



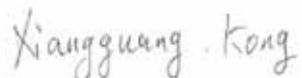
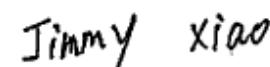
FCC PART 27  
FCC PART 22H, PART 24E  
MEASUREMENT AND TEST REPORT

For

**Wilken Technology Company Limited**

PAYSANDU 1842, (CP 1416), BUENOS AIRES, Argentina

**FCC ID: 2AFDSS500**

<b>Report Type:</b> Original Report	<b>Product Type:</b> mobile product
<b>Test Engineer:</b> <u>Xiangguang Kong</u> 	
<b>Report Number:</b> <u>RSZ150706008-00D</u>	
<b>Report Date:</b> <u>2015-07-29</u>	
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**Note:** This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp.

## **TABLE OF CONTENTS**

<b>GENERAL INFORMATION.....</b>	<b>4</b>
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT).....	4
OBJECTIVE .....	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY .....	4
TEST FACILITY .....	5
<b>SYSTEM TEST CONFIGURATION.....</b>	<b>6</b>
JUSTIFICATION .....	6
EQUIPMENT MODIFICATIONS .....	6
SUPPORT EQUIPMENT LIST AND DETAILS .....	6
BLOCK DIAGRAM OF TEST SETUP .....	6
<b>SUMMARY OF TEST RESULTS .....</b>	<b>7</b>
<b>FCC §1.1307(B) &amp; §27.52 &amp; §2.1093 - RF EXPOSURE INFORMATION.....</b>	<b>8</b>
APPLICABLE STANDARD .....	8
TEST RESULT .....	8
<b>FCC §2.1047 - MODULATION CHARACTERISTIC .....</b>	<b>9</b>
<b>FCC § 2.1046, § 22.913 (A) &amp; § 24.232 (C) &amp; § 27.50 - RF OUTPUT POWER.....</b>	<b>10</b>
APPLICABLE STANDARDS.....	10
TEST PROCEDURE .....	10
TEST EQUIPMENT LIST AND DETAILS.....	11
TEST DATA .....	11
<b>FCC §2.1049, §22.917, §22.905 &amp; §24.238 &amp; §27.53 - OCCUPIED BANDWIDTH.....</b>	<b>33</b>
APPLICABLE STANDARDS.....	33
TEST PROCEDURE .....	33
TEST EQUIPMENT LIST AND DETAILS.....	33
TEST DATA .....	33
<b>FCC §2.1051, §22.917(A) &amp; §24.238(A) &amp; §27.53 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS ..</b>	<b>67</b>
APPLICABLE STANDARDS.....	67
TEST PROCEDURE .....	67
TEST EQUIPMENT LIST AND DETAILS.....	67
TEST DATA .....	67
<b>FCC §2.1053, §22.917 &amp; §24.238 &amp; §27.53 - SPURIOUS RADIATED EMISSIONS .....</b>	<b>99</b>
APPLICABLE STANDARDS.....	99
TEST PROCEDURE .....	99
TEST EQUIPMENT LIST AND DETAILS.....	100
TEST DATA .....	100
<b>FCC §22.917(A) &amp; §24.238(A) &amp; §27.53 - BAND EDGES.....</b>	<b>104</b>
APPLICABLE STANDARDS.....	104
TEST PROCEDURE .....	104
TEST EQUIPMENT LIST AND DETAILS.....	105
TEST DATA .....	105
<b>FCC §2.1055, §22.355 &amp; §24.235 &amp; §27.54 - FREQUENCY STABILITY.....</b>	<b>152</b>

APPLICABLE STANDARDS.....	152
TEST PROCEDURE .....	152
TEST EQUIPMENT LIST AND DETAILS.....	153
TEST DATA .....	153

## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

The *Wilken Technology Company Limited*'s product, model number:S500 (*FCC ID: 2AFDSS500*) or the "EUT" in this report was a *mobile product*, which was measured approximately: 143 mm (L) × 71 mm (W) × 7 mm (H), rated with input voltage: DC 3.8 V rechargeable Li-ion battery or DC5.0 V from adapter.

#### Adapter Information

Model: HU-0501000

Input: AC 100-240V, 50/60Hz, 0.15A

Output: DC 5.0V, 1000mA

*\*All measurement and test data in this report was gathered from production sample serial number: 1505658 (Assigned by Shenzhen BACL). The EUT supplied by the applicant was received on 2015-07-06*

### Objective

This type approval report is prepared on behalf of *Wilken Technology Company Limited* in accordance with Part 2, Part 22-Subpart H, Part 24-Subpart E and Part 27 of the Federal Communication Commissions rules.

The objective is to determine the compliance of 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 15B JBP, Part 15.247 DSS&DTS submissions with FCC ID: 2AFDSS500.

### Test Methodology

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

Part 22 Subpart H - Public Mobile Services

Part 24 Subpart E - Personal Communication Services

Part 27 – Miscellaneous wireless communications services

Applicable Standards: TIA-1037, TIA/EIA 603-D & TIA/EIA 603-D, ANSI C63.4-2009.

