

Annex 1: Measurement diagrams
to
TEST REPORT
No.: 6-0143-12-11-2a

According to:
FCC Regulations
Part15C, Part 22 & Part 24

IC-Regulations
RSS-132 Issue 2, RSS-133 Issue 5 &
RSS-Gen Issue 3

for
u-blox AG

RF-Module LISA-U260-01
FCC-ID: XPYLISAU200
IC-ID: 8595A-LISAU200

Laboratory Accreditation and Listings			
 Deutsche Akkreditierungsstelle D-PL-12047-01-01	 Reg. No.: 736496 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-2665, R-2666 C-2914, T-1967, G-301
 AUTHORIZED RF LABORATORY	 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			

Table of contents

1. MEASUREMENT RESULTS.....	3
1.1. Conducted emissions on AC-Power lines - FDD II/ V Mode.....	3
1.2. 26dBc Emission bandwidth	7
1.3. 99% Occupied bandwidth.....	13
1.4. Field strength < 30 MHz (radiated) – G850 Mode	19
1.6 Field strength < 30 MHz (radiated) – PCS1900 Mode	21
1.7 TX Spurious emissions conducted + Block-Edge – FDD II Mode.....	29
1.8 TX Spurious emissions conducted + Block-Edge – FDD V Mode.....	37
1.9 Radiated spurious emissions+ Block-Edge: f> 30 MHz – G850 Mode.....	45
2.0 E.R.P.(radiated) – 850 Mode	51
2.1 Radiated spurious emissions+ Block-Edge: f> 30 MHz – PCS1900 Mode.....	57
2.2 E.I.R.P.(radiated) – PCS1900 Mode.....	63
2.3 Radiated spurious emissions+ Block-Edge: f> 30 MHz – FDD II Mode	69
2.4 E.I.R.P.(radiated) – FDD II Mode	74
2.5 Radiated spurious emissions+ Block-Edge: f> 30 MHz – FDD V Mode.....	77
2.6 E.I.R.P.(radiated) – FDD V Mode	82

1. Measurement results

1.1. Conducted emissions on AC-Power lines - FDD II/ V Mode

Diagram No. 1.01

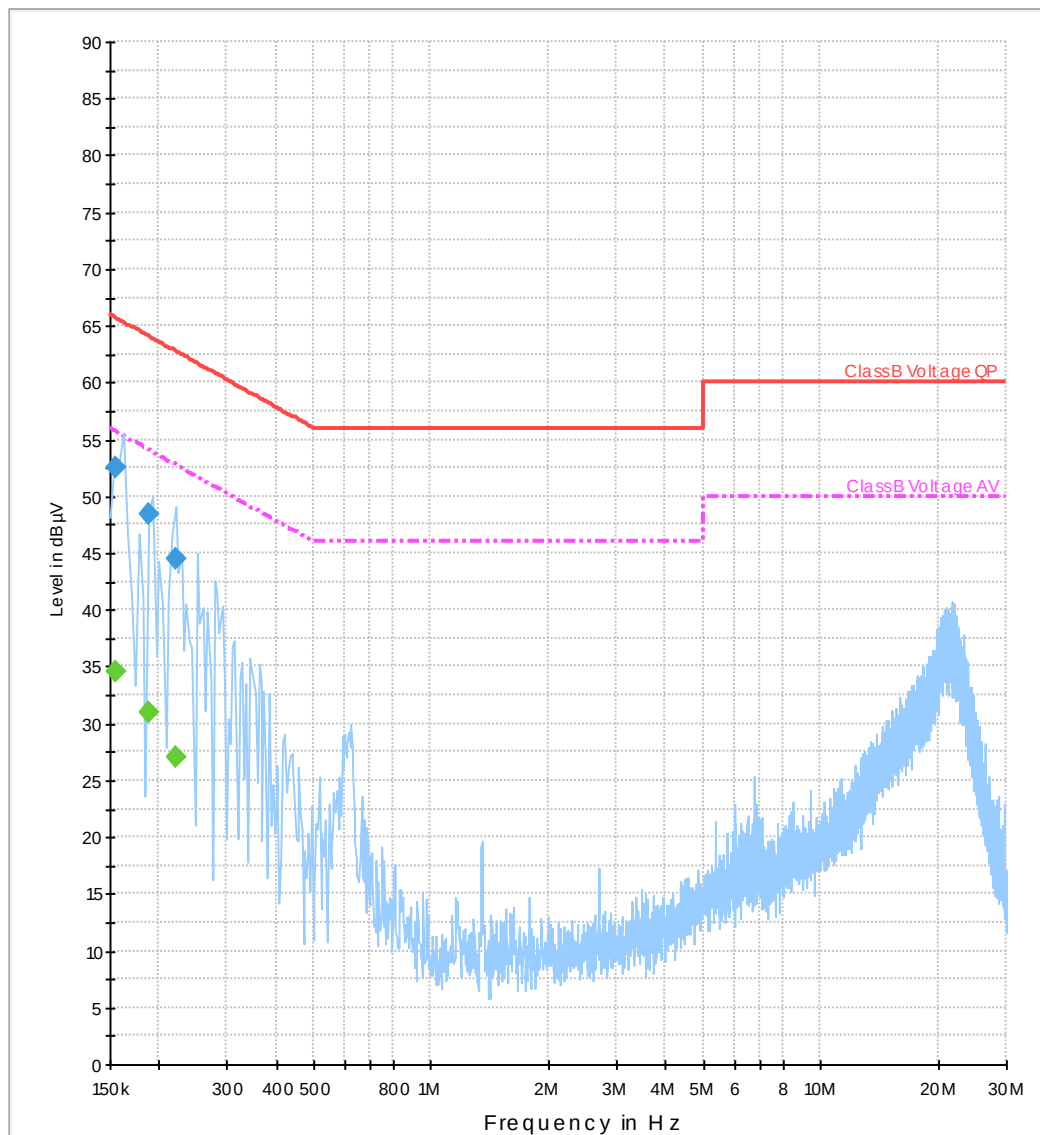
Test Description:
 Testspezifikation:
 Technical Data:
 Diagram:
 Operator name:
 Report.- Nr.

Date: 15.10.2012 Page 1 of 2
 Conducted Voltage Measurement Class B
 FCC 15.207
 Please see next page for detailed information
 Shows the peak values as a sum of measured ports (N+L1) in maxhold mode
 HLa
 6-0143-12-11-2a

EUT:
 Manufacturer:
 Operating mode:
 Measured on line:
 Power during test:
 Comment 1:

LISA U260 + Antenna + charger
 u-blox AG
 FDD II TCH Data
 Mains AC L1 and N
 110 V AC 60 Hz
 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main

01_Class B_Voltage_PK_QPAV_N_L1



Date: 15.10.2012 Page 2 of 2

Final Result 1

Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.155000	52.6	15000.0	9.000	GND	N	0.0	13.2	65.7
0.189469	48.4	15000.0	9.000	GND	N	0.0	15.7	64.1
0.221813	44.5	15000.0	9.000	GND	L1	0.0	18.3	62.8

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.155000	34.5	15000.0	9.000	GND	N	0.0	21.2	55.7
0.189469	31.0	15000.0	9.000	GND	N	0.0	23.1	54.1
0.221813	27.0	15000.0	9.000	GND	L1	0.0	25.8	52.8

Diagram No. 1.02

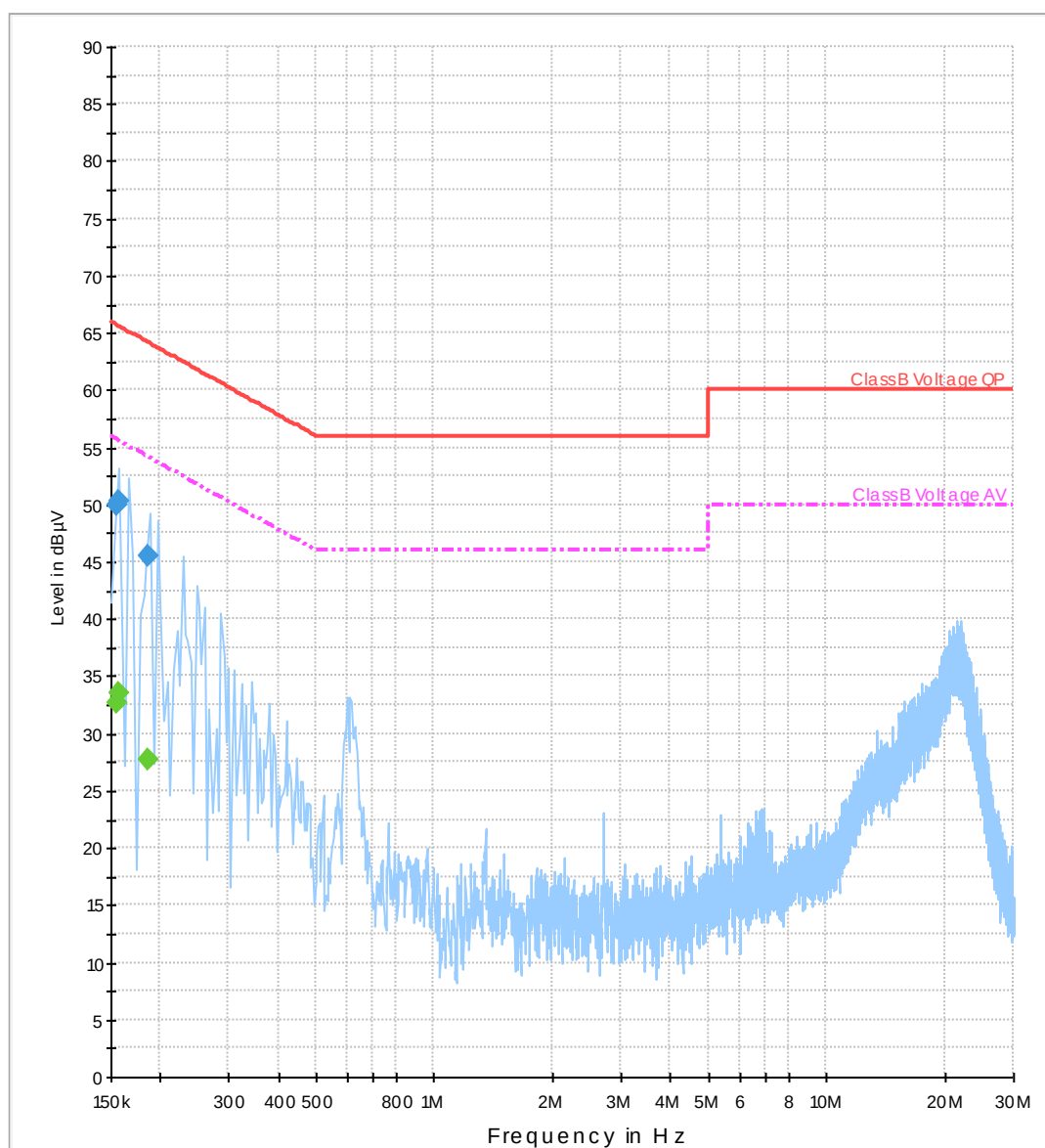
Test Description:
 Testspezifikation:
 Technical Data:
 Diagram:
 Operator name:
 Report.- Nr.

Date: 15.10.2012 Page 1 of 2
 Conducted Voltage Measurement Class B
 FCC 15.207
 Please see next page for detailed information
 Shows the peak values as a sum of measured ports (N+L1) in maxhold mode
 HLa
 6-0143-12-11-2a

EUT:
 Manufacturer:
 Operating mode:
 Measured on line:
 Power during test:
 Comment 1:
 Comment 2:

LISA U260 + Antenna + charger
 u-blox AG
 FDD V TCH Data
 Mains AC L1 and N
 110 V AC 60 Hz
 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main

01_Class B_Voltage_PK_QPAV_N_L1



Final Result 1

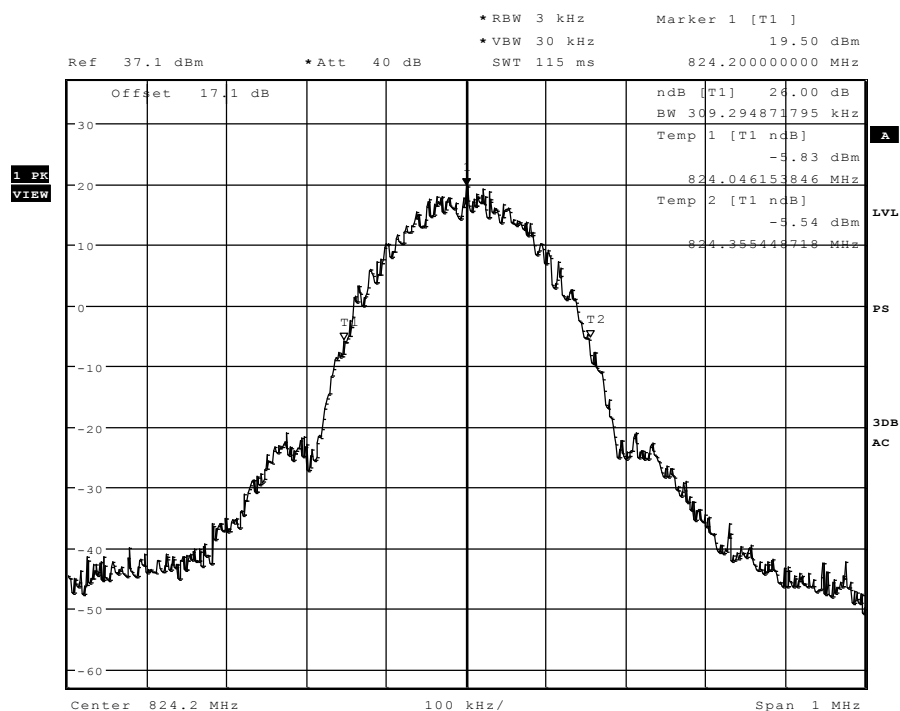
Frequency (MHz)	QuasiPeak (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.155000	50.0	15000.0	9.000	GND	L1	0.0	15.7	65.7
0.157125	50.3	15000.0	9.000	GND	L1	0.0	15.3	65.6

Final Result 2

Frequency (MHz)	CAverage (dBμV)	Meas. Time (ms)	Bandwidth (kHz)	PE	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.155000	32.6	15000.0	9.000	GND	L1	0.0	23.1	55.7
0.157125	33.6	15000.0	9.000	GND	L1	0.0	22.0	55.6

