

FCC PART 20.21, 24E & 90

TEST REPORT

For

ADC Telecommunications Inc.

P.O. Box 1101, Minneapolis, Minnesota, United States

FCC ID: NOO-S2195-011

Report Type: Original Report	Product Type: Data InterReach Spectrum
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Report Number: <u>RSZ140122004-00A</u>	
Report Date: <u>2014-05-06</u>	
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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.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The ADC Telecommunications Inc.'s product, model number: SPT-S3-8019-22-HP (FCC ID: NOO-S2195-011) or the "EUT" in this report was a Data InterReach Spectrum, which was measured approximately: 27 cm (L) x 21 cm (W) x 8 cm (H), rated with input voltage: DC 54 V.

**All measurement and test data in this report was gathered from production sample serial number: 1401096 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2014-01-22.*

Objective

This test report is prepared on behalf of ADC Telecommunications Inc. in accordance with Part 20.21, 24E, and Part 90 of the Federal Communication Commissions rules.

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

Related Submittal(s)/Grant(s)

FCC Part 90 B9B submission with FCC ID: NOO-S2195-011

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 24 Subpart E – Broadband PCS, Part 90 – Private Land Mobile Radio Service

Applicable Standards: TIA/EIA 603-D.

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.

Measurement uncertainty with radiated emission is 5.91 dB for 30 MHz-1 GHz and 4.92 dB for above 1GHz, 1.95 dB for conducted measurement.

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.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

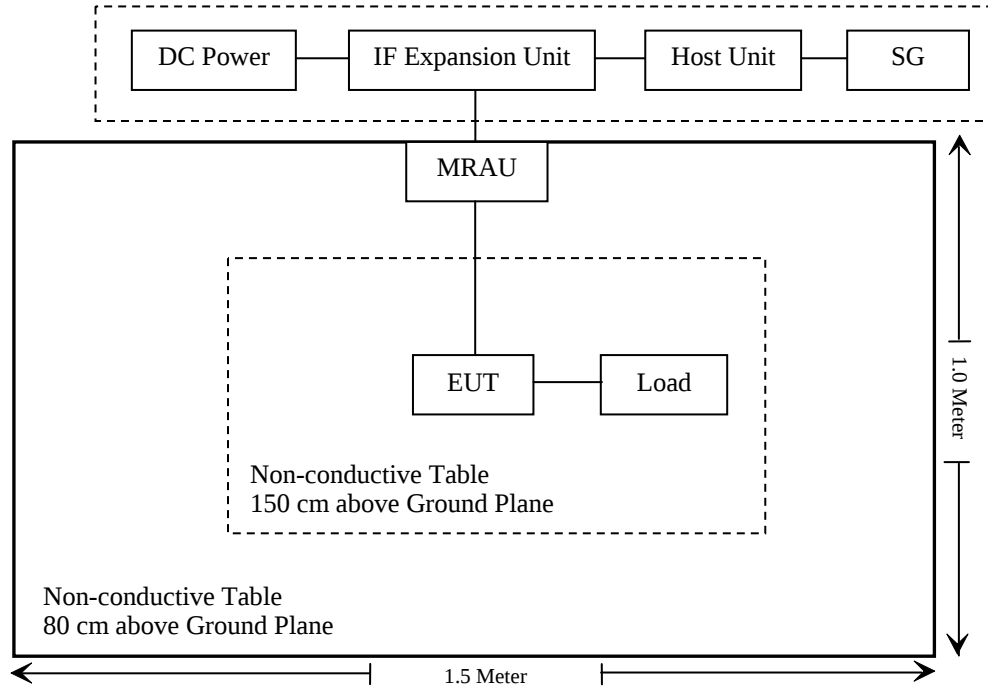
No modification was made to the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
ADC Telecommunications Inc.	Host Unit	FWP-0000HUII	MR224BKL
ADC Telecommunications Inc.	Rev Module	SPT-0000000REV-1	MR221NAU
ADC Telecommunications Inc.	Controller Module	SPT-00000MICRO-1	MR221NA3
ADC Telecommunications Inc.	FWD Module	SPT-0000000FWD-1	MR221NA5
ADC Telecommunications Inc.	DC Power	SPT-2400ACDC-1	N/A
ADC Telecommunications Inc.	MRAU	SPT-M3-8519-11-HP	MR226ZW1

External I/O Cable

Cable Description	Length (m)	From/Port	To
Shielding Detachable RF Cable	0.4	EUT	Load
Shielding Detachable RF Cable	1.2*2	EUT	MRAU
Shielding Detachable RF Cable	50*2	MRAU	IF Expansion Unit
Un-shielding Detachable DC Power Cable	1.0	IF Expansion Unit	DC Power
Shielding Detachable RF Cable	1.0	IF Expansion Unit	Host Unit
Shielding Detachable RF Cable	1.4	Host Unit	SG

Block Diagram of Test Setup

Note: IF Expansion Unit contains Rev Module, Controller Module and FWD Module

SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§2.1091	Maximum Permissible Exposure (MPE)	Compliance
§2.1046, §24.232, §90.205	RF Output Power	Compliance
§2.1047	Modulation Characteristics	N/A*
§2.1049; §24.238	Bandwidth	Compliance
§90.691	Emission Mask	Compliance
§2.1051, §24.238	Spurious Emissions at Antenna Terminal	Compliance
§2.1053, §24.238, §90.669	Field Strength of Spurious Radiation	Compliance
§24.238	Out of band emission, Band Edge	Compliance
§2.1055, §24.235, §90.213	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance
§20.21	Out of Band Rejection	Compliance

Note: N/A, the device is a booster.

FCC §2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1307 (b)(1), 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

MPE Prediction

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

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)

Frequency (MHz)	Antenna Gain		Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	(numeric)	(dBm)	(mW)			
865.0	3	2.00	18.96	78.70	40	0.00783	0.577
1994.8	3	2.00	26.58	455.0	40	0.04528	1.0

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 40cm from nearby persons.

Result: Compliance

FCC §2.1047 - MODULATION CHARACTERISTIC

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

FCC § 2.1046 & § 24.232 & §90.205 - RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046, §24.232 and §90.205

Device Specifications: In addition to the general rules for equipment certification in §90.203(a)(2) and part 2, subpart J of this chapter, a signal booster must also meet the rules in this paragraph.

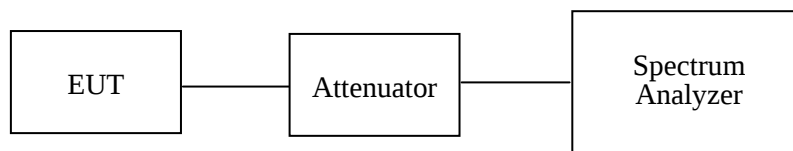
The output power capability of a signal booster must be designed for deployments providing a radiated power not exceeding 5 Watts ERP for each retransmitted channel.

The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

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	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	20 ~ 26 °C
Relative Humidity:	48 ~ 56 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang from 2014-02-24 to 2014-04-24.

Conducted Power**GSM/GPRS**

Mode	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
GSM/GPRS (1900 MHz Downlink)	Low	1930.2	-19	25.97	50
	Middle	1960.0	-21	26.03	50
	High	1994.8	-19	26.45	50

EDGE

Mode	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
EDGE (1900 MHz Downlink)	Low	1930.2	-21	25.93	50
	Middle	1960.0	-25	26.20	50
	High	1994.8	-22	26.58	50

CDMA

Mode	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
CDMA (1900 MHz Downlink)	Low	1931.25	-25	23.75	50
	Middle	1960.0	-26	23.47	50
	High	1993.75	-26	23.41	50

WCDMA

Mode	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
WCDMA (1900 MHz Downlink)	Low	1932.4	-28	23.31	50
	Middle	1960.0	-27	23.72	50
	High	1992.6	-27	23.34	50

PCS LTE Band -downlink

Mode	Modulation	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
1900 MHz Downlink	QPSK(1.4MHz)	1931	-26	23.62	50
		1960	-27	23.84	50
		1994	-26	23.64	50
	16QAM(1.4MHz)	1931	-26	23.94	50
		1960	-27	23.96	50
		1994	-26	23.67	50
	64QAM(1.4MHz)	1931	-26	23.03	50
		1960	-27	23.26	50
		1994	-26	23.12	50
	QPSK(3MHz)	1932	-25	23.32	50
		1960	-26	23.04	50
		1993	-24	23.84	50
	16QAM(3MHz)	1932	-25	23.18	50
		1960	-25	23.78	50
		1993	-26	23.54	50
	64QAM(3MHz)	1932	-27	23.96	50
		1960	-26	23.78	50
		1993	-27	23.49	50
	QPSK(5MHz)	1933	-25	23.52	50
		1960	-26	23.25	50
		1992	-26	23.41	50
	16QAM(5MHz)	1933	-26	23.71	50
		1960	-25	23.43	50
		1992	-26	23.65	50
	64QAM(5MHz)	1933	-25	23.17	50
		1960	-25	23.30	50
		1992	-25	23.41	50
	QPSK(10MHz)	1935	-26	23.24	50
		1960	-26	23.27	50
		1990	-27	23.39	50
	16QAM(10MHz)	1935	-26	23.91	50
		1960	-27	23.72	50
		1990	-26	23.42	50
	64QAM(10MHz)	1935	-25	23.89	50
		1960	-25	23.15	50
		1990	-26	23.54	50

IDEN (862-869MHz)

Mode	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
IDEN (800 MHz Downlink)	Low	862.1	-27	17.16	50
	Middle	865.0	-27	17.17	50
	High	868.9	-28	17.21	50

CDMA (862-869MHz)

Mode	Channel	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
CDMA (800 MHz Downlink)	Low	863.25	-26	18.01	50
	Middle	865.0	-25	18.24	50
	High	867.75	-25	18.12	50

LTE Band – Downlink (862-869MHz)

Mode	Modulation	Frequency (MHz)	Input Power (dBm)	Output Power (dBm)	Limit (dBm)
800 MHz Downlink	QPSK(1.4MHz)	863	-29	18.62	50
		865	-29	18.84	50
		868	-30	18.64	50
	16QAM(1.4MHz)	863	-30	18.94	50
		865	-30	18.96	50
		868	-30	18.67	50
	64QAM(1.4MHz)	863	-29	18.03	50
		865	-28	18.26	50
		868	-29	18.12	50
	QPSK(3MHz)	863.5	-27	18.33	50
		865	-29	18.15	50
		867.5	-28	18.39	50
	16QAM(3MHz)	863.5	-29	18.17	50
		865	-29	18.05	50
		867.5	-30	18.28	50
	64QAM(3MHz)	863.5	-29	18.23	50
		865	-29	18.41	50
		867.5	-30	18.66	50
	QPSK(5MHz)	865	-28	18.33	50
	16QAM(5MHz)	865	-29	18.11	50
	64QAM(5MHz)	865	-29	18.05	50

Note: The limit is 100 watts=50 dBm

FCC §2.1049 & §24.238 – BANDWIDTH

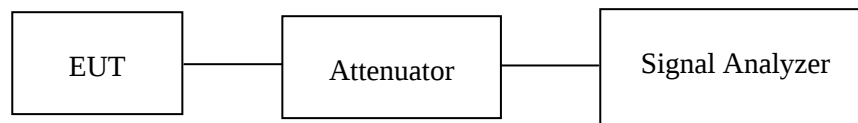
Applicable Standard

FCC §2.1049 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	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	20 ~ 26 °C
Relative Humidity:	48 ~ 56 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang from 2014-02-20 to 2014-03-13.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables and plots.

PCS Band Downlink

Mode	Frequency (MHz)	Emission Bandwidth Input (kHz)	Emission Bandwidth Output (kHz)
GSM	1960	244.4889	246.4929
EDGE	1960	246.4929	246.4929

Mode	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
CDMA	1960	1.2805	1.2805
WCDMA	1960	4.1683	4.1883

PCS Band LTE Downlink

Mode	Modulation	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
Downlink 1930-1995	QPSK(1.4MHz)	1960	1.1302	1.1302
	16QAM(1.4MHz)	1960	1.1422	1.1422
	64QAM(1.4MHz)	1960	1.1302	1.1302
	QPSK(3MHz)	1960	2.7555	2.7555
	16QAM(3MHz)	1960	2.7655	2.7755
	64QAM(3MHz)	1960	2.7655	2.7655
	QPSK(5MHz)	1960	4.5490	4.5691
	16QAM(5MHz)	1960	4.5490	4.5490
	64QAM(5MHz)	1960	4.5290	4.5290
	QPSK(10MHz)	1960	8.9879	8.9879
	16QAM(10MHz)	1960	8.9879	8.9879
	64QAM(10MHz)	1960	8.9879	8.9879

800 MHz Band – Downlink (862-869MHz)

Mode	Frequency (MHz)	Emission Bandwidth Input (kHz)	Emission Bandwidth Output (kHz)
IDEN	865	16.1322	16.1322

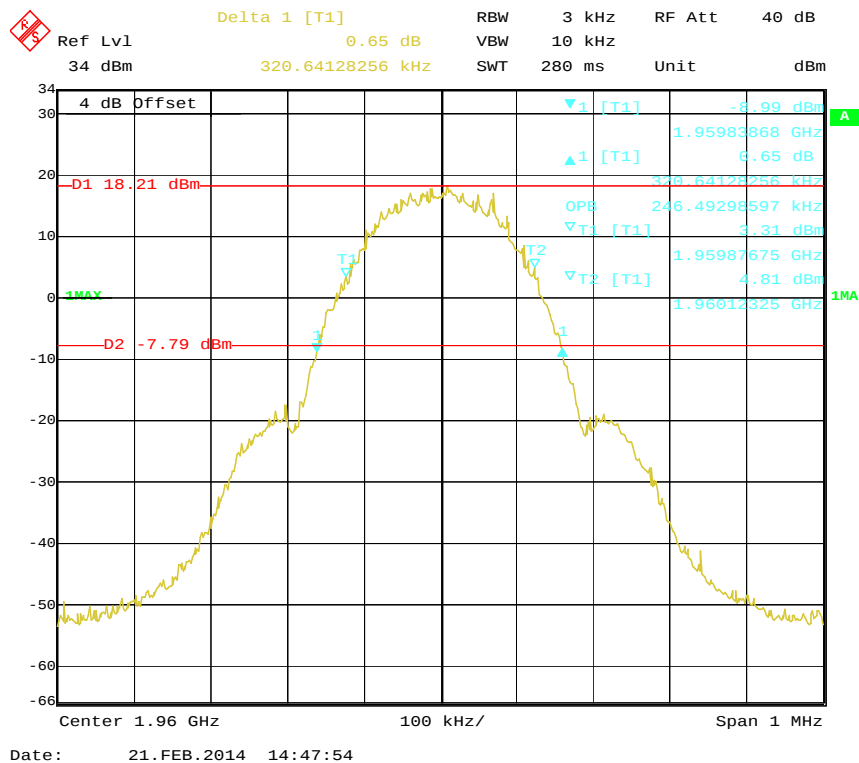
800 MHz Band – Downlink (862-869MHz)

Mode	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
CDMA	865	1.2805	1.2805

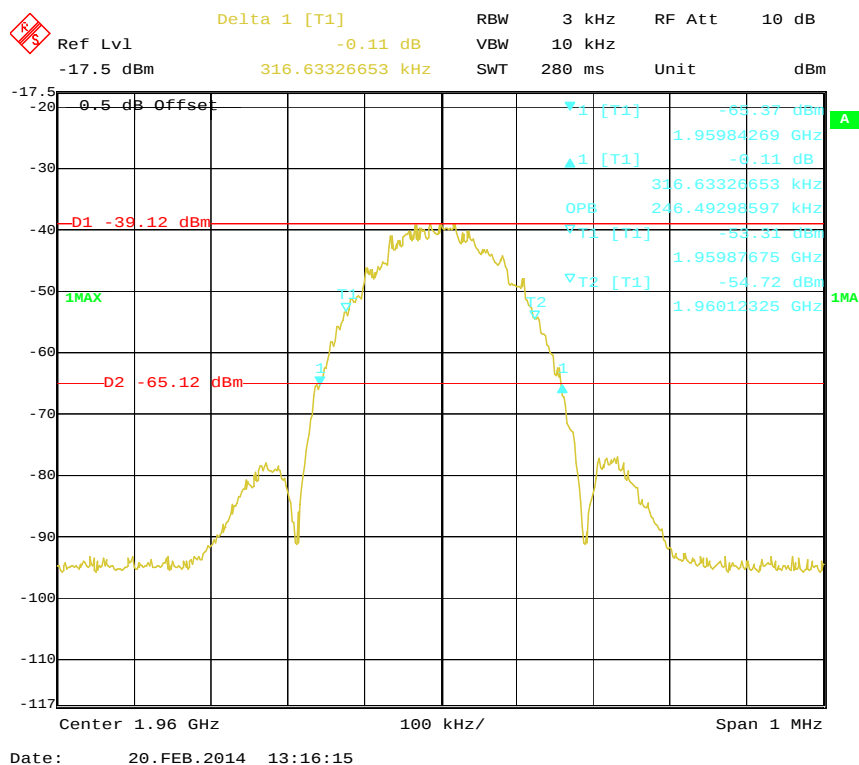
800 MHz Band LTE – Downlink (862-869MHz)

Mode	Modulation	Frequency (MHz)	Emission Bandwidth Input (MHz)	Emission Bandwidth Output (MHz)
Downlink 862-869 MHz	QPSK(1.4MHz)	865	1.1302	1.1302
	16QAM(1.4MHz)	865	1.1422	1.1482
	64QAM(1.4MHz)	865	1.1302	1.1302
	QPSK(3MHz)	865	2.7655	2.7555
	16QAM(3MHz)	865	2.7755	2.7655
	64QAM(3MHz)	865	2.7755	2.7655
	QPSK(5MHz)	865	4.5891	4.5891
	16QAM(5MHz)	865	4.5691	4.5490
	64QAM(5MHz)	865	4.5490	4.5290

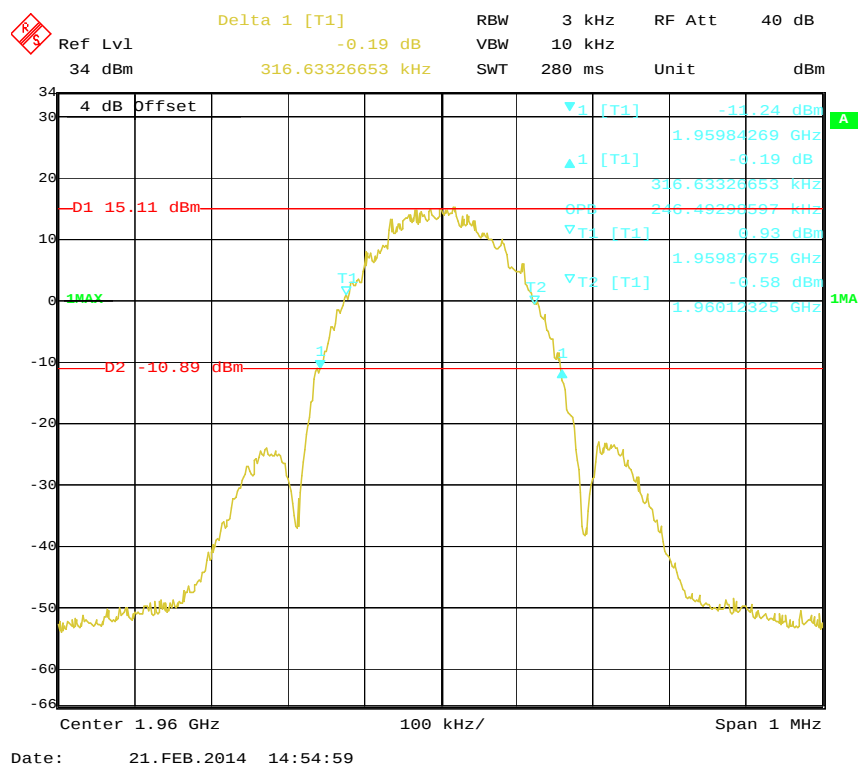
GSM Mode, Input



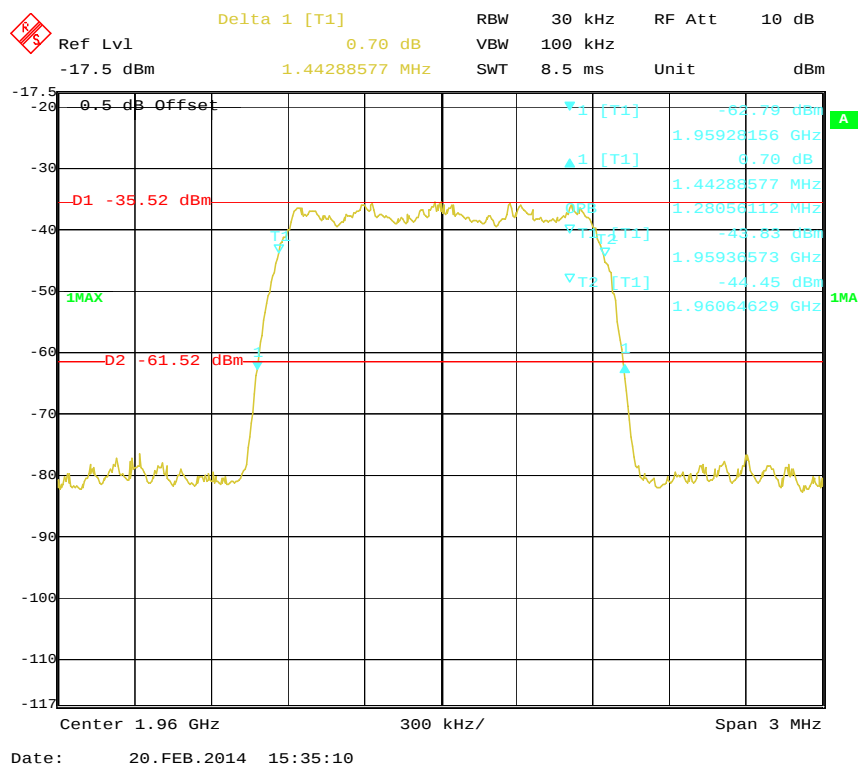
EDGE Mode, Input



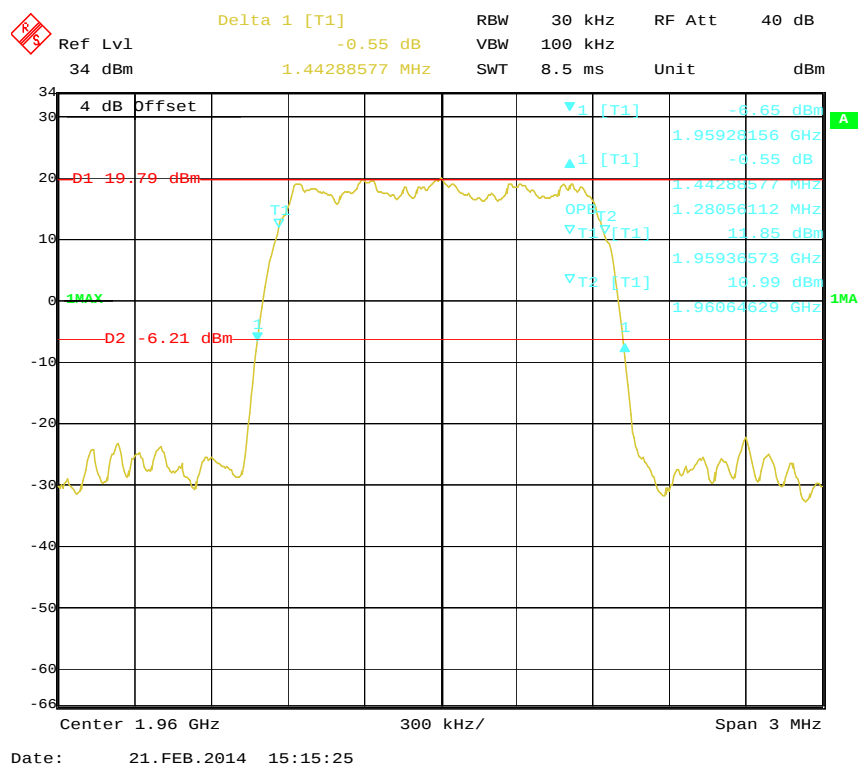
EDGE Mode, Output



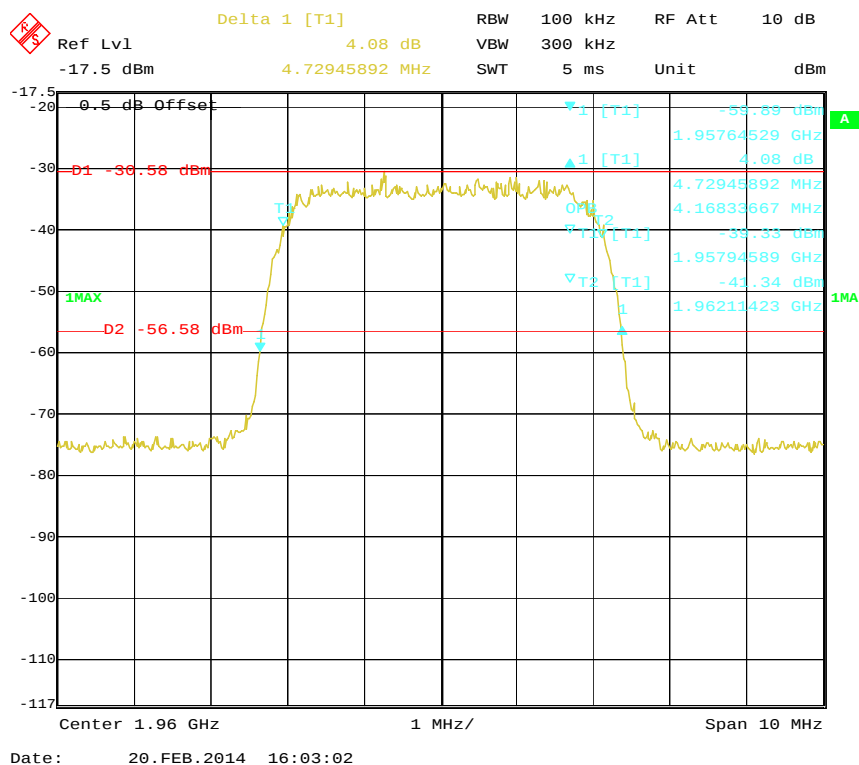
CDMA Mode, Input



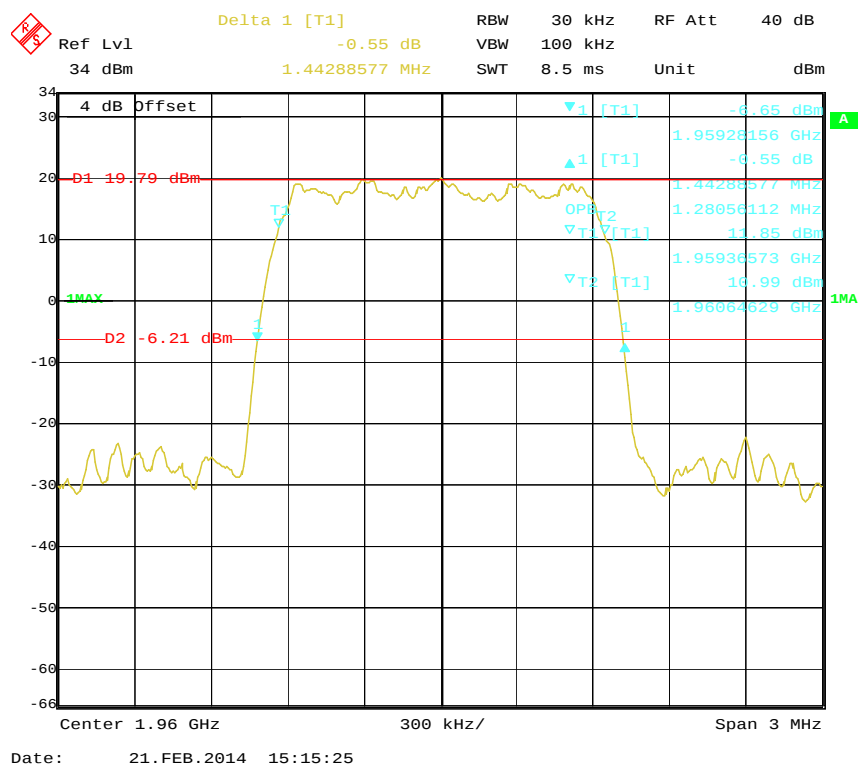
CDMA Mode, Output



WCDMA Mode, Input

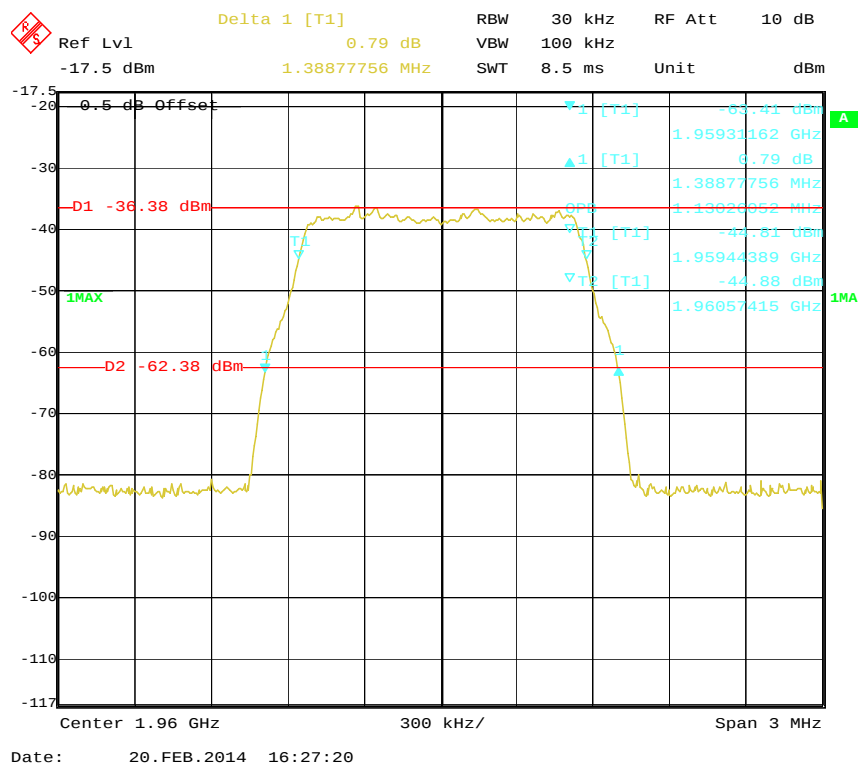


WCDMA Mode, Output

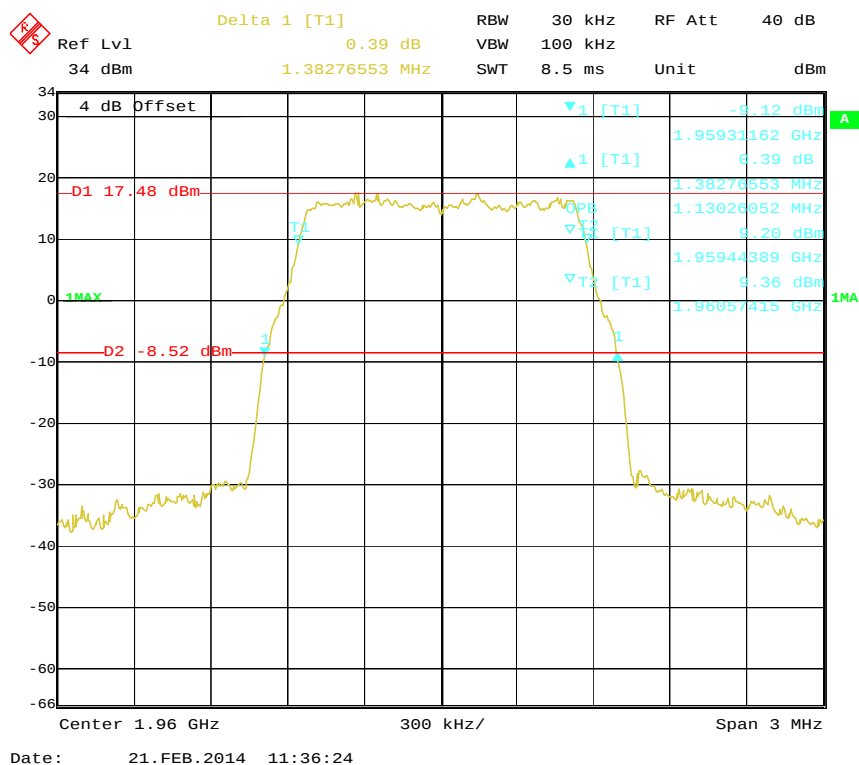


PCS Band LTE Downlink:

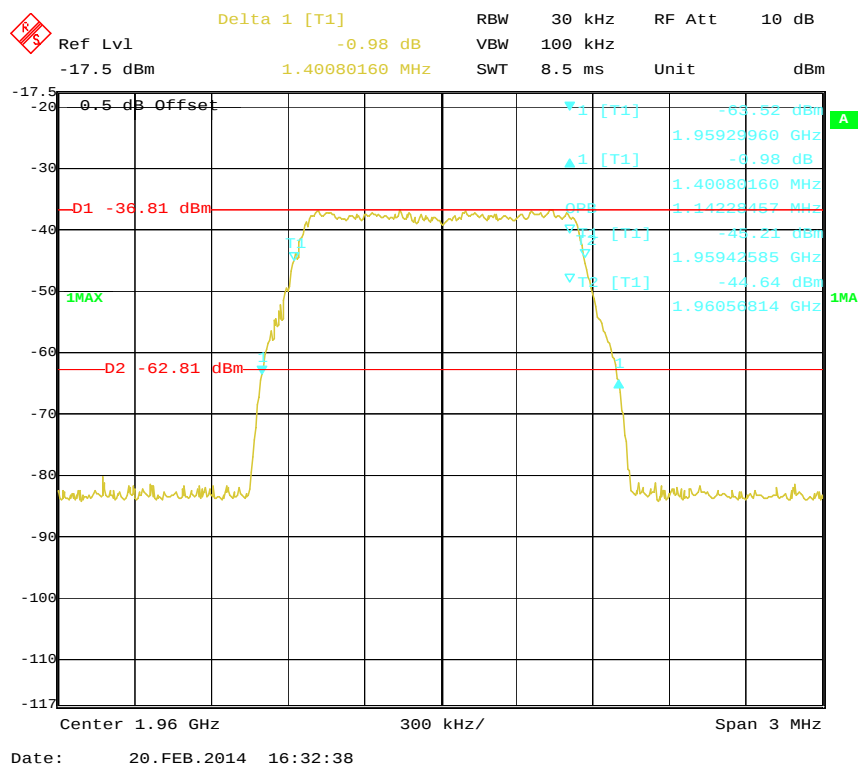
QPSK (1.4MHz) Mode, Input



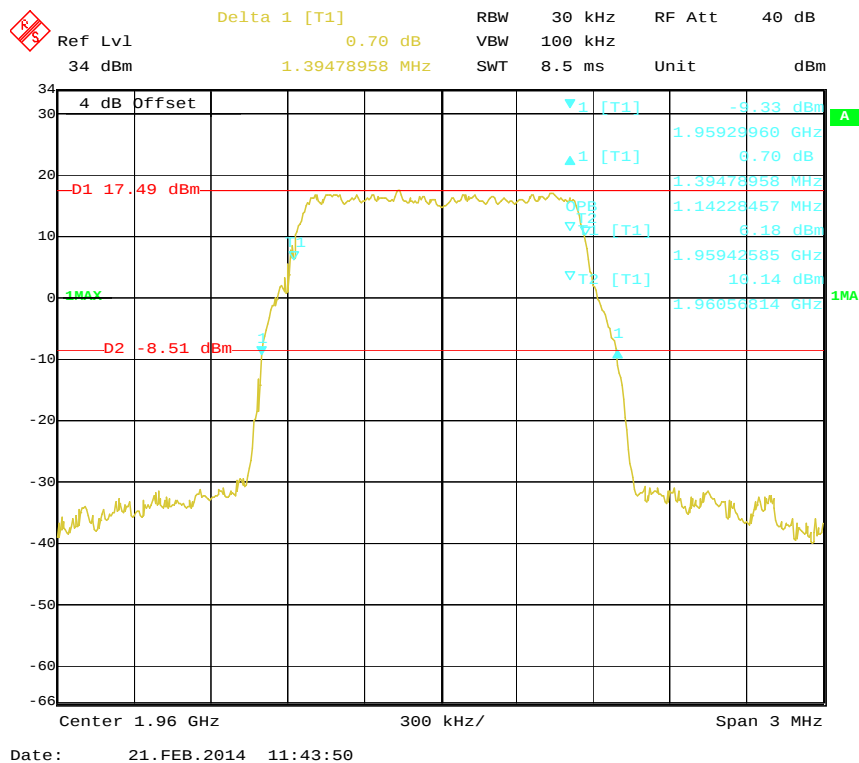
QPSK (1.4MHz) Mode, Output



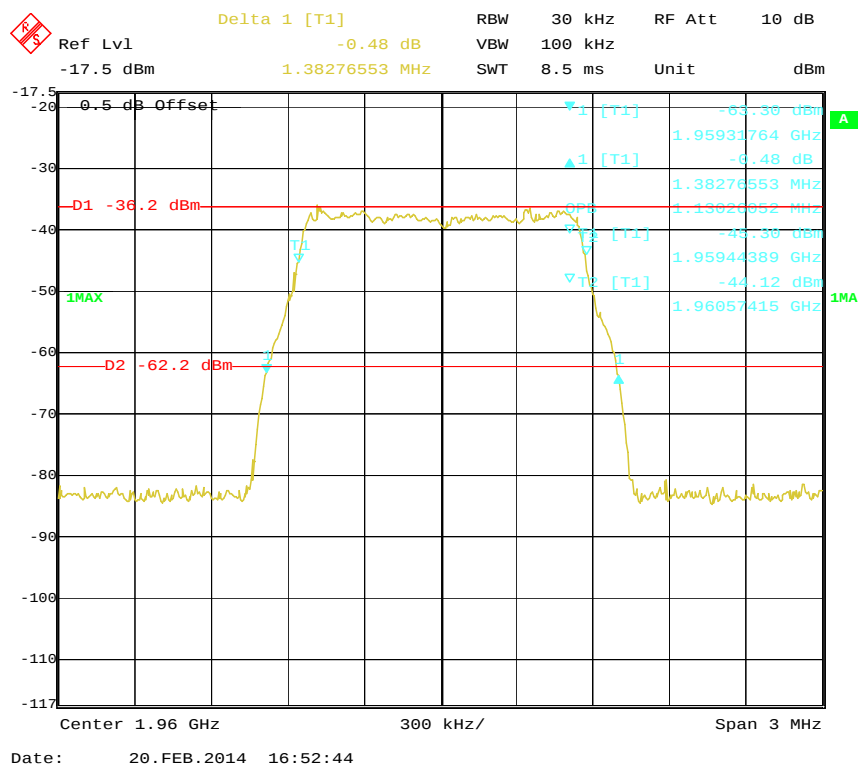
16QAM (1.4MHz) Mode, Input



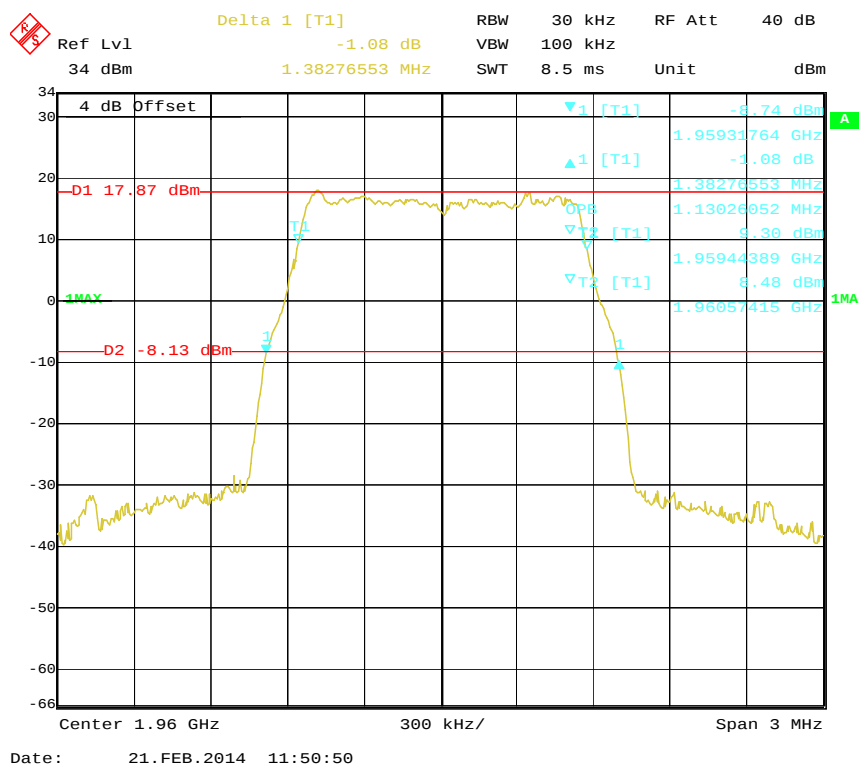
16QAM (1.4MHz) Mode, Output



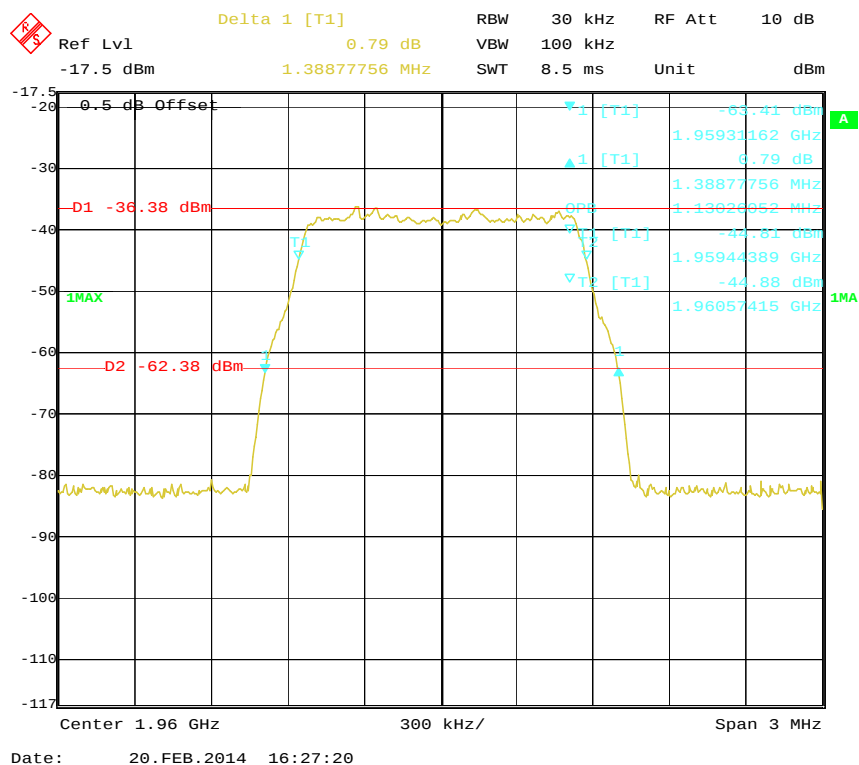
64QAM (1.4MHz) Mode, Input



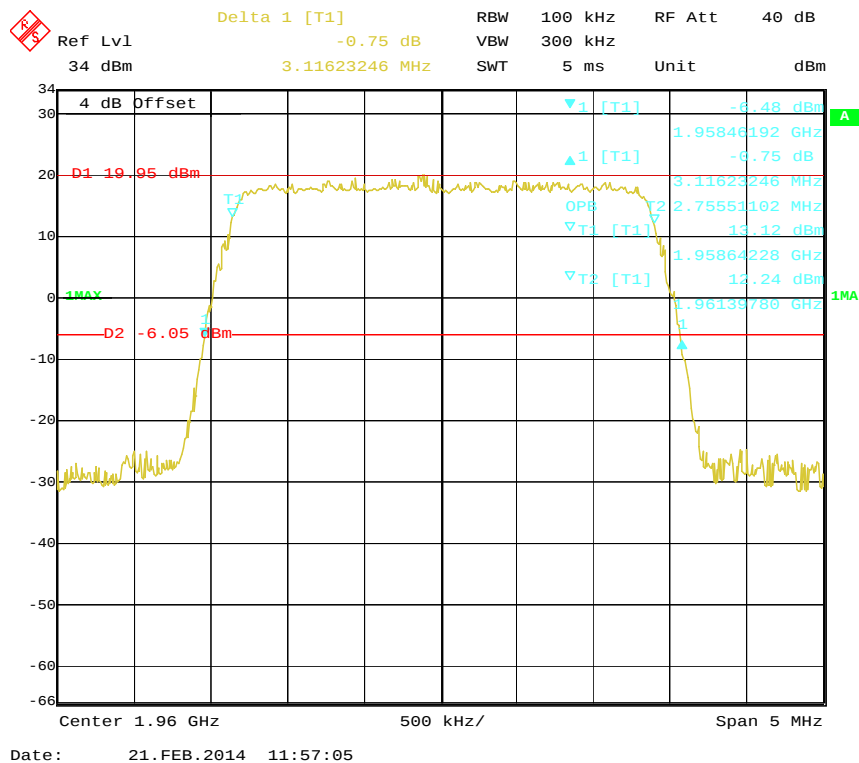
64QAM (1.4MHz) Mode, Output



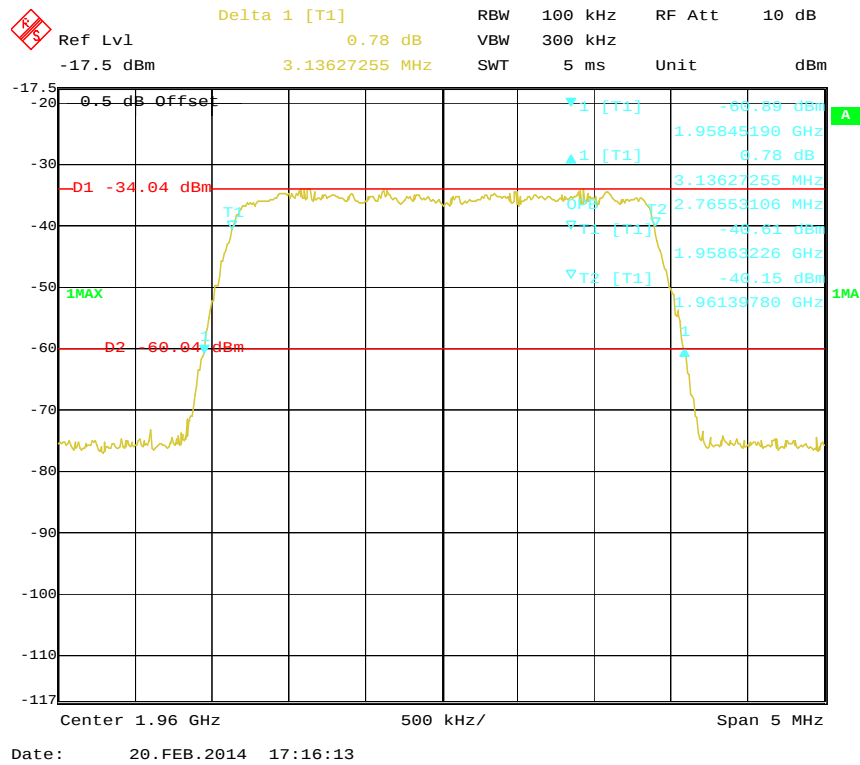
QPSK (3MHz) Mode, Input



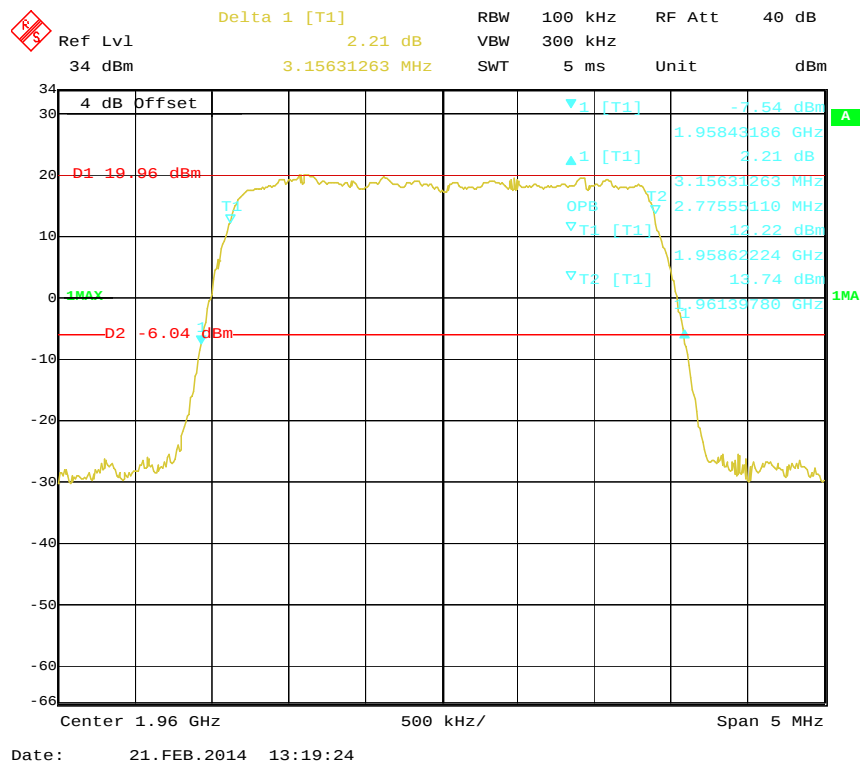
QPSK (3MHz) Mode, Output



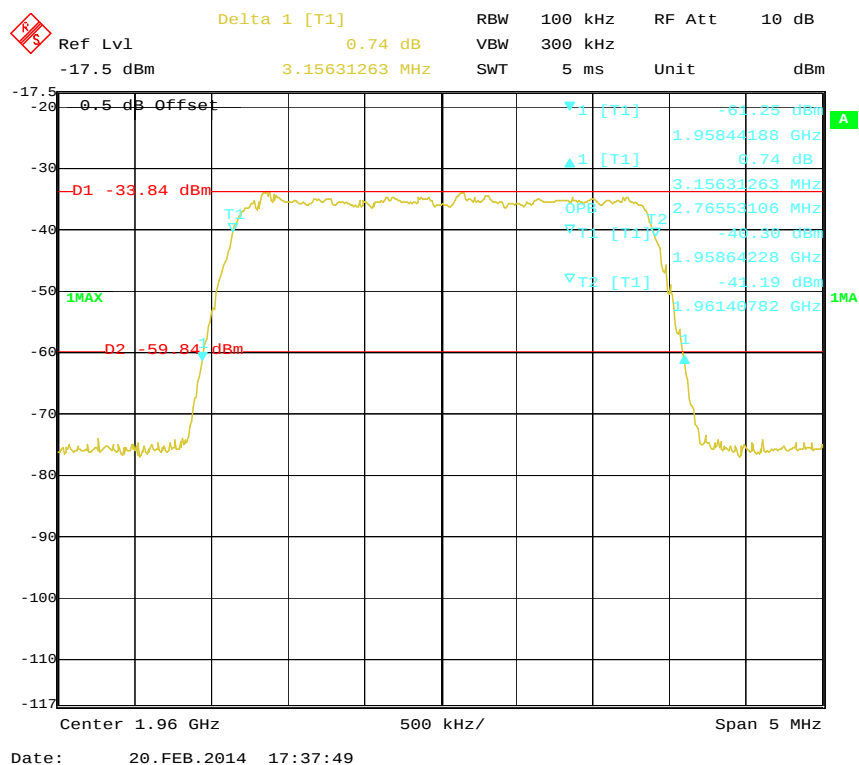
16QAM (3MHz) Mode, Input



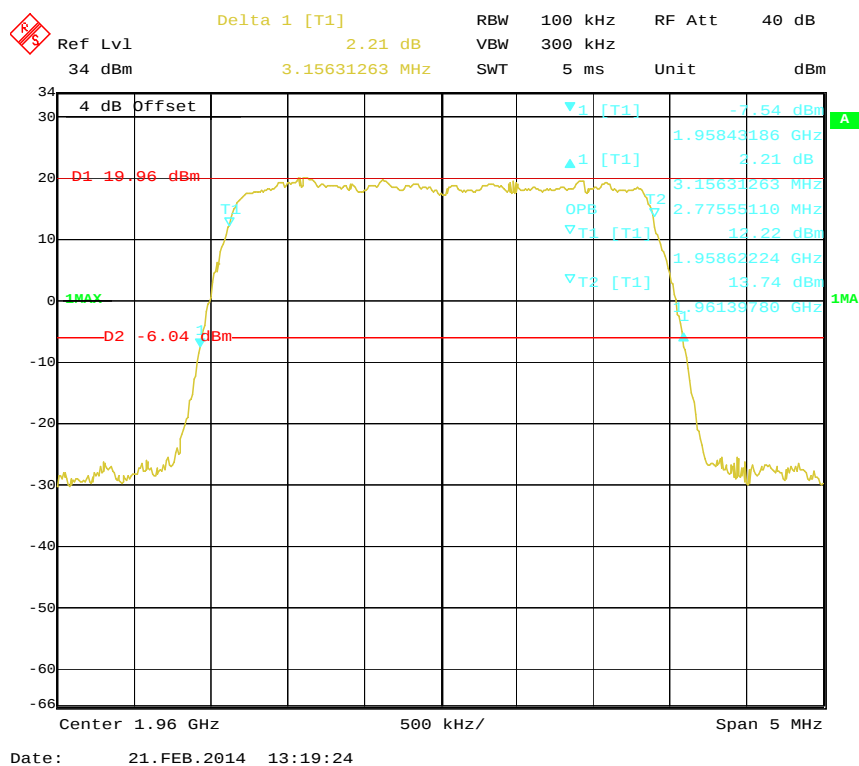
16QAM (3MHz) Mode, Output



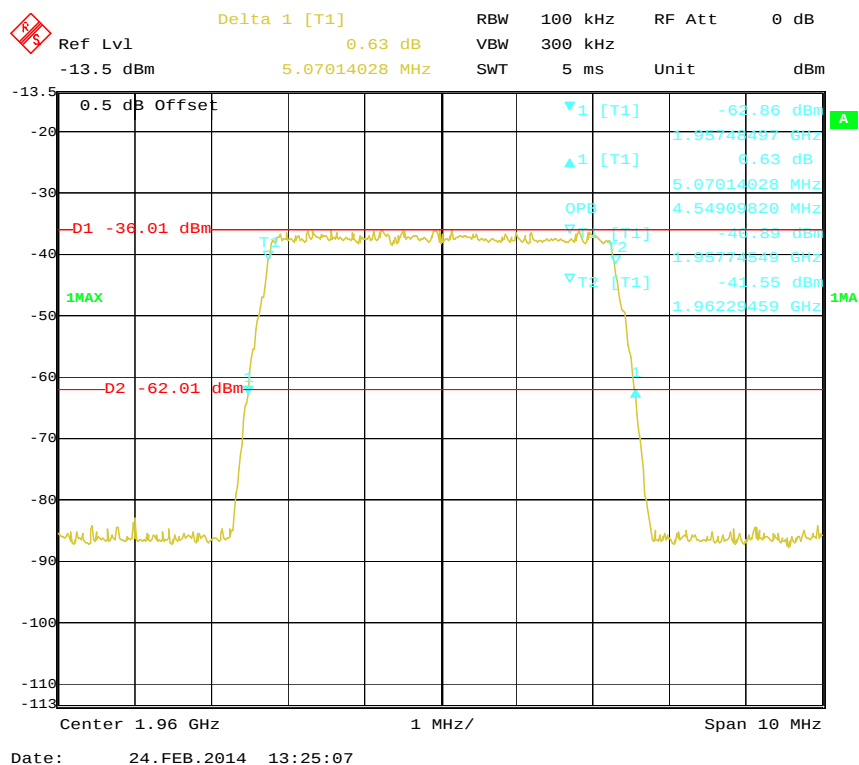
64QAM (3MHz) Mode, Input



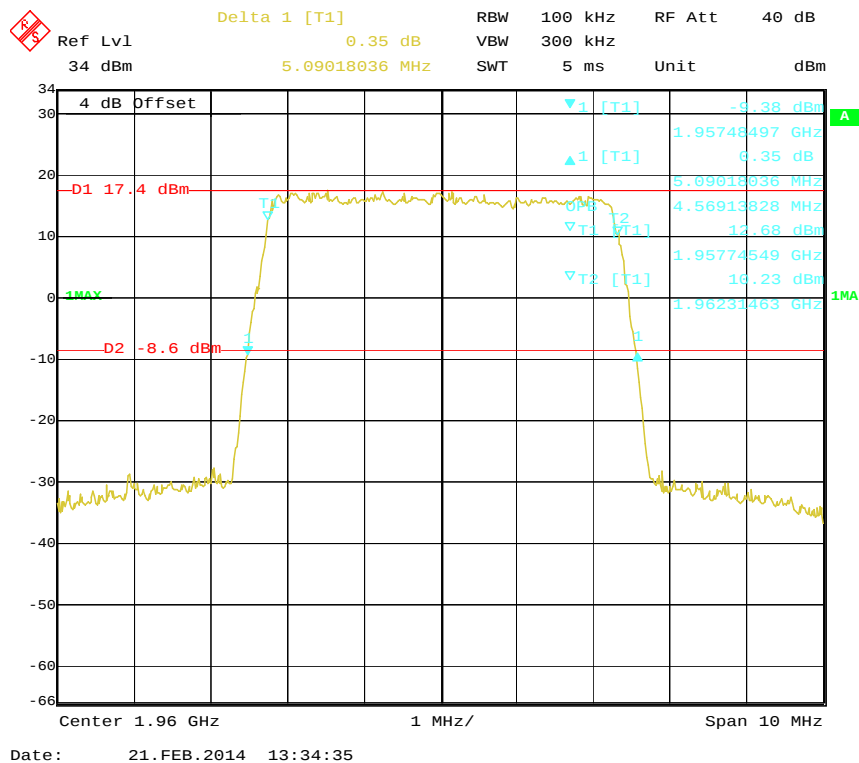
64QAM (3MHz) Mode, Output



QPSK (5MHz) Mode, Input



QPSK (5MHz) Mode, Output



Delta 1 [T1] 0.41 dB
 RBW 100 kHz RF Att 0 dB
 Ref Lvl -13.5 dBm 5.09018036 MHz VBW 300 kHz
 SWT 5 ms Unit dBm

0.5 dB Offset
 -62.35 dBm
 1.95744493 GHz
 0.41 dB
 5.09018036 MHz
 4.54905820 MHz
 -43.29 dBm
 1.95774549 GHz
 -46.06 dBm
 1.96229459 GHz
 1MAX

D1 -35.88 dBm
 D2 -61.88 dBm
 Center 1.96 GHz 1 MHz/
 Span 10 MHz

Date: 24.FEB.2014 13:32:13

Delta 1 [T1] 1.17 dB RBW 100 kHz RF Att 40 dB
 Ref Lvl 34 dBm 5.11022044 MHz SWT 5 ms Unit dBm

4 dB Offset

D1 17.39 dBm

D2 -8.61 dBm

1MAX

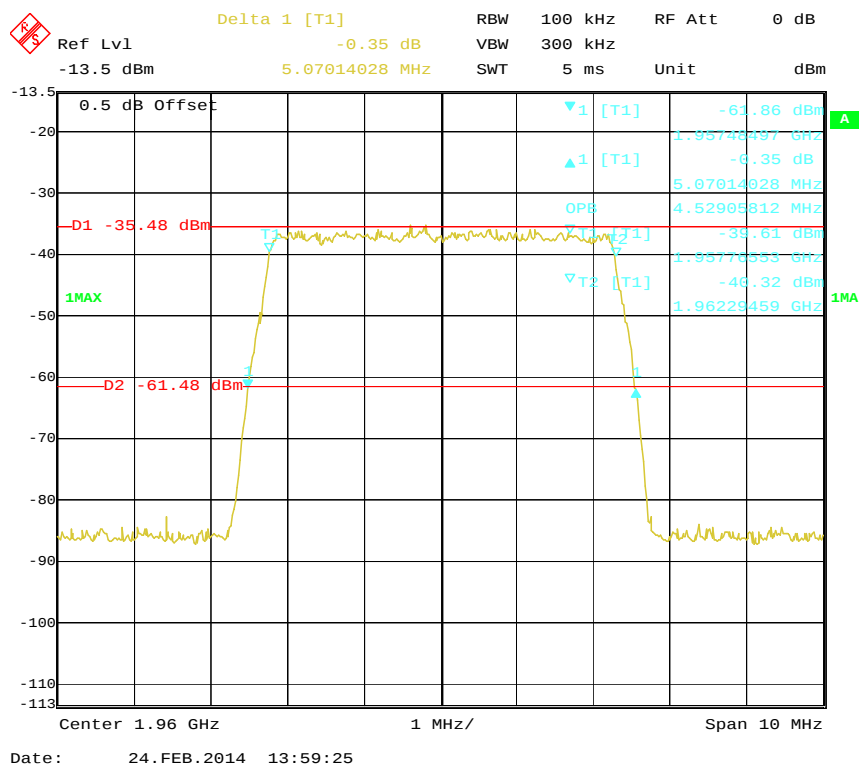
1MA

1 [T1] 1.957746493 GHz 3.17 dB 5.11022044 MHz 11.25 dBm 1.95774549 GHz 13.46 dBm 1.96229459 GHz

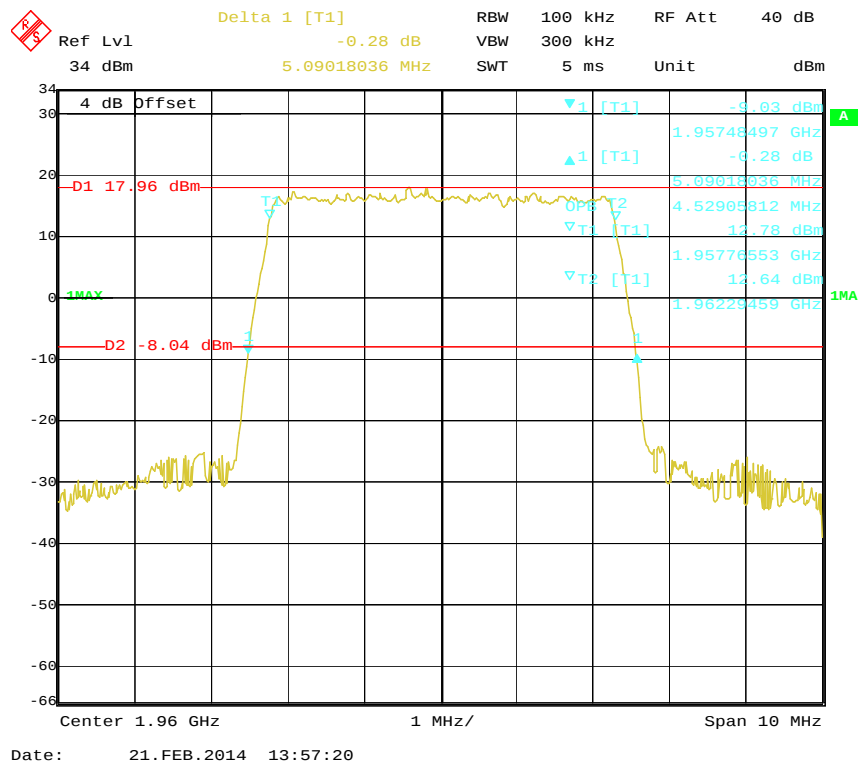
Center 1.96 GHz 1 MHz/ Span 10 MHz

Date: 21.FEB.2014 13:49:34

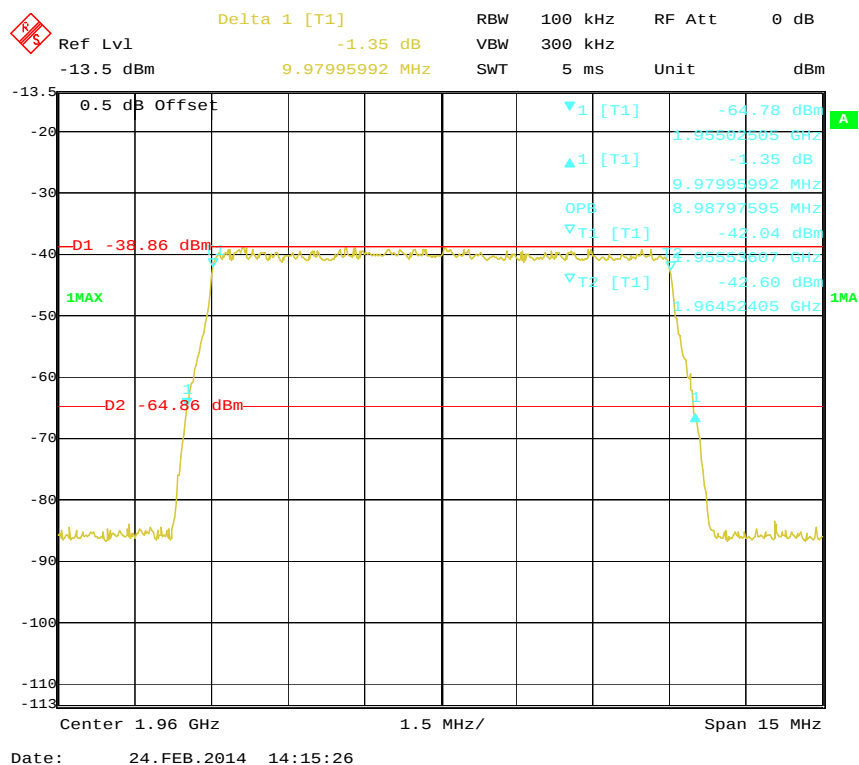
64QAM (5MHz) Mode, Input



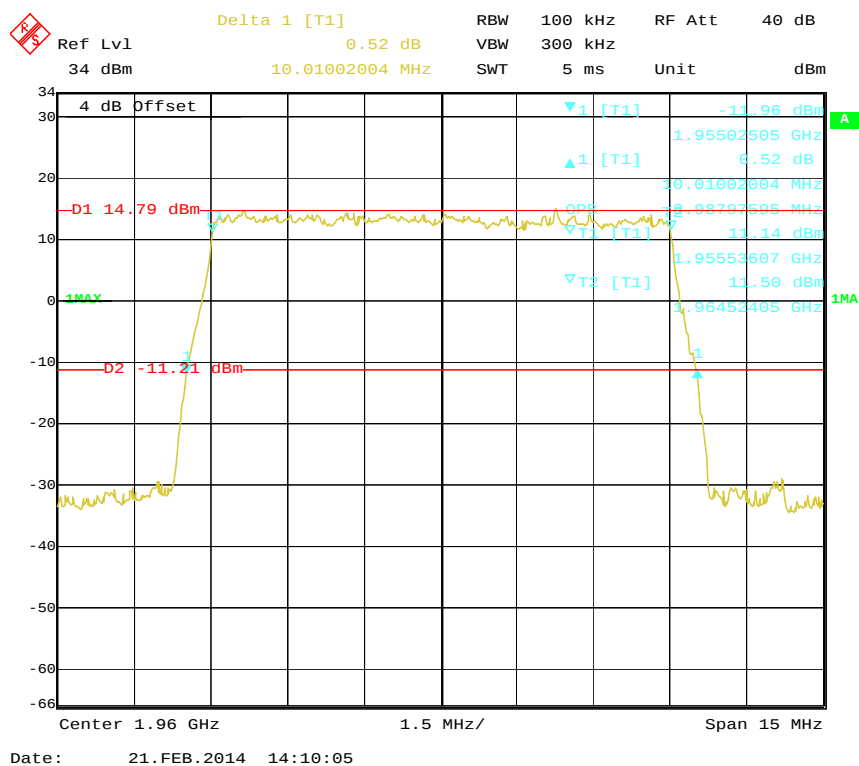
64QAM (5MHz) Mode, Output



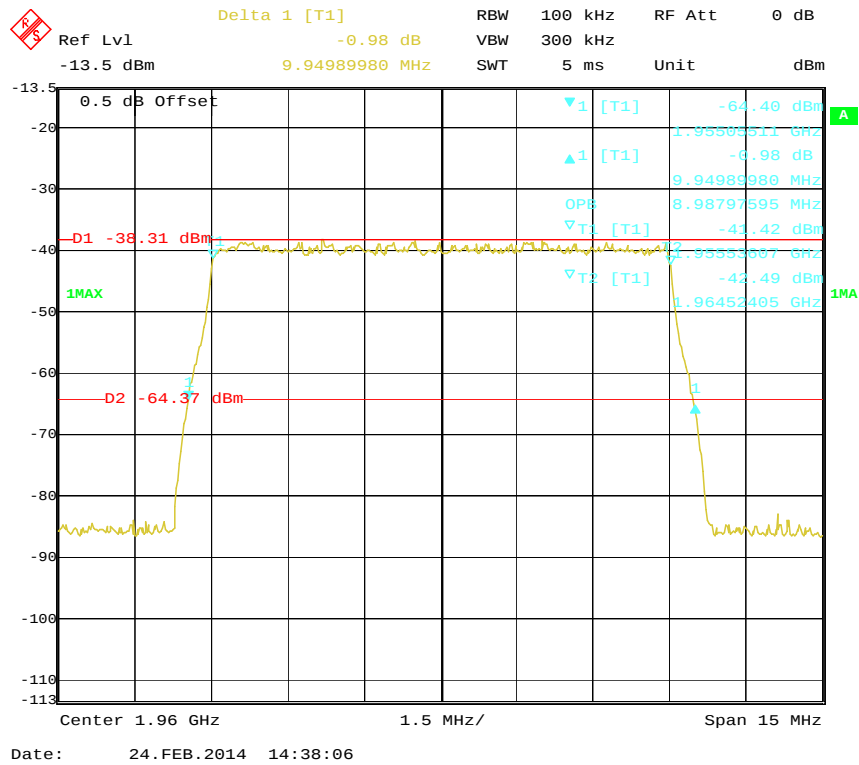
QPSK (10MHz) Mode, Input



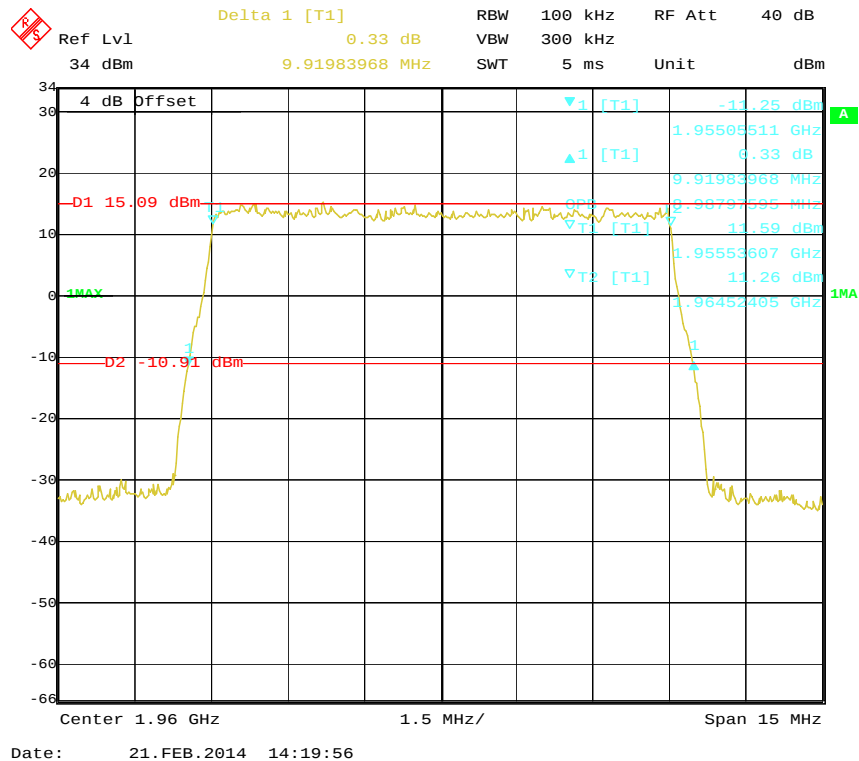
QPSK (10MHz) Mode, Output



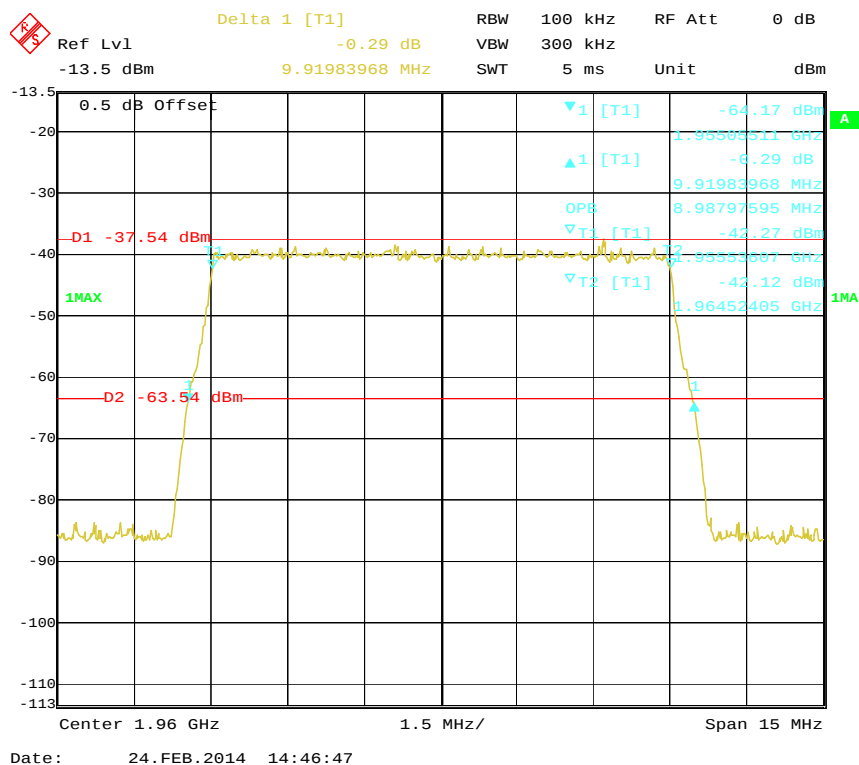
16QAM (10MHz) Mode, Input



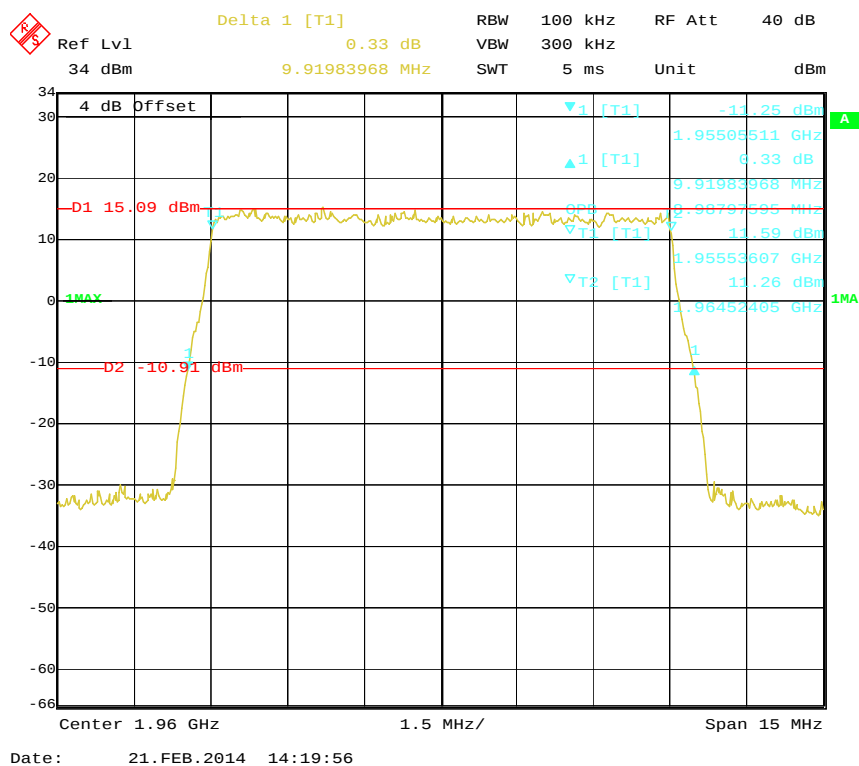
16QAM (10MHz) Mode, Output



64QAM (10MHz) Mode, Input

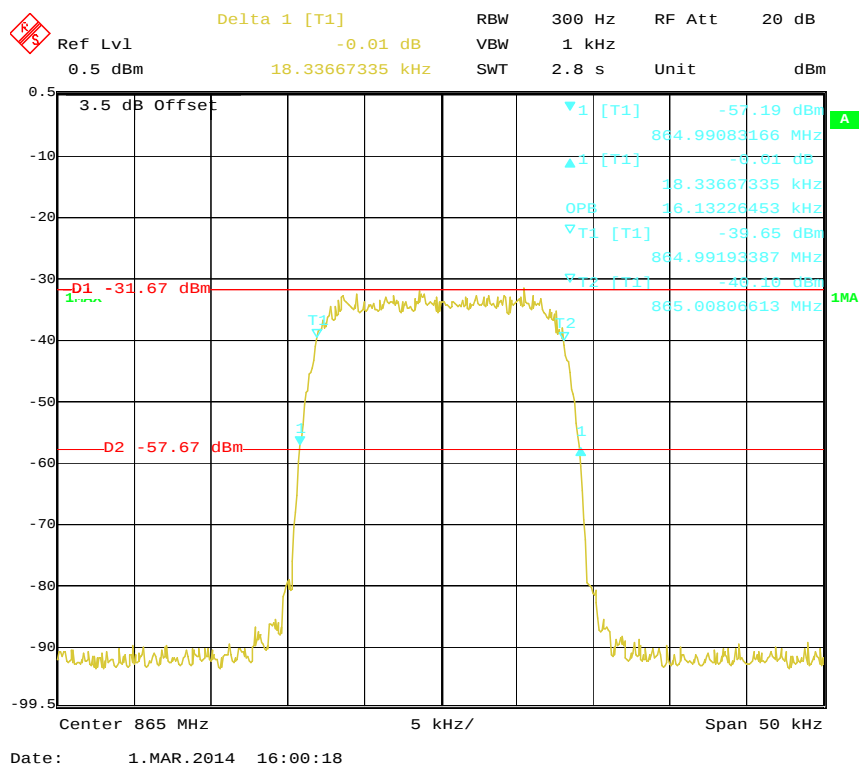


64QAM (10MHz) Mode, Output

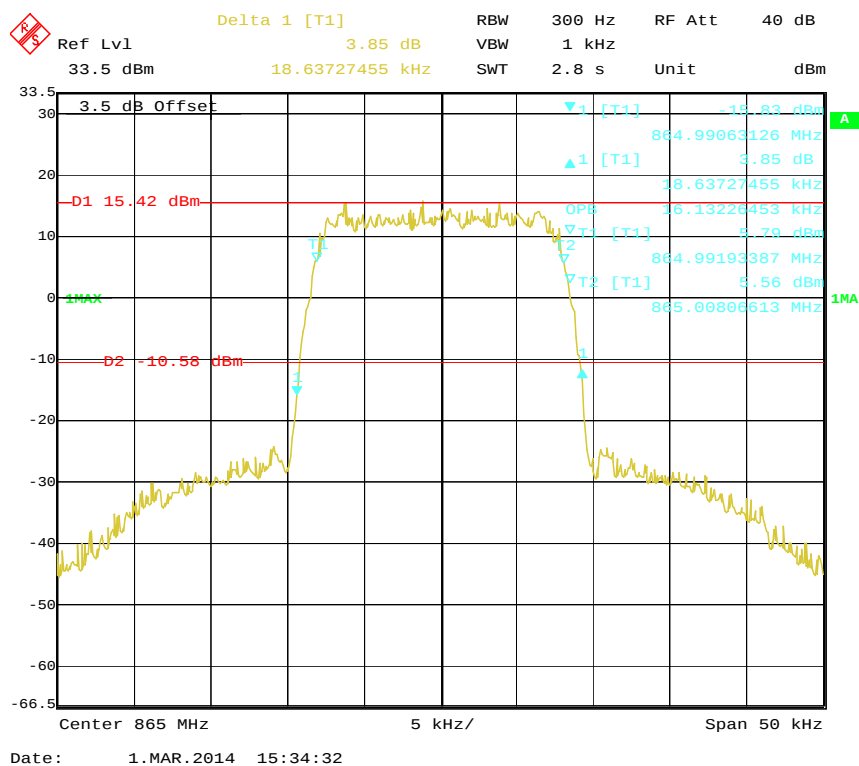


862-869MHz:

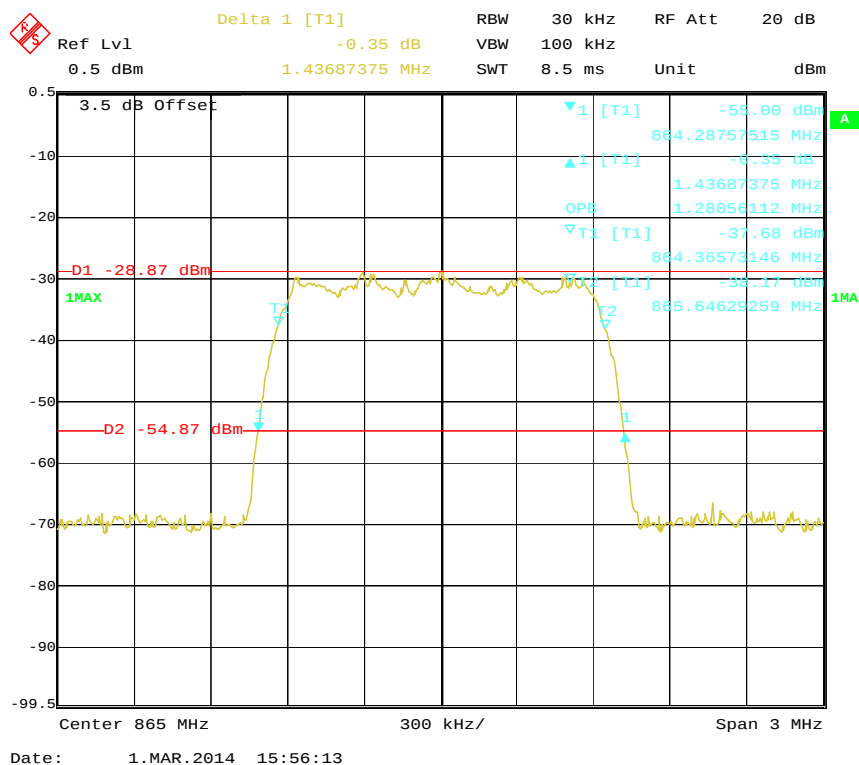
IDEN Mode, Input



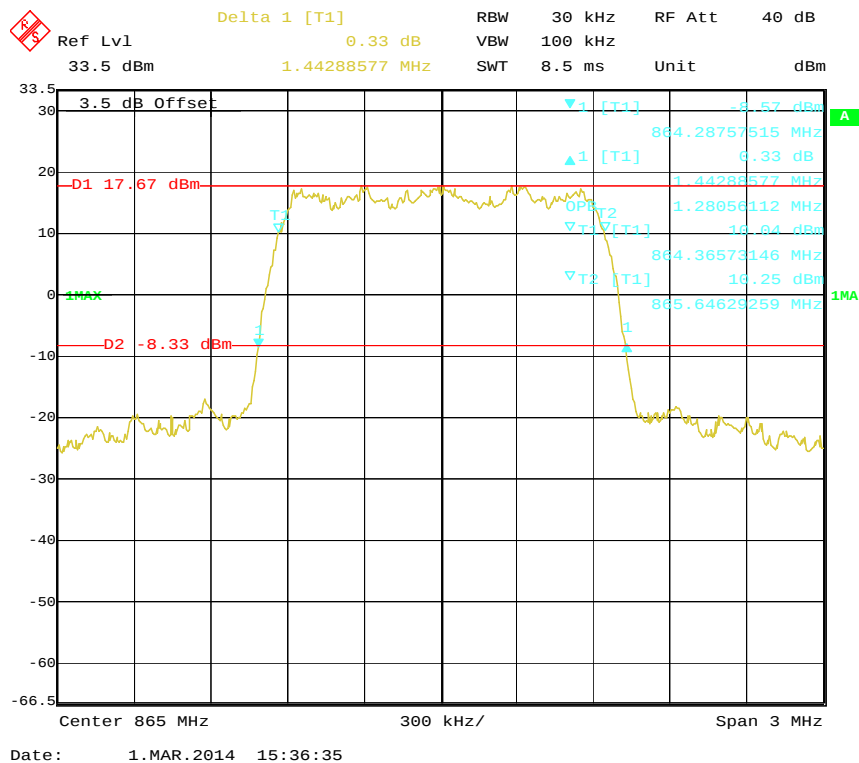
IDEN Mode, Output



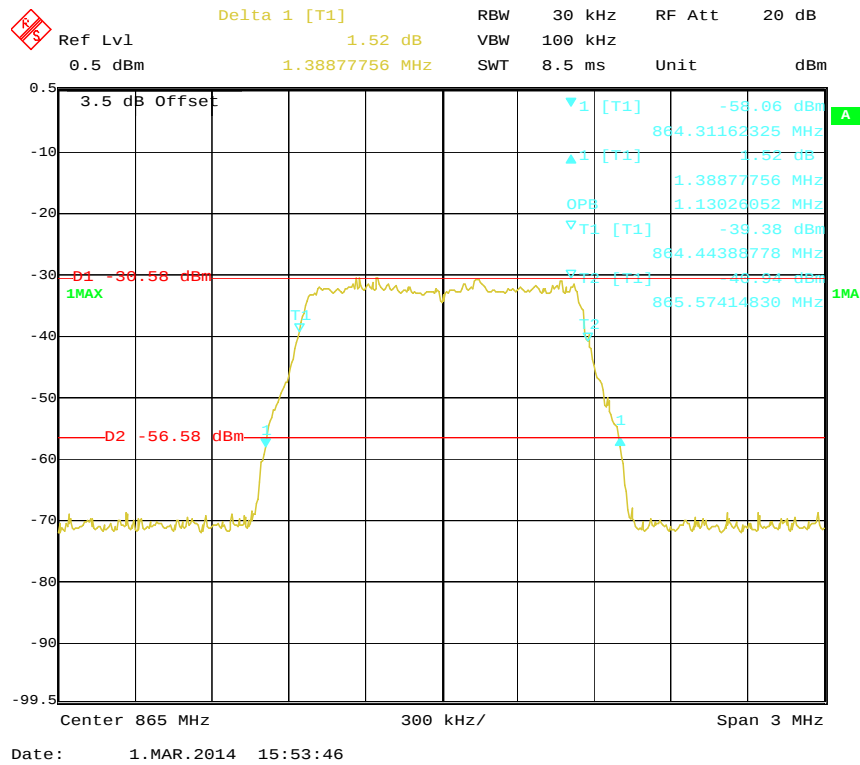
CDMA Mode, Input



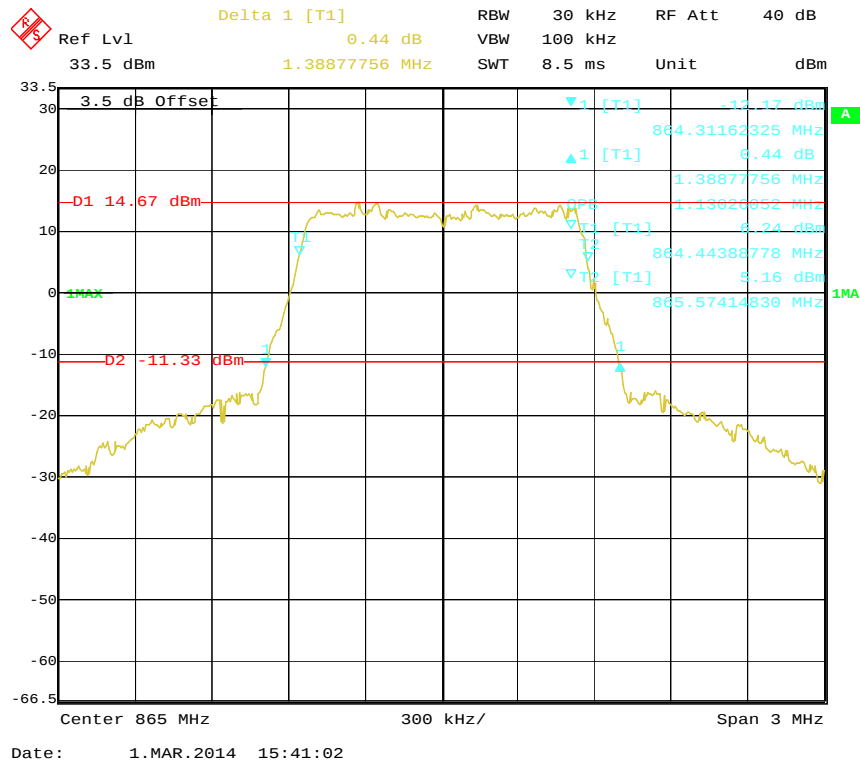
CDMA Mode, Output



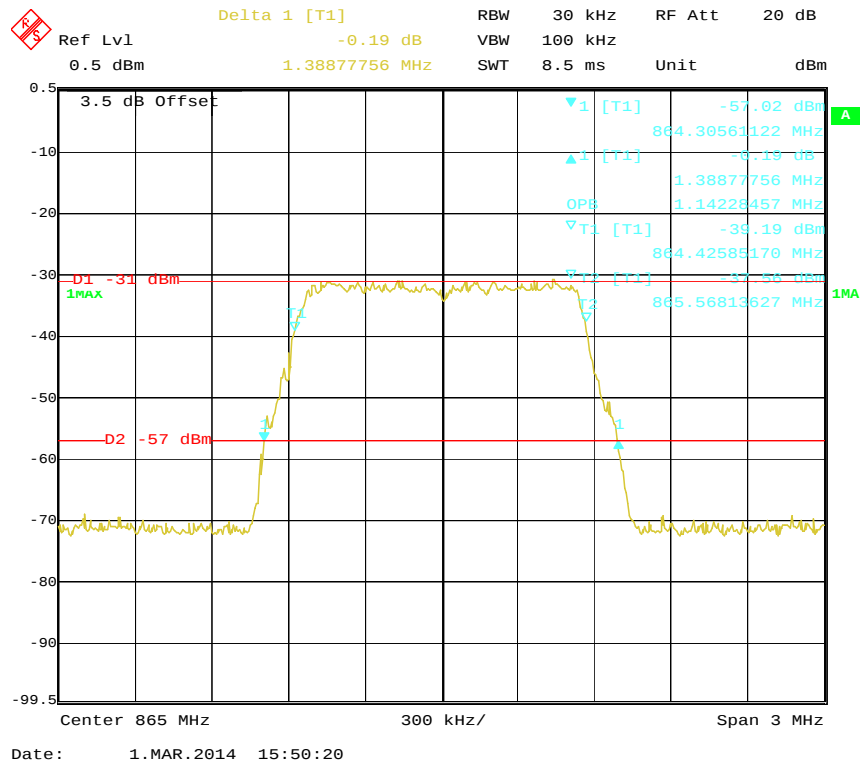
QPSK (1.4MHz) Mode, Input



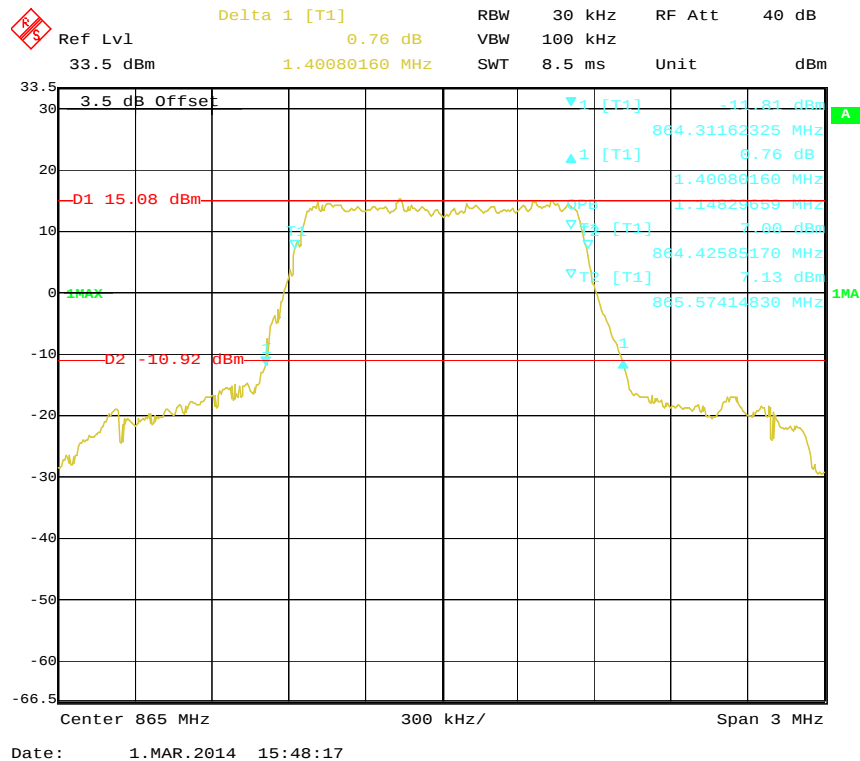
QPSK (1.4MHz) Mode, Output

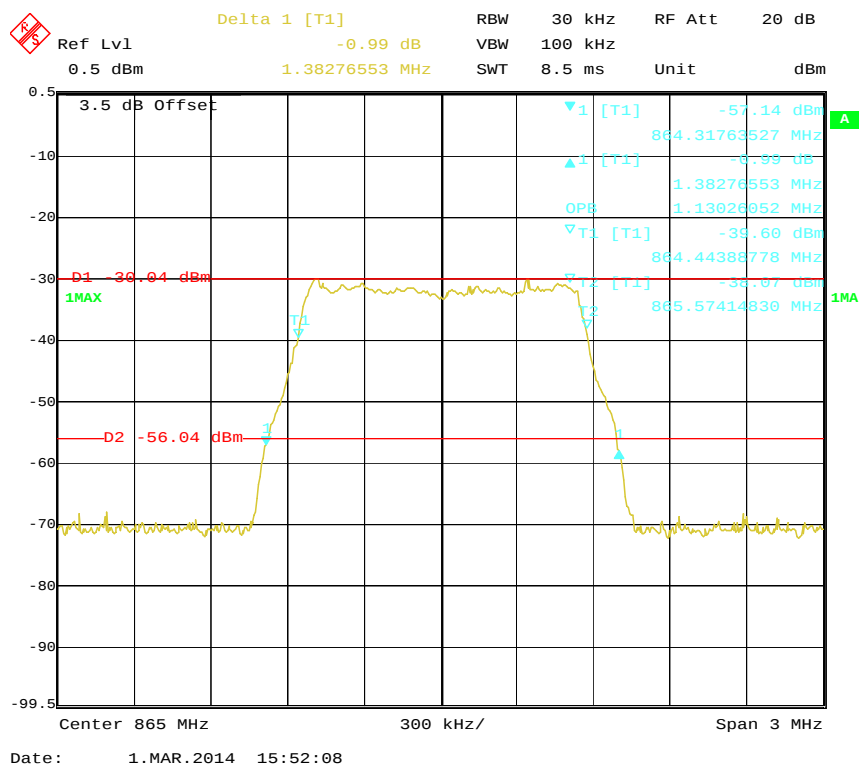
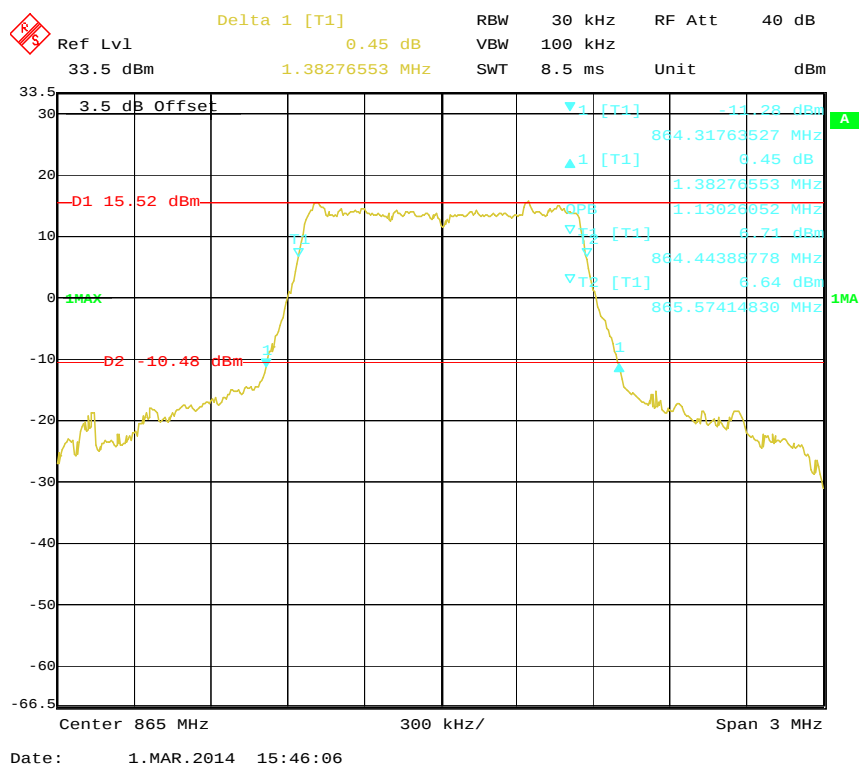


16QAM (1.4MHz) Mode, Input



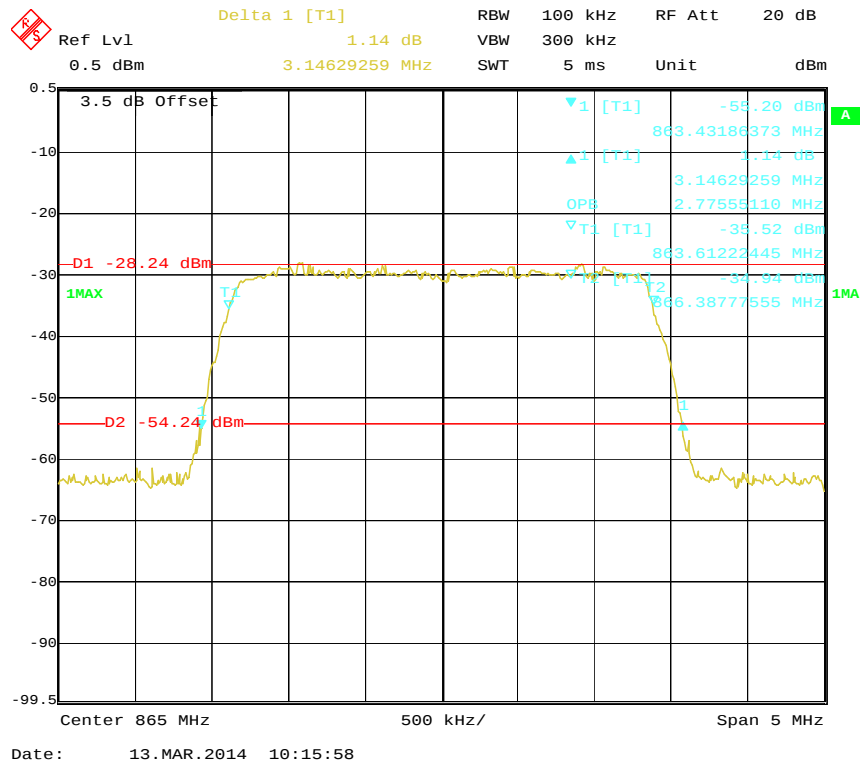
16QAM (1.4MHz) Mode, Output



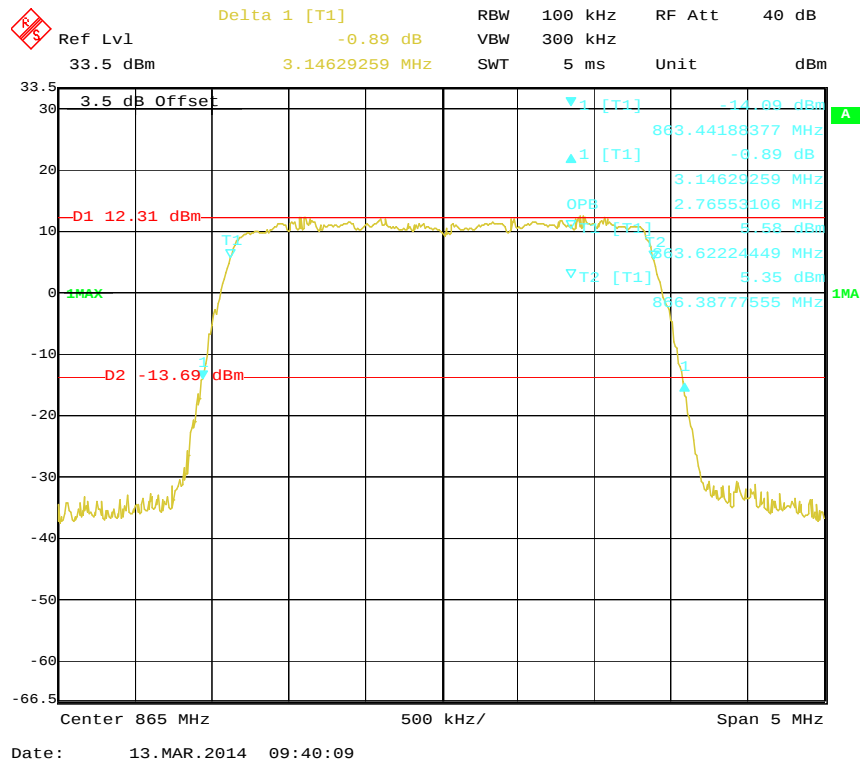
64QAM (1.4MHz) Mode, Input**64QAM (1.4MHz) Mode, Output**