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

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

## **Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp.(Shenzhen) to collect test data is located in 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 October 31, 2013. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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

### Justification

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

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

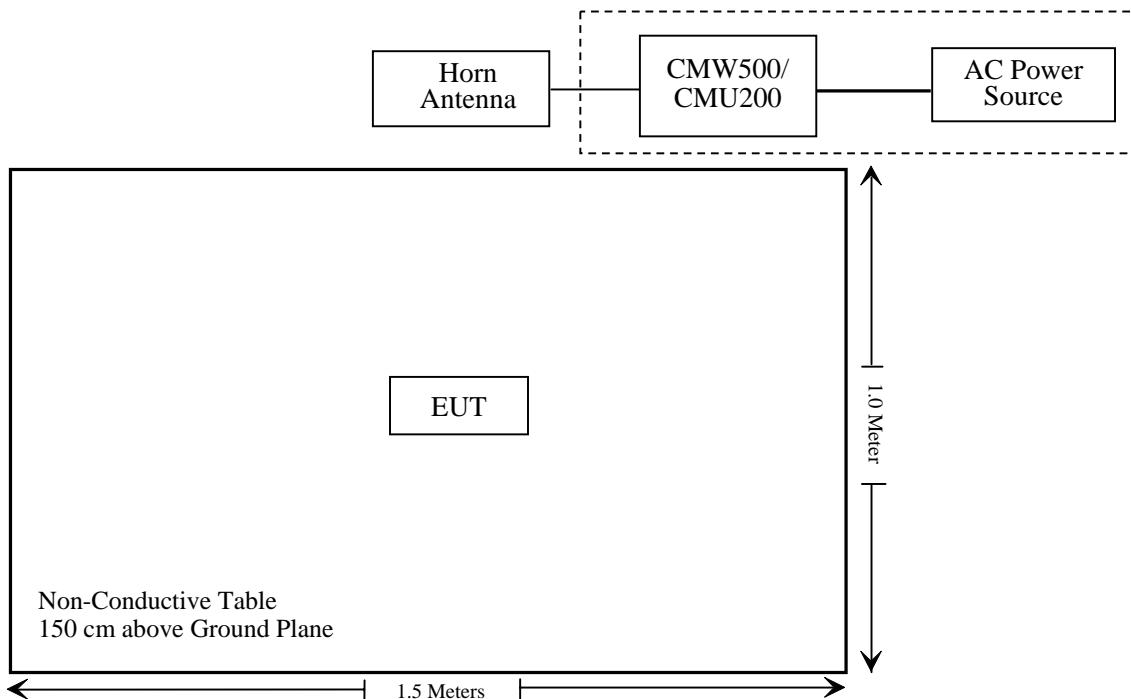
### Equipment Modifications

No modifications were made to the EUT.

### Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.0002K50
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891

### Block Diagram of Test Setup



## SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b)(1), §2.1093, §27.52	RF Exposure Information	Compliance*
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (d) (i)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53 (c)	Occupied Bandwidth	Compliance
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53(c) (g)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53 (c) (g)	Spurious Radiated Emissions	Compliance
§ 22.917 (a); § 24.238 (a); §27.53 (c) (g);	Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliance

Note: \* Please refer to SAR report released by BACL, report number: RSZ150706008-20A and RSZ150706008-20B.

## **FCC §1.1307(b) & §27.52 & §2.1093 - RF EXPOSURE INFORMATION**

### **Applicable Standard**

FCC§1.1307, §2.1093 and §27.52.

### **Test Result**

Compliance, please refer to the SAR report: RSZ150706008-20A and RSZ150706008-20B.

## **FCC §2.1047 - MODULATION CHARACTERISTIC**

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According to FCC § 2.1047(d) , Part 22H & 24E, Part 27 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

## **FCC § 2.1046, § 22.913 (a) & § 24.232 (c) & § 27.50 - RF OUTPUT POWER**

### **Applicable Standards**

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (C), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications..

According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz. The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

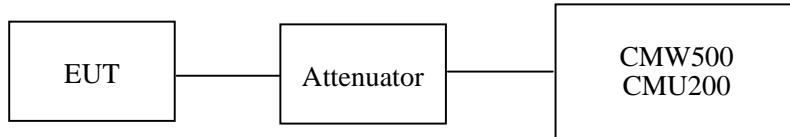
According to §27.50(c), the maximum EIRP must not exceed 3Watts (34.77dBm) for 704-716MHz. According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz. According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz.

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

### **Test Procedure**

*Conducted method:*

The RF output of the transmitter was connected to the CMW500/CMU200 through sufficient attenuation.



*Radiated method:*

TIA603-D section 2.2.17

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2014-11-03	2015-11-03
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2014-12-07	2017-12-06
HP	Synthesized Sweeper	8341B	2624A00116	2015-06-03	2016-06-03
COM POWER	Dipole Antenna	AD-100	041000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2013-02-11	2016-02-10
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2015-04-27	2016-04-26
Sunol Sciences	Horn Antenna	DRH-118	A052304	2014-12-01	2015-11-30
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

\* **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:	26
Relative Humidity:	49 %
ATM Pressure:	101.0 kPa

The testing was performed by Xiangguang Kong on 2015-07-22.

## Conducted Power

### Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	128	824.2	32.63	38.45
	190	836.6	32.55	38.45
	251	848.8	32.54	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	32.65	31.92	30.11	28.86	38.45
	190	836.6	32.54	31.81	29.91	28.74	38.45
	251	848.8	32.51	31.78	29.86	28.70	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.04	24.81	22.74	21.54	38.45
	190	836.6	25.99	24.73	22.71	21.50	38.45
	251	848.8	25.80	24.59	22.52	21.29	38.45

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band V)	Normal	HSDPA	RMC12.2k	22.35	22.62	22.67
			1	21.28	21.55	21.56
			2	21.26	21.56	21.60
			3	21.20	21.51	21.52
			4	21.26	21.54	21.63
		HSUPA	1	21.28	21.57	21.61
			2	21.29	21.58	21.59
			3	21.22	21.53	21.51
			4	21.30	21.55	21.56
			5	21.24	21.56	21.57
		DC-HSDPA	1	21.14	21.01	21.03
			2	21.11	21.20	21.14
			3	21.08	21.04	21.02
			4	21.13	21.09	21.13
		HSPA+	1	21.09	21.17	21.03

### PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	512	1850.2	29.02	33
	661	1880.0	29.00	33
	810	1909.8	29.17	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.01	28.02	25.73	24.36	33
	661	1880.0	29.04	28.00	25.67	24.32	33
	810	1909.8	29.18	28.21	26.01	24.69	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	23.53	22.29	20.00	18.72	33
	661	1880.0	23.79	22.54	20.24	18.98	33
	810	1909.8	24.09	22.85	20.48	19.21	33

