

# Annex 1: Measurement diagrams to TEST REPORT No.: 6-0668-15-3-13b

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

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

for

**ACTIA Nordic AB**

**Telematic unit for automotive use**







**ACUII-06**

**FCC-ID:** 2AGKKACUII-06

**IC:** 20839-ACUII06

**PMN:** ACUII-06

**HVIN:** ACUII-06

Laboratory Accreditation and Listings			
 <b>Deutsche Akkreditierungsstelle</b> D-PL-12047-01-01	 <b>MRA US-EU 0003</b>	 <b>Industry Canada</b> Reg. No.: 3462D-1 Reg. No.: 3462D-2 Reg. No.: 3462D-3	 <b>Voluntary Controls for Electromagnetic Emissions</b> Reg. No.: R-2666 C-2914, T-1967, G-301
 <b>AUTHORIZED RF LABORATORY</b>	 <b>Authorized<sup>TM</sup> Test Lab</b> Lab Code: <b>20011130-00</b>		
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The listed attachments are an integral part of this report.

## 1. Measurement diagrams

### 1.1. Magnetic field emissions in frequency range 9kHz to 30MHz

#### 1.1.1. Magnetic field emissions (GSM-Mode)

### Diagram No. 2.01\_Ch128\_ExtAnt\_GPRS

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 V8.51.0  
 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: Lor  
 Operating conditions: GPRS Channel 128  
 Power during tests: 13.8V DC  
 Comment 1: Channel Low  
 Comment 2: External Antenna

#### EUT Information

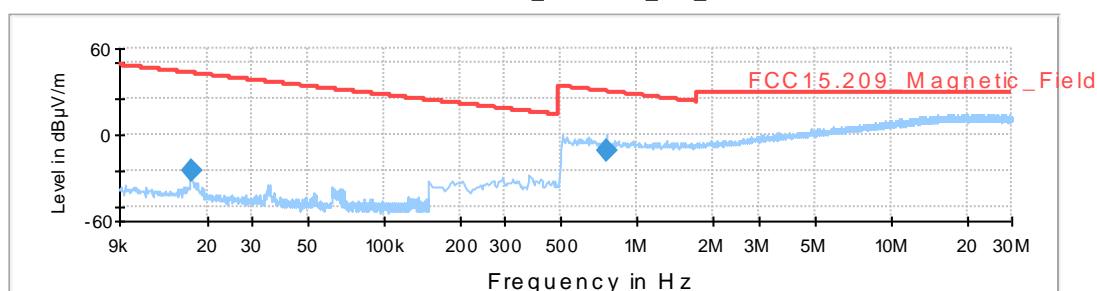
Manufacturer: ACTIA Nordic AB  
 EuT: ACUII-06

HW Version: C  
 SW Version: 13  
 Serial Number: 21790250902643  
 Connected Interfaces: MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector

Power Supply: 13.8 VDC  
 Antenna Type: LTE Antenna with SDAR  
 434-WLAN-GNSS-SDARS-LTE  
 50751424 | 15W421 | Portugal AD801  
 SDARS Modified #1

#### FCC15.209\_ANSI63\_10\_2013

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#### Final Result 1

Frequency (MHz)	RMS (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Polarization	Azimuth (deg)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)
0.017240	-25.6	1000.0	0.200	100.0	H	80.0	-58.7	68.50	42.90
0.754000	-11.7	1000.0	10.000	100.0	V	304.0	-20.1	41.70	30.10

(continuation of the "Final Result 1" table from column 10 ...)

Frequency	Comment
0.017240	
0.754000	

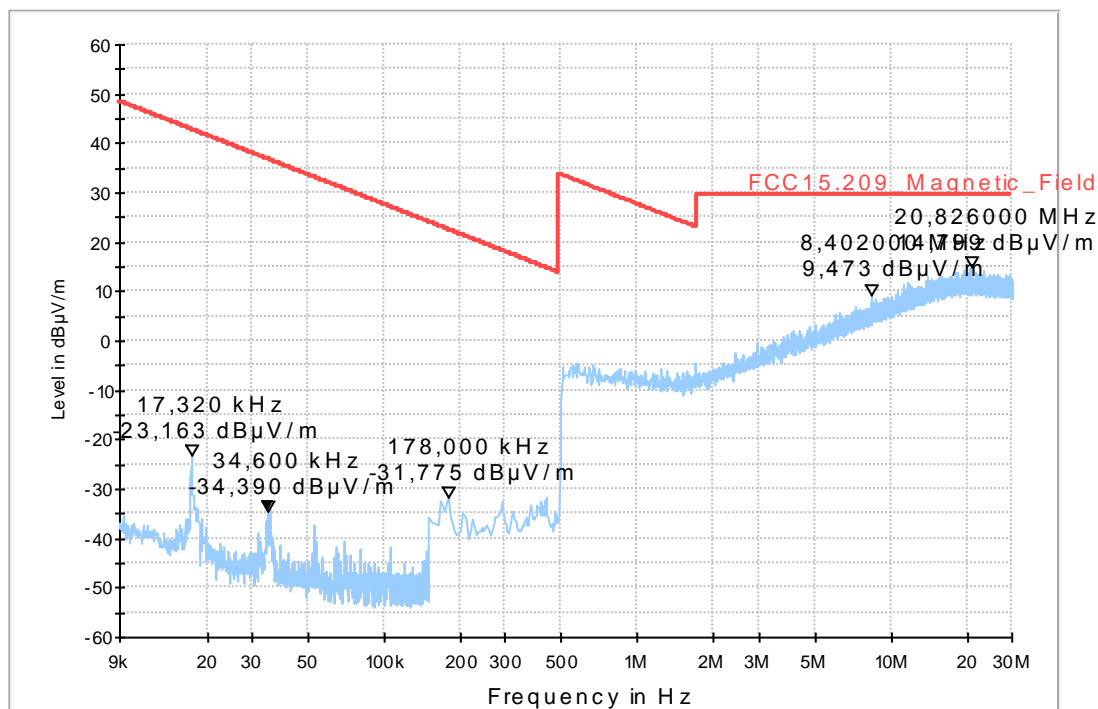
## Diagram No. 2.02\_Ch251\_ExtAnt\_GPRS

Date:	16.01.2016	Page 1 of 1
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 V8.51.0	
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:	Lor	
Operating conditions:	Ch251	
Power during tests:	13.8V DC	
Comment 1:	Channel High	
Comment 2:	Internal Antenna	

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR
	434-WLAN-GNSS-SDARS-LTE
	50751424   15W421   Portugal AD801
	SDARS Modified #1

FCC15.209\_ANSI63\_10\_2013



## Diagram 2.08\_Ch810\_GPRS\_\_ExtAnt

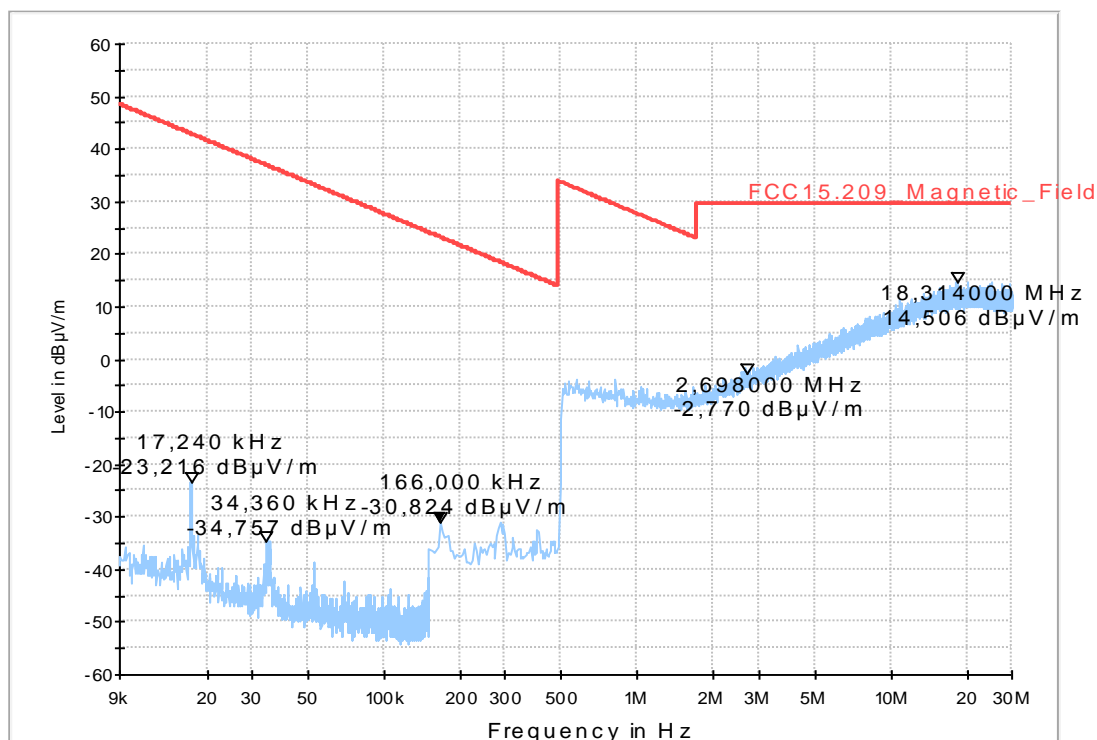
### Common Information

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 V8.51.0
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
Operating Conditions:	Ch810
Operator Name:	MFr
Comment 1:	Ch 810
Comment 2:	External Antenna

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

FCC15.209\_ANSI63\_10\_2013



## 1.1.2. Magnetic field emissions (LTE-Mode)

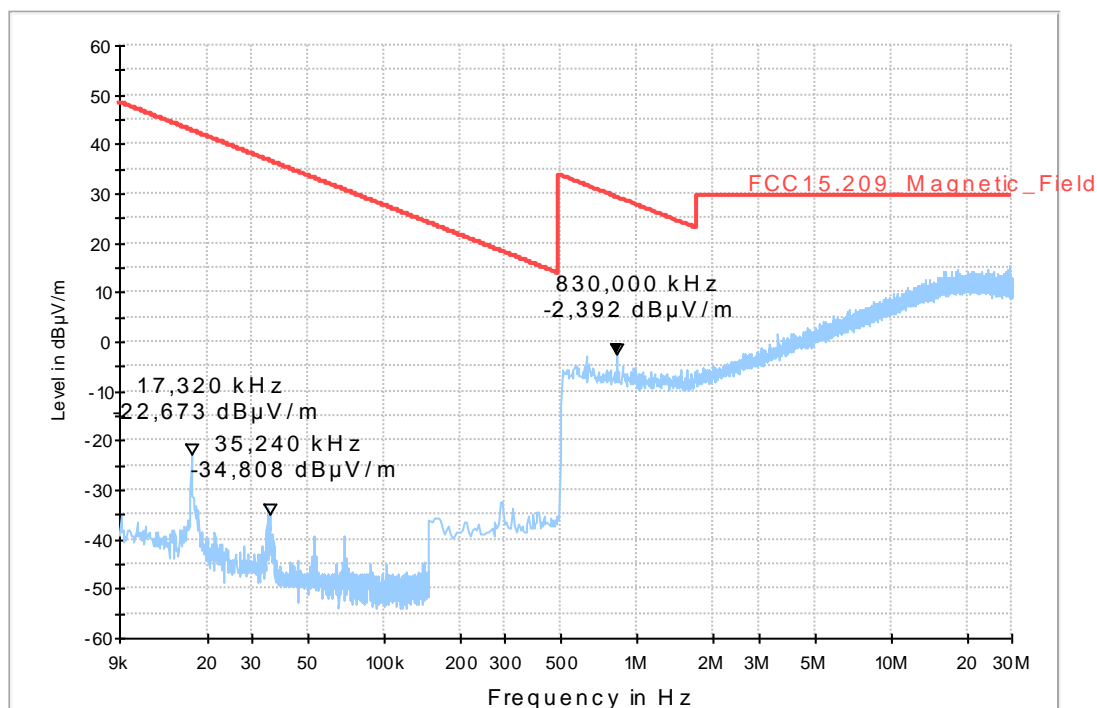
### Diagram No. 2.03\_Ch23755\_BW5MHz\_25RBs\_QPSK\_ExtAnt

Date:	16.01.2016	Page 1 of 1
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 V8.51.0	
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:	Lor	
Operating conditions:	TX-on, LTE Band 17, low channel =23755	
Power during tests:	13.8V DC	
Comment 1:	Channel low=23755, QPSK-Modulation, 25RBs (5MHZ BW)	
Comment 2:	External Antenna	

## EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

FCC 15.209\_ANSI63\_10\_2013



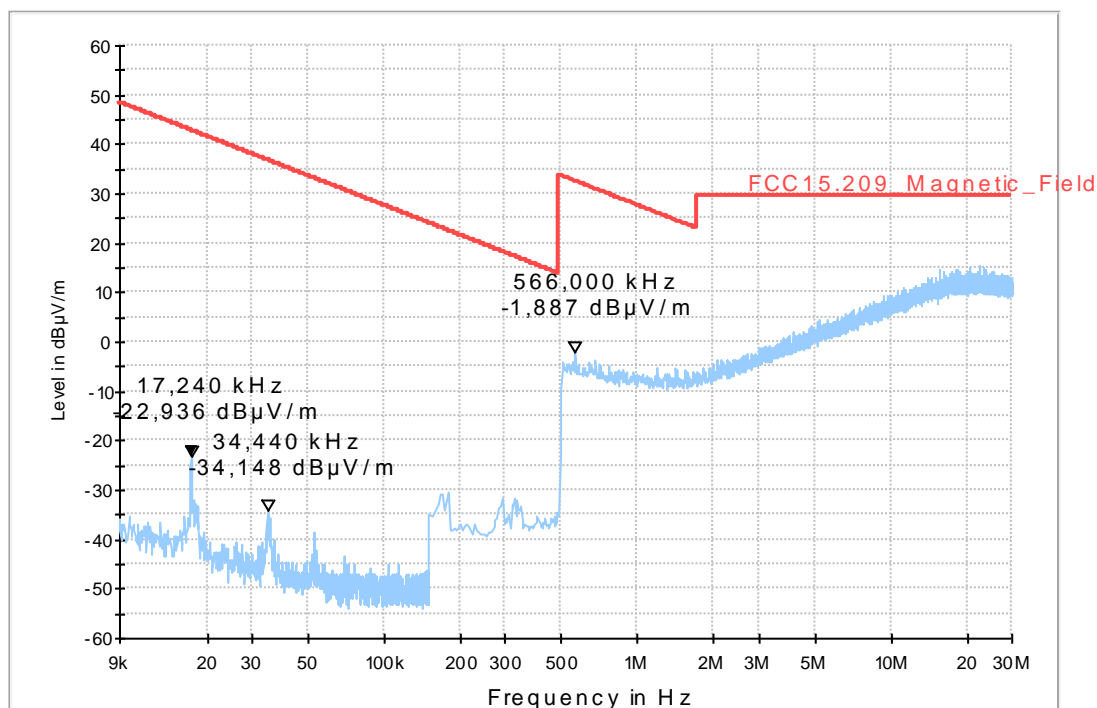
## Diagram No. 2.04\_Ch23755\_BW5MHz\_25RBs\_QPSK\_IntAnt

Date:	16.01.2016	Page 1 of 1
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 V8.51.0	
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:	Lor	
Operating conditions:	TX-on, LTE Band 7, low channel =23755	
Power during tests:	13.8V DC	
Comment 1:	Channel high=23825, QPSK, 5MHZ BW	
Comment 2:	Internal Antenna	

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

FCC 15.209\_ANSI63\_10\_2013



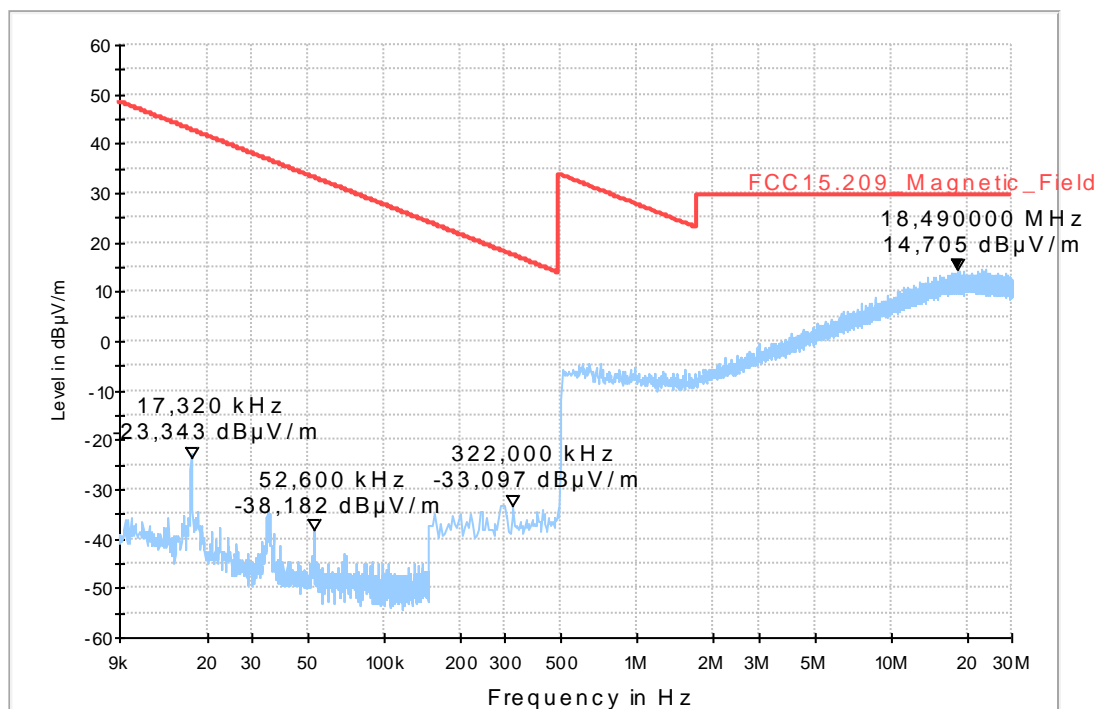
## Diagram No. 2.05\_Ch19975\_BW5MHz\_25RBs\_QPSK\_IntAnt

Date:	16.01.2016	Page 1 of 1
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 V8.51.0	
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:	Lor	
Operating conditions:	TX, LTE Band 4 / QPSK/ 25RBs /5MHZ BW	
Power during tests:	13.8V DC	
Comment 1:	Channel low=19975	
Comment 2:	Internal Antenna	

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR
	434-WLAN-GNSS-SDARS-LTE
	50751424   15W421   Portugal AD801
	SDARS Modified #1

FCC 15.209\_ AN SI63\_10\_2013





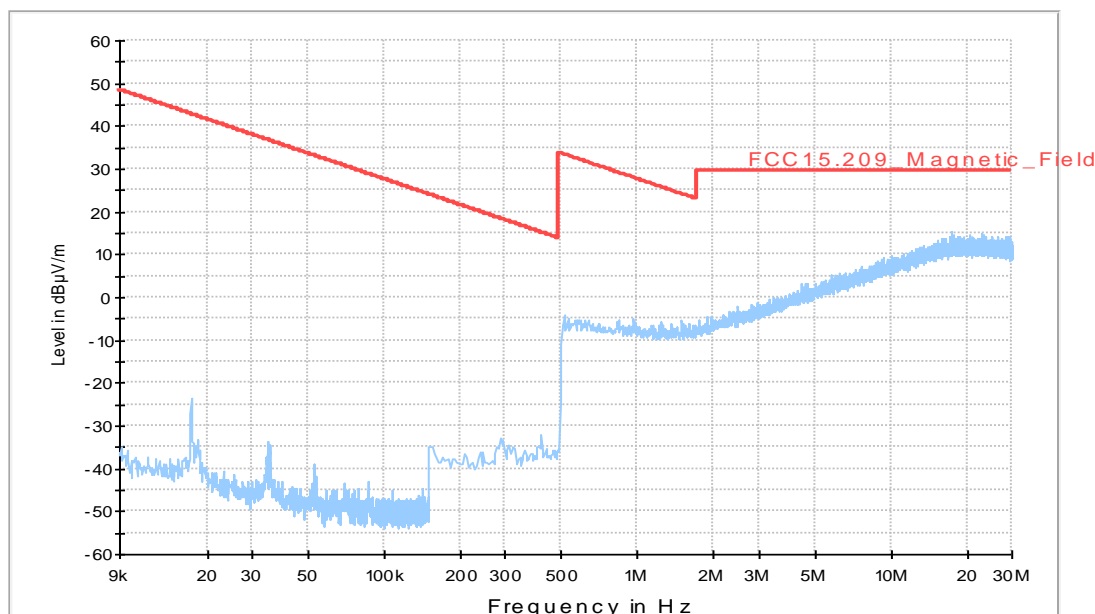
## Diagram No. 2.07\_Ch18625\_BW5MHz\_25RBs\_QPSK\_IntAnt

Date:	16.01.2016	Page 1 of 1
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 V8.51.0	
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:	Lor	
Operating conditions:	TX, LTE Band 2 / QPSK/ 25RBs /5MHz BW	
Power during tests:	13.8V DC	
Comment 1:	Channel low=18625	
Comment 2:	Internal Antenna	

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

FCC 15.209\_ANSI63\_10\_2013



## 1.2. Spurious emissions radiated

### 1.2.1. Emissions in GSM-Mode

#### 8.04b\_RSE\_R\_CH128\_GPRS\_ExtAnt

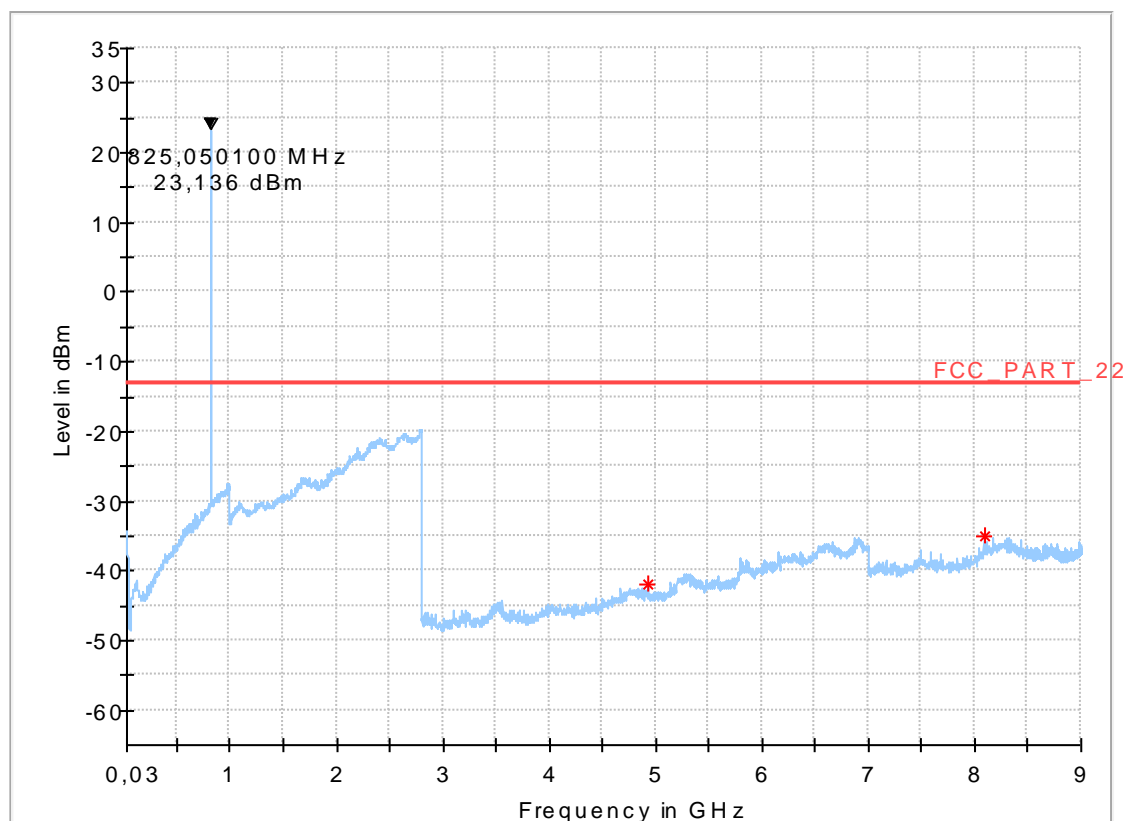
##### Common Information

Test Description:	Radiated Emissions GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part22.917 / RSS-132, Issue 3
Software:	EMC32 V9.21.0
Operating Mode:	MS allocated UL channel 128
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 35%rH; Temperature: 22.8°C
Operator:	External Antenna used

##### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 8.06a\_RSE\_R\_CH251\_GPRS\_Int.Ant

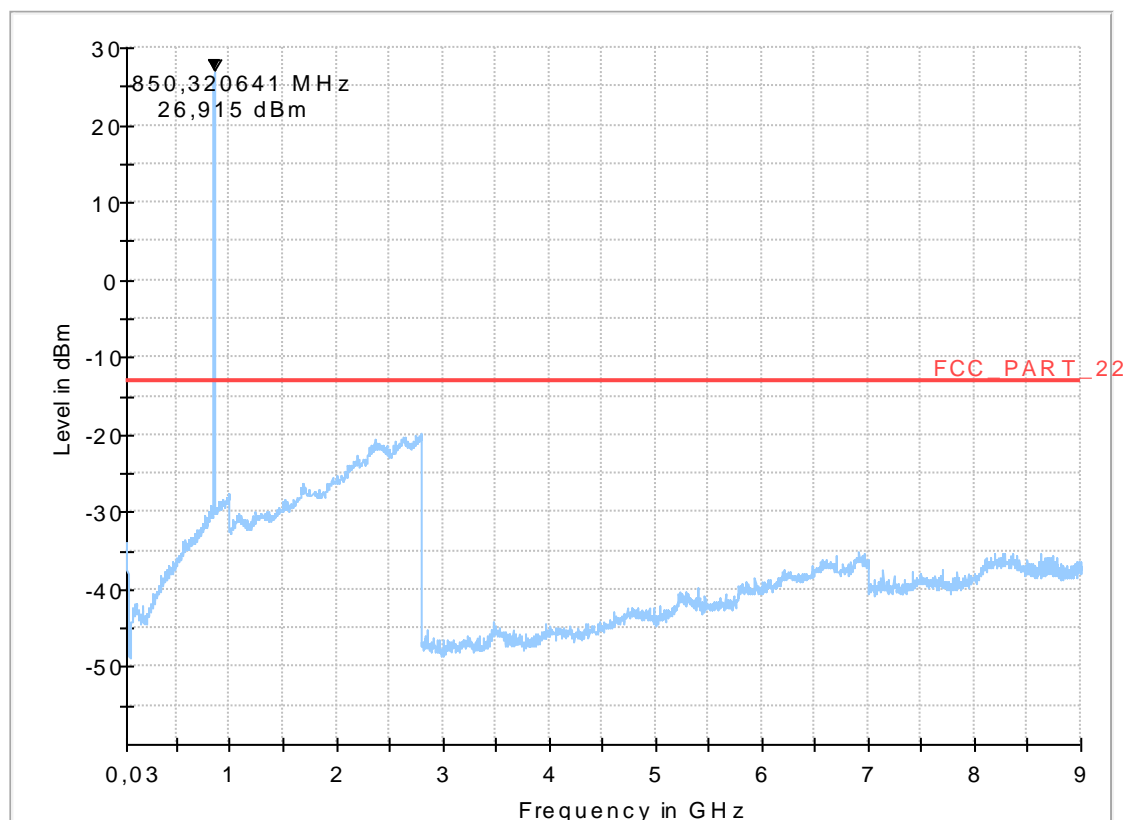
### Common Information

Test Description:	Radiated Emissions GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part22.917 / RSS-132, Issue 3
Test SW.:	EMC32 V9.21.0
Operating Mode:	MS allocated UL channel 251
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 35%rH; Temperature: 23,0°C
Operator:	Lor
Remark:	Internal antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



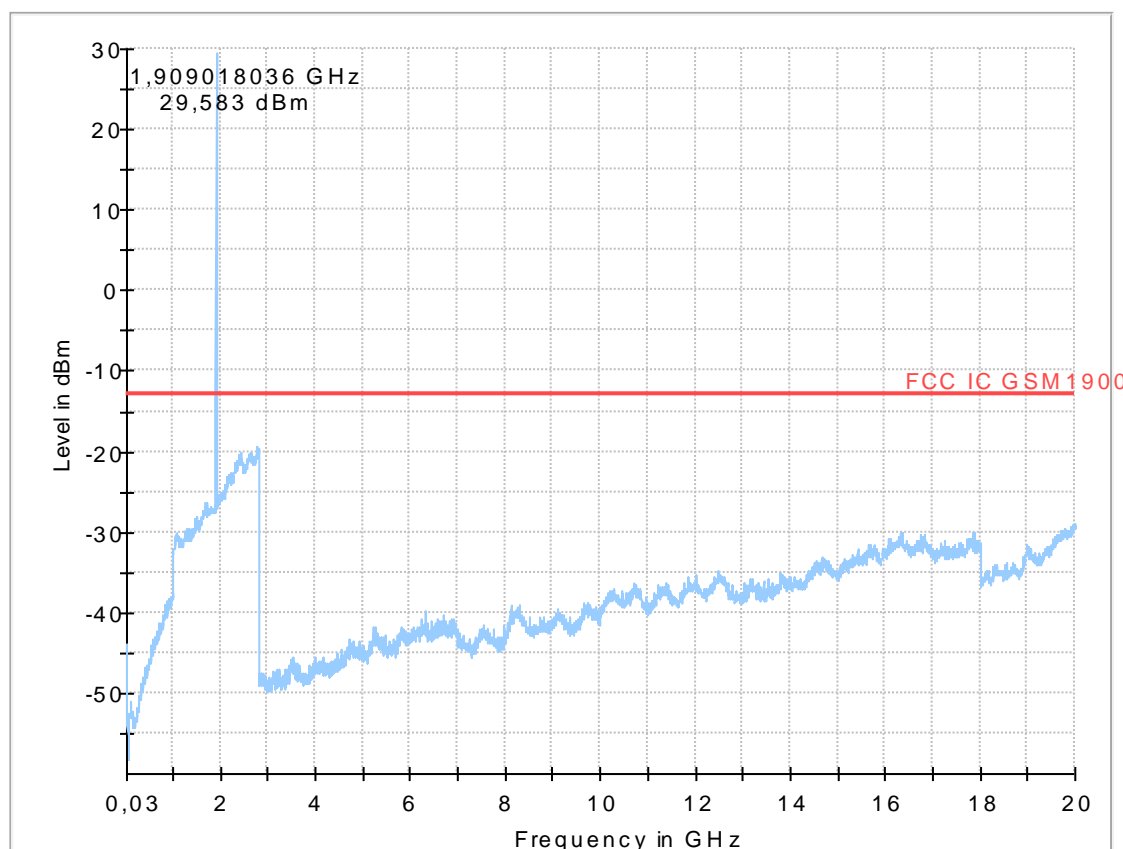
## 8.13\_RSE\_R\_Ch512\_GPRS

### Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 24.238/RSS-133, Issue 3
Test SW.:	EMC32 V9.21.0
Comm. Link:	GPRS 1900
Operating Mode:	MS allocated channel 512 (fc = 1850.2MHz)
Exclusion Band:	1850 - 1910MHz
Environmental Conditions:	Humidity: 33%rH; Temperature: 21°C
Operator Name:	AHo

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Comments:	-



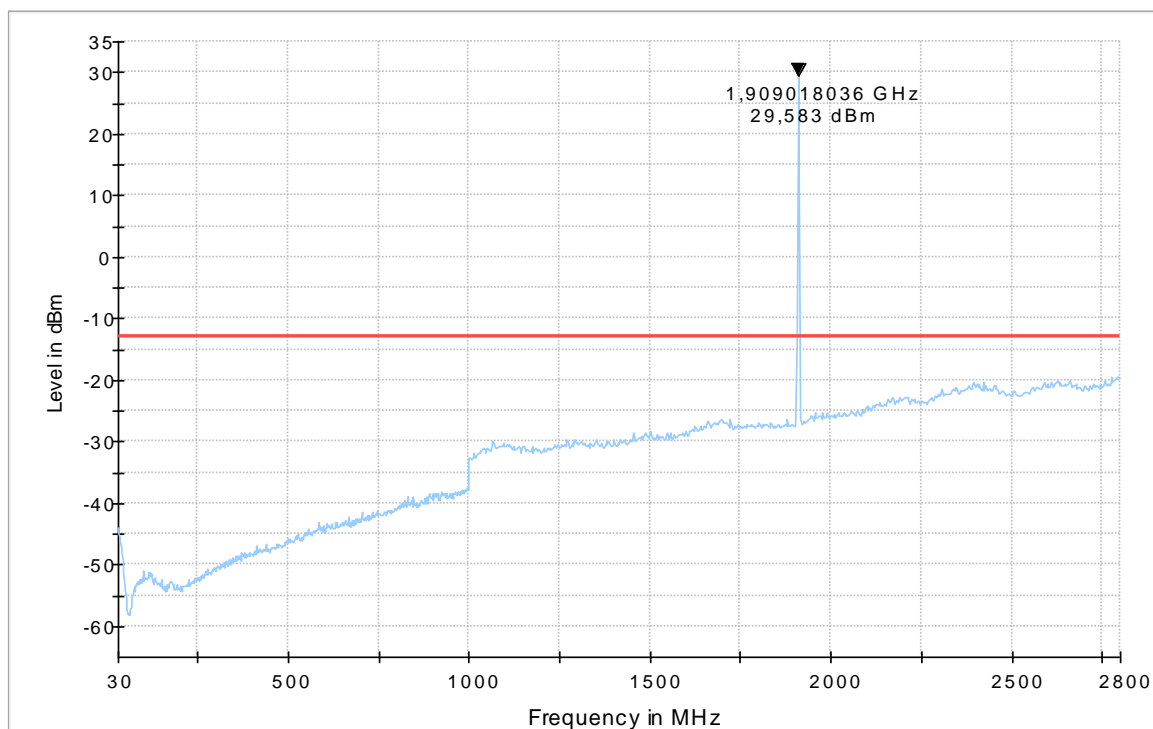
## 8.15b\_RSE\_R\_Ch810\_GPRS

### Common Information

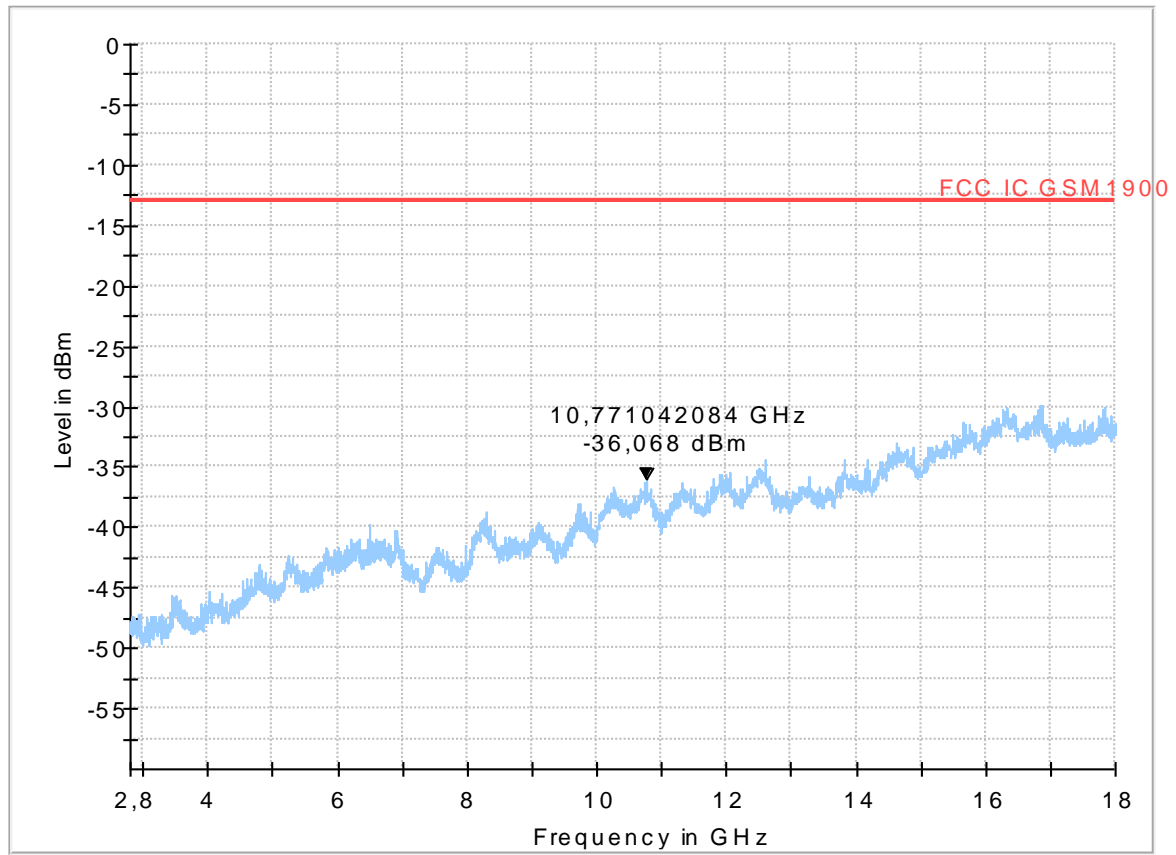
Test Description:	Radiated Emissions GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part24.238
Test SW.:	EMC32 V9.21.0
Operating Mode:	MS allocated UL channel 512,661,810
Exclusionband:	1850 - 1910MHz
Environmental Conditions:	Humidity: 33%rH; Temperature: 21°C
Operator:	AHo