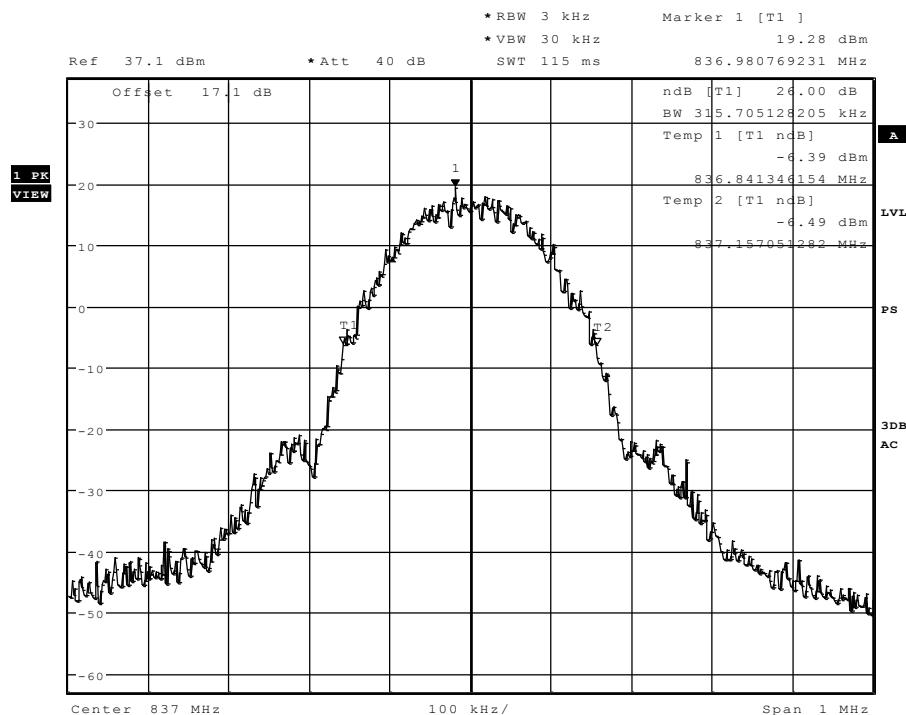
1.2. 26dBc Emission bandwidth

EDGE 850



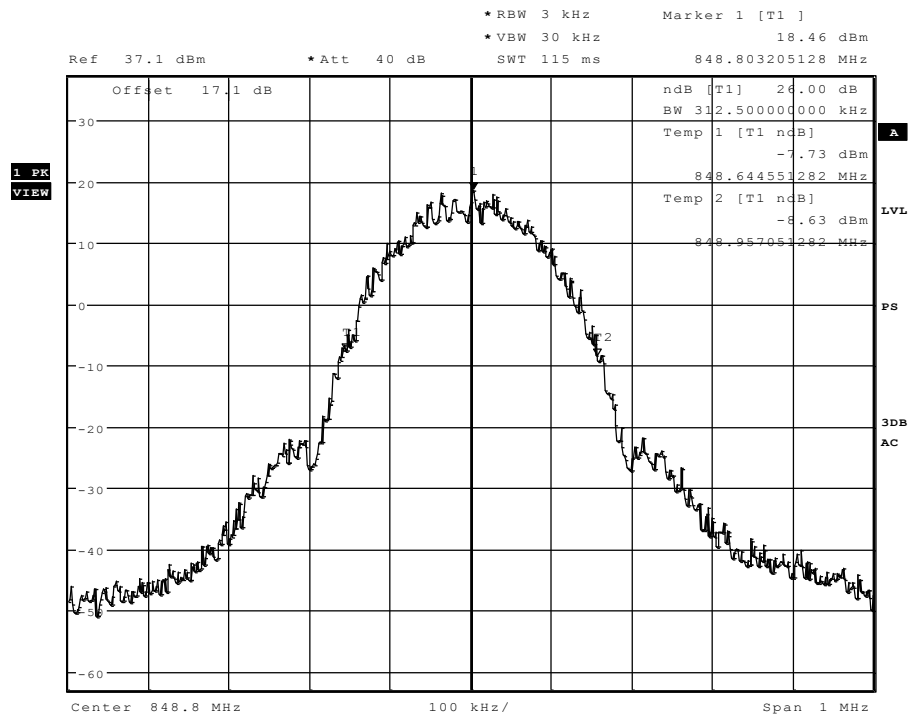
Date: 15.OCT.2012 13:54:52

Channel 128

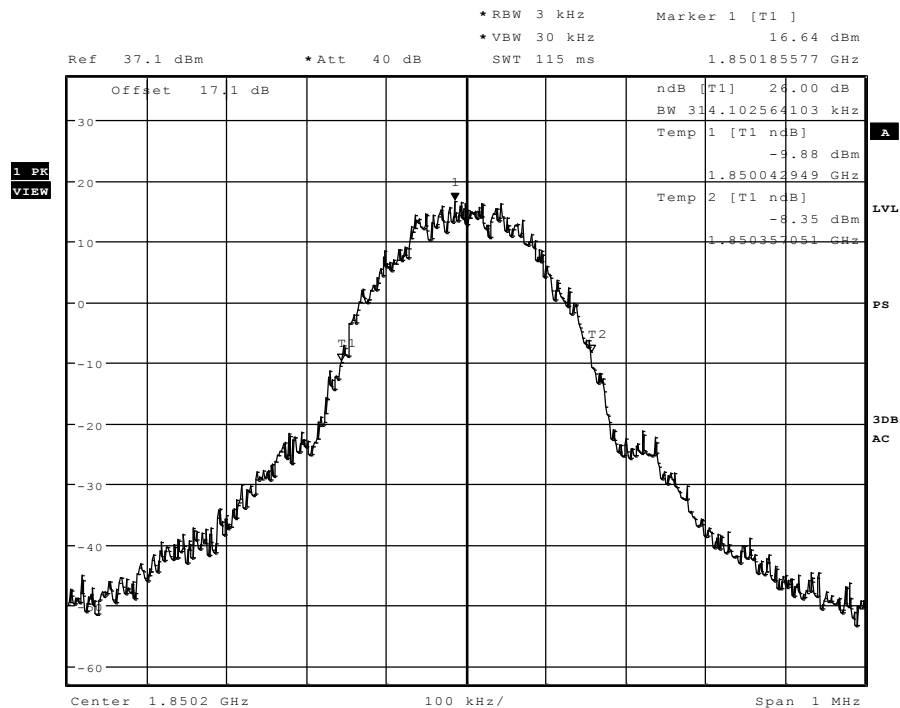


Date: 15.OCT.2012 13:56:54

Channel 192

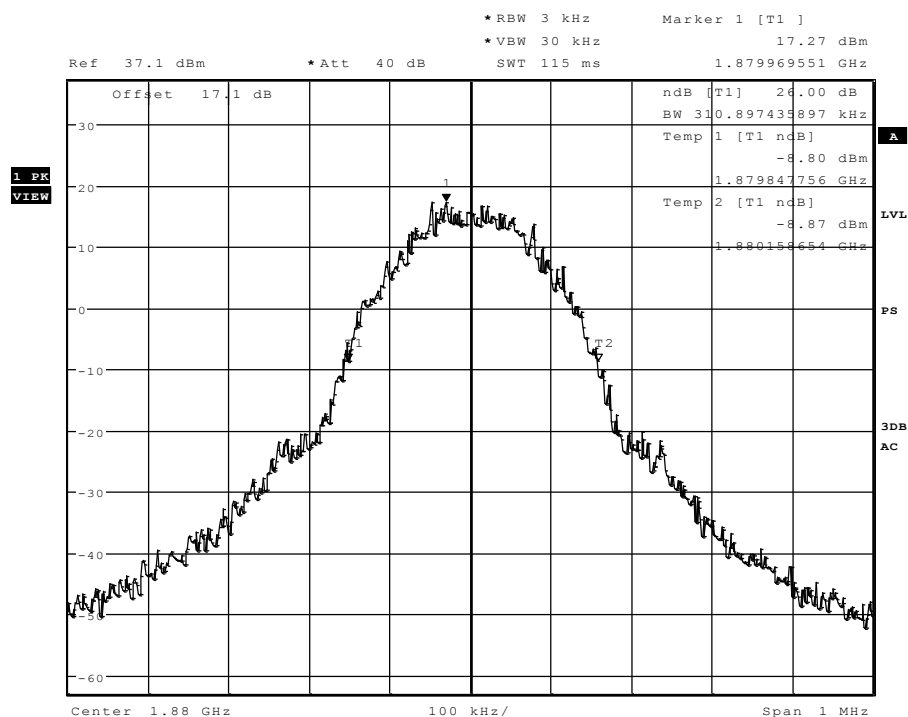


Date: 15.OCT.2012 14:00:58

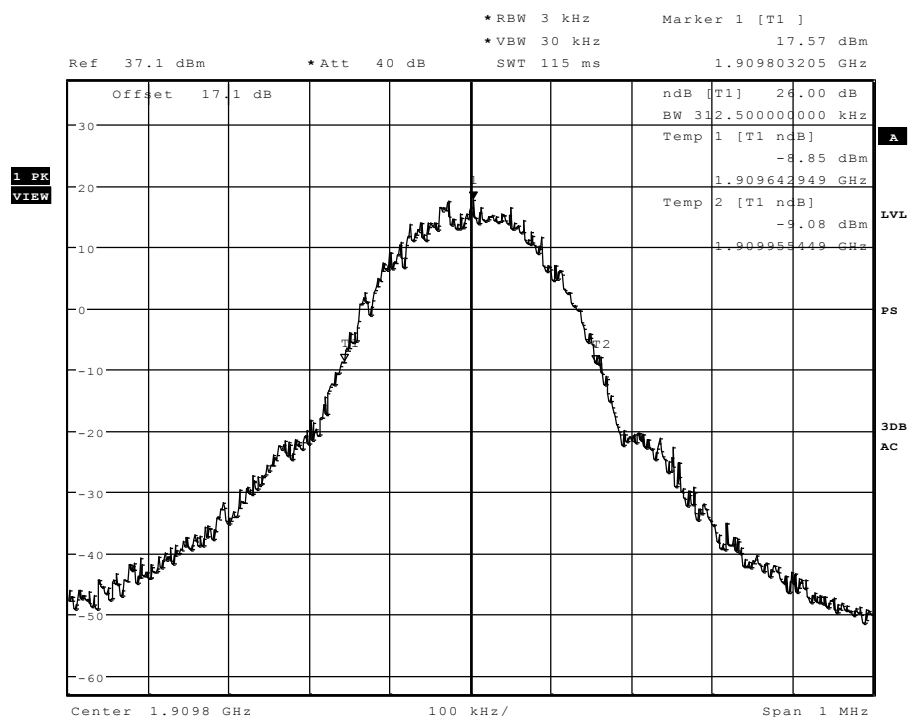
Channel 251**EDGE - PCS 1900**

Date: 15.OCT.2012 14:09:16

Channel 512

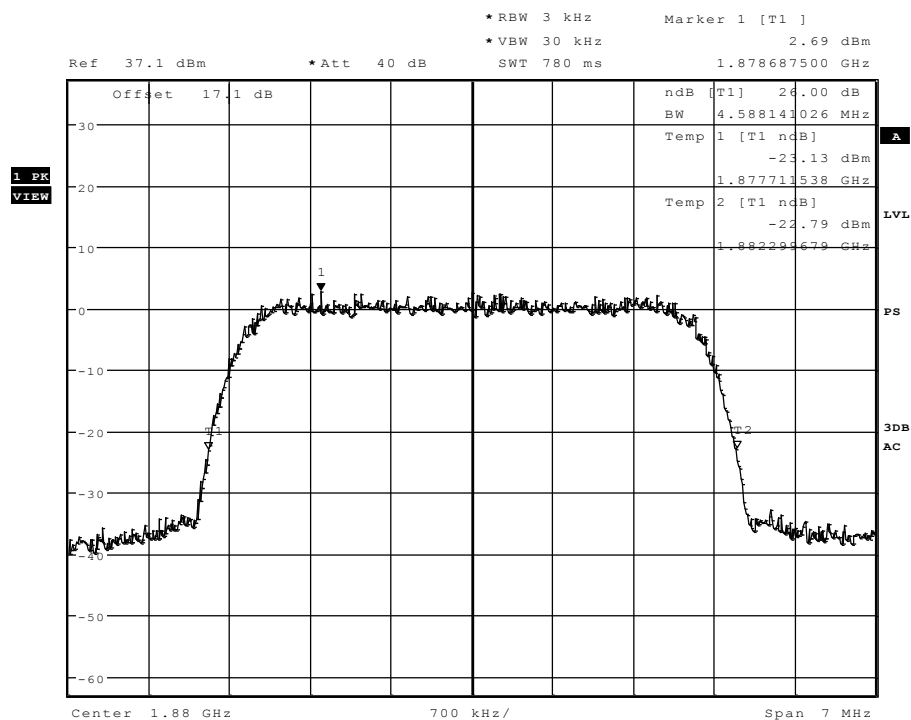


Date: 15.OCT.2012 14:03:36

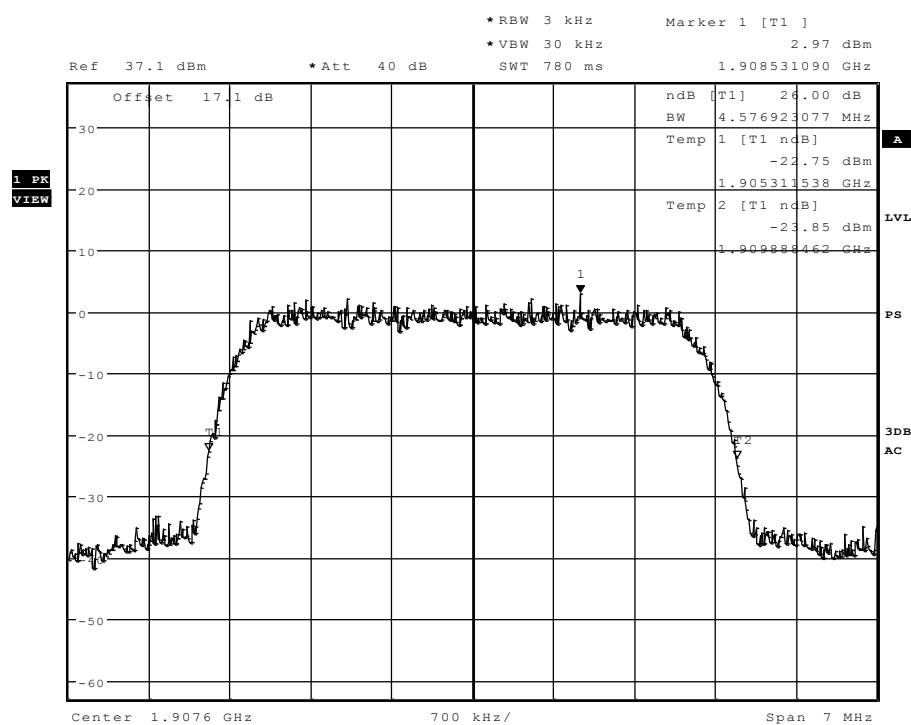
Channel 661

Date: 15.OCT.2012 14:11:27

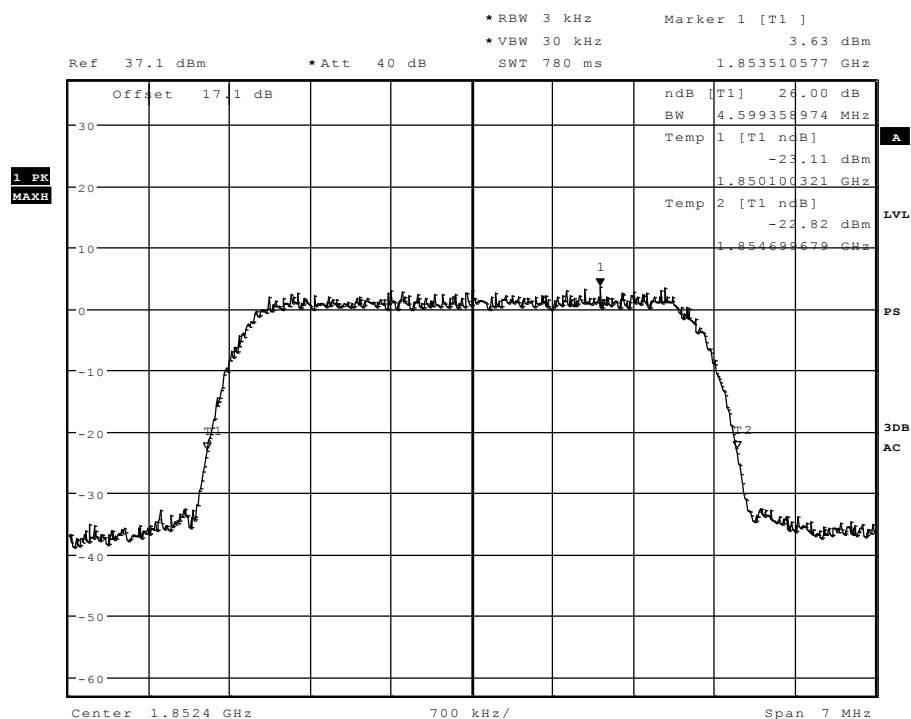
Channel 810

FDD II mode

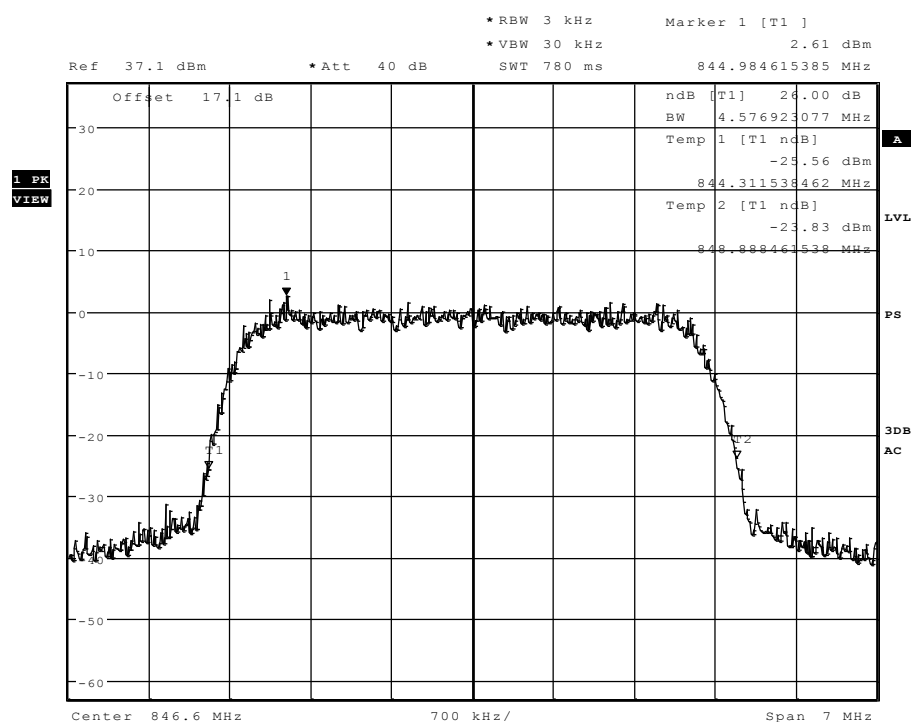
Date: 12.OCT.2012 12:08:16



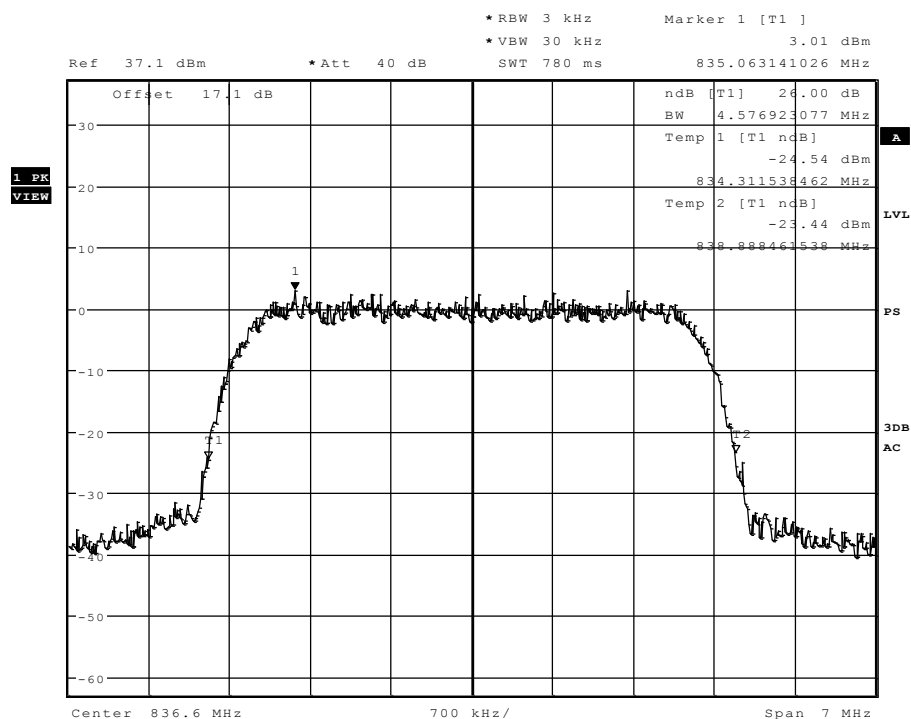
Date: 12.OCT.2012 12:10:24



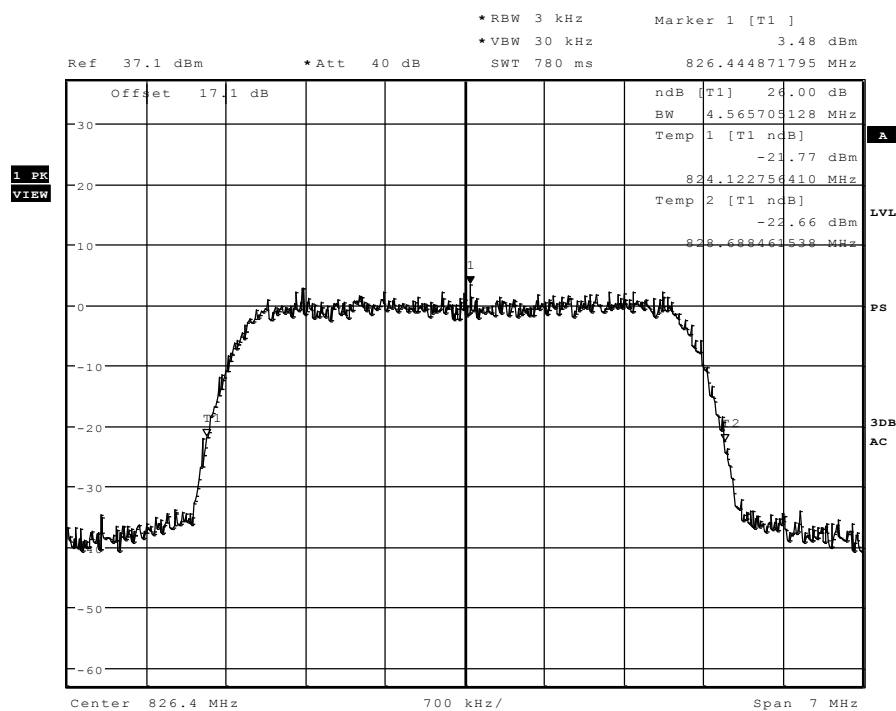
Date: 12.OCT.2012 12:00:57

FDD V mode

Date: 12.OCT.2012 15:54:31



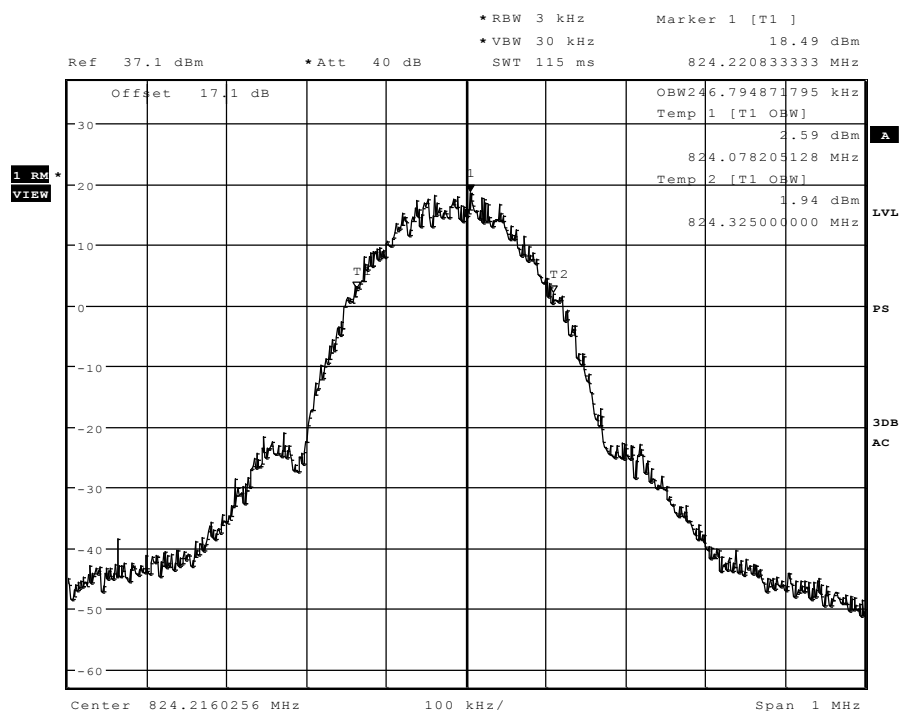
Date: 12.OCT.2012 15:59:16



Date: 12.OCT.2012 15:58:11

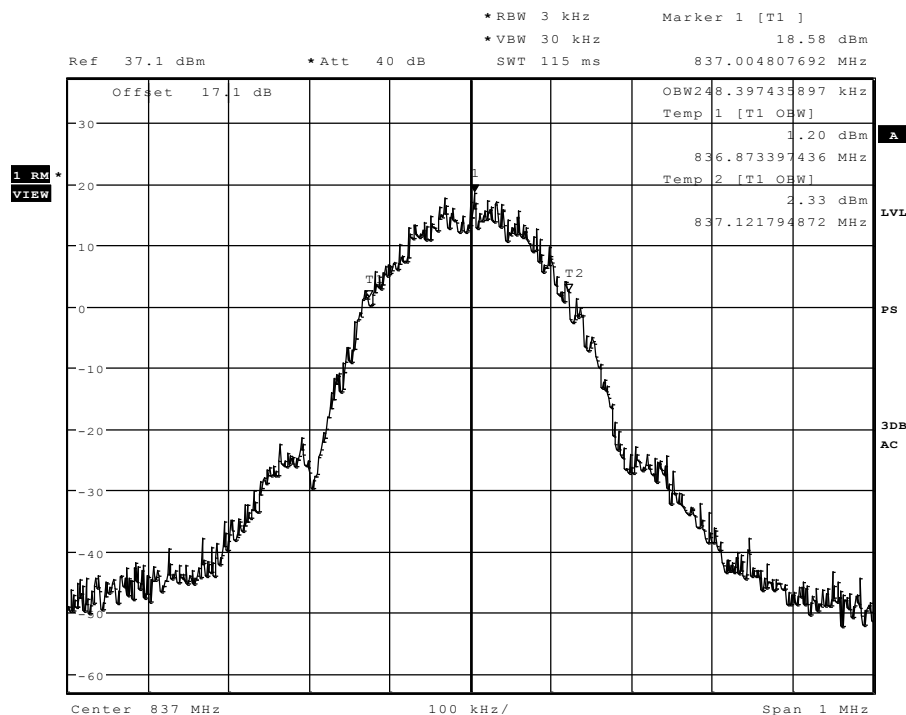
1.3. 99% Occupied bandwidth

EDGE G850



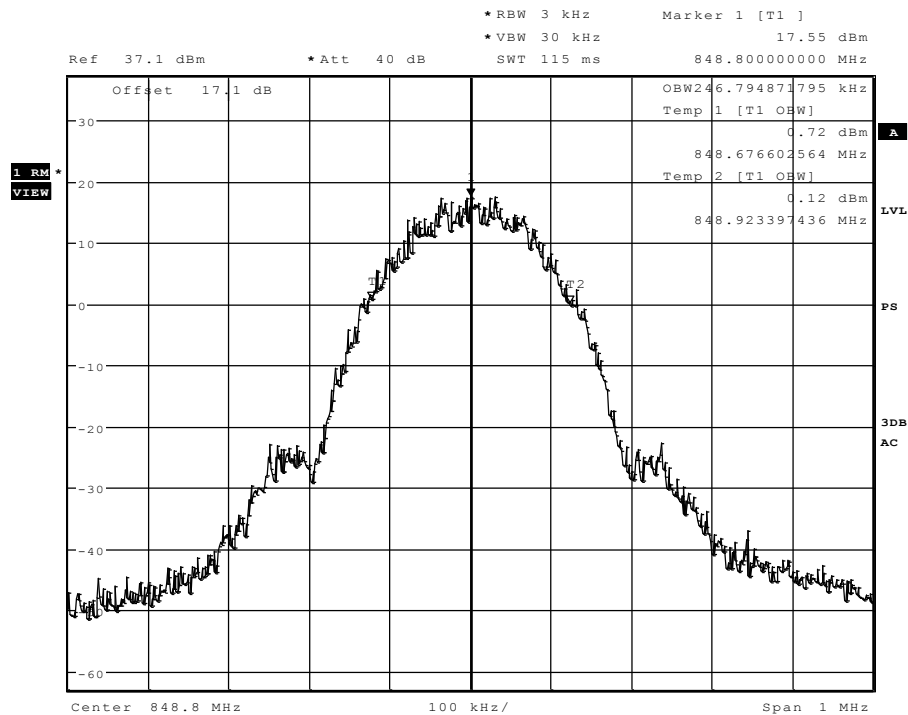
Date: 15.OCT.2012 13:52:10

Channel 128

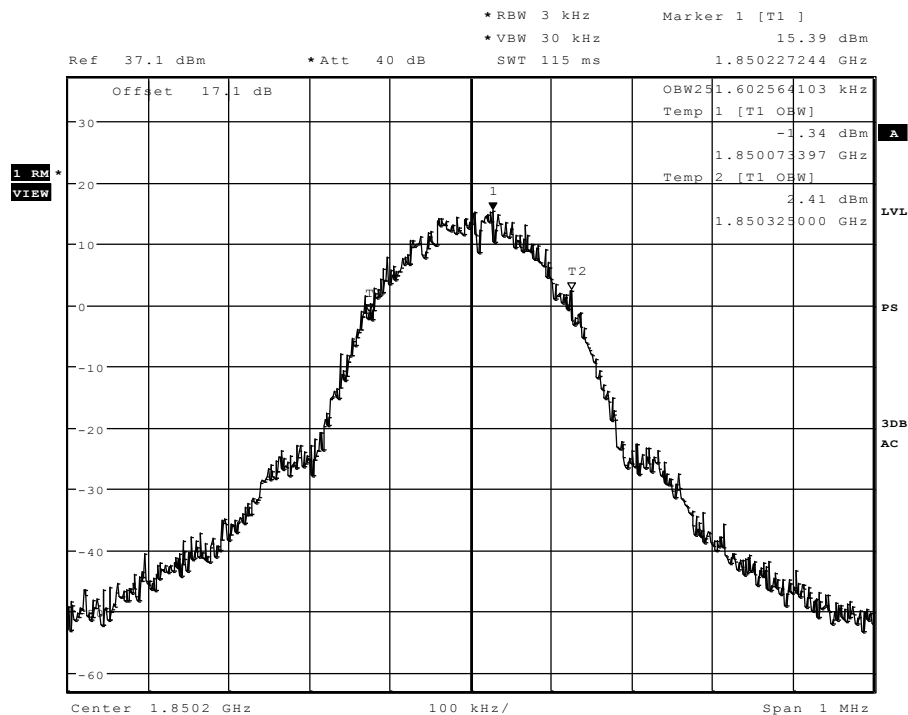


Date: 15.OCT.2012 13:58:12

Channel 192

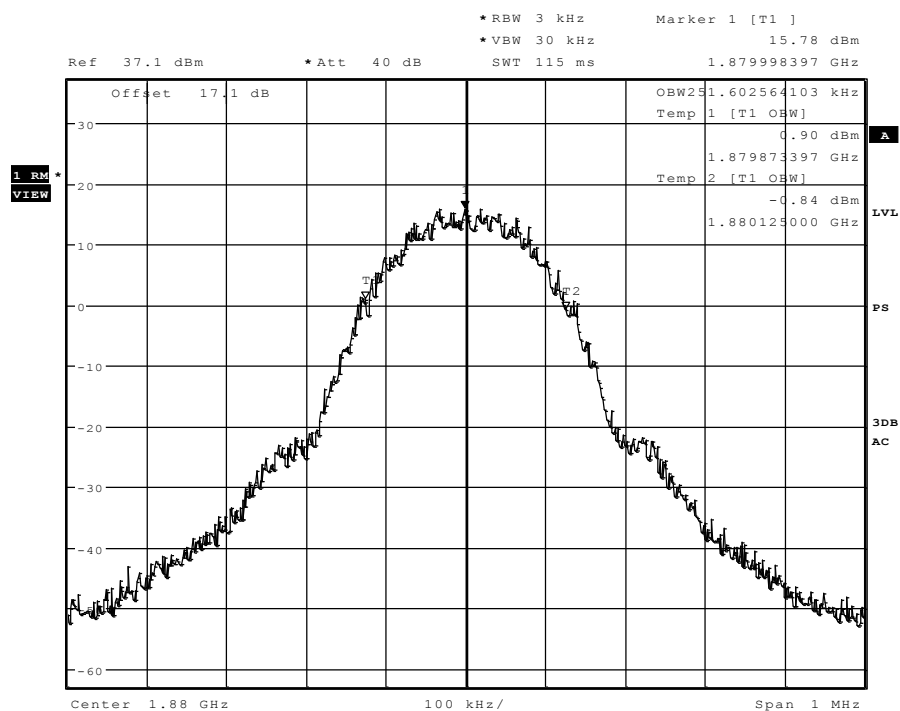


Date: 15.OCT.2012 13:59:53

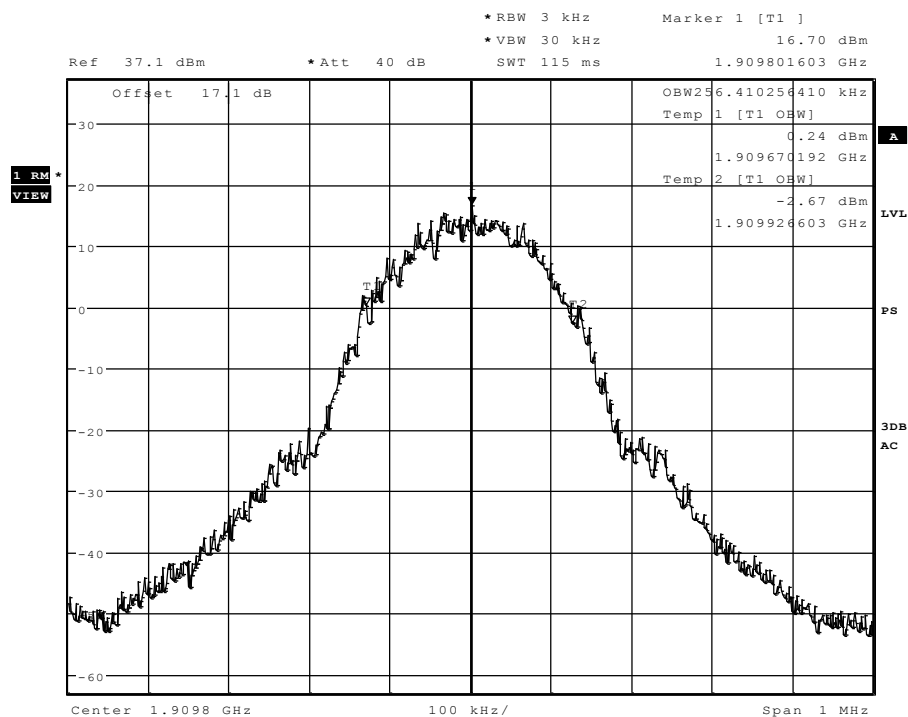
Channel 251**EDGE - PCS1900**

Date: 15.OCT.2012 14:07:51

Channel 512

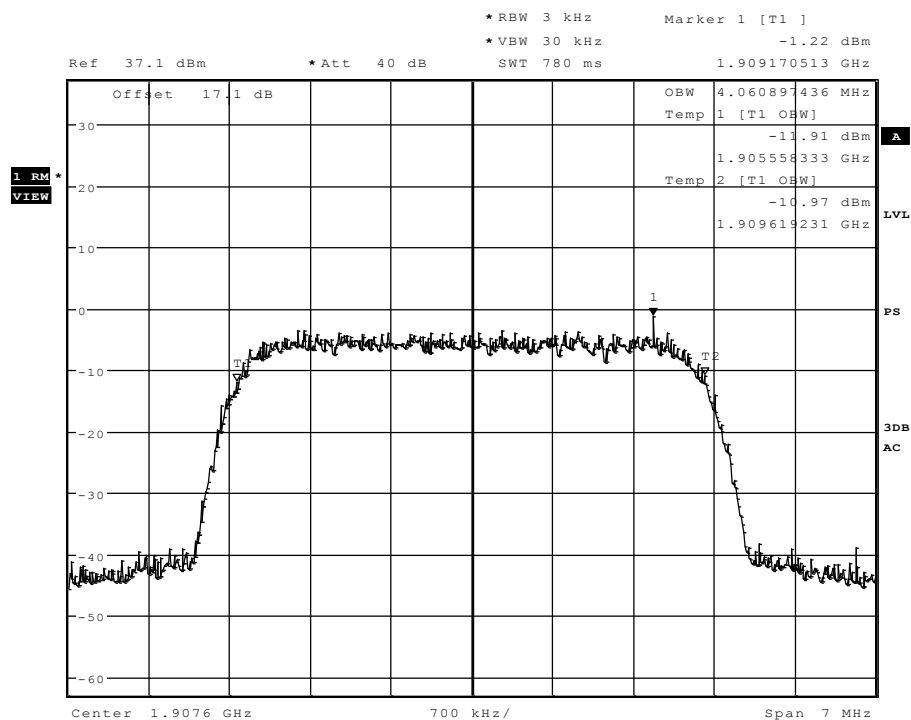


Date: 15.OCT.2012 14:05:51

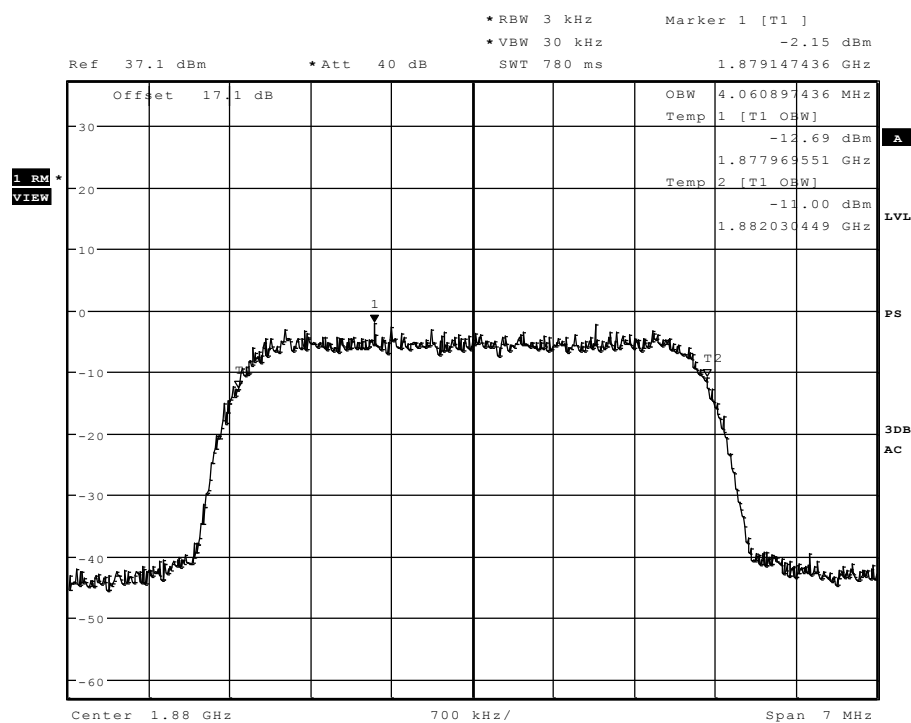
Channel 661

Date: 15.OCT.2012 14:13:07

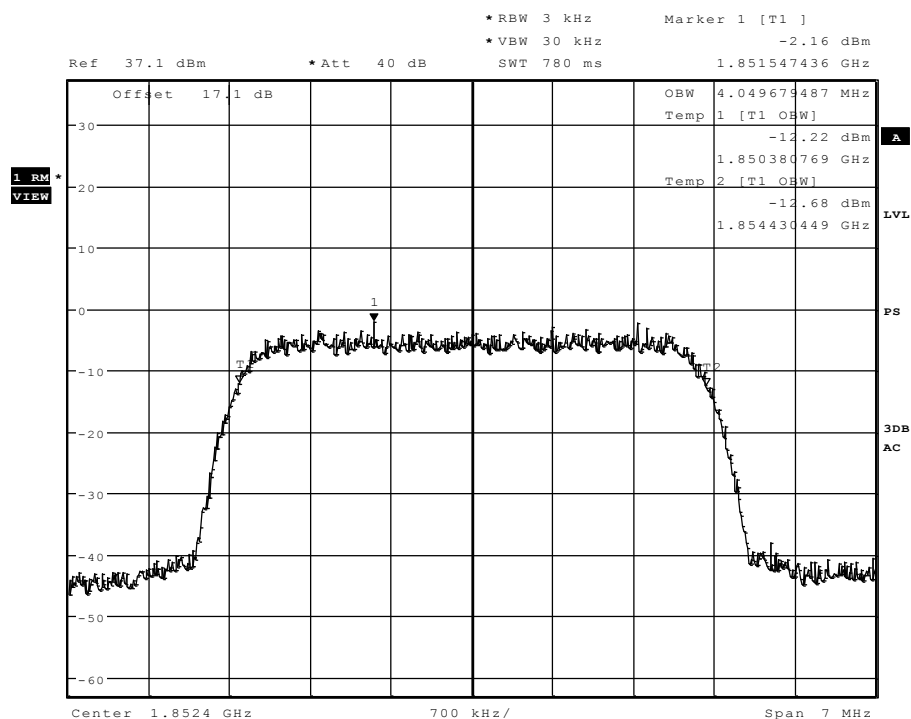
Channel 810

FDD II mode

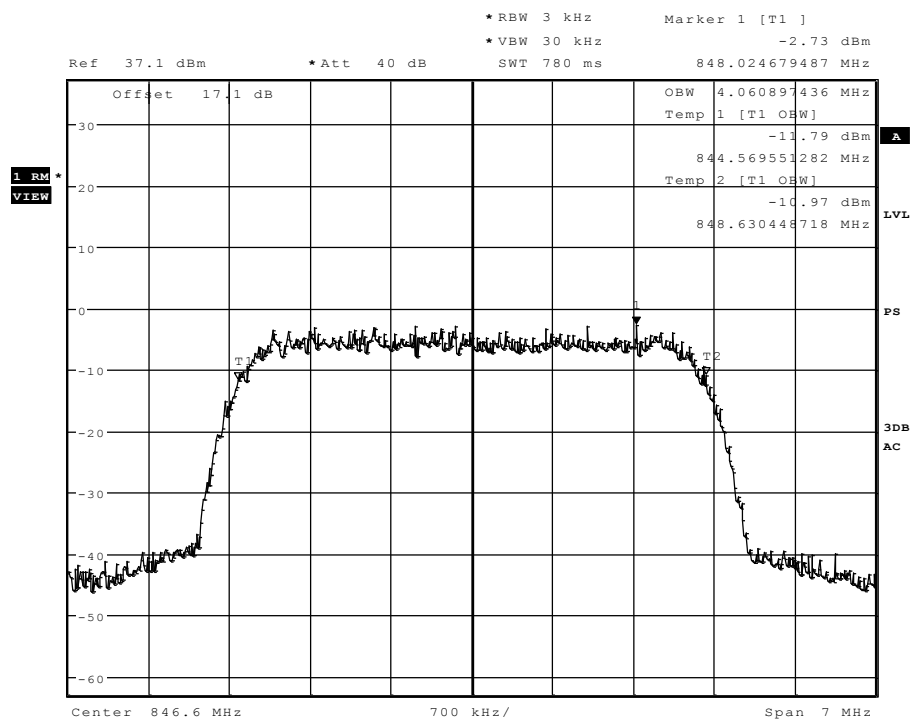
Date: 12.OCT.2012 12:12:02



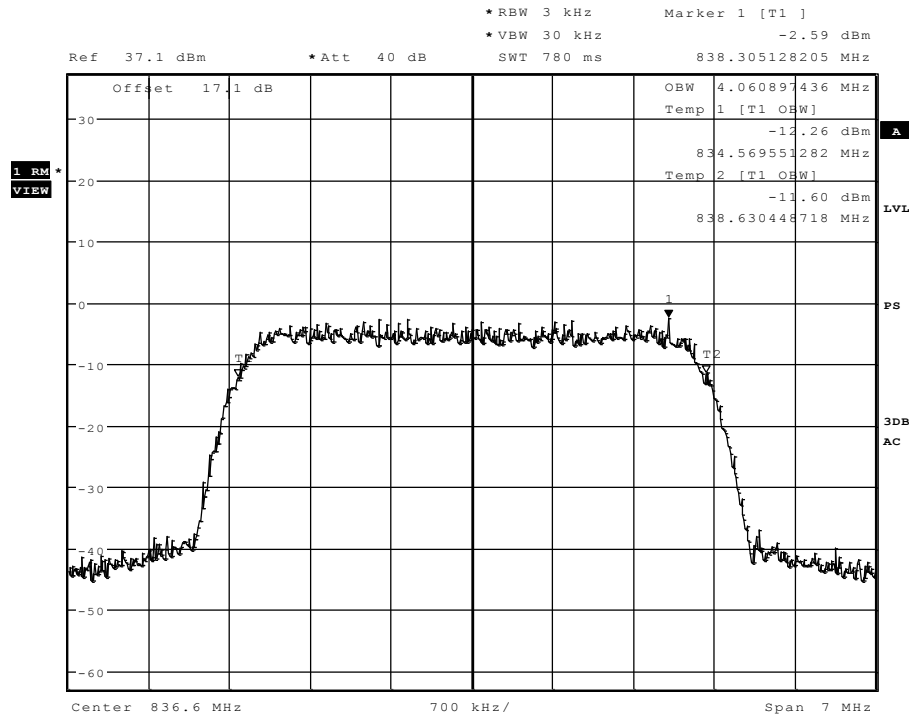
Date: 12.OCT.2012 12:05:23



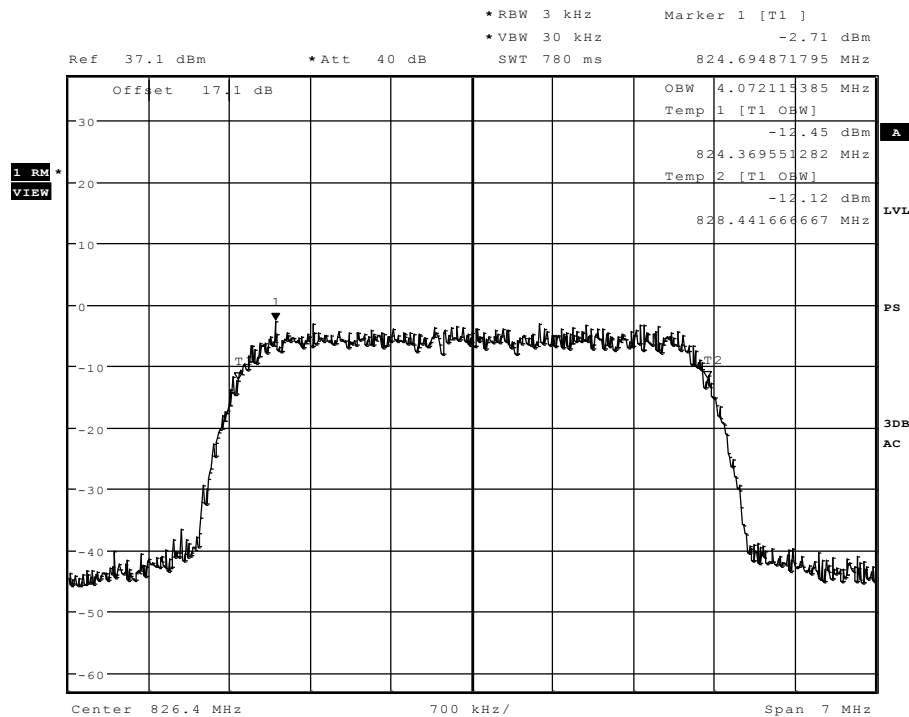
Date: 12.OCT.2012 12:02:50

FDD V mode

Date: 12.OCT.2012 15:55:54



Date: 12.OCT.2012 16:00:32



Date: 12.OCT.2012 15:56:57

1.4. Field strength < 30 MHz (radiated) – G850 Mode

Diagram No. 2.01_CS_H

Date:	09.10.2012	Page 1 of 1
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance	
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance	
Distance correction:	used	
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 3	
Operator:	KRe/Tas	
Operating conditions:	TX mode, ARFCN 251 high channel (G850)	
Power during tests:	110V 60Hz,	
Comment 1:	6-0143-12-11-2a	
Comment 2:		

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert

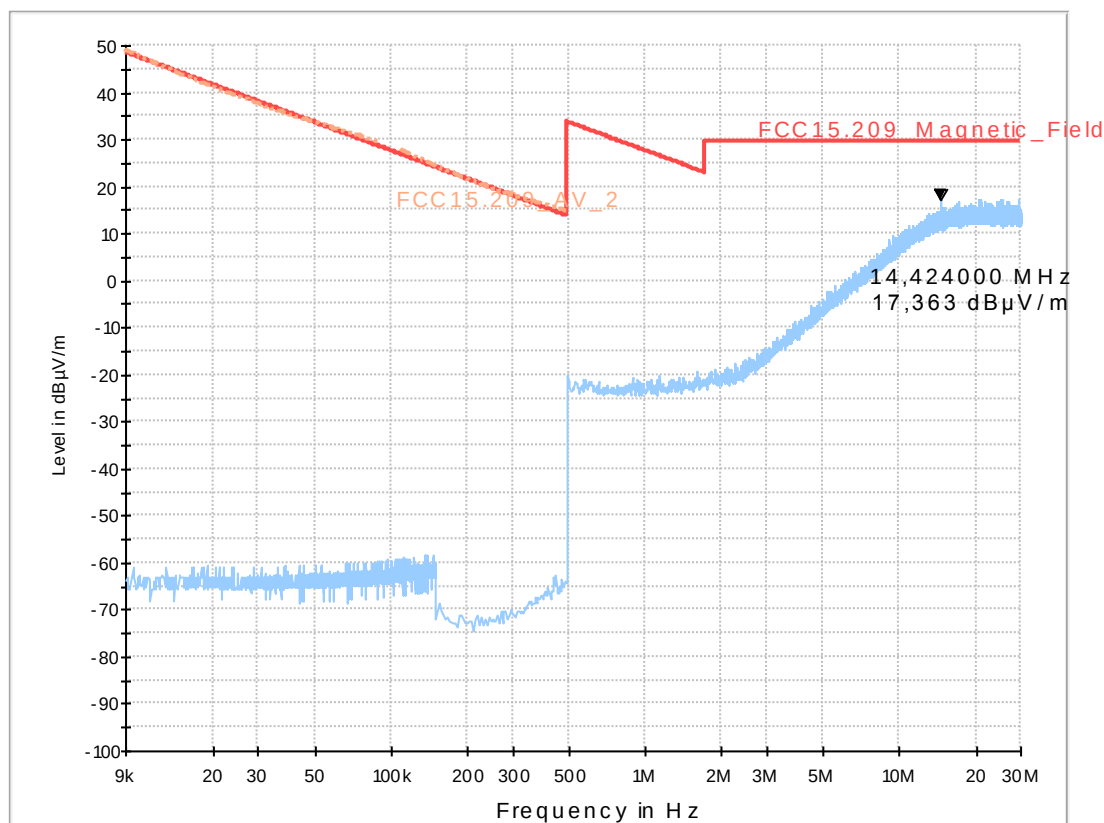


Diagram No. 2.01_PS_L

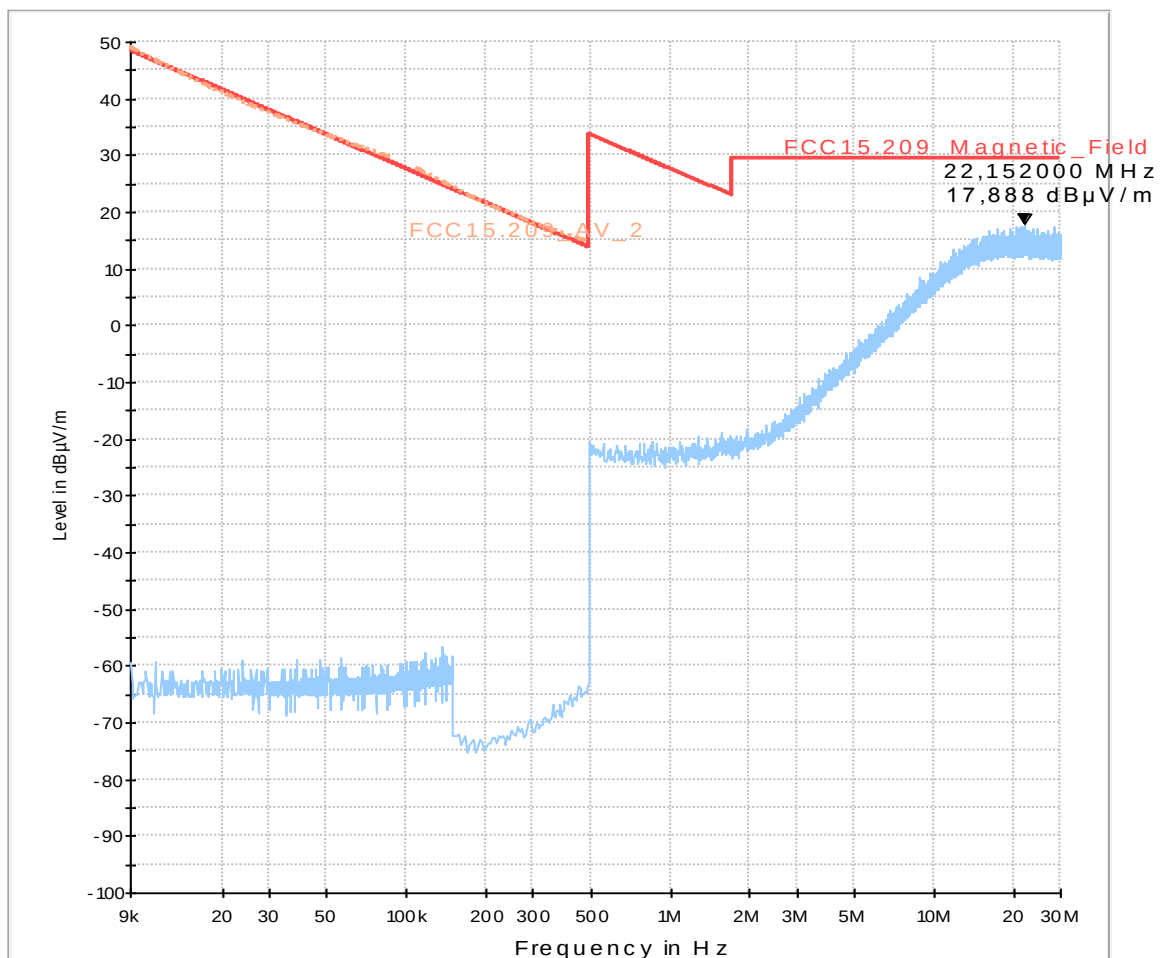
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance
Distance correction:	used
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3
Operator:	KRe/Tas
Operating conditions:	TX – EDGE mode, ARFCN 128 low channel (G850)
Power during tests:	110V 60Hz,
Comment 1:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert



1.6 Field strength < 30 MHz (radiated) – PCS1900 Mode

Diagram No. 2.02_CS_L

Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance
Distance correction:	used
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 3
Operator:	KRe/Tas
Operating conditions:	TX - Voice mode, ARFCN 512 low channel (PCS1900)
Power during tests:	110V 60Hz,
Comment 1:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert