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band II)	Normal	HSDPA	RMC12.2k	21.49	21.50	21.76
			1	20.33	20.41	20.61
			2	20.29	20.37	20.57
			3	20.26	20.29	20.47
			4	20.31	20.39	20.64
		HSUPA	1	20.32	20.40	20.65
			2	20.27	20.41	20.67
			3	20.34	20.35	20.57
			4	20.32	20.43	20.69
			5	20.30	20.40	20.65
		DC-HSDPA	1	20.19	20.19	20.02
			2	20.06	20.08	20.06
			3	20.01	20.10	20.13
			4	20.09	20.07	20.07
		HSPA+	1	20.14	20.03	20.01

**Peak-to-average ratio (PAR)****Cellular Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	0.11	13
	Middle	0.15	13
	High	0.18	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	0.13	13
	Middle	0.11	13
	High	0.14	13

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (BPSK)	Low	3.28	13
	Middle	3.33	13
	High	3.39	13
HSDPA (16QAM)	Low	3.27	13
	Middle	3.22	13
	High	3.24	13
HSUPA (BPSK)	Low	3.25	13
	Middle	3.36	13
	High	3.31	13

**PCS Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	0.12	13
	Middle	0.14	13
	High	0.17	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	0.15	13
	Middle	0.12	13
	High	0.16	13

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (BPSK)	Low	3.26	13
	Middle	3.31	13
	High	3.32	13
HSDPA (16QAM)	Low	3.27	13
	Middle	3.24	13
	High	3.19	13
HSUPA (BPSK)	Low	3.21	13
	Middle	3.16	13
	High	3.25	13

**Radiated Power (Measured at Max. conducted power channel)****ERP & EIRP****GSM Mode:**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	S.G. Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
ERP for Cellular Band (Part 22H), Low Channel										
824.2	98.76	36	2.4	H	32.0	0.67	0	31.33	38.45	7.12
824.2	96.46	100	1.4	V	29.4	0.67	0	28.73	38.45	9.72
EIRP for PCS Band (Part 24E), High Channel										
1909.80	91.41	221	2.4	H	22.7	1.40	7.30	28.60	33	4.40
1909.80	89.76	14	1.0	V	20.5	1.40	7.30	26.40	33	6.60

**EDGE Mode :**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E	
			Height (m)	Polar (H/V)	S.G. Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
ERP for Cellular Band (Part 22H), Low Channel										
824.2	91.79	182	1.5	H	25.0	0.67	0	24.33	38.45	14.12
824.2	89.72	68	1.2	V	22.6	0.67	0	21.93	38.45	16.52
EIRP for PCS Band (Part 24E), High Channel										
1909.80	86.13	239	1.5	H	17.5	1.40	7.30	23.40	33	9.60
1909.80	84.67	355	1.2	V	15.4	1.40	7.30	21.30	33	11.70

**WCDMA Mode:**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H/24E/27	
			Height (m)	Polar (H/V)	S.G. Level (dBm)	Cable loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
EIRP for WCDMA Band V (Part 22H), High Channel										
846.6	89.21	180	1.6	H	22.3	0.67	0	21.63	38.45	16.82
846.6	87.49	128	1.7	V	20.5	0.67	0	19.83	38.45	18.62
EIRP for WCDMA Band II (Part 24E), High Channel										
1907.60	83.43	169	1.4	H	14.8	1.40	7.30	20.70	33	12.30
1907.60	81.98	232	2.0	V	12.7	1.40	7.30	18.60	33	14.40

Note:

All above data were tested with no amplifier.

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

**LTE Band 2:****Maximum Output Power**

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
1.4	QPSK	RB Size=1, RB Offset=0	22.09	22.23	22.12
		RB Size=1, RB Offset=2	21.35	22.14	21.21
		RB Size=1, RB Offset=5	21.12	21.75	21.72
		RB Size=3, RB Offset=0	21.54	22.20	21.38
		RB Size=3, RB Offset=1	21.17	21.79	20.86
		RB Size=3, RB Offset=2	20.61	21.83	20.82
		RB Size=6, RB Offset=0	21.11	21.38	20.45
	16QAM	RB Size=1, RB Offset=0	21.11	21.22	21.15
		RB Size=1, RB Offset=2	20.90	21.19	20.89
		RB Size=1, RB Offset=5	20.28	21.16	20.41
		RB Size=3, RB Offset=0	20.39	21.03	21.04
		RB Size=3, RB Offset=1	19.96	20.49	20.76
		RB Size=3, RB Offset=2	19.93	20.99	20.57
		RB Size=6, RB Offset=0	20.71	20.64	20.47
3.0	QPSK	RB Size=1, RB Offset=0	22.07	22.19	22.11
		RB Size=1, RB Offset=7	21.31	21.51	21.73
		RB Size=1, RB Offset=14	21.32	21.83	21.66
		RB Size=8, RB Offset=0	21.69	21.55	21.43
		RB Size=8, RB Offset=4	21.03	20.70	21.18
		RB Size=8, RB Offset=7	20.73	21.08	21.08
		RB Size=15, RB Offset=0	21.06	21.32	21.67
	16QAM	RB Size=1, RB Offset=0	21.07	21.17	21.10
		RB Size=1, RB Offset=7	20.96	20.43	20.85
		RB Size=1, RB Offset=14	20.22	20.77	20.83
		RB Size=8, RB Offset=0	20.72	20.74	20.11
		RB Size=8, RB Offset=4	20.43	19.71	20.28
		RB Size=8, RB Offset=7	20.65	19.51	20.09
		RB Size=15, RB Offset=0	20.48	20.13	20.54