[illegible][illegible]

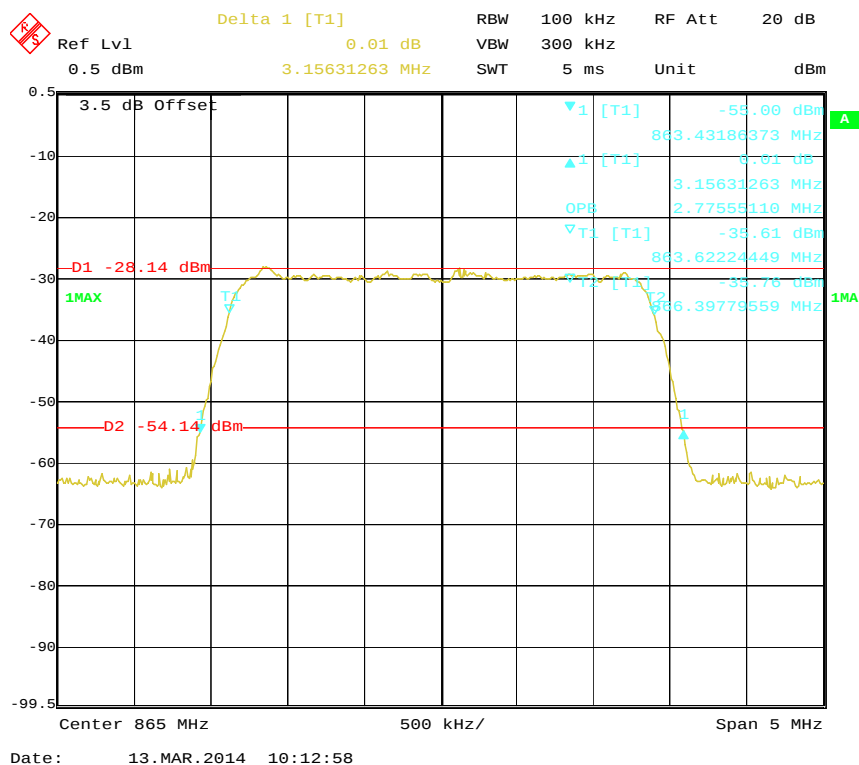
16QAM (3MHz) Mode, Input



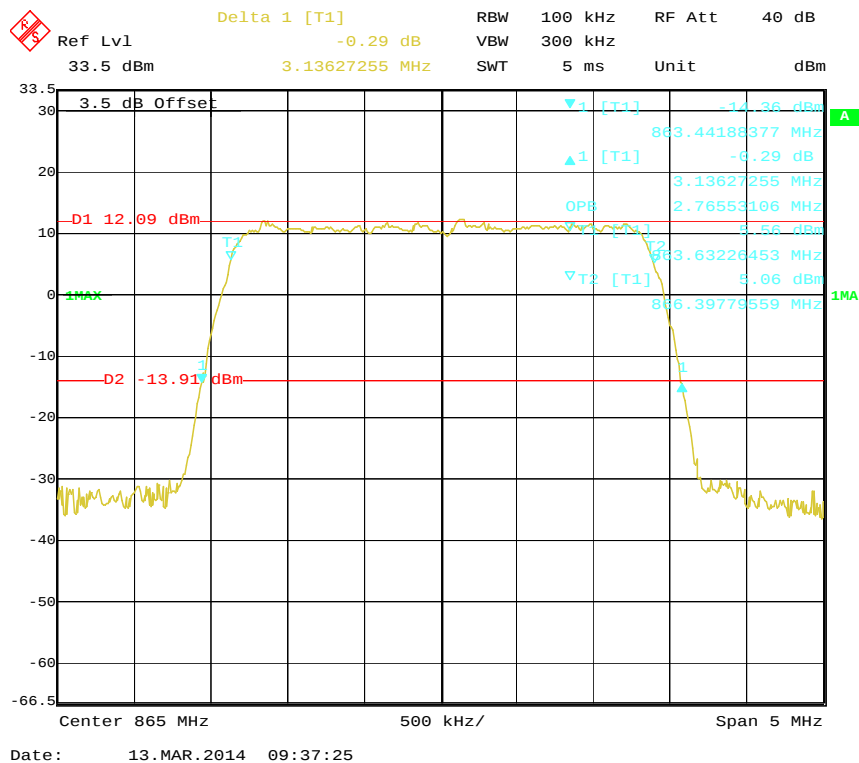
16QAM (3MHz) Mode, Output



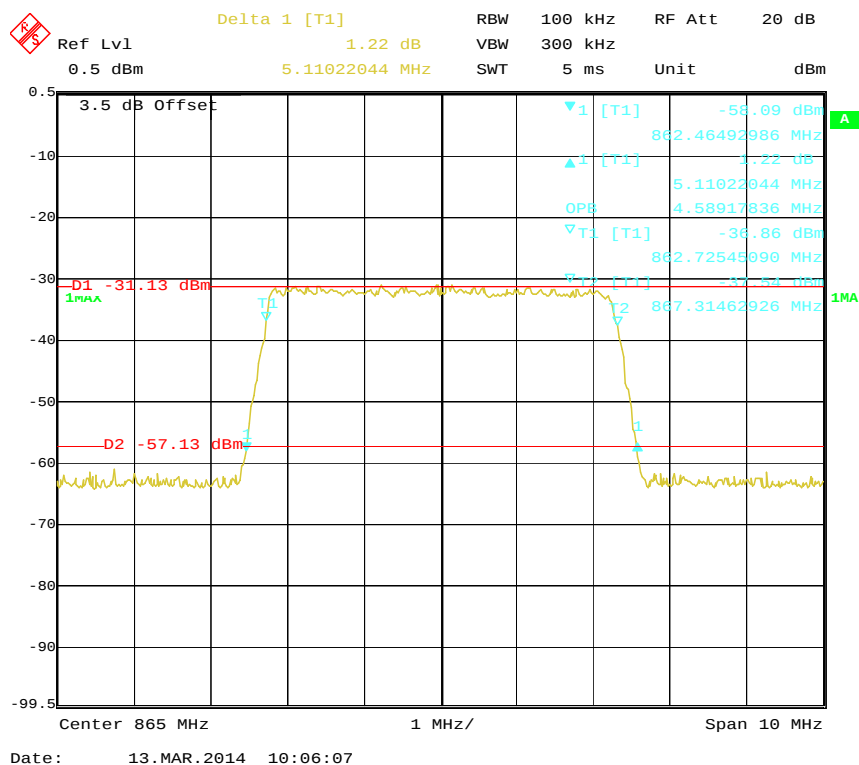
64QAM (3MHz) Mode, Input



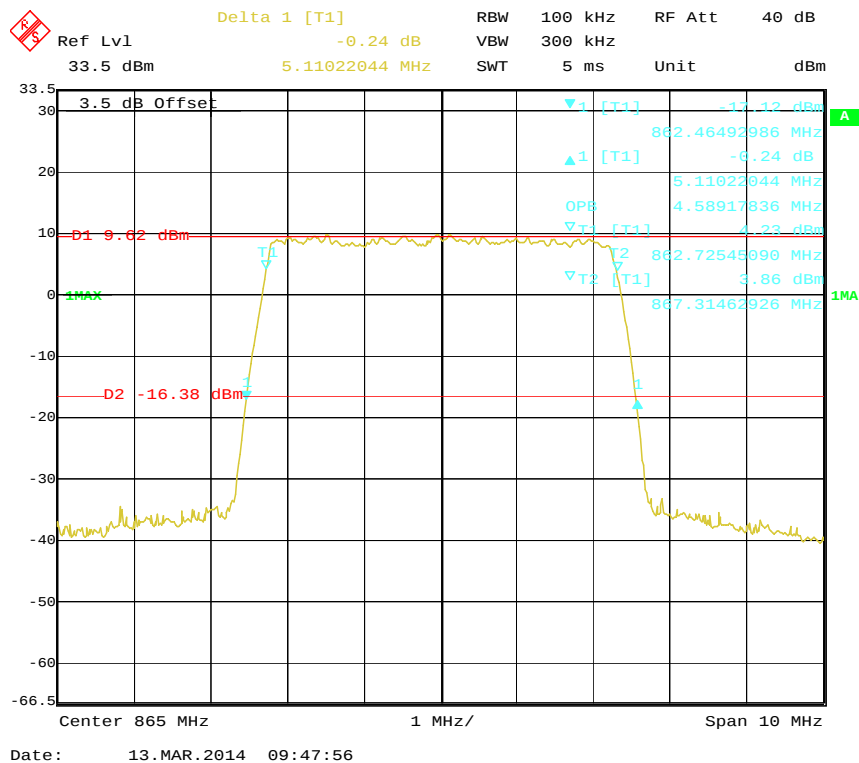
64QAM (3MHz) Mode, Output



QPSK (5MHz) Mode, Input



QPSK (5MHz) Mode, Output



Ref Lvl 0.37 dB
0.5 dBm 5.11022044 MHz
3.5 dB Offset

RBW 100 kHz
VBW 300 kHz
SWT 5 ms
RF Att 20 dB
Unit dBm

1 [T1] -56.59 dBm
862.46492986 MHz
1 [T1] 0.37 dB
5.11022044 MHz
OPB 4.56913828 MHz
T1 [T1] -37.55 dBm
862.72545090 MHz
D1 -56.46 dBm
1MAX
T1 [T1] -56.46 dBm
867.29455918 MHz
D2 -56.46 dBm
1MAX

Center 865 MHz 1 MHz/ Span 10 MHz

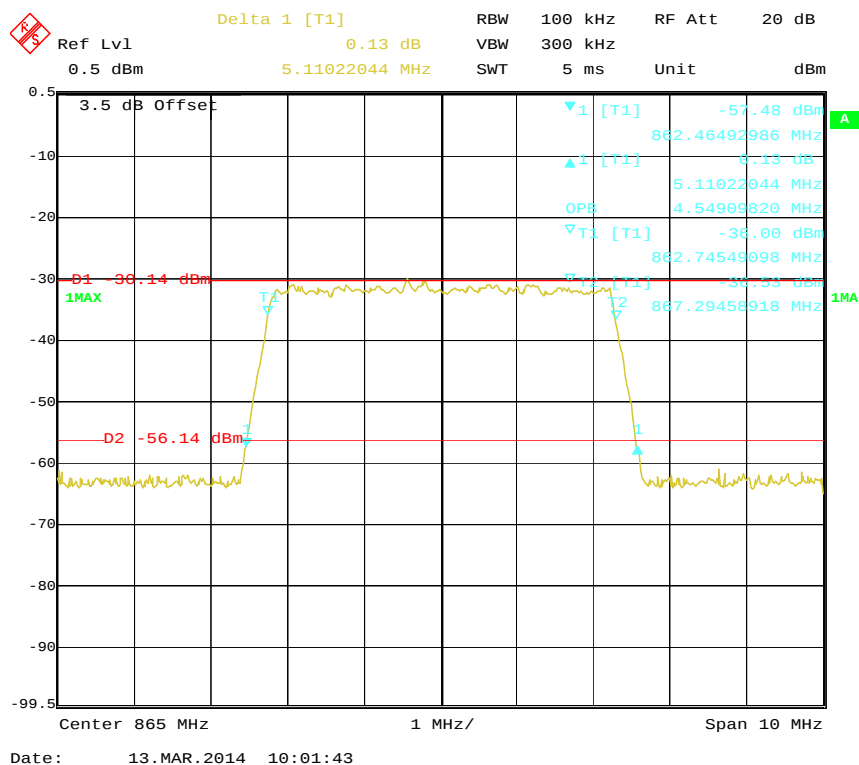
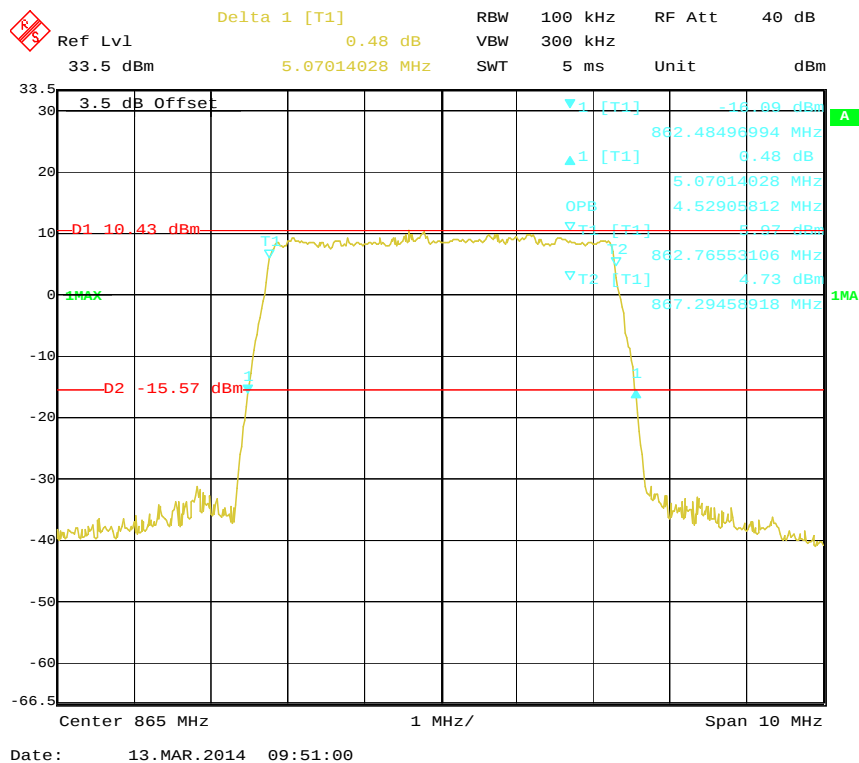
Date: 13.MAR.2014 09:58:10

The screenshot displays a spectrum analyzer interface with a yellow trace representing a signal. The x-axis is labeled "Center 865 MHz" and "Span 10 MHz". The y-axis shows power levels from -66.5 dBm to 33.5 dBm. A red horizontal line is drawn across the plot at approximately 9.87 dBm.

Parameter	Value
Ref Lvl	33.5 dBm
Delta 1 [T1]	1.75 dB
RBW	100 kHz
VSWR	300 kHz
RF Att	40 dB
SWT	5 ms
Unit	dBm

Key measurements and labels on the plot include:

- D1**: 9.87 dBm (red label)
- D2**: -16.13 dBm (red label)
- T1**: 862.46492986 MHz, 3.75 dB (cyan label)
- T2**: 862.74549098 MHz, 4.86 dBm (cyan label)
- T3**: 867.29458918 MHz (cyan label)
- OPB**: 4.54909820 MHz (cyan label)
- MAX**: Green label near the bottom left corner.
- A**: Green label near the top right corner.
- 1MA**: Green label near the bottom right corner.

64QAM (5MHz) Mode, Input**64QAM (5MHz) Mode, Output**

FCC §90.691 – EMISSION MASK

Applicable Standard

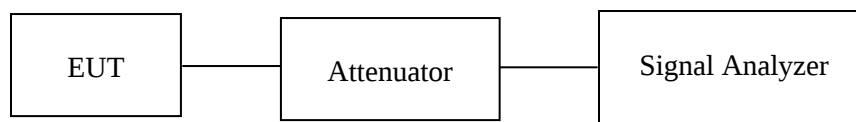
As per FCC §90.691 Emission mask requirements for EA-based systems

- (a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:
- (1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.
- (2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.
- (b) (b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Test Procedure

The RF output of the transmitter was connected to spectrum analyzer 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 emission up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

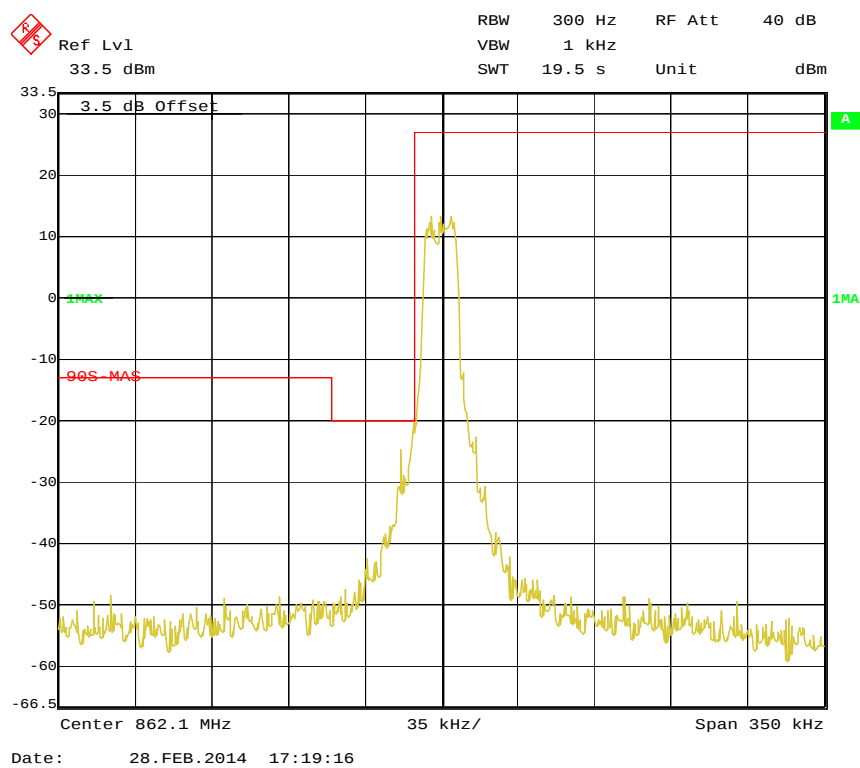
* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

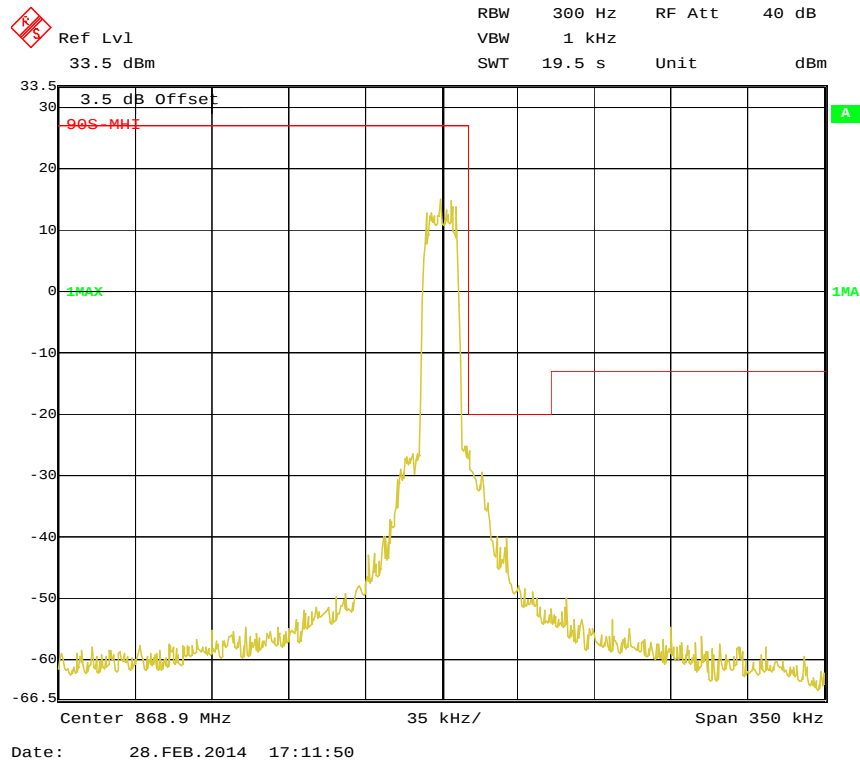
Temperature:	24 °C
Relative Humidity:	53 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang on 2014-02-28.

Test Mode: Transmitting

SMR Band, Low Channel

SMR Band, High Channel



FCC §2.1051 & §24.238 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

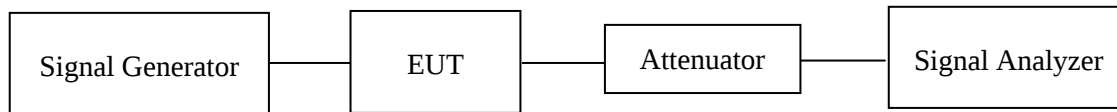
Applicable Standard

FCC §2.1051 and §24.238

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	FSIQ26	8386001028	2013-11-12	2014-11-12
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

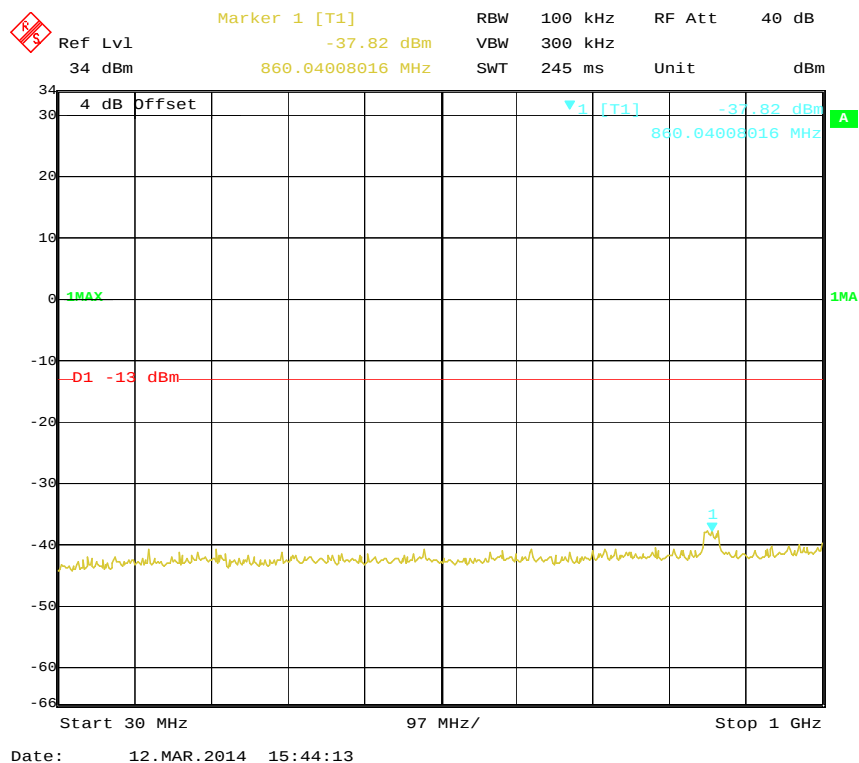
Temperature:	20 ~ 26 °C
Relative Humidity:	48 ~ 56 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang from 2014-02-24 to 2014-05-06.

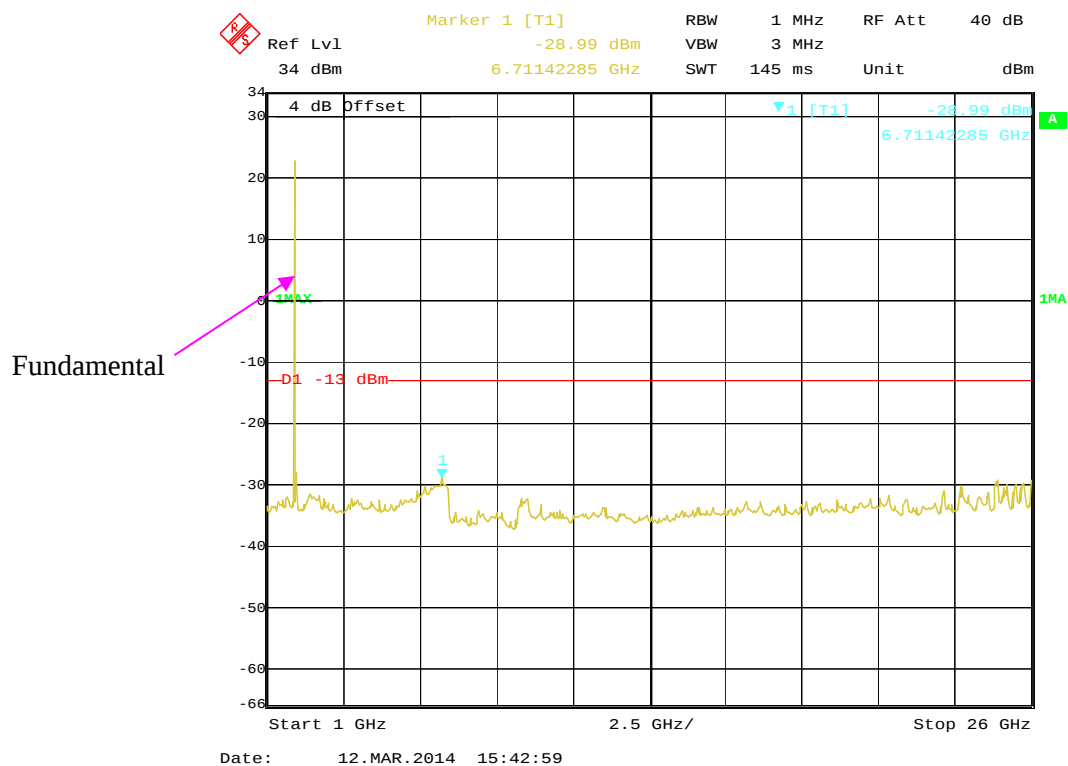
Test result: Compliance, please refer to the following plots.

1930 ~ 1995 MHz:

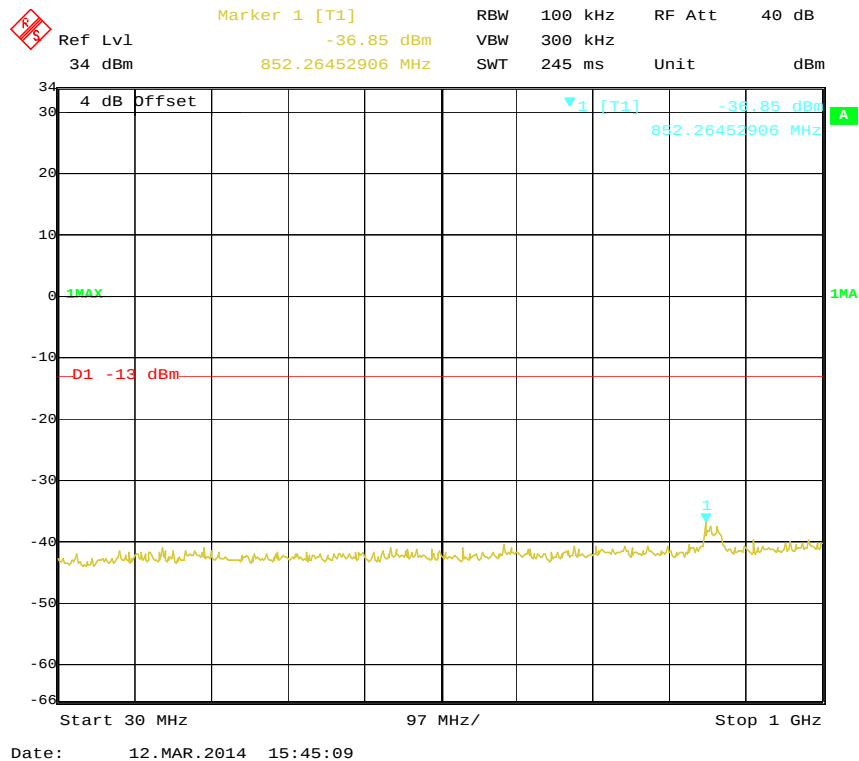
PCS Mode: 30 MHz – 1 GHz (Low Channel)



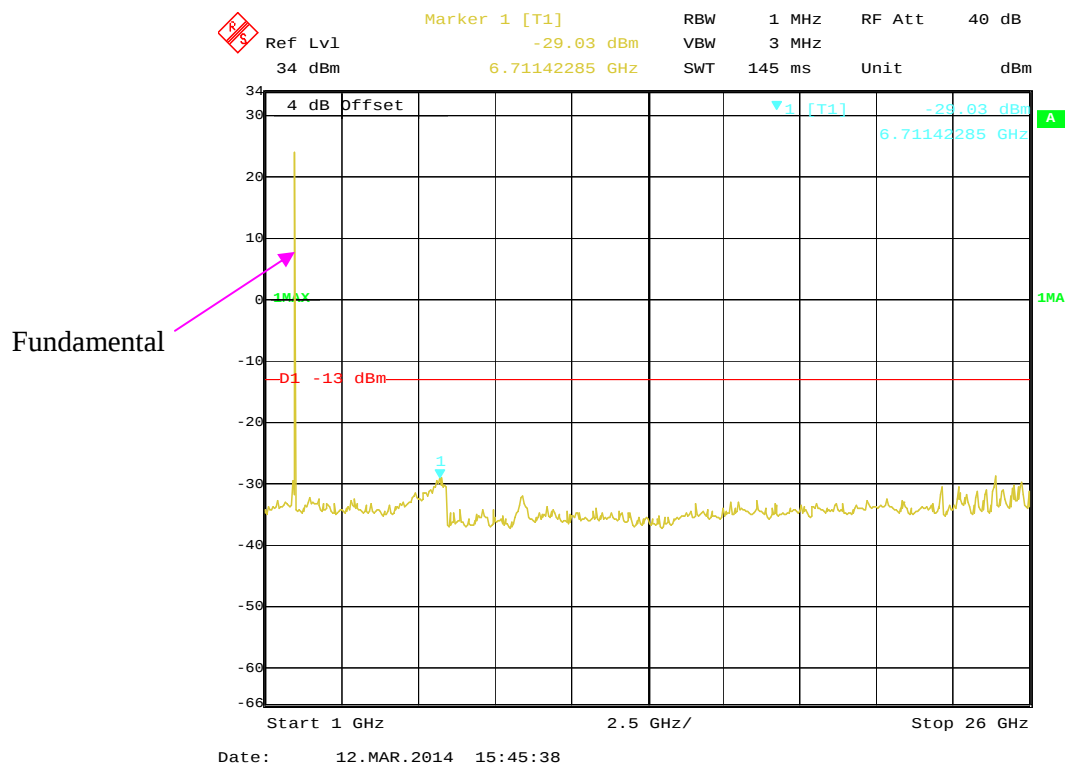
PCS Mode: 1 GHz – 26 GHz (Low Channel)



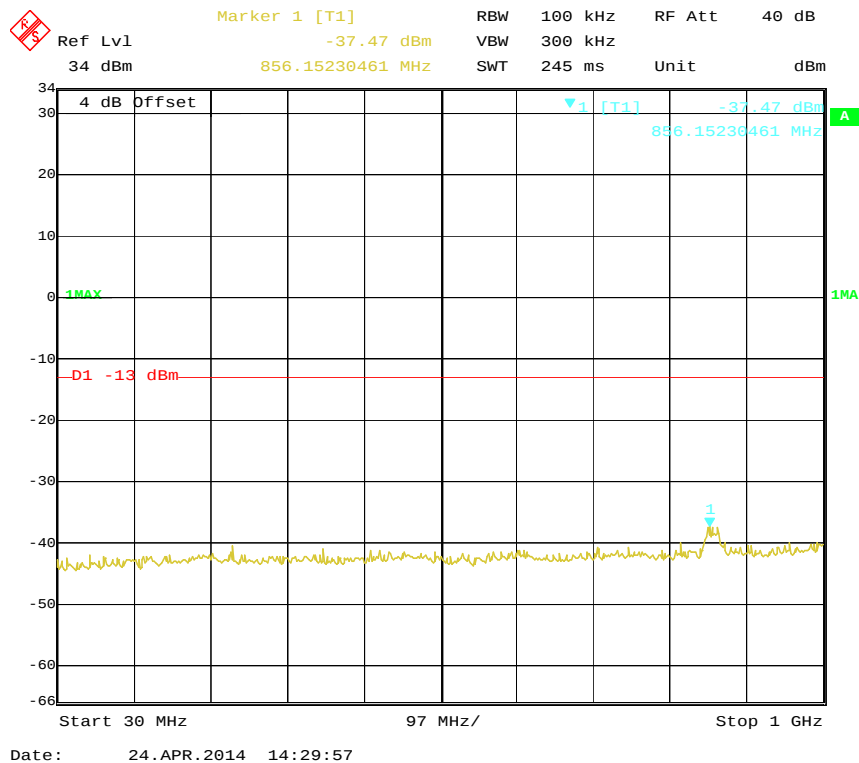
PCS Mode: 30 MHz – 1 GHz (Middle Channel)



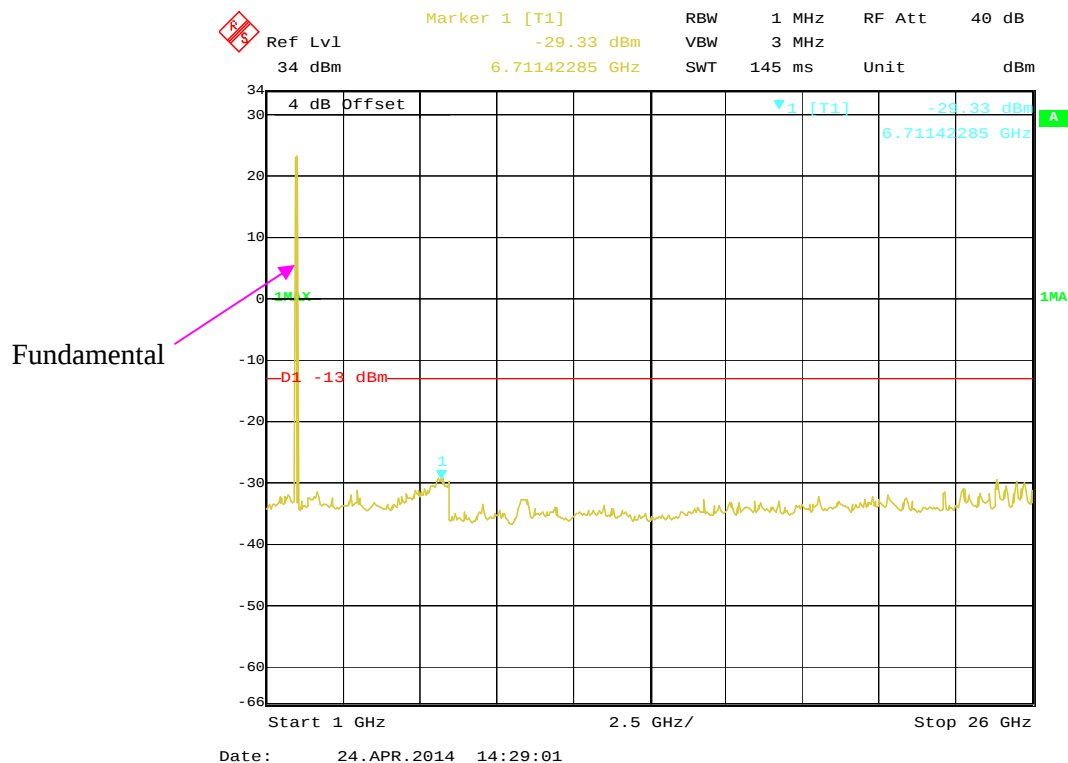
PCS Mode: 1 GHz – 26 GHz (Middle Channel)

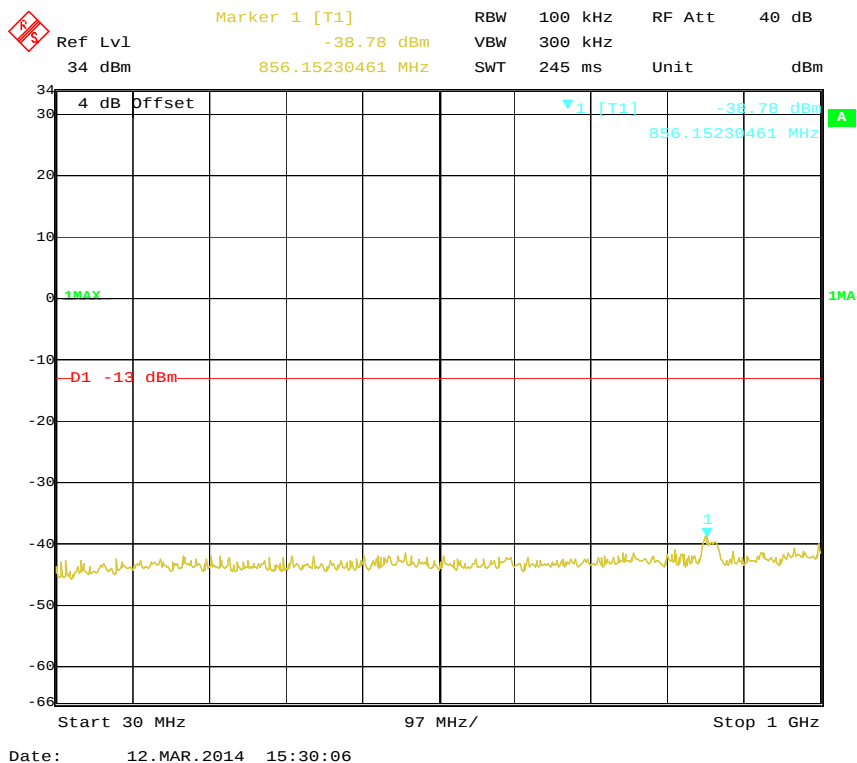
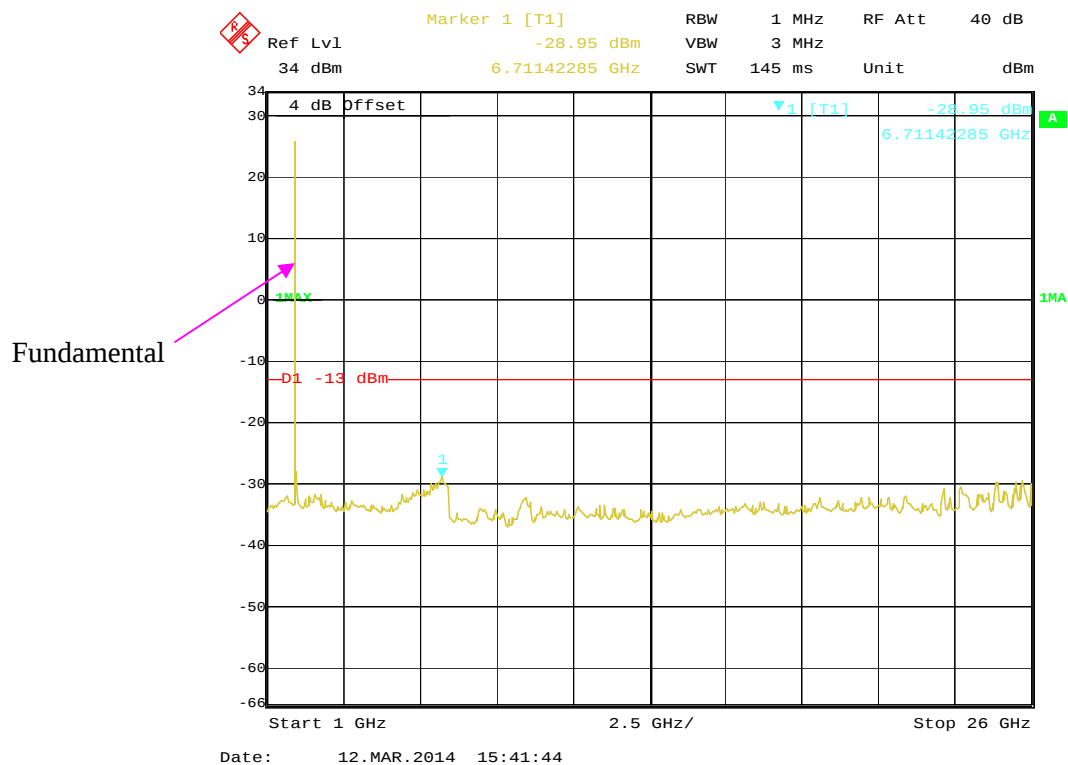


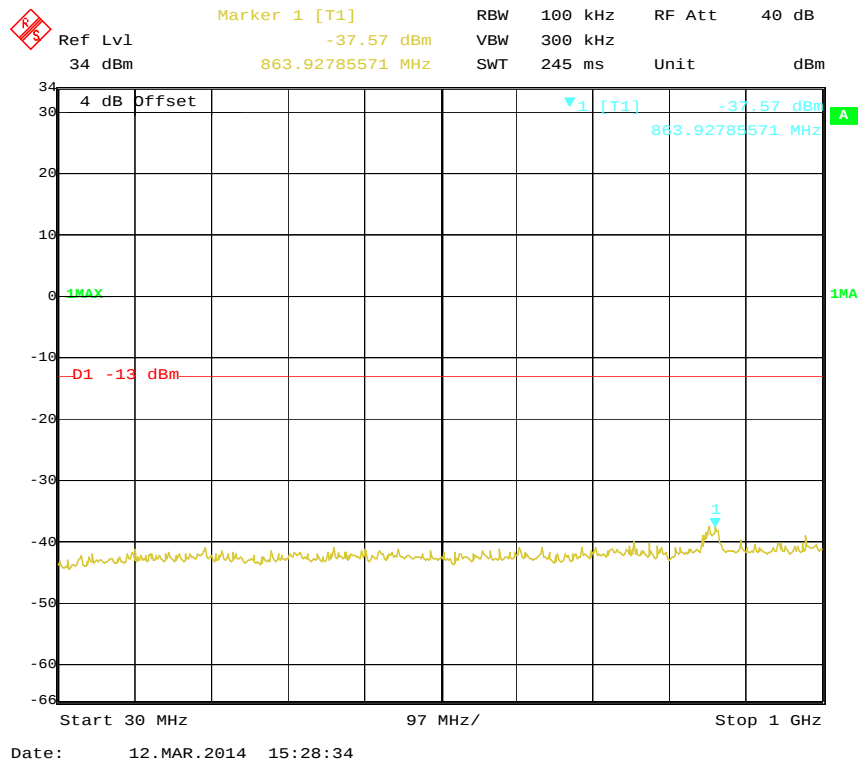
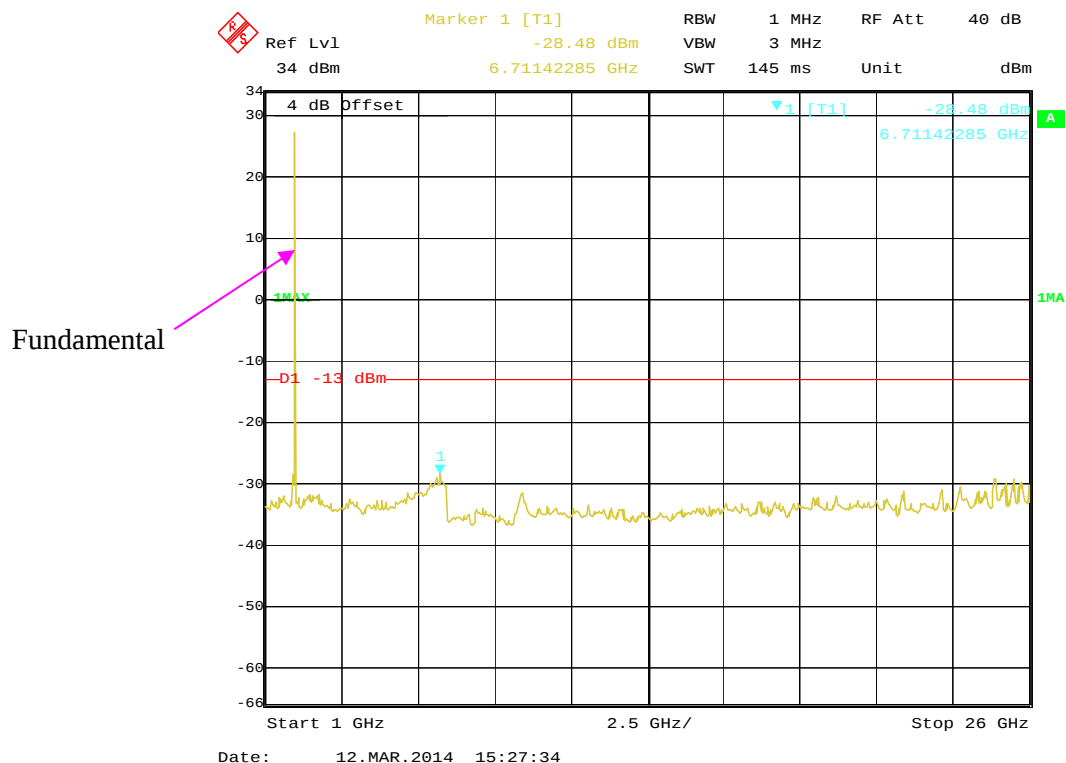
PCS Mode: 30 MHz – 1 GHz (High Channel)



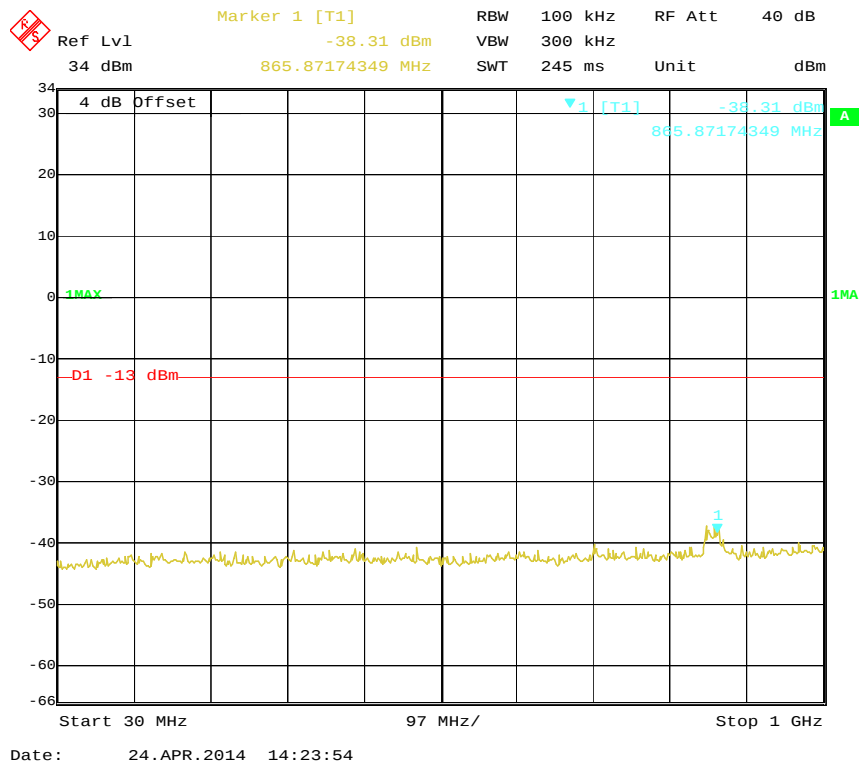
PCS Mode: 1 GHz – 26 GHz (High Channel)



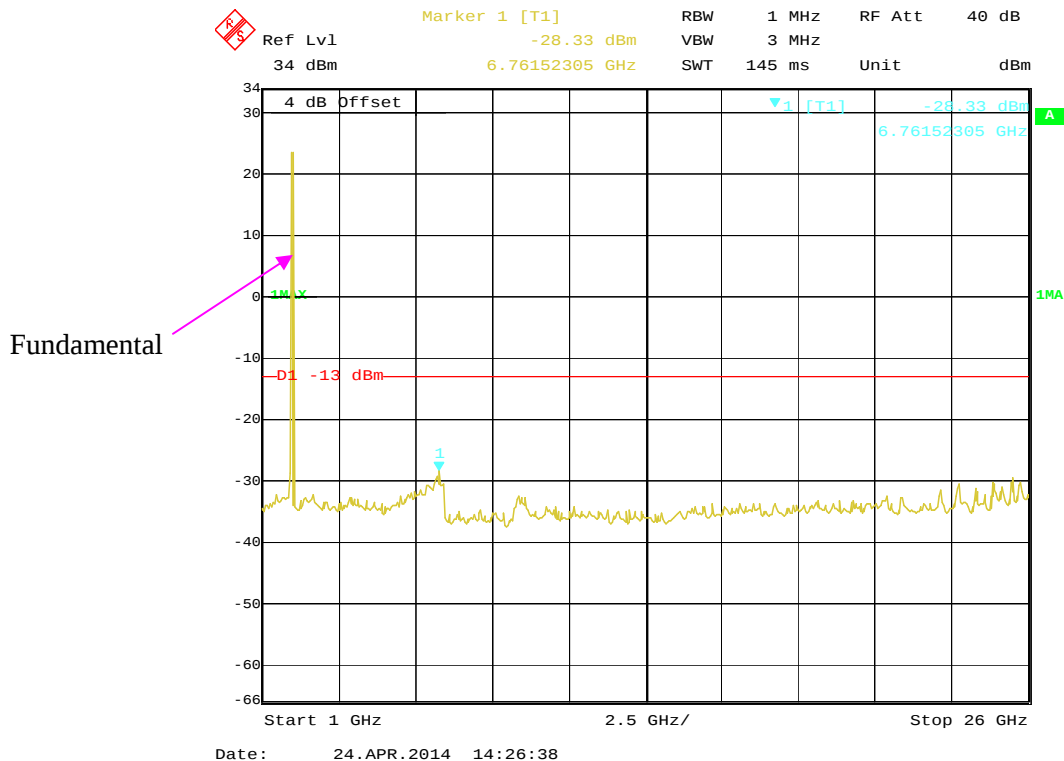
EDGE Mode: 30 MHz – 1 GHz (Low Channel)**EDGE Mode: 1 GHz – 26 GHz (Low Channel)**

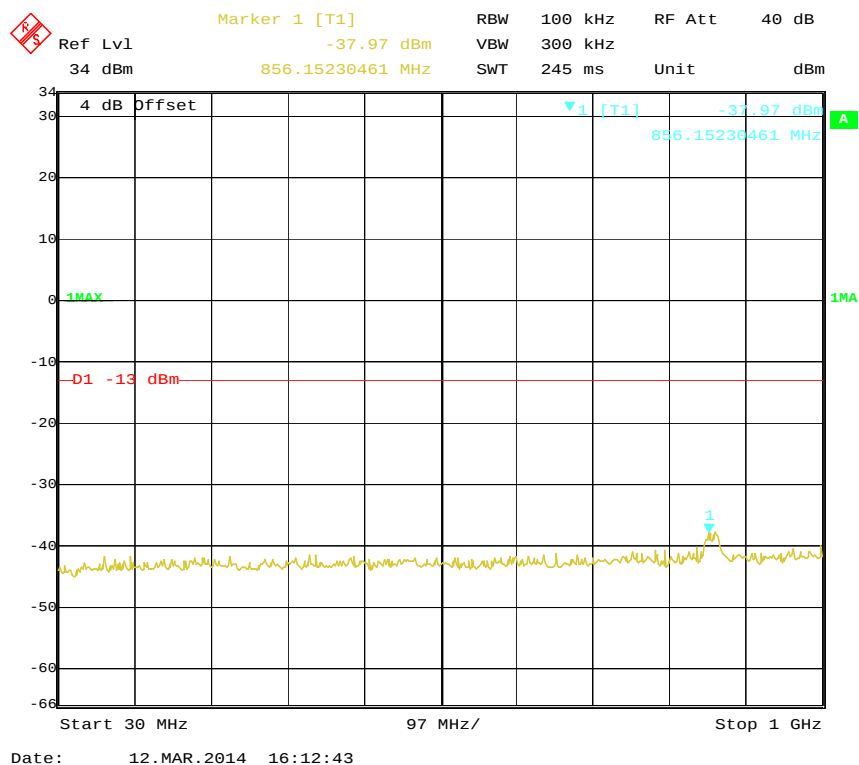
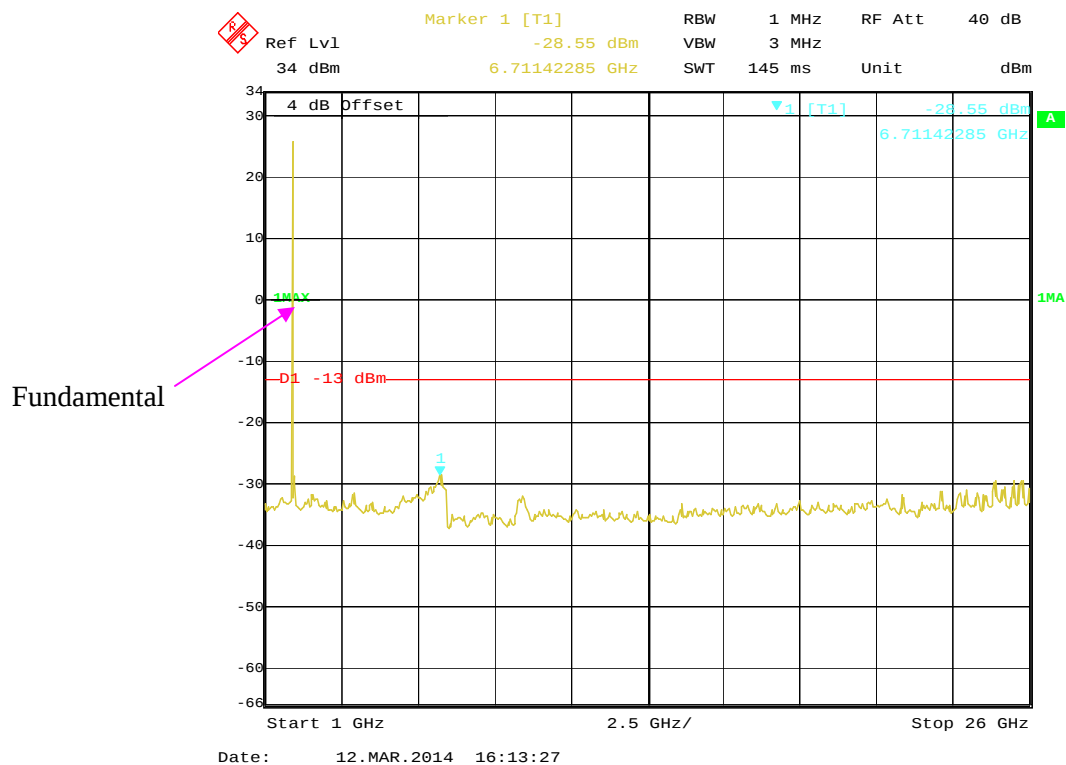
EDGE Mode: 30 MHz – 1 GHz (Middle Channel)**EDGE Mode: 1 GHz – 26 GHz (Middle Channel)**

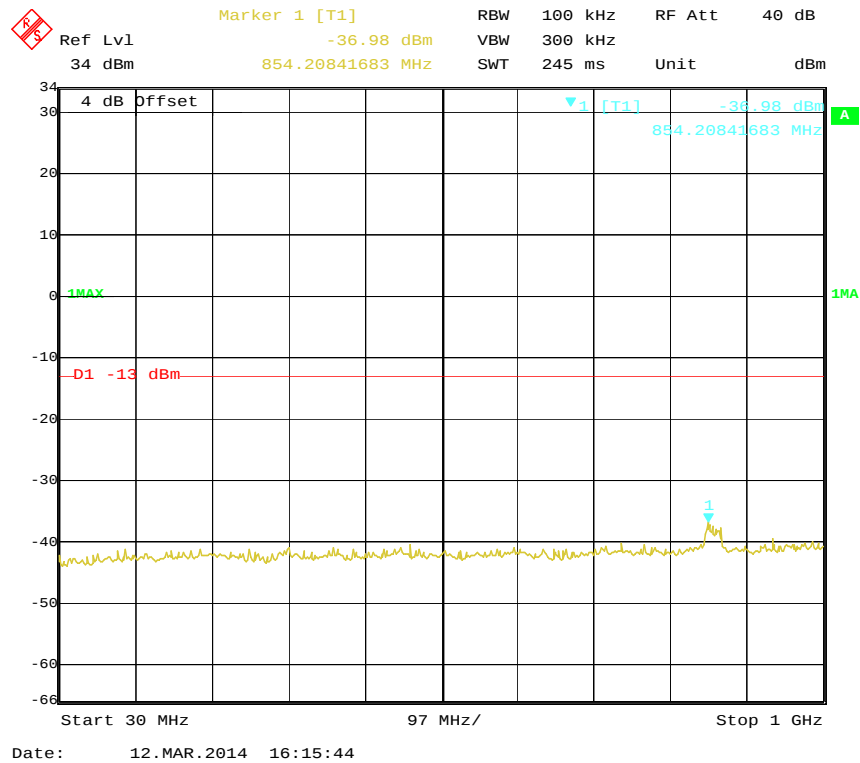
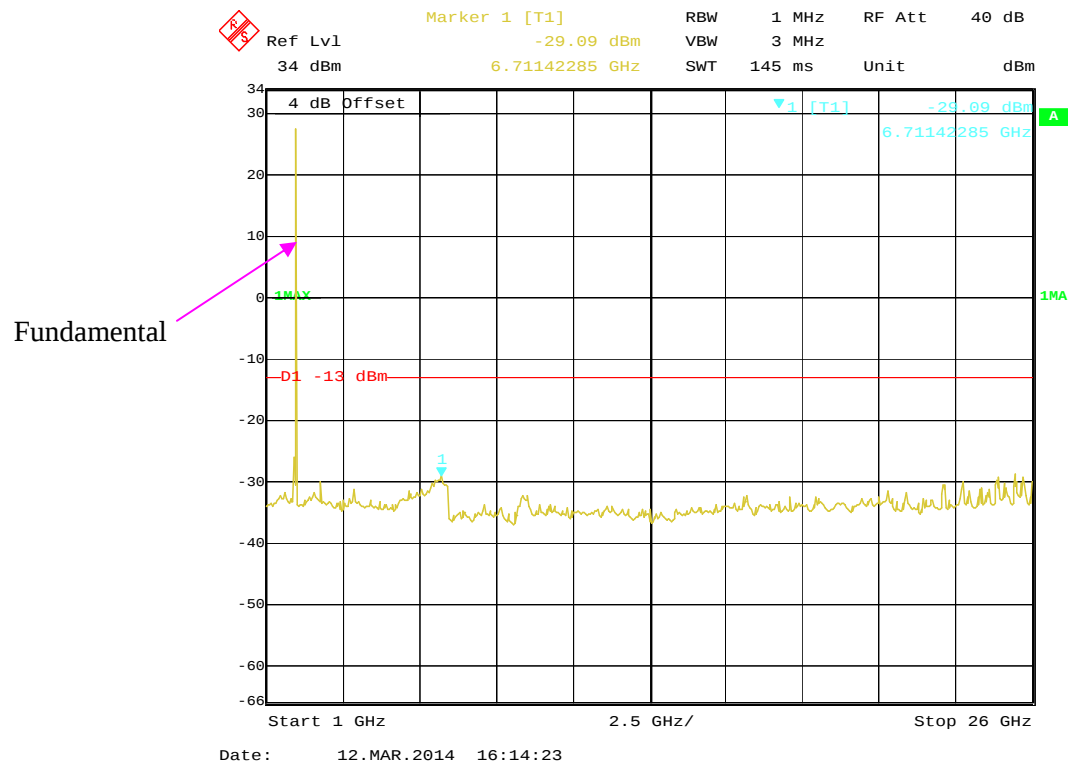
EDGE Mode: 30 MHz – 1 GHz (High Channel)

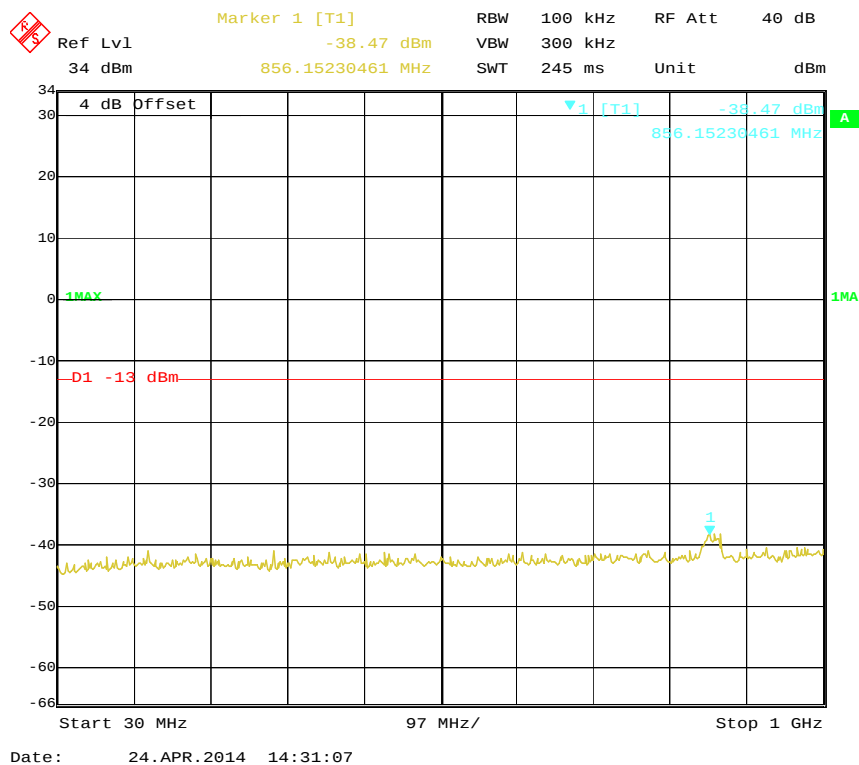
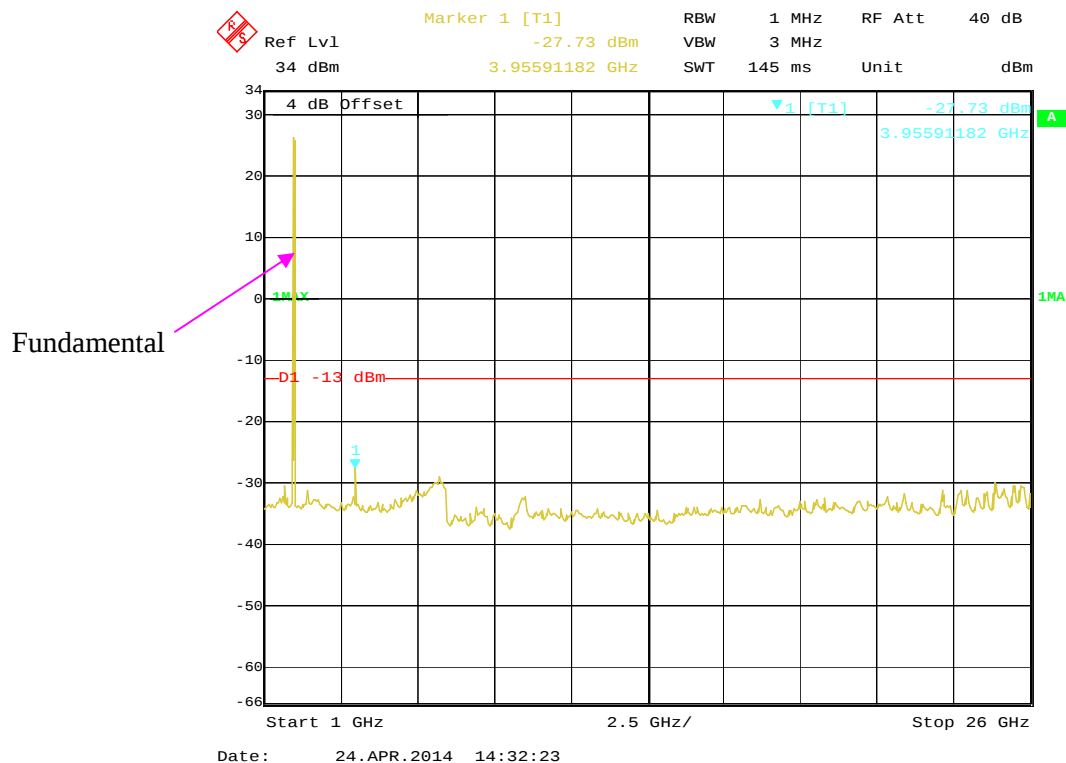


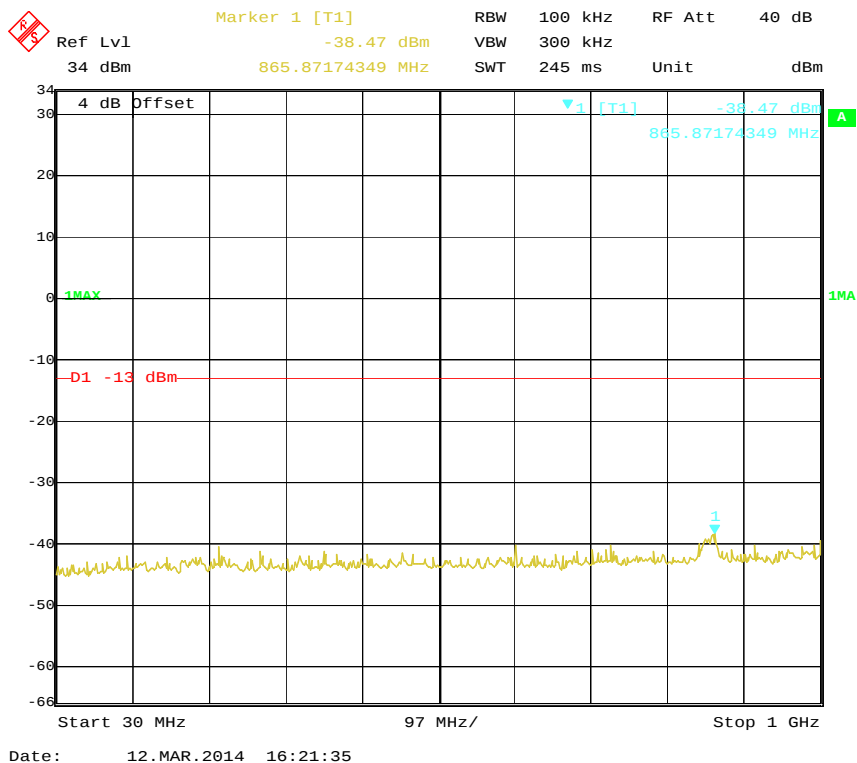
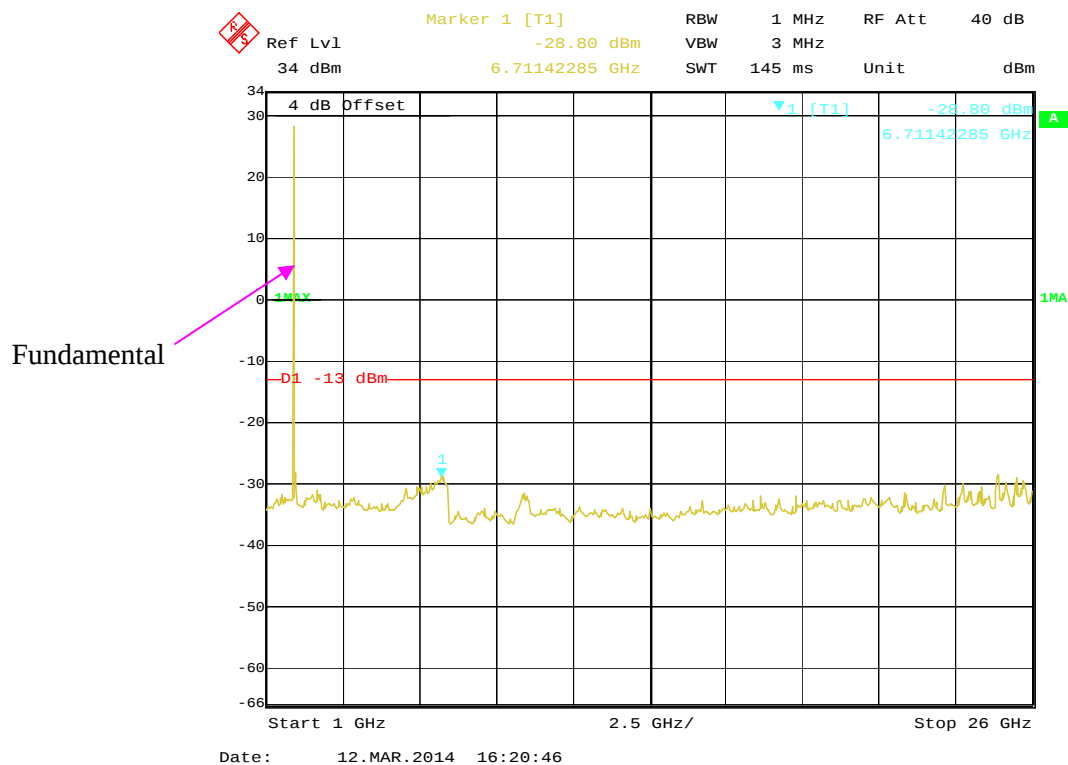
EDGE Mode: 1 GHz – 26 GHz (High Channel)



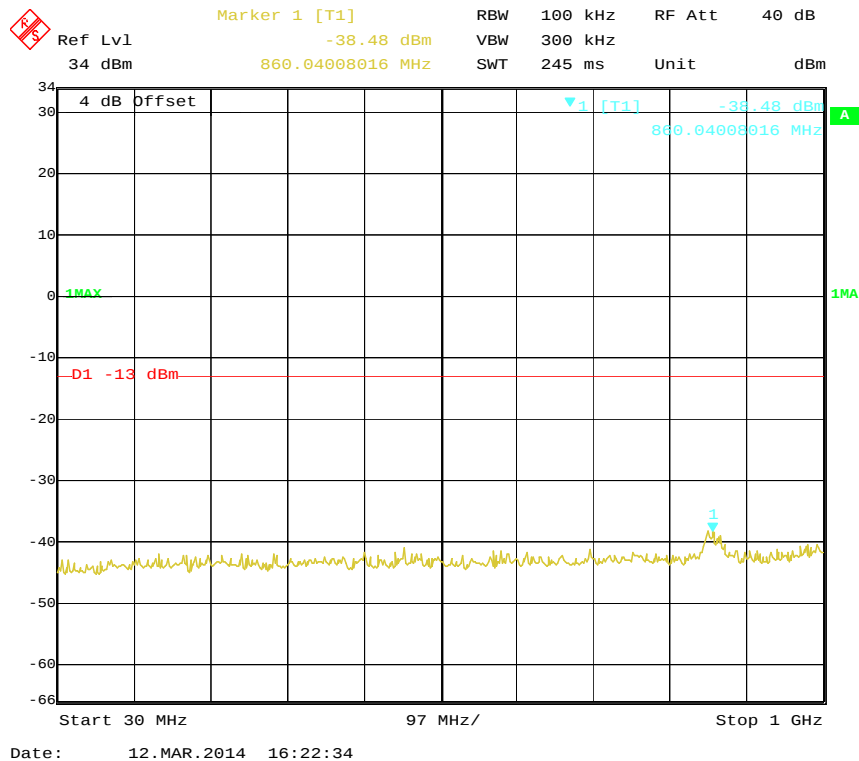
CDMA Mode: 30 MHz – 1 GHz (Low Channel)**CDMA Mode: 1 GHz – 26 GHz (Low Channel)**

CDMA Mode: 30 MHz – 1 GHz (Middle Channel)**CDMA Mode: 1 GHz – 26 GHz (Middle Channel)**

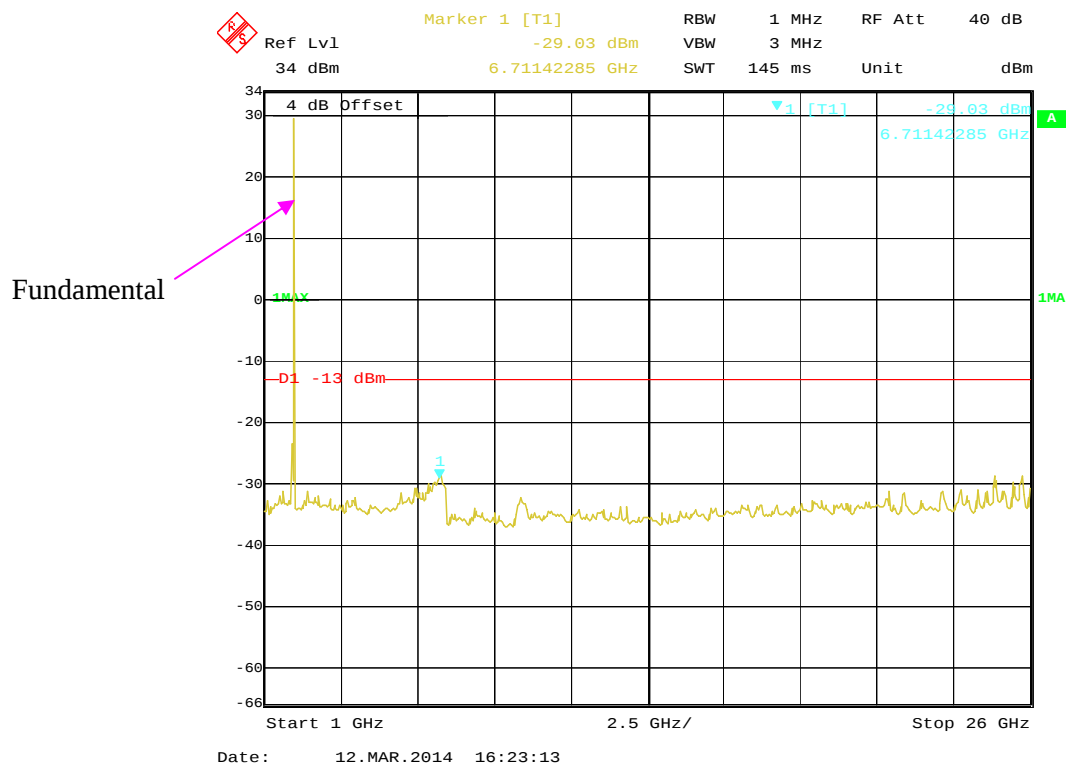
CDMA Mode: 30 MHz – 1 GHz (High Channel)**CDMA Mode: 1 GHz – 26 GHz (High Channel)**

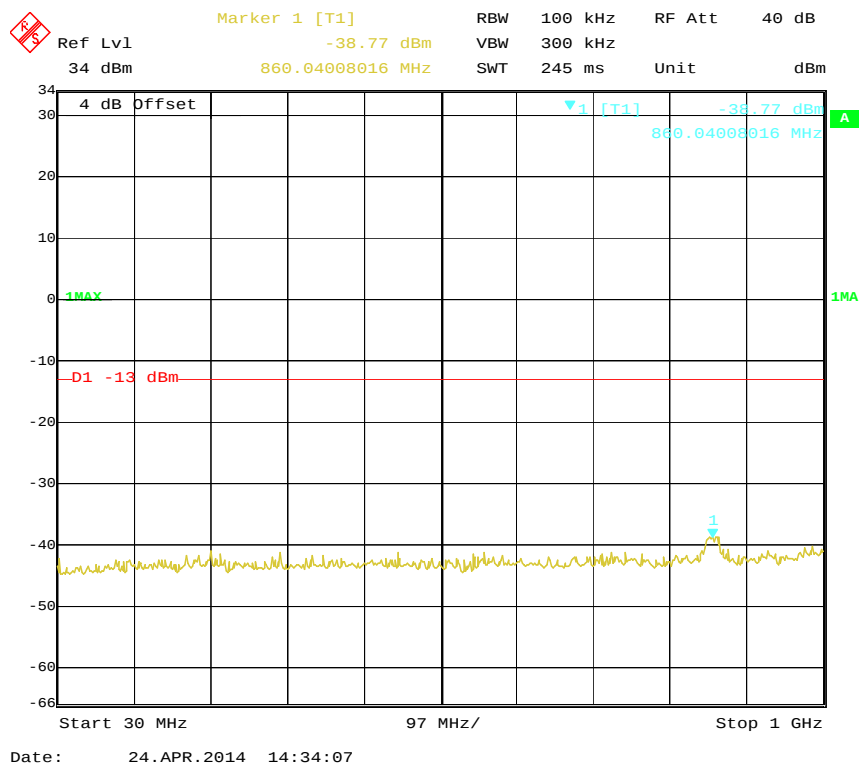
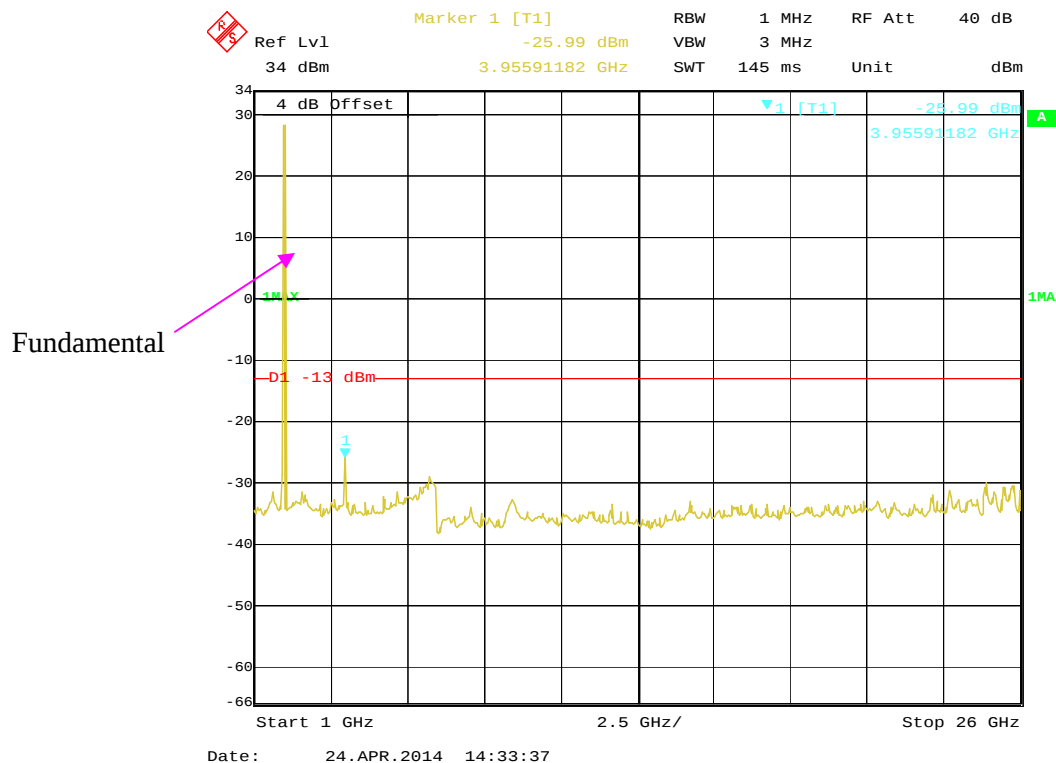
WCDMA Mode: 30 MHz – 1 GHz (Low Channel)**WCDMA Mode: 1 GHz – 26 GHz (Low Channel)**

WCDMA Mode: 30 MHz – 1 GHz (Middle Channel)



WCDMA Mode: 1 GHz – 26 GHz (Middle Channel)



WCDMA Mode: 30 MHz – 1 GHz (High Channel)**WCDMA Mode: 1 GHz – 26 GHz (High Channel)**

Ref Lvl 34 dBm Marker 1 [T1] -38.41 dBm RBW 100 kHz RF Att 40 dB
 34 dBm 856.15230461 MHz SWT 245 ms Unit dBm A

4 dB Offset 1 [T1] -38.41 dBm 856.15230461 MHz

-1MAX -D1 -13 dBm 1

Start 30 MHz 97 MHz/ Stop 1 GHz

Date: 12.MAR.2014 16:27:30

Ref Lvl 34 dBm

Marker 1 [T1] -28.14 dBm

RBW 1 MHz

VBW 3 MHz

RF Att 40 dB

Unit dBm

SWT 145 ms

4 dB Offset

▼1 [T1] -28.14 dBm

25.69939880 GHz

1 MHz

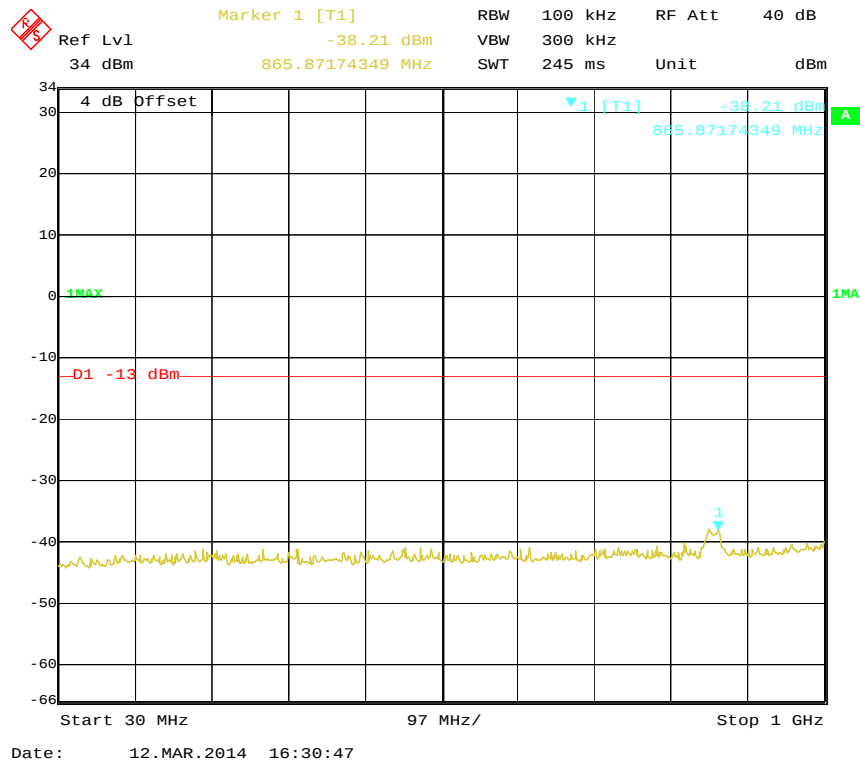
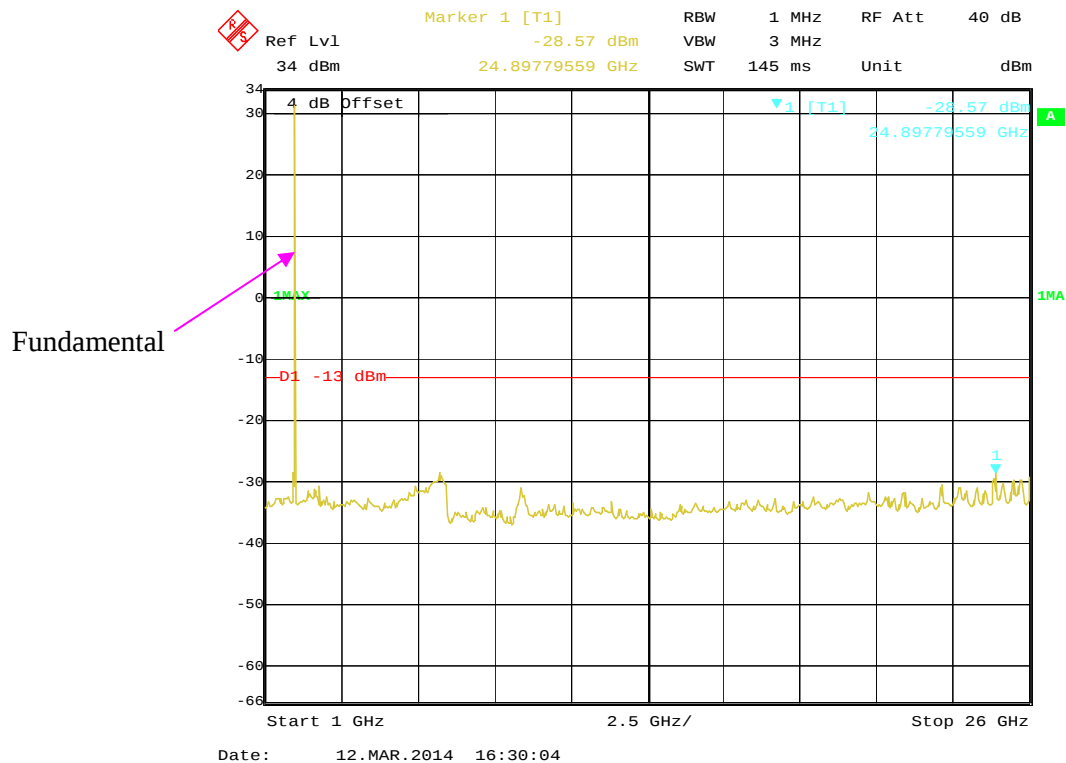
D1 -13 dBm

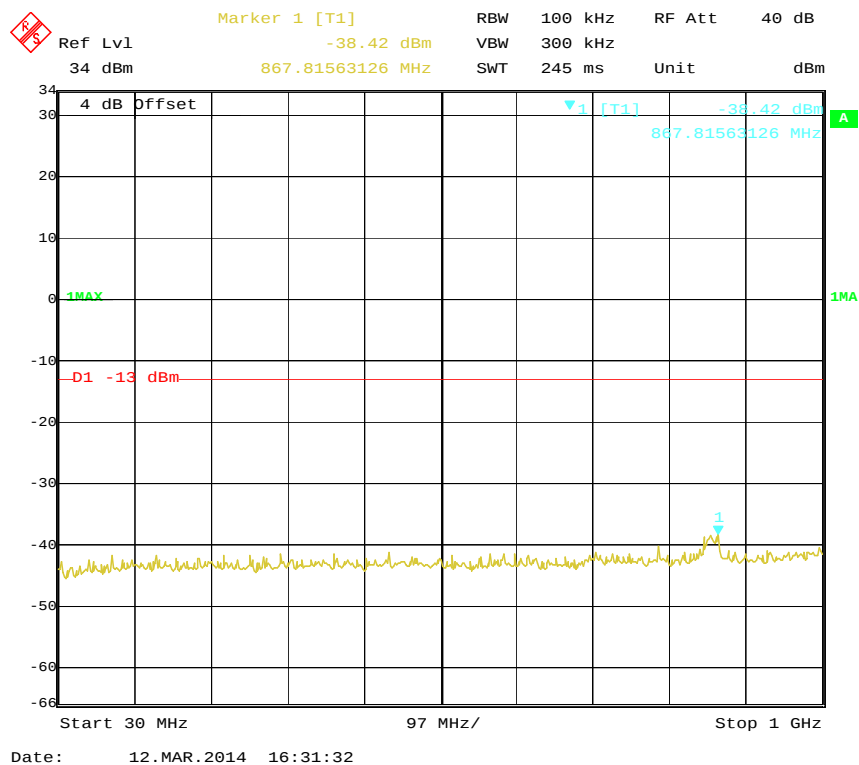
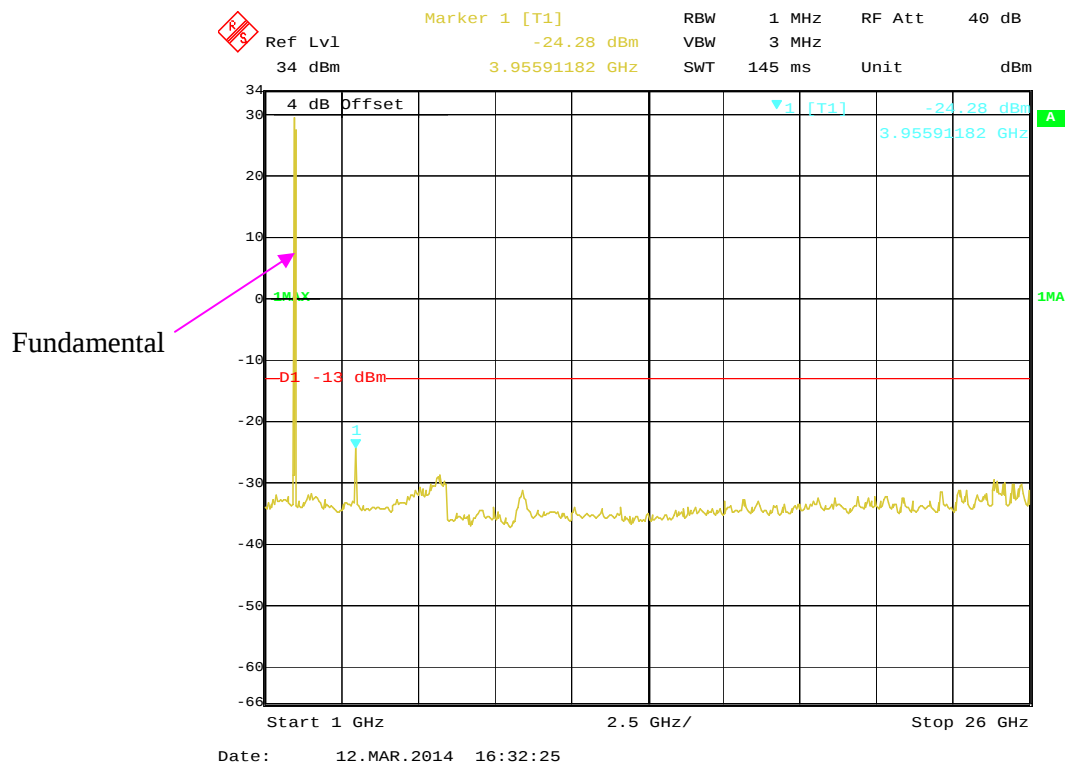
Start 1 GHz

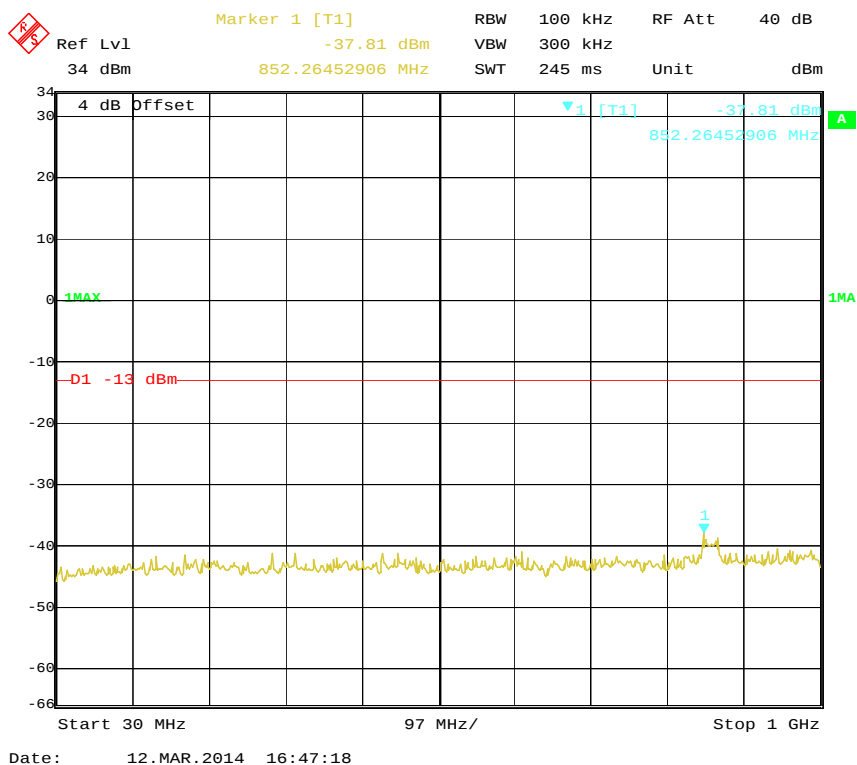
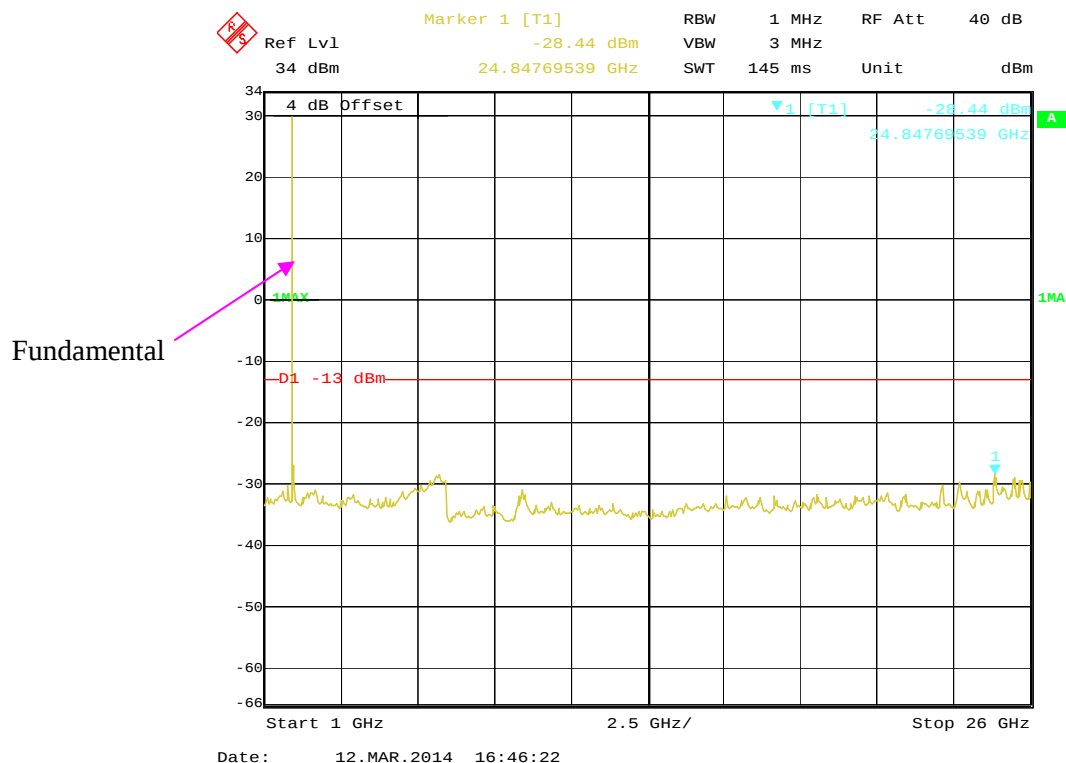
2.5 GHz/

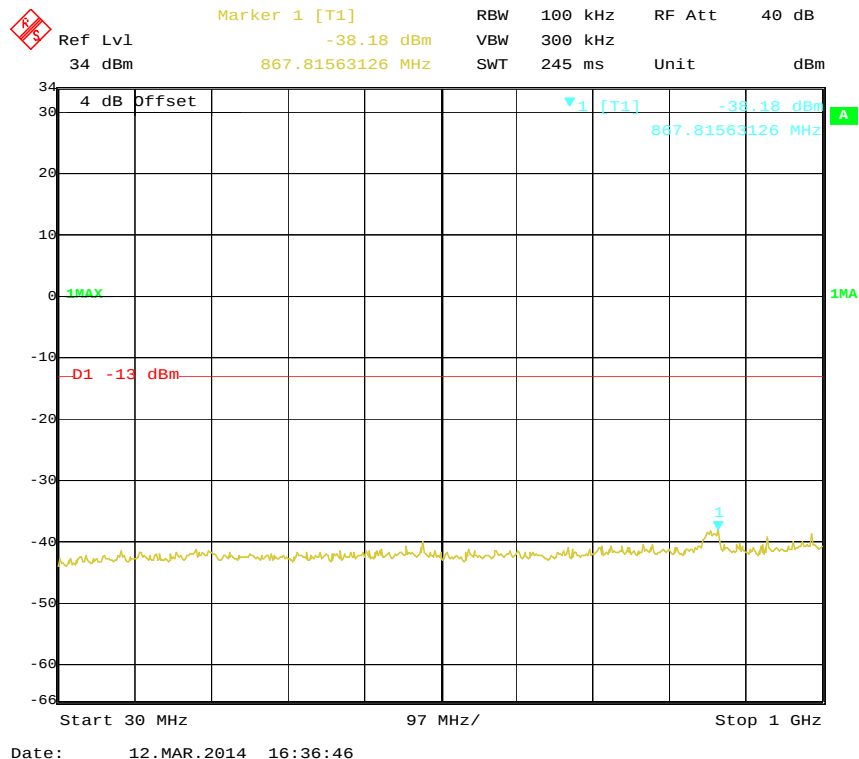
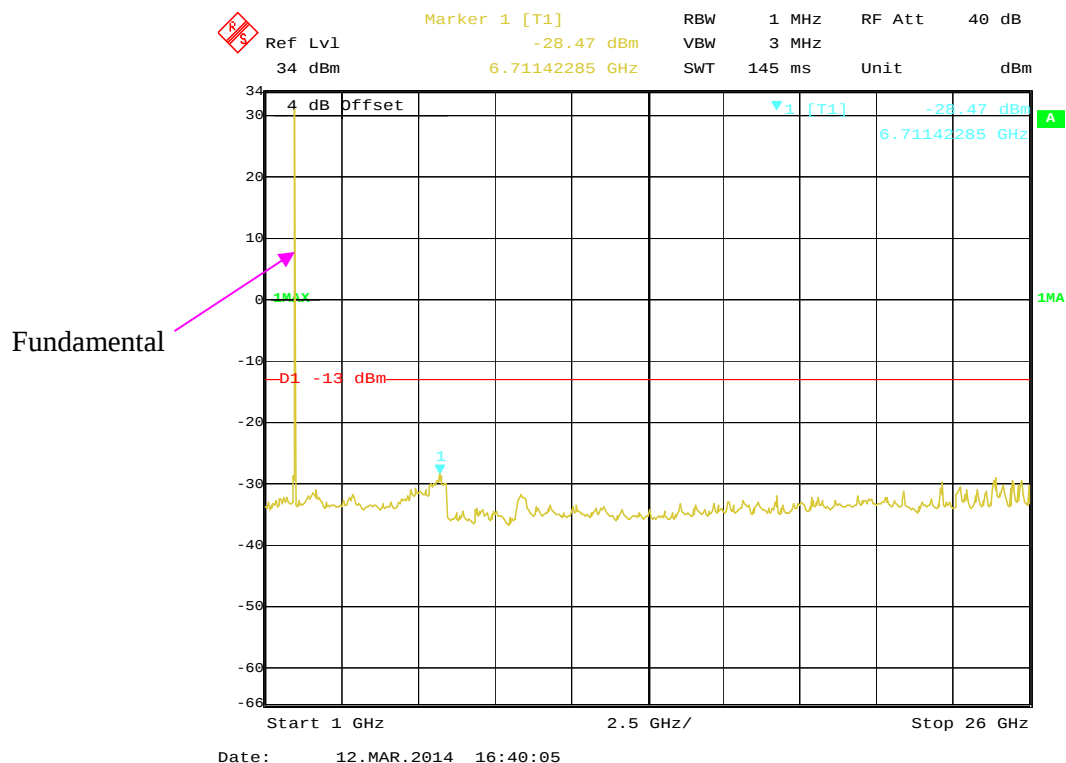
Stop 26 GHz