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Comments:	-



## Full Spectrum



## 1.2.2. Emissions in (W-CDMA-Mode)

### Diagram 8.20b\_RSE\_R\_Ch9262\_RMC\_Ext.Ant

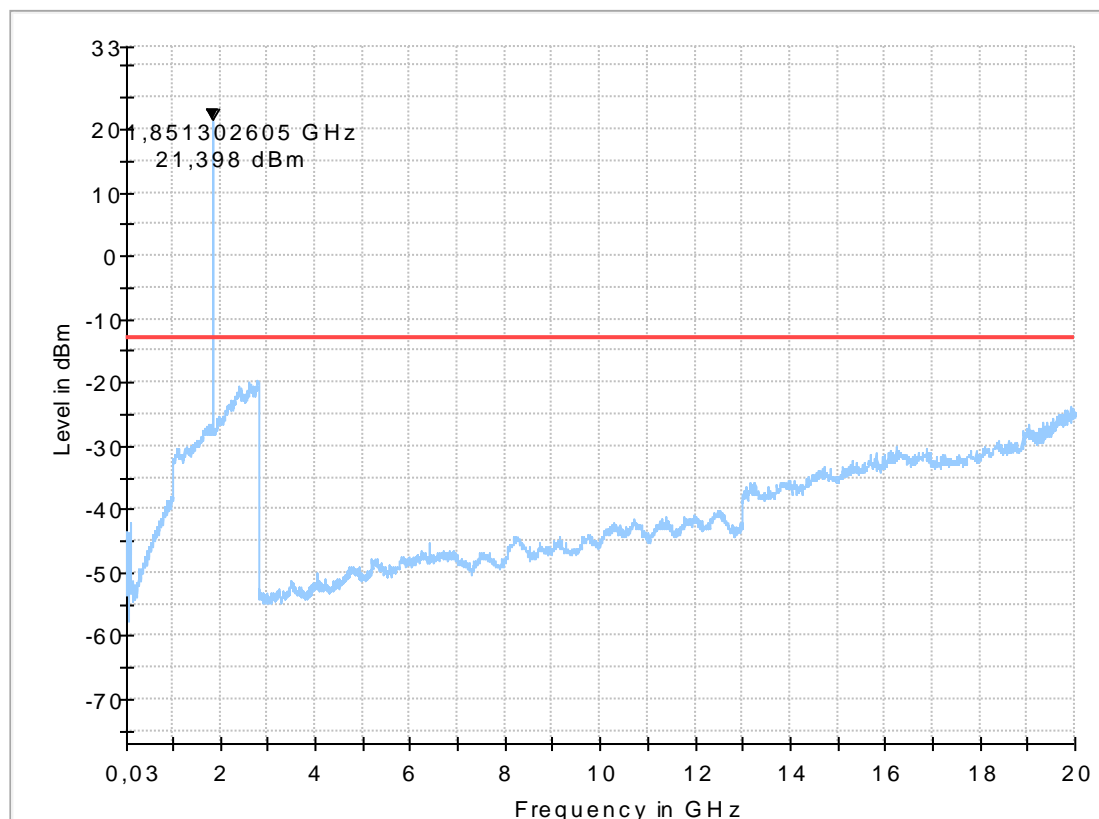
#### Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 9262 (fc = 1852.4 MHz)
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Comment:	External Antenna used

#### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## Diagram 8.22a\_RSE\_R\_Ch9538\_RMC\_FDD2

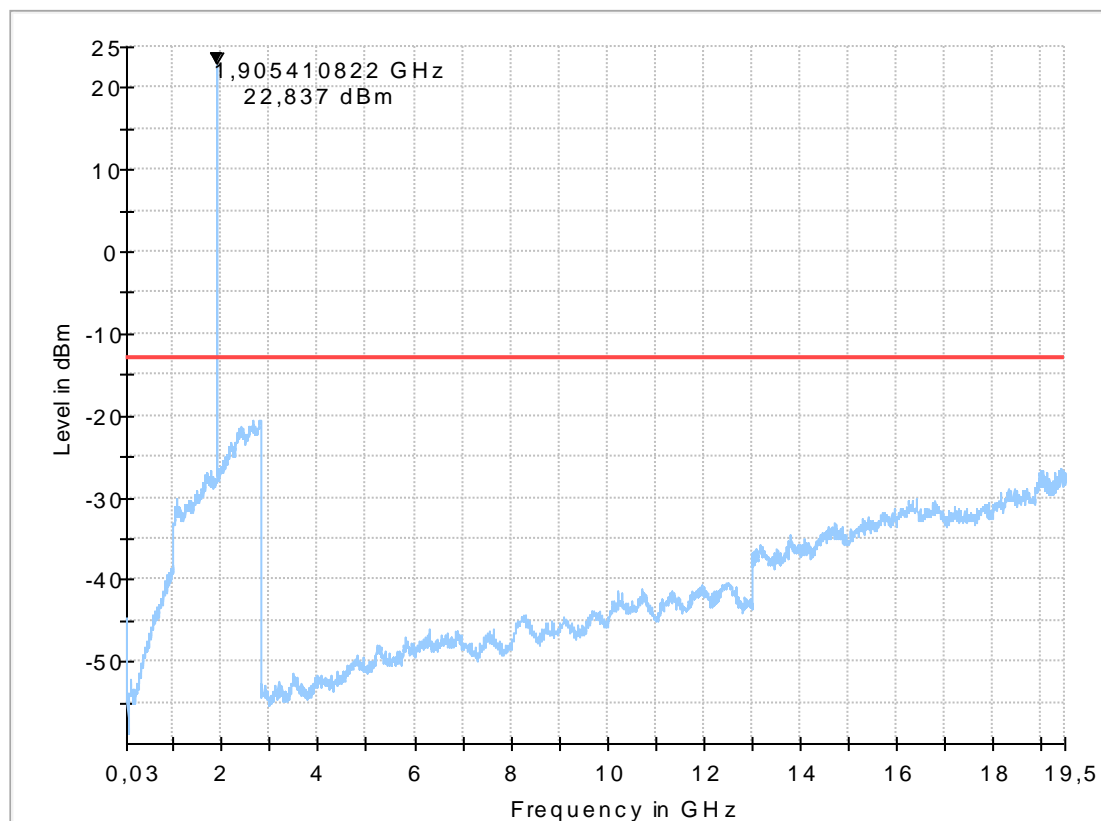
### Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 24.238/RSS-133, Issue 3
Operating Mode:	UE allocated channel 9538 (fc = 1907.6 MHz)
Environmental Conditions:	Humidity: 49%rH; Temperature: 21,8°C
Operator:	AHo
Remarks:	Internal antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum





## 8.40b\_RSE\_R\_Ch1312\_RMC\_FDD4\_Ext.Ant

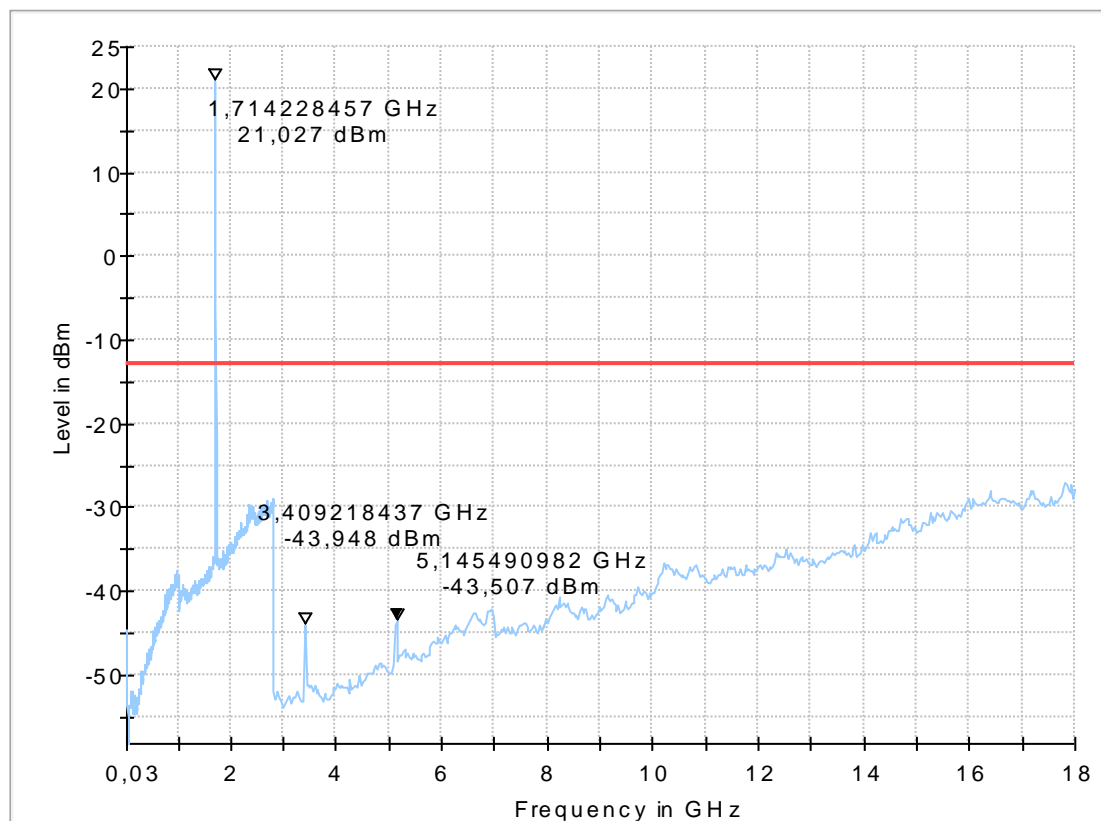
### Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 27.53 / RSS-139
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 1312
Exclusionband:	1710 to 1755 MHz
Environmental Conditions:	Humidity: 47%rH; Temperature: 22°C
Operator:	AHo
Comments	External Antenna

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 8.42a\_RSE\_R\_Ch1513\_RMC\_FDD4\_Int.Ant

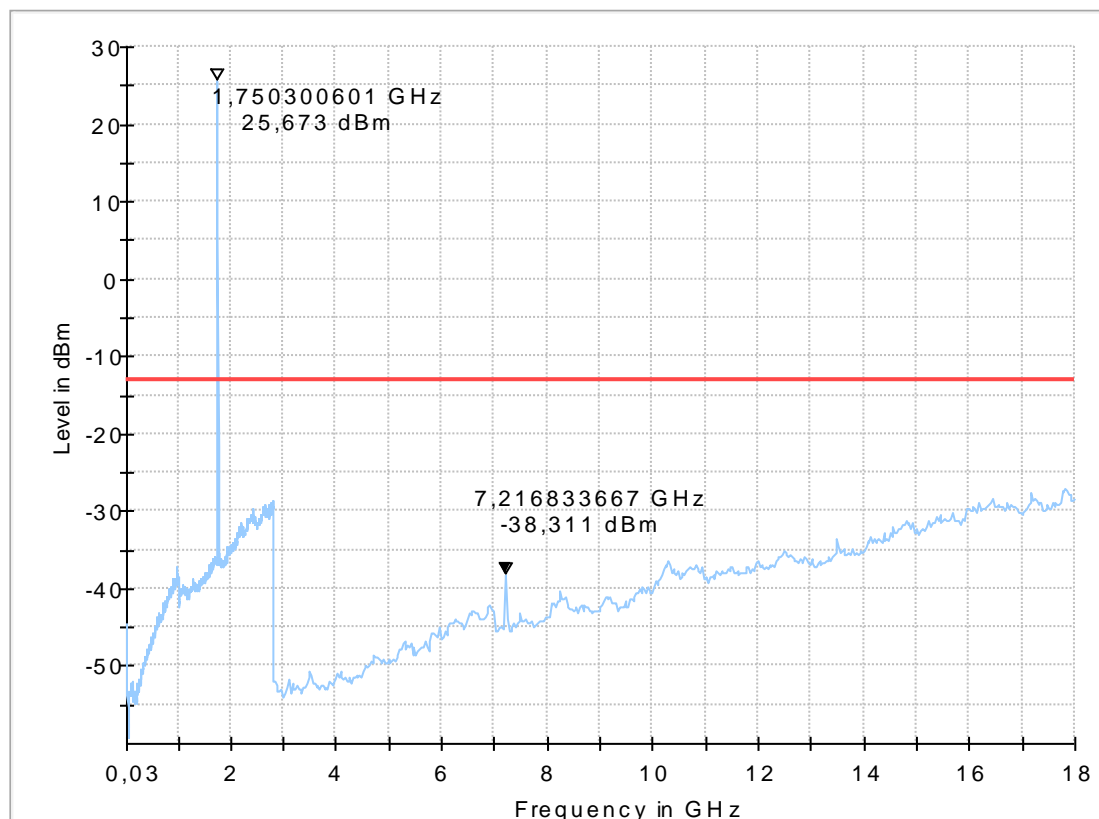
### Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 27.53 / RSS-139
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 1312
Exclusionband:	1710 to 1755 MHz
Environmental Conditions:	Humidity: 47%rH; Temperature: 22°C
Operator:	AHo
Comments	Internal Antenna

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## Diagram 8.50b\_RSE\_R\_Ch4132\_RMC\_Ext.Ant

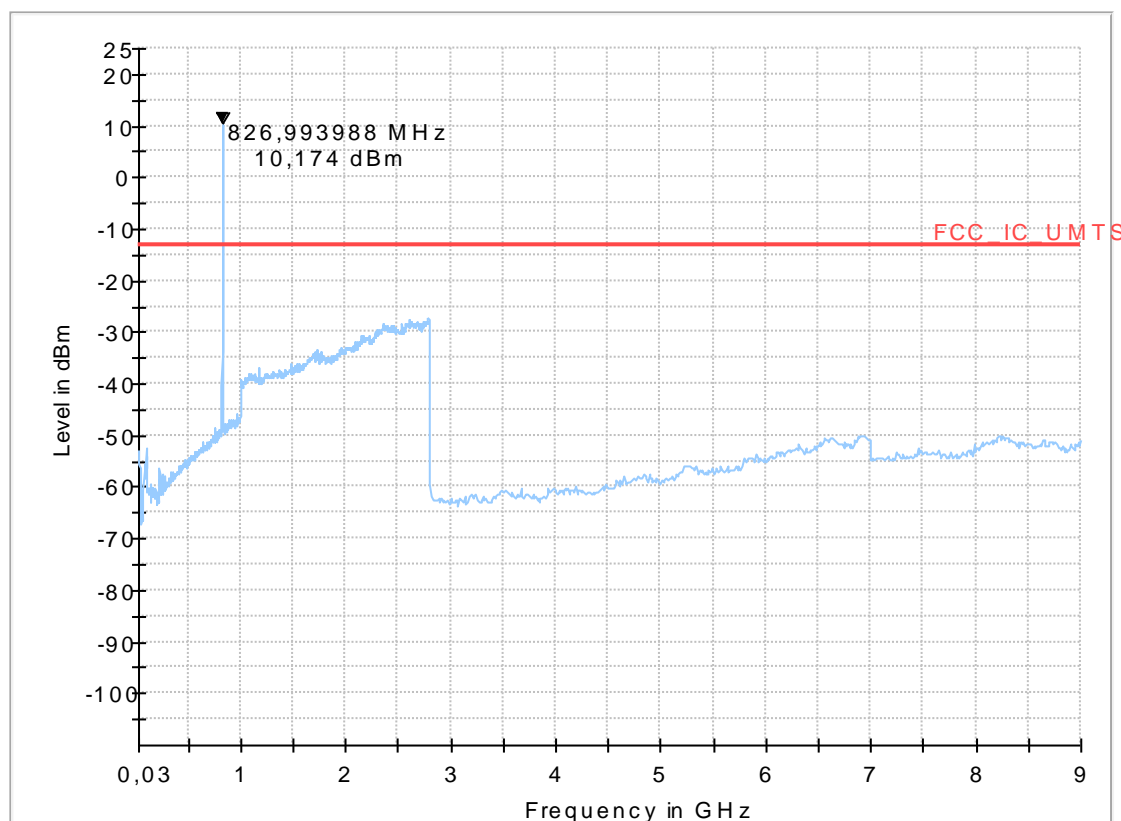
### Common Information

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)
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 4132 (fc =826.4 MHz), RMC
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Remark:	External Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## Diagram 8.52a\_RSE\_R\_Ch4233\_RMC\_Int.Ant

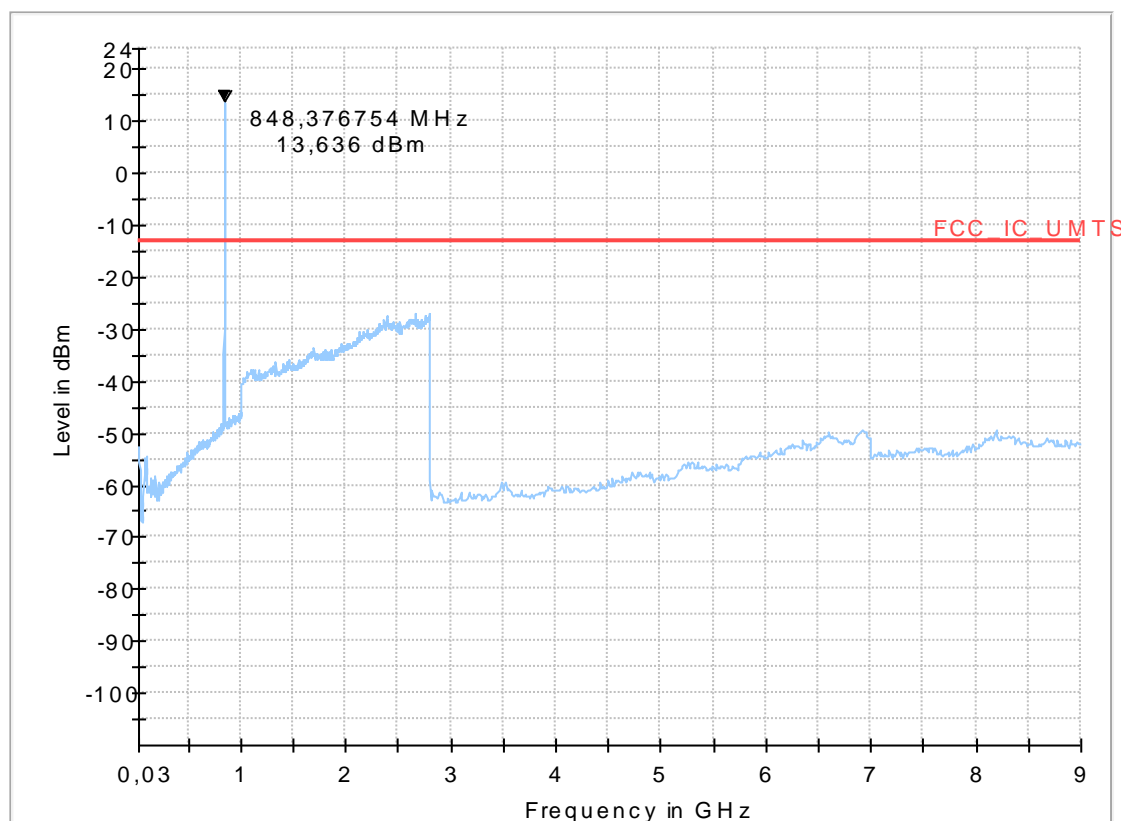
### Common Information

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)
Software:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 4233 (fc =846.6 MHz), RMC
Environmental Conditions:	Humidity: 35%rH; Temperature: 22.6°C
Operator:	KMo
Comment:	Internal Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



### 1.2.3. Emissions in (LTE-Mode)

## 8.22\_LTE II\_Ch18900\_BW\_10MHz\_50\_RB\_QPSK\_9 bis 19.5GHz

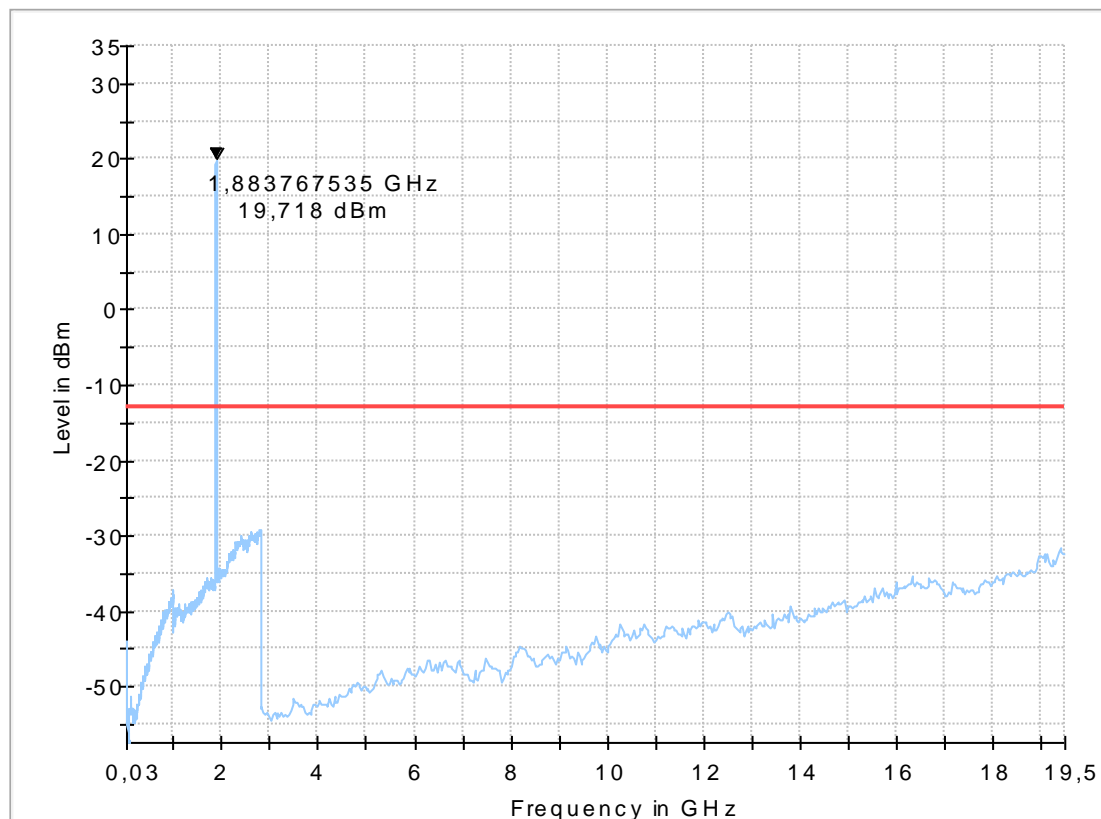
### Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Operating Mode:	UE allocated channel 18900 (fc =1880.0MHz),BW=10 MHz, RB=50,Modulation:QPSK
Environmental Conditions:	Humidity: 24 %rH; Temperature: 23 °C
Operator:	KMo

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Comments:	-

Full Spectrum



## Diagram 8.25\_LTE II\_Ch18900\_BW\_10MHz\_50\_RB\_QAM

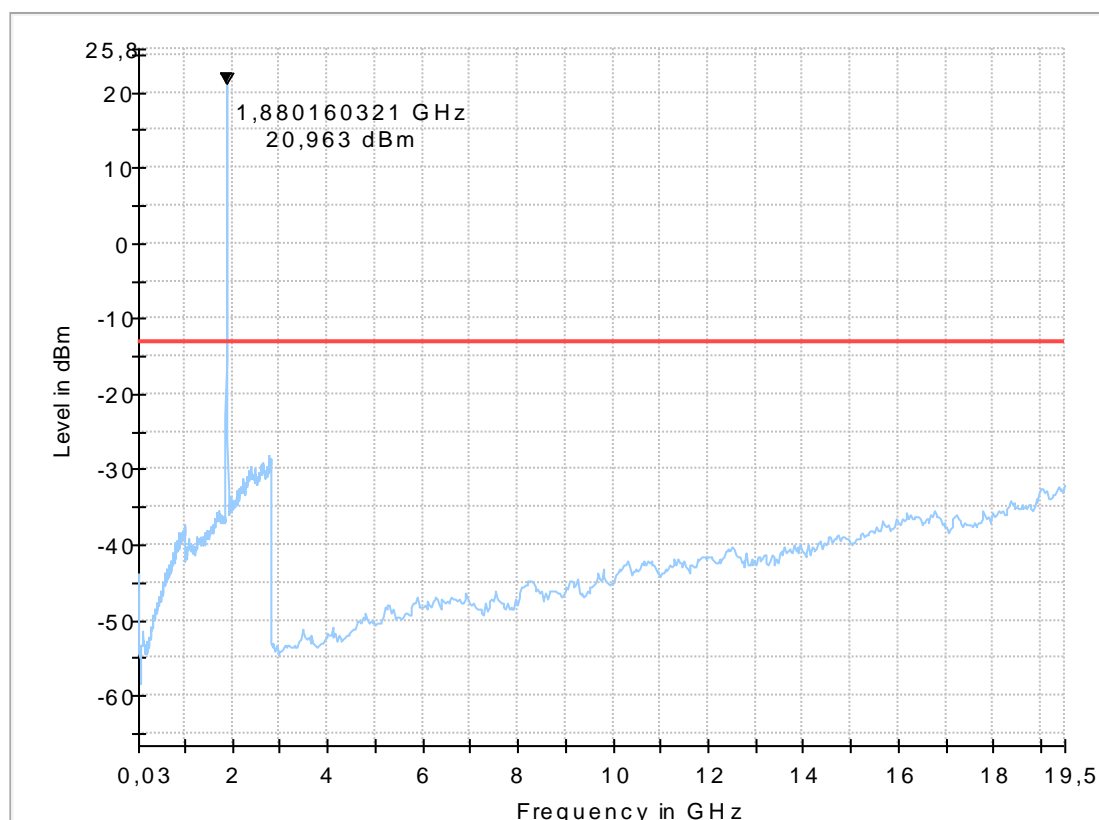
### Common Information

Test Description:	Radiated Spurious Emissions LTE FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Operating Mode:	UE allocated channel 18900 (fc =1880.0MHz),BW=10 MHz, RB=50,Modulation:QAM
Environmental Conditions:	Humidity: 24 %rH; Temperature: 23 °C
Operator:	KMo

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Comments:	-

Full Spectrum



## 8.41\_RSE\_R\_Ch20175\_BW10\_Ext.Ant

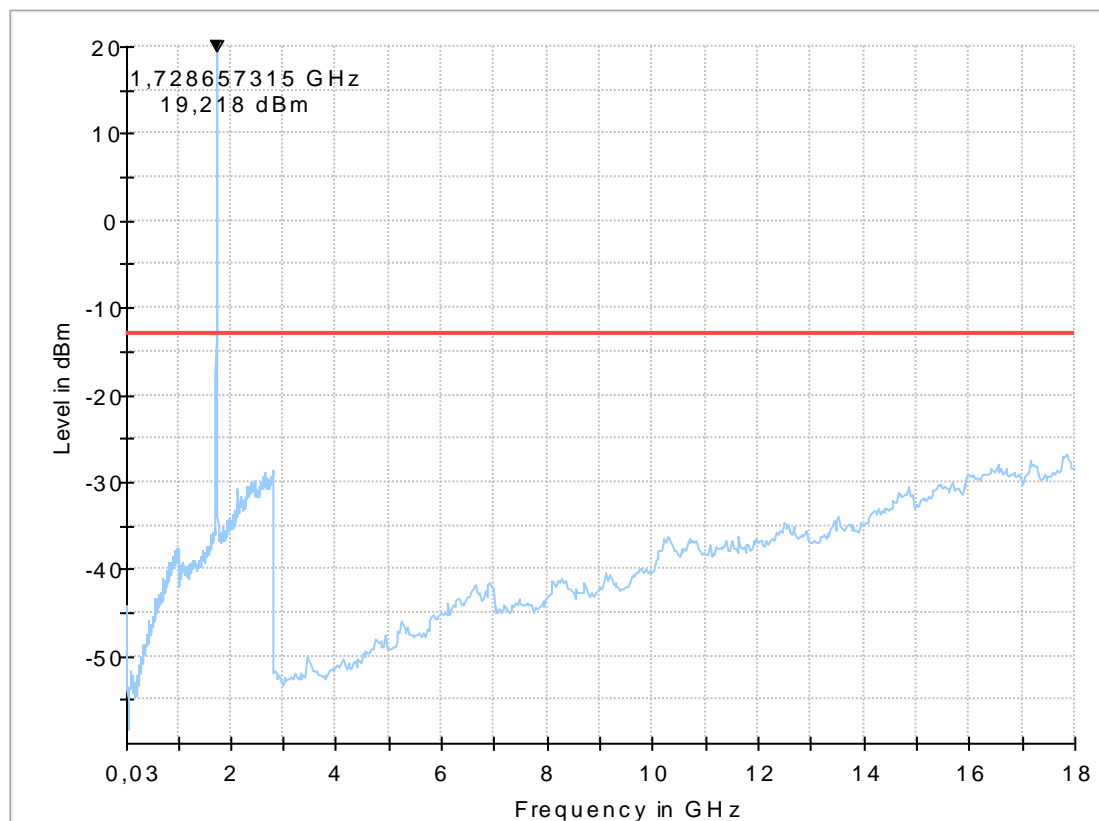
### Common Information

Test Description:	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
Operating Mode:	UE allocated channel 20175 (fc = 1732,5MHz), RMC, 10MHz/QPSK/50RB
Environment Conditions:	Humidity: 30%rH; Temperature: 23.2°C
Operator Name:	Ris
Comment:	External Antenna

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	-----
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 8.44\_RSE\_R\_Ch20175\_BW10\_Int.Ant

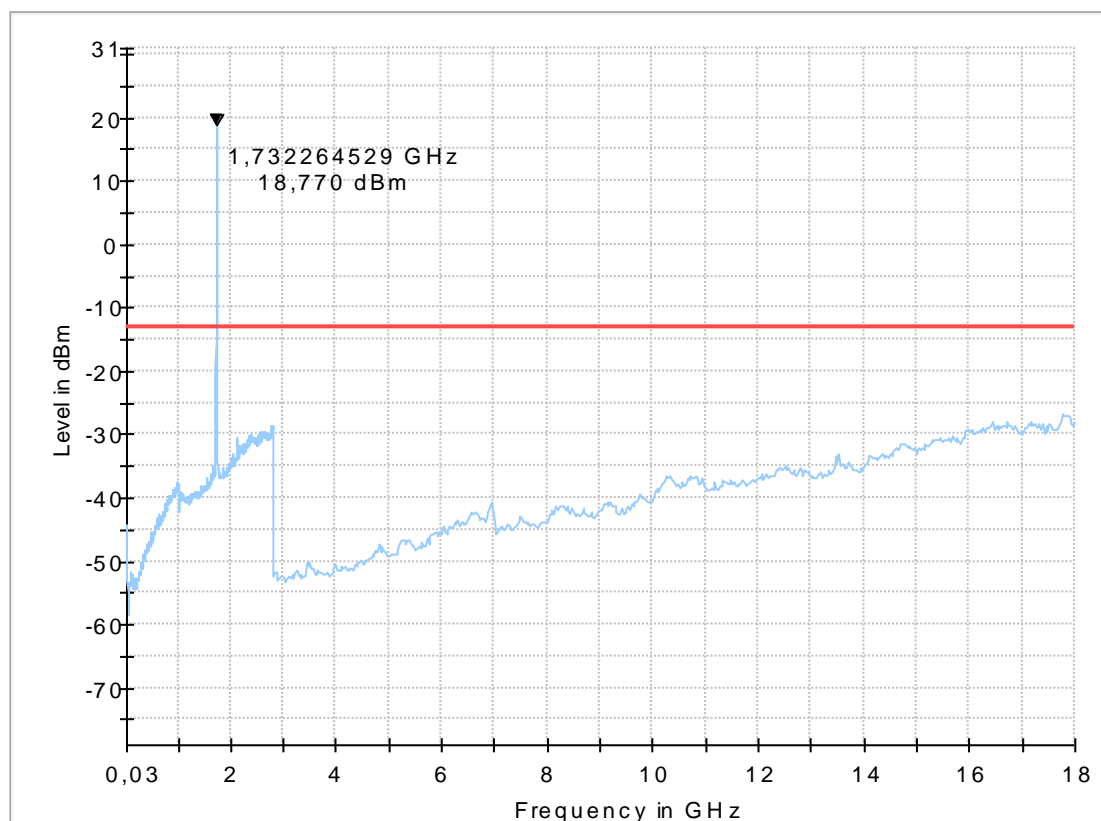
### Common Information

Test Description:	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
Comm. Link:	LTE Band 4
Operating Mode:	UE allocated channel 20175 (fc = 1732,5MHz), RMC, 10MHz/QAM/50RB
Exclusionband:	1710 to 1755 MHz
Environmental Conditions:	Humidity: 31%rH; Temperature: 23,0°C
Operator:	Ris
Comment:	Internal antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum





## Diagram 8.52\_Ch20525\_LTE-BANDV\_BW-10MHz\_QPSK

### Common Information

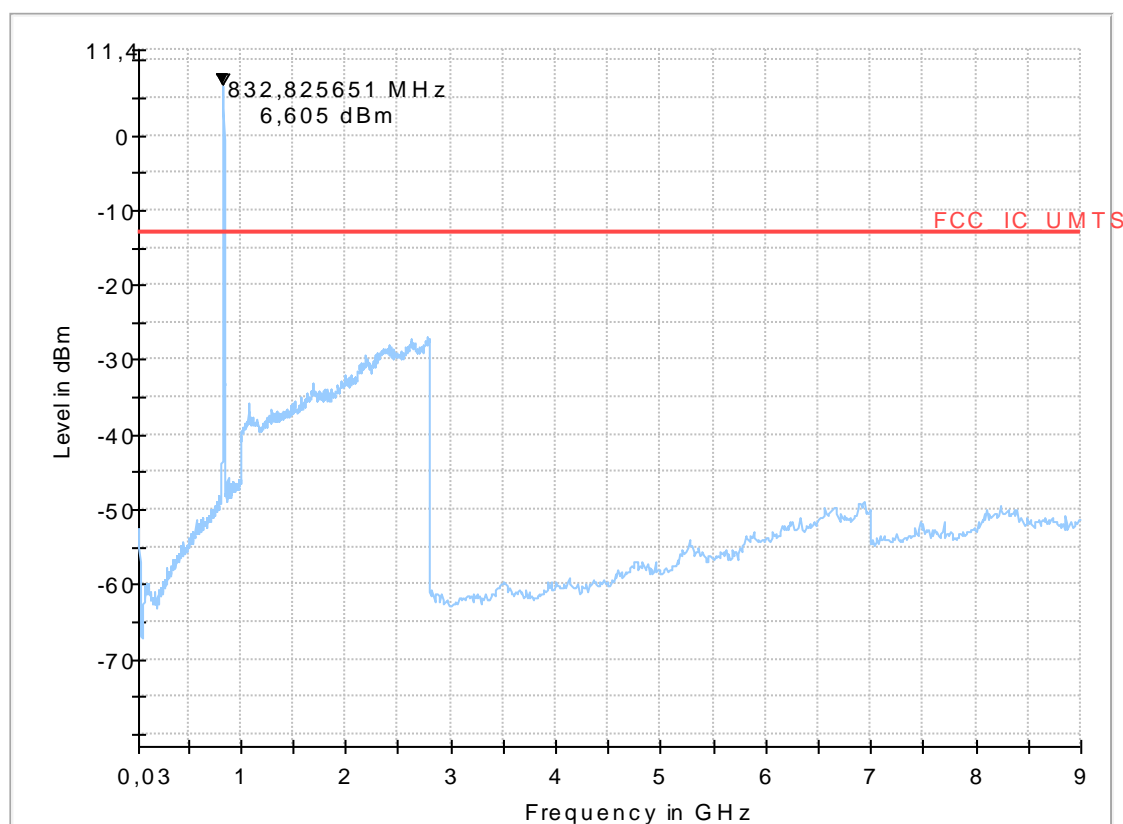
Test Description:	Radiated Spurious Emissions LTE FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 20525 (fc = 836.4), BW=10 MHz, RB=50, Modulation:QPSK