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
5.0	QPSK	RB Size=1, RB Offset=0	22.14	22.23	22.12
		RB Size=1, RB Offset=12	21.25	21.25	21.22
		RB Size=1, RB Offset=24	21.22	21.33	21.20
		RB Size=12, RB Offset=0	21.82	21.95	21.27
		RB Size=12, RB Offset=6	20.82	20.55	20.61
		RB Size=12, RB Offset=11	21.06	20.36	20.51
		RB Size=25, RB Offset=0	21.21	20.70	20.29
	16QAM	RB Size=1, RB Offset=0	21.09	21.18	21.11
		RB Size=1, RB Offset=12	20.55	20.82	20.37
		RB Size=1, RB Offset=24	20.78	20.47	20.80
		RB Size=12, RB Offset=0	21.03	21.04	20.56
		RB Size=12, RB Offset=6	20.40	19.96	20.00
		RB Size=12, RB Offset=11	20.28	20.52	19.93
		RB Size=25, RB Offset=0	19.70	20.13	20.32
10.0	QPSK	RB Size=1, RB Offset=0	22.22	22.32	22.25
		RB Size=1, RB Offset=24	21.25	22.23	21.48
		RB Size=1, RB Offset=49	21.37	21.85	21.99
		RB Size=25, RB Offset=0	21.57	22.06	21.34
		RB Size=25, RB Offset=12	20.71	21.73	21.20
		RB Size=25, RB Offset=24	21.04	21.36	20.79
		RB Size=50, RB Offset=0	21.24	22.09	21.01
	16QAM	RB Size=1, RB Offset=0	21.60	21.71	21.63
		RB Size=1, RB Offset=24	21.10	21.27	21.09
		RB Size=1, RB Offset=49	21.31	20.87	21.21
		RB Size=25, RB Offset=0	20.64	20.99	21.27
		RB Size=25, RB Offset=12	20.18	20.66	21.02
		RB Size=25, RB Offset=24	20.30	20.61	20.62
		RB Size=50, RB Offset=0	20.29	20.99	20.31

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
15.0	QPSK	RB Size=1, RB Offset=0	22.24	22.35	22.27
		RB Size=1, RB Offset=37	21.97	22.06	22.05
		RB Size=1, RB Offset=74	21.96	21.72	22.12
		RB Size=36, RB Offset=0	21.67	21.61	21.71
		RB Size=36, RB Offset=18	21.89	21.58	22.04
		RB Size=36, RB Offset=37	21.53	21.63	22.00
		RB Size=75, RB Offset=0	21.54	21.41	21.96
	16QAM	RB Size=1, RB Offset=0	21.71	21.76	21.66
		RB Size=1, RB Offset=37	21.07	20.98	20.74
		RB Size=1, RB Offset=74	20.87	21.14	21.33
		RB Size=36, RB Offset=0	21.22	20.85	21.13
		RB Size=36, RB Offset=18	20.71	20.03	20.29
		RB Size=36, RB Offset=37	21.00	20.84	19.79
		RB Size=75, RB Offset=0	20.92	20.61	20.70
20.0	QPSK	RB Size=1, RB Offset=0	22.22	22.34	22.26
		RB Size=1, RB Offset=49	22.07	21.51	21.28
		RB Size=1, RB Offset=99	22.16	21.77	21.47
		RB Size=50, RB Offset=0	22.11	21.68	21.87
		RB Size=50, RB Offset=24	22.02	21.45	20.84
		RB Size=50, RB Offset=49	21.77	20.67	20.40
		RB Size=100, RB Offset=0	21.65	20.80	21.03
	16QAM	RB Size=1, RB Offset=0	21.39	21.57	21.42
		RB Size=1, RB Offset=49	20.85	20.73	21.26
		RB Size=1, RB Offset=99	21.37	21.31	21.02
		RB Size=50, RB Offset=0	20.56	21.34	20.52
		RB Size=50, RB Offset=24	20.57	20.64	20.37
		RB Size=50, RB Offset=49	19.98	19.99	20.39
		RB Size=100, RB Offset=0	20.08	20.40	20.64

<b>Modulation</b>	<b>Low Channel (dB)</b>	<b>Middle Channel (dB)</b>	<b>High Channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
16QAM (1RB Size)	5.57	5.30	6.41	13	Pass
16QAM (100RB Size)	6.58	6.35	6.41	13	Pass

**Band 2:****Radiated: For QPSK**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E Limit (dBm)				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
1.4 MHz Bandwidth													
1880.00	83.07	249	1.7	H	14.4	1.40	7.30	20.30	33				
1880.00	81.76	180	1.3	V	12.5	1.40	7.30	18.40	33				
3 MHz Bandwidth													
1880.00	83.90	262	1.7	H	15.2	1.40	7.30	21.10	33				
1880.00	81.48	295	1.6	V	12.2	1.40	7.30	18.10	33				
5 MHz Bandwidth													
1880.00	82.97	302	1.8	H	14.3	1.40	7.30	20.20	33				
1880.00	81.07	248	1.6	V	11.8	1.40	7.30	17.70	33				
10 MHz Bandwidth													
1880.00	84.07	71	1.9	H	15.4	1.40	7.30	21.30	33				
1880.00	82.16	318	1.5	V	12.9	1.40	7.30	18.80	33				
15 MHz Bandwidth													
1880.00	83.60	78	1.6	H	14.9	1.40	7.30	20.80	33				
1880.00	81.95	71	1.4	V	12.7	1.40	7.30	18.60	33				
20 MHz Bandwidth													
1880.00	82.86	58	1.6	H	14.2	1.40	7.30	20.10	33				
1880.00	80.79	142	1.7	V	11.5	1.40	7.30	17.40	33				