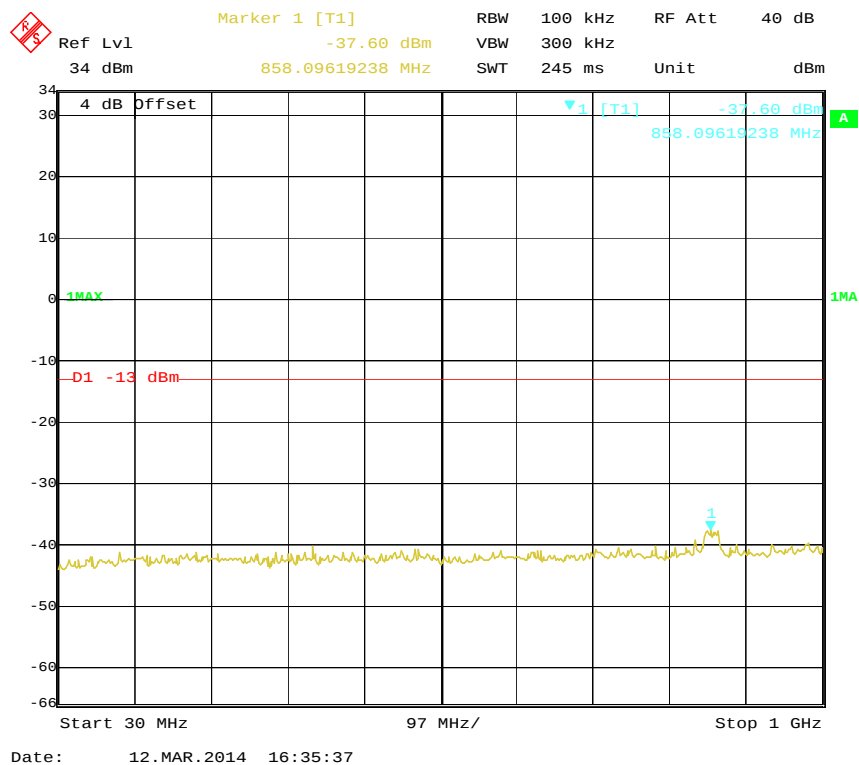
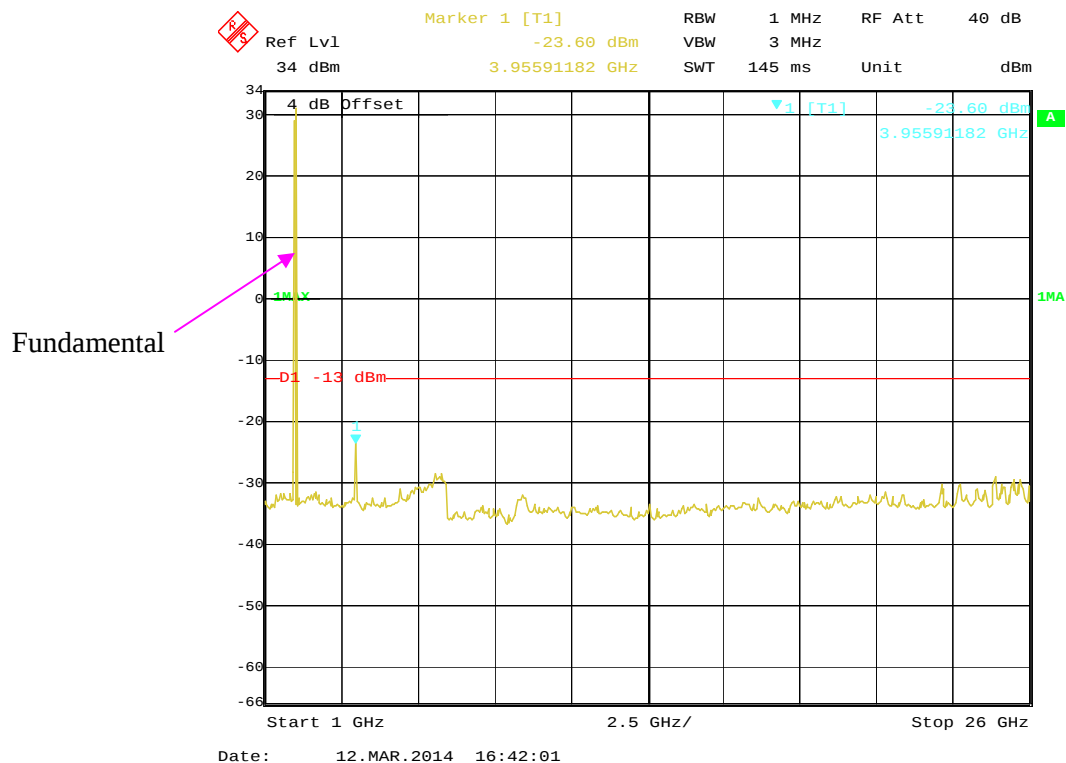
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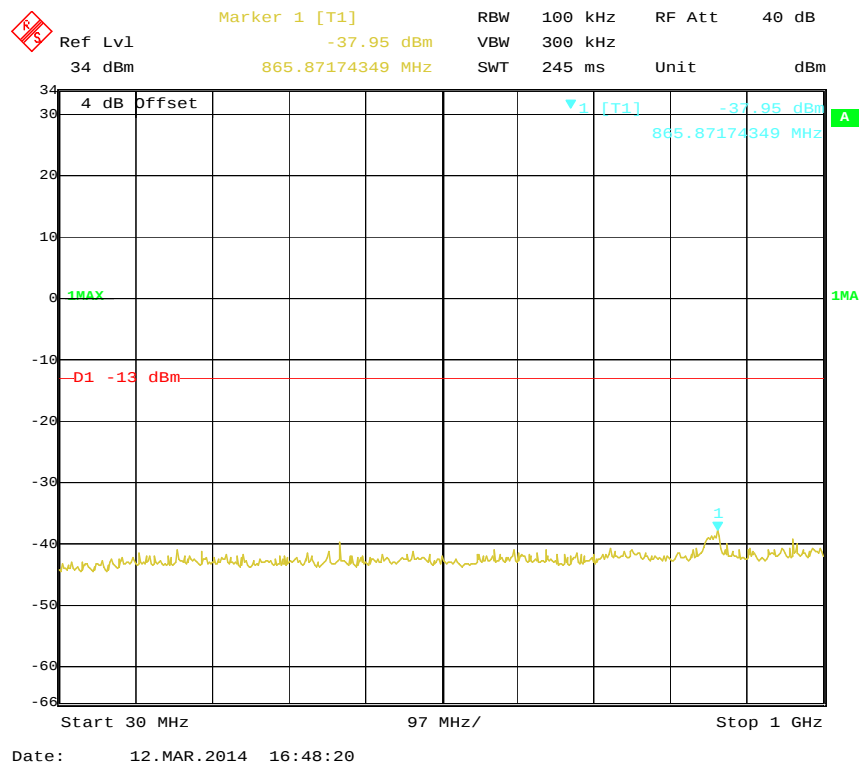
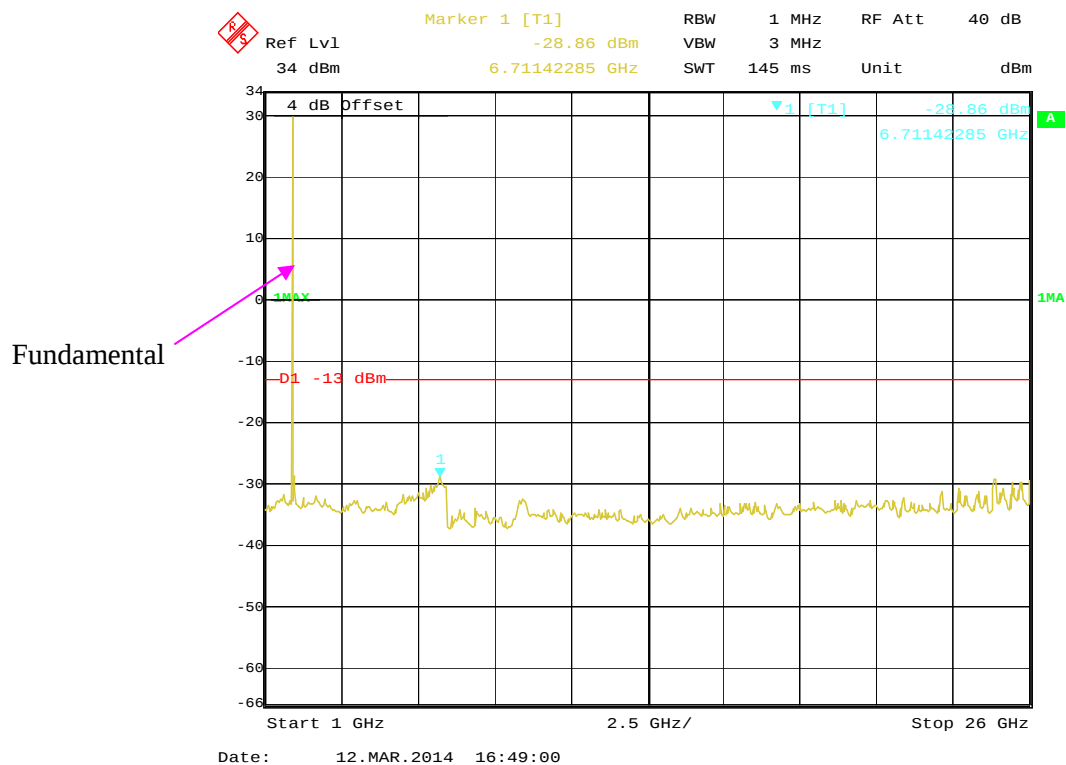
QPSK (1.4MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**QPSK (1.4MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

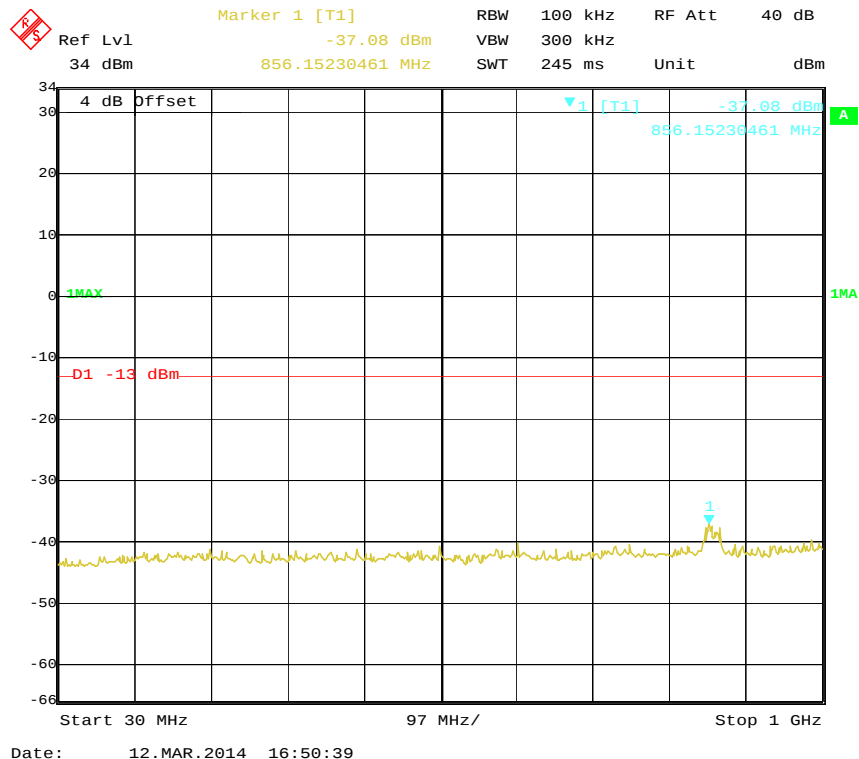
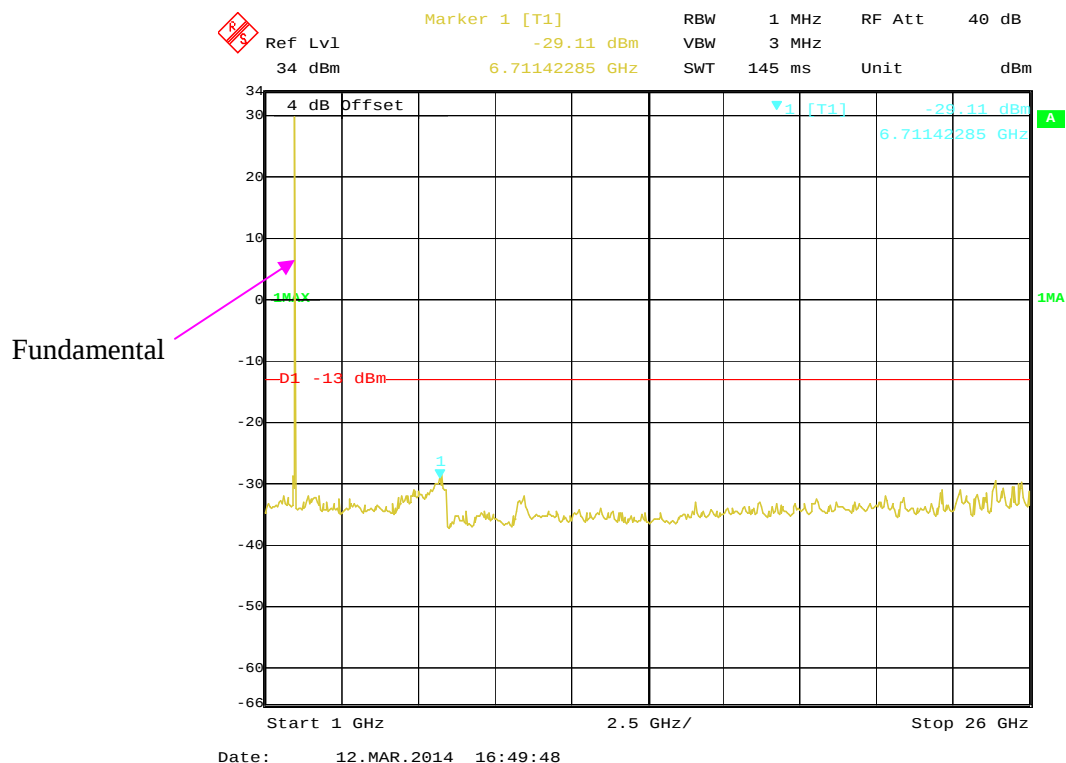
QPSK (1.4MHz) Mode: 30 MHz – 1 GHz (High Channel)**QPSK (1.4MHz) Mode: 1 GHz – 26 GHz (High Channel)**

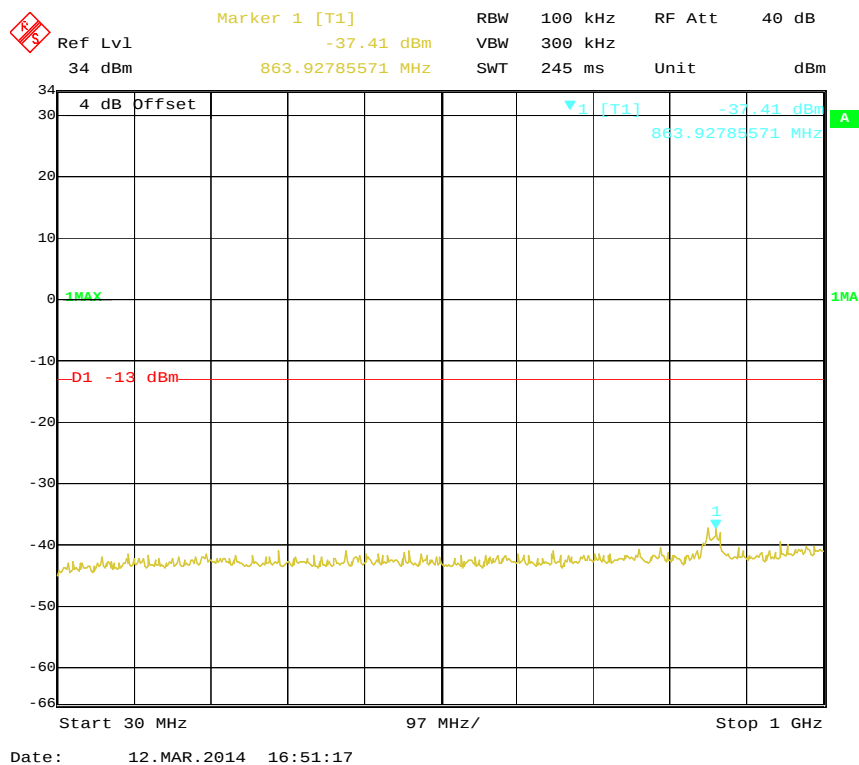
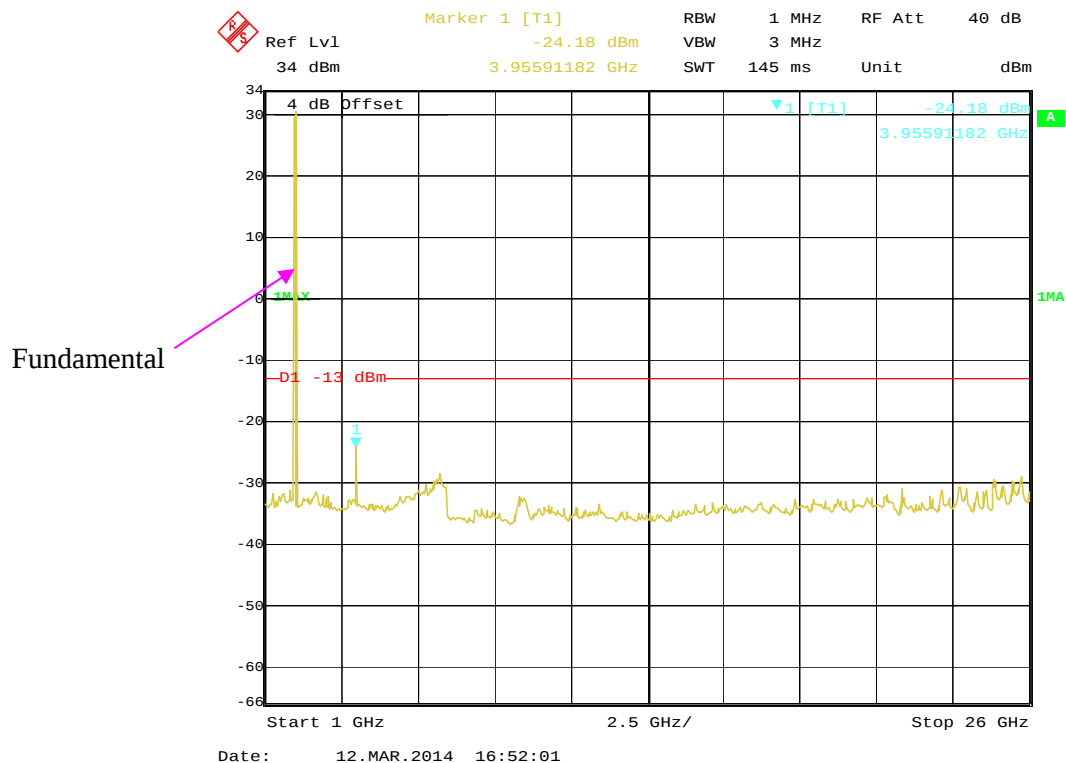
16QAM (1.4MHz) Mode: 30 MHz – 1 GHz (Low Channel)**16QAM (1.4MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

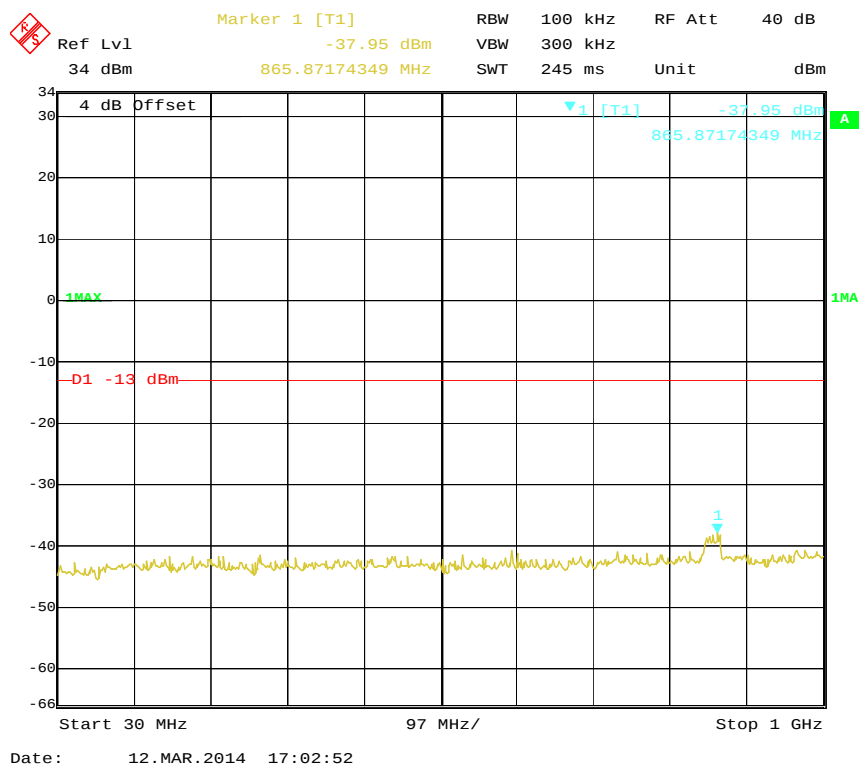
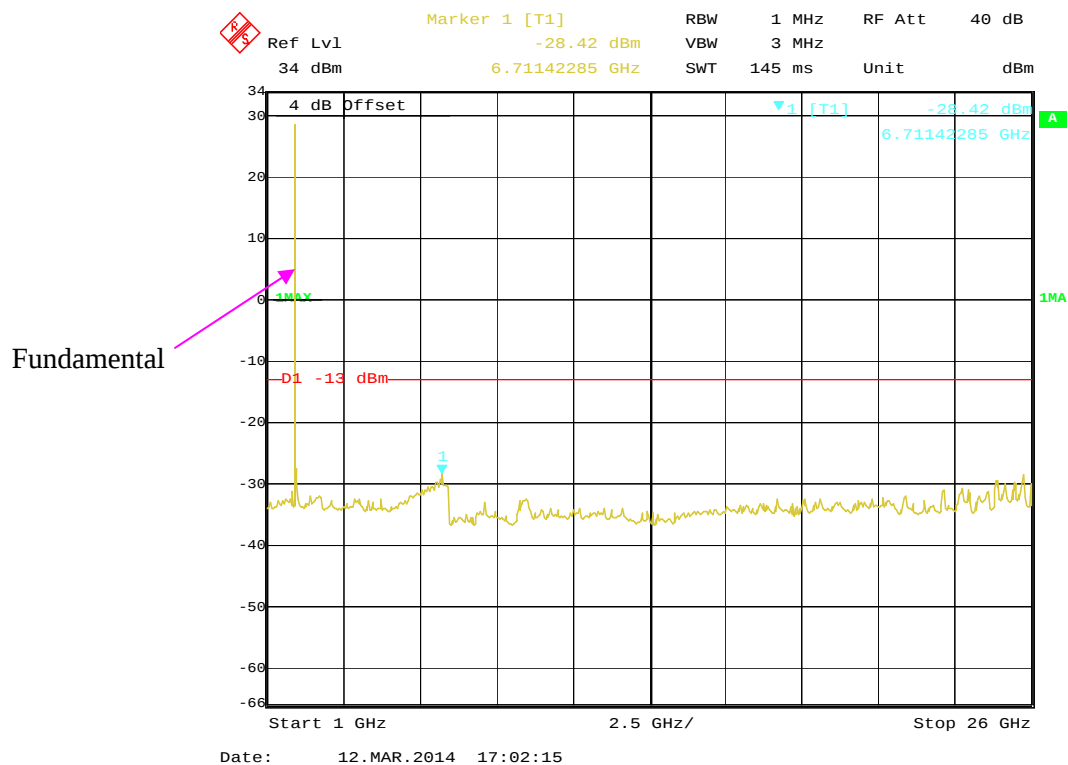
16QAM (1.4MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**16QAM (1.4MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

16QAM (1.4MHz) Mode: 30 MHz – 1 GHz (High Channel)**16QAM (1.4MHz) Mode: 1 GHz – 26 GHz (High Channel)**

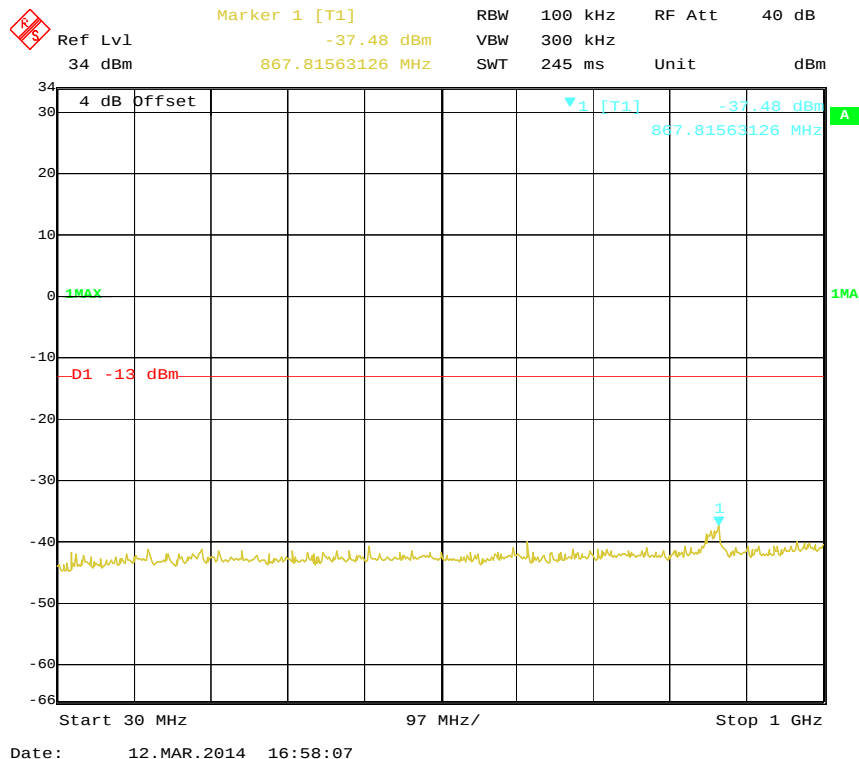
64QAM (1.4MHz) Mode: 30 MHz – 1 GHz (Low Channel)**64QAM (1.4MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

64QAM (1.4MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**64QAM (1.4MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

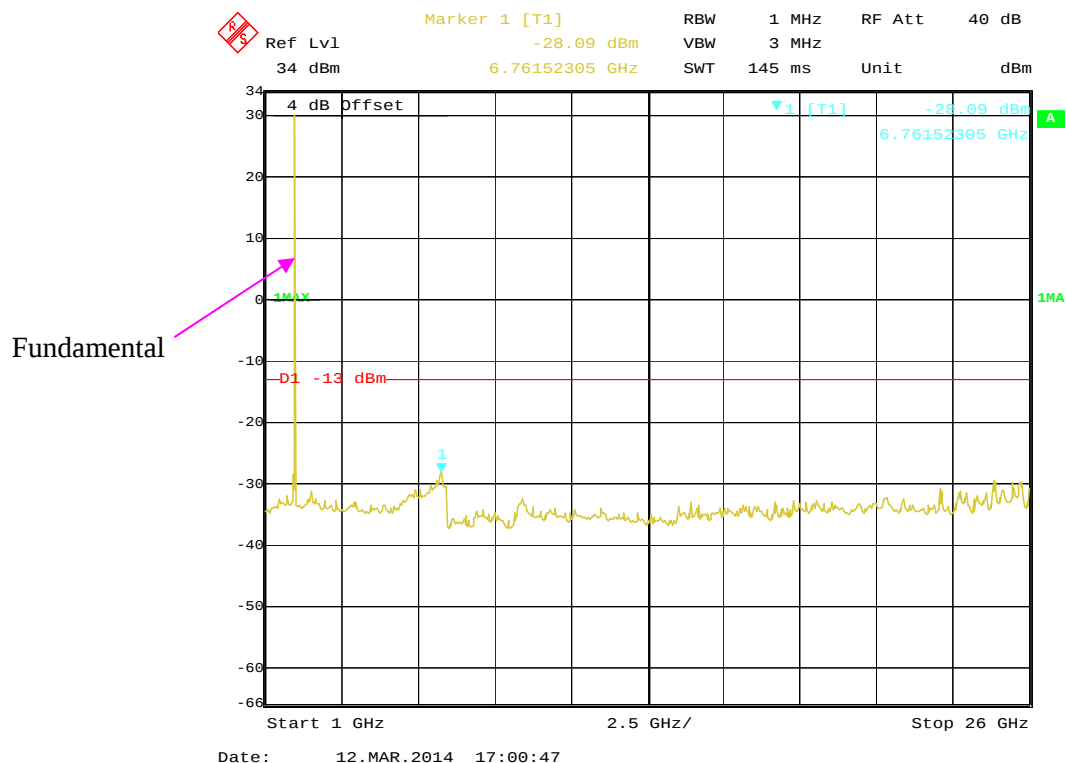
64QAM (1.4MHz) Mode: 30 MHz – 1 GHz (High Channel)**64QAM (1.4MHz) Mode: 1 GHz – 26 GHz (High Channel)**

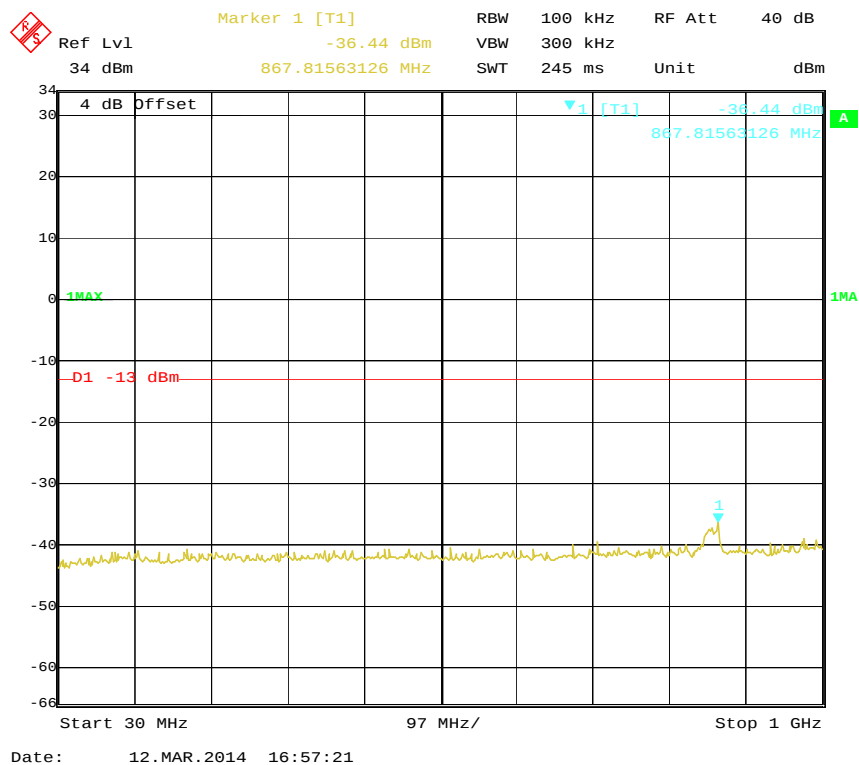
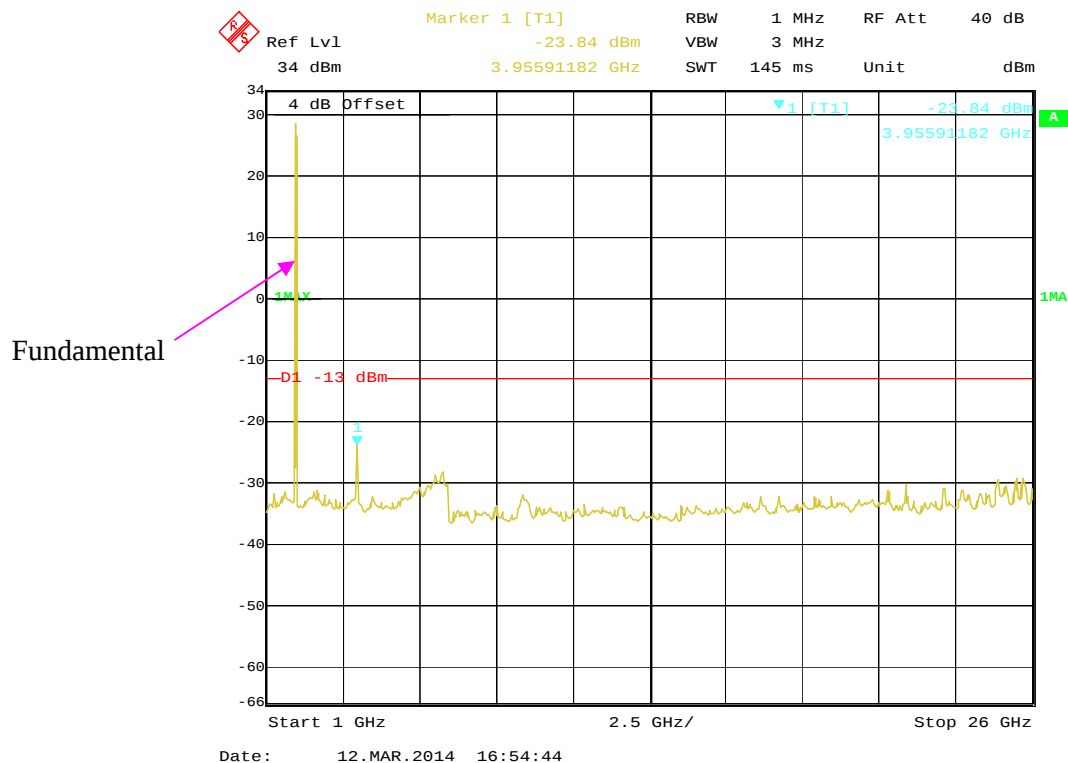
QPSK (3MHz) Mode: 30 MHz – 1 GHz (Low Channel)**QPSK (3MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

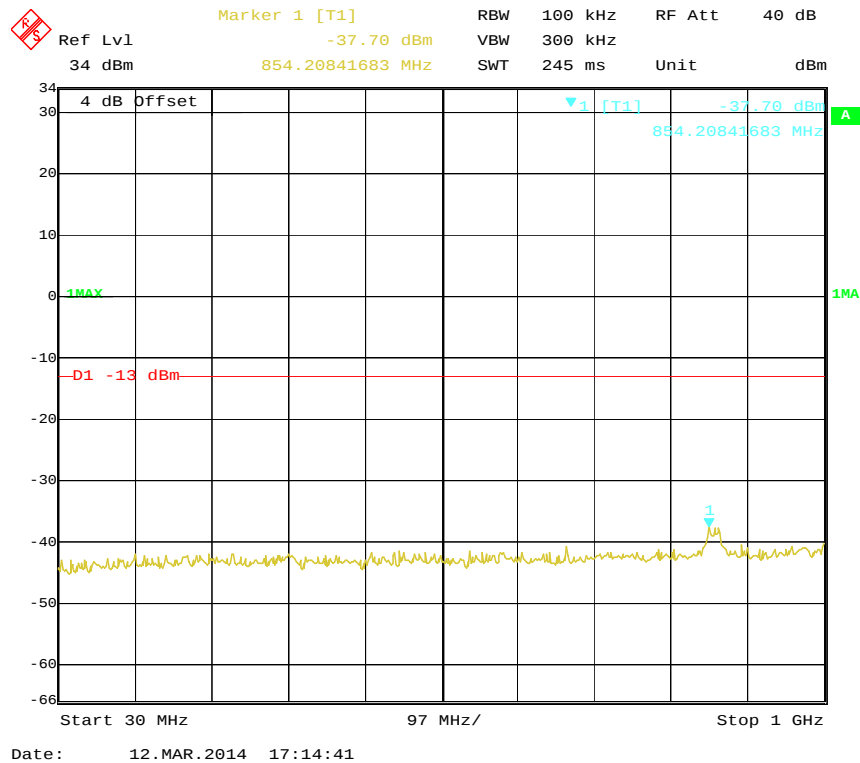
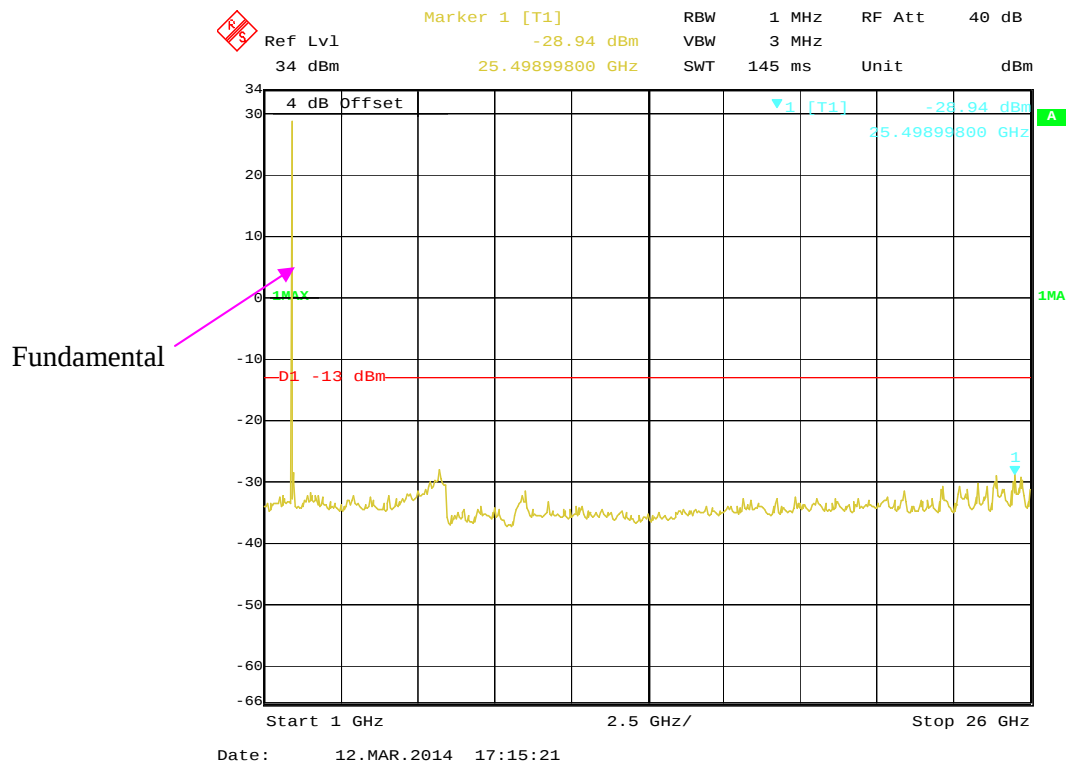
QPSK (3MHz) Mode: 30 MHz – 1 GHz (Middle Channel)

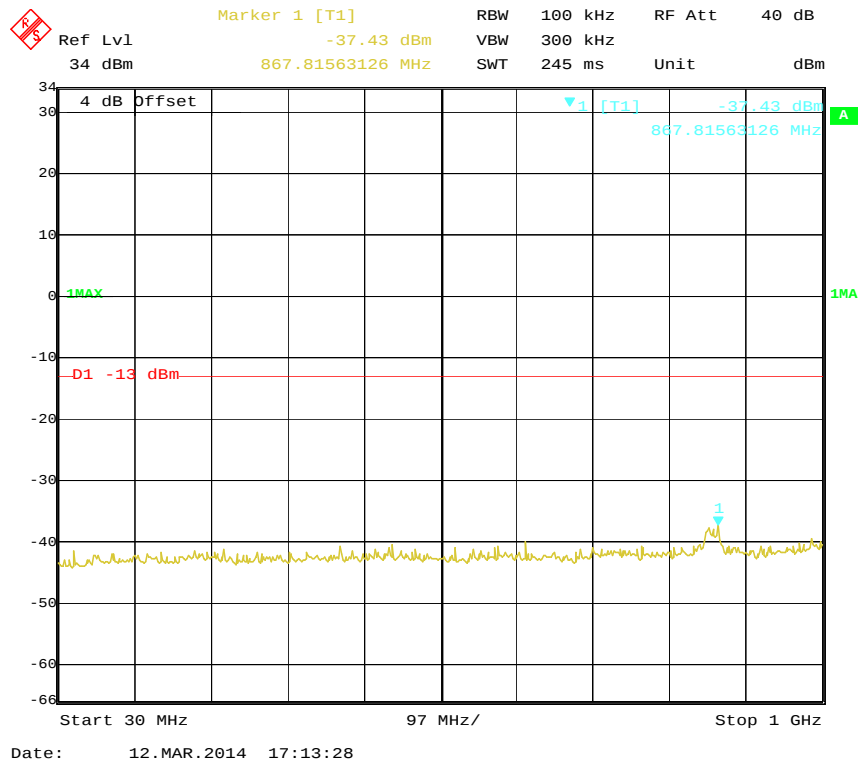
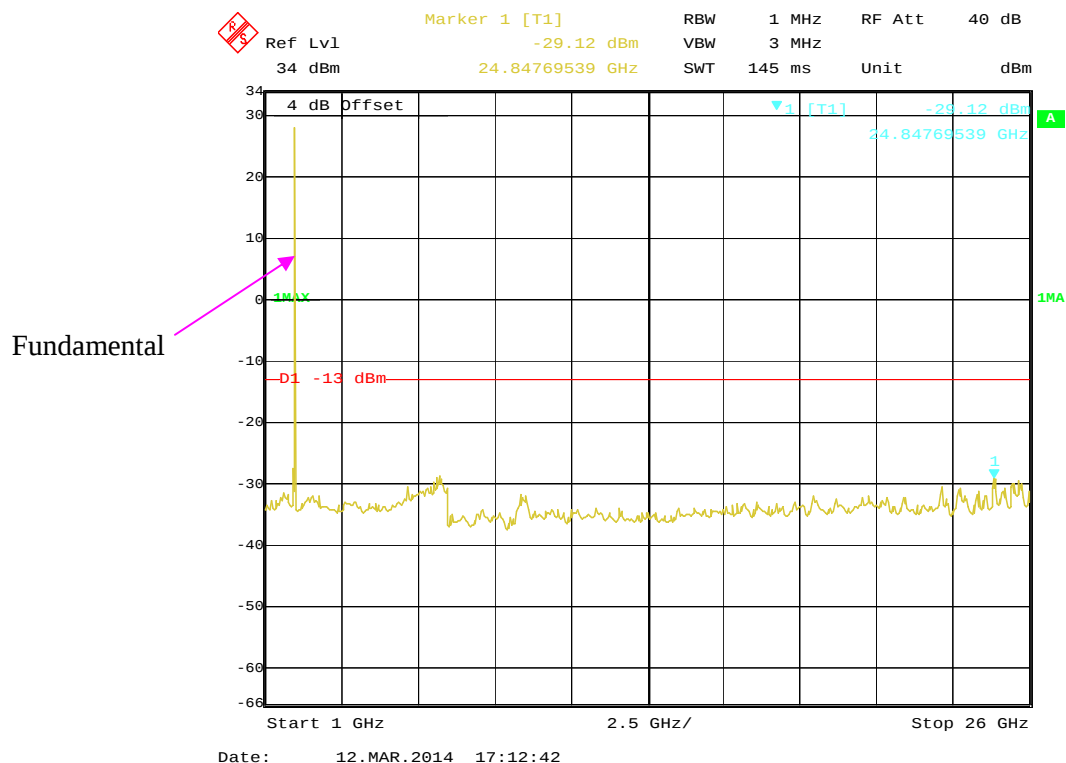


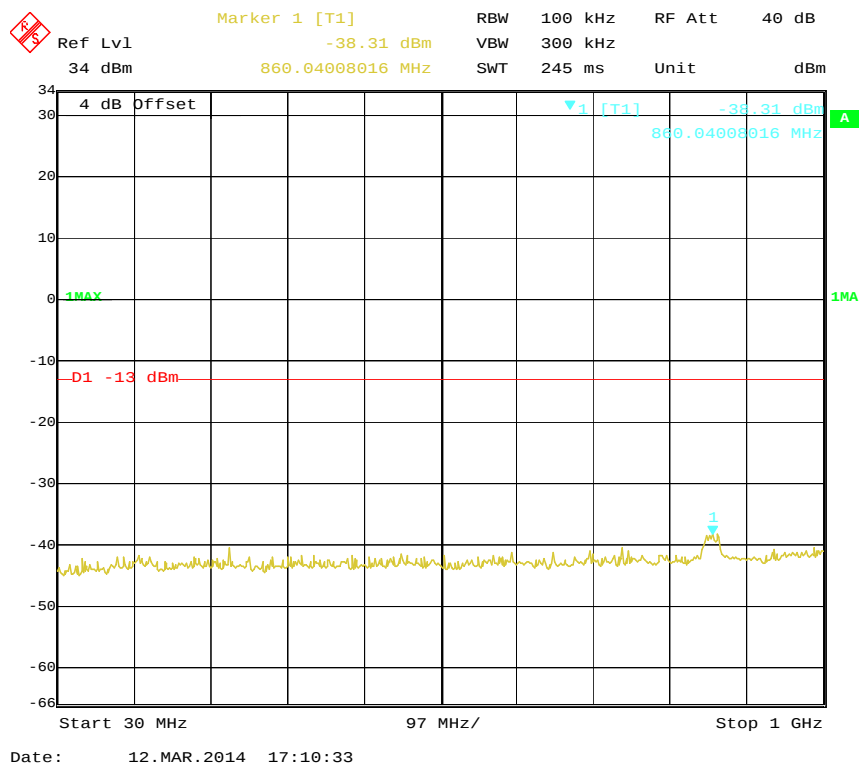
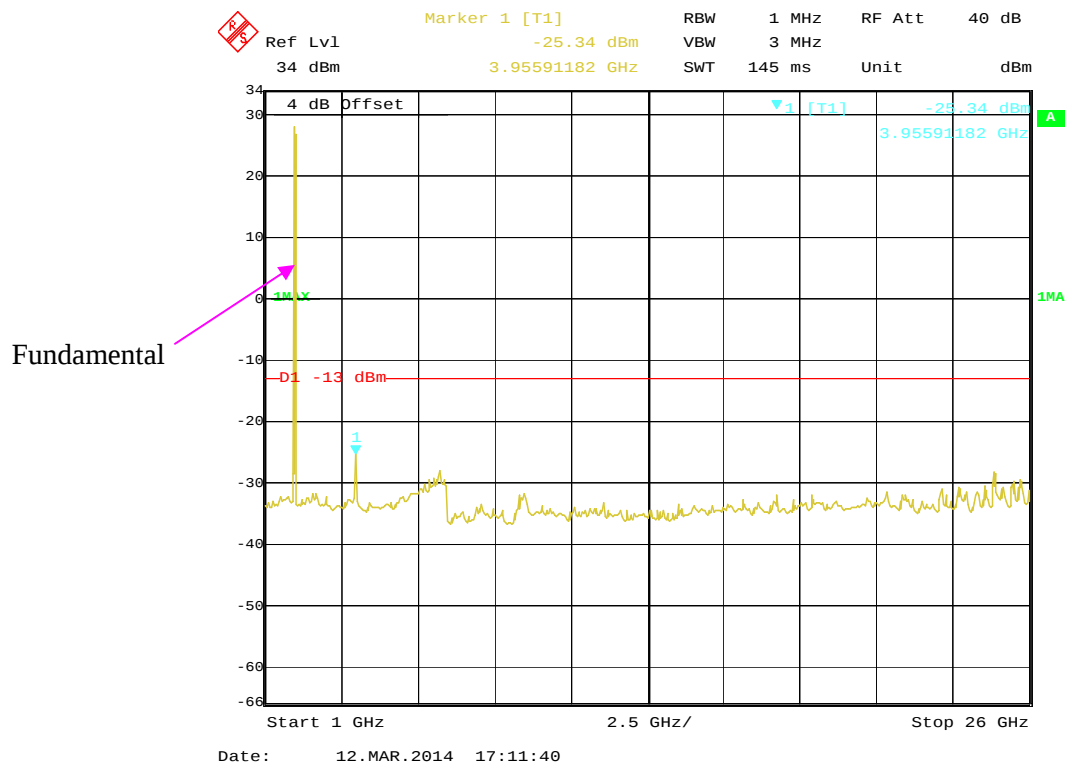
QPSK (3MHz) Mode: 1 GHz – 26 GHz (Middle Channel)



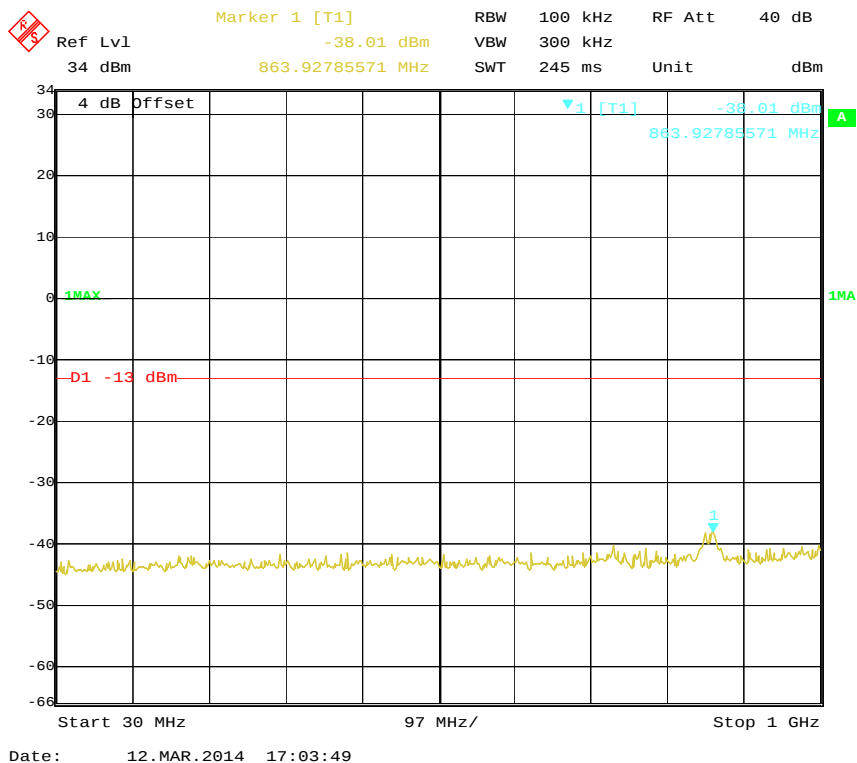
QPSK (3MHz) Mode: 30 MHz – 1 GHz (High Channel)**QPSK (3MHz) Mode: 1 GHz – 26 GHz (High Channel)**

16QAM (3MHz) Mode: 30 MHz – 1 GHz (Low Channel)**16QAM (3MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

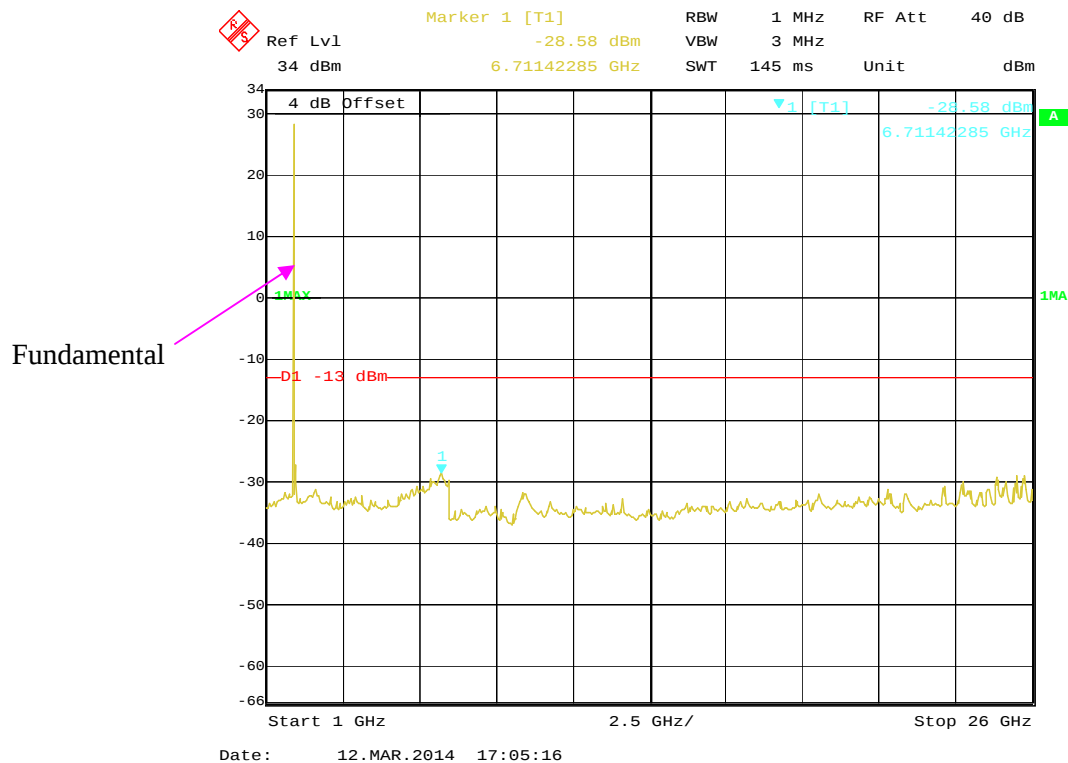
16QAM (3MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**16QAM (3MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

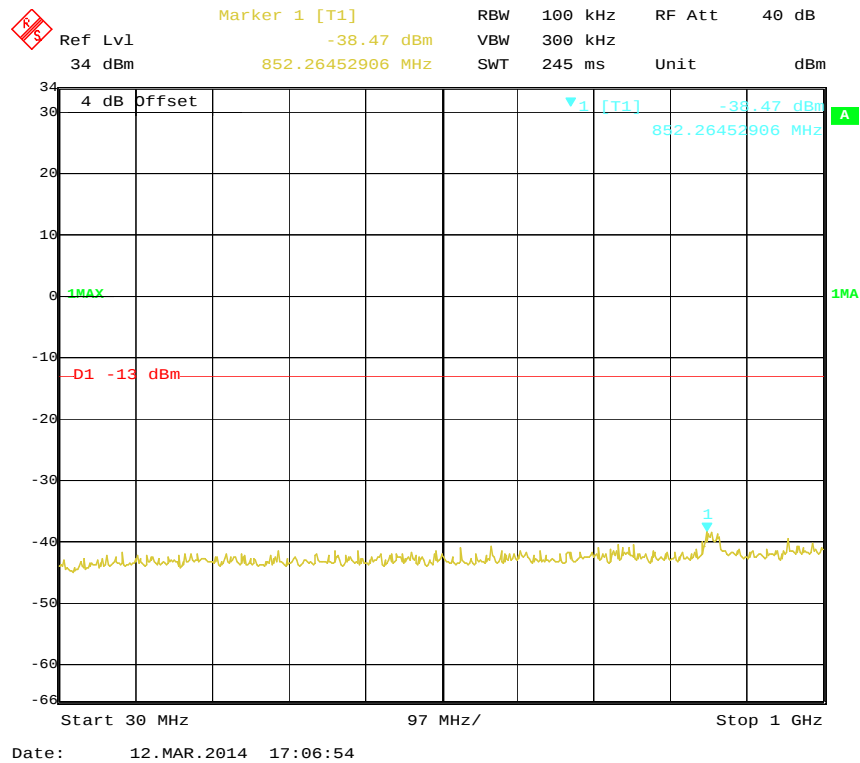
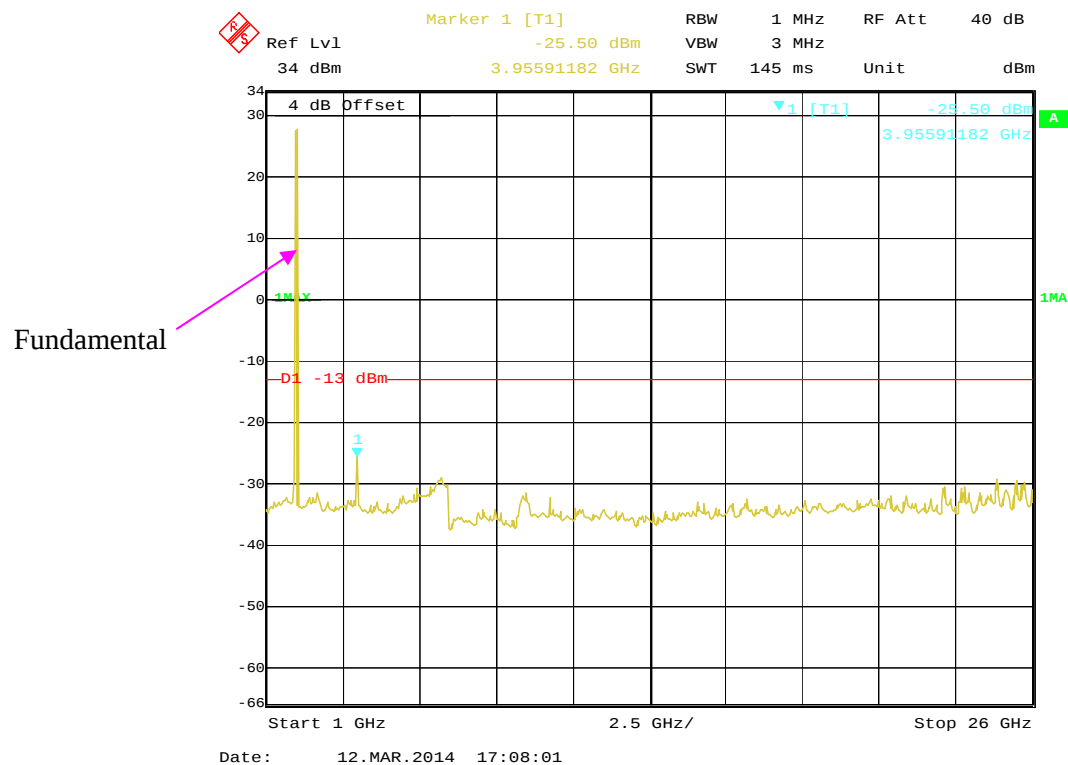
16QAM (3MHz) Mode: 30 MHz – 1 GHz (High Channel)**16QAM (3MHz) Mode: 1 GHz – 26 GHz (High Channel)**

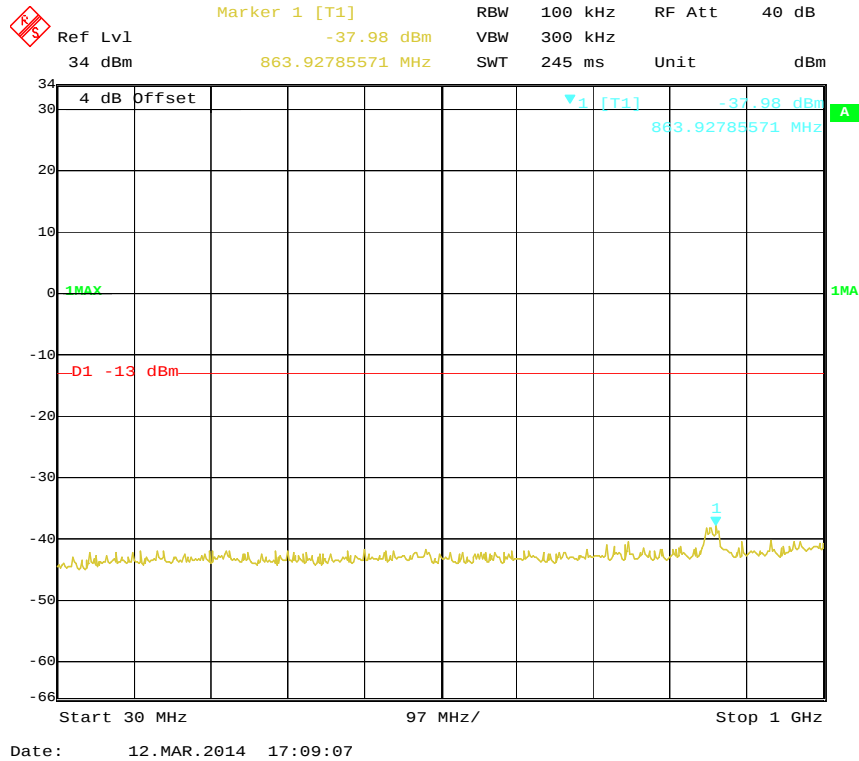
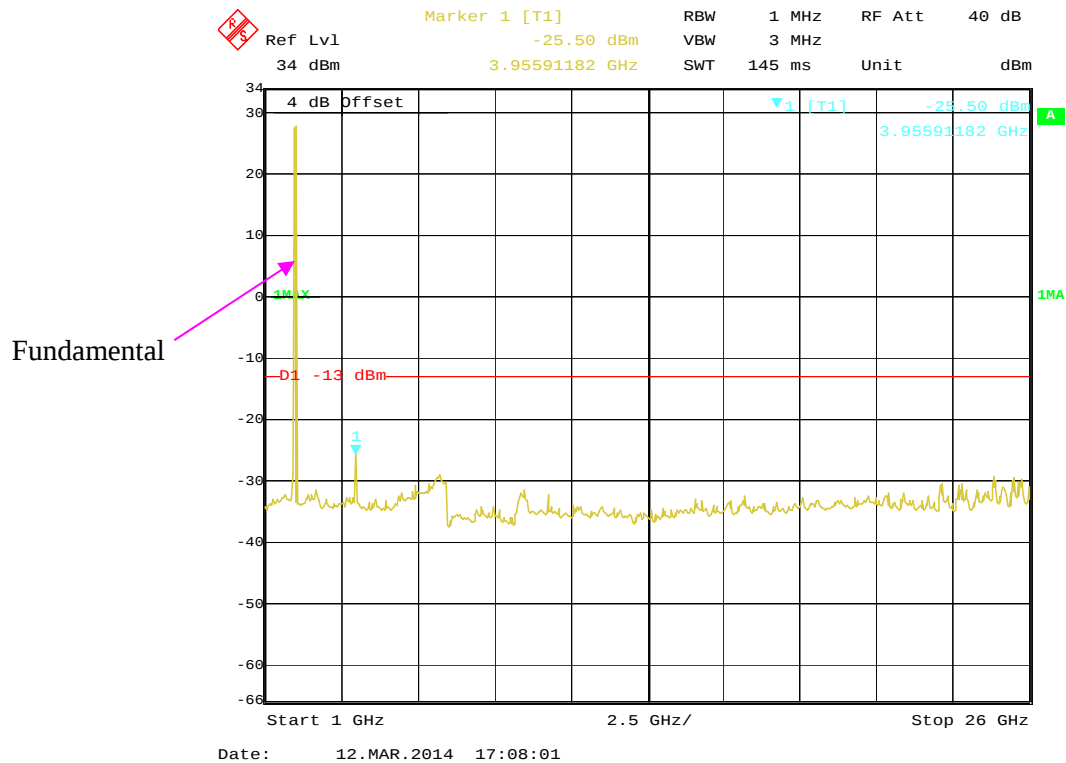
64QAM (3MHz) Mode: 30 MHz – 1 GHz (Low Channel)

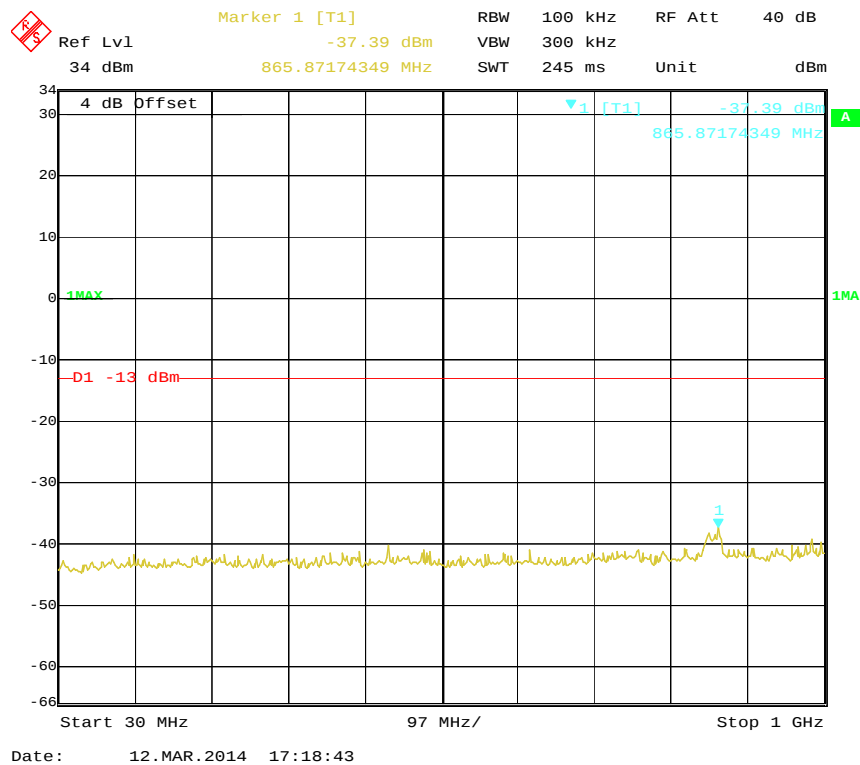
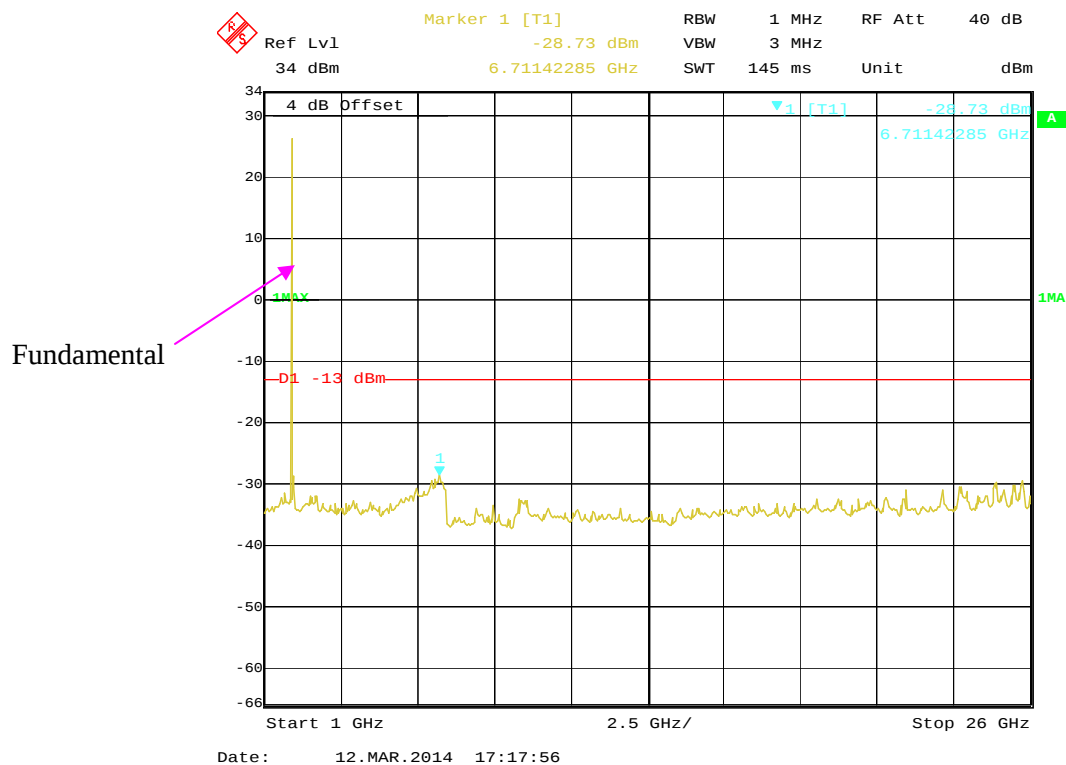


64QAM (3MHz) Mode: 1 GHz – 26 GHz (Low Channel)

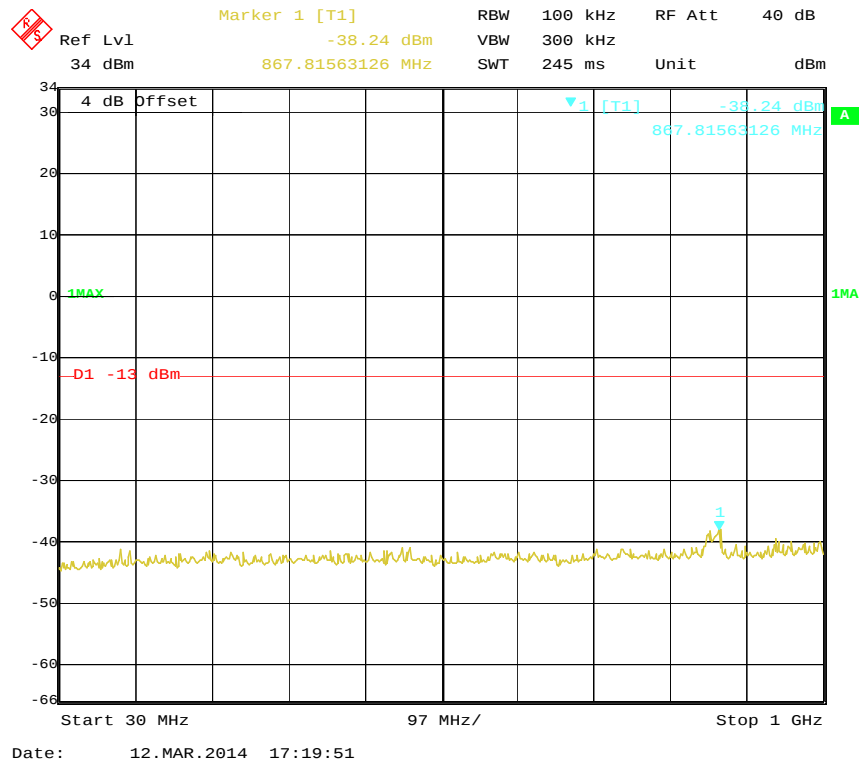


64QAM (3MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**64QAM (3MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

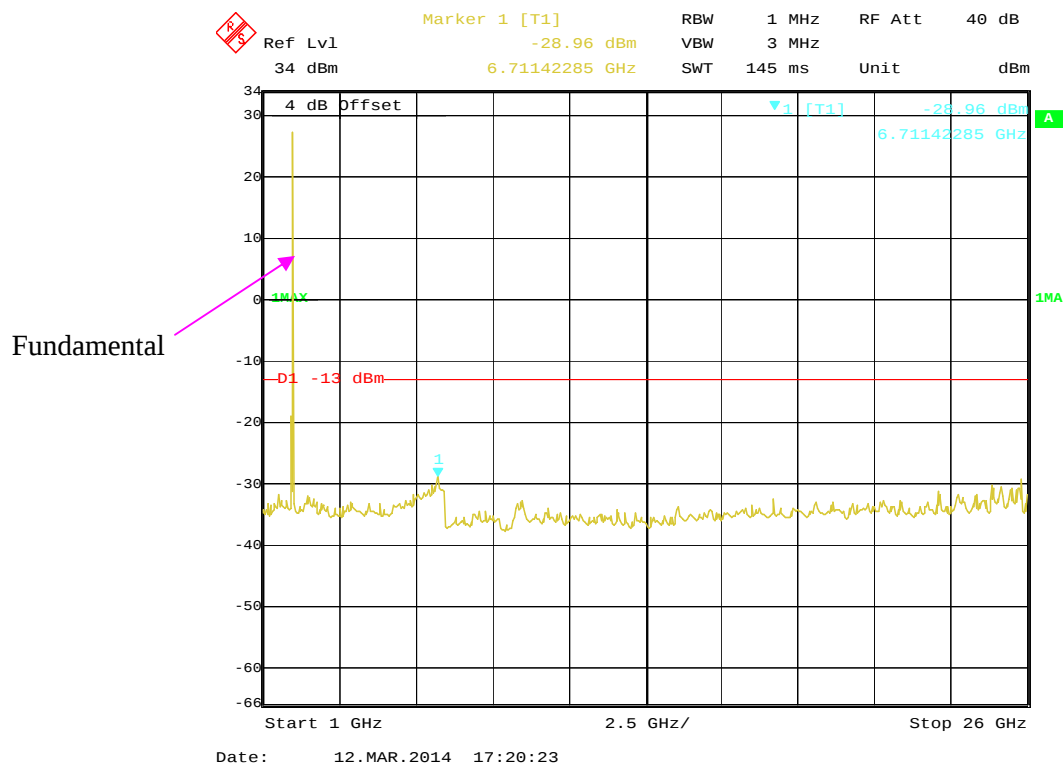
64QAM (3MHz) Mode: 30 MHz – 1 GHz (High Channel)**64QAM (3MHz) Mode: 1 GHz – 26 GHz (High Channel)**

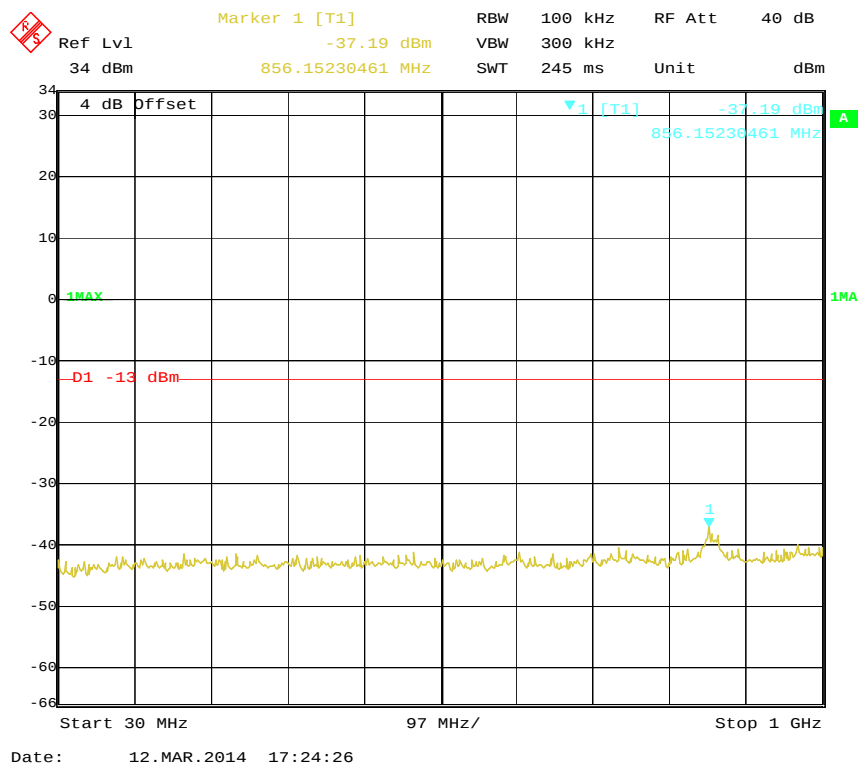
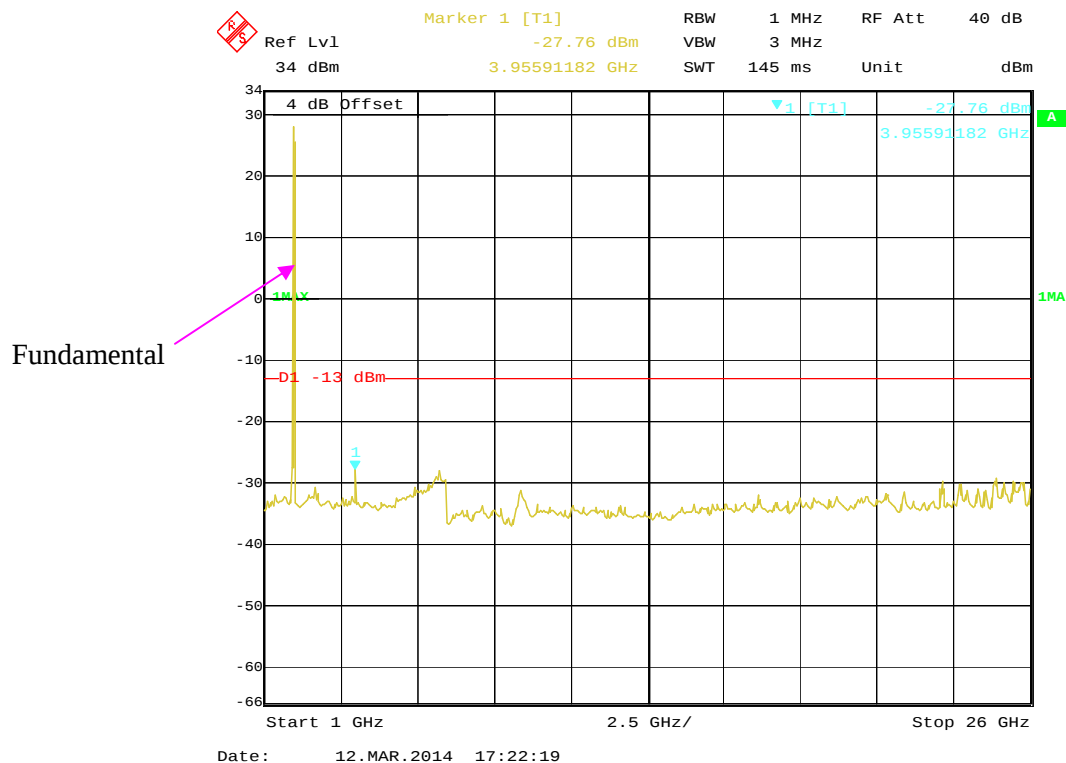
QPSK (5MHz) Mode: 30 MHz – 1 GHz (Low Channel)**QPSK (5MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

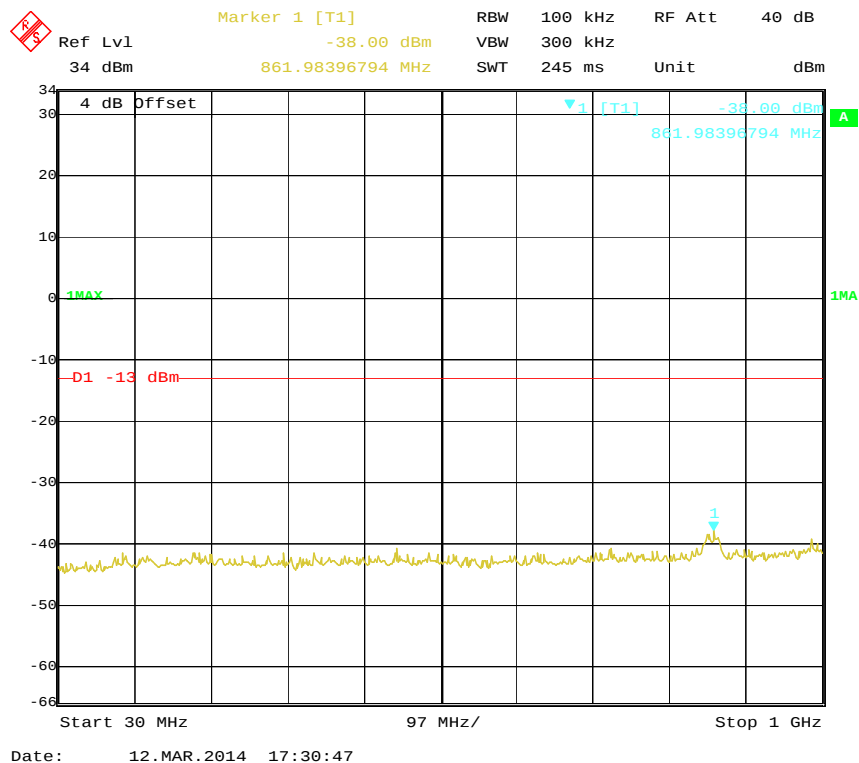
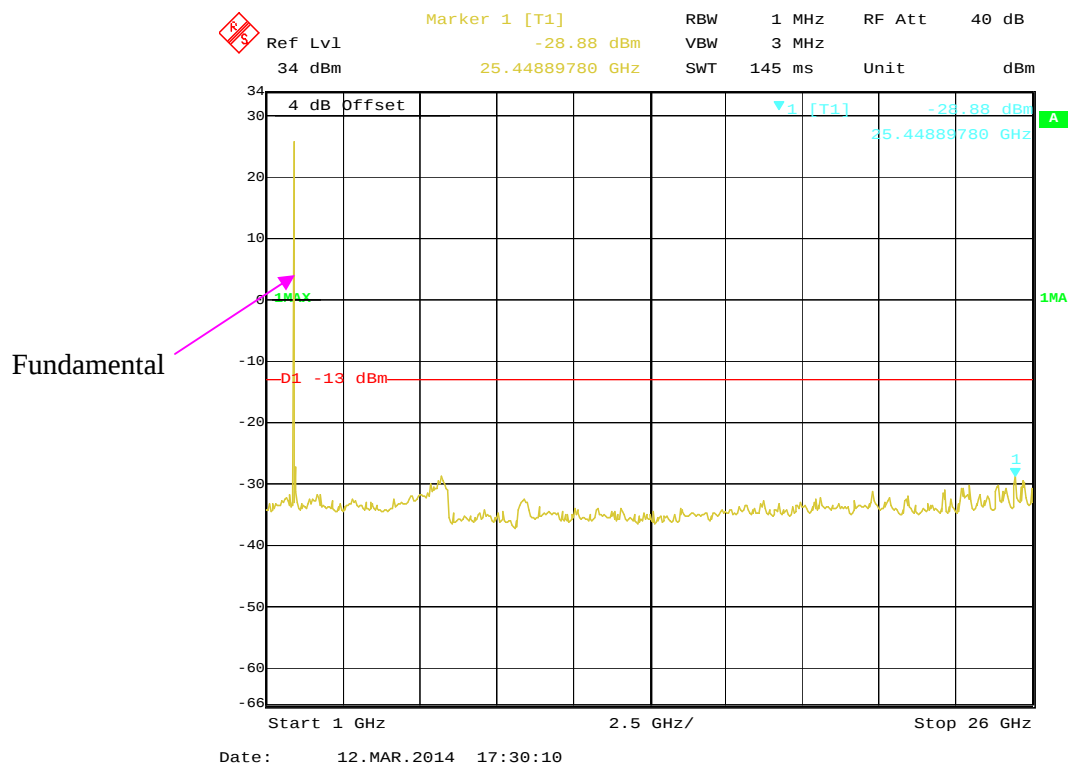
QPSK (5MHz) Mode: 30 MHz – 1 GHz (Middle Channel)

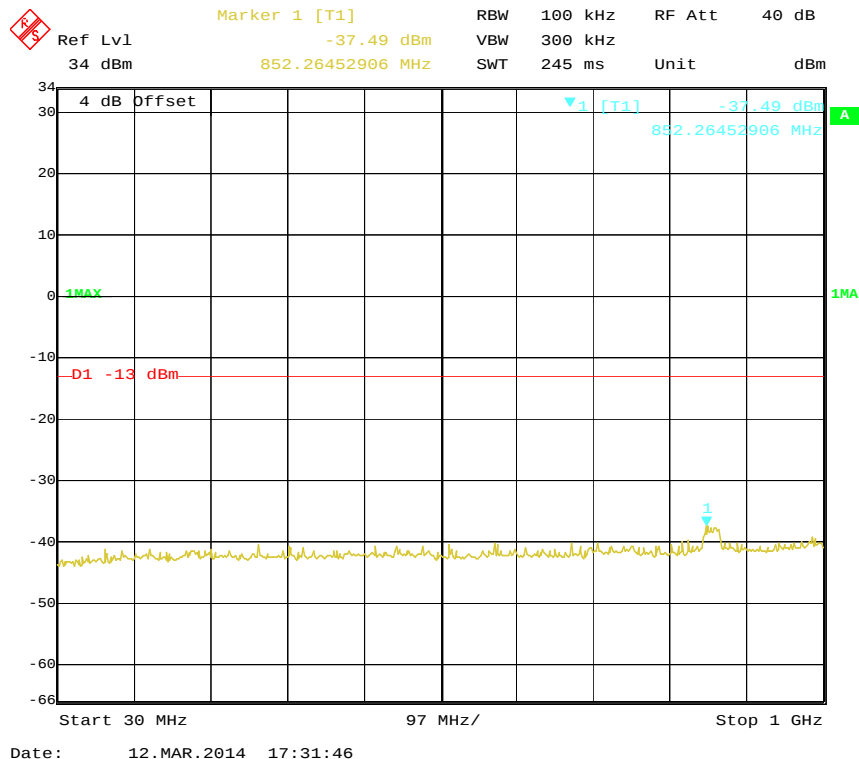
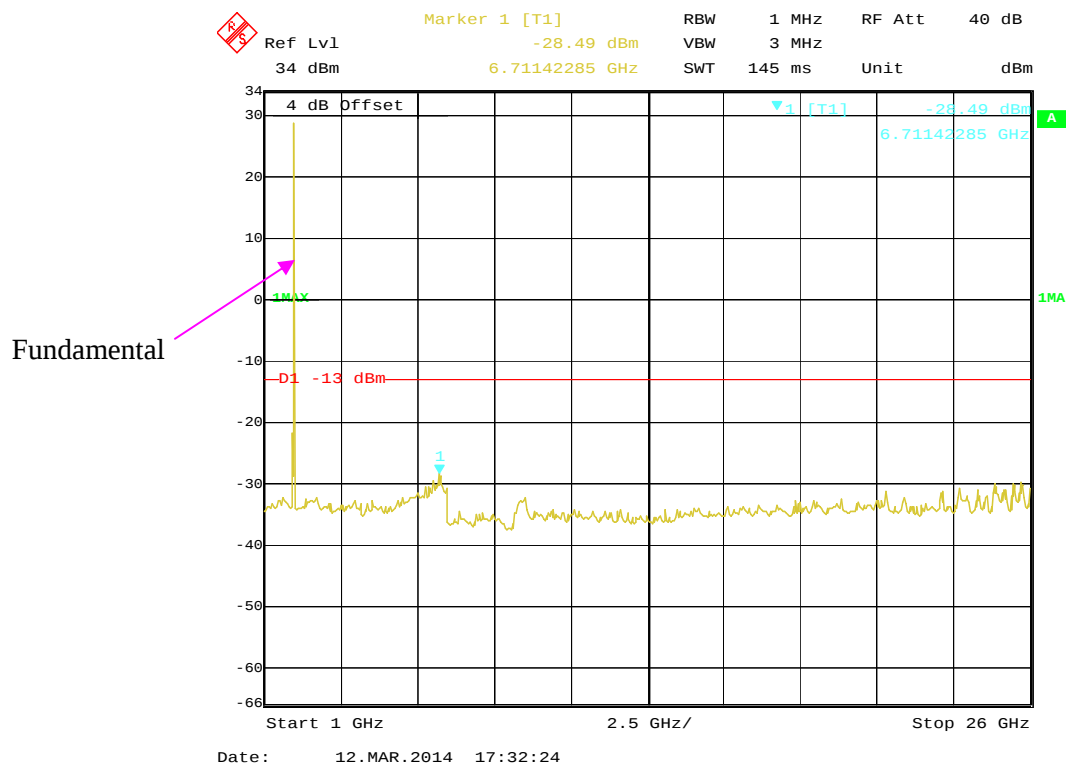


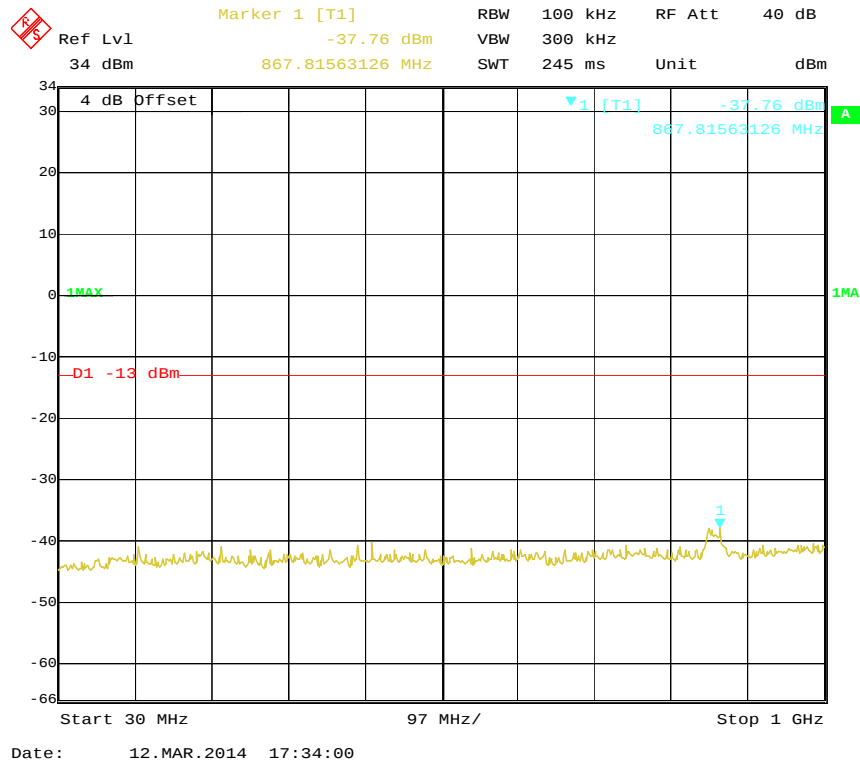
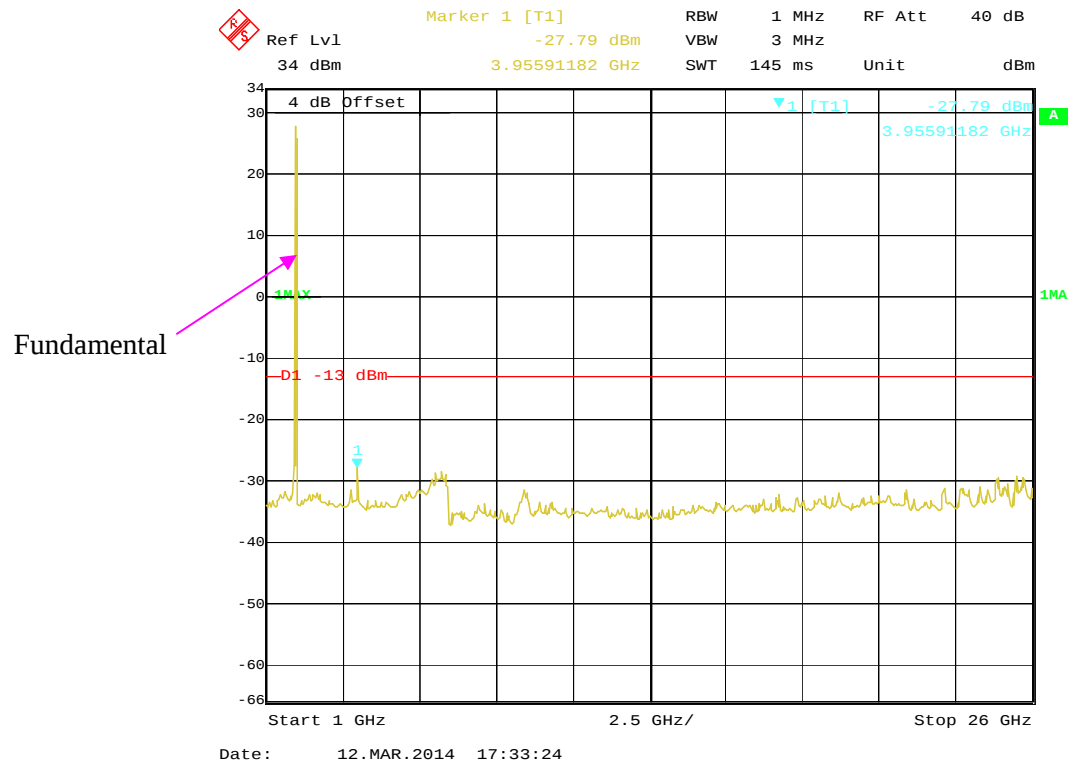
QPSK (5MHz) Mode: 1 GHz – 26 GHz (Middle Channel)

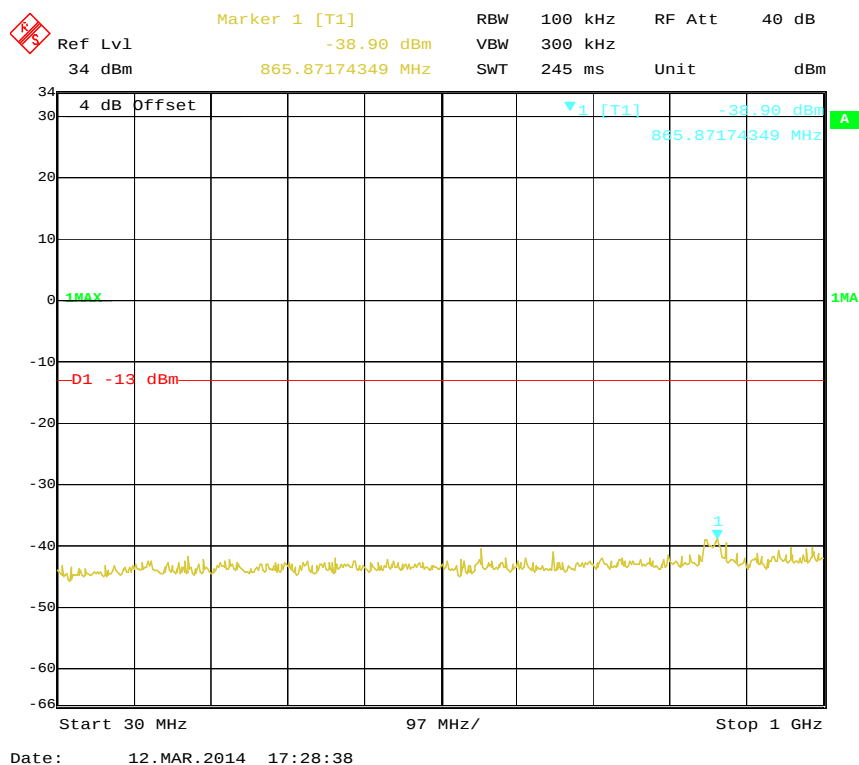
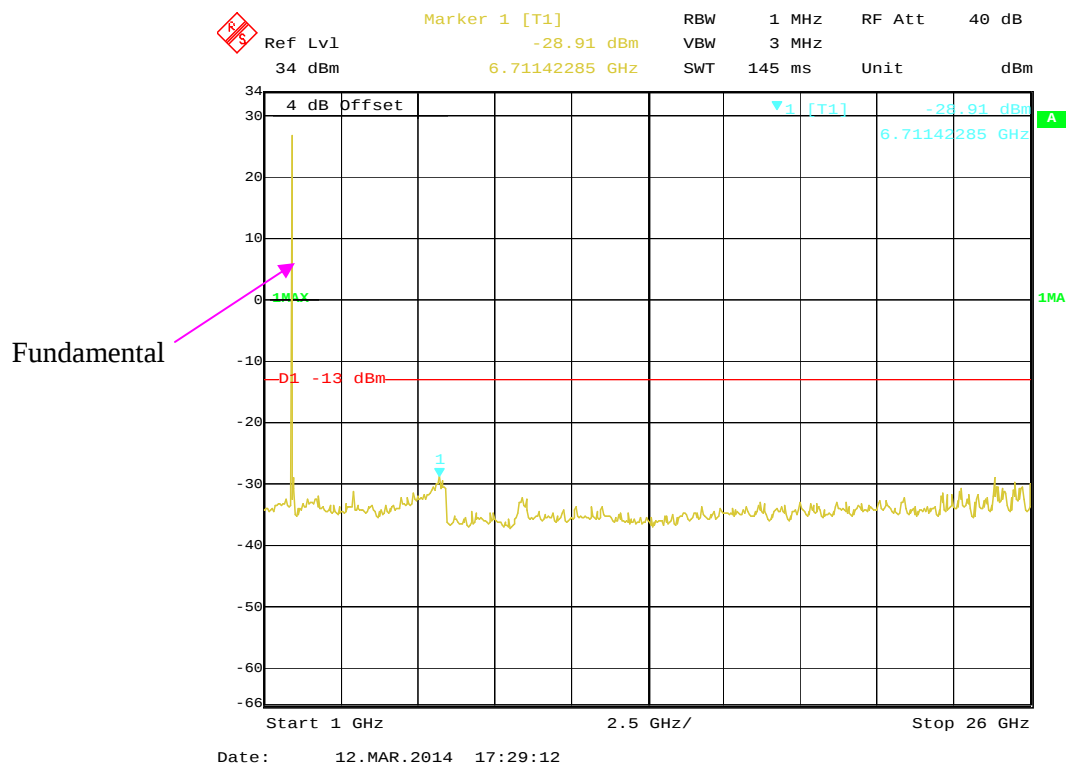


QPSK (5MHz) Mode: 30 MHz – 1 GHz (High Channel)**QPSK (5MHz) Mode: 1 GHz – 26 GHz (High Channel)**

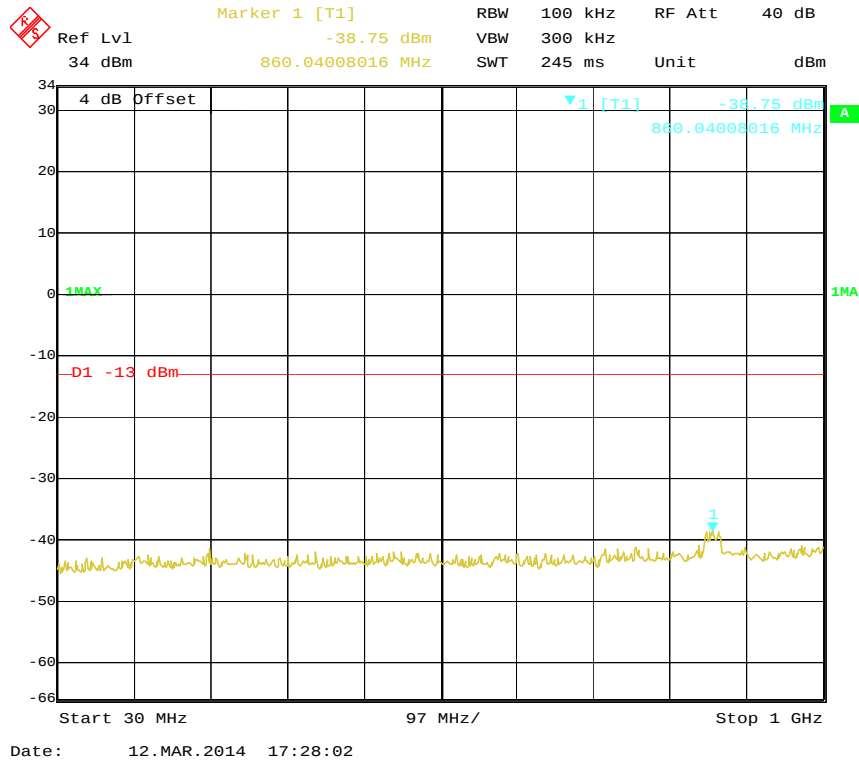
16QAM (5MHz) Mode: 30 MHz – 1 GHz (Low Channel)**16QAM (5MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

16QAM (5MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**16QAM (5MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

