

FCC PART 22H, 24E
MEASUREMENT AND TEST REPORT

For

JDTECK INC

107 South Hoagland Blvd, Kissimmee FL 34741

FCC ID: SQX-WCB-819

Report Type: Original Report	Product Type: Wireless Cellular Repeater
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Report Number: RSZ110930002-00	
Report Date: 2012-06-14	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP*, or any agency of the Federal Government.

* This report may contain data that are not covered by the NVLAP accreditation and are marked with an asterisk "★" (Rev.2)

TABLE OF CONTENTS

GENERAL INFORMATION.....	3
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	3
OBJECTIVE	3
RELATED SUBMITTAL(S)/GRANT(S).....	3
TEST METHODOLOGY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
JUSTIFICATION	5
EQUIPMENT MODIFICATIONS	5
SUPPORT EQUIPMENT LIST AND DETAILS	5
EXTERNAL I/O CABLE.....	5
CONFIGURATION OF TEST SETUP	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
FCC §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)	8
APPLICABLE STANDARD	8
TEST DATA	8
FCC §2.1047 - MODULATION CHARACTERISTIC	10
FCC § 2.1046, § 22.913(A), § 24.232(C) - RF OUTPUT POWER	11
APPLICABLE STANDARD	11
TEST PROCEDURE	11
TEST EQUIPMENT LIST AND DETAILS.....	11
TEST DATA	12
FCC §2.1049, §22.917, §22.905& §24.238 - OCCUPIED BANDWIDTH	39
APPLICABLE STANDARDS.....	39
TEST PROCEDURE	39
TEST EQUIPMENT LIST AND DETAILS.....	39
TEST DATA	39
FCC §2.1051, §22.917(A) &§24.238(A) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS	76
APPLICABLE STANDARDS.....	76
TEST PROCEDURE	76
TEST EQUIPMENT LIST AND DETAILS.....	76
TEST DATA	76
FCC §2.1053, §22.917&§24.238- SPURIOUS RADIATED EMISSIONS	117
APPLICABLE STANDARDS.....	117
TEST PROCEDURE	117
TEST EQUIPMENT LIST AND DETAILS.....	117
TEST DATA	117
FCC §22.917(A) &§24.238(A) - BAND EDGES.....	119
APPLICABLE STANDARDS.....	119
TEST PROCEDURE	119
TEST EQUIPMENT LIST AND DETAILS.....	119
TEST DATA	119
DECLARATION LETTER	138

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *JDTECK INC*'s product, model number: *WCB-819-NF-35 (FCC ID: SQX-WCB-819)* or the ("EUT") as referred to in this report is a *Wireless Cellular Repeater*, which was measures approximately: 13.5 cm (L) x 12.5 cm (W) x 3.6 cm (H), rated input voltage: DC 9 V adapter.

Adapter Information: AC/DC ADAPTER

Model: GM602-090300

Input: AC 100-240V 50/60Hz, 2.0 A

Output: DC 9V 3.0A 27VA Max LPS

Note: The serial products, model WCB-819-NF-35, WCB-819-SMA-35, WCB-819-NF-15 and WCB-819-SMA-15 are electrically identical, model WCB-819-NF-35 was selected to test, the difference among them is just the model name due to different gains achieved by adjusting the potentiometer or I/O port, and please refers to the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 1206058 (Assigned by BACL, Shenzhen). The EUT was received on 2011-09-30.*

Objective

This report is prepared on behalf of *JDTECK INC* in accordance with Part 2-Subpart J, Part 22 Subpart H, and Part 24 Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, spurious emission at antenna terminal, spurious radiated emission, frequency stability, and band edge.

Related Submittal(s)/Grant(s)

No related submittal(s)

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E - Personal Communication Services

Applicable Standards: TIA/EIA 603-D, ANSI C63.4-2009.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

The uncertainty of any RF tests which use conducted method measurement is 0.96 dB, the uncertainty of any radiation on emissions measurement is 4.0 dB

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to TIA/EIA-603-D.

The final qualification test was performed with the EUT operating at normal mode.

Equipment Modifications

No modification was made to the EUT.

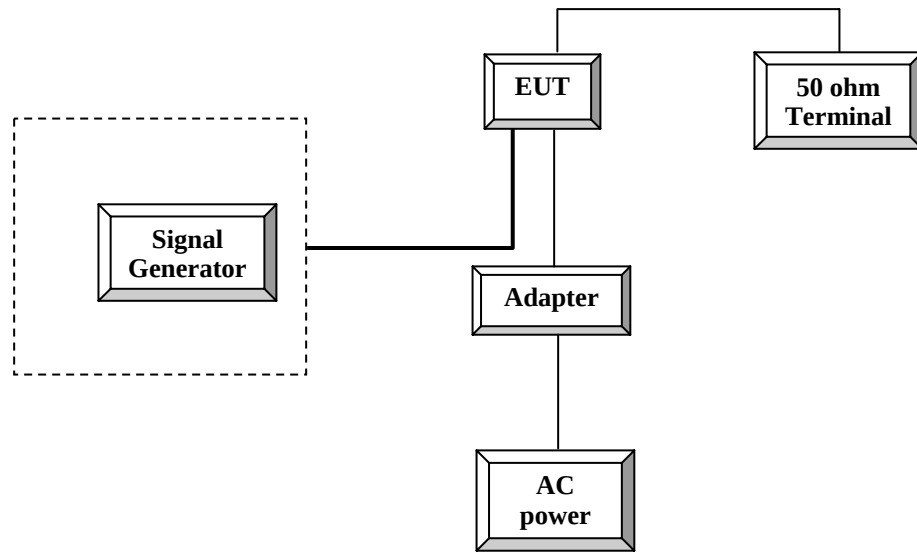
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R&S	Universal Radio Communication Tester (Signal Generator)	CMU200	109038

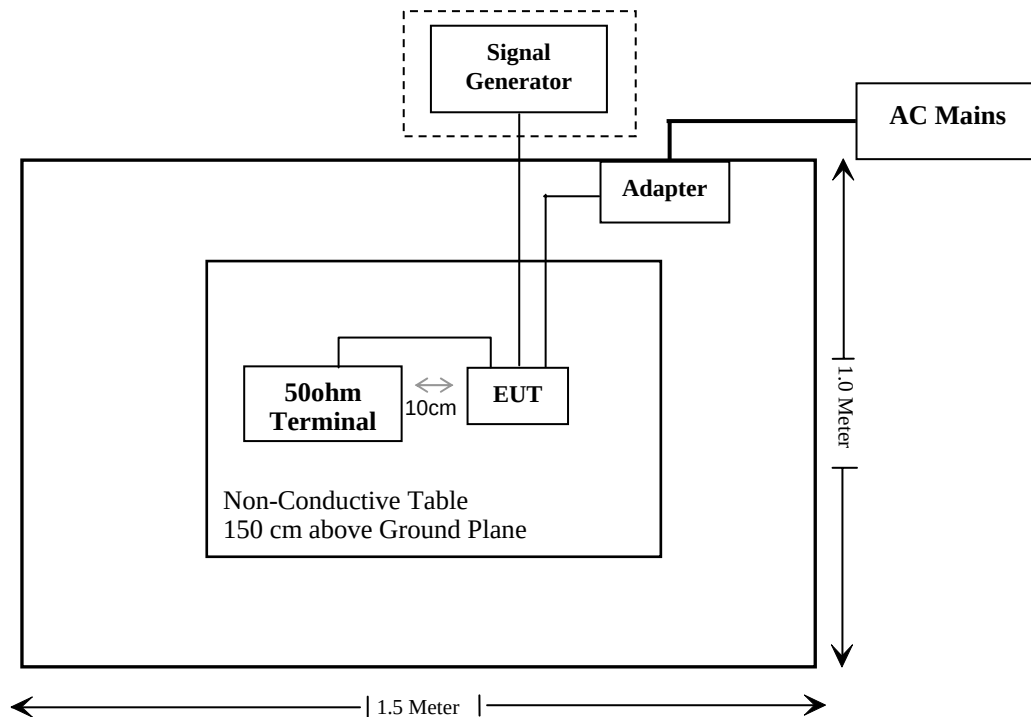
External I/O Cable

Cable Description	Length (m)	From Port	To
Unshielded Detachable Power Cable	1.80	AC power	Adapter
Unshielded Detachable Power Cable	2.00	Adapter	EUT
Coaxial Cable	1.20	Signal Generator	EUT
Coaxial Cable	1.20	RF Terminal	EUT

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b)(1), §2.1091	Maximum Permissible Exposure (MPE)	Compliance
§2.1046; § 22.913 (a); § 24.232 (a)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905 § 22.917; § 24.238	Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053, § 22.917 (a); § 24.238 (a)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a)	Out of band emission, Band Edge	Compliance
§ 2.1055, § 22.355; § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Not Applicable*

Not applicable*: This device is a repeater.

FCC §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart FCC §1.1307 (b)(1) and §2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mw/cm ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally **numeric** gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

CDMA

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Cellular Band								
Uplink	834.70	14	25.12	20.12	102.80	25	0.3290	0.5565
Downlink	893.31	10	10.00	0.67	1.17	25	0.0015	0.5955
PCS Band								
Uplink	1880.00	14	25.12	19.86	96.83	25	0.3099	1.000
Downlink	1931.25	10	10.00	0.14	1.03	25	0.0013	1.000

GSM

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Cellular Band								
Uplink	836.6	14	25.12	20.20	104.71	25	0.3351	0.5577
Downlink	893.8	10	10.00	0.15	1.04	25	0.0013	0.5959
PCS Band								
Uplink	1880.00	14	25.12	20.13	103.04	25	0.3297	1.000
Downlink	1930.20	10	10.00	0.11	1.03	25	0.0013	1.000

EDGE

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Cellular Band								
Uplink	828.2	14	25.12	20.65	116.14	25	0.3716	0.5521
Downlink	869.2	10	10.00	0.50	1.12	25	0.0014	0.5795
PCS Band								
Uplink	1850.20	14	25.12	20.20	104.71	25	0.3351	1.000
Downlink	1930.20	10	10.00	0.29	1.07	25	0.0014	1.000

WCDMA

Mode	Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Cellular Band								
Uplink	826.4	14	25.12	20.16	103.75	25	0.3320	0.5509
Downlink	891.6	10	10.00	0.63	1.16	25	0.0015	0.5944
PCS Band								
Uplink	1907.60	14	25.12	20.52	112.72	25	0.3607	1.000
Downlink	1987.60	10	10.00	0.18	1.04	25	0.0013	1.000

Note:

Manufacturer declares that the maximum antenna gain is: 14 dBi for uplink (outdoor) and 10 dBi for downlink (indoor).

Manufacturer declares that the nearest distance between human and the EUT is 25 cm

Result: compliant

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H and 24E, there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

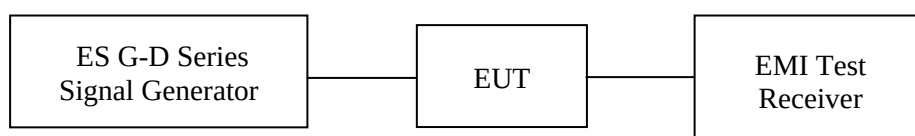
FCC § 2.1046, § 22.913(a), § 24.232(c) - RF OUTPUT POWER**Applicable Standard**

According to FCC §2.1046, §22.913 (a) and §24.232 (a)

Test Procedure

Conducted method:

The RF output of the transmitter was connected to the wireless test set and the spectrum analyzer through sufficient attenuation.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2011-11-11	2012-11-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Felix Li on 2012-02-27 and 2012-02-28.

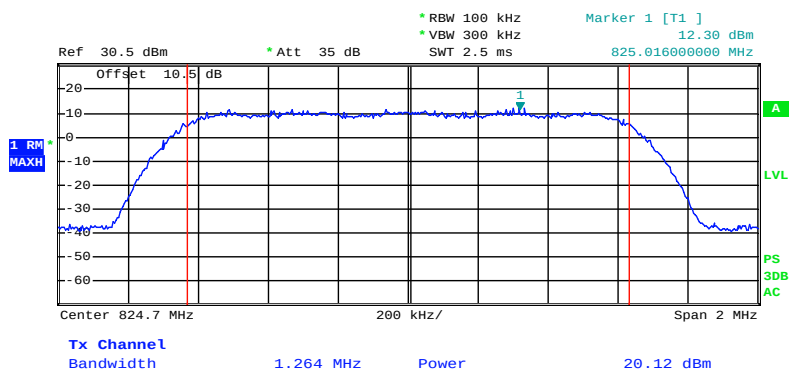
Conducted Power**CDMA**

Mode	Frequency (MHz)	Output power (dBm)
Cellular Band (Part 22H)		
Uplink (824-849 MHz)	824.70	20.12
	836.52	19.73
	848.31	19.82
Downlink (869-894 MHz)	869.70	0.08
	881.52	0.10
	893.31	0.67
PCS Band (Part 24E)		
Uplink (1850-1910 MHz)	1851.25	19.57
	1880.00	19.86
	1908.75	19.69
Downlink (1930-1990 MHz)	1931.25	0.14
	1960.00	0.12
	1988.75	0.03

Please see the below plots.

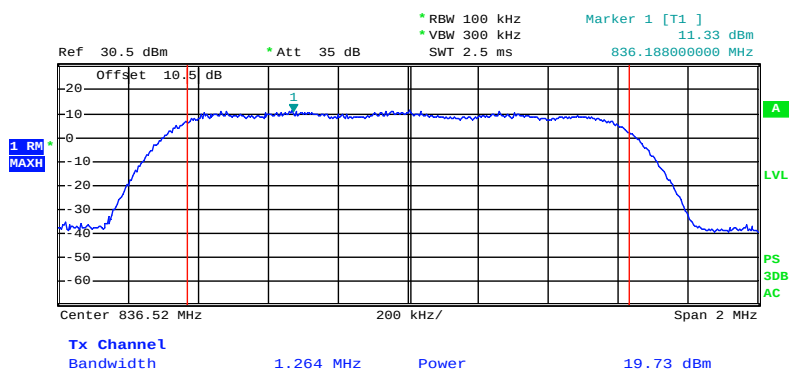
Cellular Band

Uplink, Low Channel



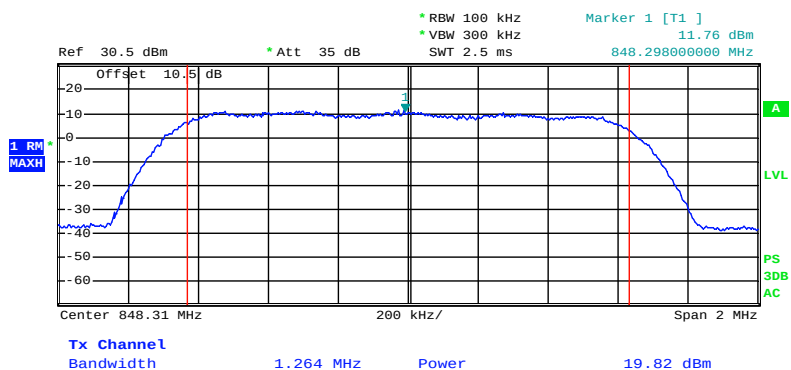
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Uplink, Middle Channel



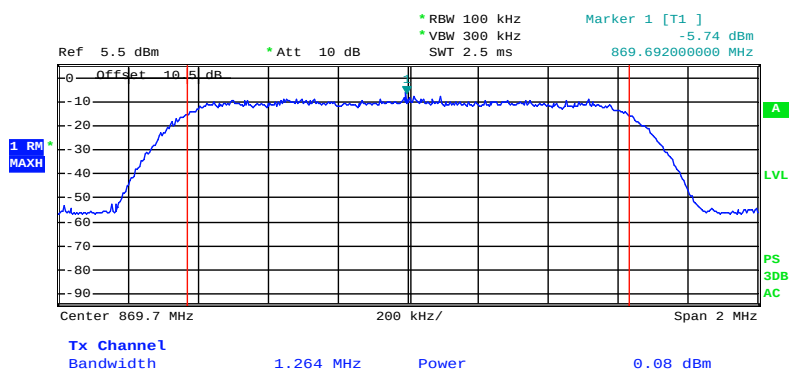
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Uplink, High Channel

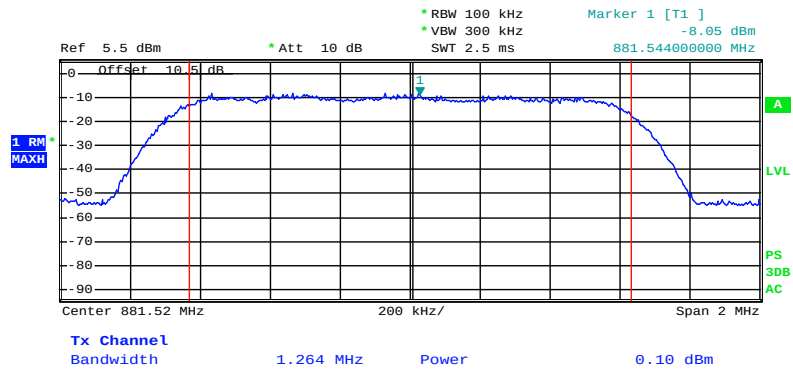


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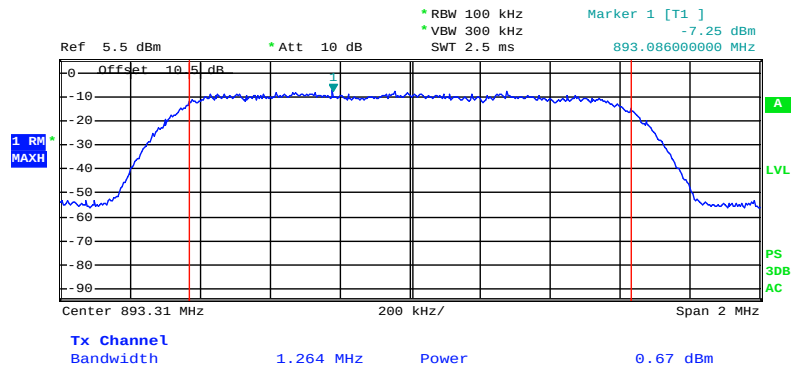
Downlink, Low Channel



Date: 28.FEB.2012 09:14:49

Downlink, Middle Channel

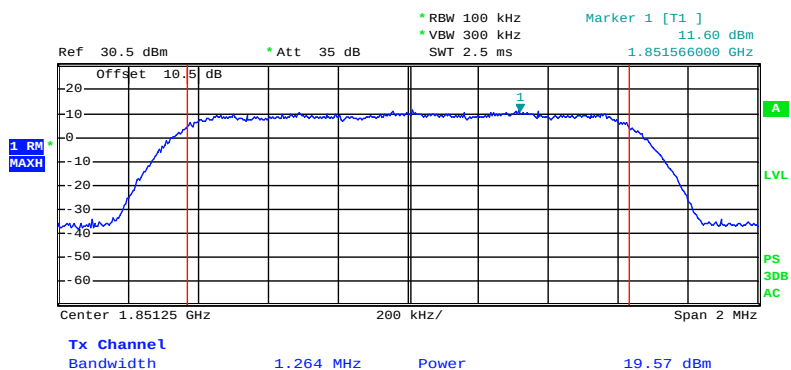
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Downlink, High Channel

Date: 28.FEB.2012 09:12:15

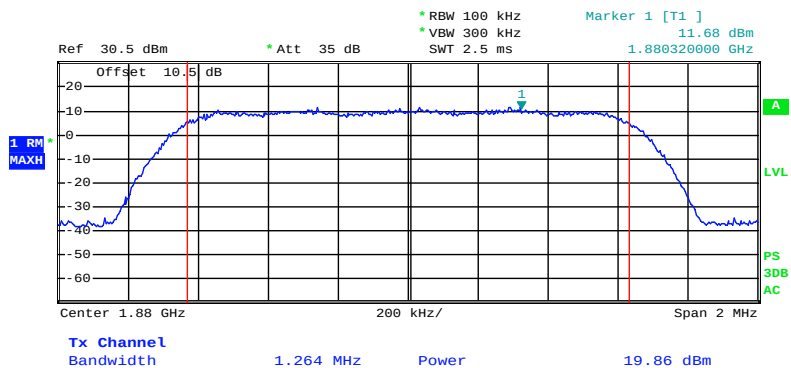
PCS Band

Uplink, Low Channel



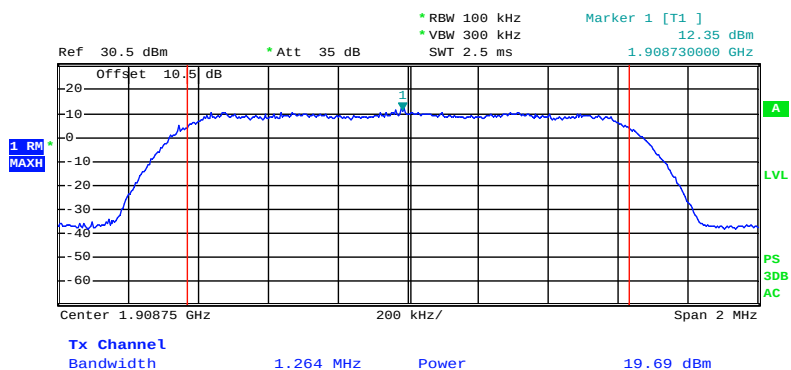
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Uplink, Middle Channel



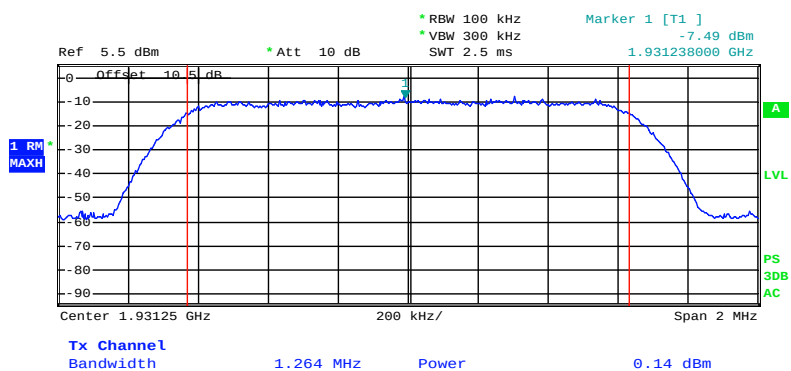
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Uplink, High Channel

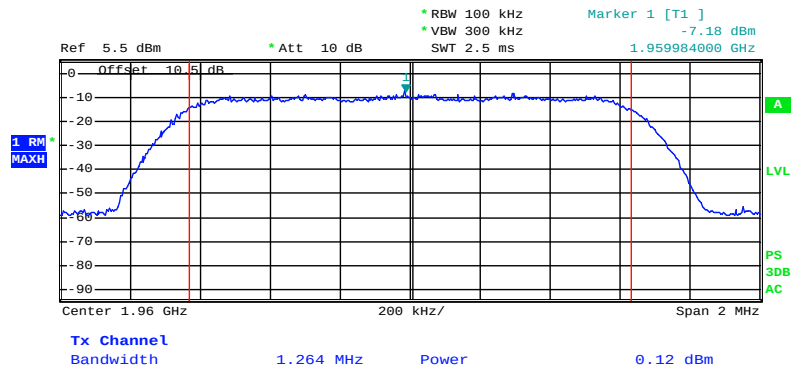


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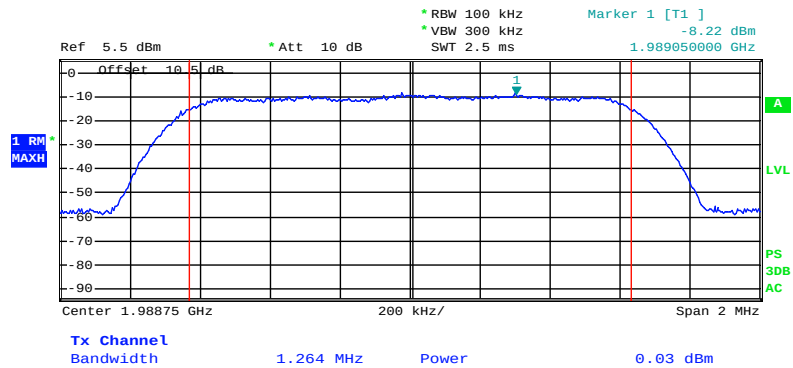
Downlink, Low Channel



Date: 28.FEB.2012 09:05:22

Downlink, Middle Channel

Date: 28.FEB.2012 09:00:57

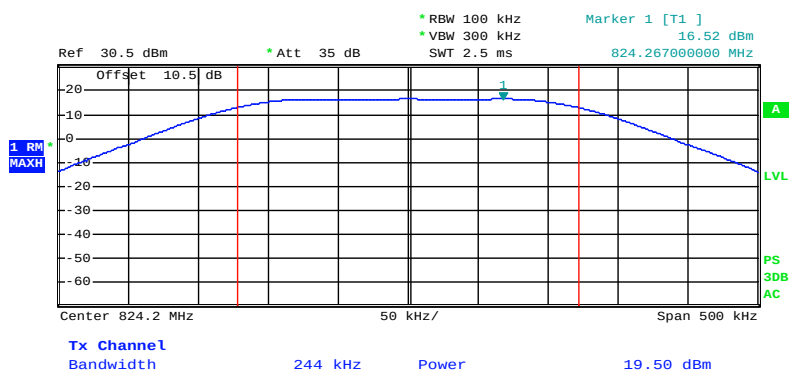
Downlink, High Channel

Date: 28.FEB.2012 09:03:55

GSM

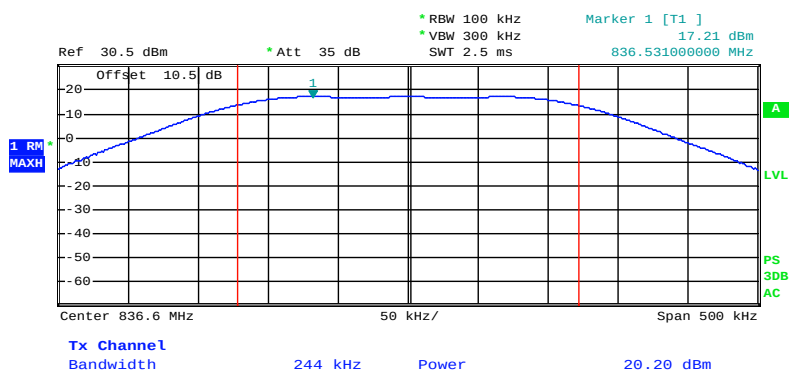
Mode	Frequency (MHz)	Output power (dBm)
Cellular Band (Part 22H)		
Uplink (824-849 MHz)	824.2	19.50
	836.6	20.20
	848.8	19.52
Downlink (869-894 MHz)	869.2	0.08
	881.6	0.03
	893.8	0.15
PCS Band (Part 24E)		
Uplink (1850-1910 MHz)	1850.20	19.83
	1880.00	20.13
	1909.80	19.85
Downlink (1930-1990 MHz)	1930.20	0.11
	1960.00	0.02
	1989.80	0.00

Please see the below plots.

Cellular Band**Uplink, Low Channel**

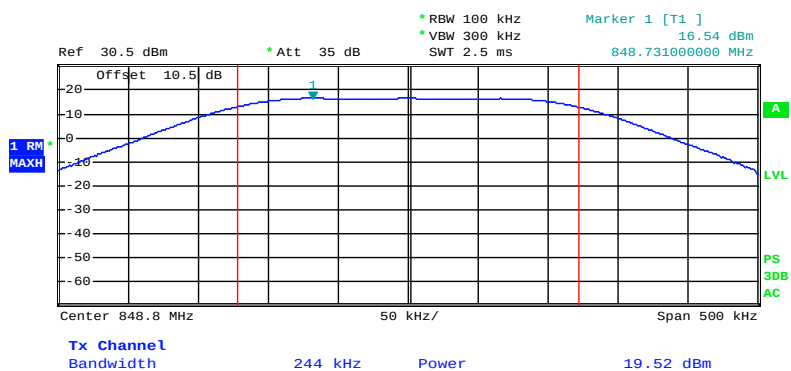
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Uplink, Middle Channel



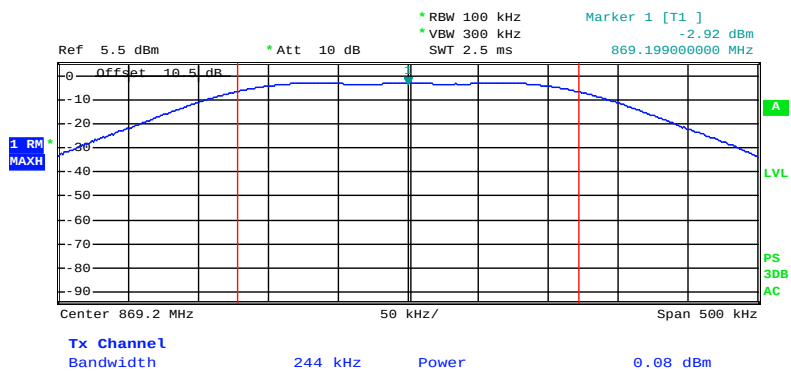
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Uplink, High Channel



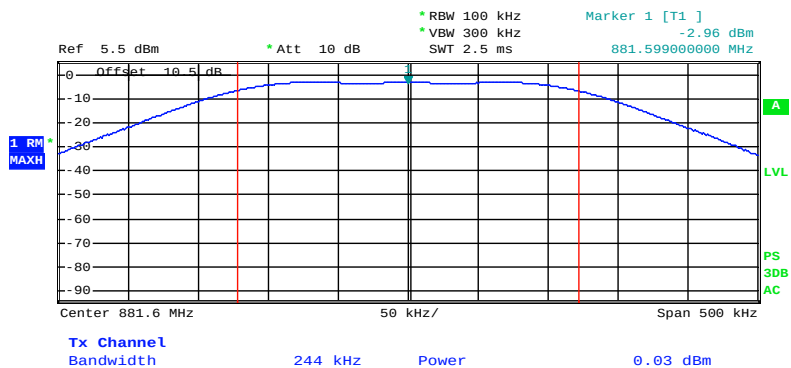
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Downlink, Low Channel

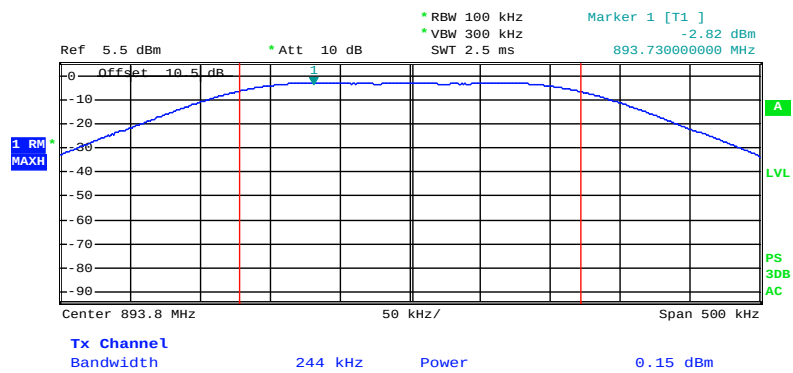


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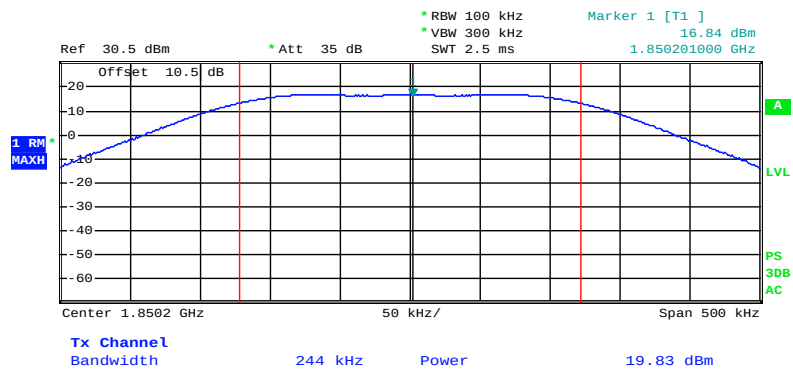
Downlink, Middle Channel



Date: 27.FEB.2012 11:14:49

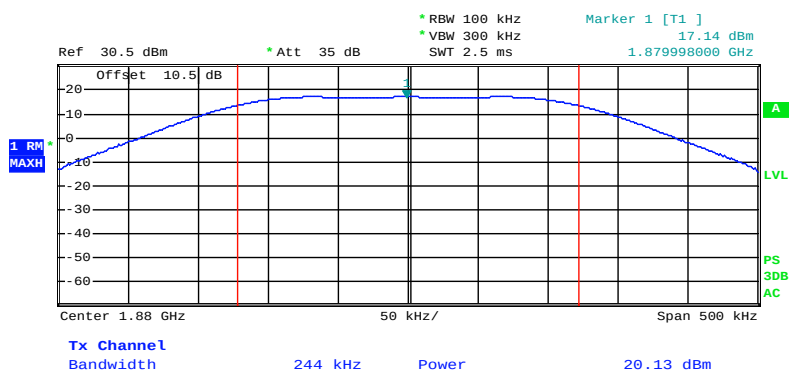
Downlink, High Channel

Date: 27.FEB.2012 11:16:48

PCS Band**Uplink, Low Channel**

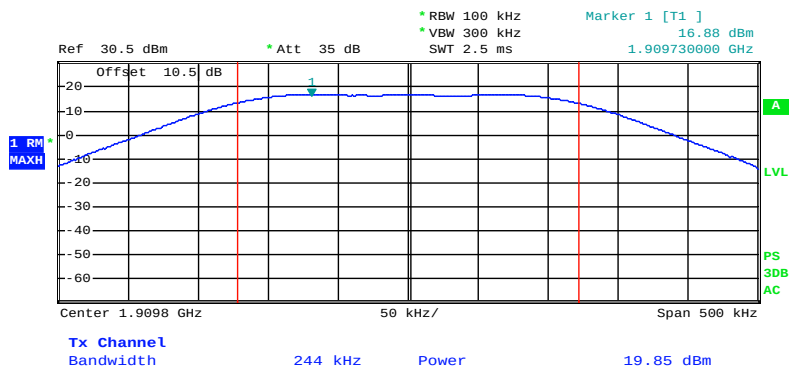
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Uplink, Middle Channel

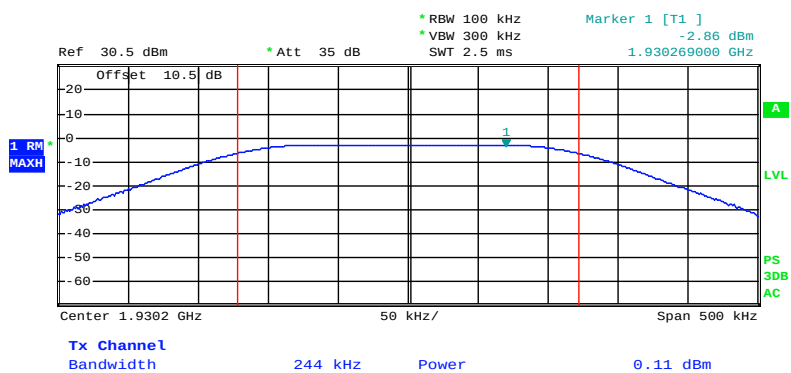


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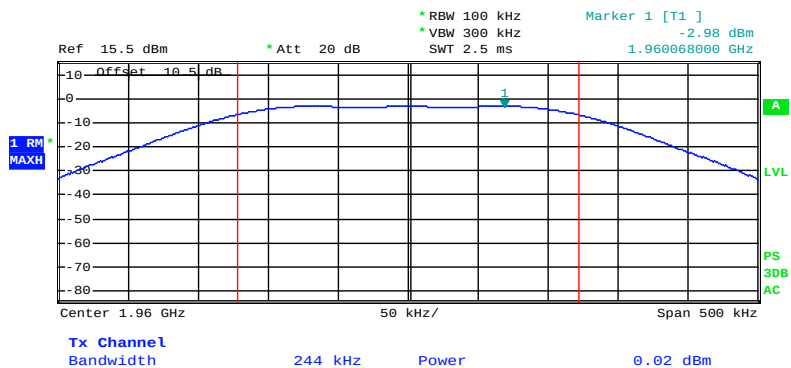
Uplink, High Channel



Date: 27.FEB.2012 10:15:52

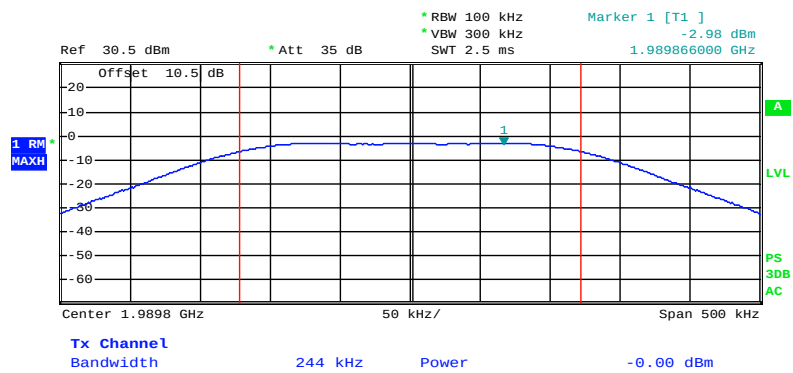
Downlink, Low Channel

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Downlink, Middle Channel

Date: 27.FEB.2012 09:32:21

Downlink, High Channel

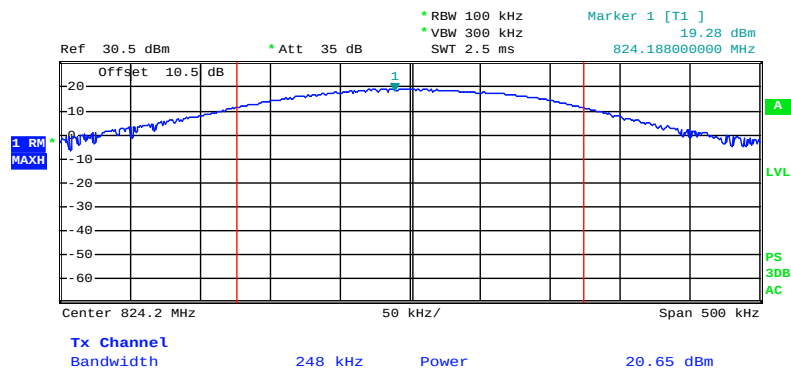


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EDGE

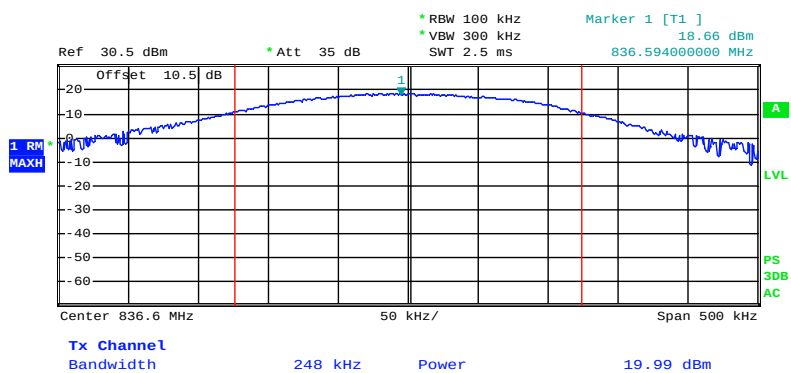
Mode	Frequency (MHz)	Output power (dBm)
Cellular Band (Part 22H)		
Uplink (824-849 MHz)	824.2	20.65
	836.6	19.99
	848.8	19.98
Downlink (869-894 MHz)	869.2	0.50
	881.6	0.29
	893.8	0.24
PCS Band (Part 24E)		
Uplink (1850-1910 MHz)	1850.20	20.20
	1880.00	19.60
	1909.80	19.79
Downlink (1930-1990 MHz)	1930.20	0.29
	1960.00	-0.01
	1989.80	0.00

Please see the below plots.

Cellular Band**Uplink, Low Channel**

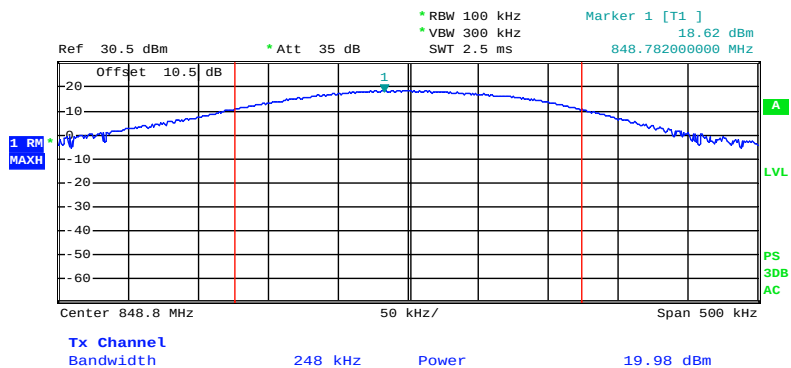
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Uplink, Middle Channel

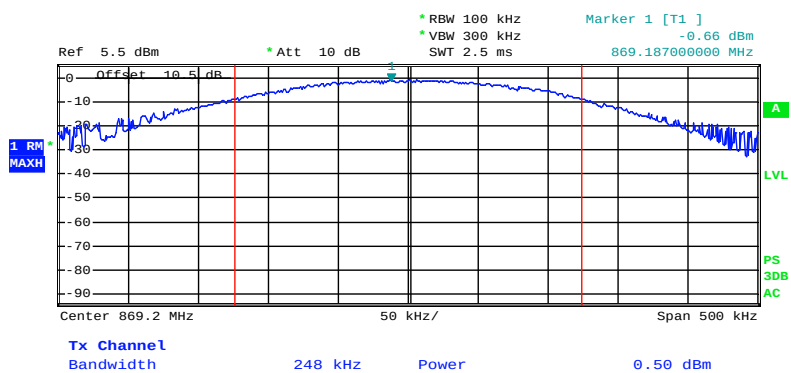


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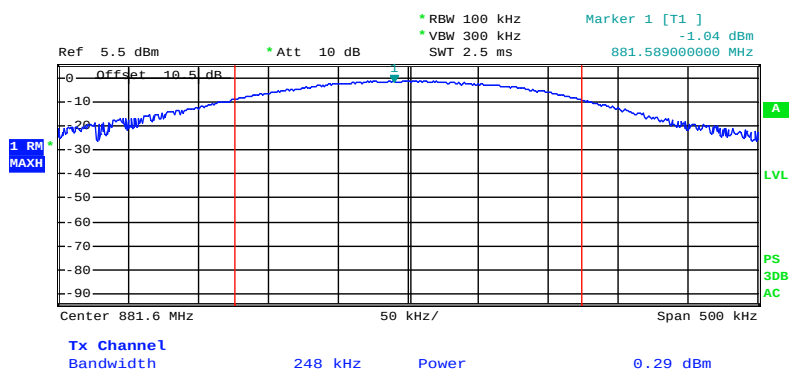
Uplink, High Channel



Date: 27.FEB.2012 11:03:06

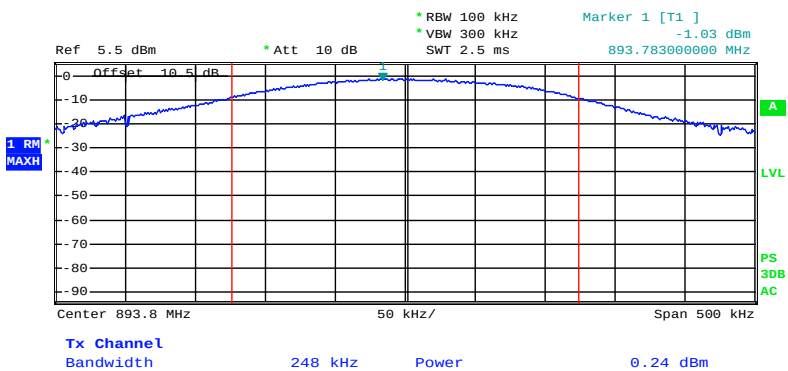
Downlink, Low Channel

Date: 27.FEB.2012 11:25:55

Downlink, Middle Channel

Date: 27.FEB.2012 11:22:04

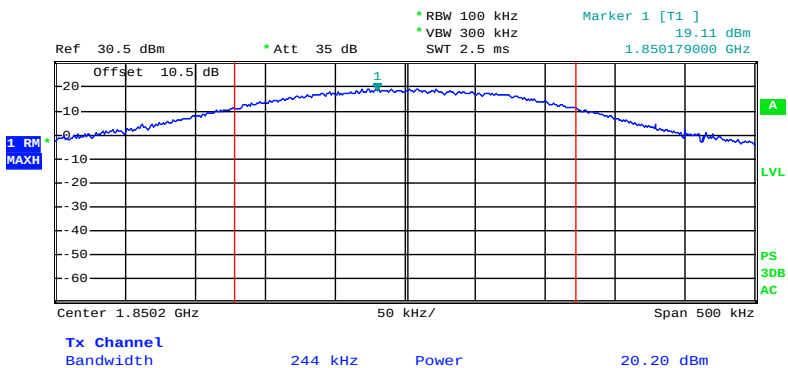
Downlink, High Channel



Date: 27.FEB.2012 11:23:20

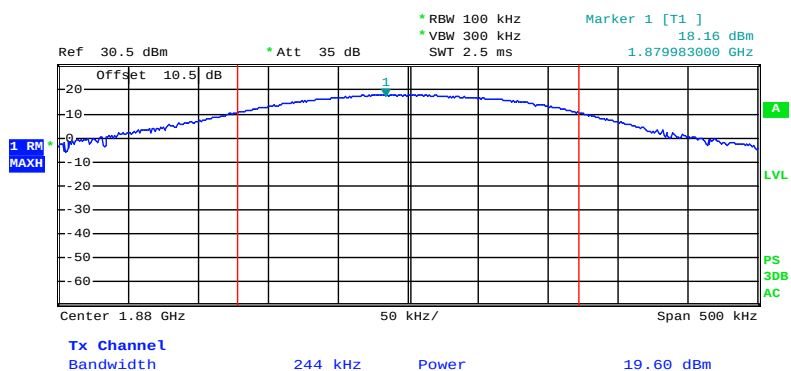
PCS Band

Uplink, Low Channel



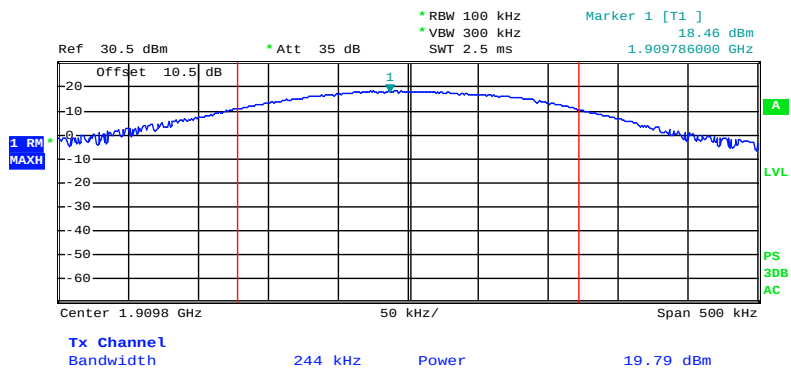
Date: 27.FEB.2012 10:20:30

Uplink, Middle Channel

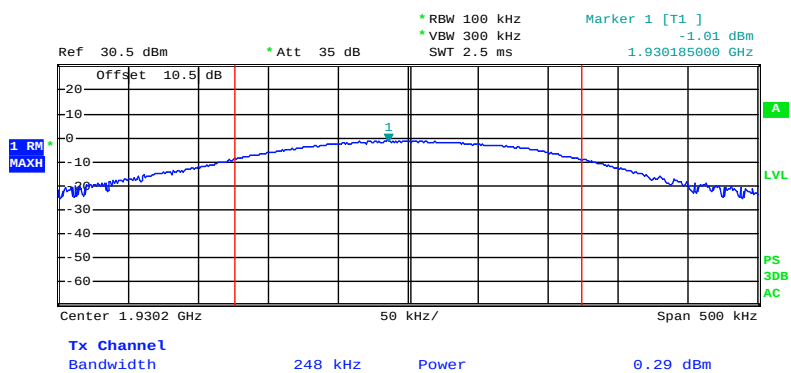


Date: 27.FEB.2012 09:53:06

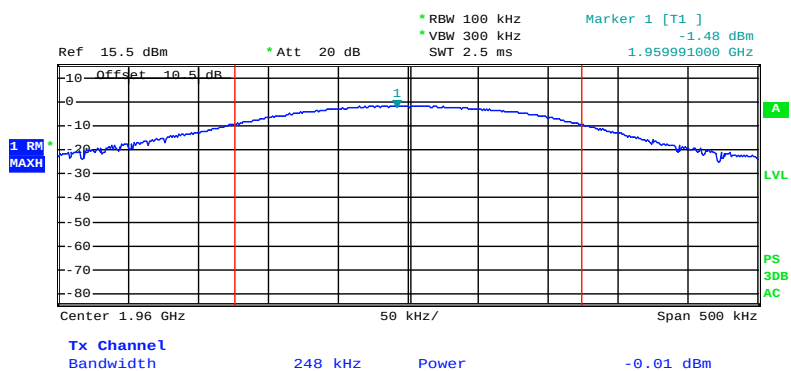
Uplink, High Channel



Date: 27.FEB.2012 10:18:57

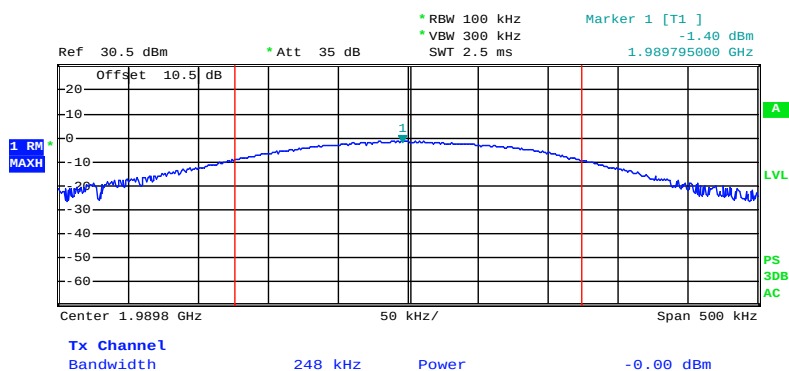
Downlink, Low Channel

Date: 27.FEB.2012 10:25:57

Downlink, Middle Channel

Date: 27.FEB.2012 09:40:28

Downlink, High Channel



Date: 27.FEB.2012 10:28:41

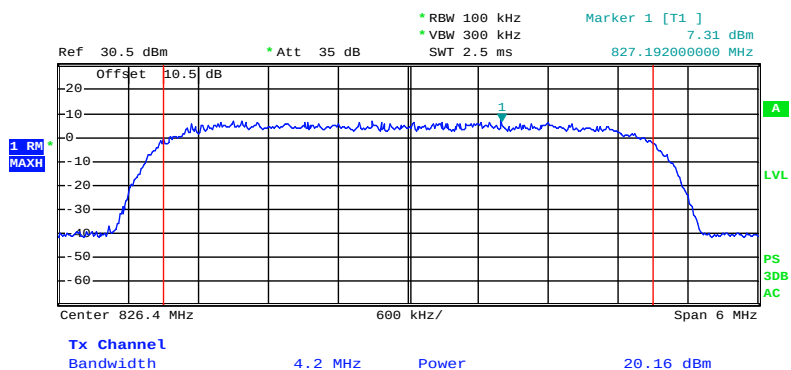
WCDMA

Mode	Frequency (MHz)	Output power (dBm)
Cellular Band (Part 22H)		
Uplink (824-849 MHz)	826.4	20.16
	836.6	19.74
	846.6	20.01
Downlink (869-894 MHz)	871.4	0.01
	881.6	0.02
	891.6	0.63
PCS Band (Part 24E)		
Uplink (1850-1910 MHz)	1852.40	20.26
	1880.00	20.09
	1907.60	20.52
Downlink (1930-1990 MHz)	1932.4	0.01
	1960.00	0.02
	1987.60	0.18

Please see the below plots.