**Band 2****Radiated: For 16QAM**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E Limit (dBm)				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
1.4 MHz Bandwidth													
1880	83.16	259	1.5	H	14.5	1.40	7.30	20.40	33				
1880	81.80	240	1.6	V	12.5	1.40	7.30	18.40	33				
3 MHz Bandwidth													
1880	82.67	71	1.6	H	14.0	1.40	7.30	19.90	33				
1880	81.10	276	2.4	V	11.8	1.40	7.30	17.70	33				
5 MHz Bandwidth													
1880	83.01	205	1.5	H	14.3	1.40	7.30	20.20	33				
1880	80.57	163	1.9	V	11.3	1.40	7.30	17.20	33				
10 MHz Bandwidth													
1880	82.84	118	1.9	H	14.2	1.40	7.30	20.10	33				
1880	81.42	259	1.5	V	12.2	1.40	7.30	18.10	33				
15 MHz Bandwidth													
1880	82.73	80	2.0	H	14.1	1.40	7.30	20.00	33				
1880	81.21	113	1.4	V	12.0	1.40	7.30	17.90	33				
20 MHz Bandwidth													
1880	82.80	315	1.8	H	14.1	1.40	7.30	20.00	33				
1880	81.19	259	1.7	V	11.9	1.40	7.30	17.80	33				

**Band 4:****Maximum Output Power**

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
1.4	QPSK	RB Size=1, RB Offset=0	23.05	23.19	23.08
		RB Size=1, RB Offset=2	22.31	23.10	22.17
		RB Size=1, RB Offset=5	22.08	22.71	22.68
		RB Size=3, RB Offset=0	22.50	23.16	22.34
		RB Size=3, RB Offset=1	22.13	22.75	21.82
		RB Size=3, RB Offset=2	21.57	22.79	21.78
		RB Size=6, RB Offset=0	22.07	22.34	21.41
	16QAM	RB Size=1, RB Offset=0	22.07	22.18	22.11
		RB Size=1, RB Offset=2	21.86	22.15	21.85
		RB Size=1, RB Offset=5	21.24	22.12	21.37
		RB Size=3, RB Offset=0	21.35	21.99	22.00
		RB Size=3, RB Offset=1	20.92	21.45	21.72
		RB Size=3, RB Offset=2	20.89	21.95	21.53
		RB Size=6, RB Offset=0	21.67	21.60	21.43
3.0	QPSK	RB Size=1, RB Offset=0	22.96	23.08	23.00
		RB Size=1, RB Offset=7	22.20	22.40	22.62
		RB Size=1, RB Offset=14	22.21	22.72	22.55
		RB Size=8, RB Offset=0	22.58	22.44	22.32
		RB Size=8, RB Offset=4	21.92	21.59	22.07
		RB Size=8, RB Offset=7	21.62	21.97	21.97
		RB Size=15, RB Offset=0	21.95	22.21	22.56
	16QAM	RB Size=1, RB Offset=0	21.96	22.06	21.99
		RB Size=1, RB Offset=7	21.85	21.32	21.74
		RB Size=1, RB Offset=14	21.11	21.66	21.72
		RB Size=8, RB Offset=0	21.61	21.63	21.00
		RB Size=8, RB Offset=4	21.32	20.60	21.17
		RB Size=8, RB Offset=7	21.54	20.40	20.98
		RB Size=15, RB Offset=0	21.37	21.02	21.43

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
5.0	QPSK	RB Size=1, RB Offset=0	22.93	23.02	22.91
		RB Size=1, RB Offset=12	22.04	22.04	22.01
		RB Size=1, RB Offset=24	22.01	22.12	21.99
		RB Size=12, RB Offset=0	22.61	22.74	22.06
		RB Size=12, RB Offset=6	21.61	21.34	21.40
		RB Size=12, RB Offset=11	21.85	21.15	21.30
		RB Size=25, RB Offset=0	22.00	21.49	21.08
	16QAM	RB Size=1, RB Offset=0	21.88	21.97	21.90
		RB Size=1, RB Offset=12	21.34	21.61	21.16
		RB Size=1, RB Offset=24	21.57	21.26	21.59
		RB Size=12, RB Offset=0	21.82	21.83	21.35
		RB Size=12, RB Offset=6	21.19	20.75	20.79
		RB Size=12, RB Offset=11	21.07	21.31	20.72
		RB Size=25, RB Offset=0	20.49	20.92	21.11
10.0	QPSK	RB Size=1, RB Offset=0	22.56	22.66	22.59
		RB Size=1, RB Offset=24	21.59	22.57	21.82
		RB Size=1, RB Offset=49	21.71	22.19	22.33
		RB Size=25, RB Offset=0	21.91	22.40	21.68
		RB Size=25, RB Offset=12	21.05	22.07	21.54
		RB Size=25, RB Offset=24	21.38	21.70	21.13
		RB Size=50, RB Offset=0	21.58	22.43	21.35
	16QAM	RB Size=1, RB Offset=0	21.94	22.05	21.97
		RB Size=1, RB Offset=24	21.44	21.61	21.43
		RB Size=1, RB Offset=49	21.65	21.21	21.55
		RB Size=25, RB Offset=0	20.98	21.33	21.61
		RB Size=25, RB Offset=12	20.52	21.00	21.36
		RB Size=25, RB Offset=24	20.64	20.95	20.96
		RB Size=50, RB Offset=0	20.63	21.33	20.65