Environmental Conditions:	Humidity: 24 %rH; Temperature: 23 °C
Operator:	KMo

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Comments:	-

Full Spectrum



## 8.55\_Ch20525\_LTE-BAND V\_BW-10MHz\_QAM

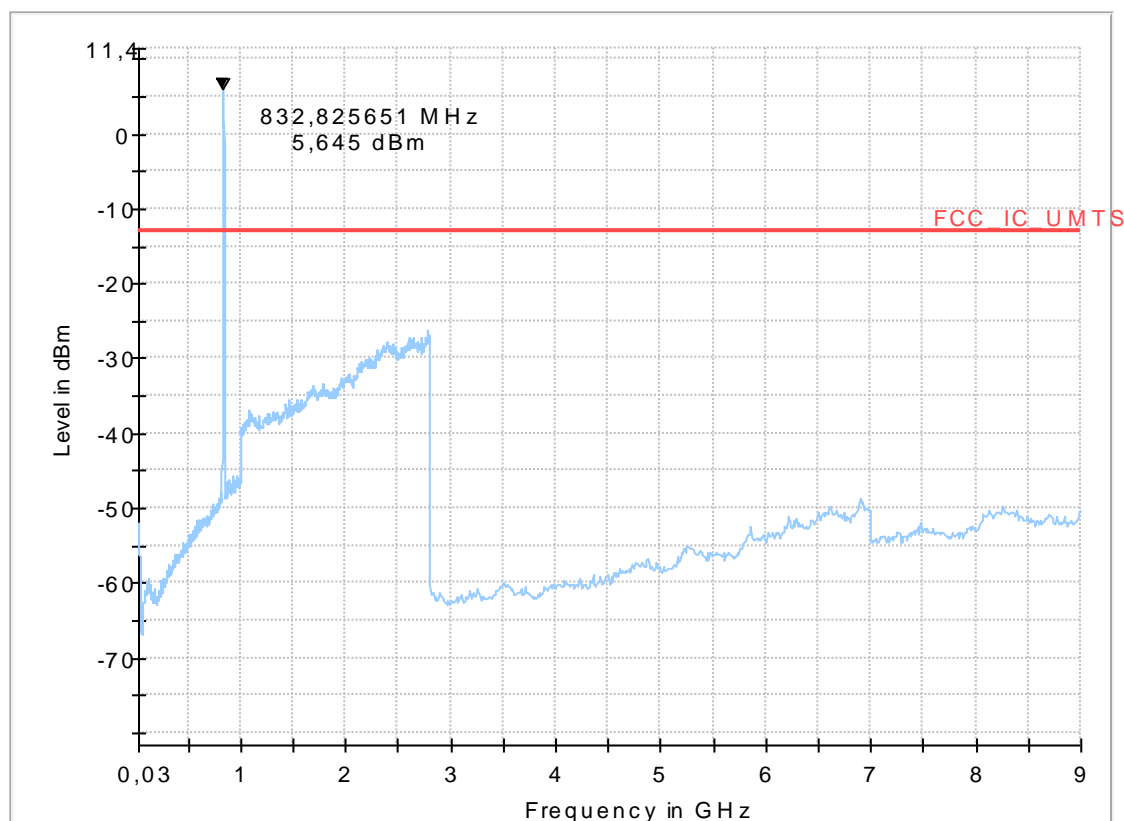
### Common Information

Test Description:	Radiated Spurious Emissions LTE FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Operating Mode:	UE allocated channel 20525 (fc = 836.4), BW=10 MHz, RB=50, Modulation:QAM
Environmental Conditions:	Humidity: 24 %rH; Temperature: 23 °C
Operator:	KMo

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Comments:	-

Full Spectrum



## 8.171\_RSE\_R\_Ch23790\_BW5\_QPSK\_Ext.Ant

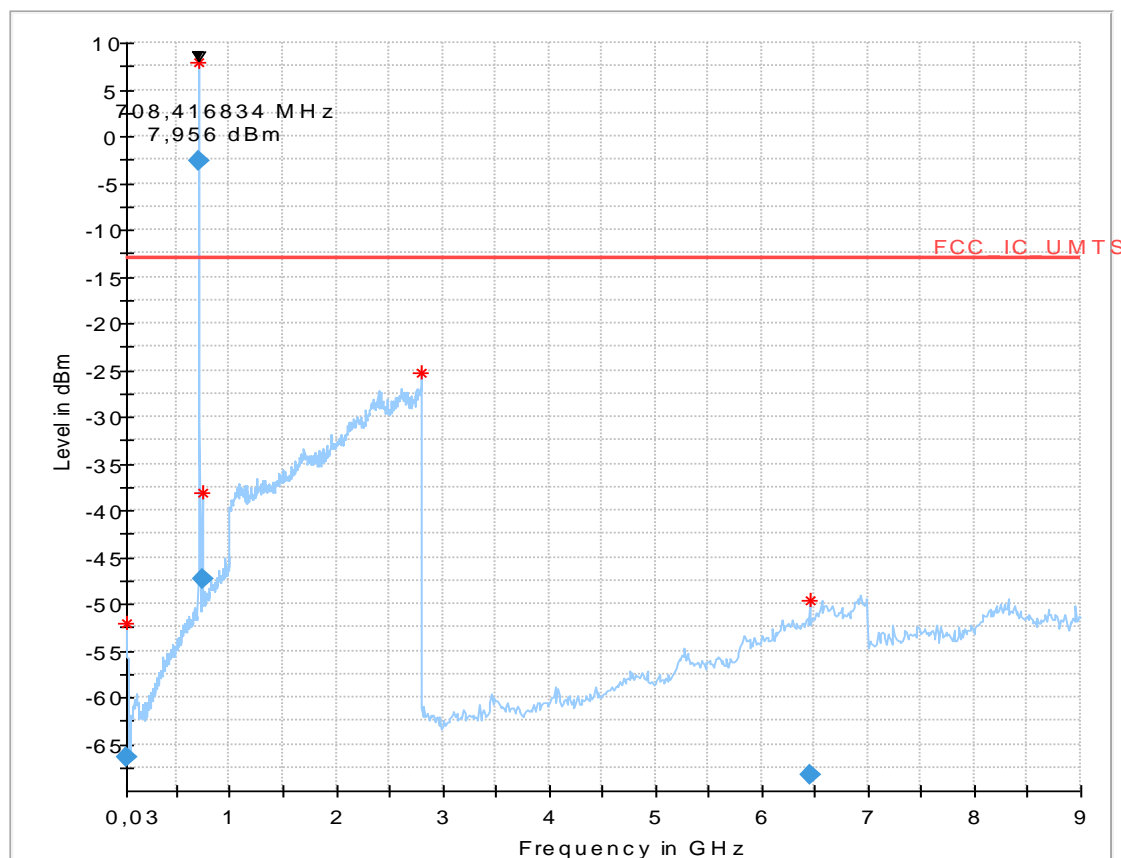
### Common Information

Test Description:	Radiated Spurious Emissions LTE Band 17
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a) / RSS-130
Operating Mode:	UE allocated channel 23790 (fc = 710MHz), RMC, 5MHz/QPSK/25RB
Environmental Conditions:	Humidity: 35%rH; Temperature:21,5°C
Operator:	Ris
Remark:	External Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 8.175\_RSE\_R\_Ch23790\_BW5\_QAM\_Int.Ant

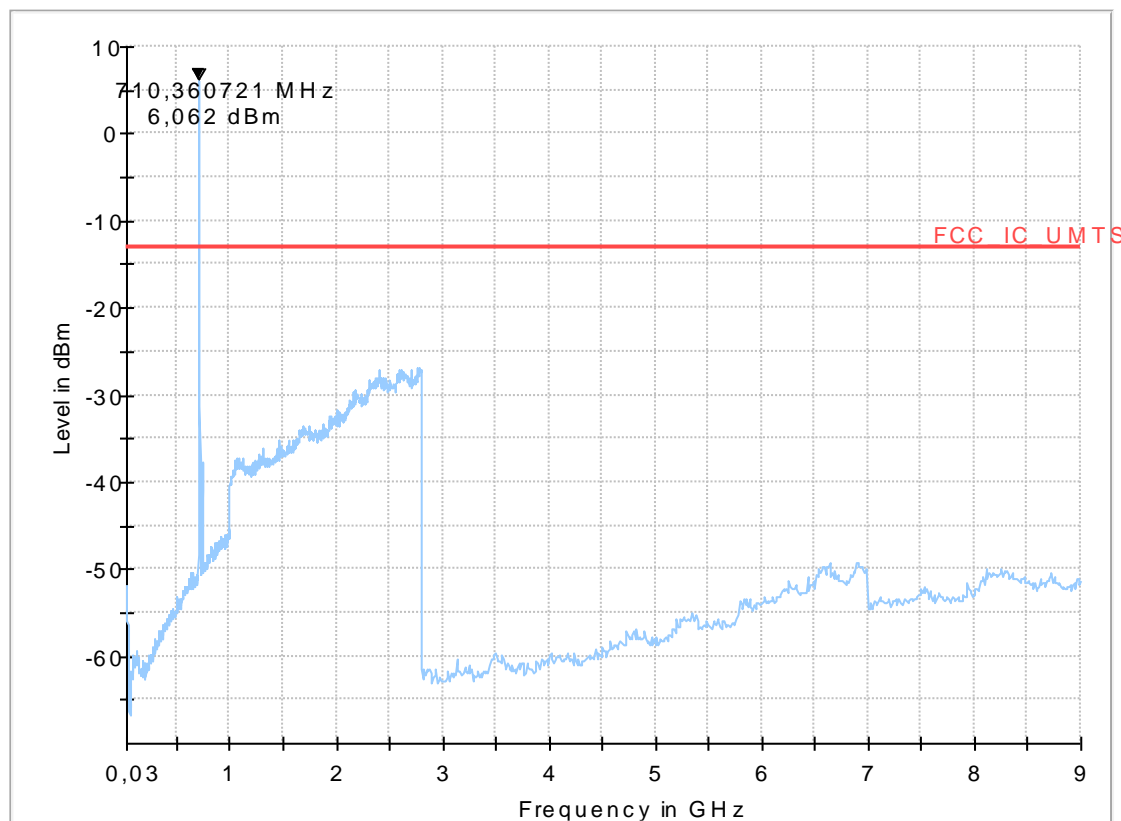
### Common Information

Test Description:	Radiated Spurious Emissions LTE Band 17
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a) / RSS-130
Operating Mode:	UE allocated channel 23790 (fc = 710MHz), RMC, 5MHz/QAM/25RB
Environmental Conditions:	Humidity: 34%rH; Temperature: 22°C
Operator:	Ris
Remark	Internal Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



### 1.3. Radiated emissions – band-edge for GSM – Operating Mode

#### 1.3.1. GSM Mode 1900

##### 1.3.1.1. Internal antenna

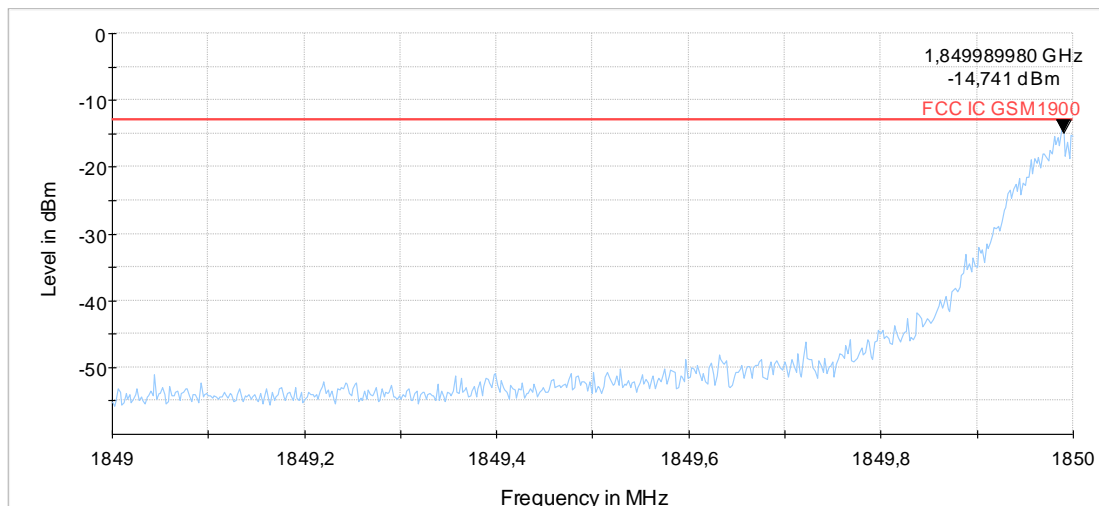


Diagram 9.02a - Ch 512

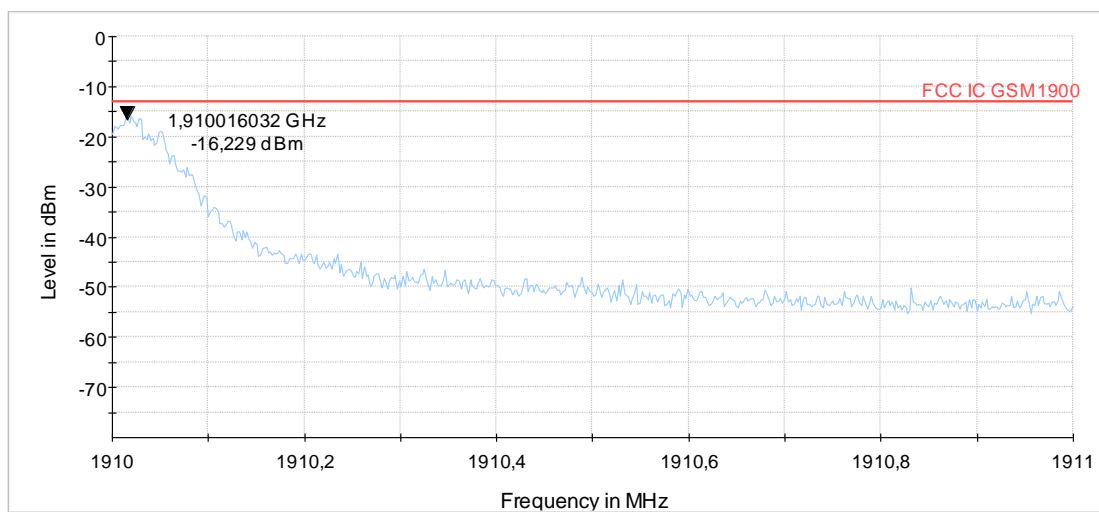


Diagram 9.10a - Ch810

### 1.3.1.2. External Antenna

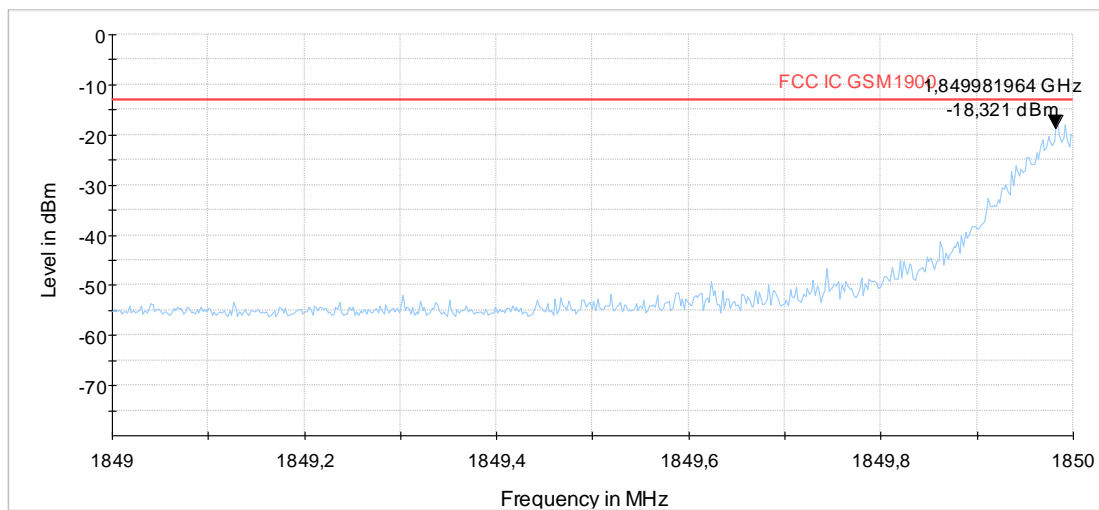


Diagram 9.09b - Ch 512

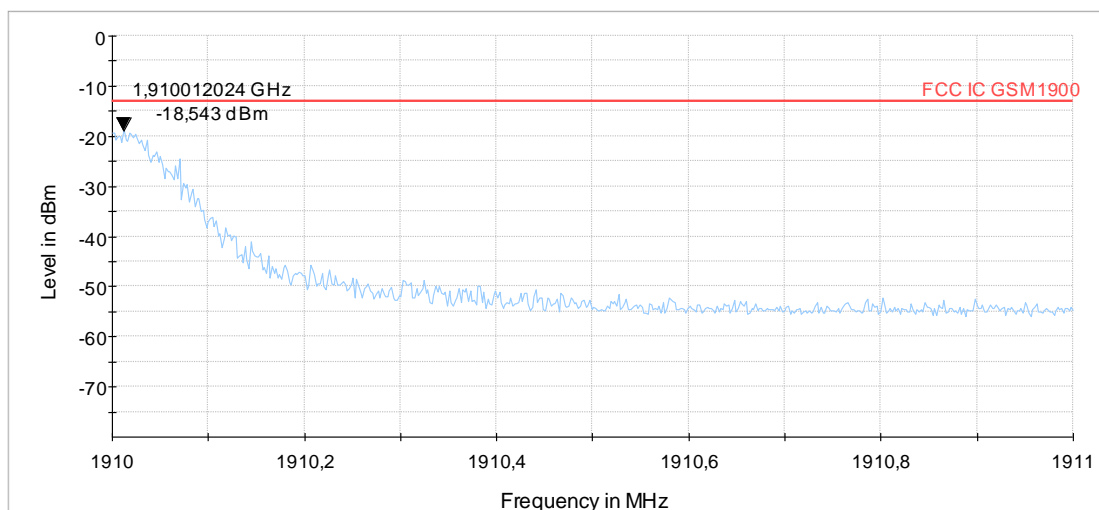


Diagram 9.10b - Ch810

## 1.3.2. GSM Mode 850

### 1.3.2.1. Internal antenna

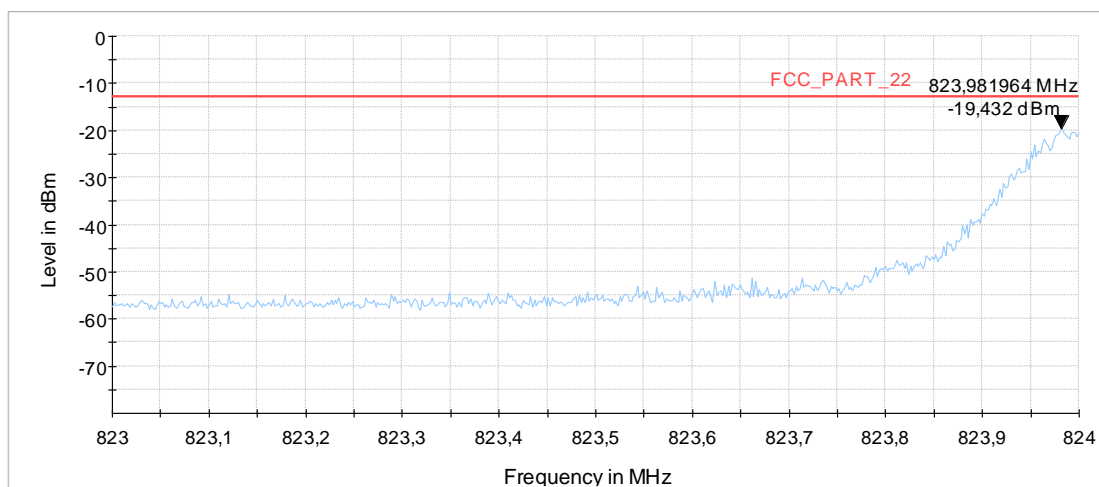


Diagram 9.03a - Ch 128

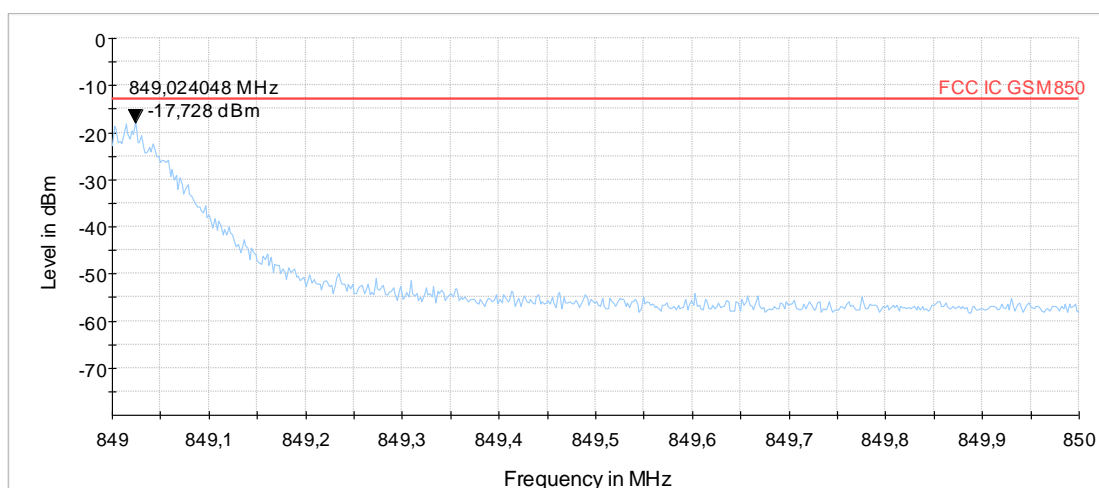


Diagram 9.03a - Ch 251

## 1.3.2.2. External Antenna

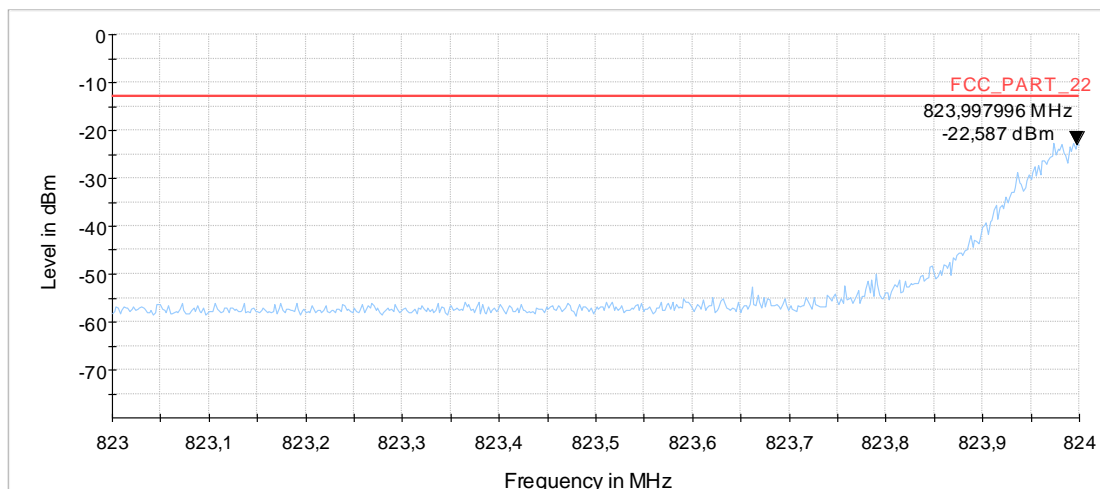


Diagram 9.03b – Ch128

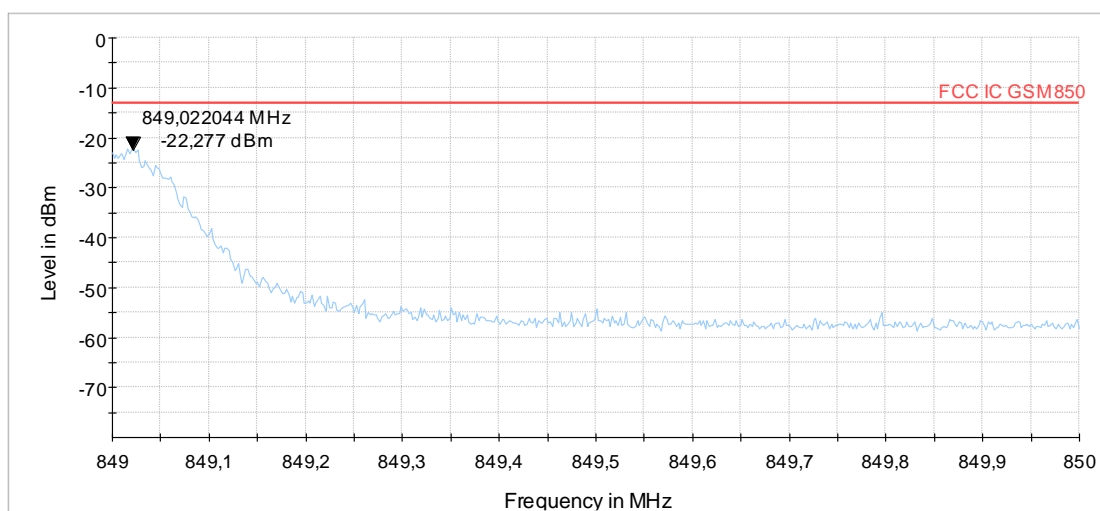


Diagram 9.04b – Ch251



## 1.4. Radiated emissions – band-edge for W-CDMA Operating Mode

### 1.4.1. W-CDMA Mode 2

#### 9.20a\_RSE\_R\_Ch9262\_RMC\_Int.Ant

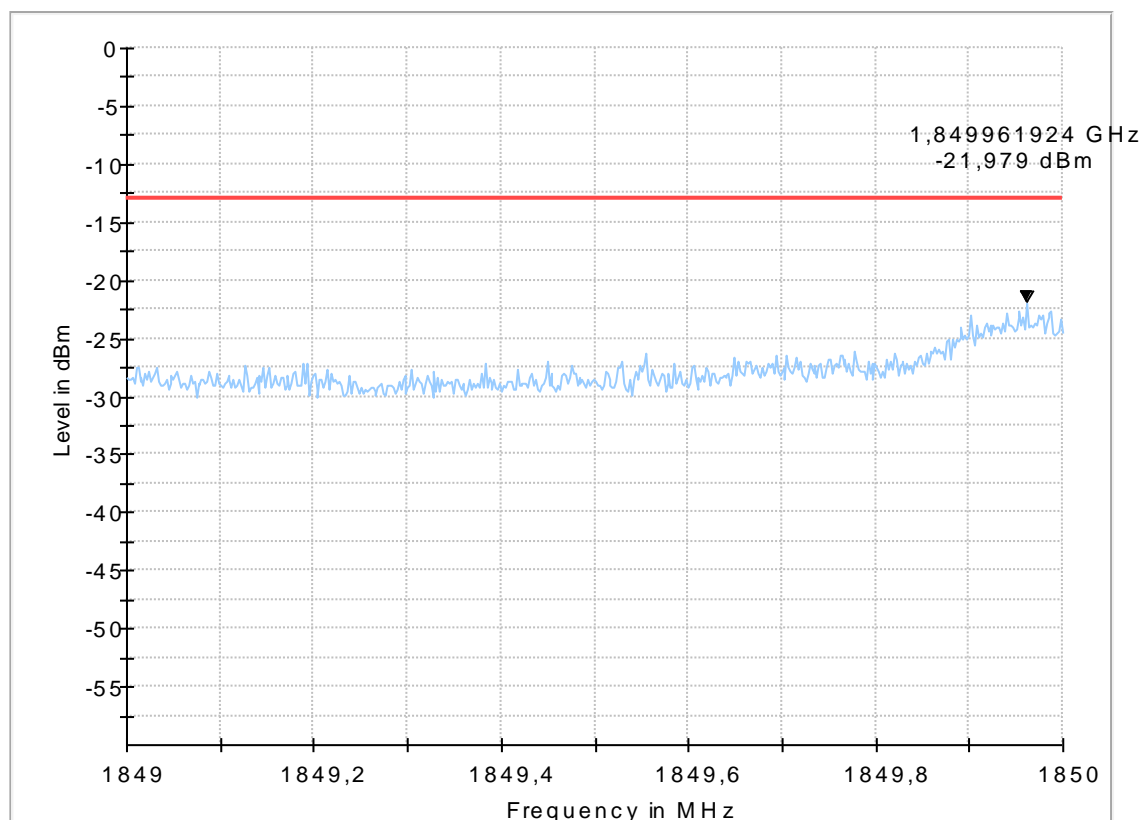
#### Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions UMTS FDD 2
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 9262 (fc = 1852.4 MHz)
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Comment:	Internal Antenna used

#### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.20b\_RSE\_R\_Ch9262\_RMC\_Ext.Ant

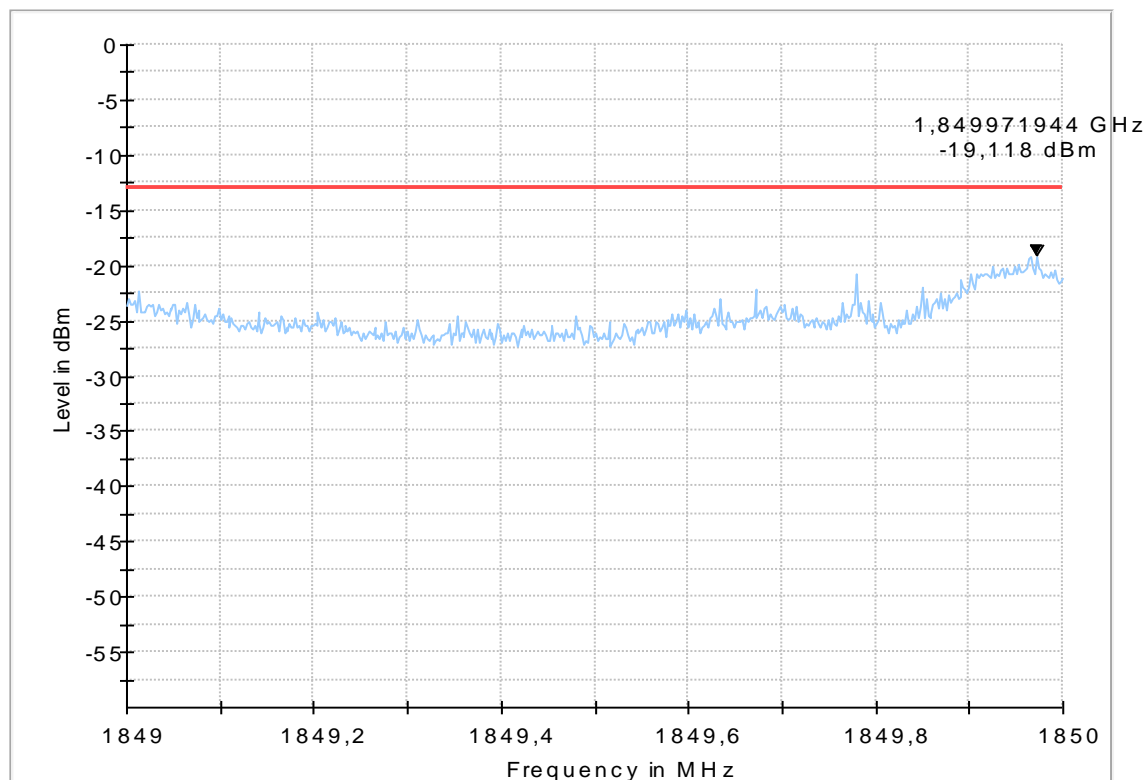
### Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions UMTS FDD 2
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 9262 (fc = 1852.4 MHz)
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Comment:	External Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
<hr/>	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.21a\_RSE\_R\_Ch9538\_RMC\_Int.Ant

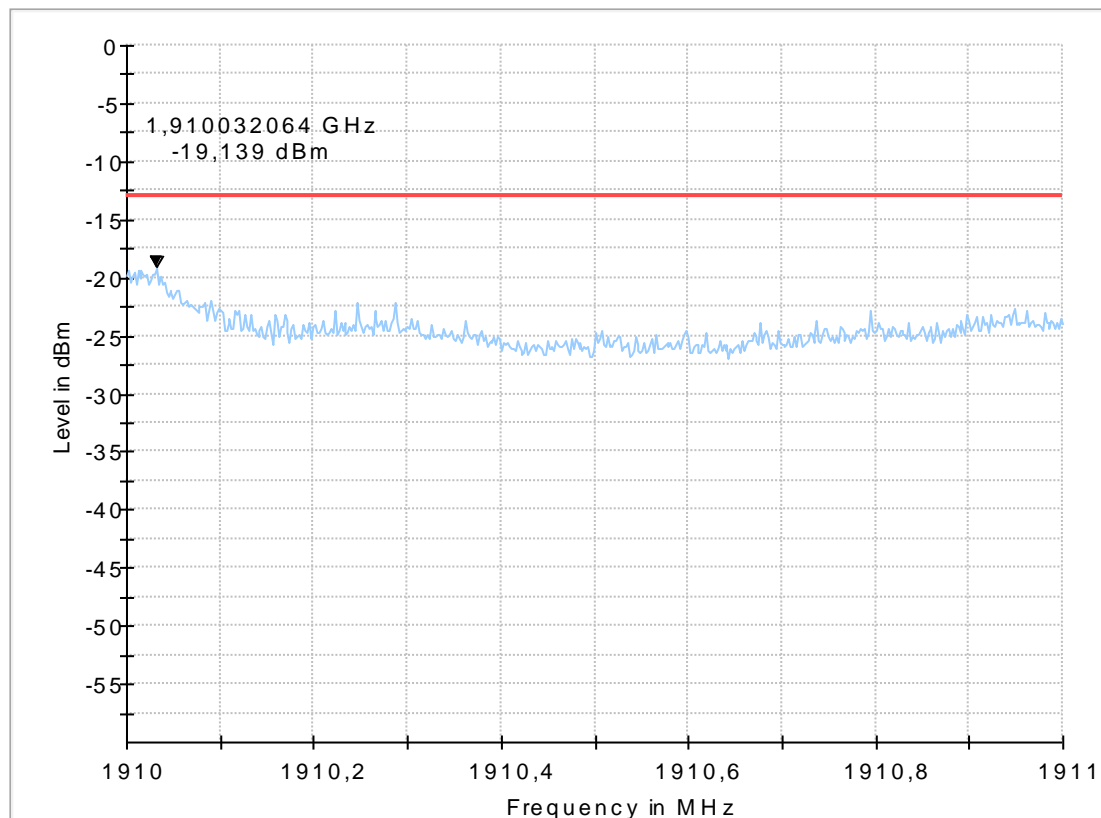
### Common Information

Test Description:	Band-Edge high - Radiated Spurious Emissions UMTS FDD 2
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 9538 (fc = 1907.6 MHz)
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Comment:	Internal Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.21b\_RSE\_R\_Ch9538\_RMC\_Ext.Ant

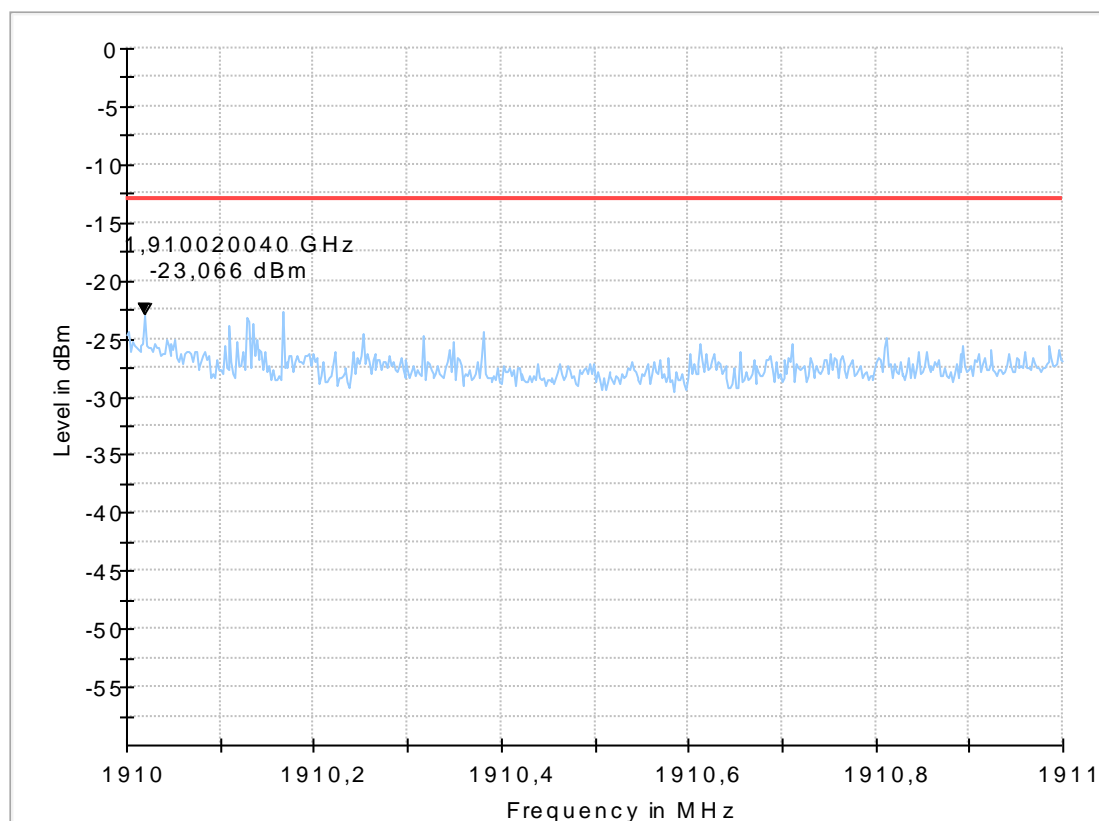
### Common Information

Test Description:	Band-Edge high - Radiated Spurious Emissions UMTS FDD 2
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 9538 (fc = 1907.6 MHz)
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Comment:	External Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
-----	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 1.4.2. W-CDMA Mode 4

