, Channel 20050, QPSK, 100RBs****Diagram 9.529b, Channel 20050, 16-QAM, 100RBs**

1.6.2. High Band-Edge**Diagram 9.530a, Channel 20393, QPSK, 6RBs****Diagram 9.530b, Channel 20393, 16-QAM, 6RBs**

**Diagram 9.541a, Channel 20300, QPSK, 100RBs****Diagram 9.541b, Channel 20300, 16-QAM, 100RBs**

1.7. Radiated emissions – band-edge (LTE Band V)

1.7.1. Low Band-Edge

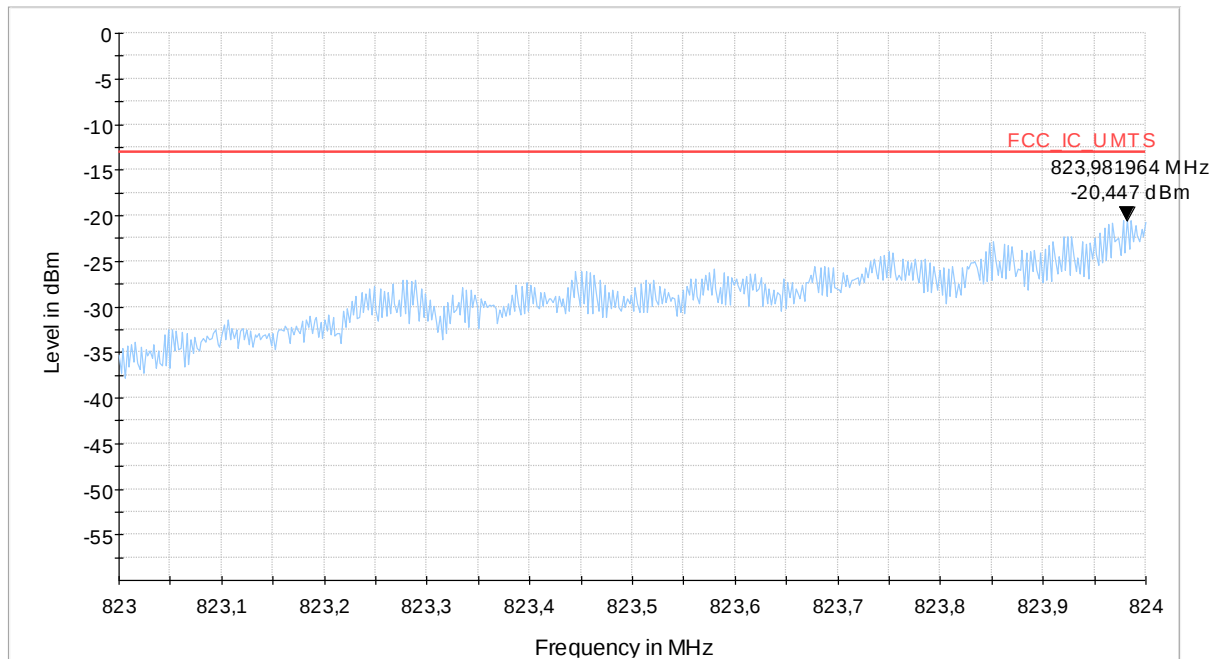


Diagram 9.510a, Channel 20407, QPSK, 6RBs

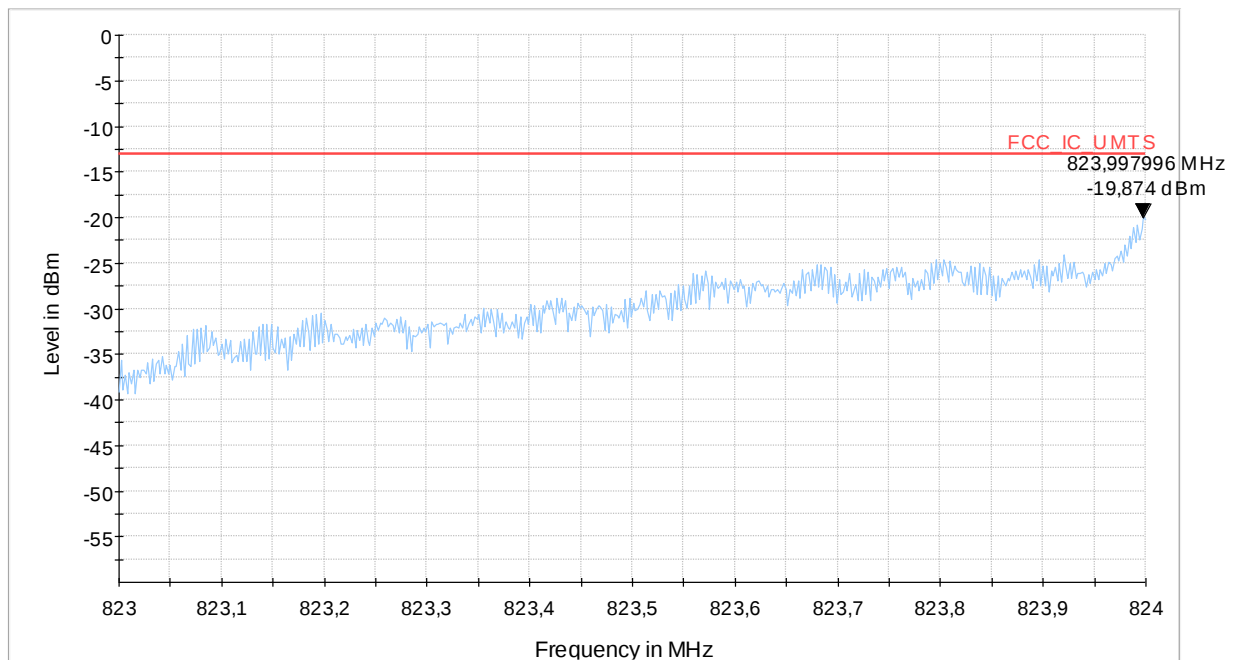
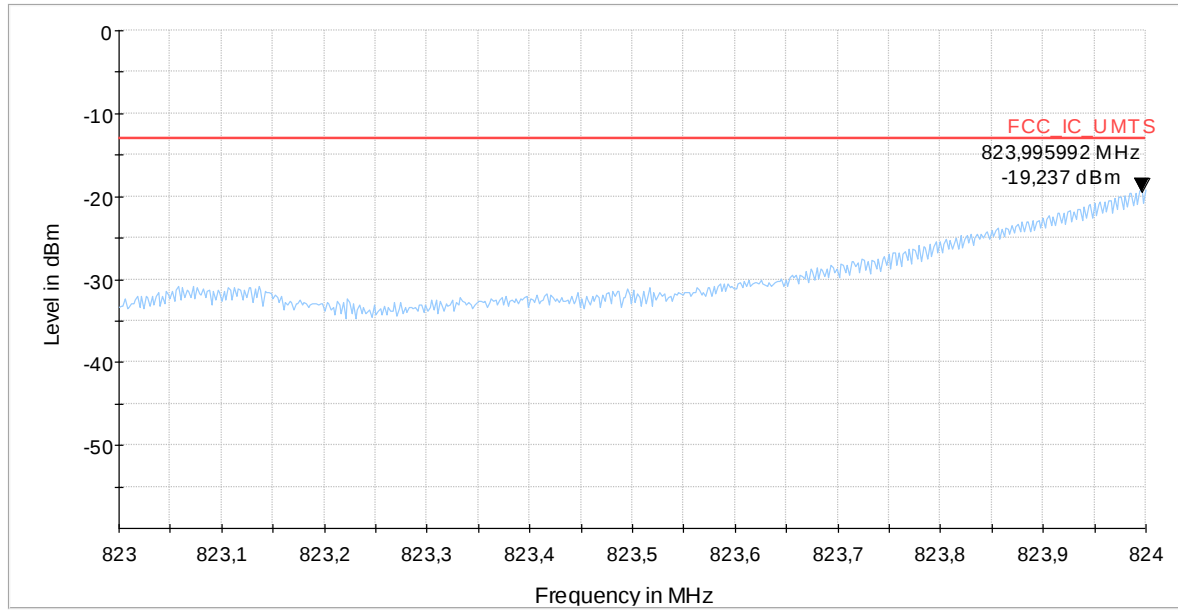
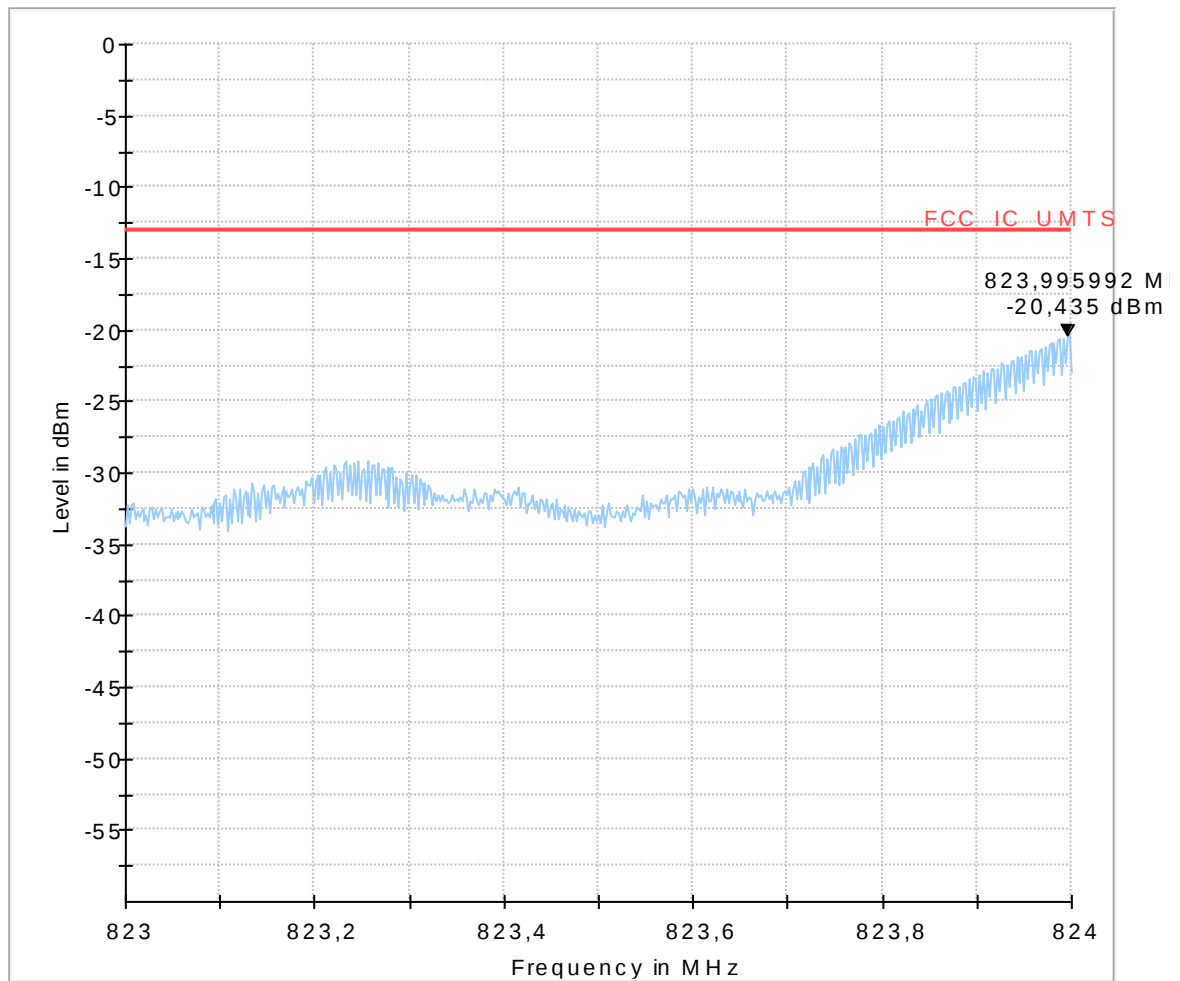