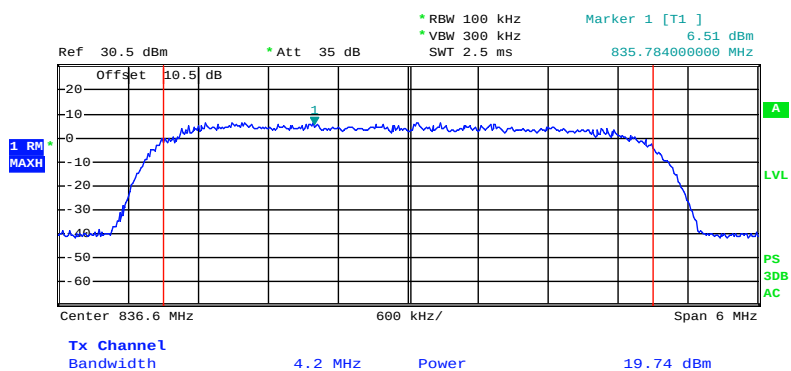
Cellular Band

Uplink, Low Channel



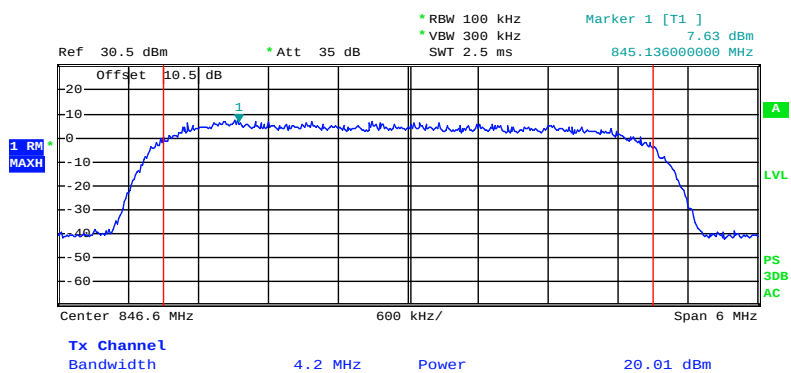
Date: 27.FEB.2012 13:30:43

Uplink, Middle Channel



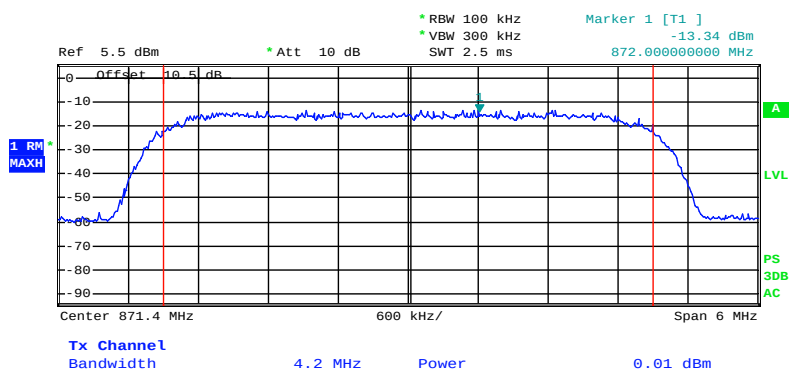
Date: 27.FEB.2012 13:29:37

Uplink, High Channel

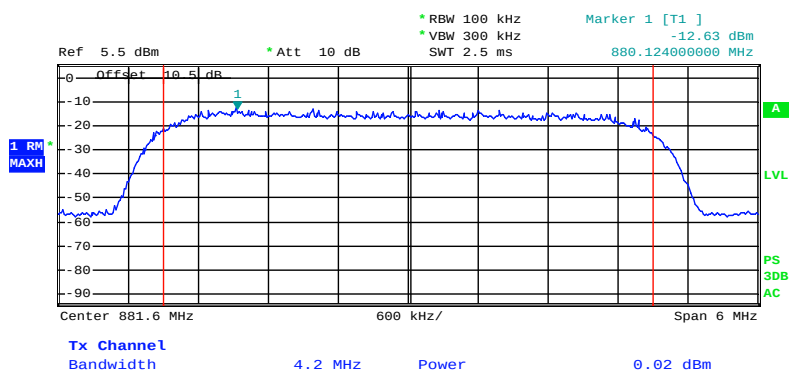


Date: 27.FEB.2012 13:31:39

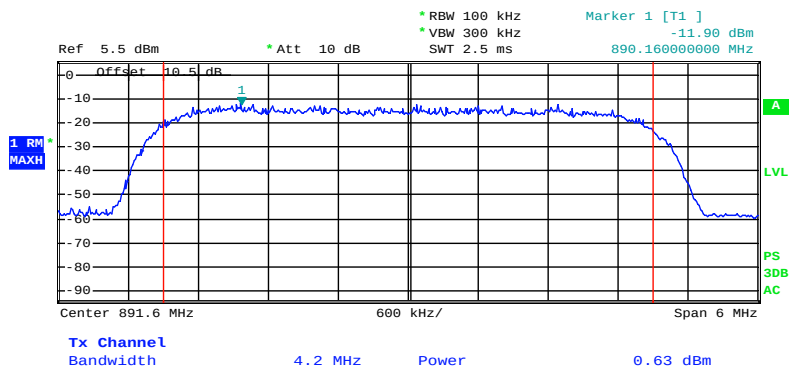
Downlink, Low Channel



Date: 27.FEB.2012 13:43:40

Downlink, Middle Channel

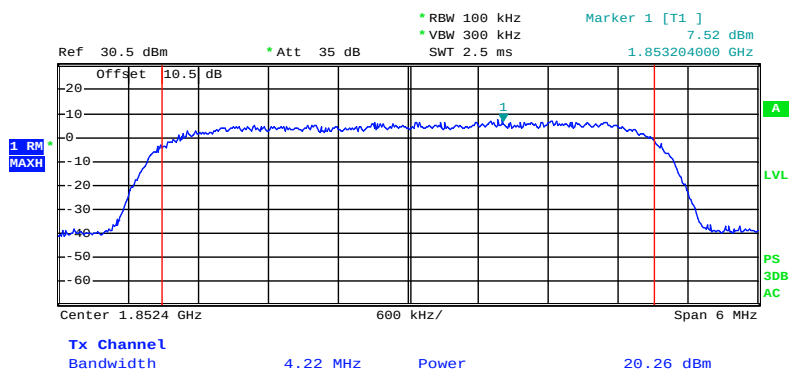
Date: 27.FEB.2012 13:42:51

Downlink, High Channel

Date: 27.FEB.2012 13:41:47

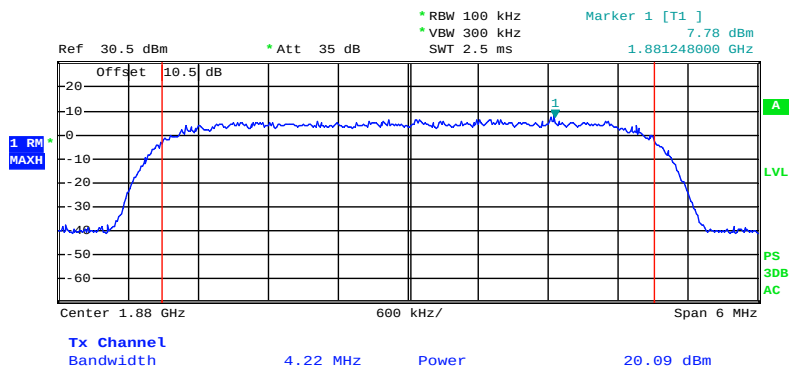
PCS Band

Uplink, Low Channel



Date: 27.FEB.2012 13:21:21

Uplink, Middle Channel



Date: 27.FEB.2012 13:22:31

Ref 30.5 dBm * Att 35 dB

RBW 100 kHz 7.50 dBm
VBW 300 kHz
SWT 2.5 ms 1.907300000 GHz

Offset 10.5 dB

1 RM MAXH

Marker 1 [T1]

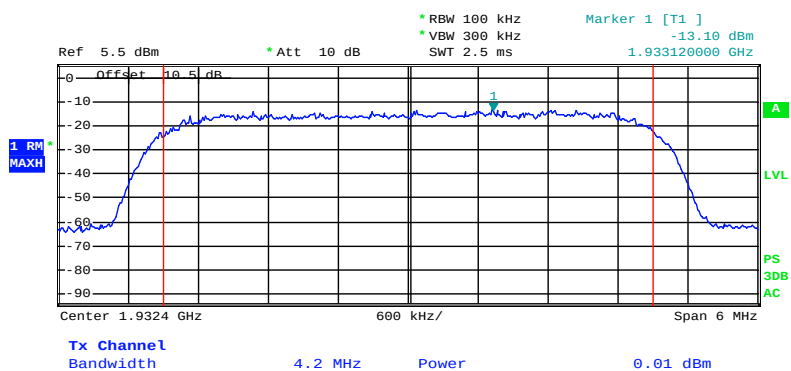
LVL

PS 3dB AC

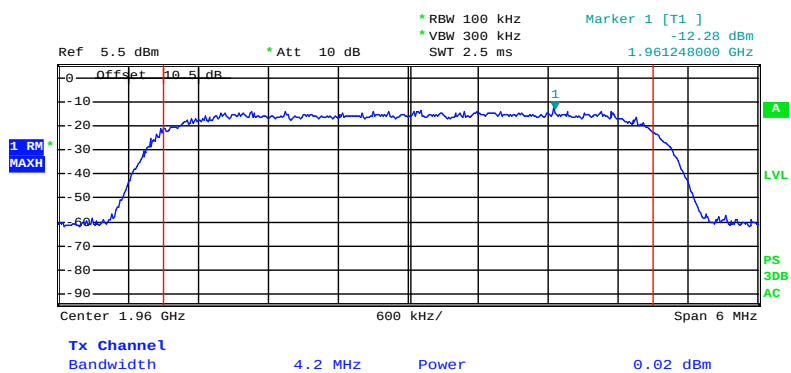
Center 1.9076 GHz 600 kHz/ Span 6 MHz

Tx Channel
Bandwidth 4.22 MHz Power 20.52 dBm

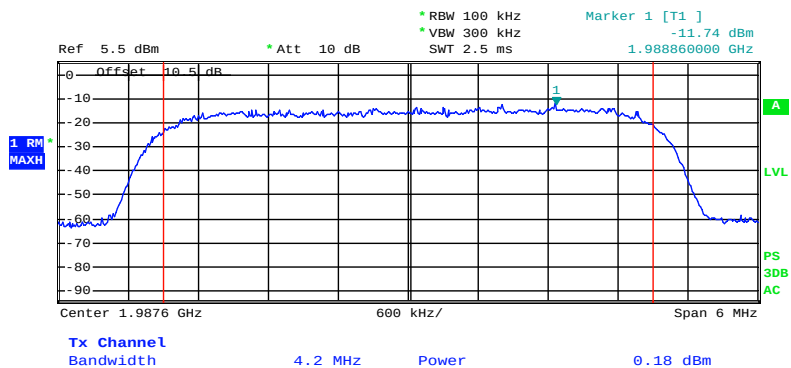
Downlink, Low Channel



Page 37 of 138

Downlink, Middle Channel

Date: 27.FEB.2012 13:47:01

Downlink, High Channel

Date: 27.FEB.2012 13:50:12

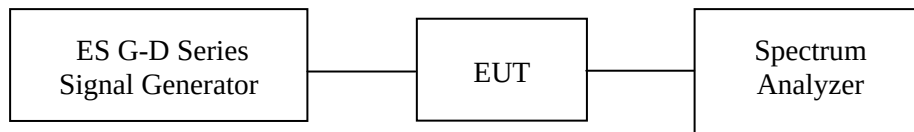
FCC §2.1049, §22.917, §22.905& §24.238 - OCCUPIED BANDWIDTH**Applicable Standards**

FCC §2.1049, §22.917, §22.905 and §24.238.

Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 30 kHz (Cellular /PCS) and the 26 dB & 99% bandwidth was recorded.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2011-11-11	2012-11-10
Agilent	PSA Series Spectrum Analyzer	E4443A	MY45300749	2011-10-28	2012-10-27
Rohde & Schwarz	Signal Analyzer	FSIQ26	609358	2011-07-08	2012-07-07
Agilent	ESG-D Series Signal Generator	E4432B	GB40051703	2011-10-28	2012-10-27

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	56%
ATM Pressure:	100.0kPa

The testing was performed by Felix Li from 2012-02-27 to 2012-02-28.

CDMA:**Input signal**

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.52	1.264	1.424
Downlink (869-894 MHz)	881.52	1.260	1.424
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	1.264	1.420
Downlink (1930-1990 MHz)	1960.0	1.264	1.416

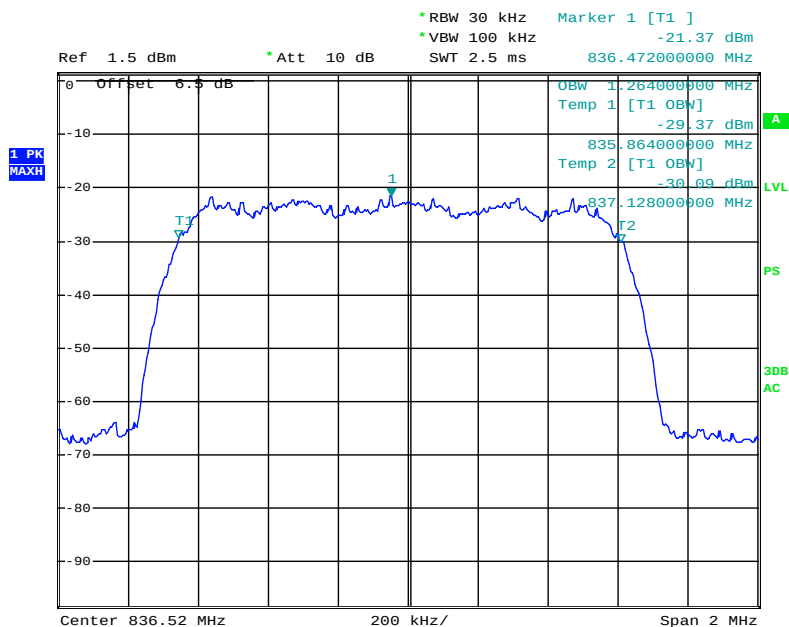
Output signal

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.52	1.264	1.428
Downlink (869-894 MHz)	881.52	1.264	1.424
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	1.264	1.428
Downlink (1930-1990 MHz)	1960.0	1.264	1.432

Please refer to the following plots.

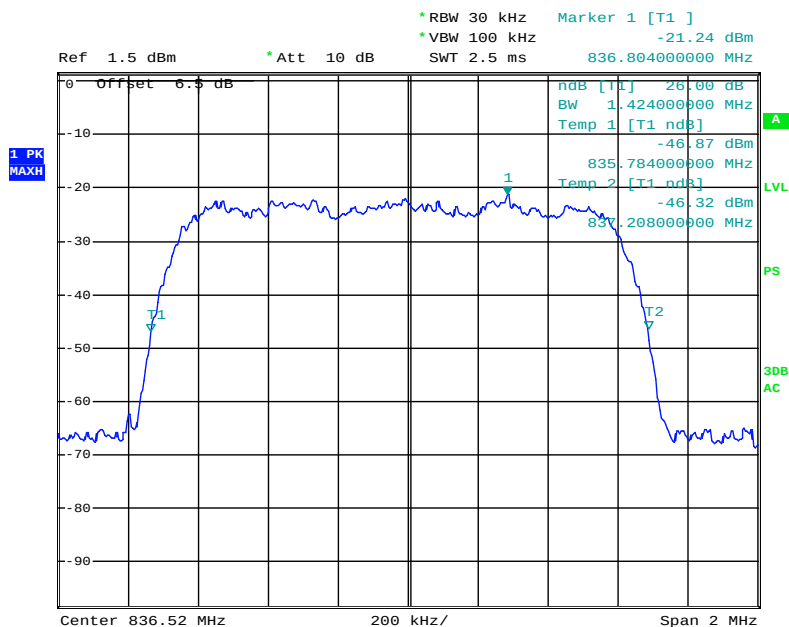
Cellular Band (Part 22H)

Input Signal, Uplink, 99% Bandwidth, Middle Channel

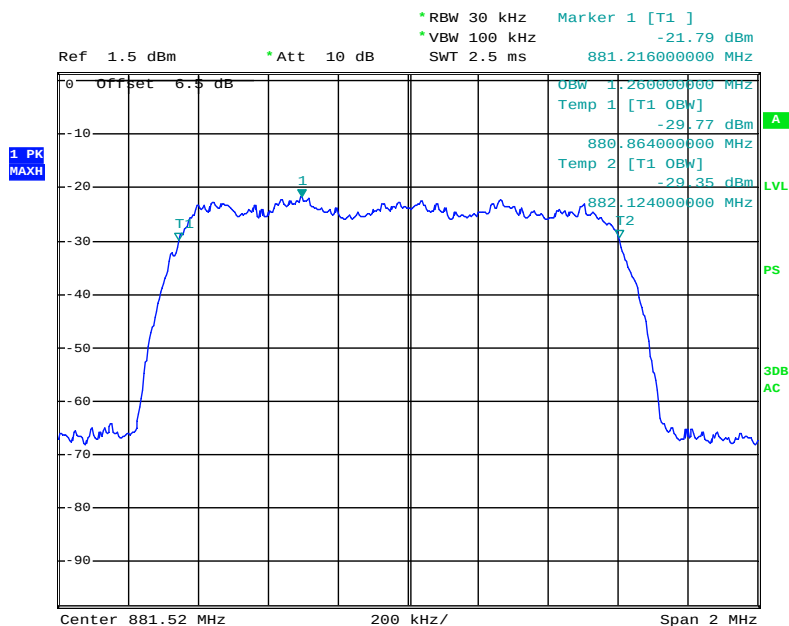


Date: 29.FEB.2012 16:31:09

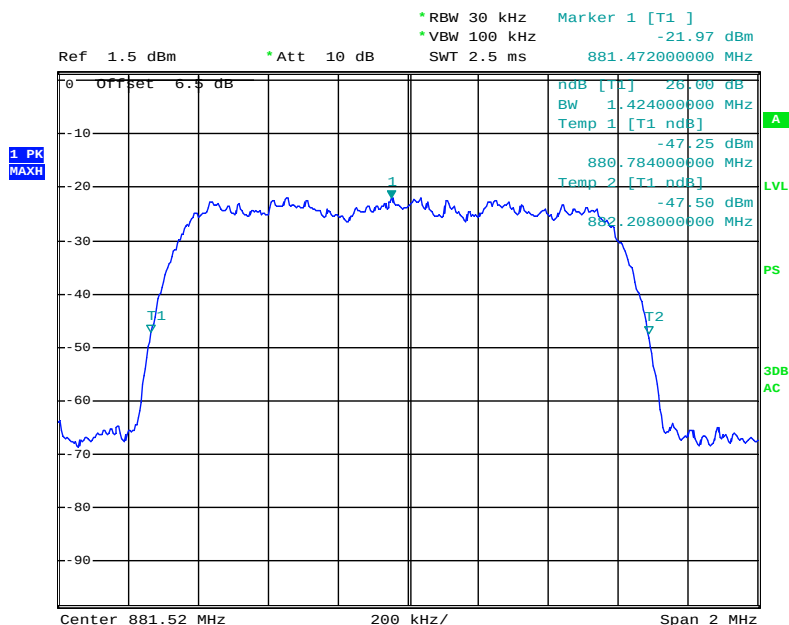
Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



Date: 29.FEB.2012 16:31:24

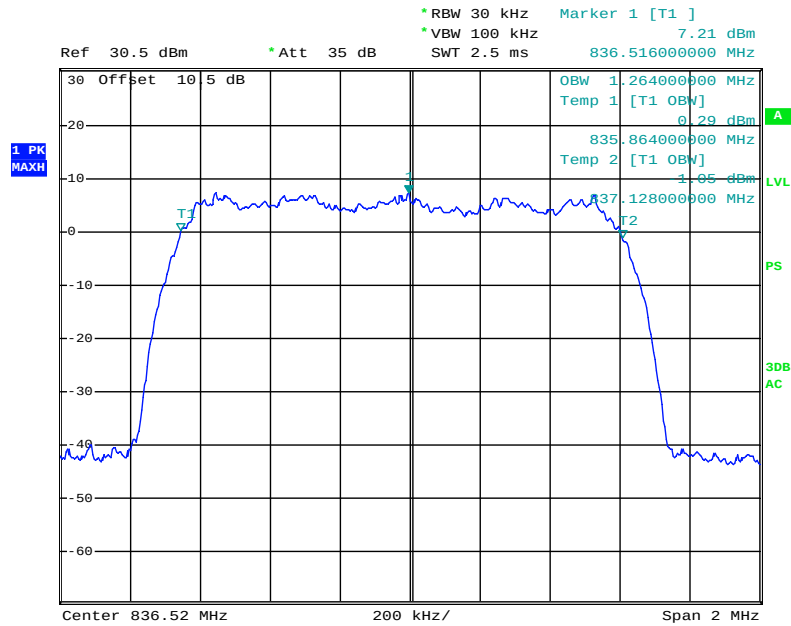
Input Signal, Downlink, 99% Bandwidth, Middle Channel

Date: 29.FEB.2012 16:29:24

Input Signal, Downlink, 26 dB Bandwidth, Middle Channel

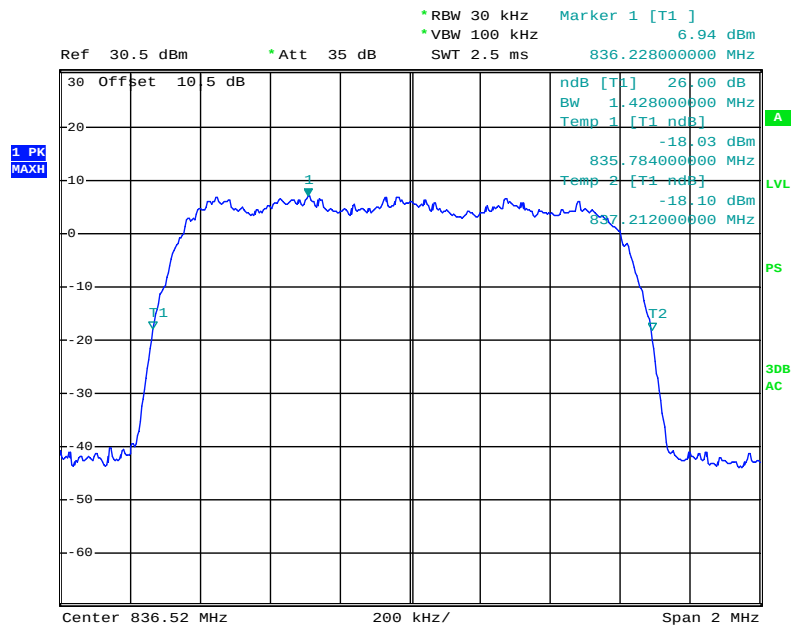
Date: 29.FEB.2012 16:29:06

Output Signal, Uplink, 99% Bandwidth, Middle Channel



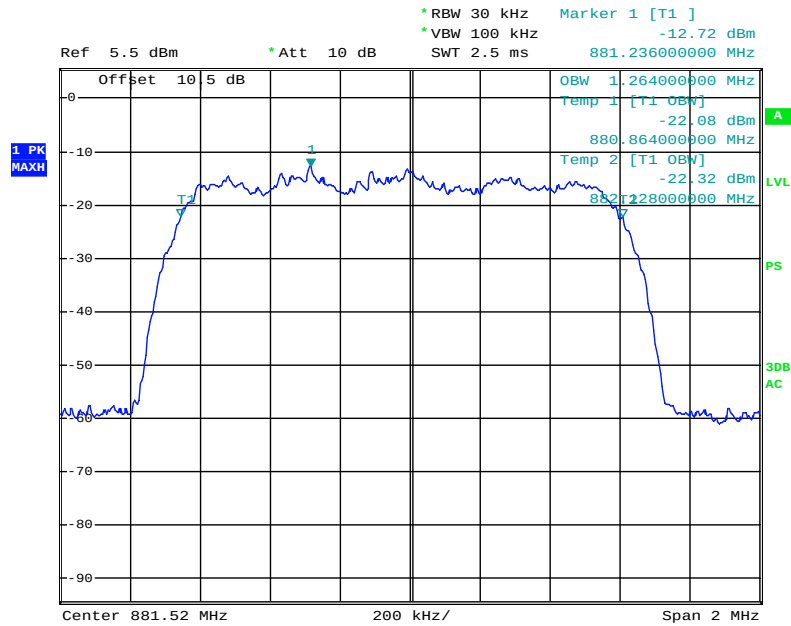
Date: 28.FEB.2012 08:41:13

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel



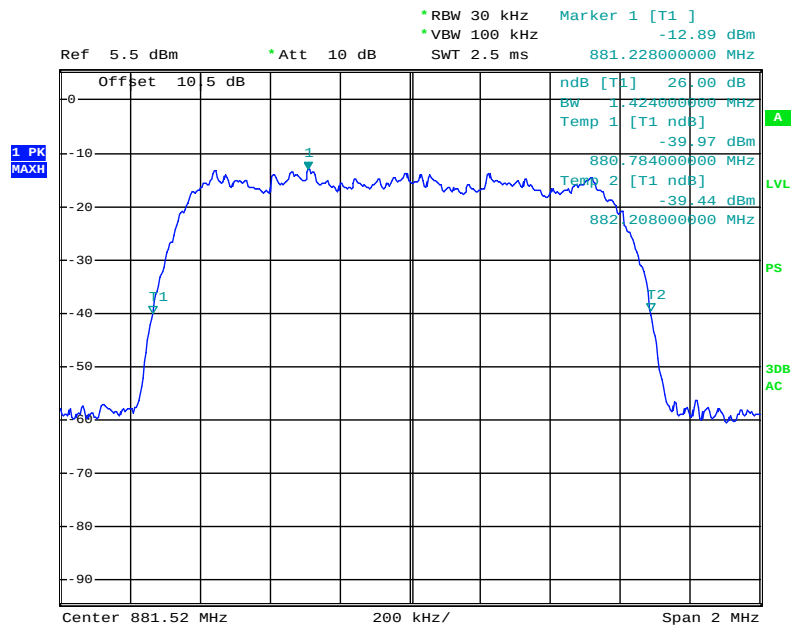
Date: 28.FEB.2012 08:41:51

Output Signal, Downlink, 99% Bandwidth, Middle Channel



Date: 28.FEB.2012 09:09:01

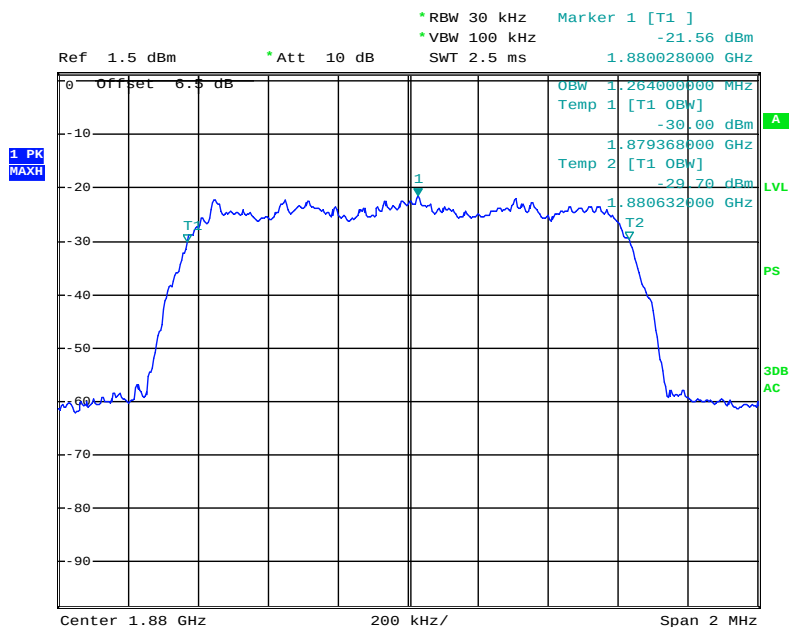
Output Signal, Downlink, 26 dB Bandwidth, Middle Channel



Date: 28.FEB.2012 09:09:44

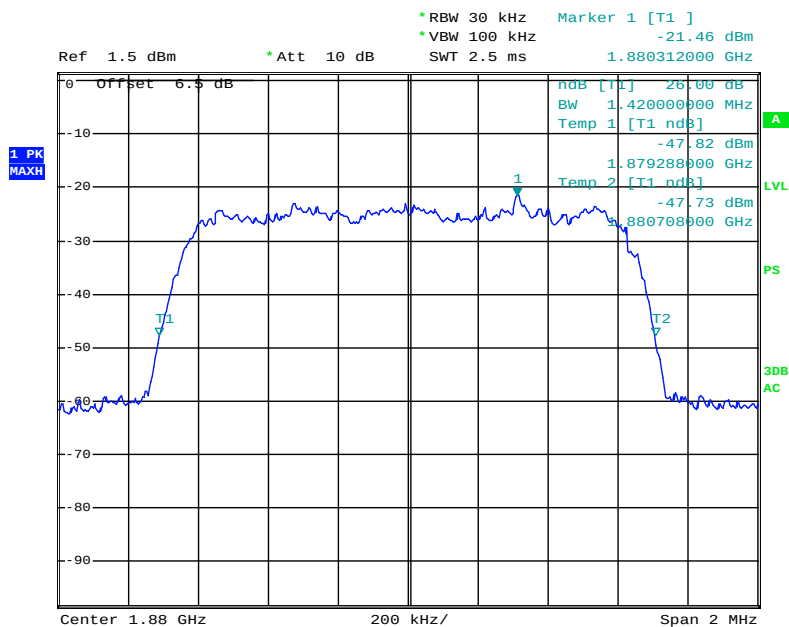
PCS Band (Part 24E)

Input Signal, Uplink, 99% Bandwidth, Middle Channel

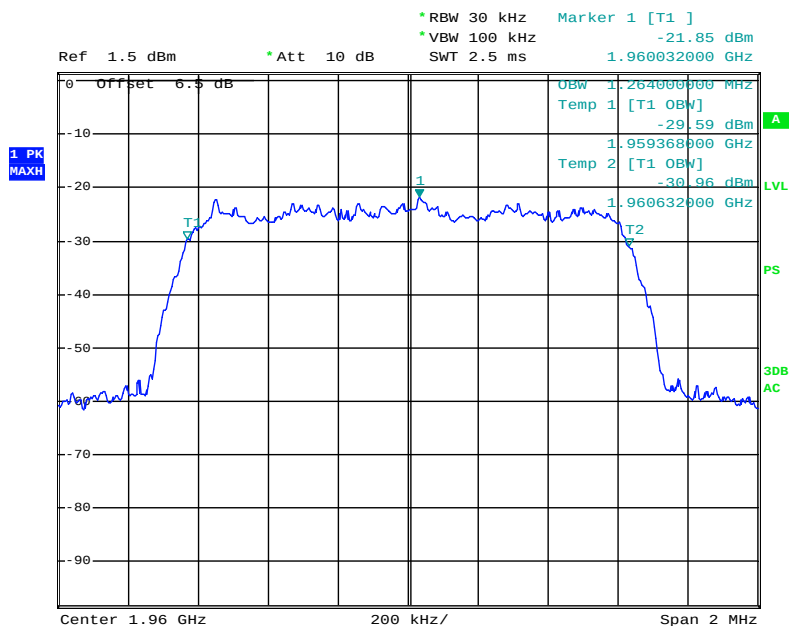


Date: 29.FEB.2012 16:24:43

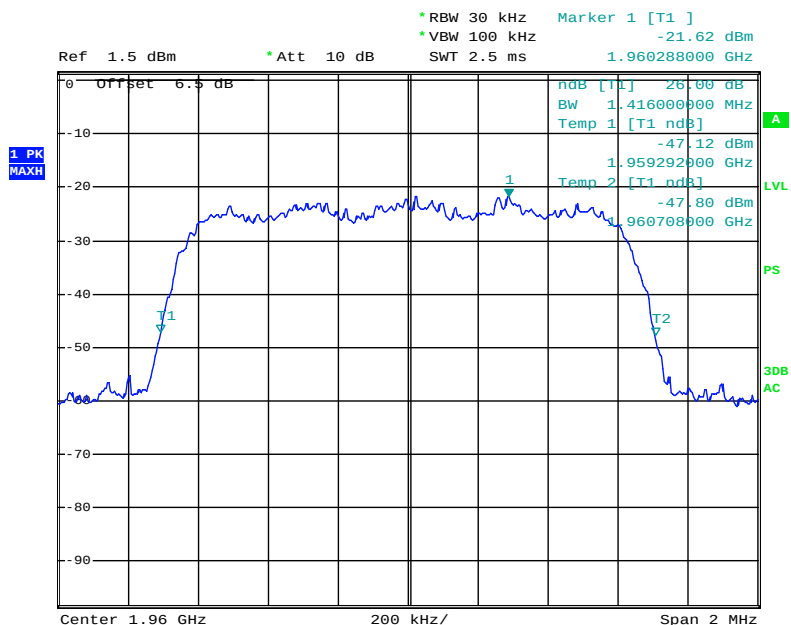
Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



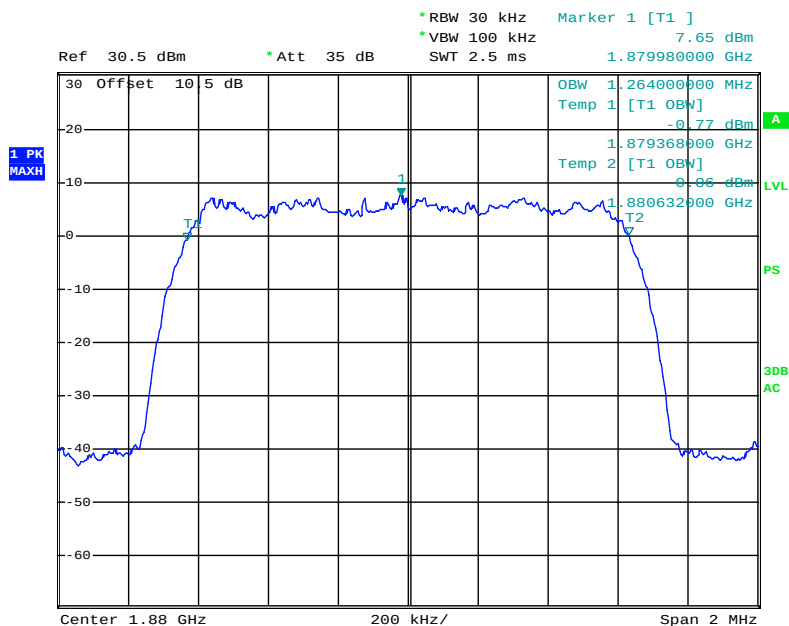
Date: 29.FEB.2012 16:23:42

Input Signal, Downlink, 99% Bandwidth, Middle Channel

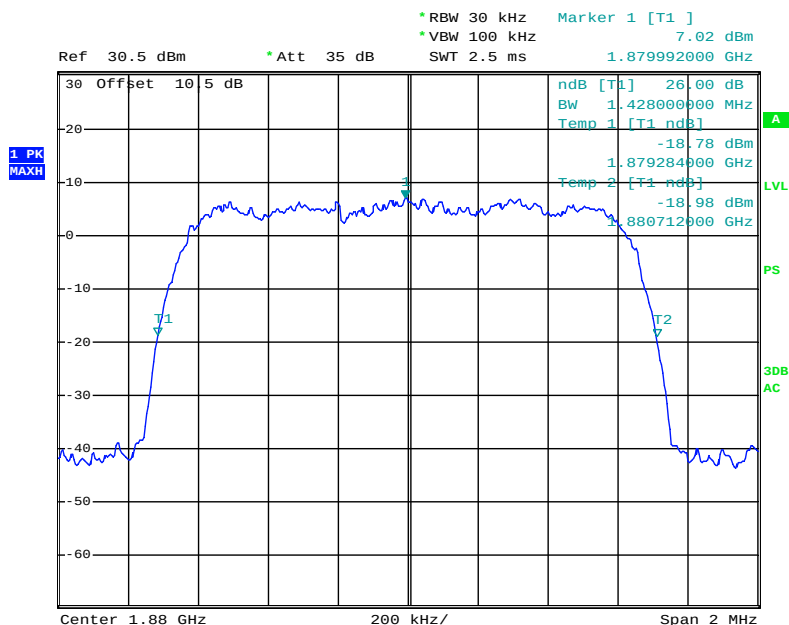
Date: 29.FEB.2012 16:26:44

Input Signal, Downlink, 26 dB Bandwidth, Middle Channel

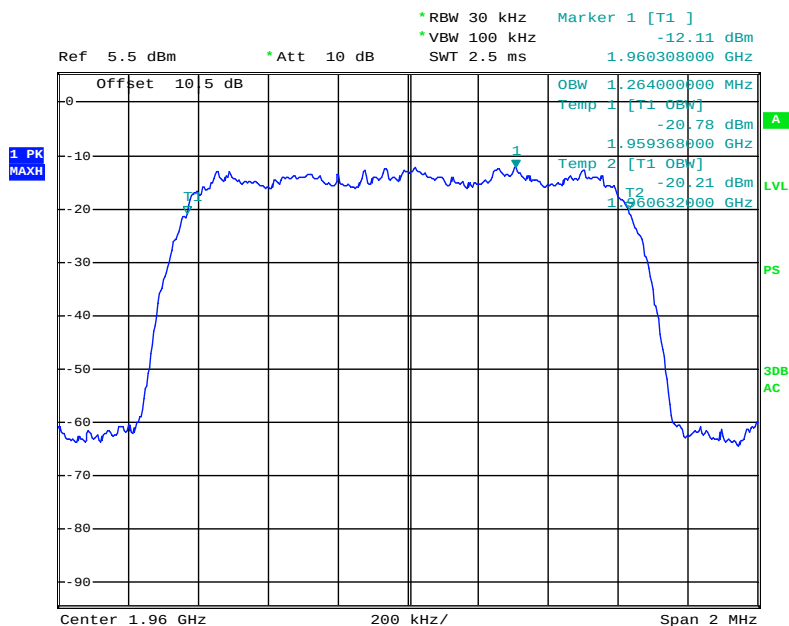
Date: 29.FEB.2012 16:26:56

Output Signal, Uplink, 99% Bandwidth, Middle Channel

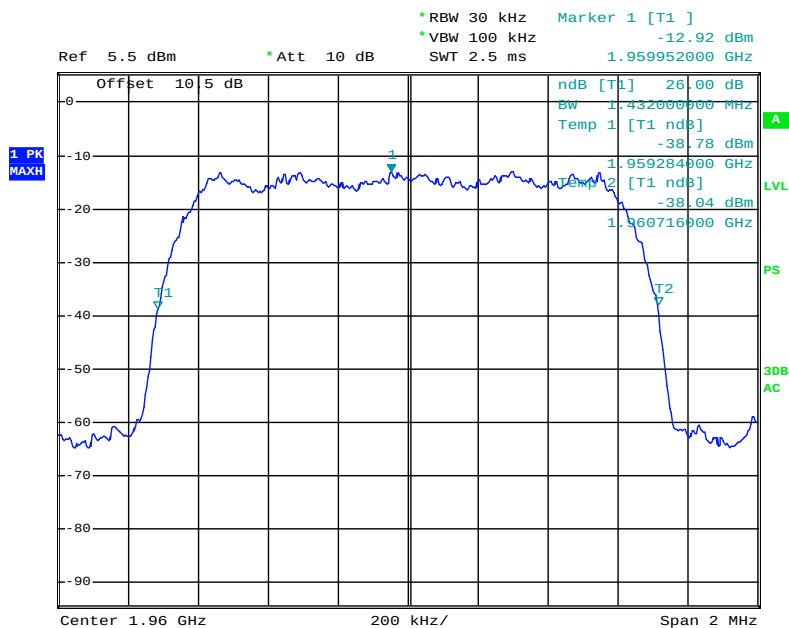
Date: 28.FEB.2012 08:50:23

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel

Date: 28.FEB.2012 08:50:52

Output Signal, Downlink, 99% Bandwidth, Middle Channel

Date: 28.FEB.2012 08:59:42

Output Signal, Downlink, 26 dB Bandwidth, Middle Channel

Date: 28.FEB.2012 09:00:12

GSM:**Input signal**

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.6	0.246	0.314
Downlink (869-894 MHz)	881.6	0.244	0.316
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	0.242	0.316
Downlink (1930-1990 MHz)	1960.0	0.246	0.316

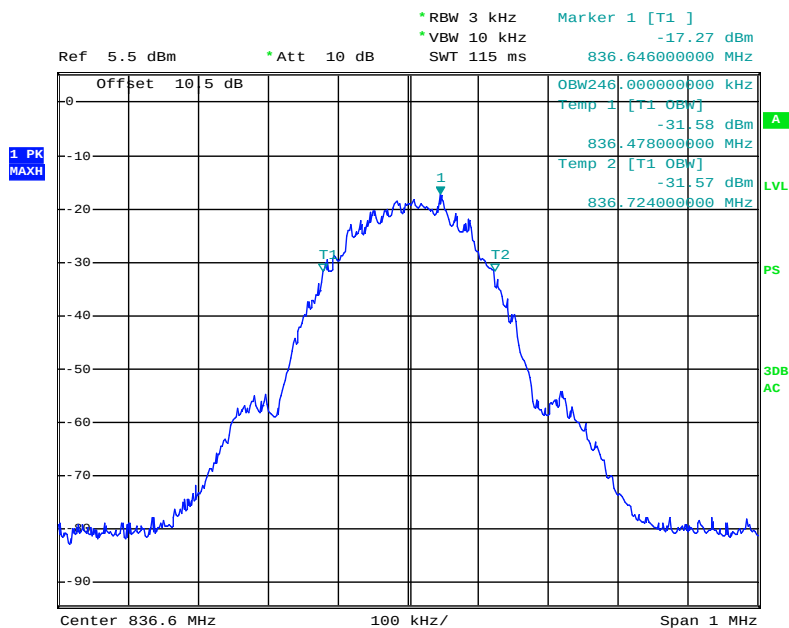
Output signal

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.6	0.244	0.314
Downlink (869-894 MHz)	881.6	0.244	0.312
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	0.244	0.316
Downlink (1930-1990 MHz)	1960.0	0.244	0.316

Please refer to the following plots.