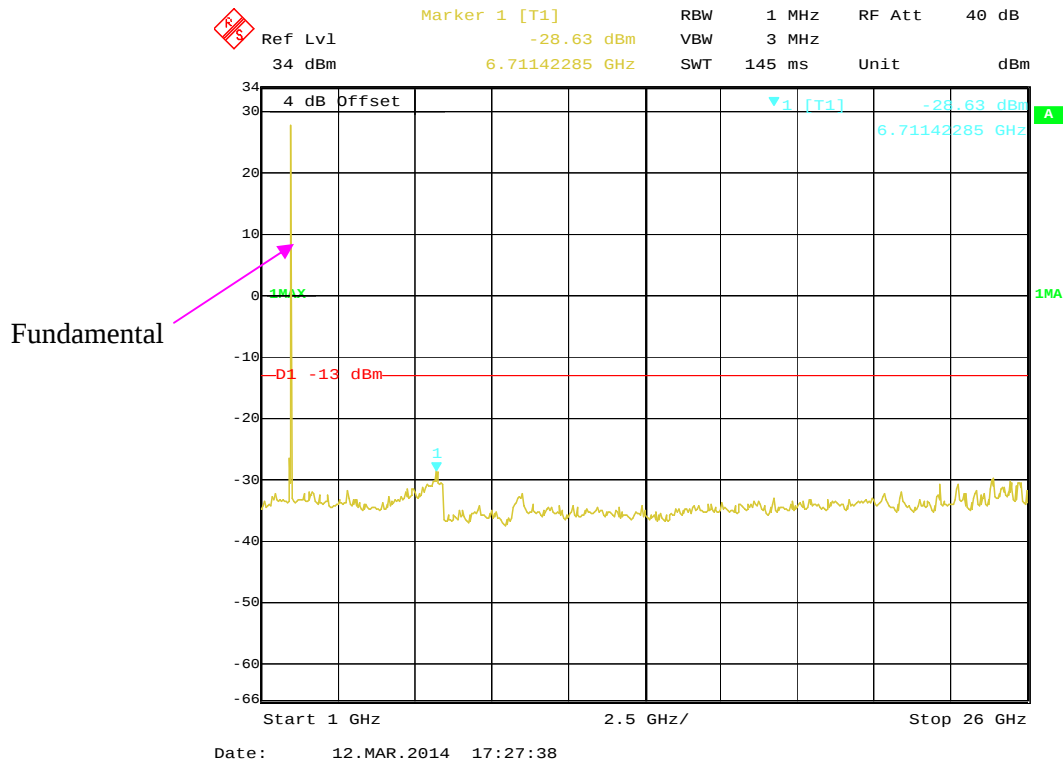
16QAM (5MHz) Mode: 30 MHz – 1 GHz (High Channel)**16QAM (5MHz) Mode: 1 GHz – 26 GHz (High Channel)**

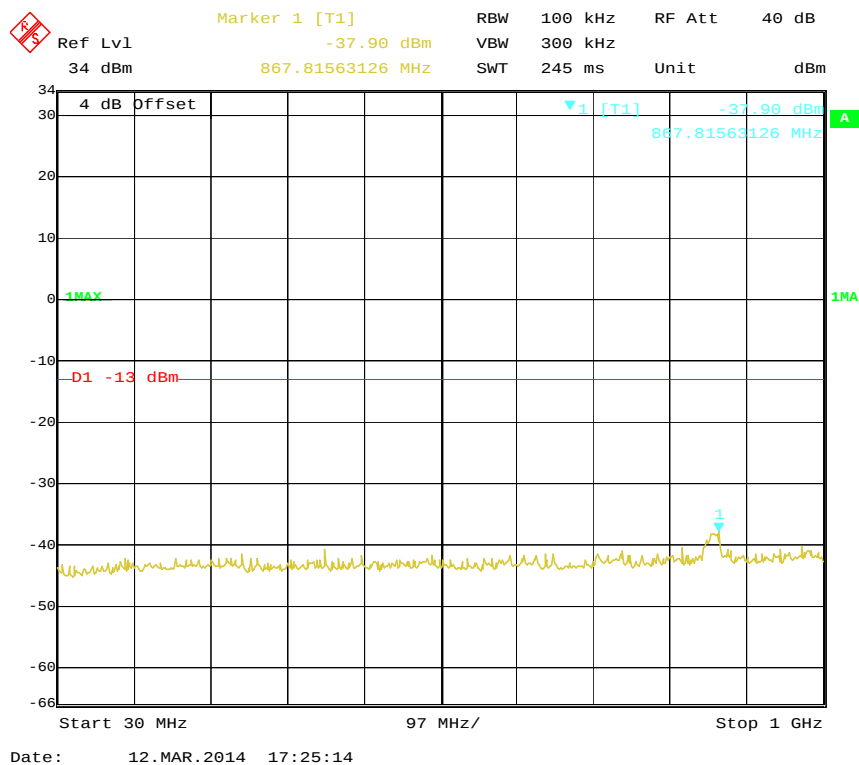
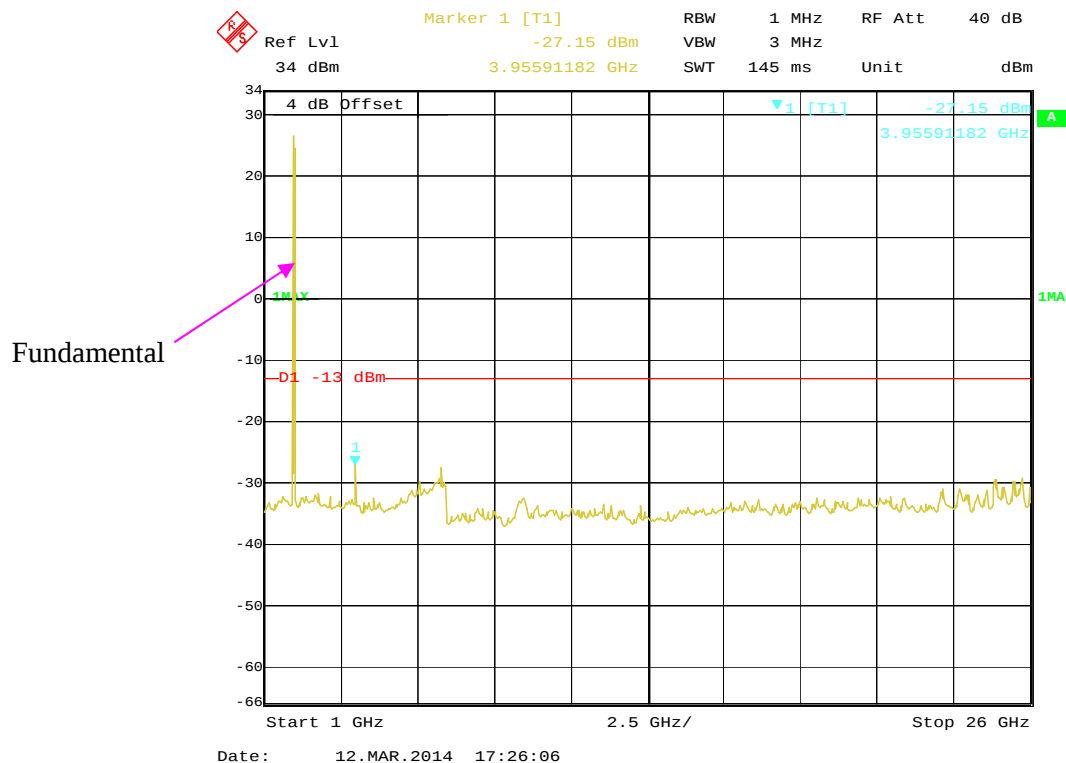
64QAM (5MHz) Mode: 30 MHz – 1 GHz (Low Channel)**64QAM (5MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

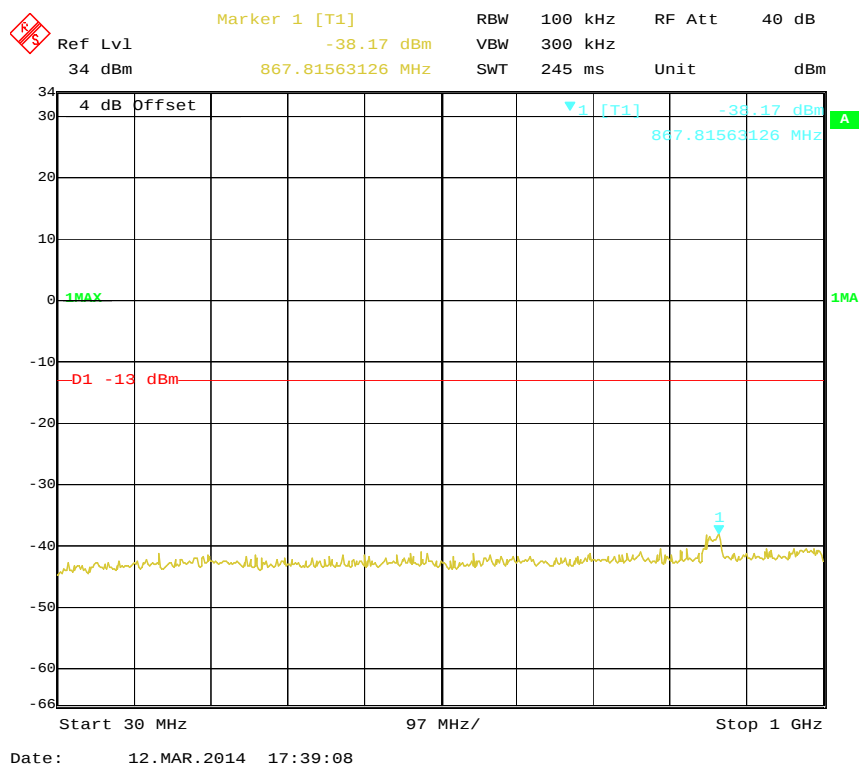
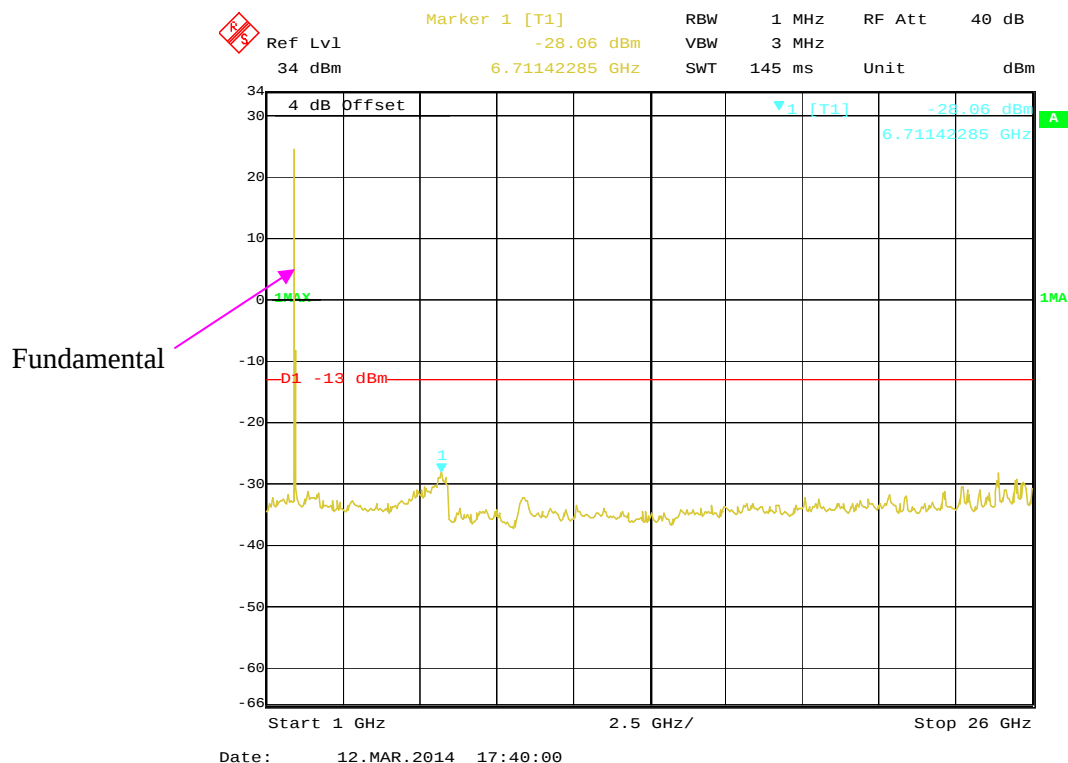
64QAM (5MHz) Mode: 30 MHz – 1 GHz (Middle Channel)



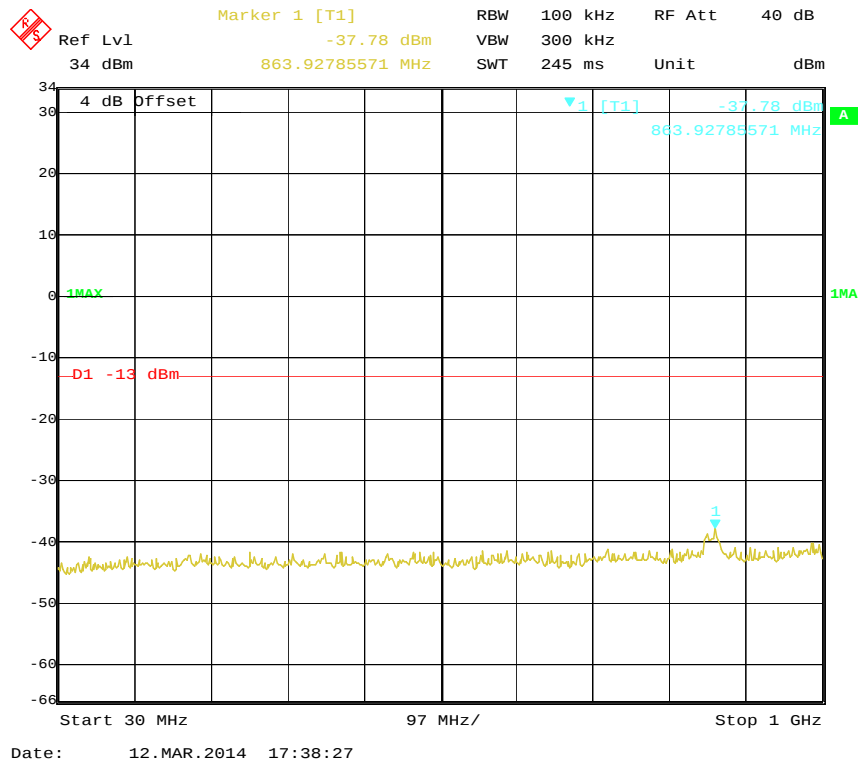
64QAM (5MHz) Mode: 1 GHz – 26 GHz (Middle Channel)



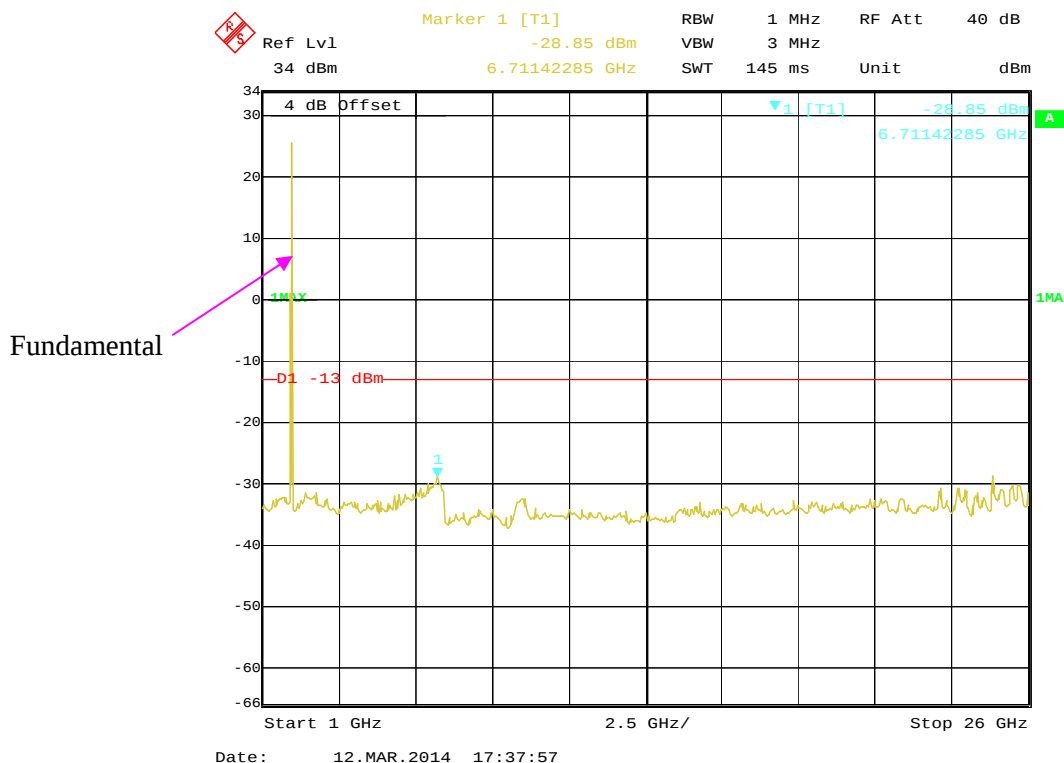
64QAM (5MHz) Mode: 30 MHz – 1 GHz (High Channel)**64QAM (5MHz) Mode: 1 GHz – 26 GHz (High Channel)**

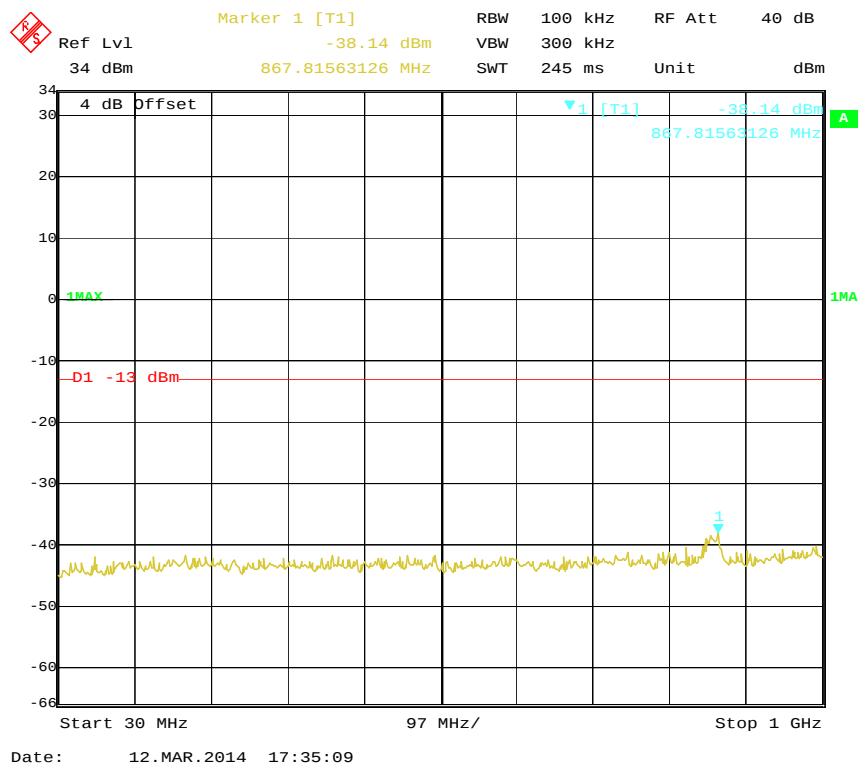
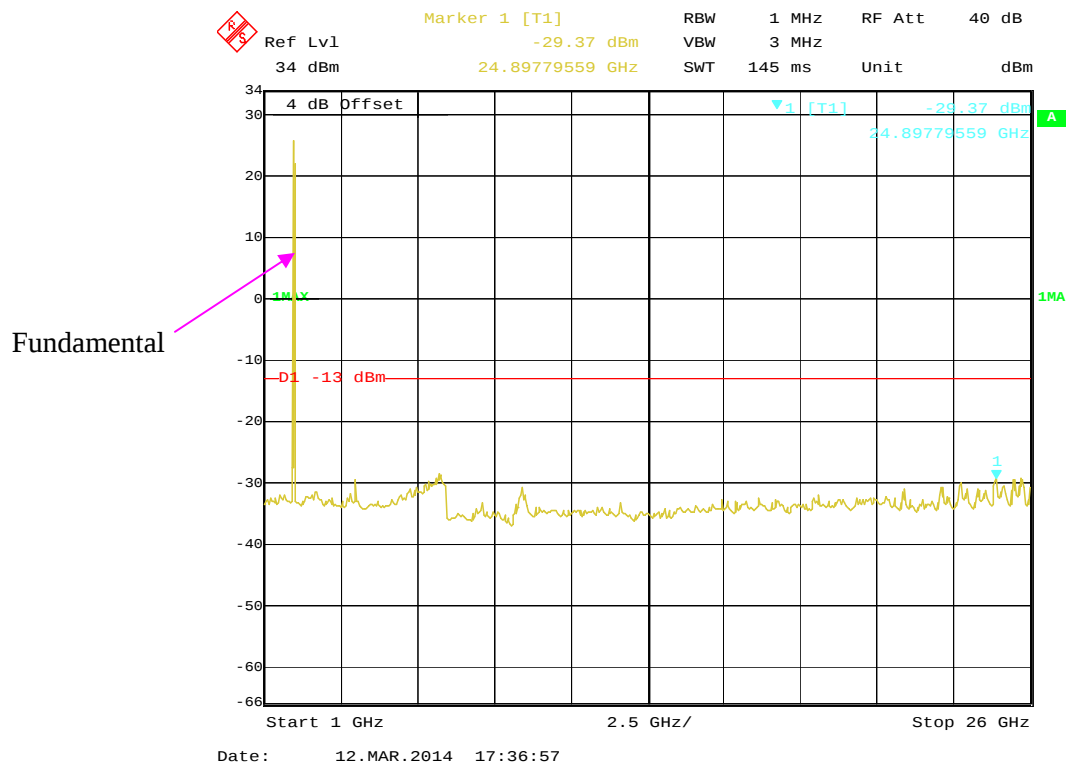
QPSK (10MHz) Mode: 30 MHz – 1 GHz (Low Channel)**QPSK (10MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

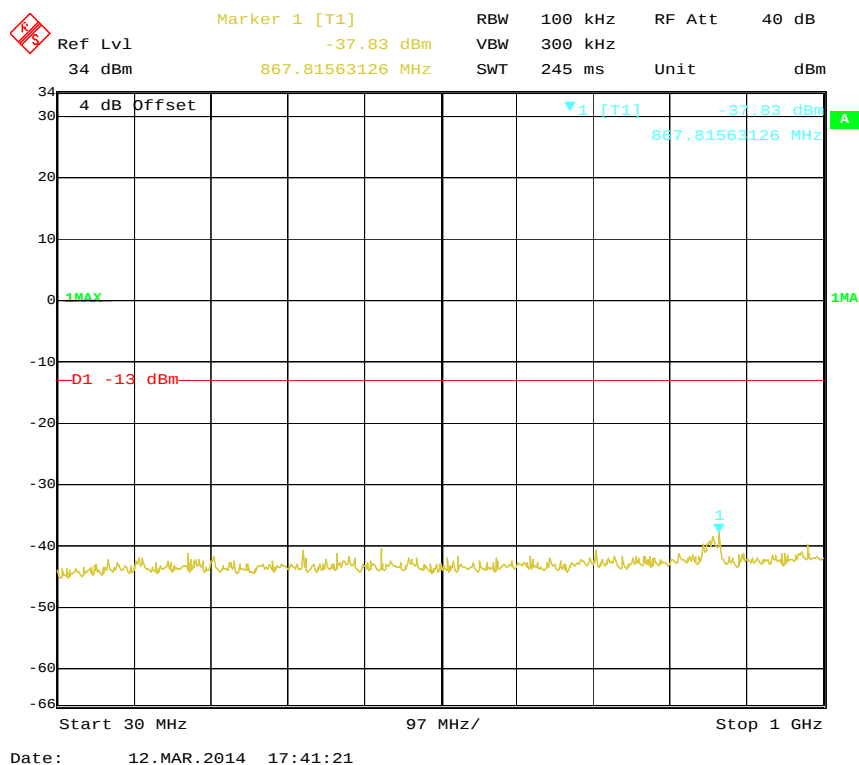
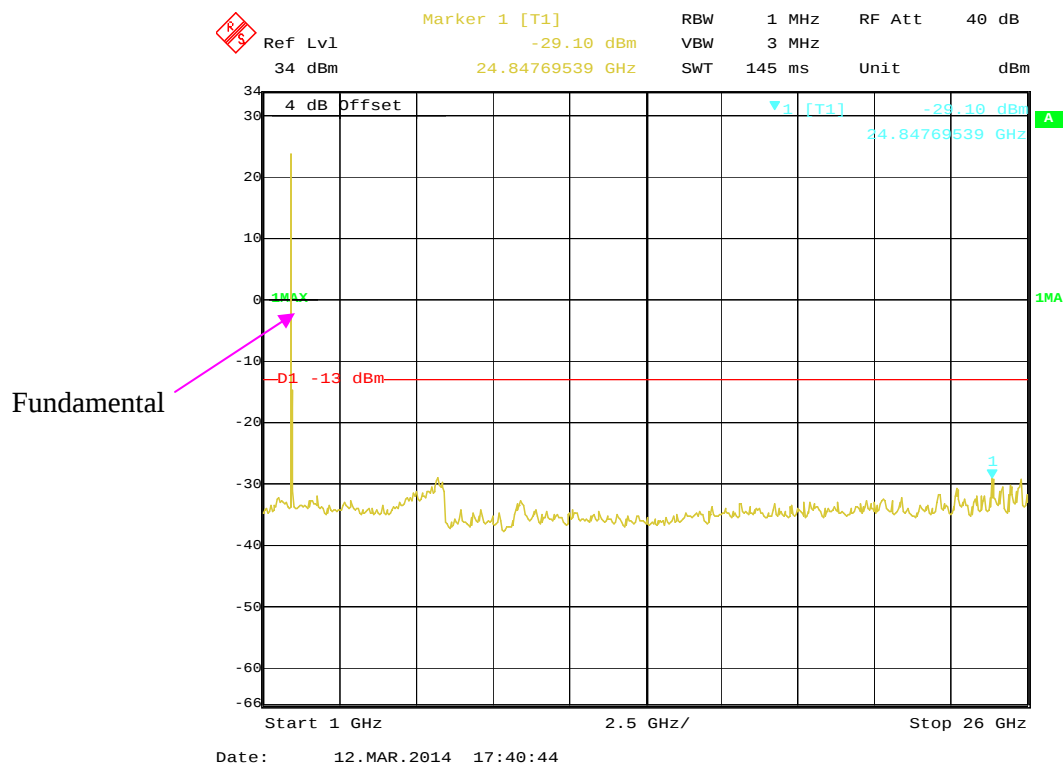
QPSK (10MHz) Mode: 30 MHz – 1 GHz (Middle Channel)

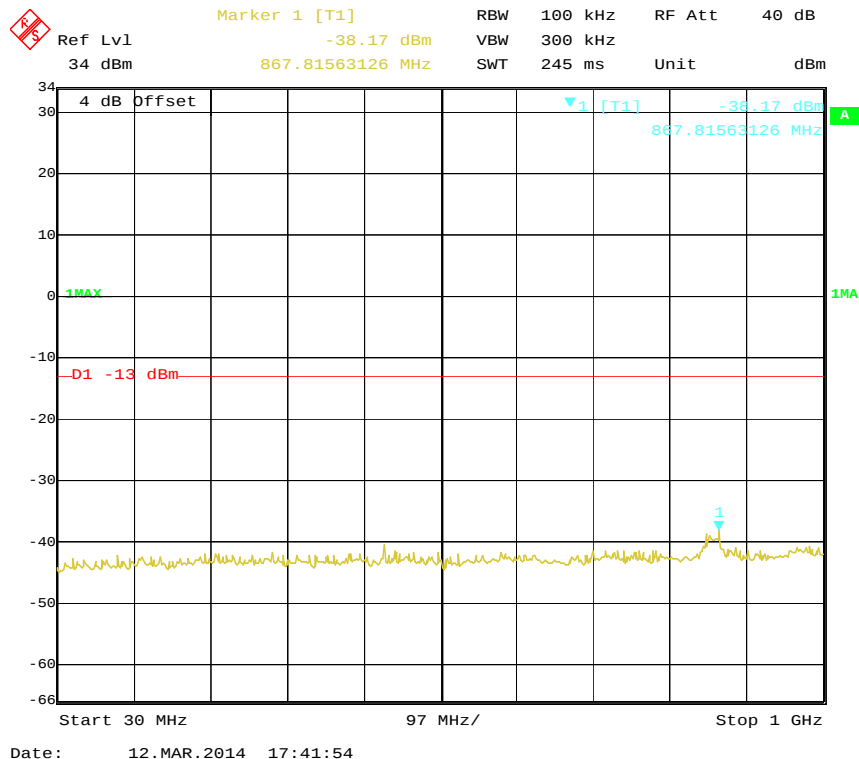
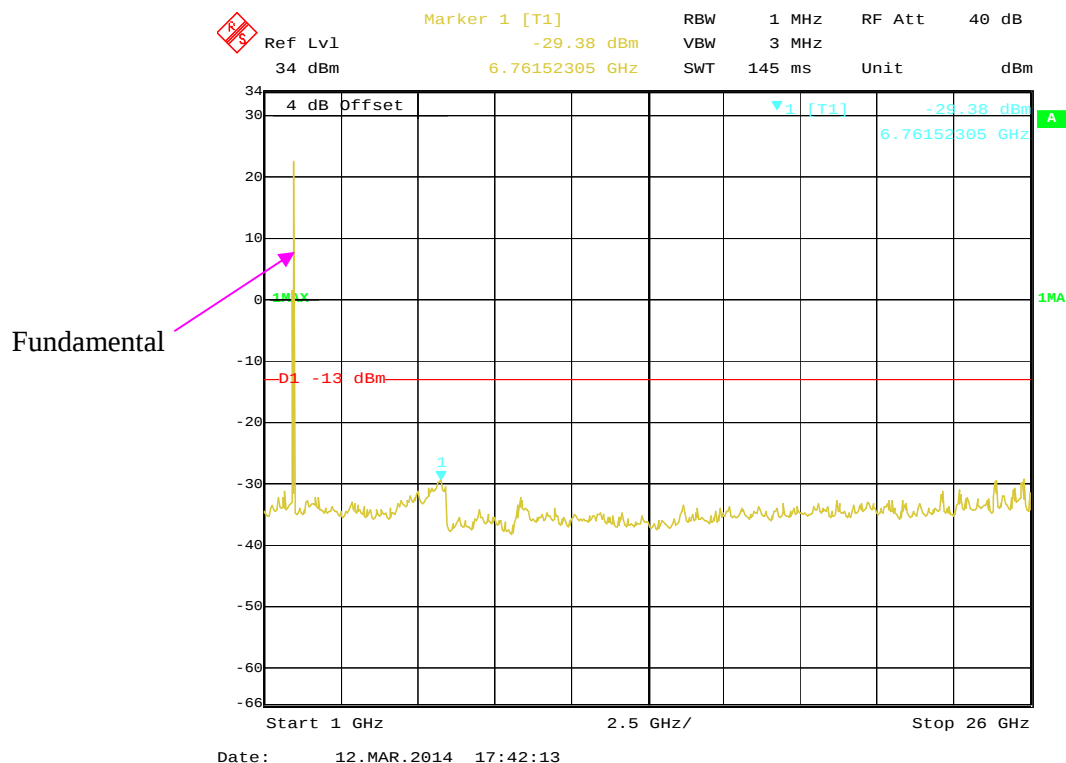


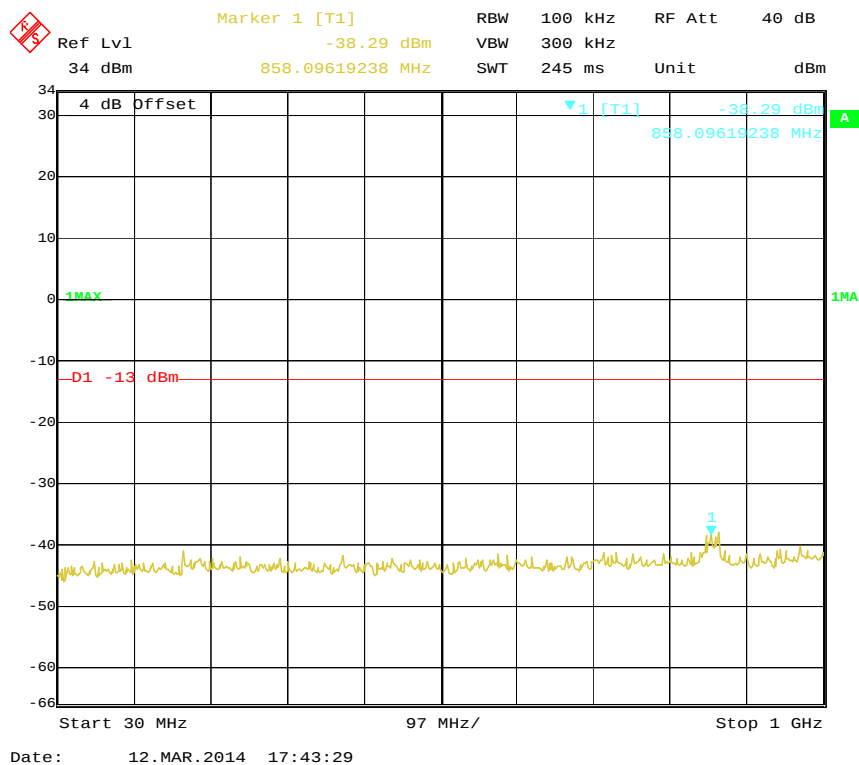
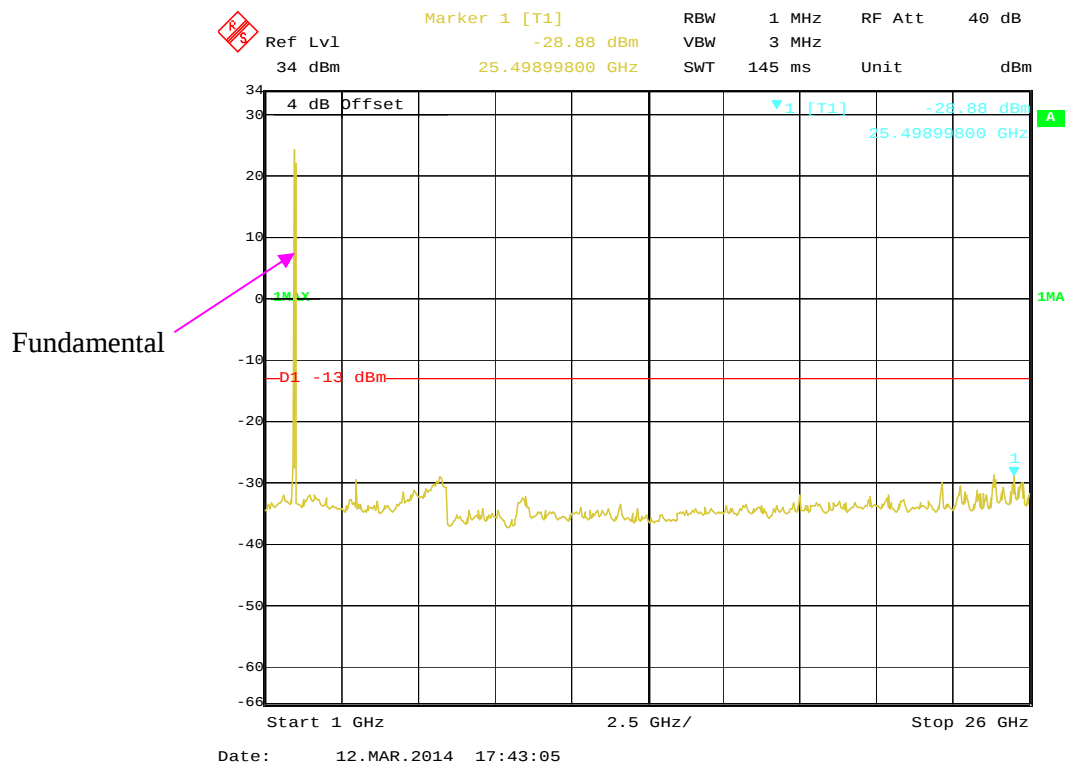
QPSK (10MHz) Mode: 1 GHz – 26 GHz (Middle Channel)

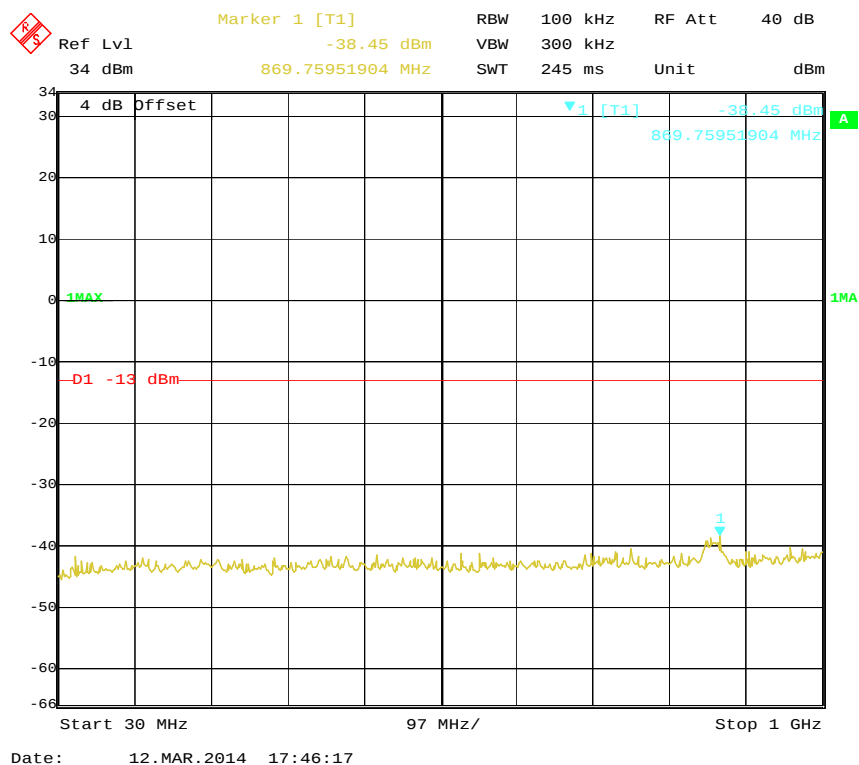
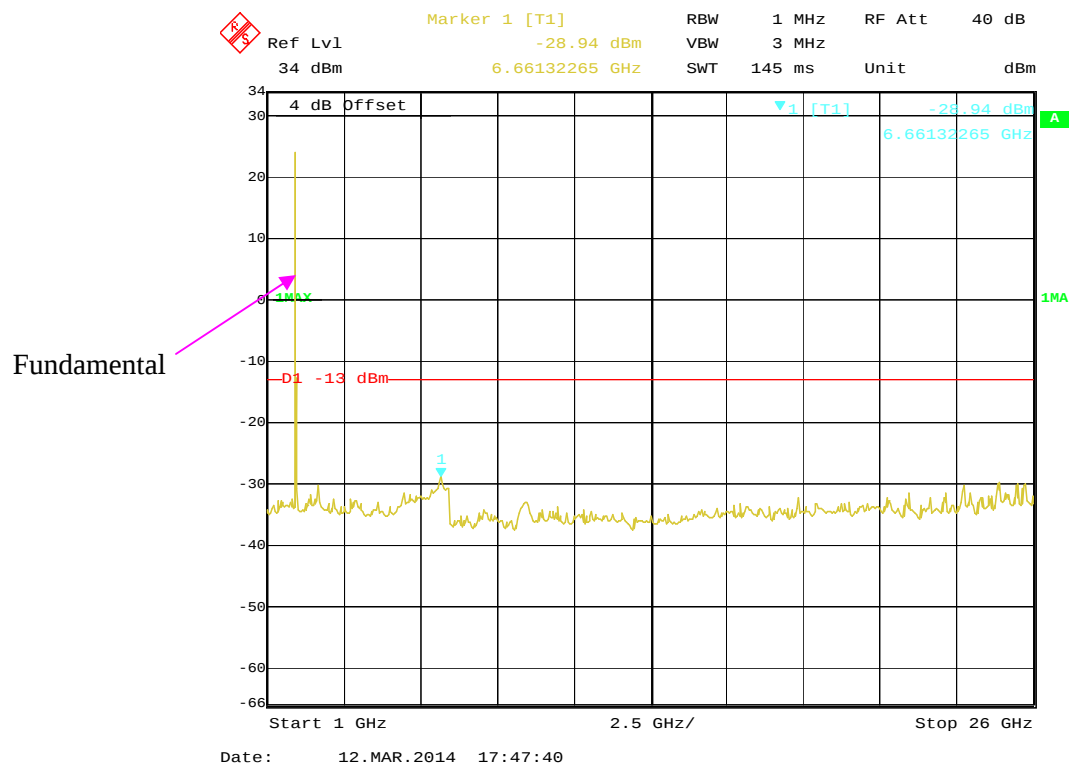


QPSK (10MHz) Mode: 30 MHz – 1 GHz (High Channel)**QPSK (10MHz) Mode: 1 GHz – 26 GHz (High Channel)**

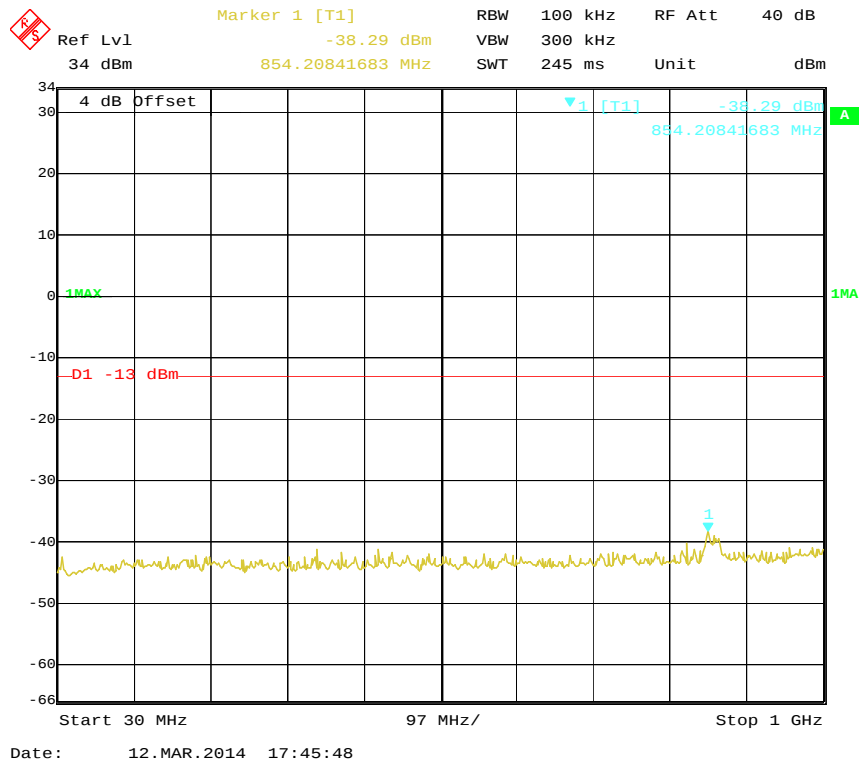
16QAM (10MHz) Mode: 30 MHz – 1 GHz (Low Channel)**16QAM (10MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

16QAM (10MHz) Mode: 30 MHz – 1 GHz (Middle Channel)**16QAM (10MHz) Mode: 1 GHz – 26 GHz (Middle Channel)**

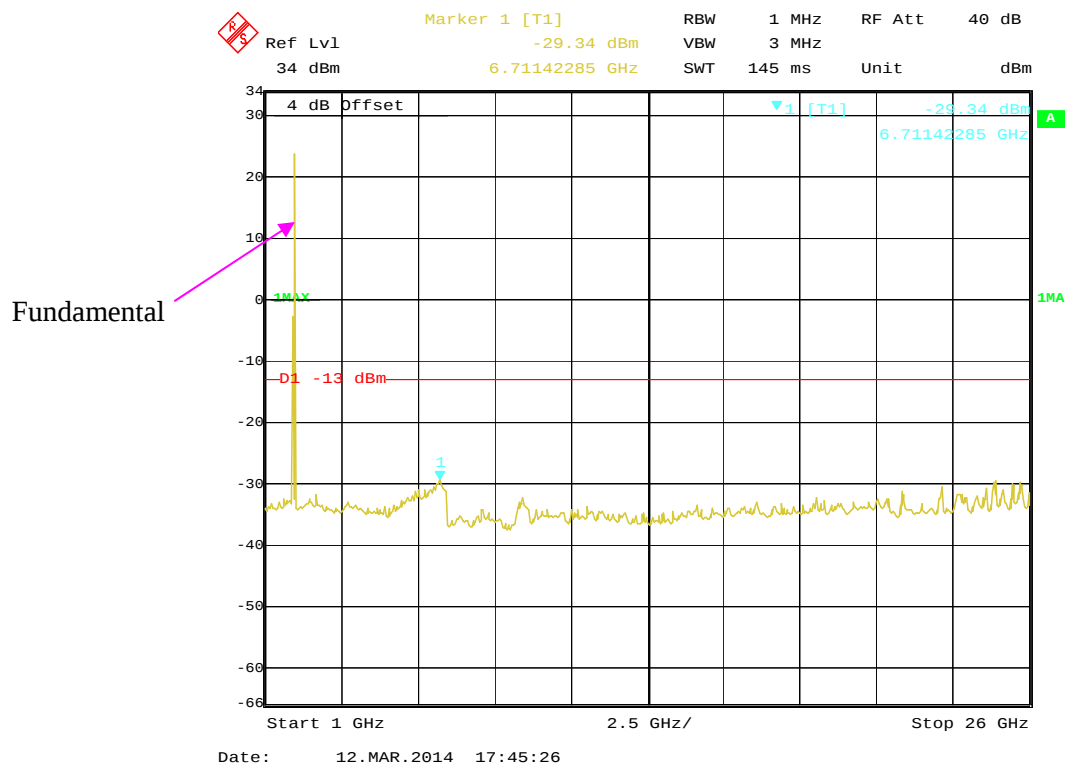
16QAM (10MHz) Mode: 30 MHz – 1 GHz (High Channel)**16QAM (10MHz) Mode: 1 GHz – 26 GHz (High Channel)**

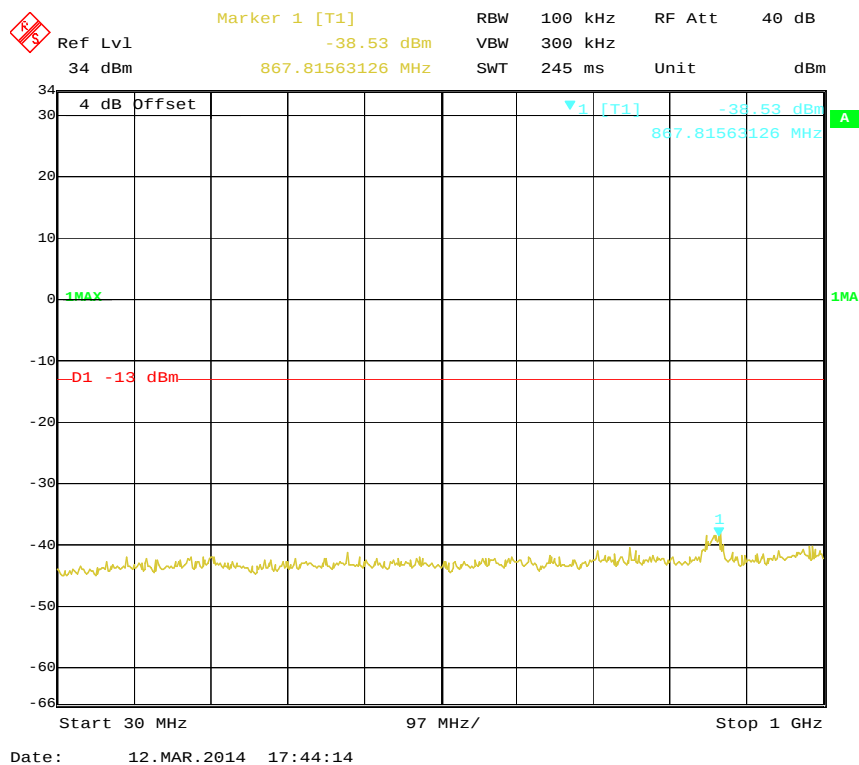
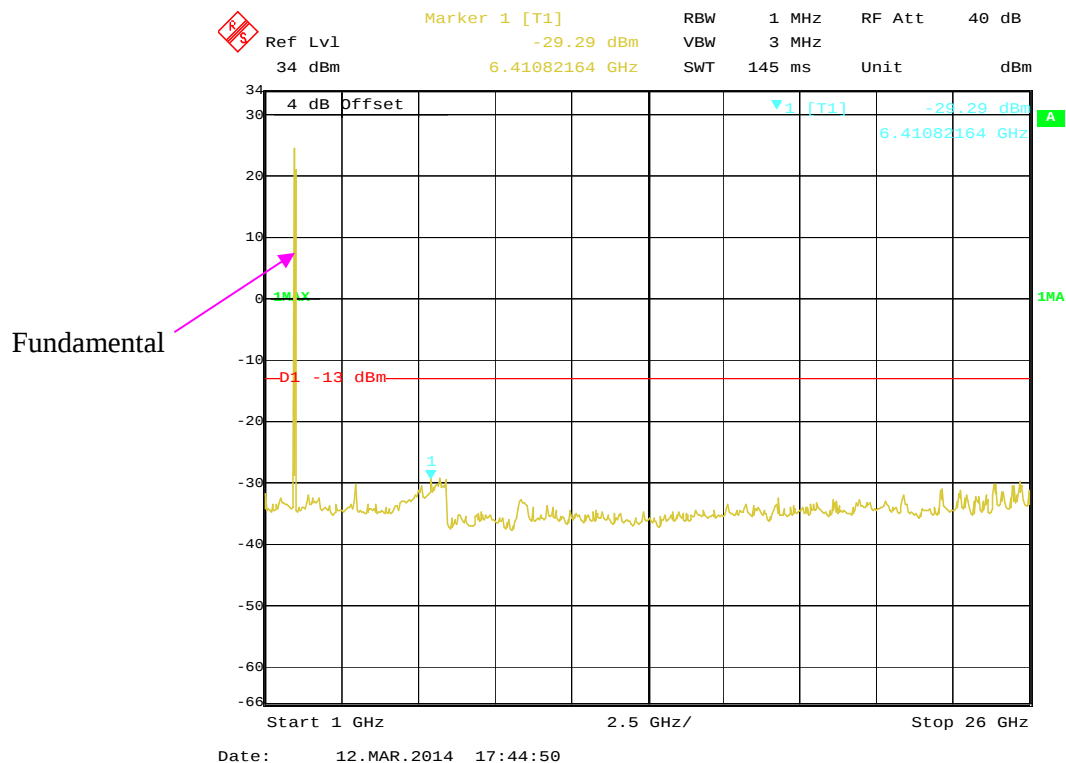
64QAM (10MHz) Mode: 30 MHz – 1 GHz (Low Channel)**64QAM (10MHz) Mode: 1 GHz – 26 GHz (Low Channel)**

64QAM (10MHz) Mode: 30 MHz – 1 GHz (Middle Channel)



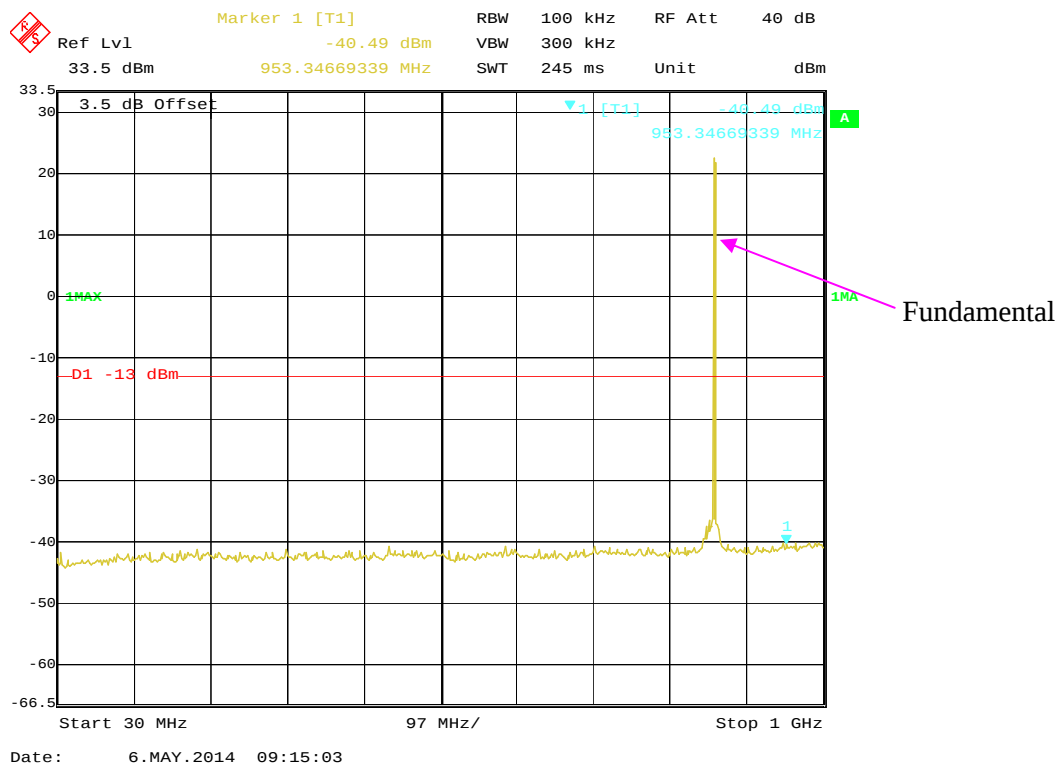
64QAM (10MHz) Mode: 1 GHz – 26 GHz (Middle Channel)



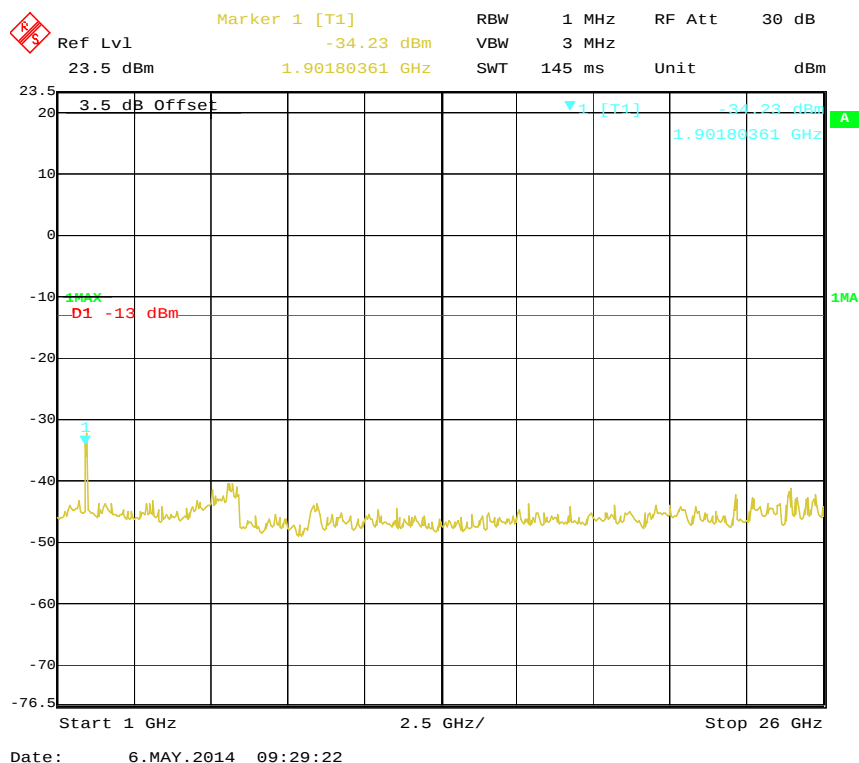
64QAM (10MHz) Mode: 30 MHz – 1 GHz (High Channel)**64QAM (10MHz) Mode: 1 GHz – 26 GHz (High Channel)**

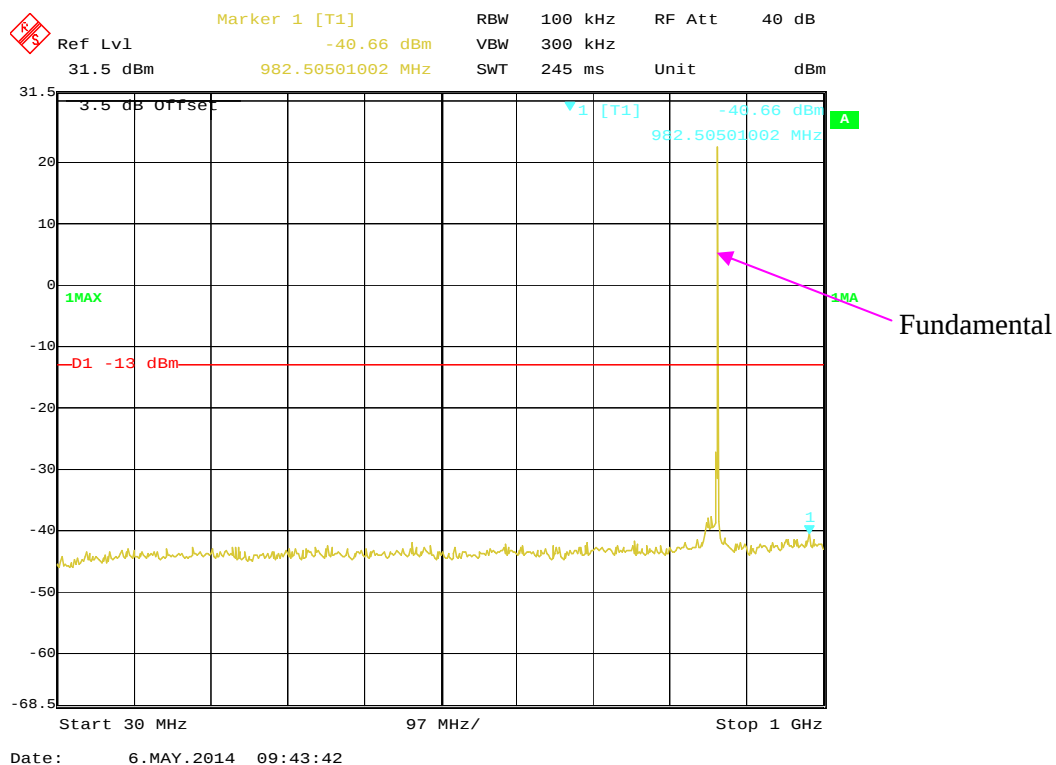
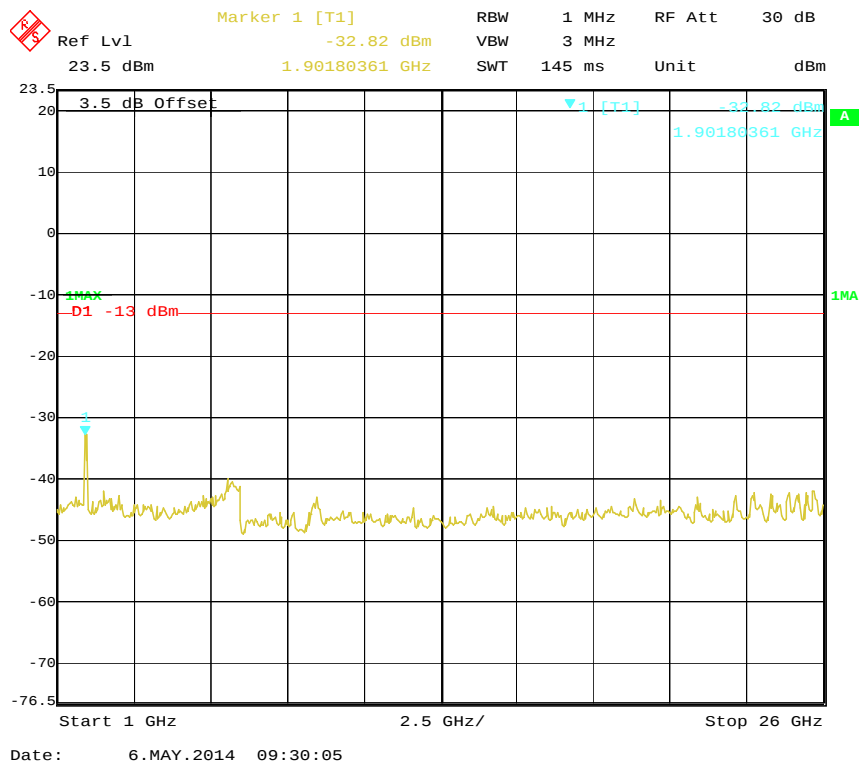
862 ~ 869 MHz:

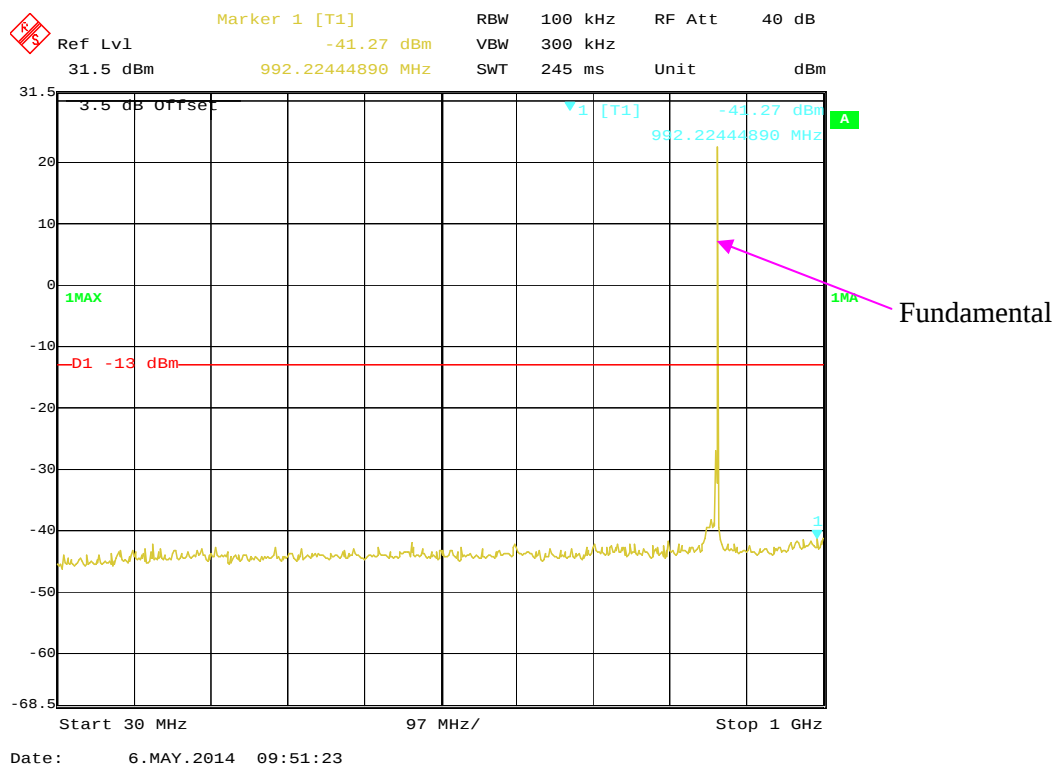
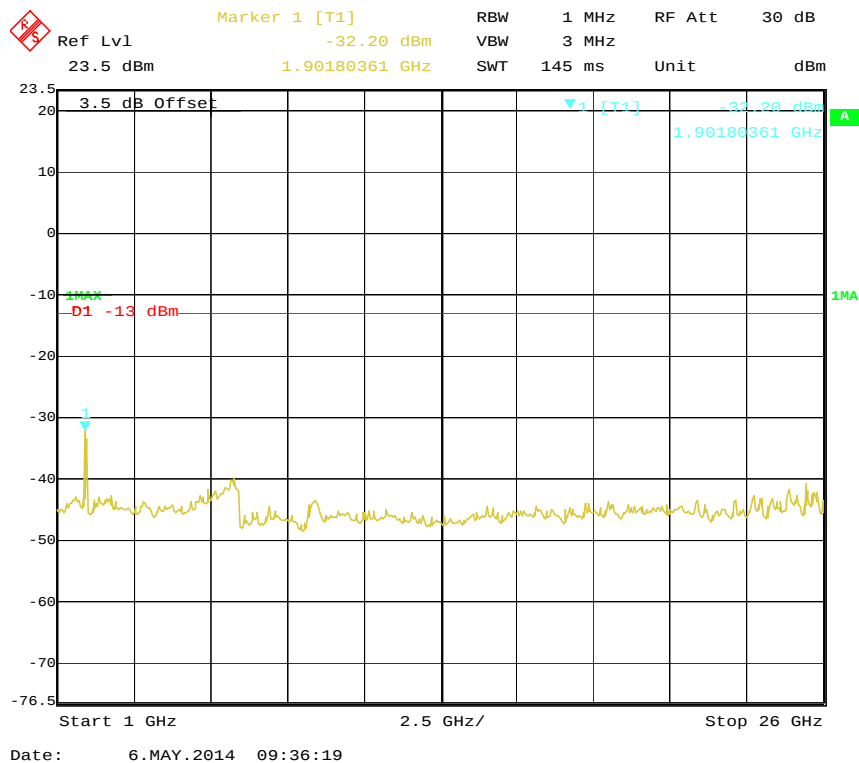
IDEN Mode, 30 MHz – 1 GHz (Low Channel)

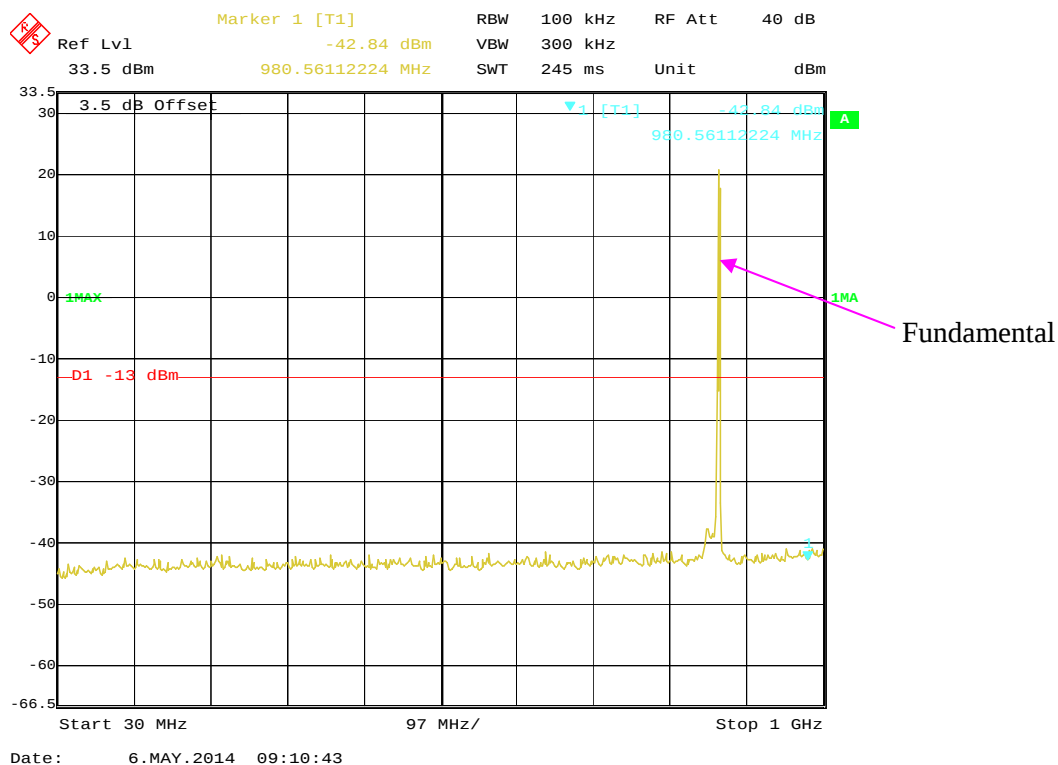
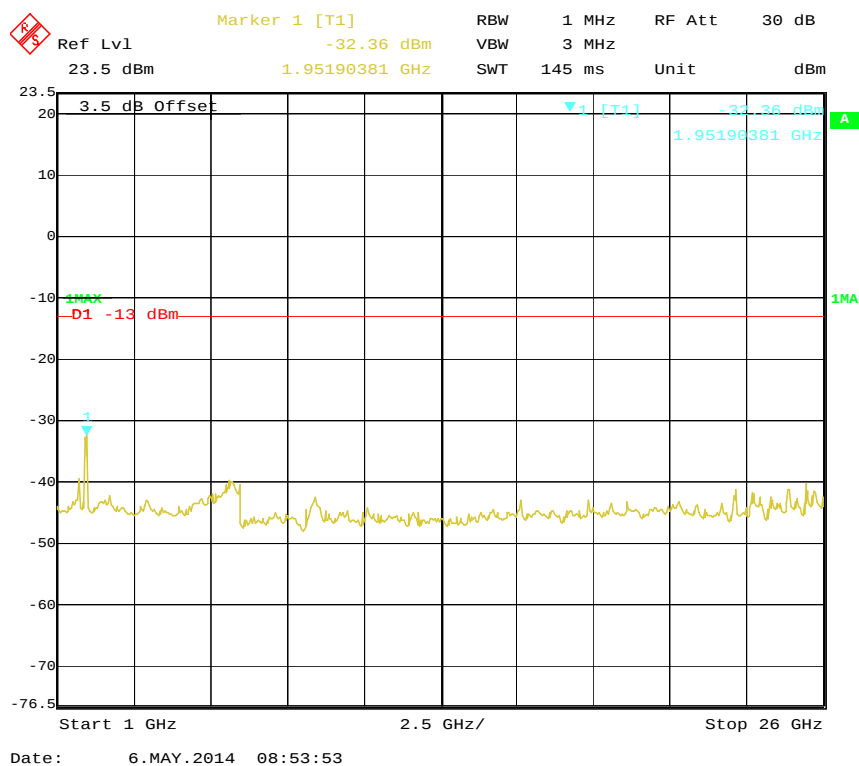


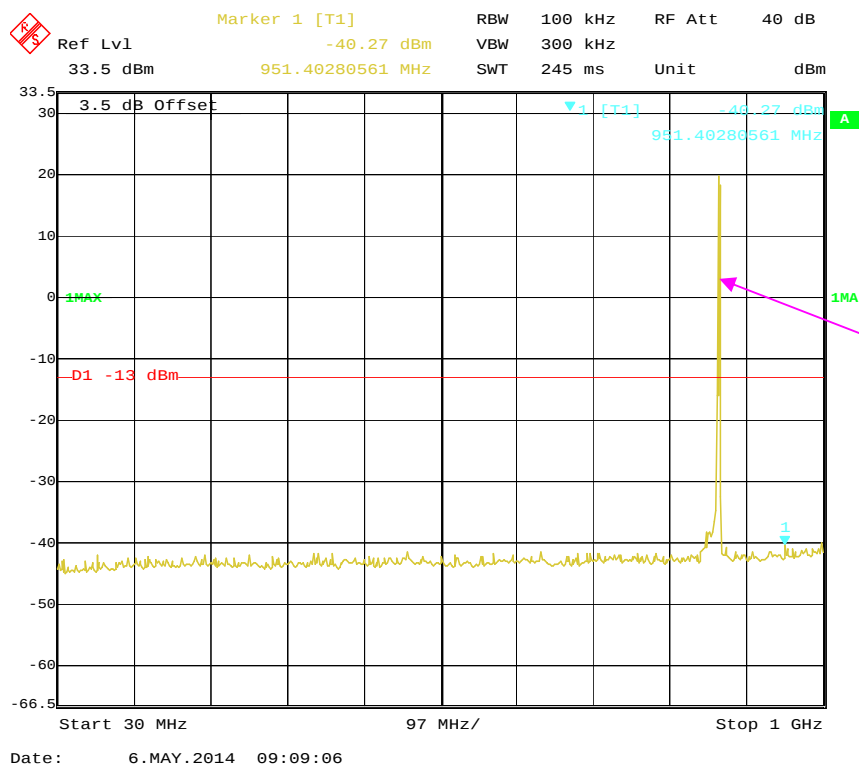
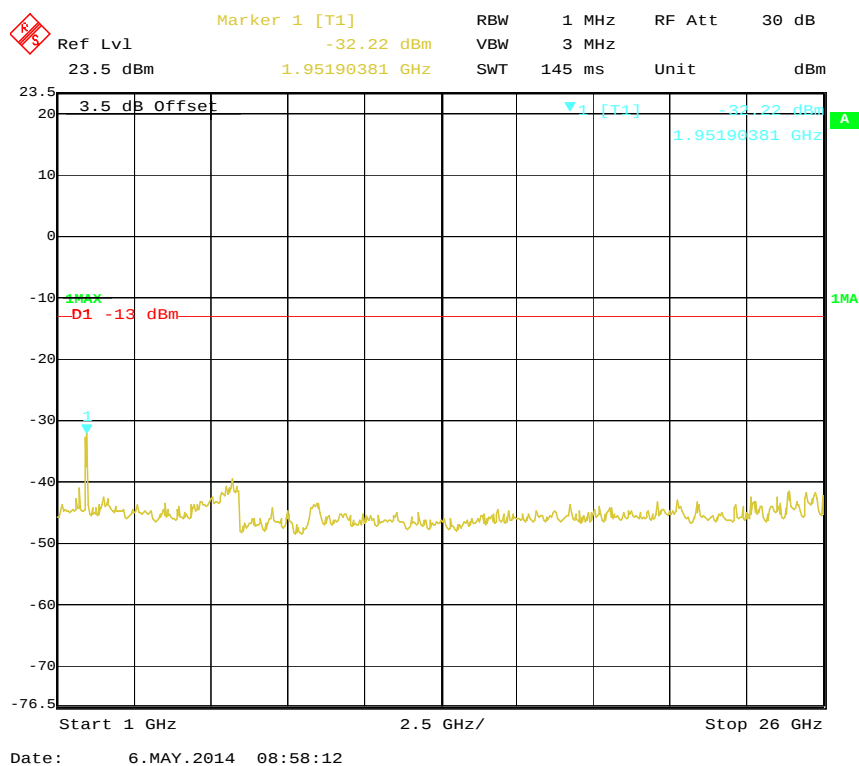
IDEN Mode, 1 GHz – 26 GHz (Low Channel)

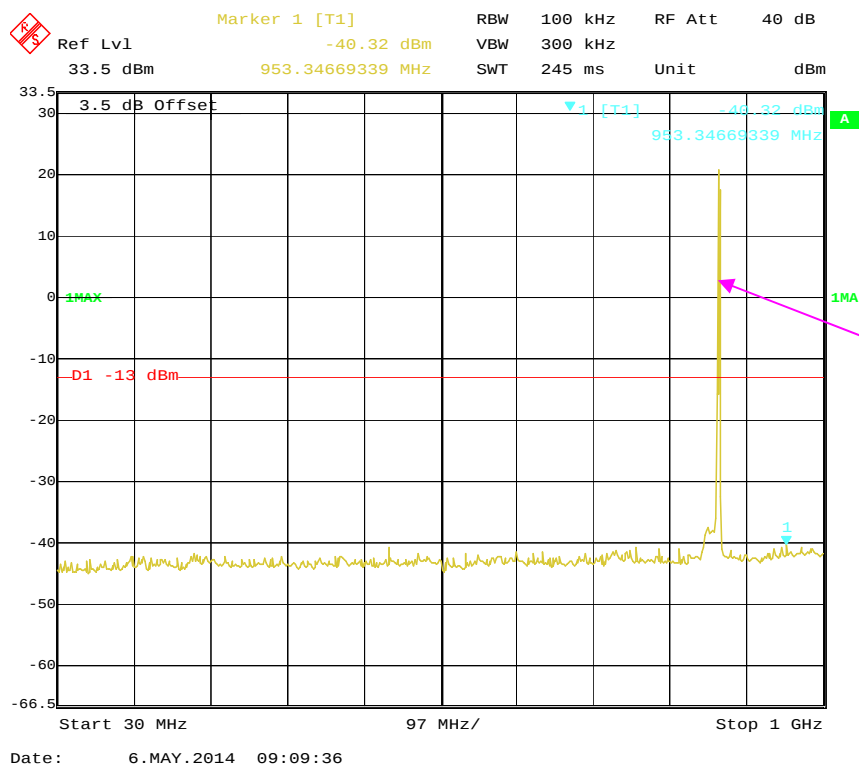
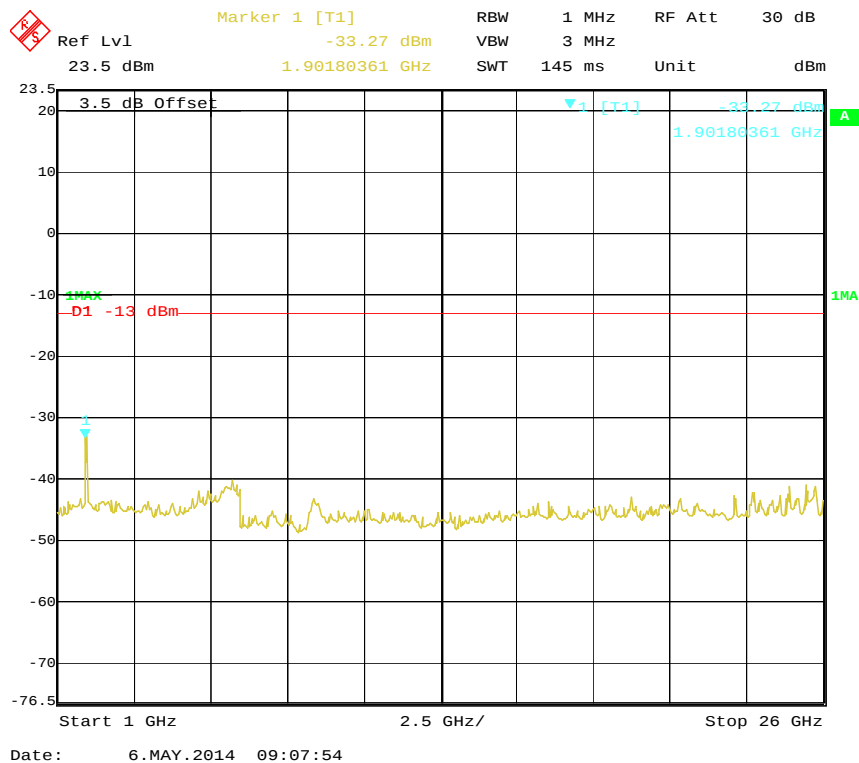


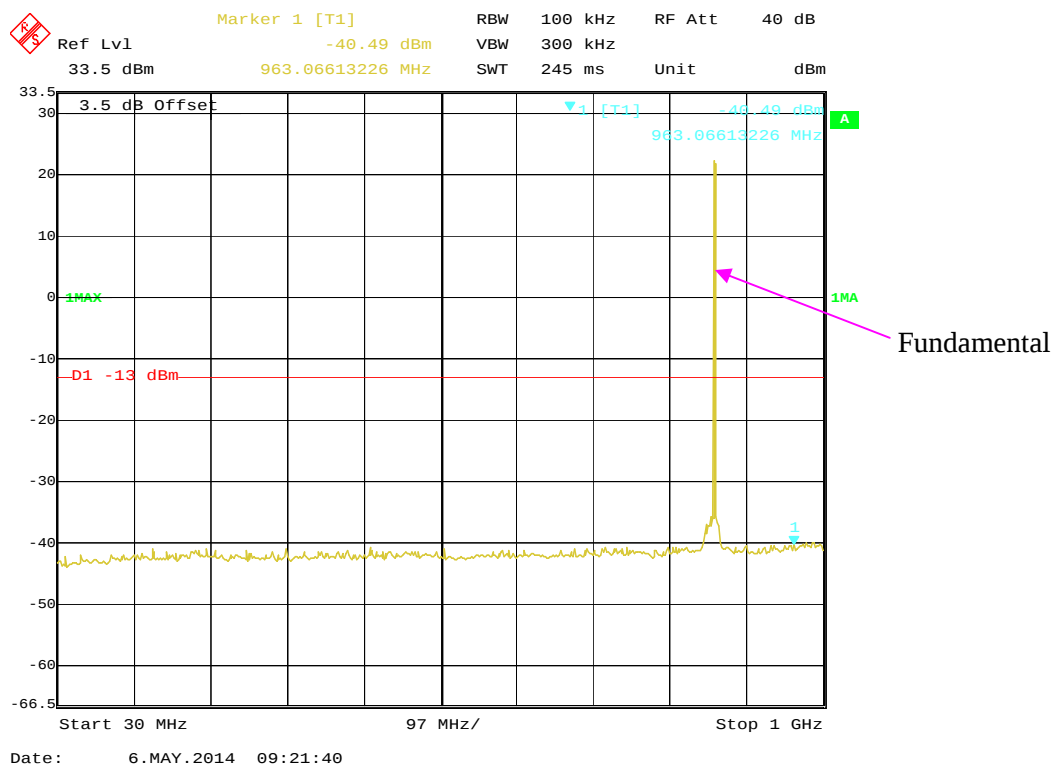
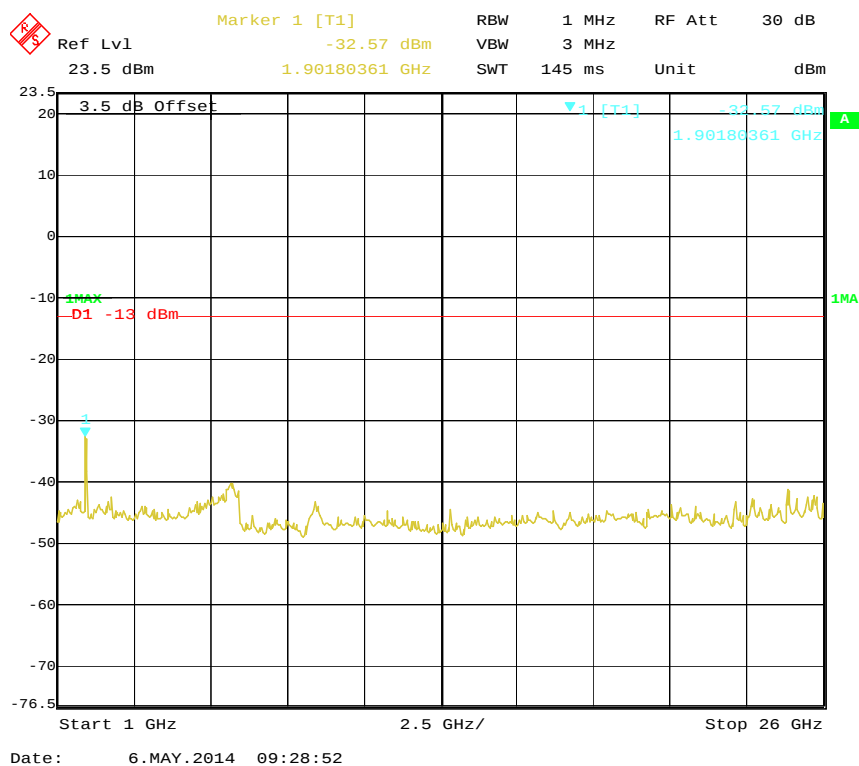
IDEN Mode, 30 MHz – 1 GHz, Middle Channel**IDEN Mode, 1 GHz – 26 GHz, Middle Channel**

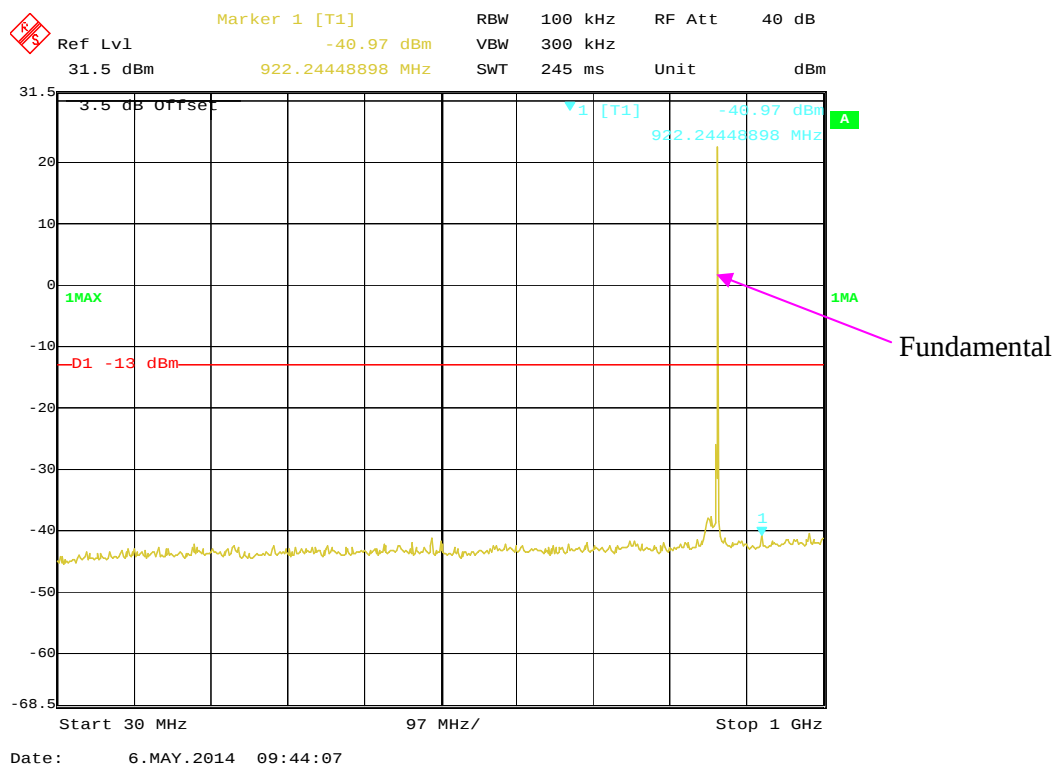
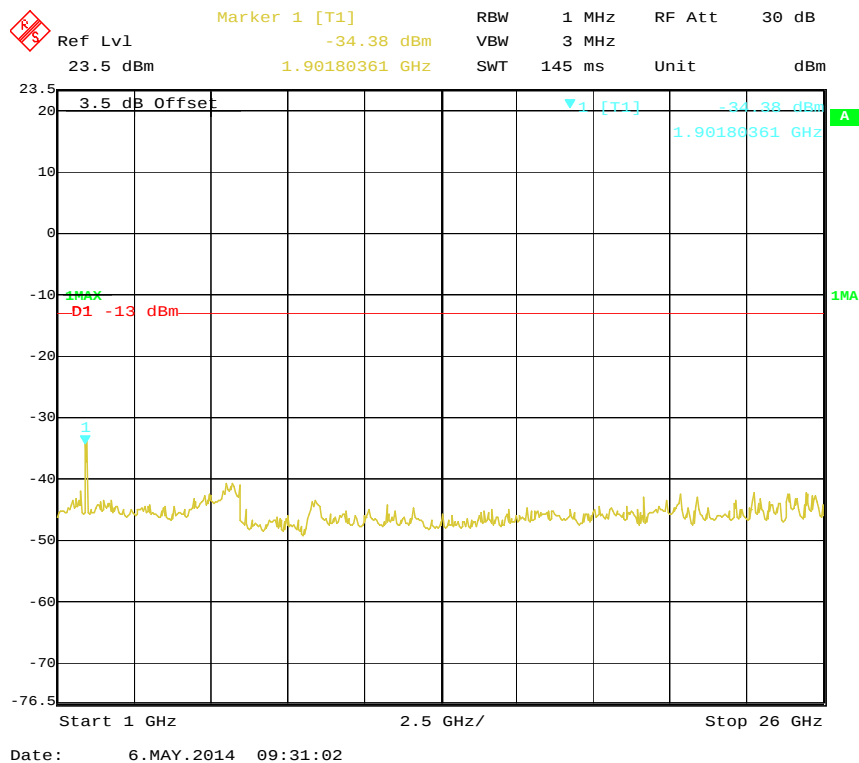
IDEN Mode, 30 MHz – 1 GHz, High Channel**IDEN Mode, 1 GHz – 26 GHz, High Channel**

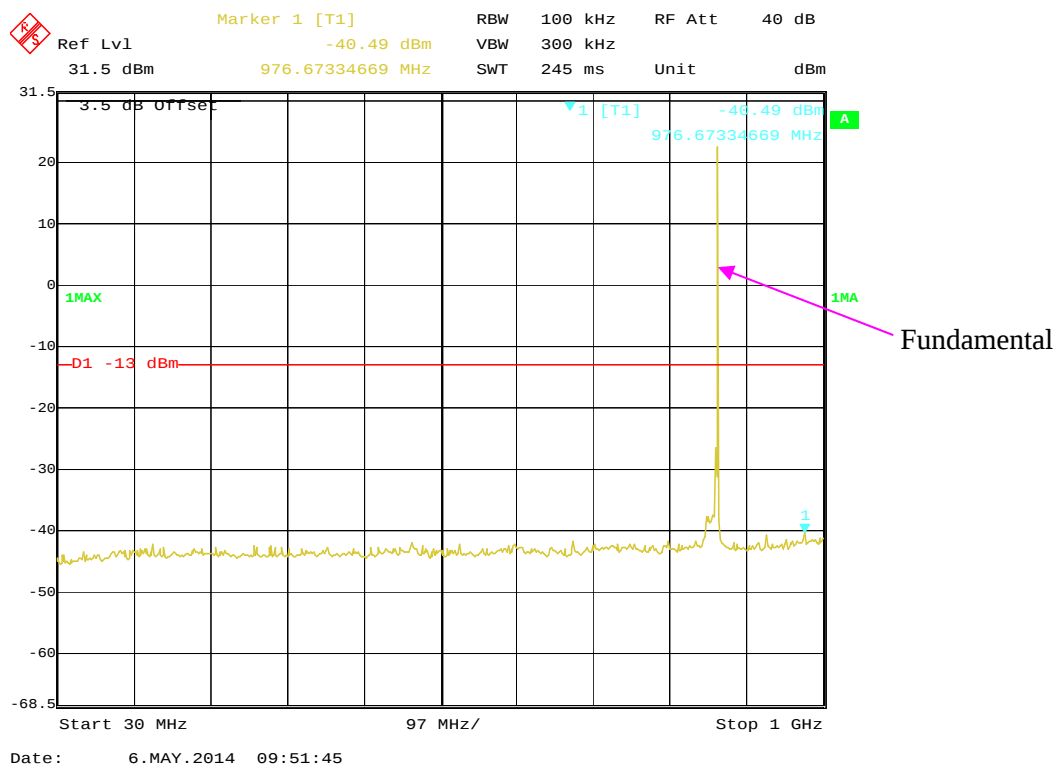
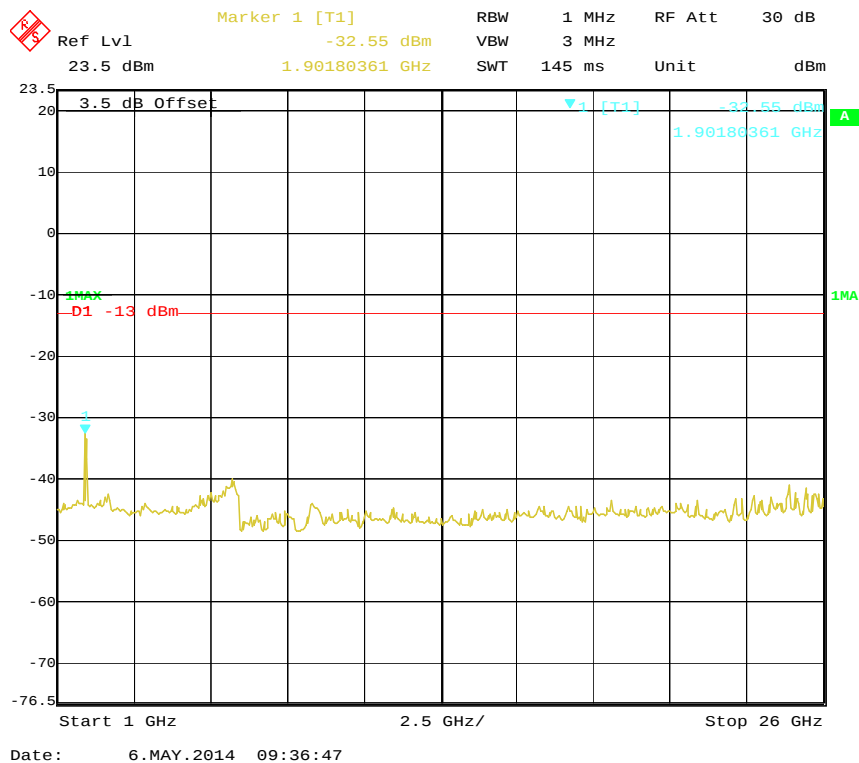
CDMA Mode, 30 MHz – 1 GHz, Low Channel**CDMA Mode, 1 GHz – 26 GHz, Low Channel**

CDMA Mode, 30 MHz – 1 GHz, Middle Channel**CDMA Mode, 1 GHz – 26 GHz, Middle Channel**

CDMA Mode, 30 MHz – 1 GHz, High Channel**CDMA Mode, 1 GHz – 26 GHz, High Channel**

QPSK (1.4MHz) Mode, 30 MHz – 1 GHz, Low Channel**QPSK (1.4MHz) Mode, 1 GHz – 26 GHz, Low Channel**

QPSK (1.4MHz) Mode, 30 MHz – 1 GHz, Middle Channel**QPSK (1.4MHz) Mode, 1 GHz – 26 GHz, Middle Channel**

QPSK (1.4MHz) Mode, 30 MHz – 1 GHz, High Channel**QPSK (1.4MHz) Mode, 1 GHz – 26 GHz, High Channel**

Ref Lvl 33.5 dBm

Marker 1 [T1] -40.96 dBm

RBW 100 kHz

VBW 300 kHz

SWT 245 ms

RF Att 40 dB

Unit dBm

3.5 dB Offset

1 [T1] -40.96 dBm

883.36673347 MHz

D1 -13 dBm

Start 30 MHz

97 MHz/

Stop 1 GHz

Date: 6.MAY.2014 09:25:01

Fundamental

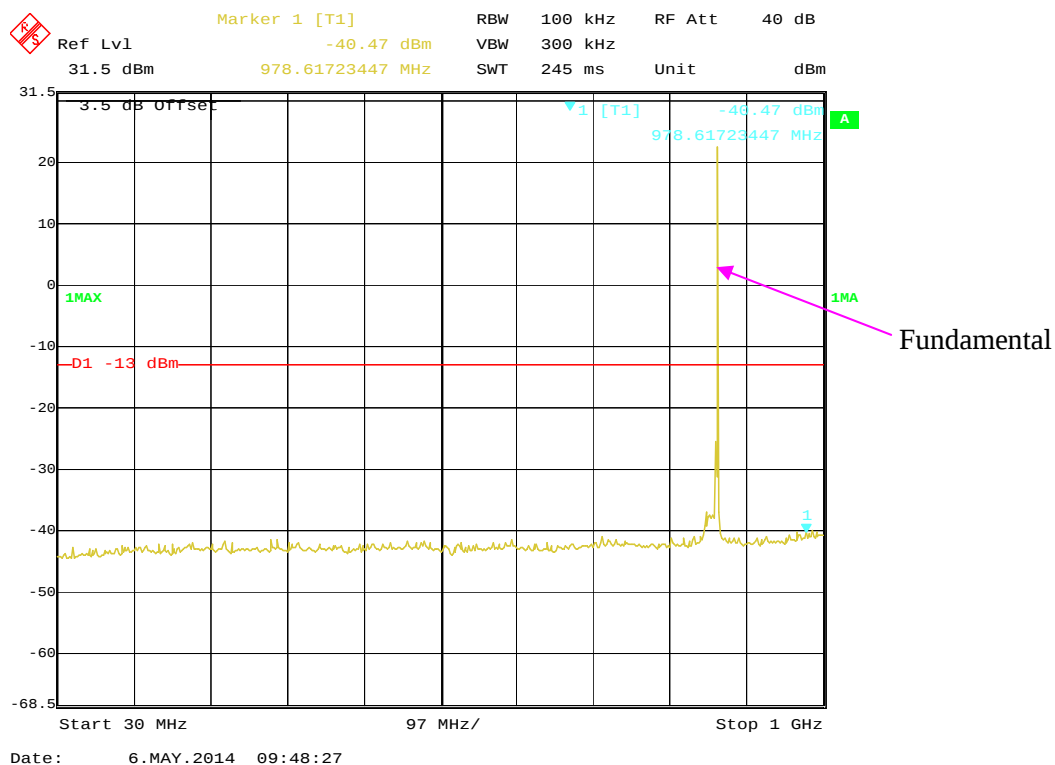
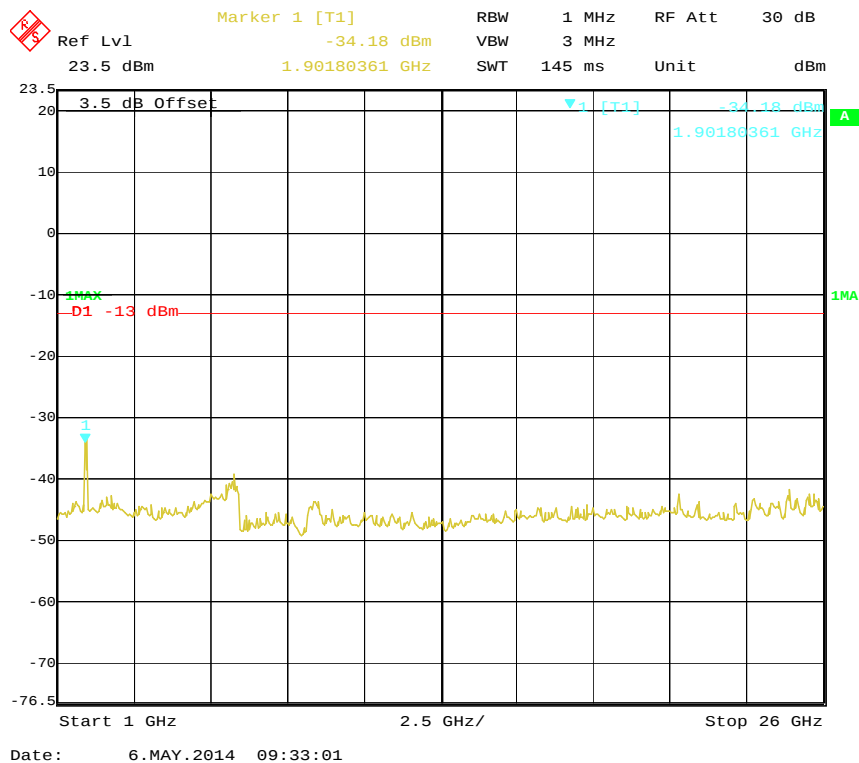
Ref Lvl 23.5 dBm
 Marker 1 [T1] -33.43 dBm
 RBW 1 MHz
 VBW 3 MHz
 RF Att 30 dB
 SWT 145 ms
 Unit
 dBm

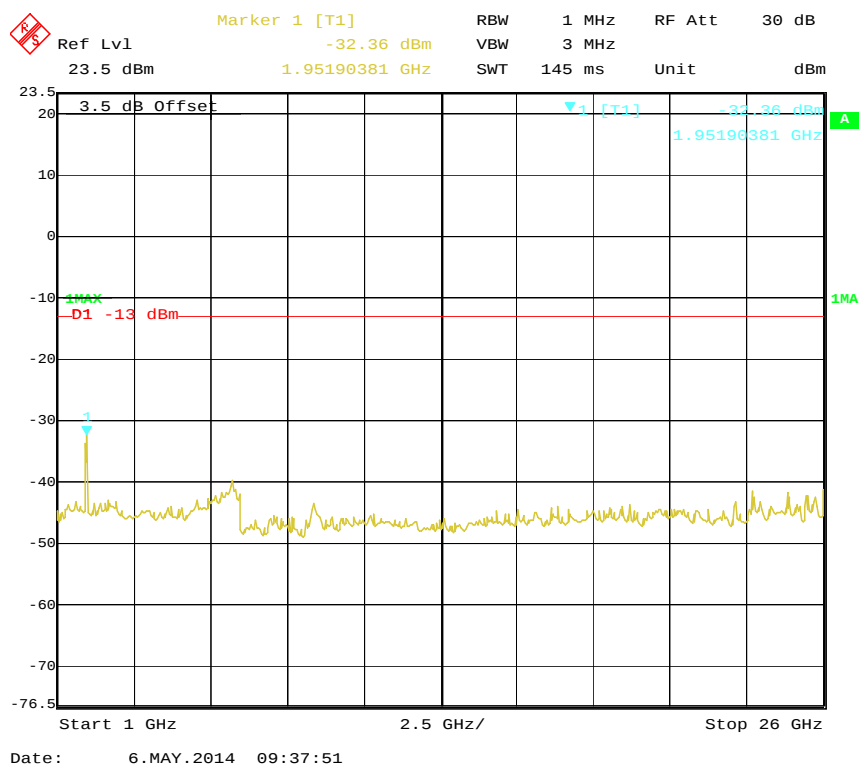
3.5 dB Offset
 1.90180361 GHz
 -33.43 dBm
 1.90180361 GHz