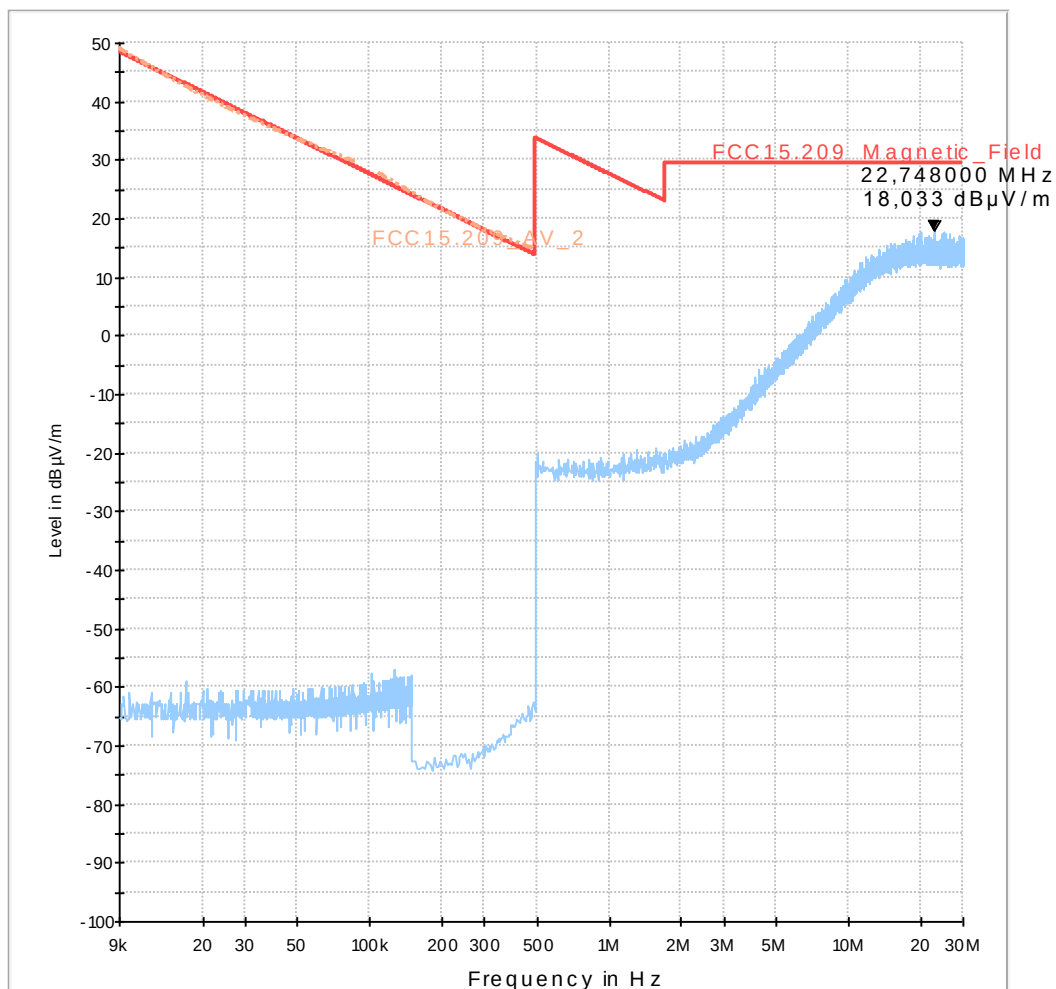


Diagram No. 2.02_PS_L

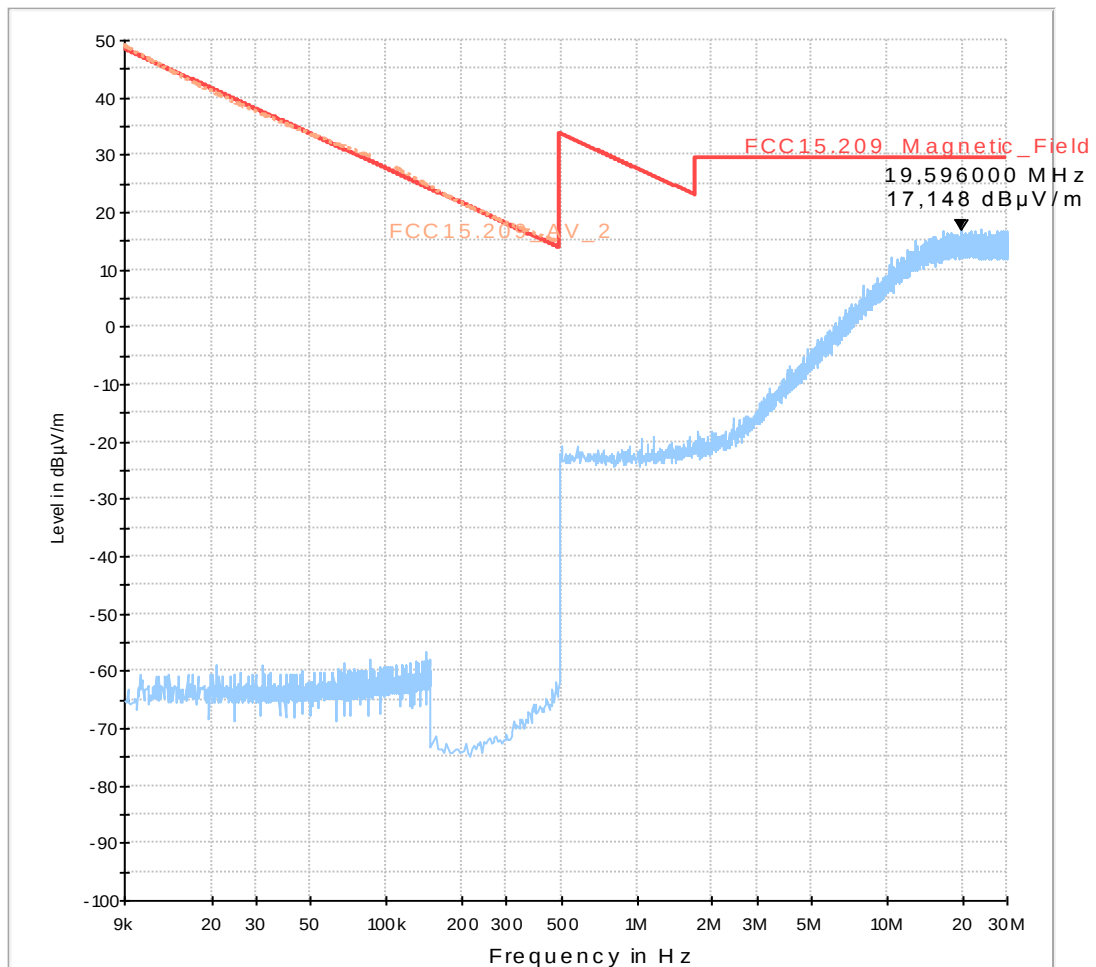
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance
Distance correction:	used
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	bypass
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3
Operator:	KRe/Tas
Operating conditions:	TX - EDGE mode, ARFCN 512 low channel (PCS1900)
Power during tests:	110V 60Hz,
Comment 1:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert



1.6 Field strength < 30 MHz (radiated) – FDD II Mode

Diagram No. 2.06_FDDII_RSE_RMC_L

Date:	09.10.2012	Page 1 of 1
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance	
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance	
Distance correction:	no used	
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation	
Used filter:	no	
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3	
Operator:	KRe/Tas	
Operating conditions:	TX mode, U-ARFCN 9262 Low channel	
Power during tests:	110V 60Hz,	
Comment 1:	6-0143-12-11-2a	
Comment 2:		

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert

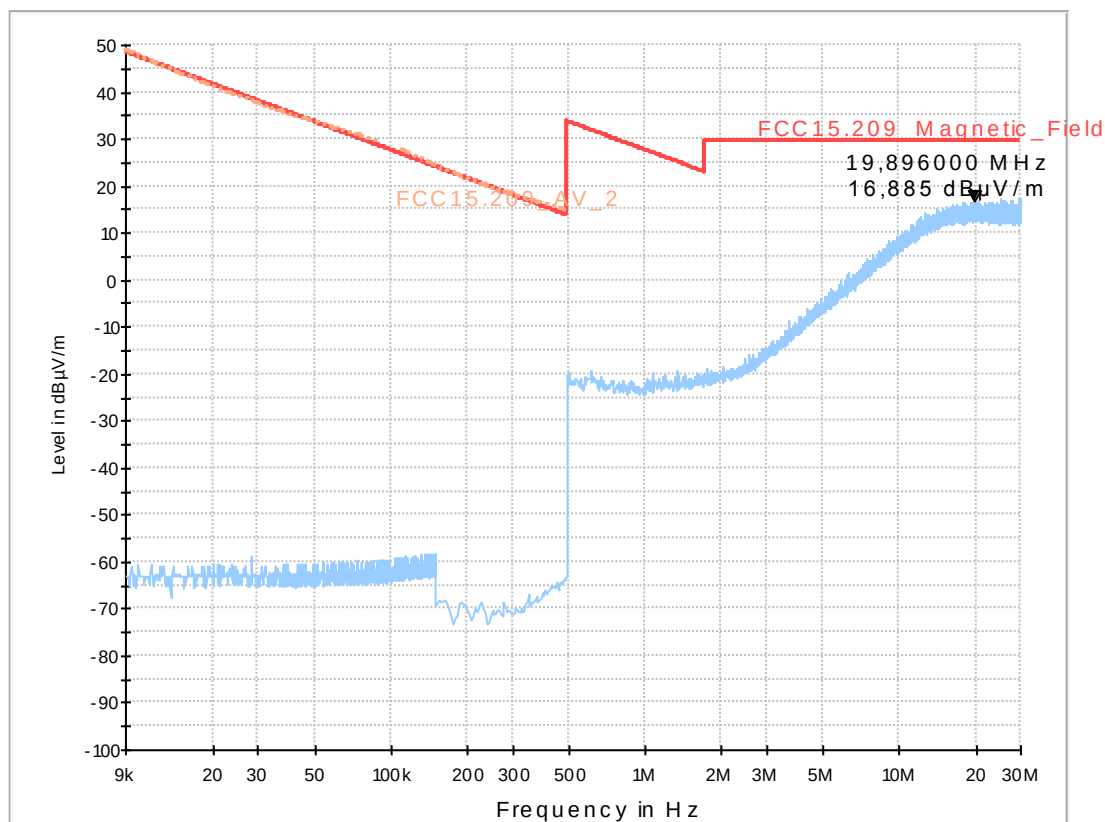


Diagram No. 2.07_FDDII_RSE_RMC_M

Date:	09.10.2012	Page 1 of 1
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance	
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance	
Distance correction:	no used	
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 3	
Operator:	KRe	
Operating conditions:	TX mode, U-ARFCN 9400 middle channel	
Power during tests:	110V 60Hz,	
Comment 1:	6-0143-12-11-2a	
Comment 2:		

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert

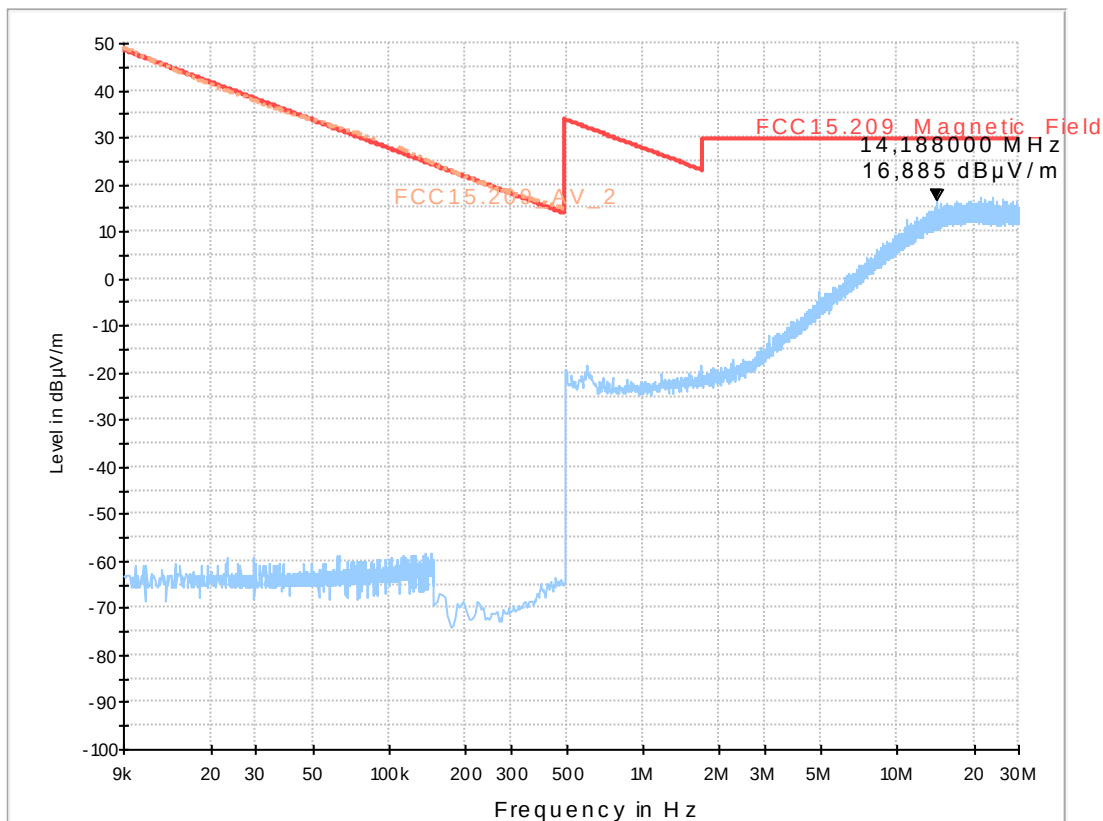


Diagram No. 2.08_FDDII_RSE_RMC_H

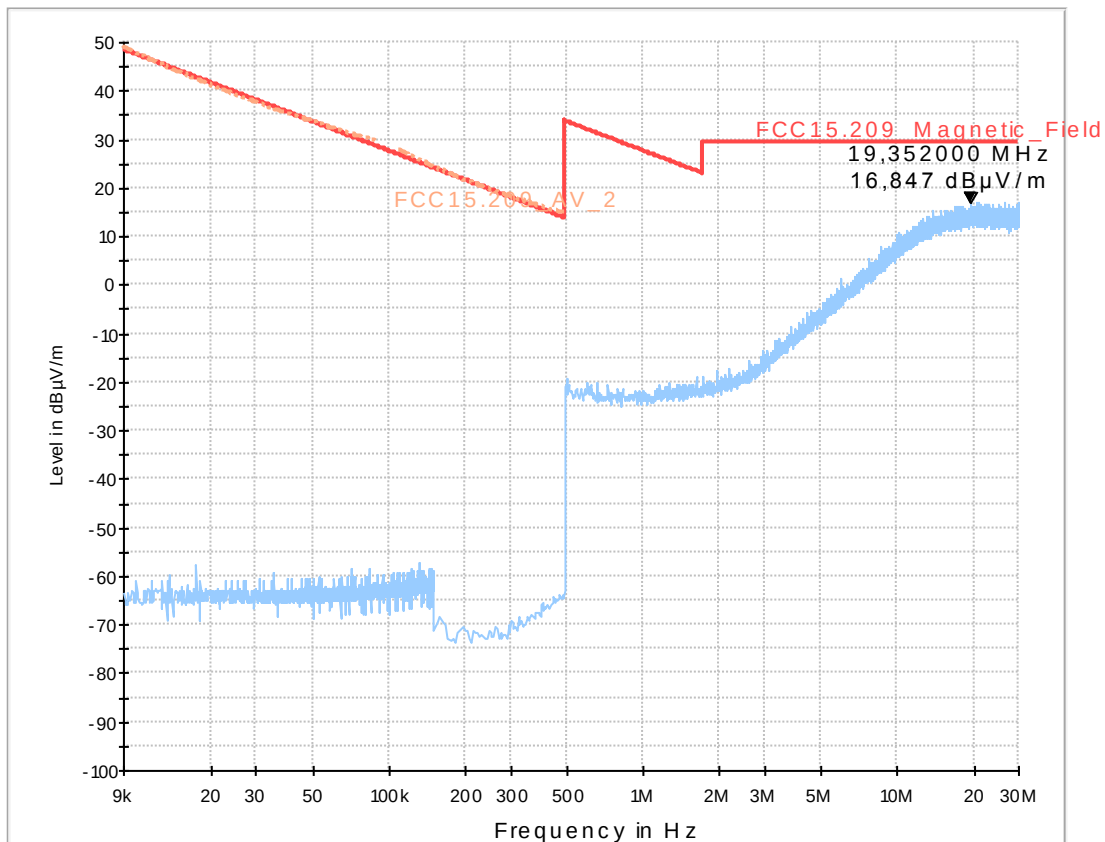
Date:	09.10.2012	Page 1 of 1
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance	
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance	
Distance correction:	no used	
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation	
Used filter:	bypass	
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3	
Operator:	KRe/Tas	
Operating conditions:	TX mode, U-ARFCN 9538 high channel	
Power during tests:	110V 60Hz,	
Comment 1:	6-0143-12-11-2a	

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert



1.6 Field strength < 30 MHz (radiated) – FDD V Mode

Diagram No. 2.03_FDDV_RSE_RMC_L

Date: 09.10.2012	Page 1 of 1
Test description:	Magnetic Fieldstrength Measurement related to 30/300 m distance
Test site and distance:	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance
Distance correction:	no used
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	no
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3
Operator:	KRe/Tas
Operating conditions:	TX mode, U-ARFCN 4132 Low channel
Power during tests:	110V 60Hz,
Comment 1:	6-0143-12-11-2a
Comment 2:	

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert

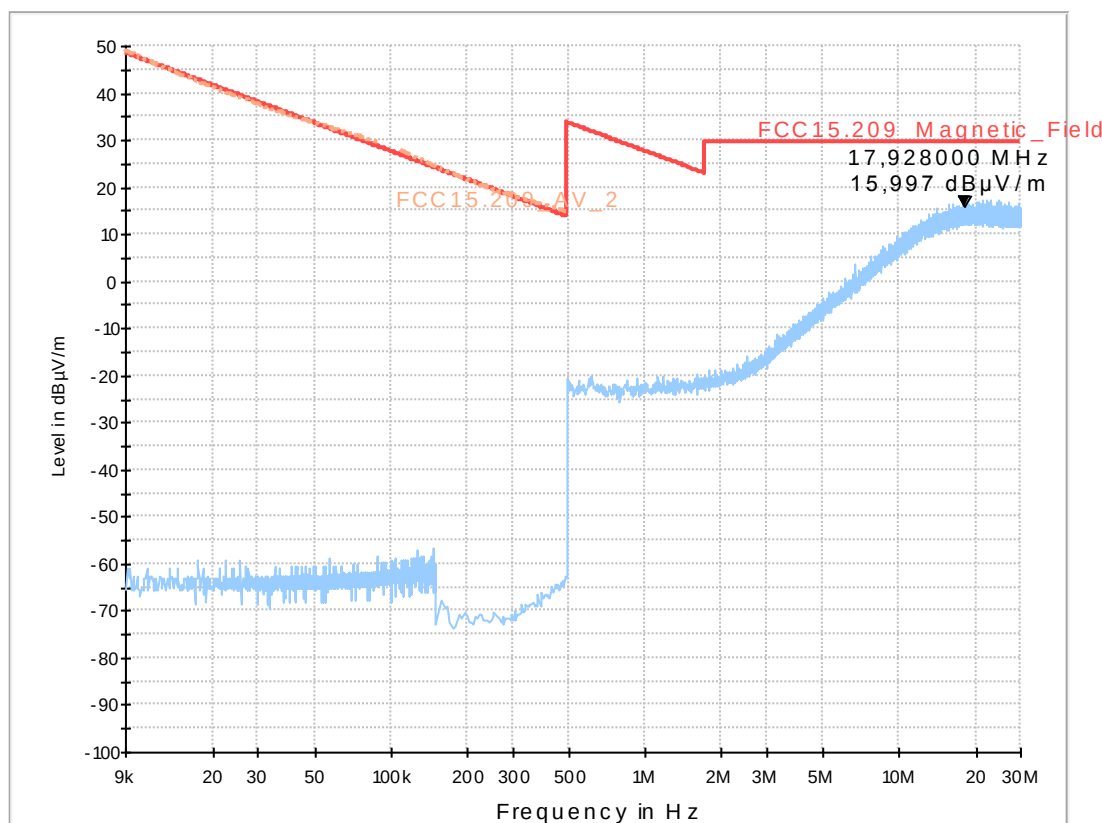


Diagram No. 2.04_FDD V_RSE_RMC_M

Test description:	Date: 09.10.2012 Page 1 of 1
Test site and distance:	Magnetic Fieldstrength Measurement related to 30/300 m distance
	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance
Distance correction:	used
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	not used
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3
Operator:	KRe/Tas
Operating conditions:	TX mode, U-ARFCN 4183 middle channel
Power during tests:	110V 60Hz,
Comment 1:	6-0143-12-11-2a
Comment 2:	

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert

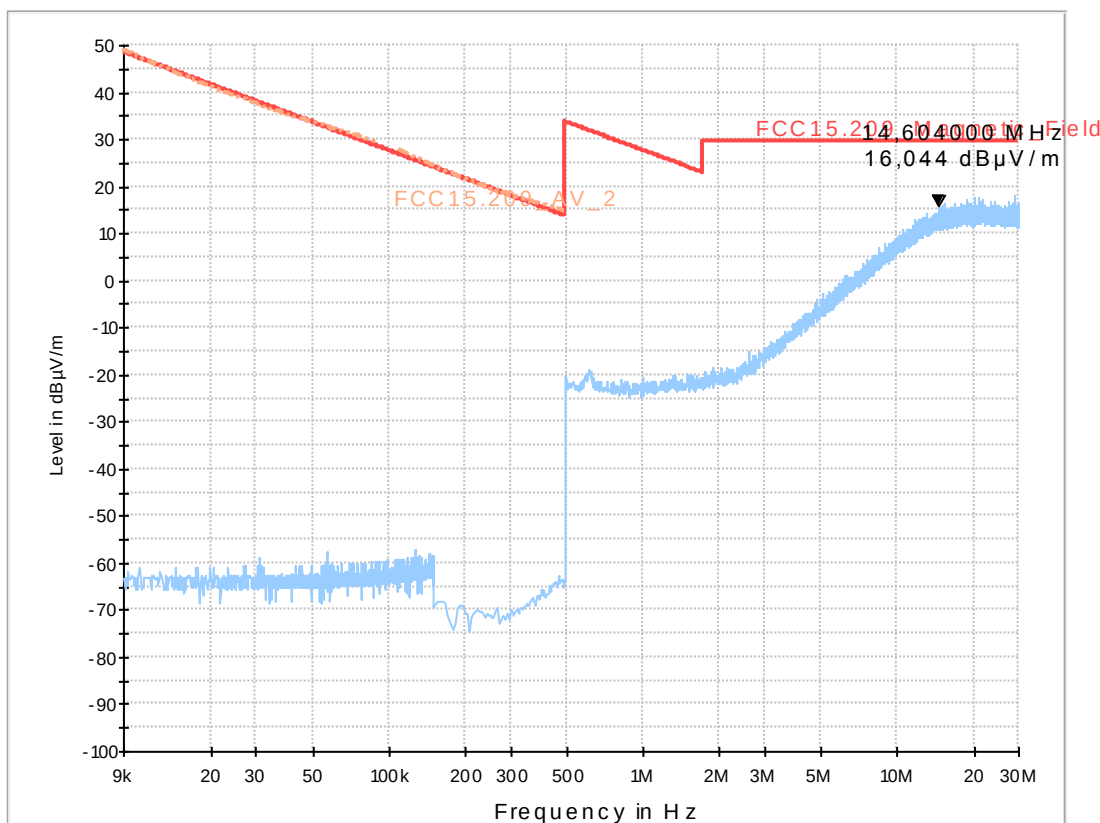


Diagram no.: 2.05_FDDV_RSE_RMC_H

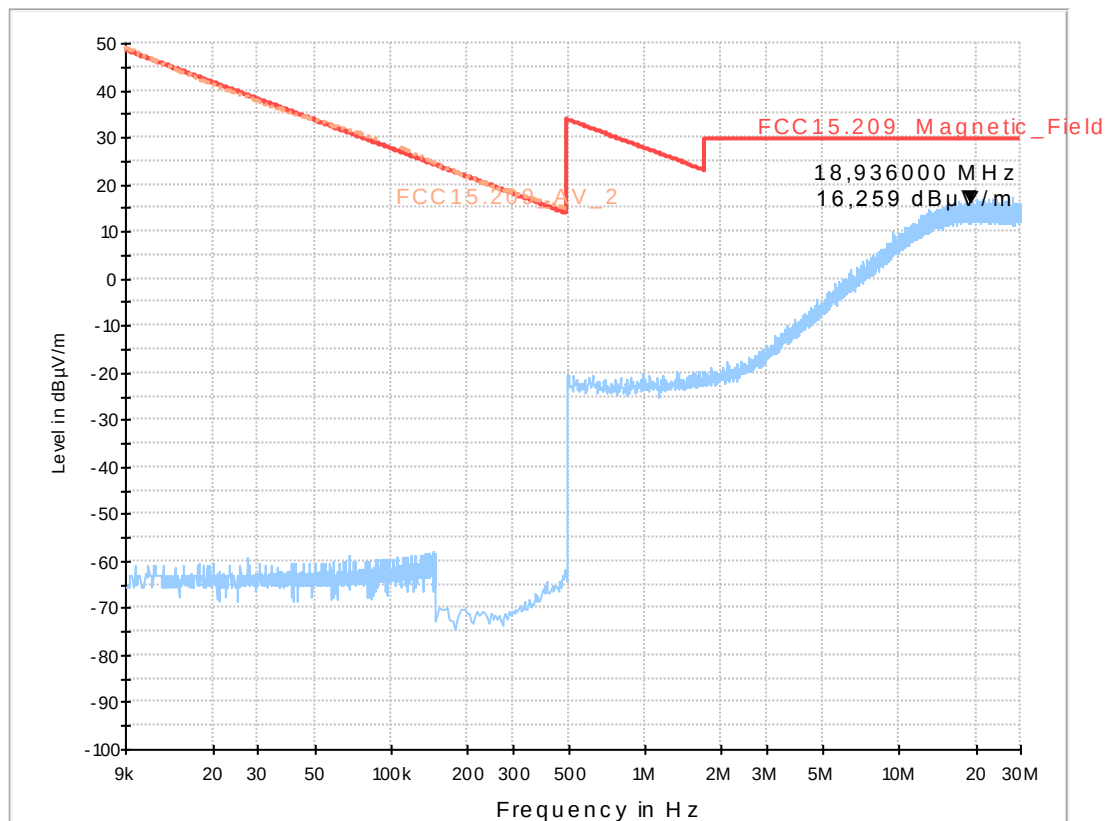
Test description:	Date: 09.10.2012 Page 1 of 1
Test site and distance:	Magnetic Fieldstrength Measurement related to 30/300 m distance
	Semi Anechoic Room with mobile absorbers on the floor (SAR) with 3 m measurement distance
Distance correction:	used
Rec. antenna (pre-scan):	height 1.00 m, parallel and 90° to EUT polarisation
Used filter:	no
Test specification:	FCC 15.205 § 15.209; RSS-Gen: Issue 3
Operator:	KRe/Tas
Operating conditions:	TX mode, U-ARFCN 4233 high channel
Power during tests:	110V 60Hz,
Comment 1:	6-0143-12-11-2a
Comment 2:	

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

FCC15.209_magn hor+vert



1.7 TX Spurious emissions conducted + Block-Edge – FDD II Mode**Diagram No.: 12.01****Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 Broadband PCS, RSS-133

Operation mode:	TX - FDD II (RMC), low channel on U-ARFCN 9262
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_1

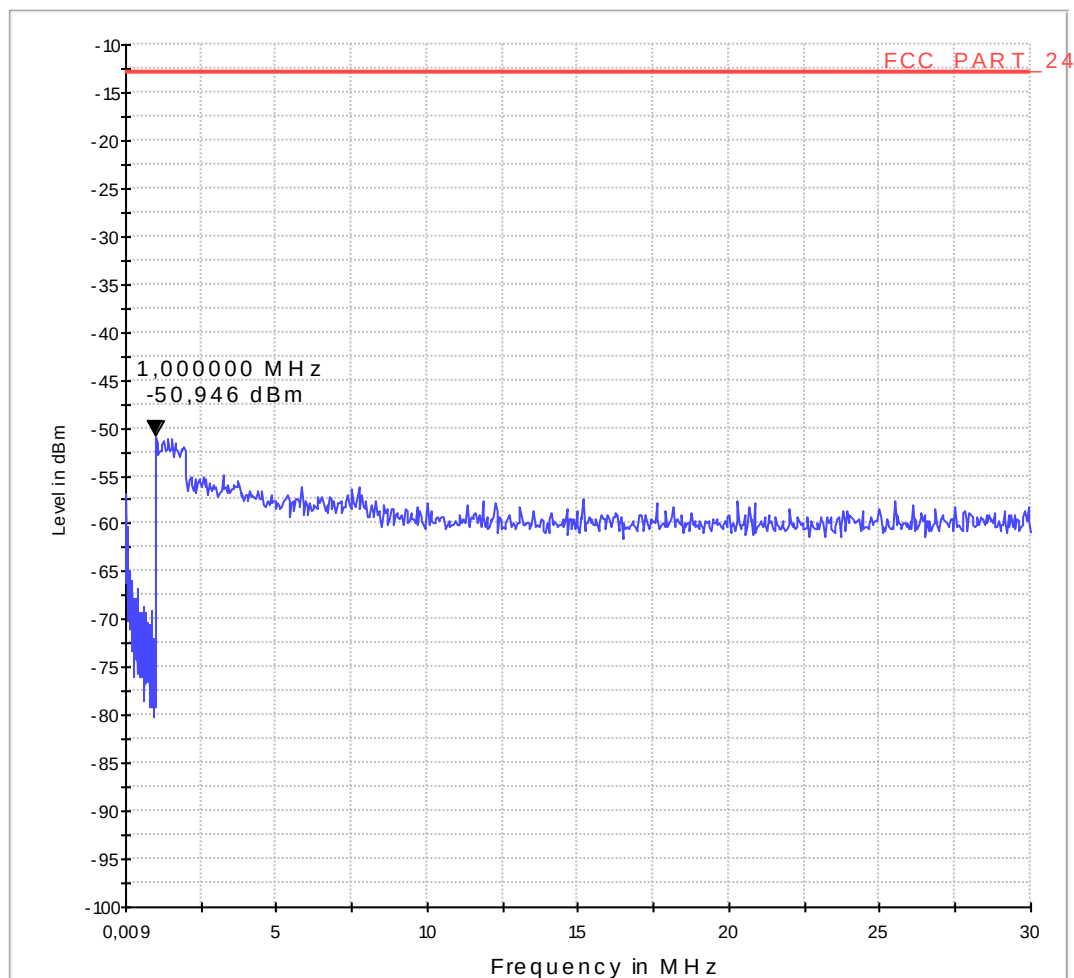


Diagram No.: 12.02**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 Broadband PCS, RSS-133
Operation mode:	TX - FDD V (RMC), middle channel on U-ARFCN 9400
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_1

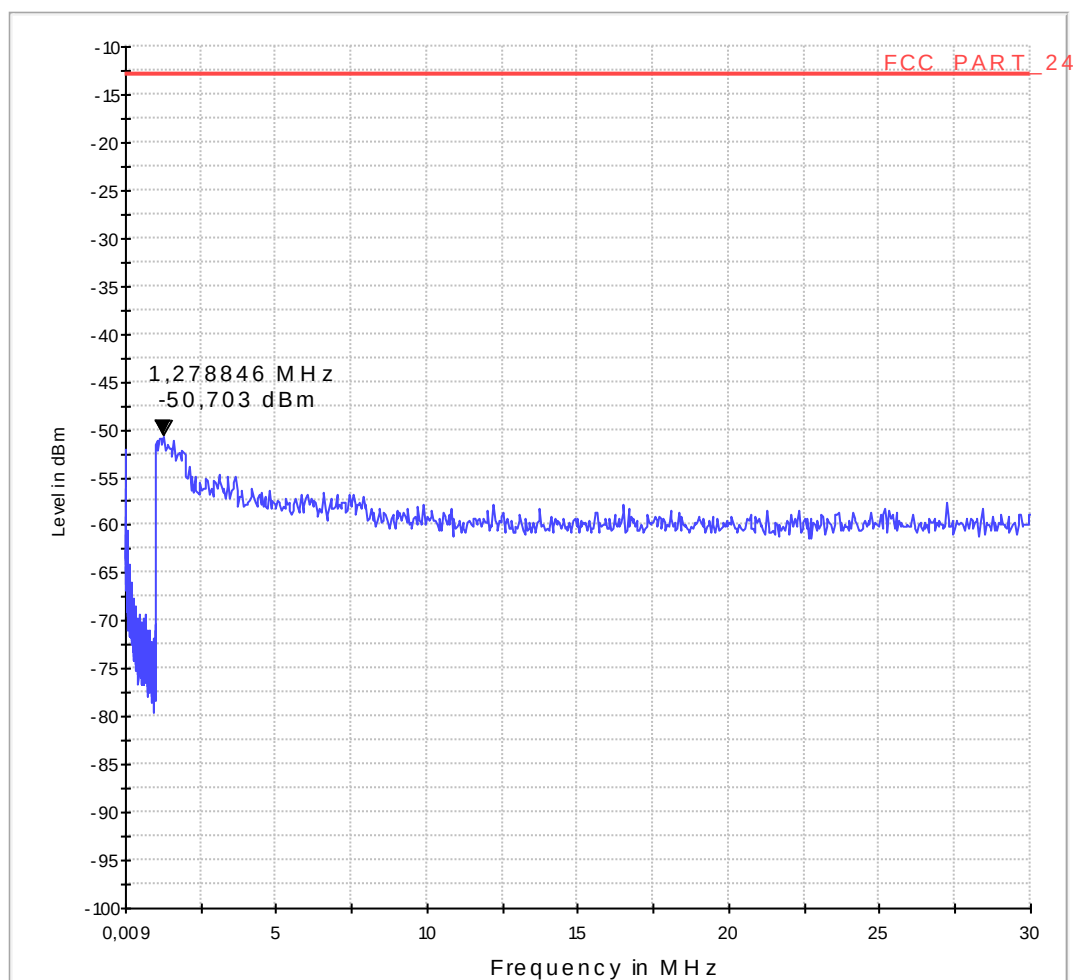


Diagram No.: 12.03**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 Broadband PCS, RSS-133
Operation mode:	TX - FDD II (RMC), high channel on U-ARFCN 9538
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_1

Sweep_1

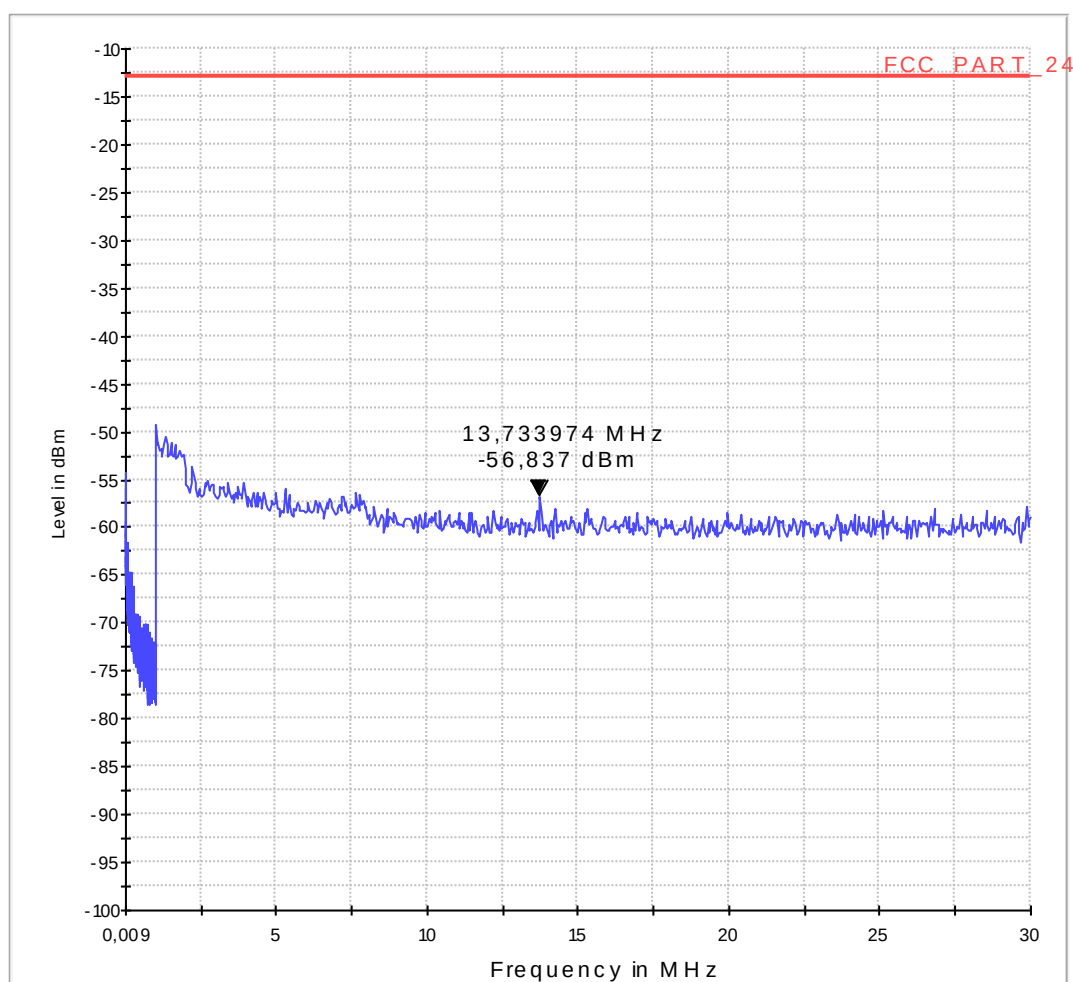


Diagram No. 12.04**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 Broadband PCS, RSS-133
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Comment	TX carrier visible and for spurious emission test shall be ignored

6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_2

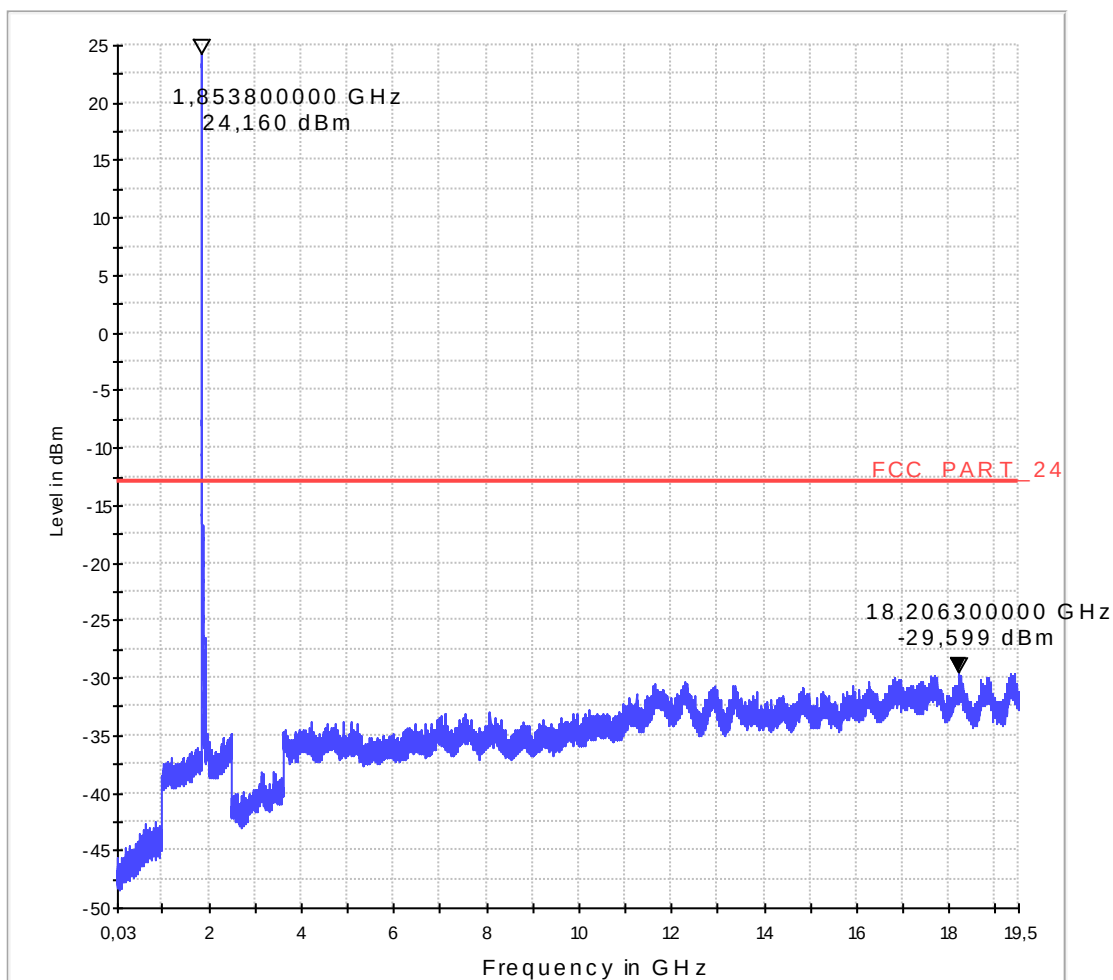


Diagram No. 12.05**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 Broadband PCS, RSS-133
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Comment	TX carrier visible and for spurious emission test shall be ignored