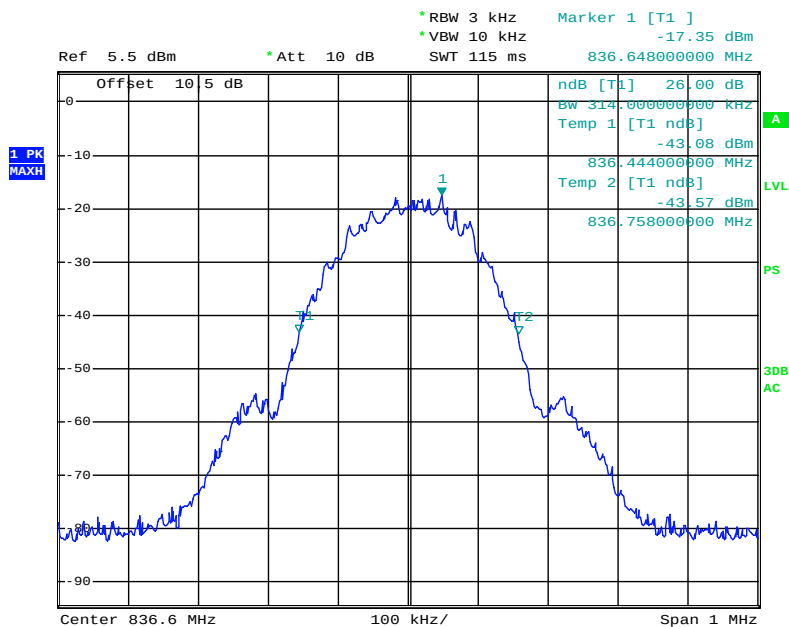
Cellular Band (Part 22H)

Input Signal, Uplink, 99% Bandwidth, Middle Channel



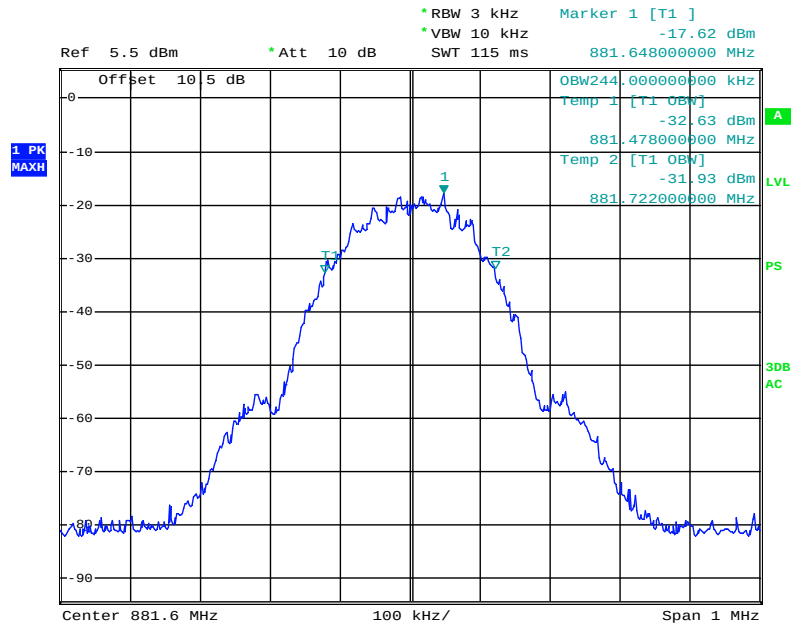
Date: 27.FEB.2012 11:39:03

Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



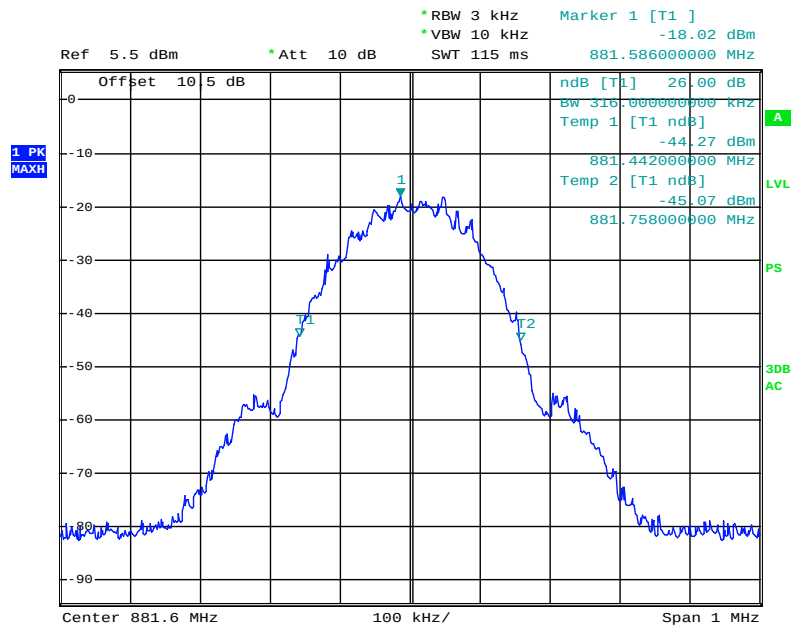
Date: 27.FEB.2012 11:39:23

Input Signal, Downlink, 99% Bandwidth, Middle Channel



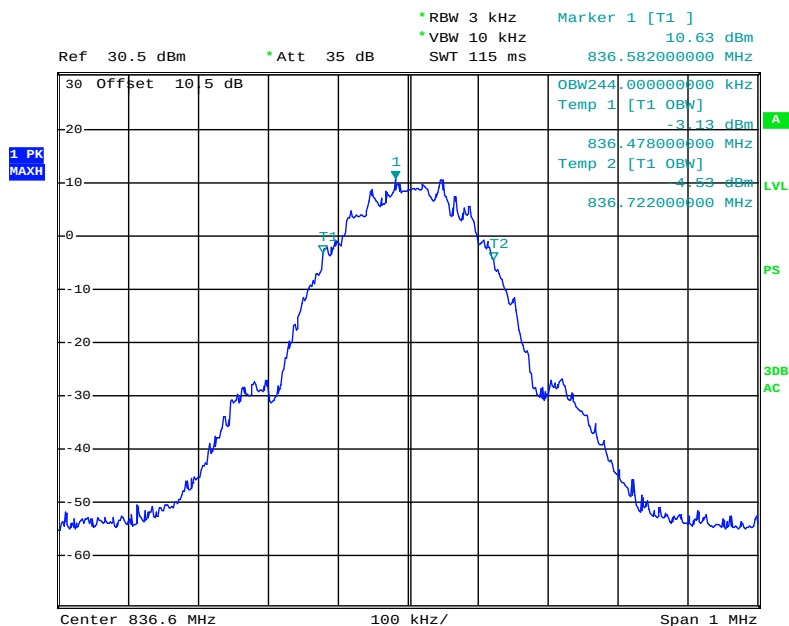
Date: 27.FEB.2012 11:35:09

Input Signal, Downlink, 26 dB Bandwidth, Middle Channel



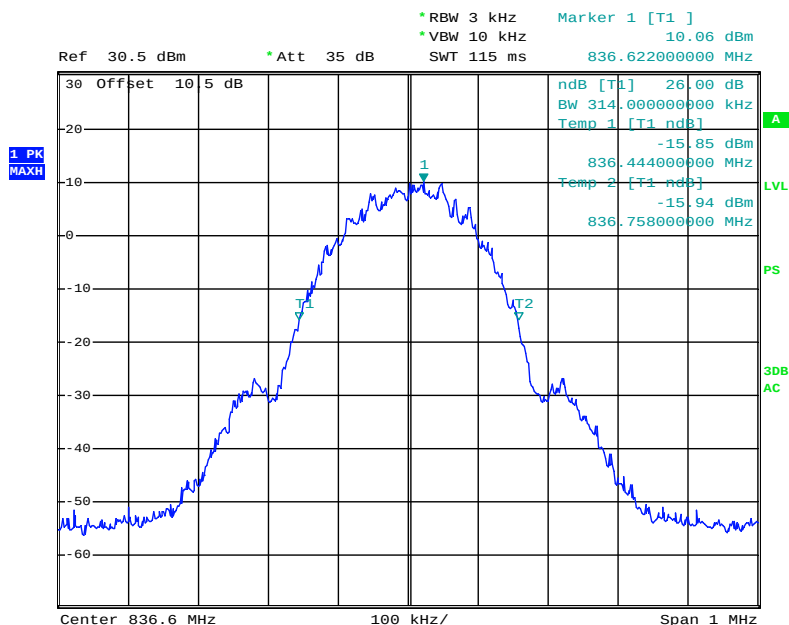
Date: 27.FEB.2012 11:34:52

Output Signal, Uplink, 99% Bandwidth, Middle Channel



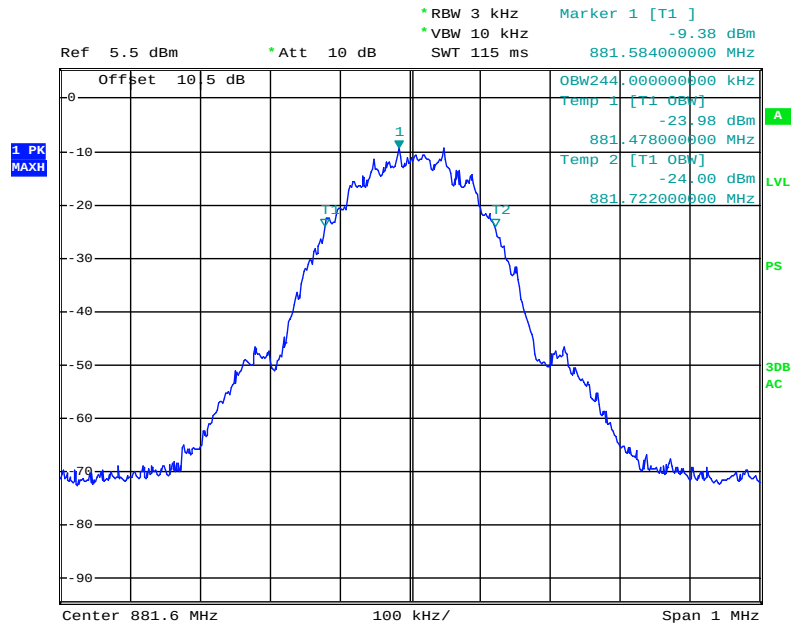
Date: 27.FEB.2012 10:55:35

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel



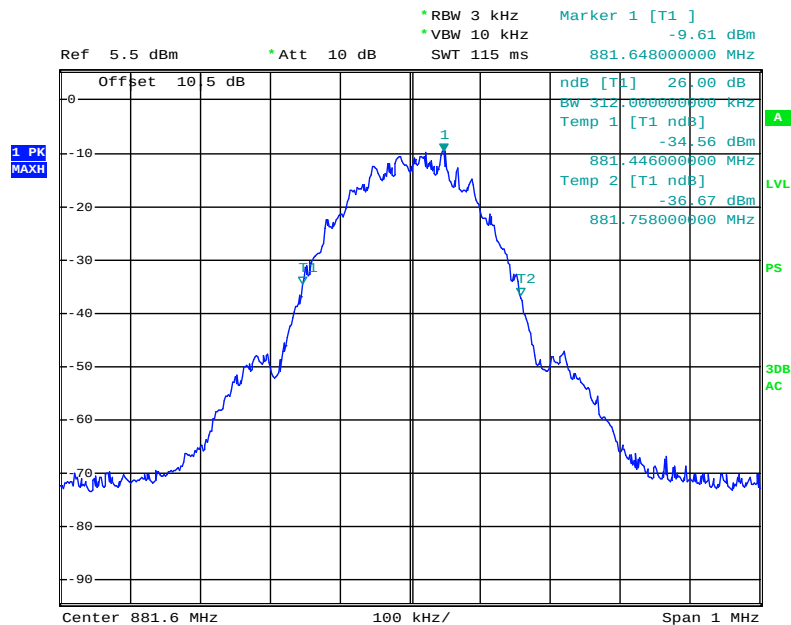
Date: 27.FEB.2012 10:55:50

Output Signal, Downlink, 99% Bandwidth, Middle Channel



Date: 27.FEB.2012 11:13:25

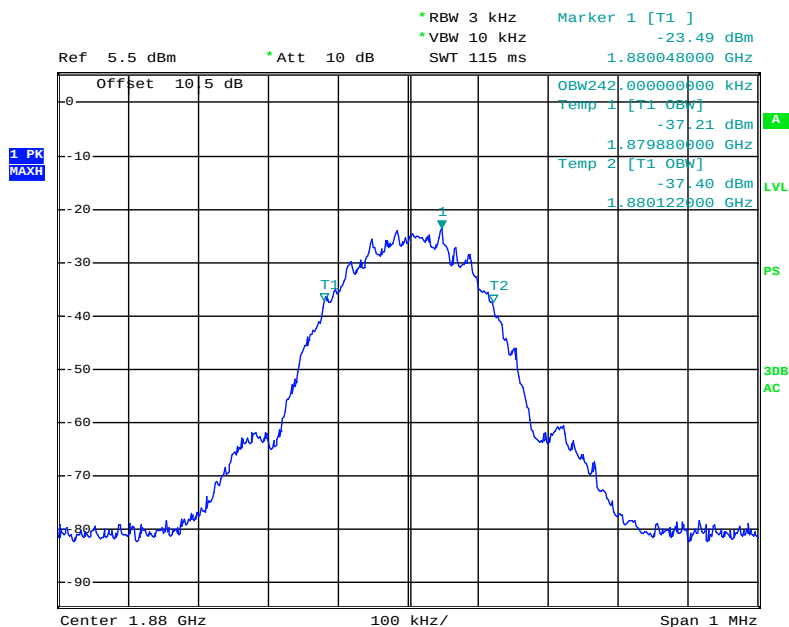
Output Signal, Downlink, 26 dB Bandwidth, Middle Channel



Date: 27.FEB.2012 11:13:51

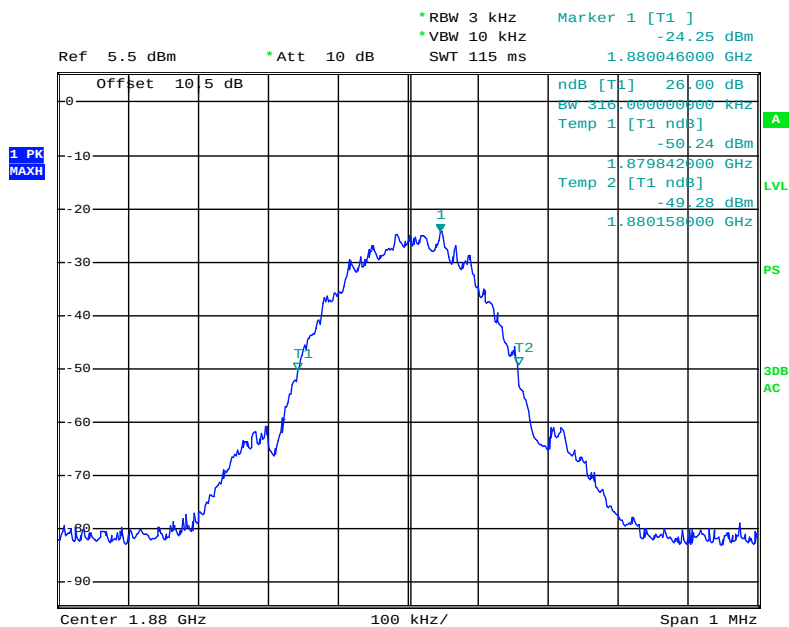
PCS Band (Part 24E)

Input Signal, Uplink, 99% Bandwidth, Middle Channel

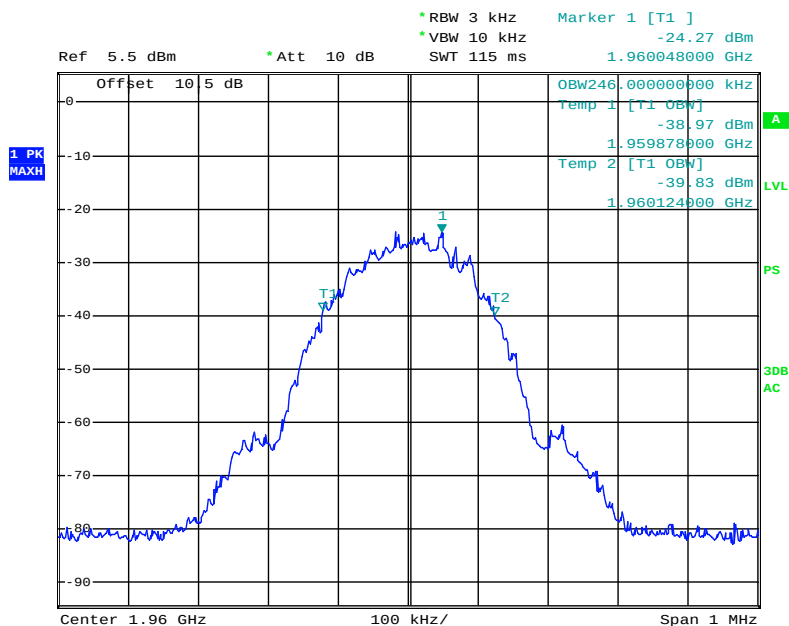


Date: 27.FEB.2012 10:02:56

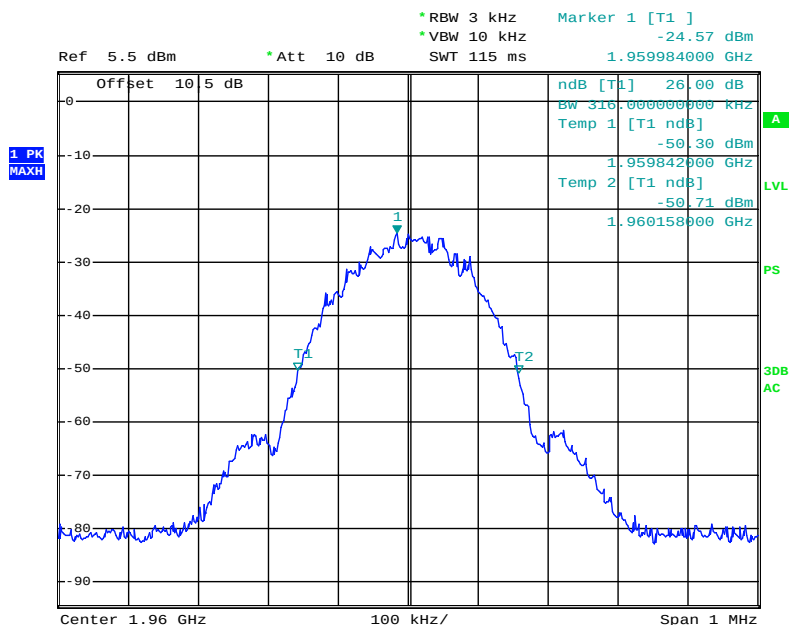
Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



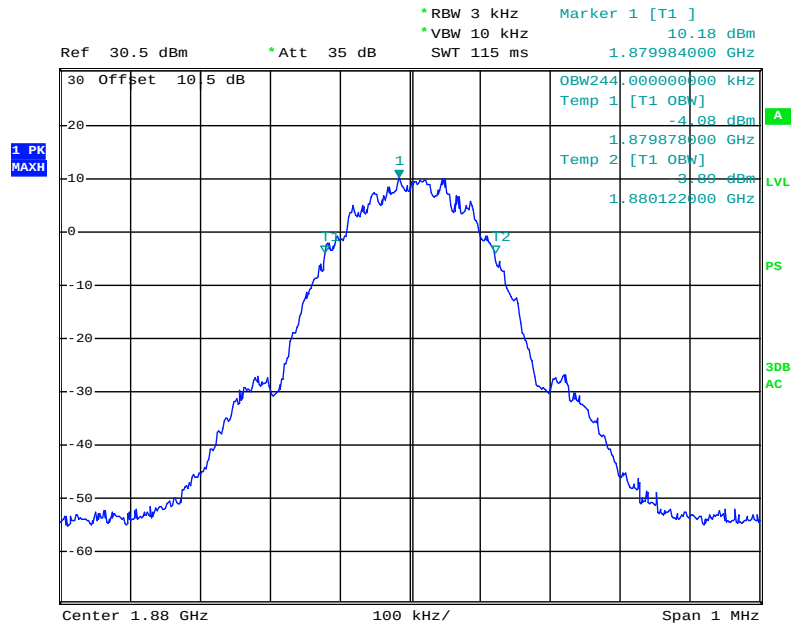
Date: 27.FEB.2012 10:03:14

Input Signal, Downlink, 99% Bandwidth, Middle Channel

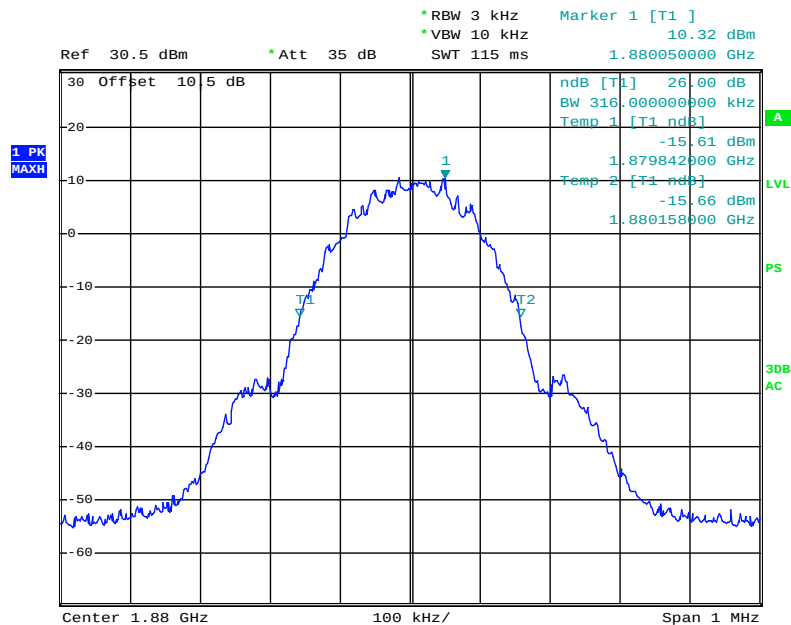
Date: 27.FEB.2012 10:08:31

Input Signal, Downlink, 26 dB Bandwidth, Middle Channel

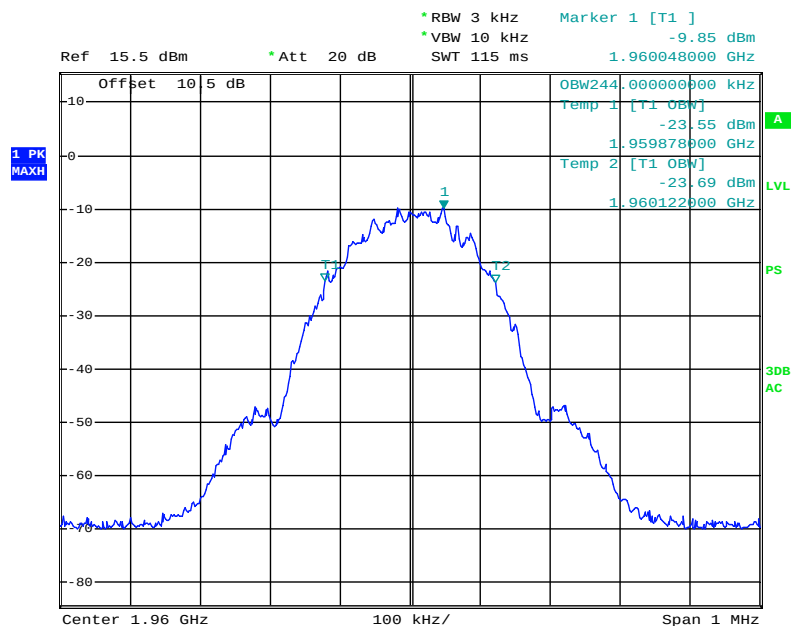
Date: 27.FEB.2012 10:08:07

Output Signal, Uplink, 99% Bandwidth, Middle Channel

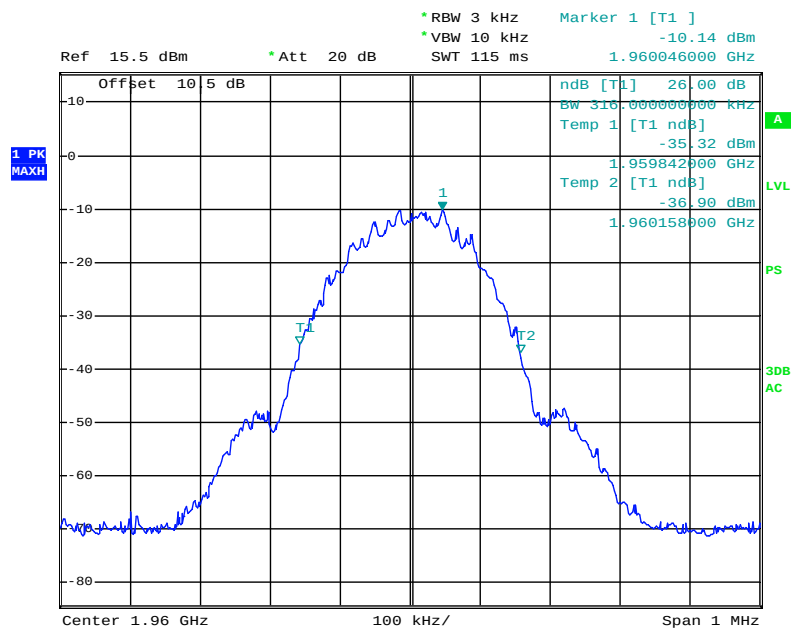
Date: 27.FEB.2012 09:55:32

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 09:54:45

Output Signal, Downlink, 99% Bandwidth, Middle Channel

Date: 27.FEB.2012 09:27:41

Output Signal, Downlink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 09:28:58

EDGE:**Input signal**

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.6	0.244	0.312
Downlink (869-894 MHz)	881.6	0.248	0.310
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	0.244	0.318
Downlink (1930-1990 MHz)	1960.0	0.248	0.312

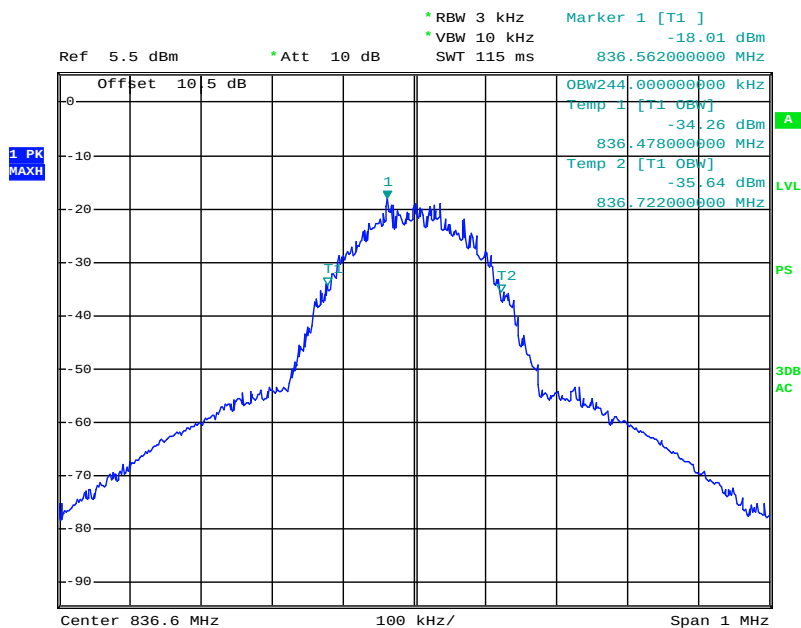
Output signal

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.6	0.248	0.312
Downlink (869-894 MHz)	881.6	0.248	0.318
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	0.244	0.316
Downlink (1930-1990 MHz)	1960.0	0.248	0.314

Please refer to the following plots.

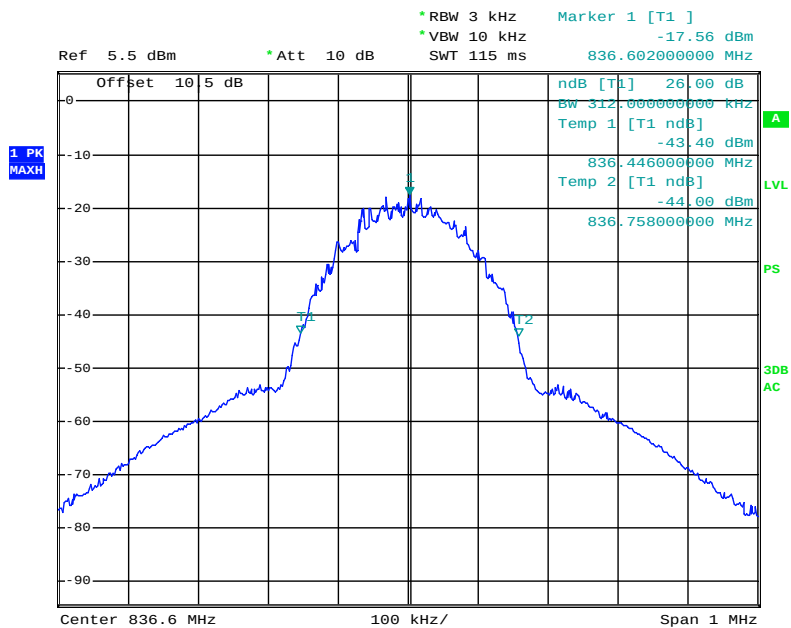
Cellular Band (Part 22H)

Input Signal, Uplink, 99% Bandwidth, Middle Channel

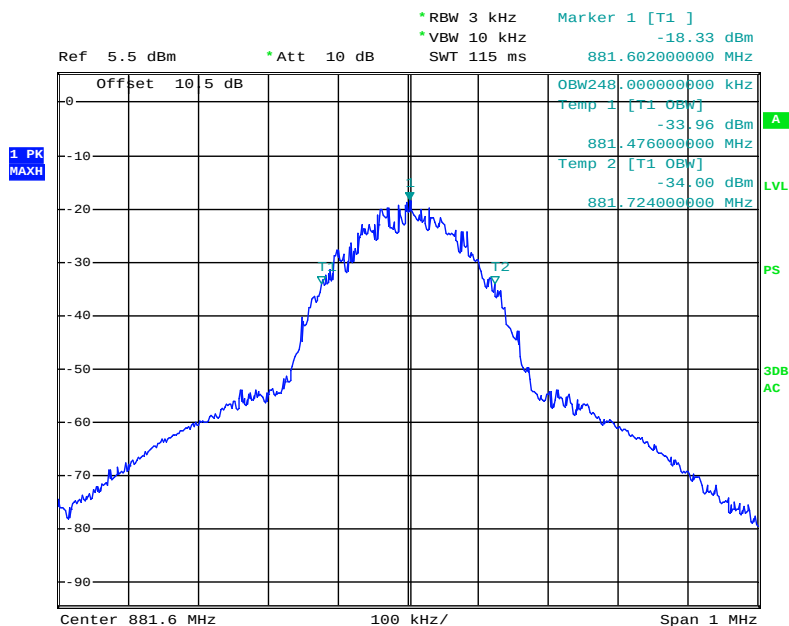


Date: 27.FEB.2012 11:38:22

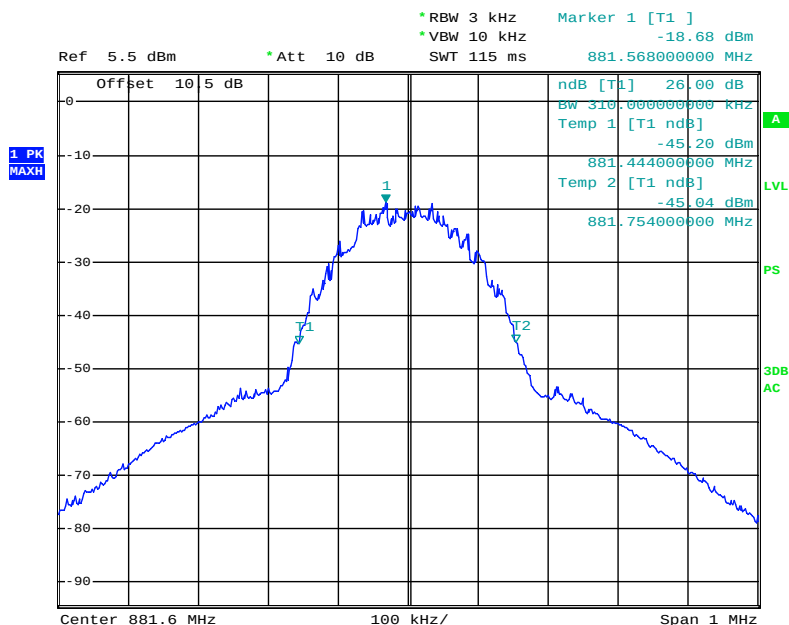
Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



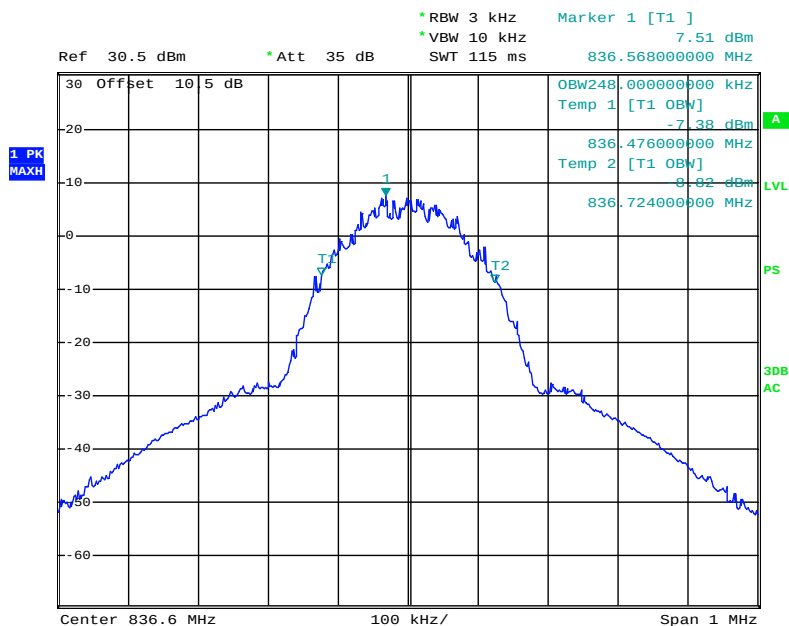
Date: 27.FEB.2012 11:37:57

Input Signal, Downlink, 99% Bandwidth, Middle Channel

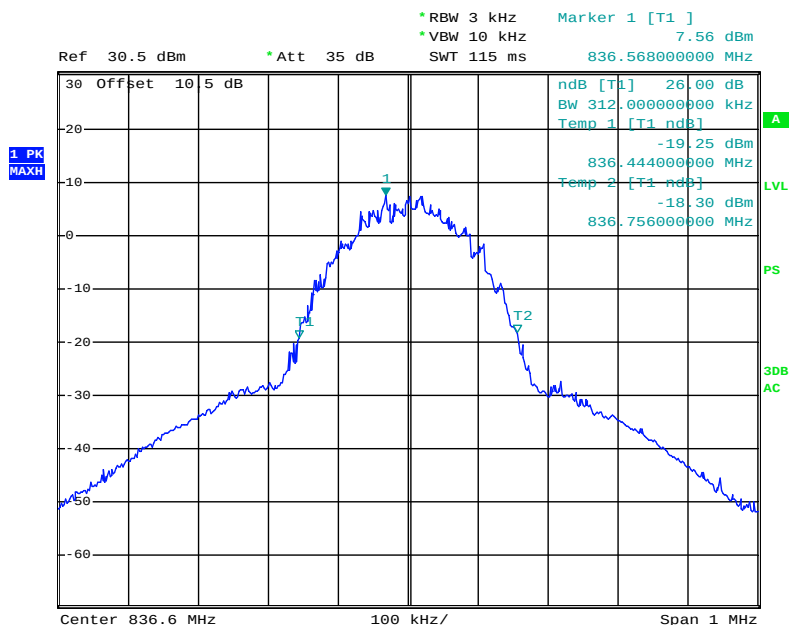
Date: 27.FEB.2012 11:36:28

Input Signal, Downlink, 26 dB Bandwidth, Middle Channel

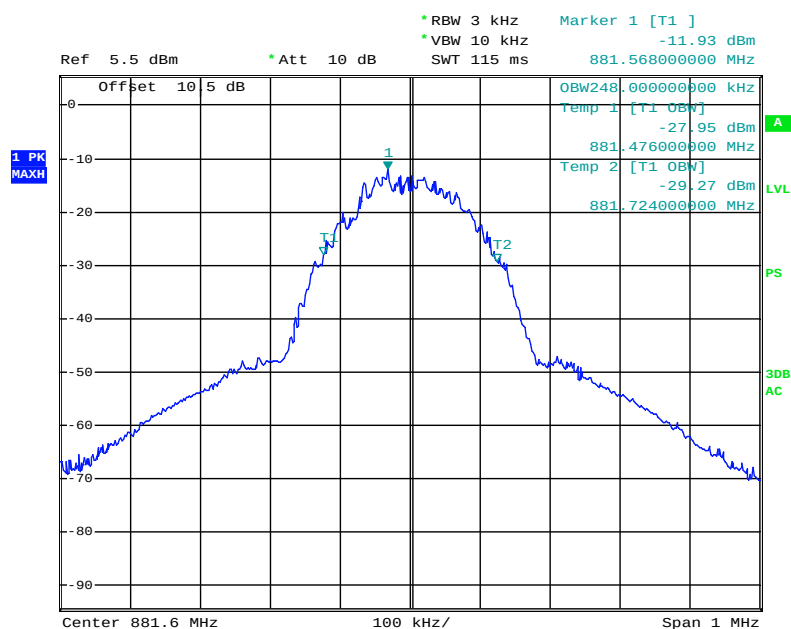
Date: 27.FEB.2012 11:37:06

Output Signal, Uplink, 99% Bandwidth, Middle Channel

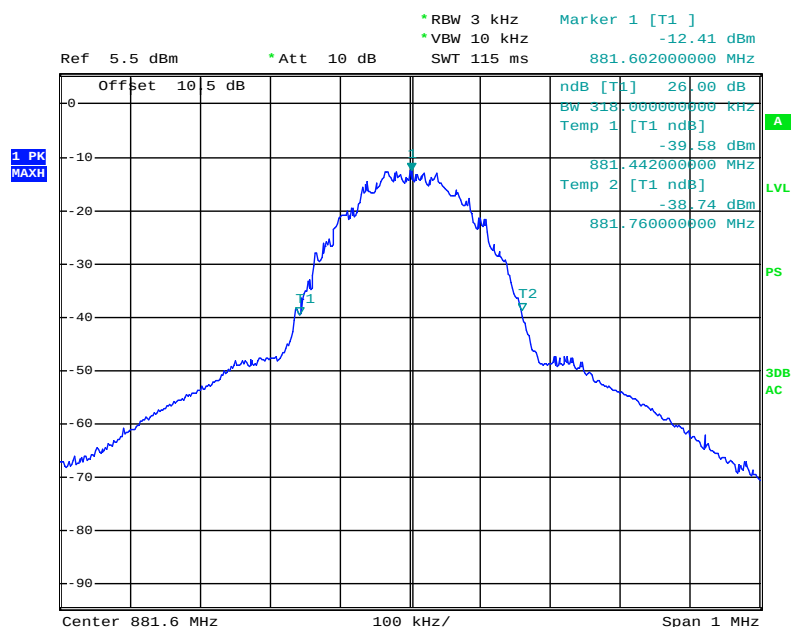
Date: 27.FEB.2012 10:59:09

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 10:59:35

Output Signal, Downlink, 99% Bandwidth, Middle Channel

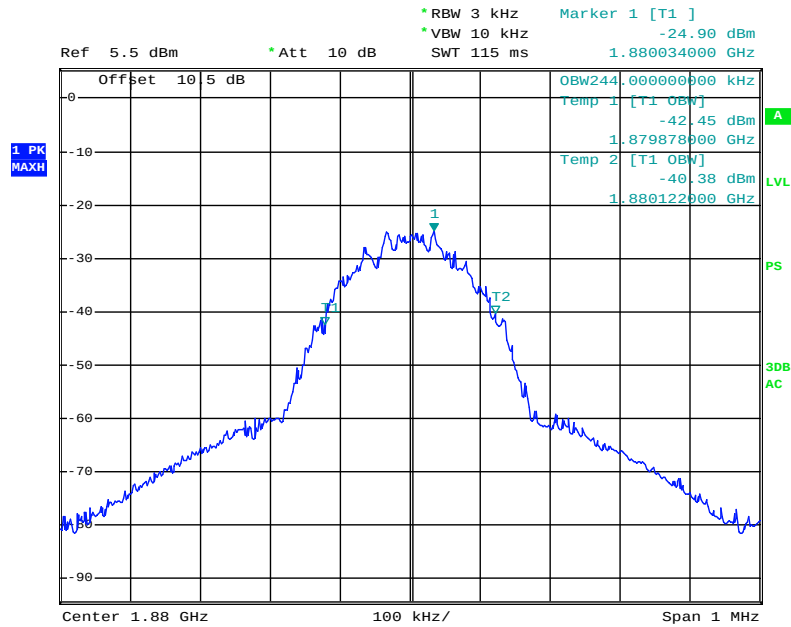
Date: 27.FEB.2012 11:21:11

Output Signal, Downlink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 11:20:30

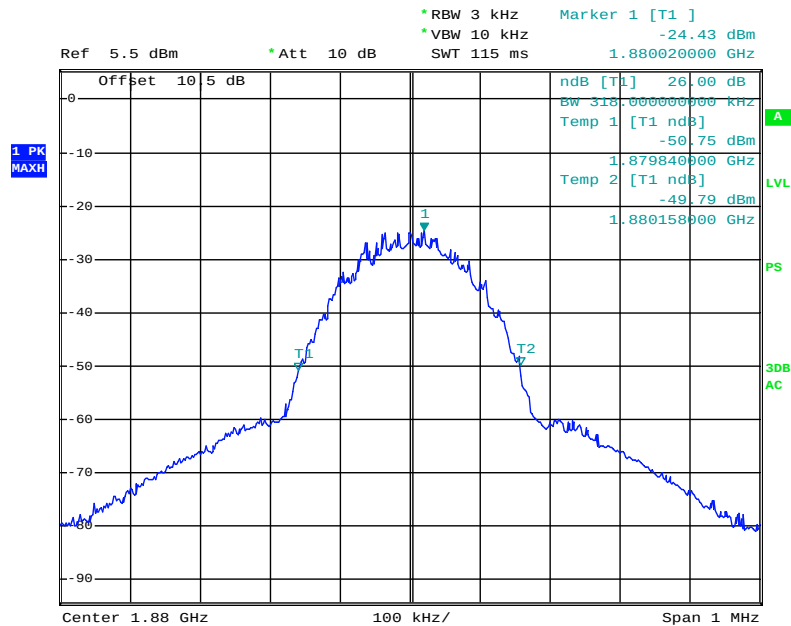
PCS Band (Part 24E)

Input Signal, Uplink, 99% Bandwidth, Middle Channel



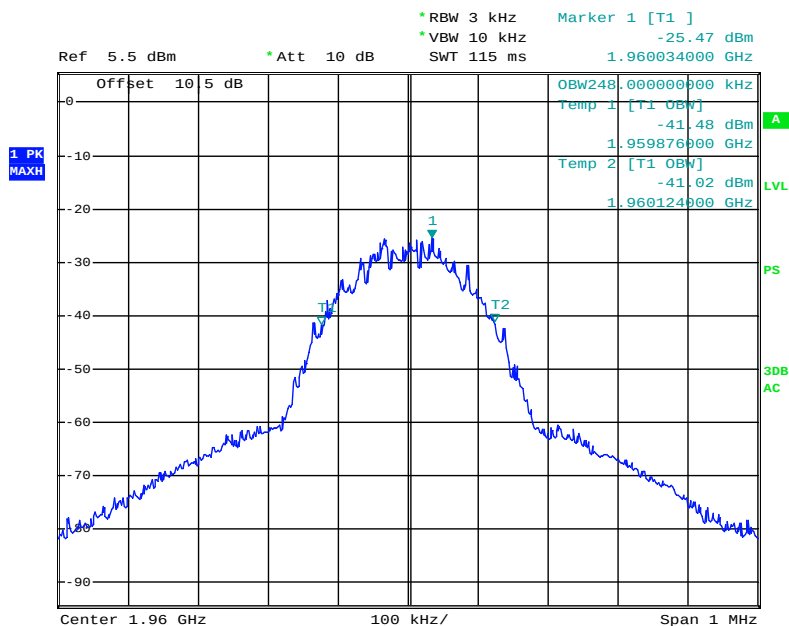
Date: 27.FEB.2012 10:05:06

Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



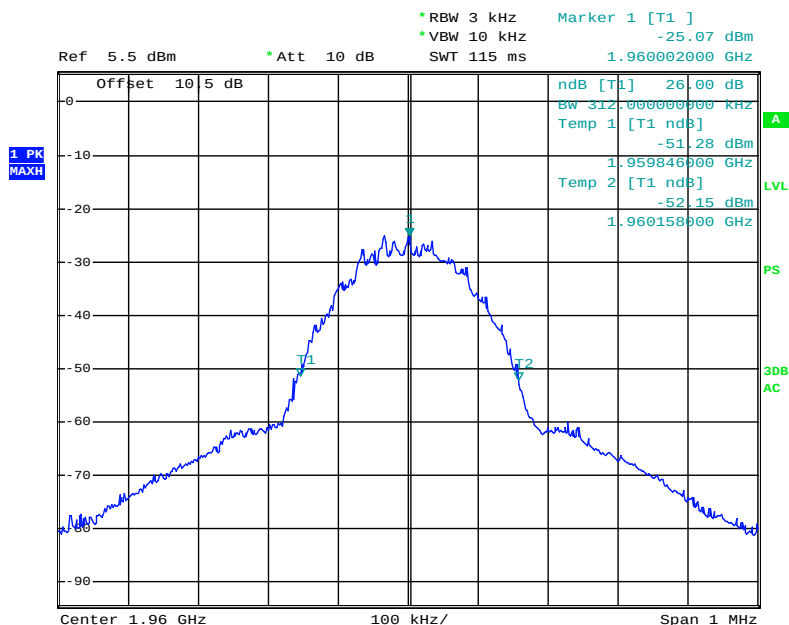
Date: 27.FEB.2012 10:03:57

Input Signal, Downlink, 99% Bandwidth, Middle Channel

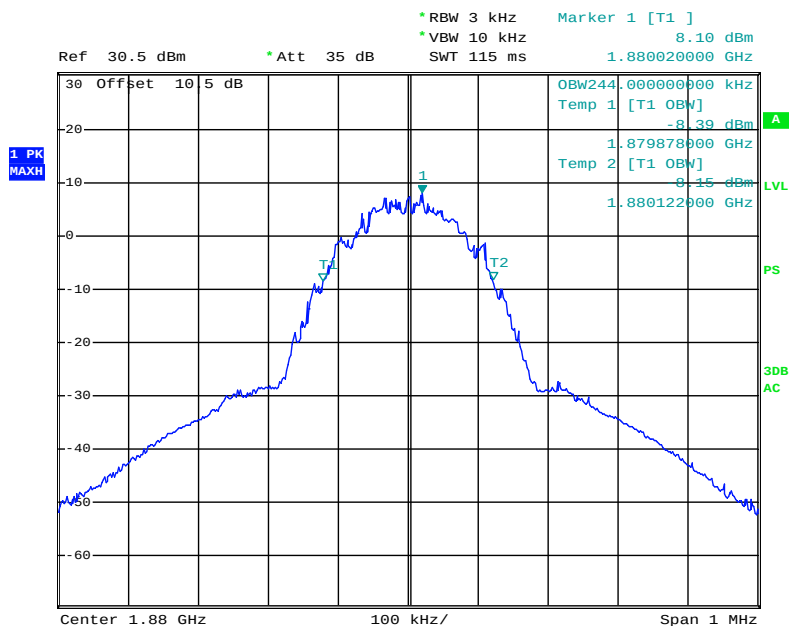


Date: 27.FEB.2012 10:06:40

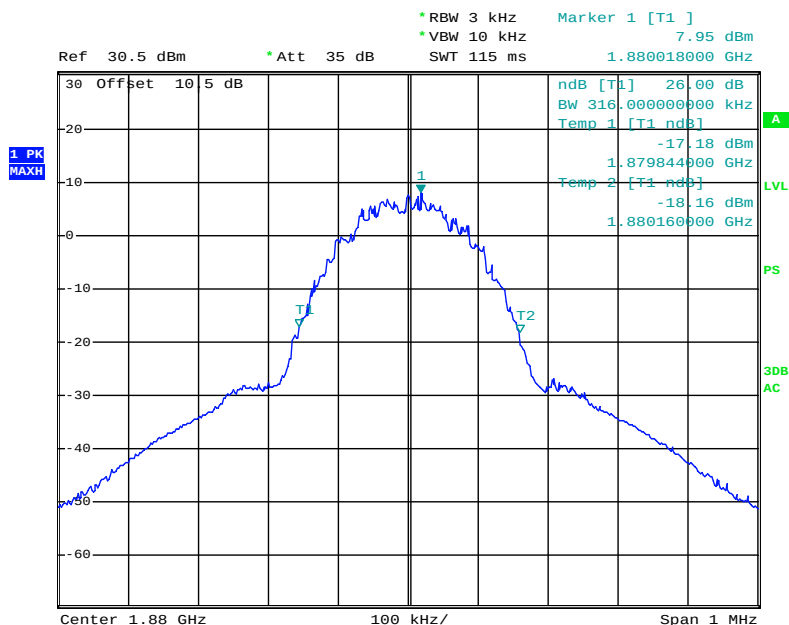
Input Signal, Downlink, 26 dB Bandwidth, Middle Channel



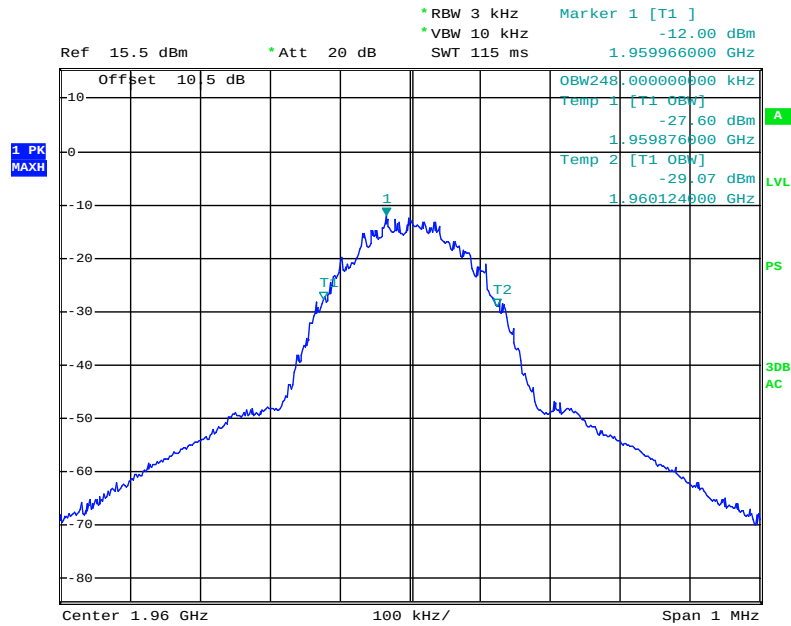
Date: 27.FEB.2012 10:07:33

Output Signal, Uplink, 99% Bandwidth, Middle Channel

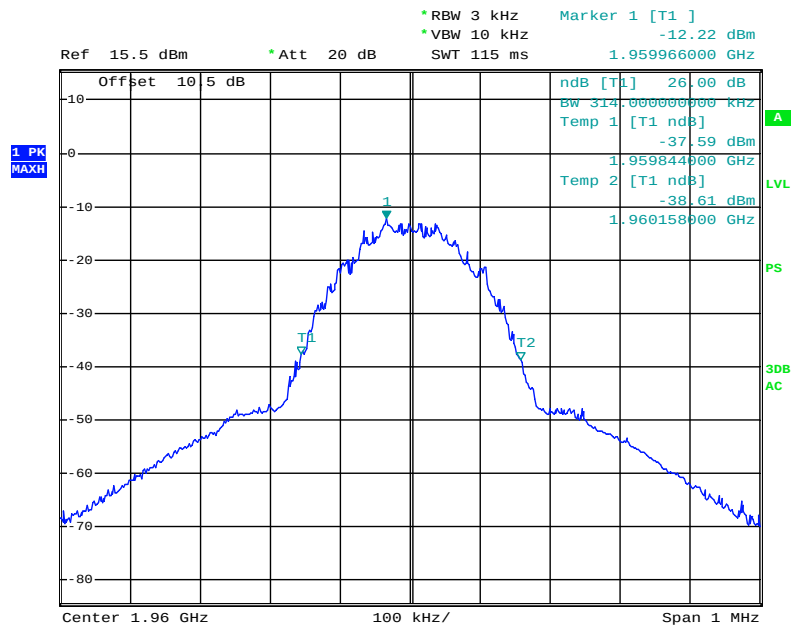
Date: 27.FEB.2012 09:47:04

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 09:45:27

Output Signal, Downlink, 99% Bandwidth, Middle Channel

Date: 27.FEB.2012 09:38:08

Output Signal, Downlink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 09:35:12

WCDMA:**Input signal**

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.6	4.188	4.740
Downlink (869-894 MHz)	881.6	4.200	4.716
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	4.200	4.752
Downlink (1930-1990 MHz)	1960.0	4.200	4.716

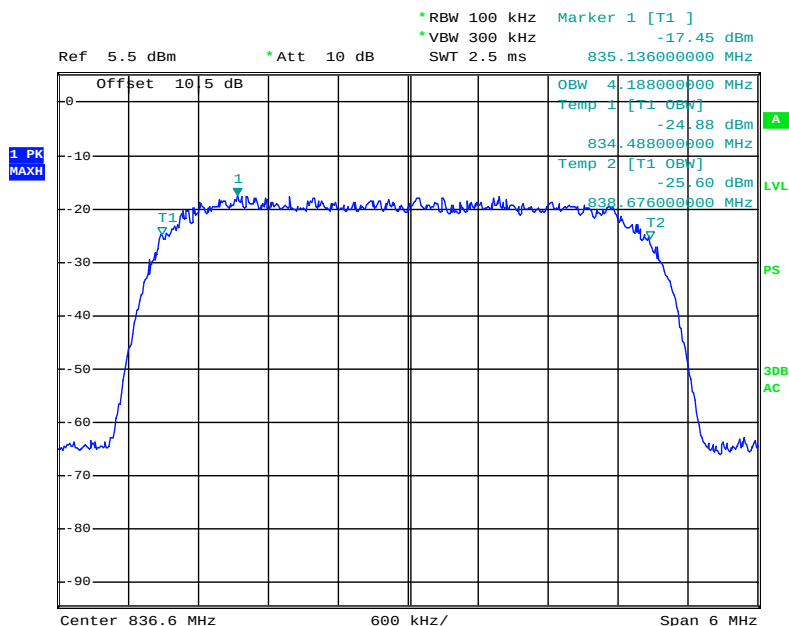
Output signal

Mode	Frequency (MHz)	99%Bandwidth (MHz)	26 dB Bandwidth (MHz)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	836.6	4.200	4.728
Downlink (869-894 MHz)	881.6	4.200	4.728
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1880.0	4.220	4.740
Downlink (1930-1990 MHz)	1960.0	4.200	4.716

Please refer to the following plots.