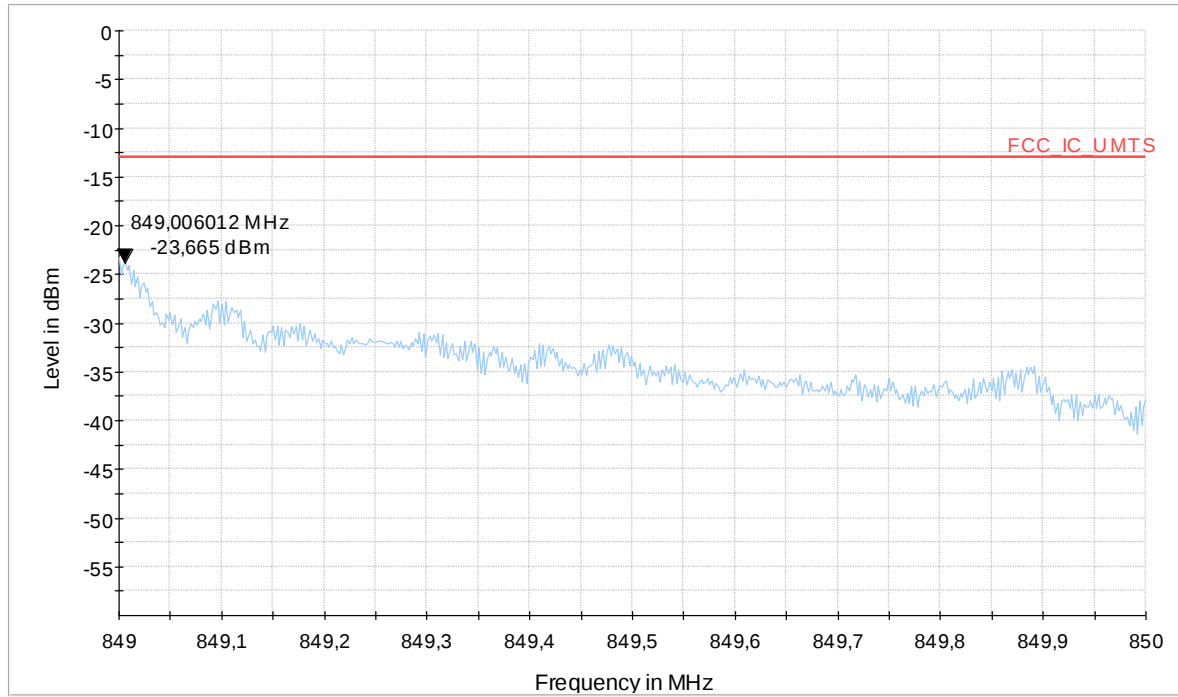
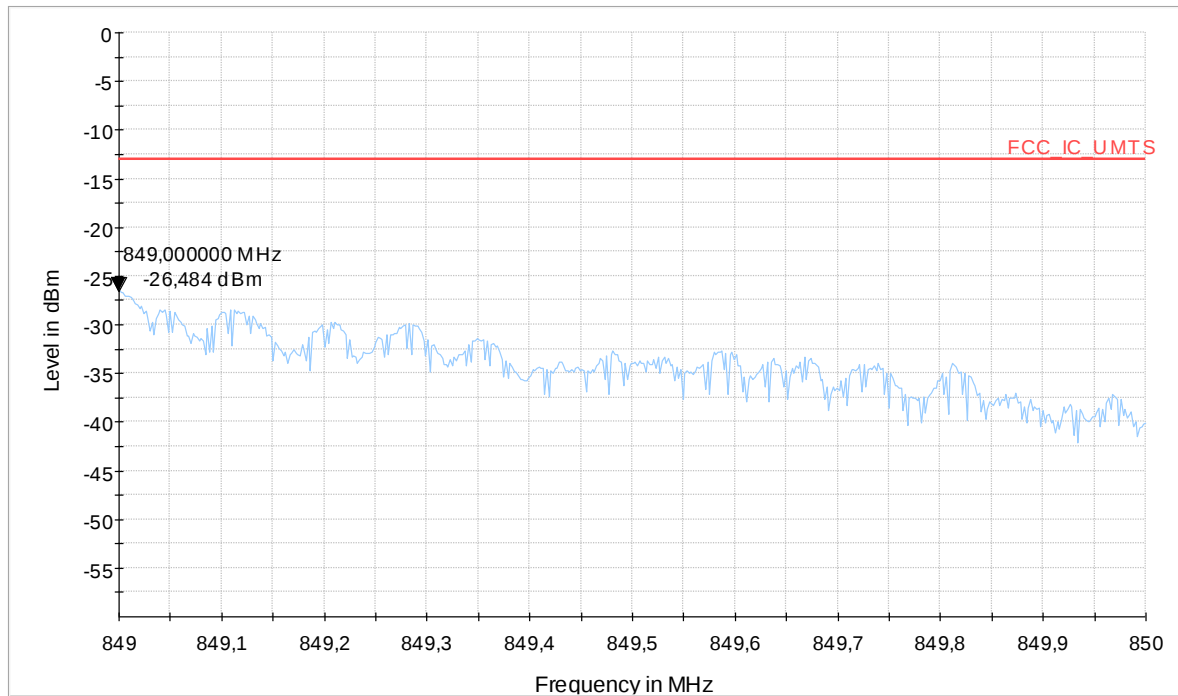
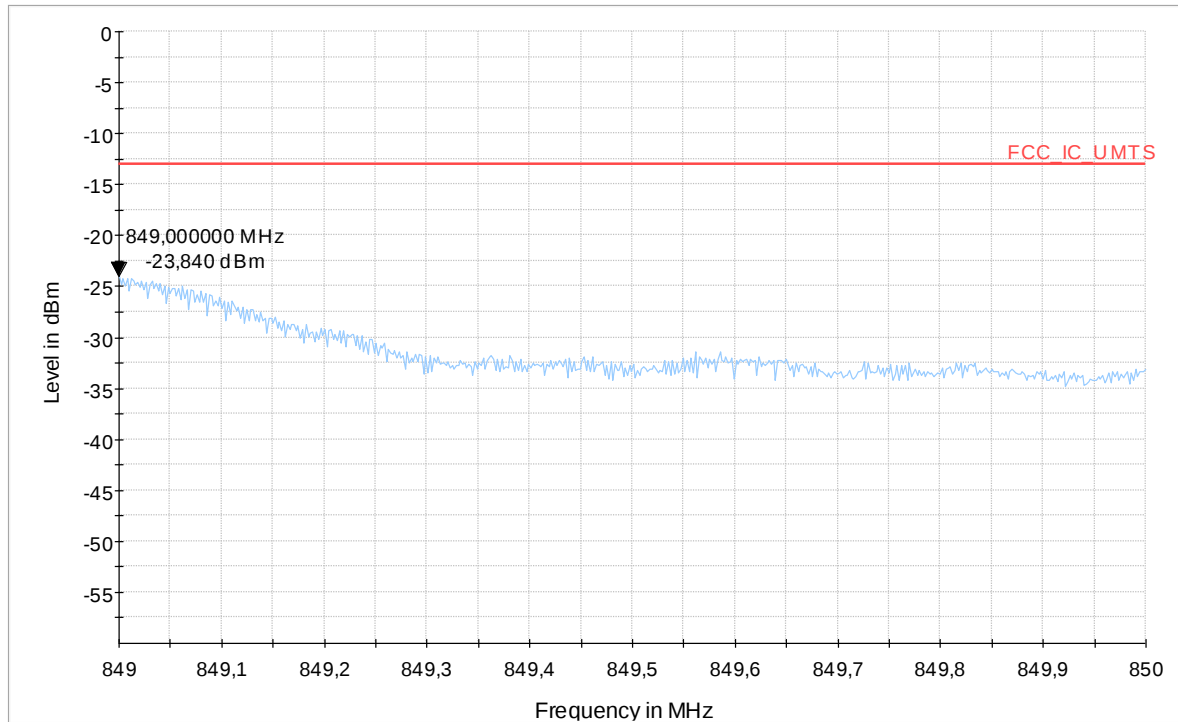
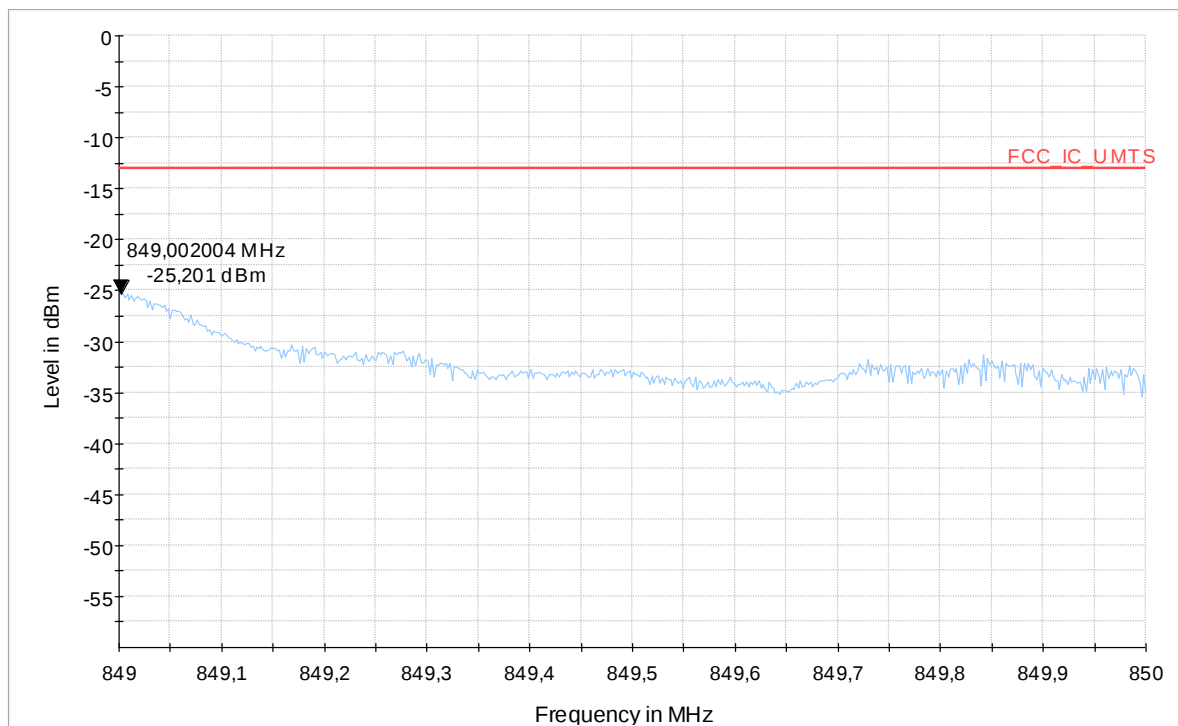