### 9.40a\_BE\_R\_Ch1312\_RMC\_IntAnt

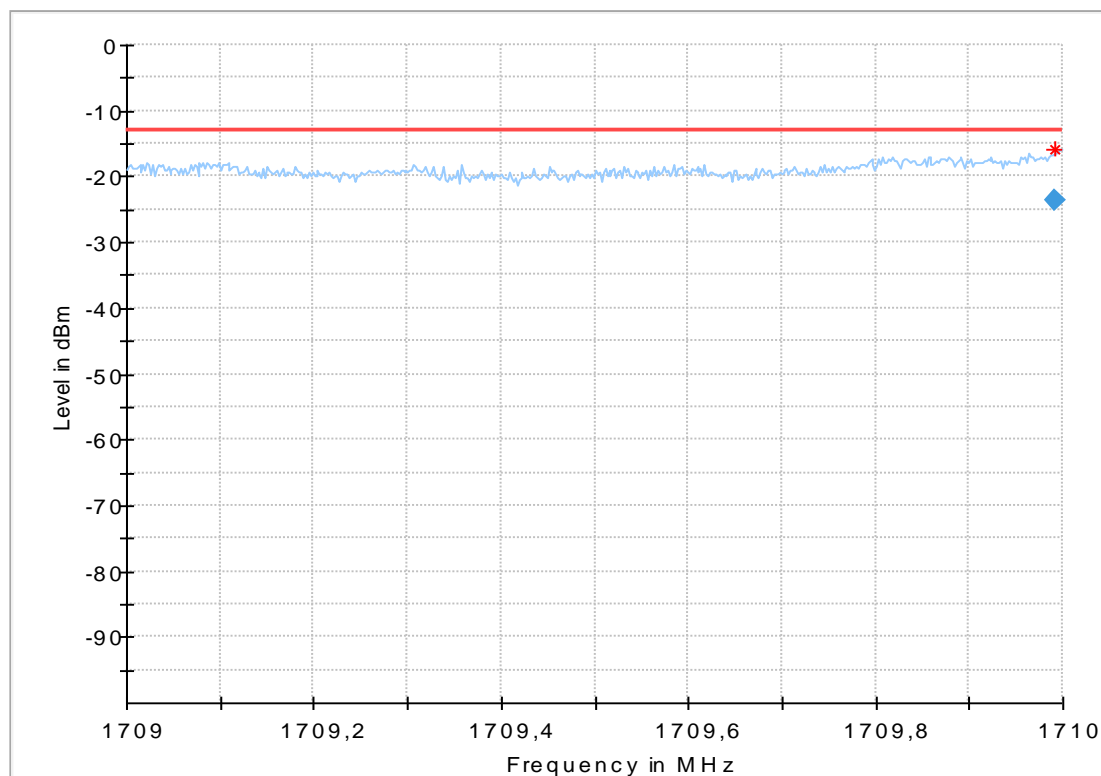
#### Common Information

Test Description:	Radiated Spurious Emissions LTE Band 4
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR) - EMC32 V9.21.0
Test Standard:	FCC Part 27.53 / RSS-139
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel 1312
Exclusionband:	1710 to 1755 MHz
Environmental Conditions:	Humidity: 47%rH; Temperature: 22°C
Operator:	AHo
Comments	Internal Antenna

#### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.40b\_BE\_R\_Ch1312\_RMC\_Ext.Ant

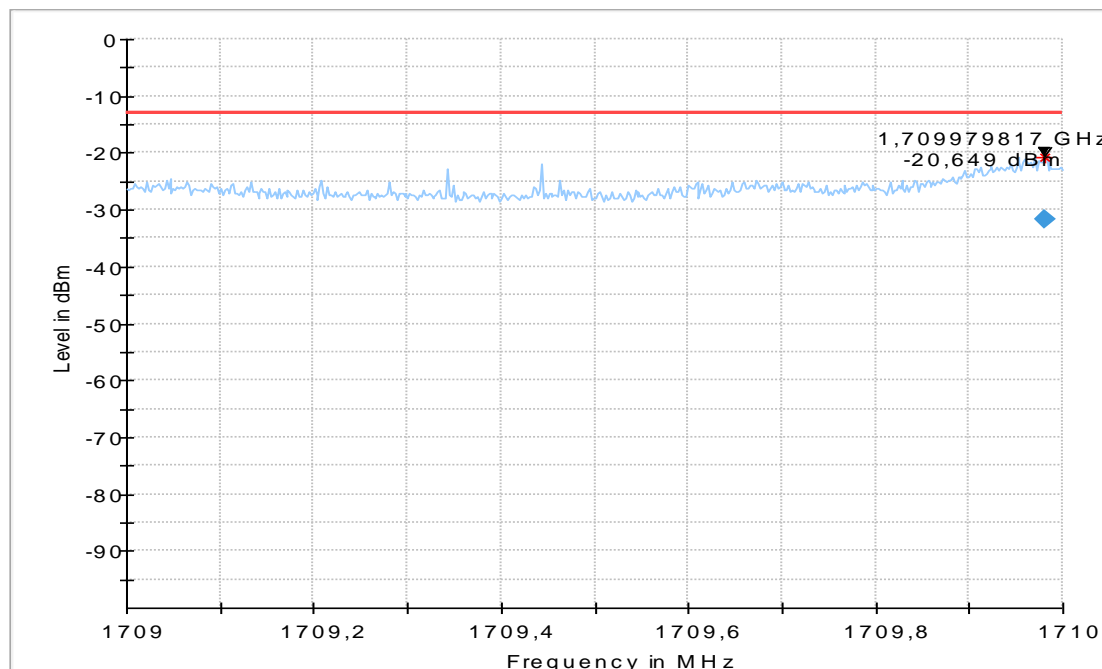
### Common Information

Test Description: Radiated Spurious Emissions LTE Band 4  
 Test Site Location: CETECOM GmbH Essen  
 Test Site: Fully Anechoic Room (FAR) - EMC32 V9.21.0  
 Test Standard: FCC Part 27.53 / RSS-139  
 Comm. Link: LTE Band 4  
 Operating Mode: MS allocated channel 1312  
 Exclusionband: 1710 to 1755 MHz  
 Environmental Conditions: Humidity: 47%rH; Temperature: 22°C  
 Operator: AHo  
 Comments: External Antenna

### EUT Information

Manufacturer: ACTIA Nordic AB  
 EuT: ACUII-06  
 -----  
 HW Version: C  
 SW Version: 13  
 Serial Number: 21790250902643  
 Connected Interfaces: MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector  
 Power Supply: 13.8 VDC  
 Antenna Type: LTE Antenna with SDAR  
 434-WLAN-GNSS-SDARS-LTE  
 50751424 | 15W421 | Portugal AD801  
 SDARS Modified #1

Full Spectrum



### Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
1709.979817	13.00	18.68	10000.0	155.0	V	79.0	0.0	-63.3	13:50:36 - 01.02.2016

## 9.41a\_BE\_R\_Ch1513\_FDD4\_RMC\_Int.Ant

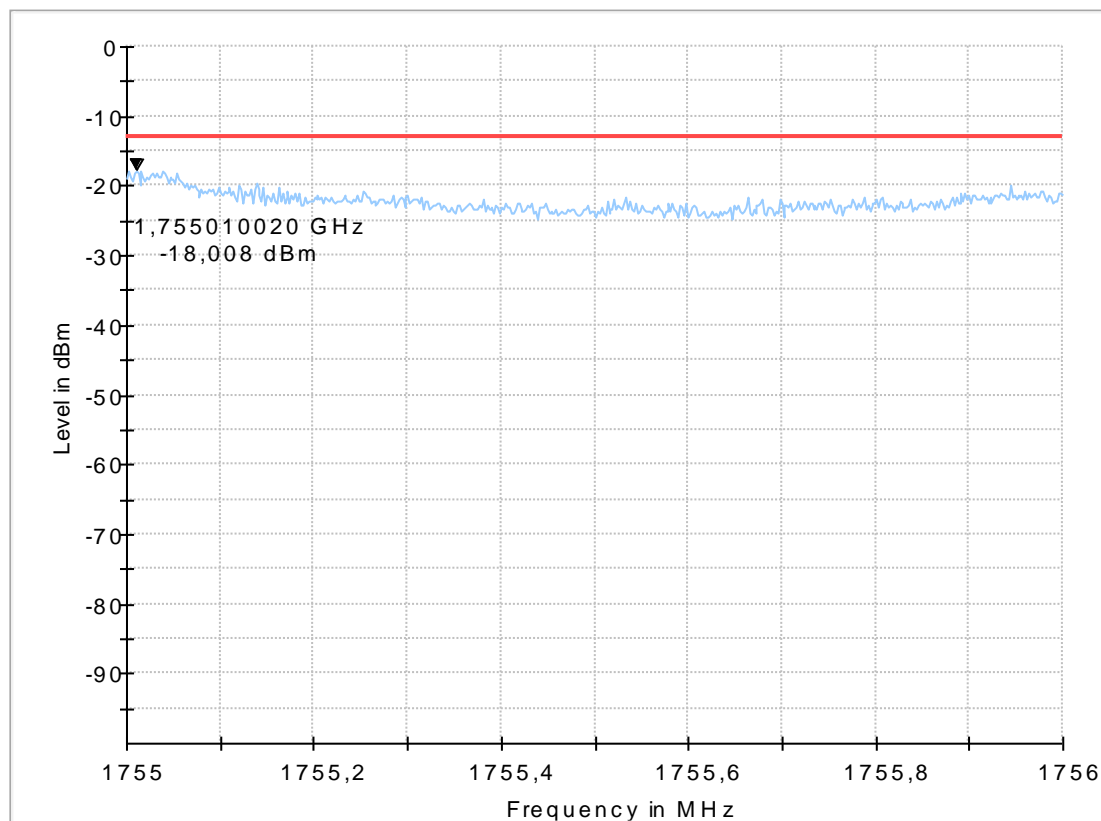
### Common Information

Test Description:	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
Comm. Link:	LTE Band 4
Operating Mode:	MS allocated channel xxx
Exclusionband:	1710 to 1755 MHz
Environmental Conditions:	Humidity: 47%rH; Temperature: 22°C
Operator:	AHo
Comments:	Internal Antenna

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
<hr/>	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.41b\_BE\_R\_Ch1513\_FDD4\_RMC\_Ext.Ant

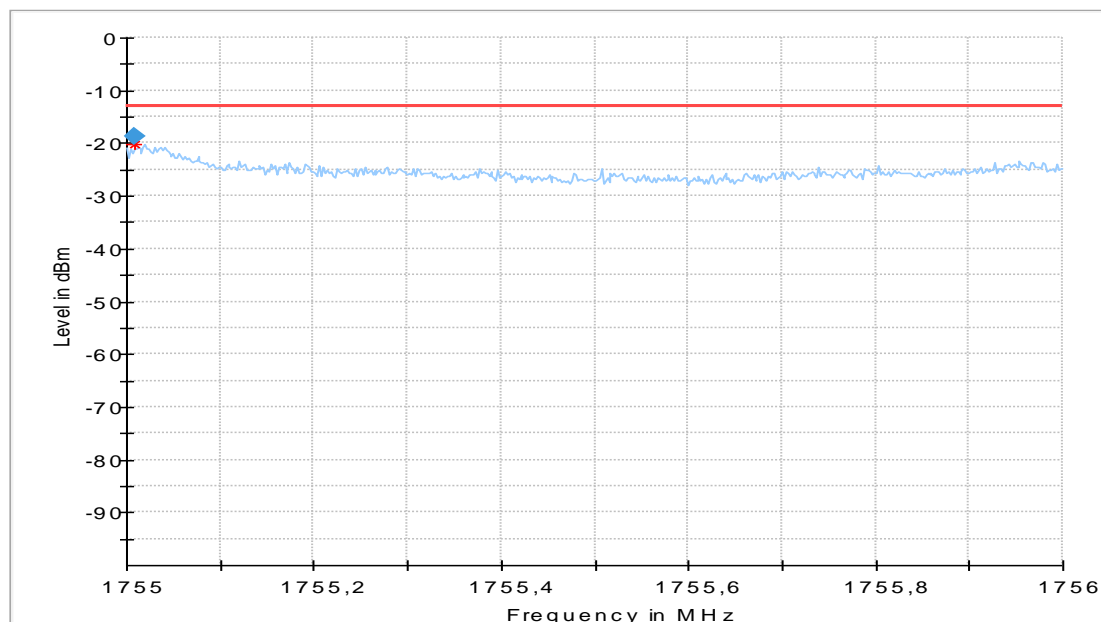
### Common Information

Test Description: Radiated Spurious Emissions LTE Band 4  
 Test Site Location: CETECOM GmbH Essen  
 Test Site: Fully Anechoic Room (FAR) - EMC32 V9.21.0  
 Test Standard: FCC Part 27.53 / RSS-139  
 Comm. Link: LTE Band 4  
 Operating Mode: MS allocated channel 1513  
 Exclusionband: 1710 to 1755 MHz  
 Environmental Conditions: Humidity: 47%rH; Temperature: 22°C  
 Operator: AHO  
 Comments: External Antenna

### EUT Information

Manufacturer: ACTIA Nordic AB  
 EuT: ACUII-06  
 -----  
 HW Version: C  
 SW Version: 13  
 Serial Number: 21790250902643  
 Connected Interfaces: MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector  
 Power Supply: 13.8 VDC  
 Antenna Type: LTE Antenna with SDAR  
 434-WLAN-GNSS-SDARS-LTE  
 50751424 | 15W421 | Portugal AD801  
 SDARS Modified #1

Full Spectrum



### Final Result

Frequency (MHz)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Elevation (deg)	Corr. (dB)	Comment
1755.009379	13.00	5.75	10000.0	155.0	H	101.0	90.0	-63.6	14:03:38 - 01.02.2016



### 1.4.3. W-CDMA Mode 5

## 9.50a\_RSE\_R\_Ch4132\_RMC\_IntAnt

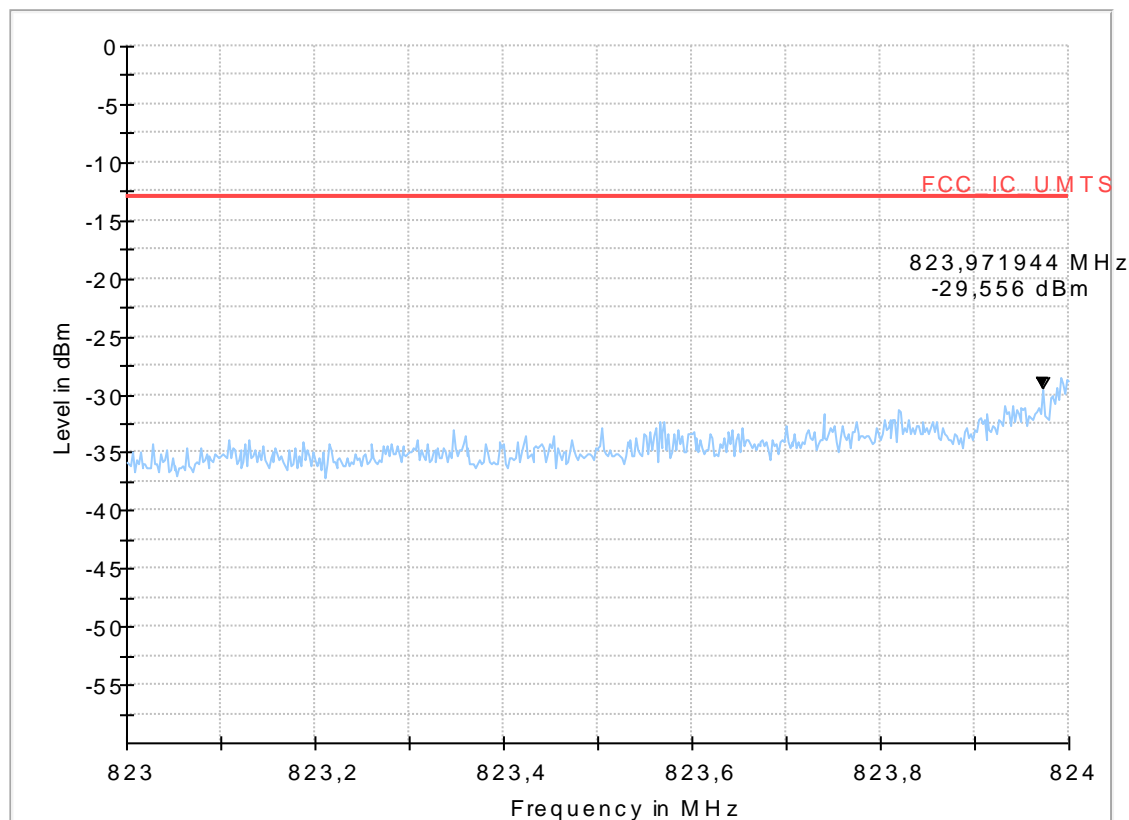
### Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 4132 (fc =826.4 MHz), RMC
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Remarks:	Internal Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.50b\_RSE\_R\_Ch4132\_RMC\_ExtAnt

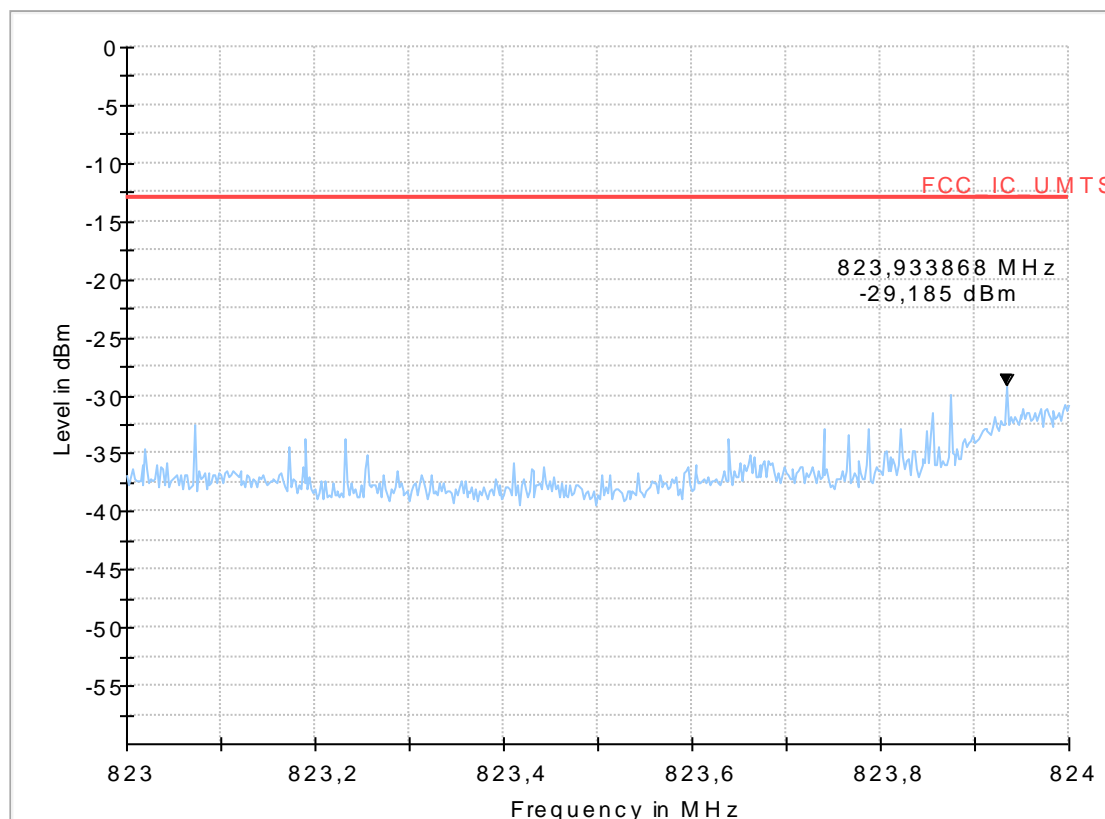
### Common Information

Test Description:	Band-Edge low - Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 4132 (fc =826.4 MHz), RMC
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Remarks:	External Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.51a\_RSE\_R\_Ch4233\_RMC\_IntAnt

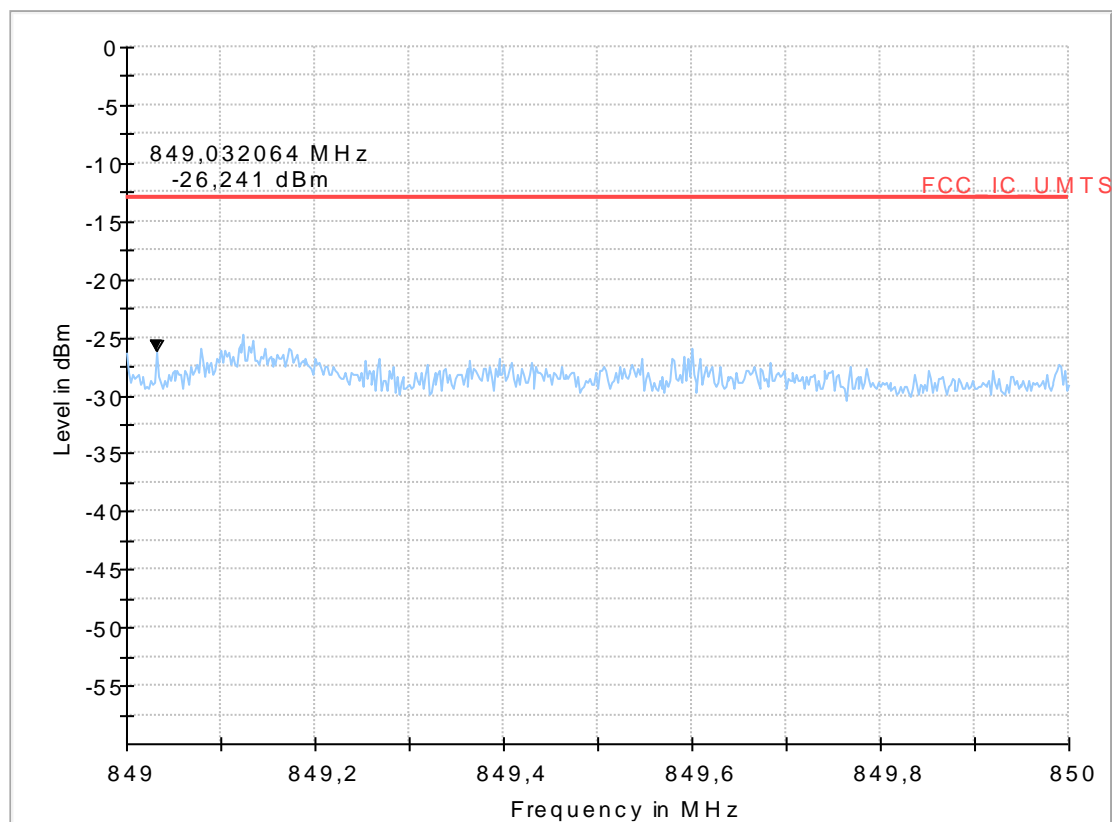
### Common Information

Test Description:	Band-Edge high - Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 4233 (fc =846.6 MHz), RMC
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Remarks:	Internal Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
<hr/>	
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



## 9.51b\_RSE\_R\_Ch4233\_RMC\_ExtAnt

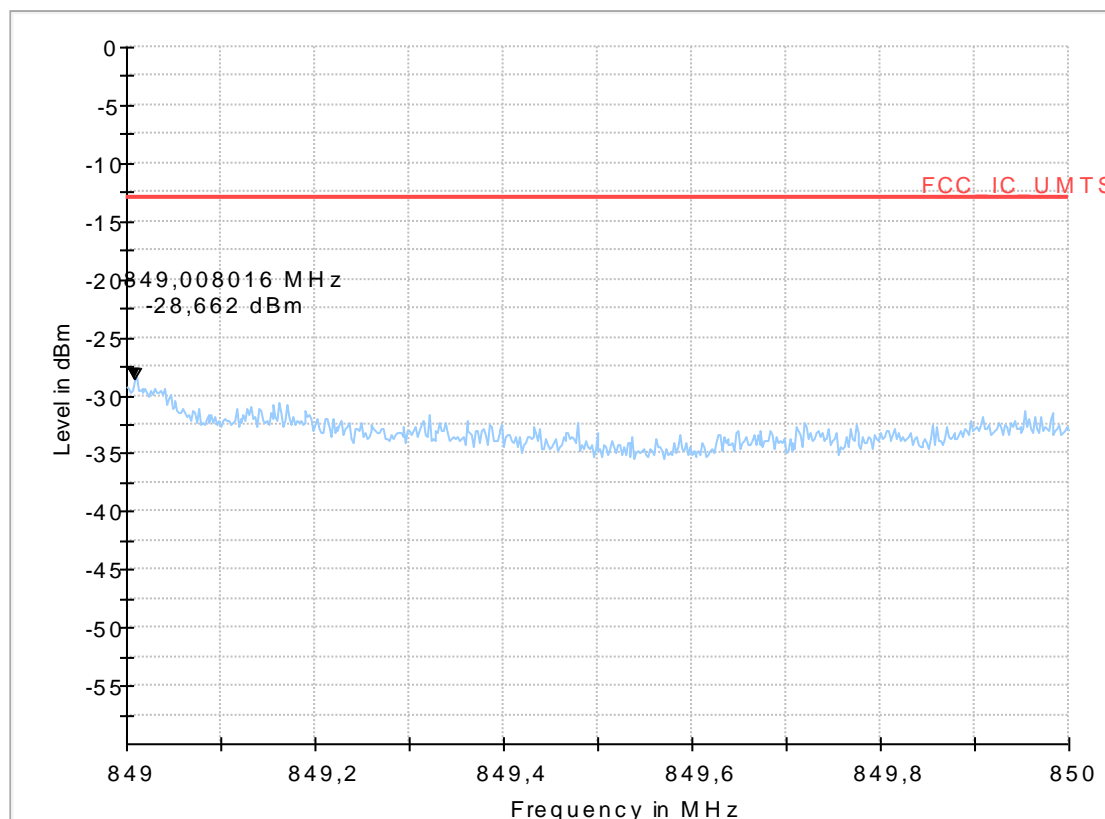
### Common Information

Test Description:	Band-Edge high - Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)
Test SW.:	EMC32 V9.21.0
Operating Mode:	UE allocated channel 4233 (fc =846.6 MHz), RMC
Environmental Conditions:	Humidity: 35%rH; Temperature: 22,6°C
Operator:	KMo
Remarks:	External Antenna used

### EUT Information

Manufacturer:	ACTIA Nordic AB
EuT:	ACUII-06
HW Version:	C
SW Version:	13
Serial Number:	21790250902643
Connected Interfaces:	MAIN harness, DCL Ethernet cable, Antenna with power supply cable, WLAN antenna cable, GNSS antenna cable, 2G/3G/4G antenna cable, 3G/4G Diversity antenna cable, Termination for IHU Ethernet connector
Power Supply:	13.8 VDC
Antenna Type:	LTE Antenna with SDAR 434-WLAN-GNSS-SDARS-LTE 50751424   15W421   Portugal AD801 SDARS Modified #1