6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_2

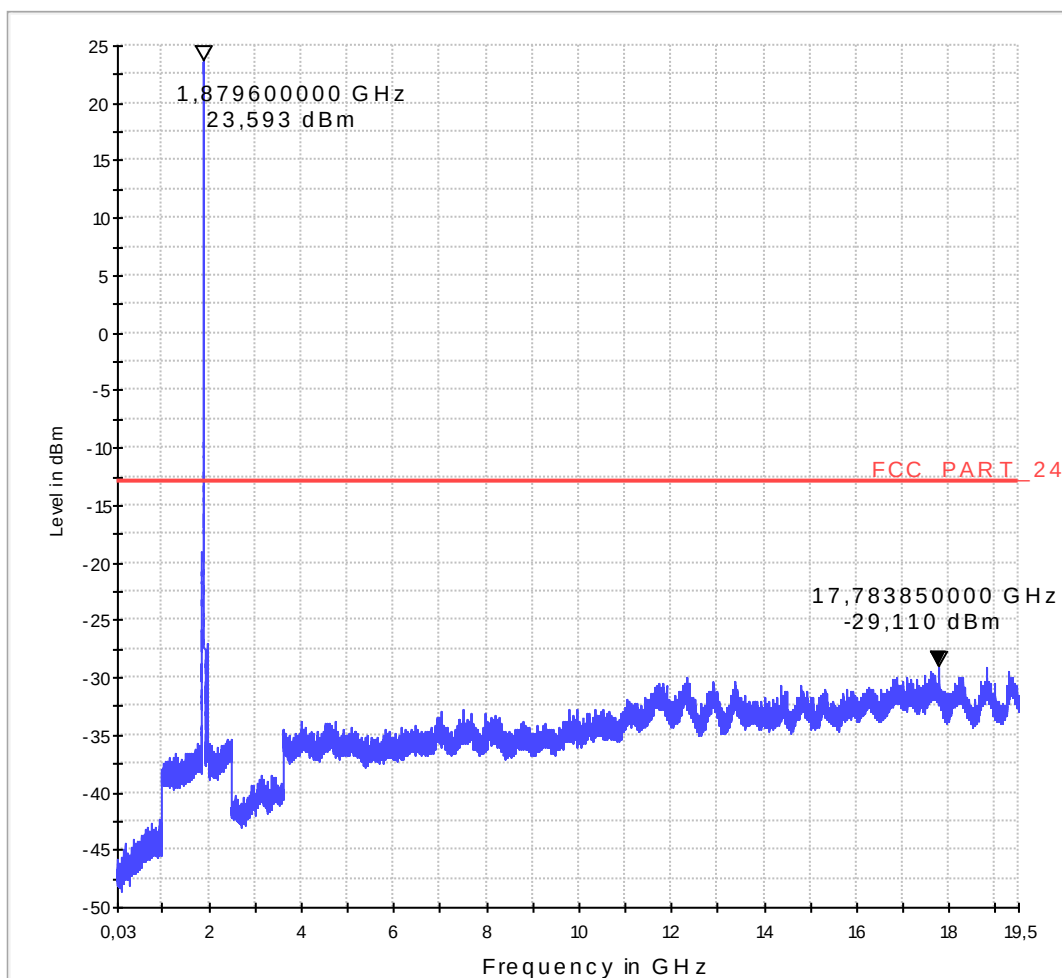


Diagram no.: 12.06**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 Broadband PCS, RSS-133
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Comment	TX carrier visible and for spurious emission test shall be ignored

6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_2

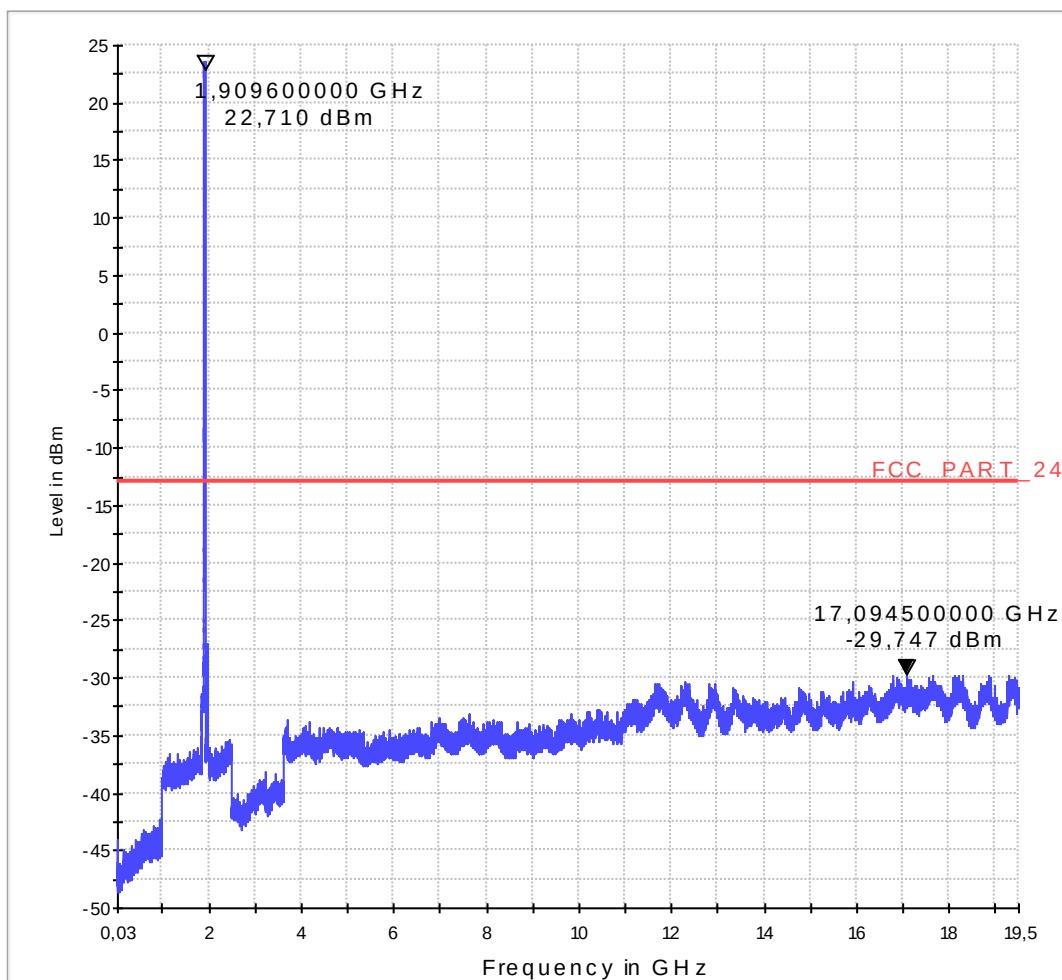


Diagram No. 12.07_BE_L**Common Information**

Test Description:	Transmitter unwanted emissions (Band-Edge)/ FCC requirements
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 (a,b)
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD II TX, low channel on U-ARFCN 9262 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_3a_Band_Edge_Channel_9262_PK

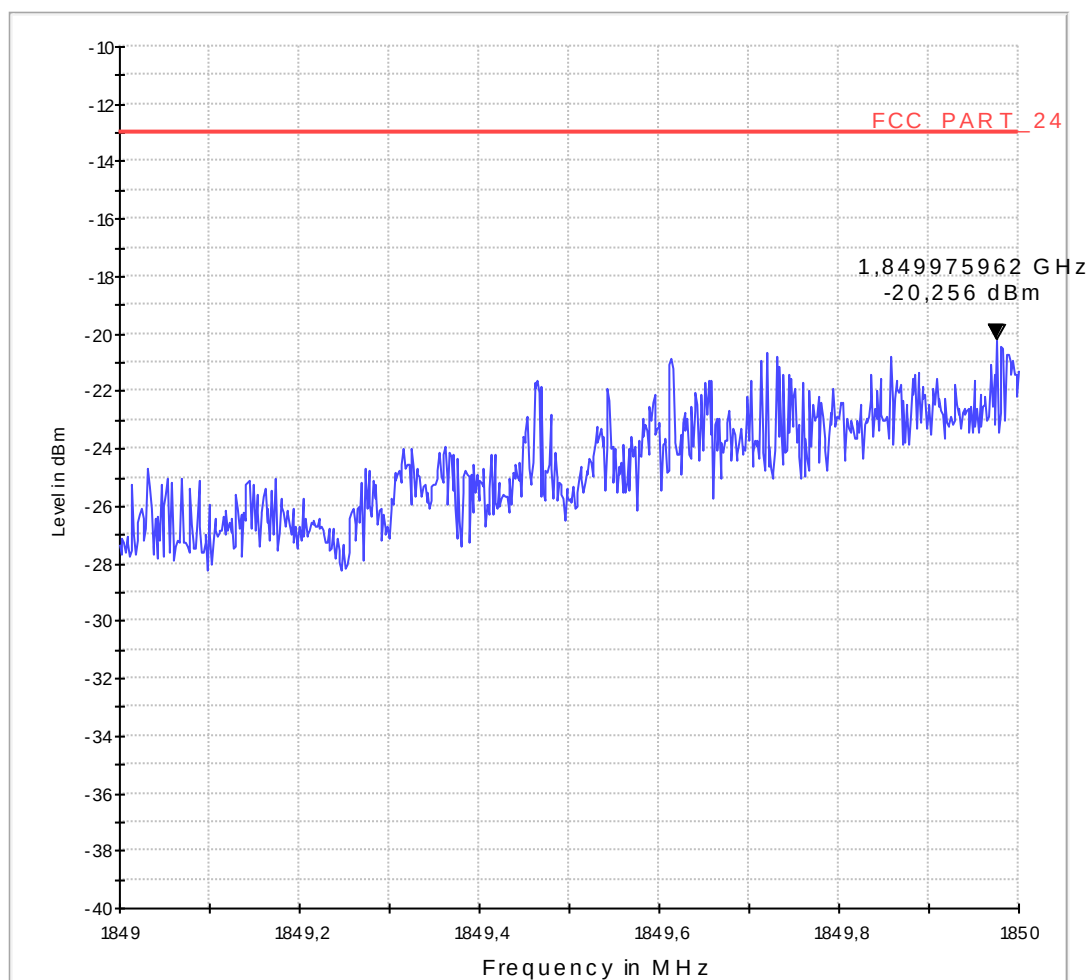


Diagram No. 12.08_BE_H**Common Information**

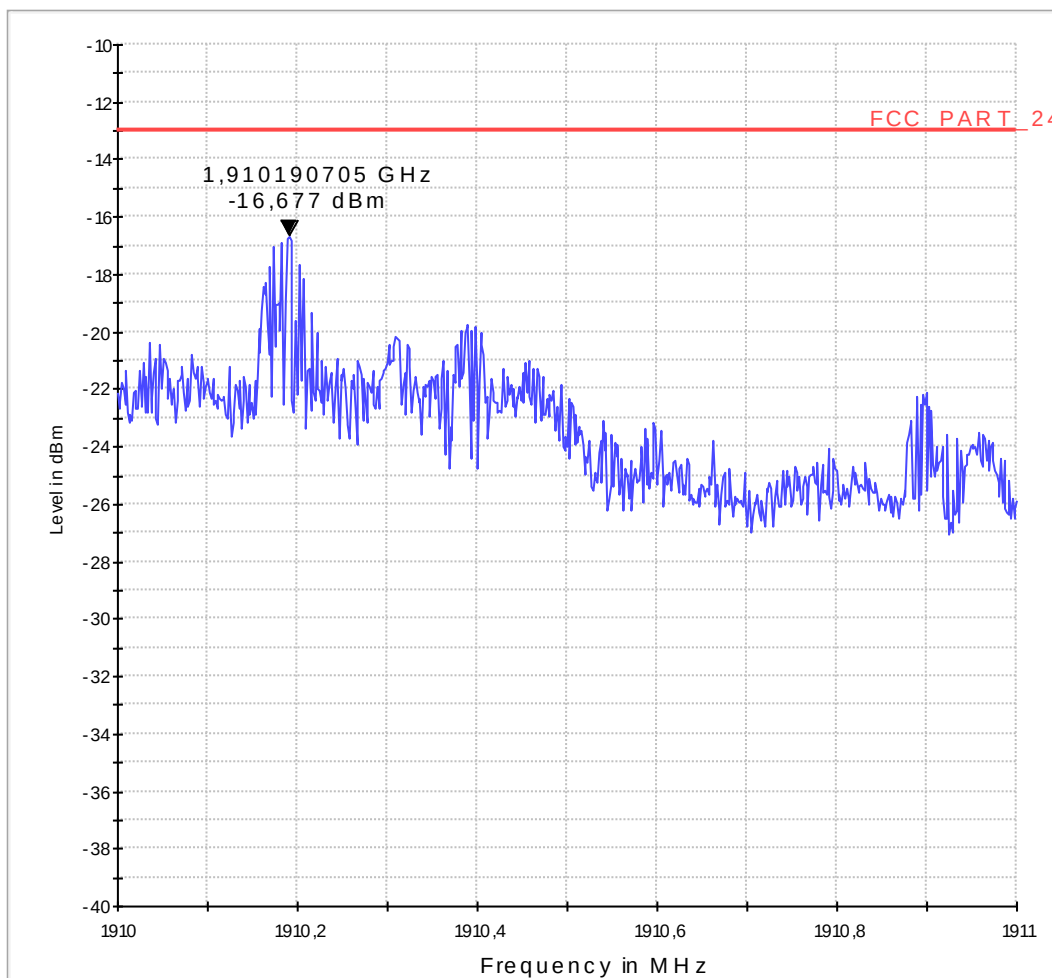
Test Description:	Transmitter unwanted emissions (Band-Edge)/ FCC requirements
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 24.238 (a,b)
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD II, TX mode, high channel on U-ARFCN 9538 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_3a_Band_Edge_Channel_9538_PK



1.8 TX Spurious emissions conducted + Block-Edge – FDD V Mode**Diagram No.: 12.11****Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917, RSS-132
Operation mode:	TX - FDD V (RMC), low channel on U-ARFCN 4132
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_1

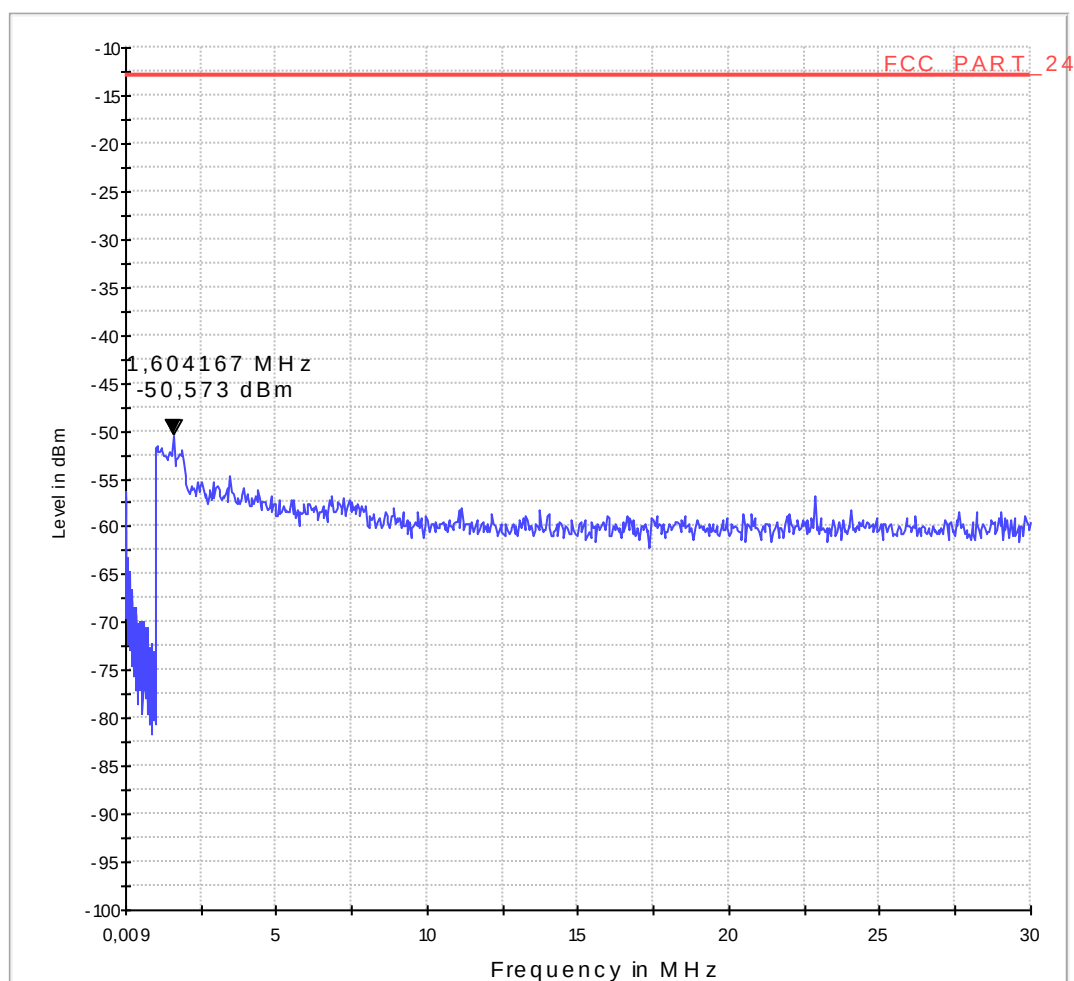


Diagram No.: 12.12**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Operation mode:	TX - FDD V (RMC), middle channel on U-ARFCN 4182
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module
EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_1

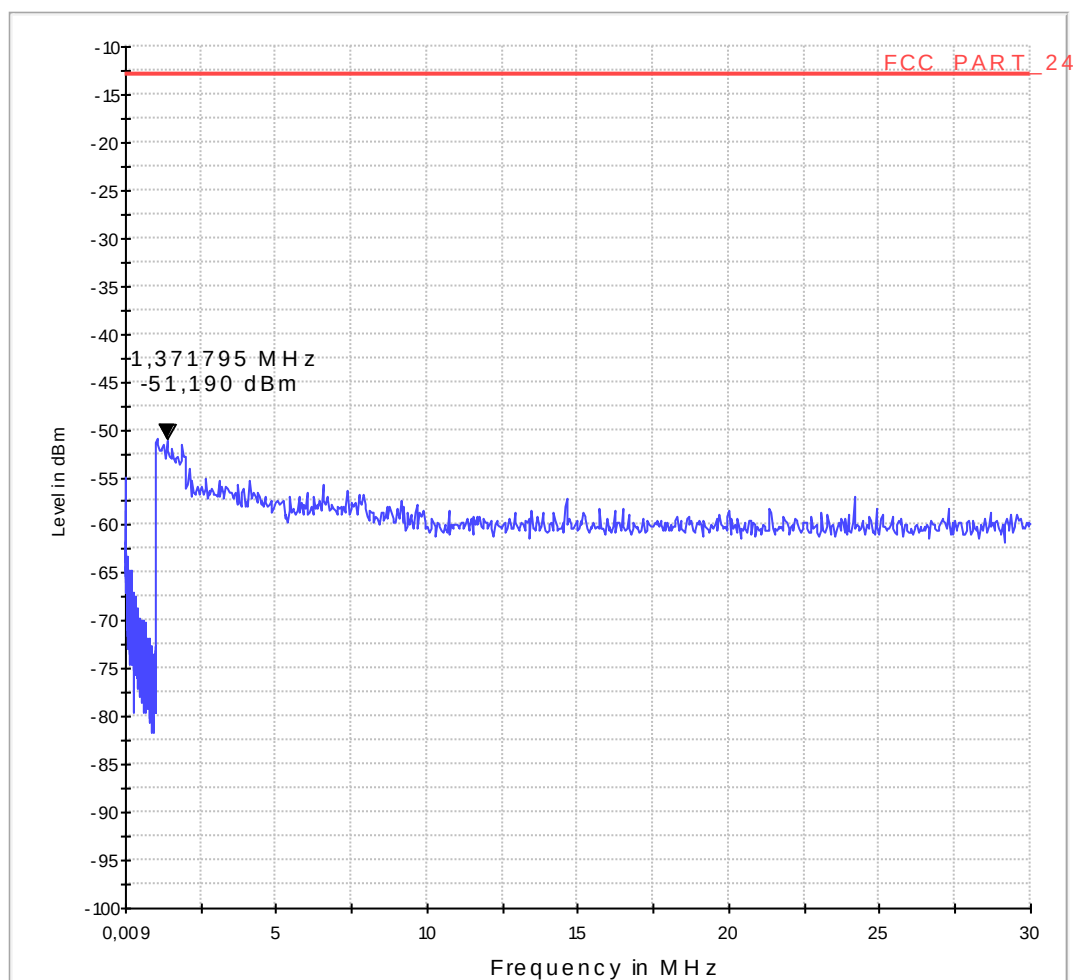


Diagram No.: 12.13**Common Information**

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Operation mode:	TX - FDD V (RMC), high channel on U-ARFCN 4233
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_1

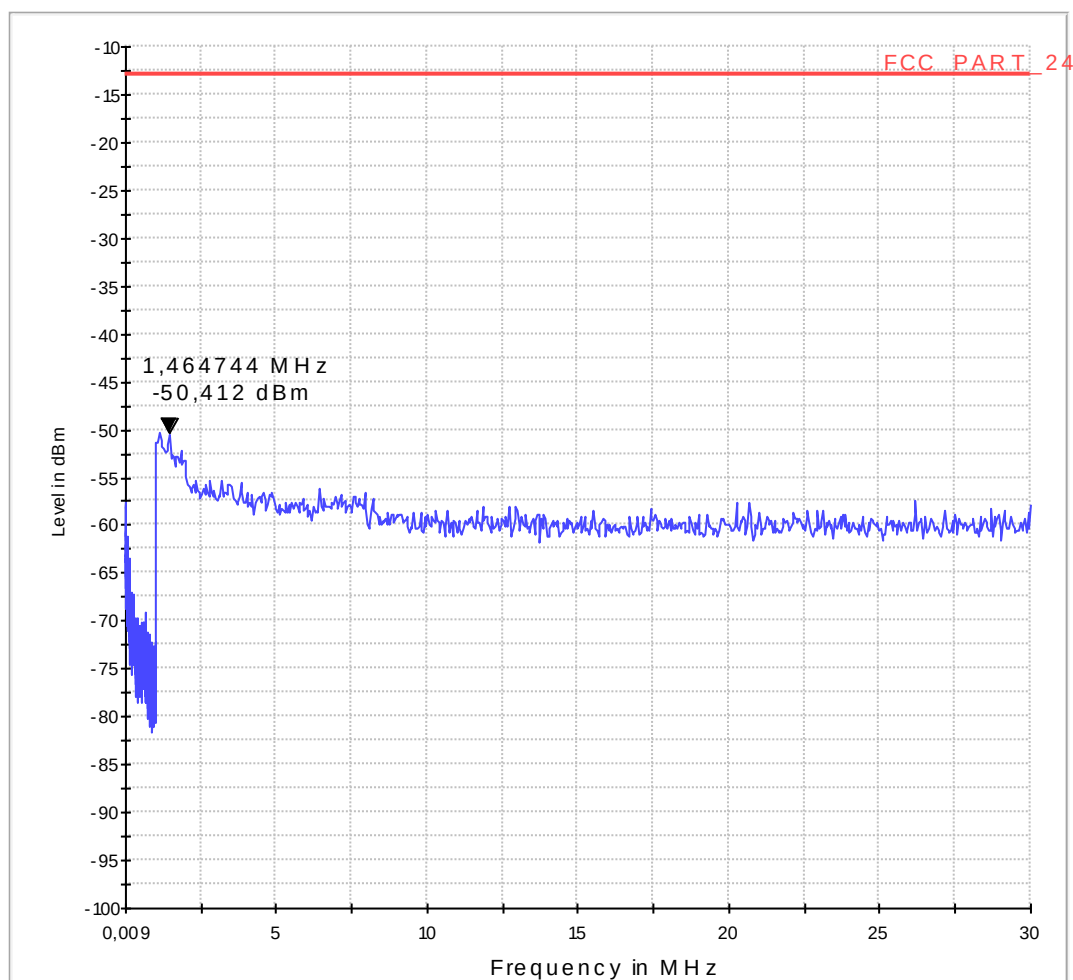


Diagram No. 12.14

Common Information

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD V, TX mode, low channel on U-ARFCN 4132
Comment	TX carrier visible and for spurious emission test shall be ignored 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_2

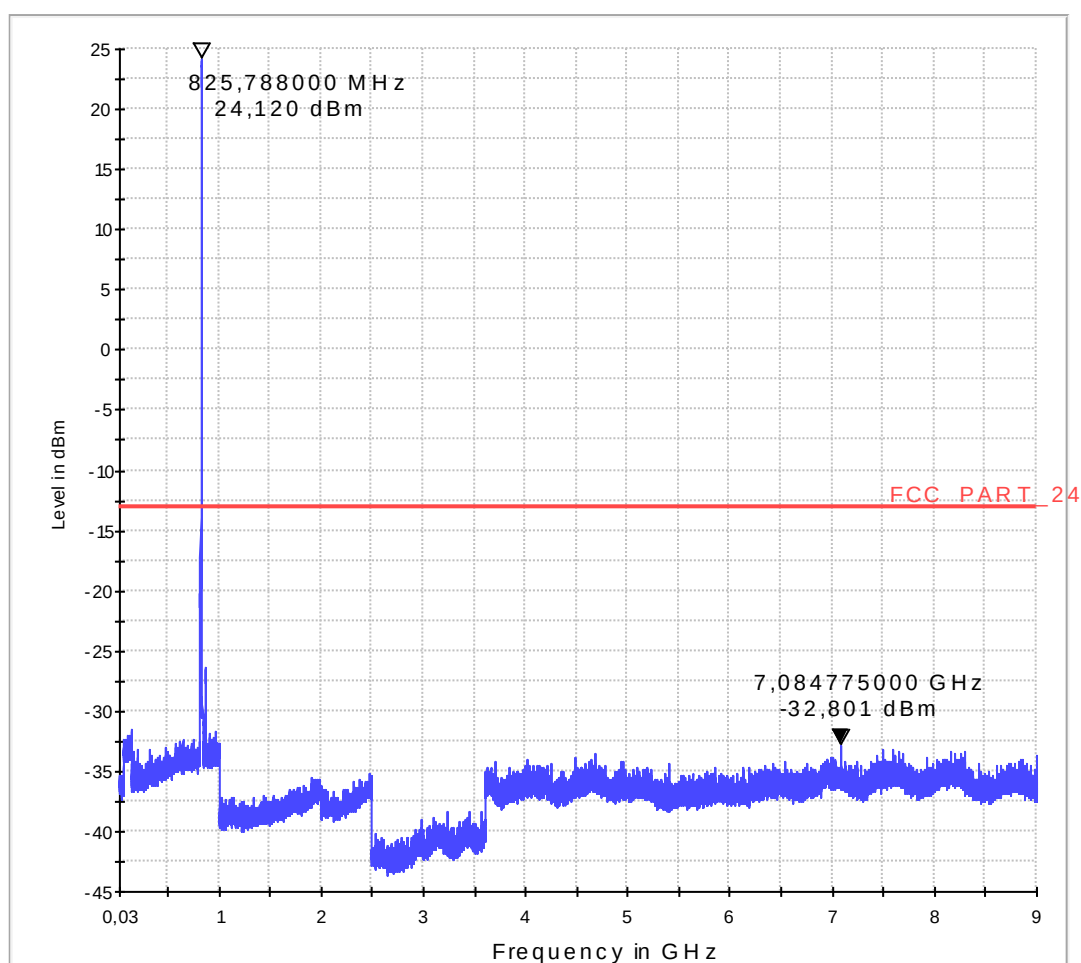


Diagram No. 12.15

Common Information

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD II, TX mode, middle channel on U-ARFCN 4183 TX carrier visible and for spurious emission test shall be ignored 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_2

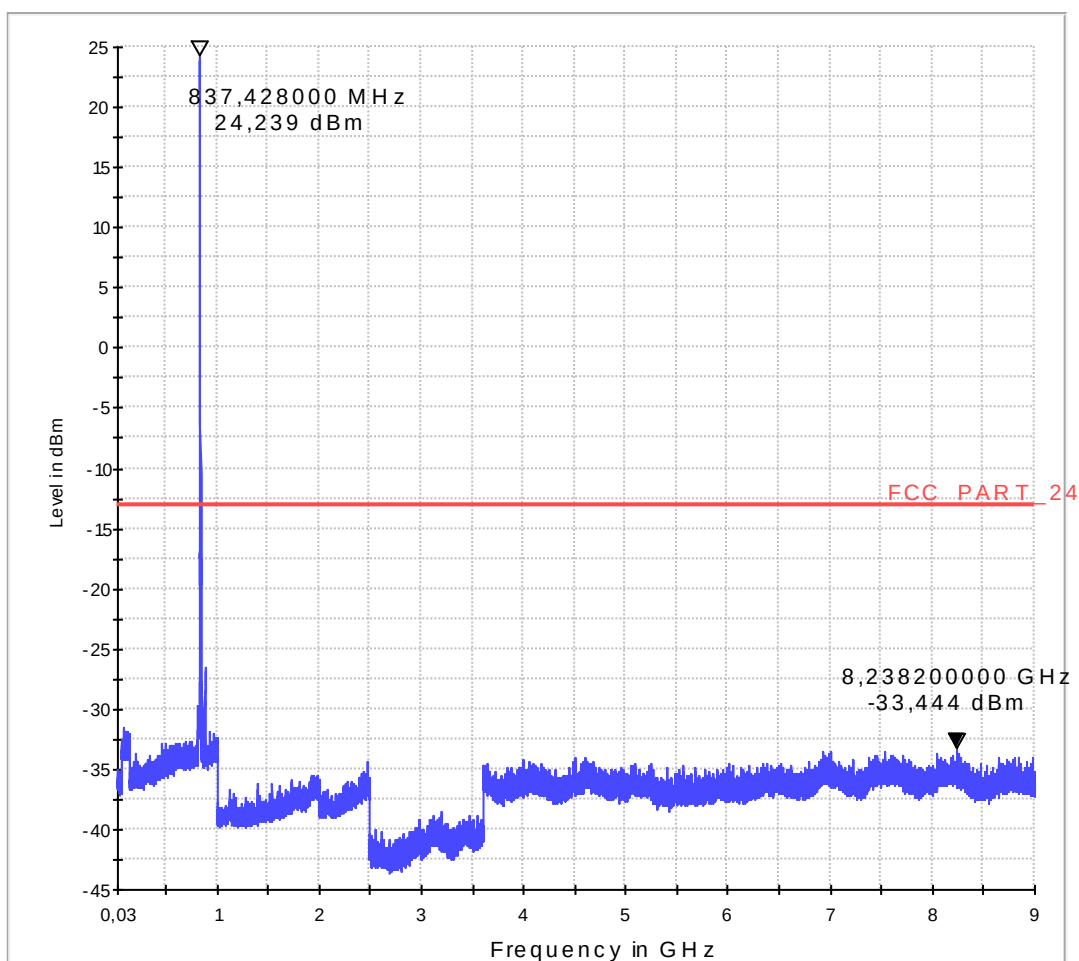


Diagram No. 12.16

Common Information

Test Description:	TX Spurious Emission conducted
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD II, TX mode, high channel on U-ARFCN 4233 TX carrier visible and for spurious emission test shall be ignored 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_2

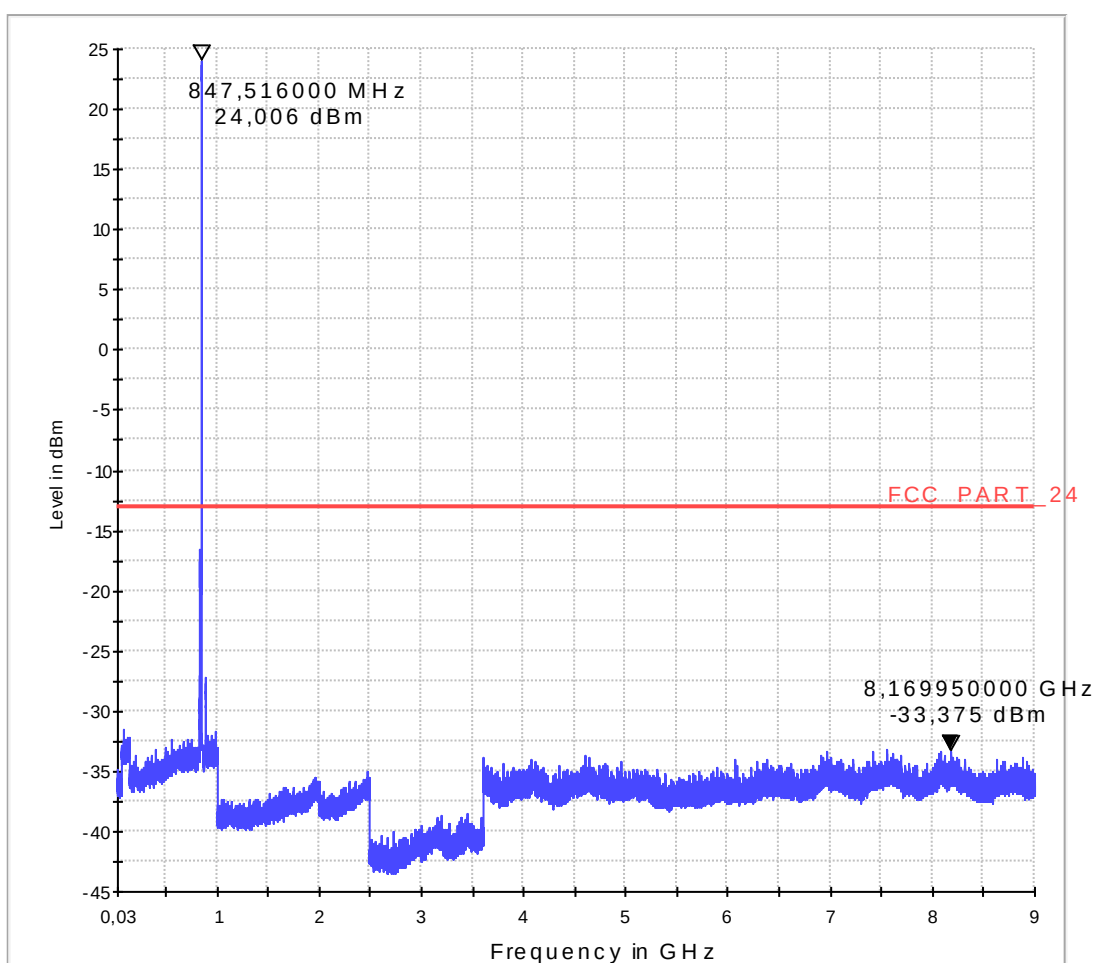


Diagram No. 12.17_BE_L**Common Information**

Test Description:	Transmitter unwanted emissions (Band-Edge)/ FCC requirements
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD V, TX mode, low channel on U-ARFCN 4132 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	--
Power Supply:	3,8 V DC nominal
Comments:	SN 113