MAX
 D1 -13 dBm

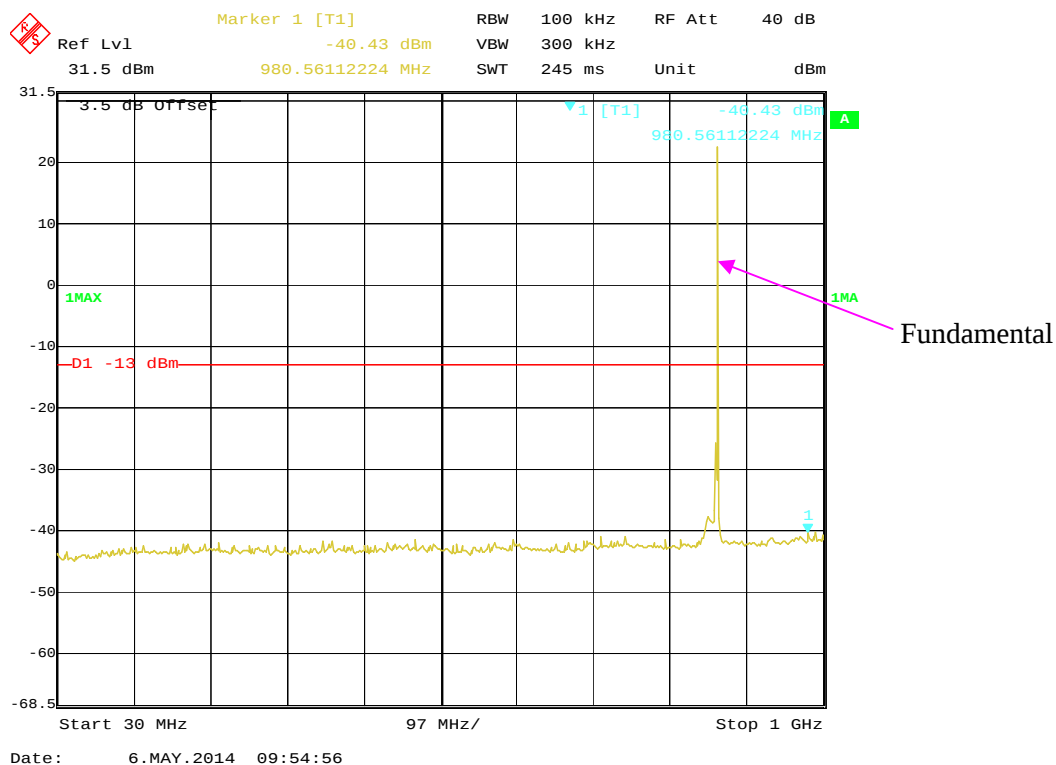
Start 1 GHz
 2.5 GHz/
 Stop 26 GHz

Date: 6.MAY.2014 09:26:52

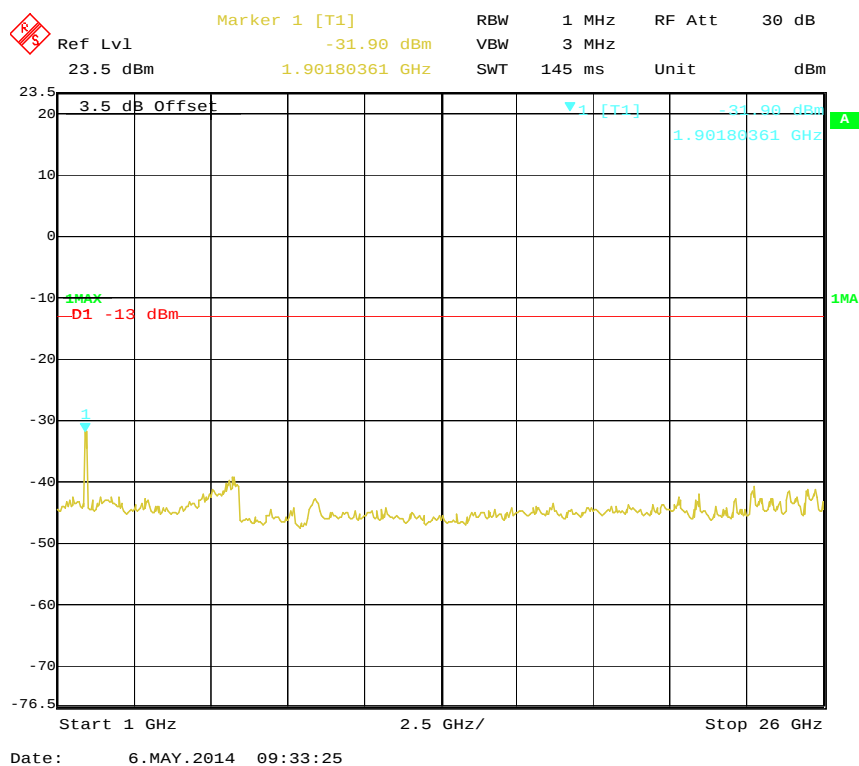
QPSK (3MHz) Mode, 30 MHz – 1 GHz, Middle Channel**QPSK (3MHz) Mode, 1 GHz – 26 GHz, Middle Channel**

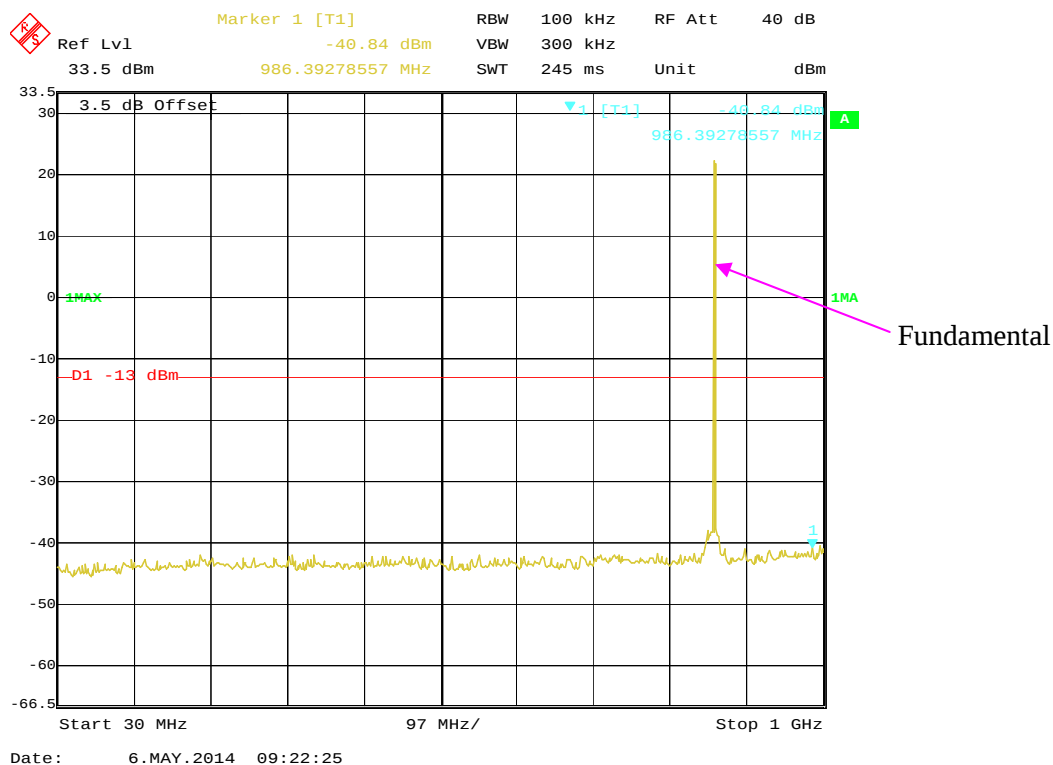
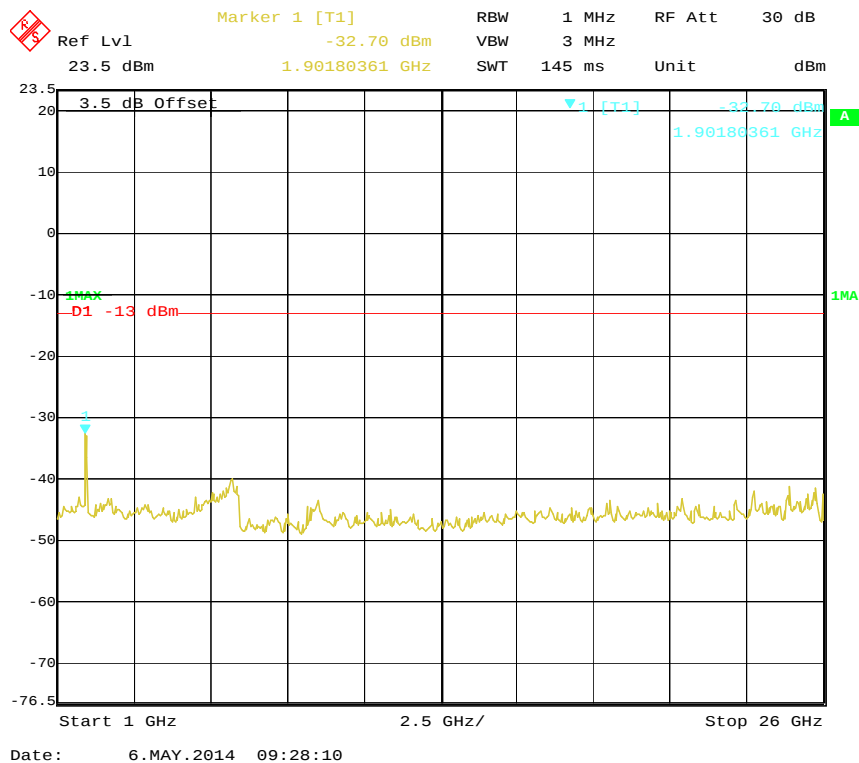
QPSK (3MHz) Mode, 30 MHz – 1 GHz, High Channel**QPSK (3MHz) Mode, 1 GHz – 26 GHz, High Channel**

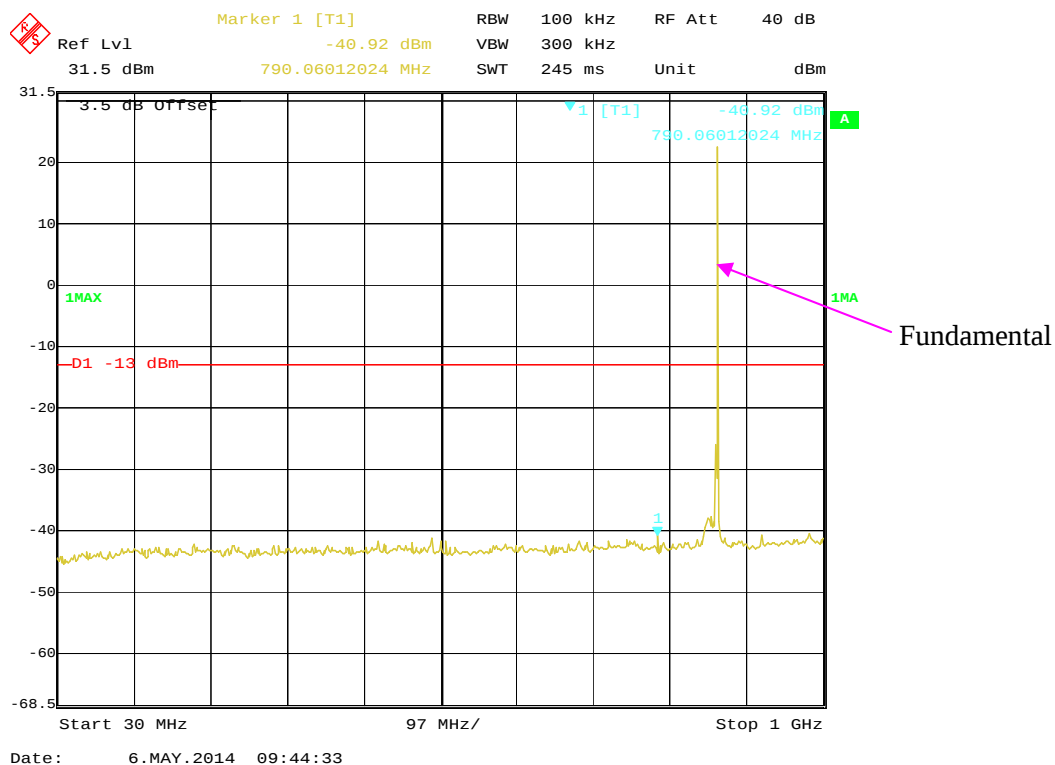
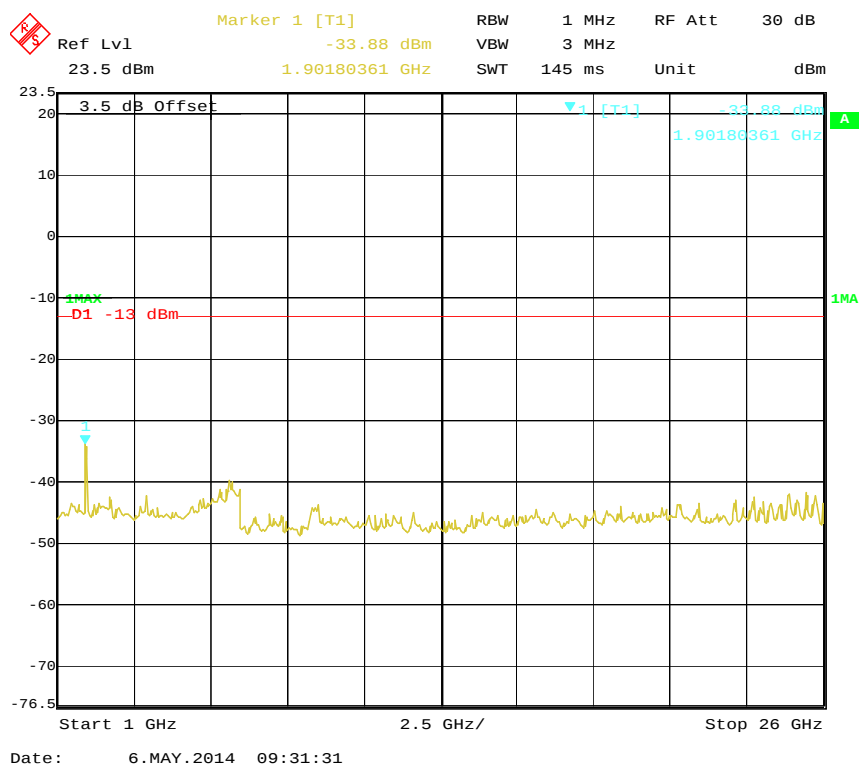
QPSK (5MHz) Mode, 30 MHz – 1 GHz

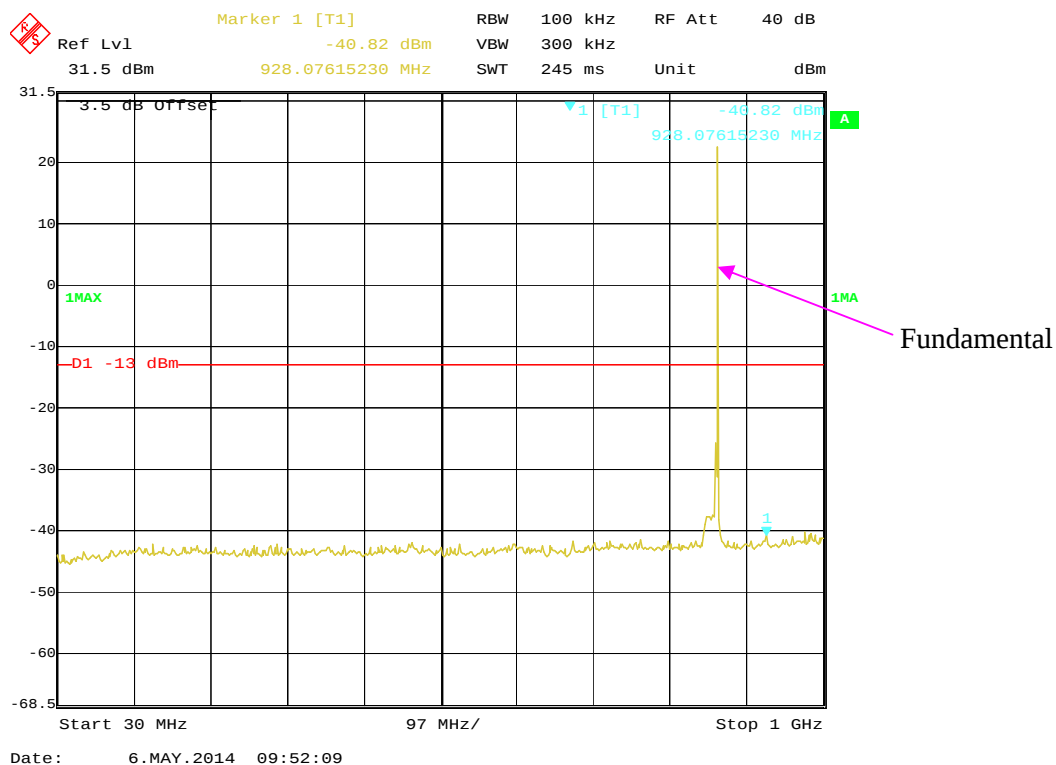
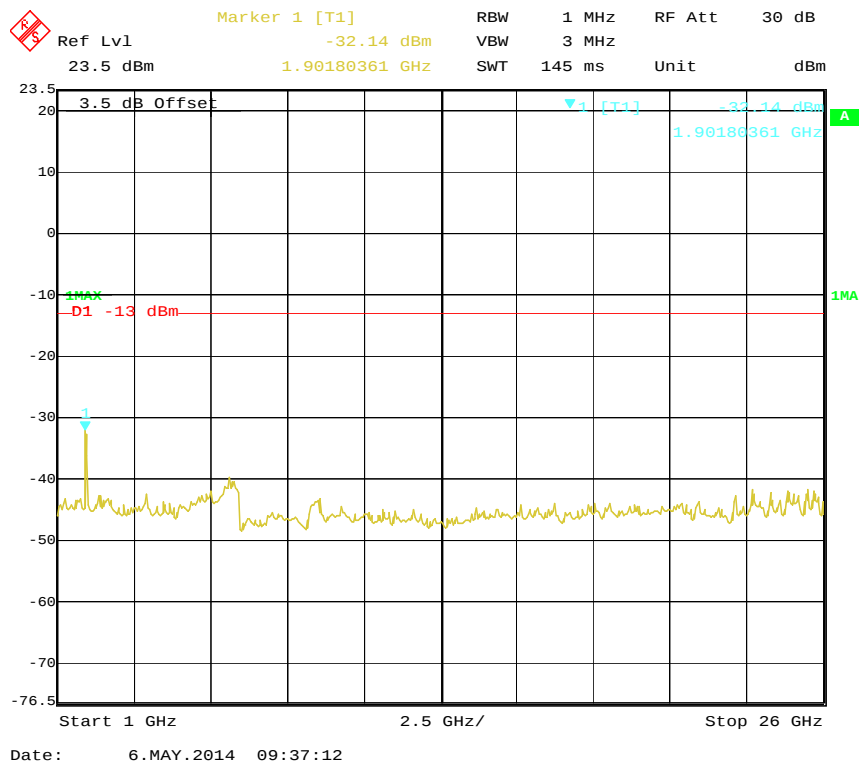


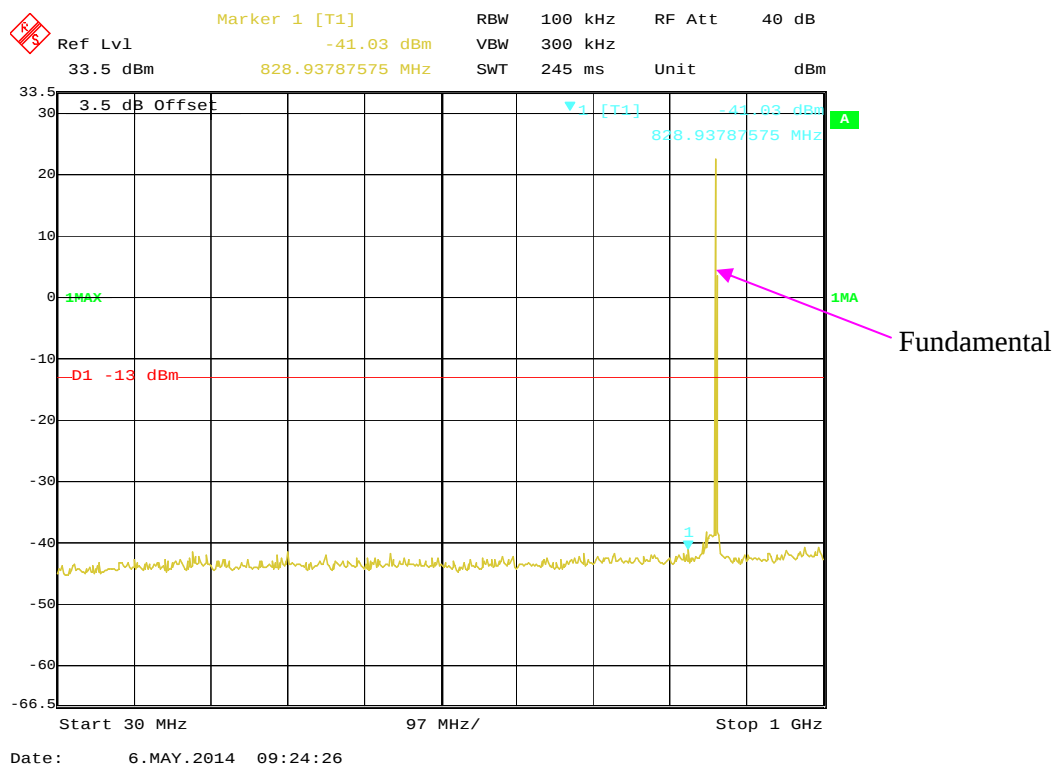
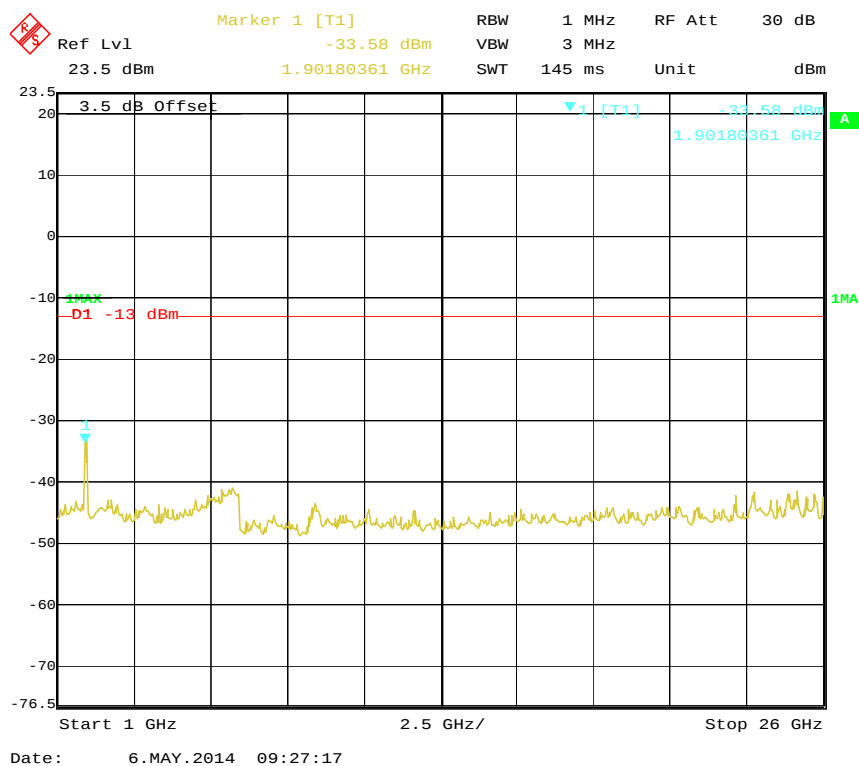
QPSK (5MHz) Mode, 1 GHz – 26 GHz

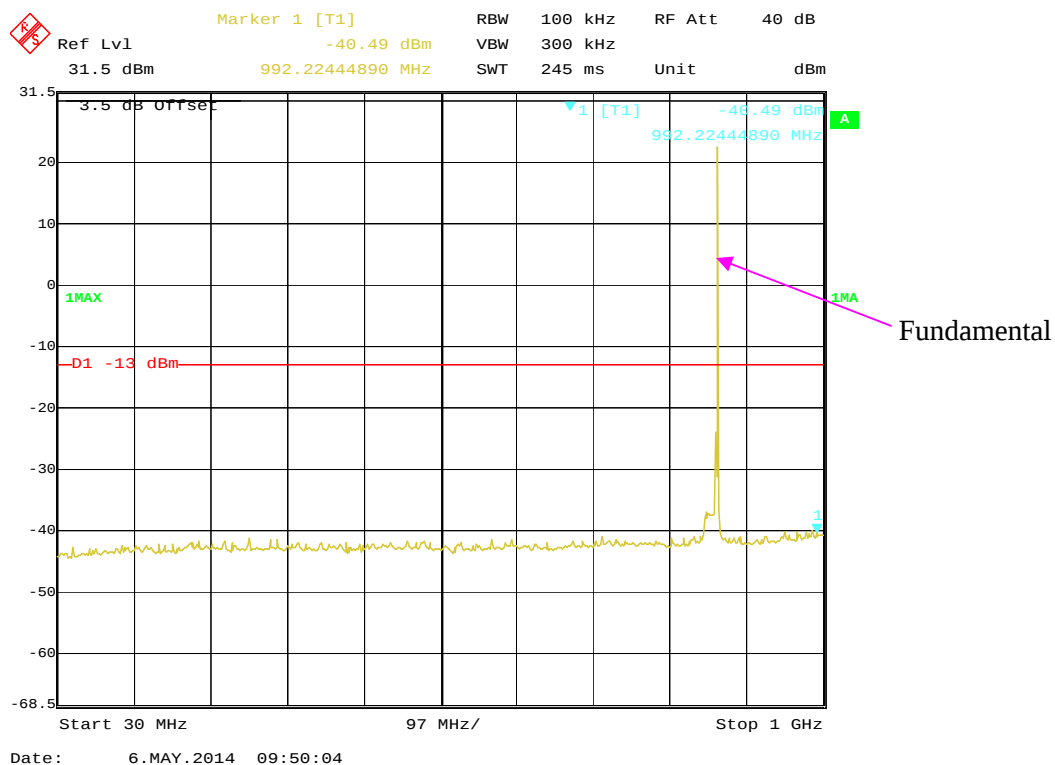
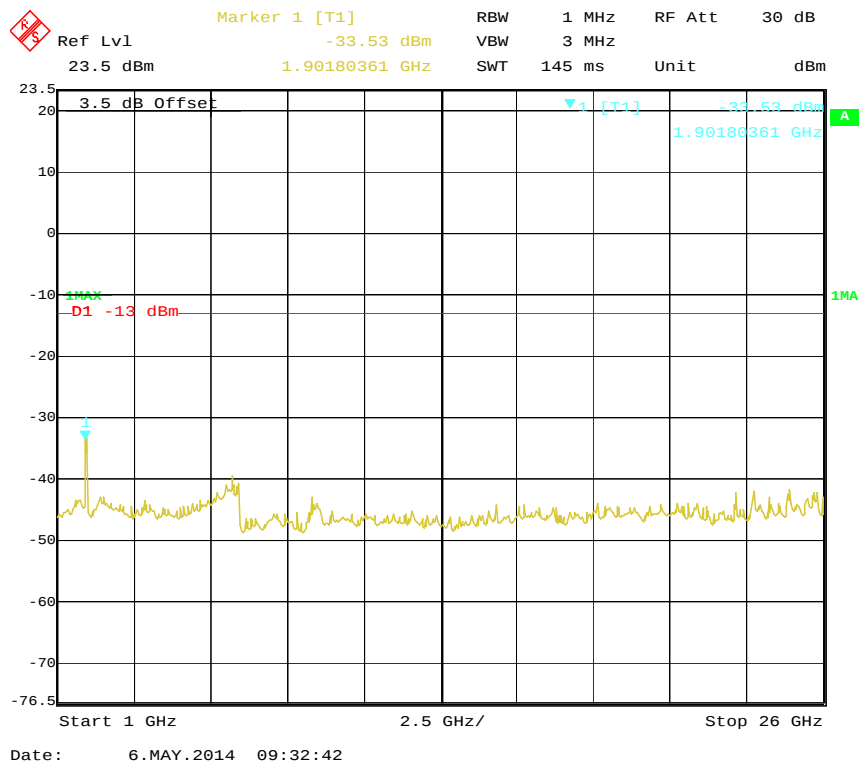


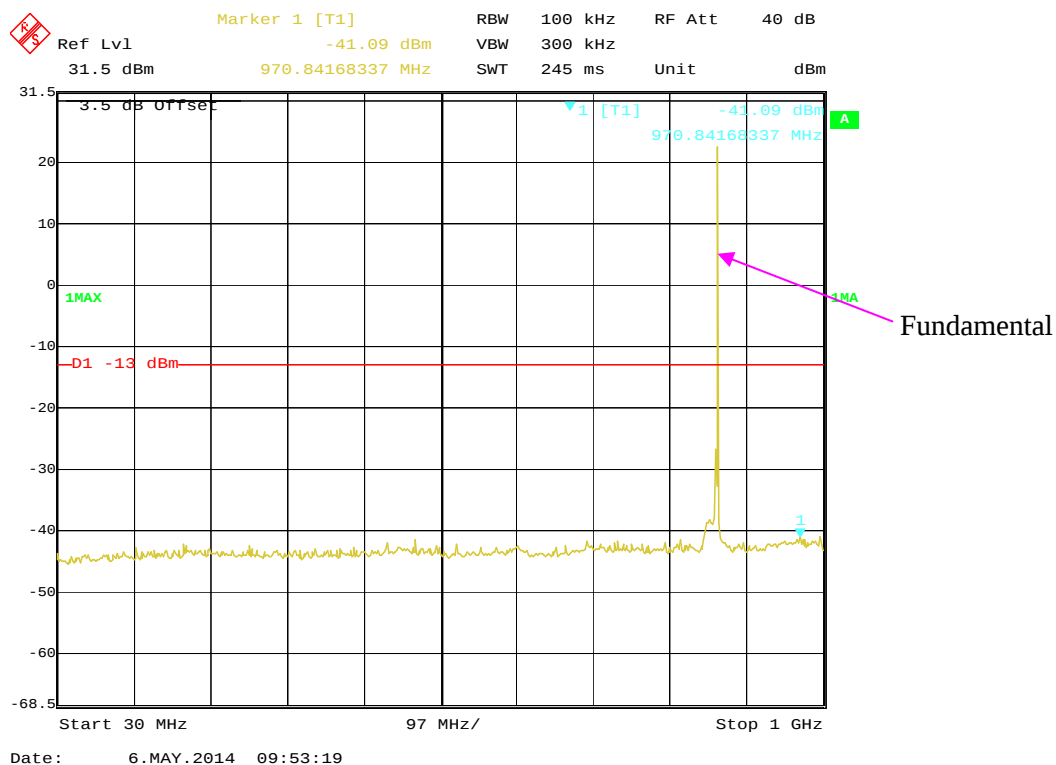
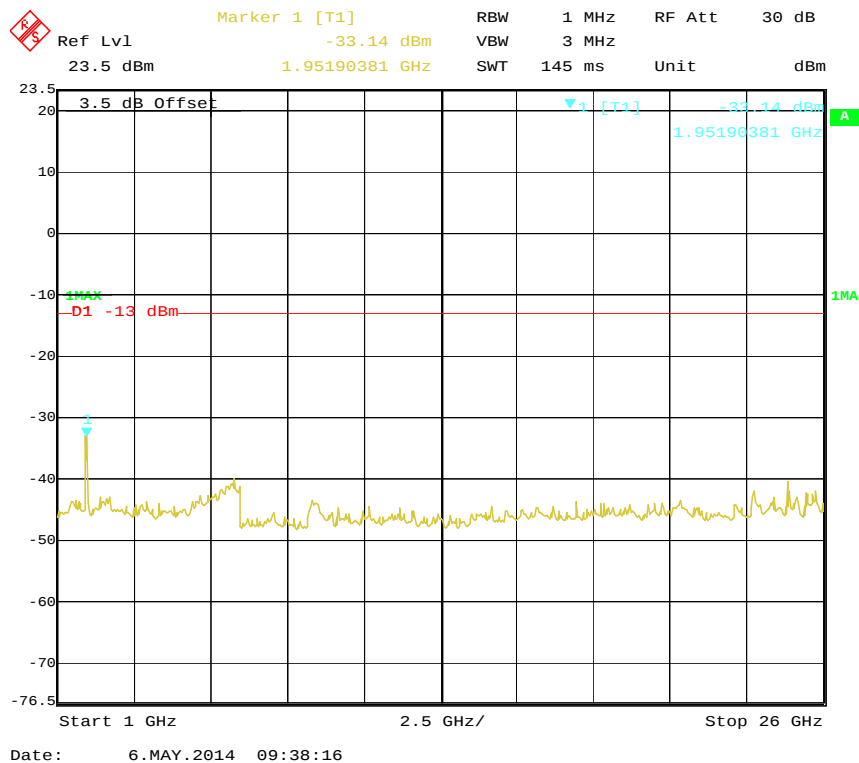
16QAM (1.4MHz) Mode, 30 MHz – 1 GHz, Low Channel**16QAM (1.4MHz) Mode, 1 GHz – 26 GHz, Low Channel**

16QAM (1.4MHz) Mode, 30 MHz – 1 GHz, Middle Channel**16QAM (1.4MHz) Mode, 1 GHz – 26 GHz, Middle Channel**

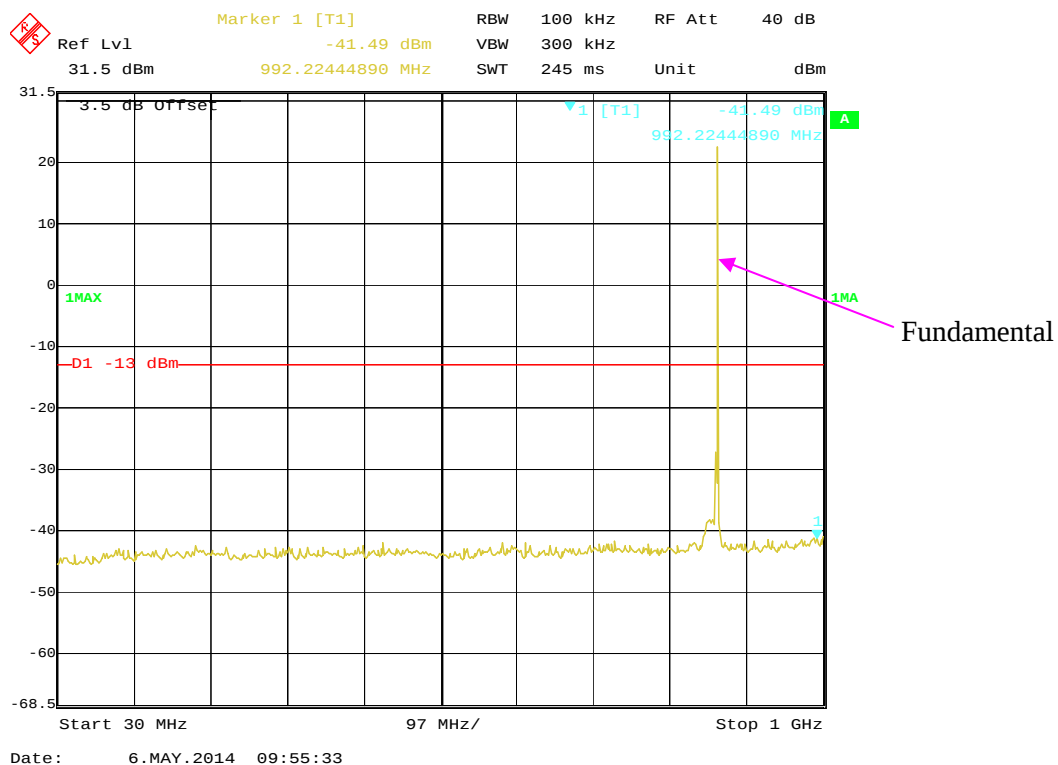
16QAM (1.4MHz) Mode, 30 MHz – 1 GHz, High Channel**16QAM (1.4MHz) Mode, 1 GHz – 26 GHz, High Channel**

16QAM (3MHz) Mode, 30 MHz – 1 GHz, Low Channel**16QAM (3MHz) Mode, 1 GHz – 26 GHz, Low Channel**

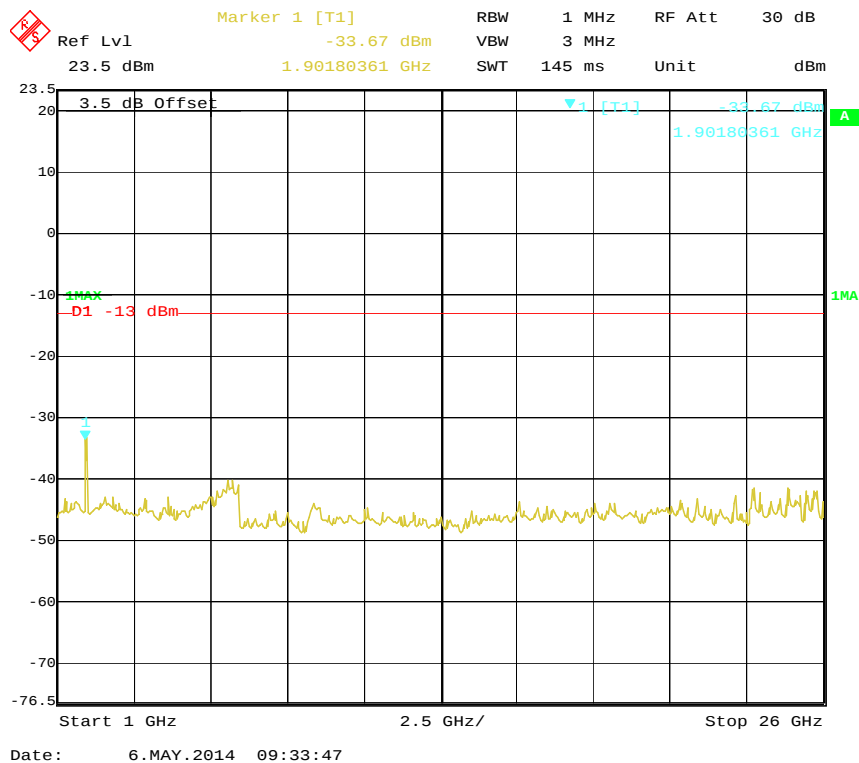
16QAM (3MHz) Mode, 30 MHz – 1 GHz, Middle Channel**16QAM (3MHz) Mode, 1 GHz – 26 GHz, Middle Channel**

16QAM (3MHz) Mode, 30 MHz – 1 GHz, High Channel**16QAM (3MHz) Mode, 1 GHz – 26 GHz, High Channel**

16QAM (5MHz) Mode, 30 MHz – 1 GHz



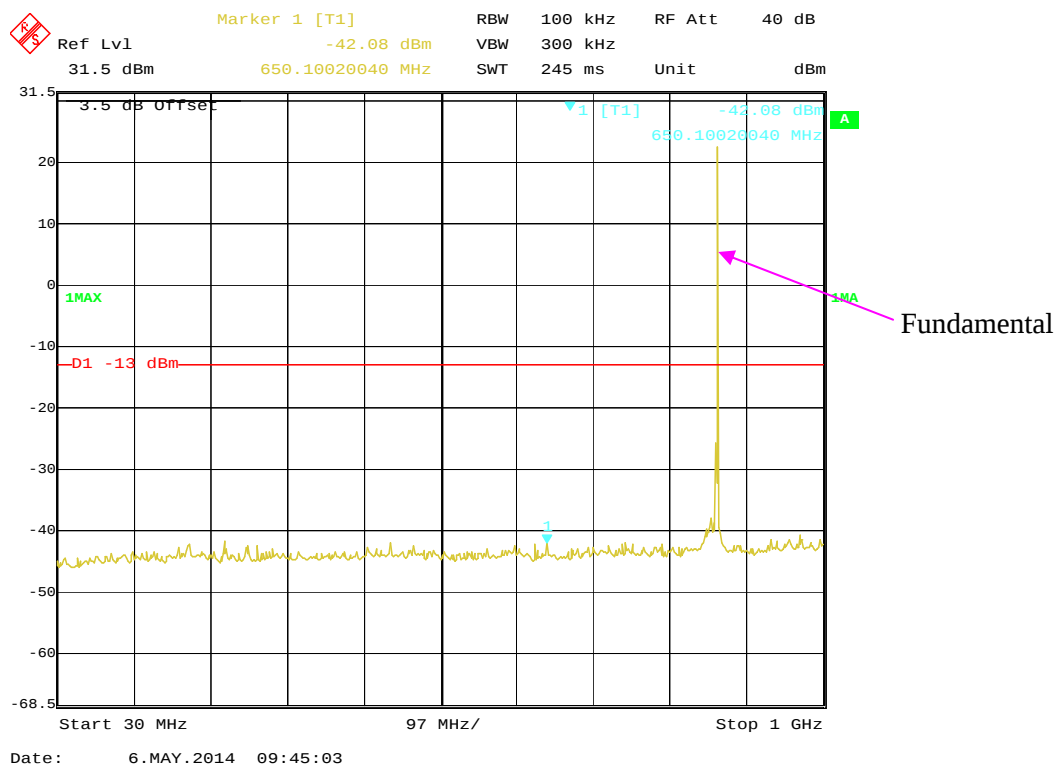
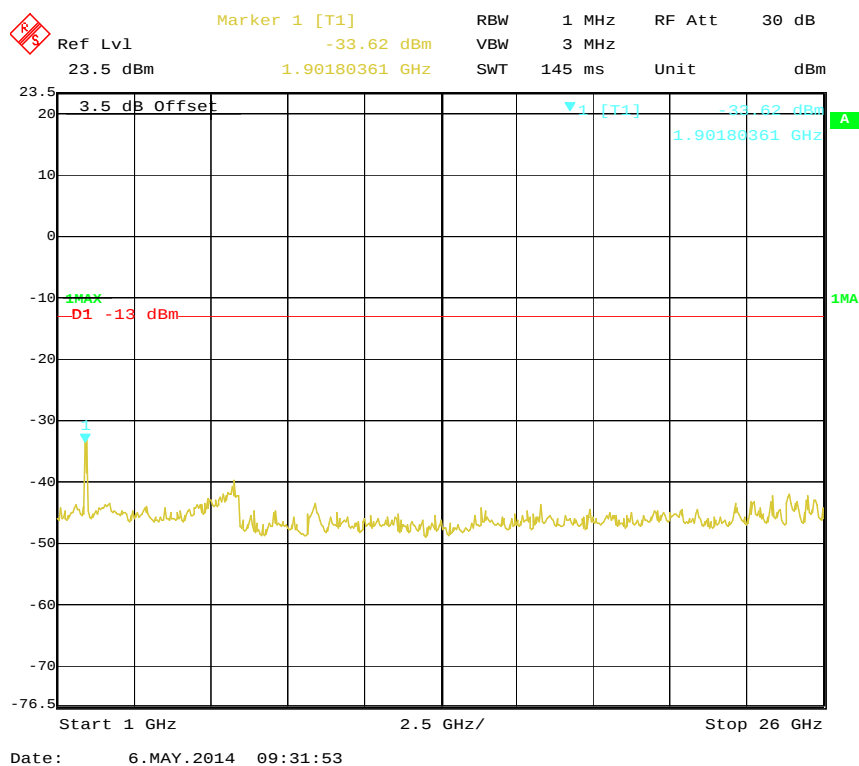
16QAM (5MHz) Mode, 1 GHz – 26 GHz

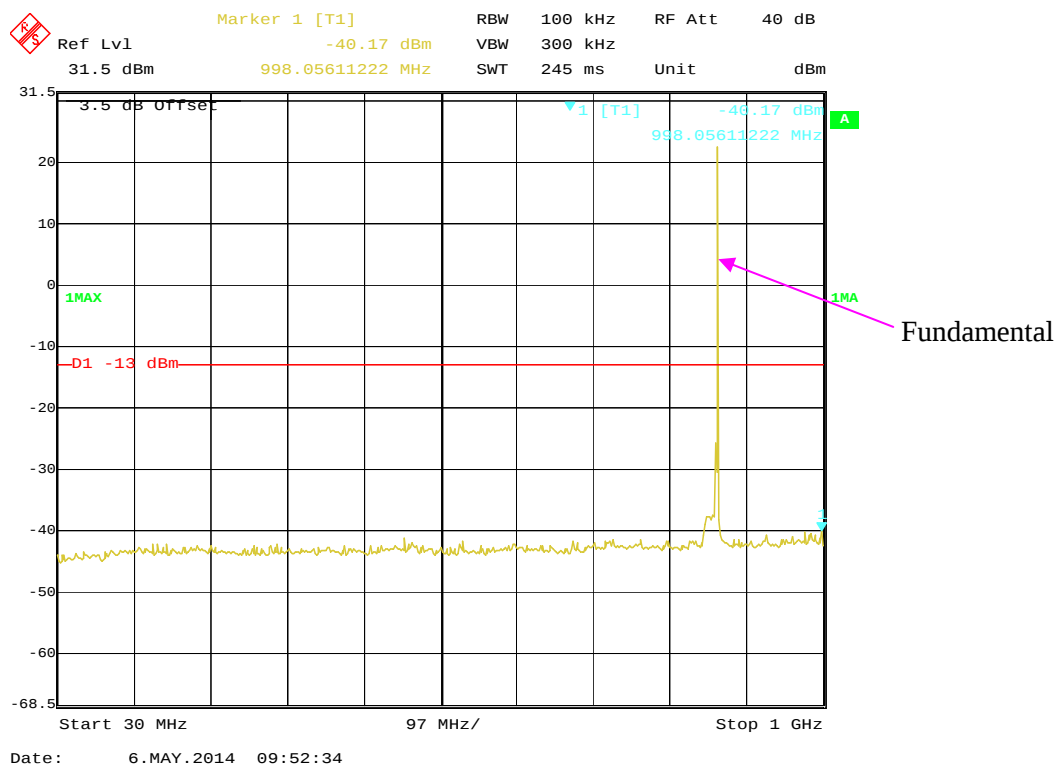
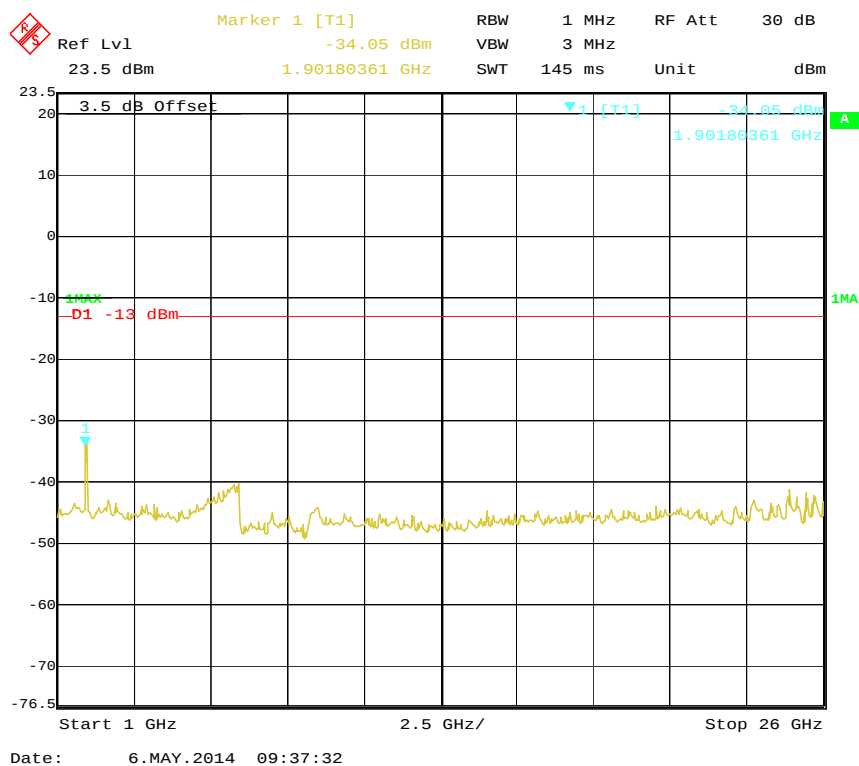


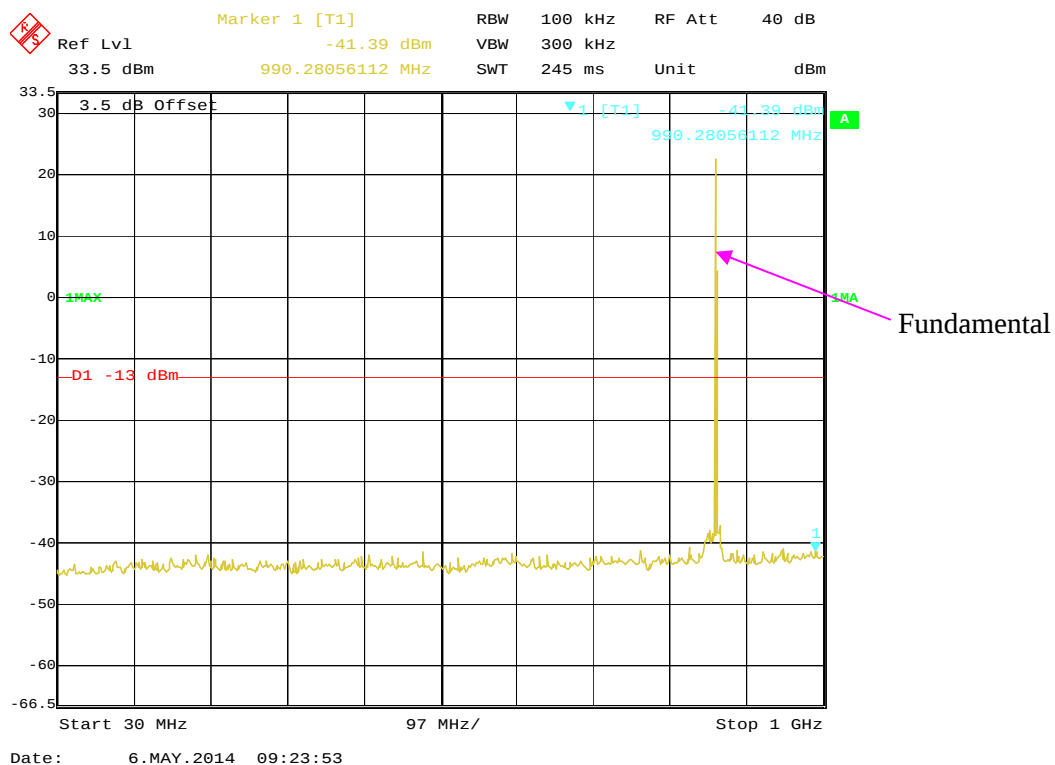
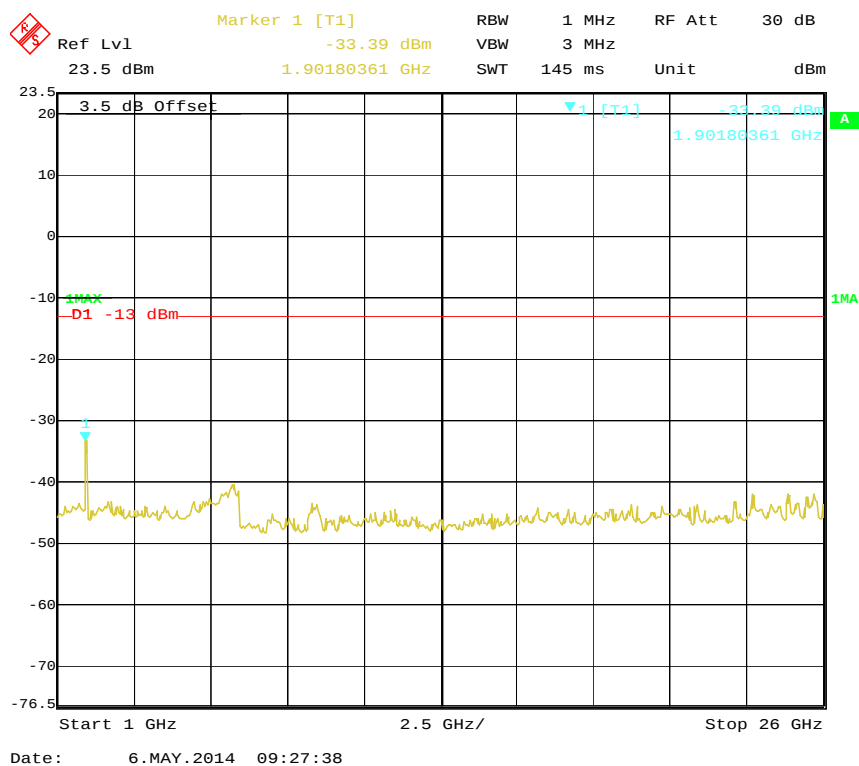
[illegible]

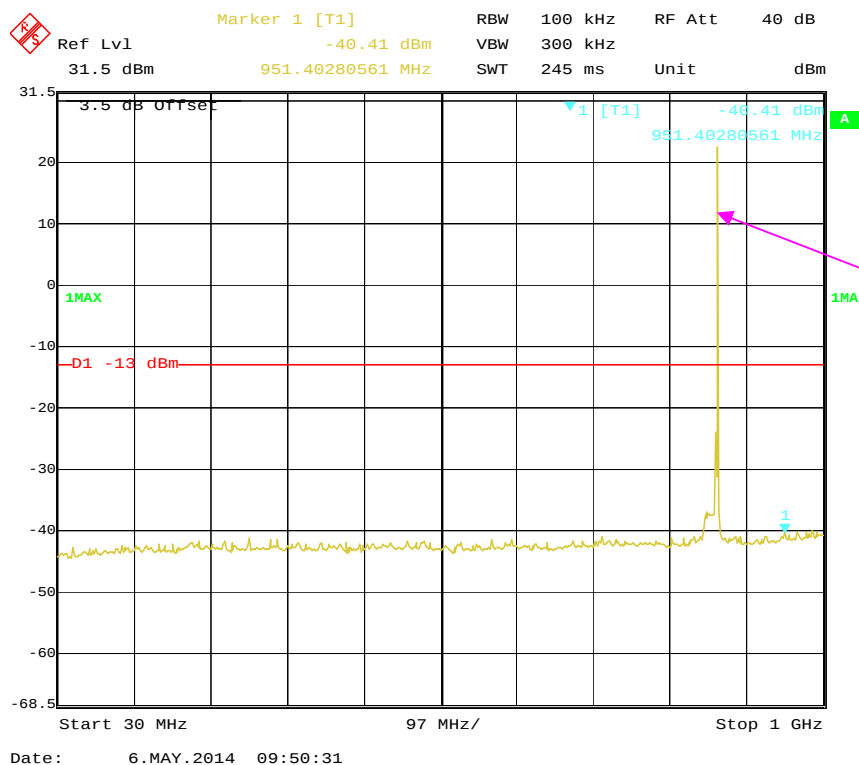
Fundamental

Ref Lvl 23.5 dBm
 Marker 1 [T1] -33.64 dBm
 1.90180361 GHz
 RBW 1 MHz RF Att 30 dB
 VBW 3 MHz
 SWT 145 ms Unit dBm
 3.5 dB Offset
 1 [T1] -33.64 dBm
 1.90180361 GHz
 -13 dBm
 -13 dBm
 Start 1 GHz 2.5 GHz/ Stop 26 GHz
 Date: 6.MAY.2014 09:27:53

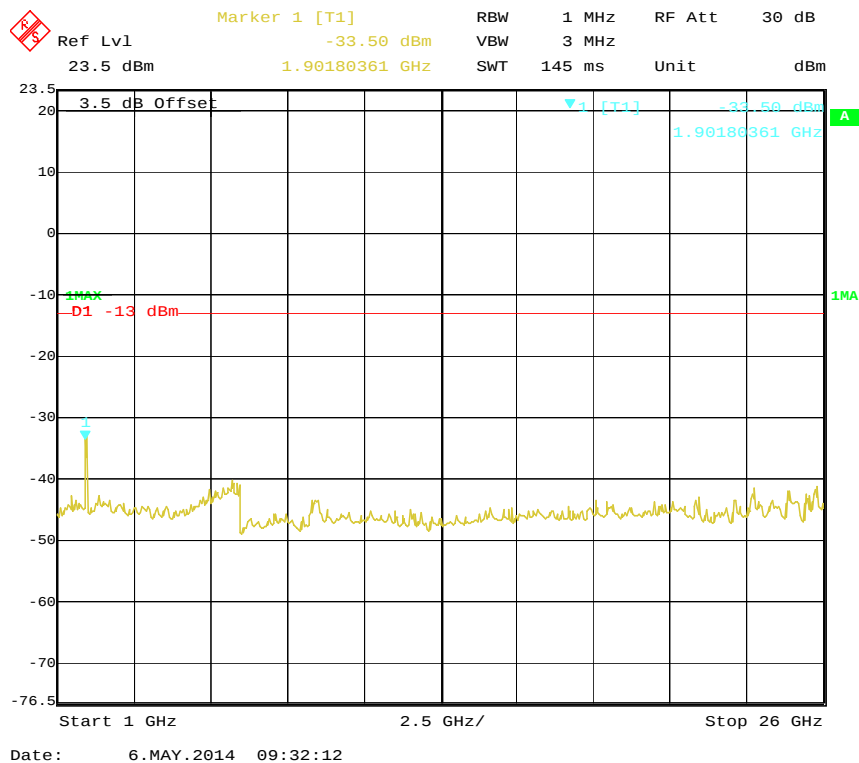
64QAM (1.4MHz) Mode, 30 MHz – 1 GHz, Middle Channel**64QAM (1.4MHz) Mode, 1 GHz – 26 GHz, Middle Channel**

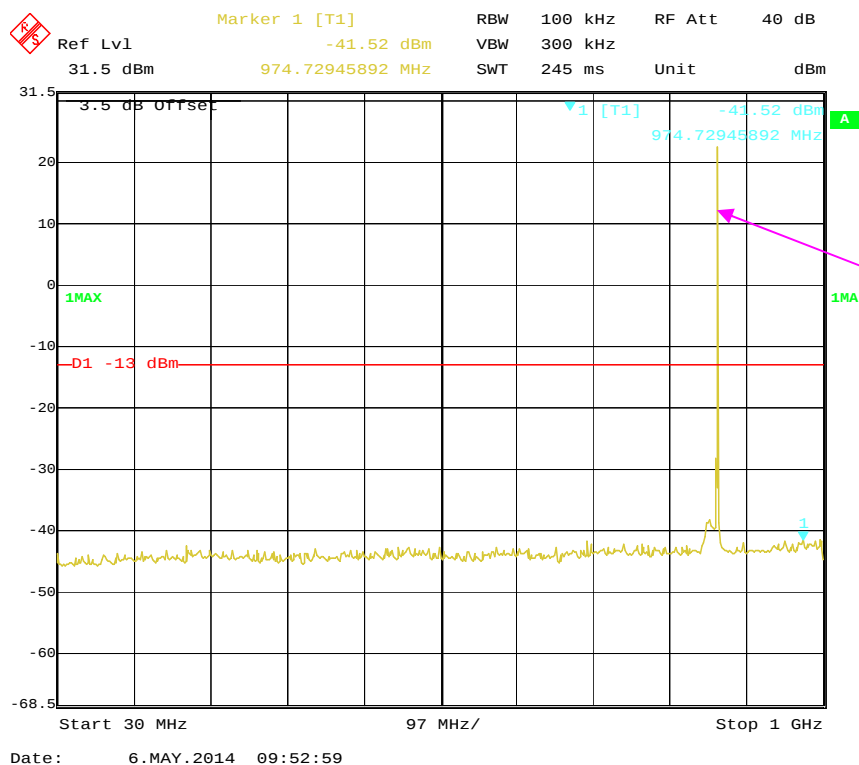
64QAM (1.4MHz) Mode, 30 MHz – 1 GHz, High Channel**64QAM (1.4MHz) Mode, 1 GHz – 26 GHz, High Channel**

64QAM (3MHz) Mode, 30 MHz – 1 GHz, Low Channel**64QAM (3MHz) Mode, 1 GHz – 26 GHz, Low Channel**

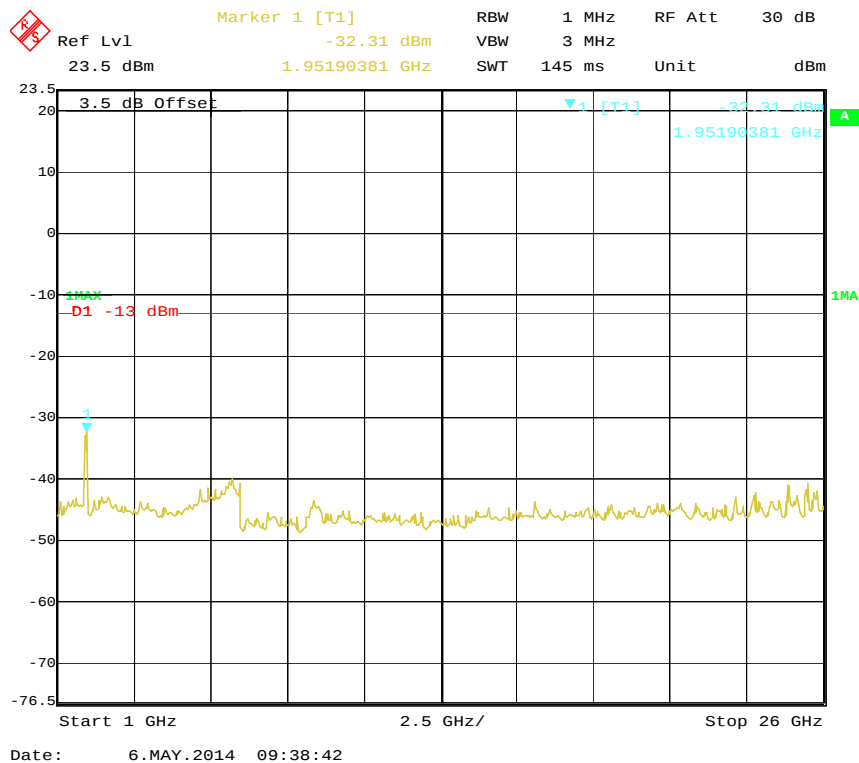
64QAM (3MHz) Mode, 30 MHz – 1 GHz, Middle Channel

Fundamental

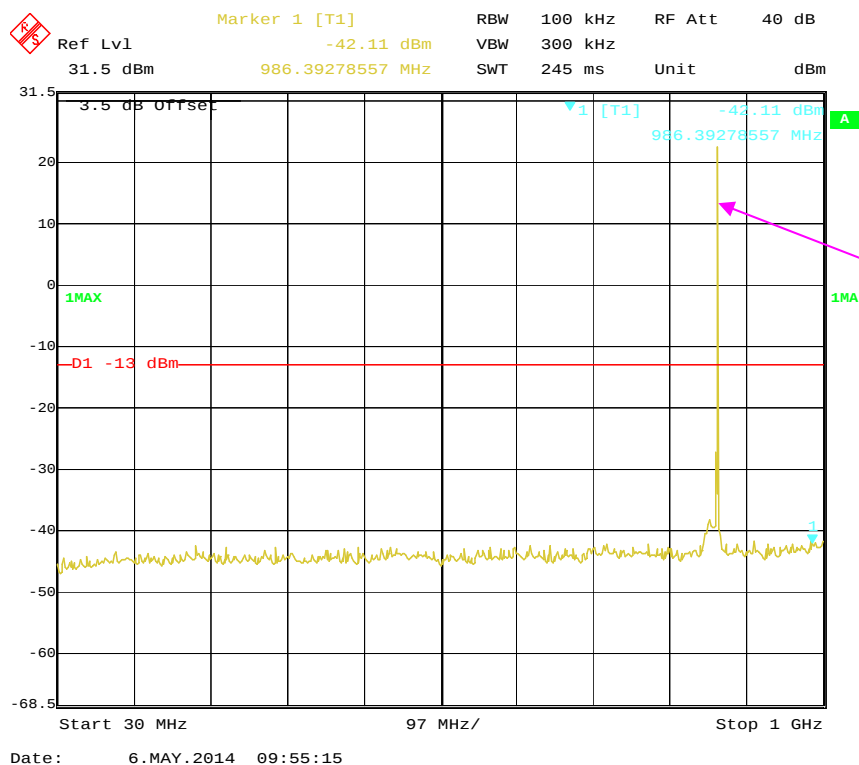
64QAM (3MHz) Mode, 1 GHz – 26 GHz, Middle Channel

64QAM (3MHz) Mode, 30 MHz – 1 GHz, High Channel

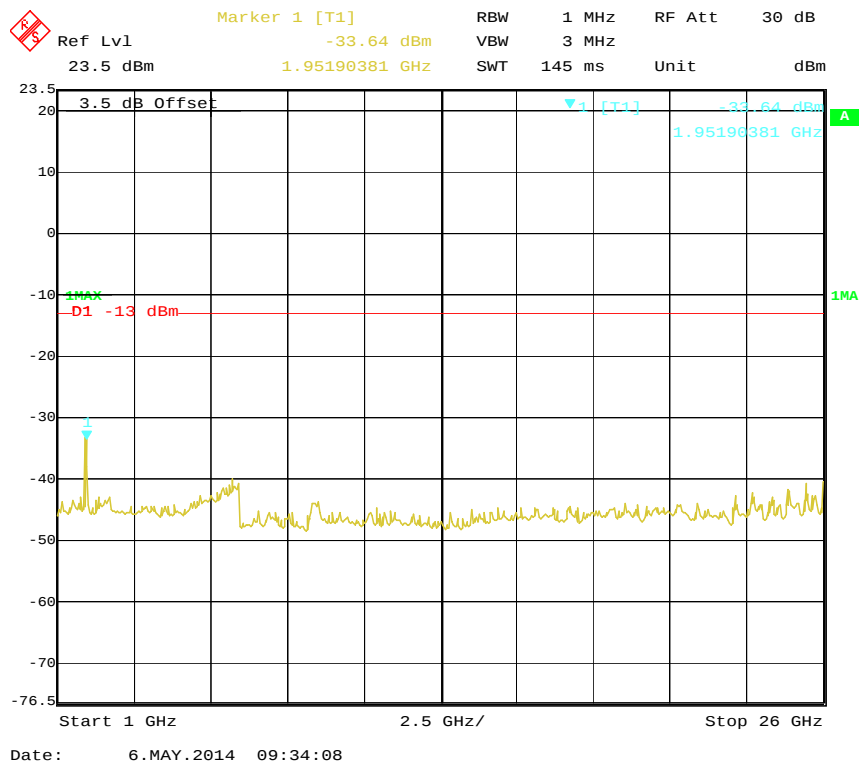
Fundamental

64QAM (3MHz) Mode, 1 GHz – 26 GHz, High Channel

64QAM (5MHz) Mode, 30 MHz – 1 GHz

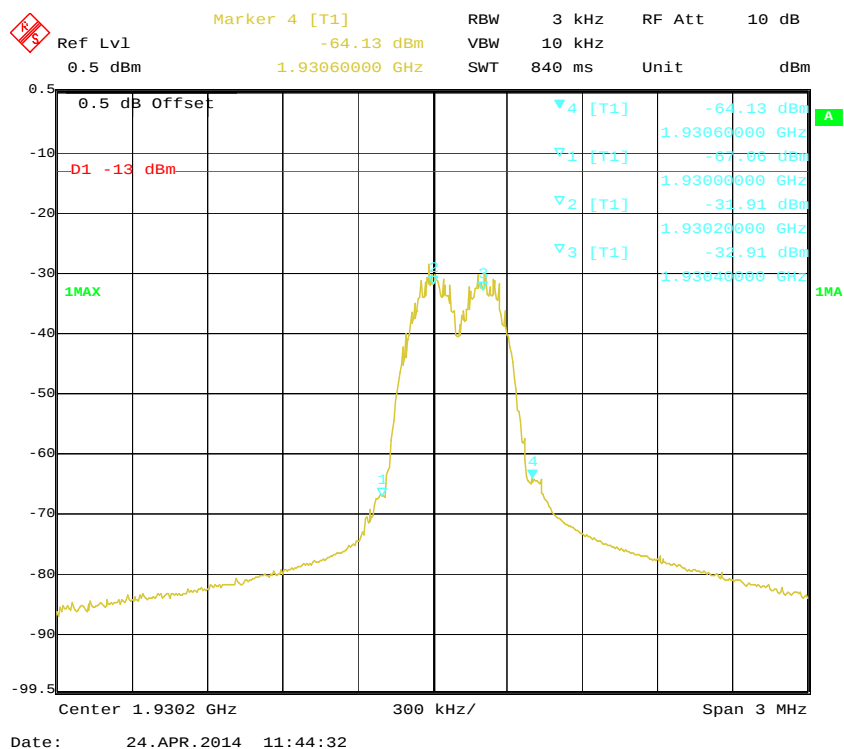


64QAM (5MHz) Mode, 1 GHz – 26 GHz

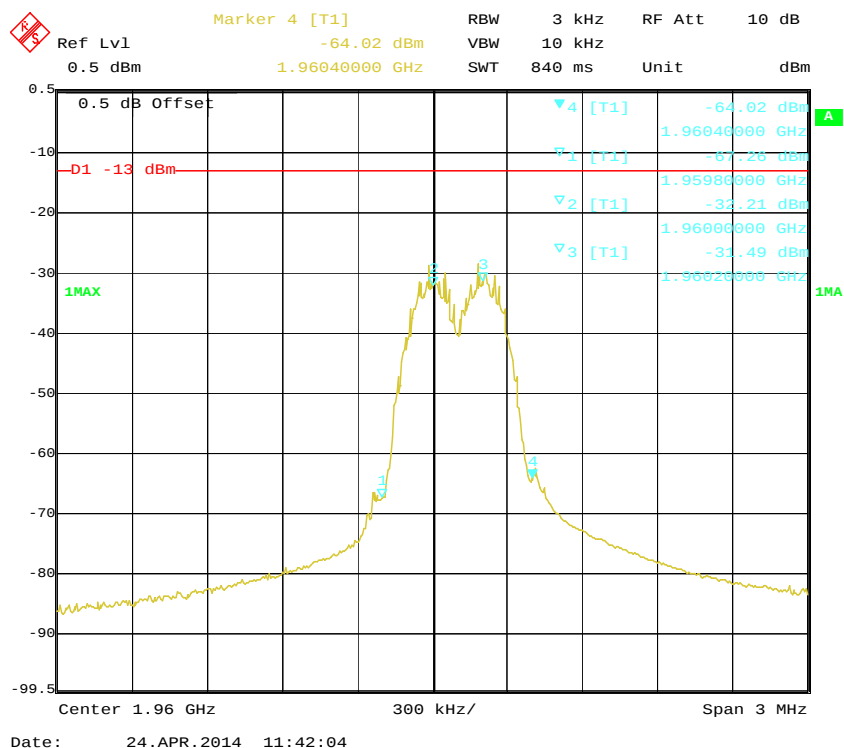


Intermodulation (PCS Band Downlink)

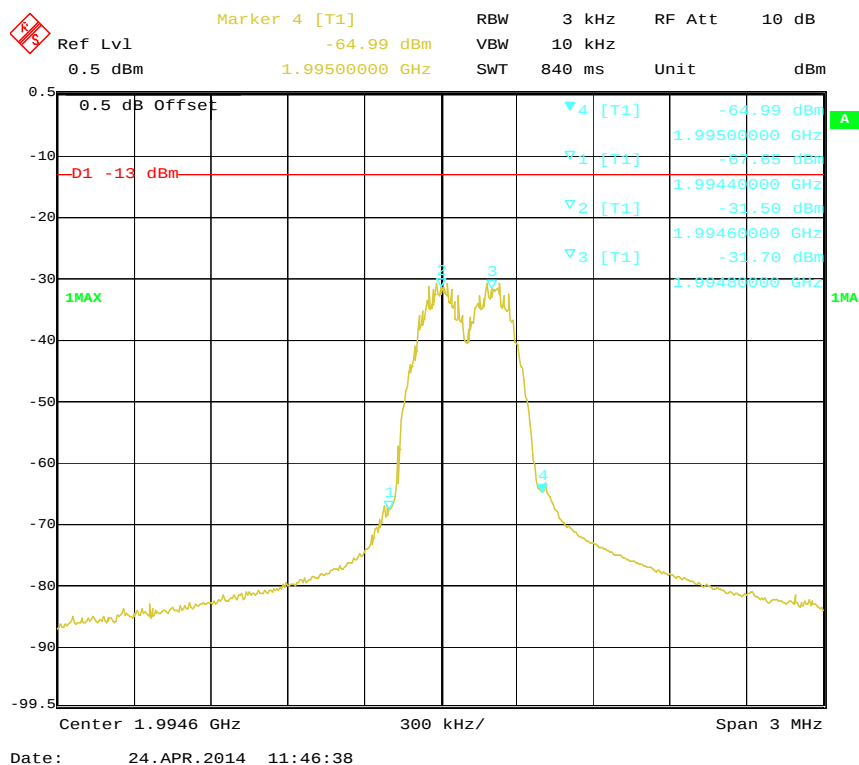
GSM Mode, Input, Low Channel



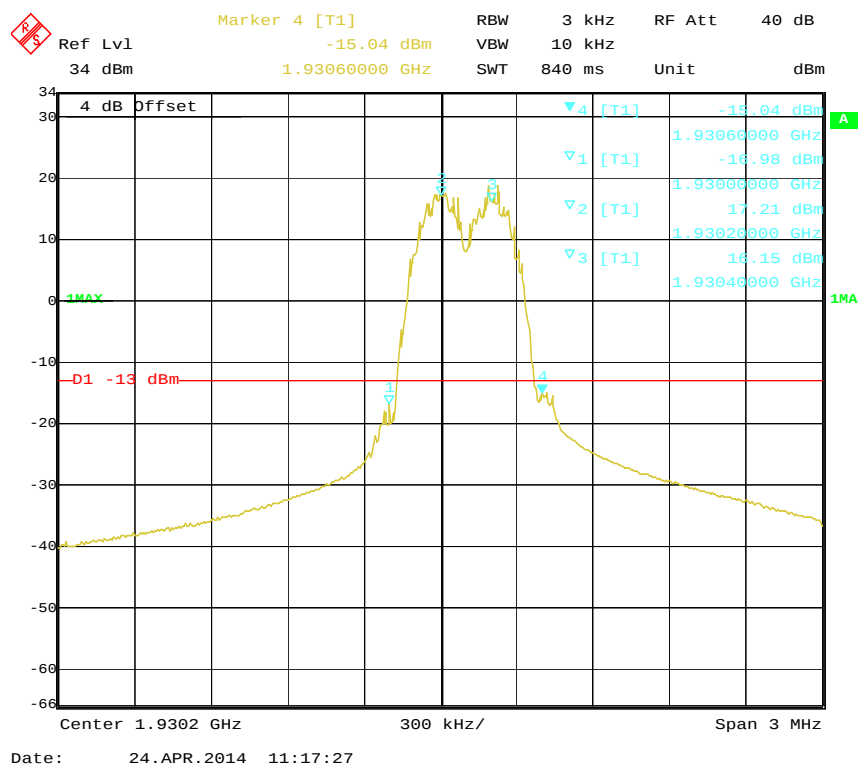
GSM Mode, Input, Middle Channel



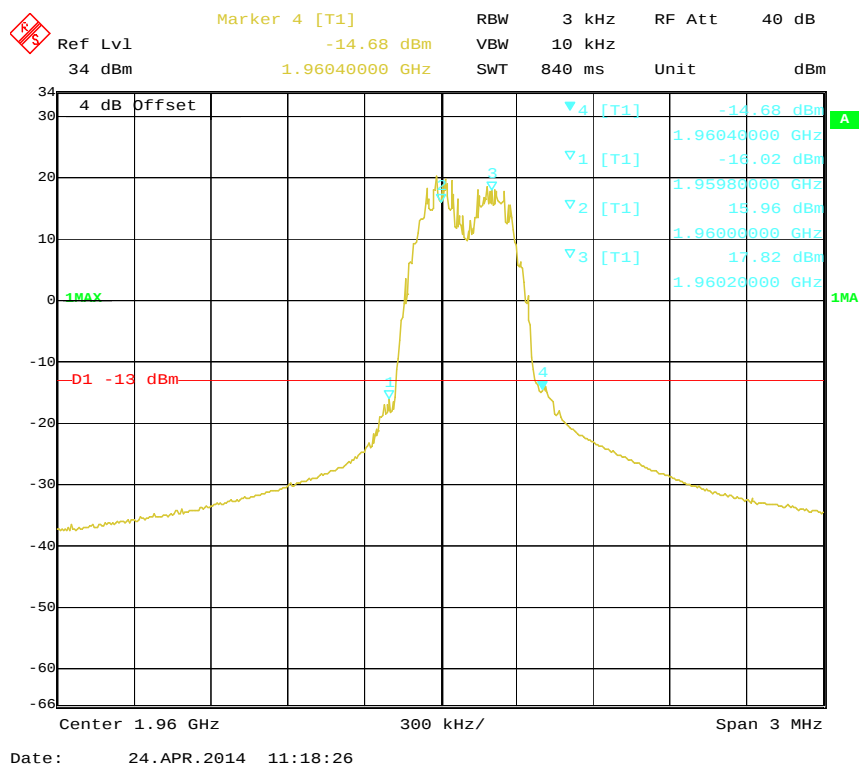
GSM Mode, Input, High Channel



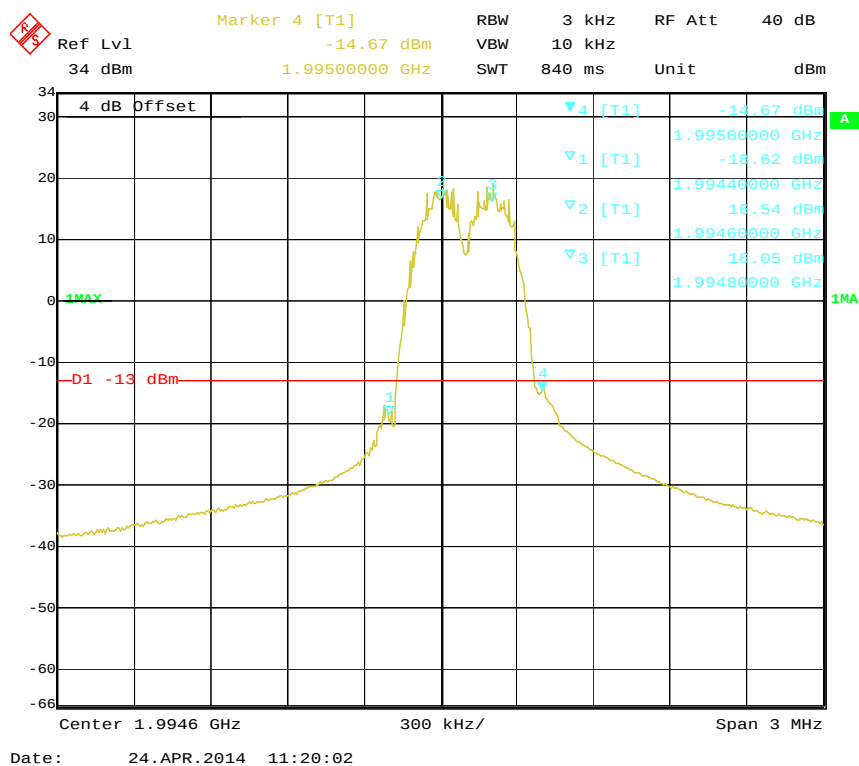
GSM Mode, Output, Low Channel



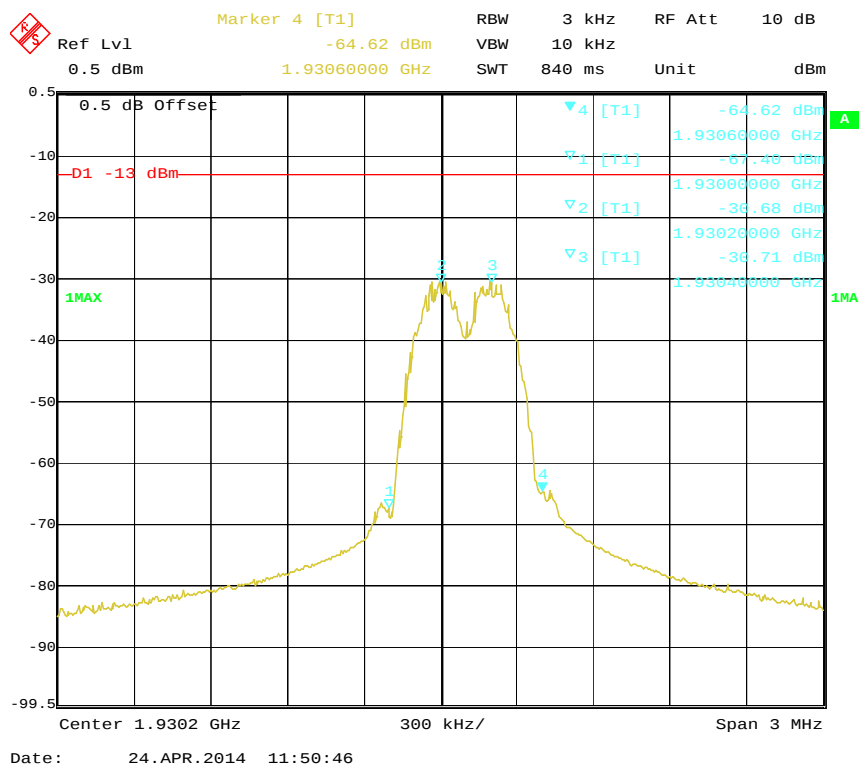
GSM Mode, Output, Middle Channel



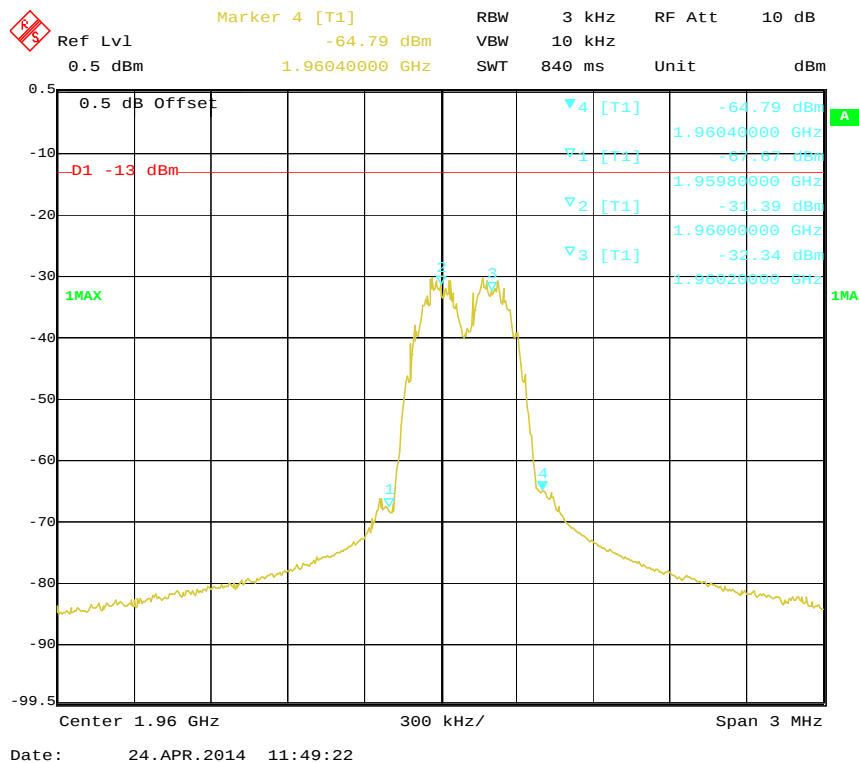
GSM Mode, Output, High Channel



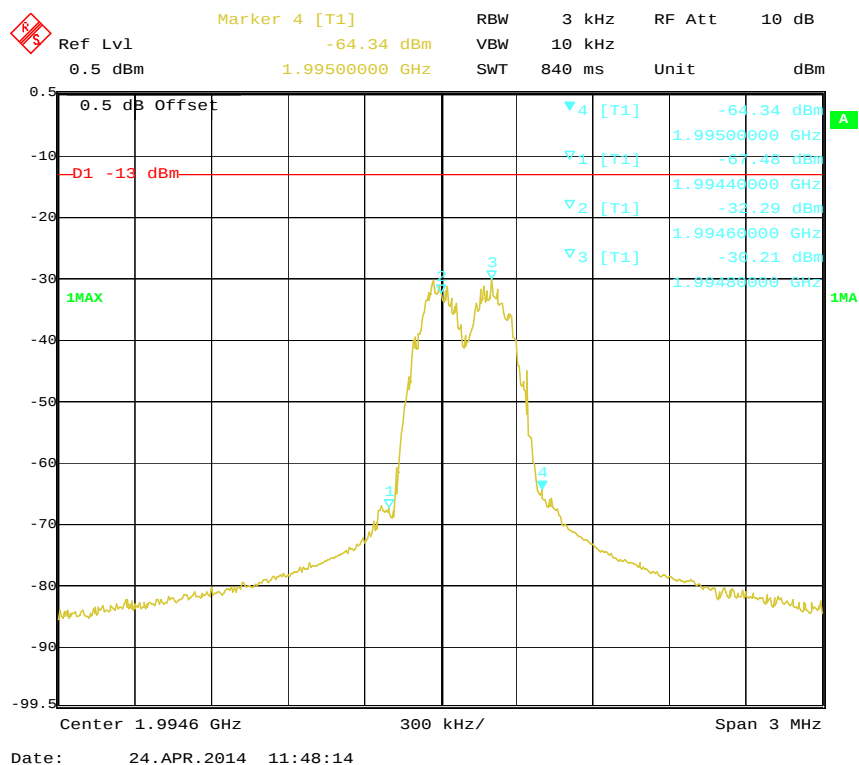
EDGE Mode, Input, Low Channel



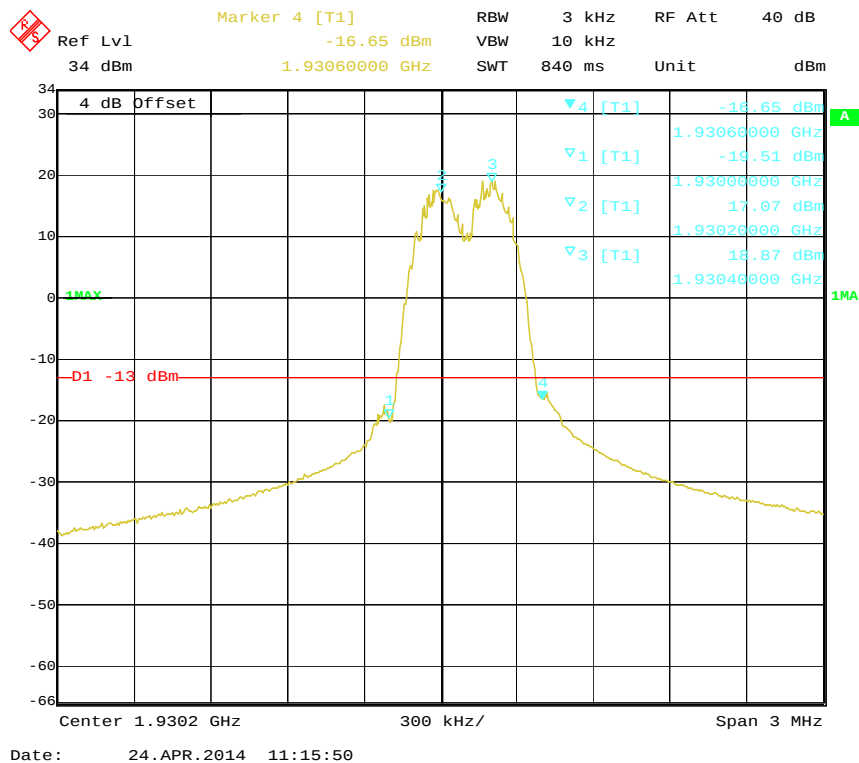
EDGE Mode, Input, Middle Channel



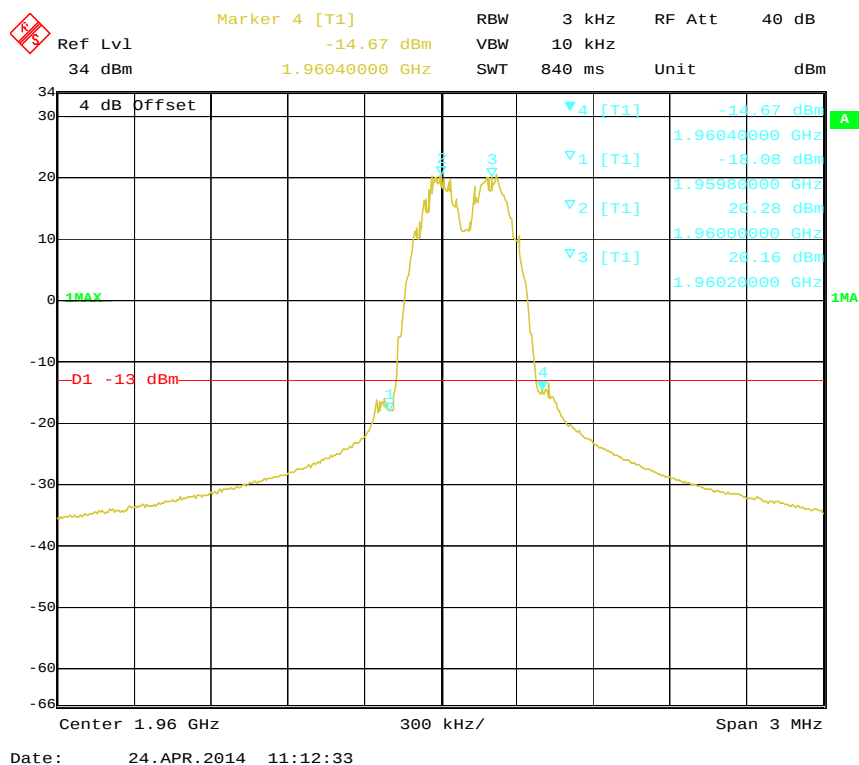
EDGE Mode, Input, High Channel



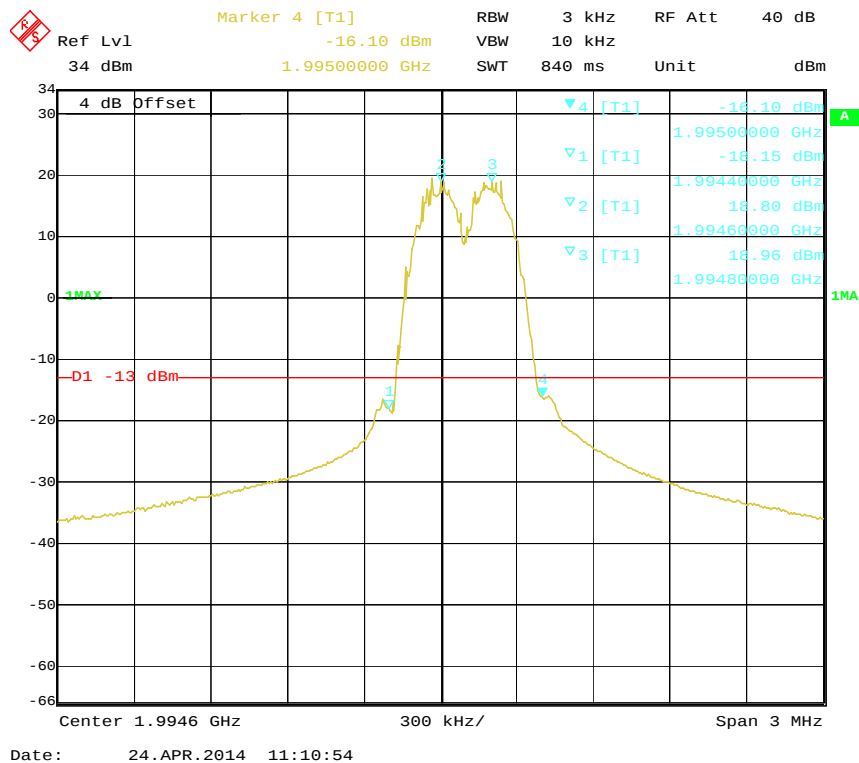
EDGE Mode, Output, Low Channel



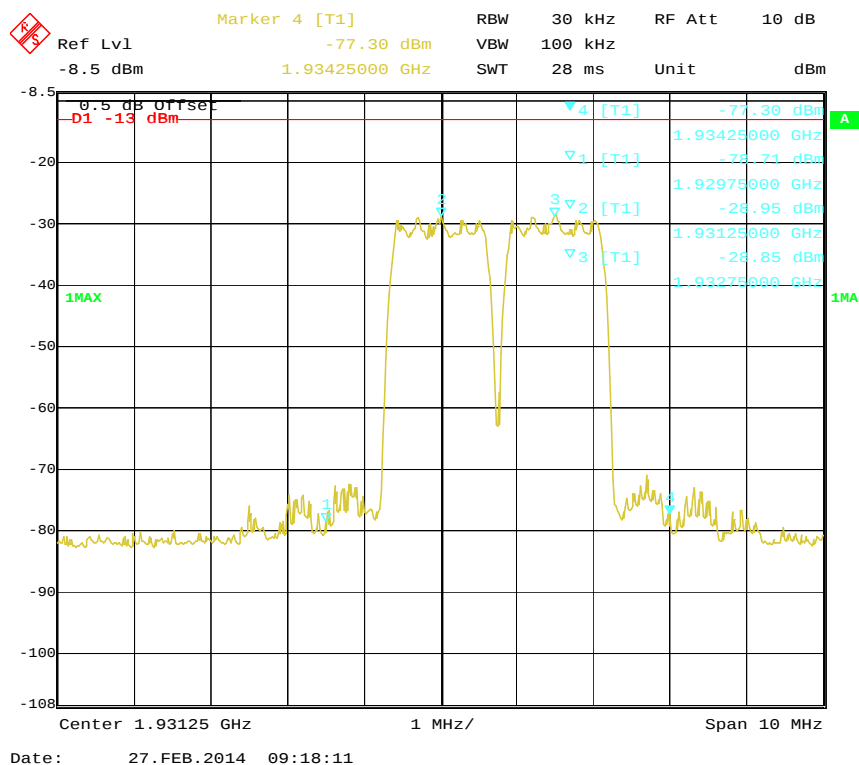
EDGE Mode, Output, Middle Channel



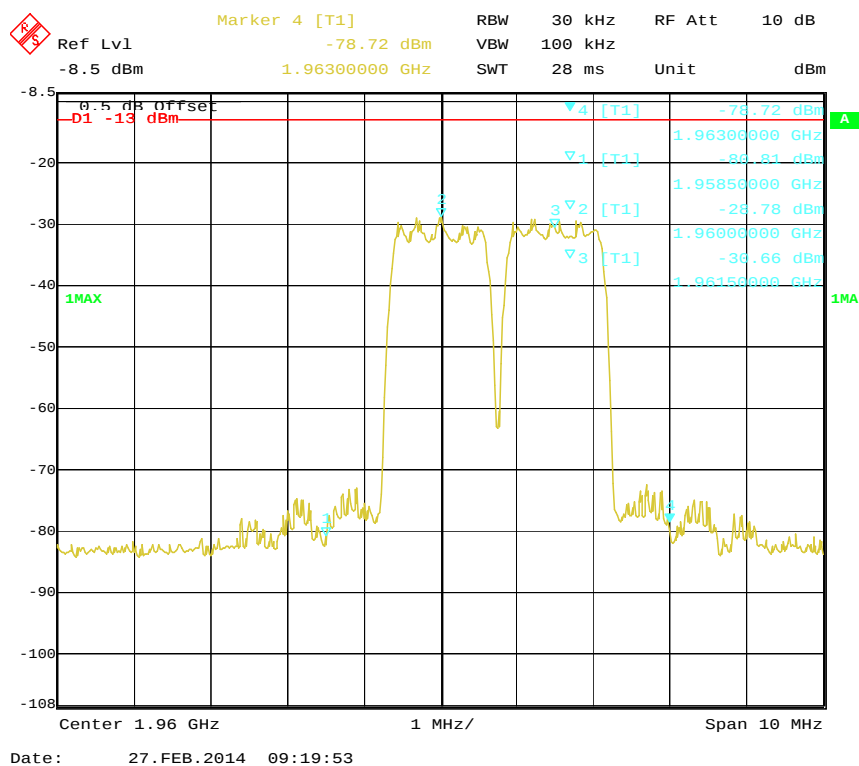
EDGE Mode, Output, High Channel



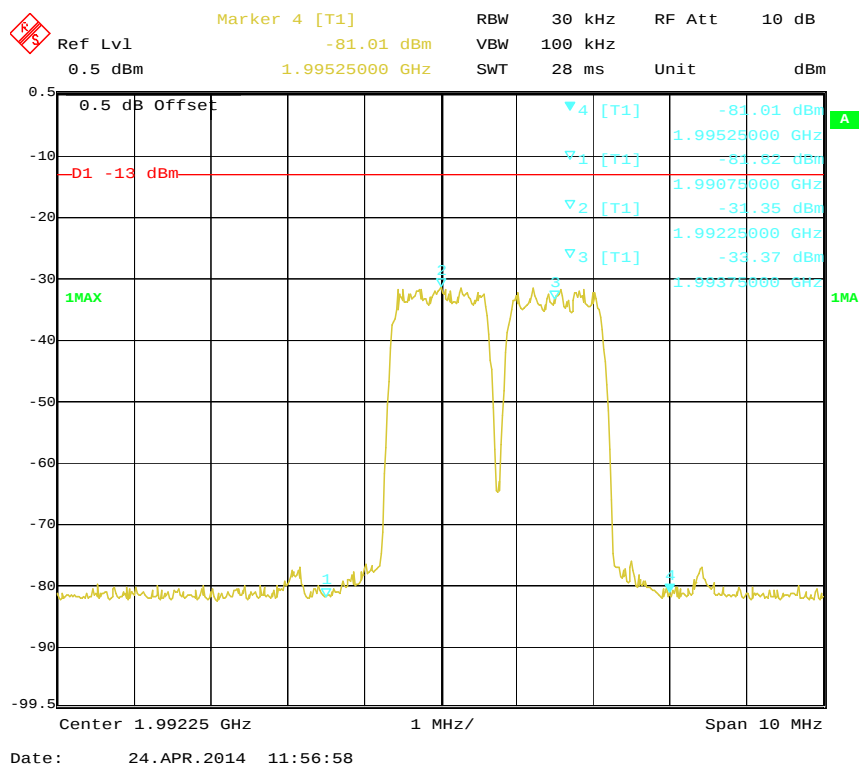
CDMA Mode, Input, Low Channel



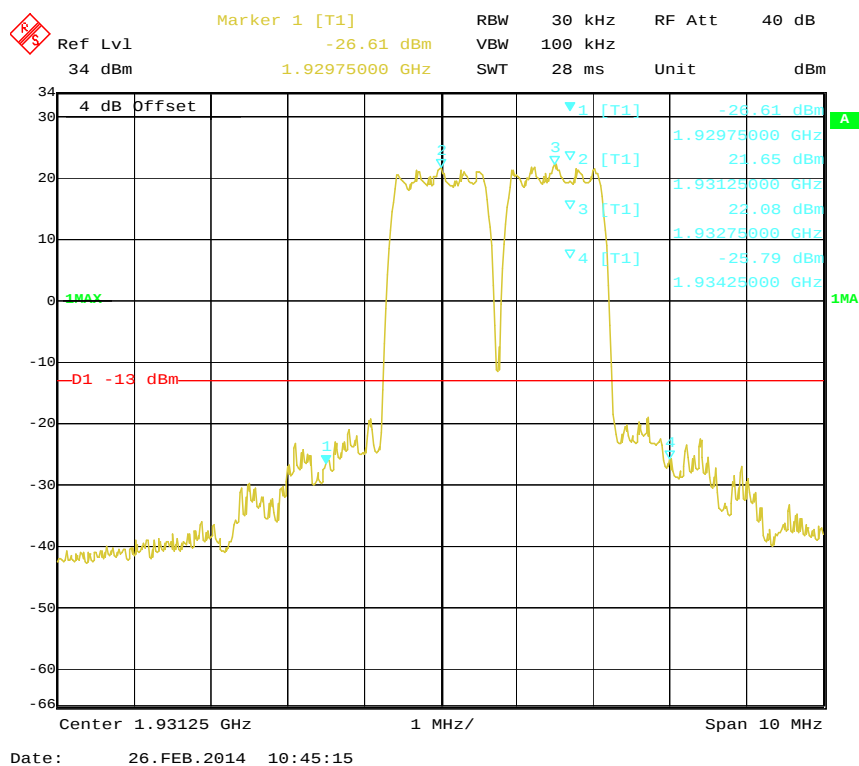
CDMA Mode, Input, Middle Channel

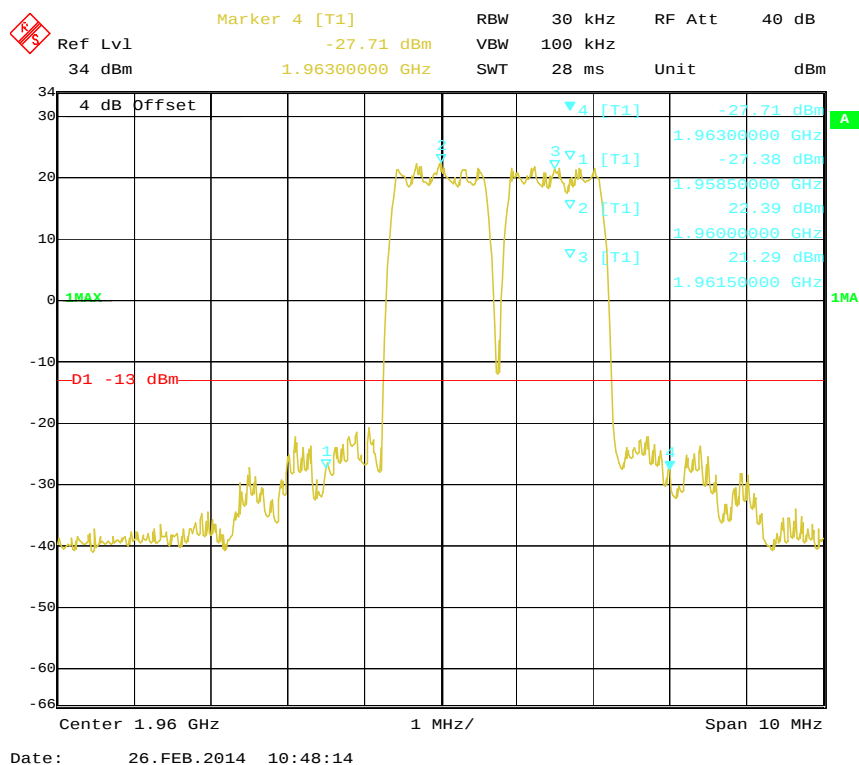
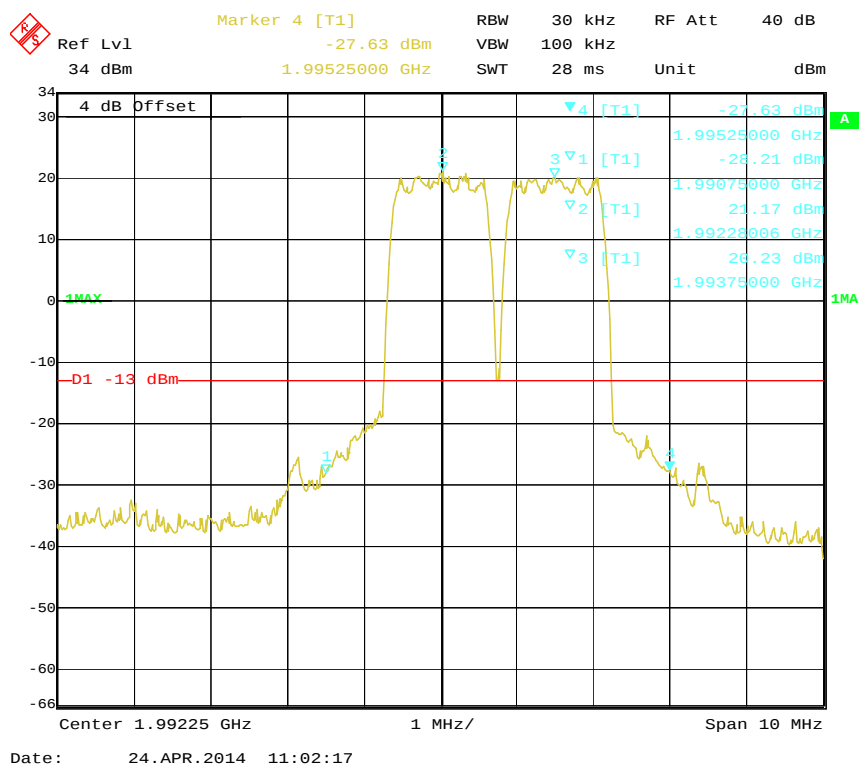