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
15.0	QPSK	RB Size=1, RB Offset=0	22.90	23.01	22.93
		RB Size=1, RB Offset=37	22.63	22.72	22.71
		RB Size=1, RB Offset=74	22.62	22.38	22.78
		RB Size=36, RB Offset=0	22.33	22.27	22.37
		RB Size=36, RB Offset=18	22.55	22.24	22.70
		RB Size=36, RB Offset=37	22.19	22.29	22.66
		RB Size=75, RB Offset=0	22.20	22.07	22.62
	16QAM	RB Size=1, RB Offset=0	22.37	22.42	22.32
		RB Size=1, RB Offset=37	21.73	21.64	21.40
		RB Size=1, RB Offset=74	21.53	21.80	21.99
		RB Size=36, RB Offset=0	21.88	21.51	21.79
		RB Size=36, RB Offset=18	21.37	20.69	20.95
		RB Size=36, RB Offset=37	21.66	21.50	20.45
		RB Size=75, RB Offset=0	21.58	21.27	21.36
20.0	QPSK	RB Size=1, RB Offset=0	23.08	23.20	23.12
		RB Size=1, RB Offset=49	22.93	22.37	22.14
		RB Size=1, RB Offset=99	23.02	22.63	22.33
		RB Size=50, RB Offset=0	22.97	22.54	22.73
		RB Size=50, RB Offset=24	22.88	22.31	21.70
		RB Size=50, RB Offset=49	22.63	21.53	21.26
		RB Size=100, RB Offset=0	22.51	21.66	21.89
	16QAM	RB Size=1, RB Offset=0	22.25	22.43	22.28
		RB Size=1, RB Offset=49	21.71	21.59	22.12
		RB Size=1, RB Offset=99	22.23	22.17	21.88
		RB Size=50, RB Offset=0	21.42	22.20	21.38
		RB Size=50, RB Offset=24	21.43	21.50	21.23
		RB Size=50, RB Offset=49	20.84	20.85	21.25
		RB Size=100, RB Offset=0	20.94	21.26	21.50

<b>Modulation</b>	<b>Low Channel (dB)</b>	<b>Middle Channel (dB)</b>	<b>High Channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
16QAM (1RB Size)	4.96	5.19	6.29	13	Pass
16QAM (100RB Size)	6.03	6.55	6.23	13	Pass

**Band 4:****Radiated: For QPSK**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27 Limit (dBm)				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
1.4 MHz Bandwidth													
1732.50	84.58	25	1.4	H	15.8	1.60	6.90	21.10	30				
1732.50	82.73	101	1.8	V	13.5	1.60	6.90	18.80	30				
3 MHz Bandwidth													
1732.5	83.64	210	1.4	H	14.9	1.60	6.90	20.20	30				
1732.5	82.55	253	1.6	V	13.3	1.60	6.90	18.60	30				
5 MHz Bandwidth													
1732.5	84.05	126	1.2	H	15.3	1.60	6.90	20.60	30				
1732.5	82.97	253	1.5	V	13.7	1.60	6.90	19.00	30				
10MHz Bandwidth													
1732.5	83.92	325	1.5	H	15.1	1.60	6.90	20.40	30				
1732.5	81.65	297	1.9	V	12.4	1.60	6.90	17.70	30				
15 MHz Bandwidth													
1732.5	83.28	121	1.3	H	14.5	1.60	6.90	19.80	30				
1732.5	82.36	257	1.5	V	13.1	1.60	6.90	18.40	30				
20 MHz Bandwidth													
1732.5	84.67	140	1.5	H	15.9	1.60	6.90	21.20	30				
1732.5	81.98	224	1.7	V	12.8	1.60	6.90	18.10	30				

**Band 4:****Radiated: For 16QAM**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27 Limit (dBm)				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
1.4 MHz Bandwidth													
1732.5	83.65	220	1.8	H	14.9	1.60	6.90	20.20	30				
1732.5	82.34	38	1.6	V	13.1	1.60	6.90	18.40	30				
3 MHz Bandwidth													
1732.5	83.72	173	1.5	H	14.9	1.60	6.90	20.20	30				
1732.5	82.35	219	1.8	V	13.1	1.60	6.90	18.40	30				
5 MHz Bandwidth													
1732.5	84.16	268	1.6	H	15.4	1.60	6.90	20.70	30				
1732.5	81.70	355	1.9	V	12.5	1.60	6.90	17.80	30				
10MHz Bandwidth													
1732.5	83.91	260	1.8	H	15.1	1.60	6.90	20.40	30				
1732.5	81.88	284	1.6	V	12.7	1.60	6.90	18.00	30				
15 MHz Bandwidth													
1732.5	83.59	153	1.6	H	14.8	1.60	6.90	20.10	30				
1732.5	81.27	48	1.2	V	12.0	1.60	6.90	17.30	30				
20 MHz Bandwidth													
1732.5	84.28	323	2.1	H	15.5	1.60	6.90	20.80	30				
1732.5	83.01	221	1.5	V	13.8	1.60	6.90	19.10	30				

**Band 7:****Maximum Output Power**

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
5.0	QPSK	RB Size=1, RB Offset=0	21.52	21.67	21.55
		RB Size=1, RB Offset=12	21.09	20.92	21.33
		RB Size=1, RB Offset=24	20.71	20.82	21.45
		RB Size=12, RB Offset=0	21.41	20.72	21.14
		RB Size=12, RB Offset=6	20.91	20.75	20.56
		RB Size=12, RB Offset=11	21.00	20.81	20.90
		RB Size=25, RB Offset=0	21.52	21.92	22.28
	16QAM	RB Size=1, RB Offset=0	21.63	21.84	21.69
		RB Size=1, RB Offset=12	21.37	21.39	21.13
		RB Size=1, RB Offset=24	21.27	21.26	21.38
		RB Size=12, RB Offset=0	21.19	21.30	20.70
		RB Size=12, RB Offset=6	20.51	20.49	20.81
		RB Size=12, RB Offset=11	20.88	20.40	20.69
		RB Size=25, RB Offset=0	20.70	20.71	20.83
10.0	QPSK	RB Size=1, RB Offset=0	21.49	21.67	21.45
		RB Size=1, RB Offset=24	21.28	21.62	20.47
		RB Size=1, RB Offset=49	20.74	20.95	20.87
		RB Size=25, RB Offset=0	21.20	20.76	21.14
		RB Size=25, RB Offset=12	21.06	21.61	20.26
		RB Size=25, RB Offset=24	21.22	21.24	19.89
		RB Size=50, RB Offset=0	20.86	20.92	19.56
	16QAM	RB Size=1, RB Offset=0	20.76	20.97	20.89
		RB Size=1, RB Offset=24	21.27	21.87	21.69
		RB Size=1, RB Offset=49	21.88	22.09	21.41
		RB Size=25, RB Offset=0	21.51	21.32	21.41
		RB Size=25, RB Offset=12	21.01	21.10	21.00
		RB Size=25, RB Offset=24	21.09	21.63	21.57
		RB Size=50, RB Offset=0	20.49	20.97	21.02