Sweep_3a_Band_Edge_Channel_4132_PK

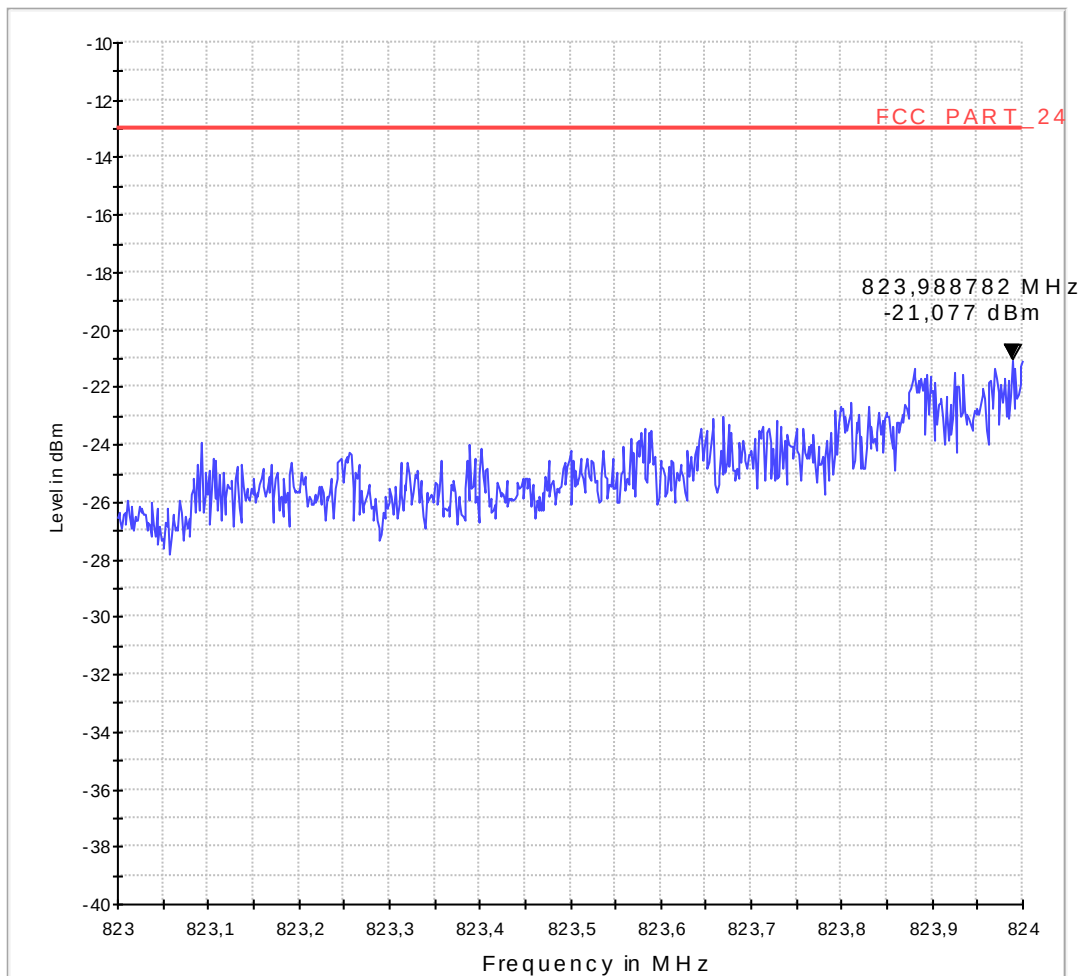


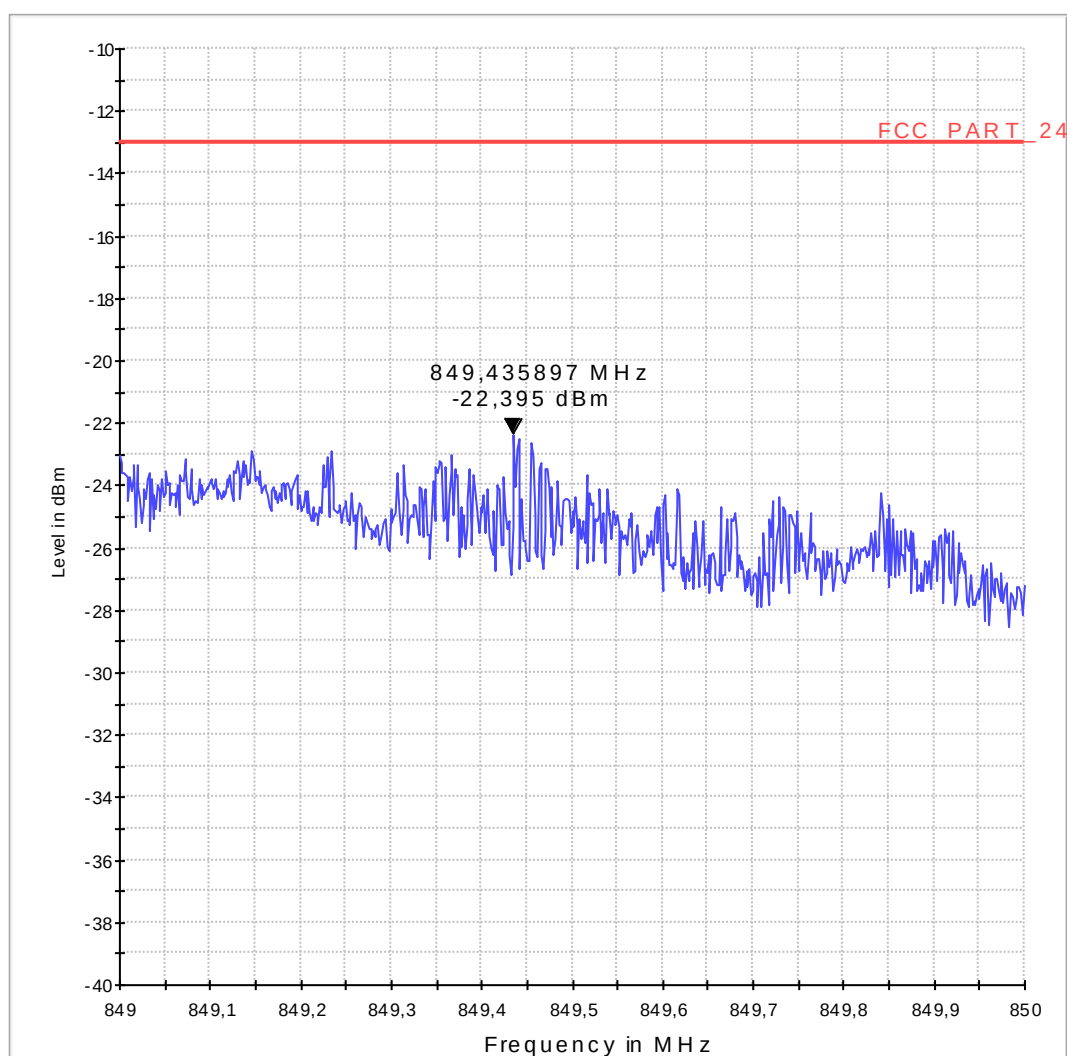
Diagram No. 12.18_BE_H**Common Information**

Test Description:	Transmitter unwanted emissions (Band-Edge)/ FCC requirements
Test Site:	Radio laboratory 1
Test Standard:	FCC Part 22.917 (a) & (b), RSS-132
Environment Conditions:	Normal conditions (Vnominal, Tnominal)
Operator Name:	Tas
Operating mode:	FDD V, TX mode, high channel on U-ARFCN 4233 6-0143-12-11-2a

EUT Information

EUT Name:	GSM/GPRS Mobile Phone
Serial Number:	
Applicant/ Manufacturer	
Serial Number	
Hardware version:	
Software version:	
Remarks:	TEST ERSTELLUNG FILES 04.05.2007, Lor

Sweep_3a_Band_Edge_Channel_4233_PK



1.9 Radiated spurious emissions+ Block-Edge: $f > 30$ MHz – G850 Mode

Diagram no.: 8.15_G850_RSE_H

Common Information

Test Description:	Radiated Emissions GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)(b), RSS-132:4.5.1
Test Case:	GSM850, Voice
Operating Mode:	MS allocated channel 251 (UL = 848.0 MHz)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 19°C
Operator:	Tas
	6-0147-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030401_FCC_Part22_GSM850_TX_all_channels_30M-12G

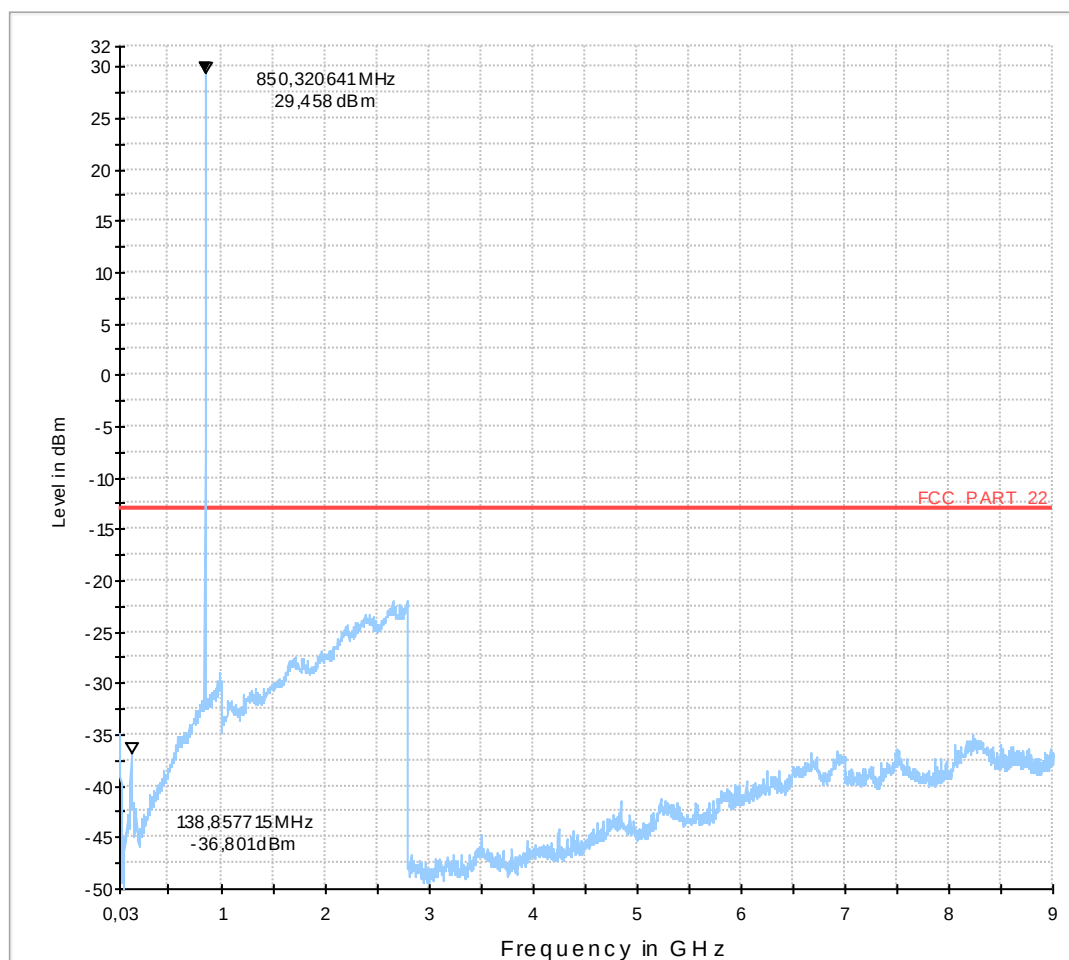


Diagram no.: 8.16_G850_EDGE_RSE_L**Common Information**

Test Description:	Radiated Emissions GSM850
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)(b), RSS-132:4.5.1
Test Case:	GSM850, EDGE
Operating Mode:	MS allocated channel 128 (UL = 824.2MHz)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 19°C
Operator:	Tas
	6-0147-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030401_FCC_Part22_GSM850_TX_all_channels_30M-12G

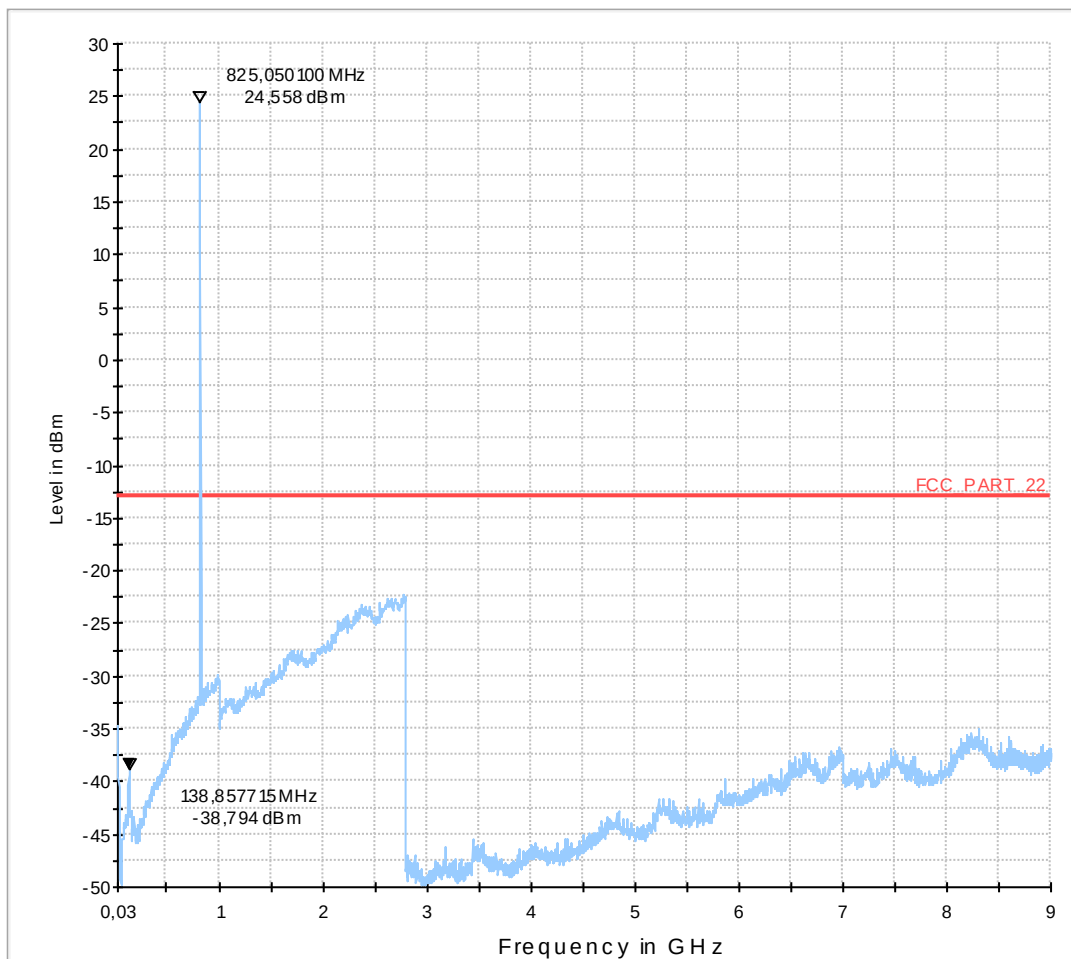


Diagram No.: 8.13_BE**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 22, RSS-132
Antenna polarisation:	vertical / horizontal
Operation mode:	MS allocated channel 128 (UL = 824.2MHz)
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010402_FCC_Part22_GSM850_TX_channel_128_band_edge

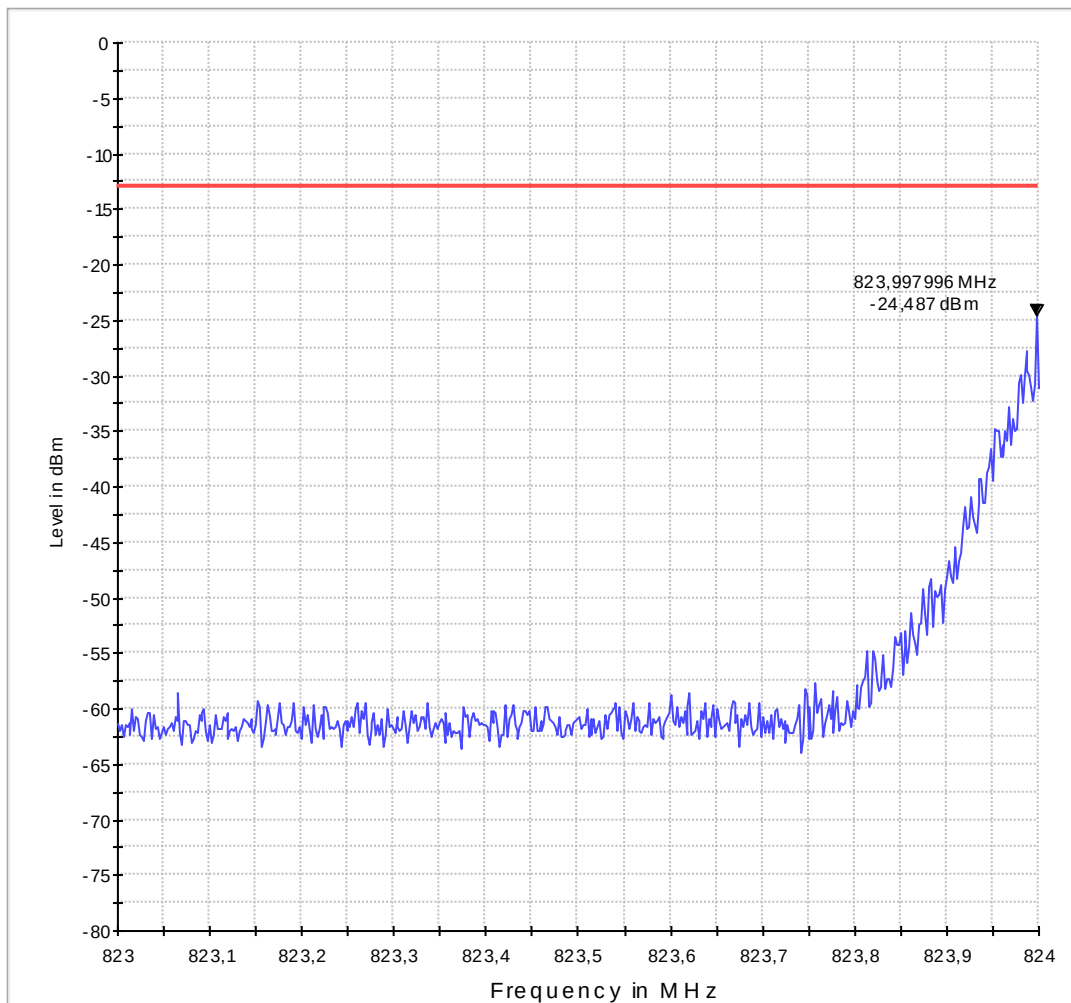


Diagram No.: 8.15_BE**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 22, RSS-132
Antenna polarisation:	vertical / horizontal
Operation mode:	MS allocated channel 251 (UL = 848.0 MHz)
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010403_FCC_Part22_GSM850_TX_channel_251_band_edge

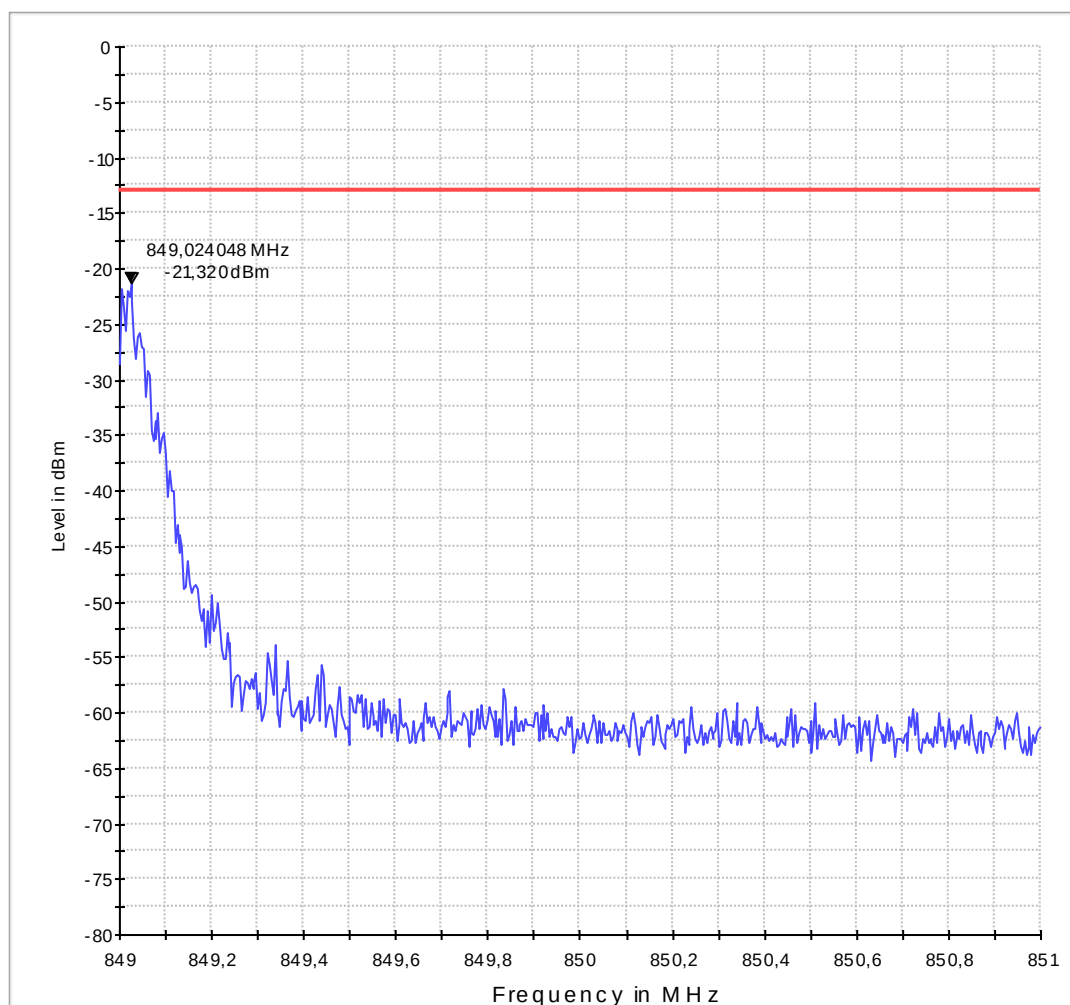


Diagram No.: 8.16_BE**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 22, RSS-132
Antenna polarisation:	vertical / horizontal
Operation mode:	MS allocated channel 128 (UL = 824.2MHz), EDGE
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module
EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010402_FCC_Part22_GSM850_TX_channel_128_band_edge

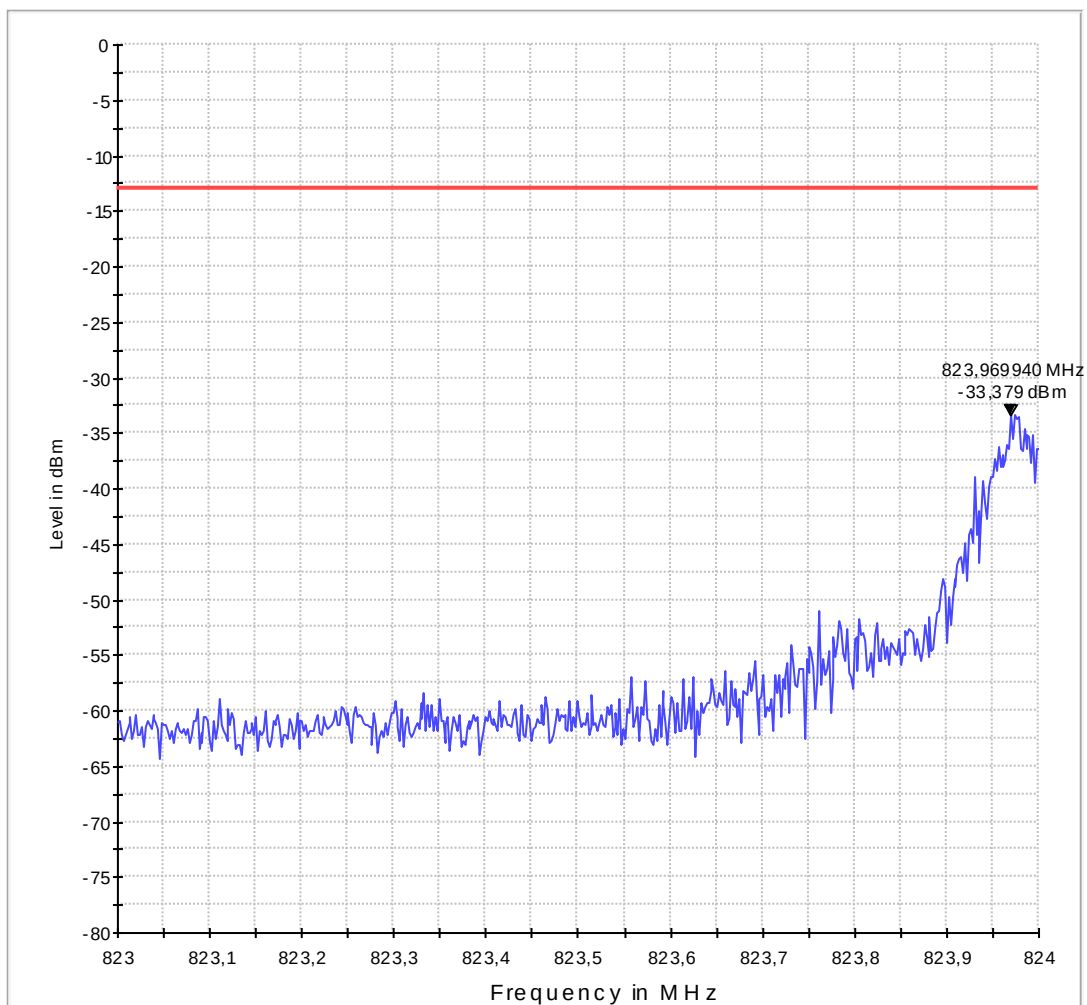


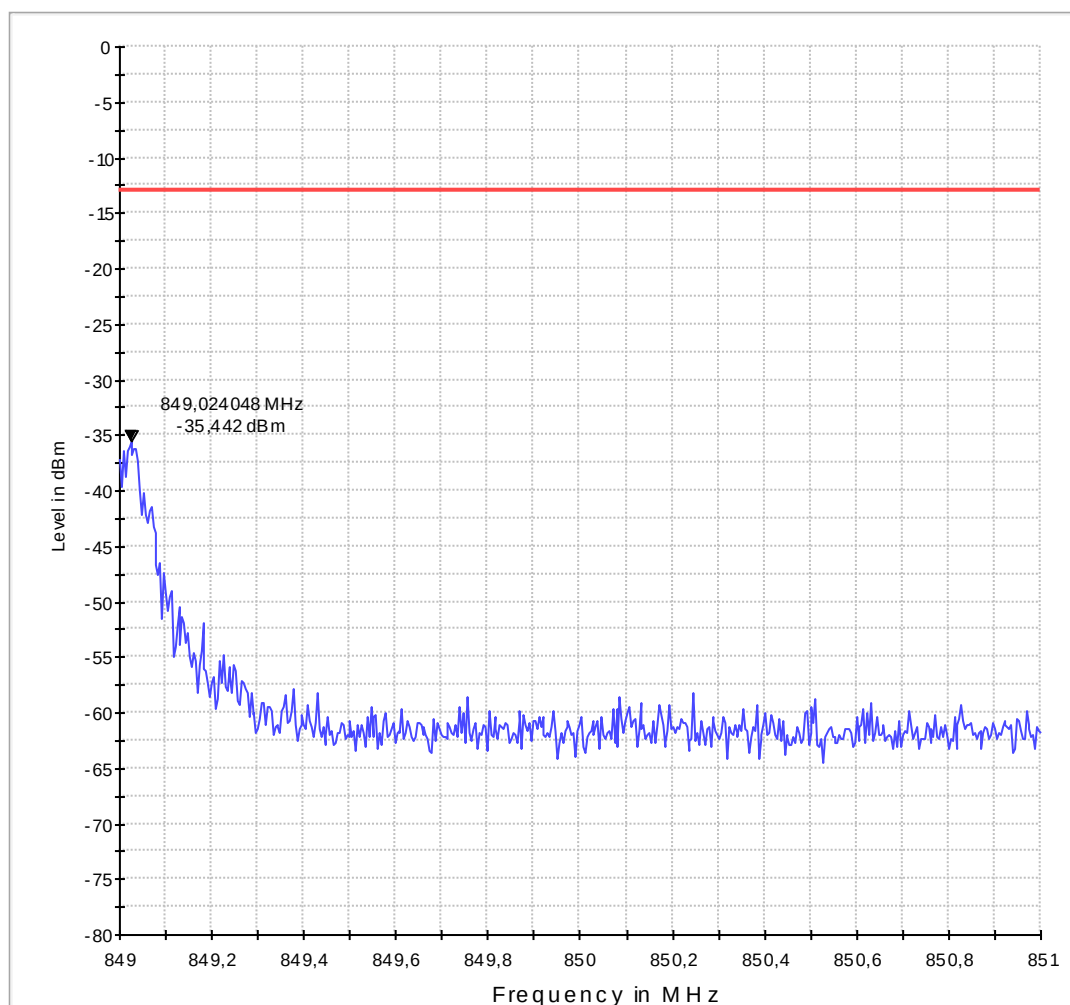
Diagram No.: 8.18_BE**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 22, RSS-132
Antenna polarisation:	vertical / horizontal
Operation mode:	MS allocated channel 251 (UL = 848.0 MHz), EDGE
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module
EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010403_FCC_Part22_GSM850_TX_channel_251_band_edge



2.0 E.R.P.(radiated) – 850 Mode

8.13_G850_ERP__L

Common Information

Test Description:	G850 - ERP Carrier Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917
Comm. Link:	GSM850, Voice
Operating Mode:	MS allocated channel 128 (UL = 824.2MHz)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 19°C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

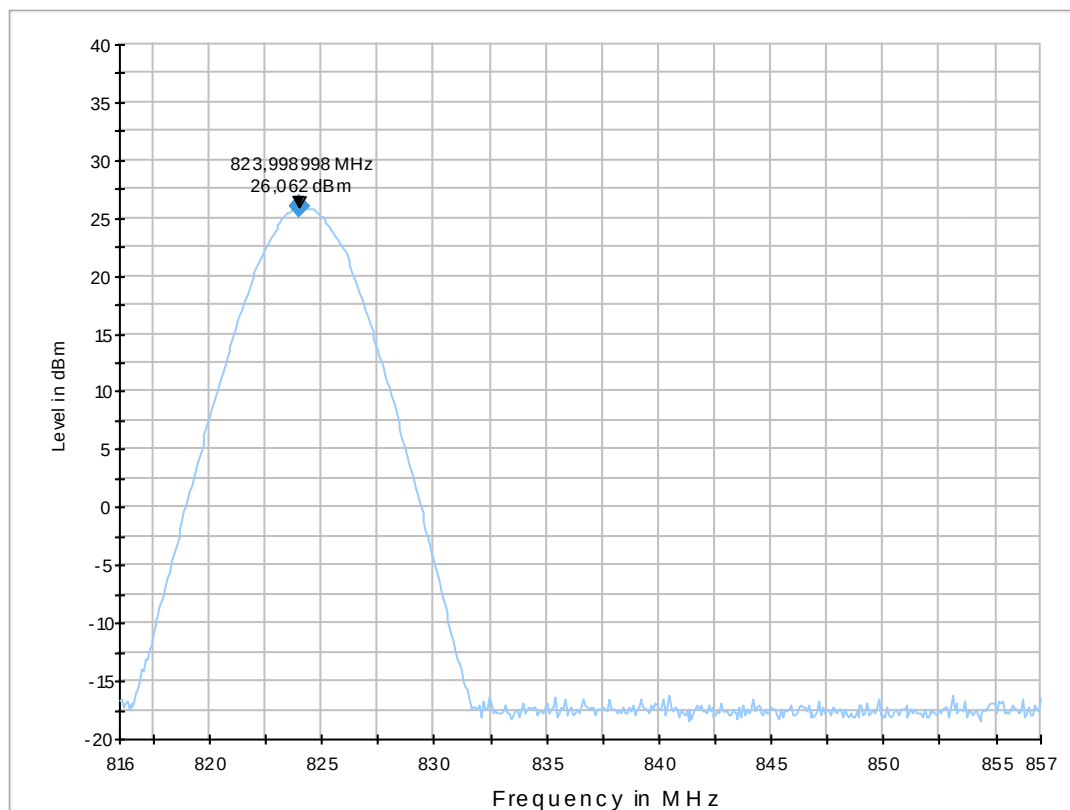
Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
823.998998	26.1	5000.0	3000.000	H	20.0	90.0	-75.9

030407_FCC_Part22_GSM850_ERP_Carrier_measurement



8.14_G850_ERP_M

Common Information

Test Description: G850 - ERP Carrier Measurement
 Operating Conditions: CETECOM GmbH Essen
 Operator Name: Fully Anechoic Room (FAR)
 FCC Part 22.917(2) - Limitation of mobile transmitters
 GSM850, Voice
 MS allocated channel 192(UL = 837.0MHz)
 824 - 849MHz
 Humidity: 53%rH; Temperature: 19°C
 Tas
 6-0143-12-11-2a

EUT Information

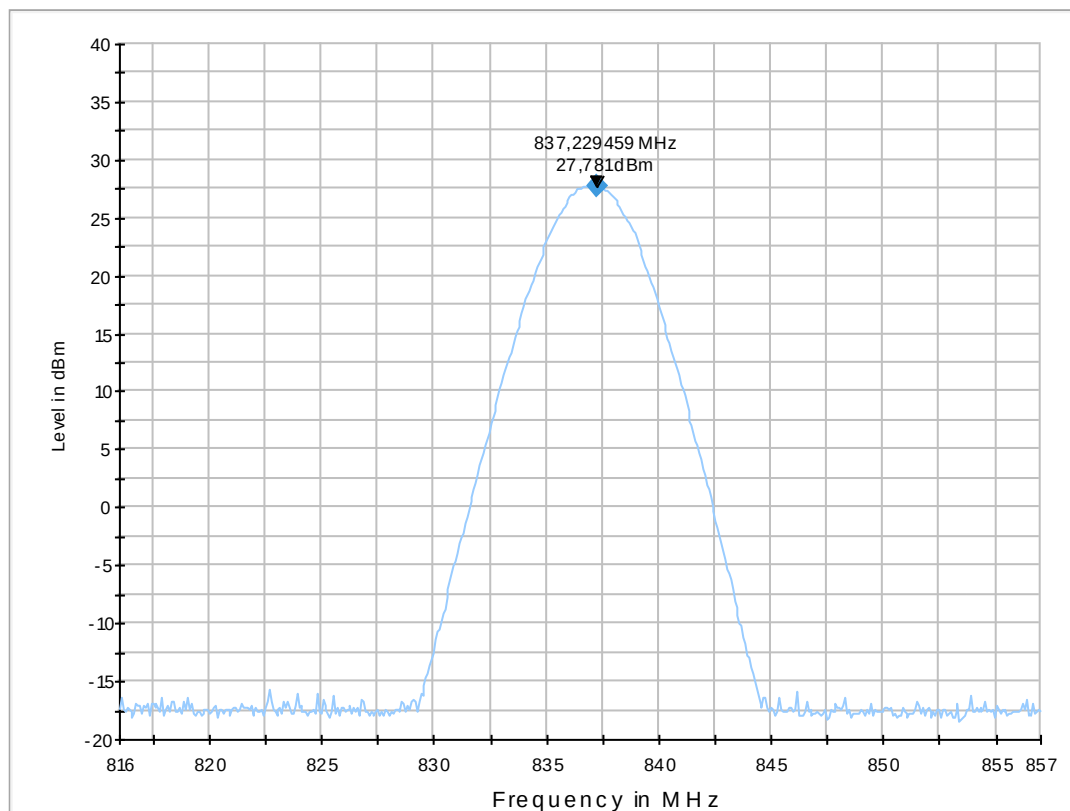
Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

 EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
837.229459	27.8	5000.0	3000.000	H	16.0	90.0	-75.8

030407_FCC_Part22_GSM850_ERP_Carrier_measurement



8.15_G850_ERP_H

Common Information

Test Description:	G850 - ERP Carrier Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917
Comm. Link:	GSM850, Voice
Operating Mode:	MS allocated channel 251 (UL = 848.0 MHz)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 19°C
Operator:	Tas
	6-0147-12-11-2a