Diagram 9.510b, Channel 20407, 16-QAM, 6RBs

**Diagram 9.517a, Channel 20450, QPSK, 6RBs****Diagram 9.517b, Channel 20450, 16-QAM, 6RBs**

1.7.2. High Band-Edge**Diagram 9.502a, Channel 20643, QPSK, 6RBs****Diagram 9.502b, Channel 20643, 16-QAM, 6RBs**

**Diagram 9.509a, Channel 20600, QPSK, 6RBs****Diagram 9.509b, Channel 20600, 16-QAM, 6RBs**

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

1.8.1. Low Band-Edge

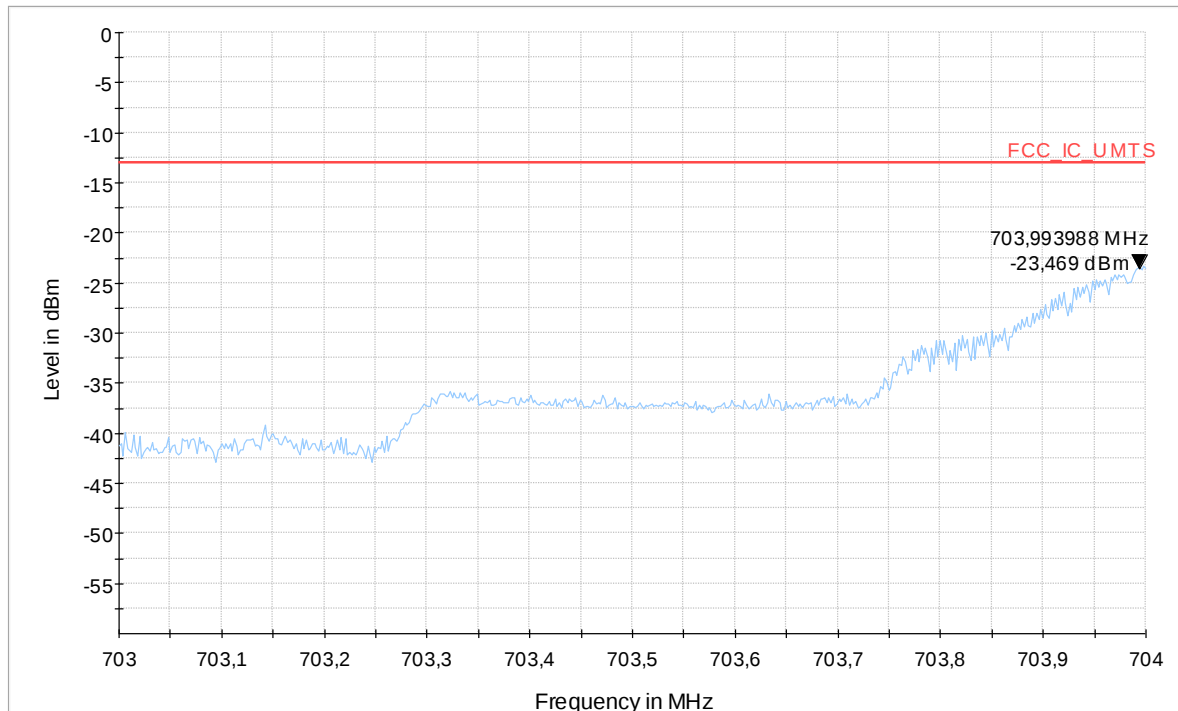


Diagram 9.172a, Channel 23755, QPSK, 25RBs

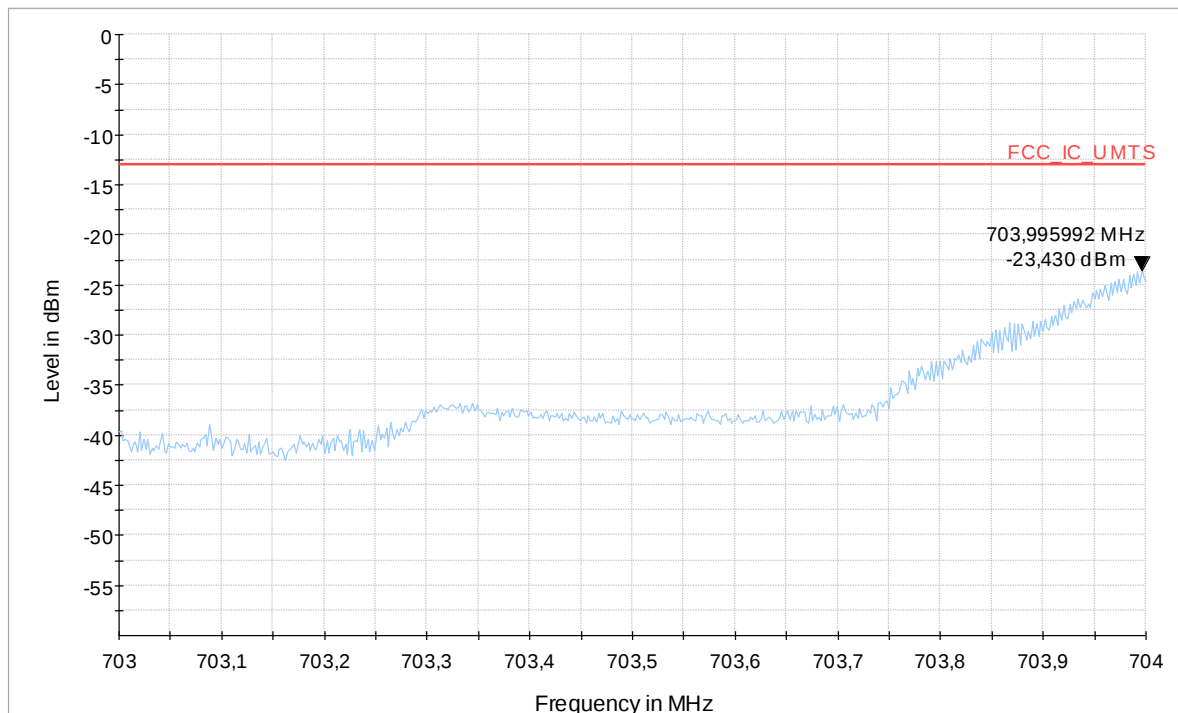
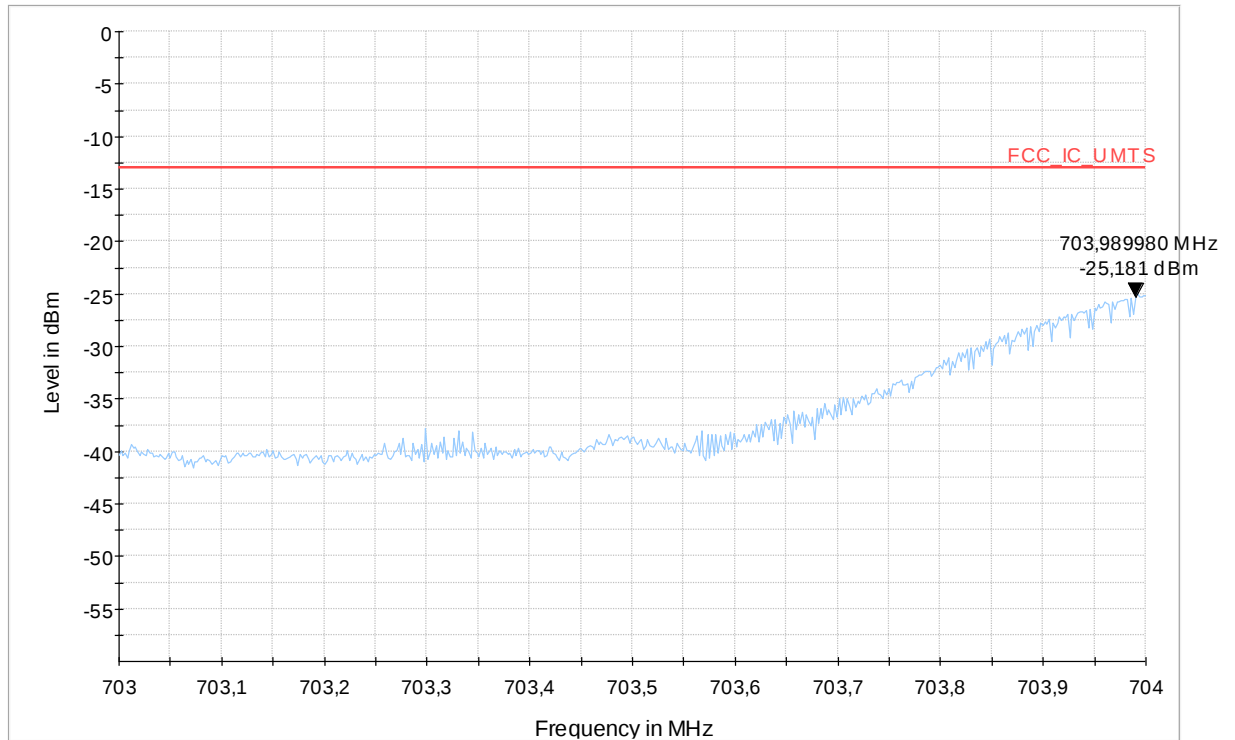