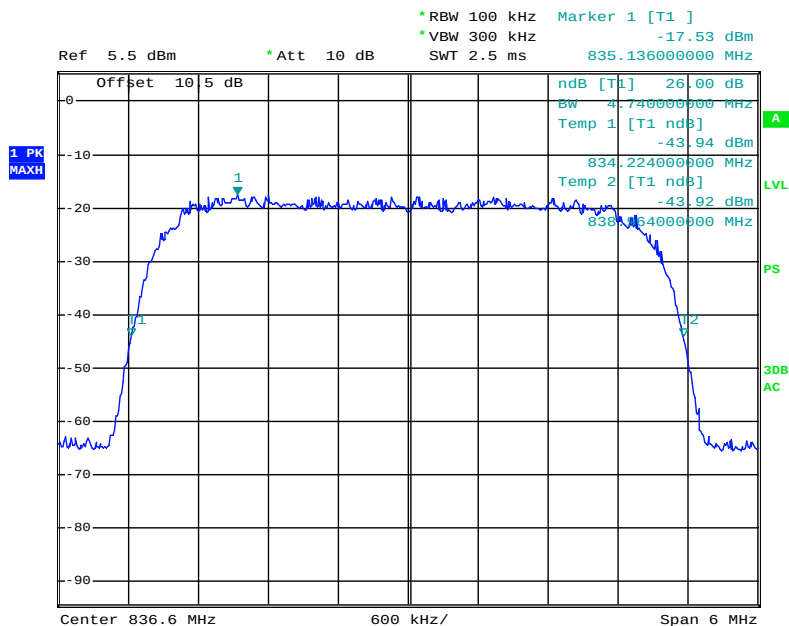
Cellular Band (Part 22H)

Input Signal, Uplink, 99% Bandwidth, Middle Channel



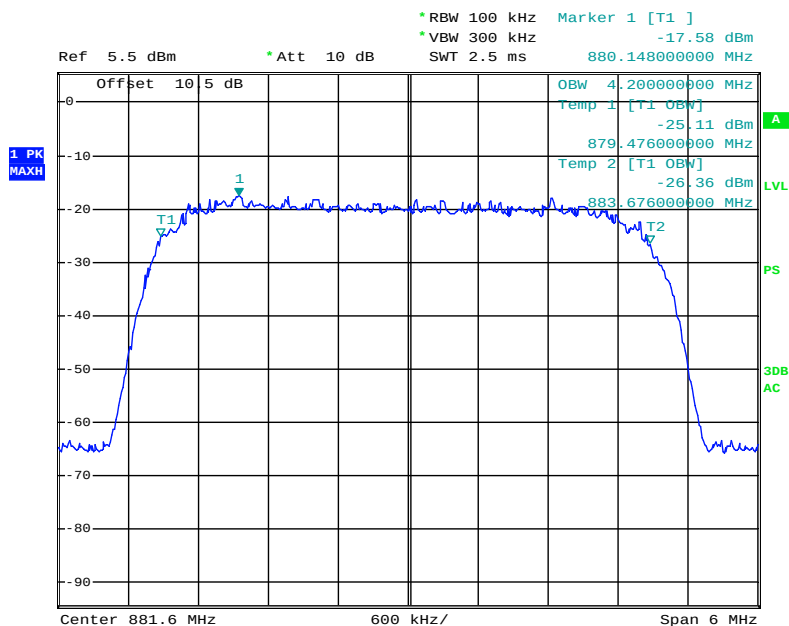
Date: 27.FEB.2012 14:55:49

Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



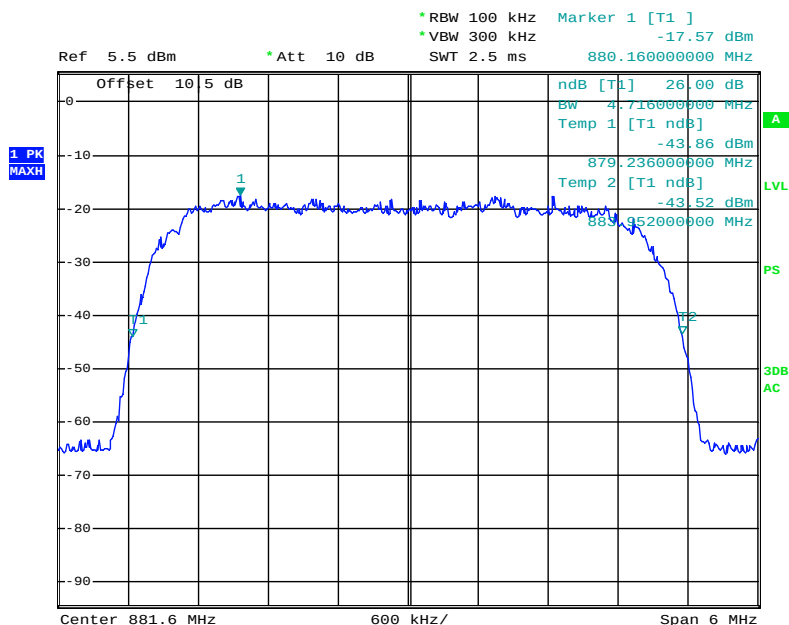
Date: 27.FEB.2012 14:55:18

Input Signal, Downlink, 99% Bandwidth, Middle Channel

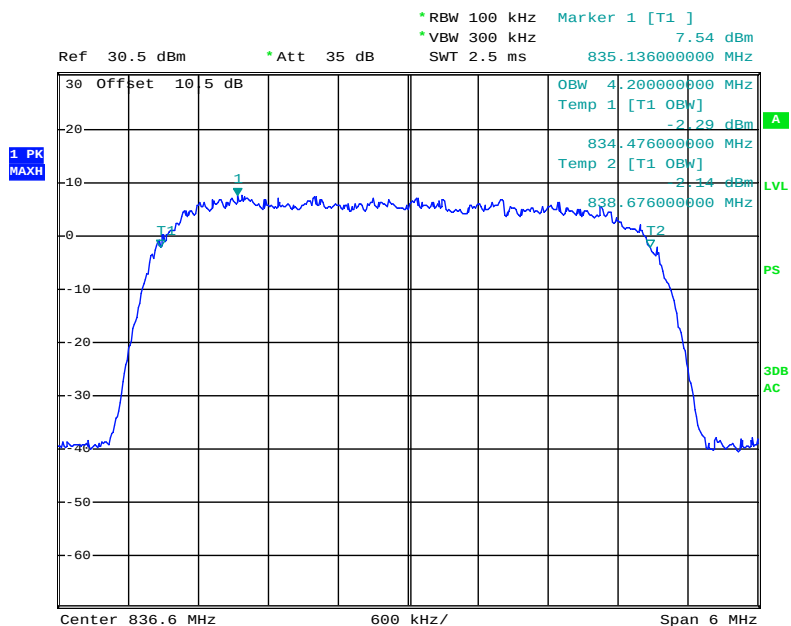


Date: 27.FEB.2012 14:57:08

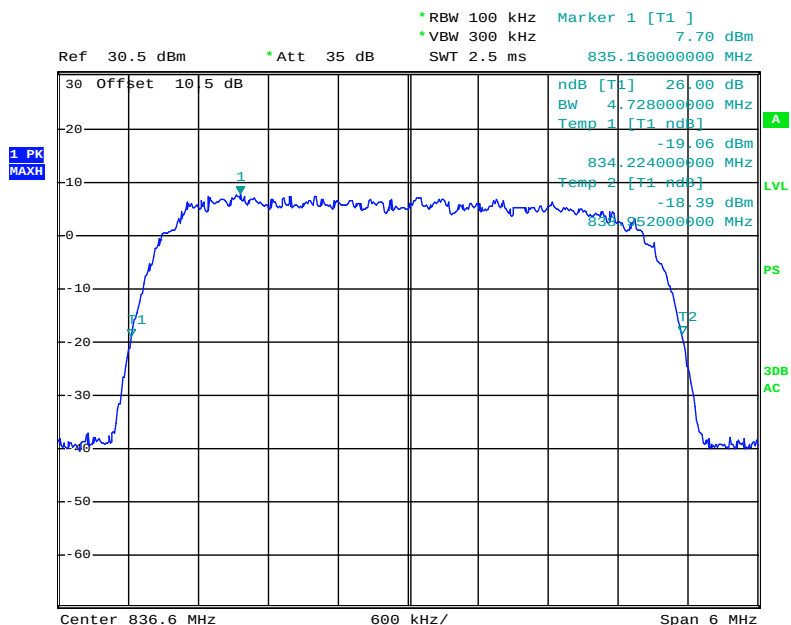
Input Signal, Downlink, 26 dB Bandwidth, Middle Channel



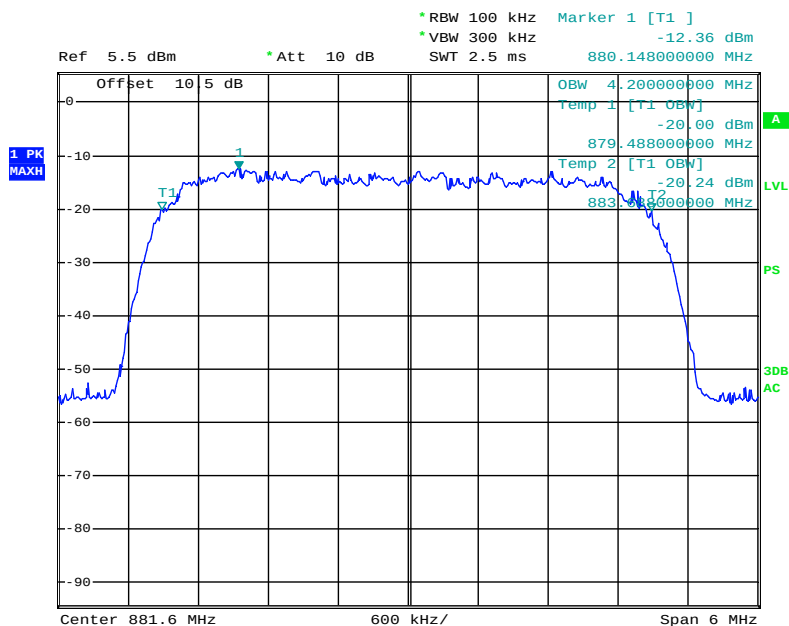
Date: 27.FEB.2012 14:57:30

Output Signal, Uplink, 99% Bandwidth, Middle Channel

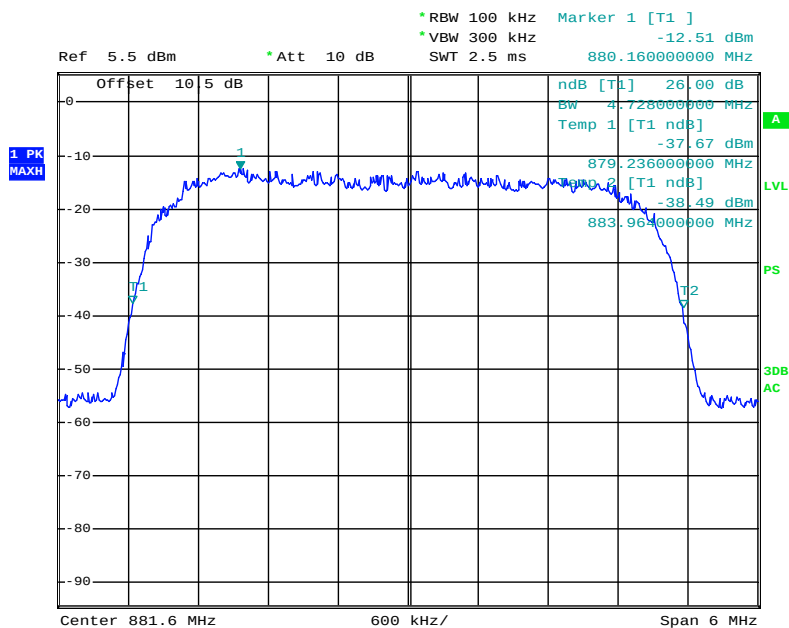
Date: 27.FEB.2012 13:28:35

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 13:27:55

Output Signal, Downlink, 99% Bandwidth, Middle Channel

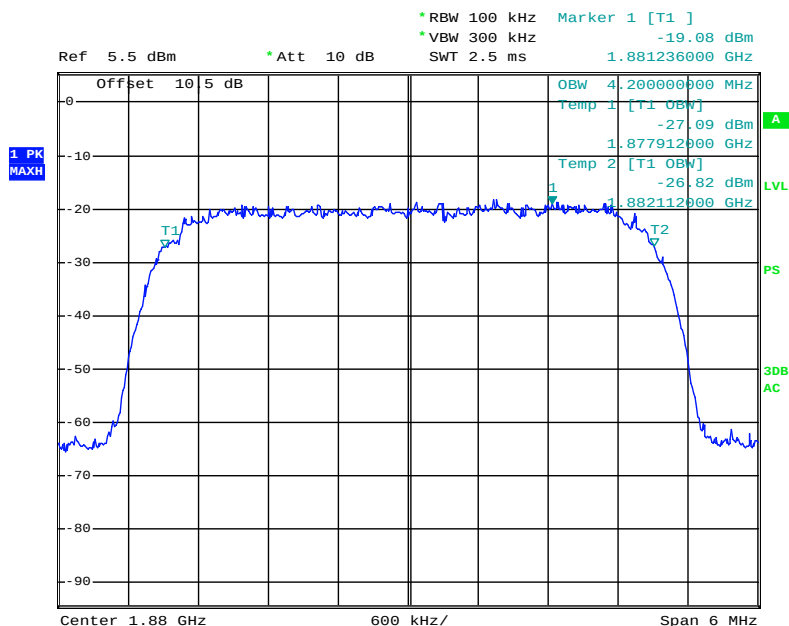
Date: 27.FEB.2012 13:36:24

Output Signal, Downlink, 26 dB Bandwidth, Middle Channel

Date: 27.FEB.2012 13:36:57

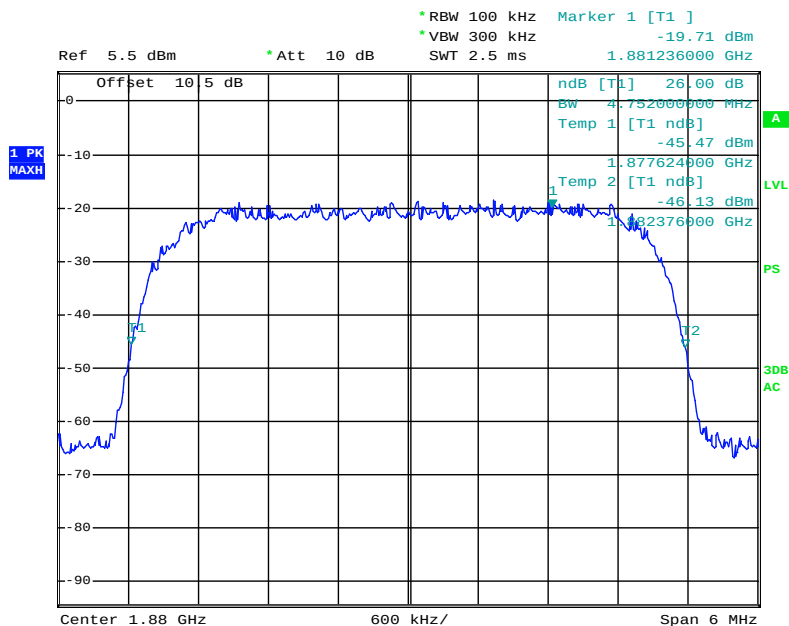
PCS Band (Part 24E)

Input Signal, Uplink, 99% Bandwidth, Middle Channel

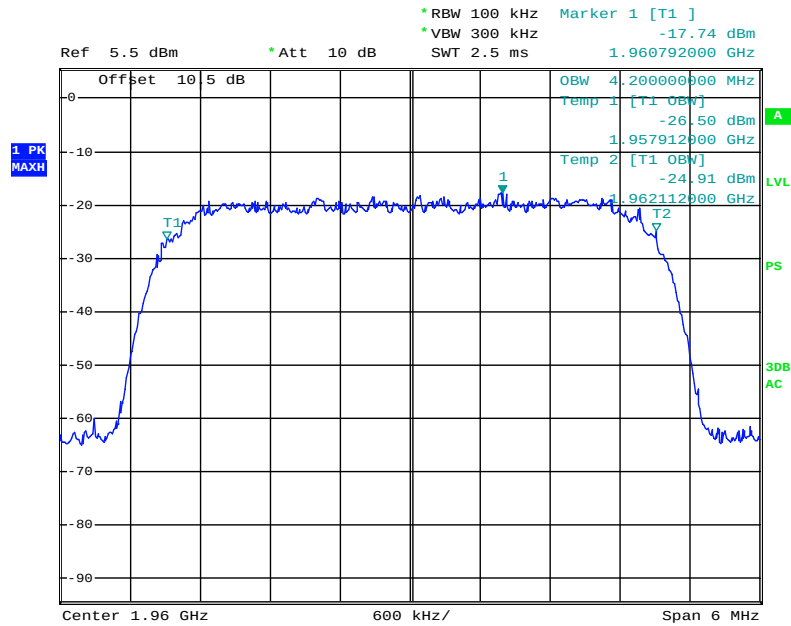


Date: 27.FEB.2012 14:53:19

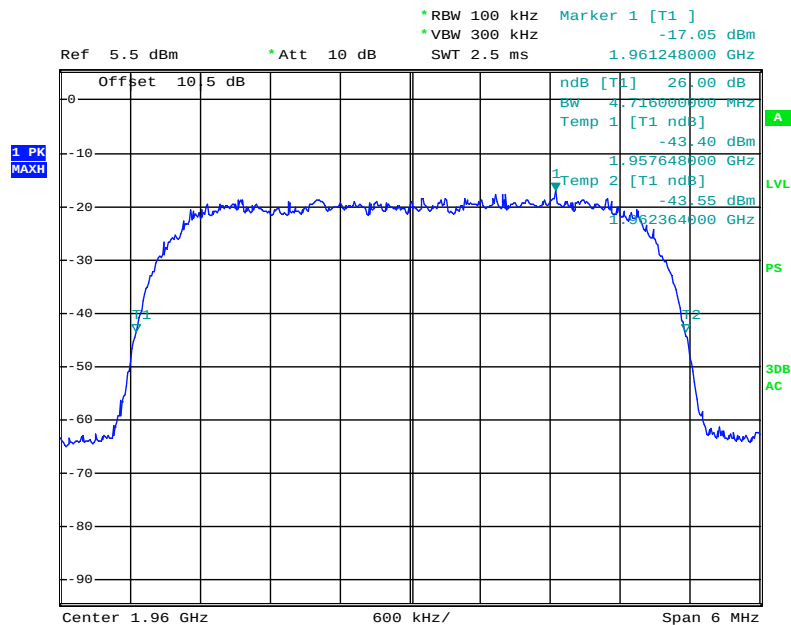
Input Signal, Uplink, 26 dB Bandwidth, Middle Channel



Date: 27.FEB.2012 14:53:34

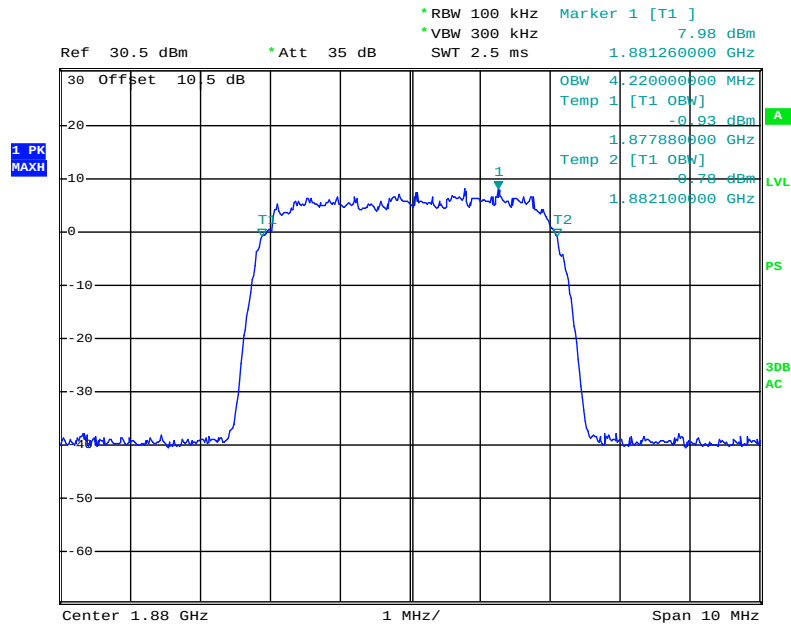
Input Signal, Downlink, 99% Bandwidth, Middle Channel

Date: 27.FEB.2012 14:58:40

Input Signal, Downlink, 26 dB Bandwidth, Middle Channel

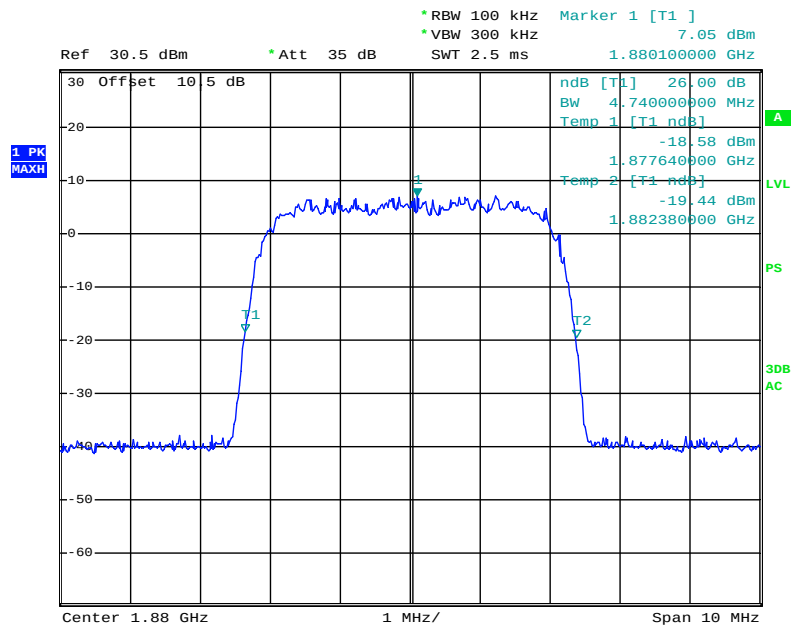
Date: 27.FEB.2012 14:58:17

Output Signal, Uplink, 99% Bandwidth, Middle Channel



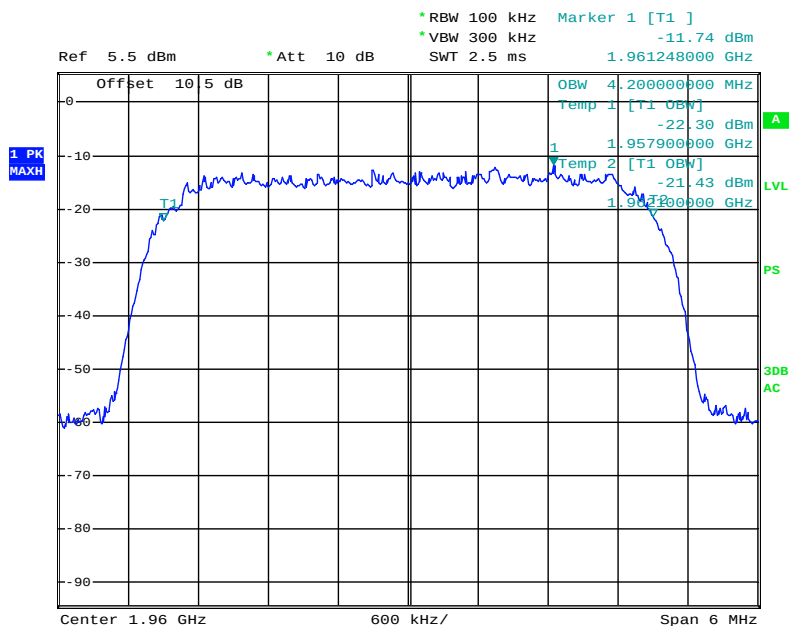
Date: 27.FEB.2012 13:12:43

Output Signal, Uplink, 26 dB Bandwidth, Middle Channel



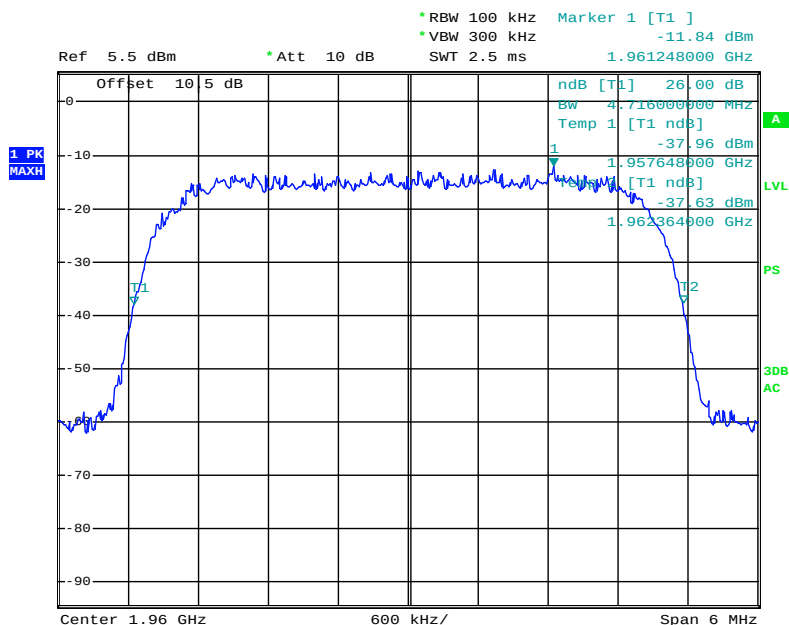
Date: 27.FEB.2012 13:13:10

Output Signal, Downlink, 99% Bandwidth, Middle Channel



Date: 27.FEB.2012 13:45:39

Output Signal, Downlink, 26 dB Bandwidth, Middle Channel



Date: 27.FEB.2012 13:45:55

FCC §2.1051, §22.917(a) & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

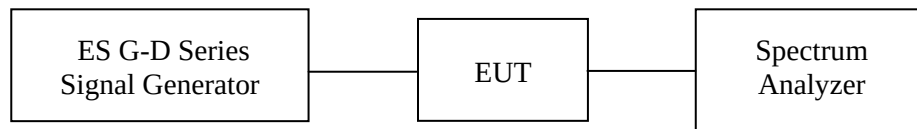
Applicable Standards

FCC §2.1051, §22.917(a) and §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ 26	609358	2011-07-08	2012-07-07
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2011-10-28	2012-10-27
HP	Synthesized Sweeper	8341B	2624A00116	2011-04-11	2012-04-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

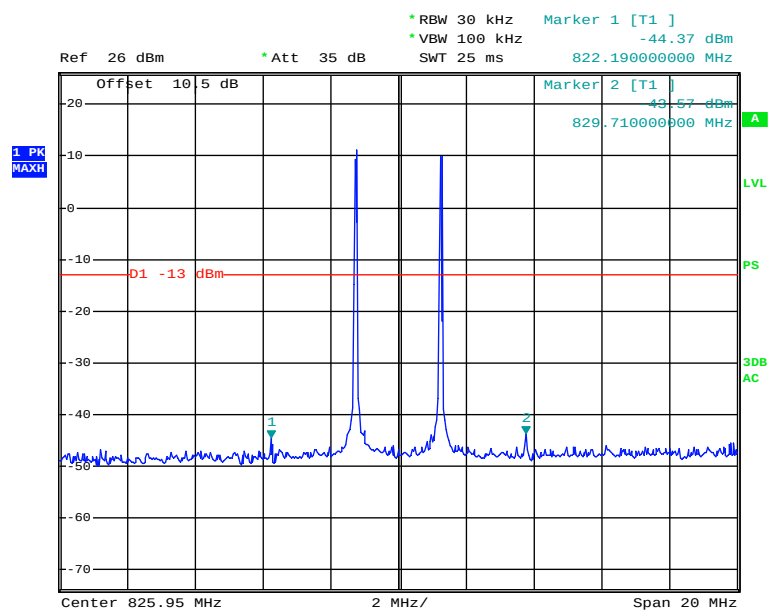
The testing was performed by Felix Li from 2012-02-27 to 2012-02-29.

Please refer to the following plots.

CDMA

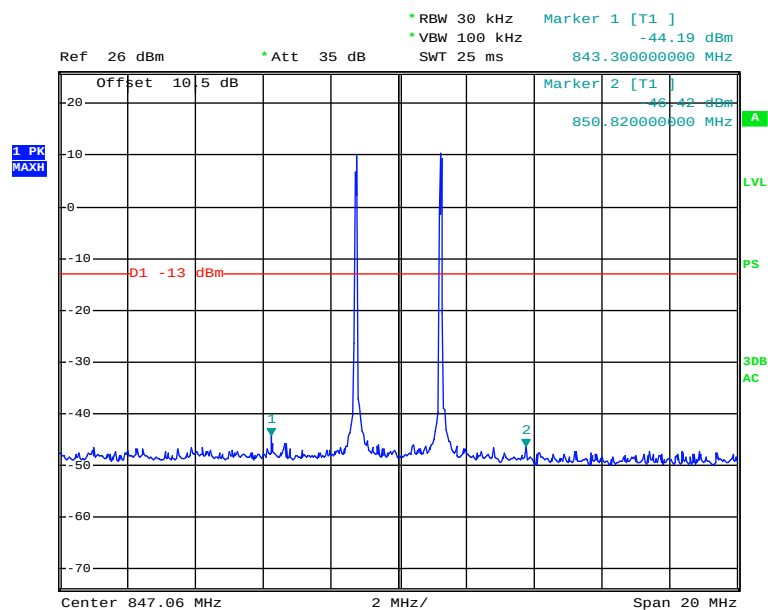
Cellular Band (Part 22H)

Uplink, Inter-modulation, Low-band edge



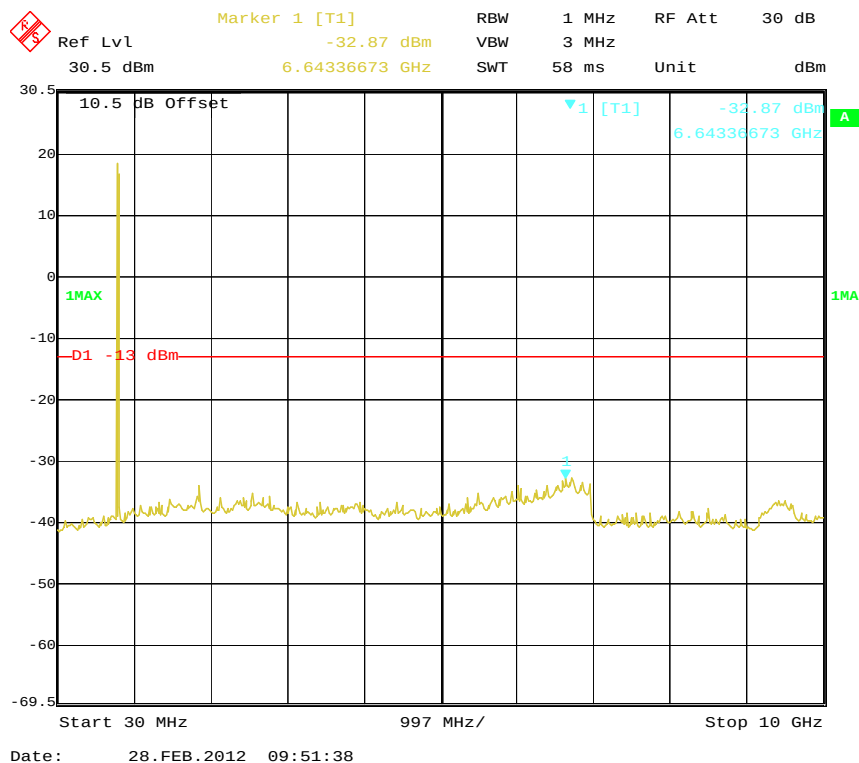
Date: 28.FEB.2012 11:54:46

Uplink, Inter-modulation, High-band edge

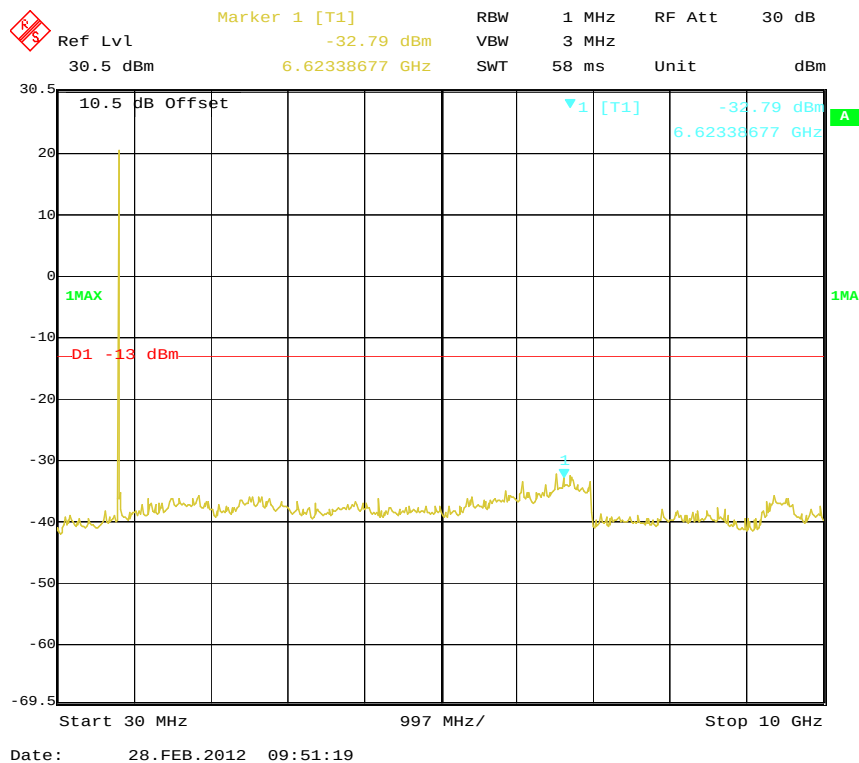


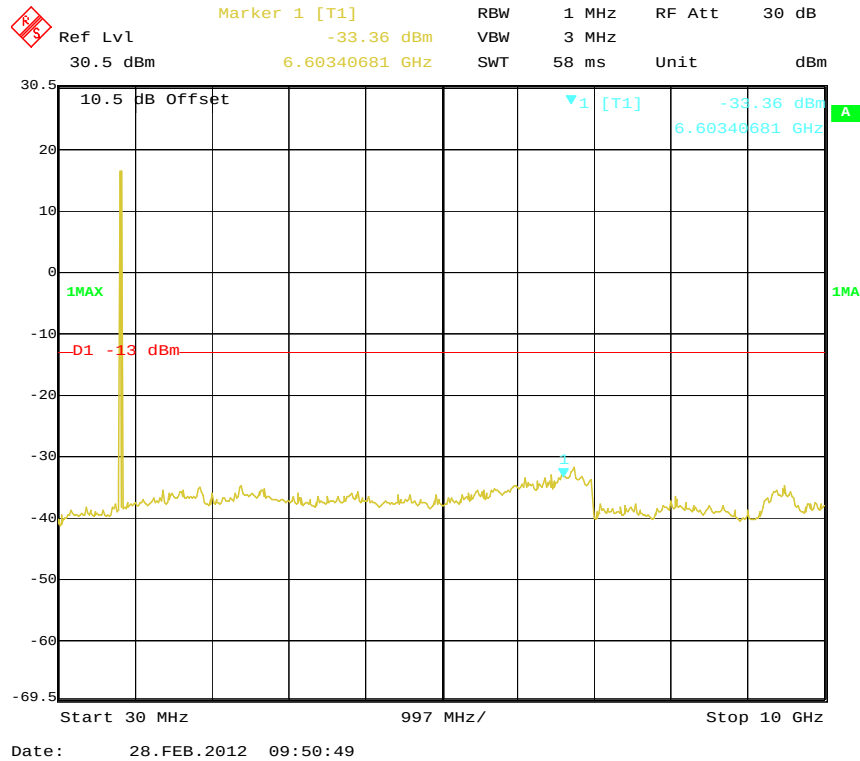
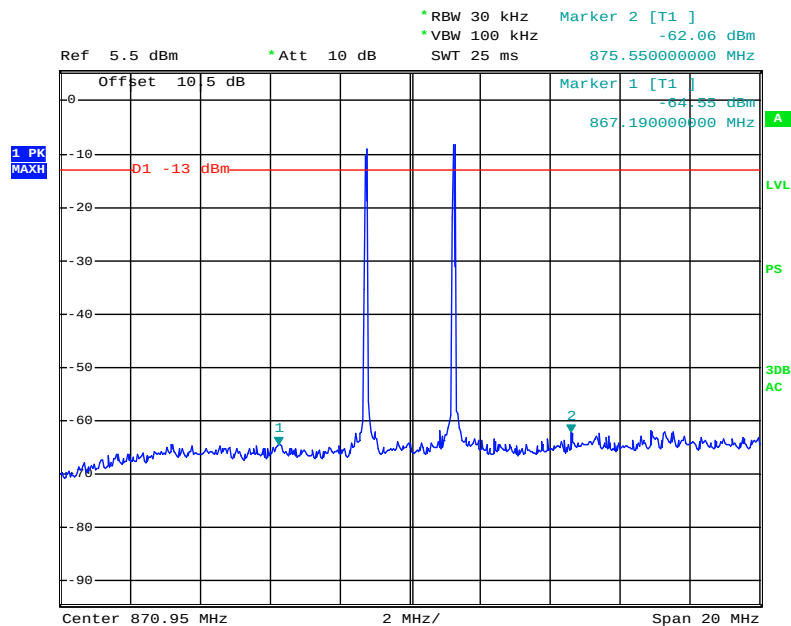
Date: 28.FEB.2012 11:56:55

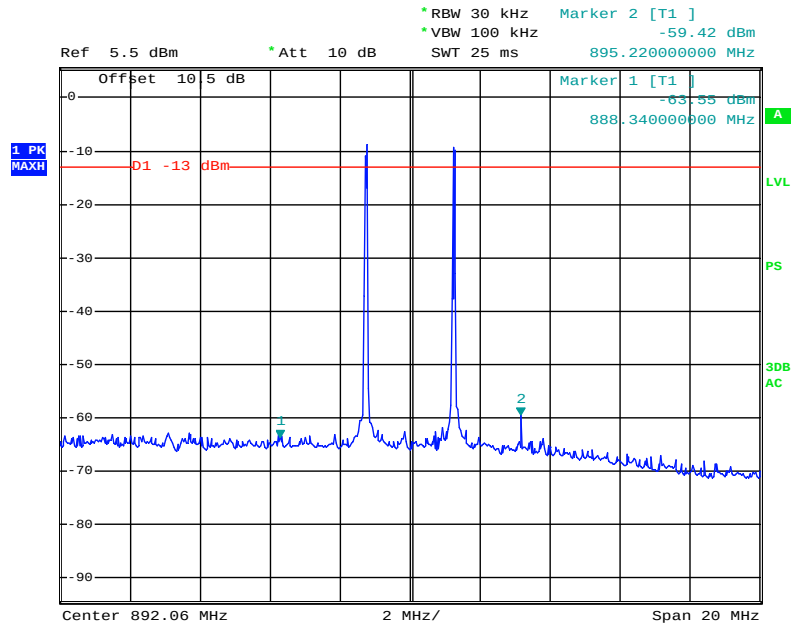
Uplink, Spurious Emissions at Antenna Terminal, Low Channel



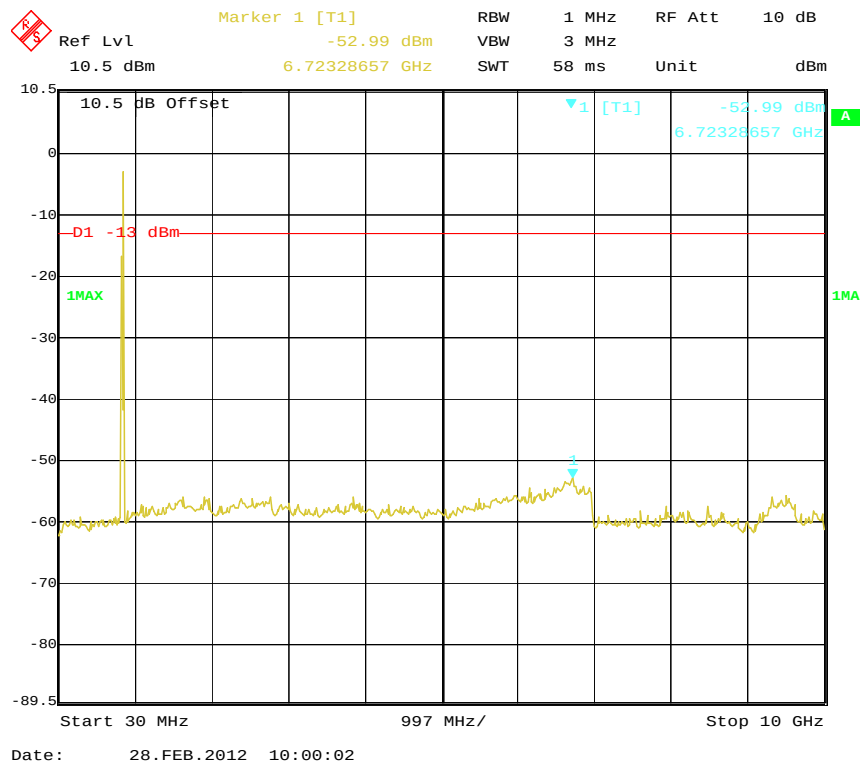
Uplink, Spurious Emissions at Antenna Terminal, Middle Channel

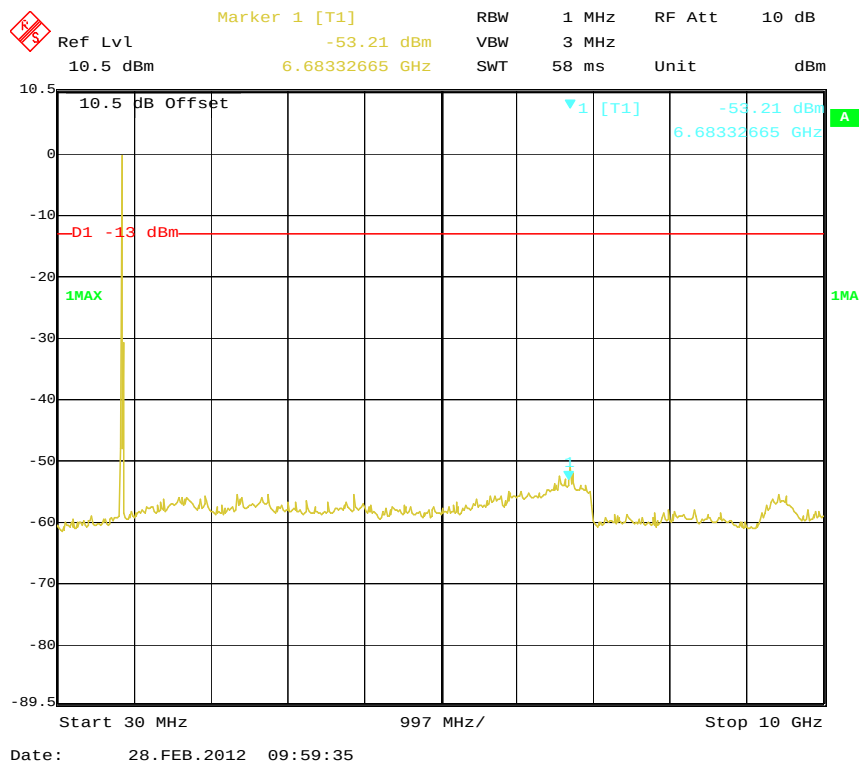
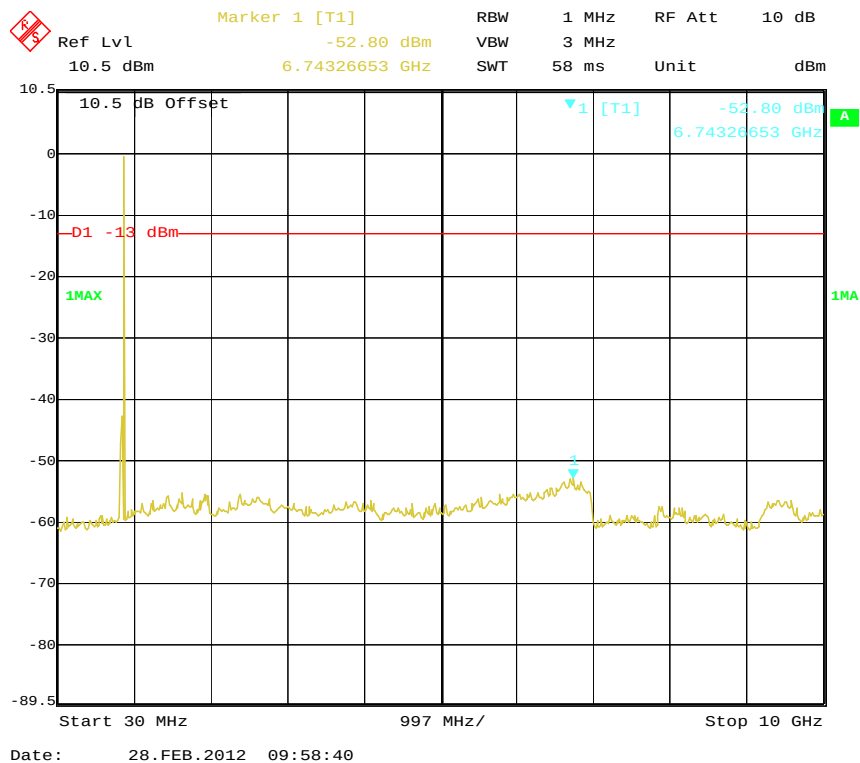