Full Spectrum



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

### 1.5.1. Band-Edge Low External Antenna

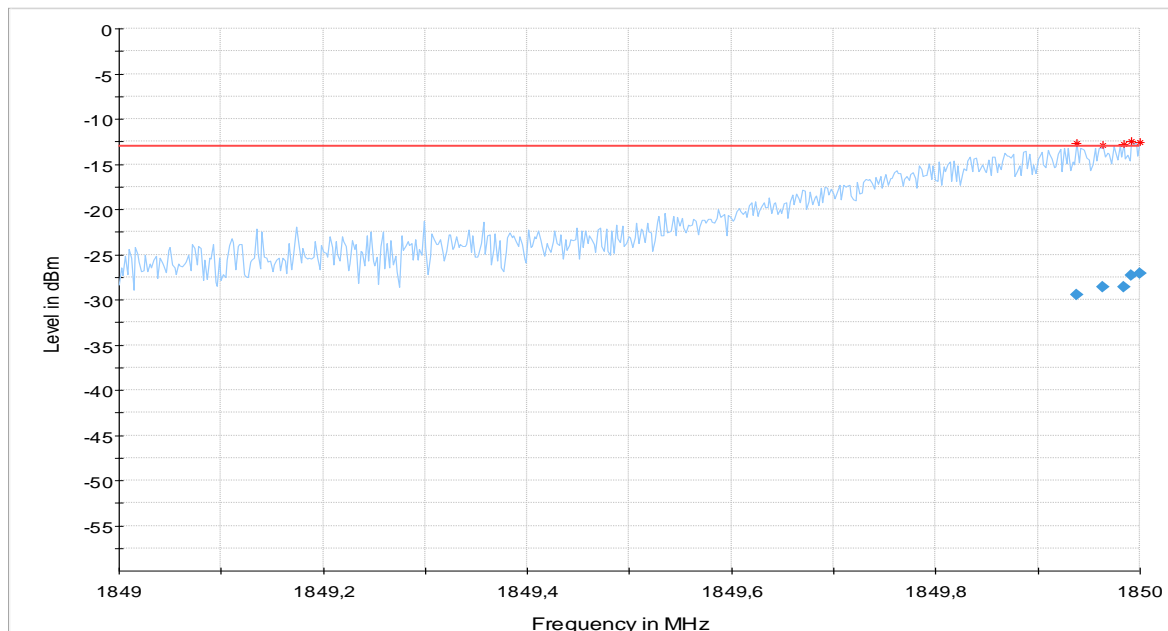


Diagram 9.32a\_BE\_R\_Ch18650\_1RB\_OFF0\_BW10\_QPSK\_Ext-Ant

Re-Measurement with RMS detector, max-level: -27.09 dBm

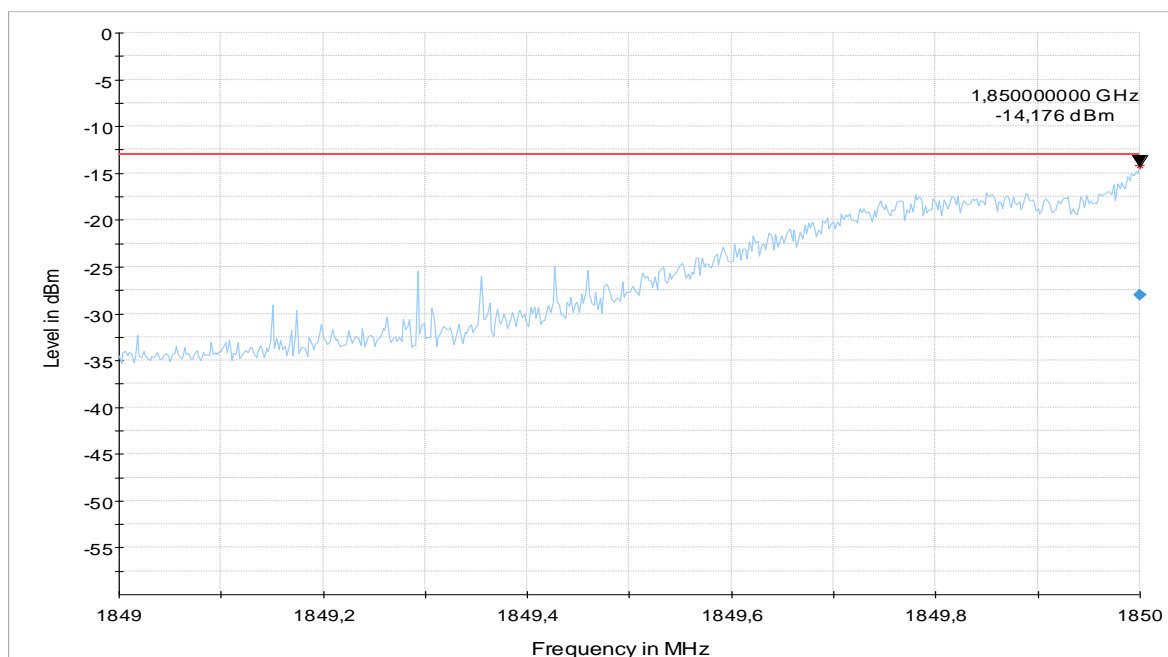


Diagram 9.32b\_BE\_R\_Ch18650\_1RB\_OFF0\_BW10\_QAM\_Ext-Ant

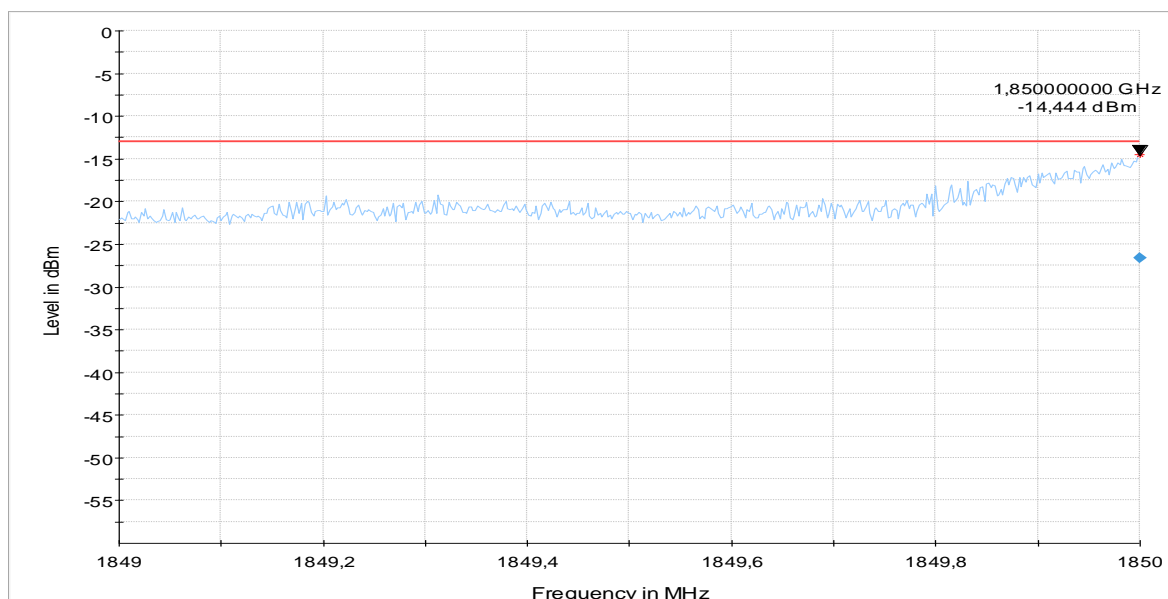


Diagram 9.33a\_BE\_R\_Ch18650\_50RB\_BW10\_QPSK\_Ext-Ant

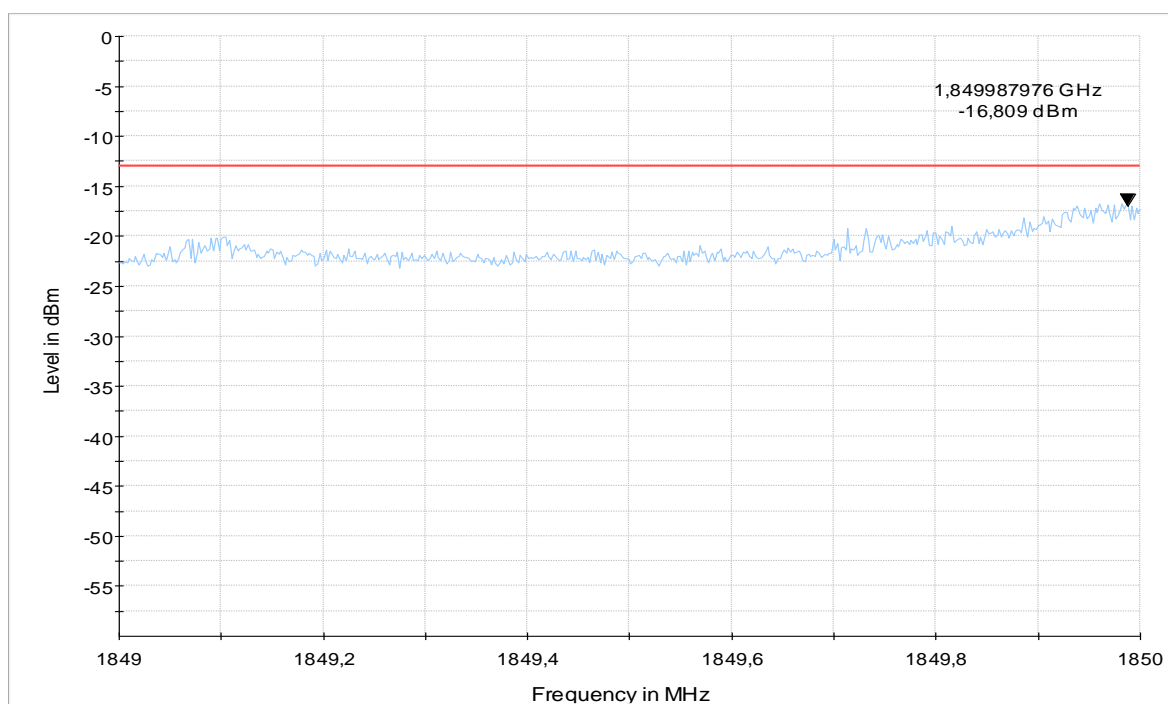


Diagram 9.33b\_BE\_R\_Ch18650\_50RB\_BW10\_QAM\_Ext-Ant

### 1.5.2. Band-Edge Low Internal Antenna

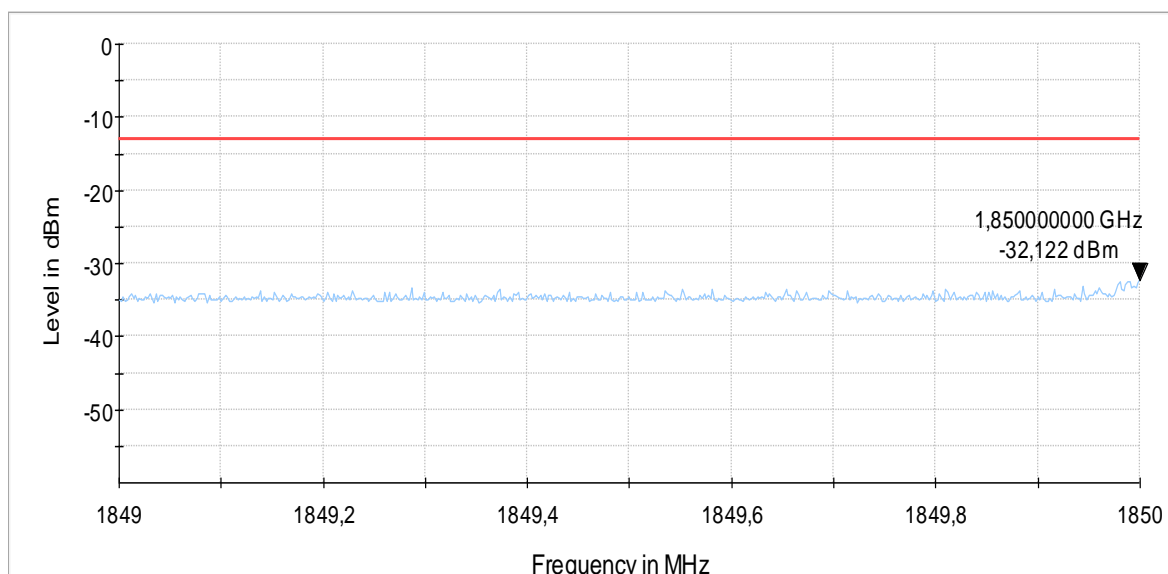


Diagram 9.32a\_BE\_R\_Ch18650\_1RB\_OFF0\_BW10\_QPSK\_Int-Ant

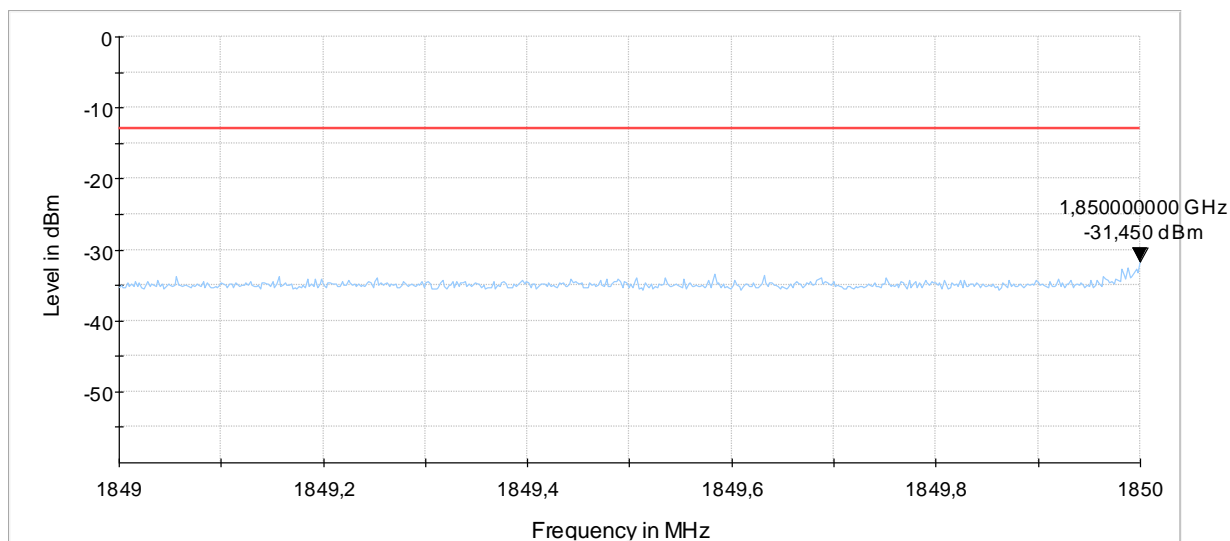


Diagram 9.32b\_BE\_R\_Ch18650\_1RB\_OFF0\_BW10\_QAM\_Int-Ant

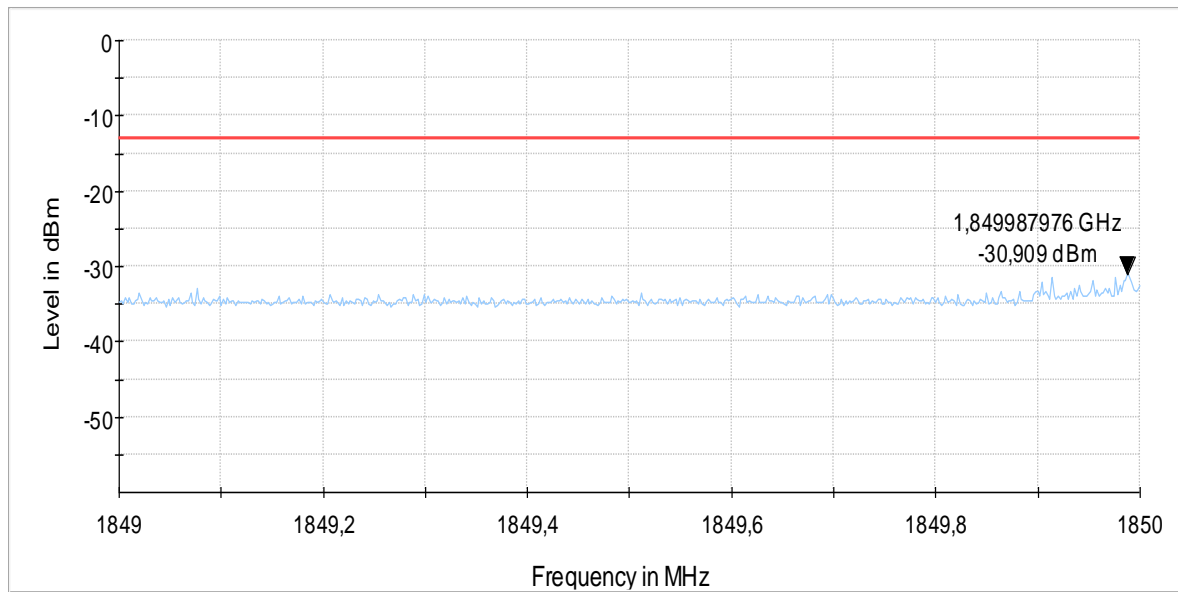


Diagram 9.33a\_BE\_R\_Ch18650\_50RB\_BW10\_QPSK\_Int-Ant

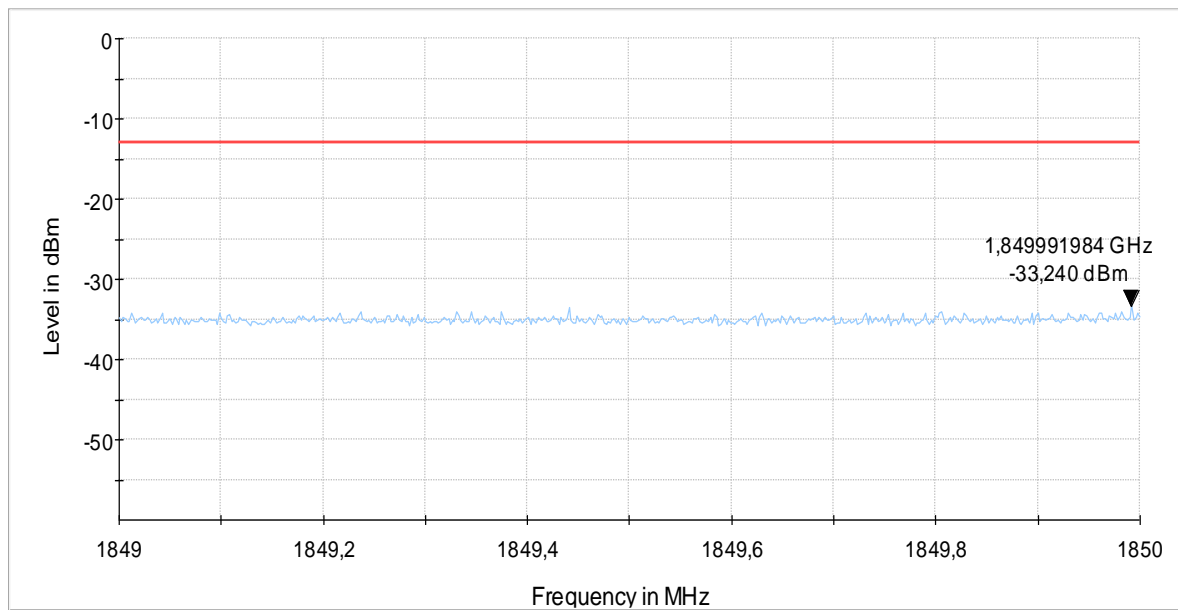


Diagram 9.33b\_BE\_R\_Ch18650\_50RB\_BW10\_QAM\_Int-Ant



### 1.5.3. Band-Edge High External Antenna

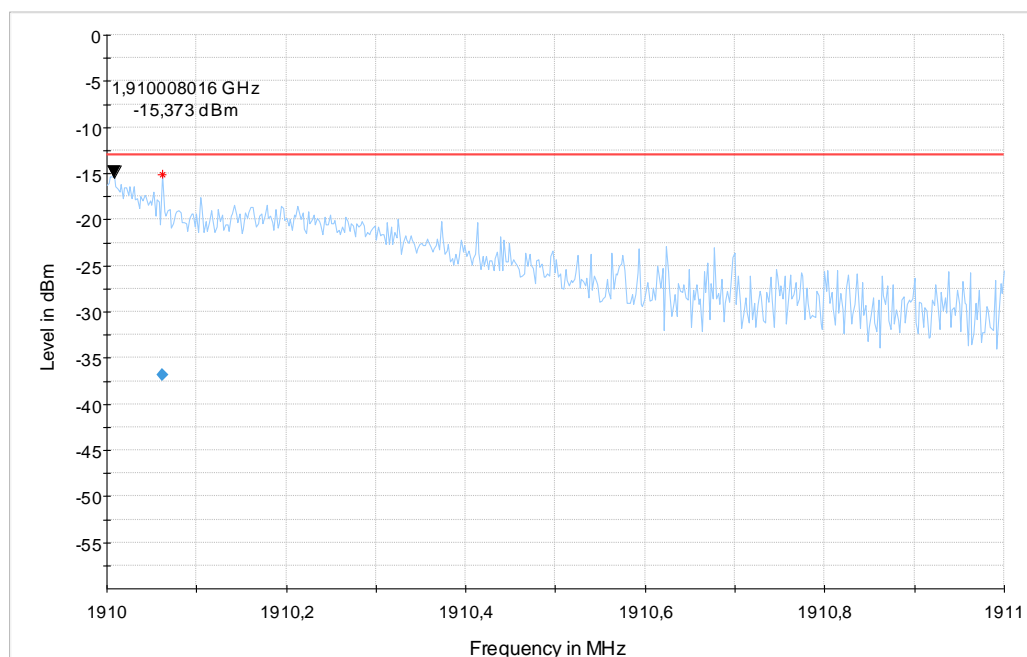


Diagram 9.34a\_BE\_R\_Ch19150\_1RB\_OFF49\_BW10\_QPSK\_Ext-Ant

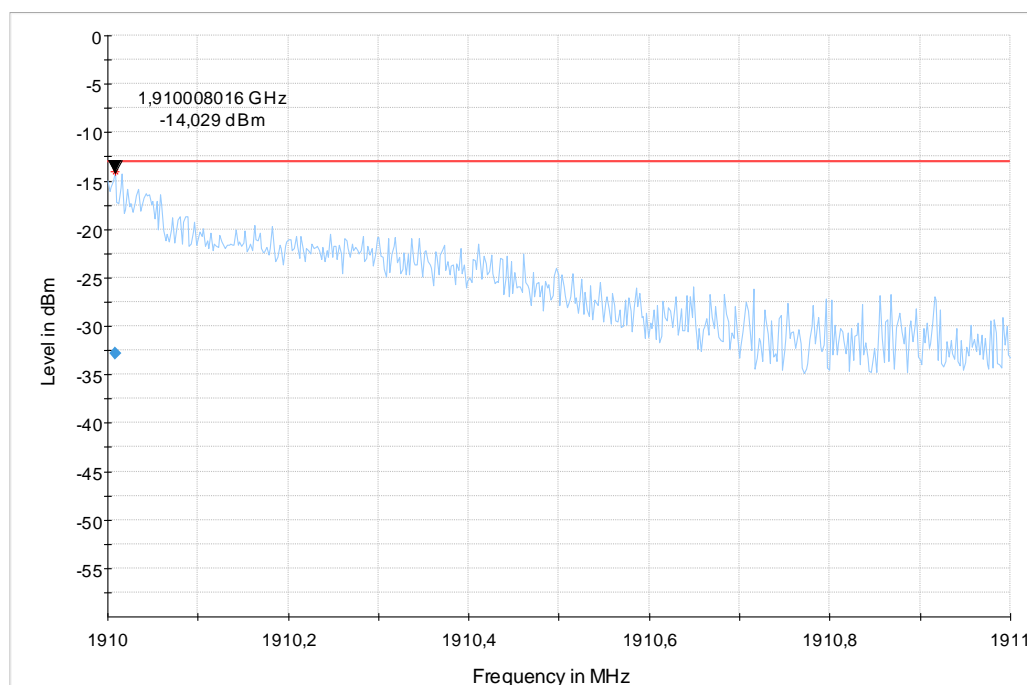


Diagram 9.34b\_BE\_R\_Ch19150\_1RB\_OFF49\_BW10\_QAM\_Ext-Ant

Re-measurement with RMS detector: -32.84dBm

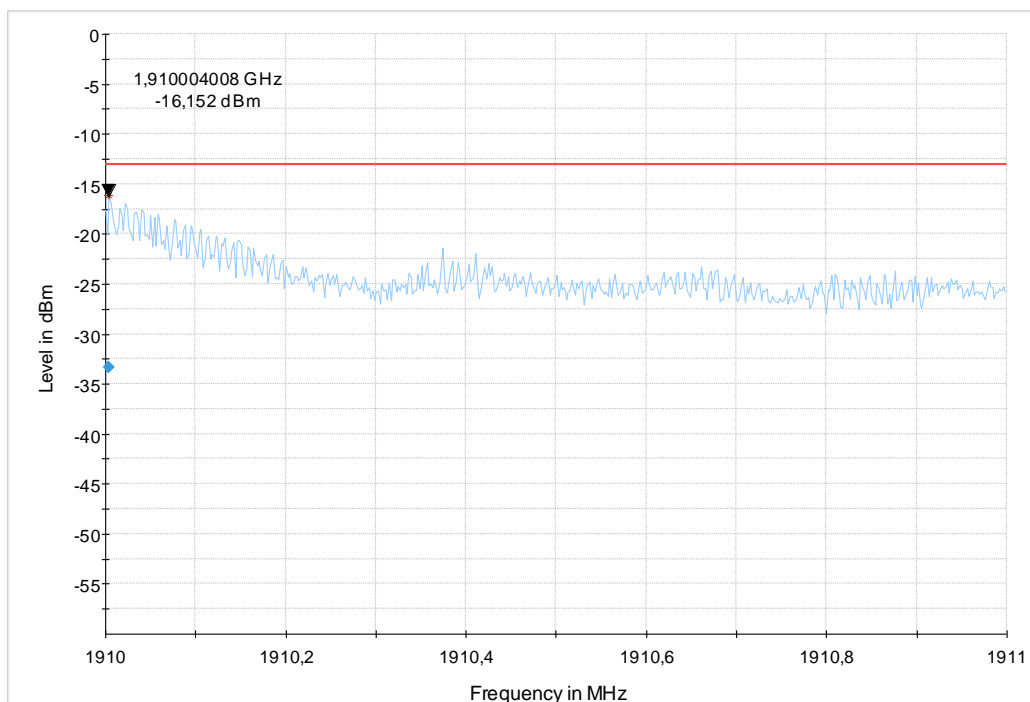


Diagram 9.35a\_BE\_R\_Ch19150\_50RB\_BW10\_QPSK\_Ext-Ant

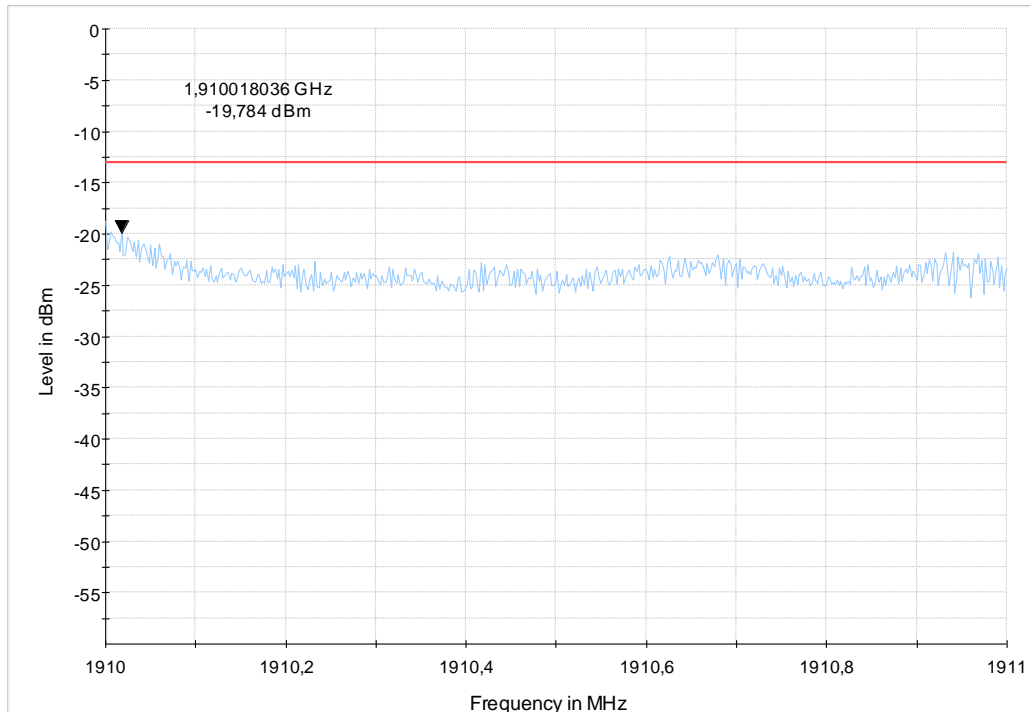


Diagram 9.35b\_BE\_R\_Ch19150\_50RB\_BW10\_QAM\_Ext-Ant

#### 1.5.4. Band-Edge High - Internal Antenna

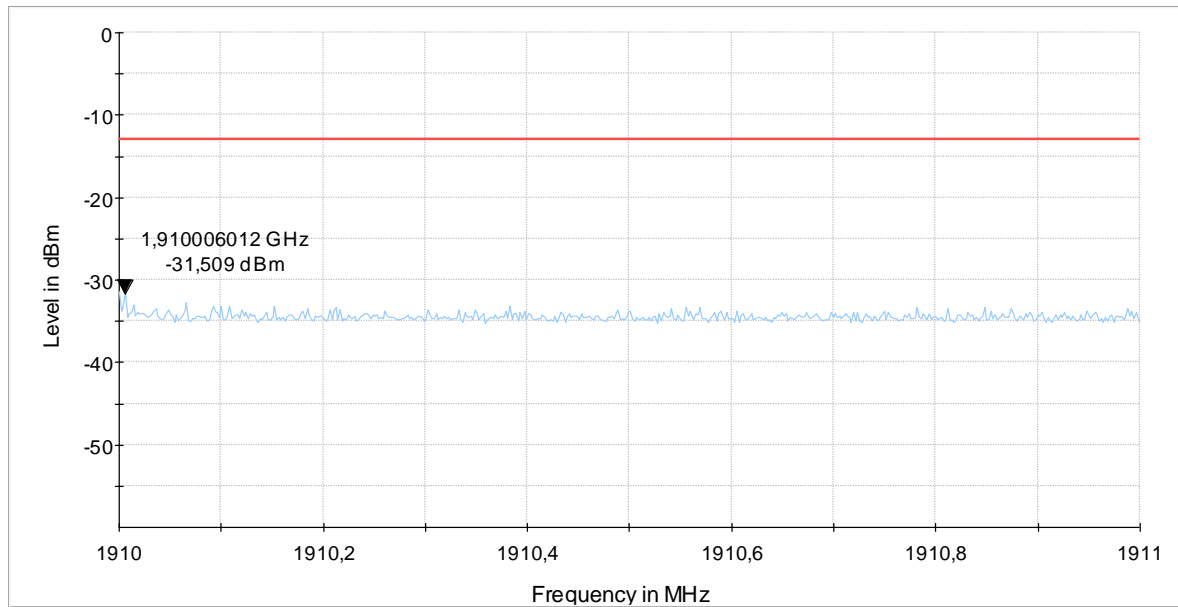


Diagram 9.34a\_BE\_R\_Ch19150\_1RB\_OFF49\_BW10\_QPSK\_Int-Ant

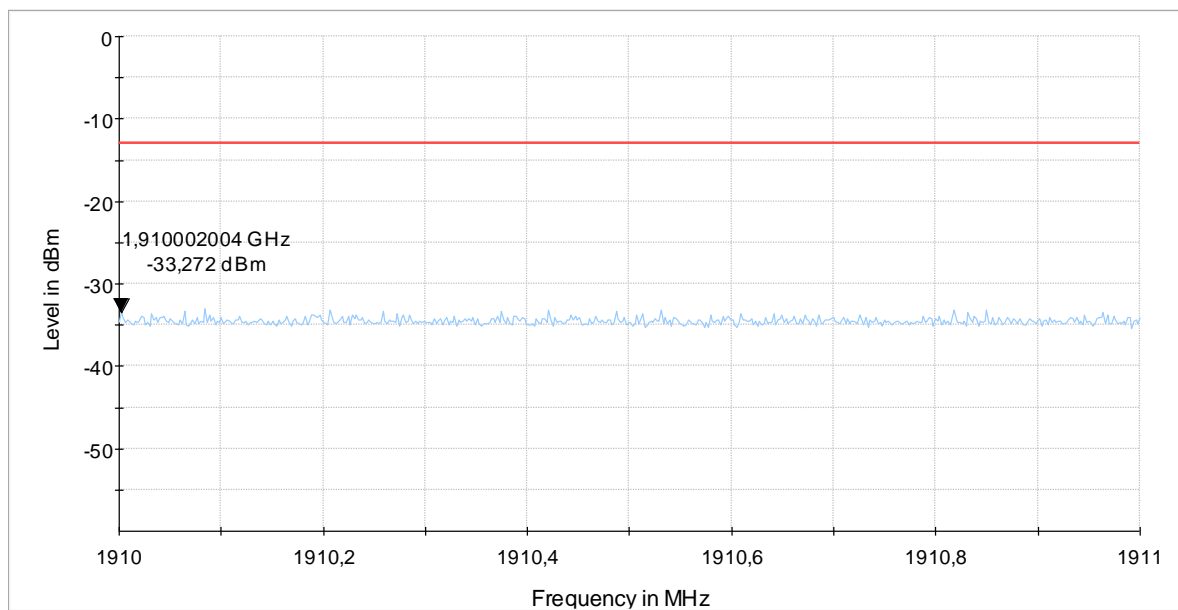


Diagram 9.34b\_BE\_R\_Ch19150\_1RB\_OFF49\_BW10\_QAM\_Int-Ant

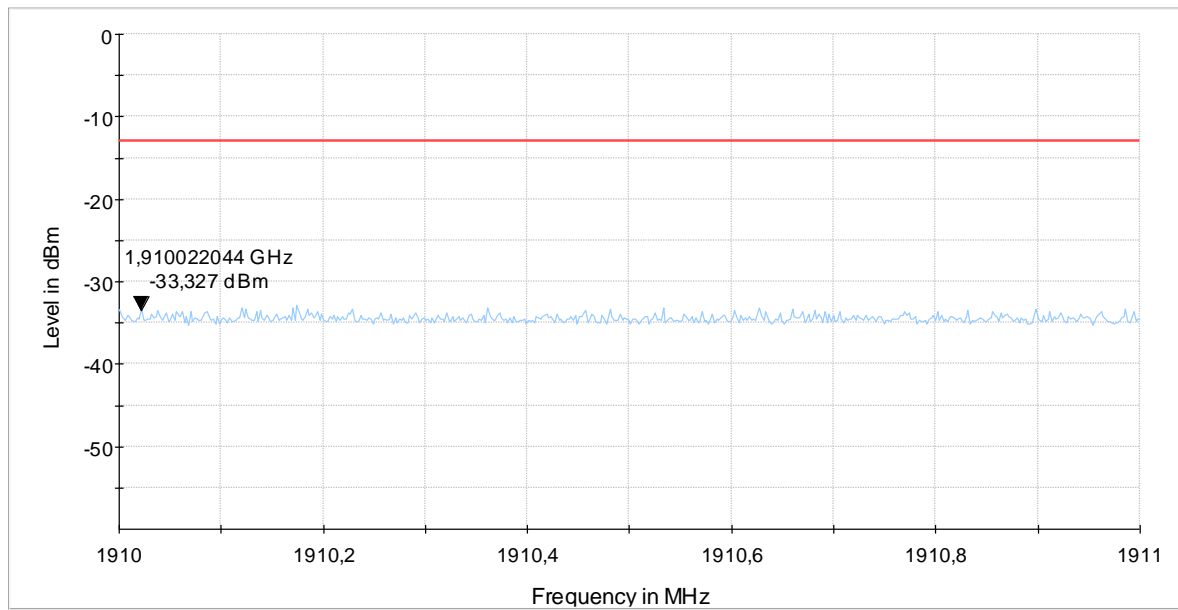


Diagram 9.35a\_BE\_R\_Ch19150\_50RB\_BW10\_QPSK\_Int-Ant