CDMA Mode, Input, High Channel

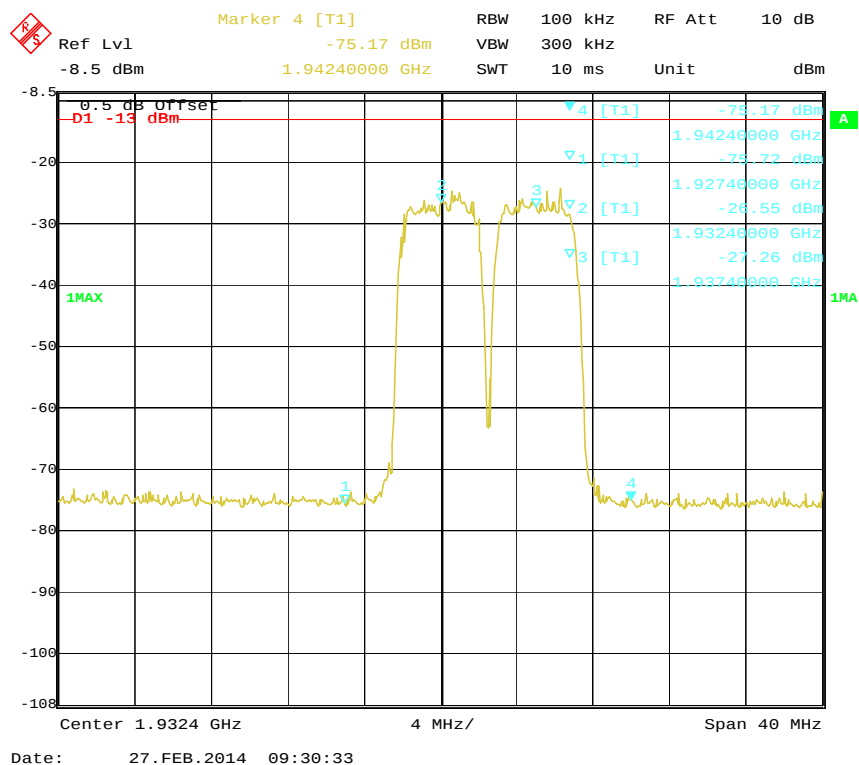


CDMA Mode, Output, Low Channel

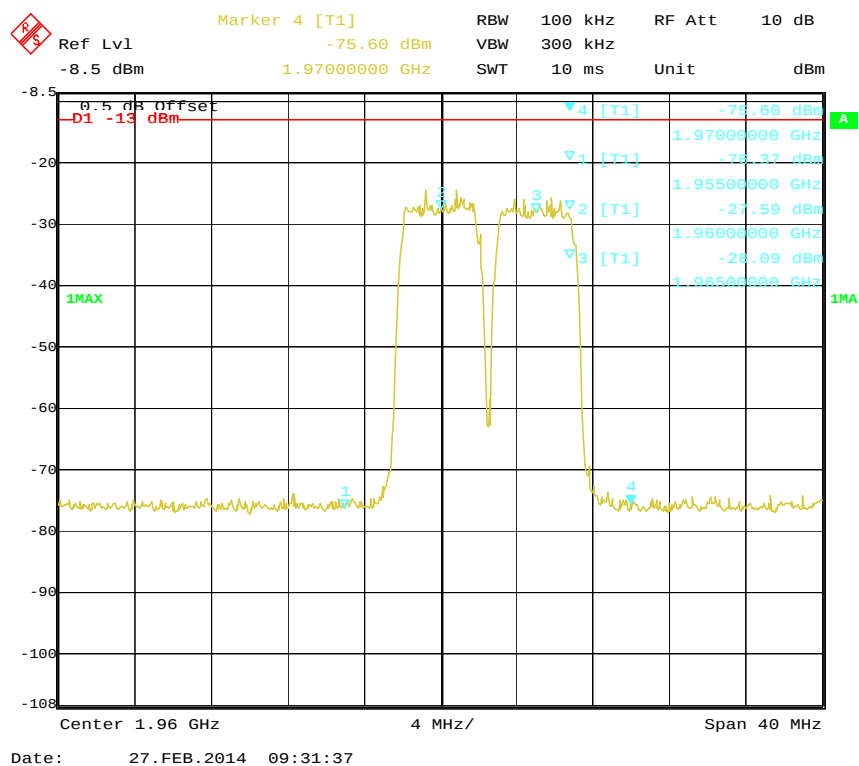


CDMA Mode, Output, Middle Channel**CDMA Mode, Output, High Channel**

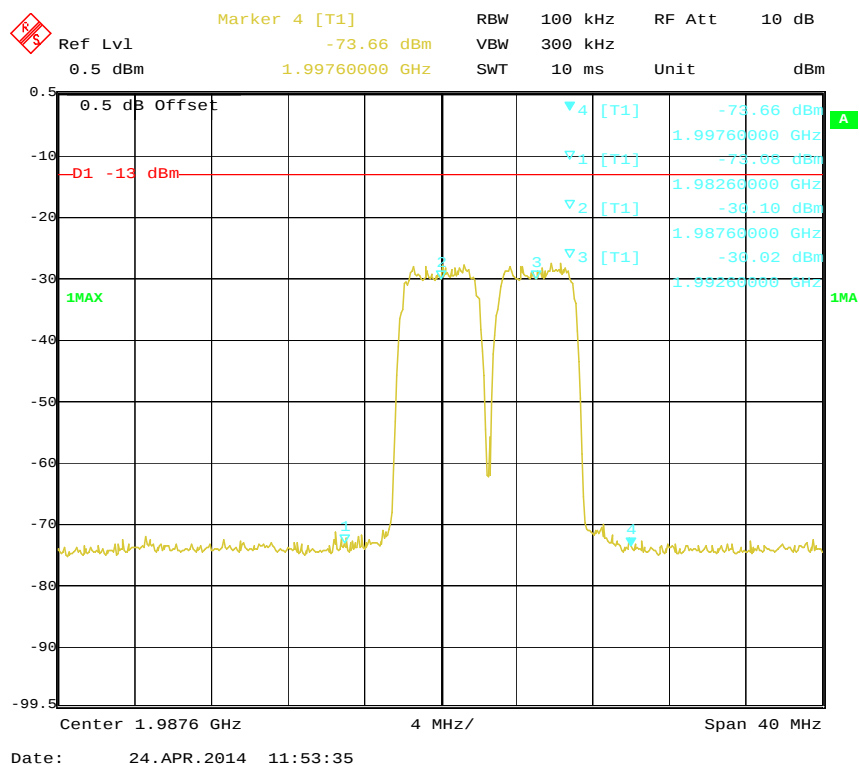
WCDMA Mode, Input, Low Channel



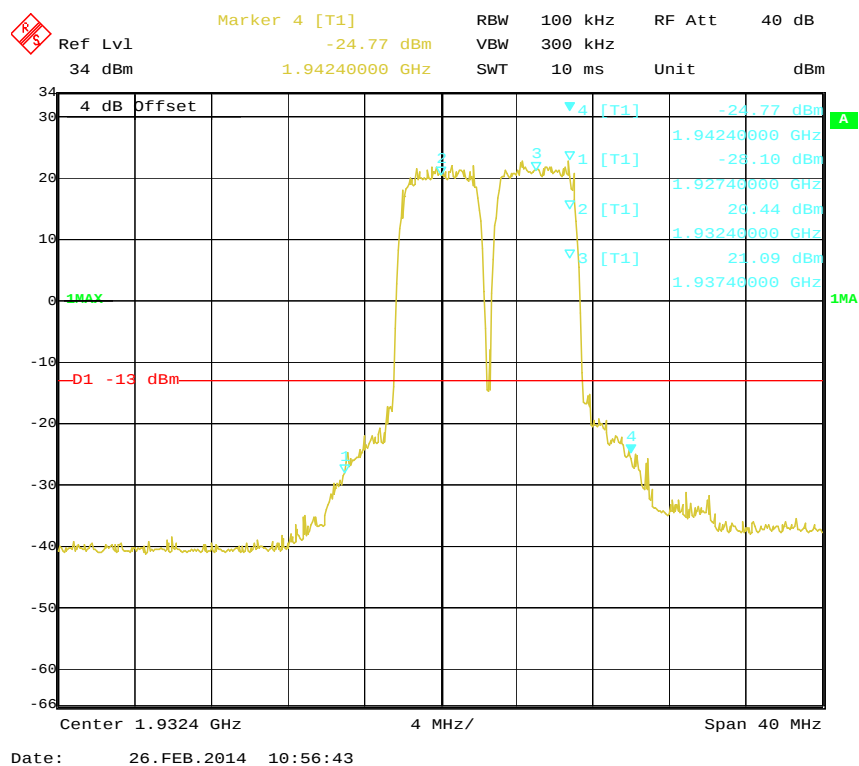
WCDMA Mode, Input, Middle Channel



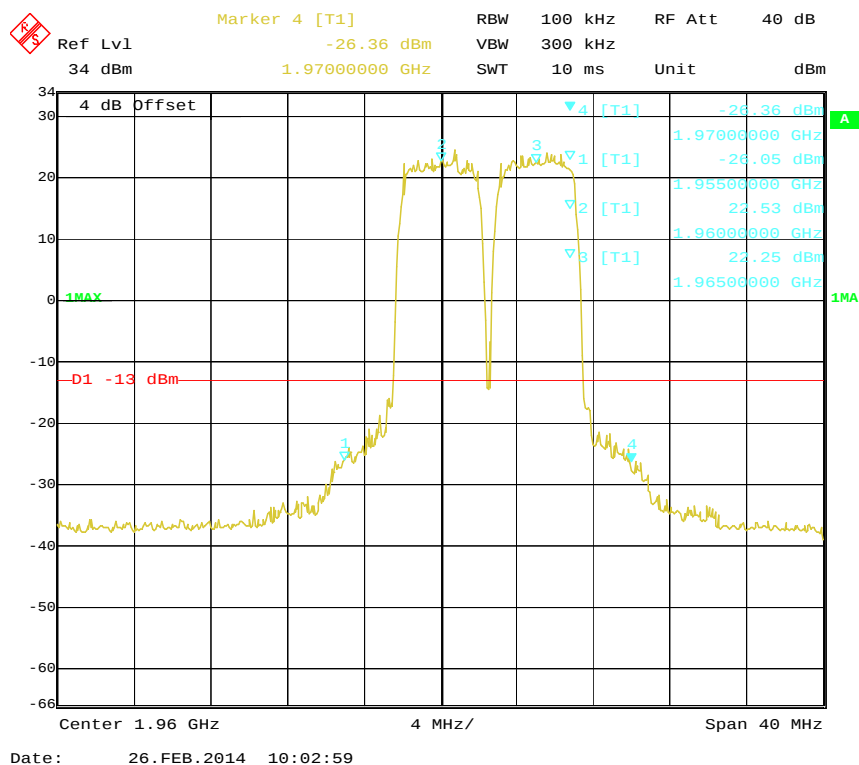
WCDMA Mode, Input, High Channel



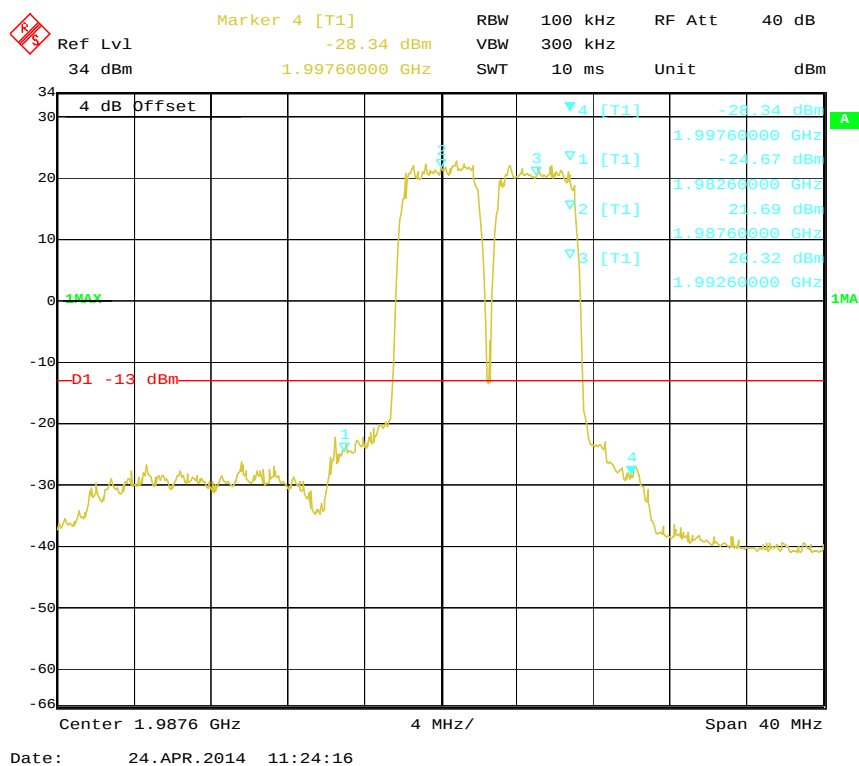
WCDMA Mode, Output, Low Channel

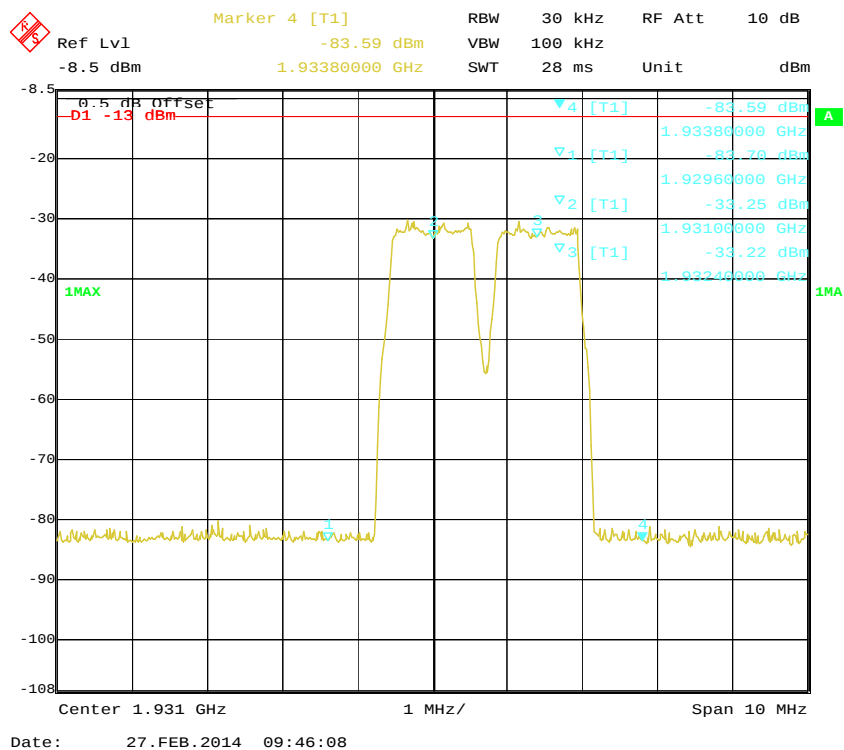
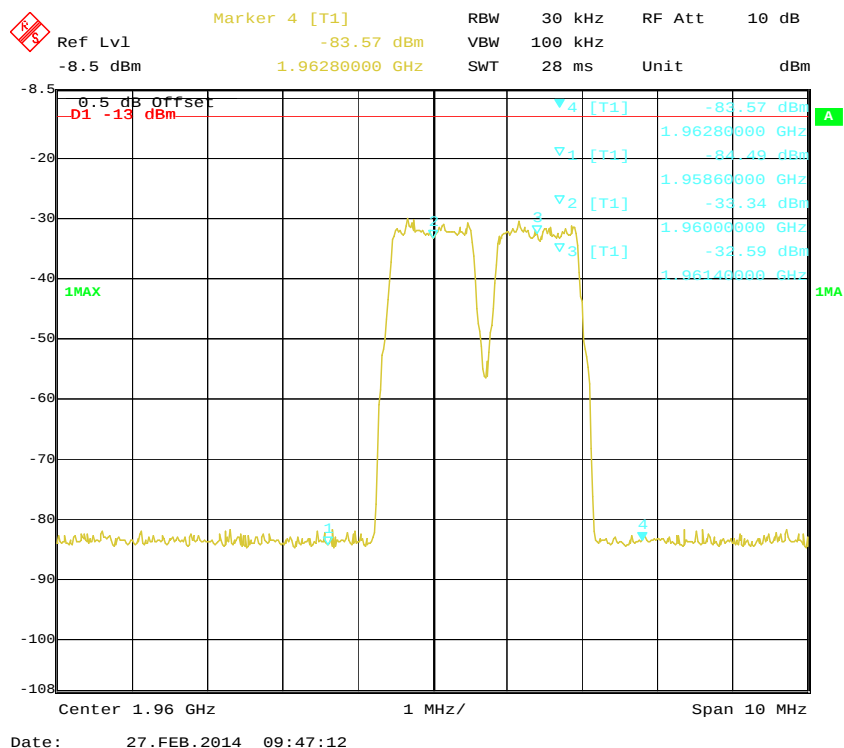


WCDMA Mode, Output, Middle Channel

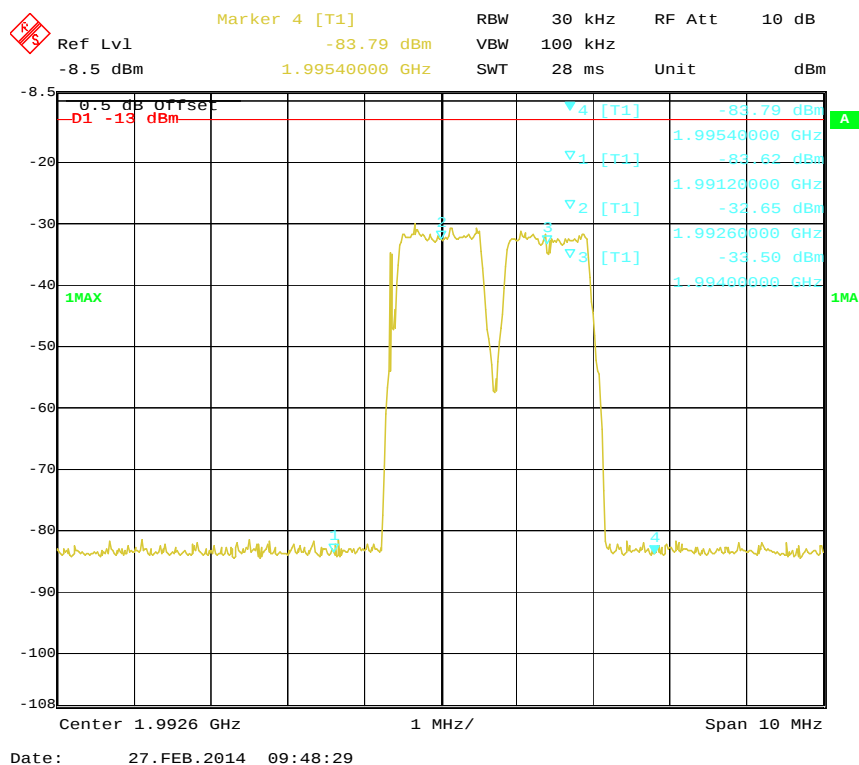


WCDMA Mode, Output, High Channel

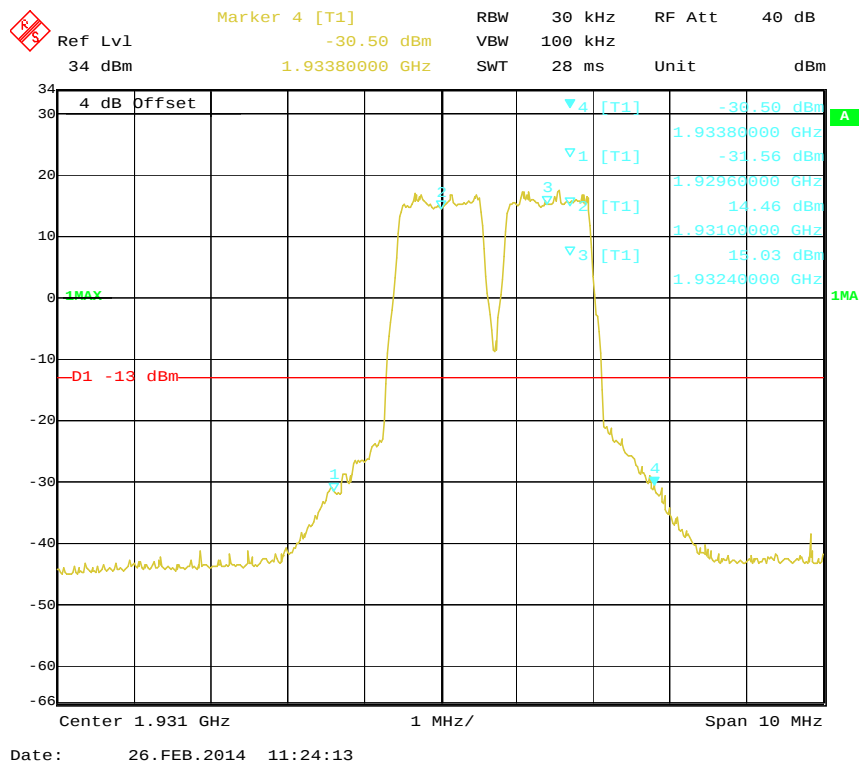


Intermodulation (PCS Band LTE Downlink):**QPSK (1.4MHz) Mode, Input, Low Channel****QPSK (1.4MHz) Mode, Input, Middle Channel**

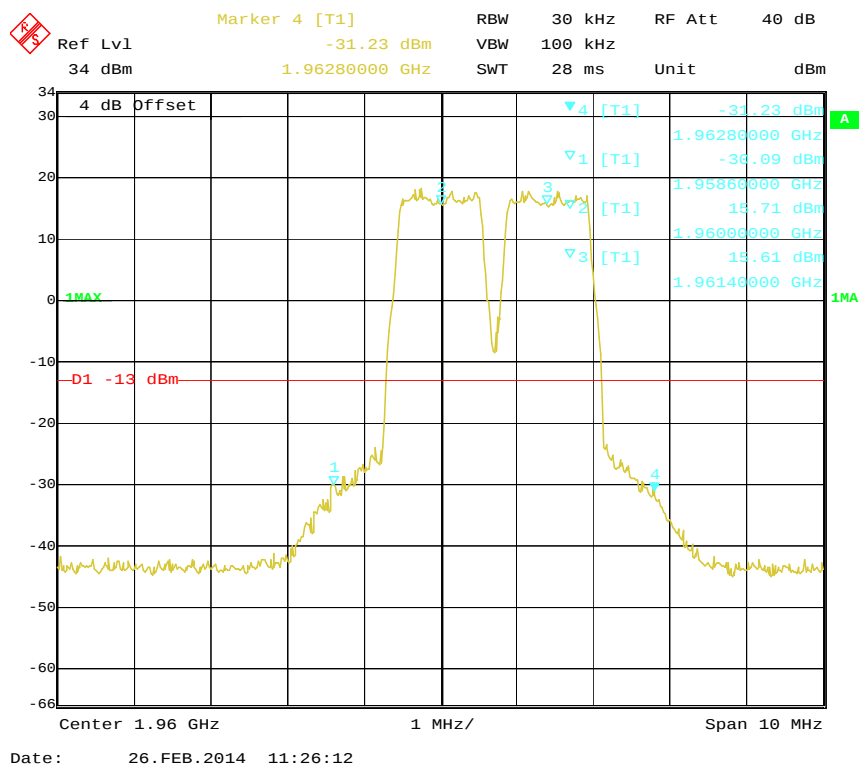
QPSK (1.4MHz) Mode, Input, High Channel



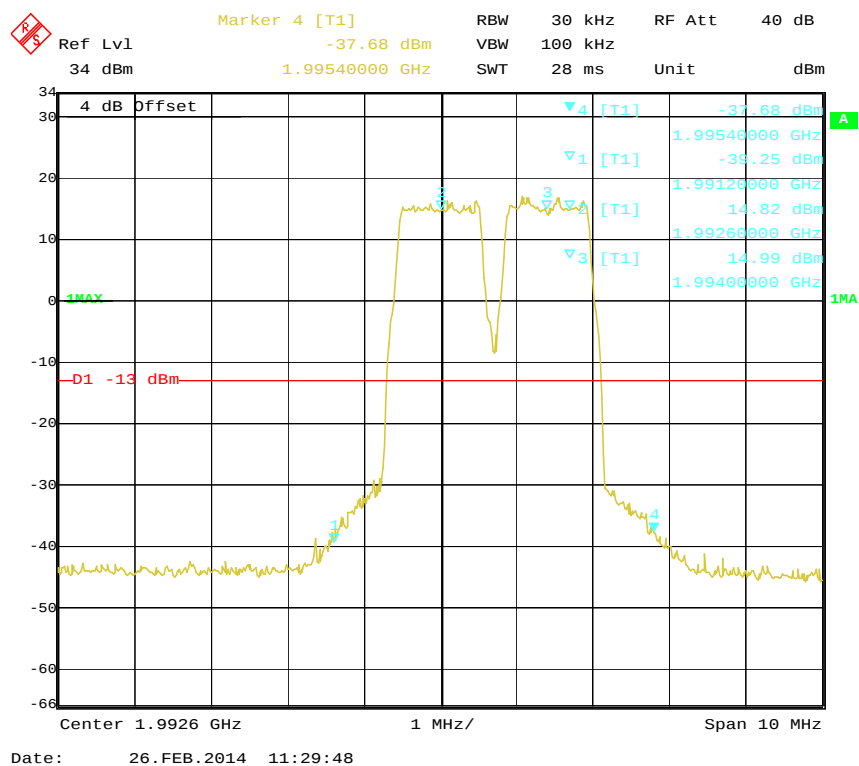
QPSK (1.4MHz) Mode, Output, Low Channel

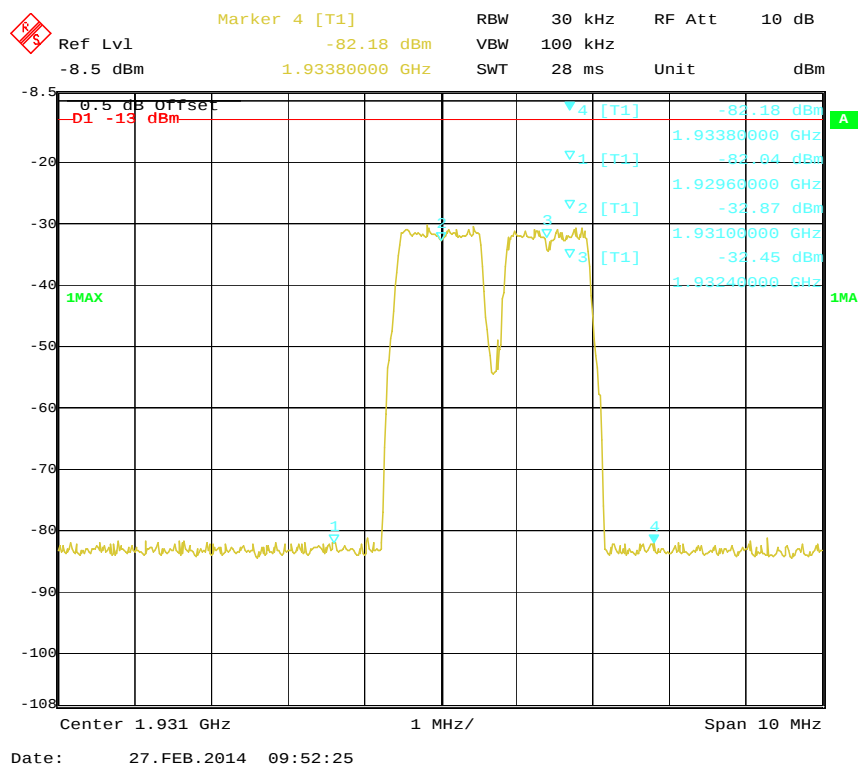
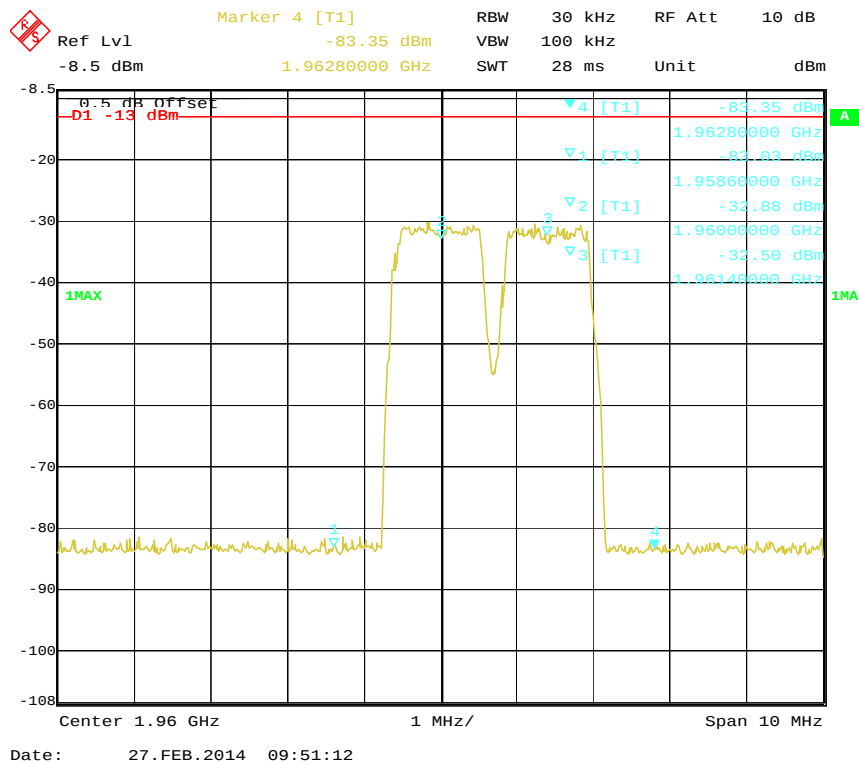


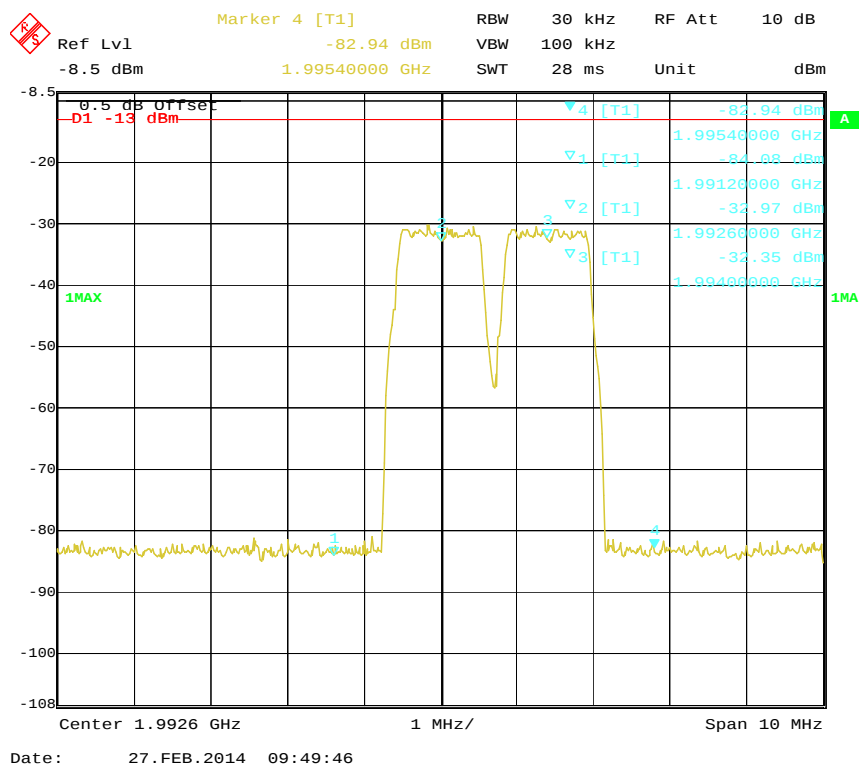
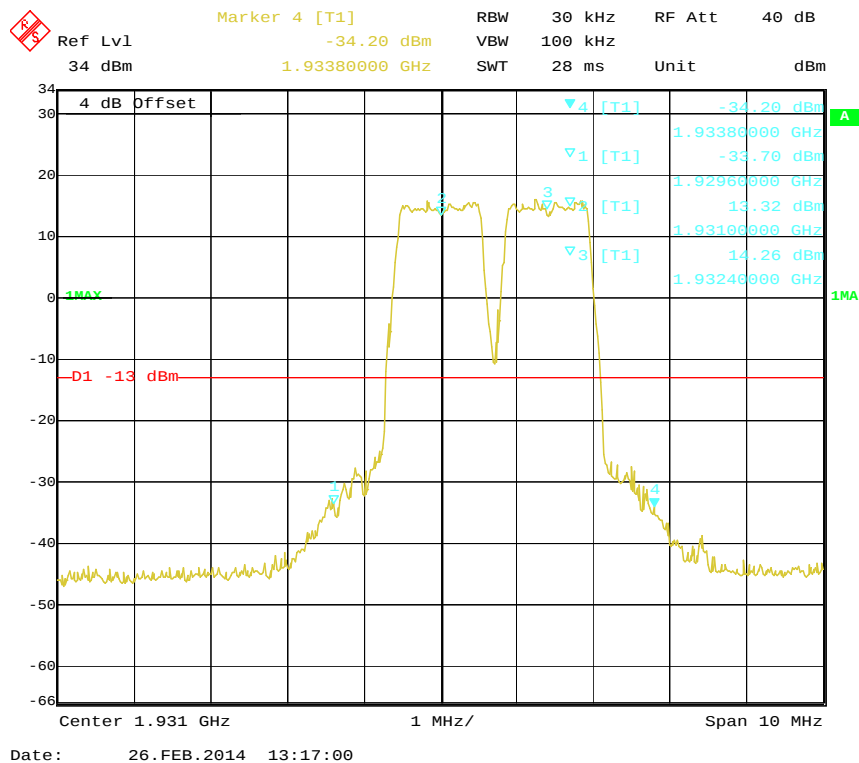
QPSK (1.4MHz) Mode, Output, Middle Channel

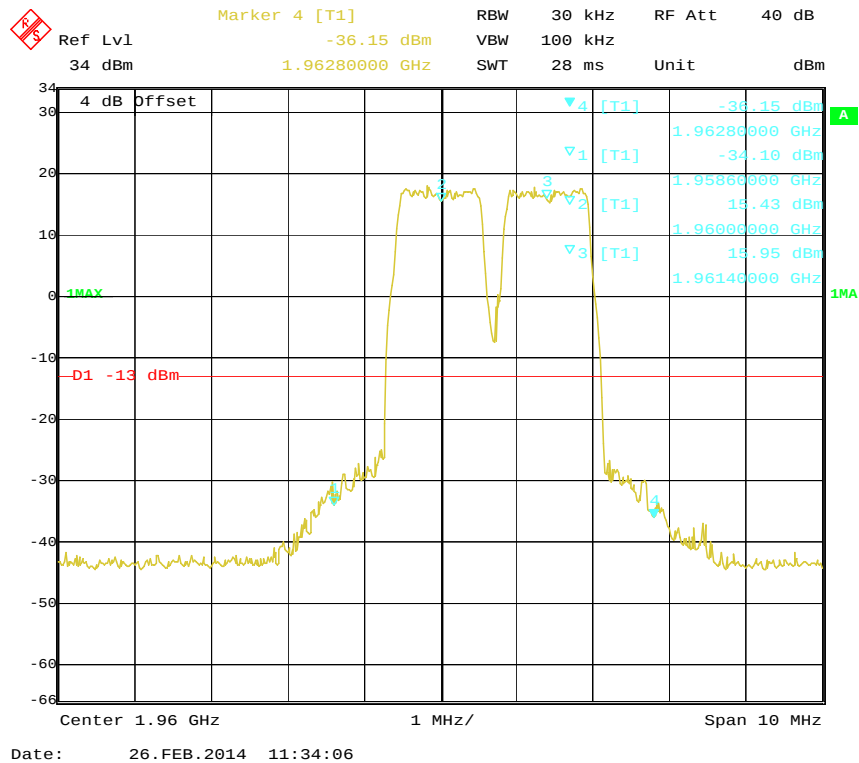
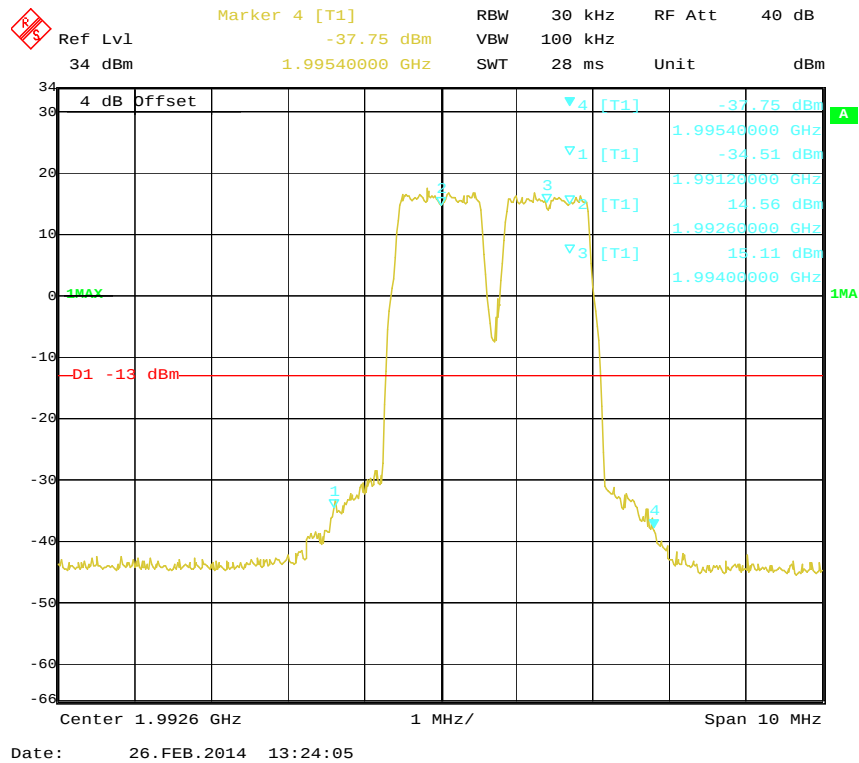


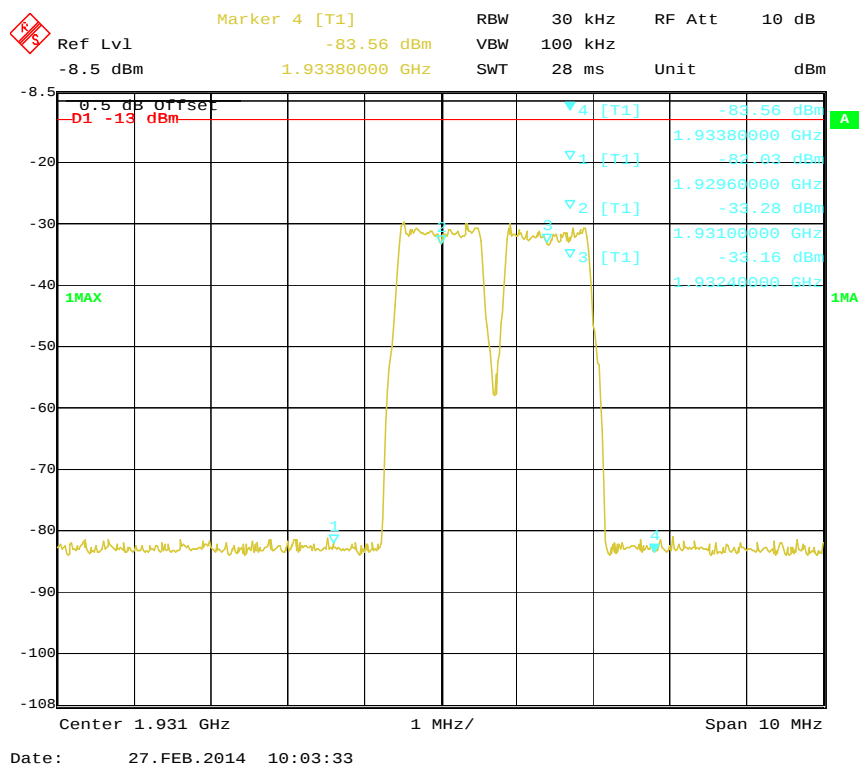
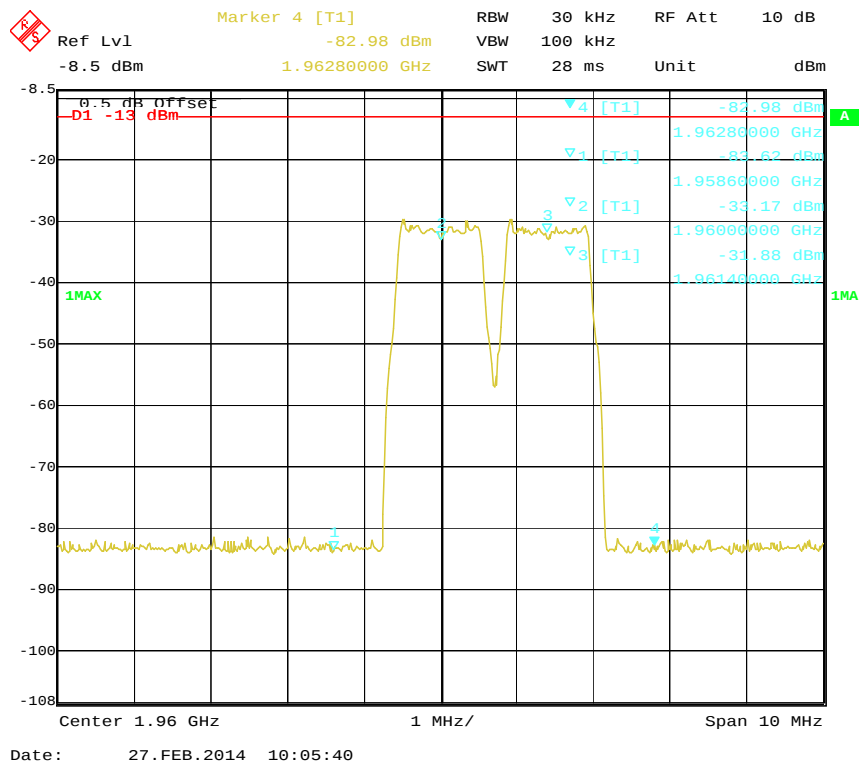
QPSK (1.4MHz) Mode, Output, High Channel

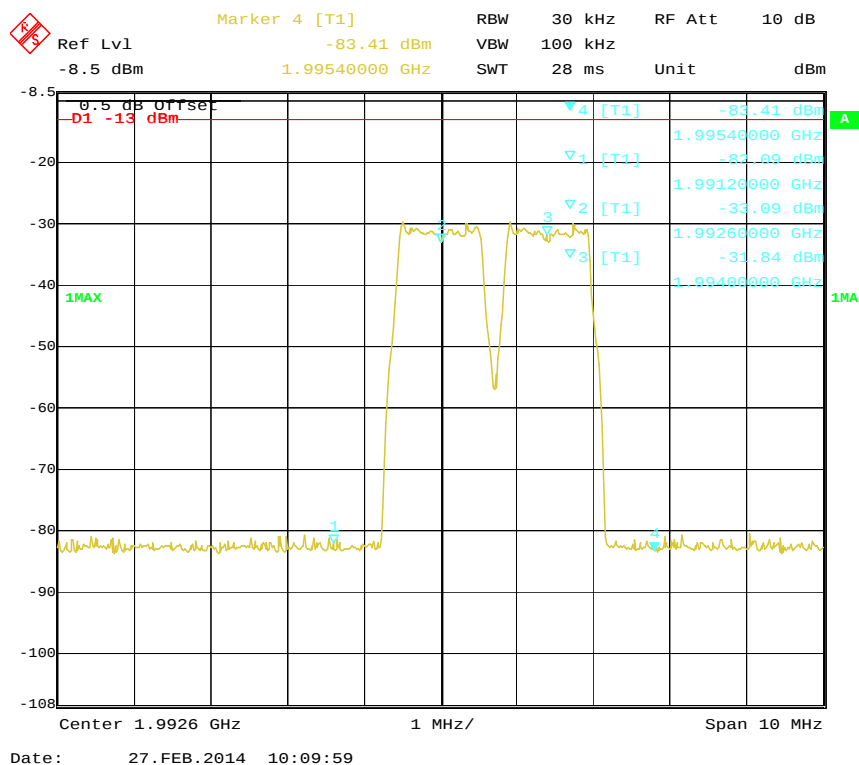
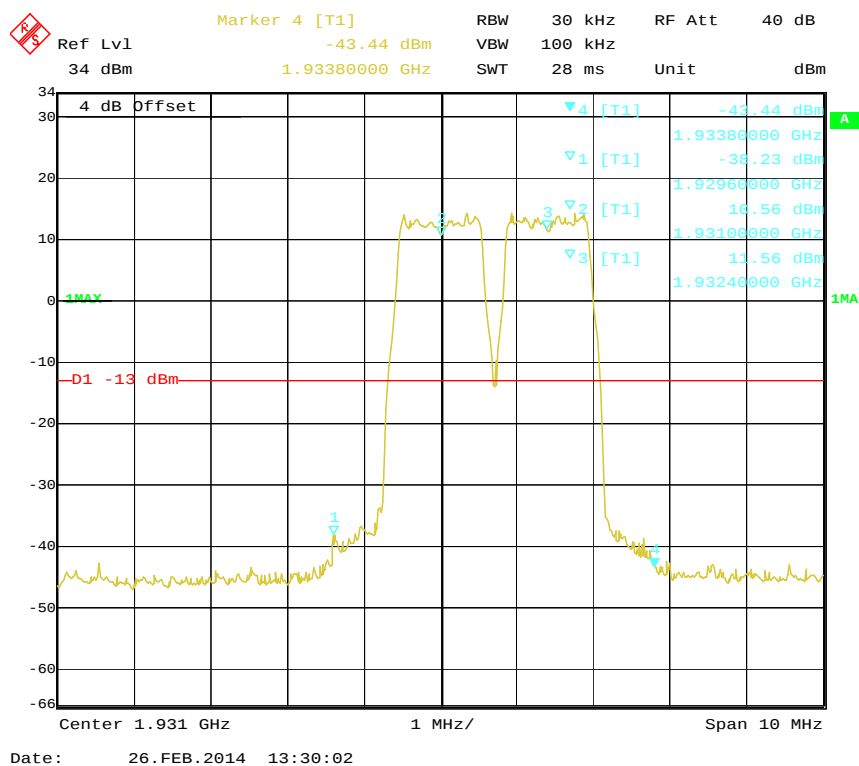


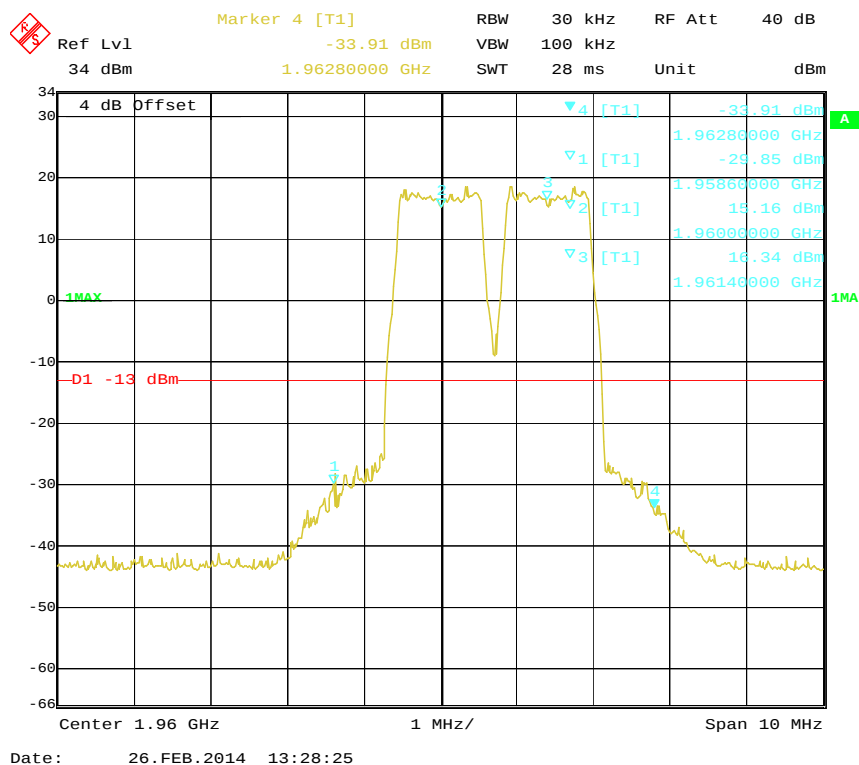
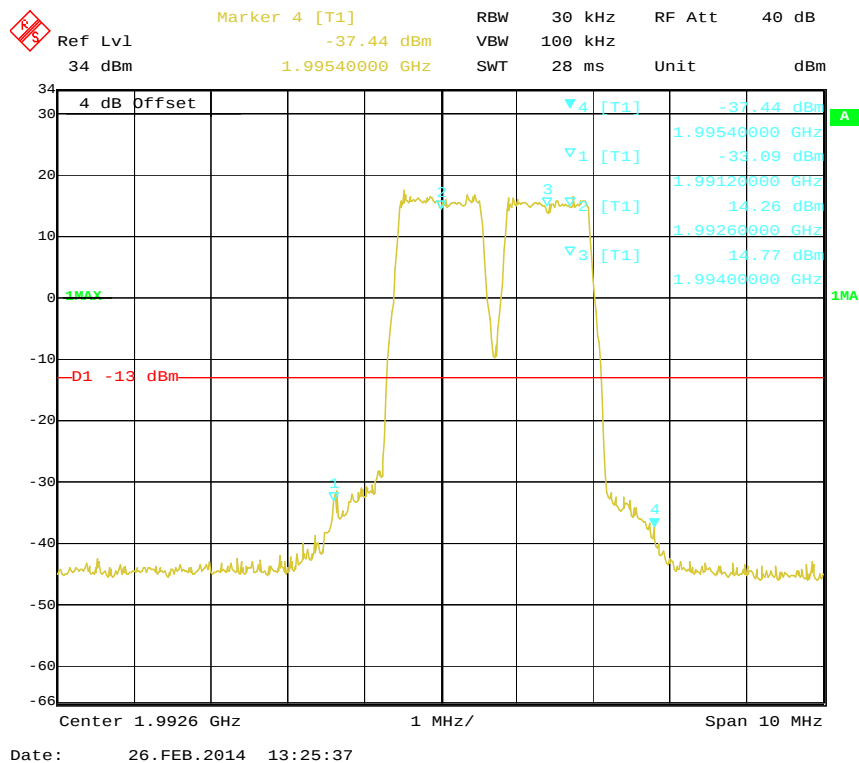
16QAM (1.4MHz) Mode, Input, Low Channel**16QAM (1.4MHz) Mode, Input, Middle Channel**

16QAM (1.4MHz) Mode, Input, High Channel**16QAM (1.4MHz) Mode, Output, Low Channel**

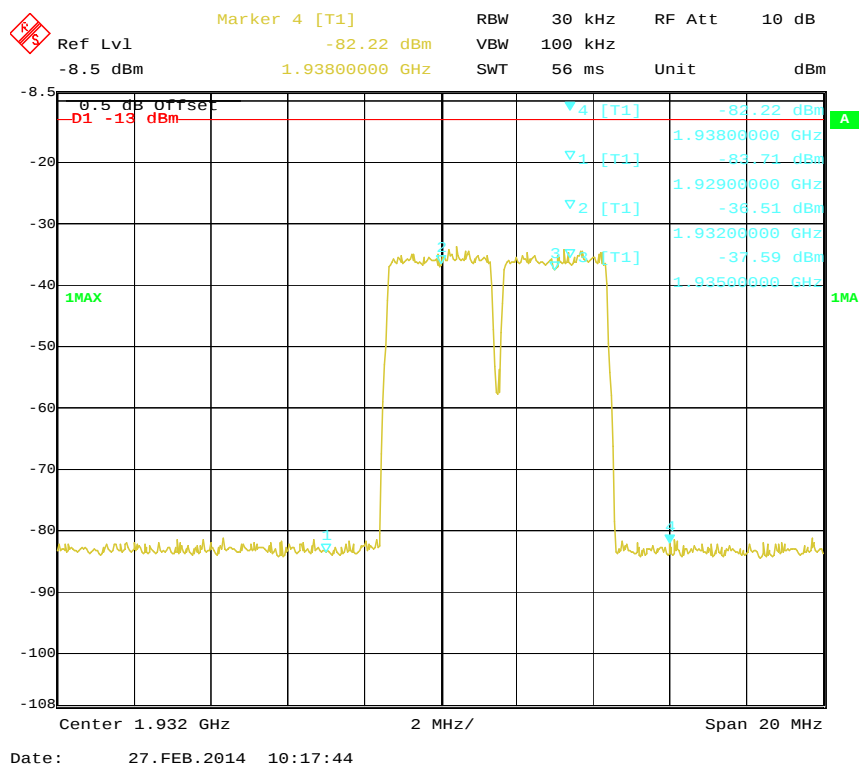
16QAM (1.4MHz) Mode, Output, Middle Channel**16QAM (1.4MHz) Mode, Output, High Channel**

64QAM (1.4MHz) Mode, Input, Low Channel**64QAM (1.4MHz) Mode, Input, Middle Channel**

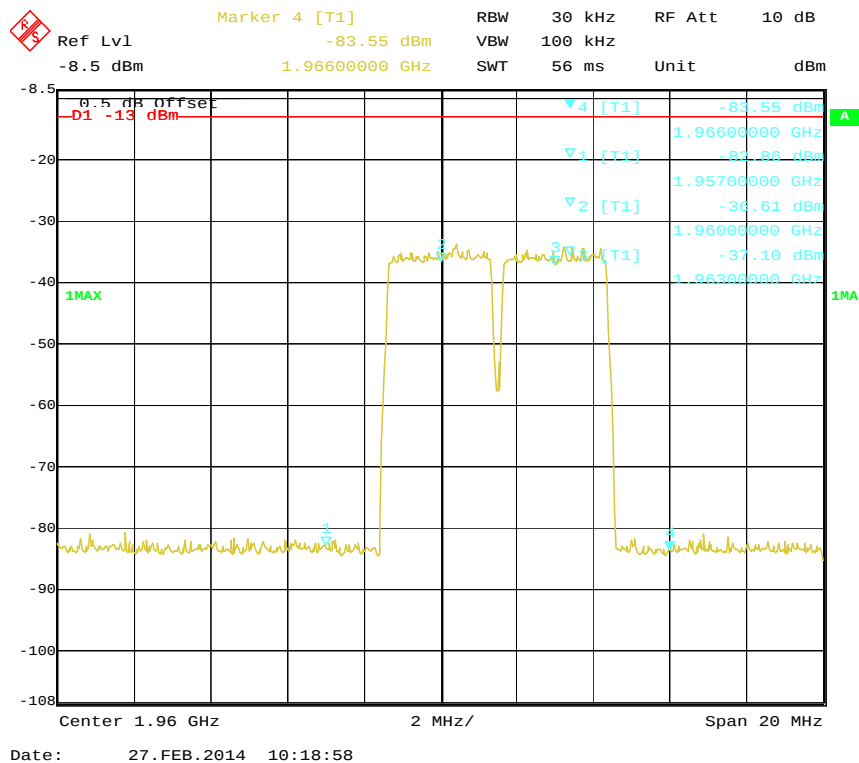
64QAM (1.4MHz) Mode, Input, High Channel**64QAM (1.4MHz) Mode, Output, Low Channel**

64QAM (1.4MHz) Mode, Output, Middle Channel**64QAM (1.4MHz) Mode, Output, High Channel**

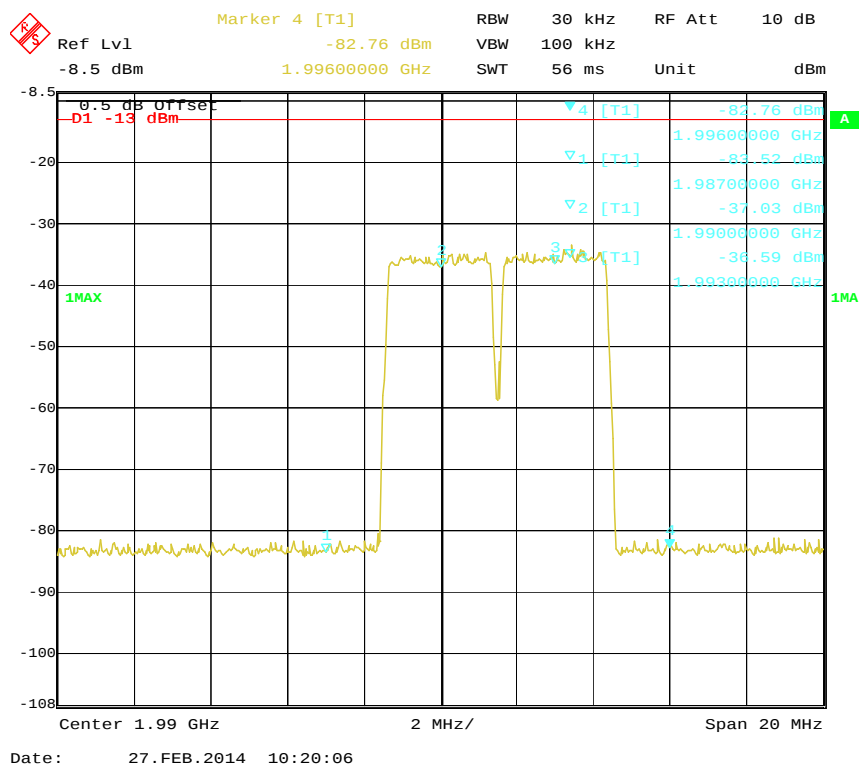
QPSK (3MHz) Mode, Input, Low Channel



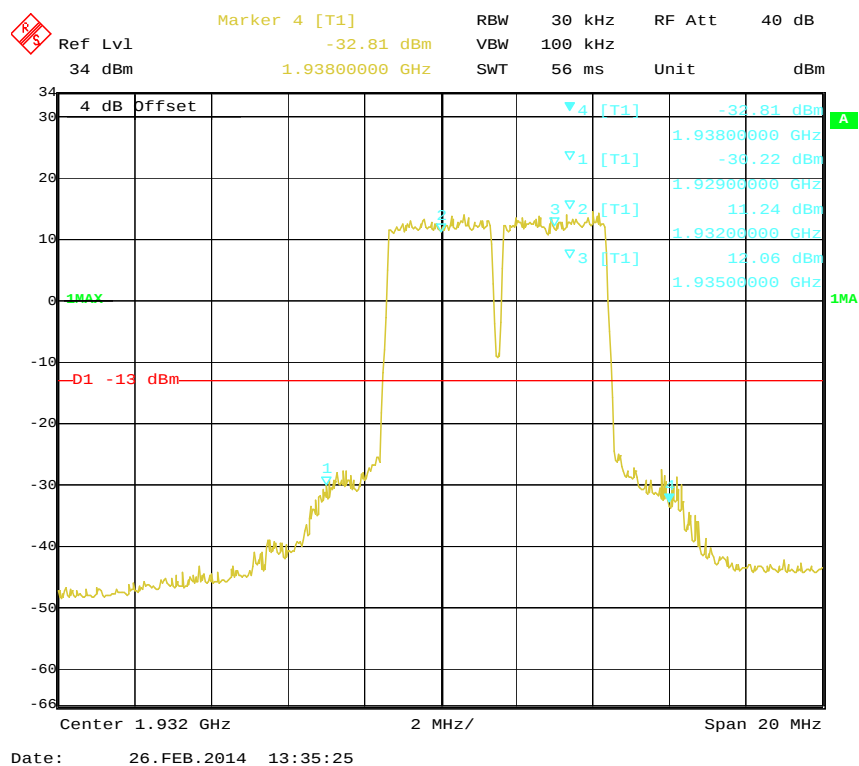
QPSK (3MHz) Mode, Input, Middle Channel



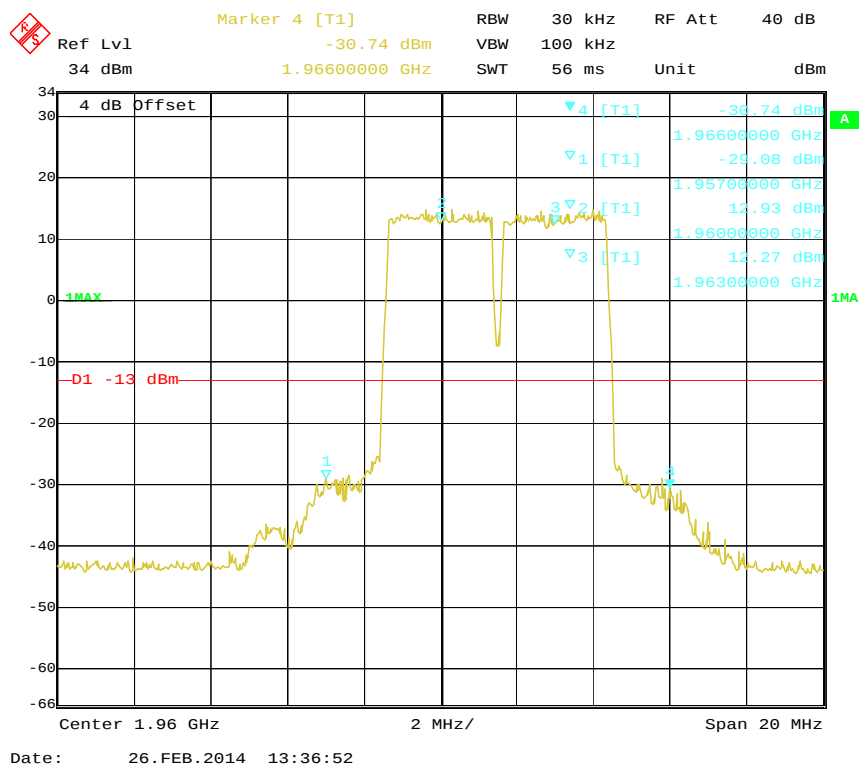
QPSK (3MHz) Mode, Input, High Channel



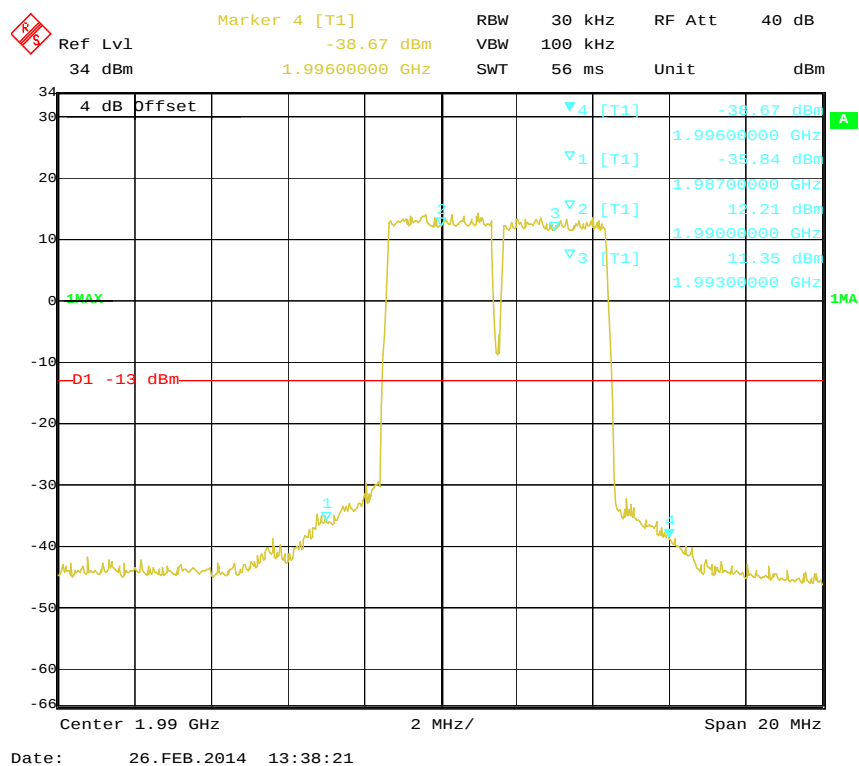
QPSK (3MHz) Mode, Output, Low Channel

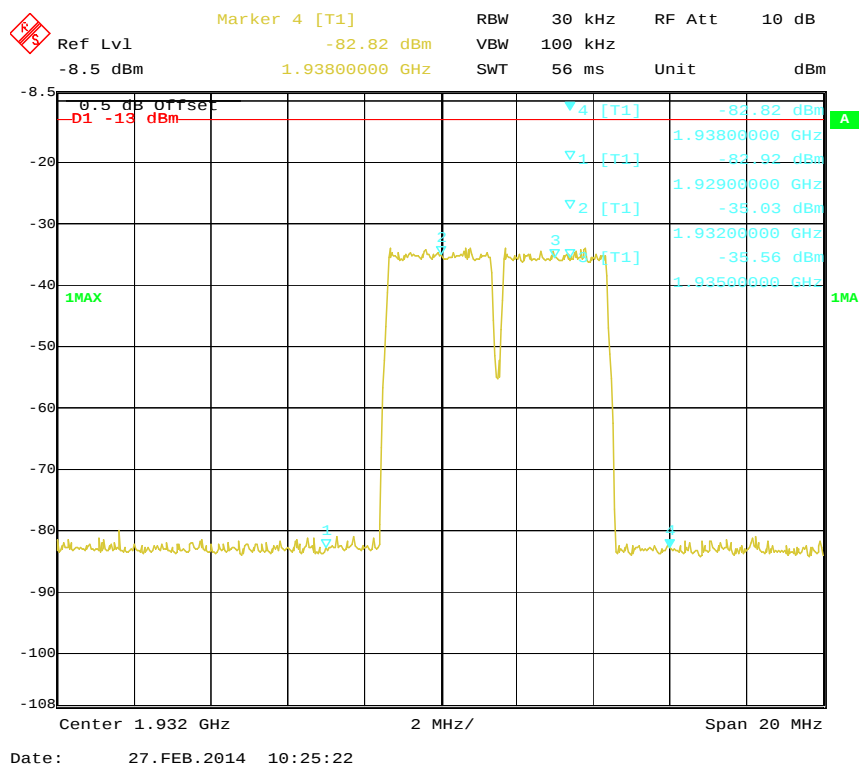
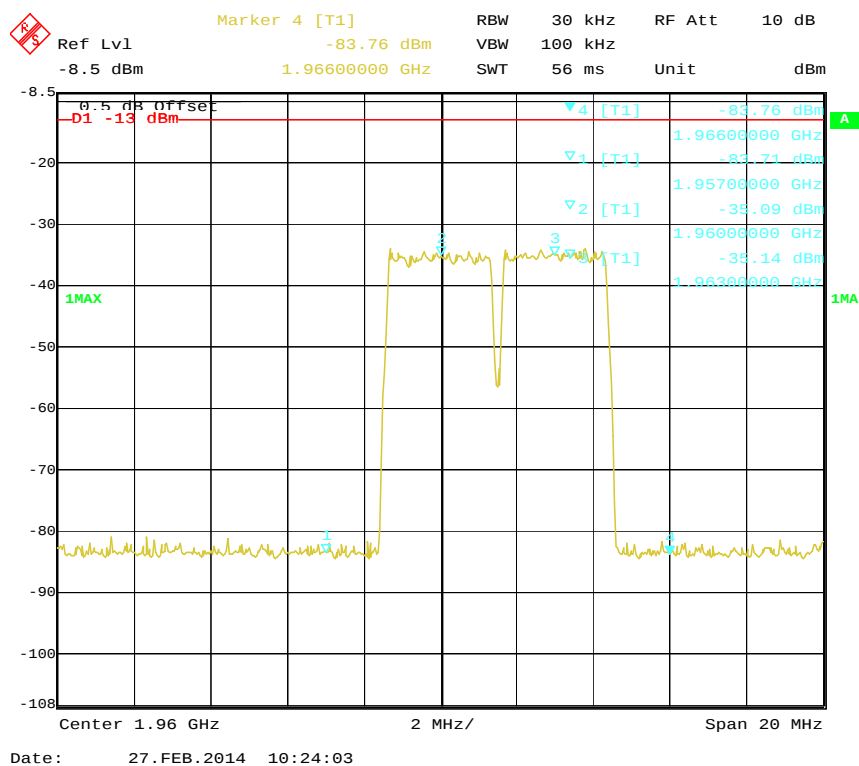


QPSK (3MHz) Mode, Output, Middle Channel

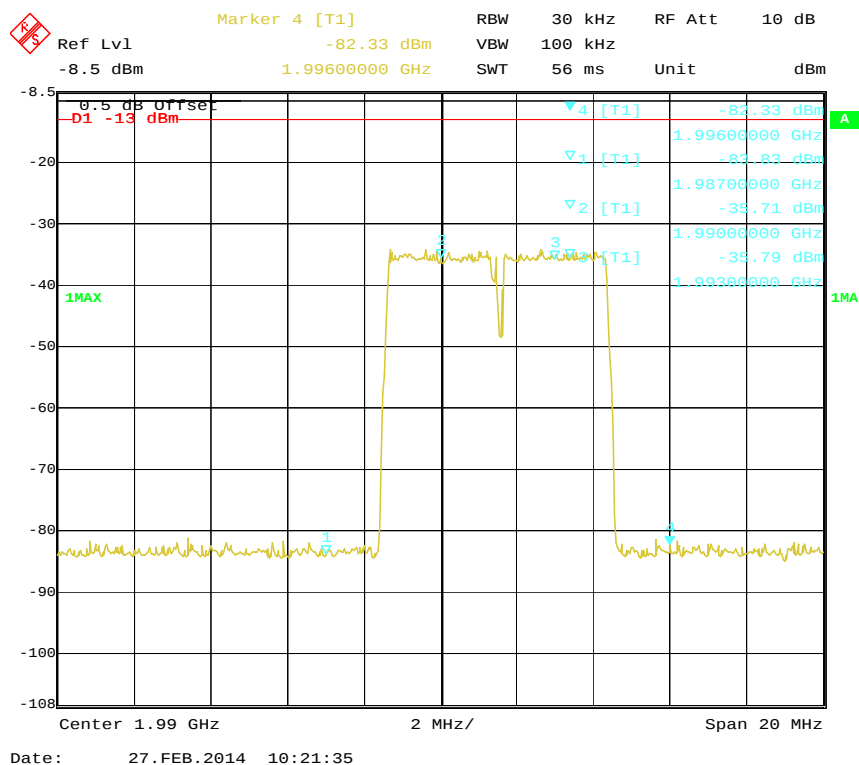


QPSK (3MHz) Mode, Output, High Channel

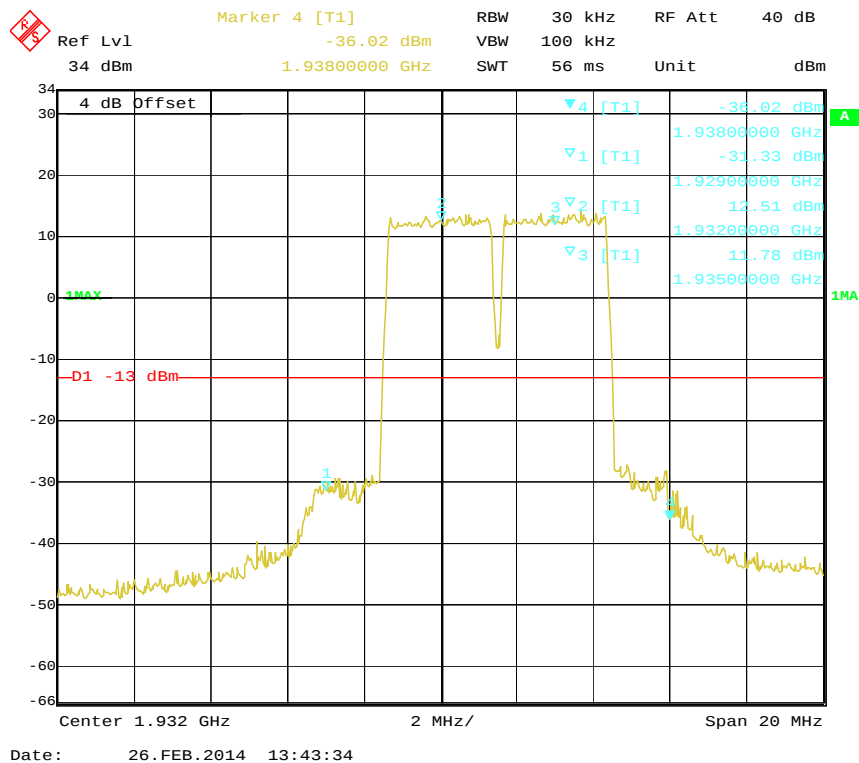


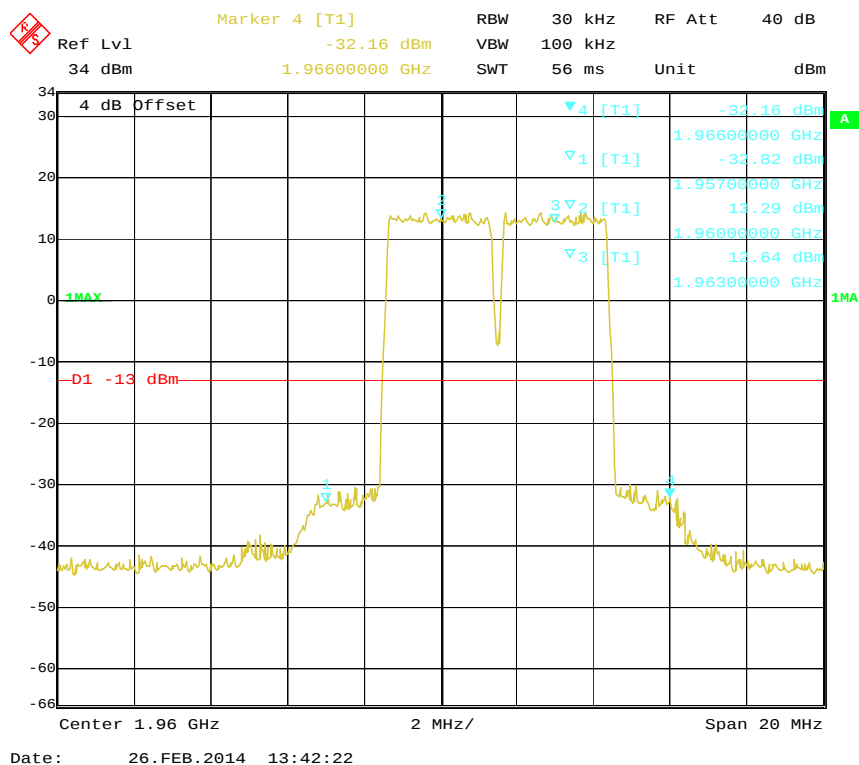
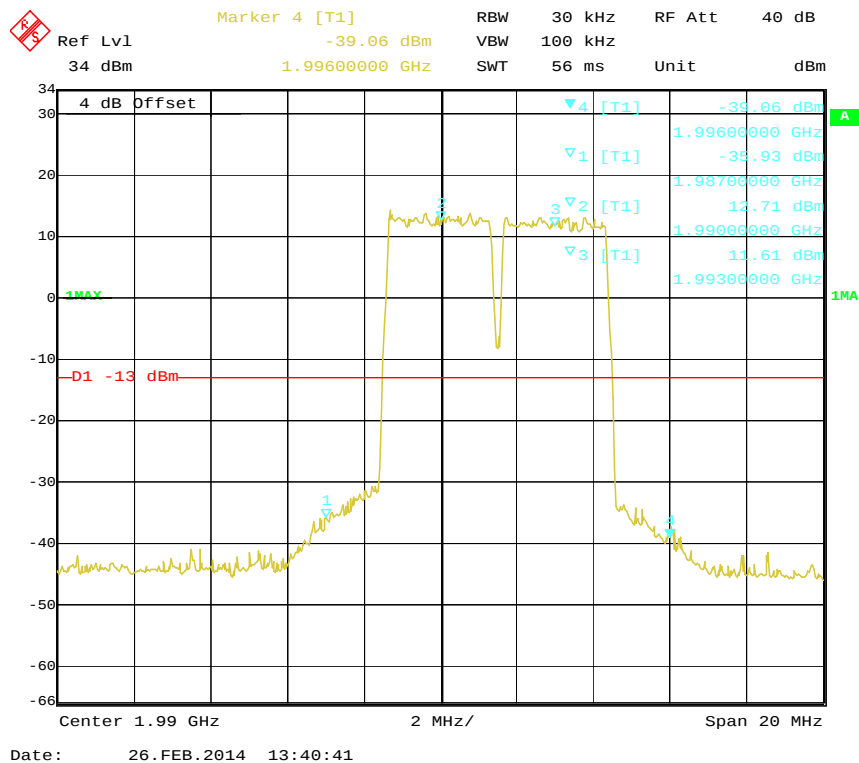
16QAM (3MHz) Mode, Input, Low Channel**16QAM (3MHz) Mode, Input, Middle Channel**

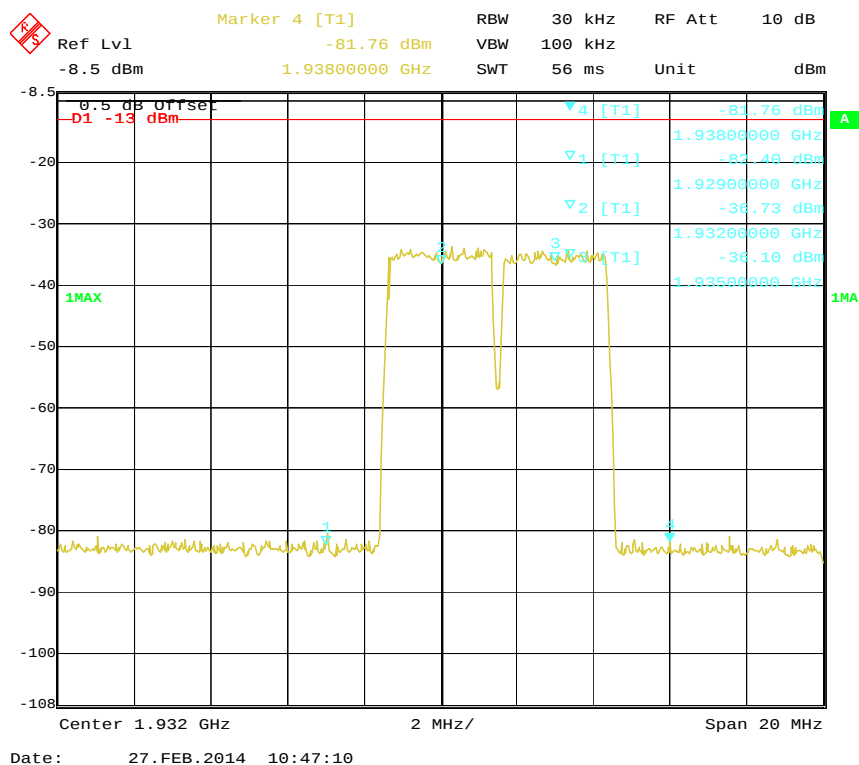
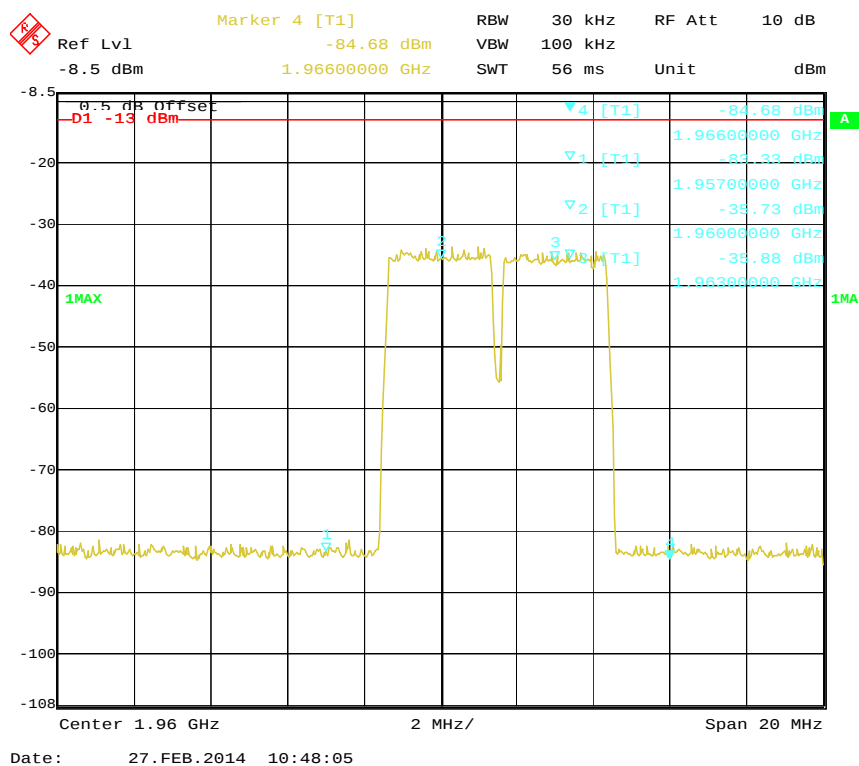
16QAM (3MHz) Mode, Input, High Channel



16QAM (3MHz) Mode, Output, Low Channel



16QAM (3MHz) Mode, Output, Middle Channel**16QAM (3MHz) Mode, Output, High Channel**

64QAM (3MHz) Mode, Input, Low Channel**64QAM (3MHz) Mode, Input, Middle Channel**

Ref Lvl -8.5 dBm RBW 30 kHz RF Att 10 dB
 -8.5 dBm 1.99600000 GHz SWT 56 ms Unit dBm

Marker 4 [T1] -84.18 dBm
 -83.84 dBm
 -36.57 dBm
 -36.28 dBm
 -36.30 dBm

0.5 dB Offset
 -D1 -13 dBm
 1MAX
 1A

Center 1.99 GHz 2 MHz/ Span 20 MHz

Date: 27.FEB.2014 10:49:16

Ref Lvl 34 dBm

Marker 4 [T1] -30.26 dBm

RBW 30 kHz RF Att 40 dB

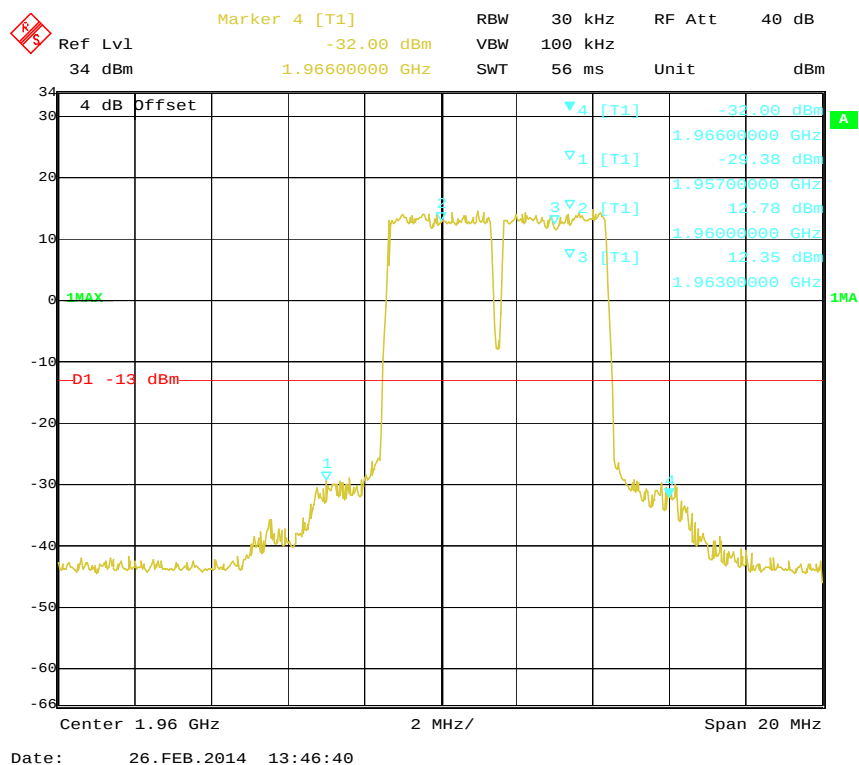
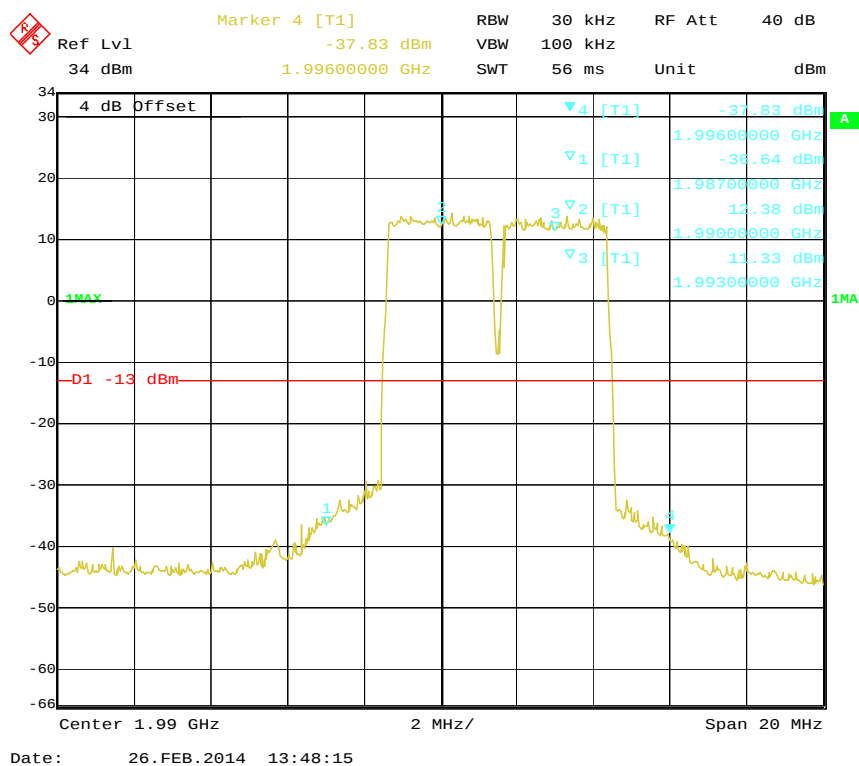
VBW 100 kHz

SWT 56 ms Unit dBm

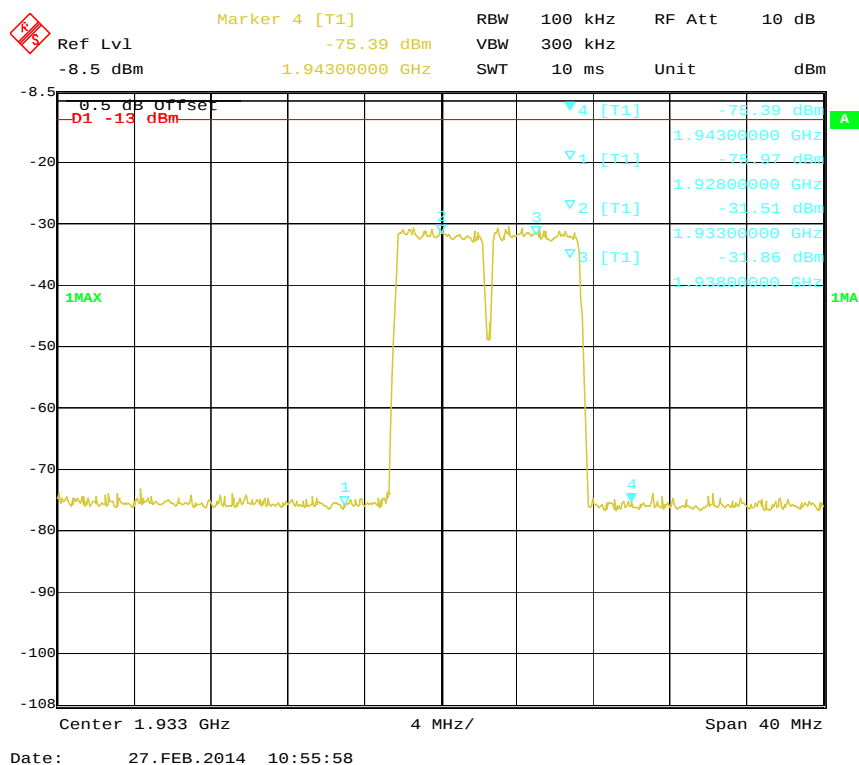
Marker	Frequency (GHz)	Power (dBm)
1	1.93800000	-29.26
2	1.92900000	13.73
3	1.93200000	12.12
4	1.93800000	-30.26
5	1.93500000	-30.26

Center 1.932 GHz 2 MHz/ Span 20 MHz

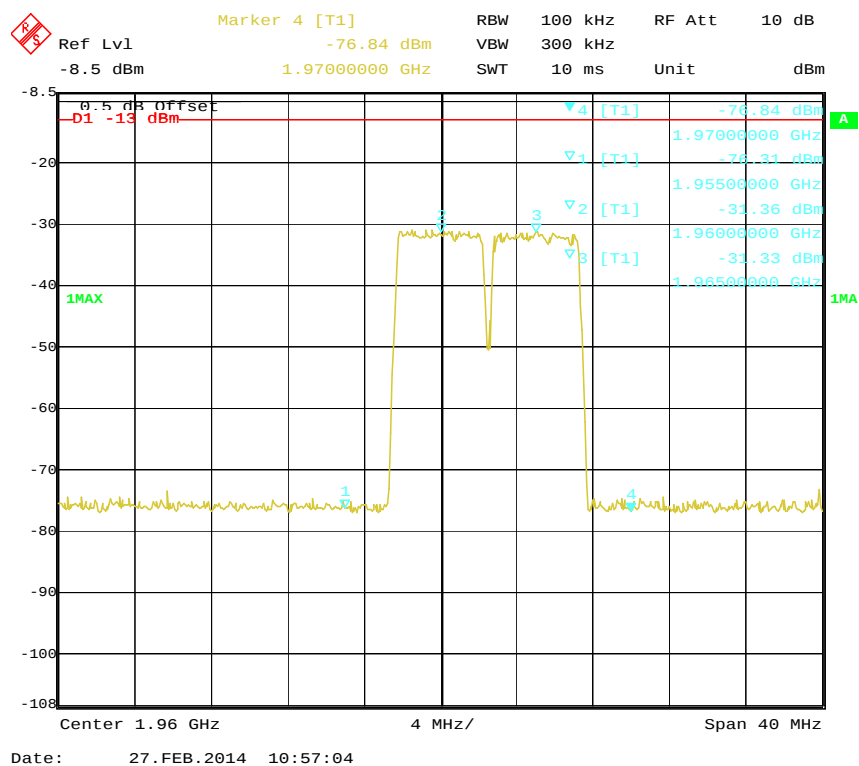
Date: 26.FEB.2014 13:45:27

64QAM (3MHz) Mode, Output, Middle Channel**64QAM (3MHz) Mode, Output, High Channel**