Uplink, Spurious Emissions at Antenna Terminal, High Channel**Downlink, Inter-modulation, Low-band edge**

Downlink, Inter-modulation, High-band edge

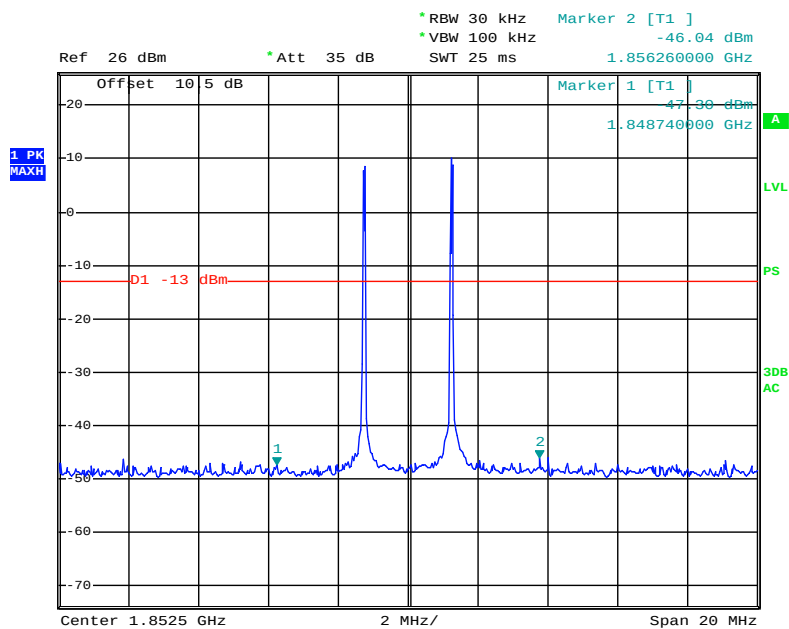
Date: 28.FEB.2012 11:46:17

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

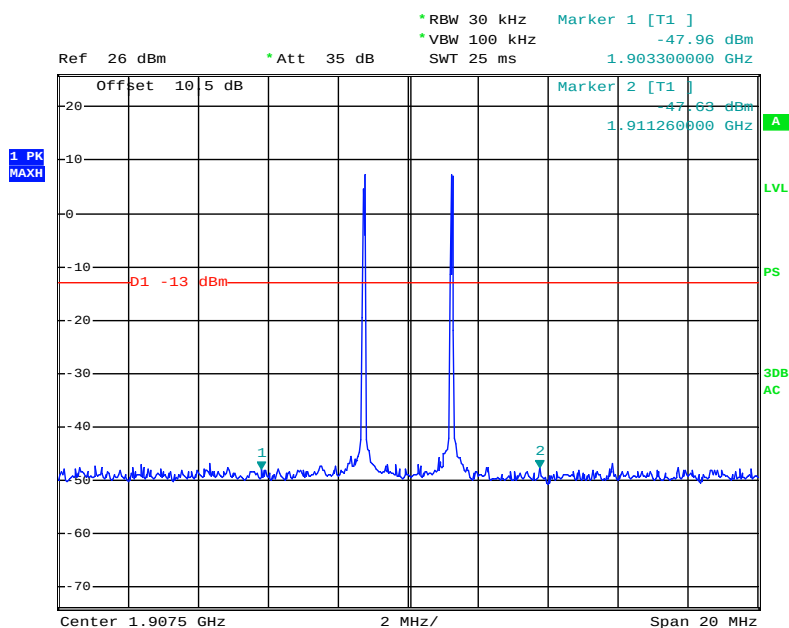
PCS Band (Part 24E)

Uplink, Inter-modulation, Low-band edge



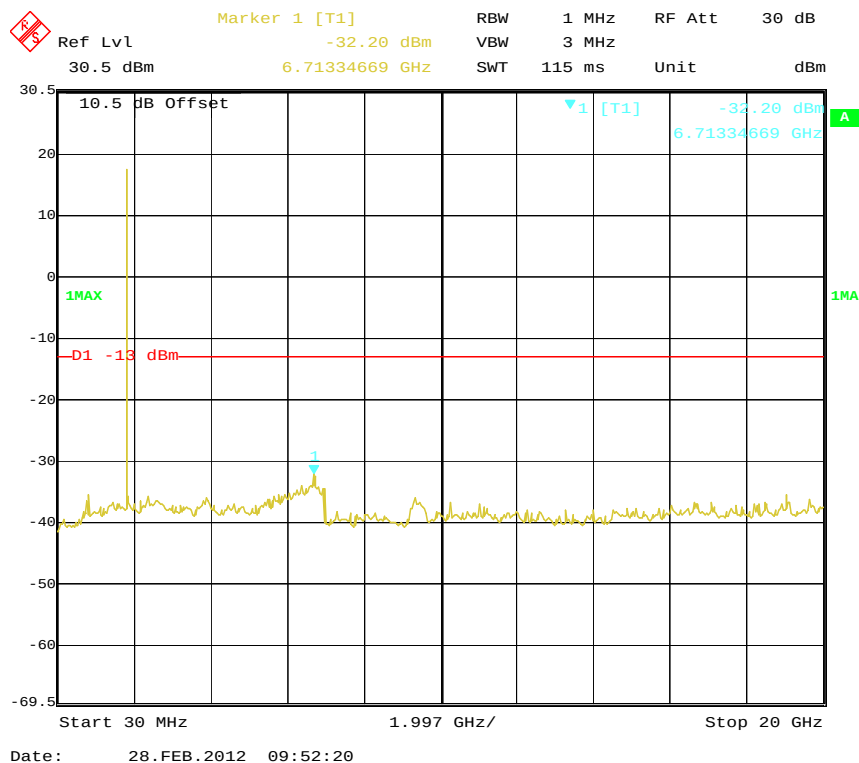
Date: 28.FEB.2012 11:58:44

Uplink, Inter-modulation, High-band edge

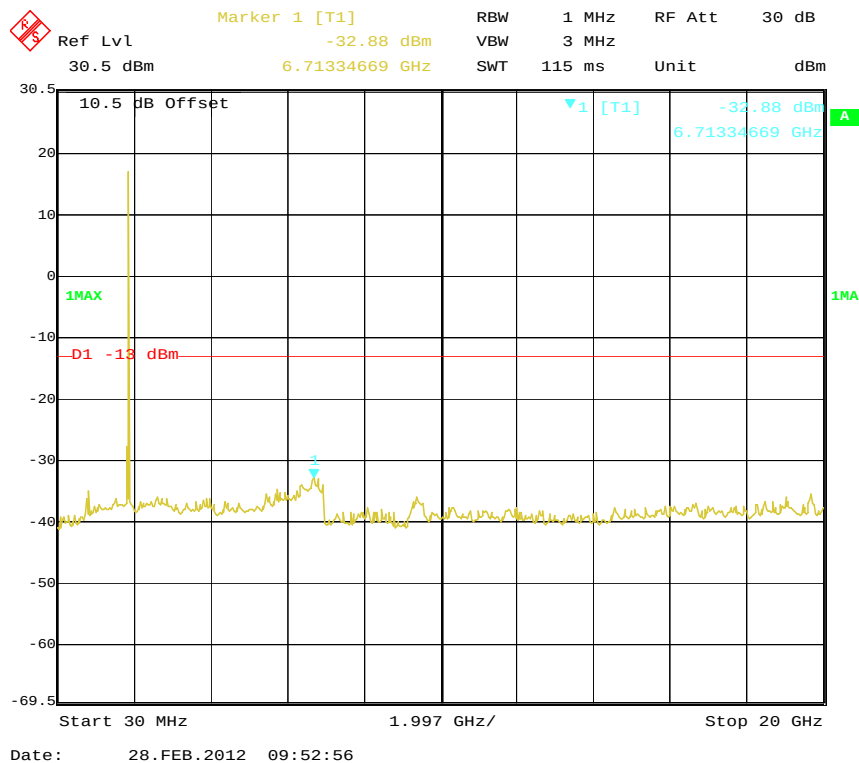


Date: 28.FEB.2012 12:02:14

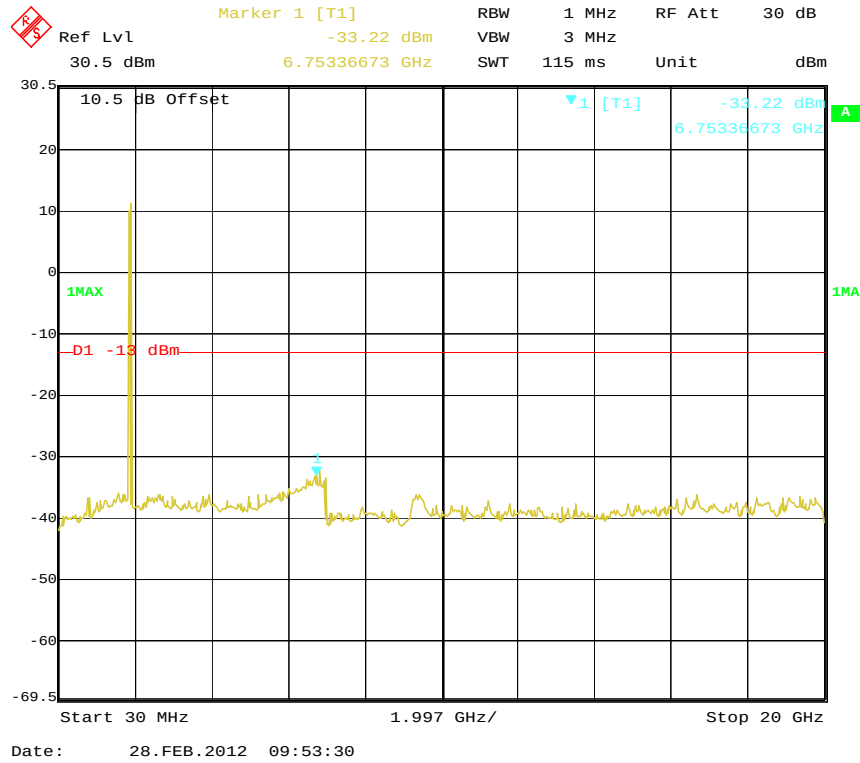
Uplink, Spurious Emissions at Antenna Terminal, Low Channel



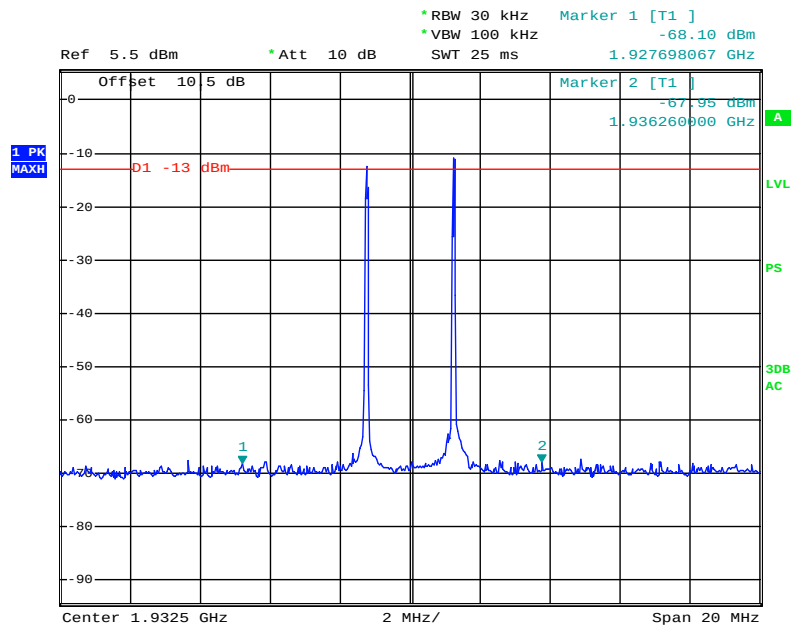
Uplink, Spurious Emissions at Antenna Terminal, Middle Channel

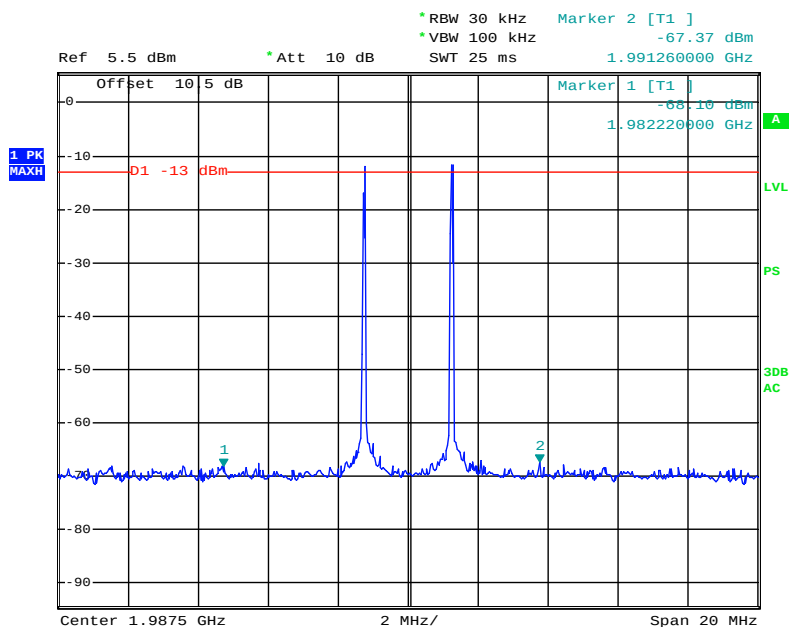


Uplink, Spurious Emissions at Antenna Terminal, High Channel

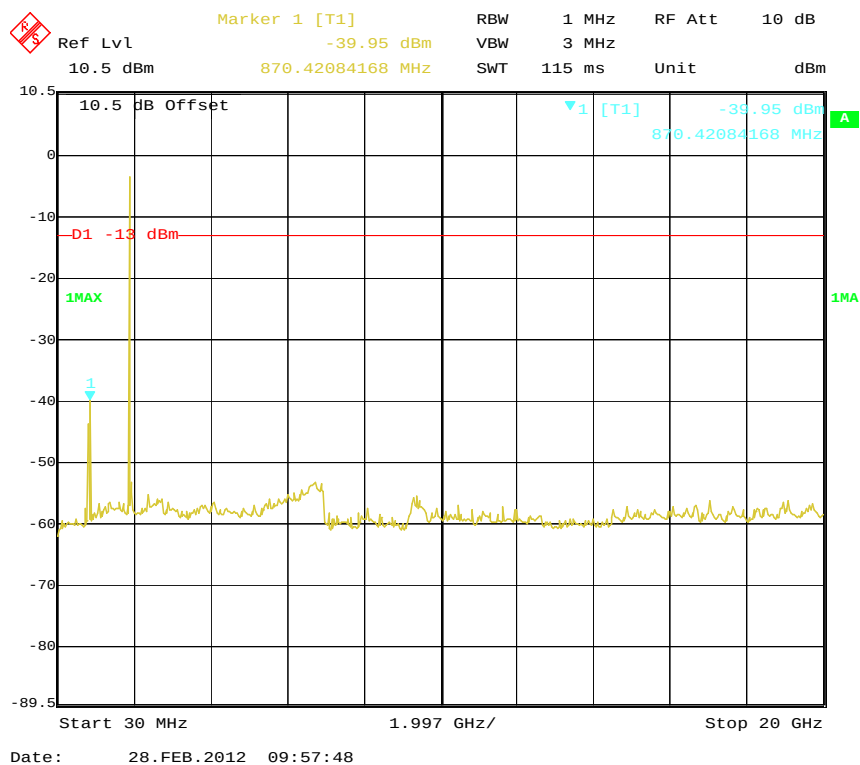


Downlink, Inter-modulation, Low-band edge



Downlink, Inter-modulation, High-band edge

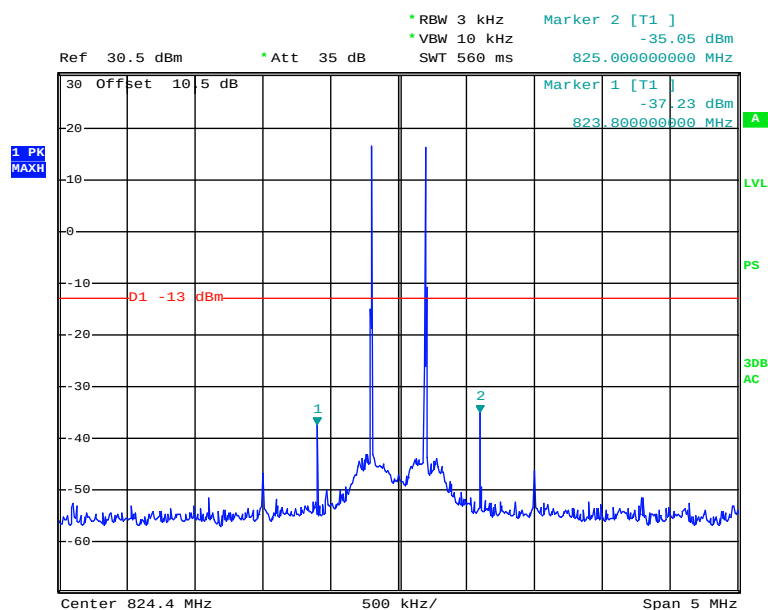
Date: 28.FEB.2012 11:50:09

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

GSM

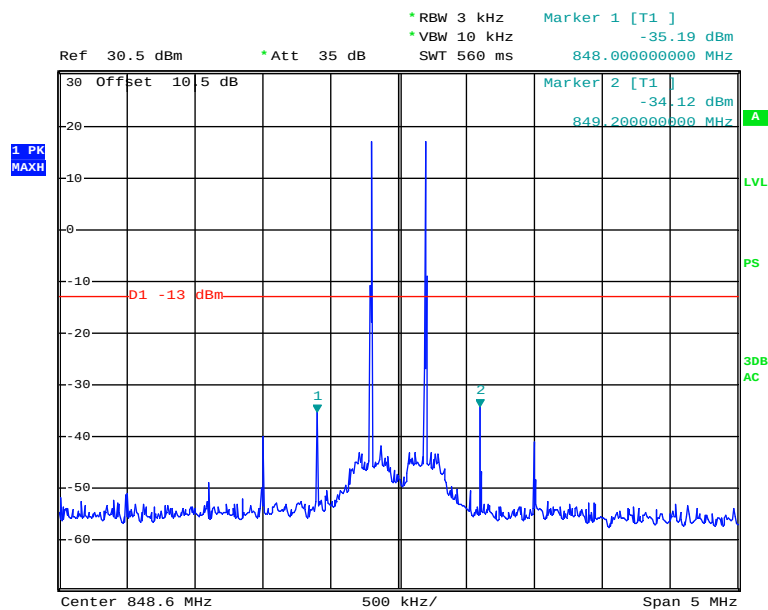
Cellular Band (Part 22H)

Uplink, Inter-modulation, Low-band edge



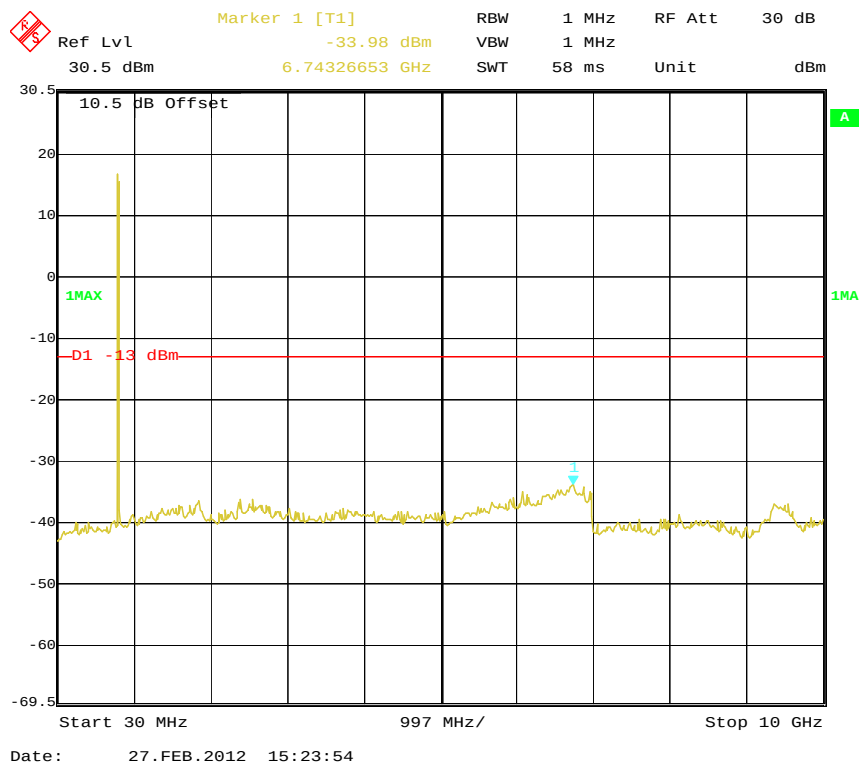
Date: 28.FEB.2012 11:00:07

Uplink, Inter-modulation, High -band edge

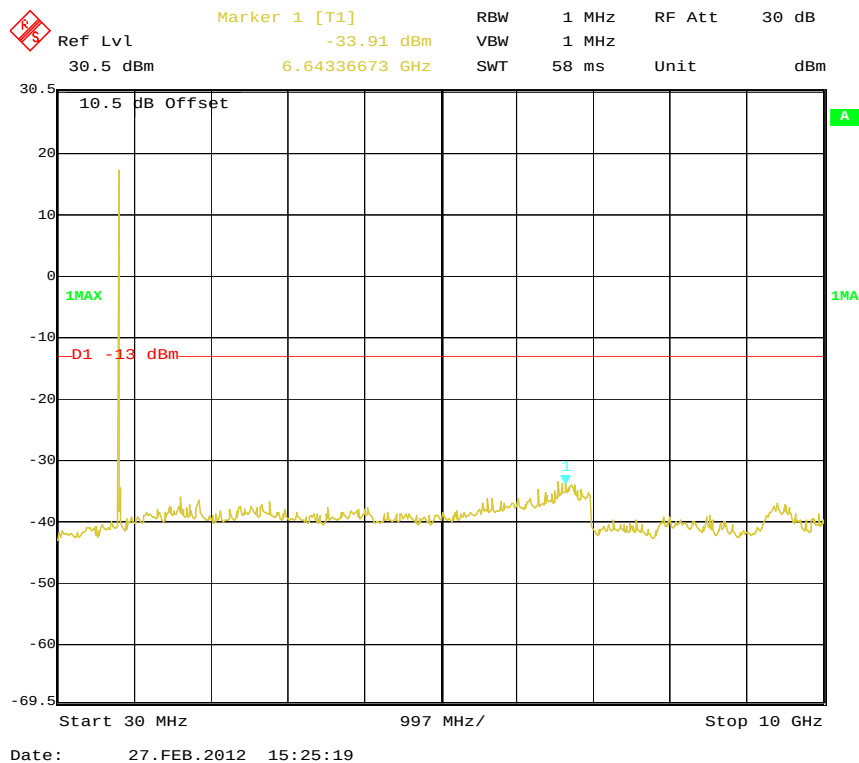


Date: 28.FEB.2012 11:01:44

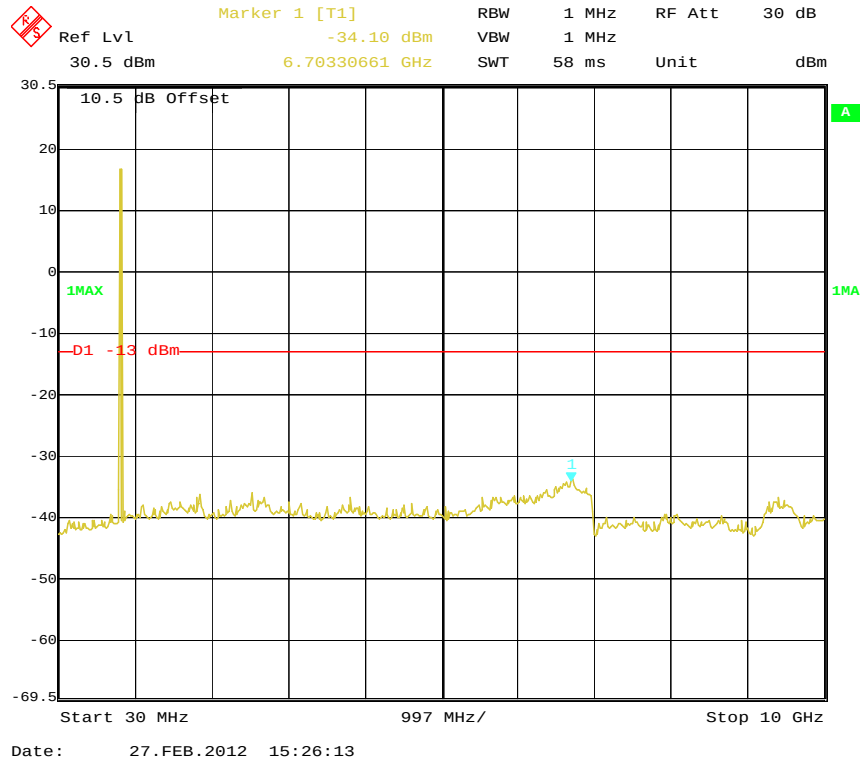
Uplink, Spurious Emissions at Antenna Terminal, Low Channel



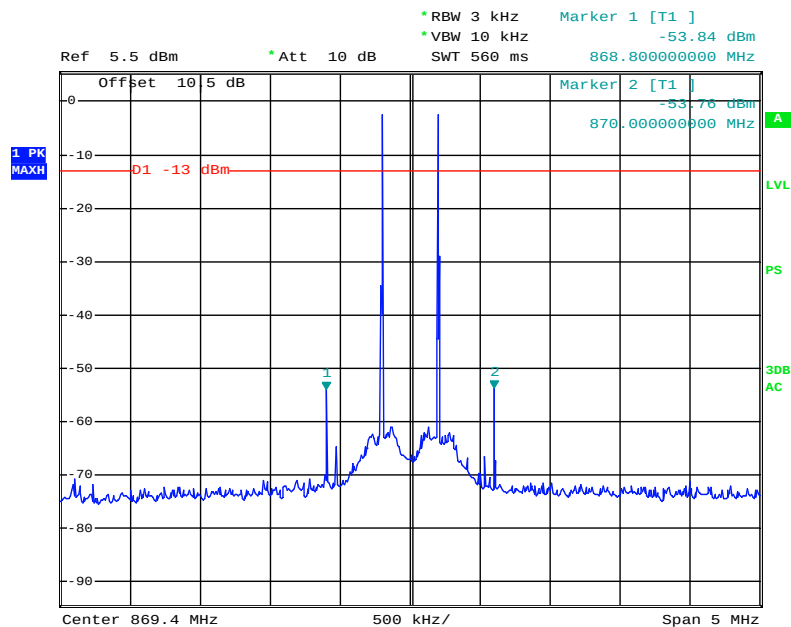
Uplink, Spurious Emissions at Antenna Terminal, Middle Channel



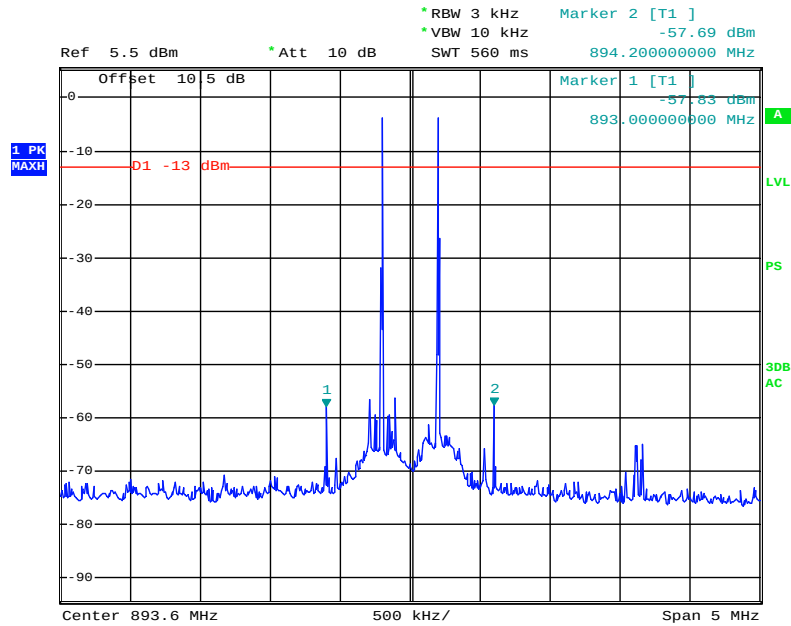
Uplink, Spurious Emissions at Antenna Terminal, High Channel



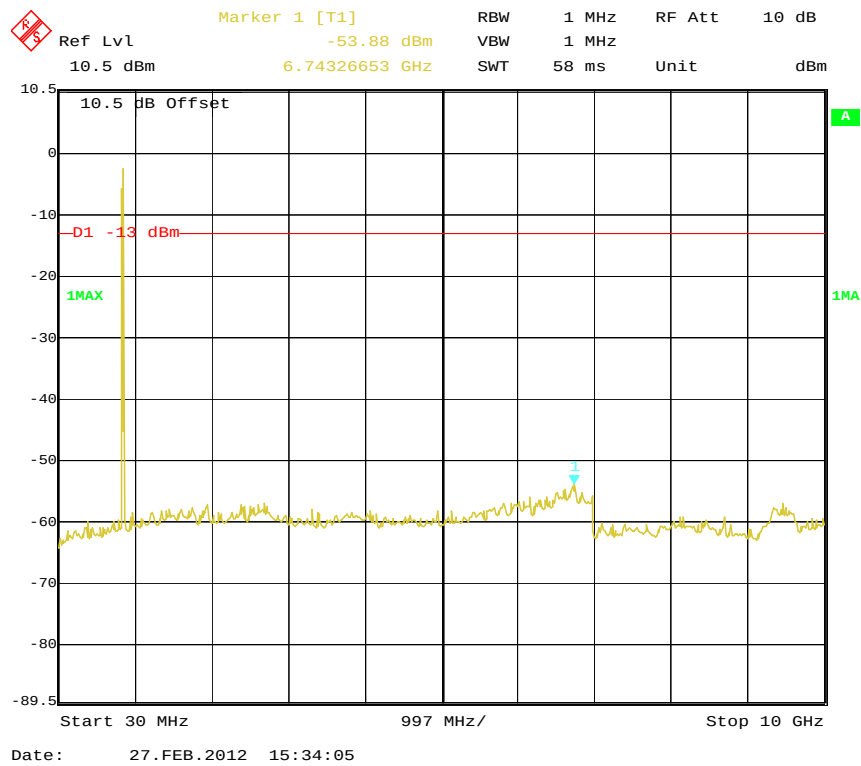
Downlink, Inter-modulation, Low-band edge

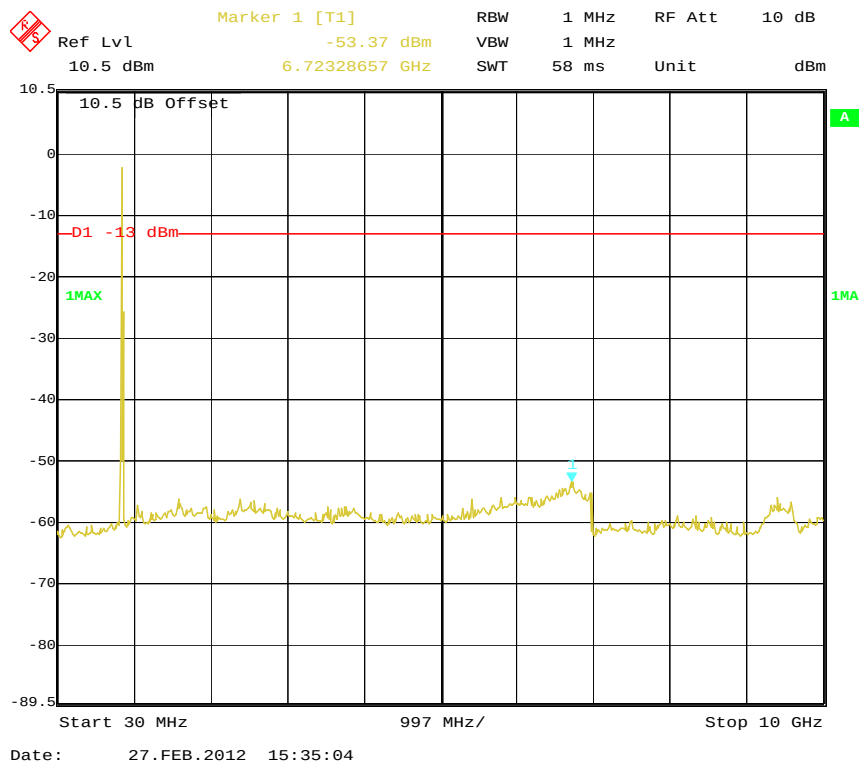
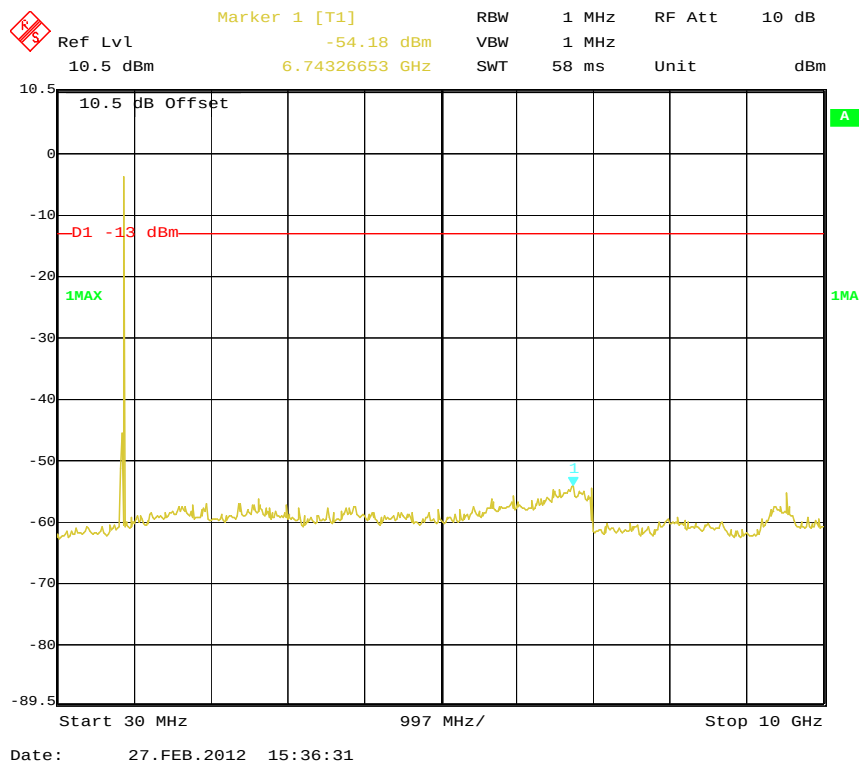


Date: 28.FEB.2012 10:48:40

Downlink, Inter-modulation, High-band edge

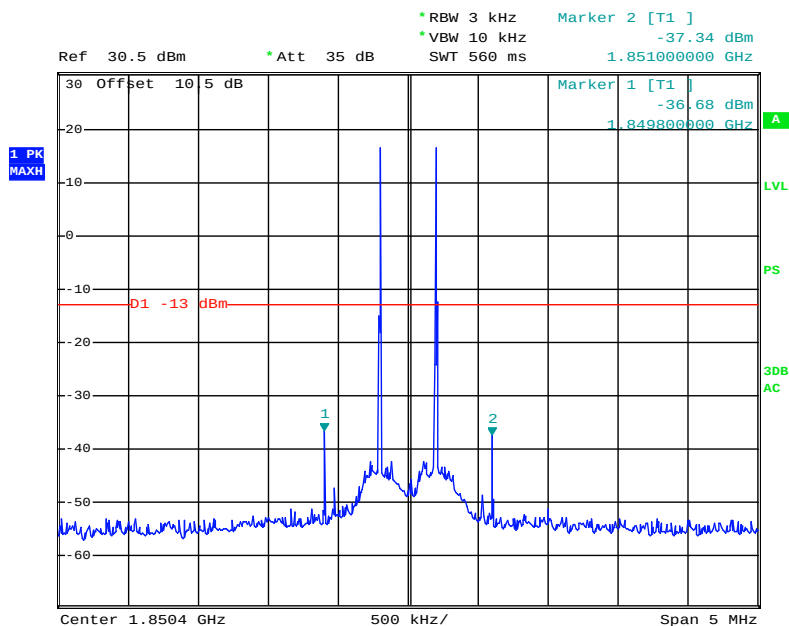
Date: 28.FEB.2012 10:50:25

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

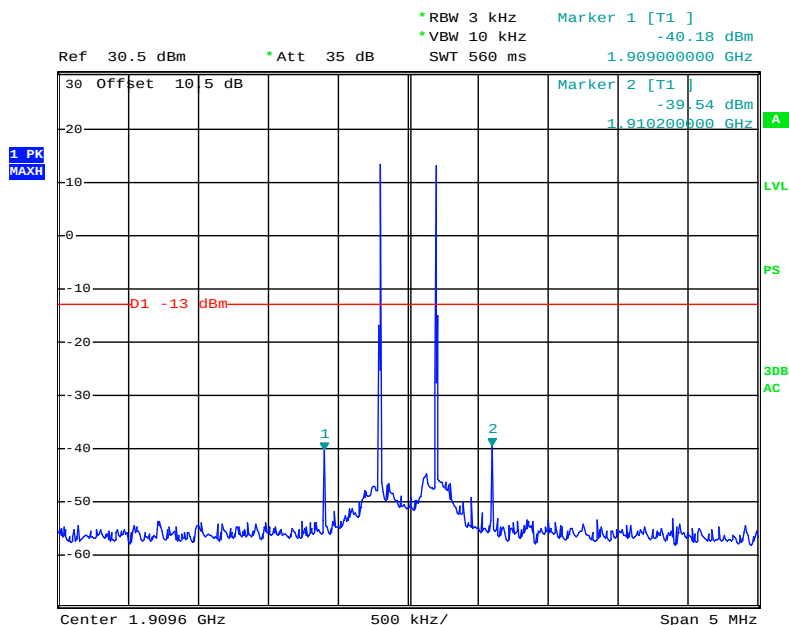
PCS Band (Part 24E)

Uplink, Inter-modulation, Low-band edge



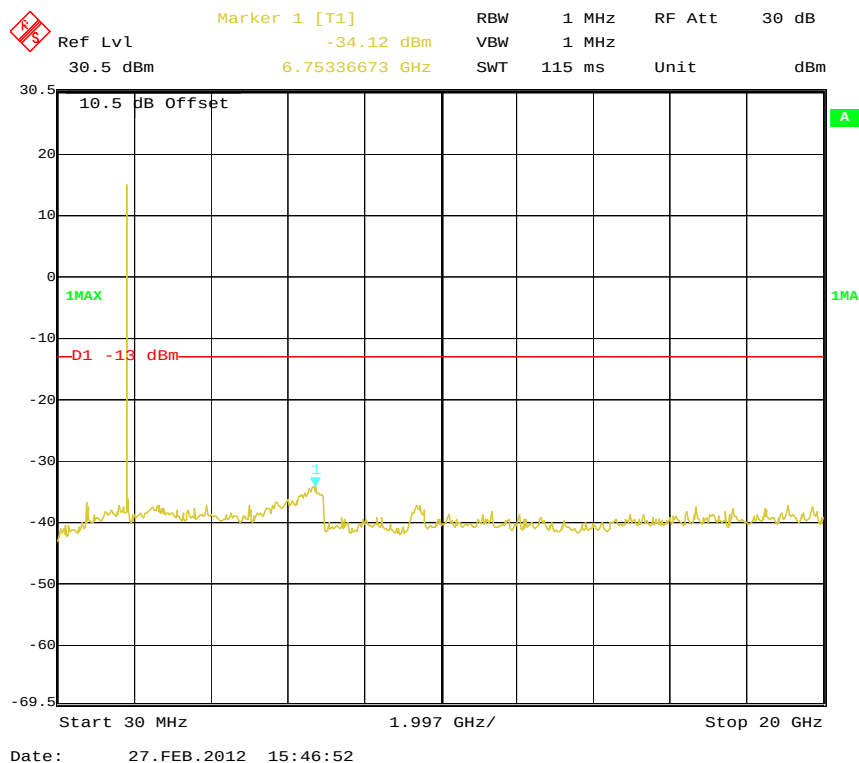
Date: 28.FEB.2012 11:03:53

Uplink, Inter-modulation, High -band edge

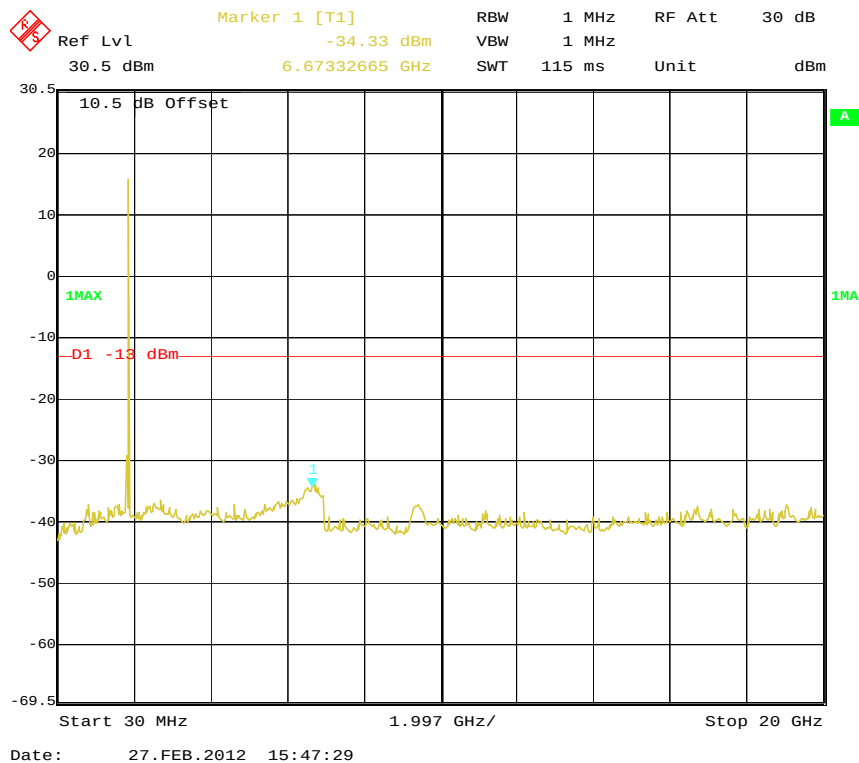


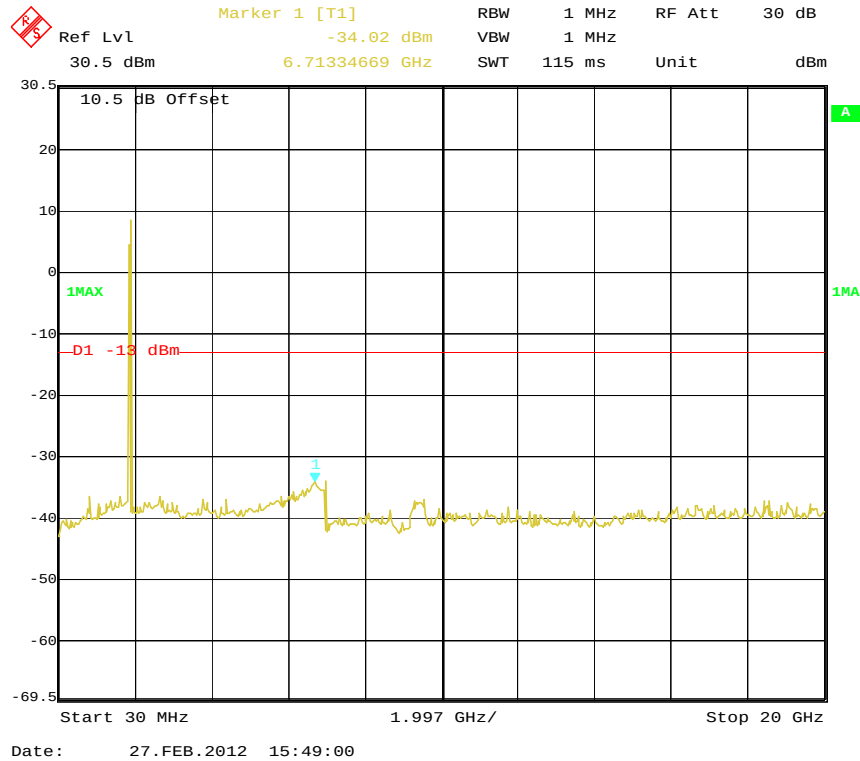
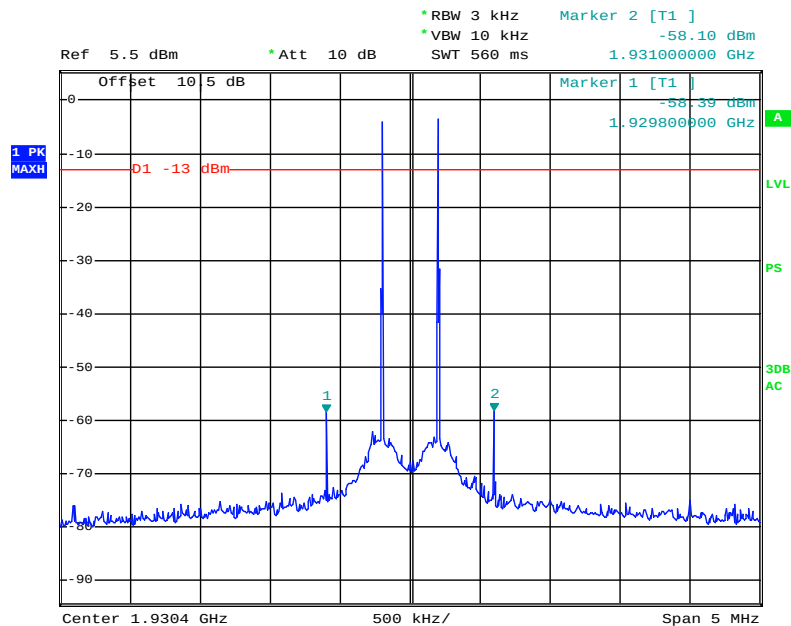
Date: 28.FEB.2012 11:09:43