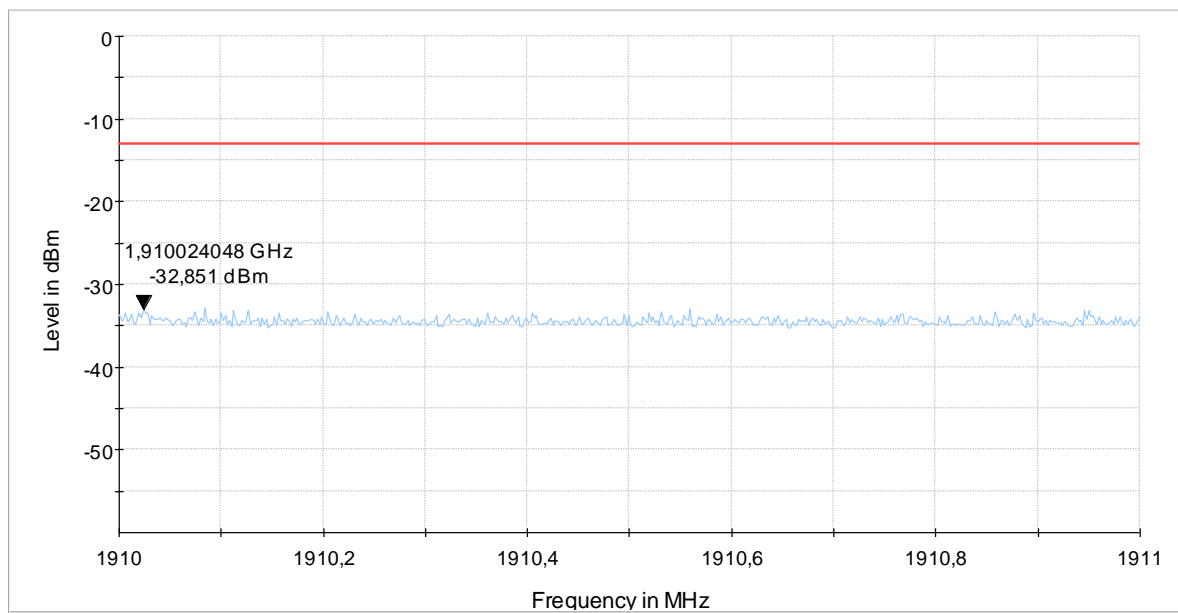


Diagram 9.35b\_BE\_R\_Ch19150\_50RB\_BW10\_QAM\_Int-Ant

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

### 1.6.1. Band-Edge Low External Antenna

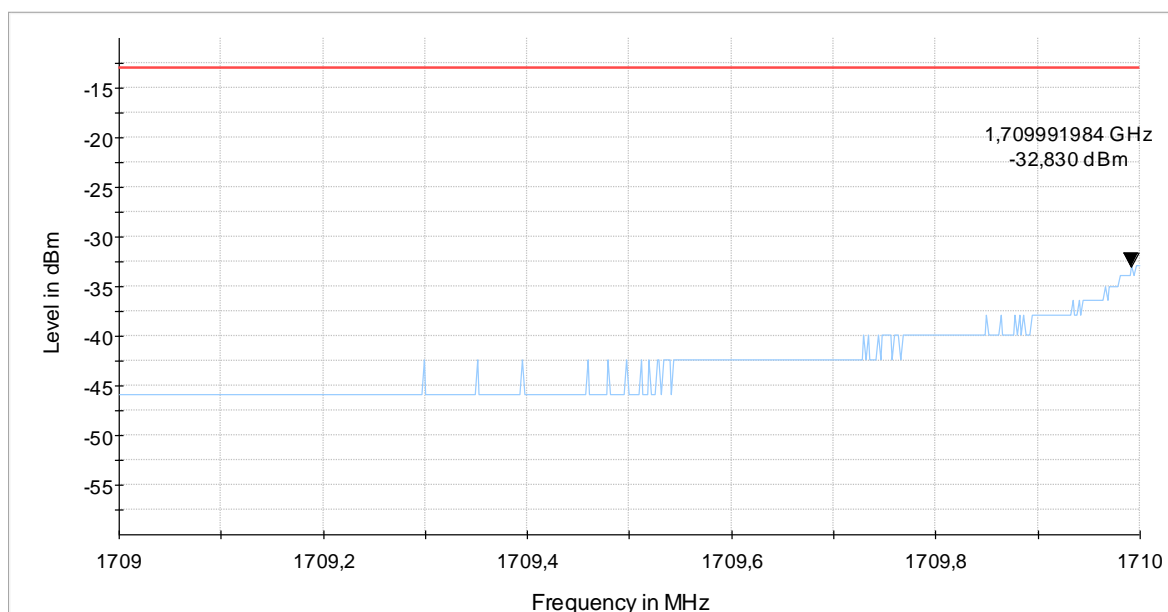


Diagram 9.52a\_BE\_R\_Ch20000\_1RB\_OFF0\_BW10\_QPSK\_Ext-Ant

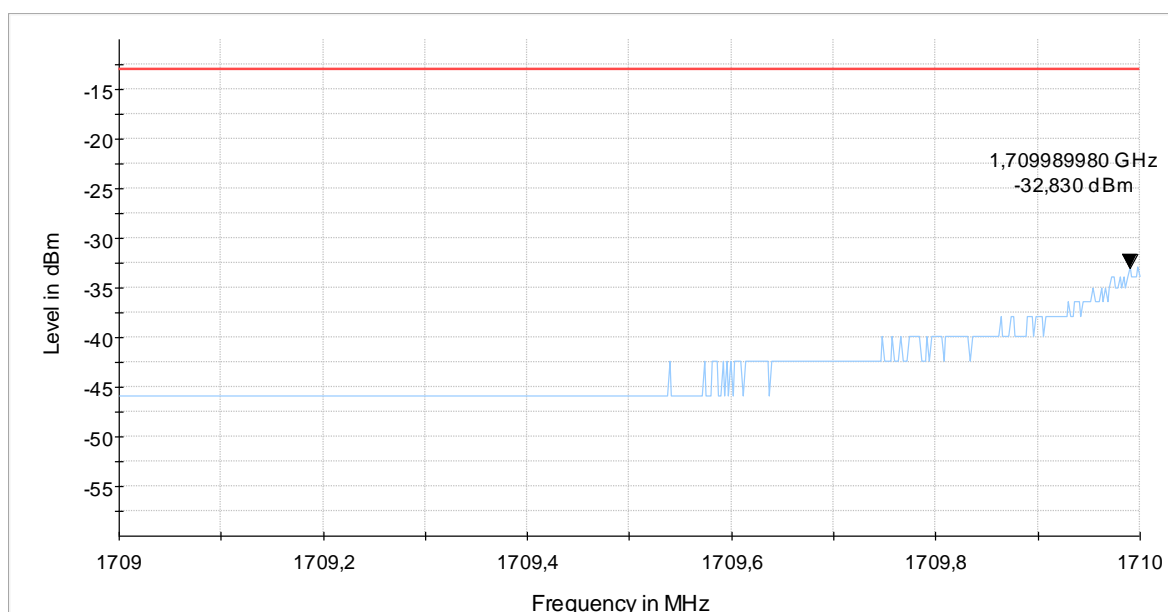


Diagram 9.52b\_BE\_R\_Ch20000\_1RB\_OFF0\_BW10\_QAM\_Ext-Ant

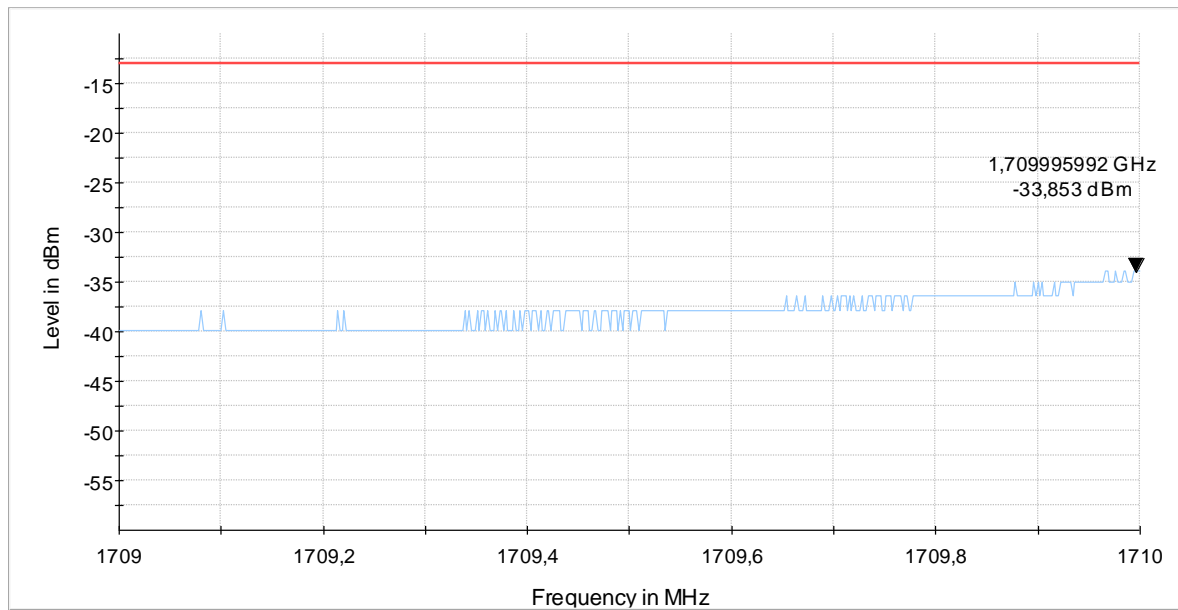


Diagram 9.53a\_BE\_R\_Ch20000\_50RB\_BW10\_QPSK\_Ext-Ant

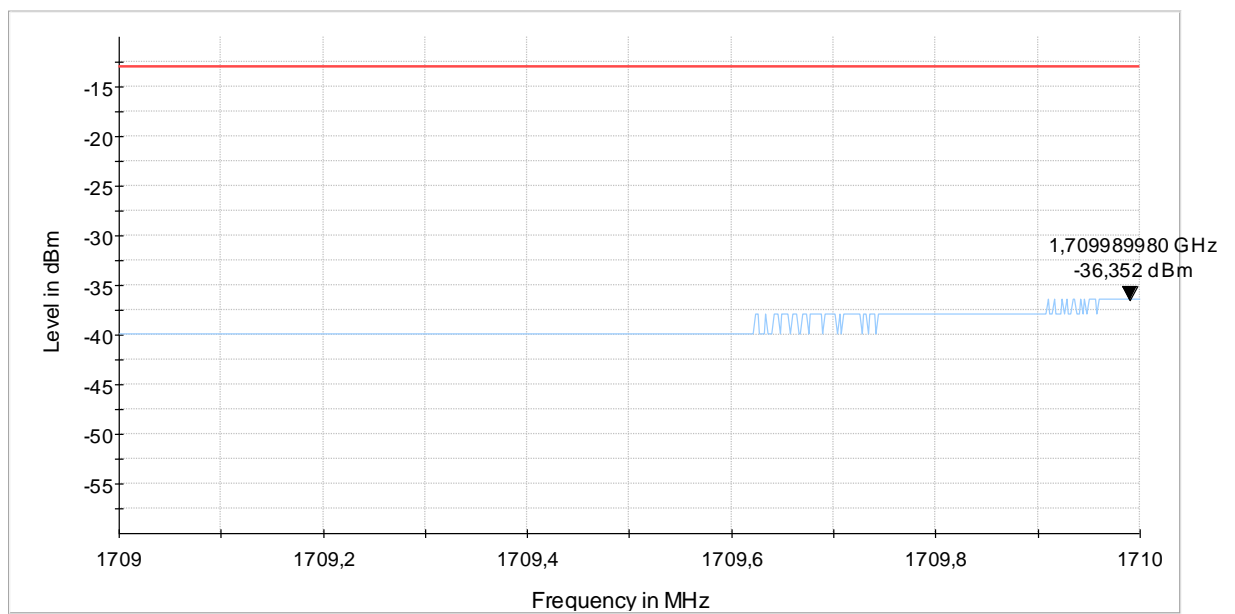


Diagram 9.53b\_BE\_R\_Ch20000\_50RB\_BW10\_QAM\_Ext-Ant

### 1.6.2. Band-Edge Low Internal Antenna

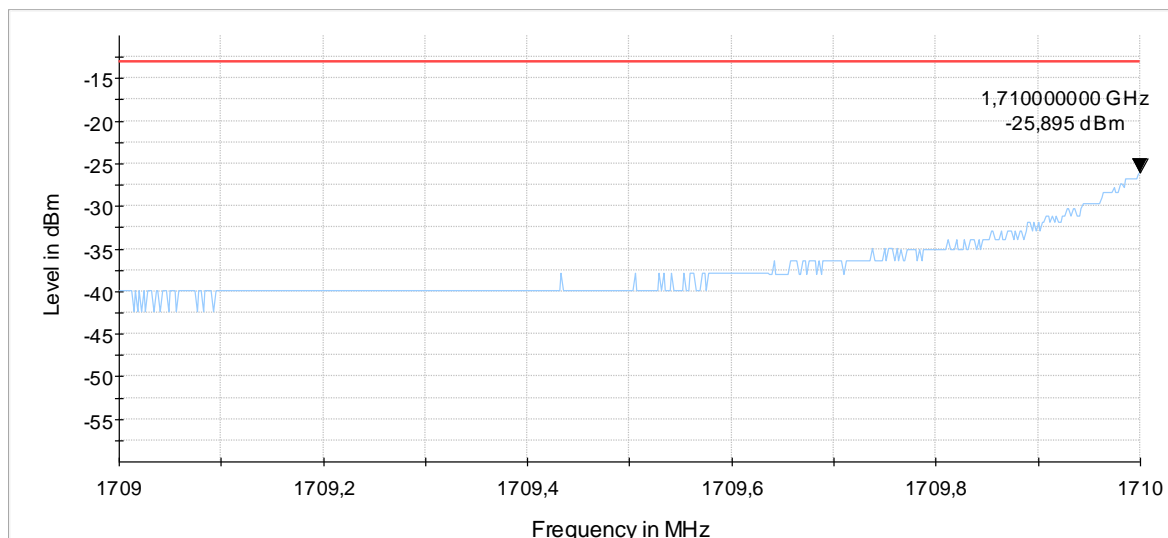


Diagram 9.52a\_BE\_R\_Ch20000\_1RB\_OFF0\_BW10\_QPSK\_Int-Ant

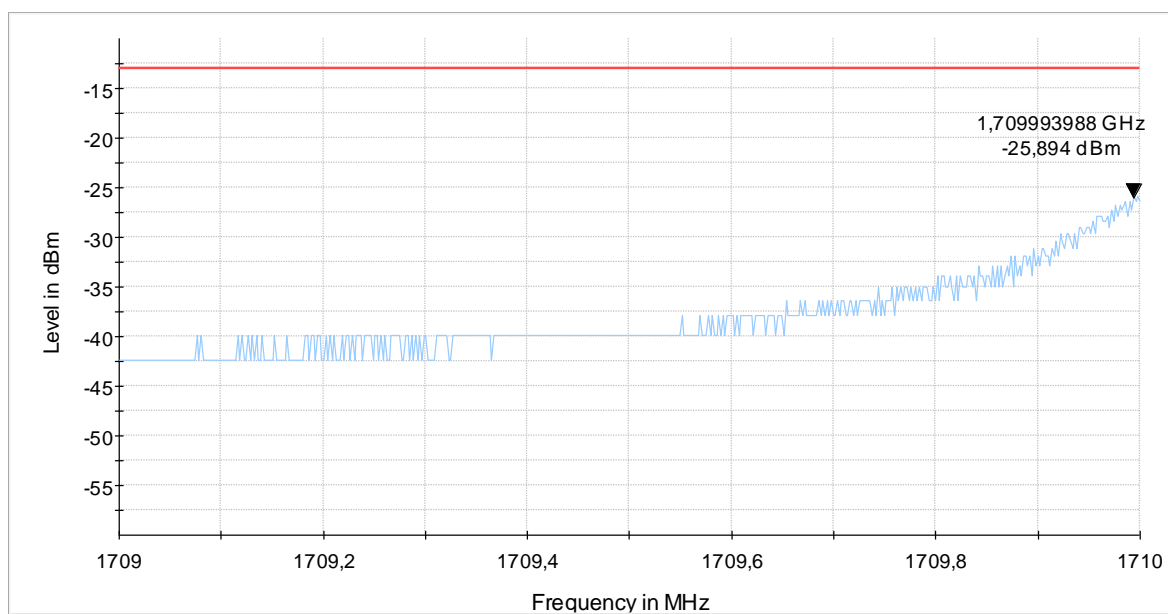


Diagram 9.52b\_BE\_R\_Ch20000\_1RB\_OFF0\_BW10\_QAM\_Int-Ant

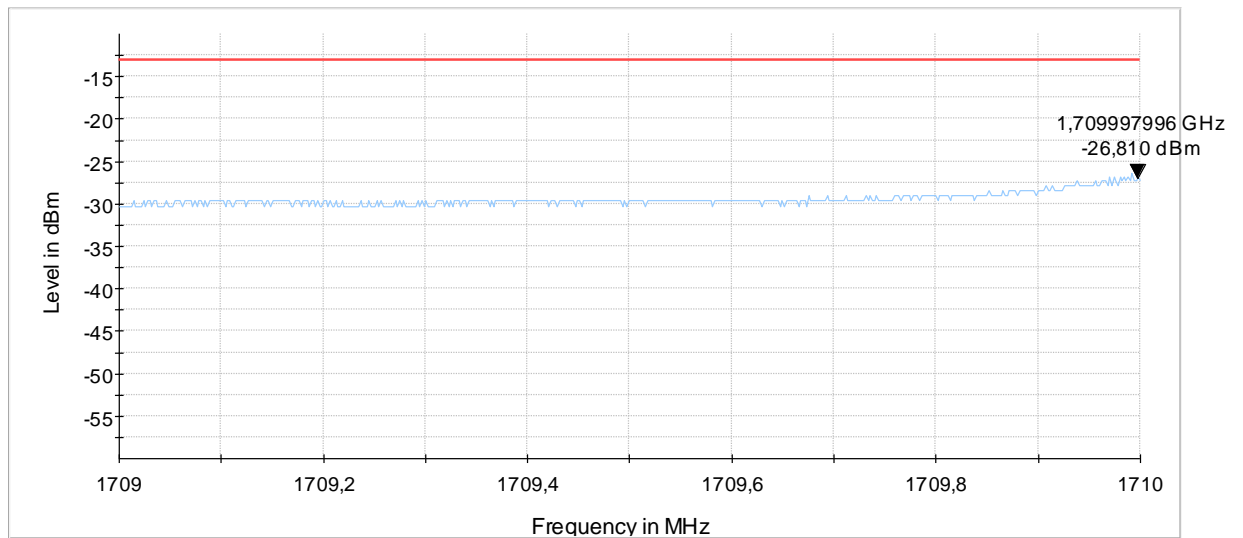


Diagram 9.53a\_BE\_R\_Ch20000\_50RB\_BW10\_QPSK\_Int-Ant

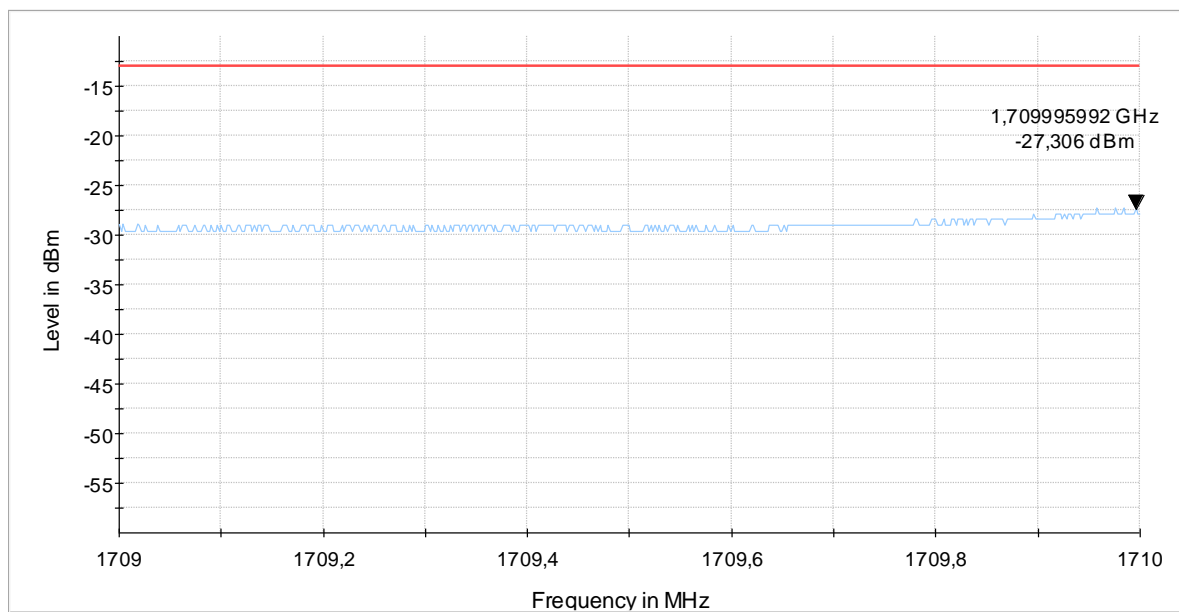


Diagram 9.53b\_BE\_R\_Ch20000\_50RB\_BW10\_QAM\_Int-Ant



### 1.6.3. Band-Edge High - External Antenna

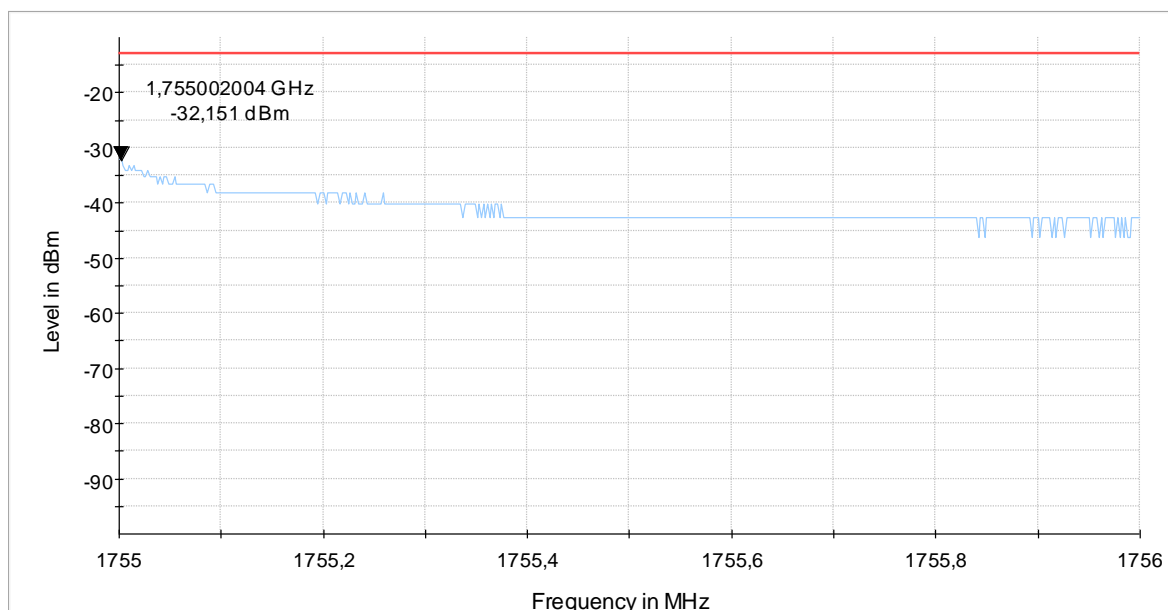


Diagram 9.54a\_BE\_R\_Ch20350\_1RB\_OFF49\_BW10\_QPSK\_Ext-Ant

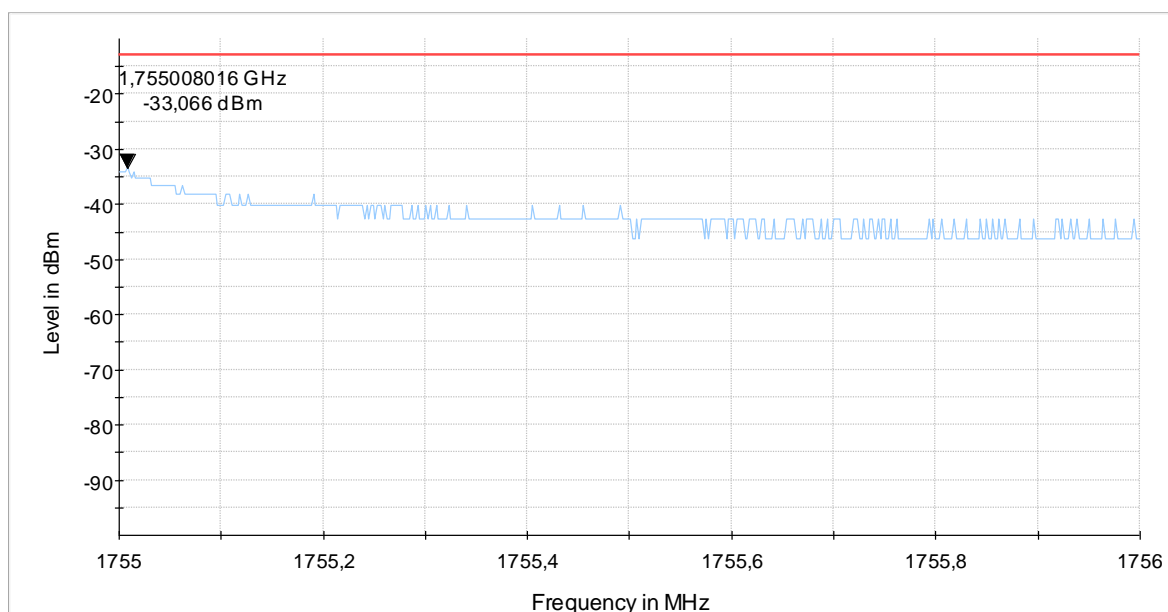


Diagram 9.54b\_BE\_R\_Ch20350\_1RB\_OFF49\_BW10\_QAM#\_Ext-Ant

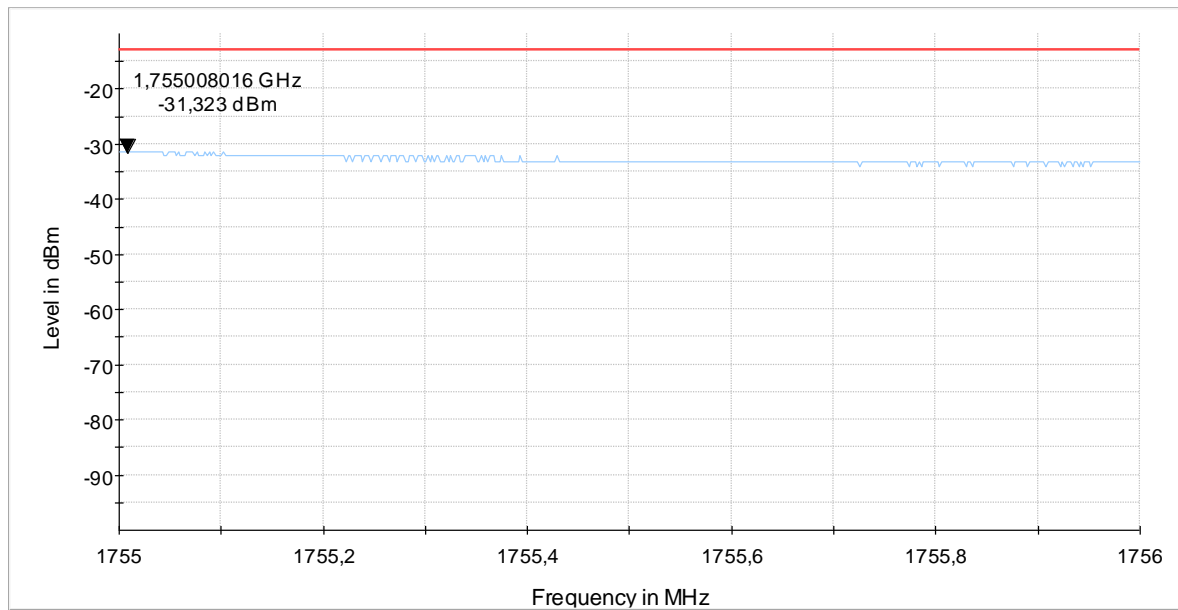


Diagram 9.55a\_BE\_R\_Ch20350\_50RB\_BW10\_QPSK\_Ext-Ant

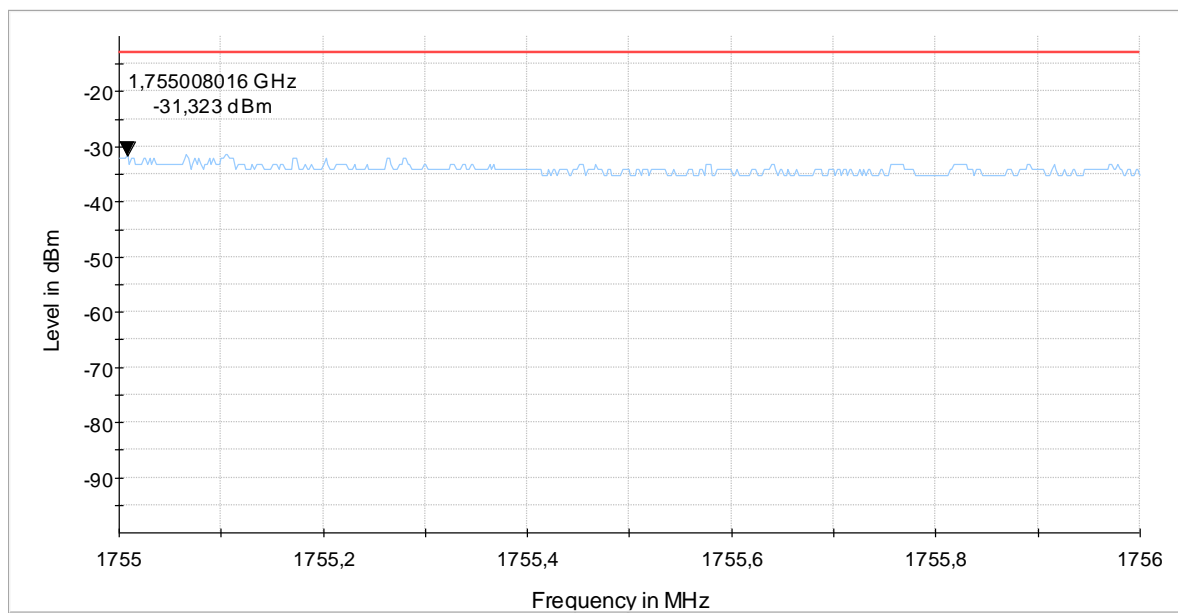


Diagram 9.55b\_BE\_R\_Ch20350\_50RB\_BW10\_QAM\_Ext-Ant

#### 1.6.4. Band-Edge High - Internal Antenna

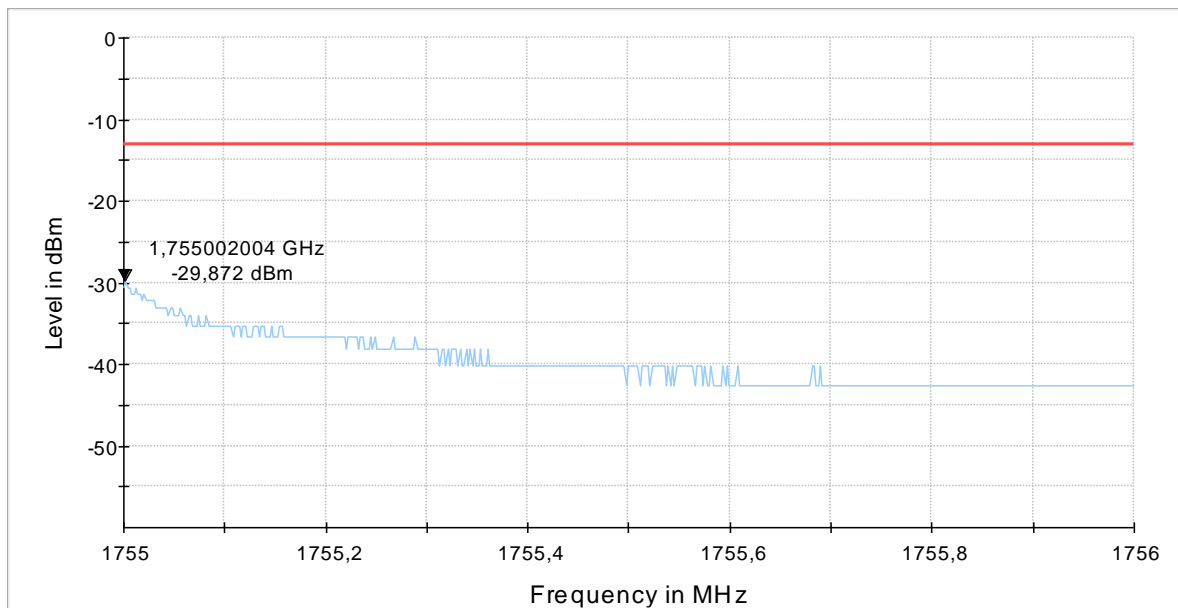


Diagram 9.54a\_BE\_R\_Ch20350\_1RB\_OFF49\_BW10\_QPSK\_Int-Ant

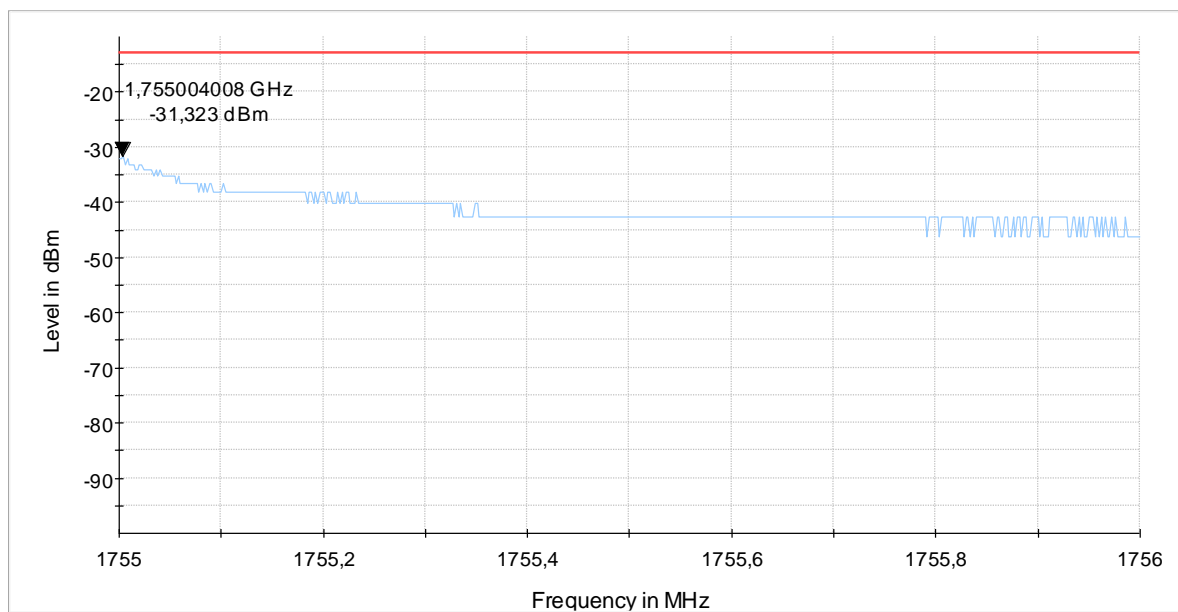


Diagram 9.54b\_BE\_R\_Ch20350\_1RB\_OFF49\_BW10\_QAM#\_Int-Ant

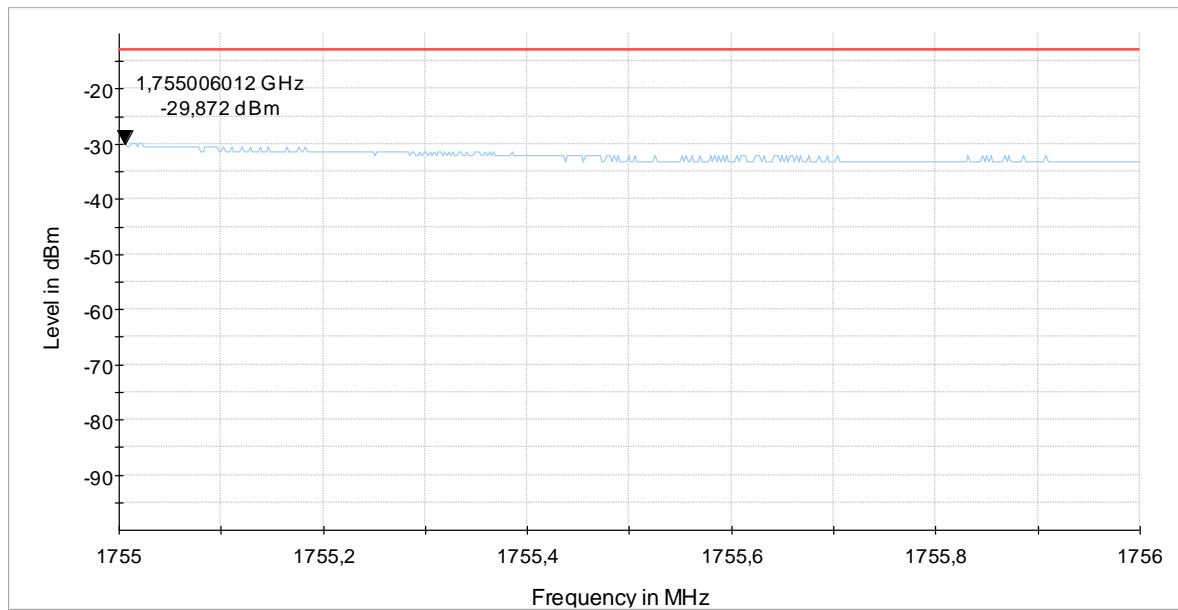


Diagram 9.55a\_BE\_R\_Ch20350\_50RB\_BW10\_QPSK\_Int-Ant

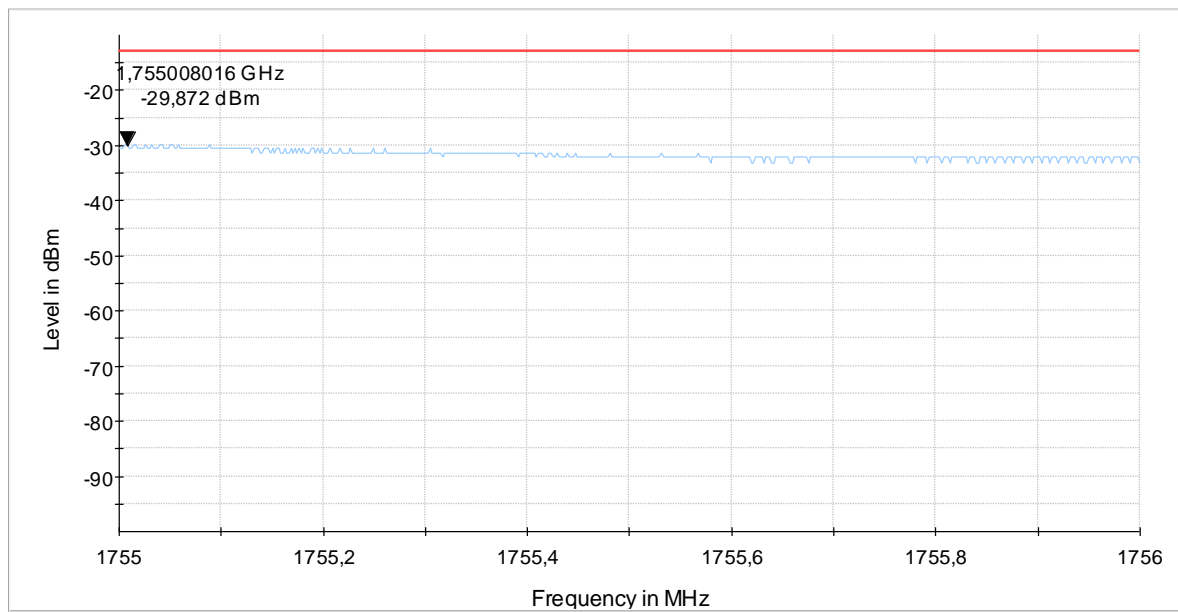