EUT Information

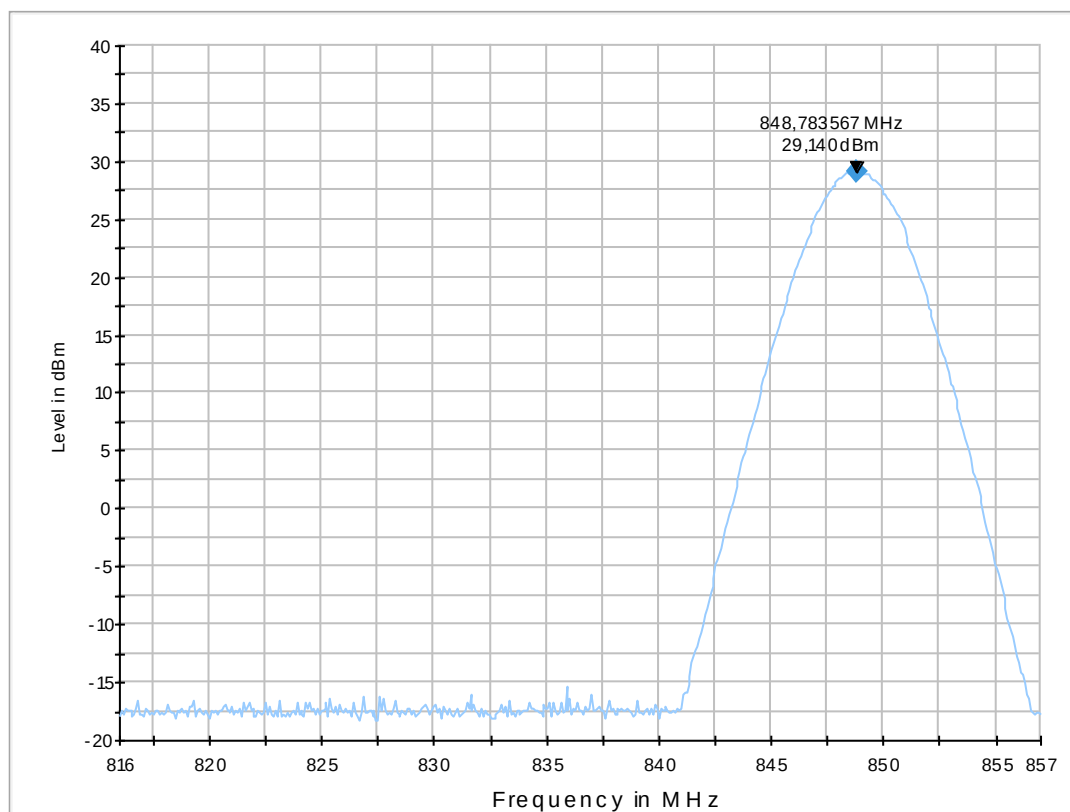
Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
848.802605	29.1	5000.0	3000.000	H	17.0	90.0	-76.0

030407_FCC_Part22_GSM850_ERP_Carrier_measurement



8.16_G850_ERP_EDGE_L

Common Information

Test Description:	EGPRS850 - ERP Carrier Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(2) - Limitation of mobile transmitters
Operating Mode:	MS allocated channel 128 (fc = 824.2MHz), EGPRS, MCS5, Testmode A, 1 UL Slot (3) ,
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 52%rH; Temperature: 20°C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

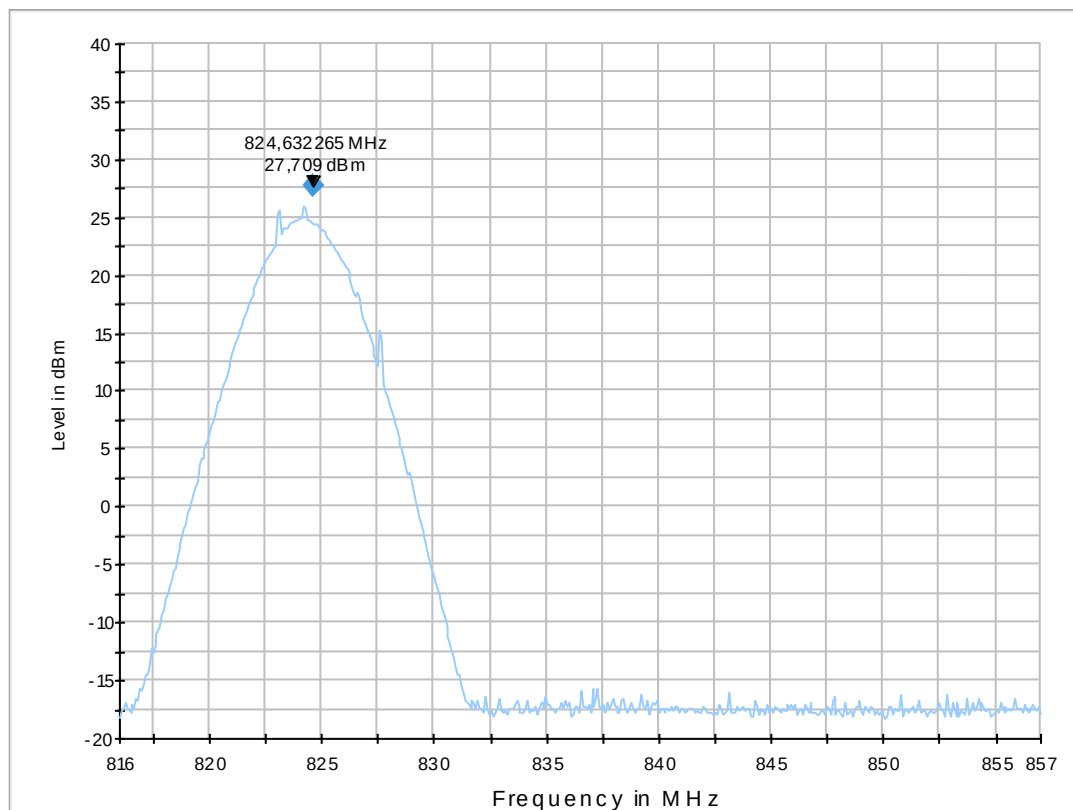
Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
824.632265	27.7	5000.0	3000.000	V	123.0	90.0	-76.0

030407g_FCC_Part22_GSM850_ERP_Ch128_EGPRS_CMU_RF2



8.17_G850_ERP_EDGE_M

Common Information

Test Description:	EGPRS850 - ERP Carrier Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(2) - Limitation of mobile transmitters
Comm. Link:	GSM850, EDGE
Operating Mode:	MS allocated channel 192(UL = 837.0MHz)
Exclusionband:	824 - 849MHz
Environmental Conditions:	Humidity: 45%rH; Temperature: 20°C
Operator:	Tas
	6-0147-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
837.071142	26.7	5000.0	3000.000	H	21.0	90.0	-75.8

030407_FCC_Part22_GSM850_ERP_Carrier_measurement

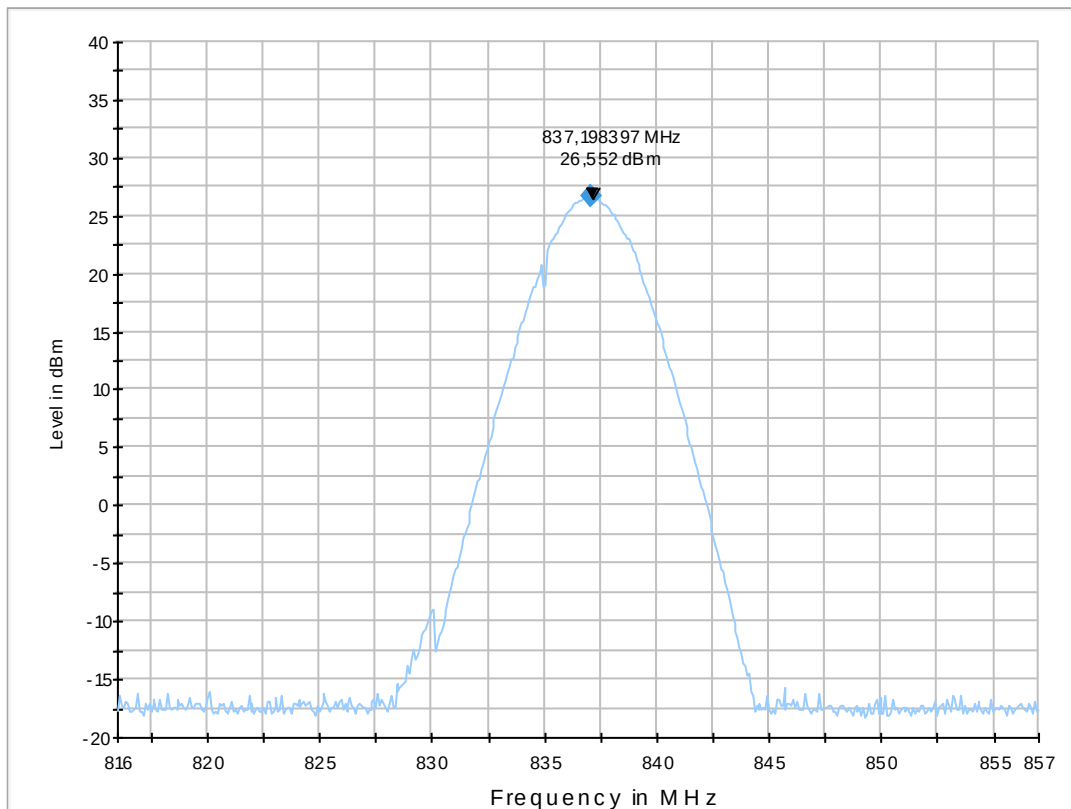


Diagram no. 8.18_G850_ERP_EDGE_H

Common Information

Test Description: EGPRS850 - ERP Carrier Measurement
 Operating Conditions: CETECOM GmbH Essen
 Operator Name: Fully Anechoic Room (FAR)
 FCC Part 22.917(2) - Limitation of mobile transmitters
 MS allocated channel 251 ($f_c = 848.0$ MHz), EGPRS, MCS5, Testmode A, 1 UL
 Slot (3),
 824 - 849MHz
 Humidity: 52%rH; Temperature: 20°C
 Tas
 6-0143-12-11-2a

EUT Information

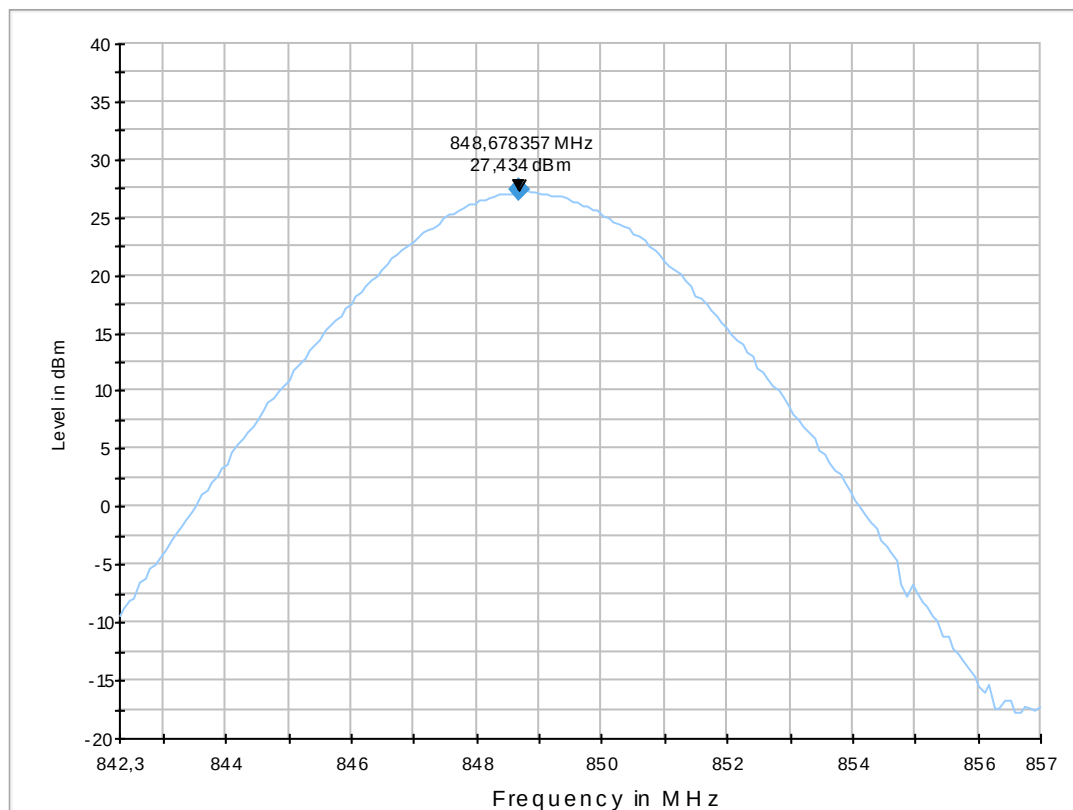
Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

 EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
848.678357	27.4	5000.0	3000.000	H	24.0	90.0	-76.0

030407_FCC_Part22_GSM850_ERP_Carrier_measurement



2.1 Radiated spurious emissions+ Block-Edge: $f > 30$ MHz – PCS1900 Mode

Diagram no.:8.07_1900_RSE_L

Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238(a)(b), RSS-133:6.5.1 (a)(b)
Comm. Link:	GSM1900, Voice
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 55%rH; Temperature: 20°C
Operator:	Tas 6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030404_FCC_Part24_GSM1900_TX_all_channels_30M-20G

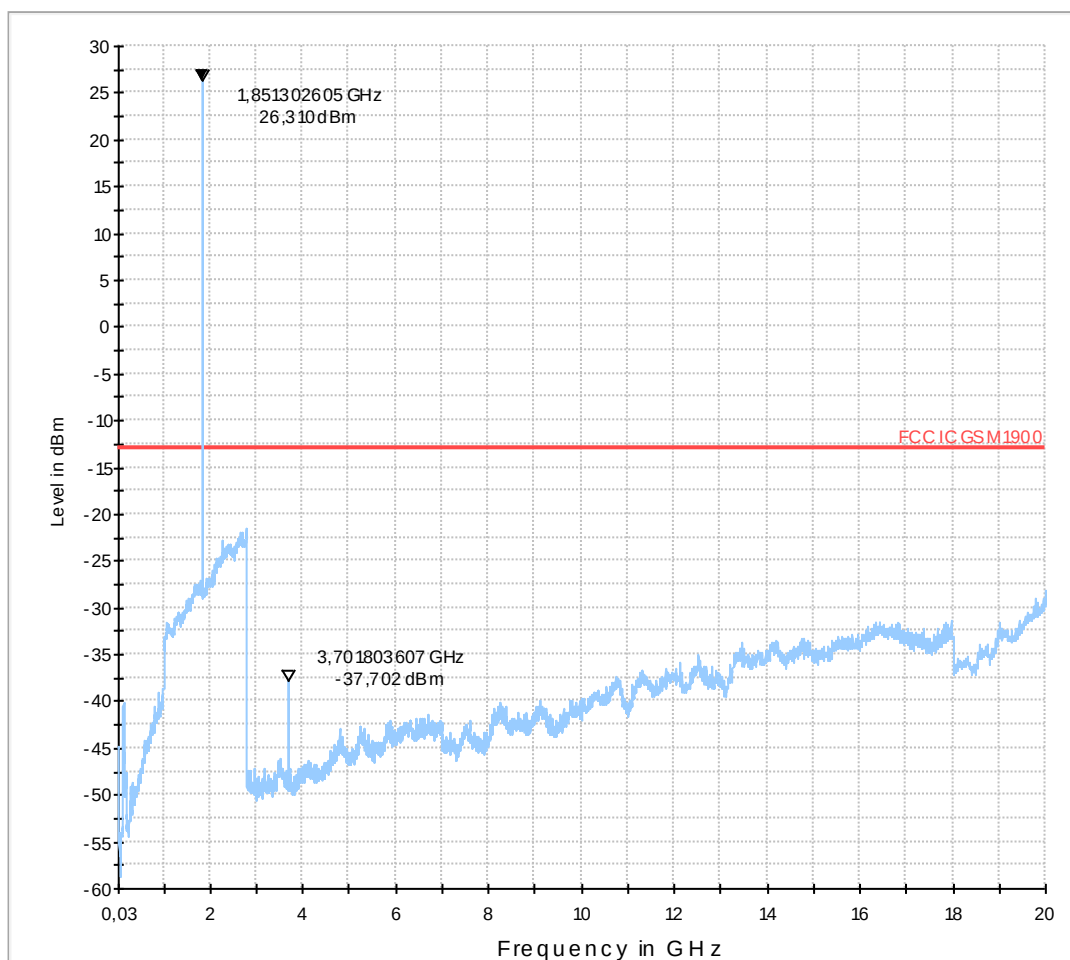


Diagram no.:8.10_1900_RSE_EDGE_L

Common Information

Test Description:	Radiated Spurious Emissions GSM1900
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238(a)(b), RSS-133:6.5.1 (a)(b)
Comm. Link:	GSM1900, EDGE
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 55%rH; Temperature: 20°C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030404_FCC_Part24_GSM1900_TX_all_channels_30M-20G

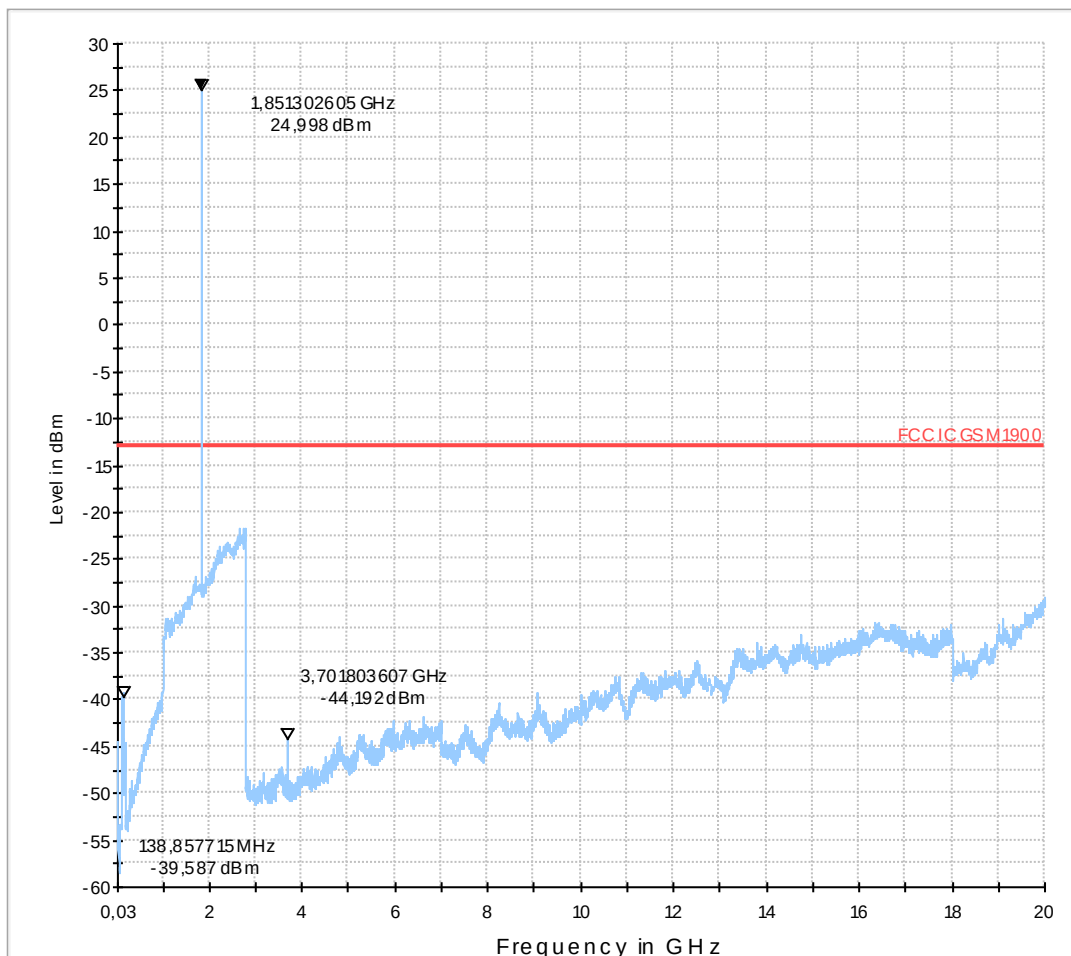


Diagram no.:8.07_1900_BE_L

Common Information

Test Description:	Band-Edge compliance radiated
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238(a)(b), RSS-133:6.5.1 (a)(b)
Comm. Link:	GSM1900, Voice
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 55%rH; Temperature: 20°C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030405_FCC_Part24_GSM1900_TX_low_ch_band_edge

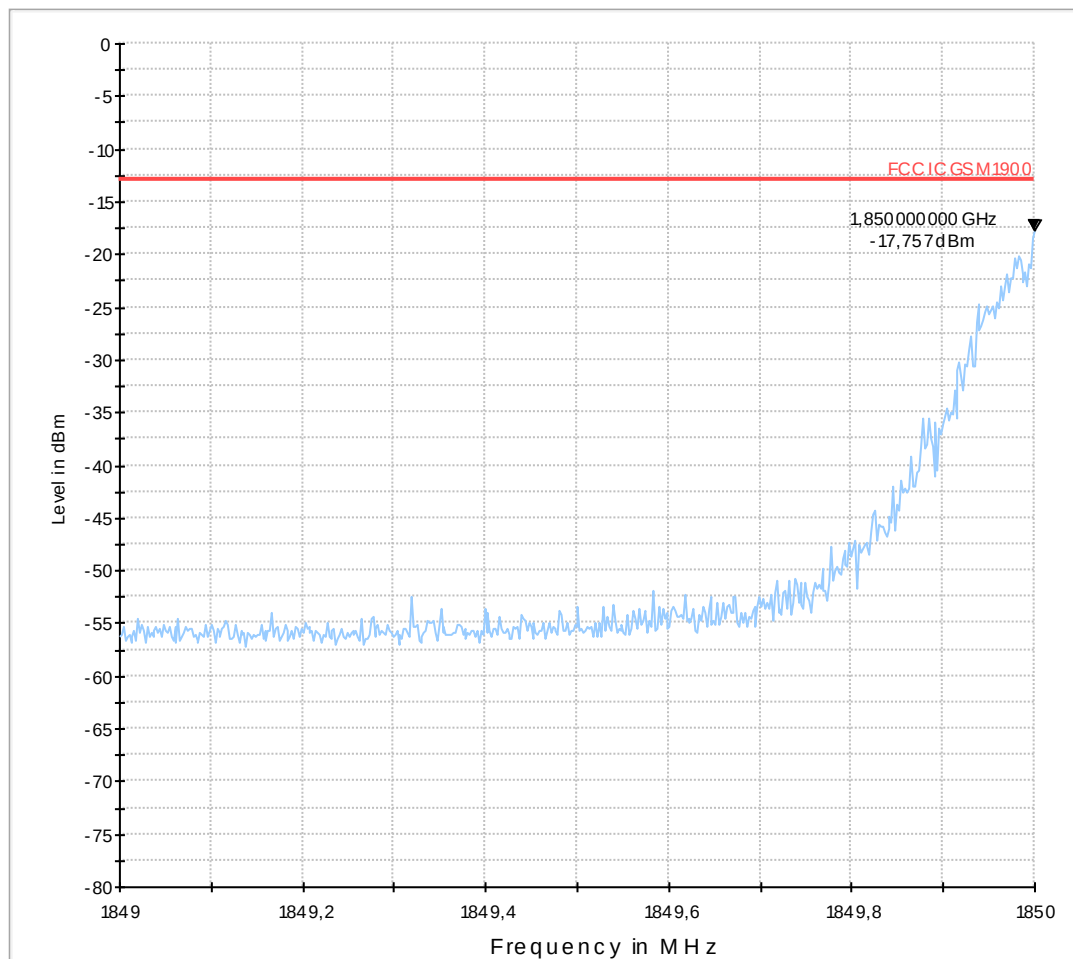


Diagram no.:8.09_1900_BE_H

Common Information

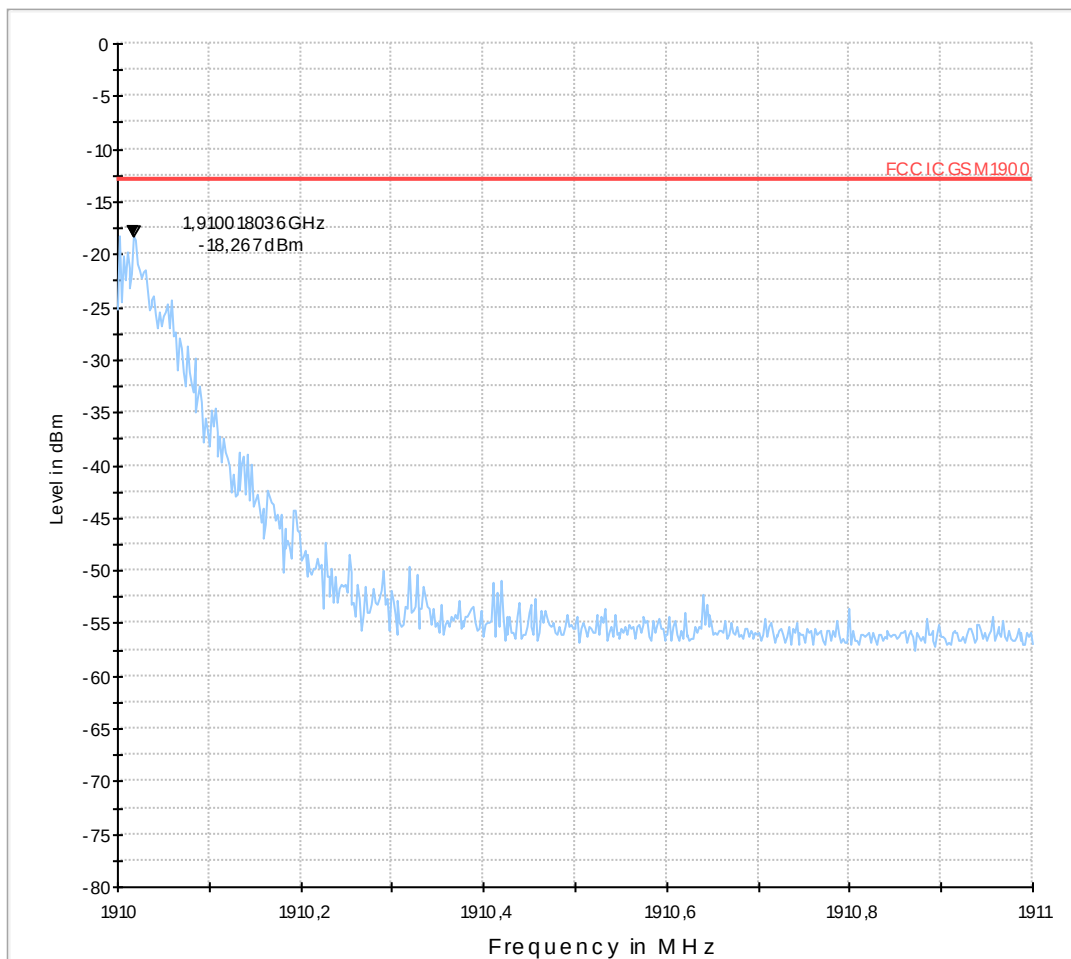
Test Description:	Band-Edge compliance radiated
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238(a)(b), RSS-133:6.5.1 (a)(b)
Comm. Link:	GSM1900, Voice
Operating Mode:	MS allocated channel 810 (UL = 1909.0 MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 55%rH; Temperature: 20°C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030406_FCC_Part24_GSM1900_TX_high_ch_band_edge



8.10_1900_BE_EDGE_L

Common Information

Test Description:	Band-Edge compliance radiated
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238(a)(b), RSS-132:4.5. -1 & -2
Comm. Link:	GSM1900, EDGE
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 19°C
Operator:	Tas
	6-0147-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030405_FCC_Part24_GSM1900_TX_low_ch_band_edge

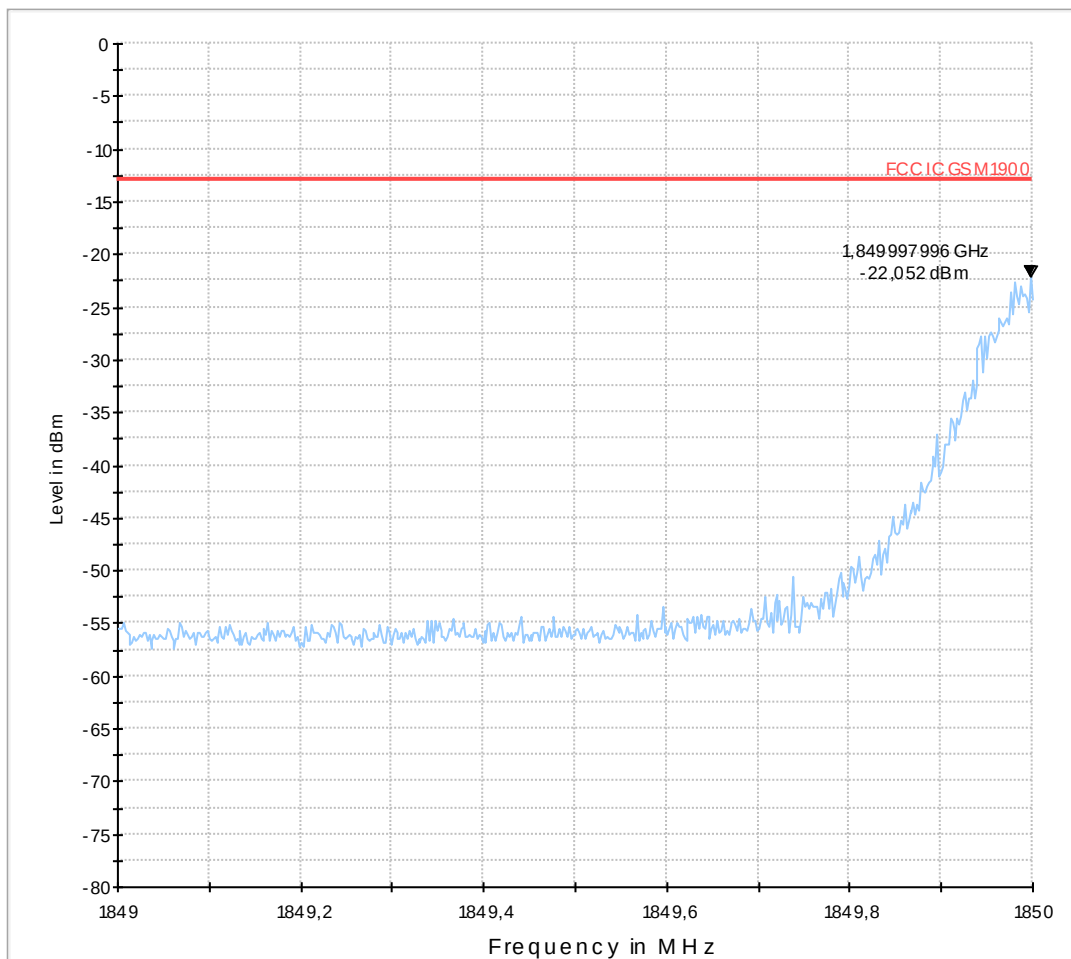


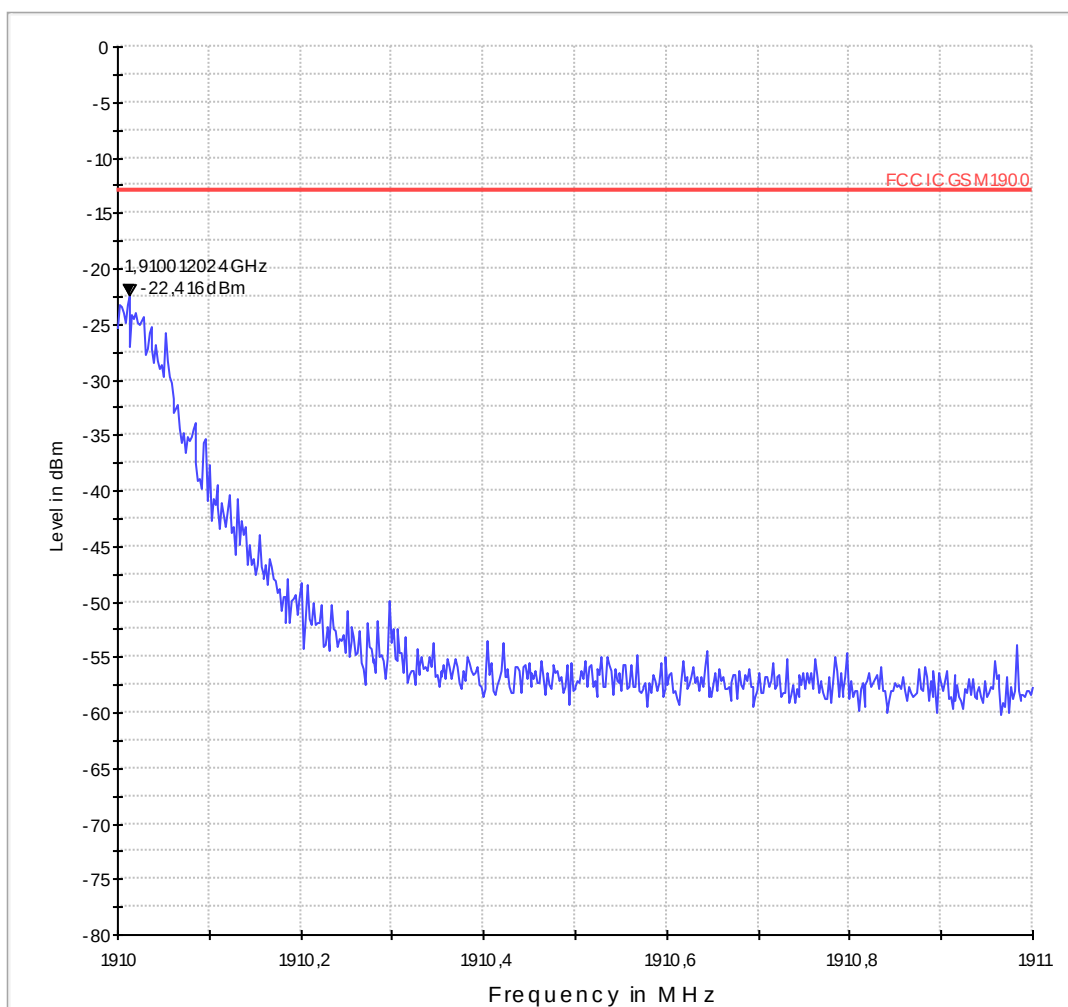
Diagram No.: 8.12_EDGE_BE**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 24, RSS-133
Antenna polarisation:	vertical / horizontal
Operation mode:	MS allocated channel 810 (UL = 1880.0 MHz), EDGE
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module
EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010406_FCC_Part24_GSM1900_TX_channel_810_band_edge



2.2 E.I.R.P.(radiated) – PCS1900 Mode

Diagram no.:8.07_1900_EIRP_L

Common Information

Test Description:	PCS1900 EIRP Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC § 24.232(c), RSS-133:4.1
Comm. Link:	GSM1900, Voice
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 55%rH; Temperature: 20°C
Operator:	Tas 6-0147-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1850.421844	27.3	5000.0	3000.000	H	193.0	0.0	-63.1

030408_FCC_Part24_GSM1900_Carrier_measurement

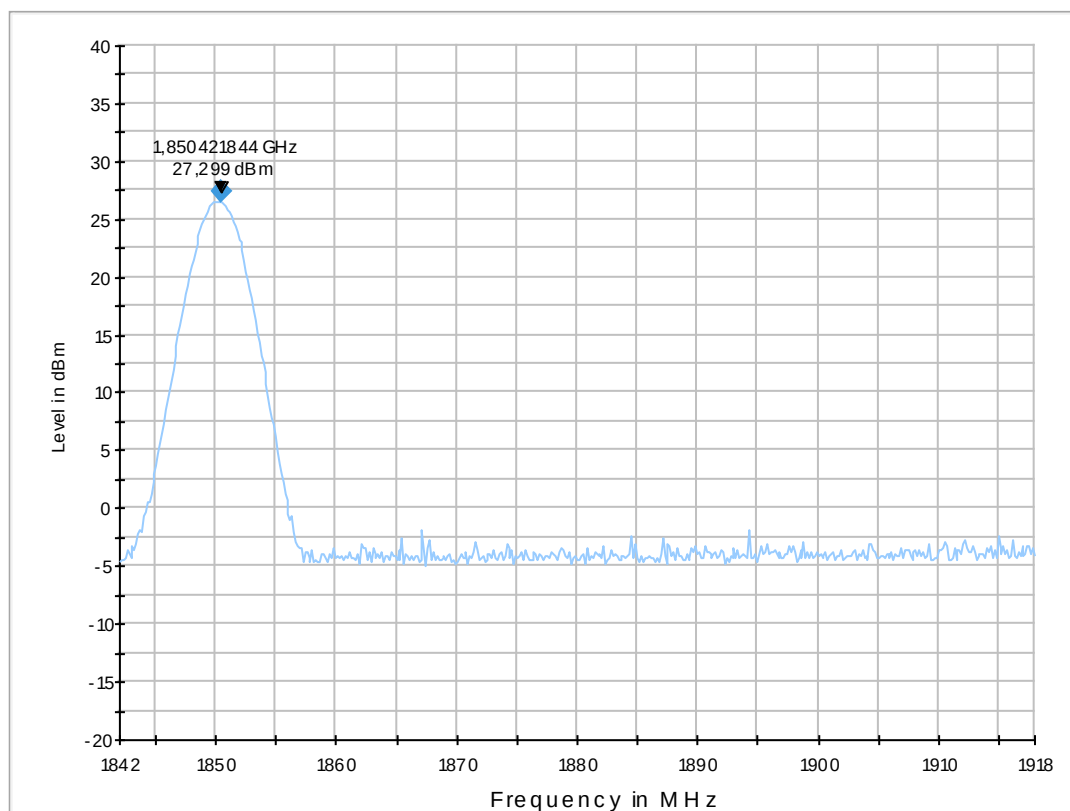


Diagram no.:8.08_1900_EIRP_M

Common Information

Test Description: PCS1900 EIRP Measurement
 Operating Conditions: CETECOM GmbH Essen
 Operator Name: Fully Anechoic Room (FAR)
 FCC § 24.232(c), RSS-133:4.1
 GSM1900, Voice
 MS allocated channel 661 (UL = 1880.0 MHz)
 1850- 1910MHz
 Humidity: 55%rH; Temperature: 20°C
 Tas
 6-0147-12-11-2a