Uplink, Spurious Emissions at Antenna Terminal, Low Channel

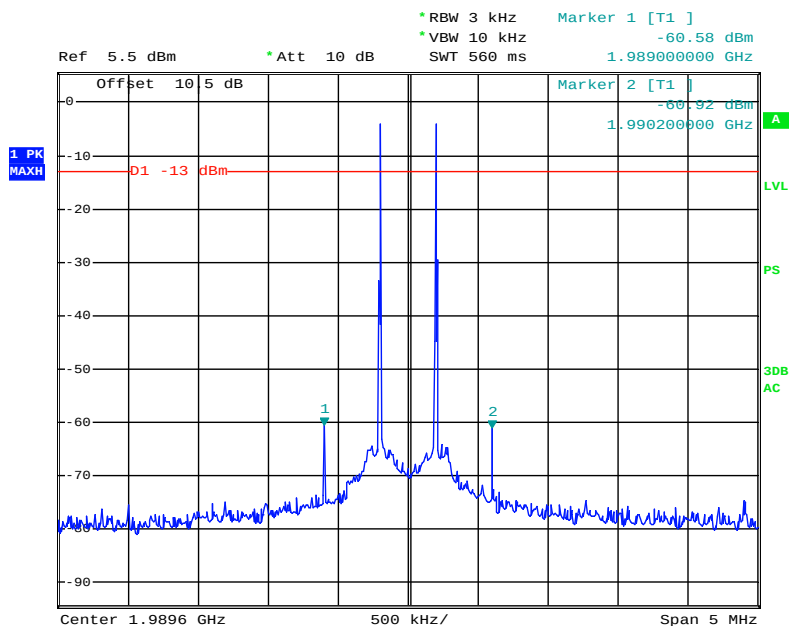


Uplink, Spurious Emissions at Antenna Terminal, Middle Channel

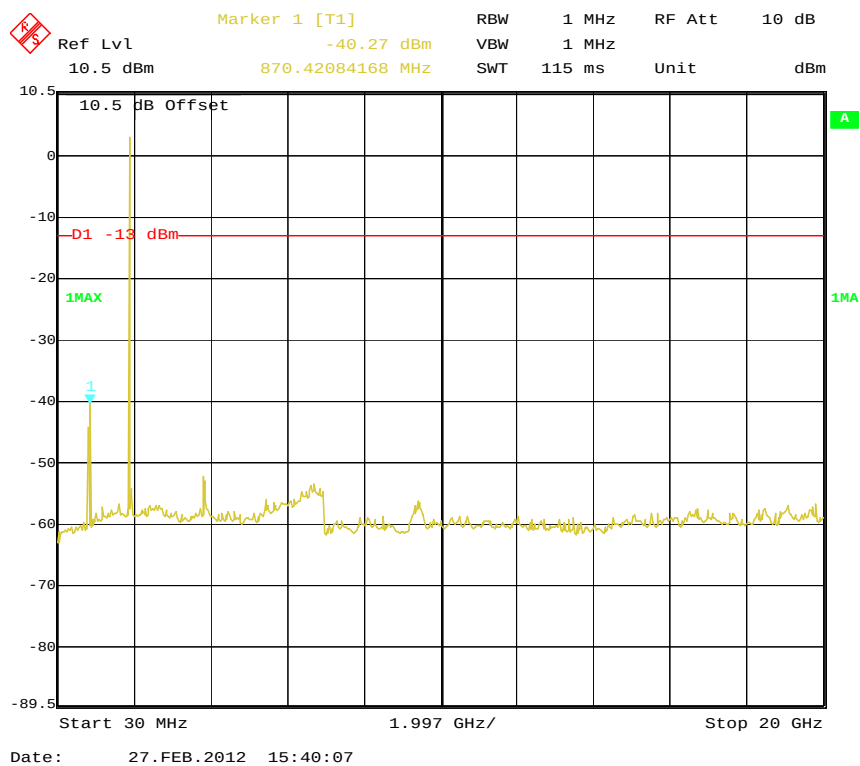


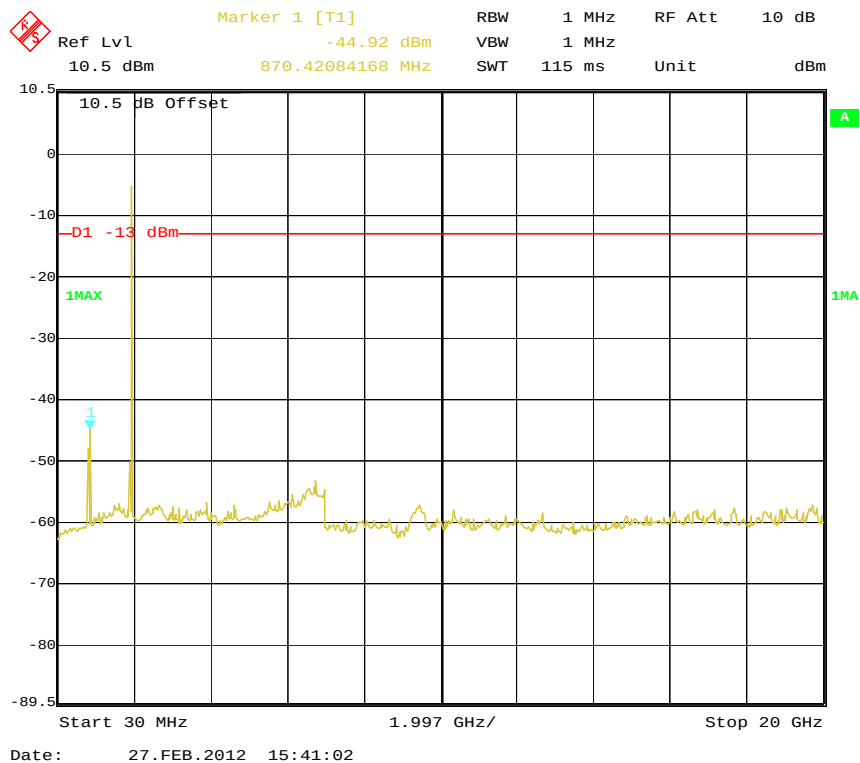
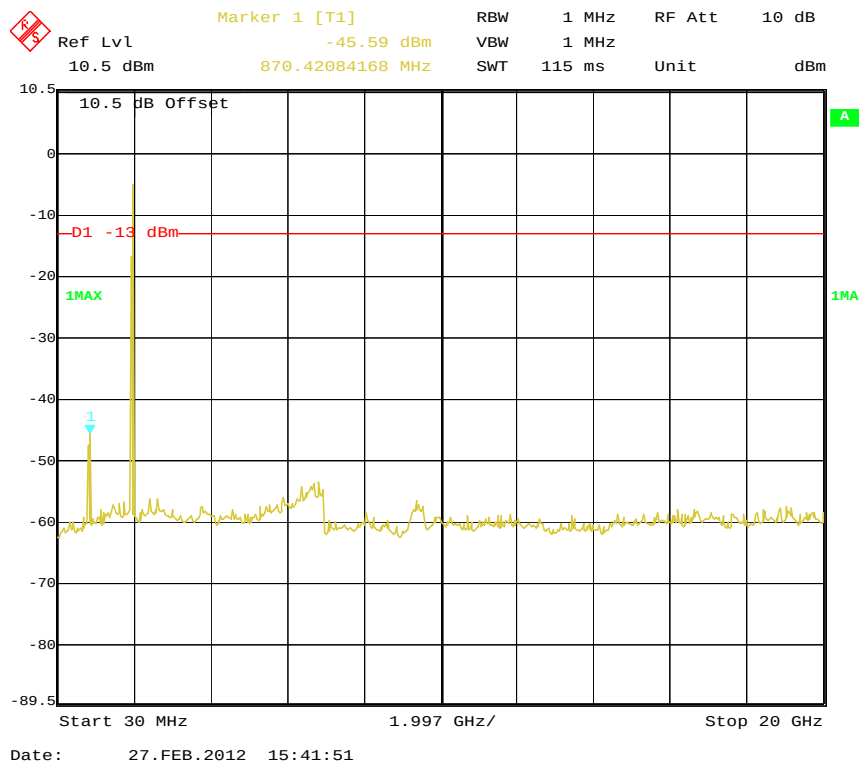
Uplink, Spurious Emissions at Antenna Terminal, High Channel**Downlink, Inter-modulation, Low-band edge**

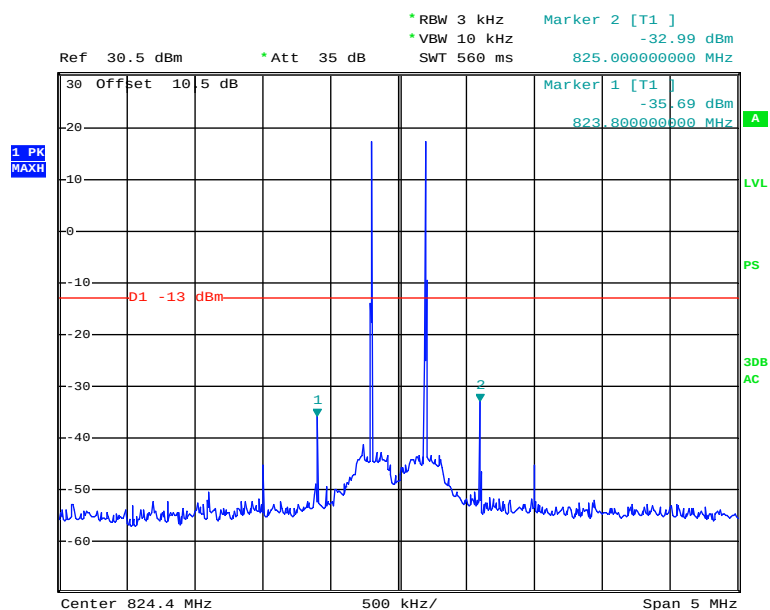
Date: 28.FEB.2012 10:41:42

Downlink, Inter-modulation, High-band edge

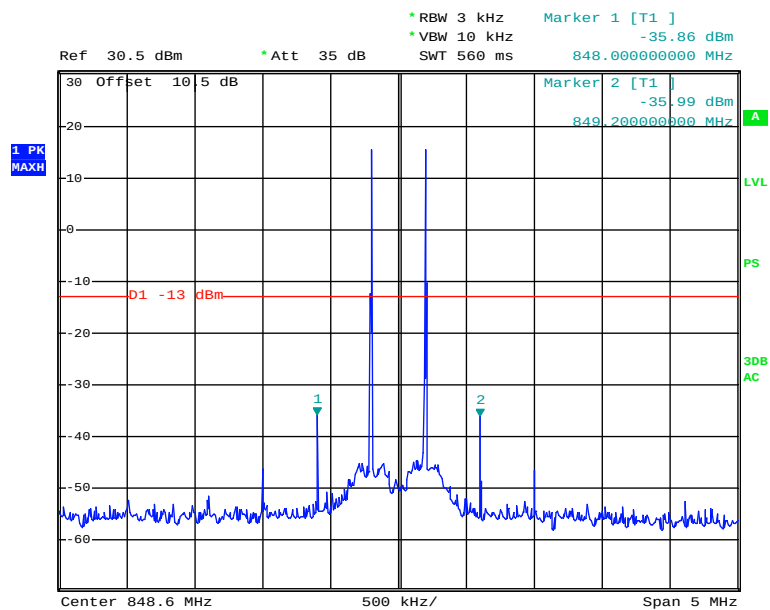
Date: 28.FEB.2012 10:43:09

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

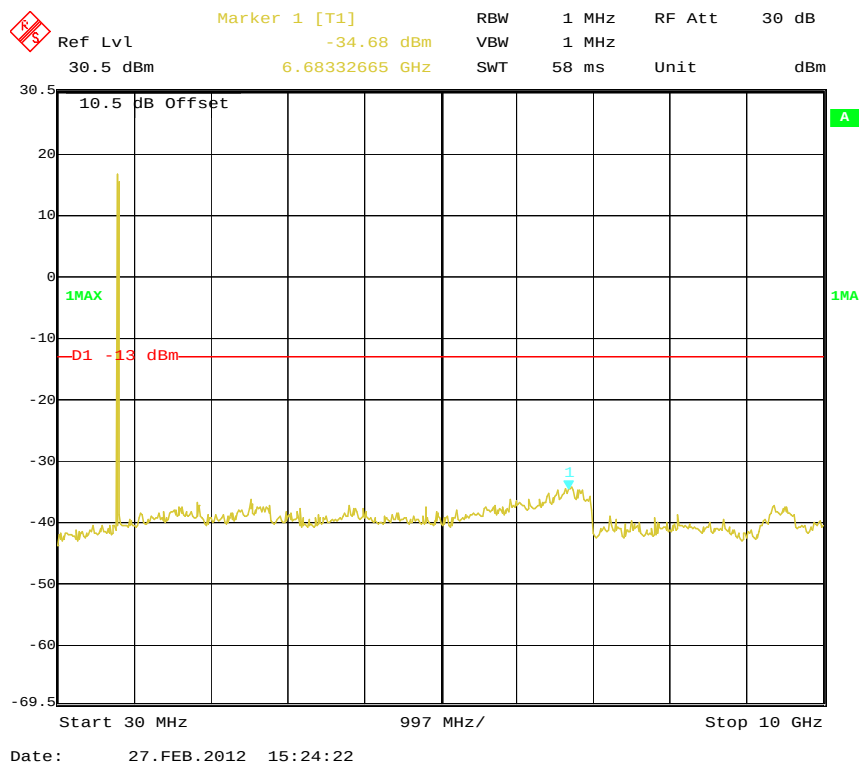
EDGE**Cellular Band (Part 22H)****Uplink, Inter-modulation, Low-band edge**

Date: 28.FEB.2012 10:59:04

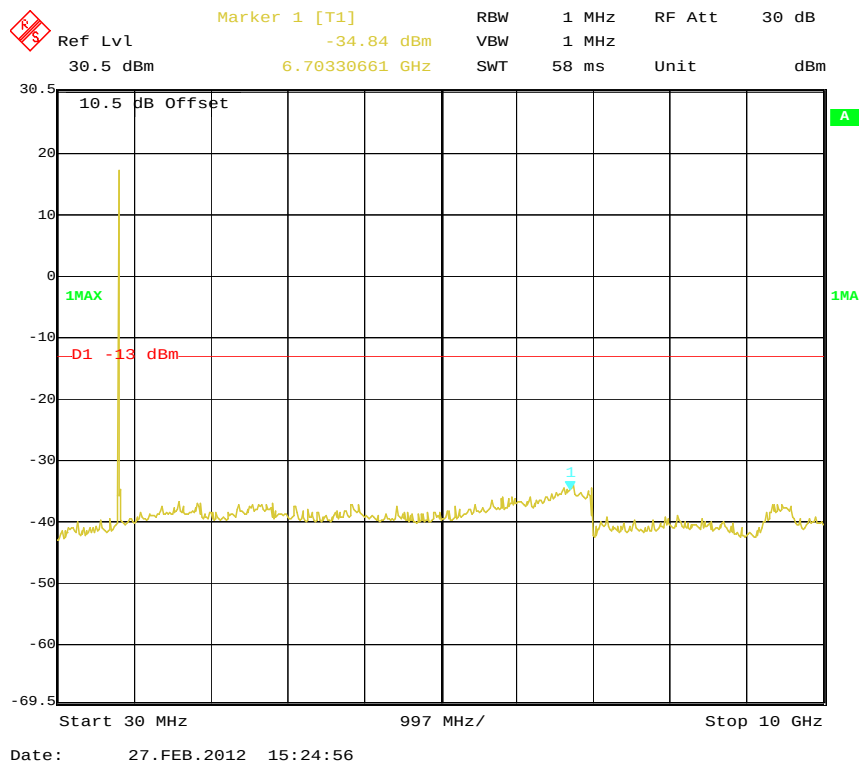
Uplink, Inter-modulation, High-band edge

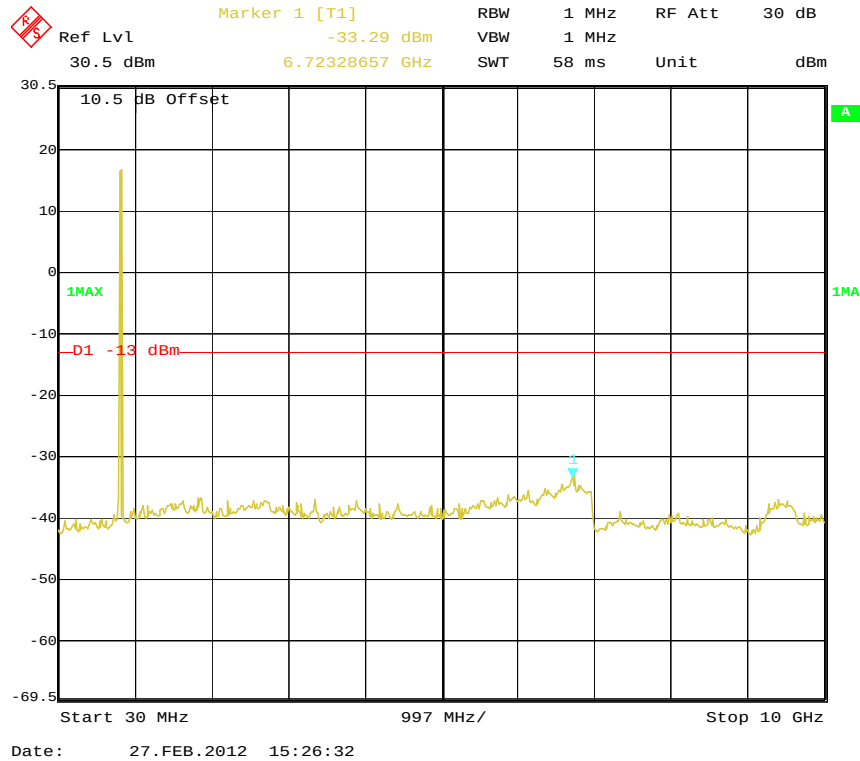
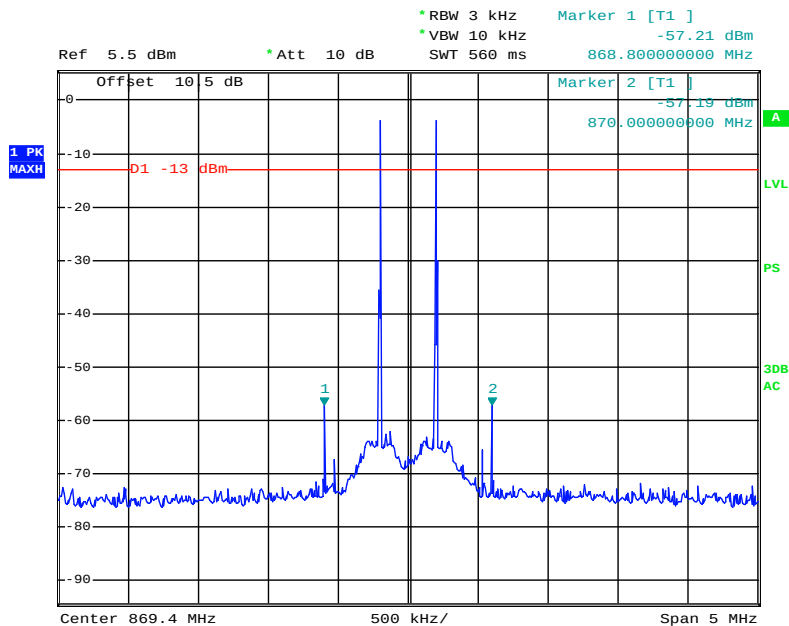
Date: 28.FEB.2012 11:02:11

Uplink, Spurious Emissions at Antenna Terminal, Low Channel

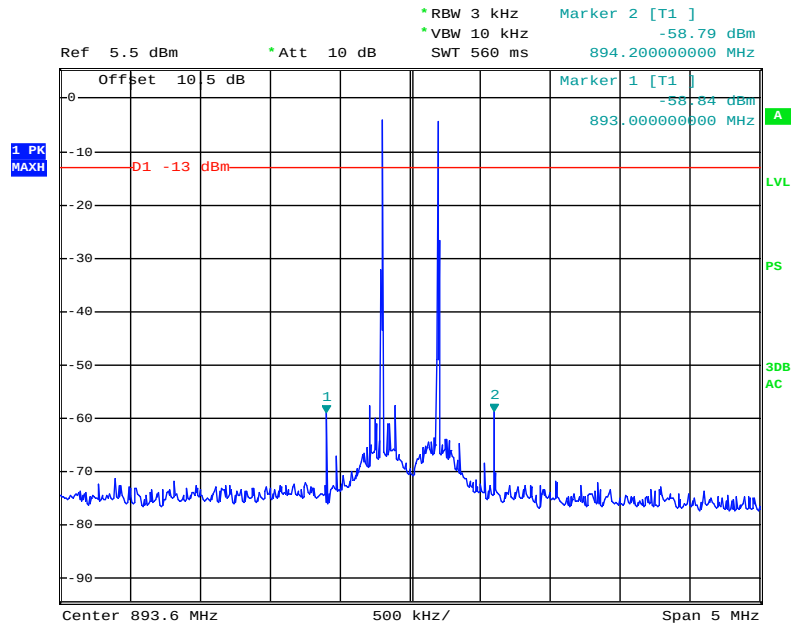


Uplink, Spurious Emissions at Antenna Terminal, Middle Channel

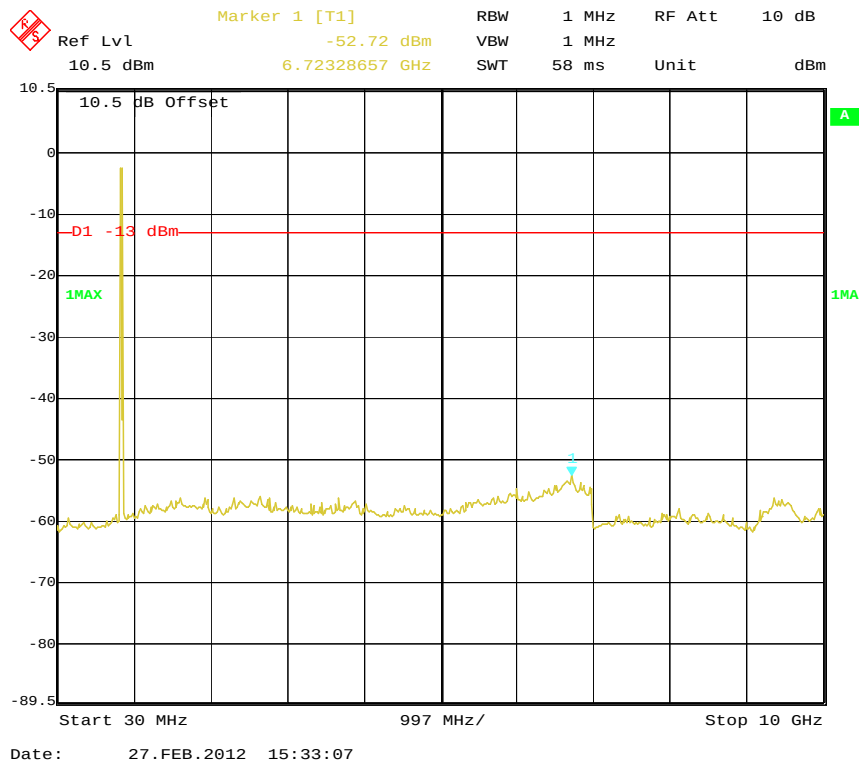


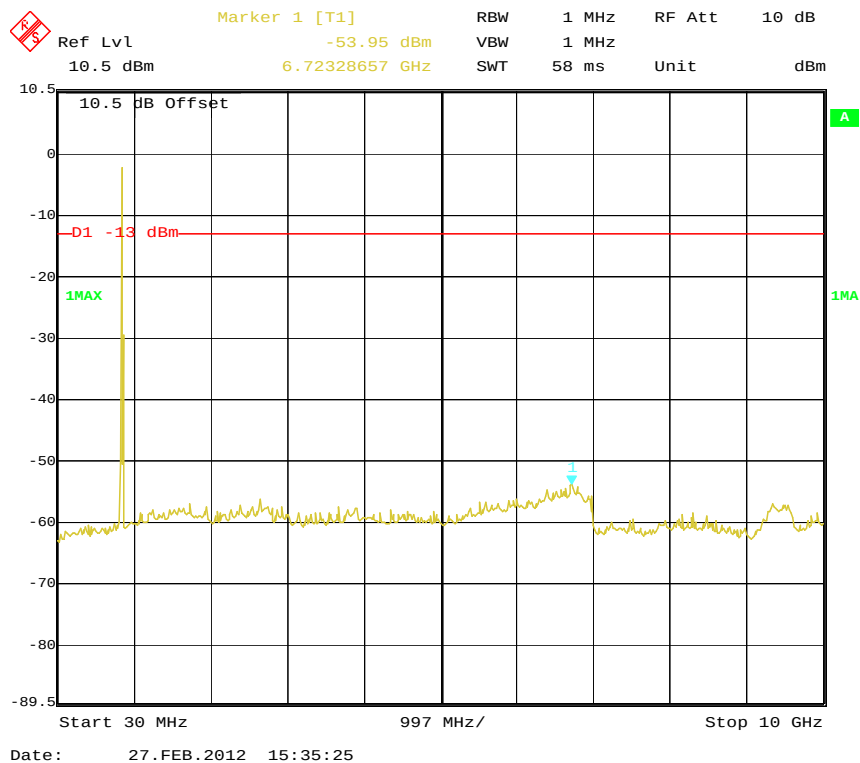
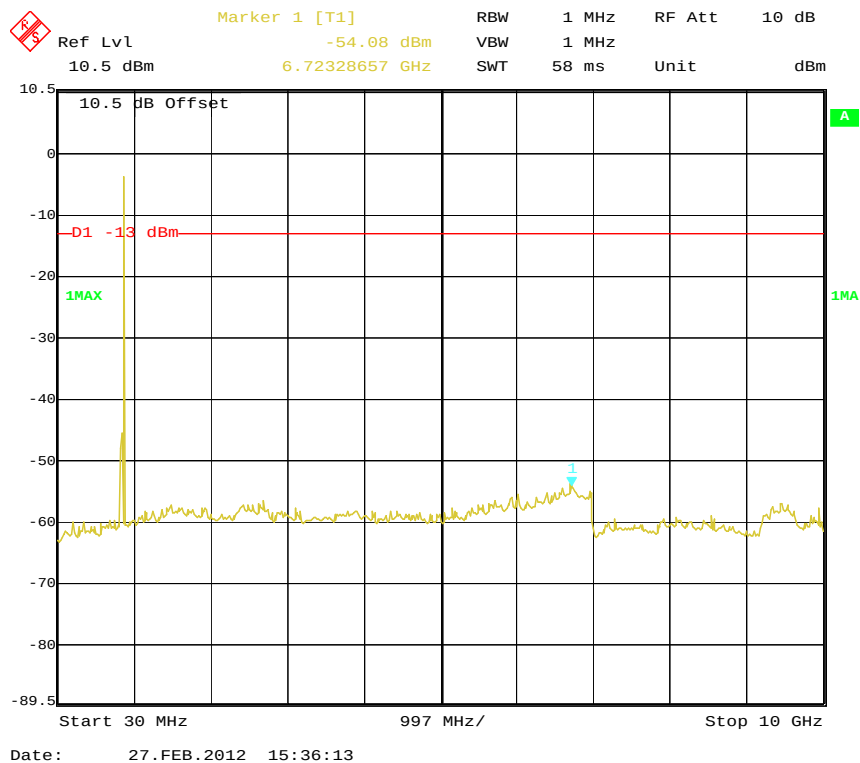
Uplink, Spurious Emissions at Antenna Terminal, High Channel**Downlink, Inter-modulation, Low-band edge**

Date: 28.FEB.2012 10:53:47

Downlink, Inter-modulation, High-band edge

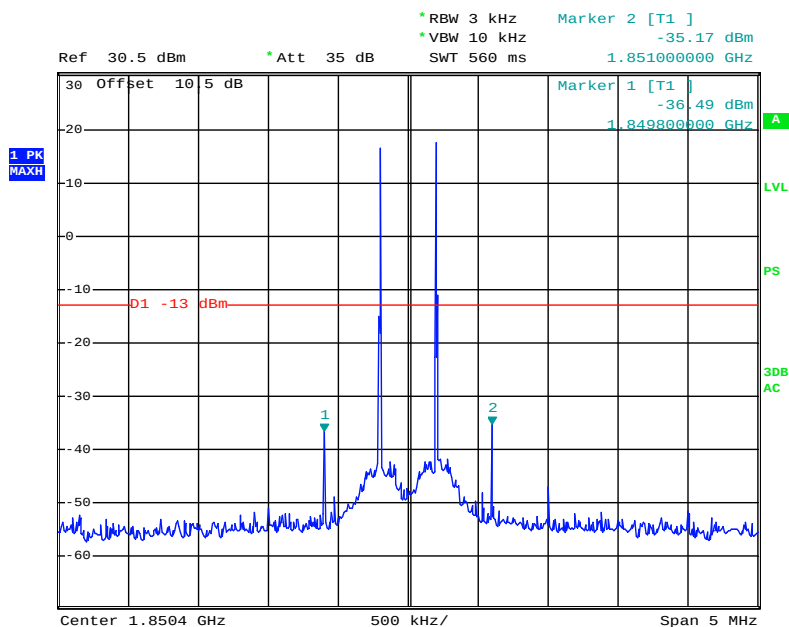
Date: 28.FEB.2012 10:52:06

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

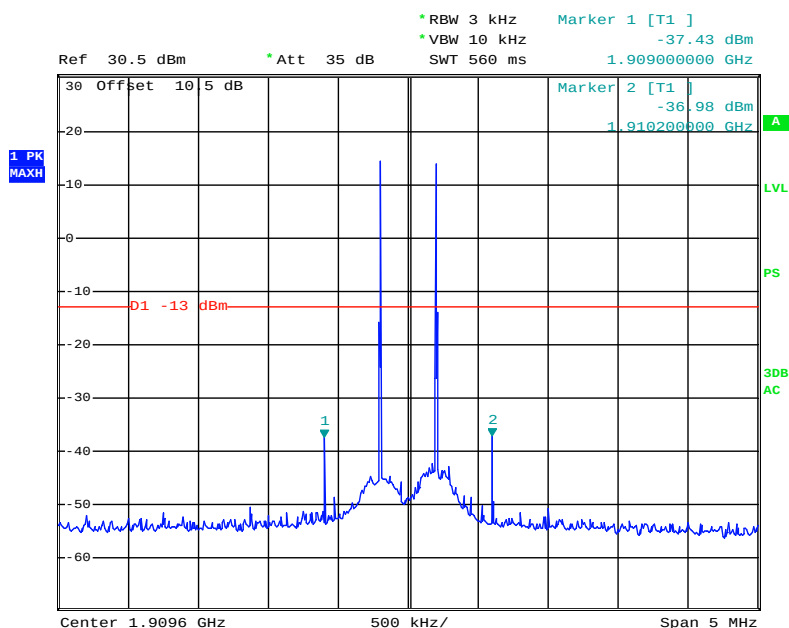
PCS Band (Part 24E)

Uplink, Inter-modulation, Low-band edge



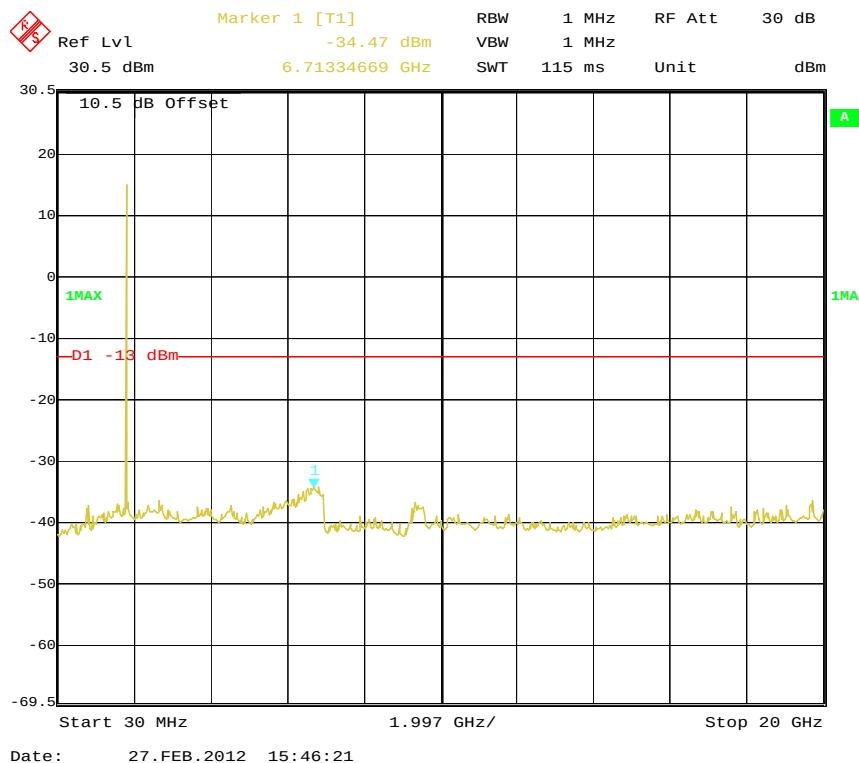
Date: 28.FEB.2012 11:04:31

Uplink, Inter-modulation, High-band edge

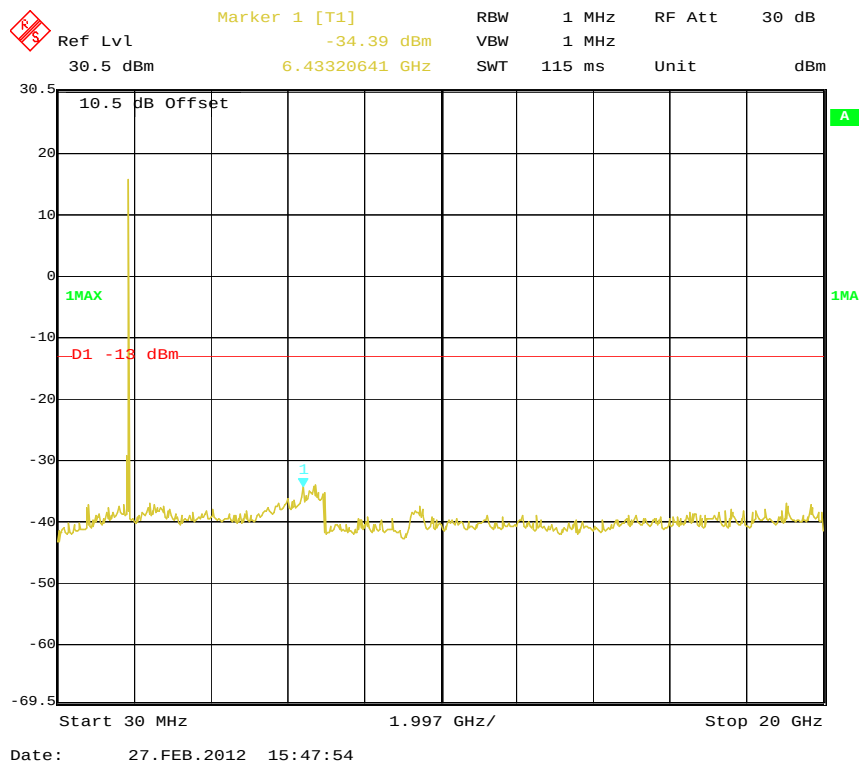


Date: 28.FEB.2012 11:08:47

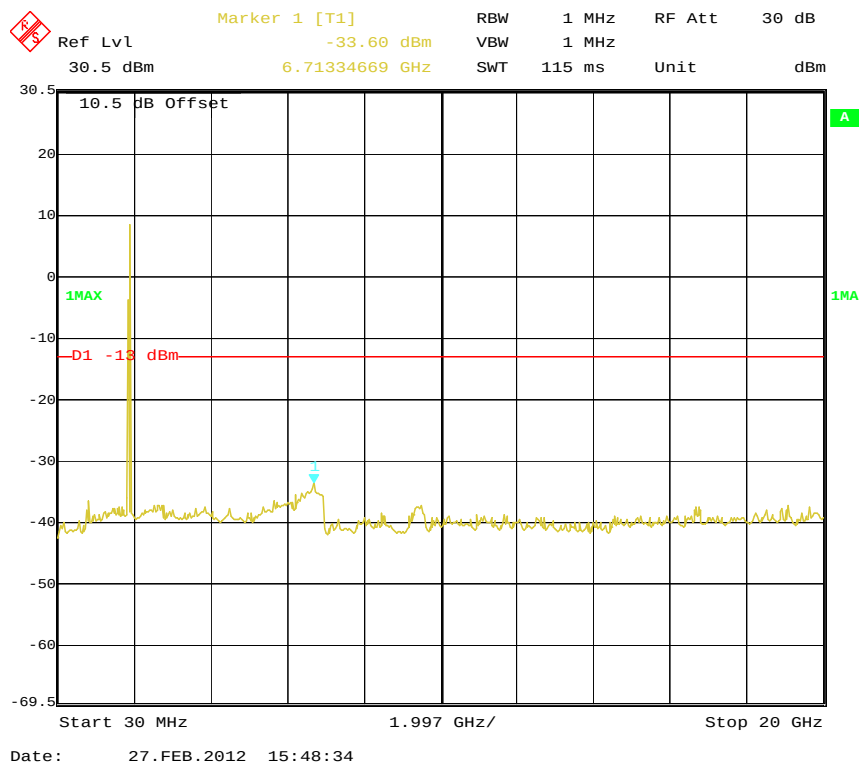
Uplink, Spurious Emissions at Antenna Terminal, Low Channel



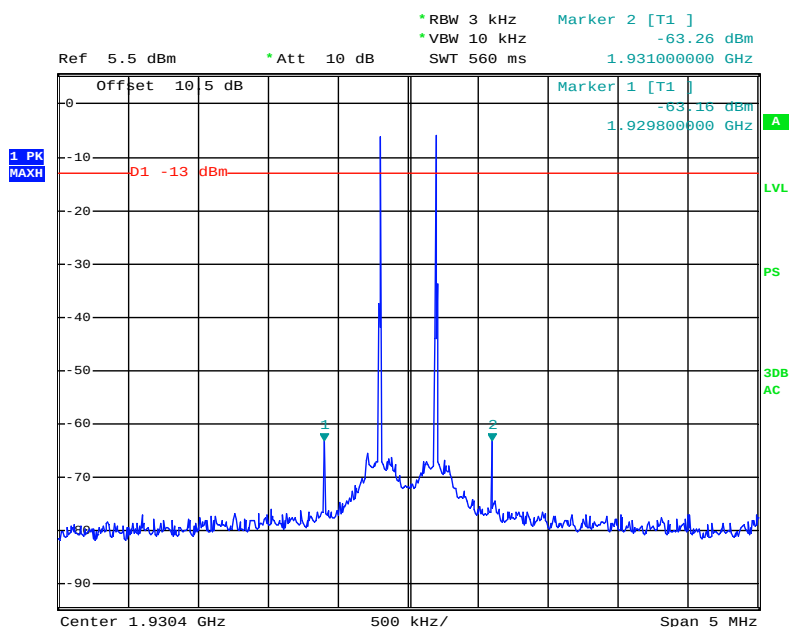
Uplink, Spurious Emissions at Antenna Terminal, Middle Channel



Uplink, Spurious Emissions at Antenna Terminal, High Channel

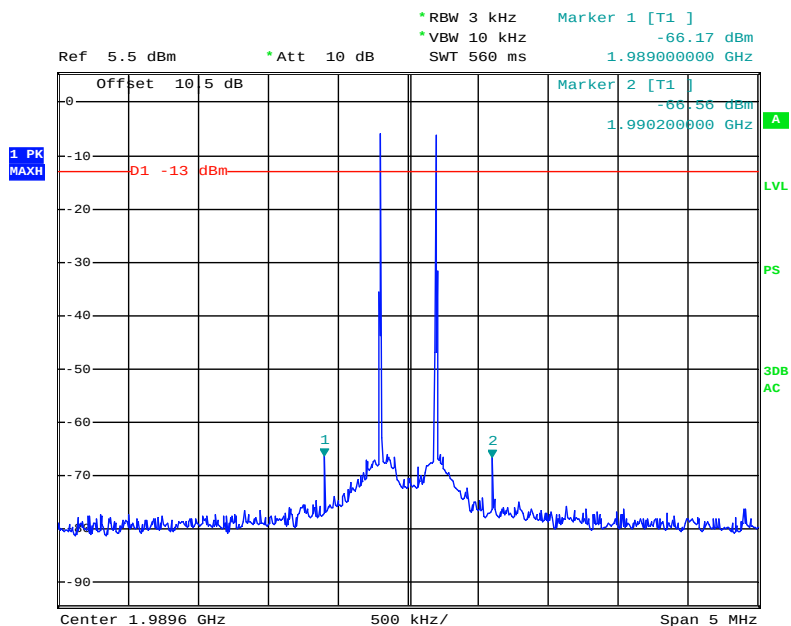


Downlink, Inter-modulation, Low Channel



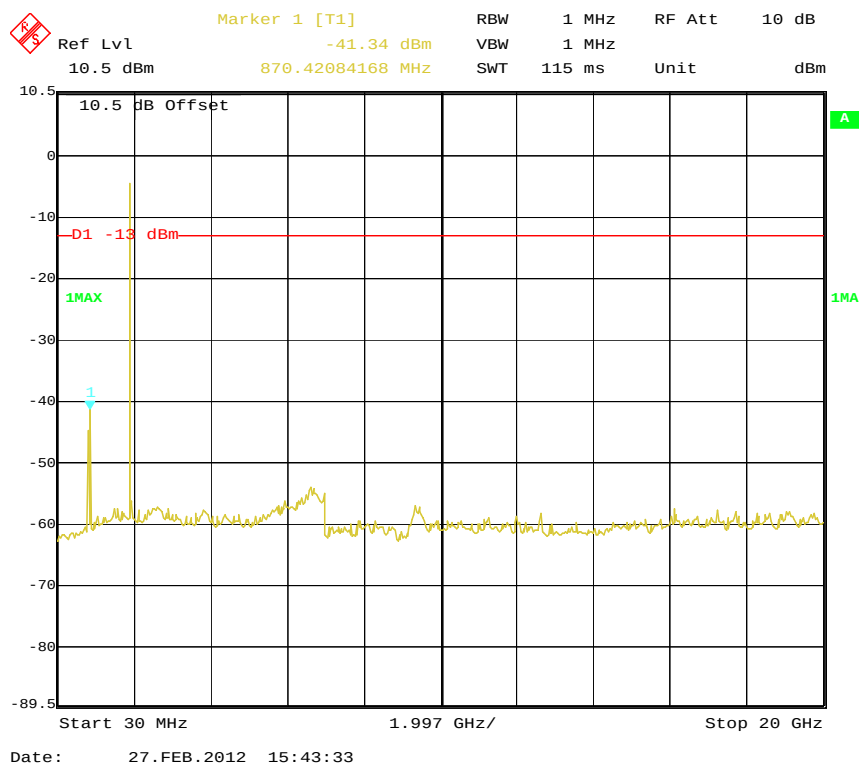
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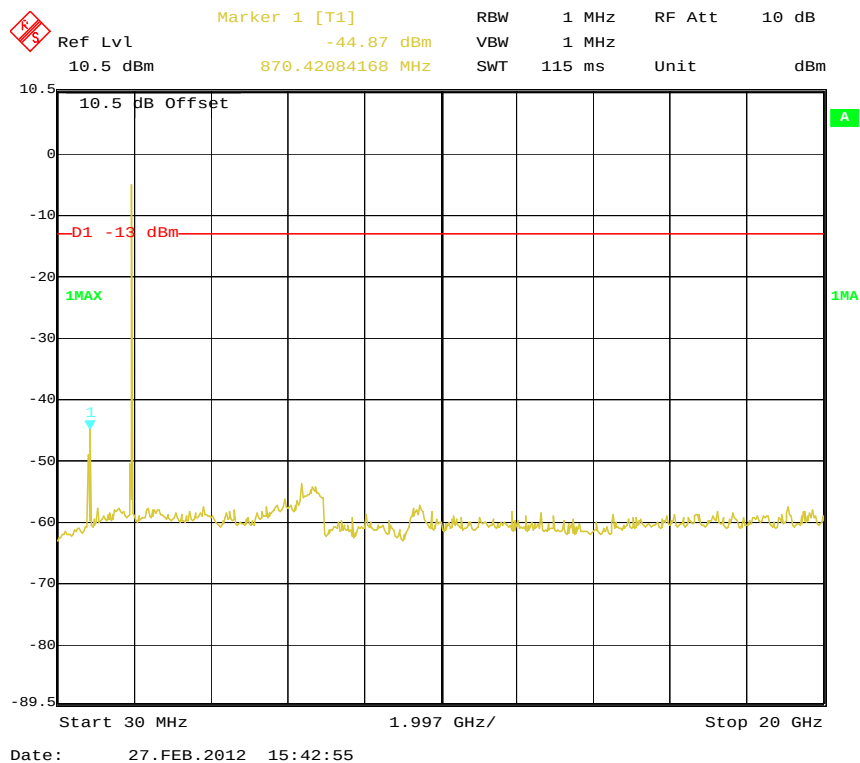
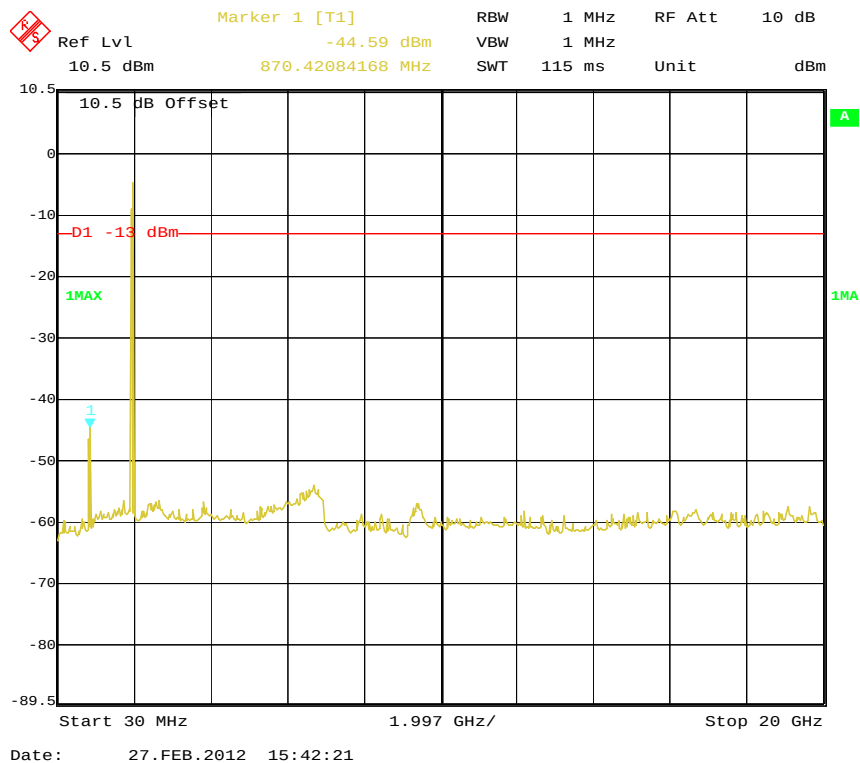
Downlink, Inter-modulation, High Channel