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
15.0	QPSK	RB Size=1, RB Offset=0	21.98	22.15	22.06
		RB Size=1, RB Offset=37	21.48	21.85	21.50
		RB Size=1, RB Offset=74	21.58	21.19	21.95
		RB Size=36, RB Offset=0	21.34	21.32	21.18
		RB Size=36, RB Offset=18	21.11	21.71	20.61
		RB Size=36, RB Offset=37	21.02	21.54	21.02
		RB Size=75, RB Offset=0	21.18	21.54	20.81
	16QAM	RB Size=1, RB Offset=0	21.33	21.43	21.36
		RB Size=1, RB Offset=37	20.83	20.48	20.90
		RB Size=1, RB Offset=74	20.83	21.31	21.20
		RB Size=36, RB Offset=0	21.10	21.13	21.14
		RB Size=36, RB Offset=18	20.36	19.85	20.22
		RB Size=36, RB Offset=37	20.61	20.44	20.17
		RB Size=75, RB Offset=0	20.32	19.58	20.28
20.0	QPSK	RB Size=1, RB Offset=0	22.47	22.57	22.51
		RB Size=1, RB Offset=49	22.41	22.11	21.84
		RB Size=1, RB Offset=99	22.27	21.80	22.23
		RB Size=50, RB Offset=0	22.16	22.14	21.71
		RB Size=50, RB Offset=24	22.31	22.09	21.14
		RB Size=50, RB Offset=49	21.69	21.44	21.02
		RB Size=100, RB Offset=0	22.08	21.29	21.00
	16QAM	RB Size=1, RB Offset=0	21.66	21.73	21.64
		RB Size=1, RB Offset=49	21.45	21.49	20.66
		RB Size=1, RB Offset=99	21.06	20.83	20.67
		RB Size=50, RB Offset=0	21.39	21.38	21.01
		RB Size=50, RB Offset=24	20.76	21.45	19.79
		RB Size=50, RB Offset=49	20.72	21.44	19.85
		RB Size=100, RB Offset=0	20.64	21.45	20.08

<b>Modulation</b>	<b>Low Channel (dB)</b>	<b>Middle Channel (dB)</b>	<b>High Channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
16QAM (1RB Size)	2.93	4.35	4.87	13	Pass
16QAM (100RB Size)	5.51	5.30	5.88	13	Pass

**Band 7****Radiated Power: For QPSK**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
5 MHz Bandwidth													
2535	79.43	254	1.2	H	13.0	1.70	8.60	19.90	33				
2535	78.56	217	2.4	V	11.9	1.70	8.60	18.80	33				
10 MHz Bandwidth													
2535	80.05	120	1.3	H	13.6	1.70	8.60	20.50	33				
2535	79.96	346	1.8	V	13.3	1.70	8.60	20.20	33				
15 MHz Bandwidth													
2535	78.95	346	1.2	H	12.5	1.70	8.60	19.40	33				
2535	77.69	127	1.5	V	11.0	1.70	8.60	17.90	33				
20 MHz Bandwidth													
2535	79.83	35	1.7	H	13.4	1.70	8.60	20.30	33				
2535	79.07	287	2.4	V	12.4	1.70	8.60	19.30	33				

**Radiated Power: For 16QAM**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
5 MHz Bandwidth													
2535	79.16	59	1.5	H	12.7	1.70	8.60	19.60	33				
2535	77.94	300	2.2	V	11.3	1.70	8.60	18.20	33				
10 MHz Bandwidth													
2535	78.94	98	1.3	H	12.5	1.70	8.60	19.40	33				
2535	77.83	345	1.5	V	11.2	1.70	8.60	18.10	33				
15 MHz Bandwidth													
2535	79.22	308	1.5	H	12.8	1.70	8.60	19.70	33				
2535	78.35	99	1.5	V	11.7	1.70	8.60	18.60	33				
20 MHz Bandwidth													
2535	78.78	245	1.5	H	12.4	1.70	8.60	19.30	33				
2535	77.91	59	1.7	V	11.3	1.70	8.60	18.20	33				

Note :

All above data were tested with no amplifier.

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

**Band 17:****Maximum Output Power**

<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>RB size/RB Offset</b>	<b>Low Channel (dBm)</b>	<b>Middle Channel (dBm)</b>	<b>High Channel (dBm)</b>
5.0	QPSK	RB Size=1, RB Offset=0	23.61	23.76	23.71
		RB Size=1, RB Offset=12	23.38	22.83	22.90
		RB Size=1, RB Offset=24	23.24	22.78	22.97
		RB Size=12, RB Offset=0	23.04	23.71	23.09
		RB Size=12, RB Offset=6	23.15	22.15	22.08
		RB Size=12, RB Offset=11	22.63	22.69	22.26
		RB Size=25, RB Offset=0	23.22	22.78	22.37
	16QAM	RB Size=1, RB Offset=0	22.86	22.94	22.84
		RB Size=1, RB Offset=12	22.70	22.31	21.88
		RB Size=1, RB Offset=24	22.37	22.53	22.18
		RB Size=12, RB Offset=0	22.64	22.58	22.36
		RB Size=12, RB Offset=6	21.75	21.75	21.45
		RB Size=12, RB Offset=11	21.77	22.14	21.74
		RB Size=25, RB Offset=0	22.02	22.27	21.15
10.0	QPSK	RB Size=1, RB Offset=0	23.65	23.73	23.59
		RB Size=1, RB Offset=24	22.89	23.35	22.92
		RB Size=1, RB Offset=49	23.10	23.00	23.42
		RB Size=25, RB Offset=0	23.28	23.13	22.66
		RB Size=25, RB Offset=12	22.53	22.75	22.33
		RB Size=25, RB Offset=24	22.15	22.86	22.44
		RB Size=50, RB Offset=0	22.39	22.61	21.97
	16QAM	RB Size=1, RB Offset=0	22.70	22.81	22.74
		RB Size=1, RB Offset=24	22.16	22.05	22.69
		RB Size=1, RB Offset=49	21.81	21.95	22.05
		RB Size=25, RB Offset=0	22.13	21.82	22.52
		RB Size=25, RB Offset=12	21.79	21.44	21.87
		RB Size=25, RB Offset=24	21.99	21.58	22.41
		RB Size=50, RB Offset=0	21.33	21.49	21.75