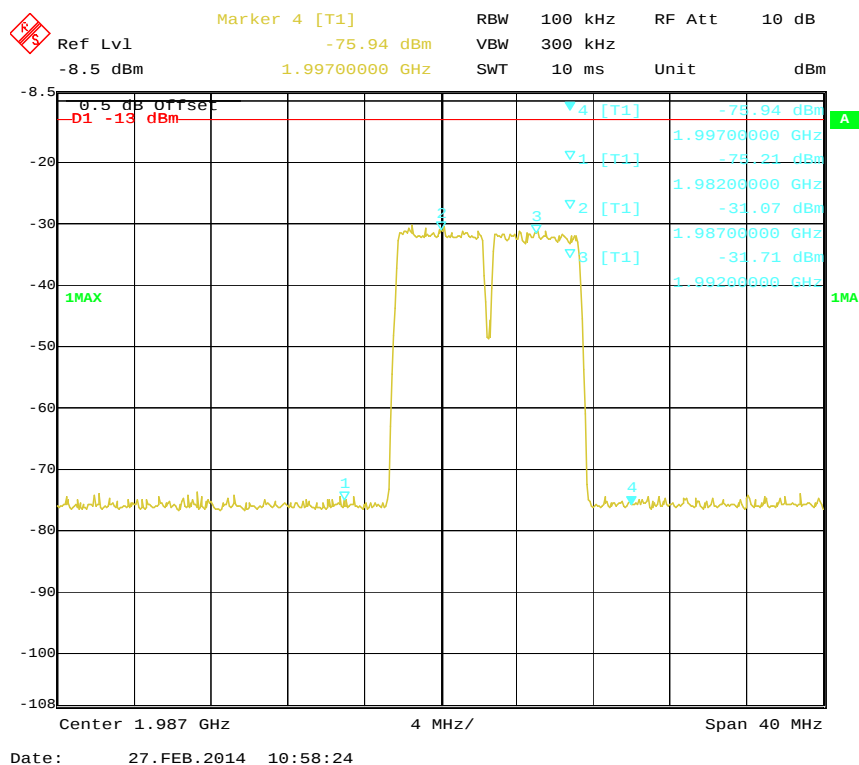
QPSK (5MHz) Mode, Input, Low Channel



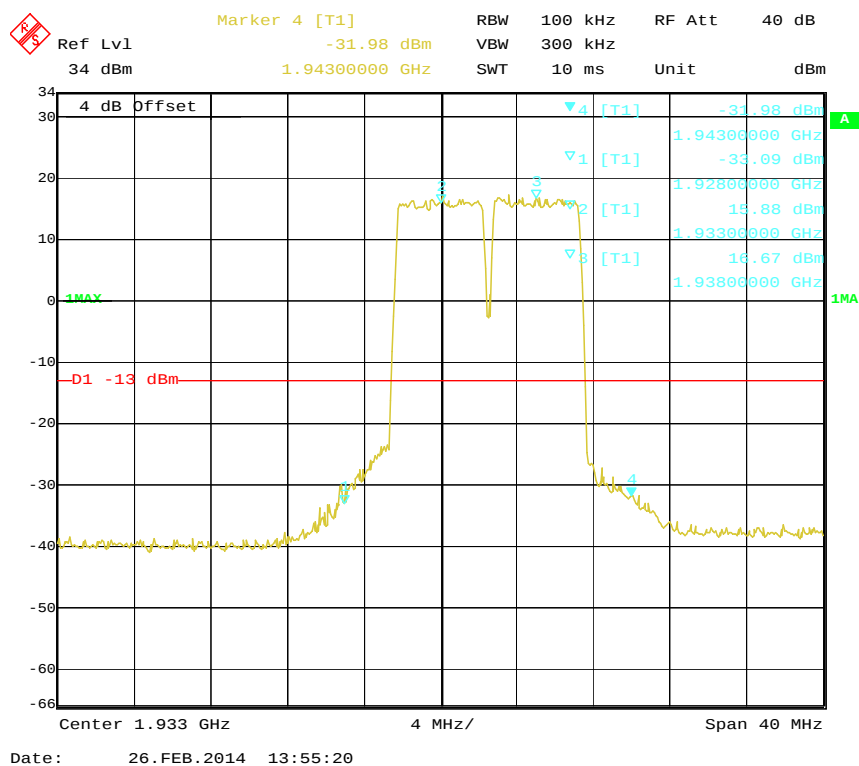
QPSK (5MHz) Mode, Input, Middle Channel



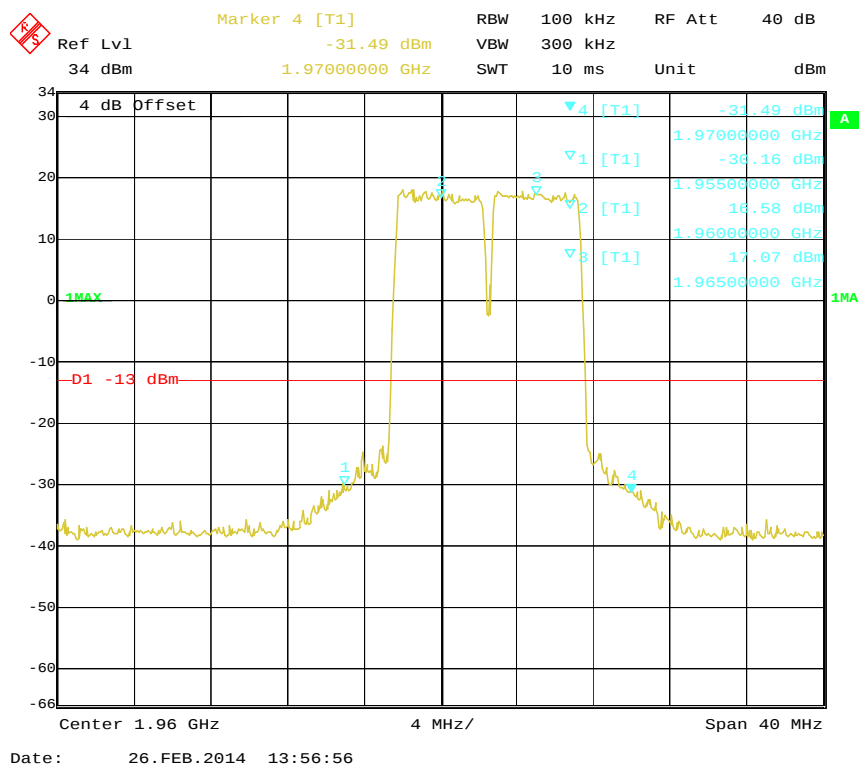
QPSK (5MHz) Mode, Input, High Channel



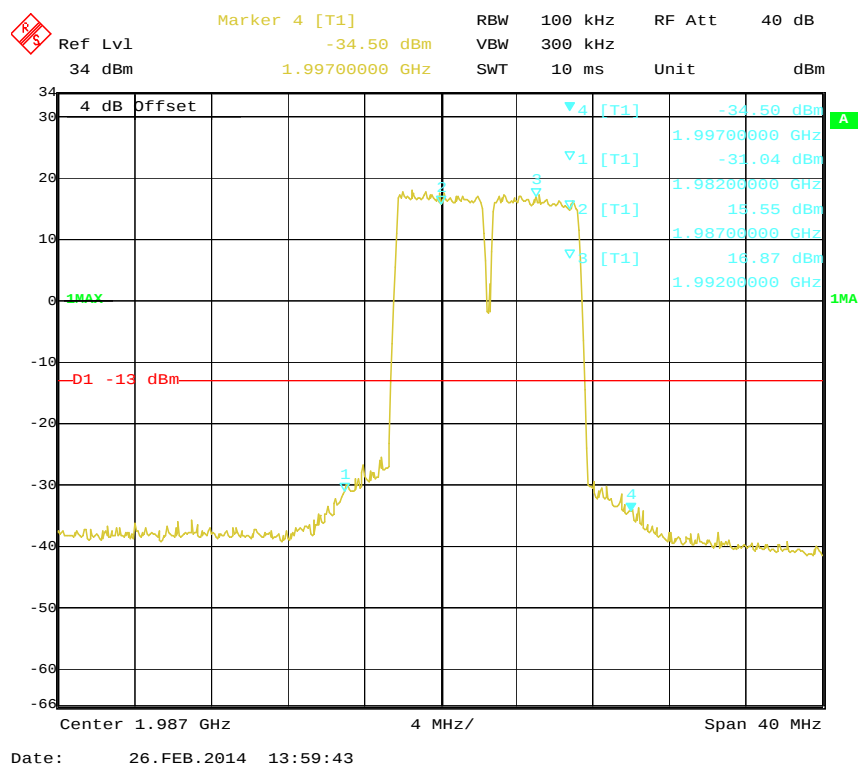
QPSK (5MHz) Mode, Output, Low Channel

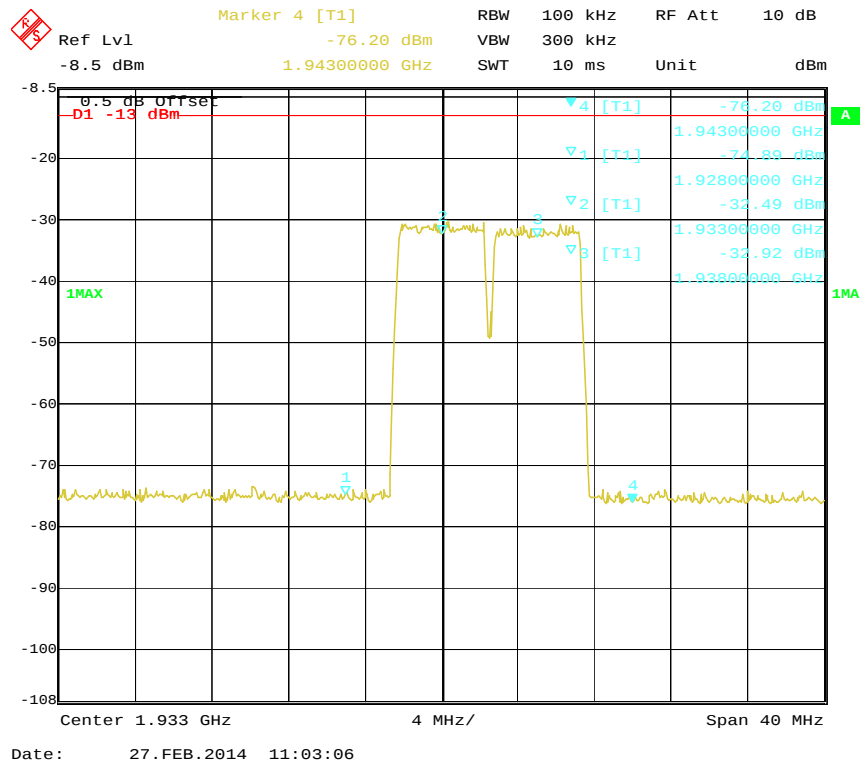
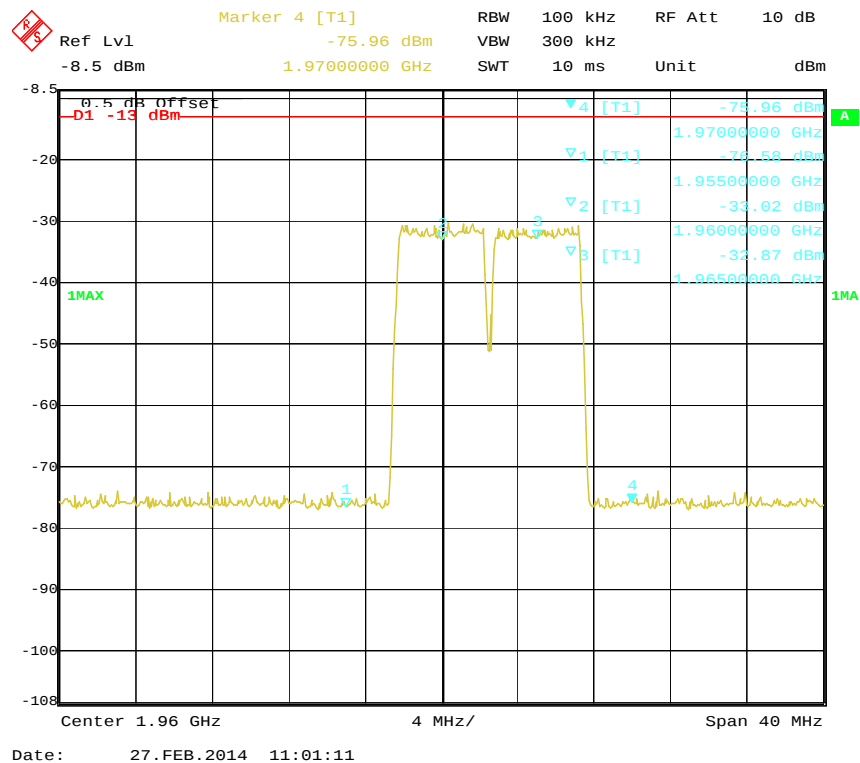


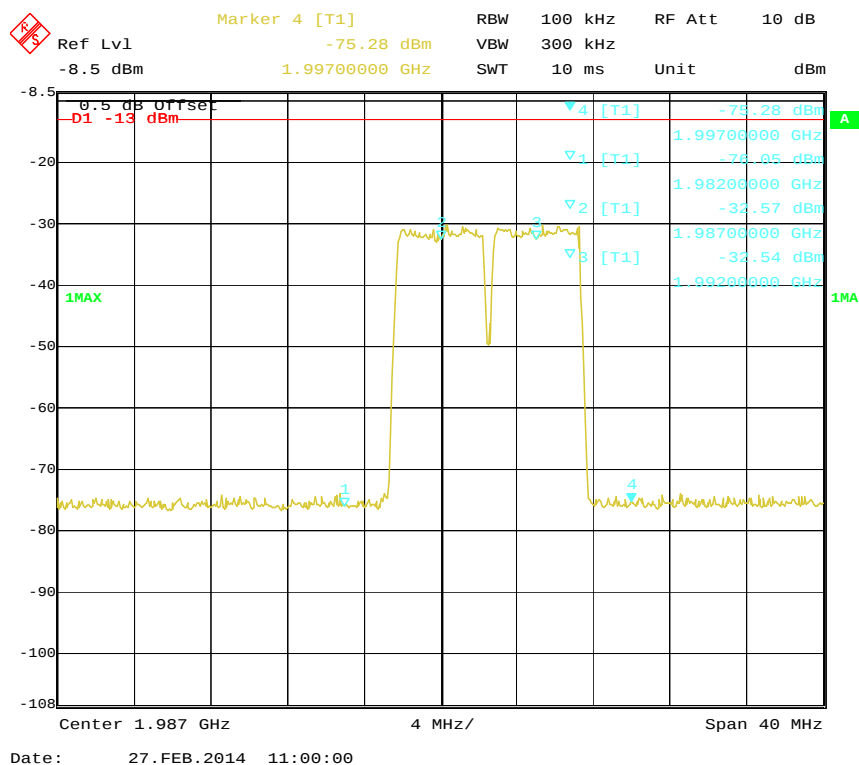
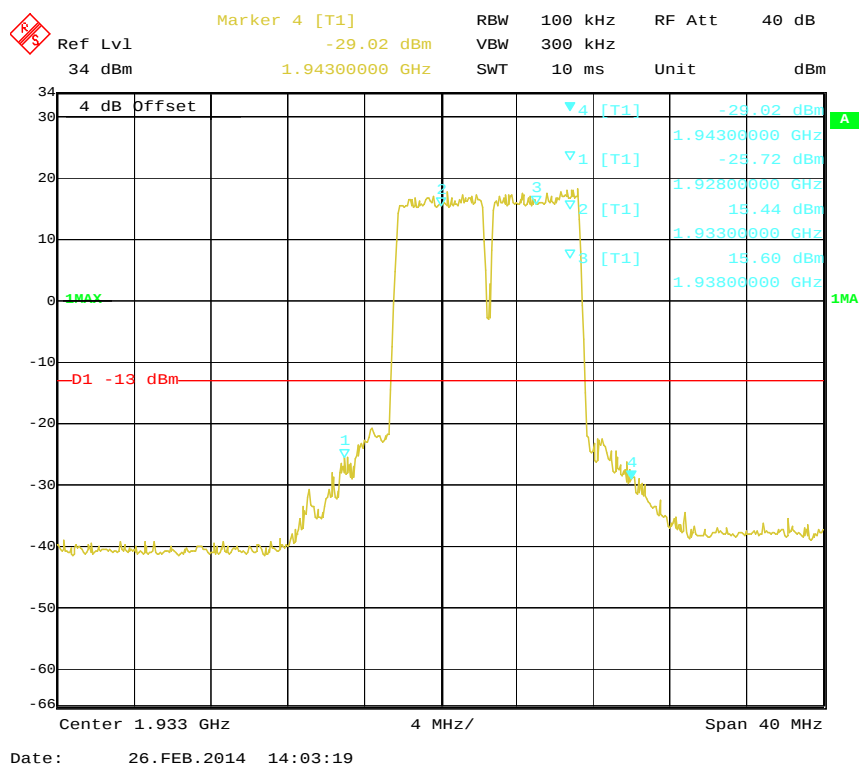
QPSK (5MHz) Mode, Output, Middle Channel

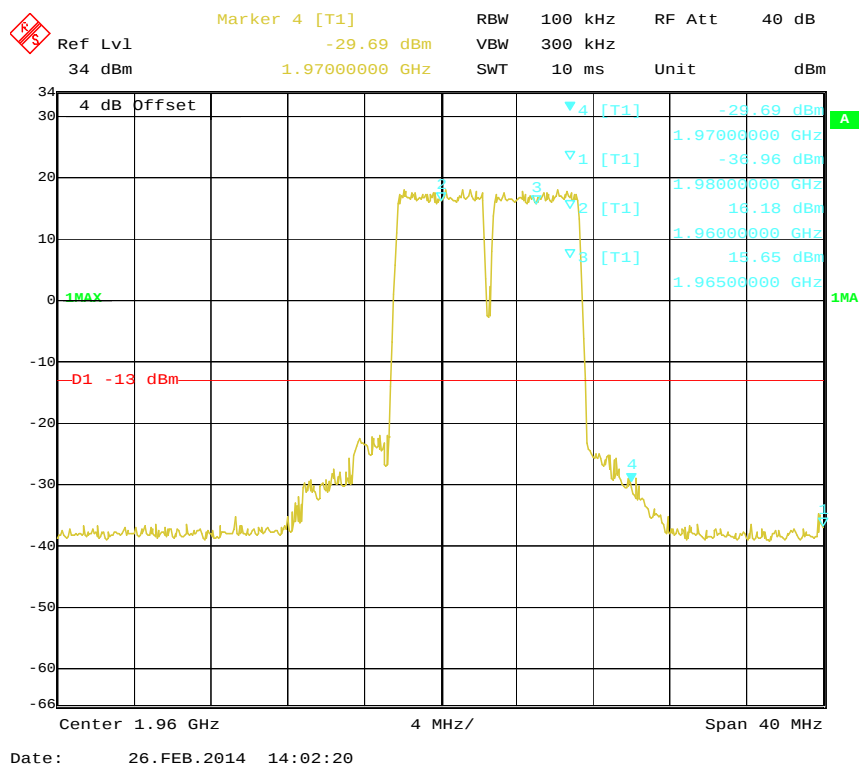
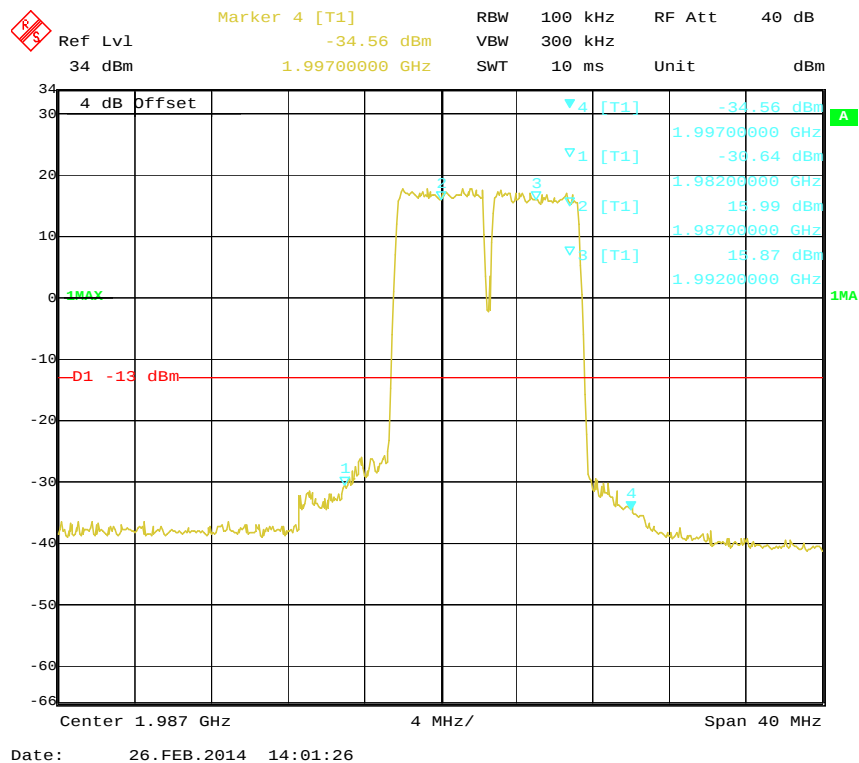


QPSK (5MHz) Mode, Output, High Channel



16QAM (5MHz) Mode, Input, Low Channel**16QAM (5MHz) Mode, Input, Middle Channel**

16QAM (5MHz) Mode, Input, High Channel**16QAM (5MHz) Mode, Output, Low Channel**

16QAM (5MHz) Mode, Output, Middle Channel**16QAM (5MHz) Mode, Output, High Channel**

Ref Lvl -8.5 dBm

Marker 4 [T1] -76.79 dBm

RBW 100 kHz RF Att 10 dB

VBW 300 kHz

SWT 10 ms Unit dBm

0.5 dB Offset

D1 -13 dBm

1.94300000 GHz

1.94300000 GHz

1.92800000 GHz

1.93300000 GHz

1.93800000 GHz

1MA

Center 1.933 GHz

4 MHz/

Span 40 MHz

Date: 27.FEB.2014 11:13:47

Ref Lvl -8.5 dBm

Marker 4 [T1] -76.70 dBm

RBW 100 kHz

VBW 300 kHz

SWT 10 ms

RF Att 10 dB

Unit dBm

0.5 dB Offset

-D1 -13 dBm

1MAX

1MA

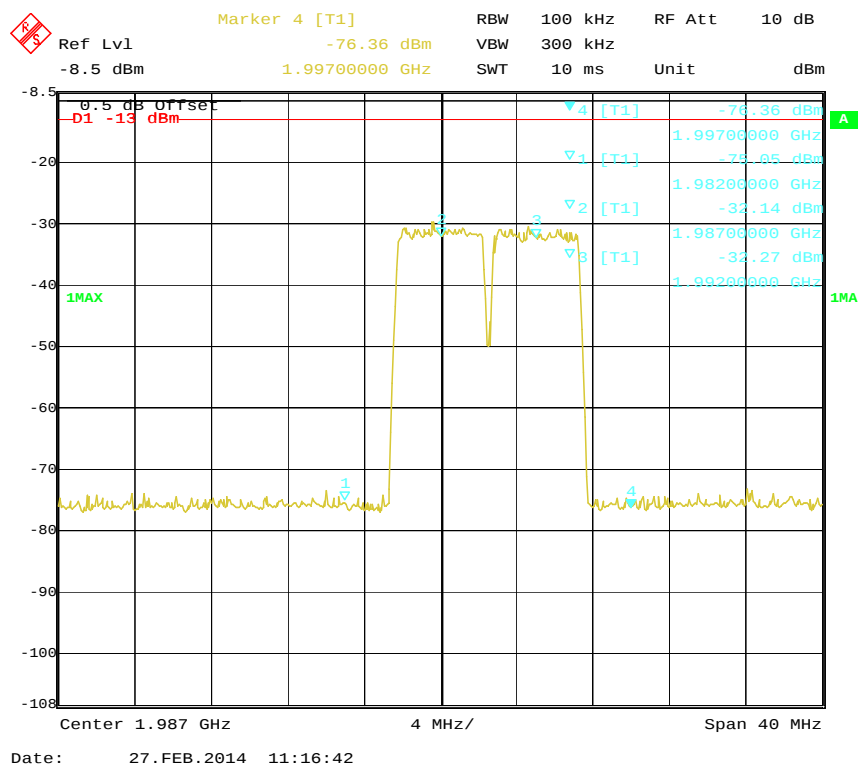
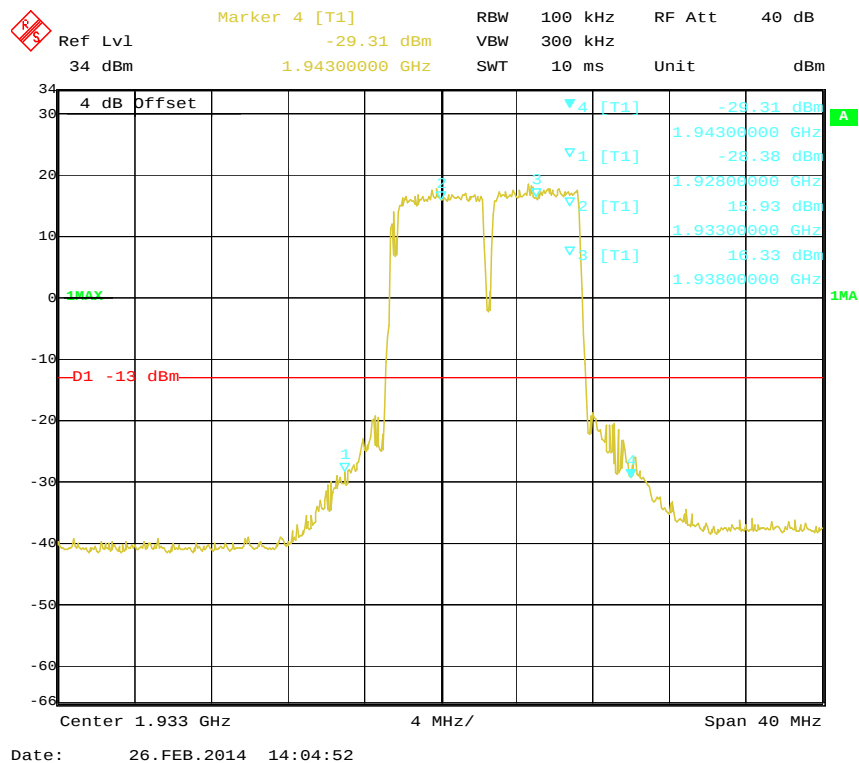
1MIN

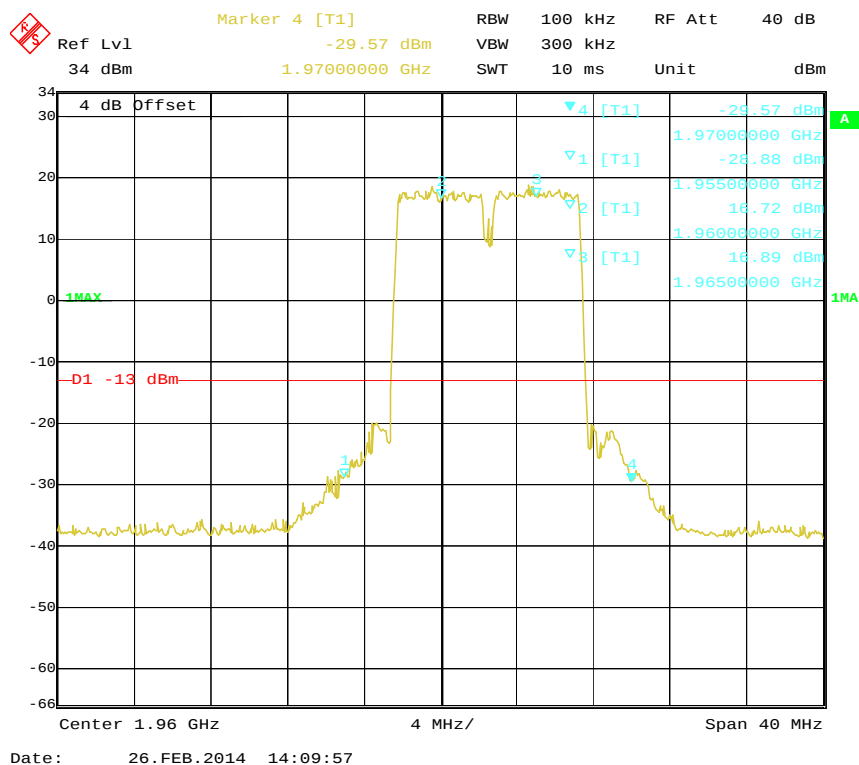
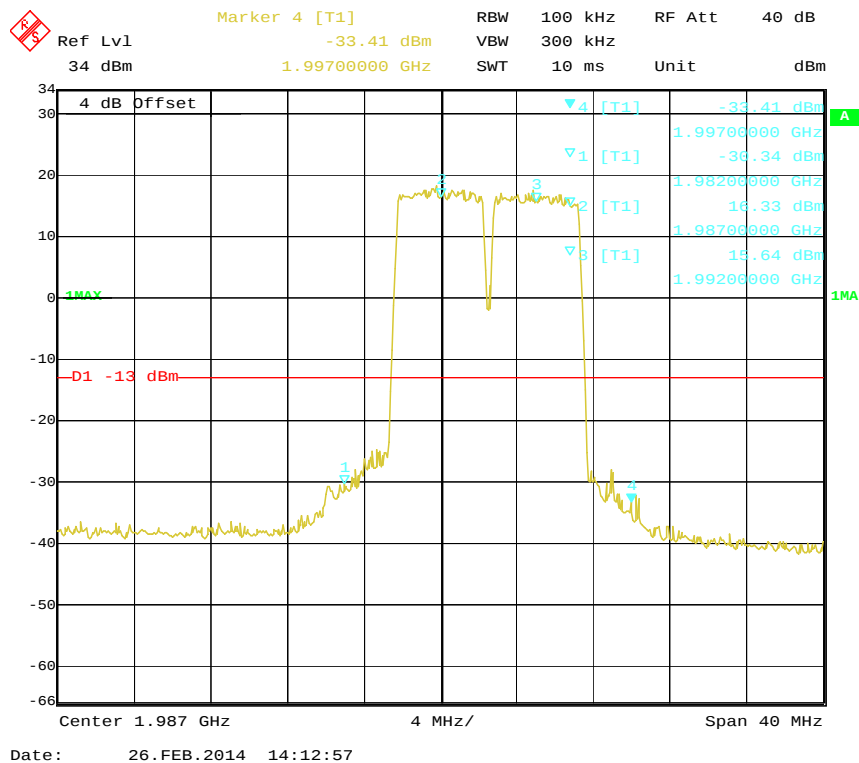
Center 1.96 GHz

4 MHz/

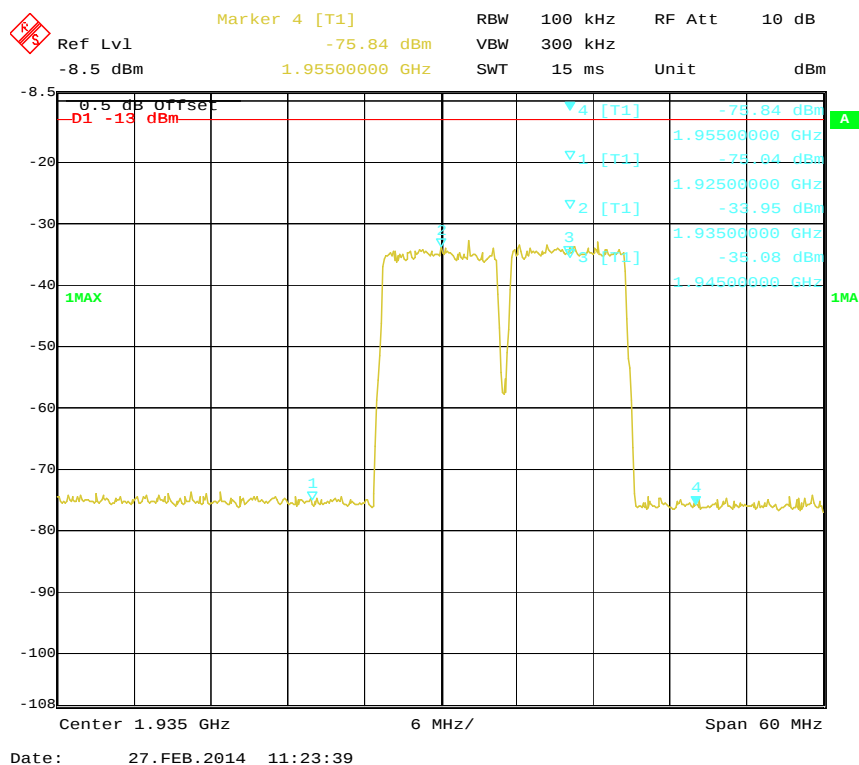
Span 40 MHz

Date: 27.FEB.2014 11:15:08

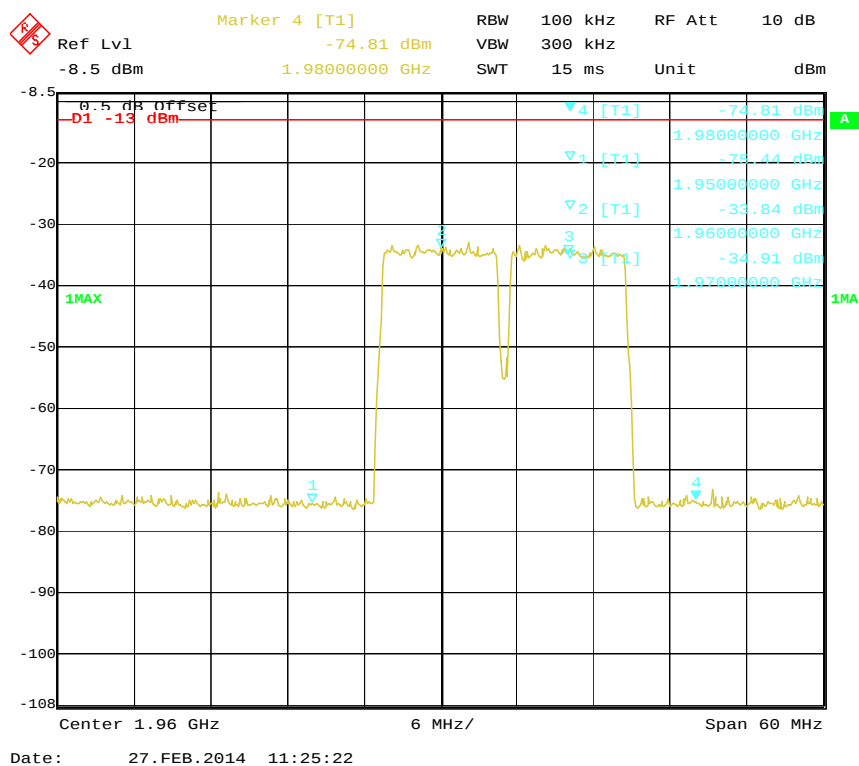
64QAM (5MHz) Mode, Input, High Channel**64QAM (5MHz) Mode, Output, Low Channel**

64QAM (5MHz) Mode, Output, Middle Channel**64QAM (5MHz) Mode, Output, High Channel**

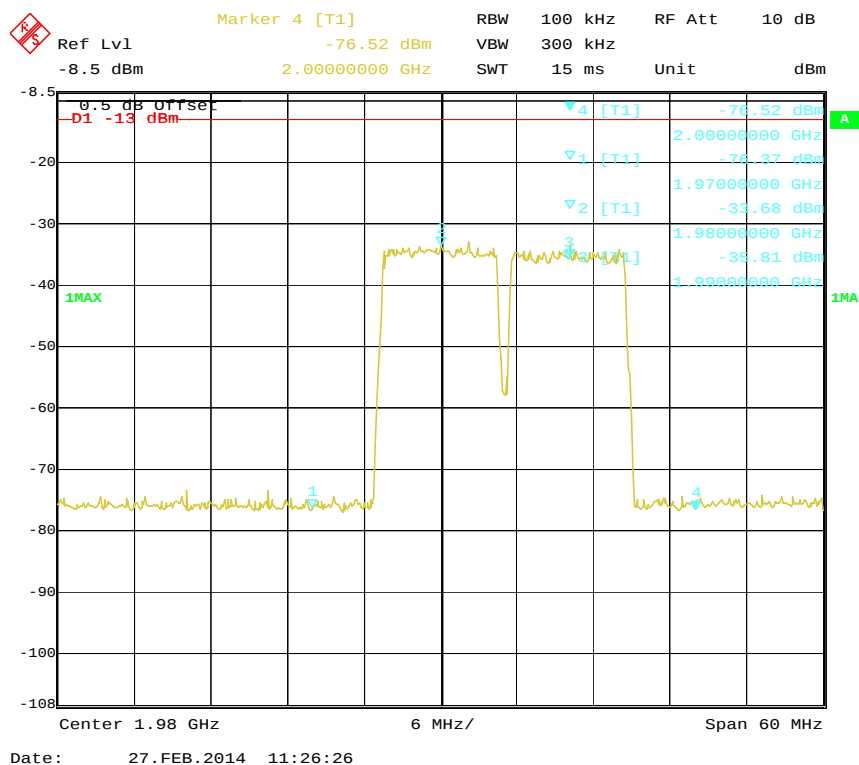
QPSK (10MHz) Mode, Input, Low Channel



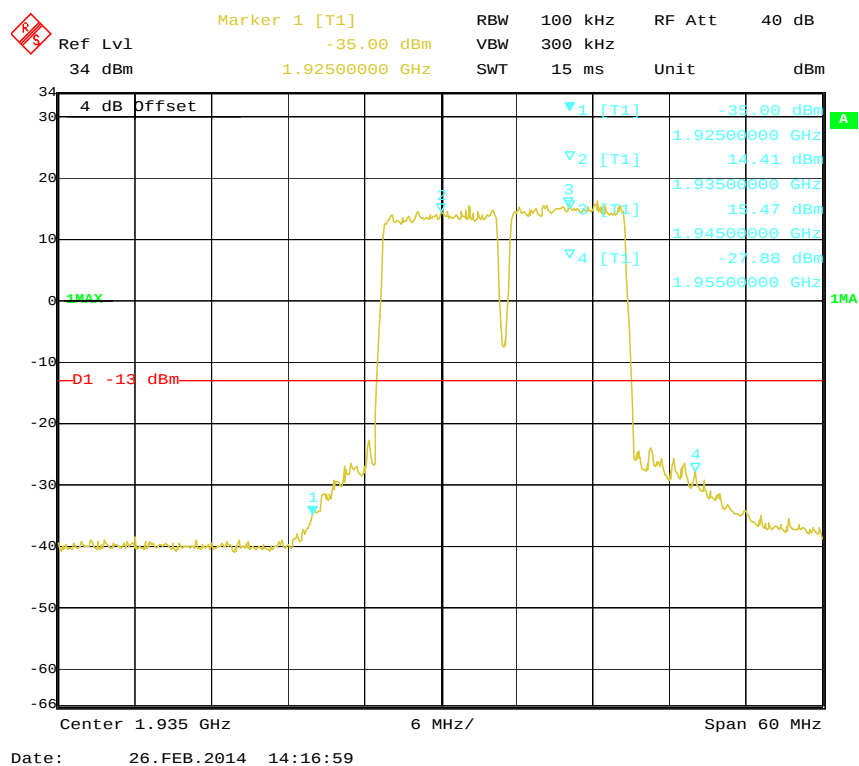
QPSK (10MHz) Mode, Input, Middle Channel



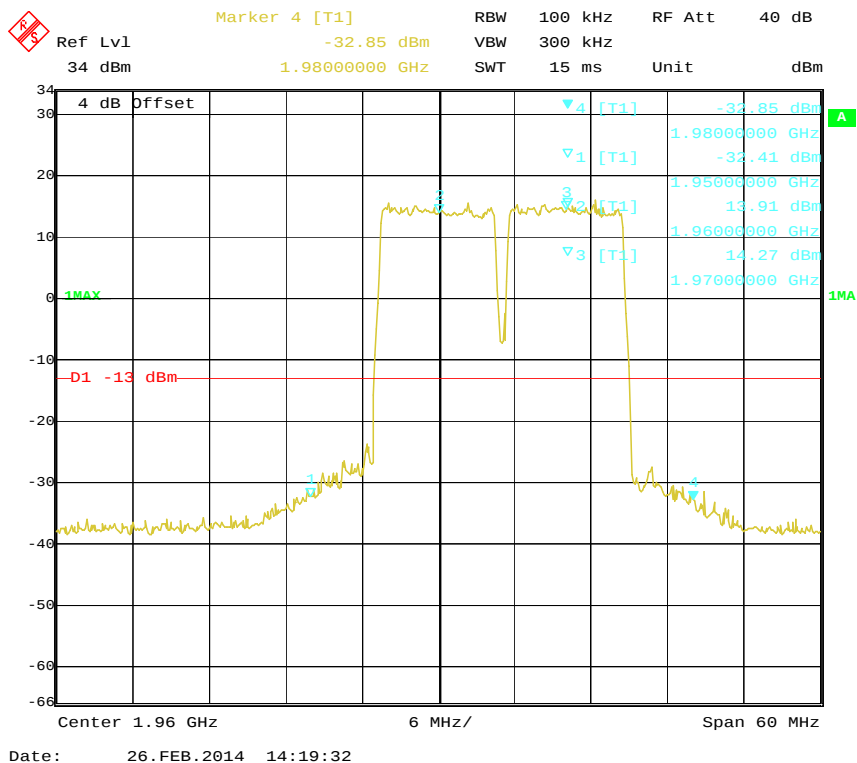
QPSK (10MHz) Mode, Input, High Channel



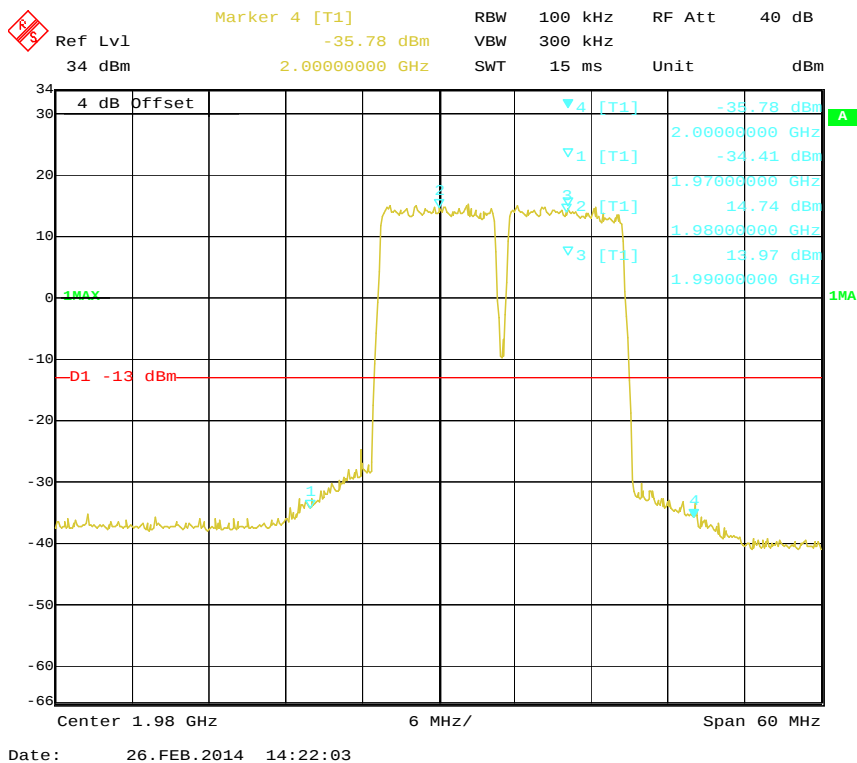
QPSK (10MHz) Mode, Output, Low Channel

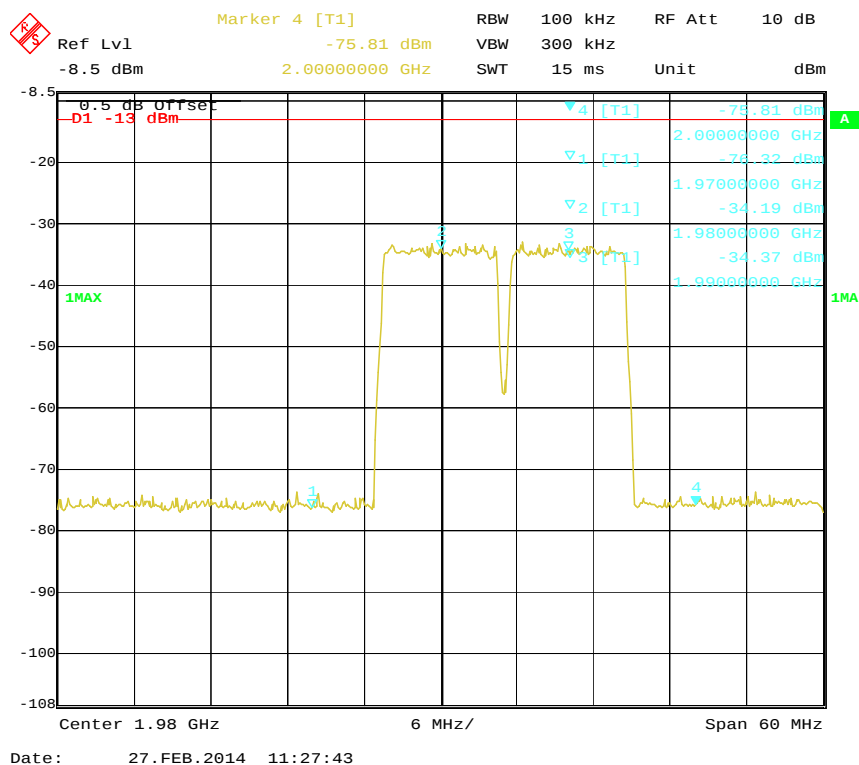
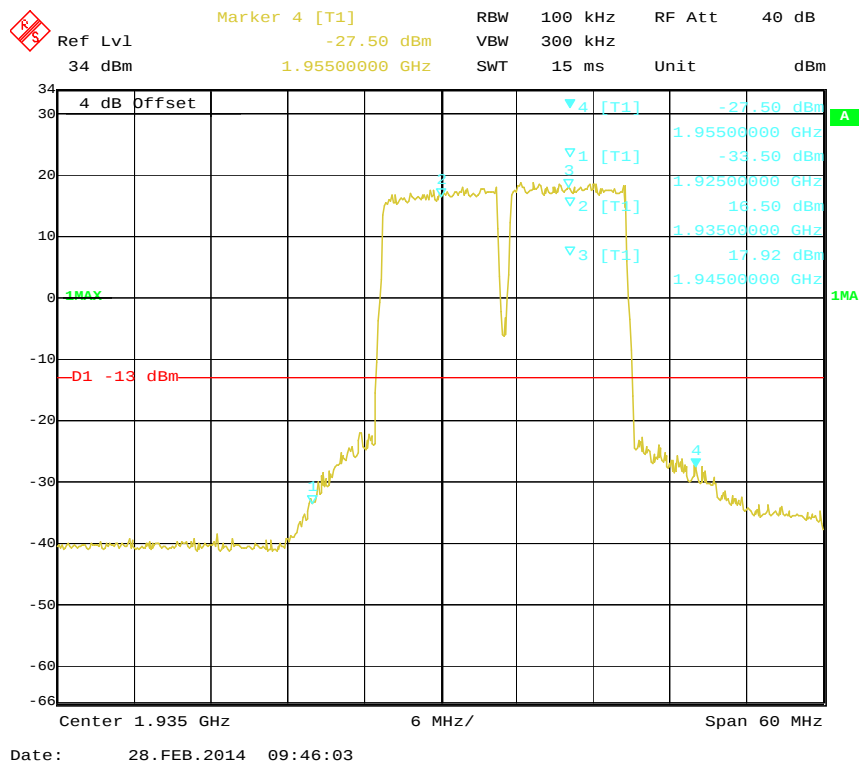


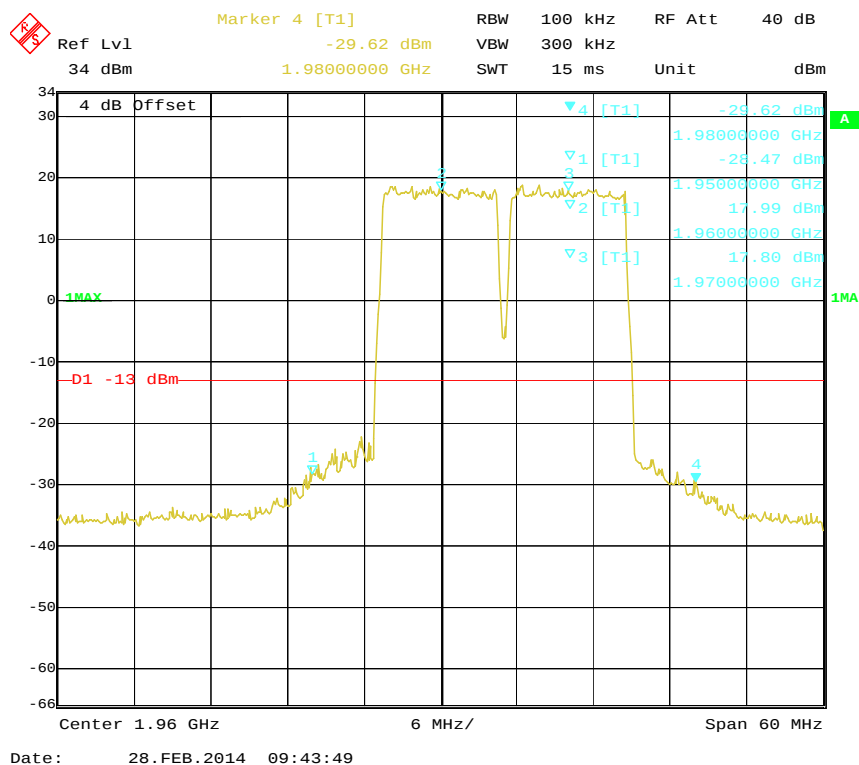
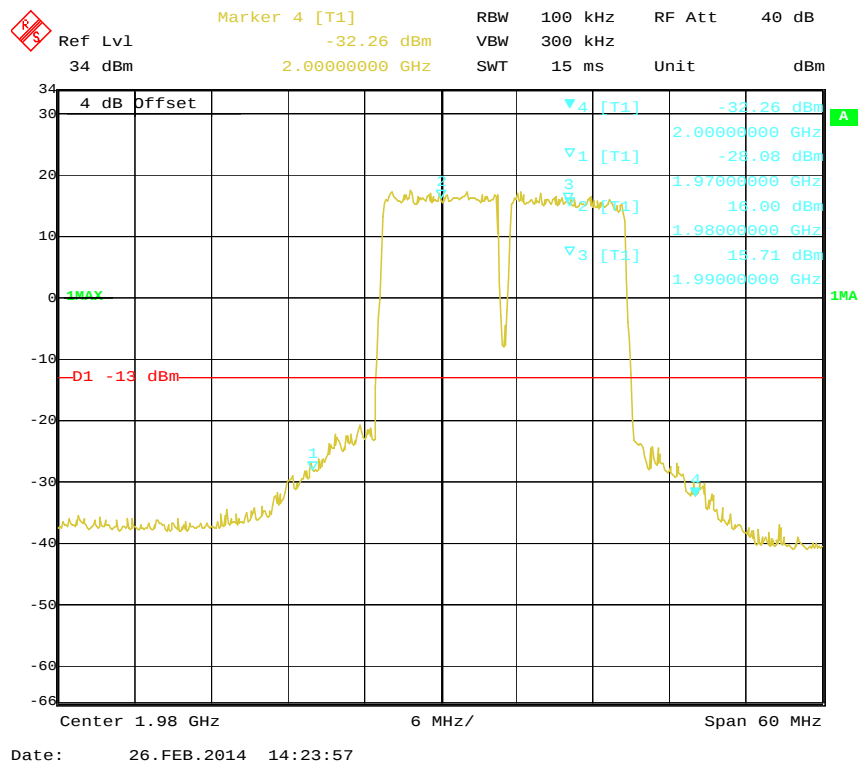
QPSK (10MHz) Mode, Output, Middle Channel



QPSK (10MHz) Mode, Output, High Channel



16QAM (10MHz) Mode, Input, High Channel**16QAM (10MHz) Mode, Output, Low Channel**

16QAM (10MHz) Mode, Output, Middle Channel**16QAM (10MHz) Mode, Output, High Channel**

K S
 Ref Lvl -8.5 dBm
 Marker 4 [T1] -76.17 dBm
 RBW 100 kHz
 VBW 300 kHz
 SWT 15 ms
 Unit dBm
 RF Att 10 dB

0.5 dB Offset
 D1 -13 dBm
 1.9550000 GHz
 -76.17 dBm
 1.9550000 GHz
 -75.95 dBm
 1.9250000 GHz
 -34.93 dBm
 1.9350000 GHz
 -35.16 dBm
 1.9450000 GHz
 1MAX

Center 1.935 GHz
 6 MHz/
 Span 60 MHz

Date: 27.FEB.2014 11:47:11

RBW 100 kHz RF Att 10 dB
 VBW 300 kHz
 SWT 15 ms Unit dBm

Ref Lvl -8.5 dBm
 Marker 4 [T1] -75.86 dBm
 1.98000000 GHz

0.5 dB Offset
 D1 -13 dBm

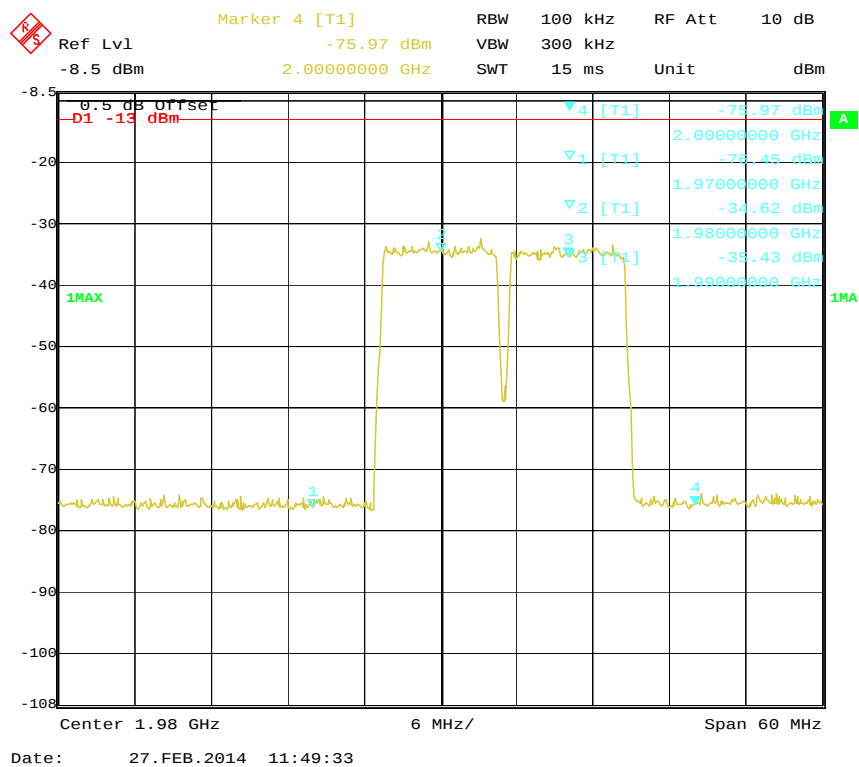
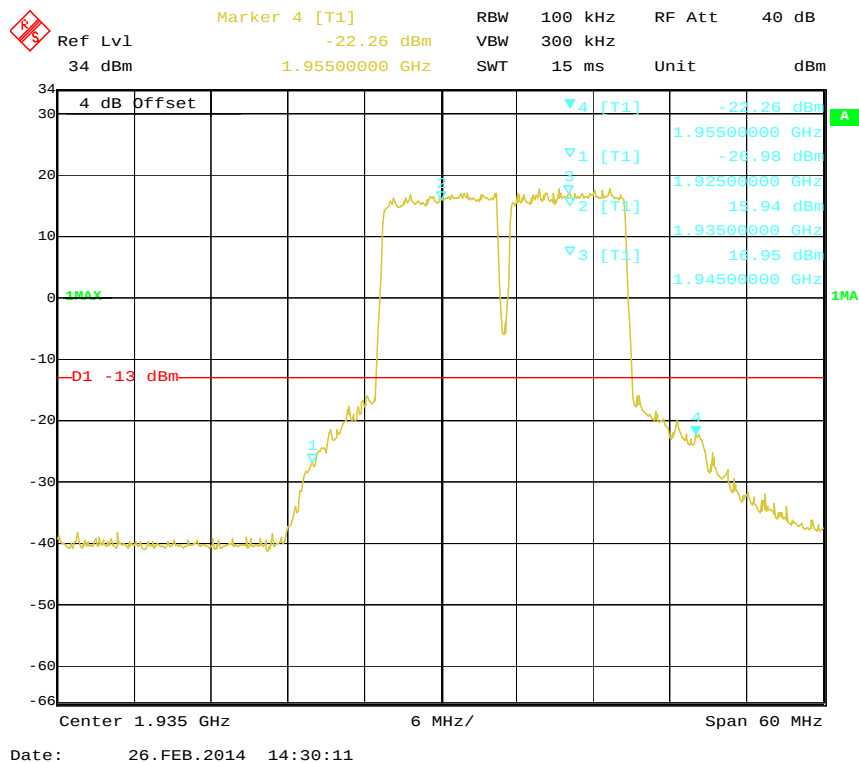
1MAX

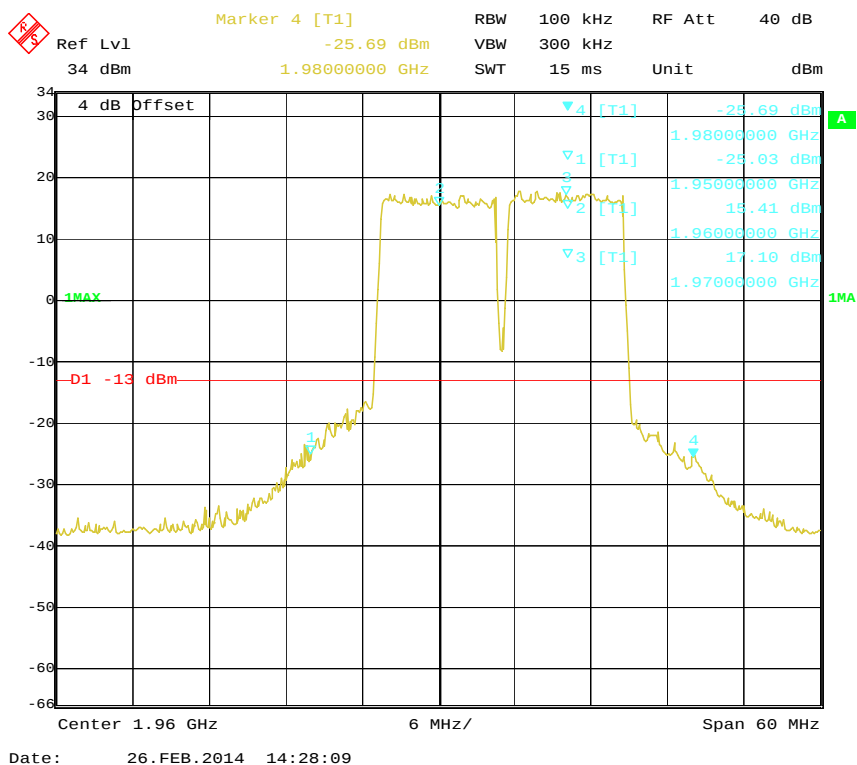
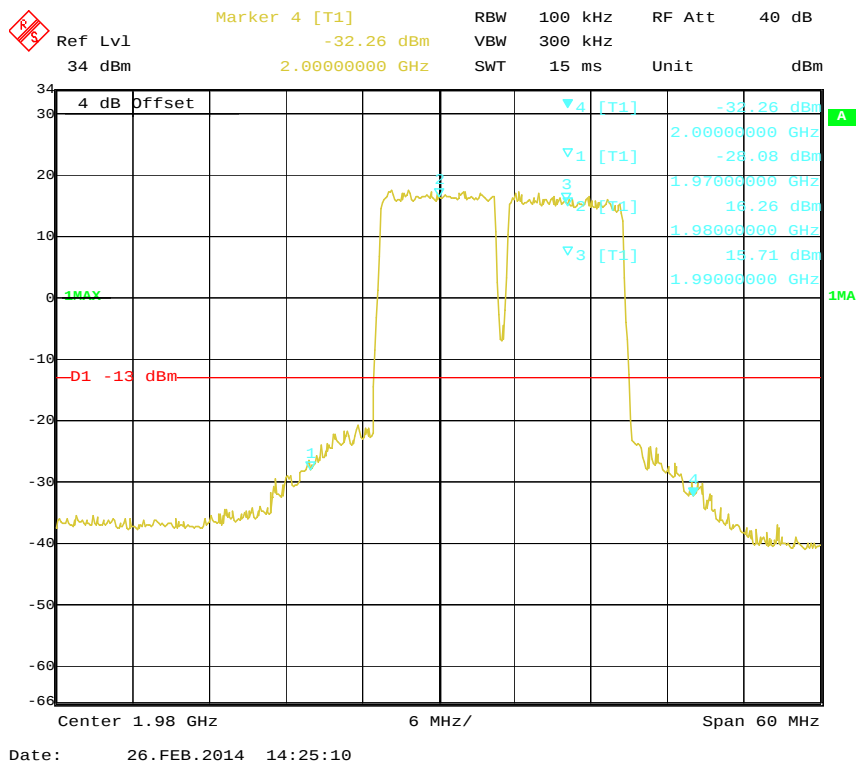
1.98000000 GHz
 -75.86 dBm
 1.95000000 GHz
 -76.42 dBm
 1.96000000 GHz
 -35.03 dBm
 1.97000000 GHz
 -34.72 dBm
 1.98000000 GHz

4 [T1]
 3 [T1]
 2 [T1]
 1 [T1]

Center 1.96 GHz 6 MHz/ Span 60 MHz

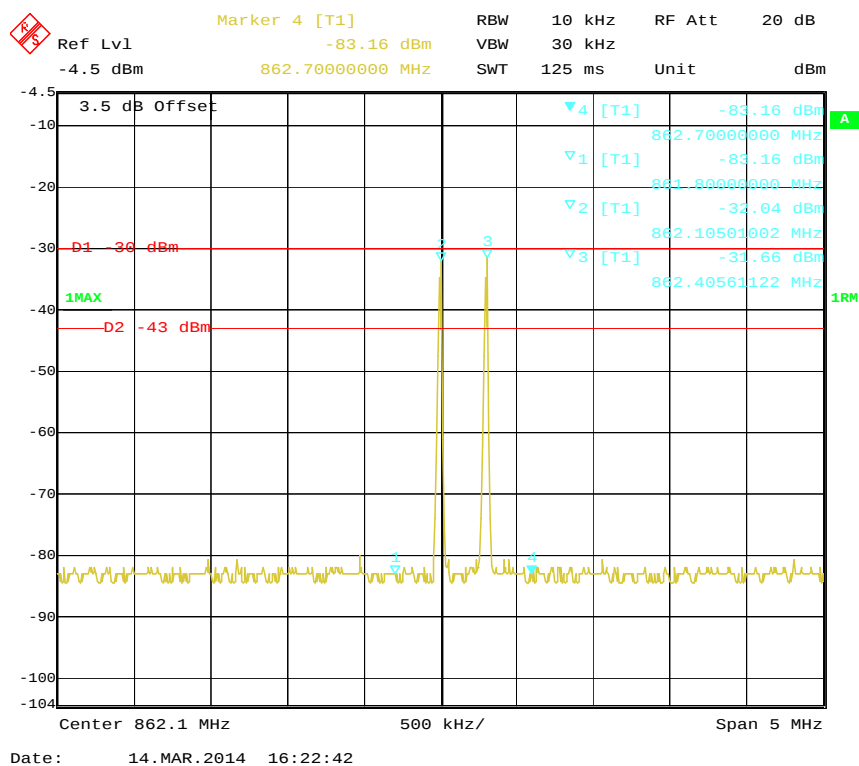
Date: 27.FEB.2014 11:47:58

64QAM (10MHz) Mode, Input, High Channel**64QAM (10MHz) Mode, Output, Low Channel**

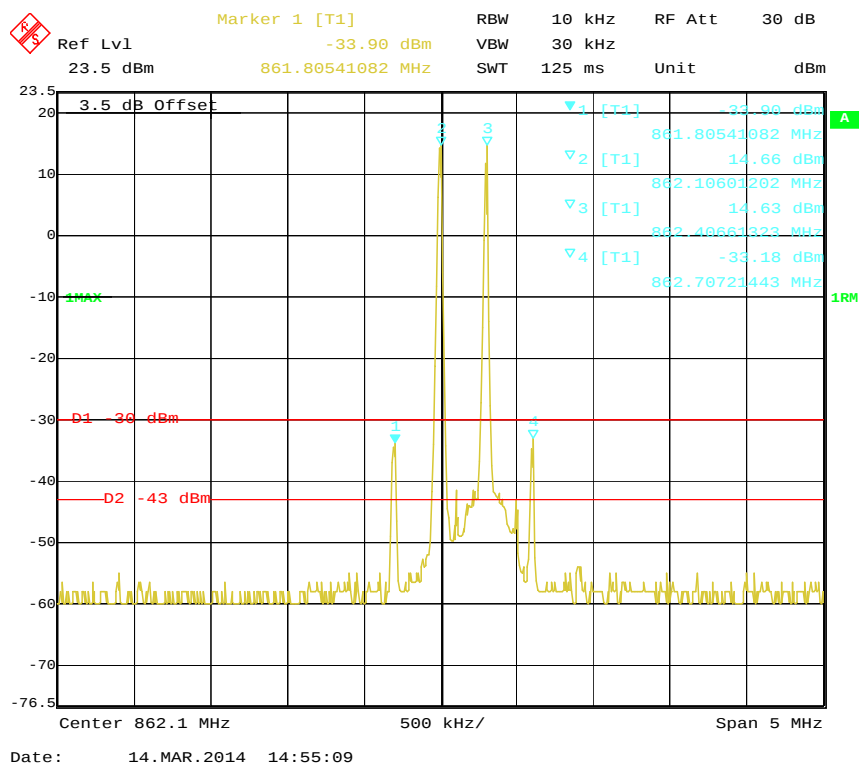
64QAM (10MHz) Mode, Output, Middle Channel**64QAM (10MHz) Mode, Output, High Channel**

862-869MHz:

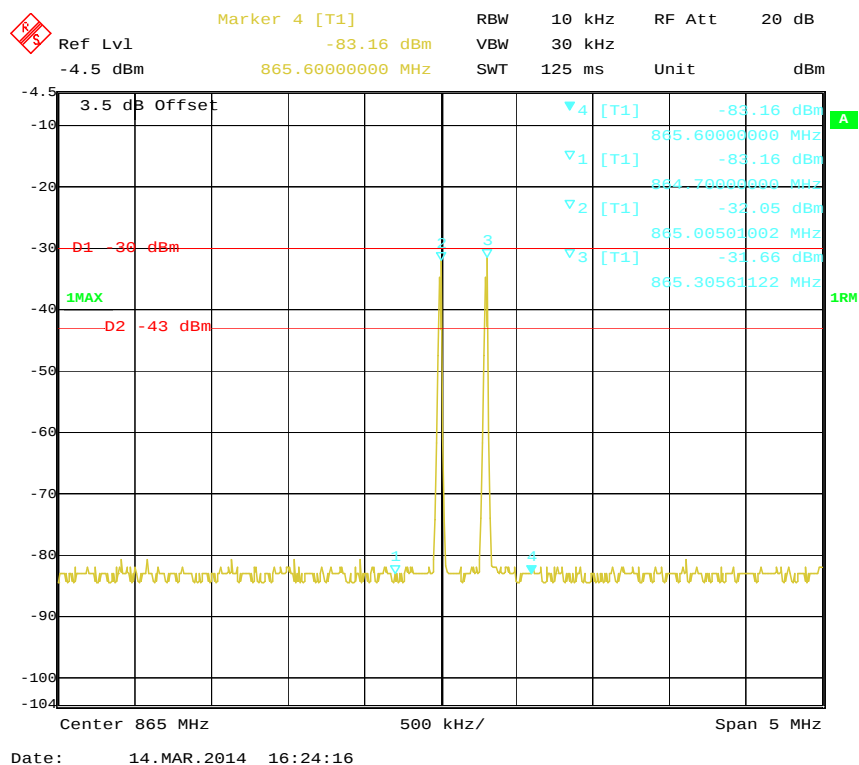
IDEN Mode, Input, Low Channel



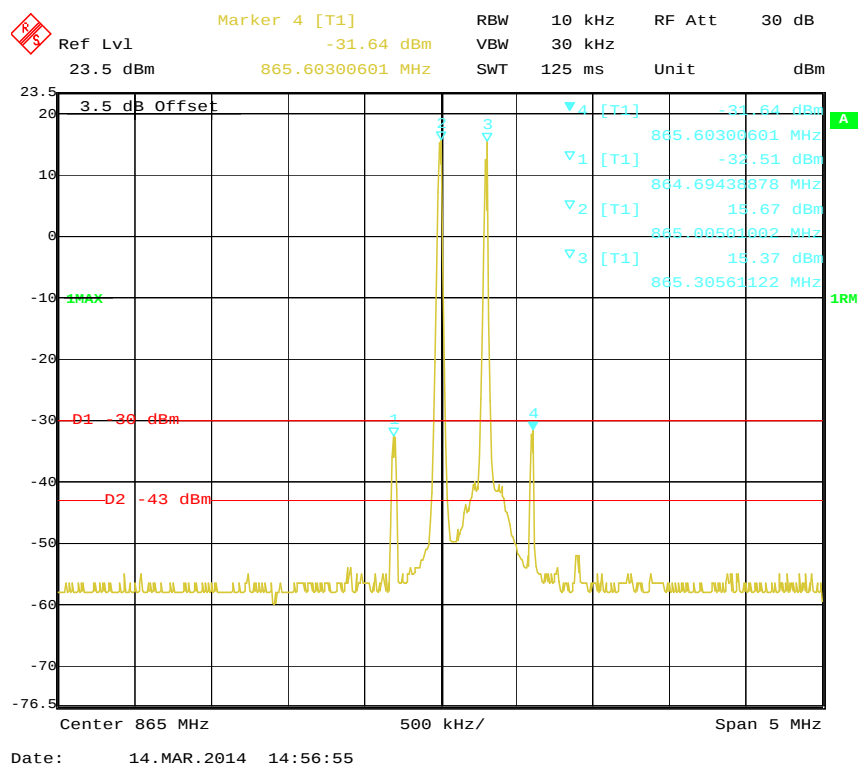
IDEN Mode, Output, Low Channel



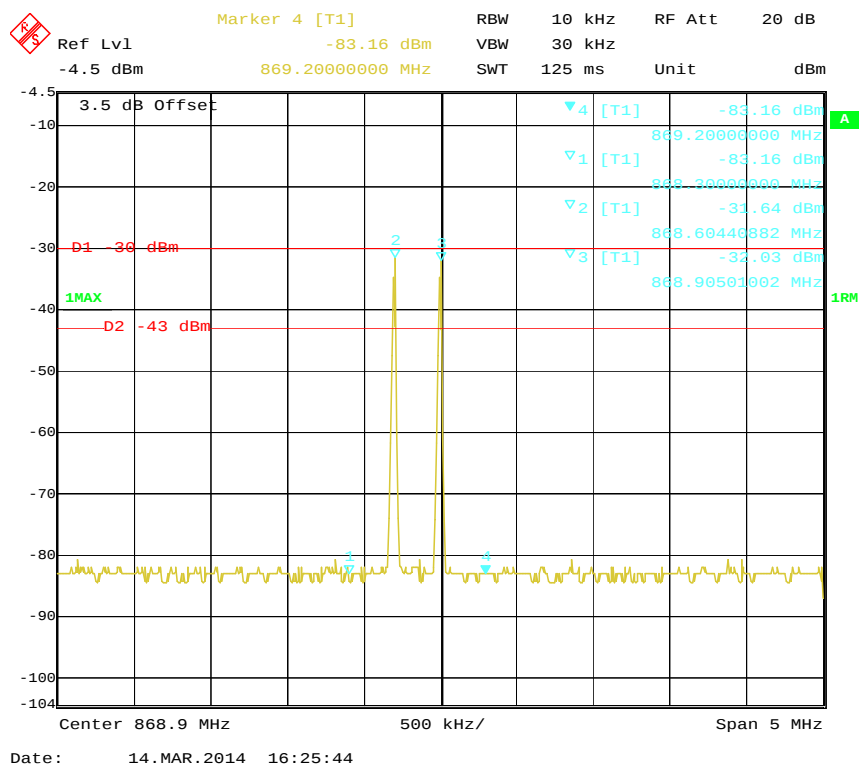
IDEN Mode, Input, Middle Channel



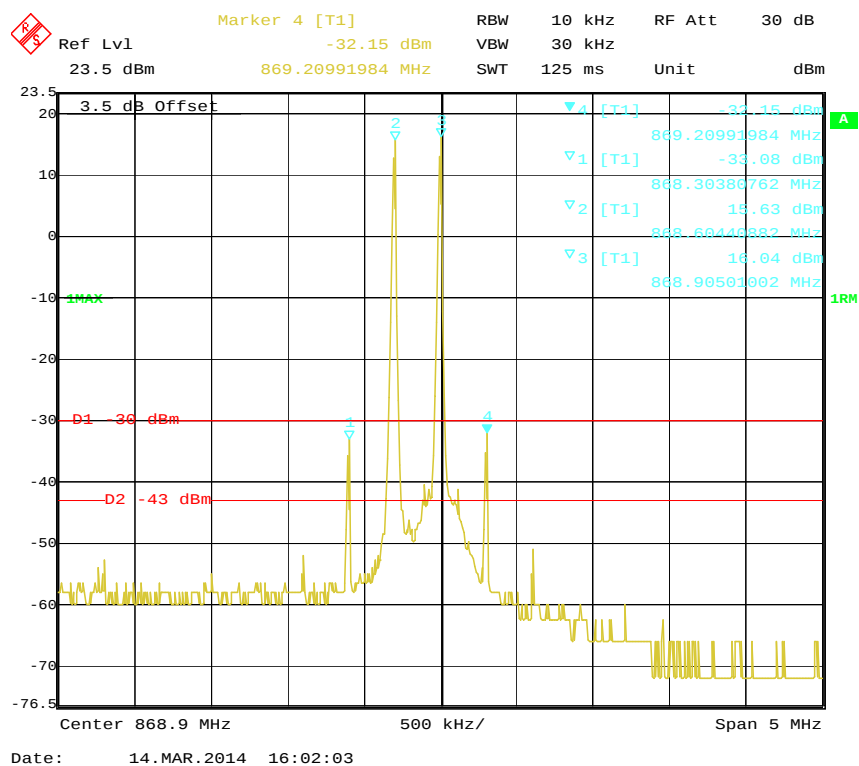
IDEN Mode, Output, Middle Channel



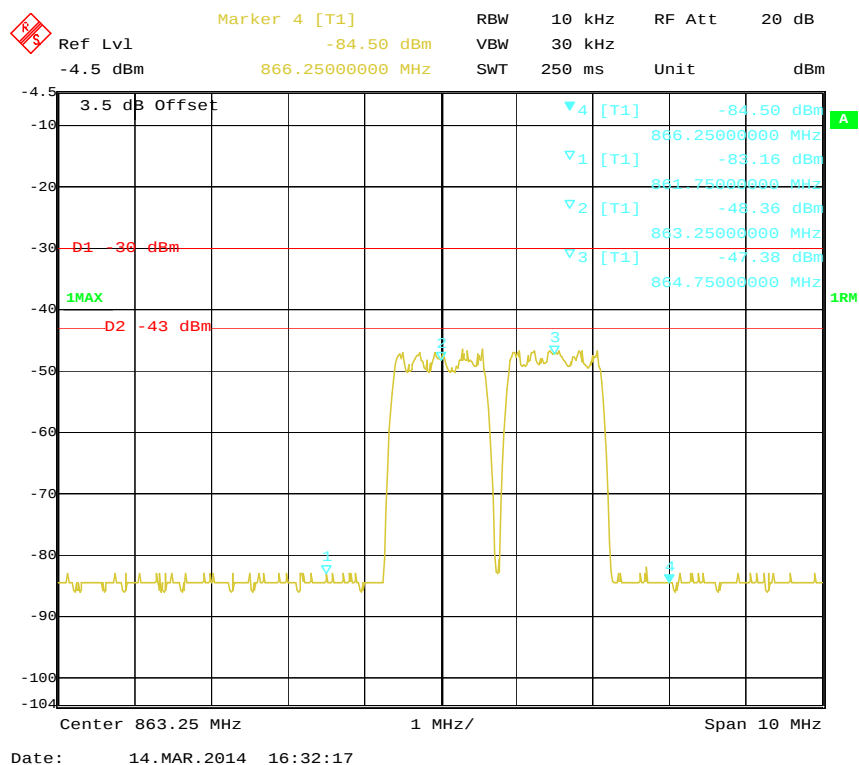
IDEN Mode, Input, High Channel



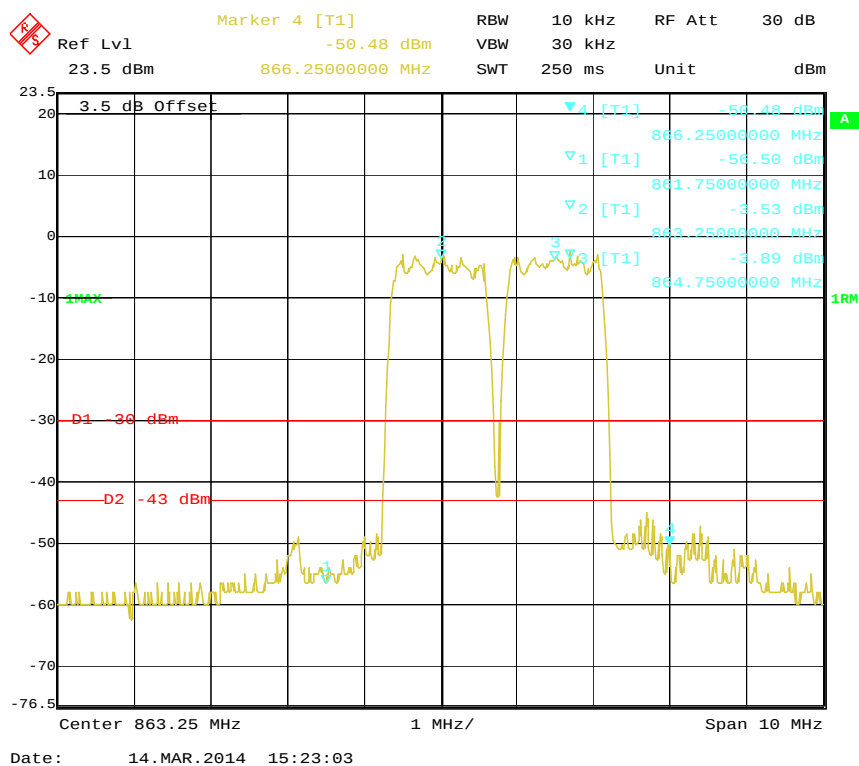
IDEN Mode, Output, High Channel



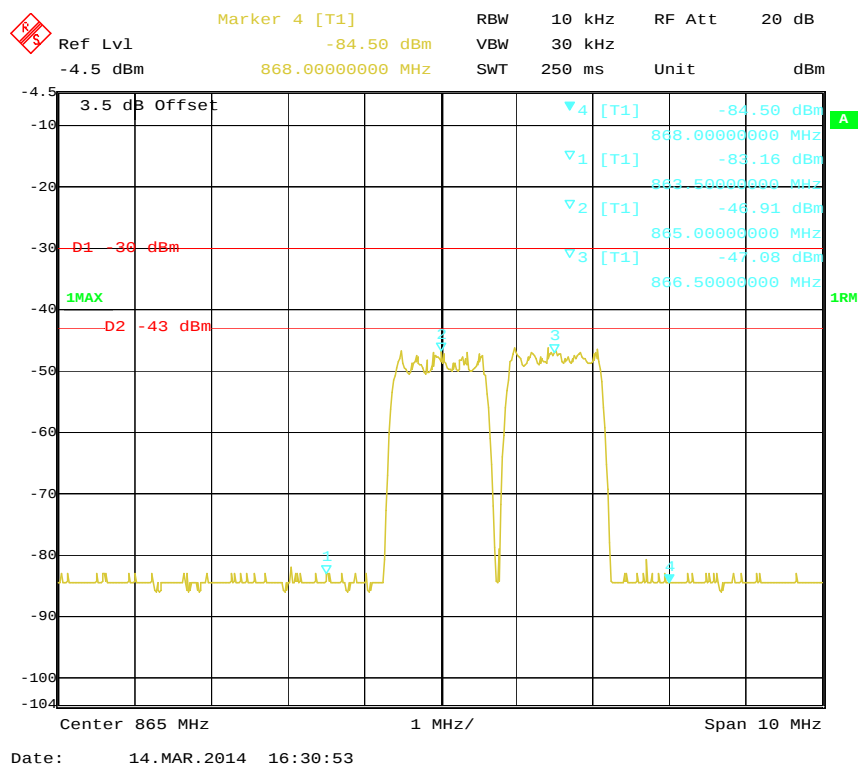
CDMA Mode, Input, Low Channel



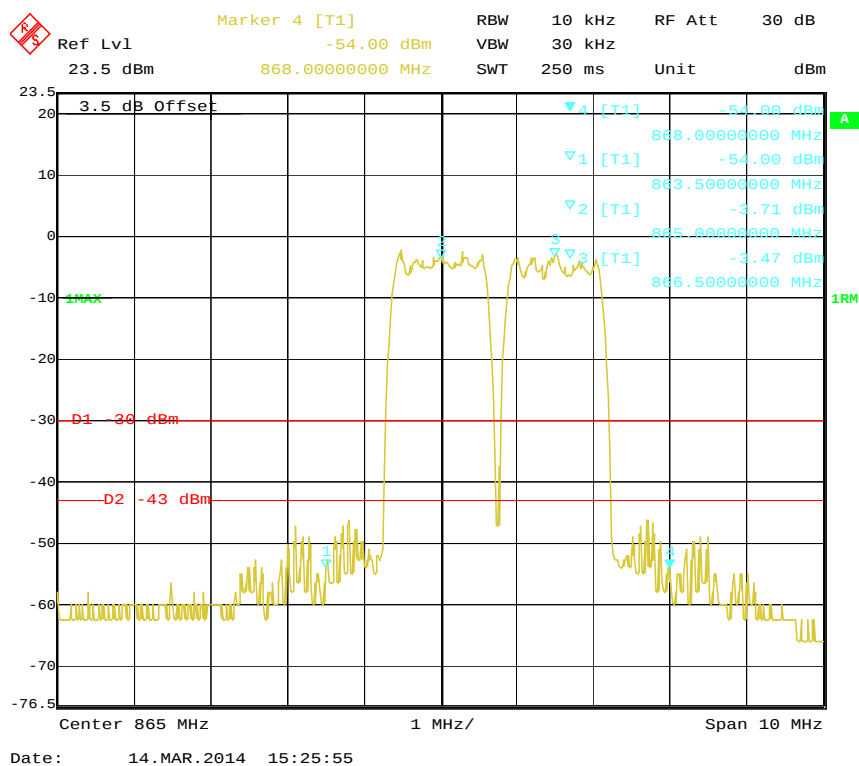
CDMA Mode, Output, Low Channel



CDMA Mode, Input, Middle Channel



CDMA Mode, Output, Middle Channel



[illegible]

Ref Lvl 23.5 dBm
 Marker 4 [T1] -55.16 dBm
 RBW 10 kHz
 VBW 30 kHz
 RF Att 30 dB
 Unit dBm
 SWT 250 ms
 3.5 dB Offset

23.5
 20
 10
 0
 -10
 -20
 -30
 -40
 -50
 -60
 -70
 -76.5

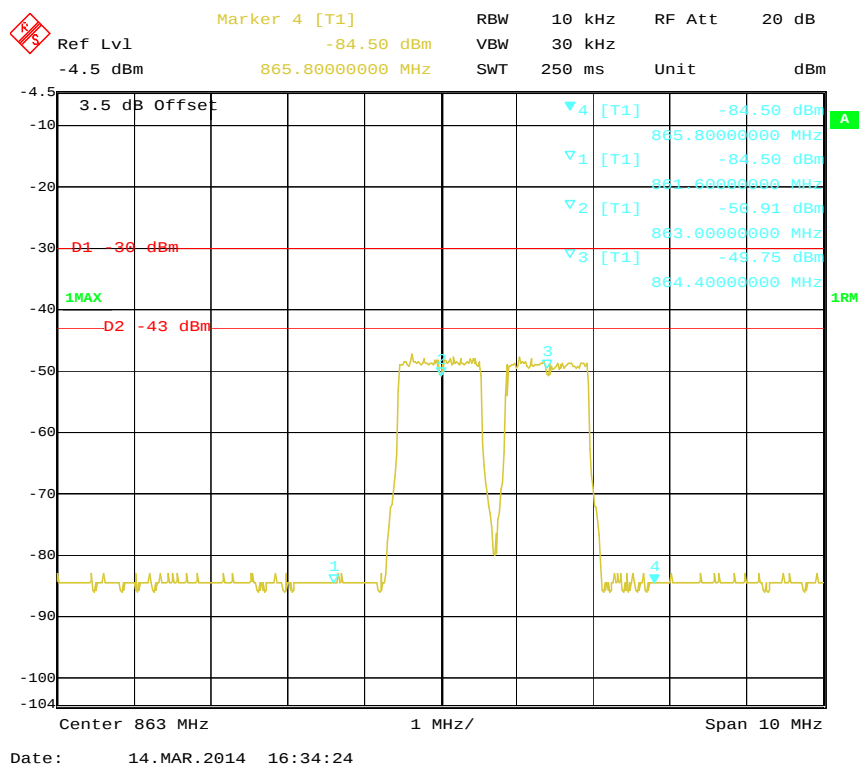
3.5 dB Offset
 1 [T1] -55.16 dBm
 869.25000000 MHz
 1 [T1] -54.00 dBm
 864.75000000 MHz
 2 [T1] -3.27 dBm
 866.25000000 MHz
 3 [T1] -3.43 dBm
 867.75000000 MHz

D1 -30 dBm
 D2 -43 dBm

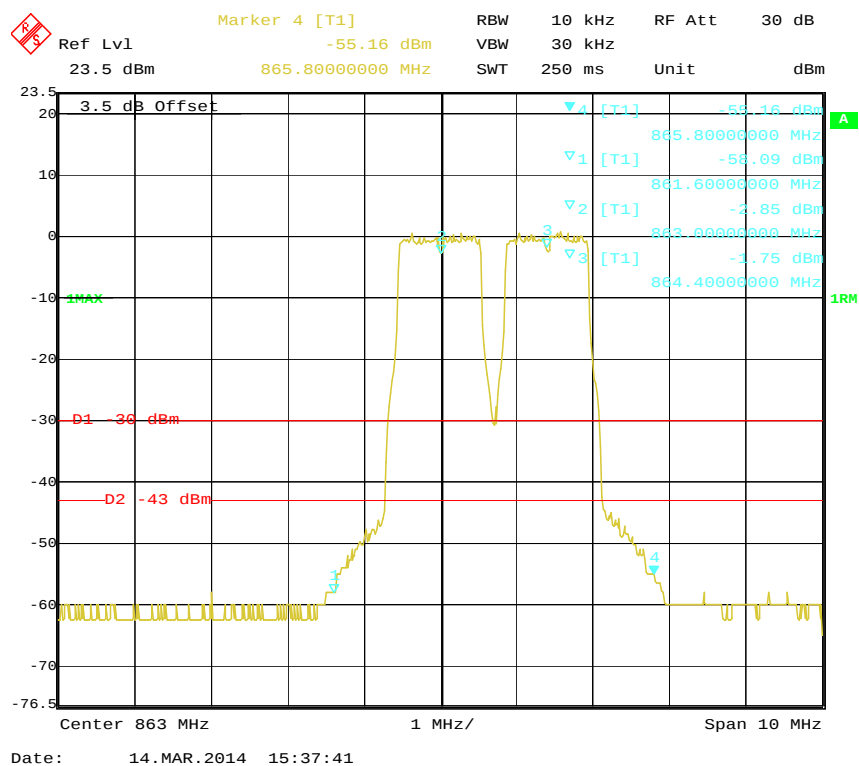
Center 867.75 MHz
 1 MHz/
 Span 10 MHz

Date: 14.MAR.2014 15:58:27

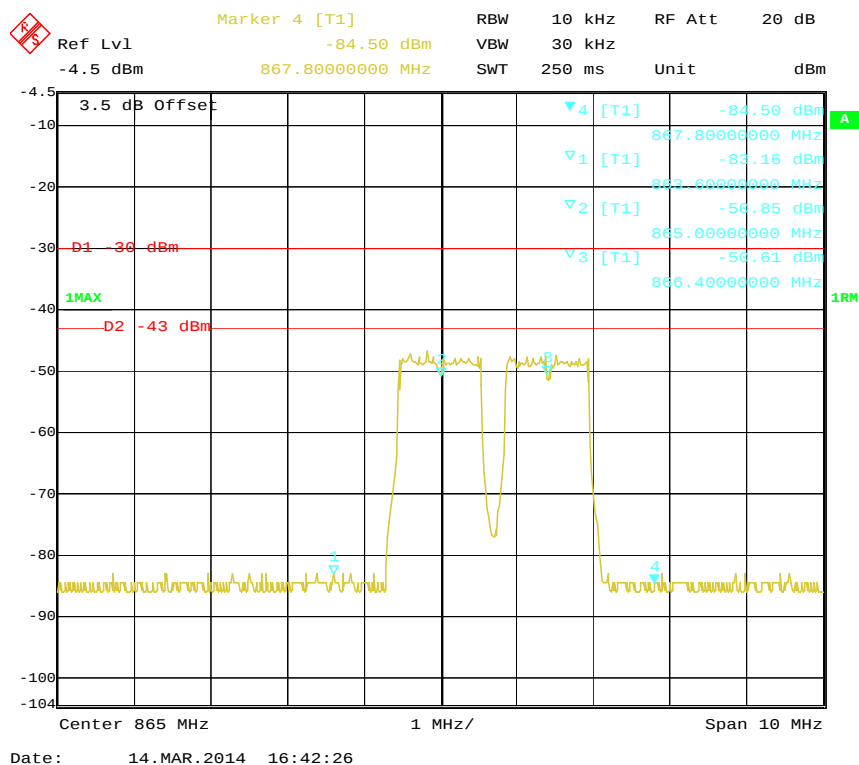
QPSK (1.4MHz) Mode, Input, Low Channel



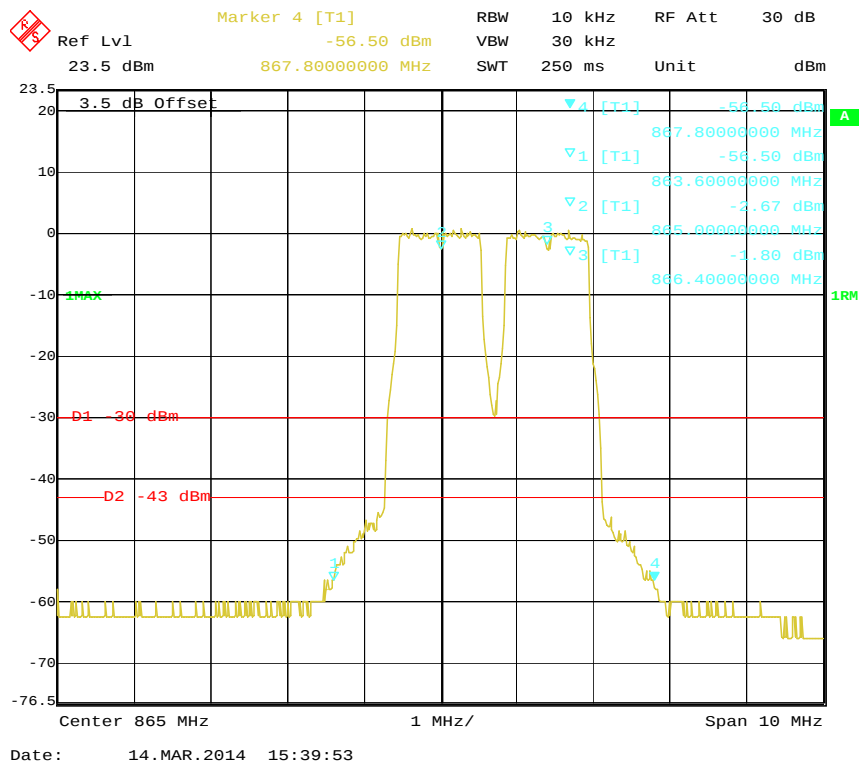
QPSK (1.4MHz) Mode, Output, Low Channel



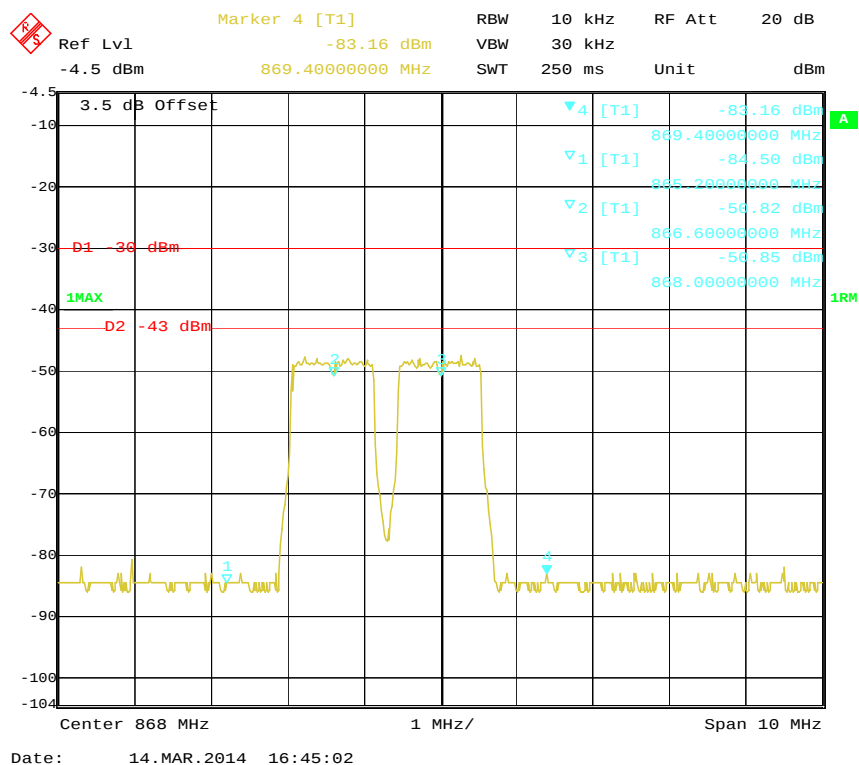
QPSK (1.4MHz) Mode, Input, Middle Channel



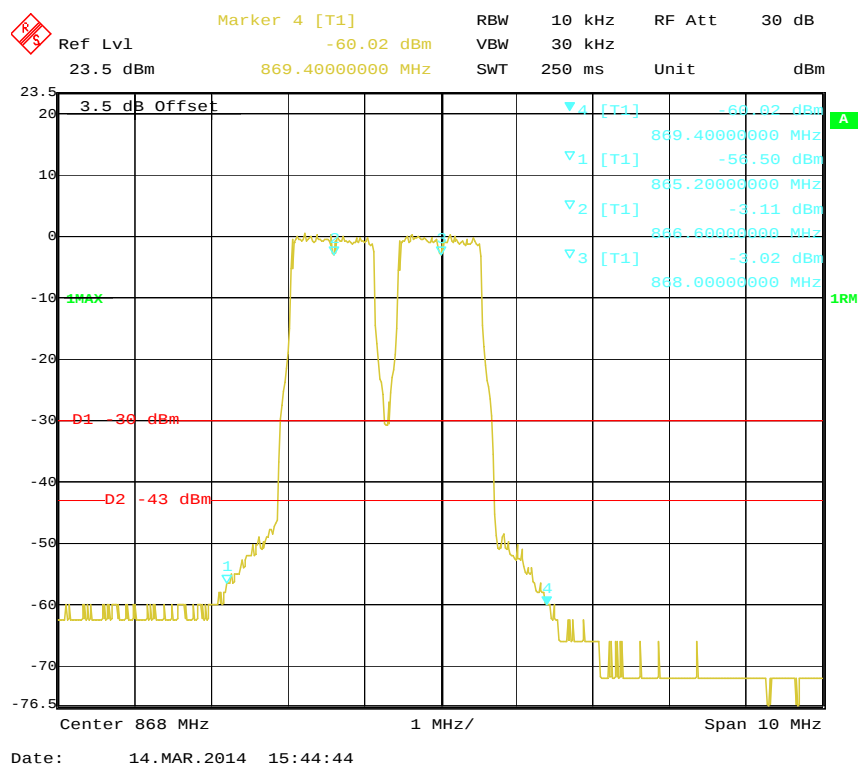
QPSK (1.4MHz) Mode, Output, Middle Channel

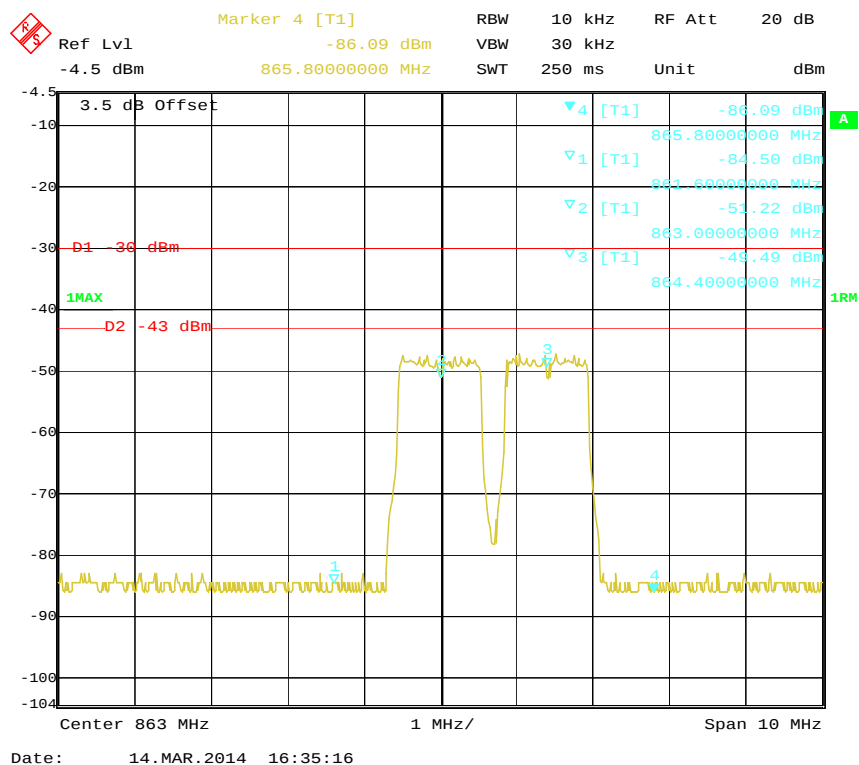
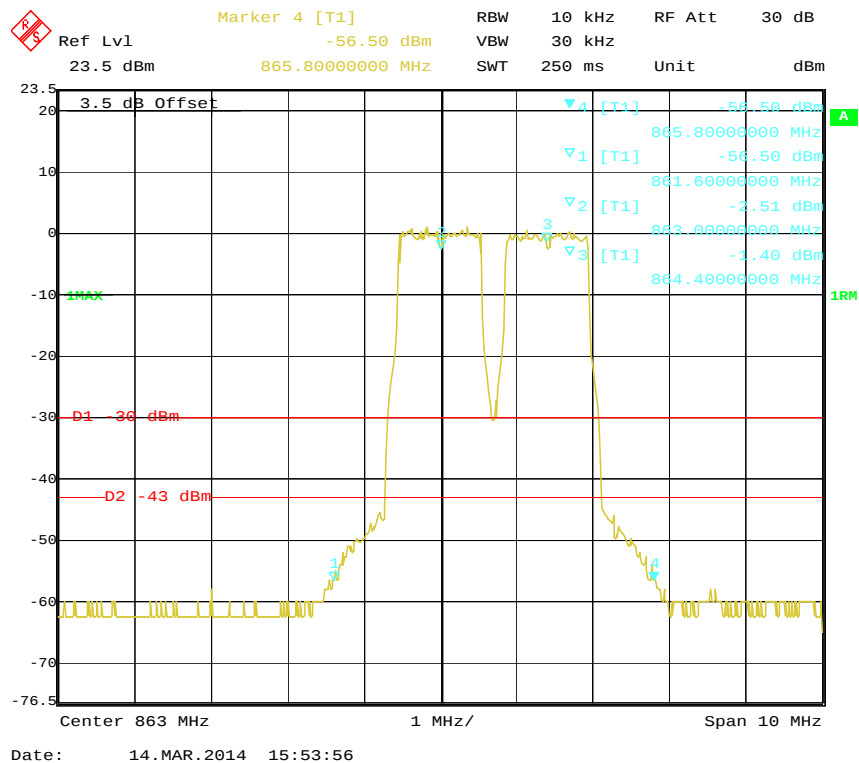


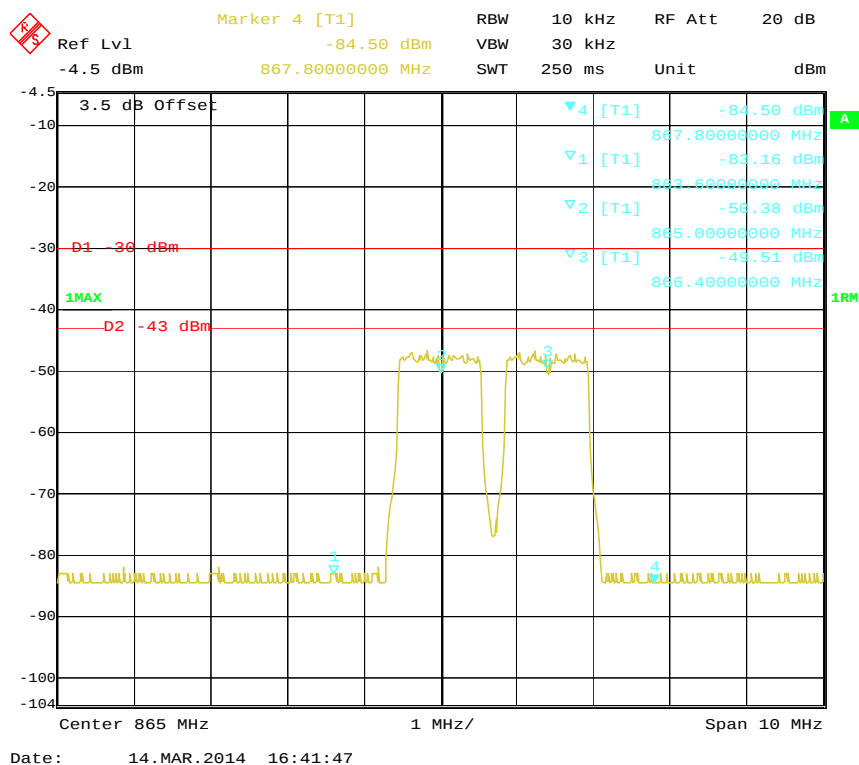
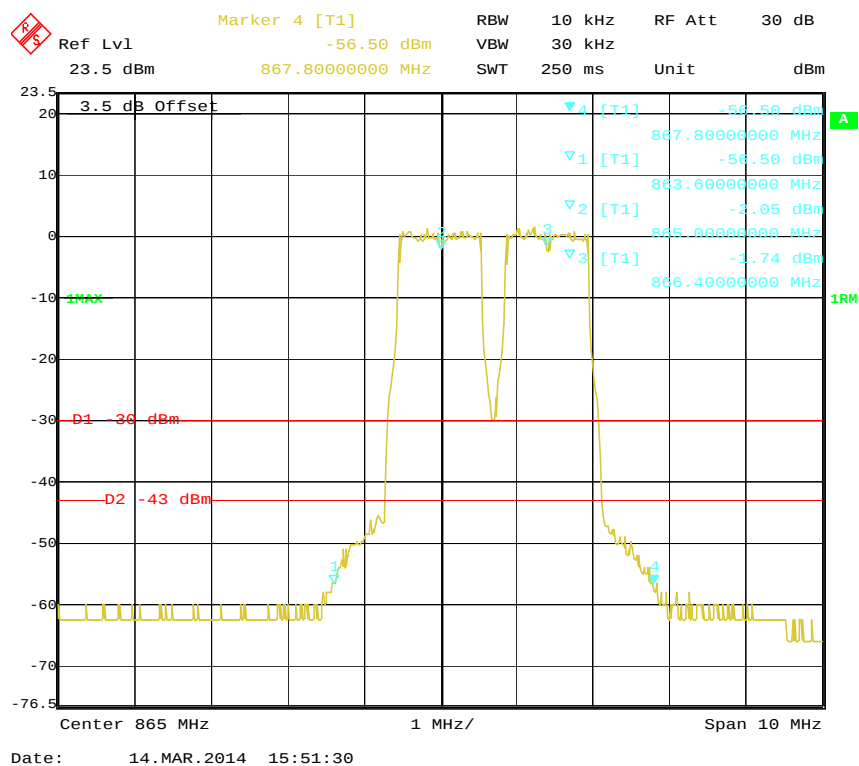
QPSK (1.4MHz) Mode, Input, High Channel