Date: 28.FEB.2012 10:44:44

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

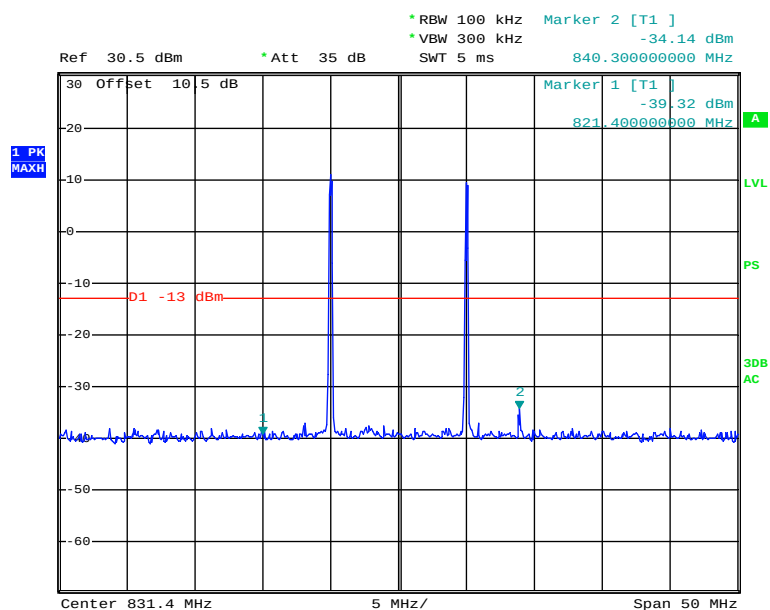


Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

WCDMA

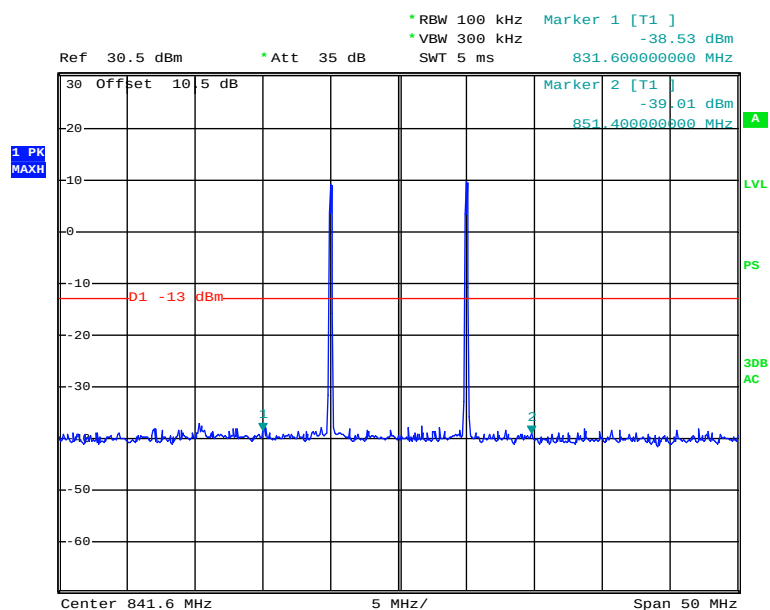
Cellular Band (Part 22H)

Uplink, Inter-modulation, Low-band edge



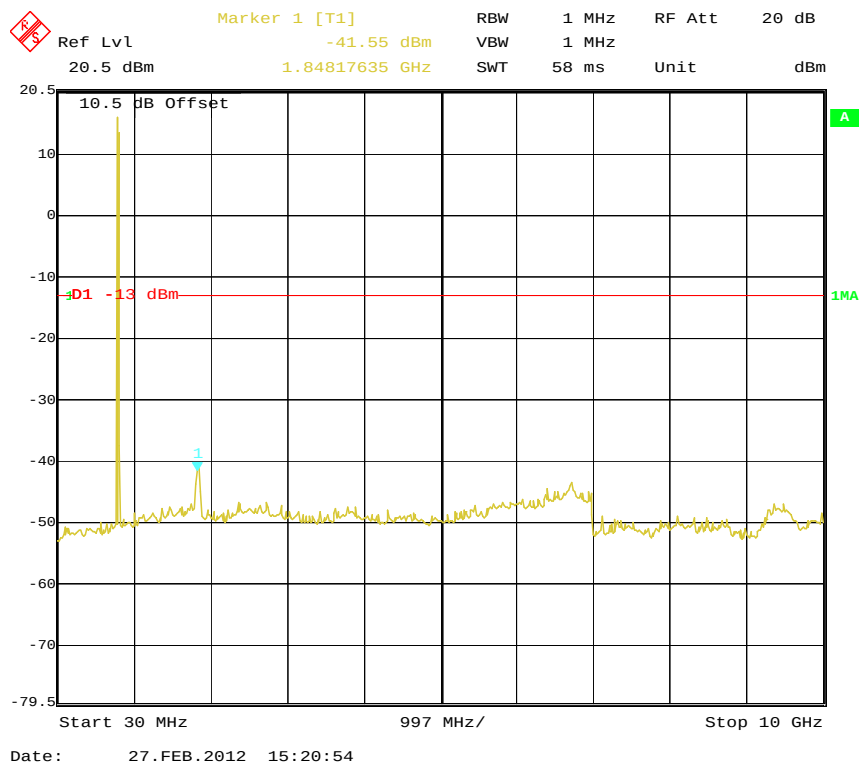
Date: 28.FEB.2012 11:17:57

Uplink, Inter-modulation, High-band edge

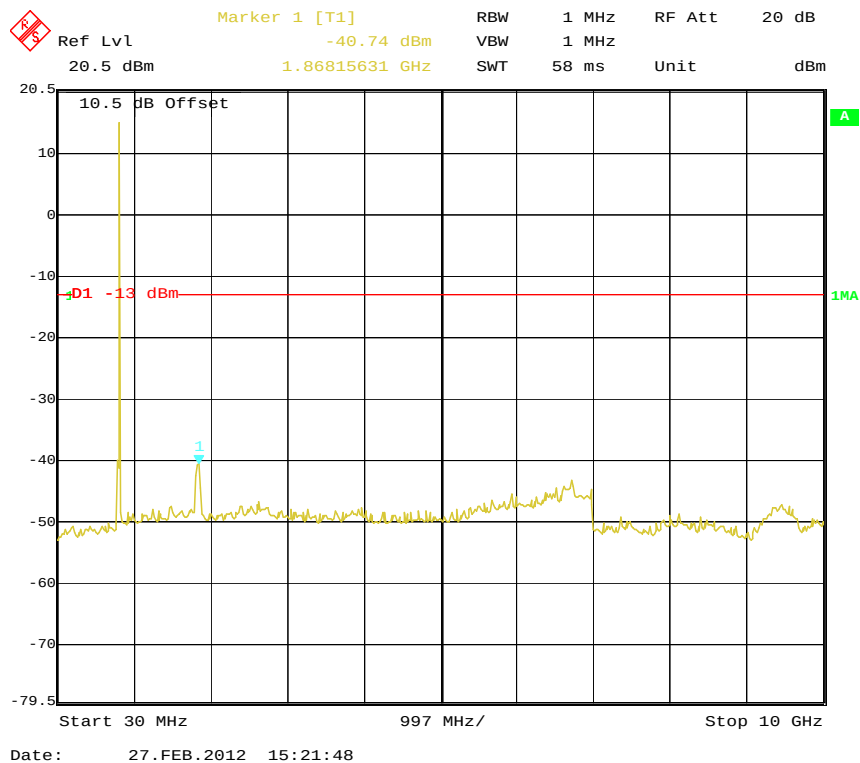


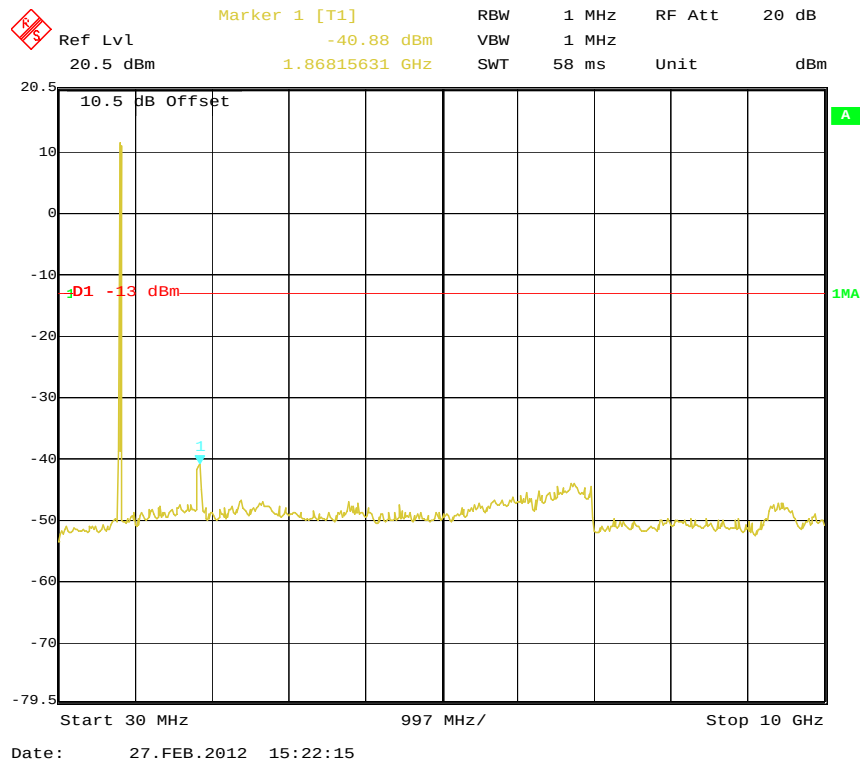
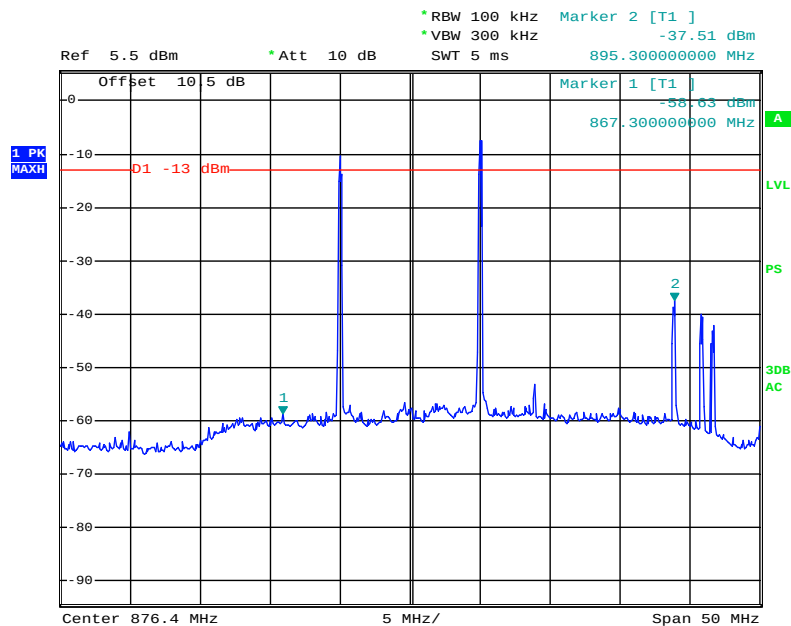
Date: 28.FEB.2012 11:19:19

Uplink, Spurious Emissions at Antenna Terminal, Low Channel

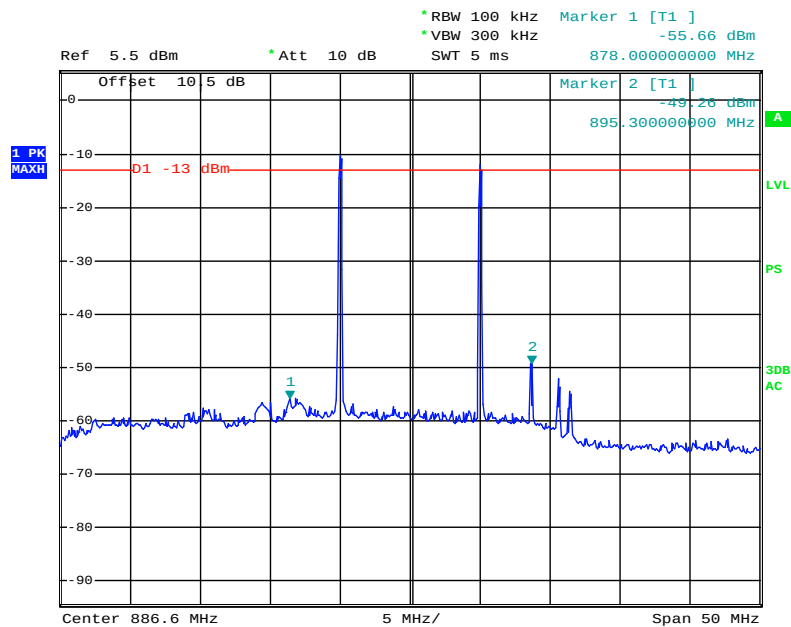


Uplink, Spurious Emissions at Antenna Terminal, Middle Channel

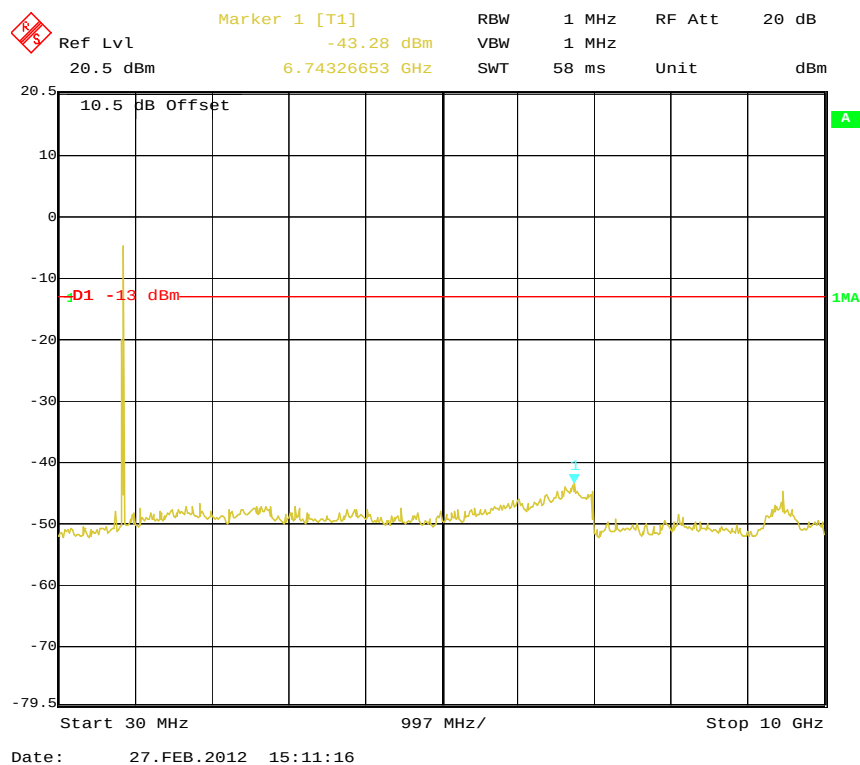


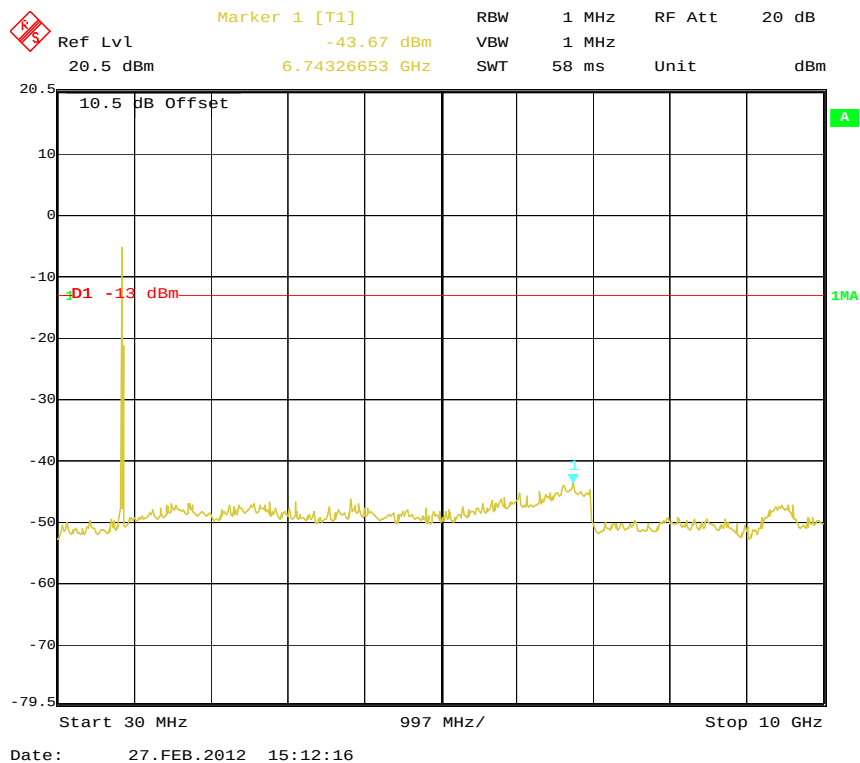
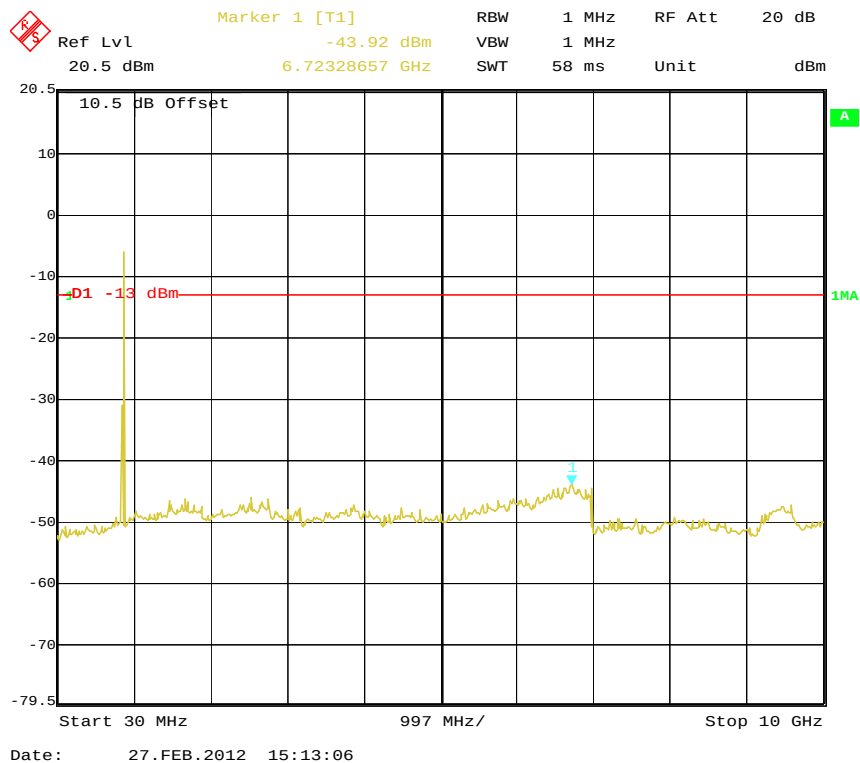
Uplink, Spurious Emissions at Antenna Terminal, High Channel**Downlink, Inter-modulation, Low-band edge**

Date: 28.FEB.2012 11:32:12

Downlink, Inter-modulation, High-band edge

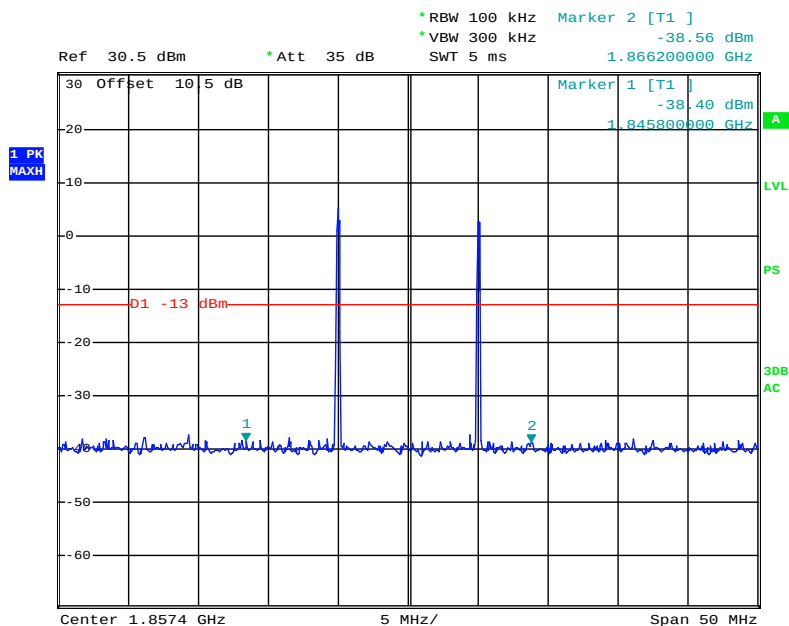
Date: 28.FEB.2012 11:33:49

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

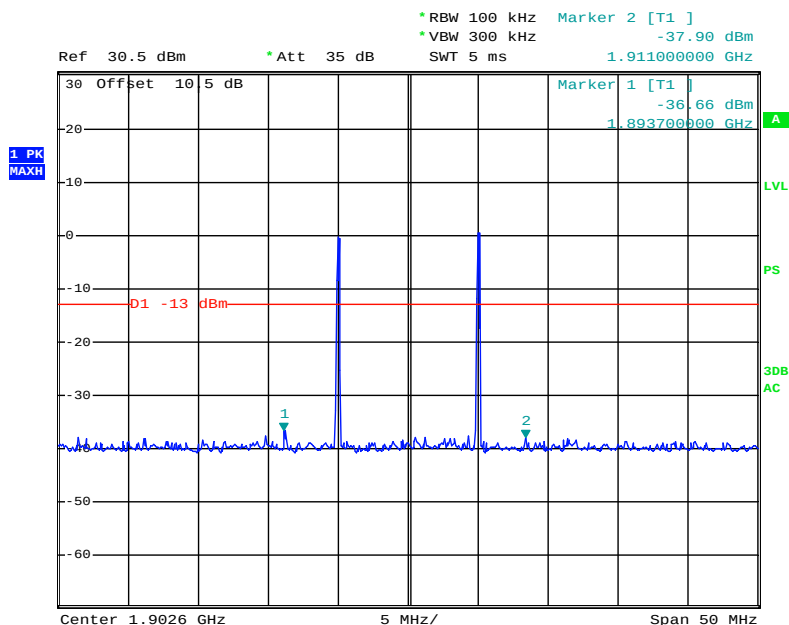
PCS Band (Part 24E)

Uplink, Inter-modulation, Low-band edge



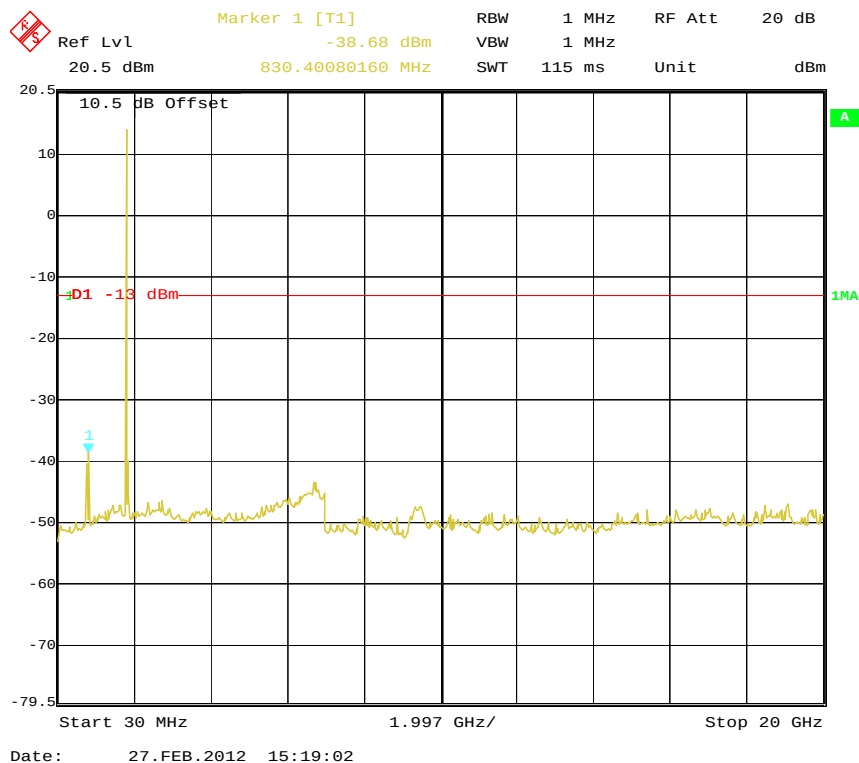
Date: 28.FEB.2012 11:21:15

Uplink, Inter-modulation, High-band edge

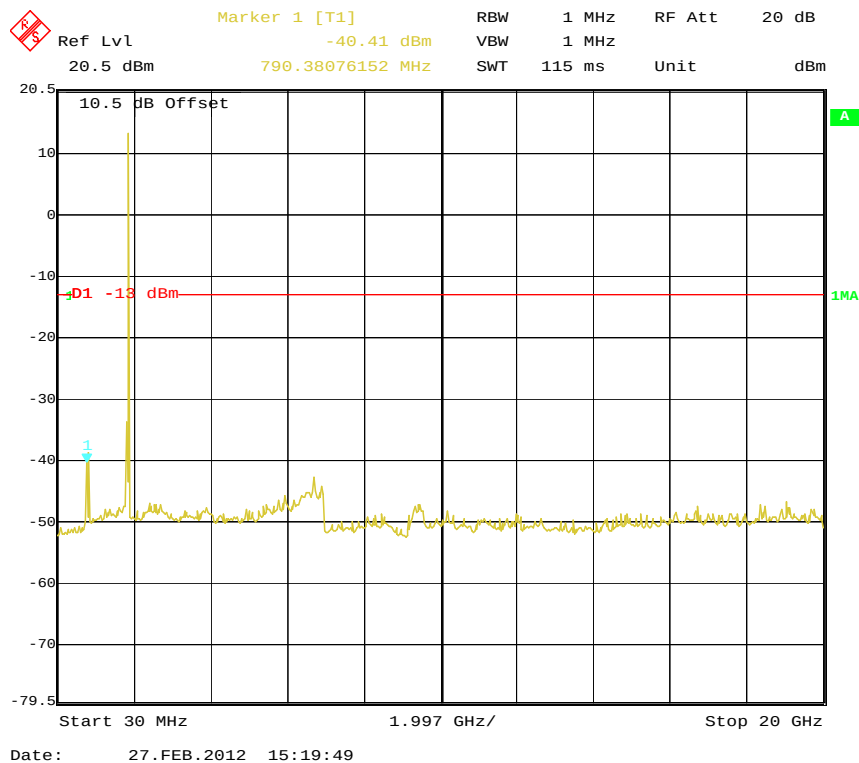


Date: 28.FEB.2012 11:23:12

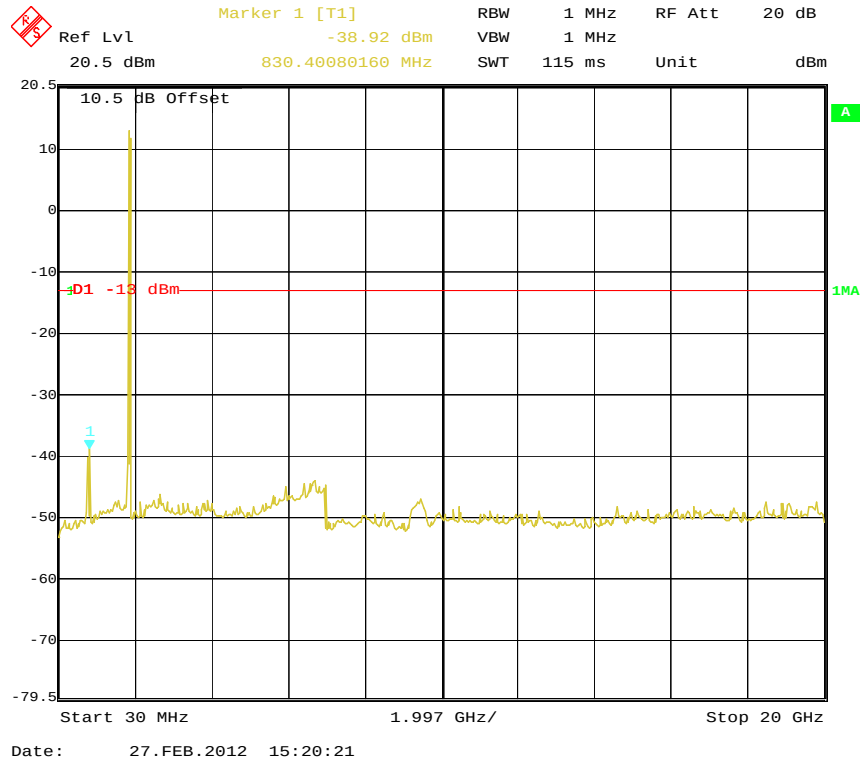
Uplink, Spurious Emissions at Antenna Terminal, Low Channel



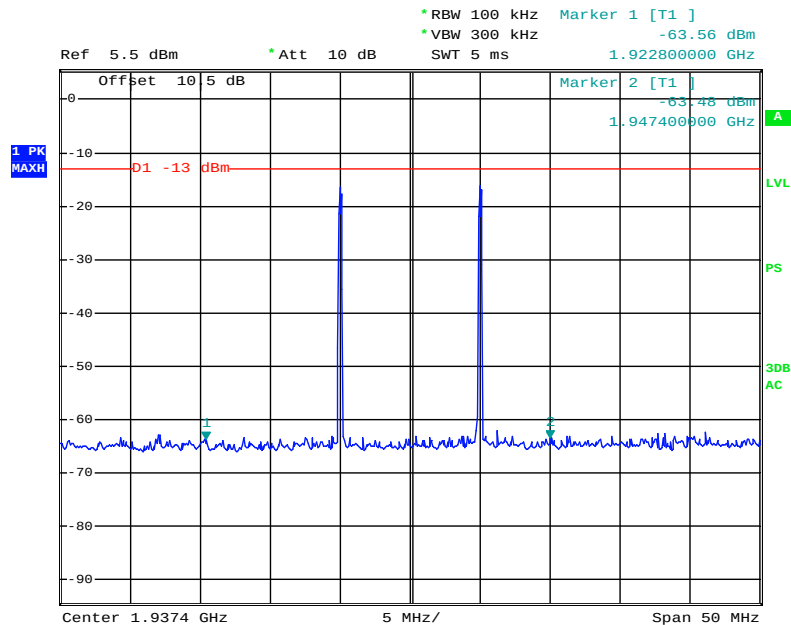
Uplink, Spurious Emissions at Antenna Terminal, Middle Channel

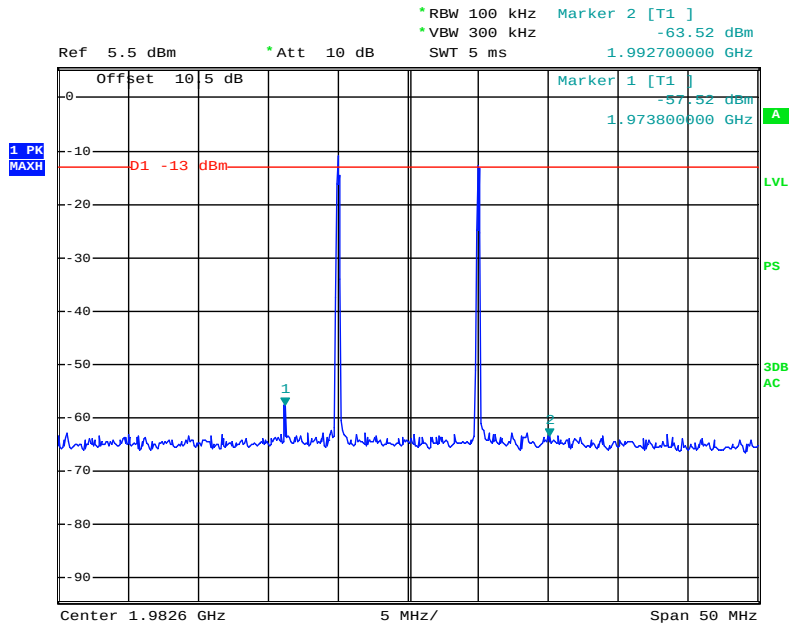


Uplink, Spurious Emissions at Antenna Terminal, High Channel

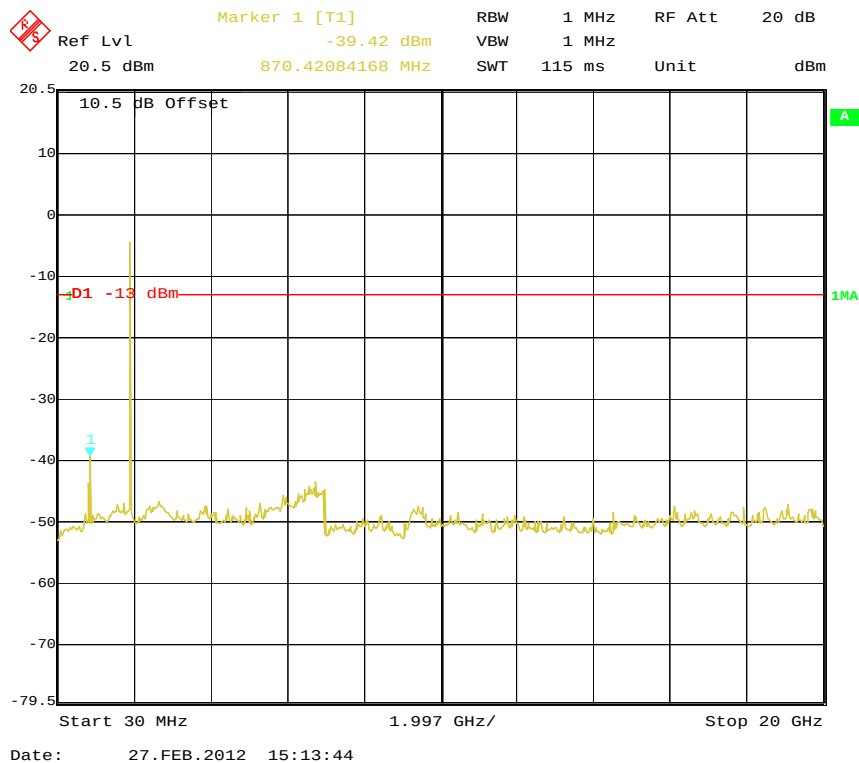


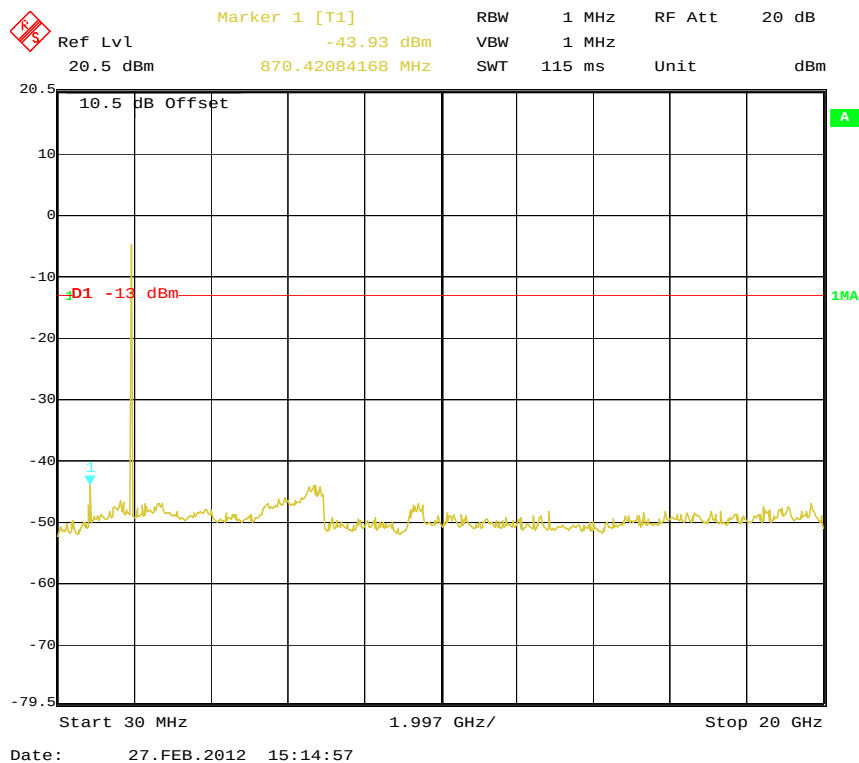
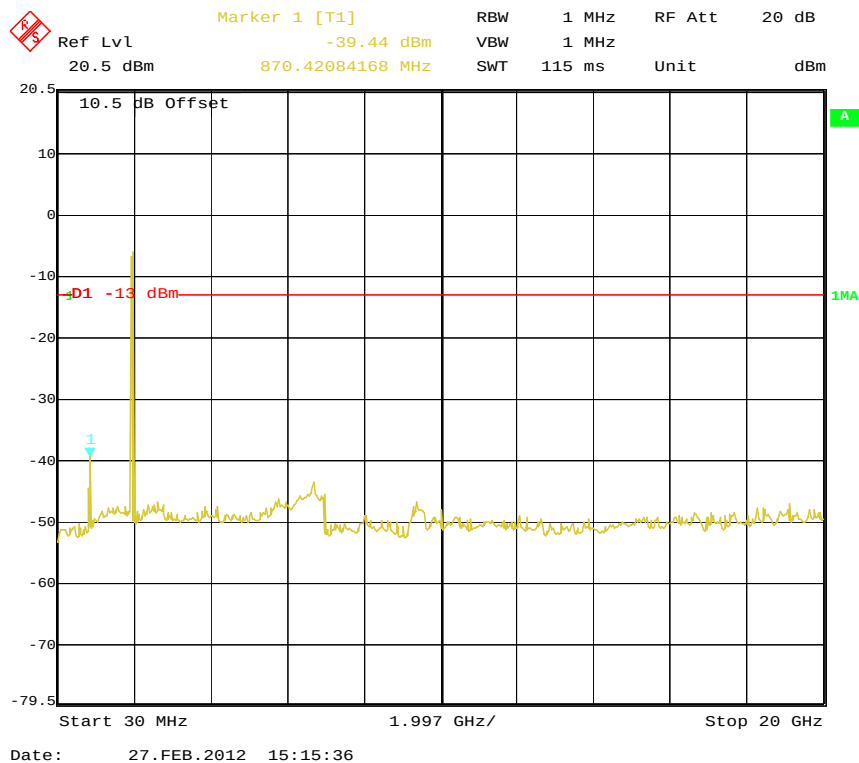
Downlink, Inter-modulation, Low-band edge



Downlink, Inter-modulation, High-band edge

Date: 28.FEB.2012 11:28:47

Downlink, Spurious Emissions at Antenna Terminal, Low Channel

Downlink, Spurious Emissions at Antenna Terminal, Middle Channel**Downlink, Spurious Emissions at Antenna Terminal, High Channel**

FCC §2.1053, §22.917&§24.238- SPURIOUS RADIATED EMISSIONS

Applicable Standards

FCC § 2.1053, §22.917 and § 24.238.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = $10 \lg (\text{TXpwr in Watts}/0.001)$ – the absolute level

Spurious attenuation limit in dB = $43 + 10 \lg_{10} (\text{power out in Watts})$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052604	2011-05-05	2012-05-04
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2011-07-05	2012-07-04
Rohde & Schwarz	Signal Analyzer	FSIQ 26	609358	2011-07-08	2012-07-07
Mini-Circuits	Amplifier	ZVA-213+	T-E27H	2011-03-08	2012-03-07
HP	Amplifier	HP8447D	2944A09795	2011-08-02	2012-08-02
HP	Synthesized Sweeper	8341B	2624A00116	2011-04-11	2012-04-10
COM POWER	Dipole Antenna	AD-100	041000	2011-04-25	2012-04-25
A.H. System	Horn Antenna	SAS-200/571	135	2011-03-77	2012-03-06
Electro-Mechanics	Horn Antenna	3116	9510-2270	2011-10-11	2012-10-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Felix Li on 2012-02-29.

Test mode: Transmitting(CW Signal input)

Cellular Band (Part 22H)

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dB)	Cable Loss (dB)			
Middle Channel (Uplink)											
2509.8	30.69	223	1.5	V	2509.8	-47.9	7.30	1.46	-42.06	-13	29.06
1673.2	34.60	231	1.7	H	1673.2	-50.6	6.15	0.97	-45.42	-13	32.42
1673.2	30.89	216	1.5	V	1673.2	-50.9	6.15	0.97	-45.72	-13	32.72
79.71	33.25	15	1.5	H	79.71	-61.8	0	0.1	-61.9	-13	33.25
2509.8	30.02	245	1.6	H	2509.8	-53.1	7.30	1.46	-47.26	-13	34.26
79.71	36.72	117	1.3	V	79.71	-58.3	0	0.1	-58.4	-13	36.72
Middle Channel (Downlink)											
1763.2	35.27	55	1.6	V	1763.2	-45.5	6.10	1.00	-40.40	-13	27.40
2644.8	31.21	26	1.9	V	2644.8	-48.8	7.20	1.47	-43.07	-13	30.07
1763.2	33.93	61	1.7	H	1763.2	-50.4	6.10	1.00	-45.30	-13	32.30
2644.8	30.81	33	1.8	H	2644.8	-52.6	7.20	1.47	-46.87	-13	33.87
79.71	34.83	325	1.3	V	79.71	-60.2	0	0.1	-60.3	-13	47.3
79.71	32.15	125	1.2	H	79.71	-62.9	0	0.1	-63.0	-13	50.0

PCS Band (Part 24E)

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBμV)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBd)	Cable Loss (dB)			
Middle Channel (Uplink)											
3760	38.77	128	1.5	H	3760	-36.7	6.70	2.96	-32.96	-13	19.96
3760	35.15	115	1.9	V	3760	-38.9	6.70	2.96	-35.16	-13	22.16
5640	31.48	134	1.7	V	5640	-40.2	8.30	3.94	-35.84	-13	22.84
5640	31.53	129	1.6	H	5640	-42.3	8.30	3.94	-37.94	-13	24.94
79.71	36.51	12	1.3	V	79.71	-58.5	0	0.1	-58.6	-13	45.6
79.71	33.68	224	1.2	H	79.71	-61.3	0	0.1	-61.4	-13	48.4
Middle Channel (Downlink)											
5880	32.42	157	1.6	H	5880	-40.2	8.20	3.09	-35.09	-13	22.09
5880	31.93	135	1.8	V	5880	-40.8	8.20	3.09	-35.69	-13	22.69
3920	31.96	168	1.6	H	3920	-41.6	6.65	3.20	-38.15	-13	25.15
3920	30.82	113	1.7	V	3920	-42.7	6.65	3.20	-39.25	-13	26.25
79.71	34.87	224	1.1	V	79.71	-60.1	0	0.1	-60.2	-13	47.2
79.71	32.33	175	1.2	H	79.71	-62.7	0	0.1	-62.8	-13	49.8

FCC §22.917(a) & §24.238(a) - BAND EDGES

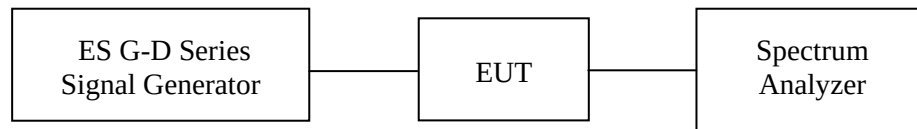
Applicable Standards

According to FCC § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ 26	609358	2011-07-08	2012-07-07
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2011-11-11	2012-11-10

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

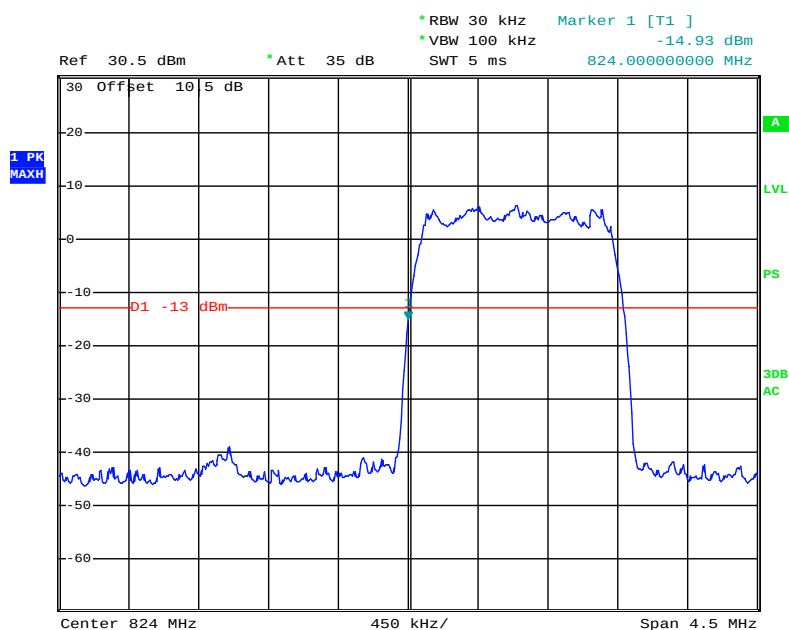
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Felix Li on 2012-02-27 and 2012-02-28

Please refer to the following tables and plots.