EUT Information

Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

 EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1880.209419	27.1	5000.0	3000.000	H	1.0	90.0	-63.0

030408_FCC_Part24_GSM1900_Carrier_measurement

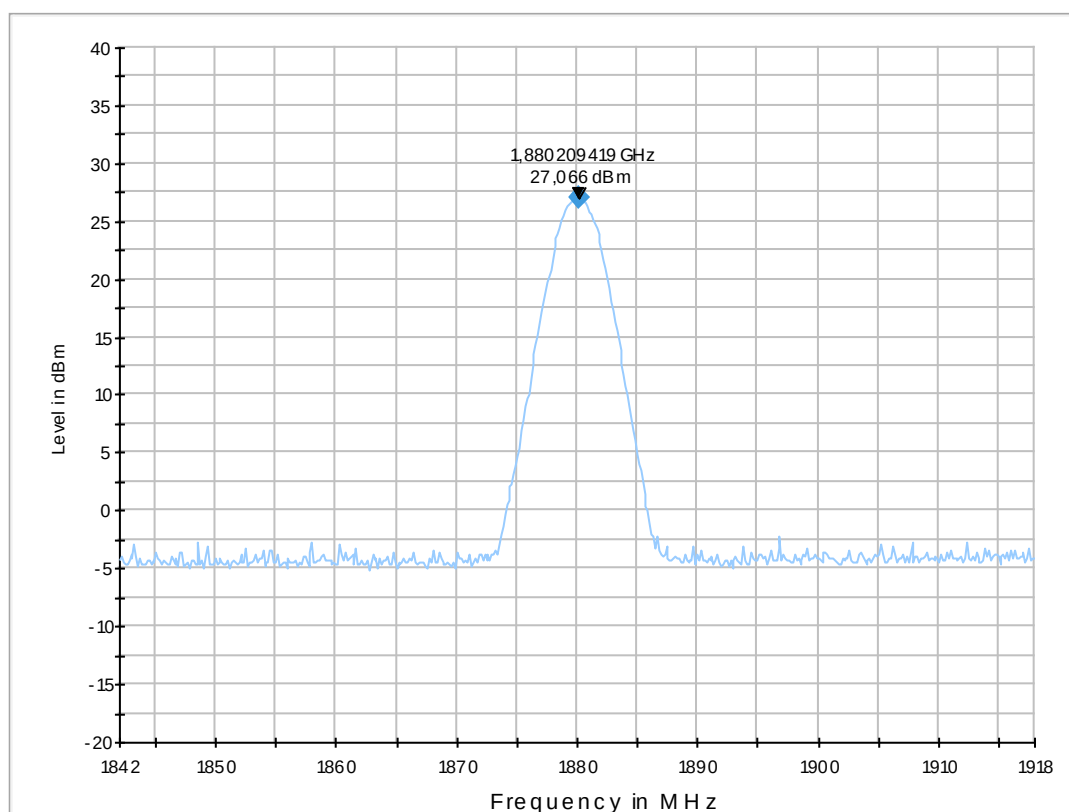


Diagram no.: 8.09_1900_EIRP_H

Common Information

Test Description: PCS1900 EIRP Measurement
 Operating Conditions: CETECOM GmbH Essen
 Operator Name: Fully Anechoic Room (FAR)
 FCC § 24.232(c), RSS-133:4.1
 GSM1900, Voice
 MS allocated channel 810 (UL = 1909.0 MHz)
 1850- 1910MHz
 Tas
 6-0143-12-11-2a

EUT Information

Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1909.872746	27.2	5000.0	3000.000	H	175.0	0.0	-62.8

030408_FCC_Part24_GSM1900_Carrier_measurement

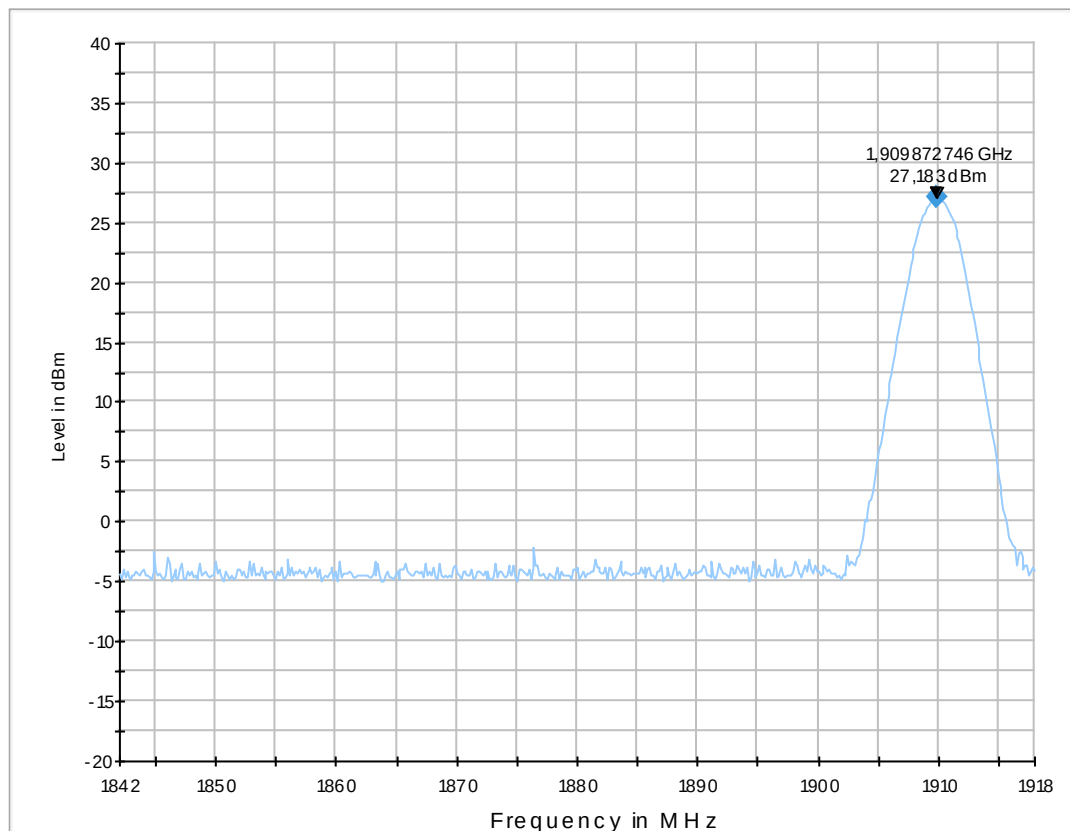


Diagram no.: 8.10_1900_EIRP_EDGE_L

Common Information

Test Description:	EDGE PCS1900 EIRP Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.913(2), RSS-133:6.5.1(a)(b)
Comm. Link:	GSM1900, EDGE
Operating Mode:	MS allocated channel 512 (UL = 1850.2MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 53%rH; Temperature: 19°C
Operator:	Tas
	6-0147-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1850.409820	26.0	5000.0	3000.000	H	33.0	90.0	-63.1

030408j_FCC_Part24_GSM1900_EIRP_Ch512_EGPRS_CMU_RF3_RF4

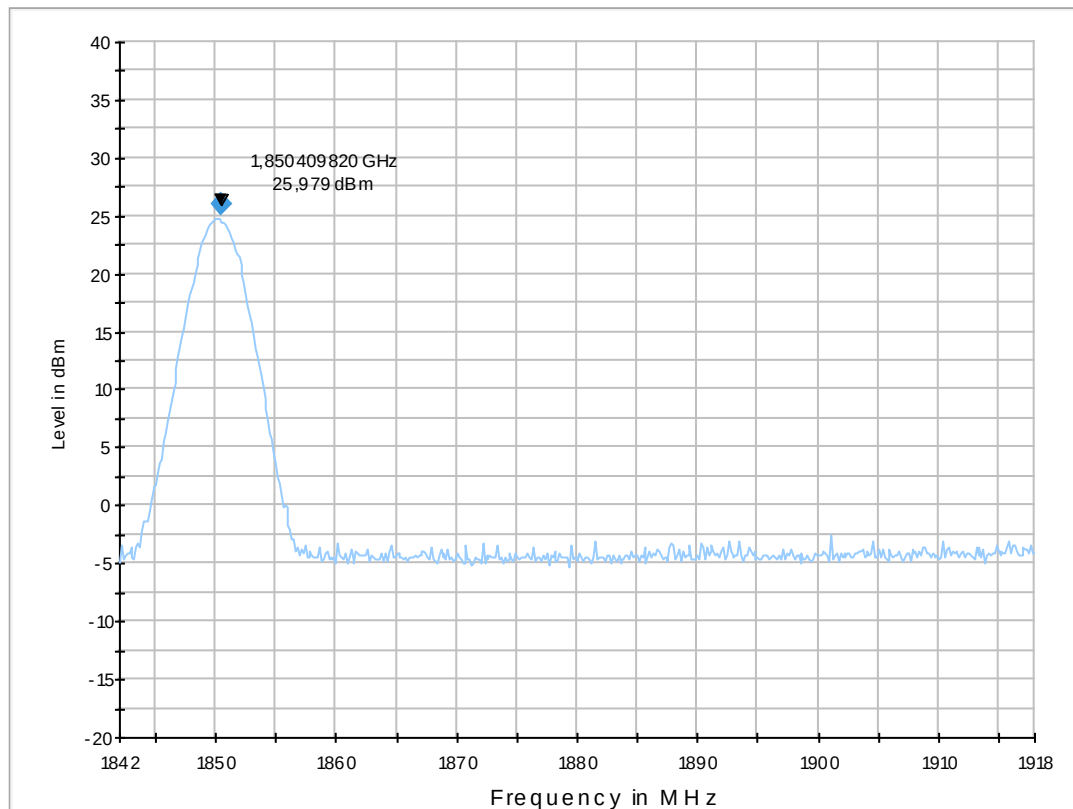


Diagram no.: 8.11_1900_EIRP_EDGE_M

Common Information

Test Description:	EDGE PCS1900 EIRP Measurement
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.232(a)
Comm. Link:	GSM1900, EDGE
Operating Mode:	MS allocated channel 661(UL = 1880.0MHz)
Exclusionband:	1850- 1910MHz
Environmental Conditions:	Humidity: 58%rH; Temperature: 20°C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1879.998998	24.4	5000.0	3000.000	H	0.0	90.0	-63.0

030408k_FCC_Part24_GSM1900_EIRP_Ch661_EGPRS_CMU_RF3_RF4

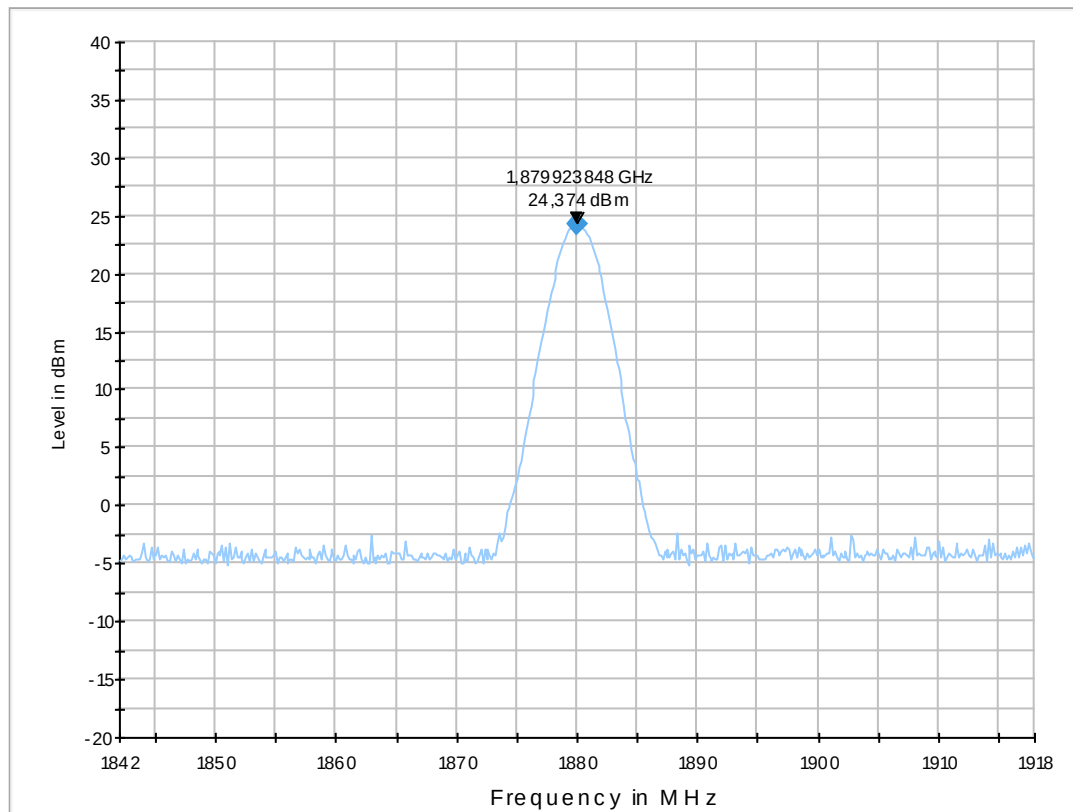


Diagram no.: 8.12_1900_EIRP_EDGE_H

Common Information

Test Description: EDGE PCS1900 EIRP Measurement
 Test Site: FAR
 Test Standard: FCC Part 24.232(c)
 Antenna polarisation: vertical / horizontal

 Operation mode: MS allocated channel 810 (UL = 1880.0 MHz)
 Operator Name: Tas
 Comment: 6-0143-12-11-2a

EUT Information

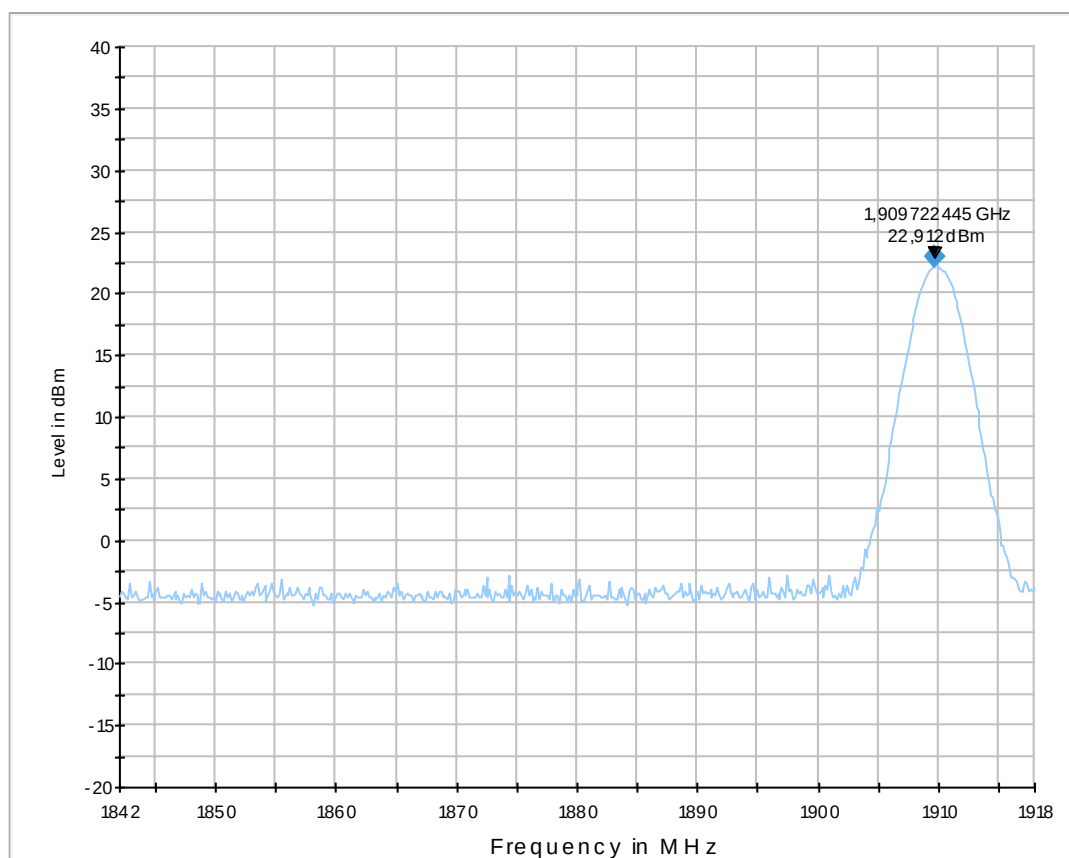
Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

 EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1909.722445	22.9	5000.0	3000.000	H	175.0	0.0	-62.8

030408I_FCC_Part24_GSM1900_EIRP_Ch810_EGPRS_CMU_RF3_RF4



2.3 Radiated spurious emissions+ Block-Edge: $f > 30$ MHz – FDD II Mode

8.01_FDDII_RSE_RMC_L

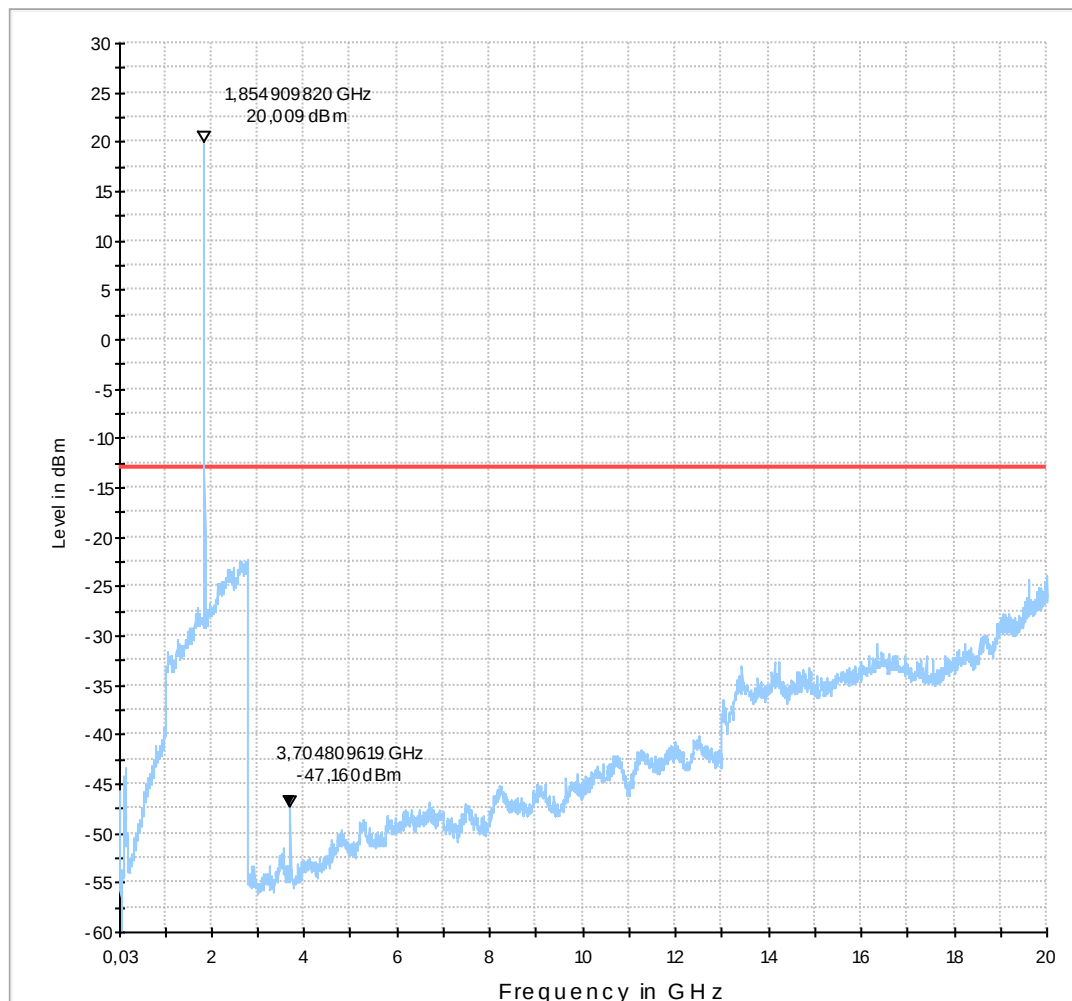
Common Information

Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.238(a)(b), RSS-133:4.1
Operating Mode:	UE allocated channel 9262 ($f_c = 1852.4$ MHz), RMC
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Operator:	Tas
Comment:	6-0143-12-11-2a Excluded 9262 carrier on diagram

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module
EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030414_FCC_Part24_UMTS-FDDII_TX_all_channels_30M-25G



8.02_FDDII_RSE_RMC_M

Common Information

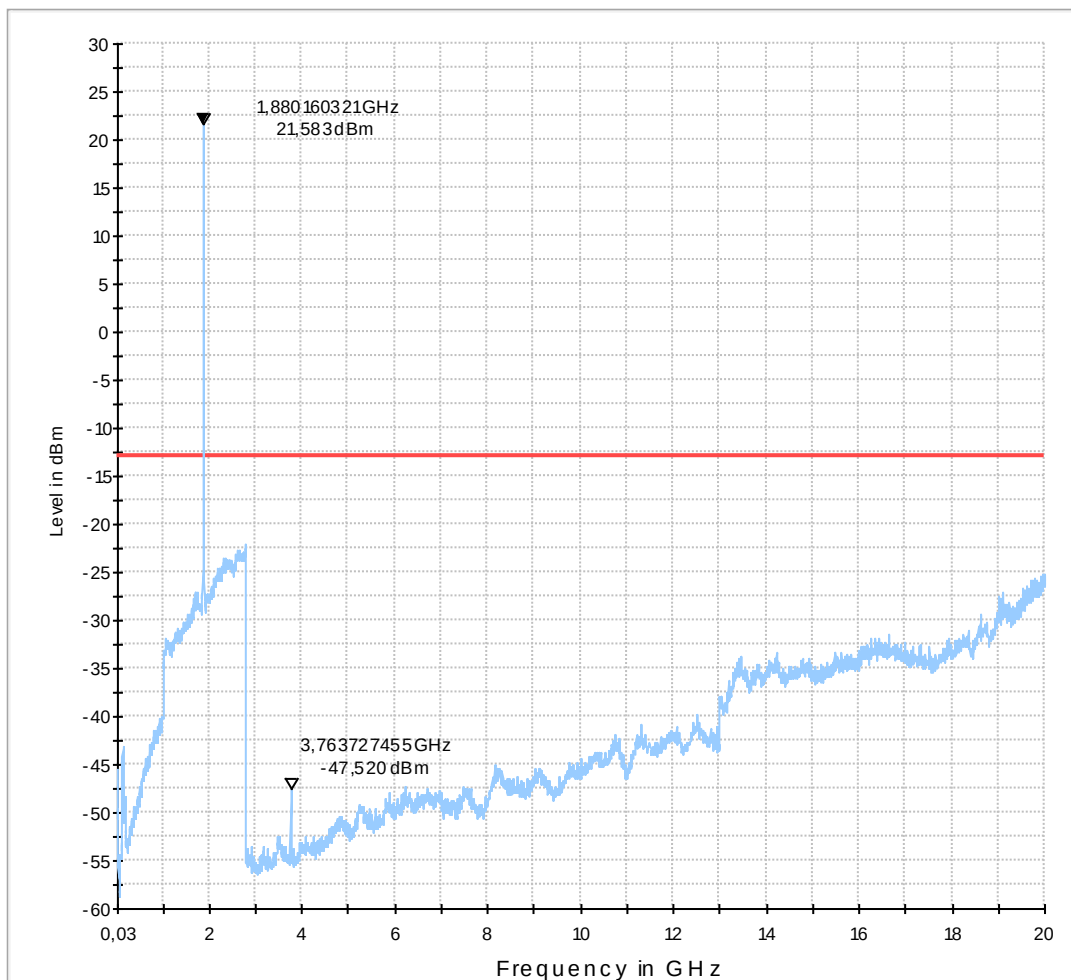
Test Description:	Radiated Spurious Emissions UMTS FDDII
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 24.913(2), RSS-133:6.5.1(a)(b)
Operating Mode:	UE allocated channel 9400 (fc = 1880.0 MHz), RMC
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Comment:	Excluded carrier 9400 of this test case
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030414_FCC_Part24_UMTS-FDDII_TX_all_channels_30M-25G



8.03_FDDII_RSE_RMC_H

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 24.913(2), RSS-133:6.5.1(a)(b)
Operating Mode:	UE allocated channel 9538 (fc = 1907.6 MHz), RMC
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Comment:	Excluded carrier 9538 of this test case
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

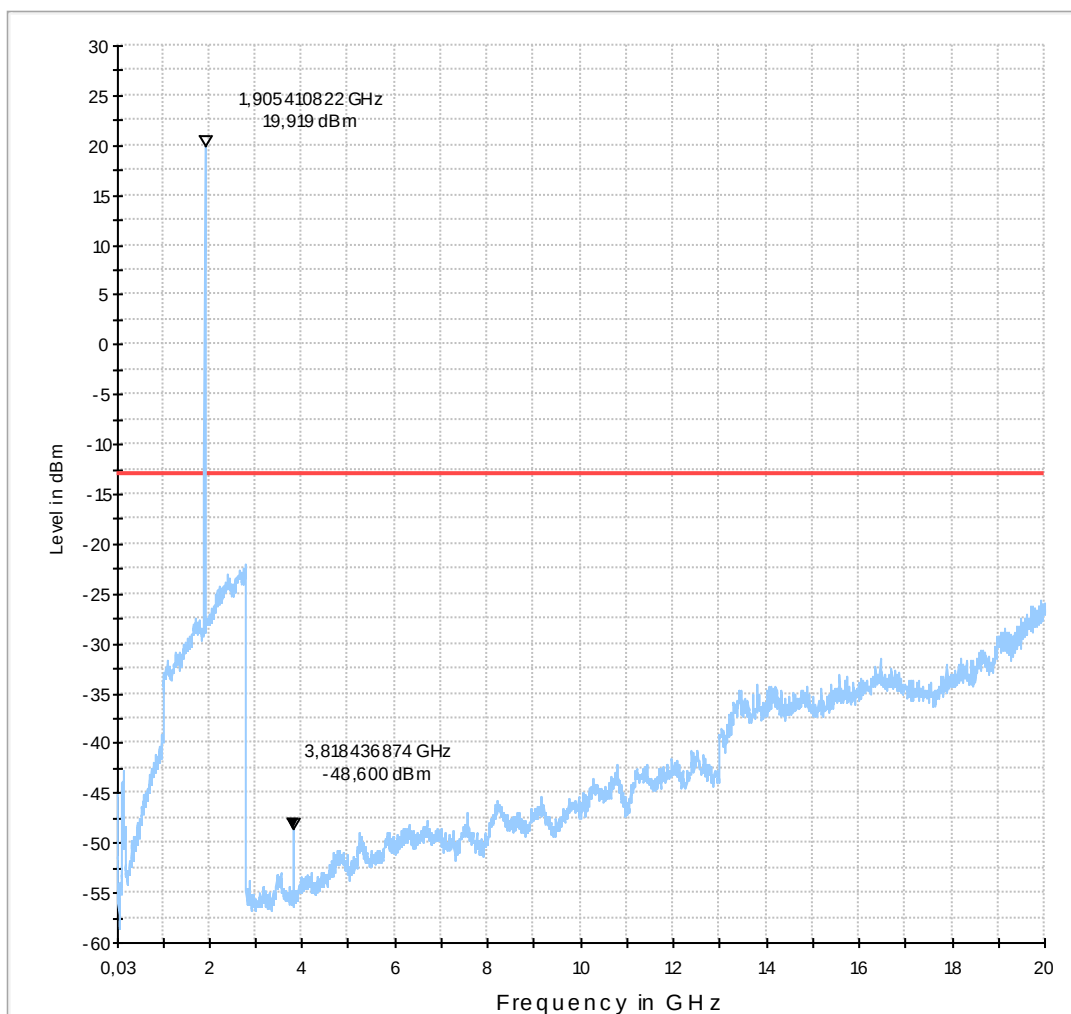


Diagram No.: 8.01_BE_L**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 24, RSS-133
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated low channel 9262 (fc = 1852.4 MHz), RMC
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030415_FCC_Part24_UMTS-FDD II_TX_low_channel_band_edge

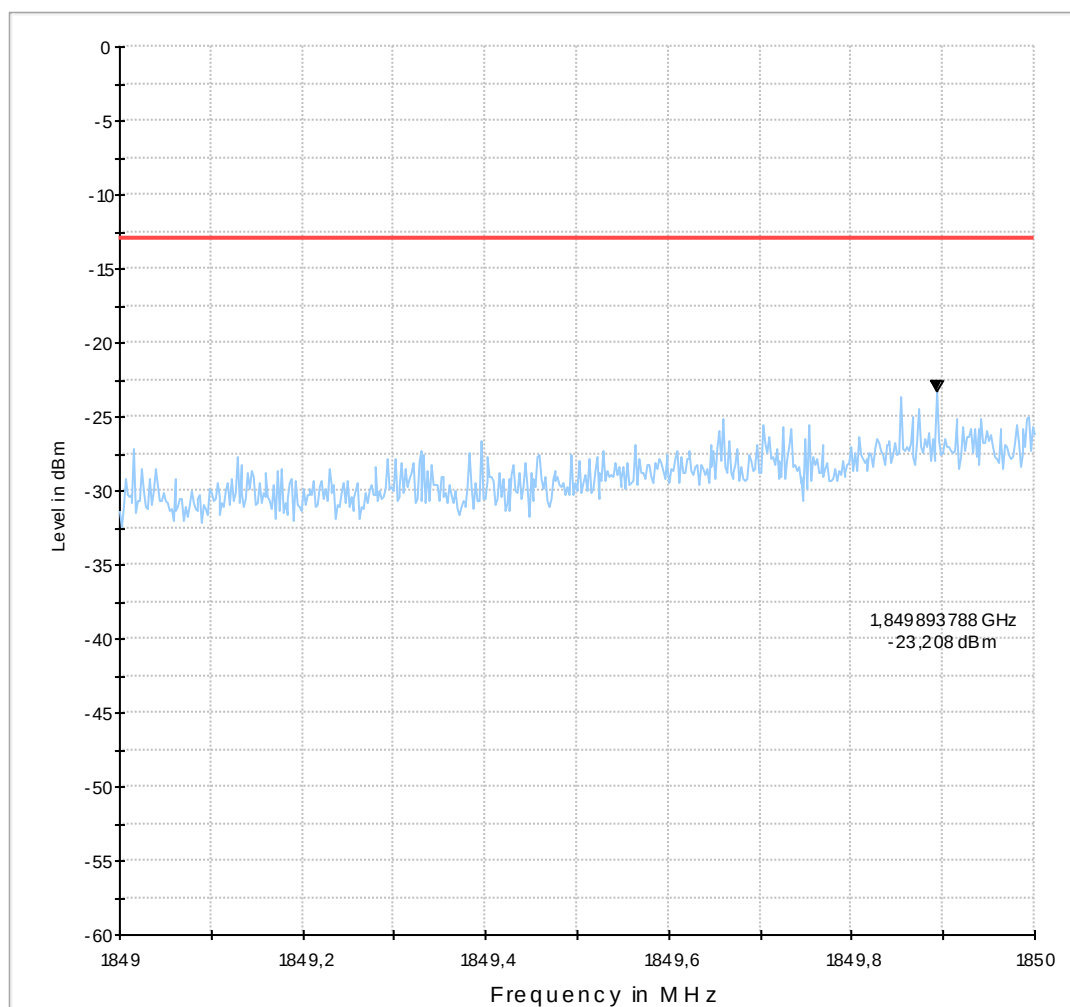


Diagram No.: 8.03_BE_H**Common Information**

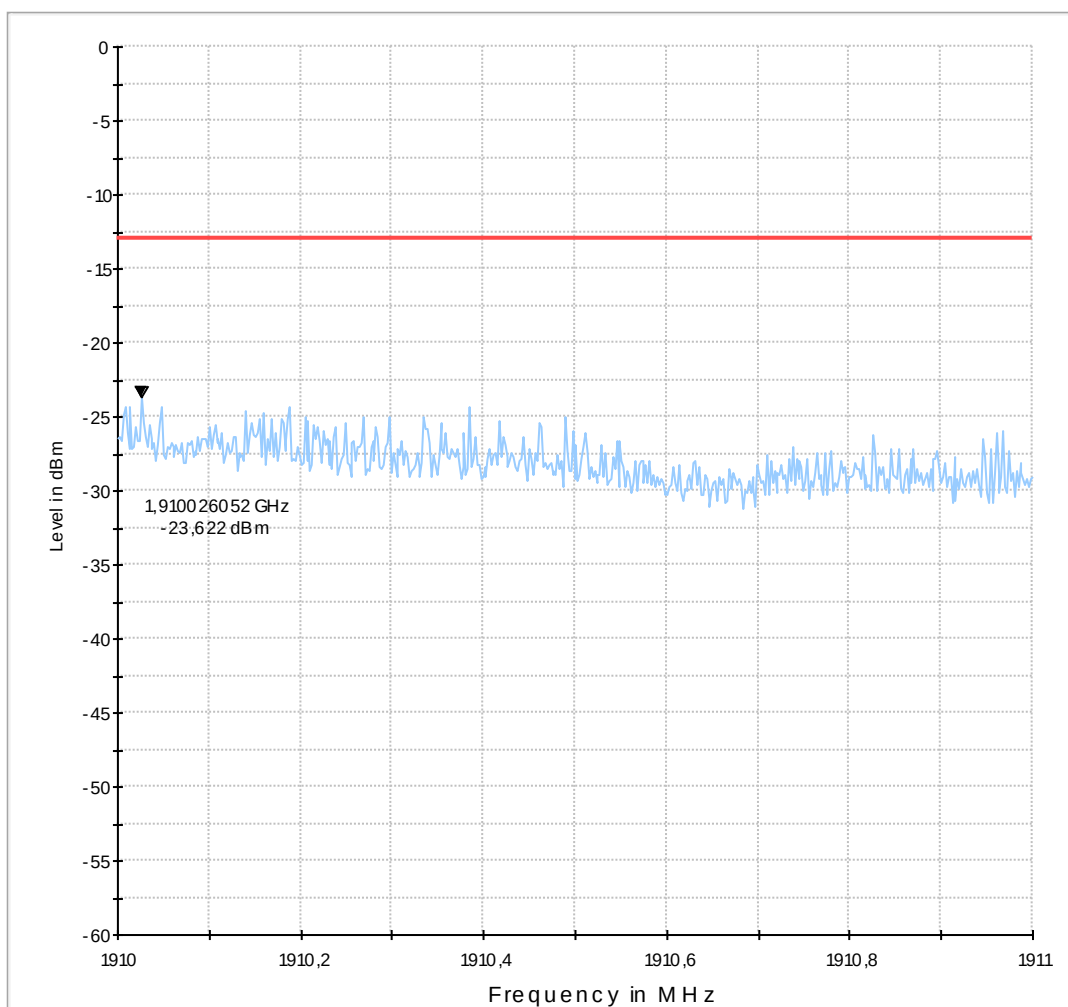
Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 24, RSS-133
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated high channel 9538 (fc = 1907.5 MHz), RMC
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030416_FCC_Part24_UMTS-FDD II_TX_high_channel_band_edge



2.4 E.I.R.P.(radiated) – FDD II Mode

Diagram no.: 8.01_FDD II_EIRP_RMC_L

Common Information

Test Description:	UMTS FDDII - ERP Carrier Measurement
Test location:	CETECOM GmbH Essen
Test site:	Fully Anechoic Room (FAR)
Ant. pol.:	horizontal/vertical
Test standards	FCC § 24.232, IC RSS-132:4.4
Op. mode:	UE allocated channel 9262 (fc = 1852.4 MHz), RMC
Operator	Tas
SAP no.:	6-0143-12-11-2a