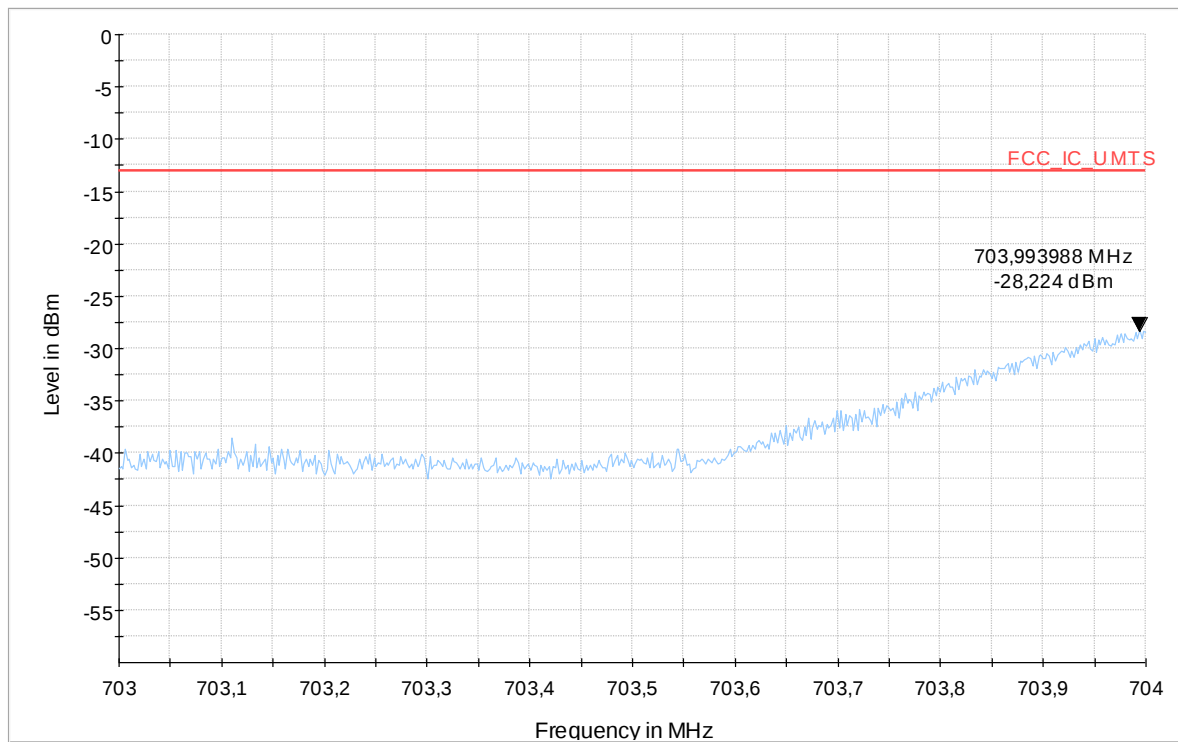
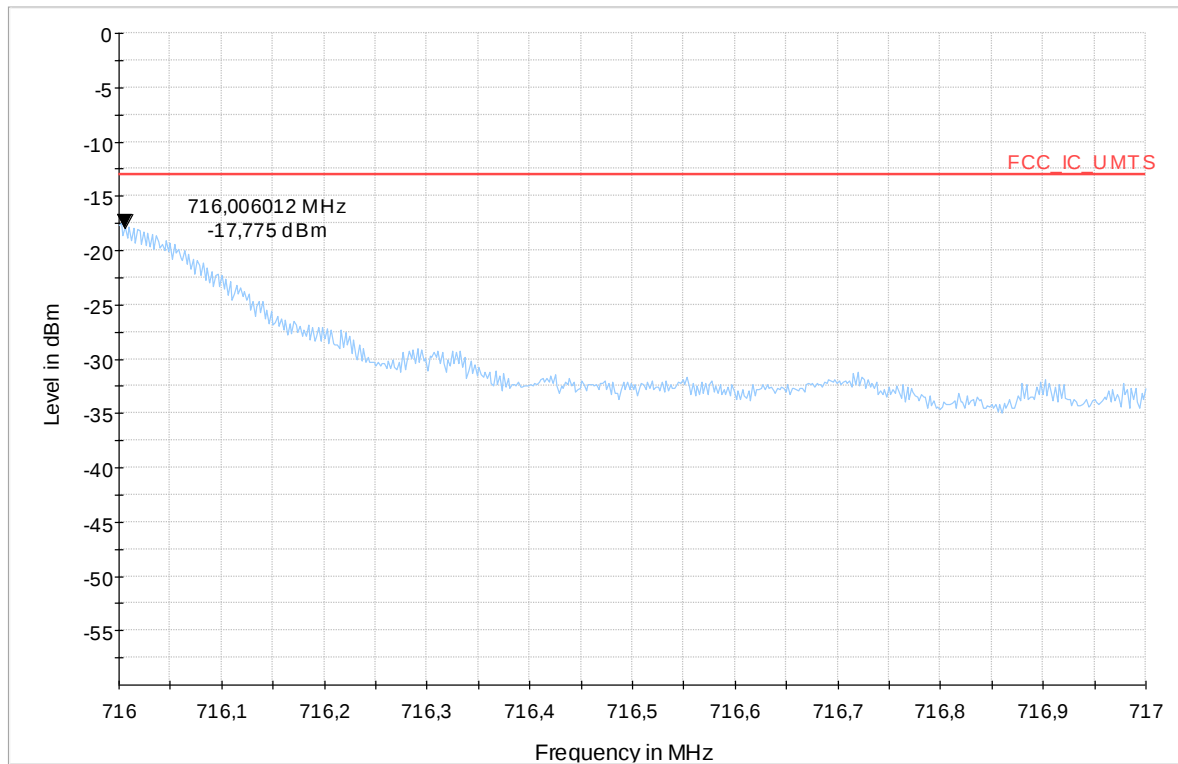
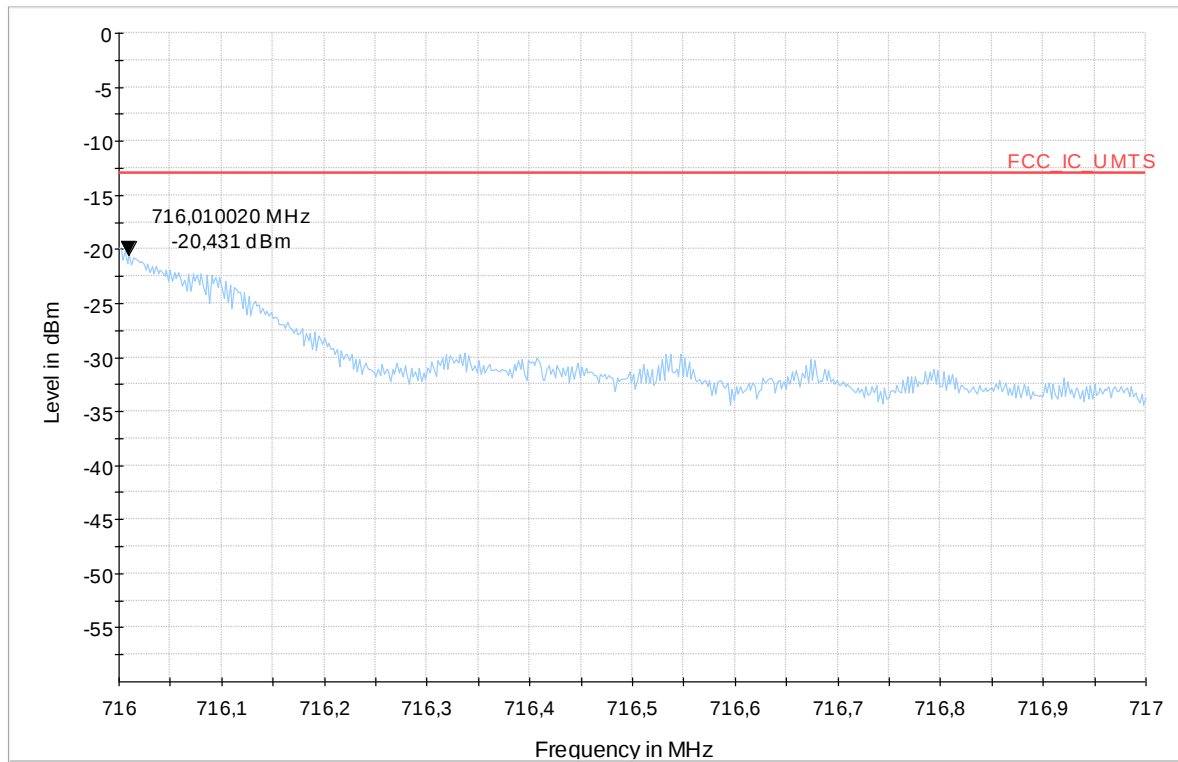
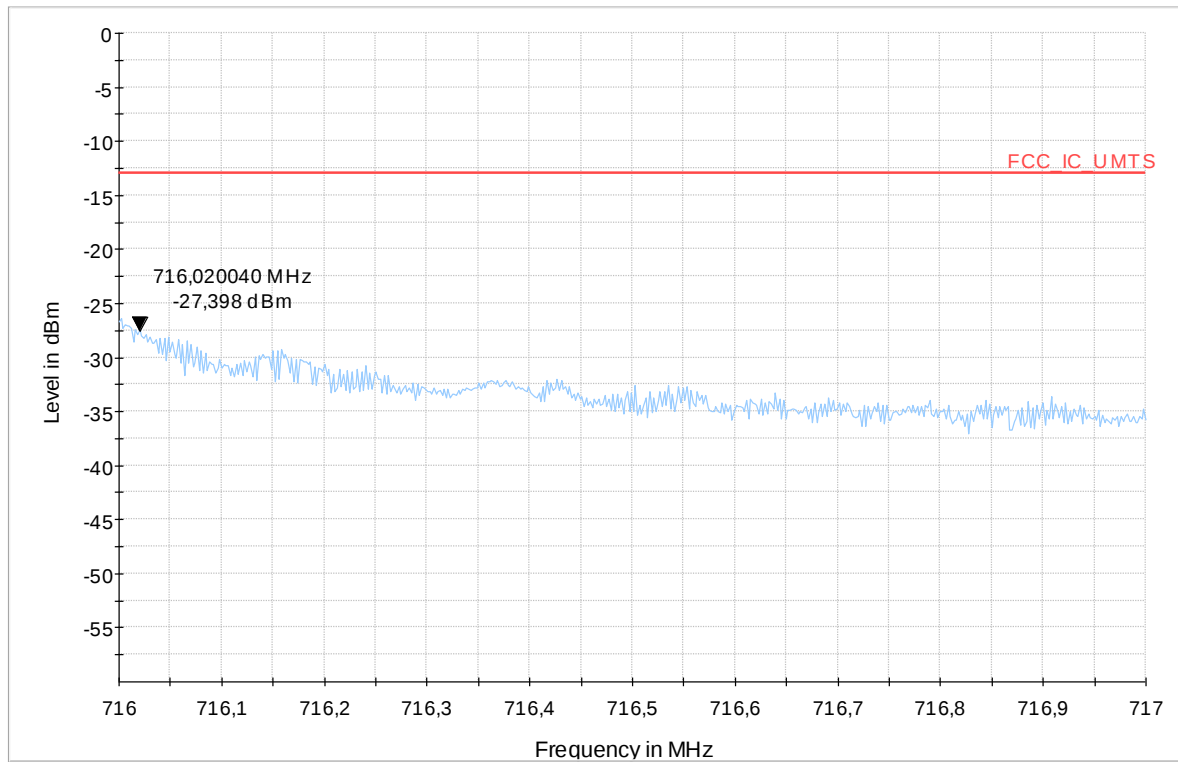
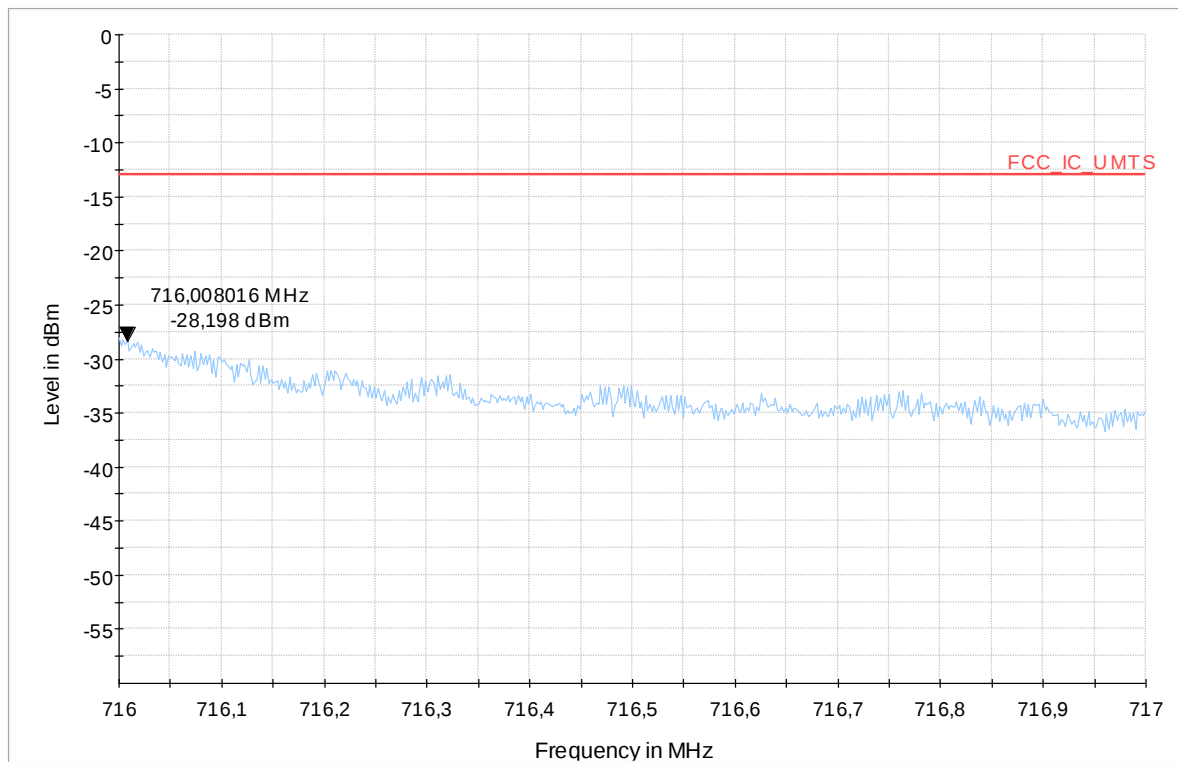


Diagram 9.172b, Channel 23755, 16-QAM, 25RBs

**Diagram 9.174a, Channel 23870, QPSK, 50RBs****Diagram 9.174b, Channel 23870, 16-QAM, 50RBs**

1.8.2. High Band-Edge**Diagram 9.176a, Channel 23825, QPSK, 25RBs****Diagram 9.176b, Channel 23825, 16-QAM, 25RBs**

**Diagram 9.178a, Channel 23800, QPSK, 50RBs****Diagram 9.178b, Channel 23800, 16-QAM, 50RBs**