QPSK (1.4MHz) Mode, Output, High Channel



16QAM (1.4MHz) Mode, Input, Low Channel**16QAM (1.4MHz) Mode, Output, Low Channel**

16QAM (1.4MHz) Mode, Input, Middle Channel**16QAM (1.4MHz) Mode, Output, Middle Channel**

RBW 10 kHz RF Att 20 dB
 VBW 30 kHz
 SWT 250 ms Unit dBm

Ref Lvl -4.5 dBm
 Marker 4 [T1] -84.50 dBm
 869.40000000 MHz

3.5 dB Offset

D1 -30 dBm
 D2 -43 dBm

1MAX
 1RM

4 [T1] -84.50 dBm
 869.40000000 MHz
 1 [T1] -86.09 dBm
 869.20000000 MHz
 2 [T1] -56.85 dBm
 866.60000000 MHz
 3 [T1] -53.37 dBm
 868.00000000 MHz

Center 868 MHz 1 MHz/ Span 10 MHz

Date: 14.MAR.2014 16:46:10

Ref Lvl
23.5 dBm

Marker 4 [T1]
-60.02 dBm

RBW 10 kHz
VBW 30 kHz
RF Att 30 dB

SWT 250 ms

Unit dBm

3.5 dB Offset

▼4 [T1] -60.02 dBm
869.4000000 MHz

▼1 [T1] -56.50 dBm
865.2000000 MHz

▼2 [T1] -2.03 dBm
866.6000000 MHz

▼3 [T1] -2.61 dBm
868.0000000 MHz

1MAX

D1 -30 dBm

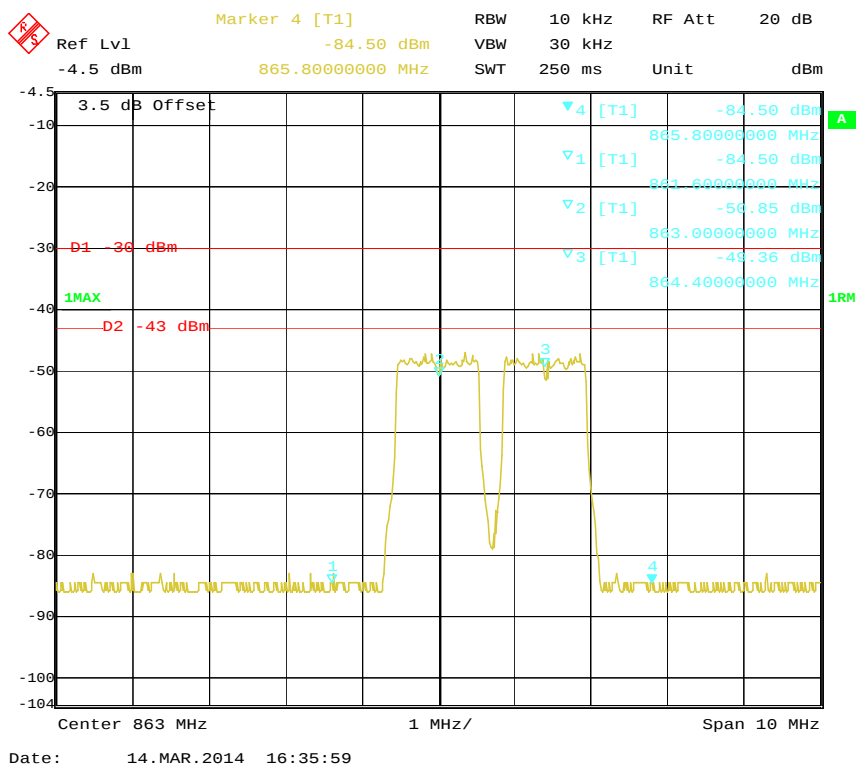
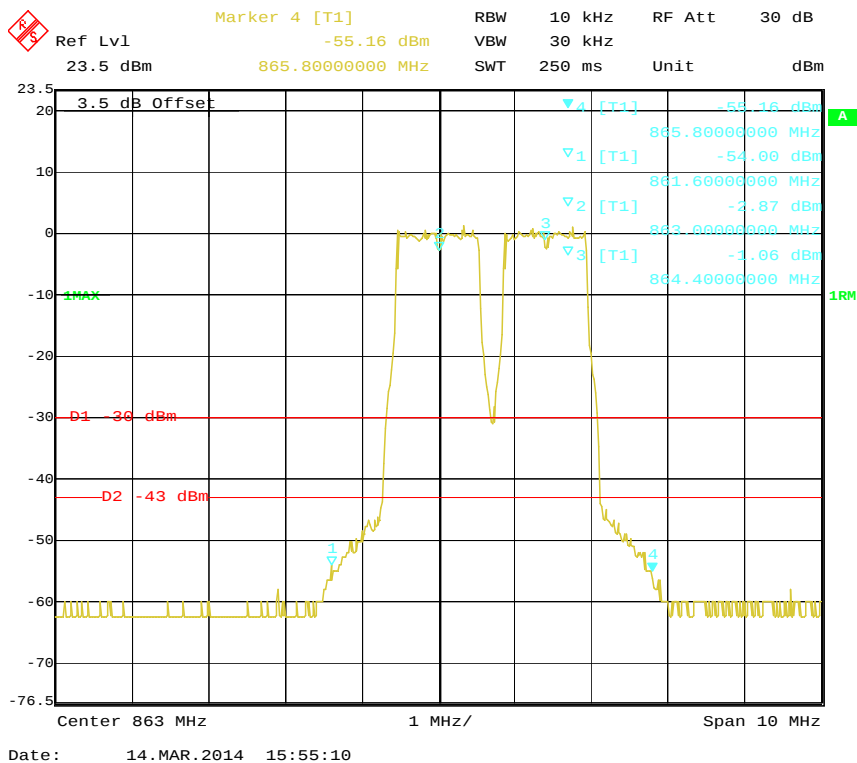
D2 -43 dBm

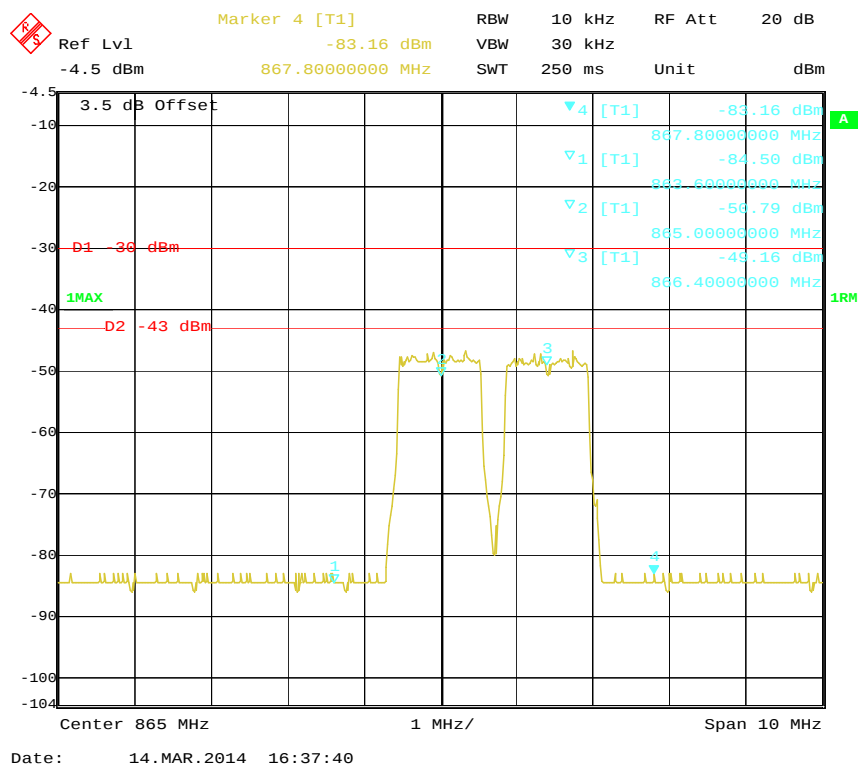
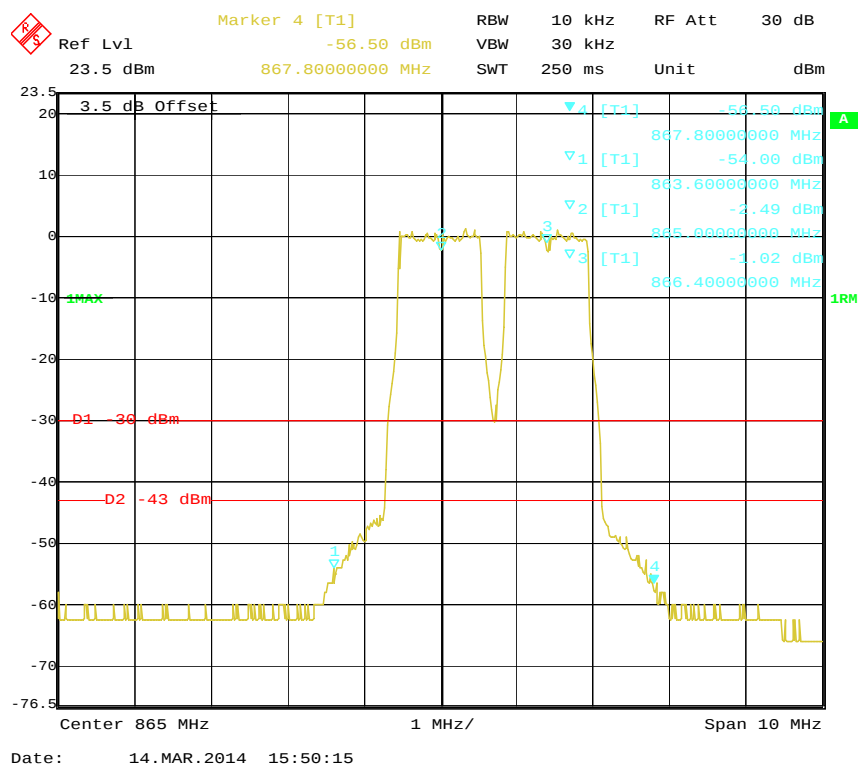
Center 868 MHz

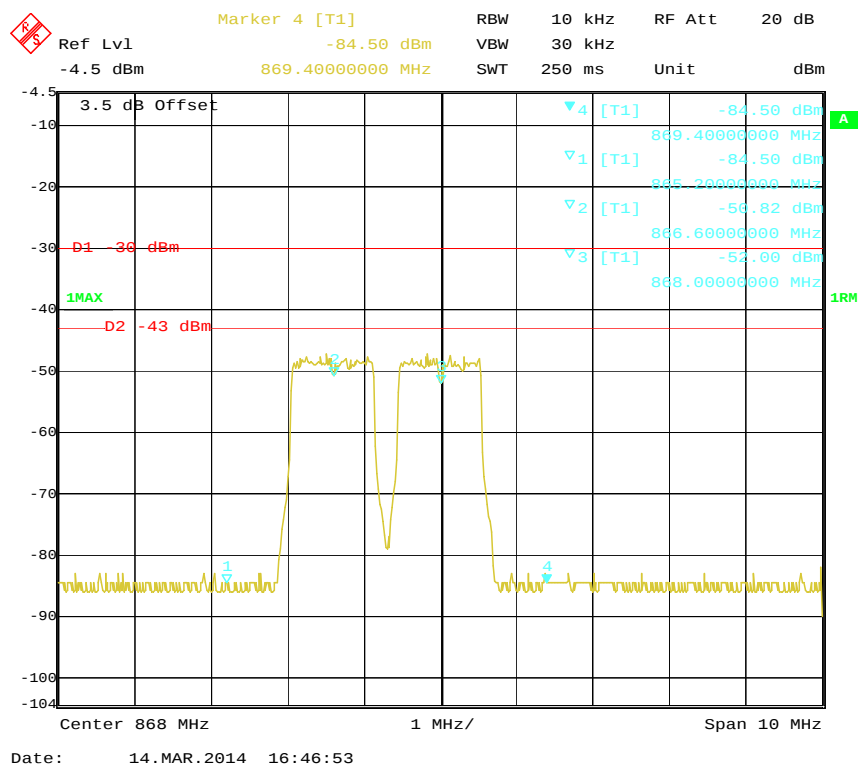
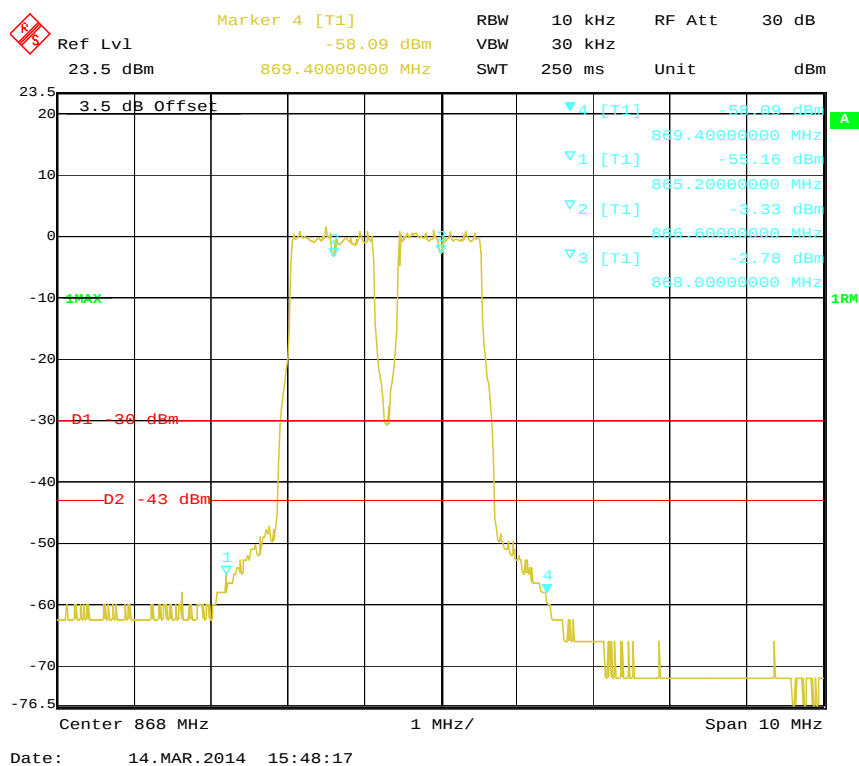
1 MHz/

Span 10 MHz

Date: 14.MAR.2014 15:46:38

64QAM (1.4MHz) Mode, Input, Low Channel**64QAM (1.4MHz) Mode, Output, Low Channel**

64QAM (1.4MHz) Mode, Input, Middle Channel**64QAM (1.4MHz) Mode, Output, Middle Channel**

64QAM (1.4MHz) Mode, Input, High Channel**64QAM (1.4MHz) Mode, Output, High Channel**

FCC §2.1053 & §24.238 & §90.669 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, § 24.238 and § 90.669

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 receiving 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 = $43 + 10 \lg(\text{power out in Watts})$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2014-11-30
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2013-09-17	2014-09-17
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2014-04-03	2015-04-03
HP	Amplifier	8447E	1937A01046	2013-09-30	2014-09-30
HP	Signal Generator	8341B	2624A00116	2013-05-09	2014-05-09
COM POWER	Dipole Antenna	AD-100	041000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2012-02-11	2015-02-10
Electro-Mechanics	Horn Antenna	3116	9510-2270	2013-10-14	2016-10-13
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	20 ~ 26 °C
Relative Humidity:	49 ~ 55 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang from 2014-03-13 to 2014-04-24.

EUT operation mode: Transmitting (worst case)

30 MHz ~ 20 GHz:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
1930.2 MHz										
470.2	41.93	17	2.4	H	-55.1	0.47	0	-55.57	-13	42.57
470.2	37.78	225	1.1	V	-59.2	0.47	0	-59.67	-13	46.67
3860.4	42.63	165	1.8	H	-44.5	3.20	10.40	-37.30	-13	24.30
3860.4	37.44	202	1.9	V	-49.2	3.20	10.40	-42.00	-13	29.00
5790.6	55.38	63	1.4	H	-37.0	3.19	11.70	-28.49	-13	15.49
5790.6	44.93	284	1.2	V	-46.5	3.19	11.70	-37.99	-13	24.99
1960 MHz										
470.2	42.35	85	1.3	H	-55.2	0.47	0	-55.67	-13	42.67
470.2	37.65	160	1.4	V	-59.9	0.47	0	-60.37	-13	47.37
3920	42.78	185	1.5	H	-53.3	3.20	10.40	-46.05	-13	33.05
3920	38.73	155	1.5	V	-56.6	3.20	10.40	-49.36	-13	36.36
5660.0	55.07	47	1.4	H	-39.4	3.39	11.70	-31.09	-13	18.09
5660.0	45.14	224	2.4	V	-44.5	3.39	11.70	-36.19	-13	23.19
1994.8 MHz										
470.2	42.04	250	1.4	H	-55.0	0.47	0	-55.47	-13	42.47
470.2	37.84	140	1.5	V	-59.2	0.47	0	-59.67	-13	46.67
3989.6	41.14	230	1.2	H	-45.6	2.89	10.30	-38.19	-13	25.19
3989.6	37.47	83	1.4	V	-50.5	2.89	10.30	-43.09	-13	30.09
5984.4	54.97	124	1.5	H	-37.1	3.09	11.80	-28.39	-13	15.39
5984.4	44.85	21	1.2	V	-46.4	3.09	11.80	-37.69	-13	24.69

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 90	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
868.9 MHz										
470.5	42.44	175	1.7	H	-55.1	0.47	0	-55.57	-13	42.57
470.5	42.13	220	1.6	V	-55.4	0.47	0	-55.87	-13	42.87
1739.8	52.39	105	1.3	H	-50.6	0.97	9.4	-42.17	-13	29.17
1739.8	55.68	212	1.4	V	-44.7	0.97	9.4	-36.27	-13	23.27

Note:

1) Absolute Level = SG Level - Cable loss + Antenna Gain

2) Margin = Limit- Absolute Level

FCC §24.238 - BAND EDGES

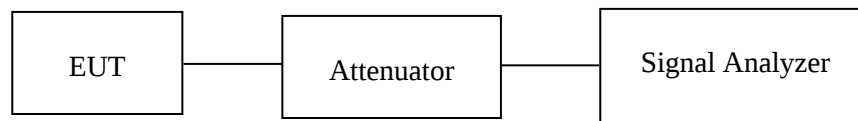
Applicable Standard

According to §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.

The center of the spectrum analyzer was set to block edge frequency



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	20 ~ 26 °C
Relative Humidity:	49 ~ 55 %
ATM Pressure:	101.0 kPa

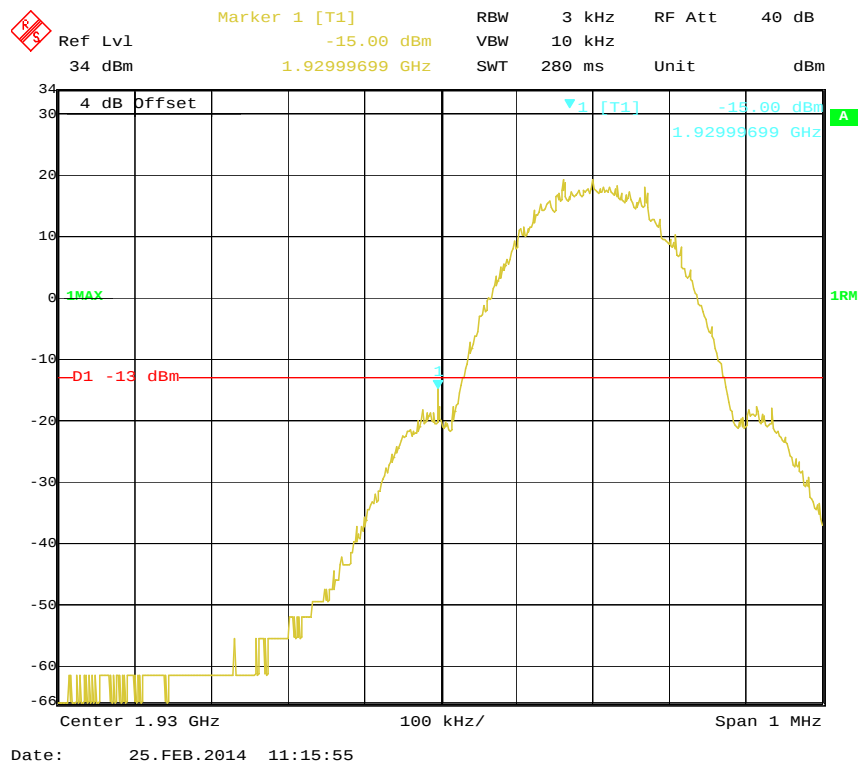
The testing was performed by Rocky Kang from 2014-02-25 to 2014-04-24.

EUT operation mode: Transmitting

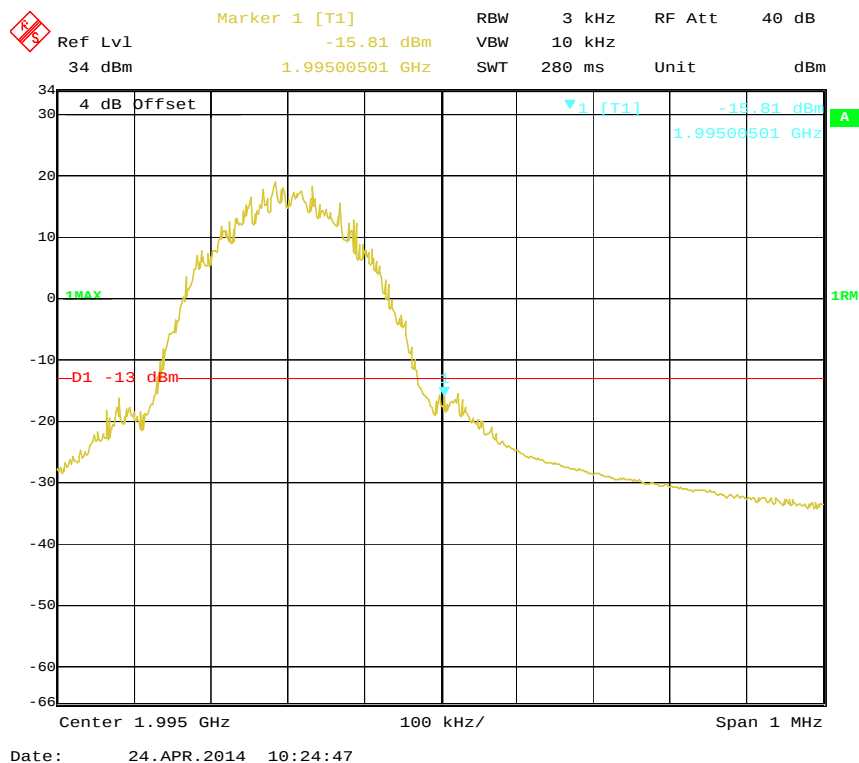
Test Result: Compliance. Please refer to the following plots.

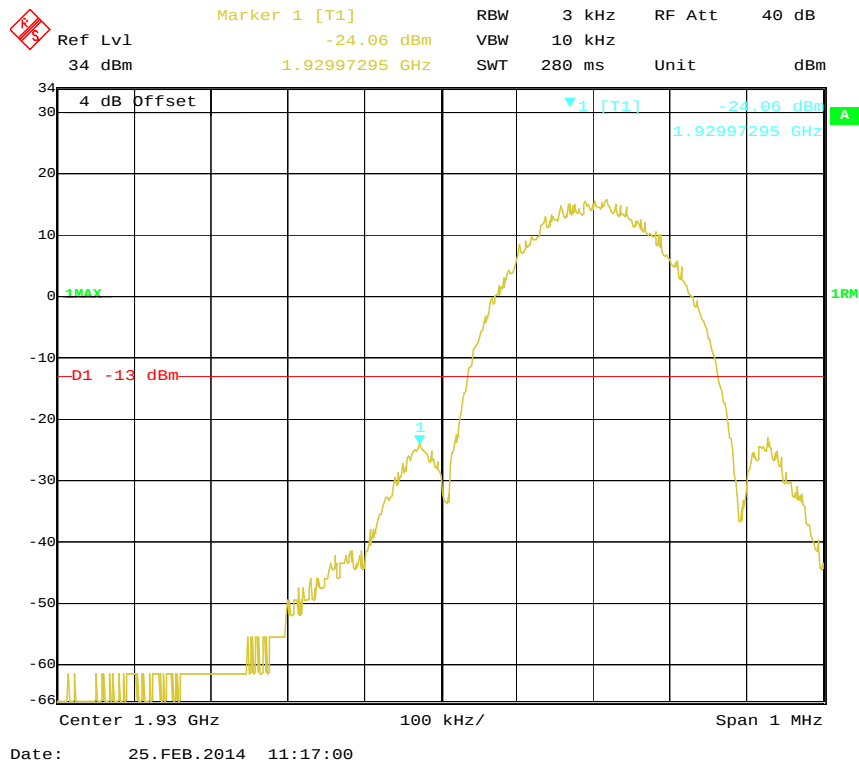
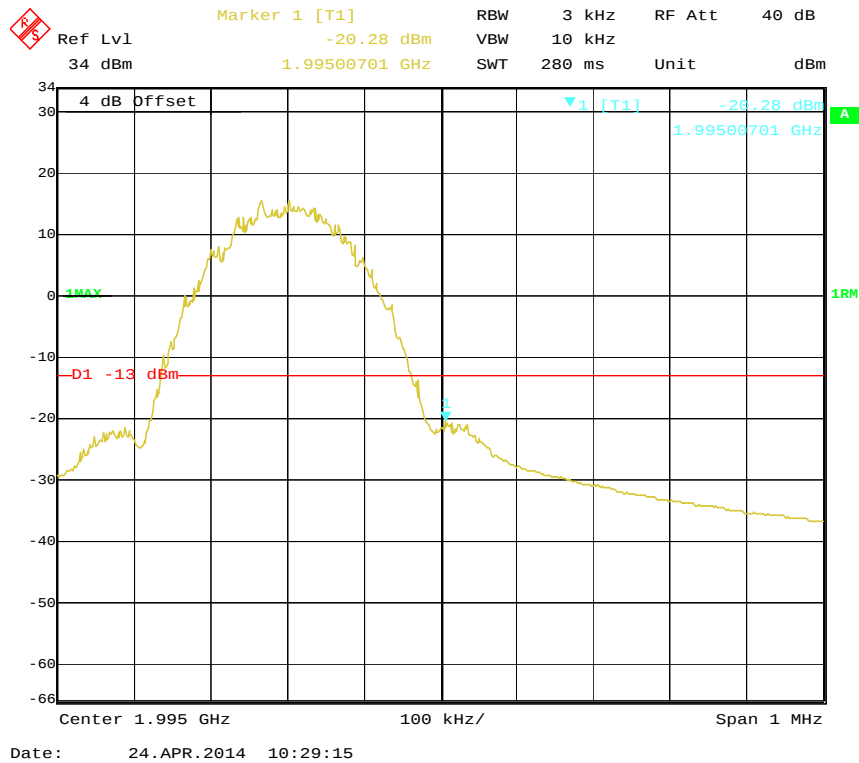
PCS Band Downlink:

GSM Mode, Left Band

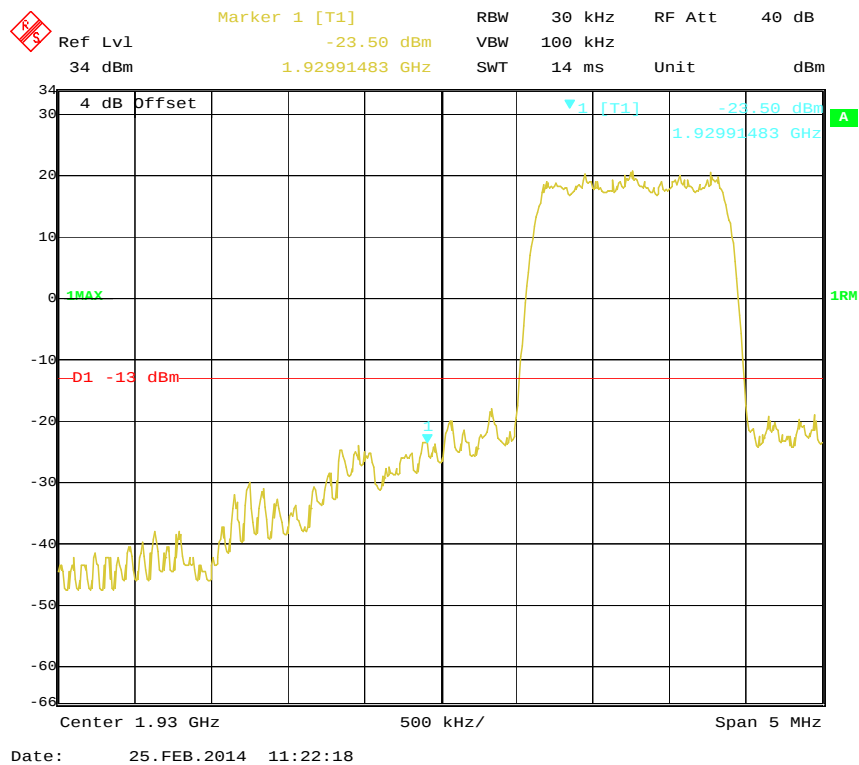


GSM Mode, Right Band

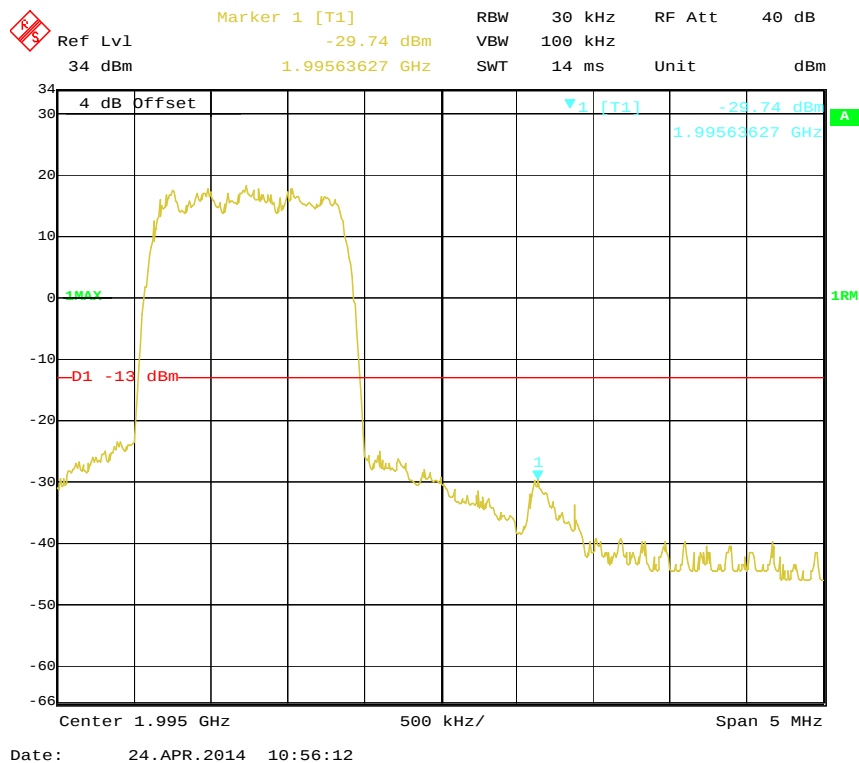


EDGE Mode, Left Band**EDGE Mode, Right Bands**

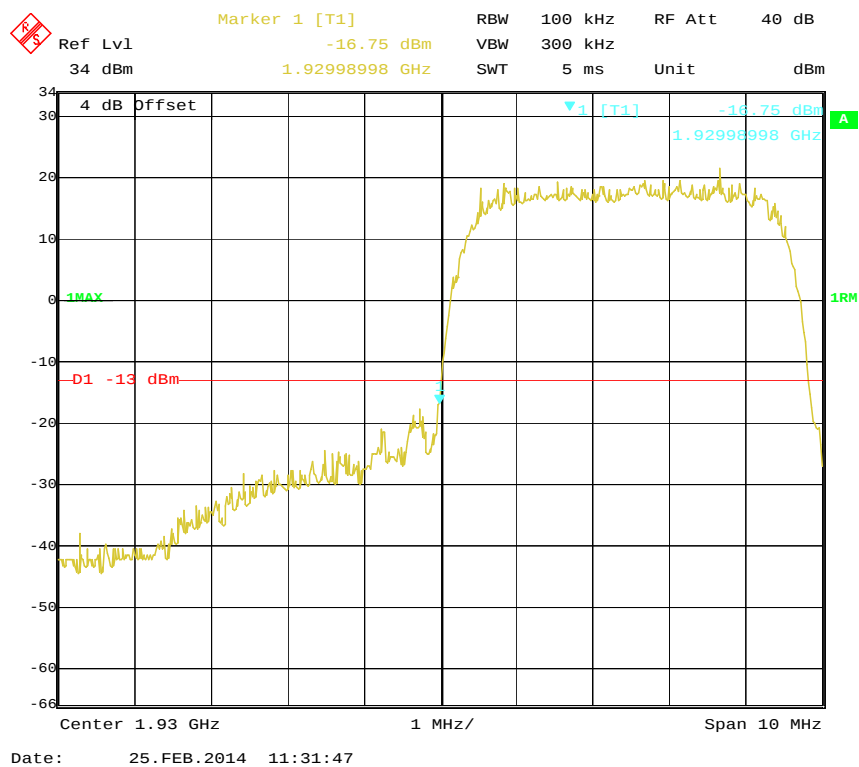
CDMA Mode, Left Band



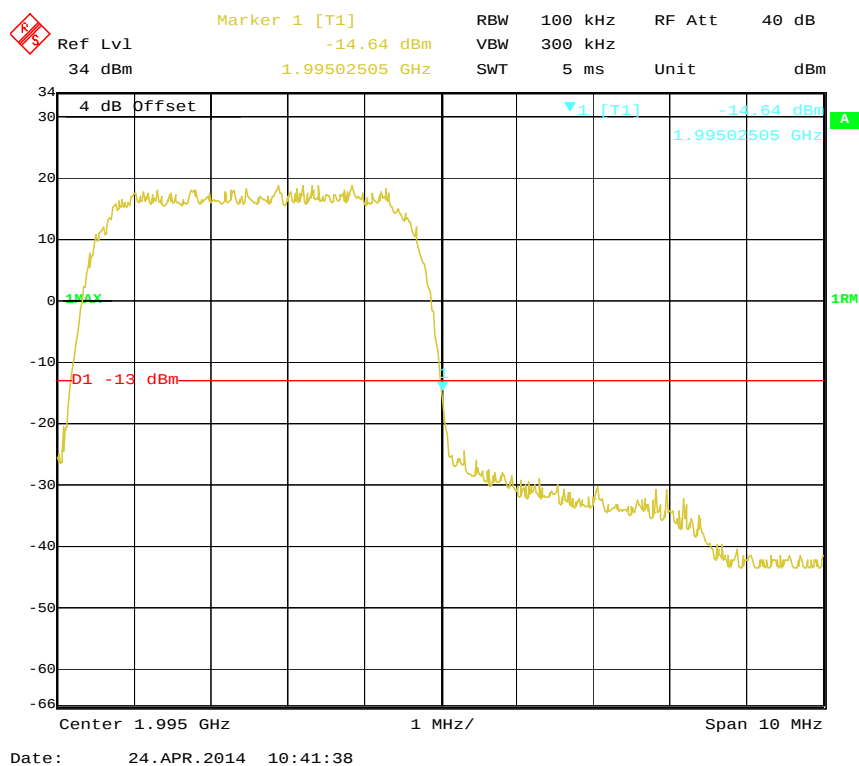
CDMA Mode, Right Band



WCDMA Mode, Left Band

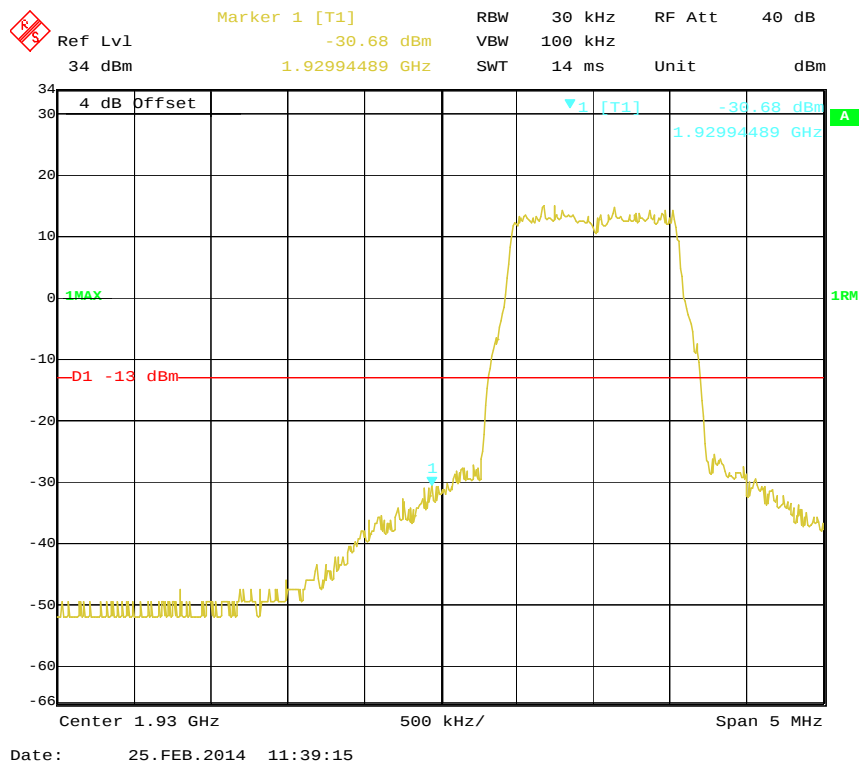


WCDMA Mode, Right Band

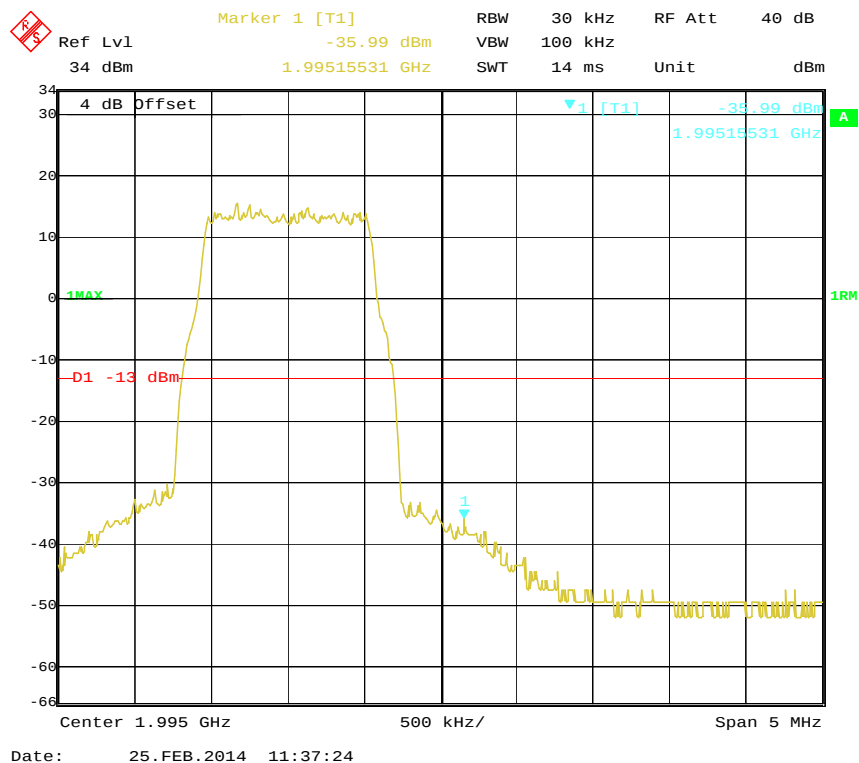


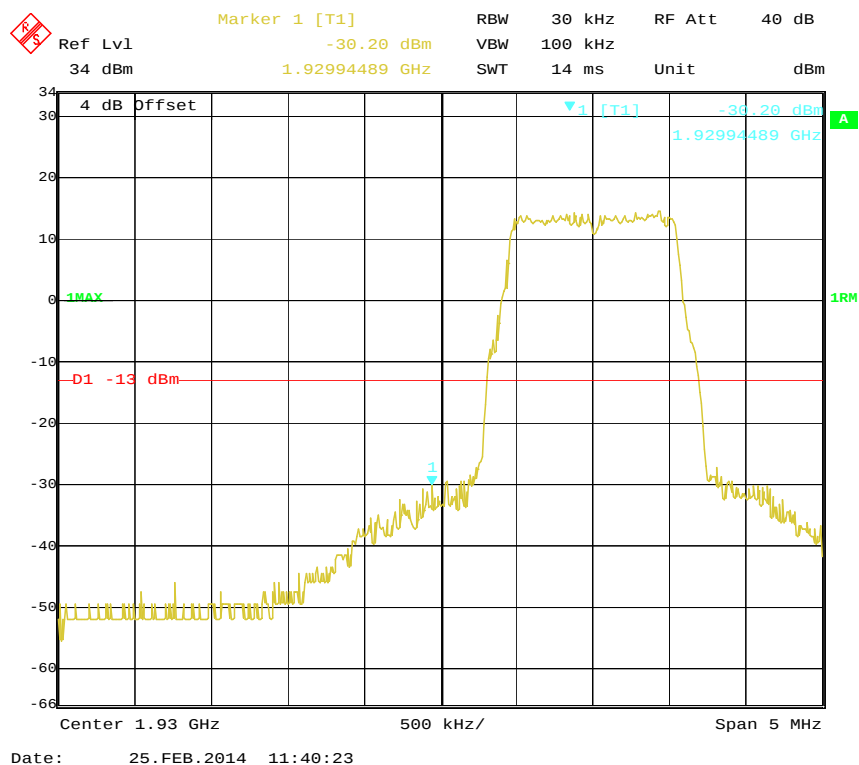
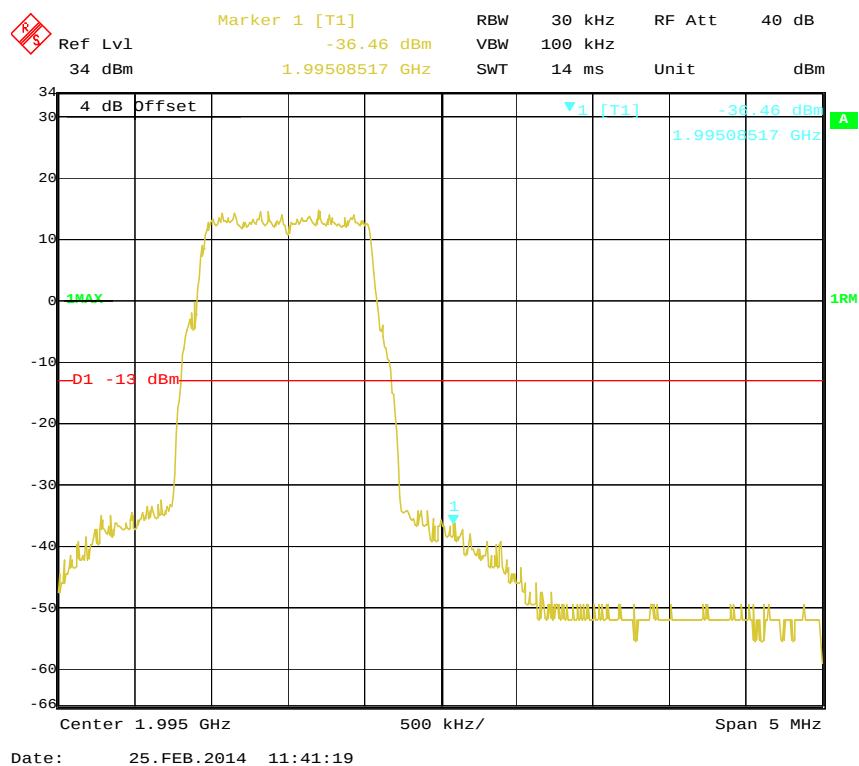
PCS Band LTE Downlink:

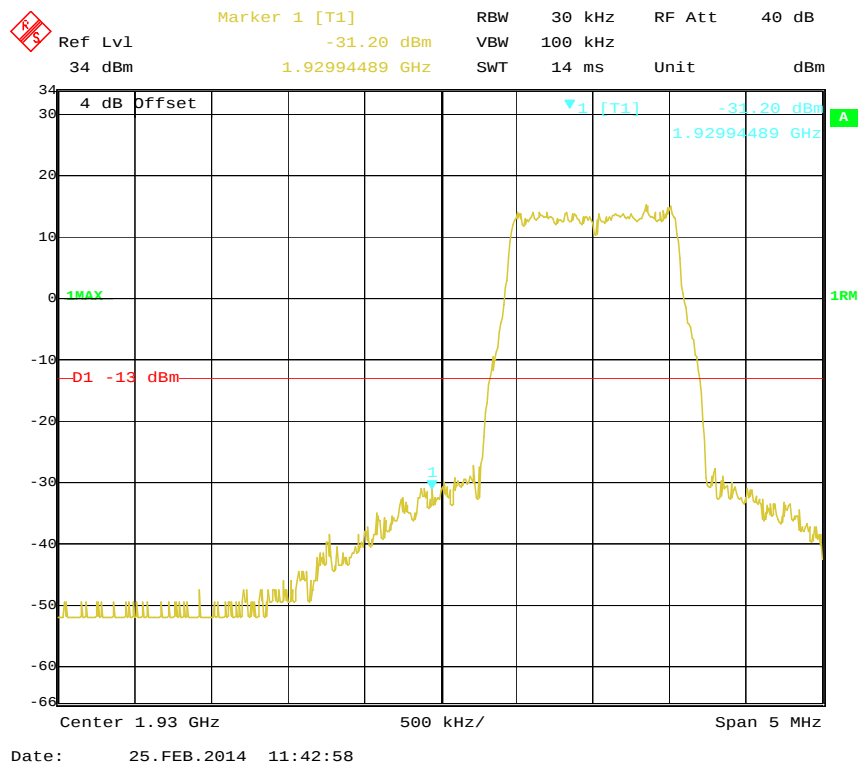
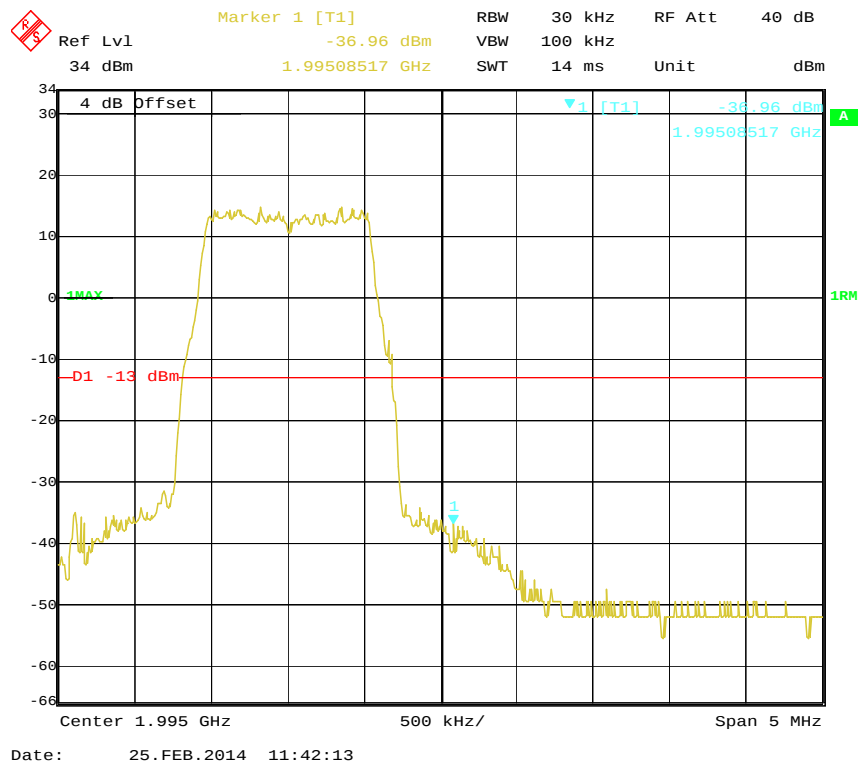
QPSK (1.4MHz) Mode, Left Band

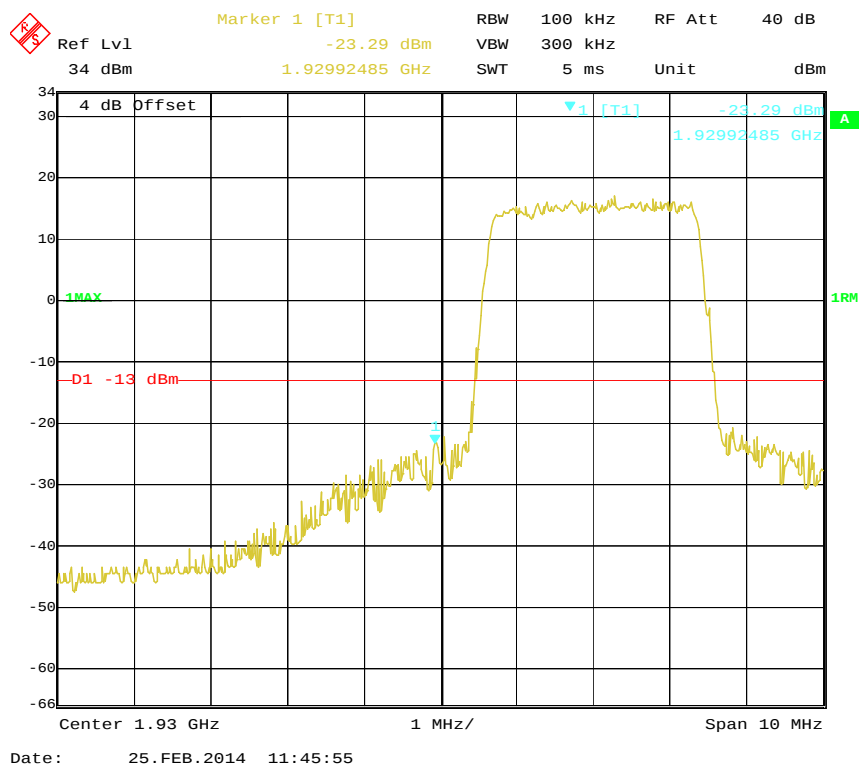
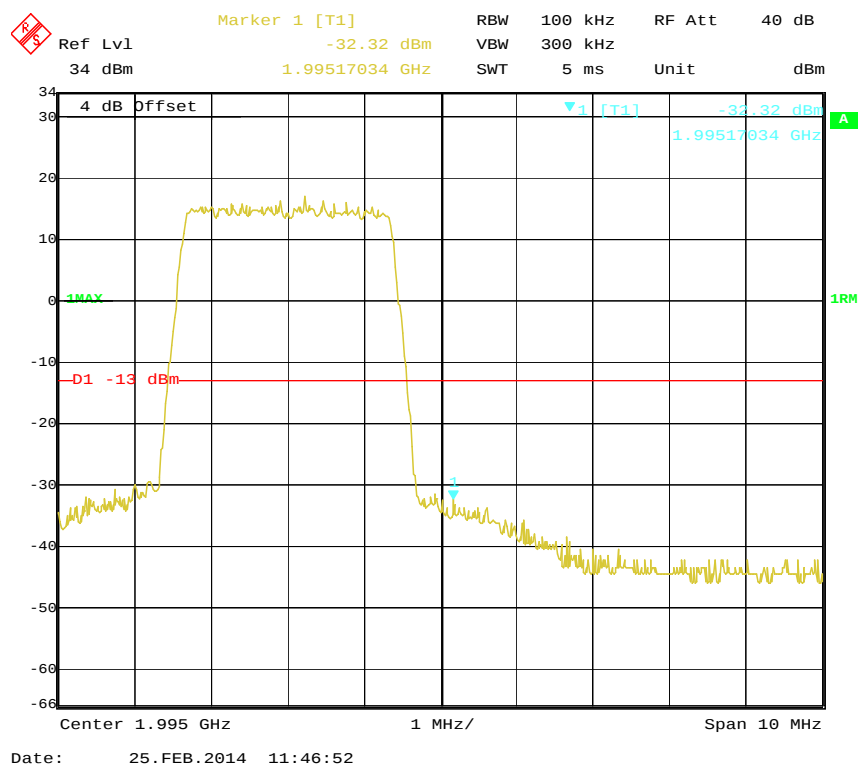


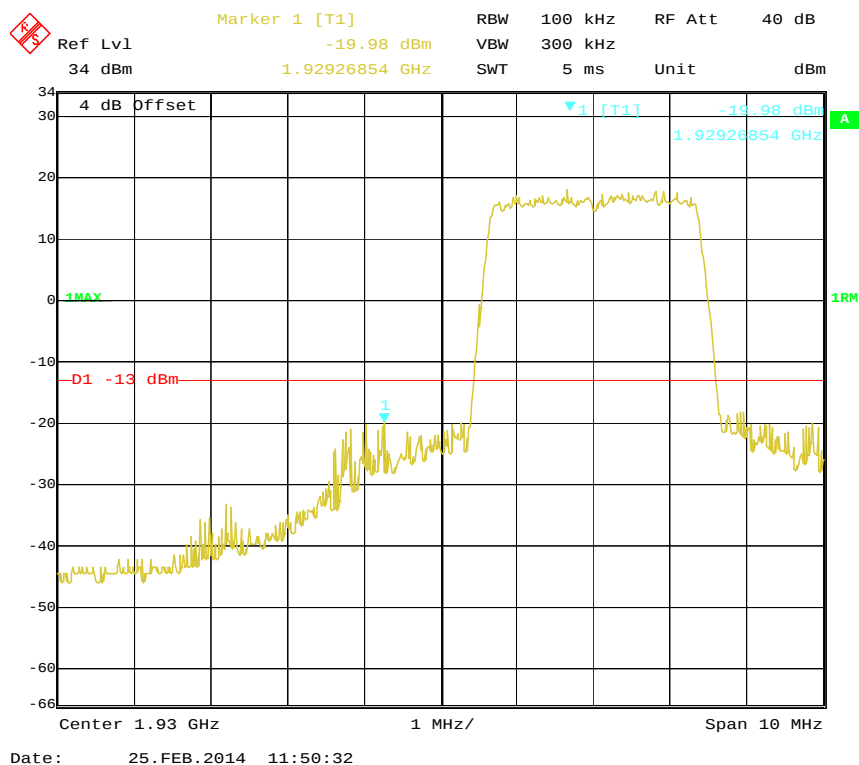
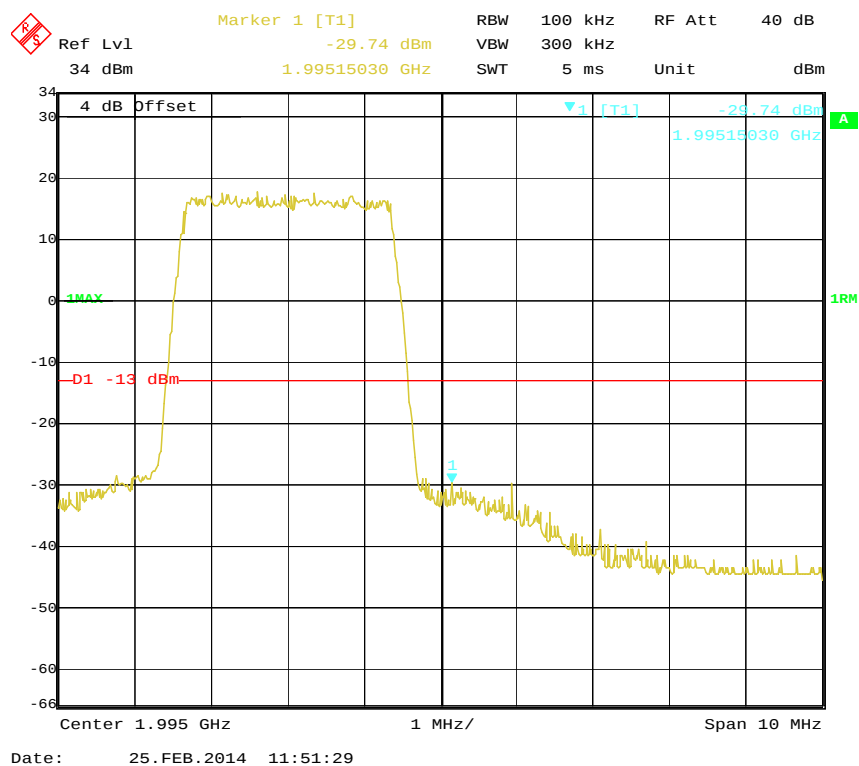
QPSK (1.4MHz) Mode, Right Band

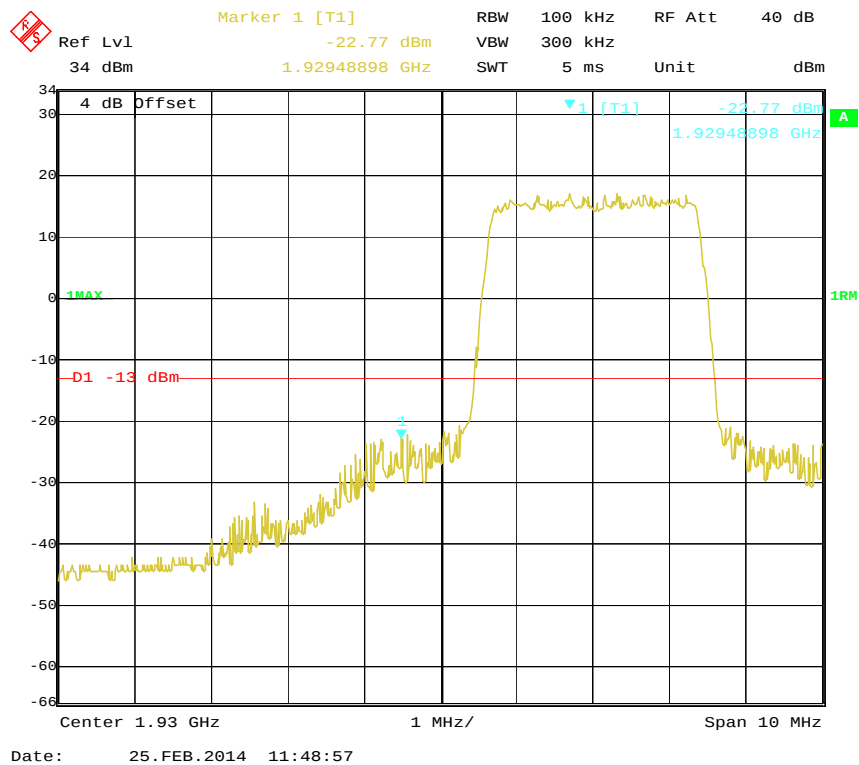
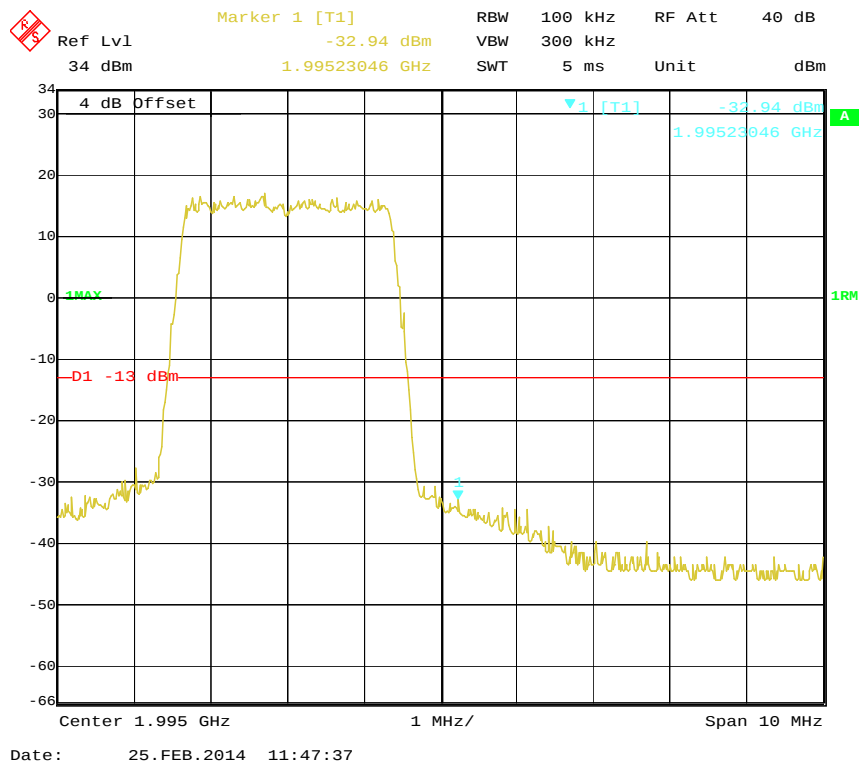


16QAM (1.4MHz) Mode, Left Band**16QAM (1.4MHz) Mode, Right Band**

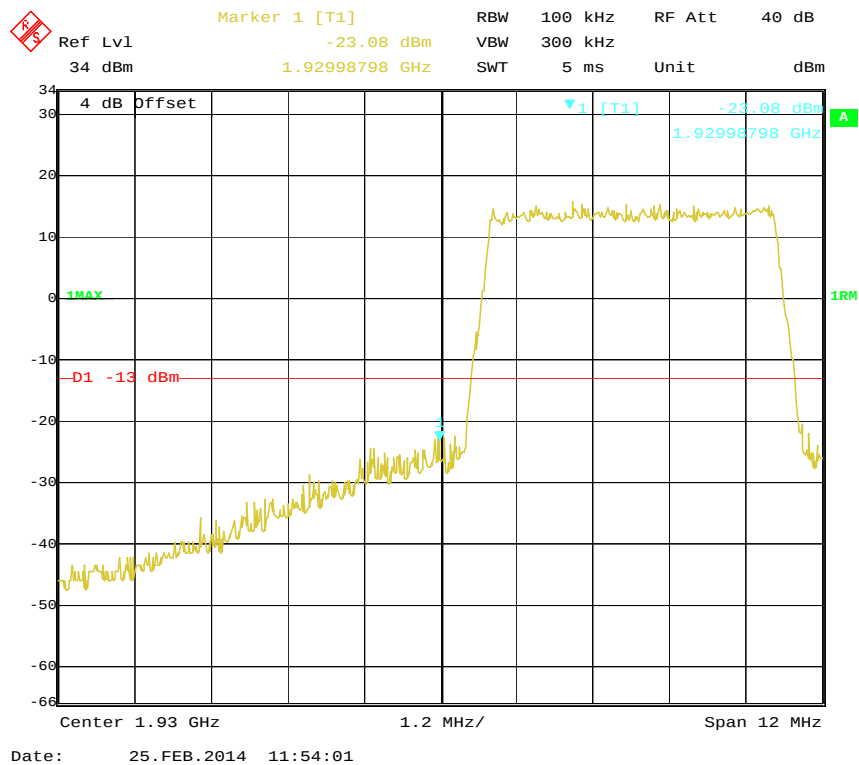
64QAM (1.4MHz) Mode, Left Band**64QAM (1.4MHz) Mode, Right Band**

QPSK (3MHz) Mode, Left Band**QPSK (3MHz) Mode, Right Band**

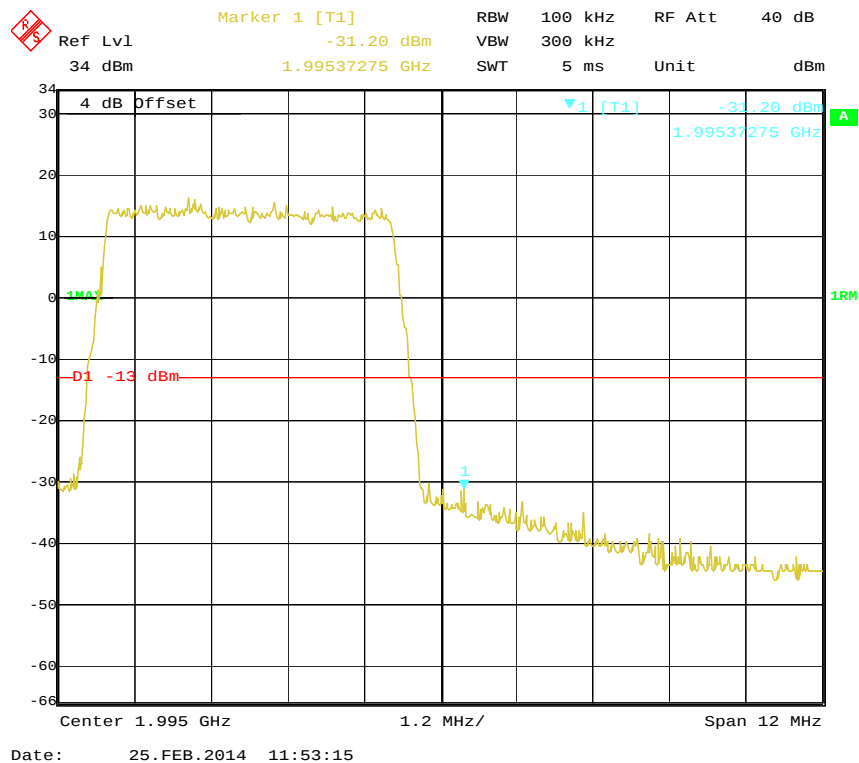
16QAM (3MHz) Mode, Left Band**16QAM (3MHz) Mode, Right Band**

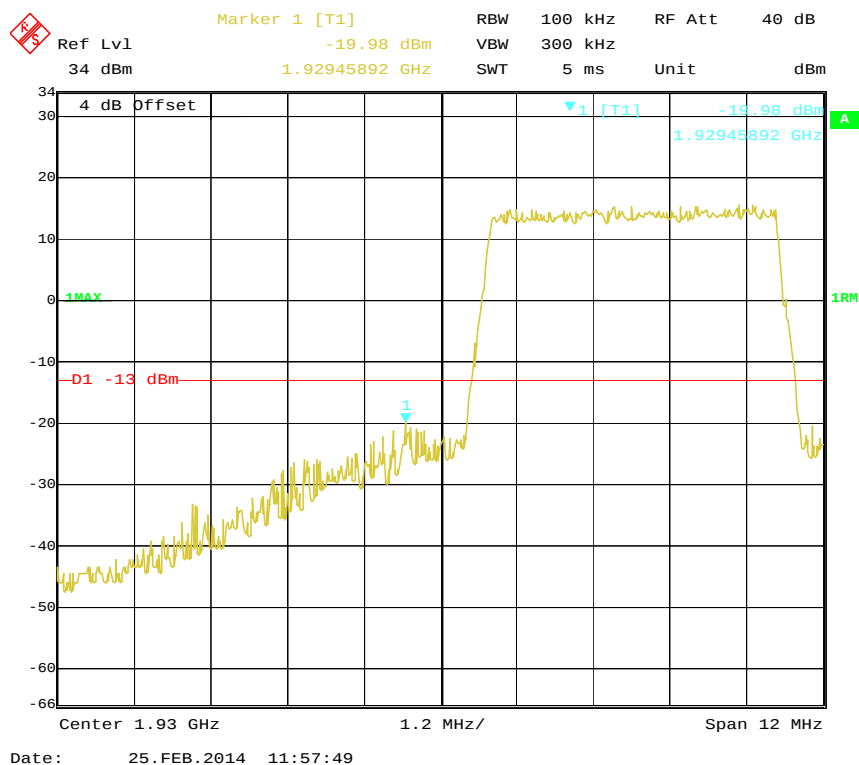
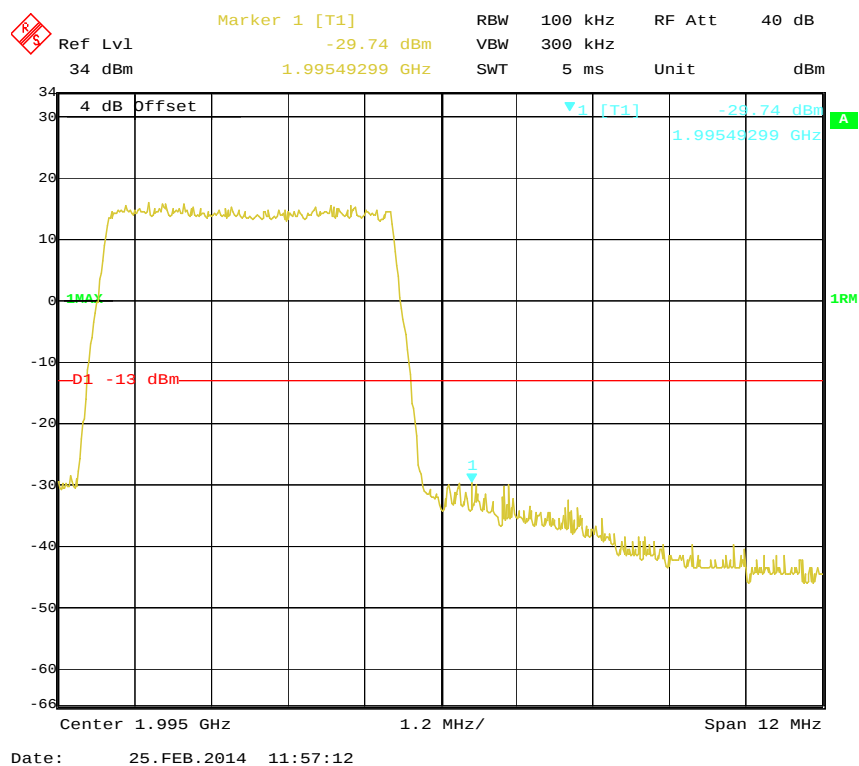
64QAM (3MHz) Mode, Left Band**64QAM (3MHz) Mode, Right Band**

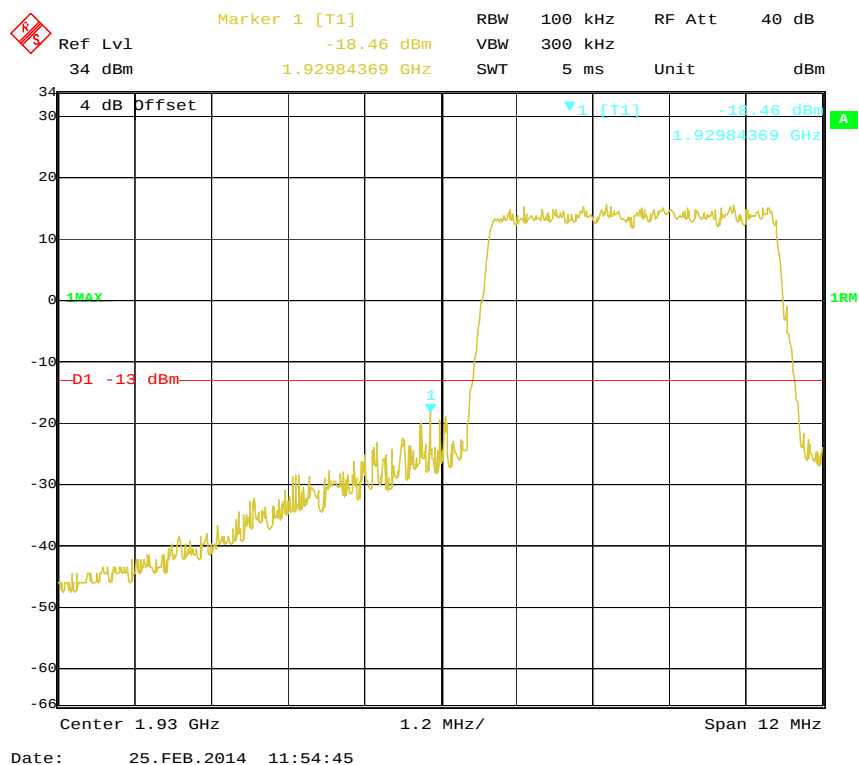
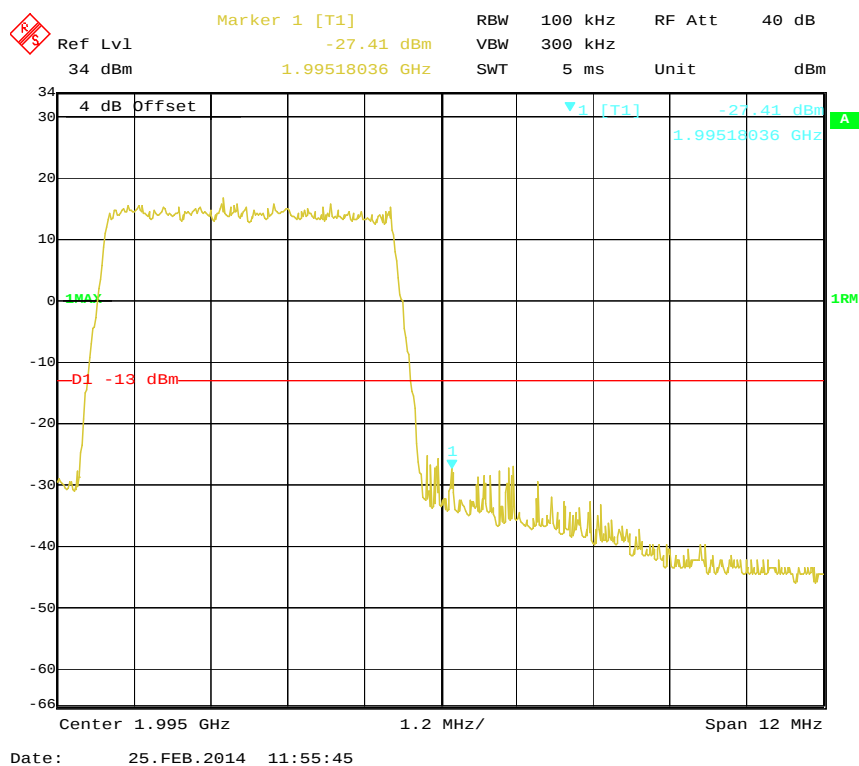
QPSK (5MHz) Mode, Left Band



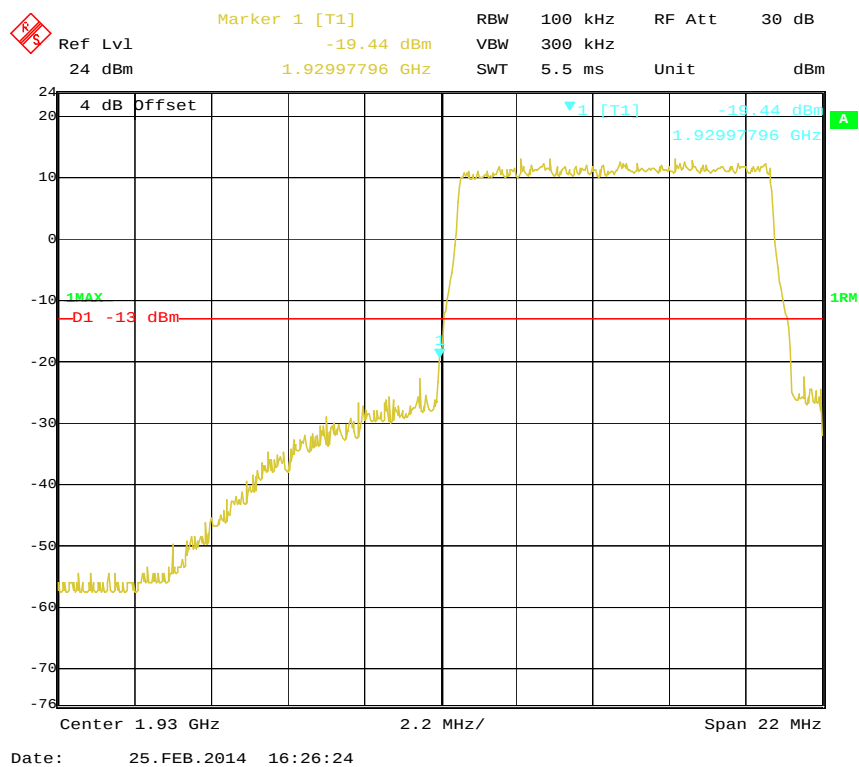
QPSK (5MHz) Mode, Right Band



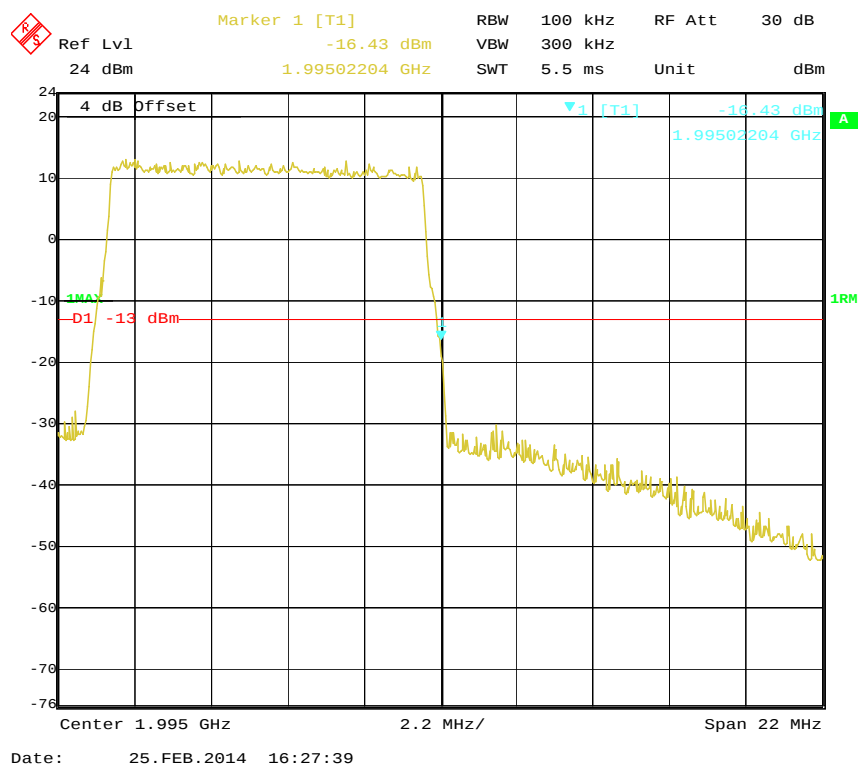
16QAM (5MHz) Mode, Left Band**16QAM (5MHz) Mode, Right Band**

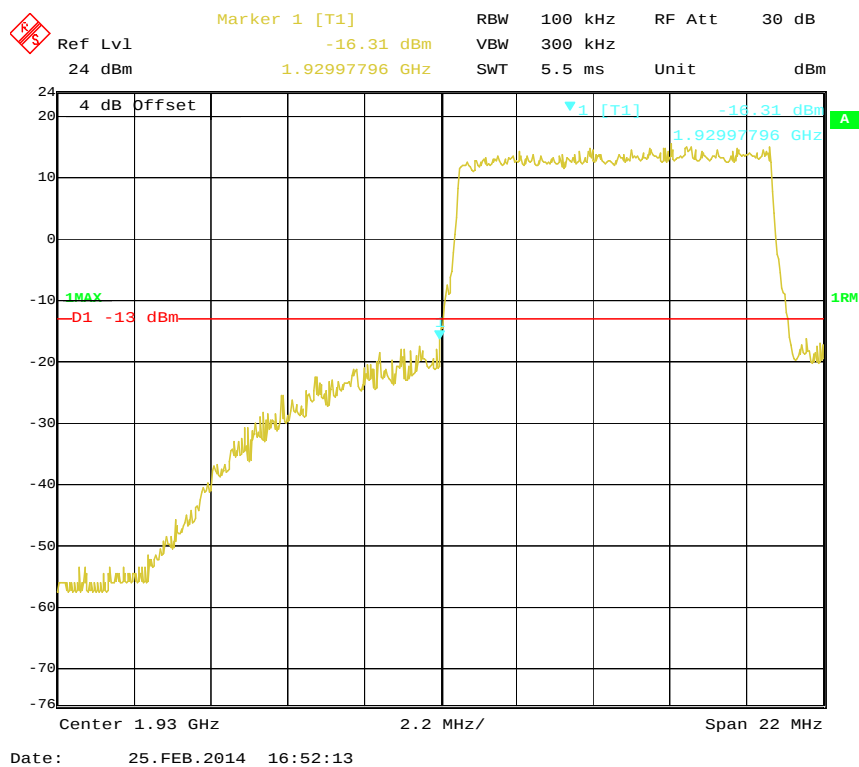
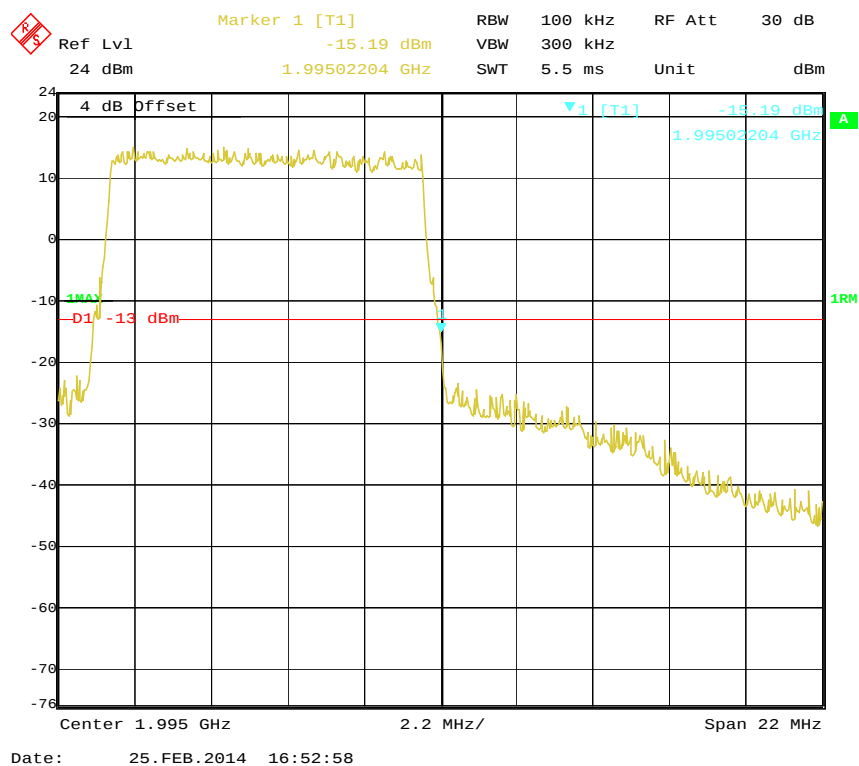
64QAM (5MHz) Mode, Left Band**64QAM (5MHz) Mode, Right Band**

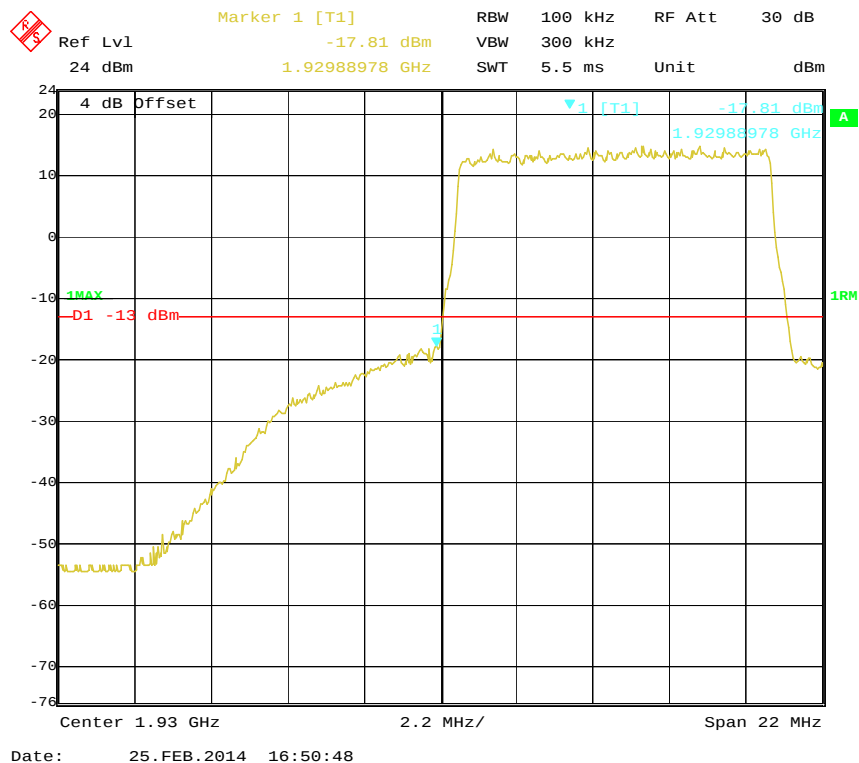
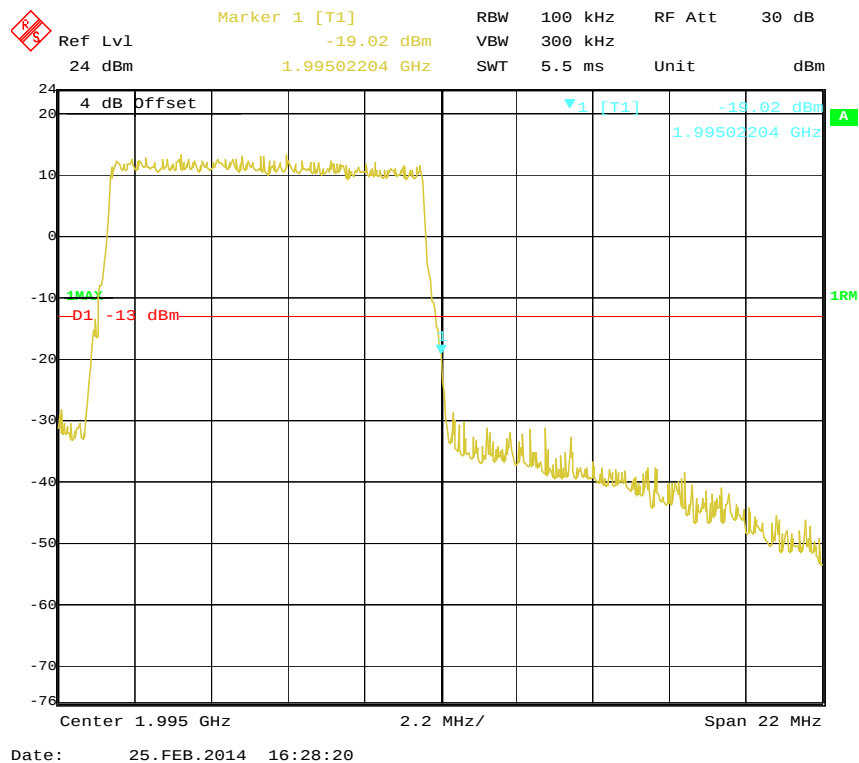
QPSK (10MHz) Mode, Left Band



QPSK (10MHz) Mode, Right Band



16QAM (10MHz) Mode, Left Band**16QAM (10MHz) Mode, Right Band**

64QAM (10MHz) Mode, Left Band**64QAM (10MHz) Mode, Right Band**

FCC §2.1055 & §24.235 & §90.213 - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055, §24.235, and §90.213

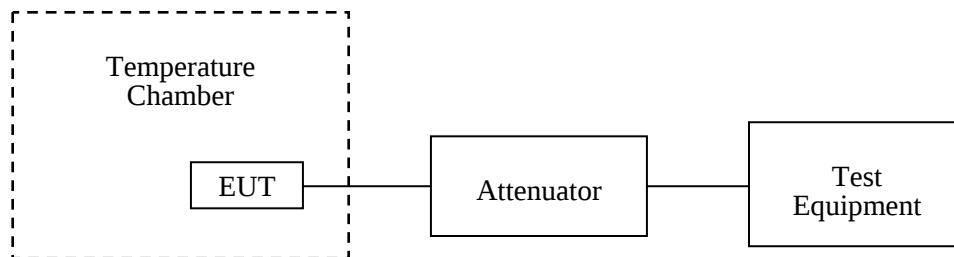
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment is varied from -30°C to + 50°C using an environmental chamber

Frequency Stability vs. Voltage: the primary supply voltage is varied from battery end point to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification – the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2013-11-01	2014-11-01
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2013-11-01	2014-11-01

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data**Environmental Conditions**

Temperature:	22 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang on 2014-02-24.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables.

1930-1995 MHz

Test Condition		Reference Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (ppm)	Results
Power Supplied (V _{DC})	Temperature (°C)				
Frequency vs. Temperature					
54	50	1960	1960.000235	0.12	Pass
	35	1960	1960.000154	0.08	Pass
	25	1960	1960.000254	0.13	Pass
	15	1960	1960.000547	0.28	Pass
	5	1960	1960.000485	0.25	Pass
	-5	1960	1960.000554	0.28	Pass
	-15	1960	1960.000457	0.23	Pass
	-25	1960	1960.000477	0.24	Pass
Frequency vs. Voltage					
51	25	1960	1960.000154	0.08	Pass
57	25	1960	1960.000187	0.10	Pass

862-869 MHz

Test Condition		Reference Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (ppm)	Limited (ppm)
Power Supplied (V _{DC})	Temperature (°C)				
Frequency vs. Temperature					
54	45	865	865.00029	0.34	±1.5
	35	865	865.00042	0.49	±1.5
	25	865	865.00023	0.27	±1.5
	15	865	865.00073	0.84	±1.5
	5	865	865.00035	0.40	±1.5
	-5	865	865.00027	0.31	±1.5
	-15	865	865.00046	0.53	±1.5
	-25	865	865.00019	0.22	±1.5
Frequency vs. Voltage					
51	25	865	865.00064	0.74	±1.5
57	25	865	865.00034	0.39	±1.5

FCC §20.21 - OUT OF BAND REJECTION

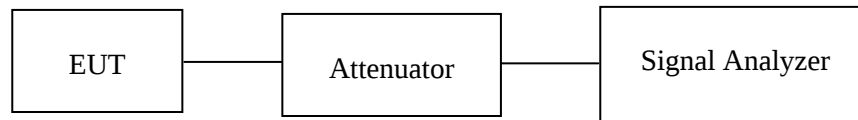
Applicable Standard

FCC § 20.21

Test Procedure

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

The center of the spectrum analyzer was set to block edge frequency



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2013-11-12	2014-11-12
Agilent	ESG Vector Signal Generator	E4438C	US41461205	2013-11-12	2014-11-12

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

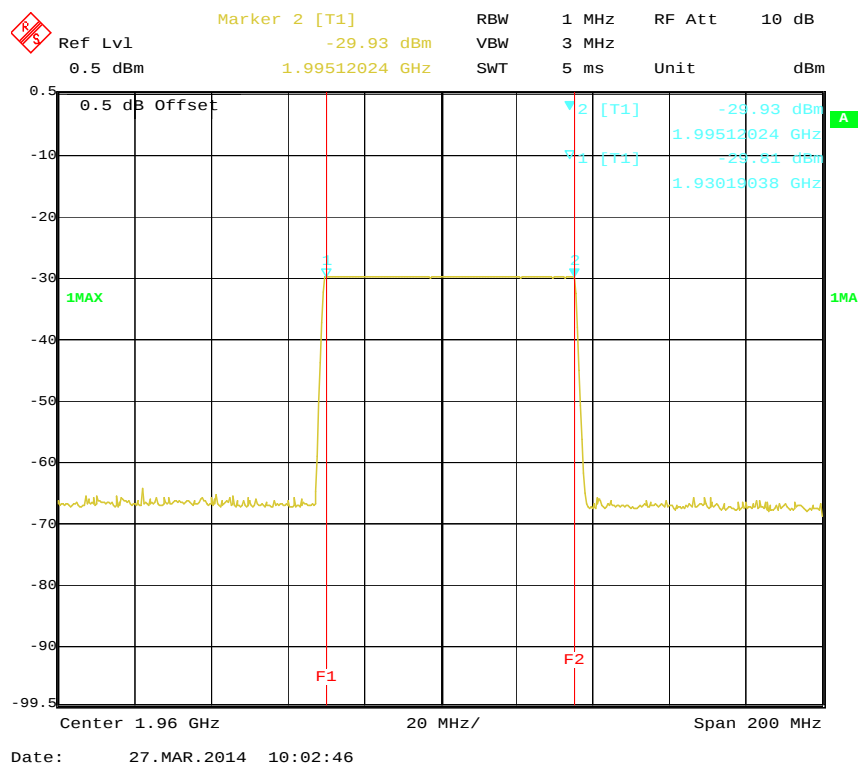
Temperature:	20 ~ 25 °C
Relative Humidity:	50~ 56 %
ATM Pressure:	101.0 kPa

The testing was performed by Rocky Kang from 2014-03-14 to 2014-03-27.

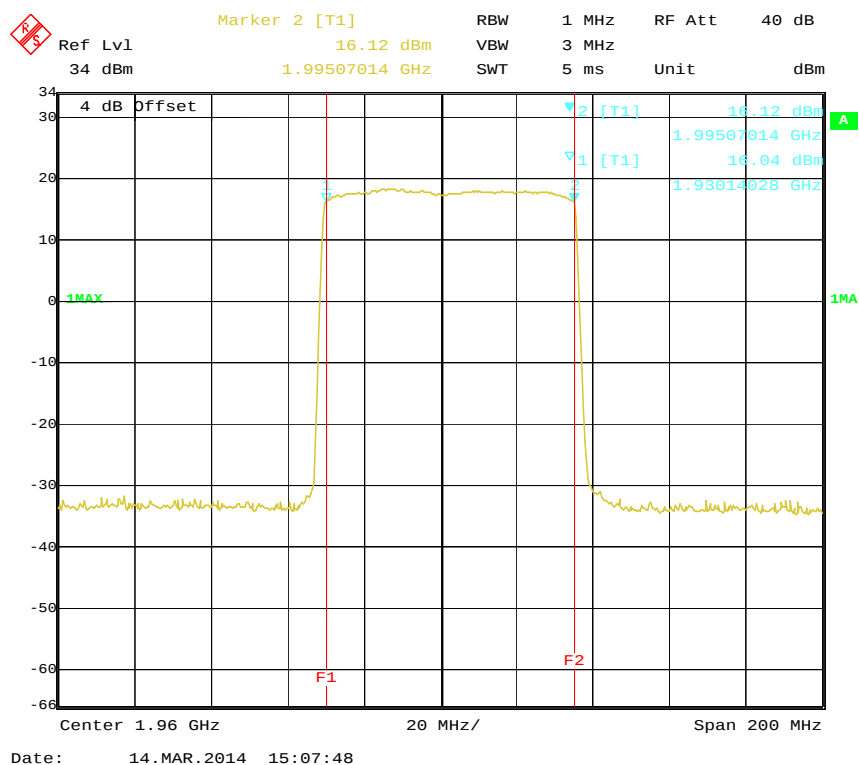
EUT operation mode: Transmitting

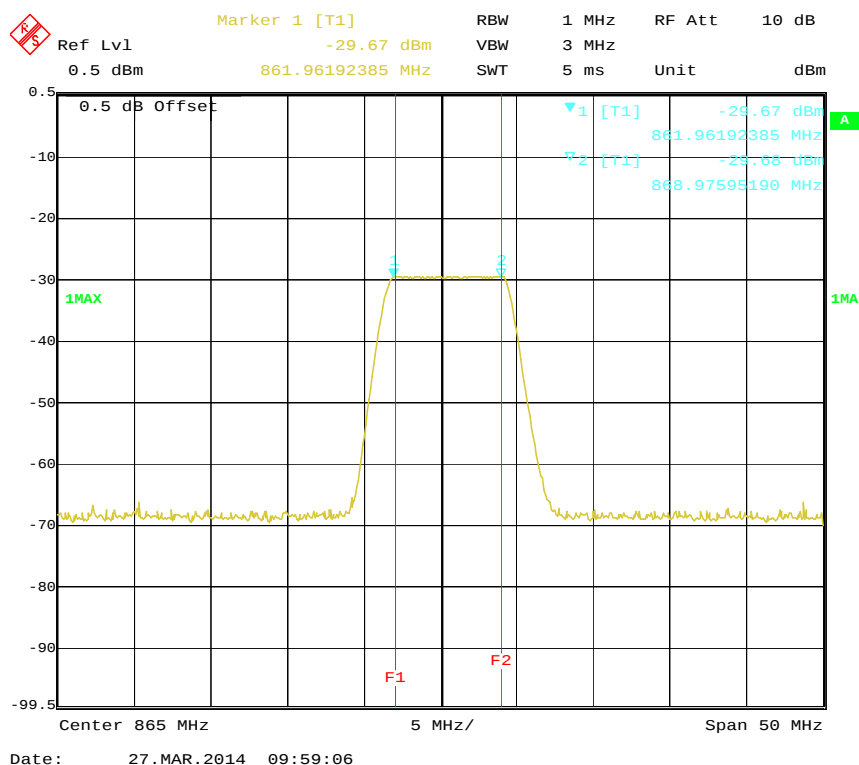
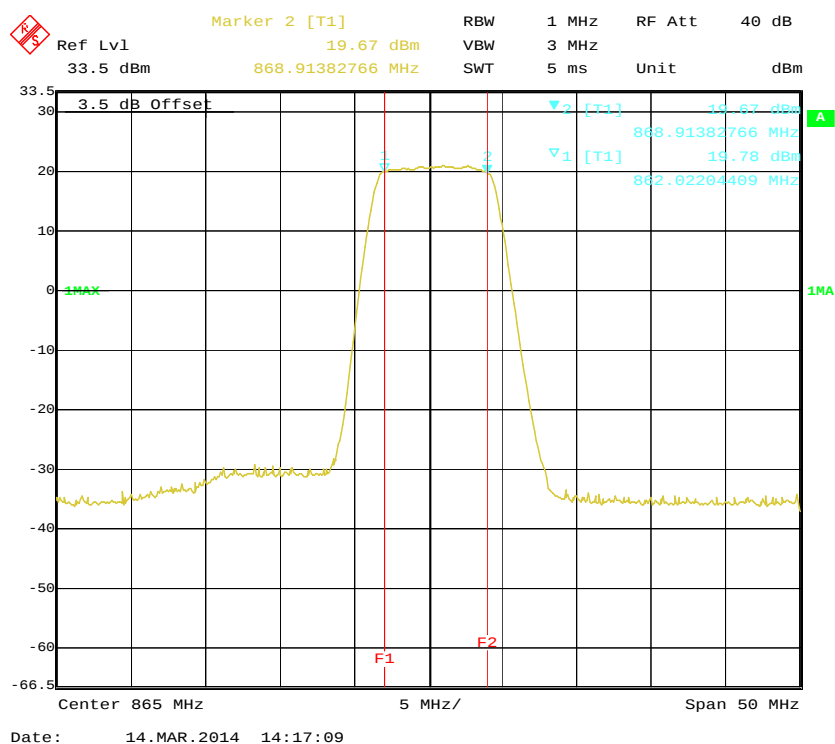
Test Result: Compliance. Please refer to the following plots.

1930-1995 MHz, Input



1930-1995 MHz, Output



862-869 MHz, Input**862-869 MHz, Output********* END OF REPORT *******