Diagram 9.55b\_BE\_R\_Ch20350\_50RB\_BW10\_QAM\_Int-Ant

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

### 1.7.1. Band-Edge Low External Antenna

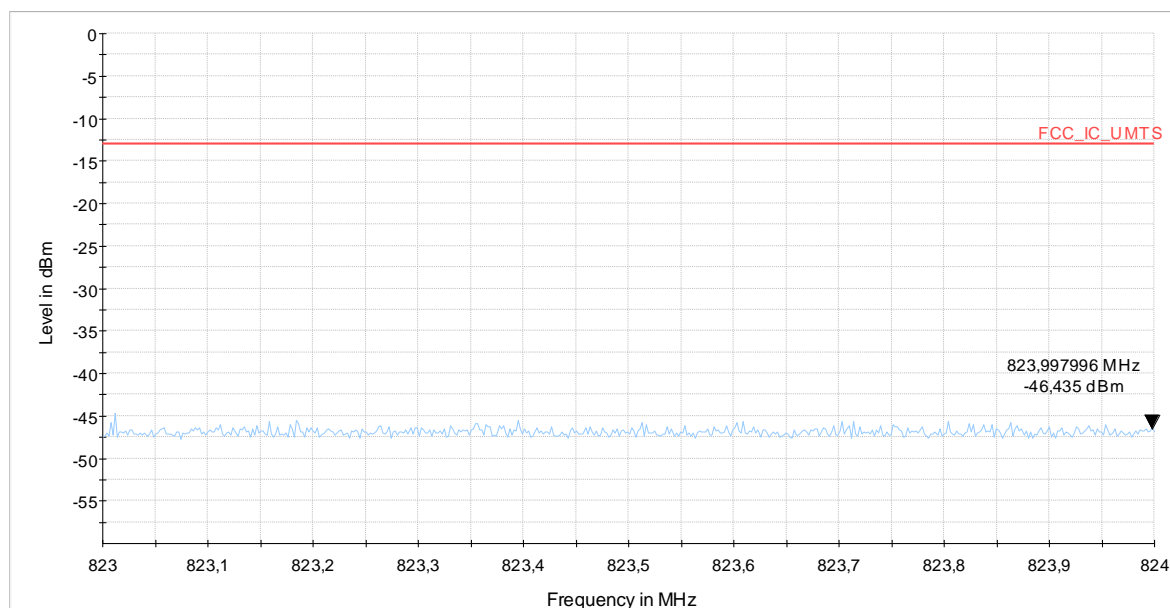


Diagram 9.512a\_BE\_R\_Ch20450\_1RB\_OFF0\_BW10\_QPSK\_Ext-Ant

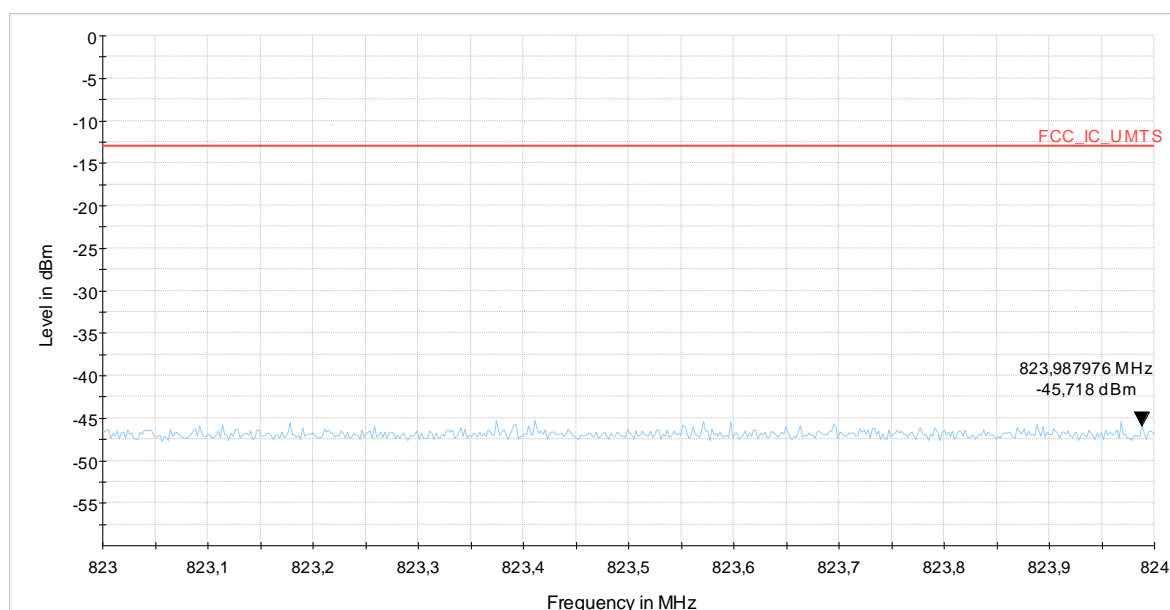


Diagram 9.512b\_BE\_R\_Ch20450\_1RB\_OFF0\_BW10\_QAM\_Ext-Ant

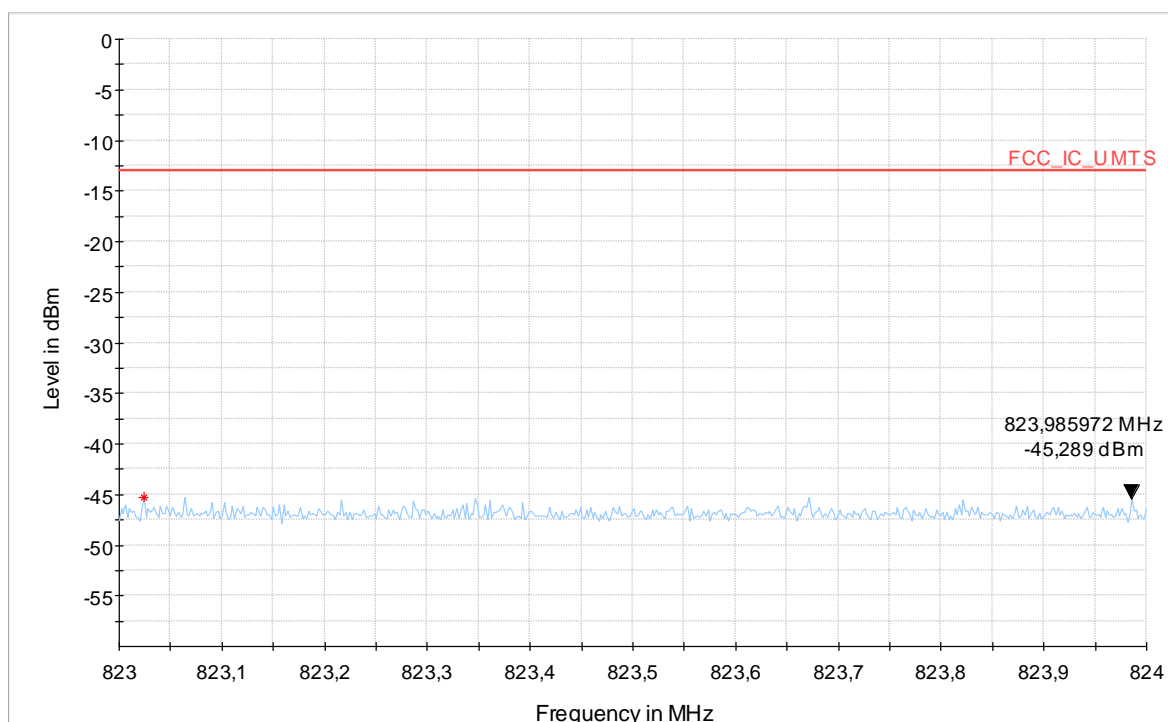


Diagram 9.513a\_BE\_R\_Ch20450\_50RB\_BW10\_QPSK\_Ext-Ant

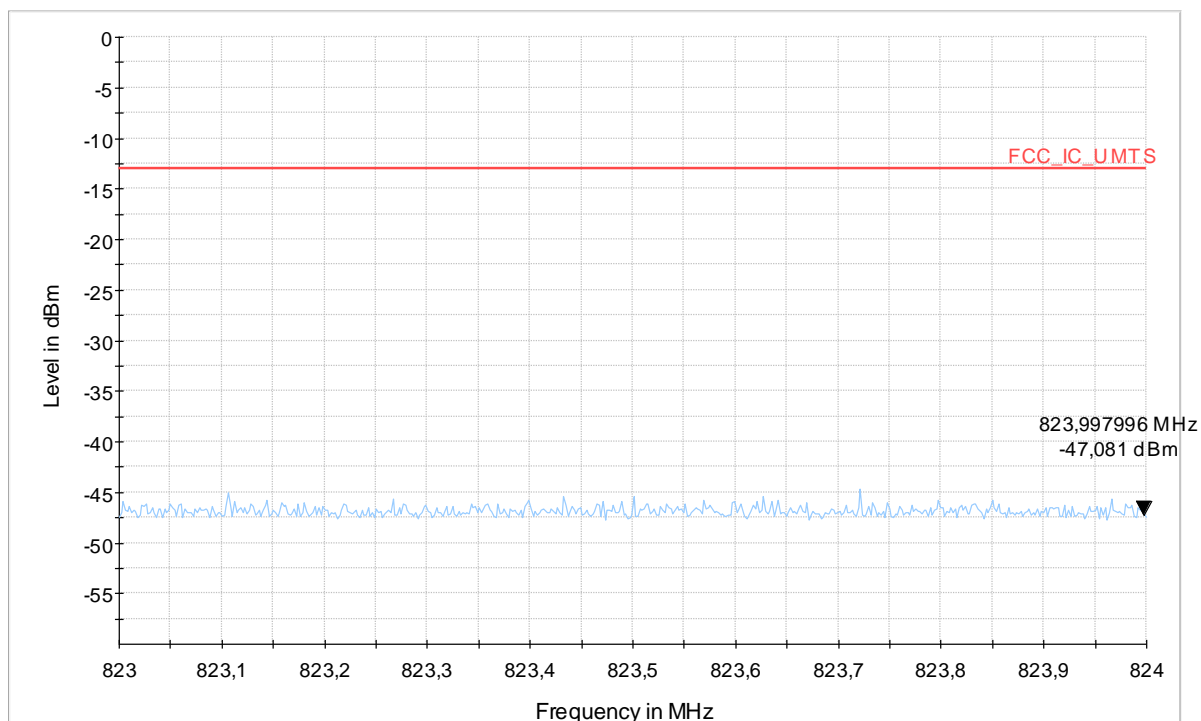


Diagram 9.513b\_BE\_R\_Ch20450\_50RB\_BW10\_QAM\_Ext-Ant

## 1.7.2. Band-Edge Low Internal Antenna

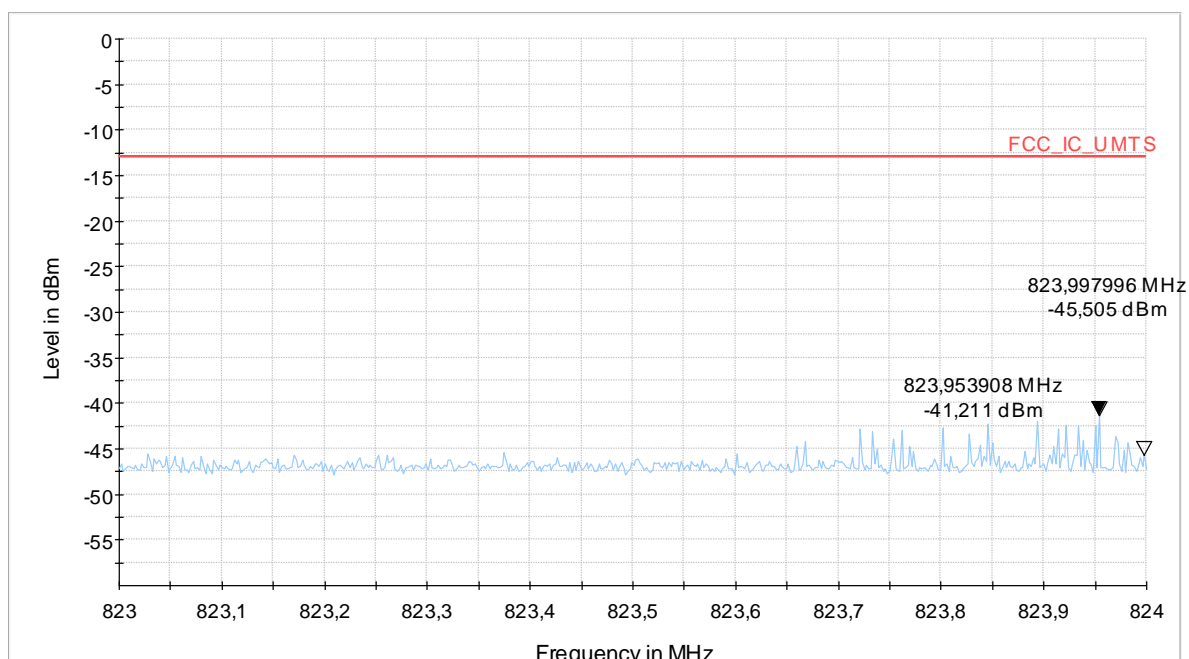


Diagram 9.512a\_BE\_R\_Ch20450\_1RB\_OFF0\_BW10\_QPSK\_Int-Ant

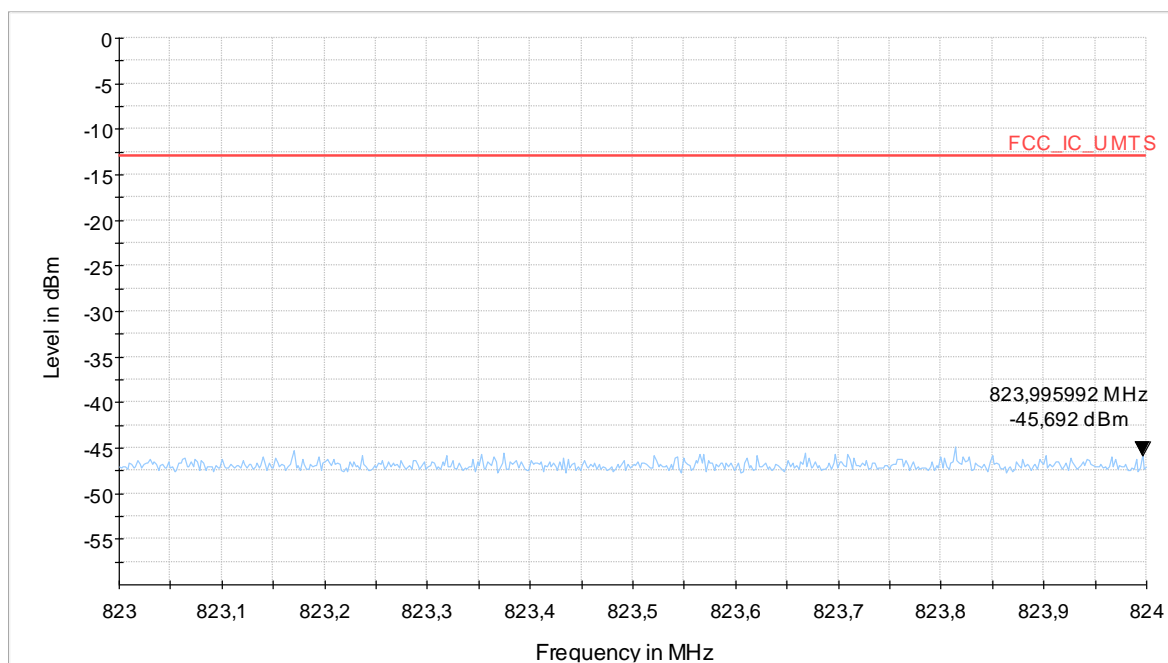


Diagram 9.512b\_BE\_R\_Ch20450\_1RB\_OFF0\_BW10\_QAM\_Int-Ant

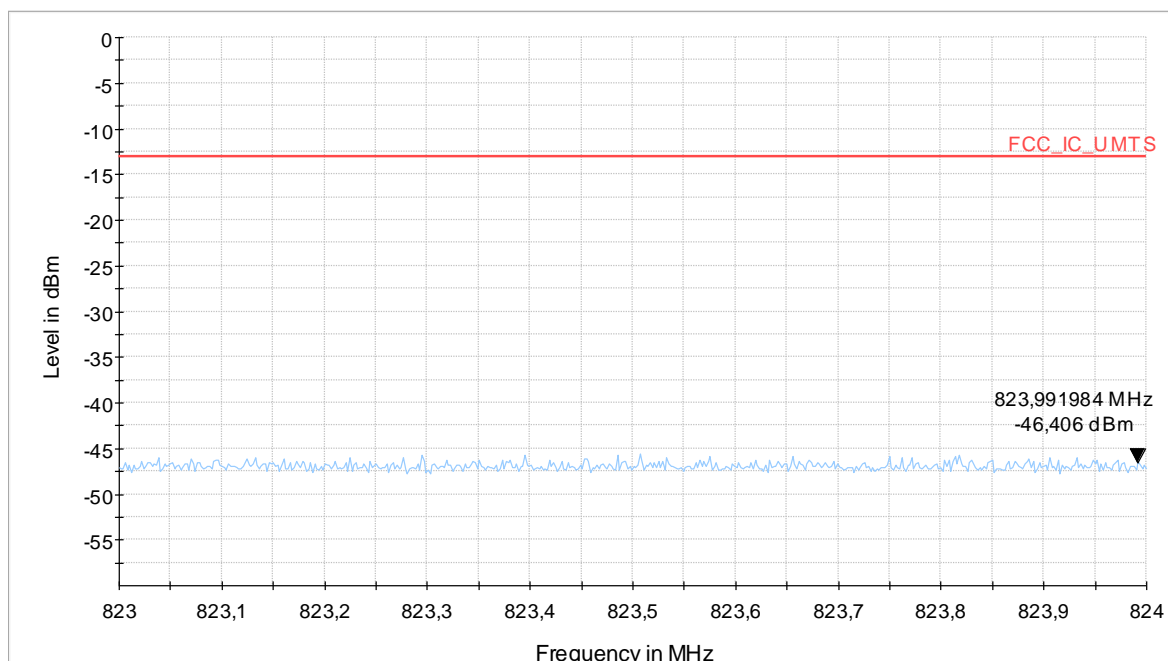


Diagram 9.513a\_BE\_R\_Ch20450\_50RB\_BW10\_QPSK\_Int-Ant

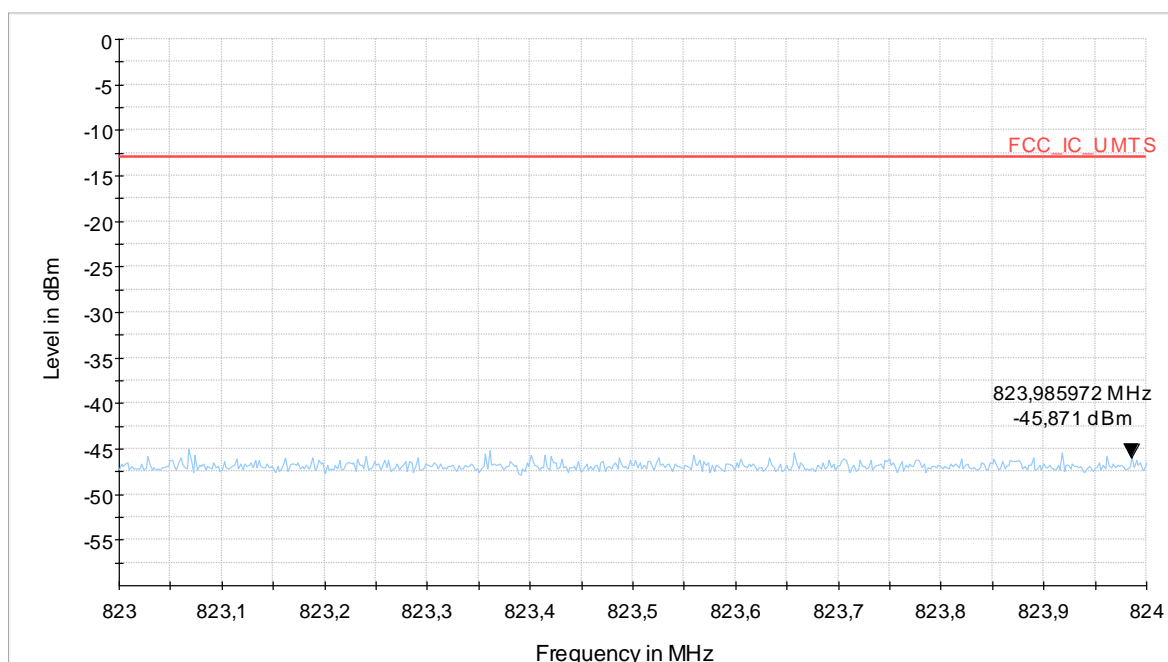


Diagram 9.513b\_BE\_R\_Ch20450\_50RB\_BW10\_QAM\_Int-Ant



### 1.7.3. Band-Edge High External Antenna

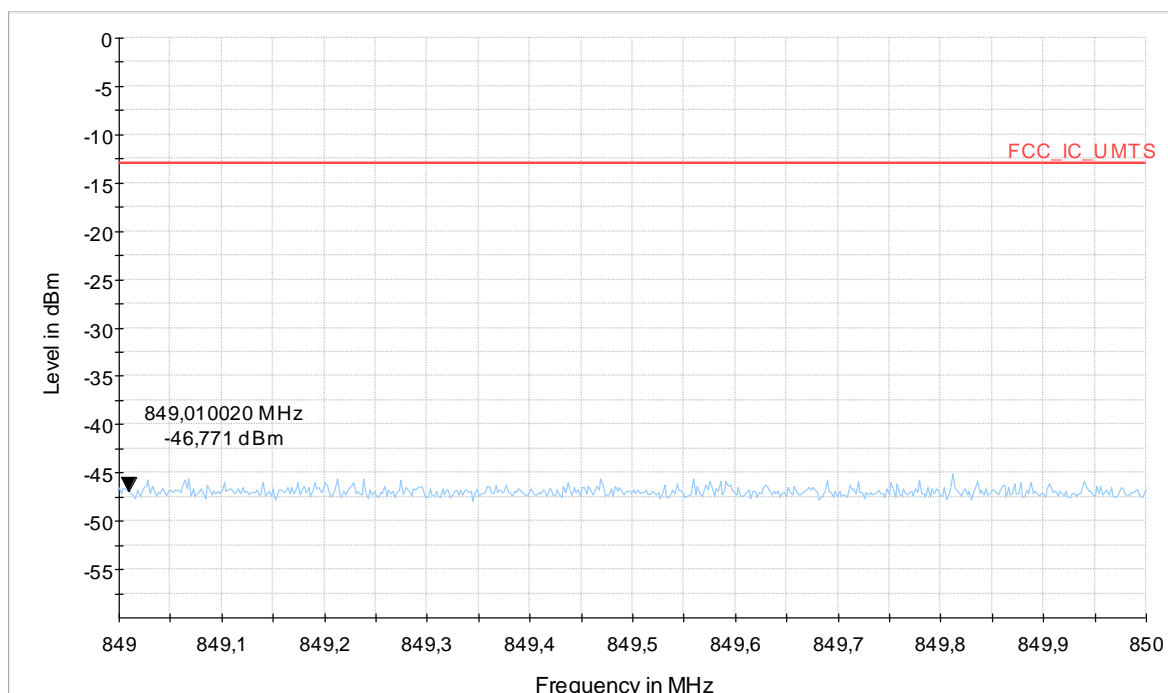


Diagram 9.514a\_BE\_R\_Ch20600\_1RB\_OFF49\_BW10\_QPSK\_Ext-Ant

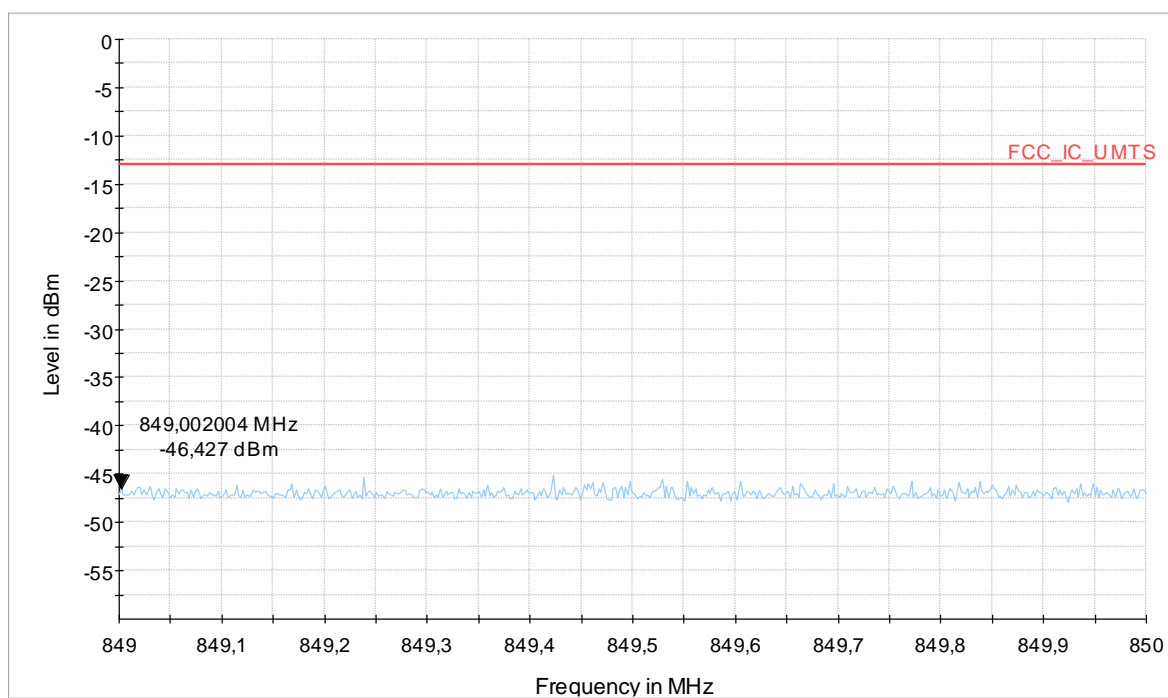


Diagram 9.514b\_BE\_R\_Ch20600\_1RB\_OFF49\_BW10\_QAM\_Ext-Ant

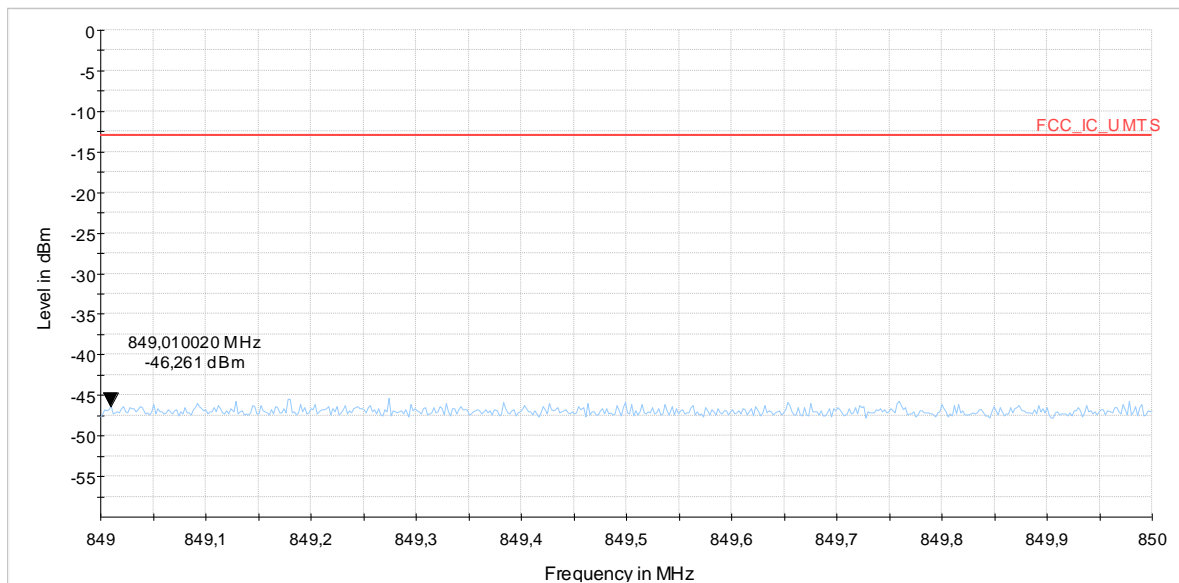


Diagram 9.515a\_BE\_R\_Ch20600\_50RB\_BW10\_QPSK\_Ext-Ant

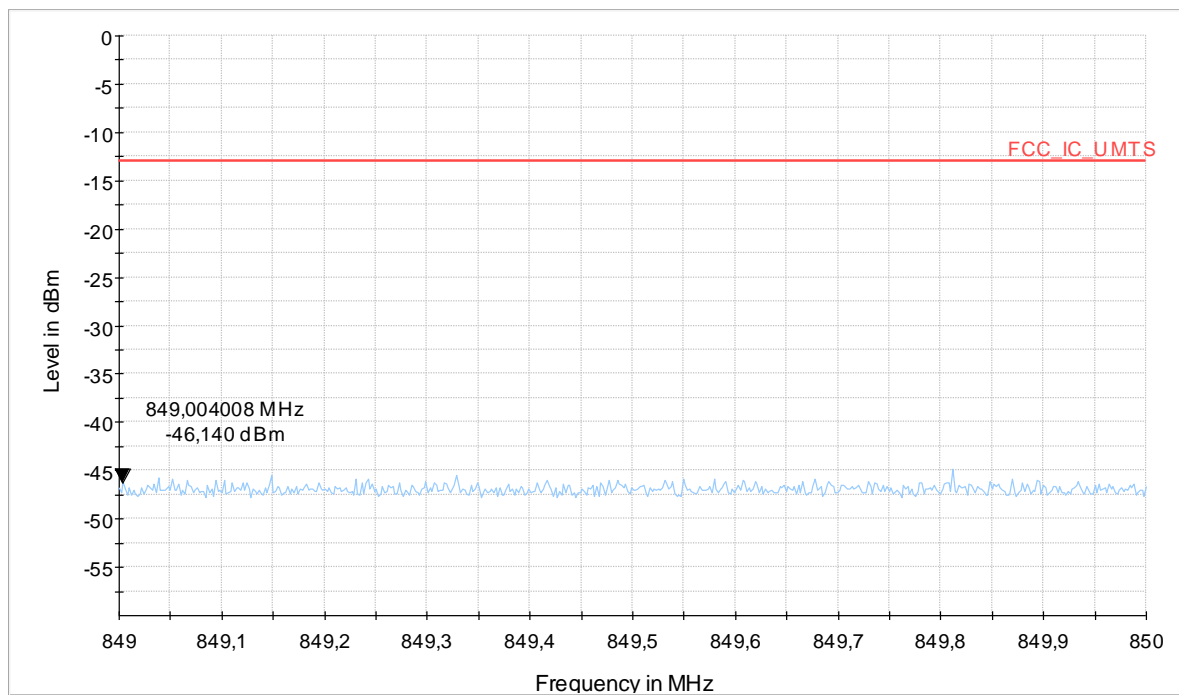


Diagram 9.515b\_BE\_R\_Ch20600\_50RB\_BW10\_QAM\_Ext-Ant

#### 1.7.4. Band-Edge High Internal Antenna

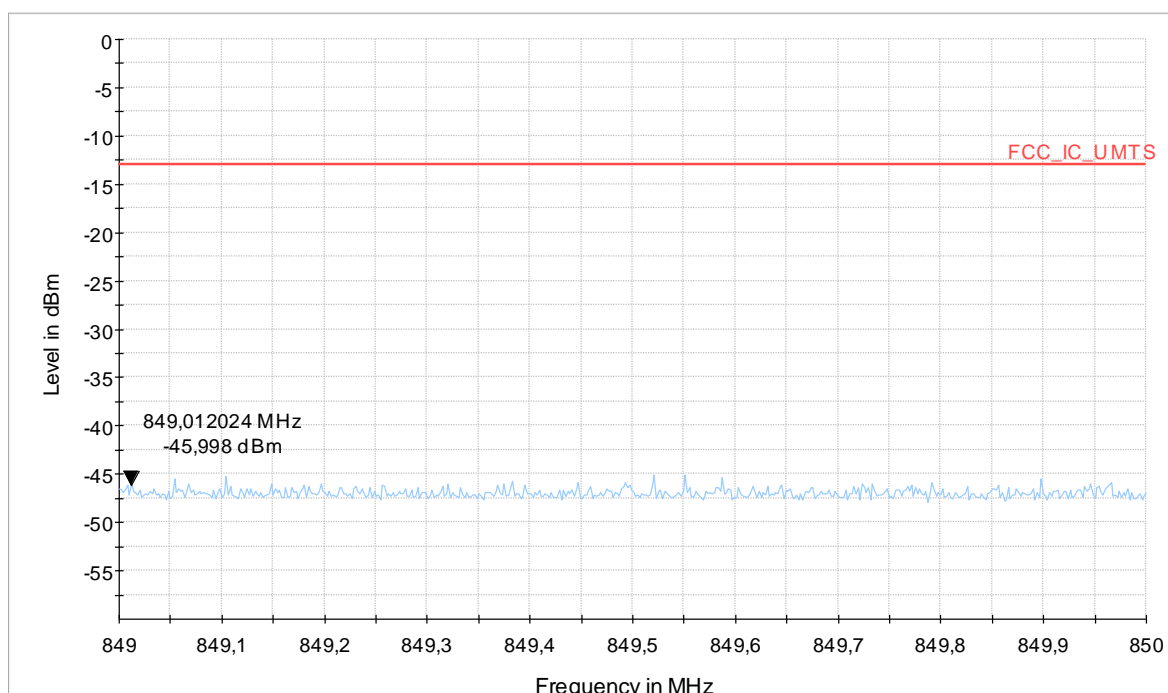


Diagram 9.514a\_BE\_R\_Ch20600\_1RB\_OFF49\_BW10\_QPSK\_Int-Ant

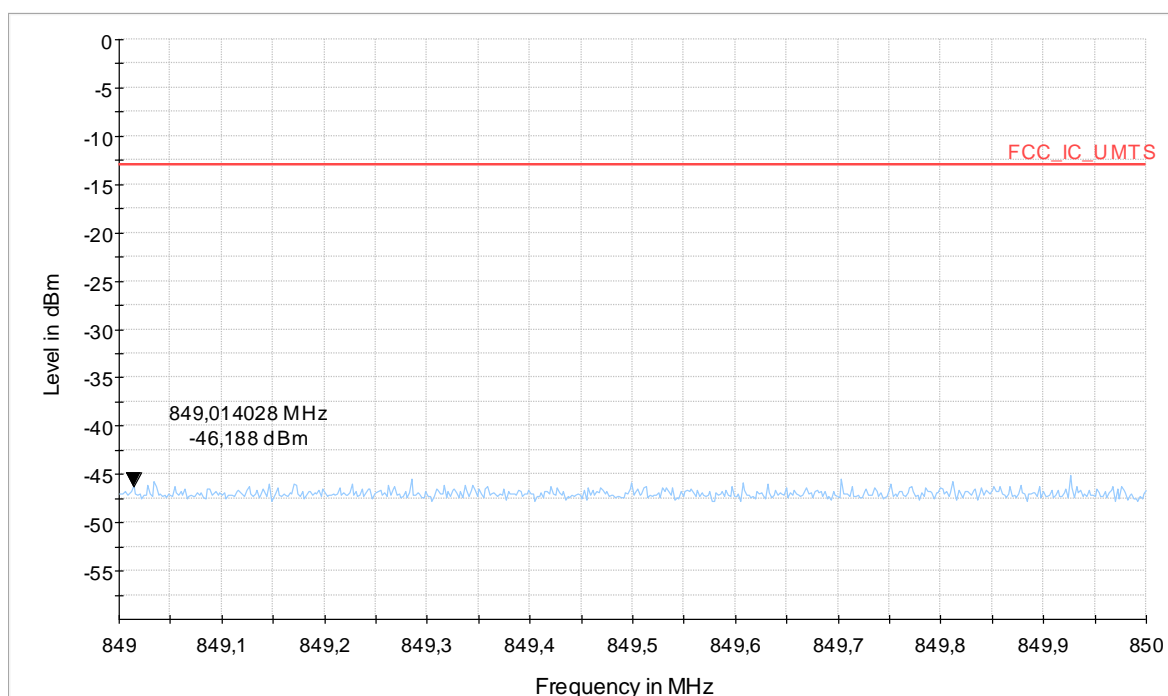


Diagram 9.514b\_BE\_R\_Ch20600\_1RB\_OFF49\_BW10\_QAM\_Int-Ant

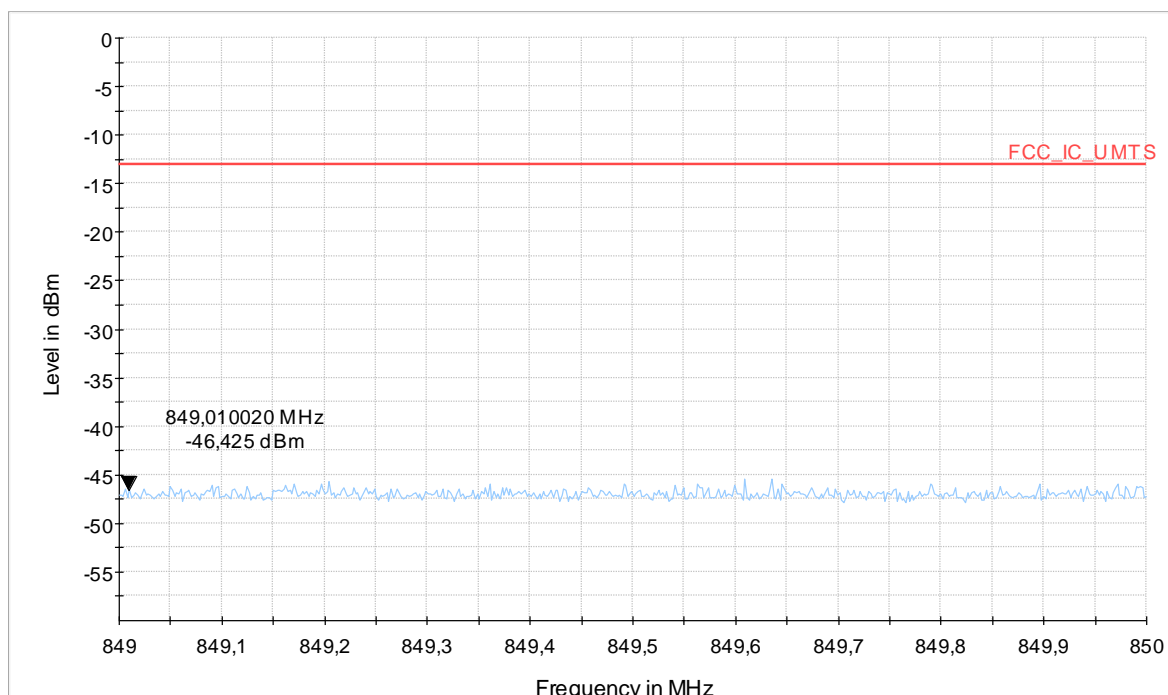


Diagram 9.515a\_BE\_R\_Ch20600\_50RB\_BW10\_QPSK\_Int-Ant

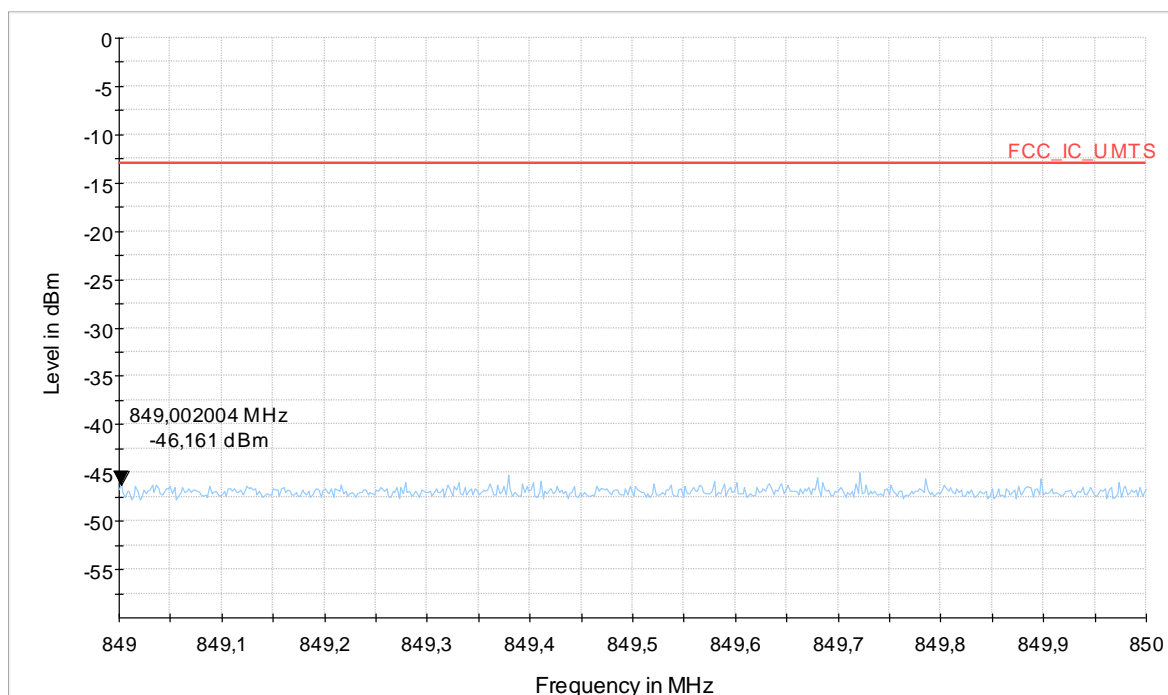