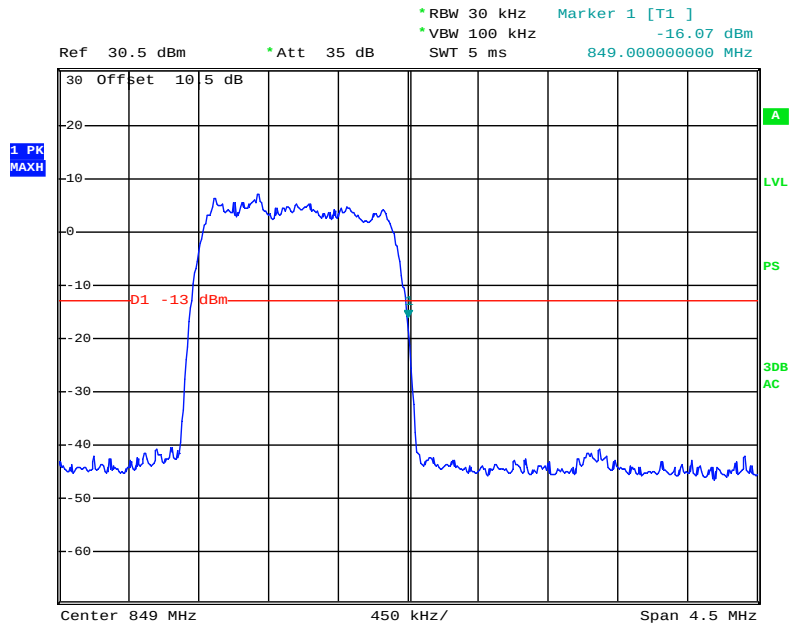
CDMA:

Mode	Frequency (MHz)	Emission (dBm)	Limit (dBm)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	824.0	-14.93	-13
	849.0	-16.07	-13
Downlink (869-894 MHz)	869.0	-36.78	-13
	894.0	-37.88	-13
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1850.0	-42.69	-13
	1910.0	-45.14	-13
Downlink (1930-1990 MHz)	1930.0	-66.09	-13
	1990.0	-66.62	-13

Cellular Band (Part 22H)**Uplink, Left Bandage**

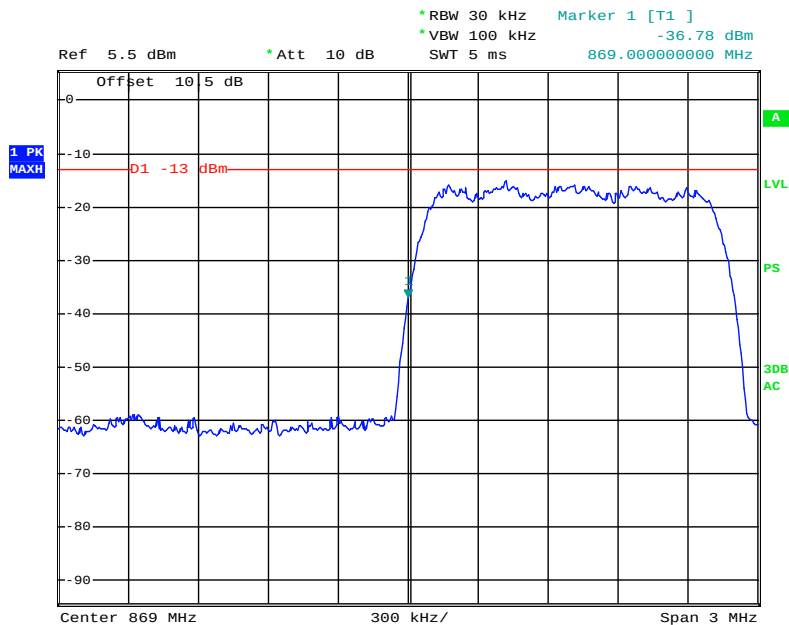
Date: 28.FEB.2012 09:37:12

Uplink, Right Bandage



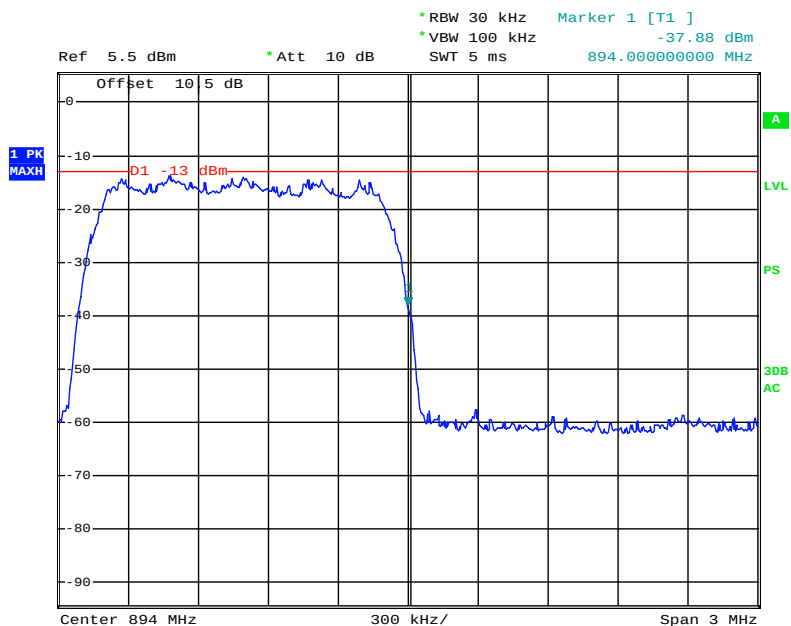
Date: 28.FEB.2012 09:36:19

Downlink, Left Bandage



Date: 28.FEB.2012 09:20:29

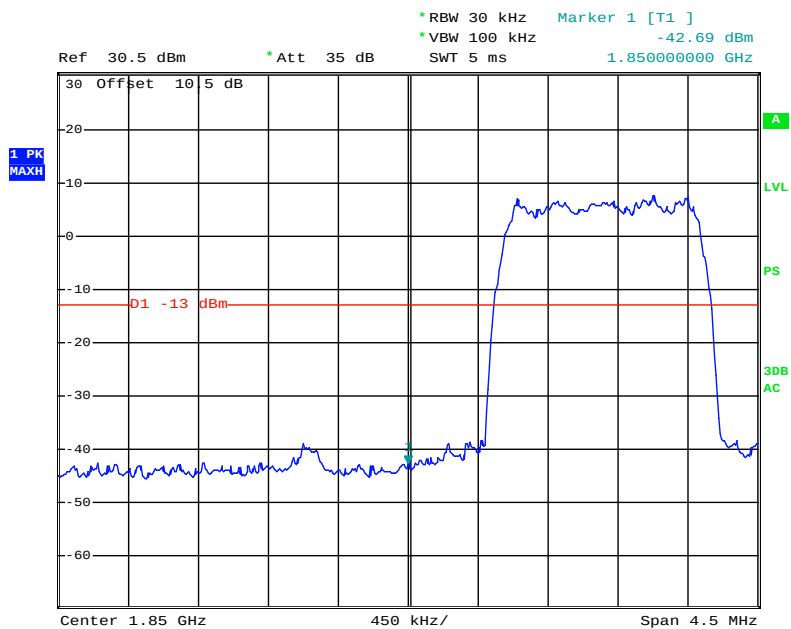
Downlink, Right Bandage



Date: 28.FEB.2012 09:21:13

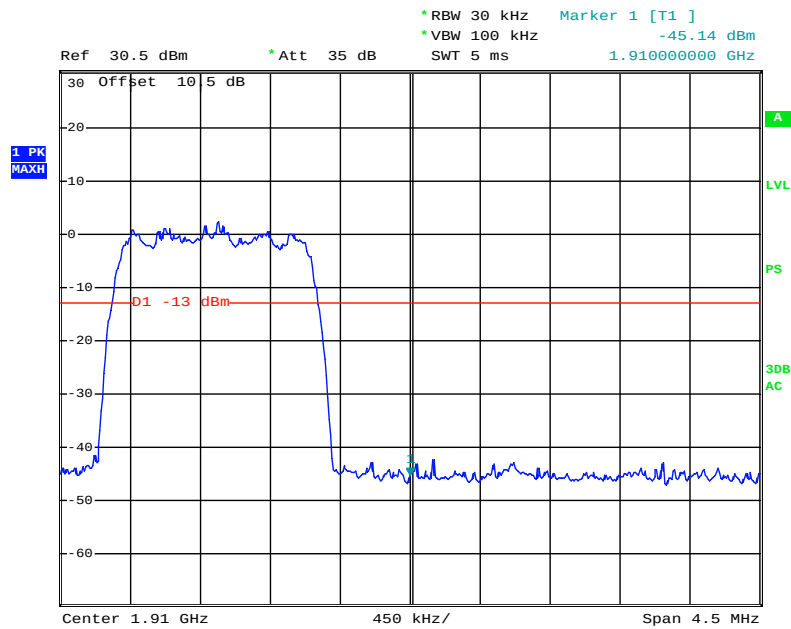
PCS Band (Part 24E)

Uplink, Left Bandage



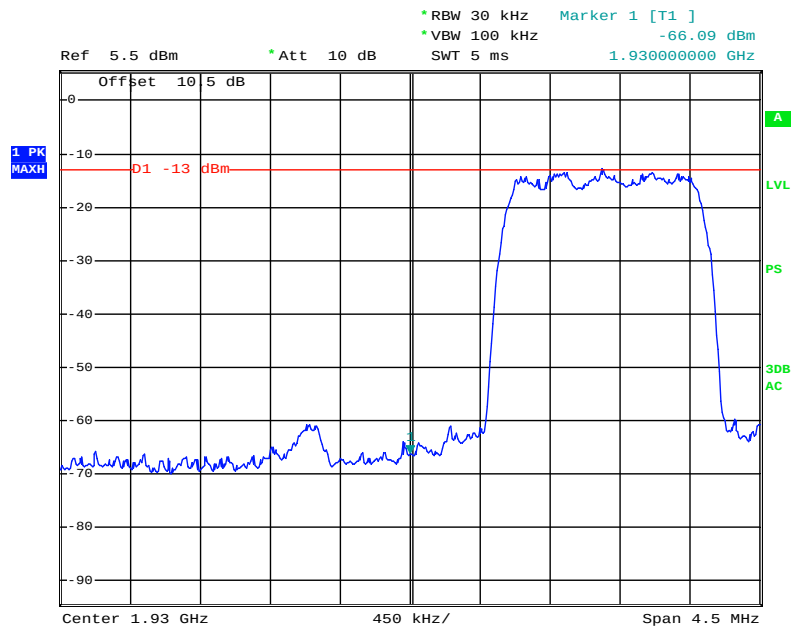
Date: 28.FEB.2012 09:34:04

Uplink, Right Bandage



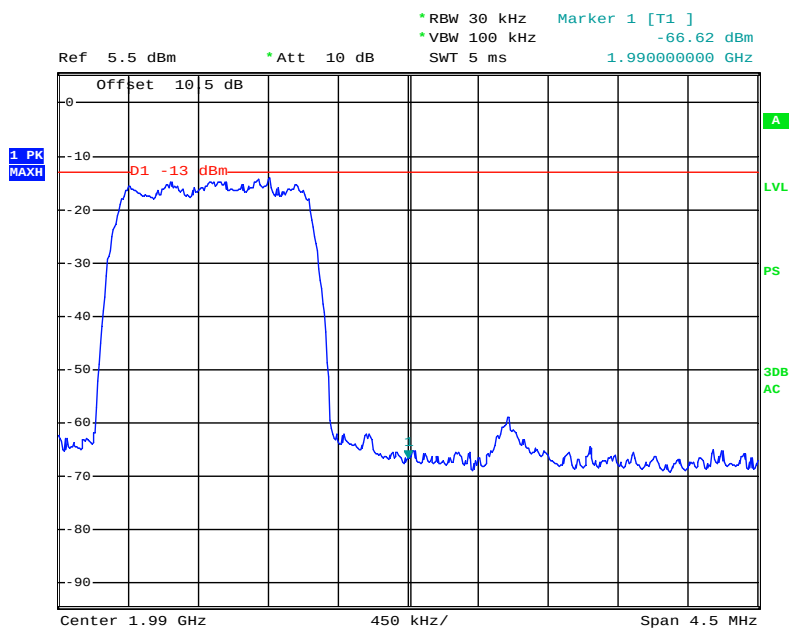
Date: 28.FEB.2012 09:35:16

Downlink, Left Bandage



Date: 28.FEB.2012 09:29:30

Downlink, Right Bandage



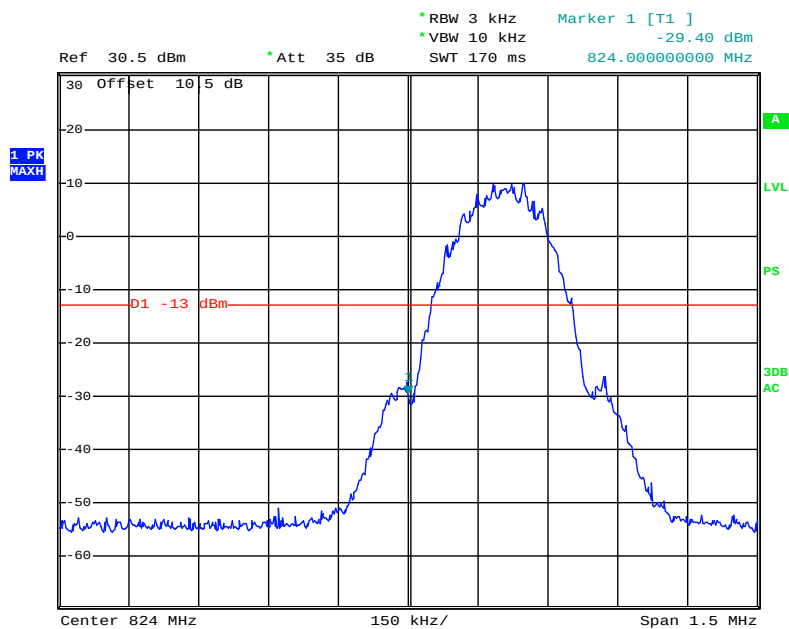
Date: 28.FEB.2012 09:30:42

GSM:

Mode	Frequency (MHz)	Emission (dBm)	Limit (dBm)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	824.0	-29.40	-13
	849.0	-27.27	-13
Downlink (869-894 MHz)	869.0	-46.50	-13
	894.0	-47.08	-13
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1850.0	-23.91	-13
	1910.0	-28.98	-13
Downlink (1930-1990 MHz)	1930.0	-48.14	-13
	1990.0	-48.30	-13

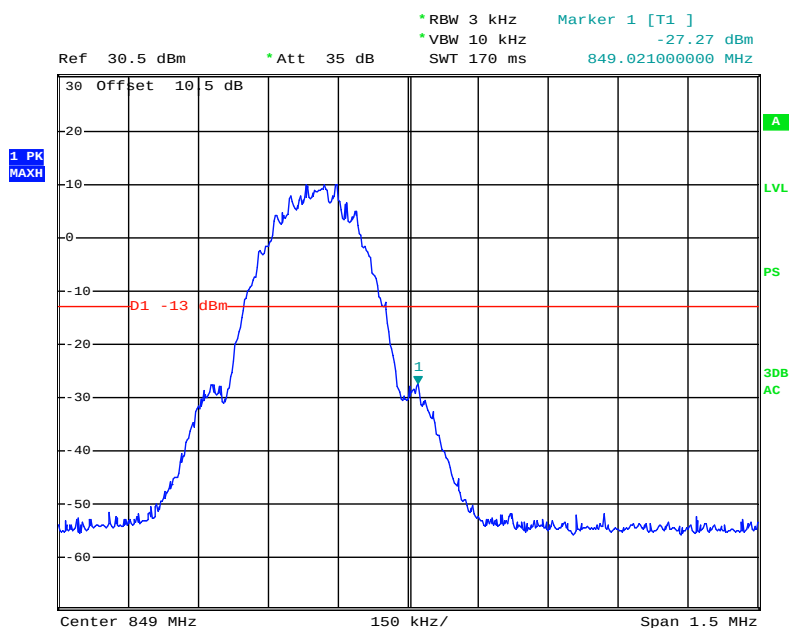
Cellular Band (Part 22H)

Uplink, Left Bandage



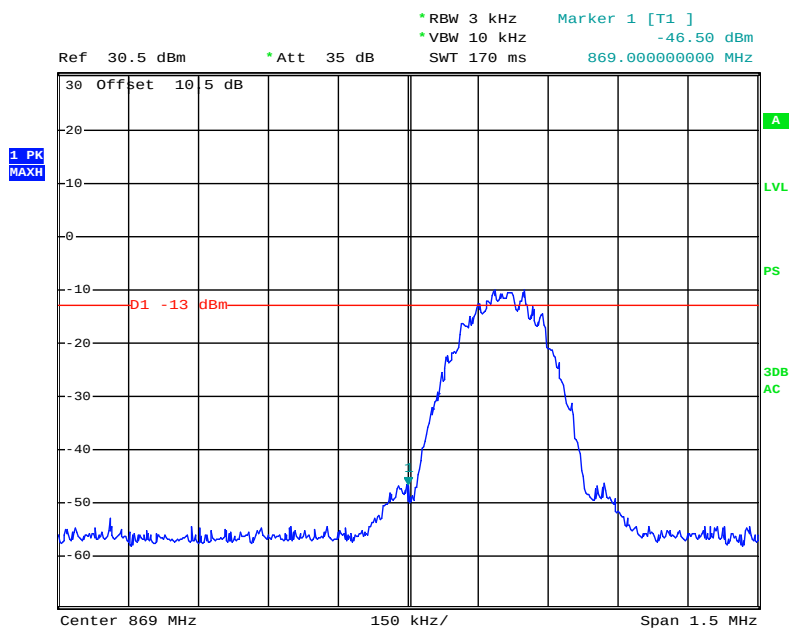
Date: 27.FEB.2012 14:14:23

Uplink, Right Bandage



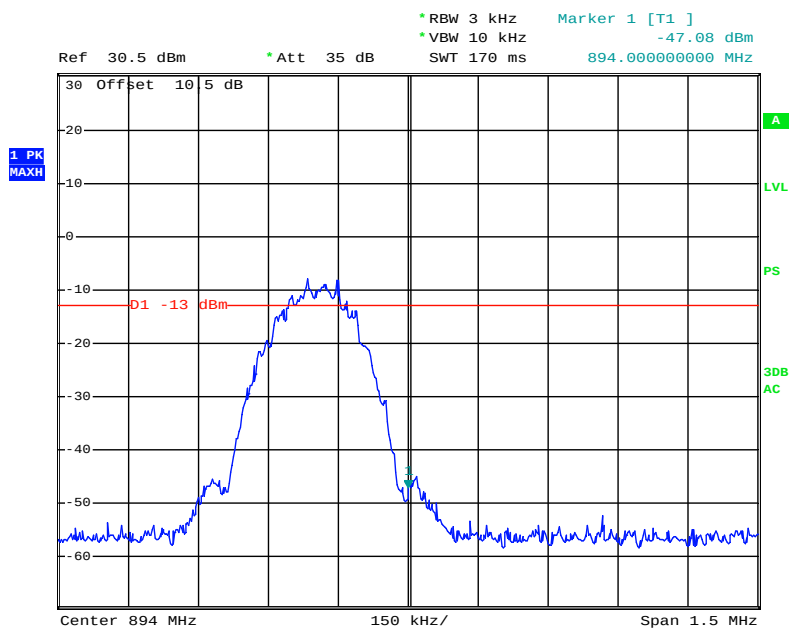
Date: 27.FEB.2012 14:16:33

Downlink, Left Bandage



Date: 27.FEB.2012 14:25:35

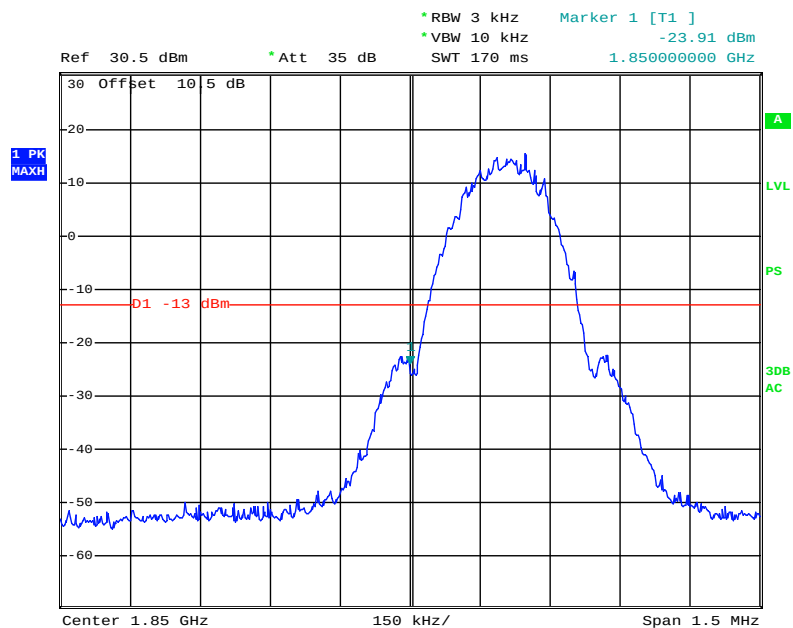
Downlink, Right Bandage



Date: 27.FEB.2012 14:24:17

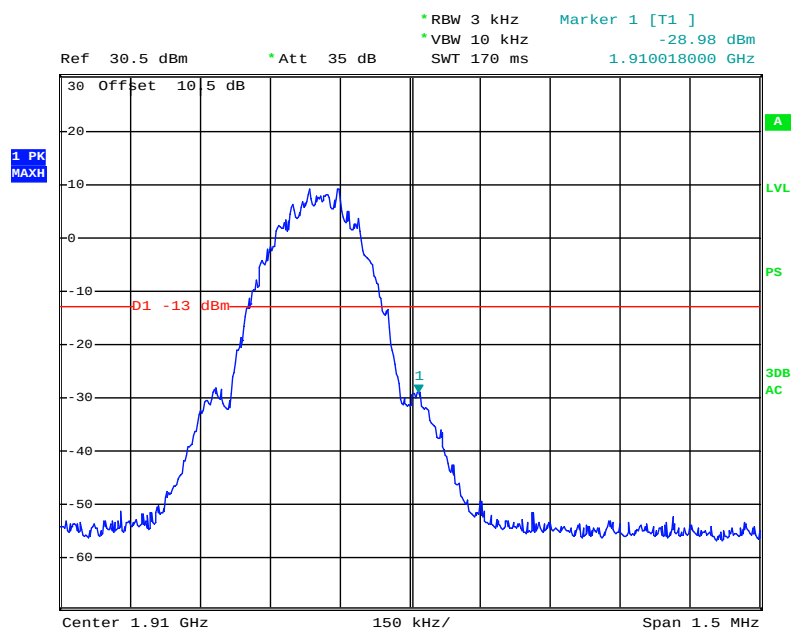
PCS Band (Part 24E)

Uplink, Left Bandage



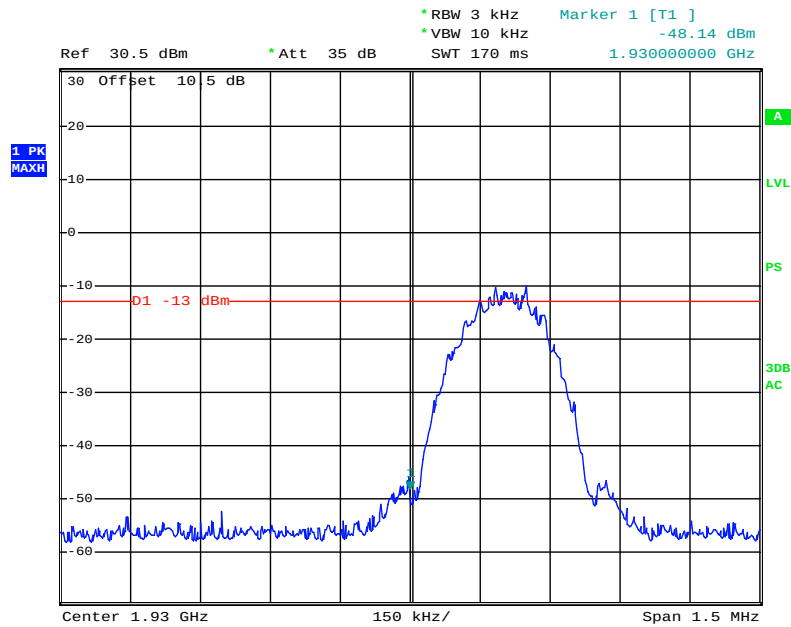
Date: 27.FEB.2012 14:44:36

Uplink, Right Bandage



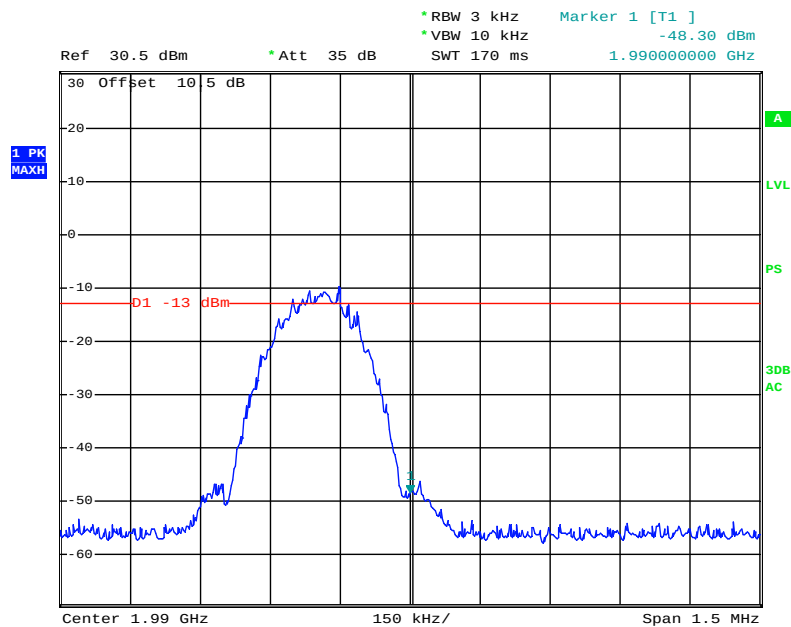
Date: 27.FEB.2012 14:43:40

Downlink, Left Bandage



Date: 27.FEB.2012 14:33:15

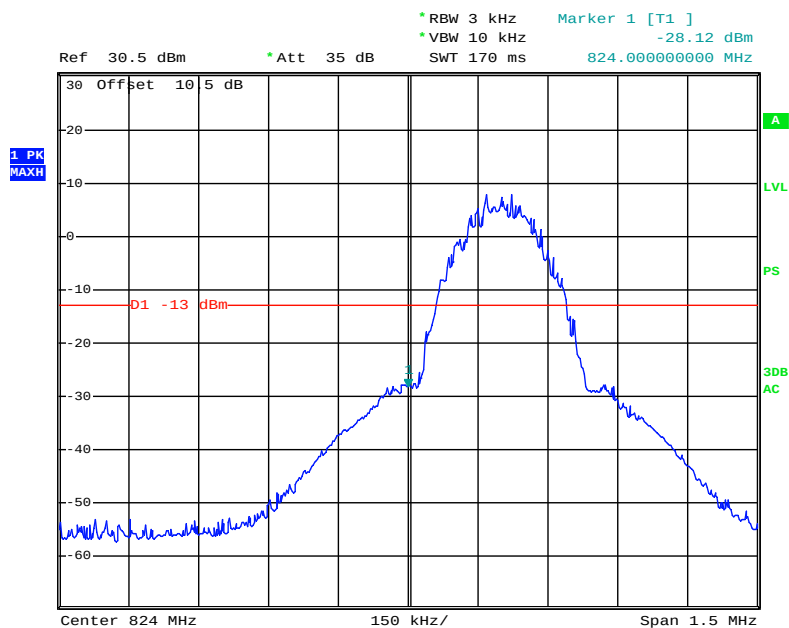
Downlink, Right Bandage



Date: 27.FEB.2012 14:34:51

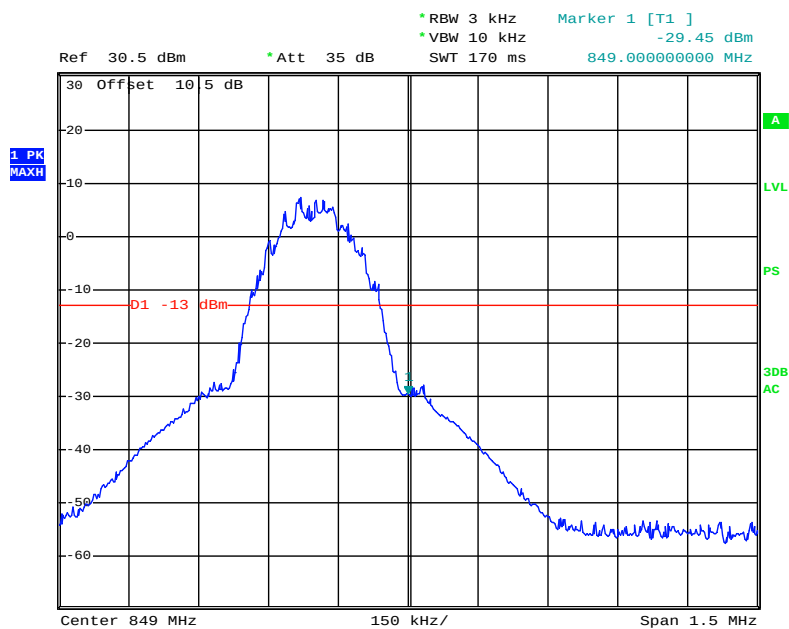
EDGE:

Mode	Frequency (MHz)	Emission (dBm)	Limit (dBm)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	824.0	-28.12	-13
	849.0	-29.45	-13
Downlink (869-894 MHz)	869.0	-44.95	-13
	894.0	-45.27	-13
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1850.0	-28.29	-13
	1910.0	-29.05	-13
Downlink (1930-1990 MHz)	1930.0	-47.44	-13
	1990.0	-46.19	-13

Cellular Band (Part 22H)**Uplink, Left Bandage**

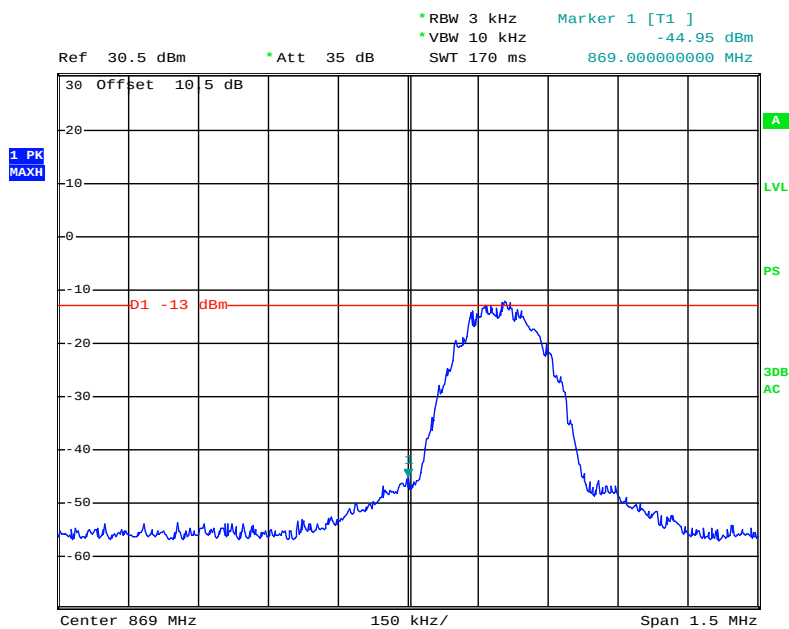
Date: 27.FEB.2012 14:18:54

Uplink, Right Bandage

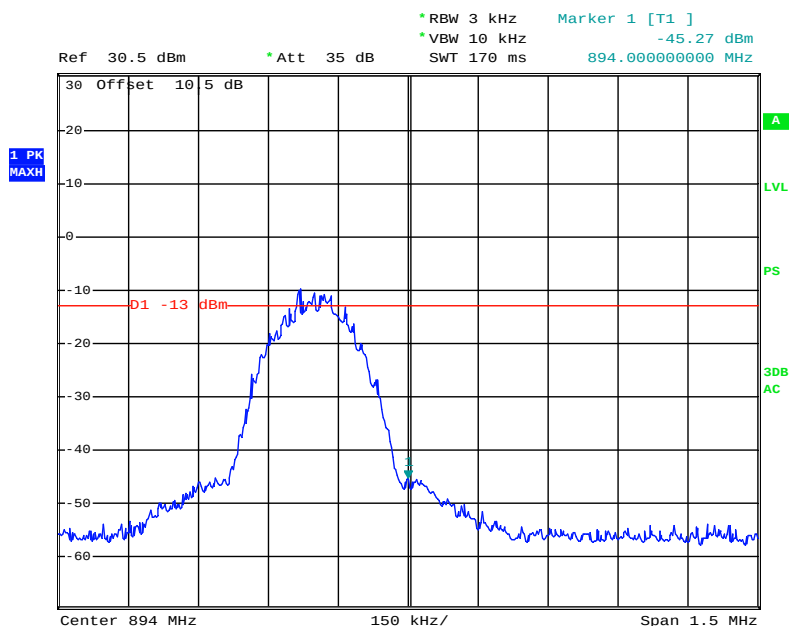


Date: 27.FEB.2012 14:17:49

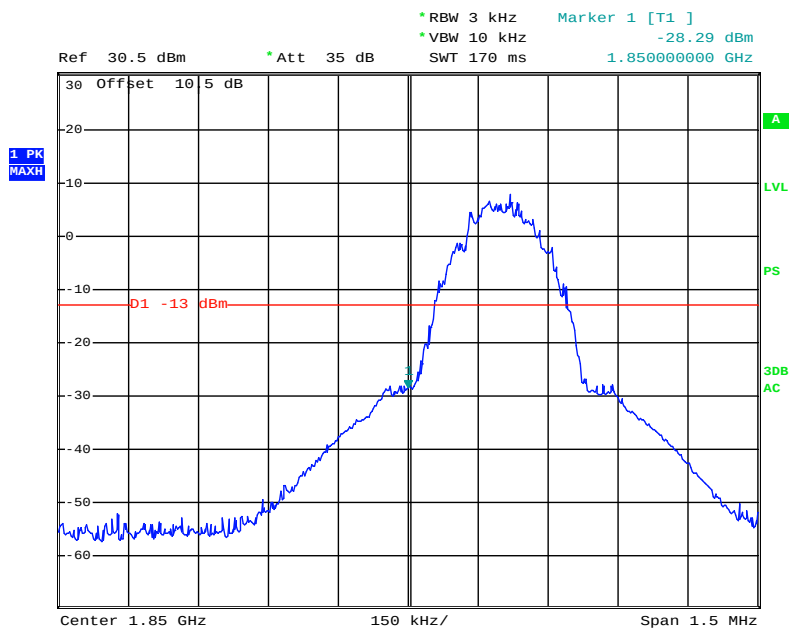
Downlink, Left Bandage



Date: 27.FEB.2012 14:22:24

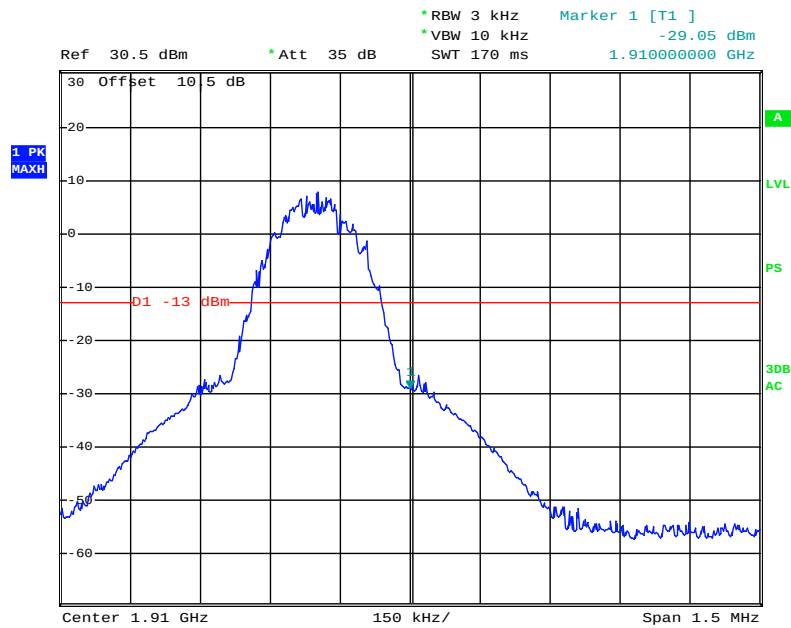
Downlink, Right Bandage

Date: 27.FEB.2012 14:23:12

PCS Band (Part 24E)**Uplink, Left Bandage**

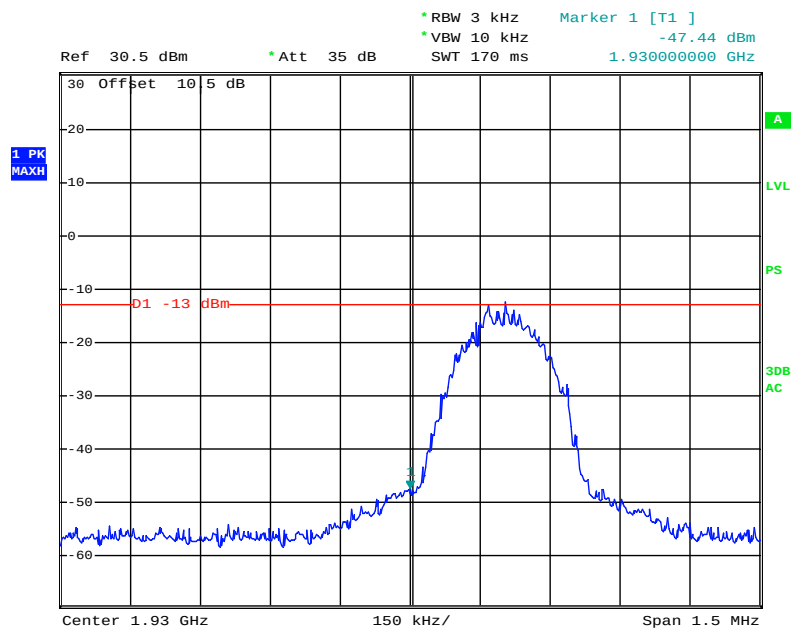
Date: 27.FEB.2012 14:40:16

Uplink, Right Bandage

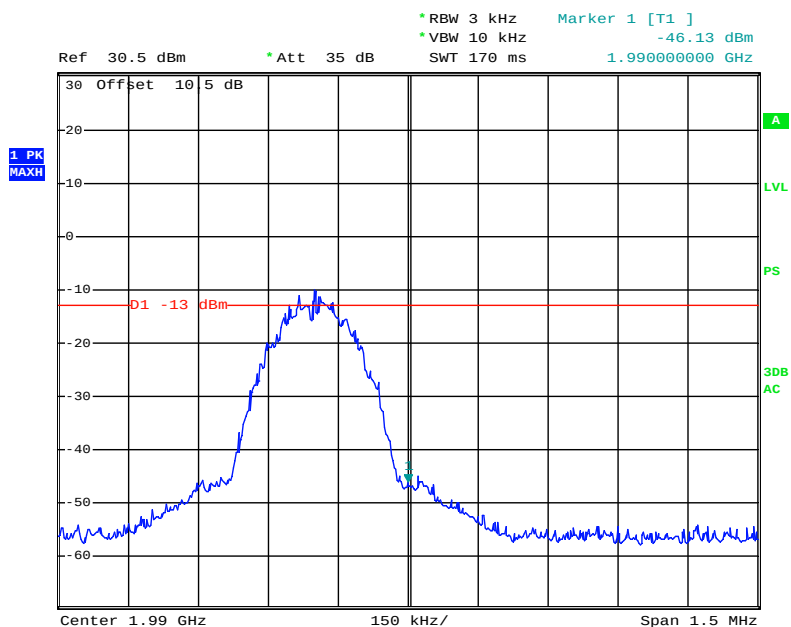


Date: 27.FEB.2012 14:42:07

Downlink, Left Bandage



Date: 27.FEB.2012 14:37:23

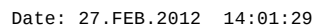
Downlink, Right Bandage

Date: 27.FEB.2012 14:36:09

WCDMA:

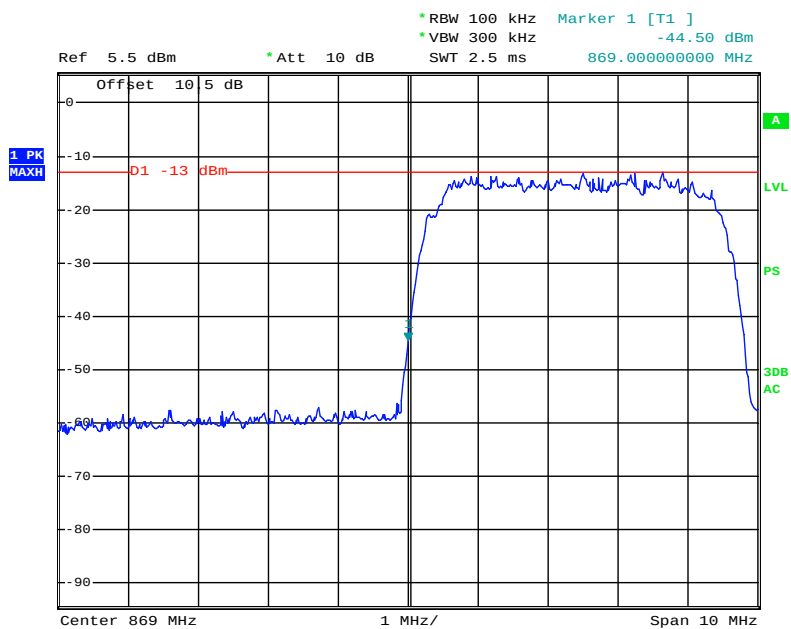
Mode	Frequency (MHz)	Emission (dBm)	Limit (dBm)
Cellular Band (Part 22H)			
Uplink (824-849 MHz)	824.0	-22.59	-13
	849.0	-24.65	-13
Downlink (869-894 MHz)	869.0	-44.50	-13
	894.0	-44.28	-13
PCS Band (Part 24E)			
Uplink (1850-1910 MHz)	1850.0	-25.50	-13
	1910.0	-26.28	-13
Downlink (1930-1990 MHz)	1930.0	-42.58	-13
	1990.0	-40.90	-13

Uplink, Left Bandage



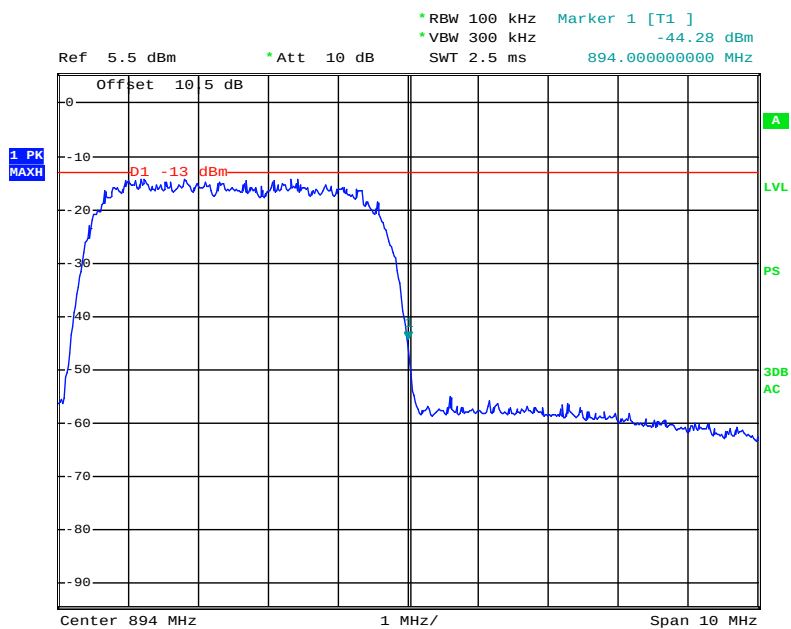
Date: 27.FEB.2012 14:02:14

Downlink, Left Bandage



Date: 27.FEB.2012 13:57:11

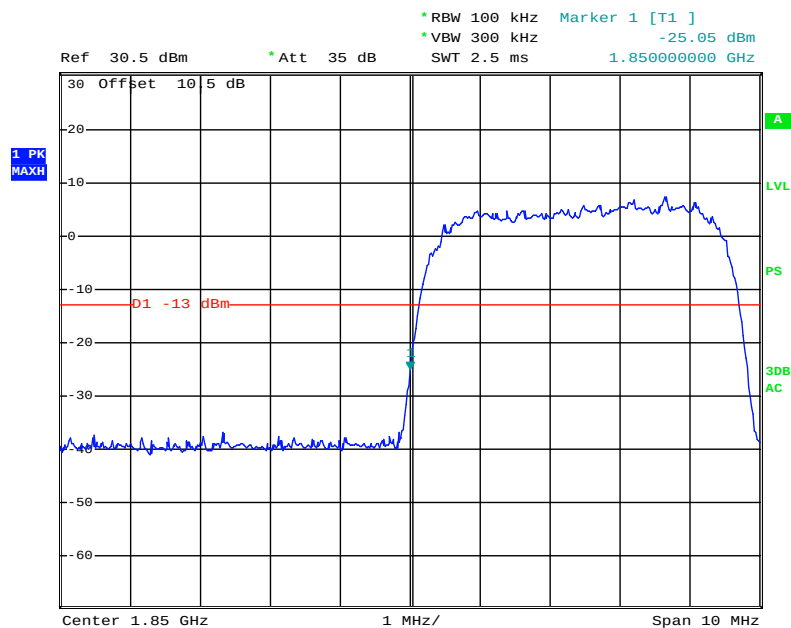
Downlink, Right Bandage



Date: 27.FEB.2012 13:58:25

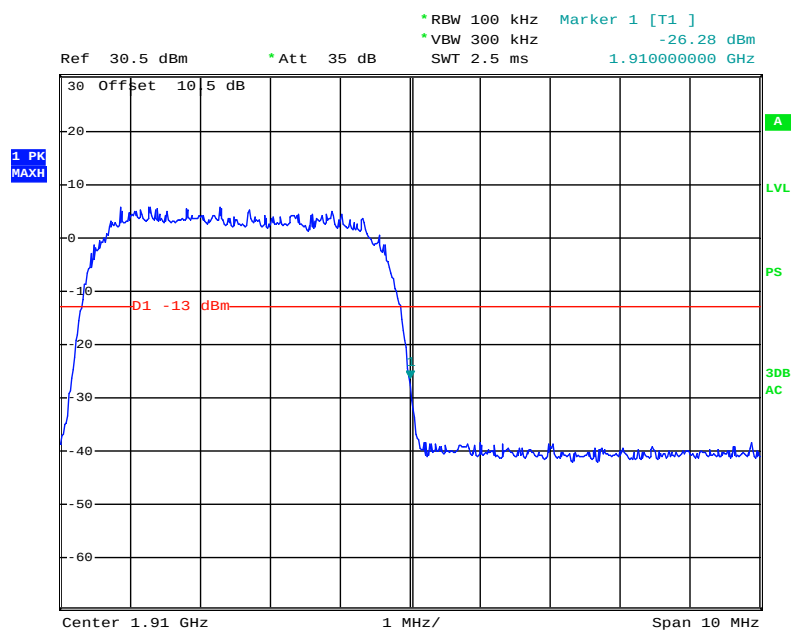
PCS Band (Part 24E)

Uplink, Left Bandage

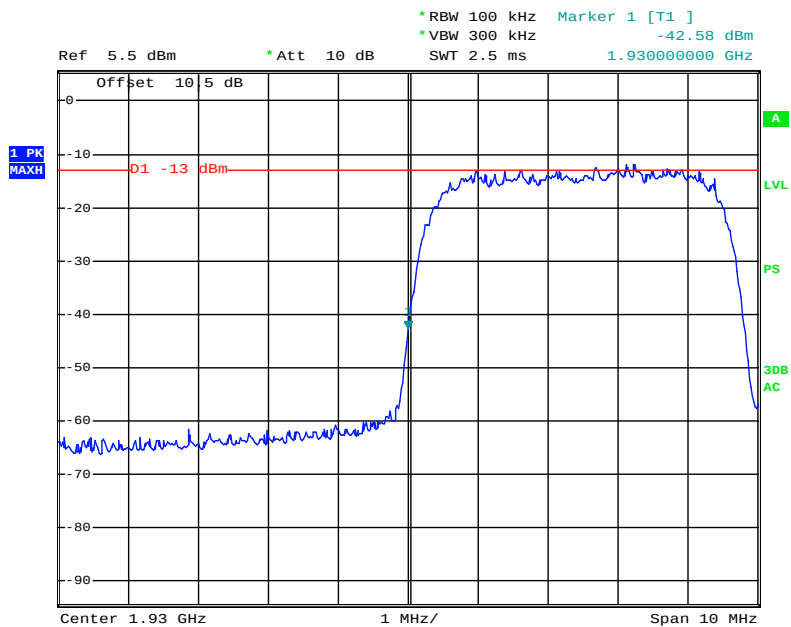


Date: 27.FEB.2012 14:07:24

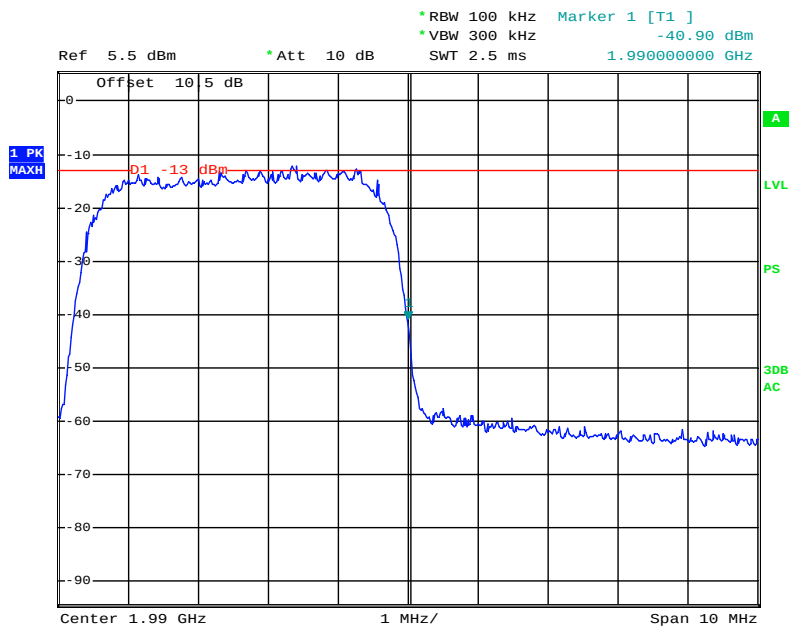
Uplink, Right Bandage



Date: 27.FEB.2012 14:08:42

Downlink, Left Bandage

Date: 27.FEB.2012 13:56:13

Downlink, Right Bandage

Date: 27.FEB.2012 13:55:21

DECLARATION LETTER



TEL: 407.933.5960
FAX: 407.847.6951
sales@jdteck.com

March 26th 2012

Product Similarity Declaration

To Whom It May Concern

Dear Sir / Madam,

We, JDTECK INC, hereby declare that our Wireless Cellular Repeater, Model Number: **WCB-819-NF-15**, are electrically identical with the Model Number: **WCB-819-NF-35** that was certified by BACL. WCB-819-NF-35 and WCB-819-NF-15 are named differently due to different gains achieved by adjusting the potentiometer.

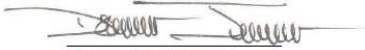
The WCB-819-NF-35 has a factory pre-set maximum output power of UL 20 dBm/ DL 0 dBm and maximum gain of UL 35 dB/ DL 35 dB.

When it is pre-set to be output power of UL 20 dBm / DL 0 dBm and maximum gain of UL 15 dB/ DL 15 dB, the model number is WCB-819-NF-15.

Model Numbers: WCB-819-SMA-35 and WCB-819-SMA-15 are electrically identical with the Model Number: WCB-819-NF-35 and WCB-819-NF-15 that were certified by BACL. They are named differently due to different I/O Port. The model: WCB-819-SMA-35 and WCB-819-SMA-15 are both SMA-Female, but Model Number: WCB-819-NF-35 and WCB-819-NF-15 are N-Female.

Please contact me if you have any questions.

Yours sincerely,


Dennison Jurawan
Sales Manager



107 South Hoagland Blvd. Kissimmee, FL 34741



***** END OF REPORT *****