EUT Information

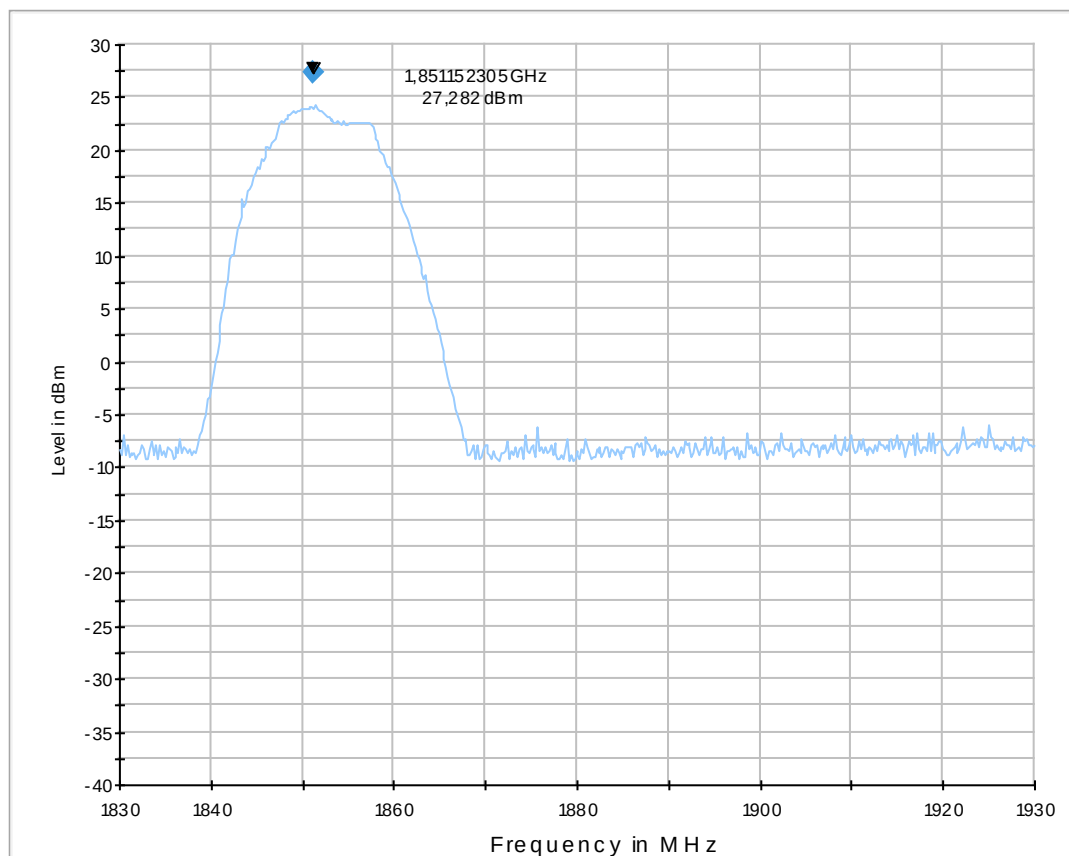
Manufacturer:	ublox
Model:	LISA-U260
Type:	GSM_GPRS_EDGE/FDD_HSUPA Module

EUT:	LISA-U260, RF Sample
HW version:	tbd
SW version:	tbd
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth h (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1851.152305	27.3	10000.0	10000.000	H	16.0	90.0	-63.1

030422a_FCC_Part24_UMTS-FDD II_Carrier_Measurement_Ch9262_CMU_R



8.02_FDDII_EIRP_RMC_M

Common Information

Test Description: EIRP Measurement UMTS FDDII
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Room (FAR)
 Test Standard: FCC § 24.232(c), RSS-133:4.1
 Operating Mode: UE allocated channel 9400 (fc = 1880.0 MHz), RMC
 Environmental Conditions: Humidity: 50 %rH; Temperature: 20.2 °C
 Operator: Tas
 6-0143-12-11-2a

EUT Information

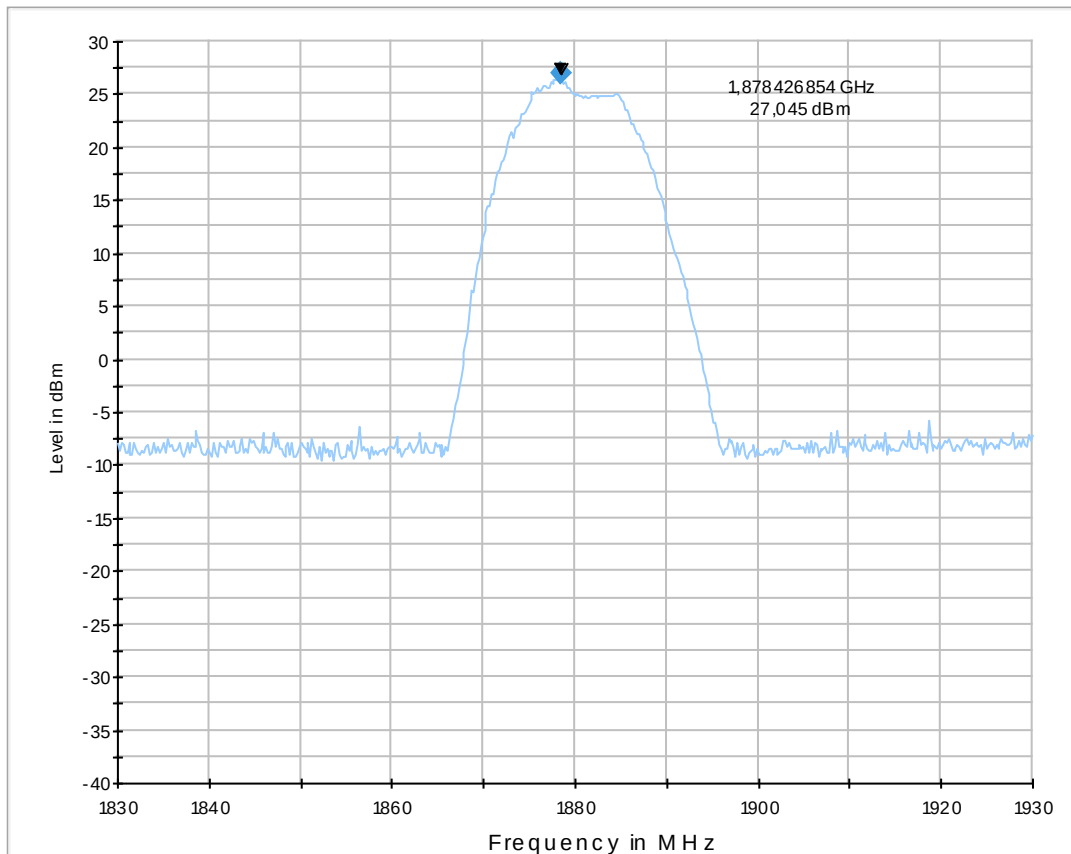
Manufacturer: ublox
 Model: LISA-U260
 Type: GSM_GPRS_EDGE/FDD_HSUPA Module

 EUT: LISA-U260, RF Sample
 HW version: tbd
 SW version: tbd
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1878.426854	27.0	10000.0	10000.000	H	9.0	90.0	-63.0

030422b_FCC_Part24_UMTS-FDDII_Carrier_Measurement_Ch9400_CMU_R



8.03_FDDII_EIRP_RMC_H

Common Information

Test Description: EIRP Measurement UMTS FDDII
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Room (FAR)
 Test Standard: FCC § 24.232(c), RSS-133:4.1
 Operating Mode: UE allocated channel 9538 (fc = 1907.6 MHz), RMC
 Environmental Conditions: Humidity: 50 %rH; Temperature: 20.2 °C
 Operator: Tas
 6-0143-12-11-2a

EUT Information

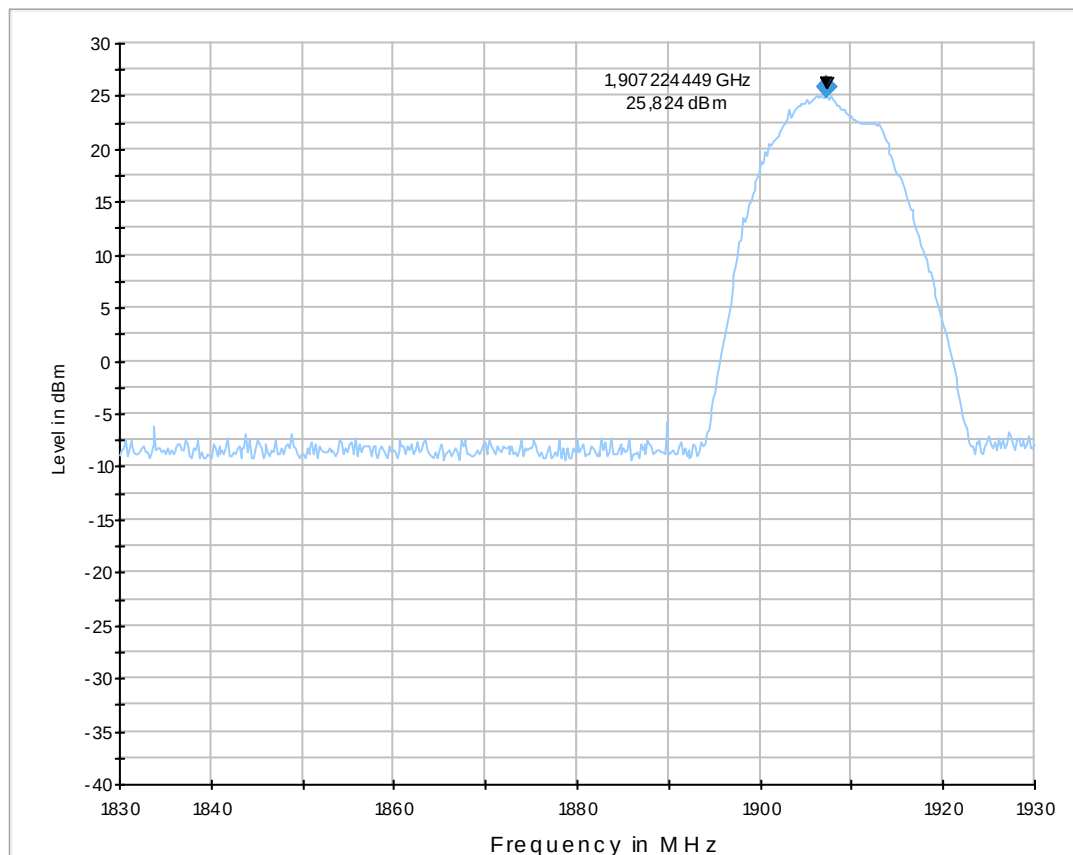
Manufacturer: ublox
 Model: LISA-U260
 Type: GSM_GPRS_EDGE/FDD_HSUPA Module

EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
1907.224449	25.8	10000.0	10000.000	H	197.0	90.0	-62.9

030422c_FCC_Part24_UMTS-FDDII_Carrier_Measurement_Ch9538_CMU_R



2.5 Radiated spurious emissions+ Block-Edge: $f > 30$ MHz – FDD V Mode

8.04_FDD V_RSE_RMC_L

Common Information

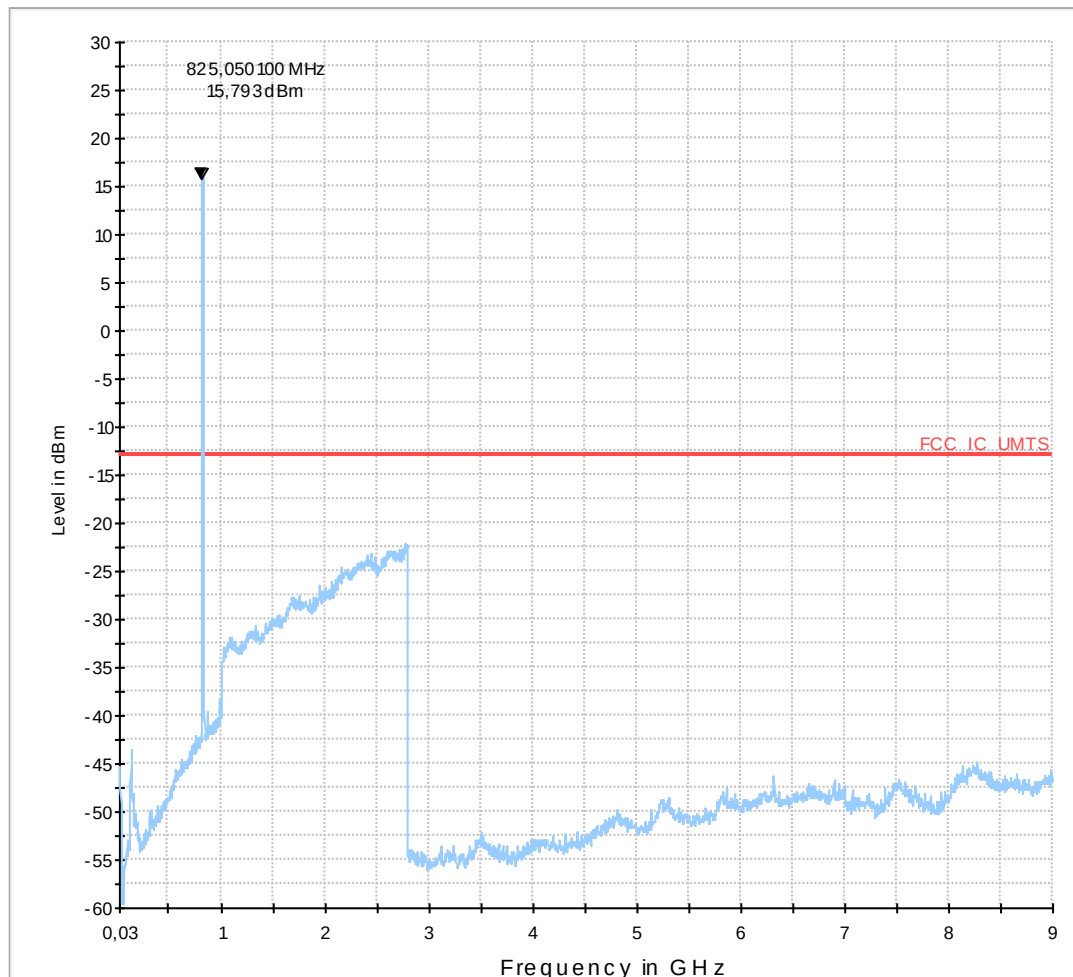
Test Description:	Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)(b), RSS-132:4.5.1
Operating Mode:	UE allocated channel 4132 ($f_c = 826.4$ MHz), RMC
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Comment:	Excluded carrier 4132 of this test case
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030411_FCC_Part22_UMTS-FDDV_TX_all_channels_30M-12G



8.05_FDD V_RSE_RMC_M

Common Information

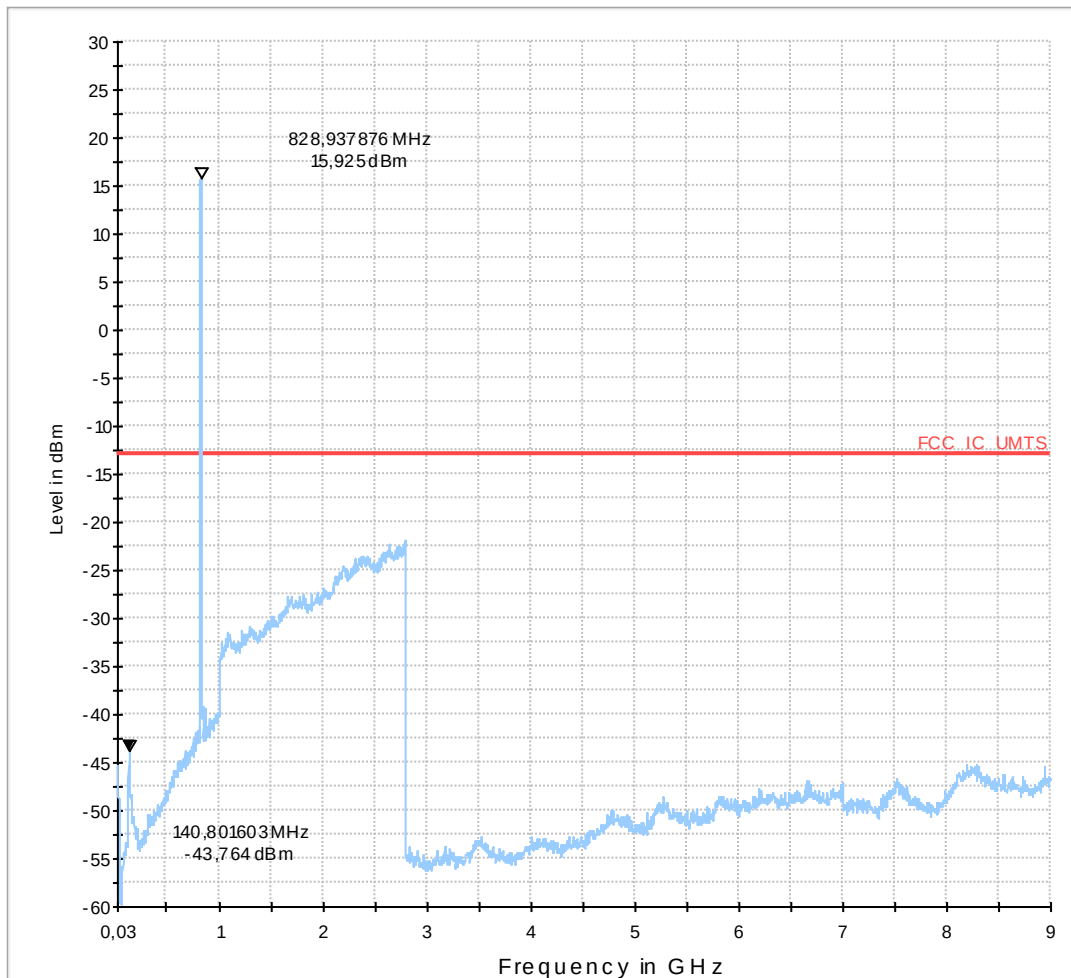
Test Description:	Radiated Spurious Emissions UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.917(a)(b), RSS-132:4.5.1
Operating Mode:	UE allocated channel 4183 (fc = 836.6 MHz), RMC
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Comment:	Excluded carrier 4183 of this test case
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030411_FCC_Part22_UMTS-FDDV_TX_all_channels_30M-12G



8.06_FDD V_RSE_RMC_H

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)(b), RSS-132:4.5.1
Operating Mode:	UE allocated channel 4233 (fc = 846.6 MHz), HSPA
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Comment:	Excluded carrier 4233 of this test case
Operator:	Tas
	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

030411_FCC_Part22_UMTS-FDDV_TX_all_channels_30M-12G

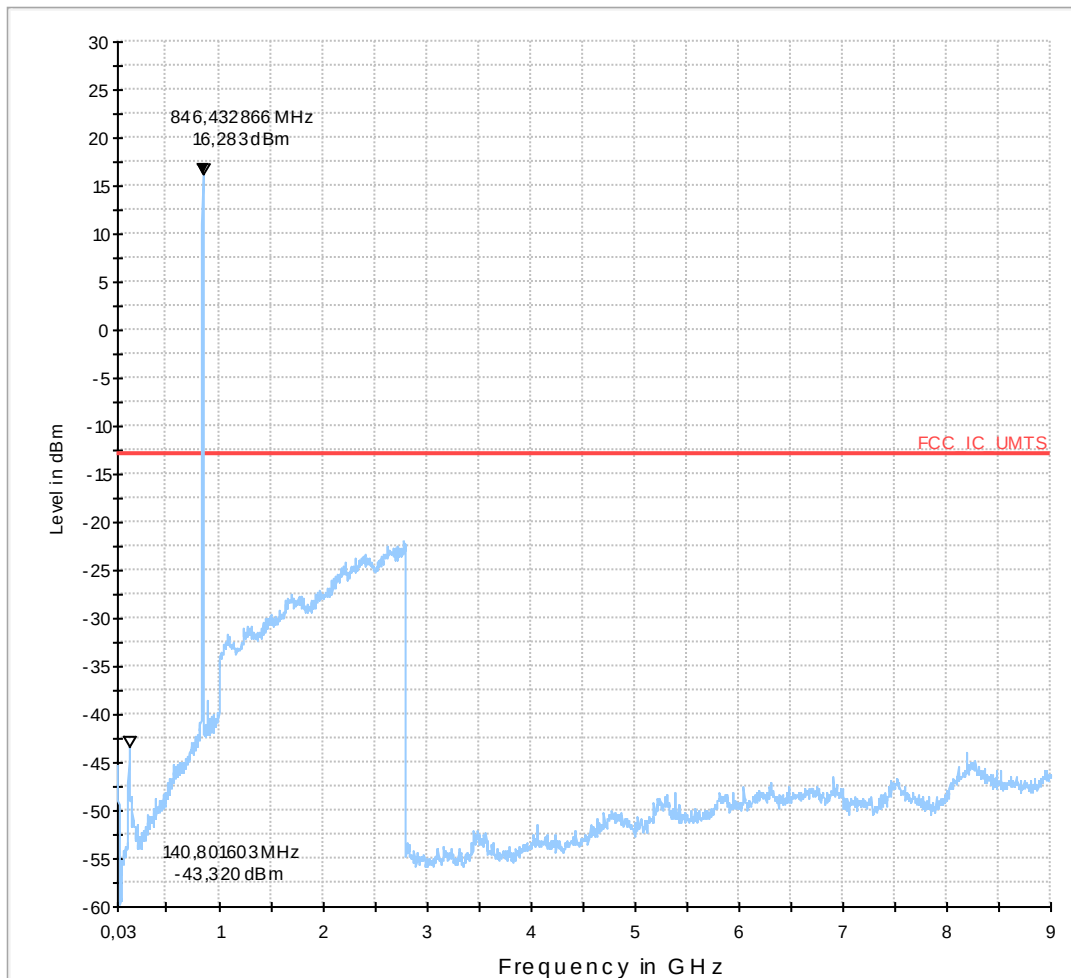


Diagram No.: 8.04_BE_L**Common Information**

Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 22, RSS-132
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated low channel 4132 (fc = 826,4 MHz), RMC
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010412_FCC_Part22_UMTS-FDDII_TX_channel_4132_band_edge

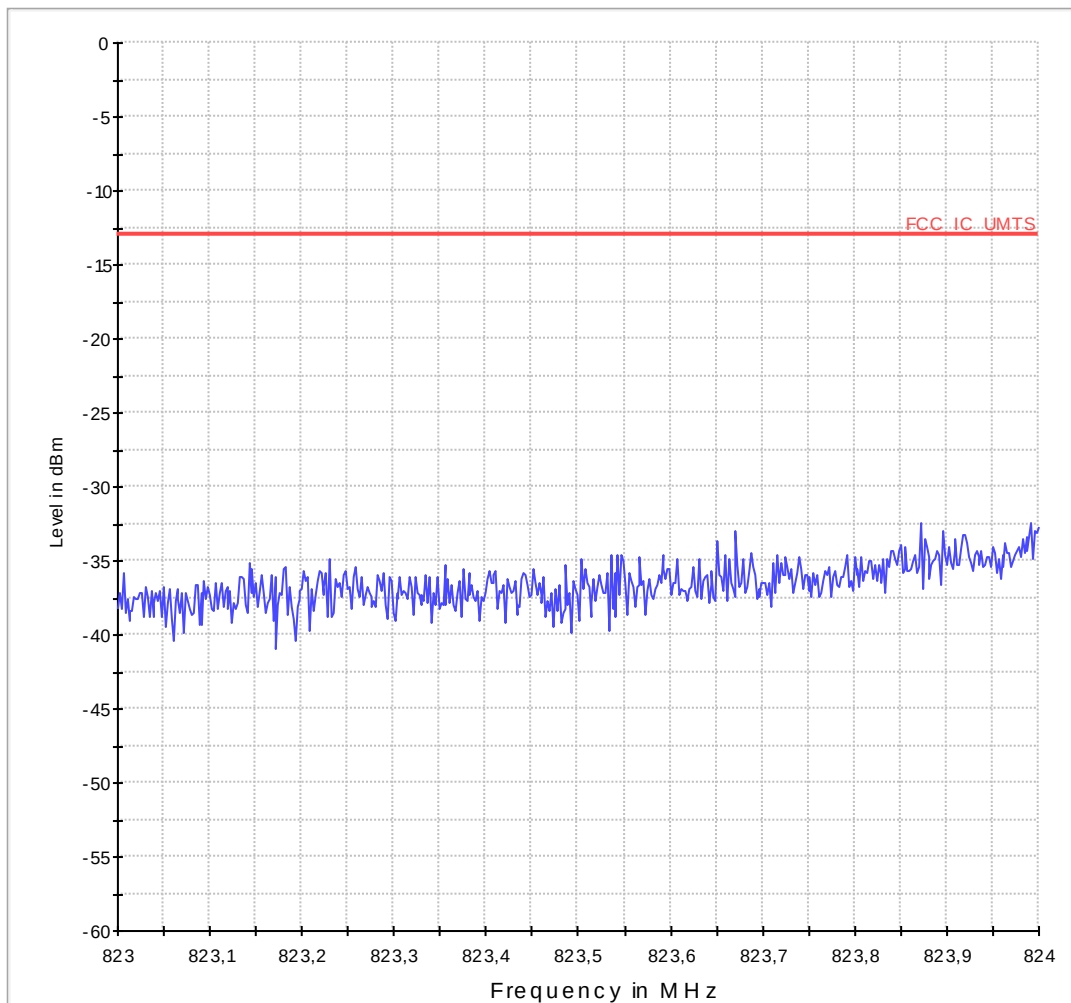


Diagram No.: 8.06_BE_H**Common Information**

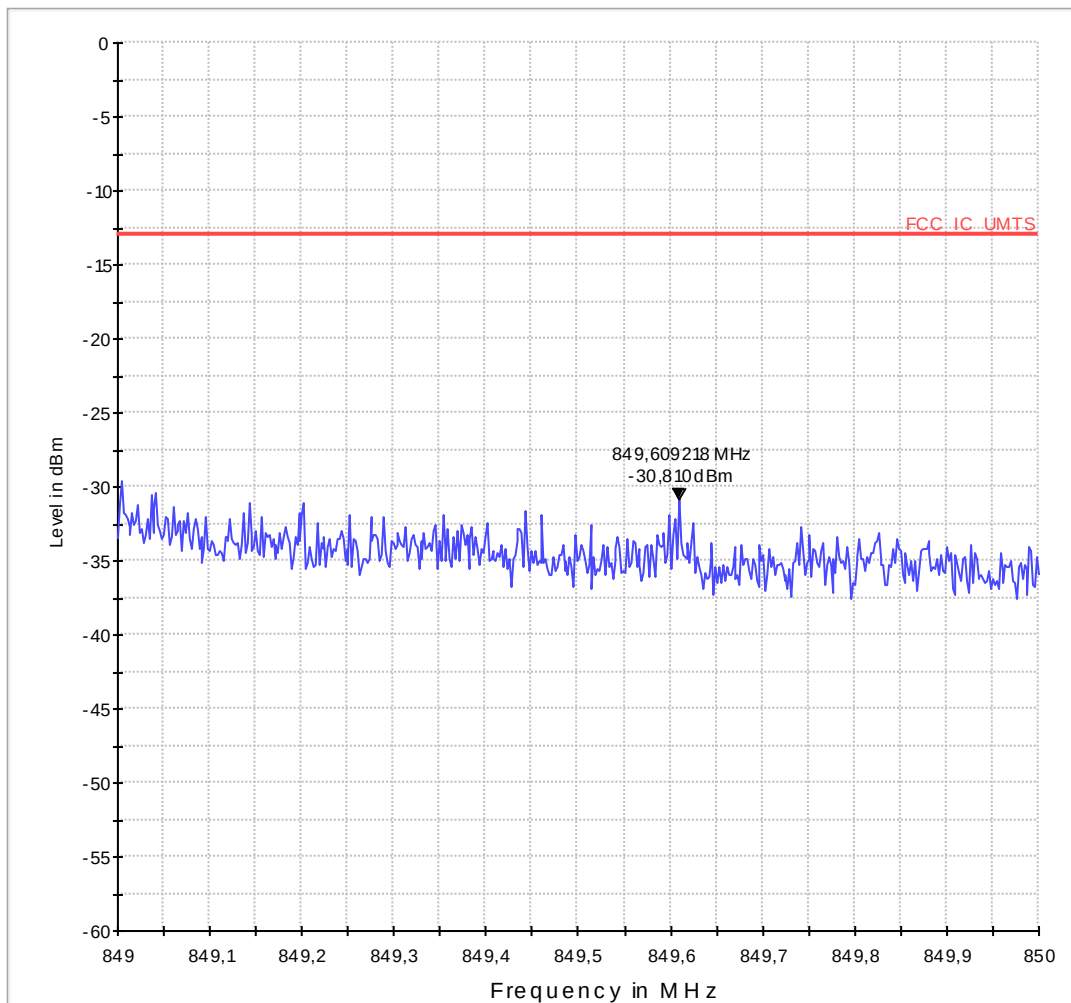
Test Description:	Band-Edge compliance radiated
Test Site:	FAR
Test Standard:	FCC Part 22, RSS-132
Antenna polarisation:	vertical / horizontal
Operation mode:	UE allocated high channel 4233 (fc = 846.6 MHz), RMC
Operator Name:	Tas
Comment:	6-0143-12-11-2a

EUT Information

Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

010413_FCC_Part22_UMTS-FDDII_TX_channel_4233_band_edge



2.6 E.I.R.P.(radiated) – FDD V Mode

8.04_FDD V_ERP_RMC_L

Common Information

Test Description:	ERP Measurement UMTS FDDV
Test Site Location:	CETECOM GmbH Essen
Test Site:	Fully Anechoic Room (FAR)
Test Standard:	FCC Part 22.913(2), RSS-132:4.4
Operating Mode:	UE allocated channel 4132 (fc = 826.4 MHz), RMC
Environmental Conditions:	Humidity: 50 %rH; Temperature: 20.2 °C
Operator:	Tas
	6-0143-12-11-2a

EUT Information

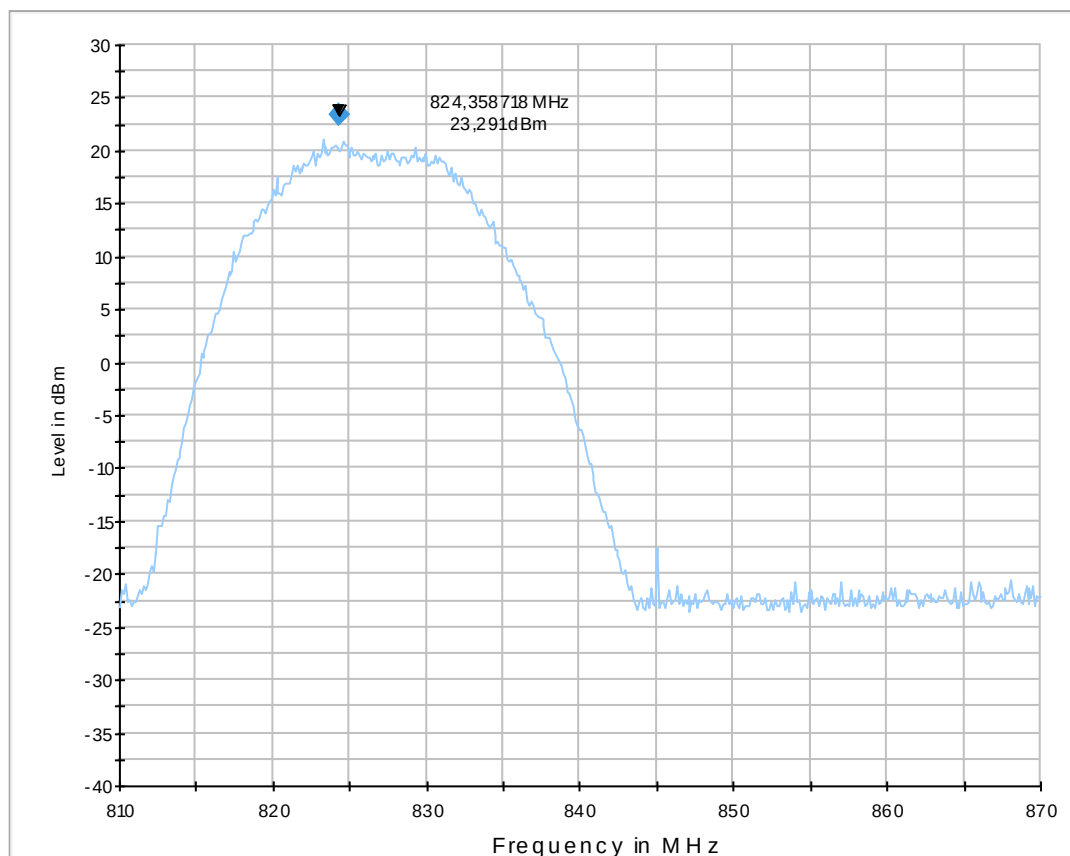
Manufacturer:	ublox AG
Model:	LISA-U260
Type:	GSM/FDD Module

EUT:	LISA-U260, RF Sample
HW version:	146AC0
FW version:	22.60
Serial number:	354235050002264
Connected Accessories:	Taoglass antenna, Micro USB cable, AC/DC Power Supply
Power Supply:	12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
Comments:	SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
824.358718	23.3	10000.0	10000.000	H	85.0	0.0	-76.0

030421a_FCC_Part22_UMTS-FDDV_Carrier_Ch4132_RMC_CMU_RF2



8.05_FDD V_ERP_RMC_M

Common Information

Test Description: ERP Measurement UMTS FDD V
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Room (FAR)
 Test Standard: FCC Part 22.913(2), RSS-132:4.4
 Operating Mode: UE allocated channel 4183 (fc = 836.6 MHz), RMC
 Environmental Conditions: Humidity: 50 %rH; Temperature: 20.2 °C
 Operator: Tas
 6-0143-12-11-2a

EUT Information

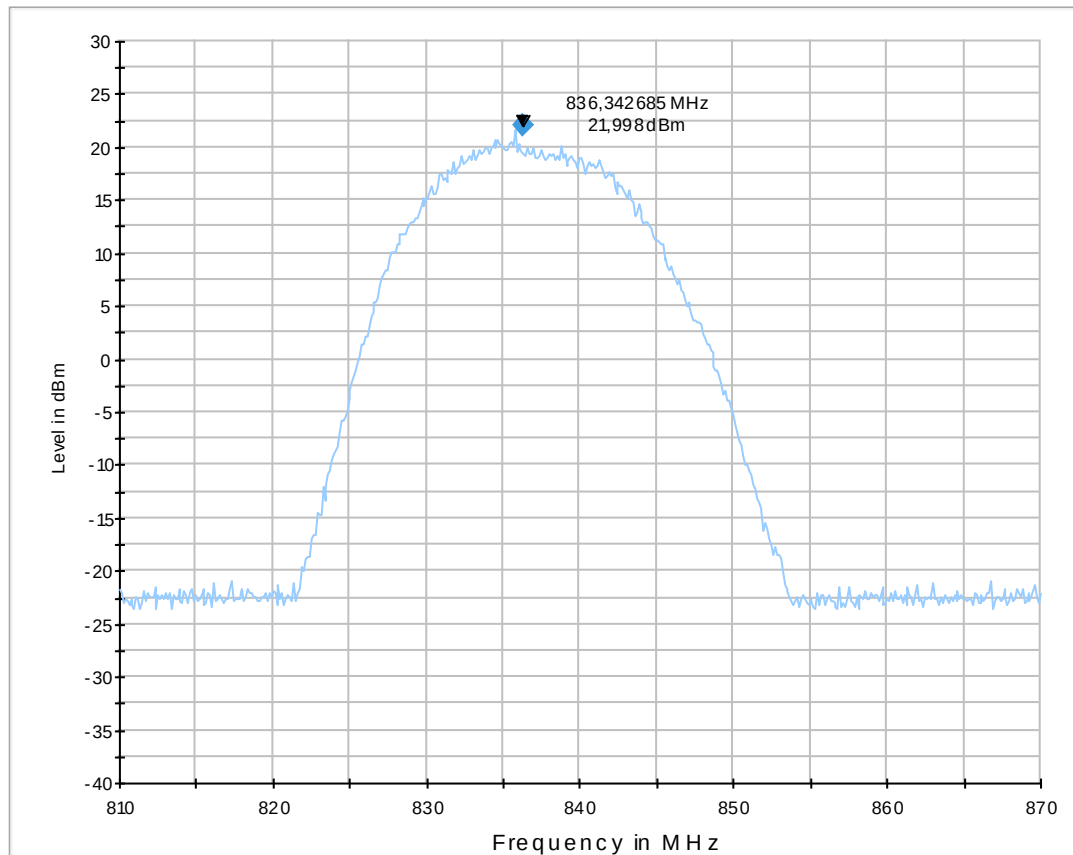
Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

 EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
836.342685	22.0	10000.0	10000.000	H	103.0	0.0	-75.9

030421b_FCC_Part22_UMTS-FDD V_Carrier_Ch4183_RMC_CMU_RF2



8.06_FDD V_ERP_RMC_H

Common Information

Test Description: ERP Measurement UMTS FDD V
 Test Site Location: CETECOM GmbH Essen
 Test Site: Fully Anechoic Room (FAR)
 Test Standard: FCC Part 22.913(2), RSS-132:4.4
 Operating Mode: UE allocated channel 4233 (fc = 846.6 MHz), HSPA
 Environmental Conditions: Humidity: 50 %rH; Temperature: 20.2 °C
 Operator: Tas
 6-0143-12-11-2a

EUT Information

Manufacturer: ublox AG
 Model: LISA-U260
 Type: GSM/FDD Module

 EUT: LISA-U260, RF Sample
 HW version: 146AC0
 FW version: 22.60
 Serial number: 354235050002264
 Connected Accessories: Taoglass antenna, Micro USB cable, AC/DC Power Supply
 Power Supply: 12VDC via AC/DC Power supply with 110VAC/ 60 Hz Main
 Comments: SN 113

Final Result 1

Frequency (MHz)	MaxPeak (dBm)	Meas. Time (ms)	Bandwidth (kHz)	Polarization	Azimuth (deg)	Elevation (deg)	Corr. (dB)
844.599198	21.6	10000.0	10000.000	H	149.0	0.0	-76.0

030421b_FCC_Part22_UMTS-FDD V_Carrier_Ch4233_RMC_CMU_RF2