Diagram 9.515b\_BE\_R\_Ch20600\_50RB\_BW10\_QAM\_Int-Ant

## 1.8. Radiated emissions – band-edge (LTE Band 17)

### 1.8.1. Band-Edge Low External Antenna

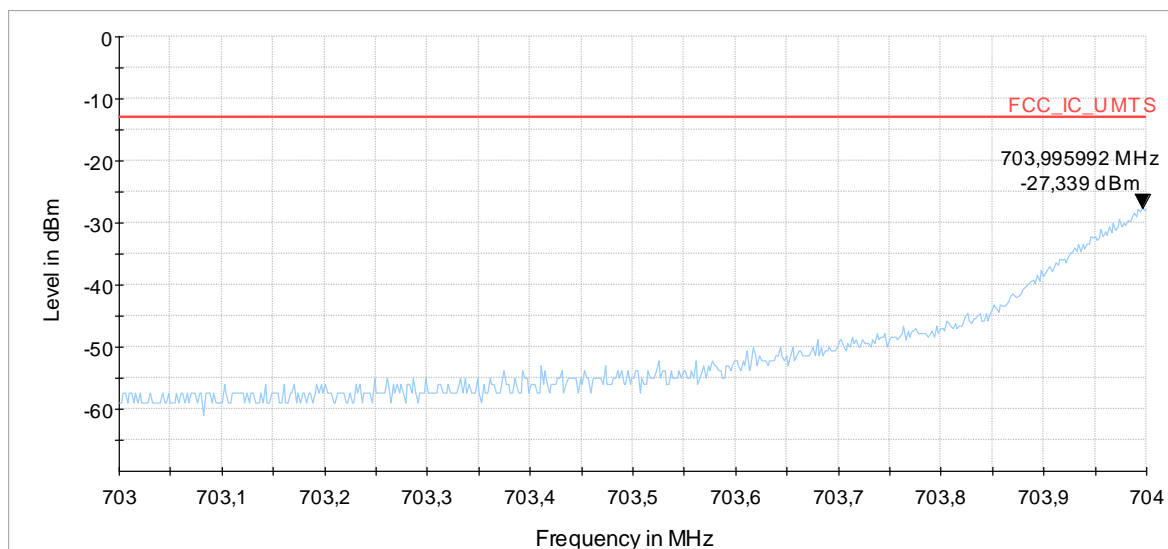


Diagram 9.1701a Ch23755\_1RB\_OFF0\_BW5\_QPSK\_ExtAnt

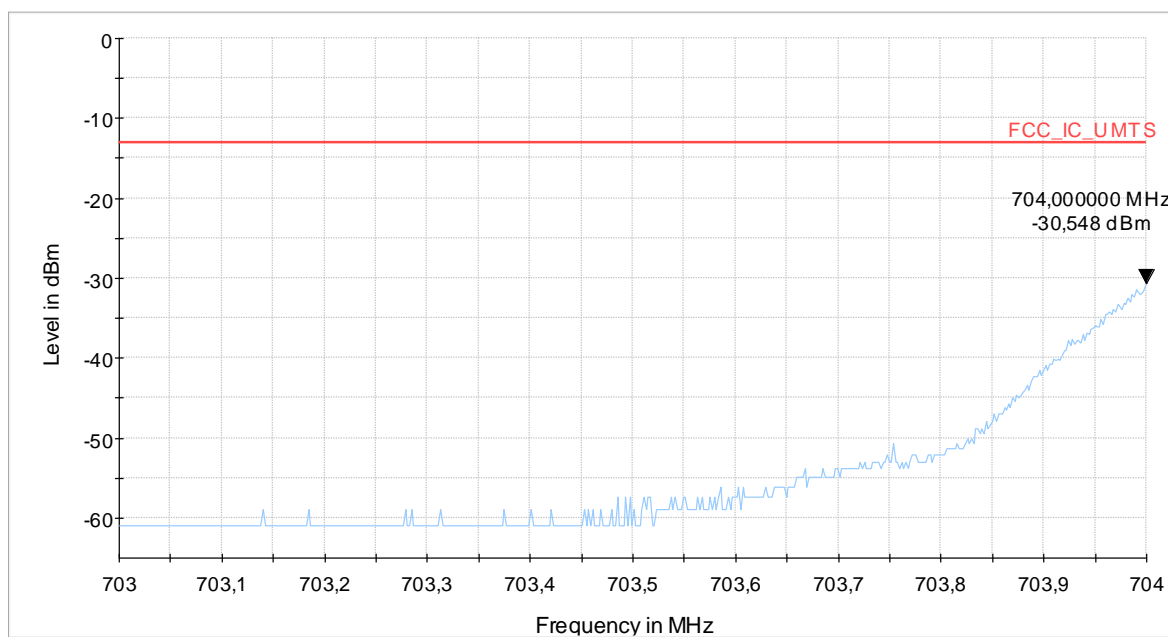


Diagram 9.1701b\_BE\_R\_Ch23755\_1RB\_OFF0\_BW5\_QAM\_ExtAnt

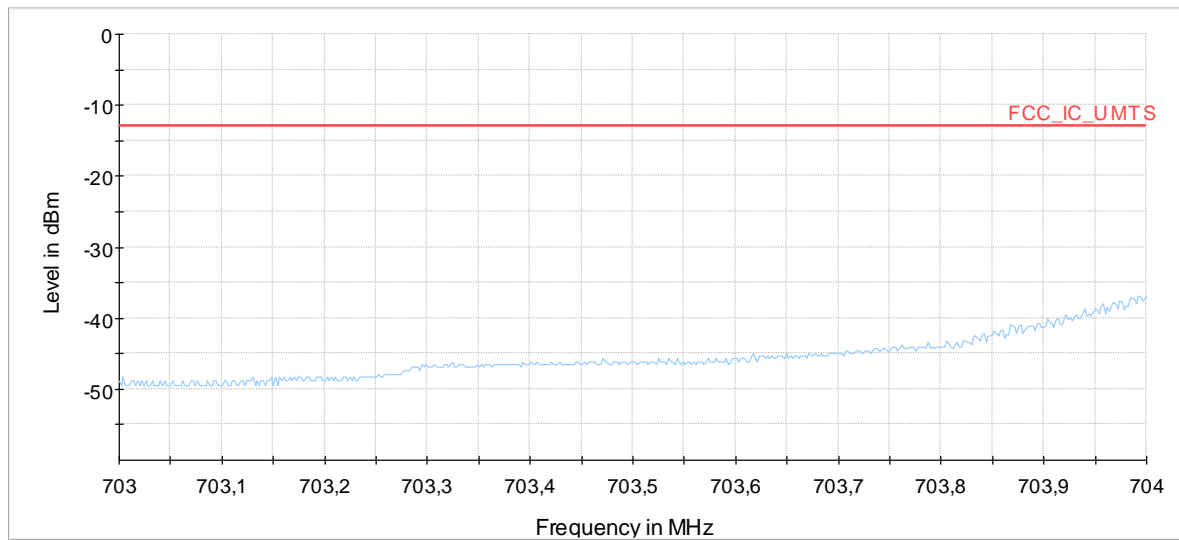


Diagram 9.1702a\_BE\_R\_Ch23755\_25RB\_BW5\_QPSK\_ExtAnt

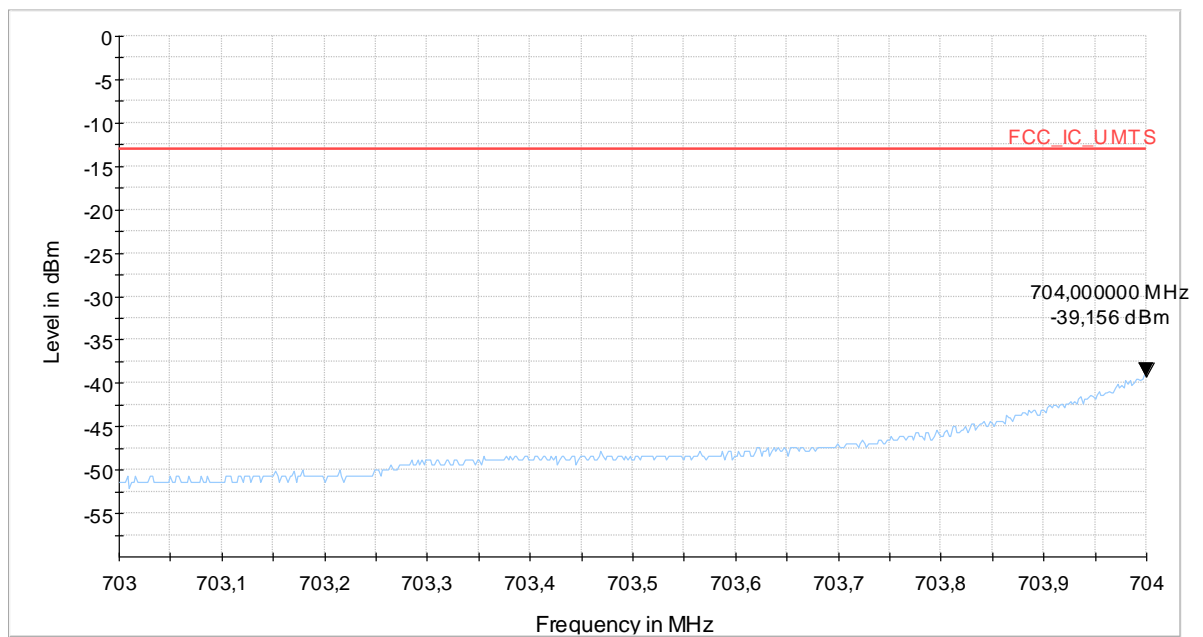


Diagram 9.1702b\_BE\_R\_Ch23755\_25RB\_BW5\_QAM\_ExtAnt

## 1.8.2. Band-Edge Low Internal Antenna

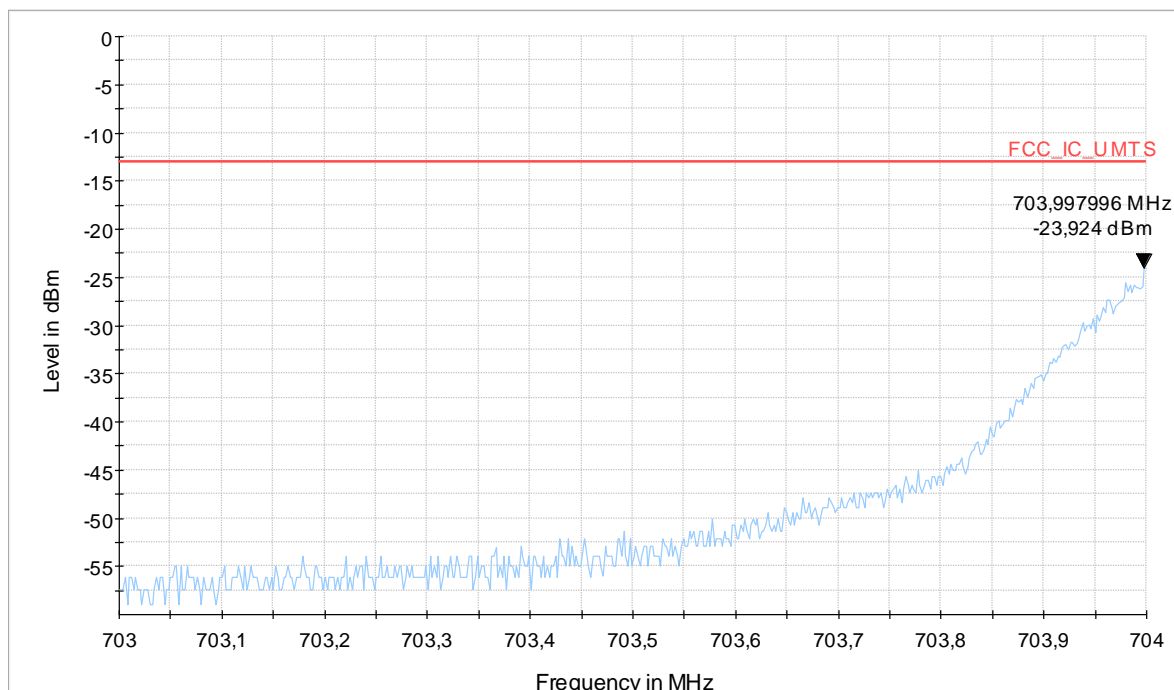


Diagram 9.1701a\_BE\_R\_Ch23755\_1RB\_OFF0\_BW5\_QPSK\_IntAnt

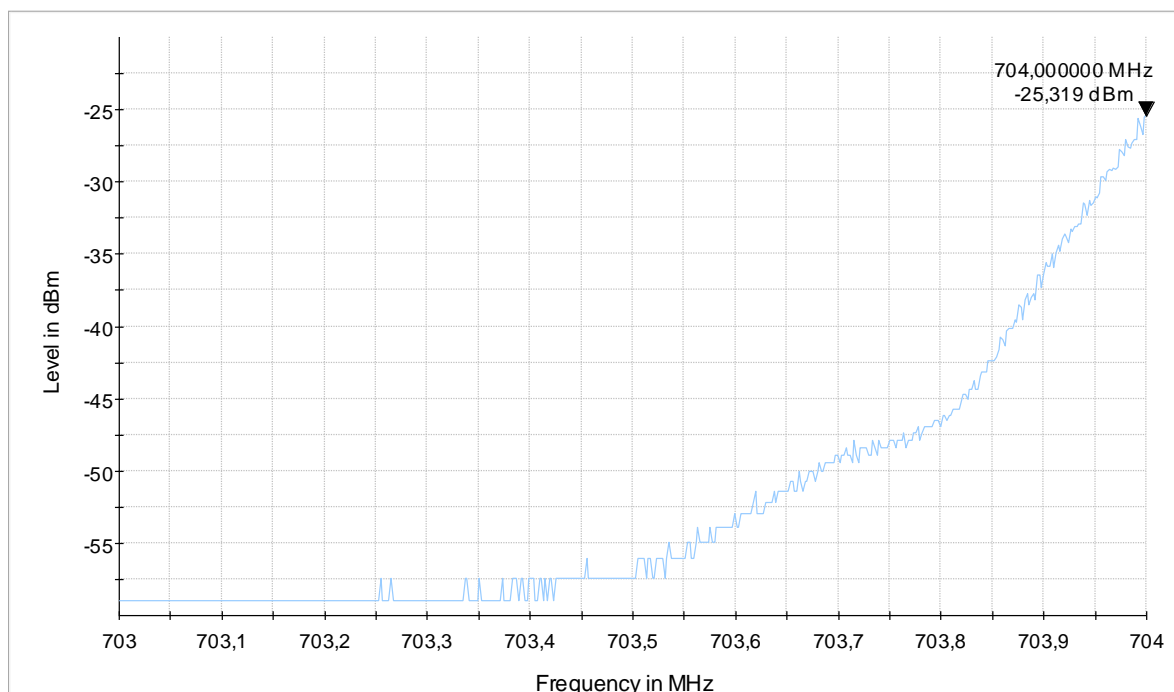


Diagram 9.1701b\_BE\_R\_Ch23755\_1RB\_OFF0\_BW5\_QAM\_IntAnt

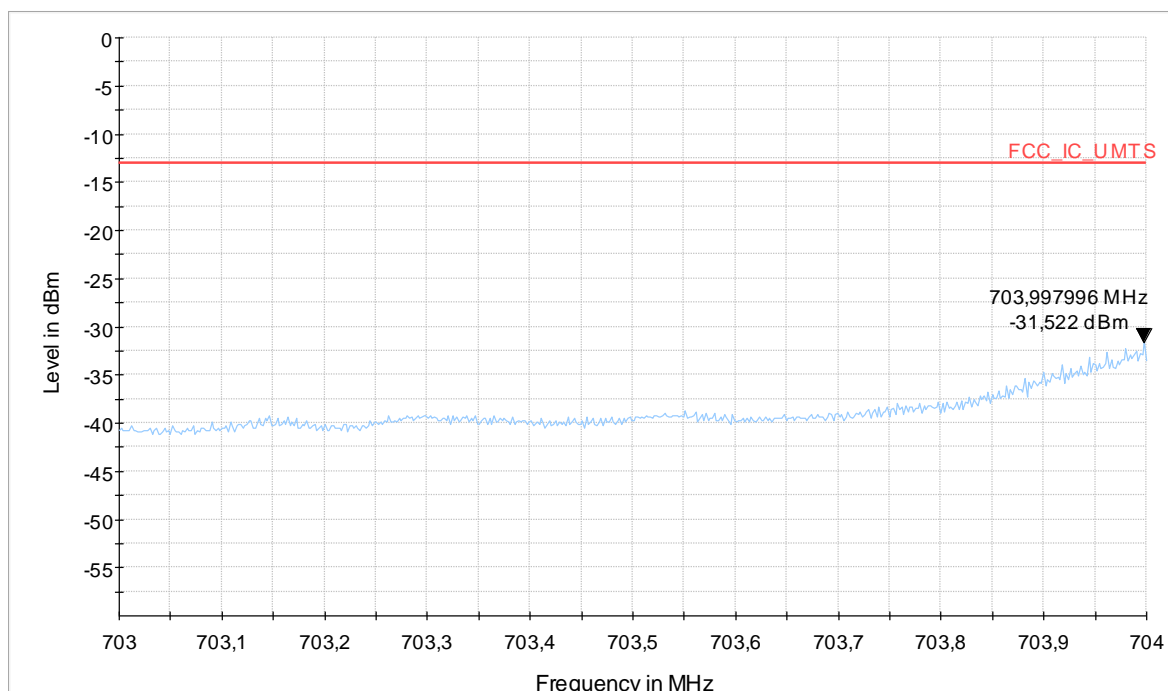


Diagram 9.1702a\_BE\_R\_Ch23755\_25RB\_BW5\_QPSK\_IntAnt

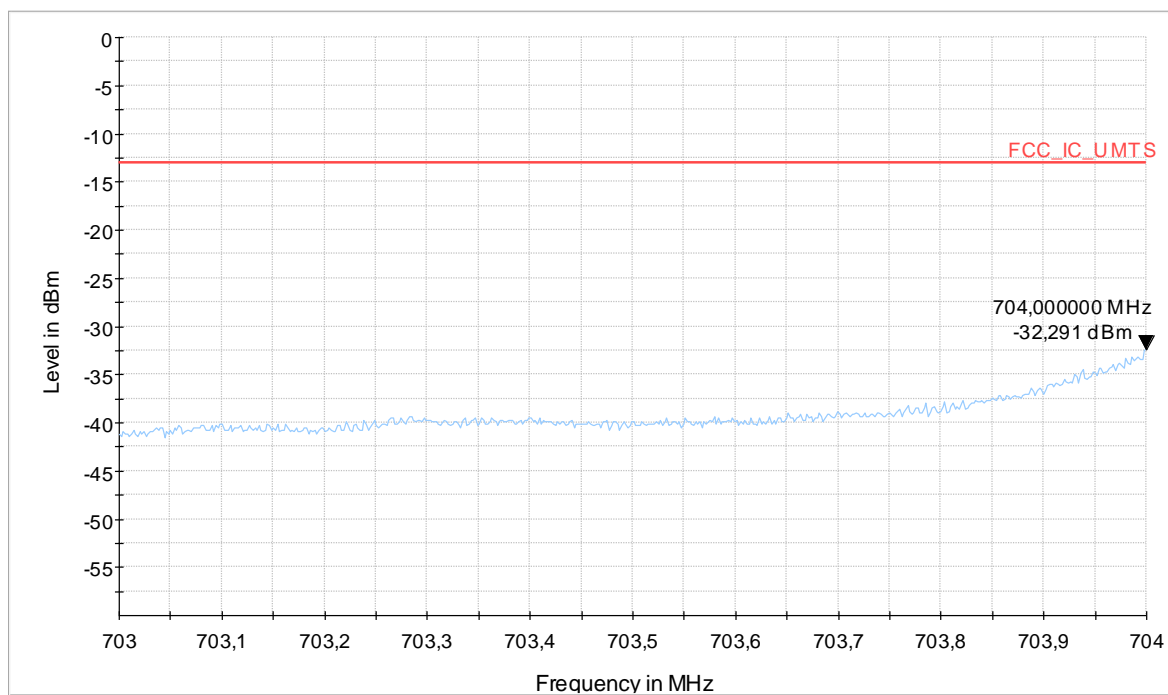


Diagram 9.1702b\_BE\_R\_Ch23755\_25RB\_BW5\_QAM\_IntAnt



### 1.8.3. Band-Edge High External Antenna

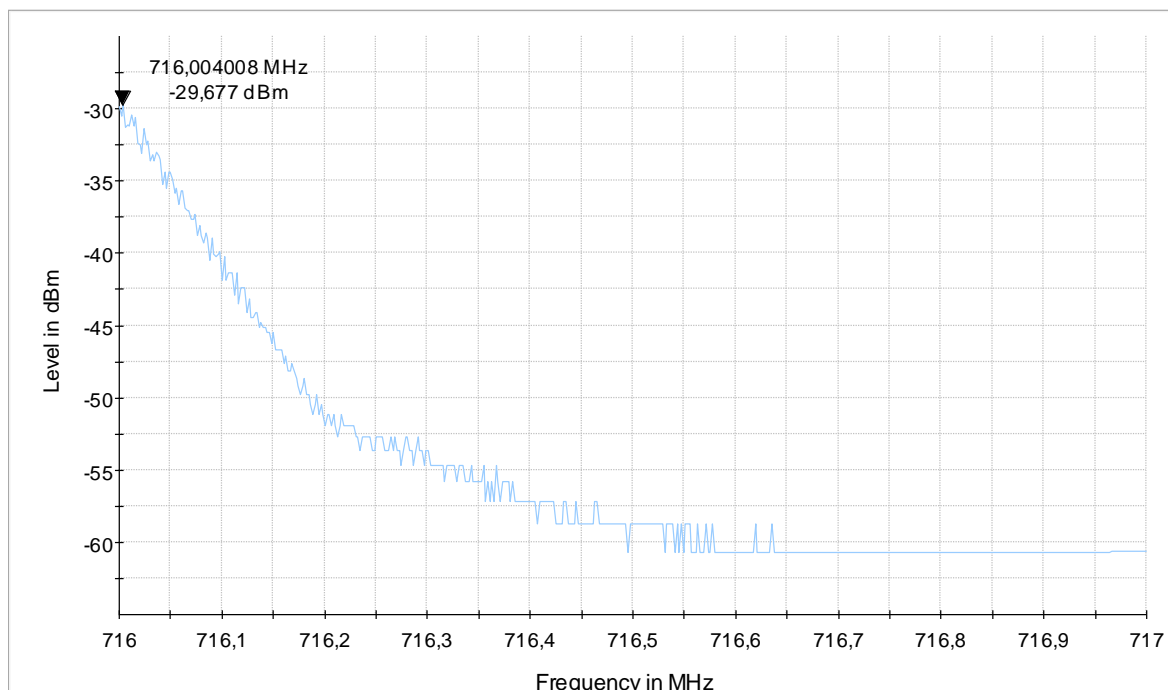


Diagram 9.1703a\_BE\_R\_Ch23825\_1RB\_OFF24\_BW5\_QPSK\_ExtAnt

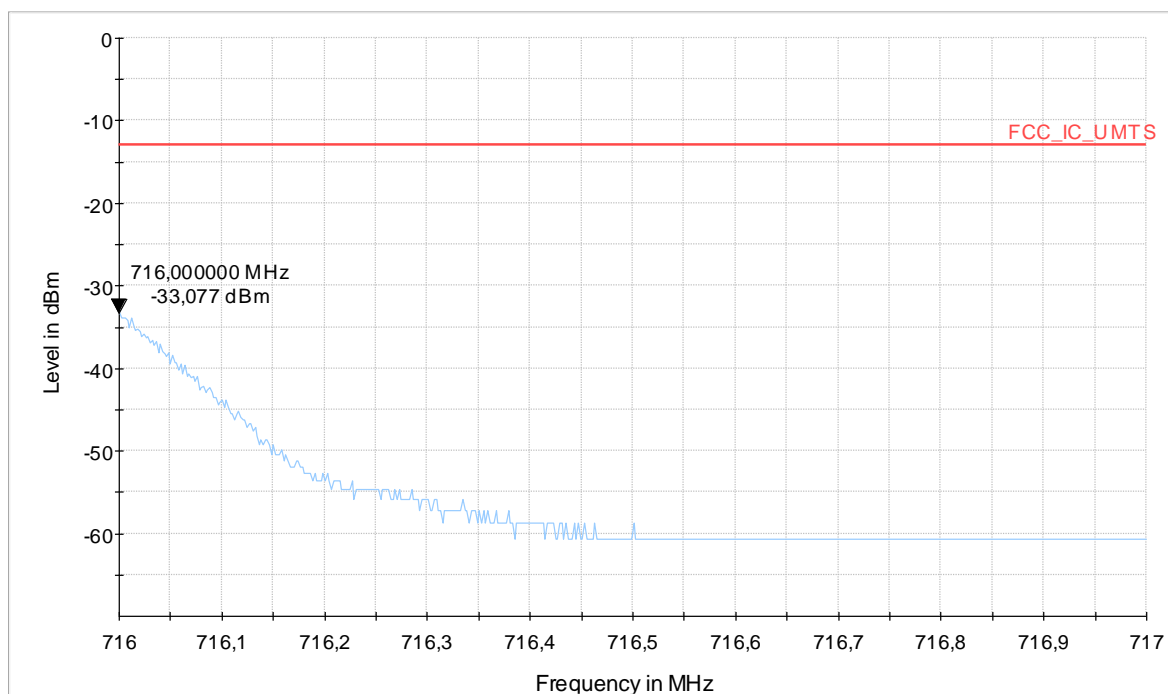


Diagram 9.1703b\_BE\_R\_Ch23825\_1RB\_OFF24\_BW5\_QAM\_ExtAnt

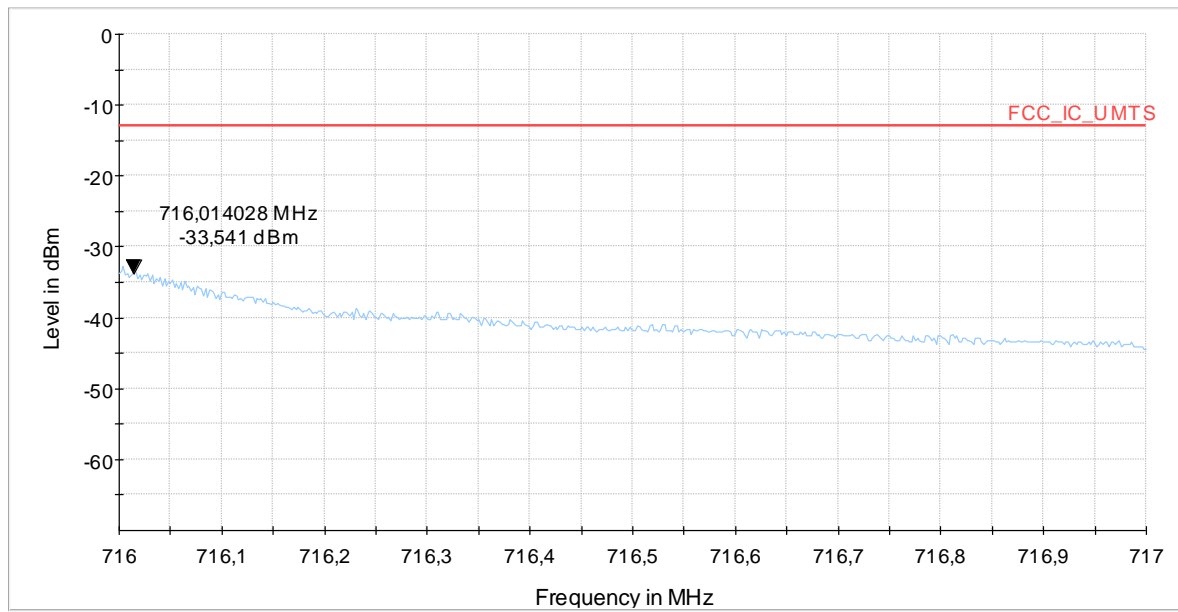


Diagram 9.1704a\_BE\_R\_Ch23825\_25RB\_BW5\_QPSK\_ExtAnt

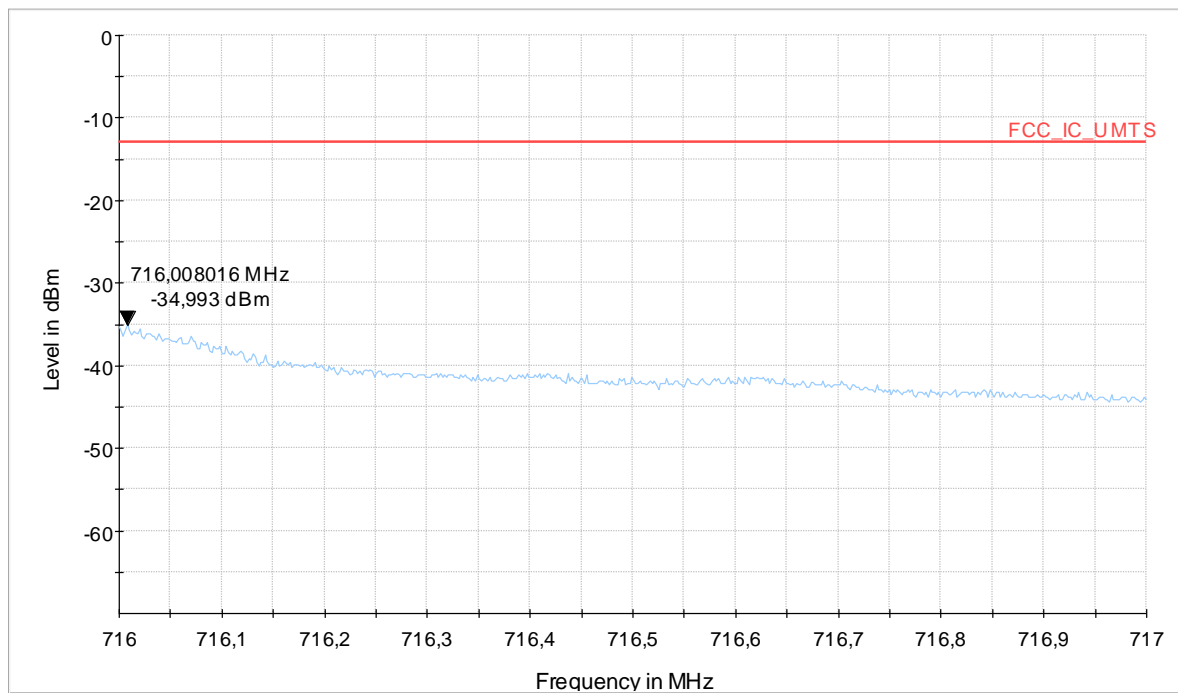


Diagram 9.1704b\_BE\_R\_Ch23825\_25RB\_BW5\_QAM\_ExtAnt

## 1.8.4. Band-Edge High Internal Antenna

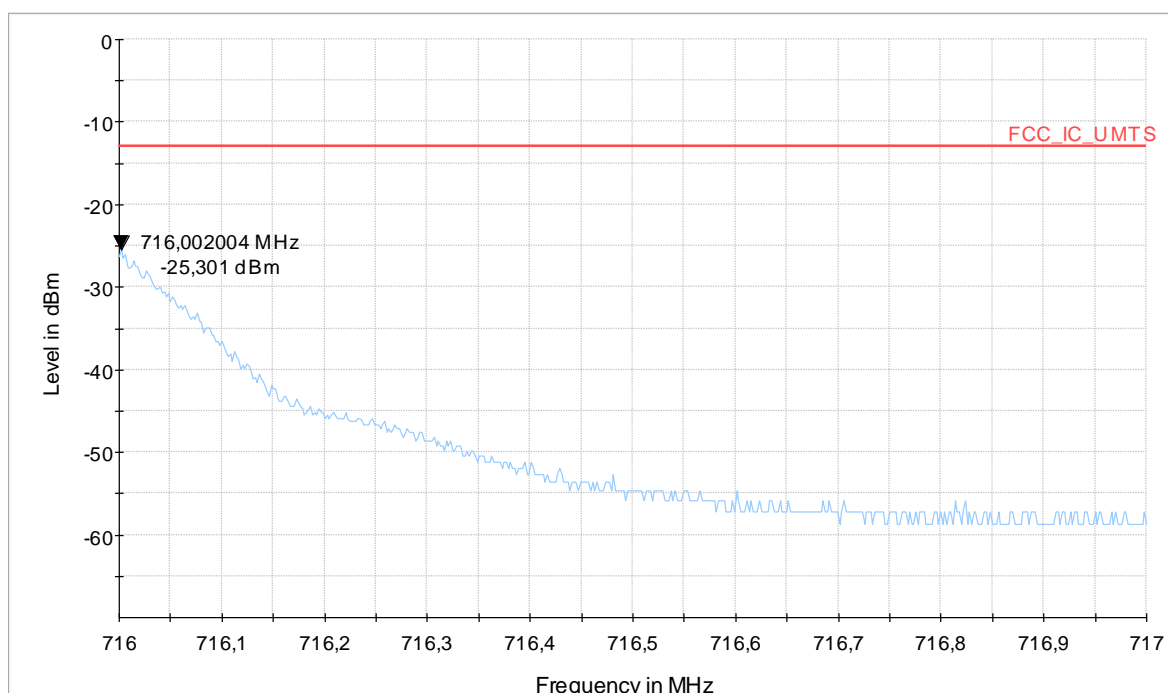


Diagram 9.1703a\_BE\_R\_Ch23825\_1RB\_OFF24\_BW5\_QPSK\_IntAnt

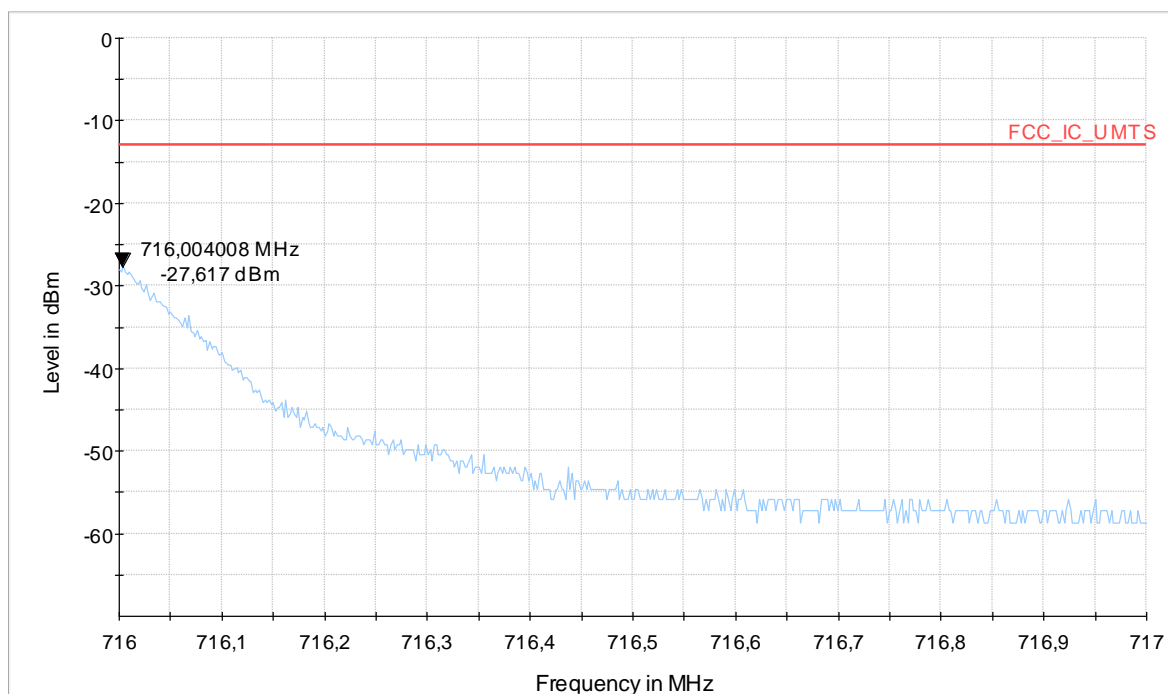


Diagram 9.1703b\_BE\_R\_Ch23825\_1RB\_OFF24\_BW5\_QAM\_IntAnt

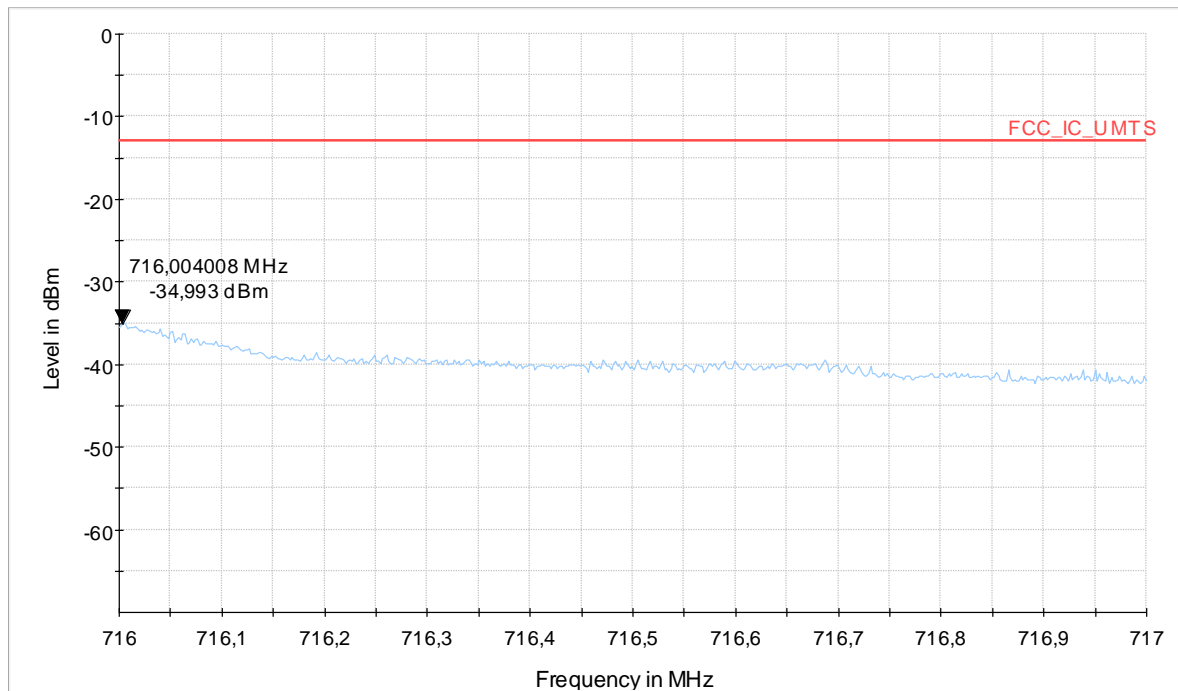


Diagram 9.1704a\_BE\_R\_Ch23825\_25RB\_BW5\_QPSK\_IntAnt

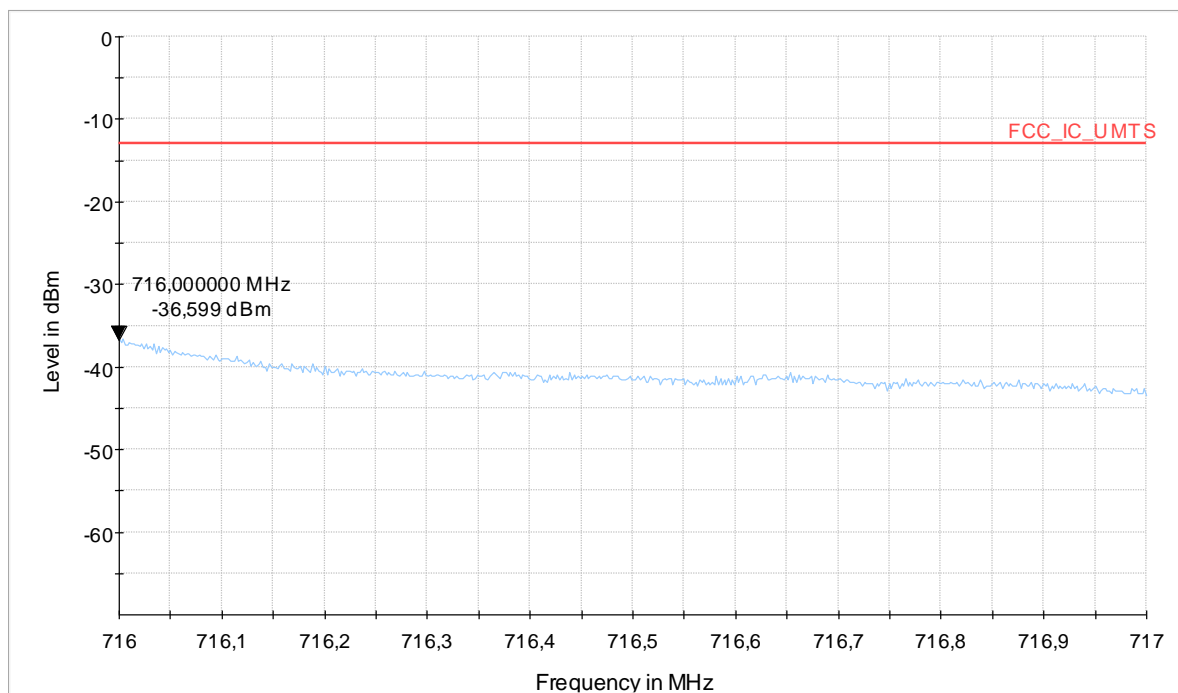


Diagram 9.1704b\_BE\_R\_Ch23825\_25RB\_BW5\_QAM\_IntAnt