<b>Modulation</b>	<b>Low Channel (dB)</b>	<b>Middle Channel (dB)</b>	<b>High Channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
16QAM (1RB Size)	6.43	6.06	5.77	13	Pass
16QAM (100RB Size)	6.23	6.23	6.23	13	Pass

**Band 17:****Radiated Power: For QPSK**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
5 MHz Bandwidth													
710	89.42	158	1.8	H	21.9	0.67	0	21.23	34.77				
710	86.89	227	1.7	V	20.2	0.67	0	19.53	34.77				
10 MHz Bandwidth													
710	88.75	323	1.9	H	21.2	0.67	0	20.53	34.77				
710	86.34	155	1.8	V	19.7	0.67	0	19.03	34.77				

**Radiated Power: For 16QAM**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27				
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)						
Middle Channel													
5 MHz Bandwidth													
710	88.89	292	1.6	H	21.4	0.67	0	20.73	34.77				
710	78.26	218	1.5	V	11.6	0.67	0	10.93	34.77				
10 MHz Bandwidth													
710	89.13	102	2.2	H	21.6	0.67	0	20.93	34.77				
710	86.74	97	1.8	V	20.1	0.67	0	19.43	34.77				

Note :

All above data were tested with no amplifier.

Absolute Level = SG Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

## FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53 - OCCUPIED BANDWIDTH

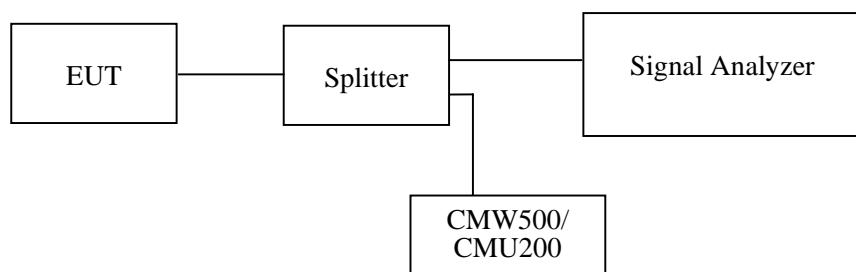
### Applicable Standards

FCC 47 §2.1049, §22.917, §22.905, §24.238 and §27.53.

### 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 5 kHz (Cellular /PCS) & 100 kHz (WCDMA) 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	837405/023	2015-04-27	2016-04-26
Rohde & Schwarz	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2015-06-13	2016-06-13
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

\* **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:	23~25
Relative Humidity:	48~50 %
ATM Pressure:	100.0~101.0 kPa

The testing was performed by Xiangguang Kong from 2015-07-09 to 2015-07-22.

*EUT operation mode: Transmitting*

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

#### Cellular Band (Part 22H)

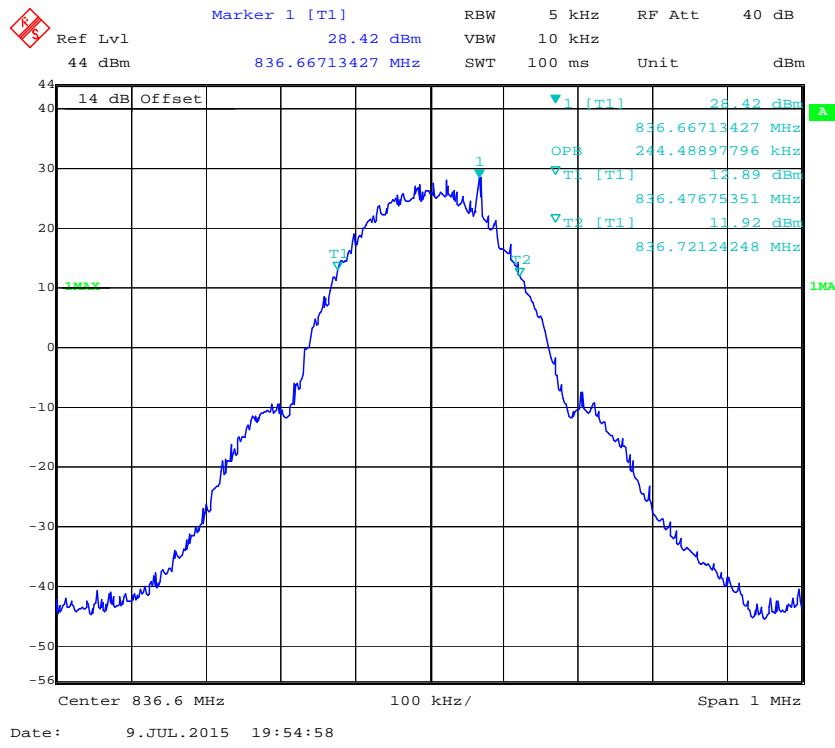
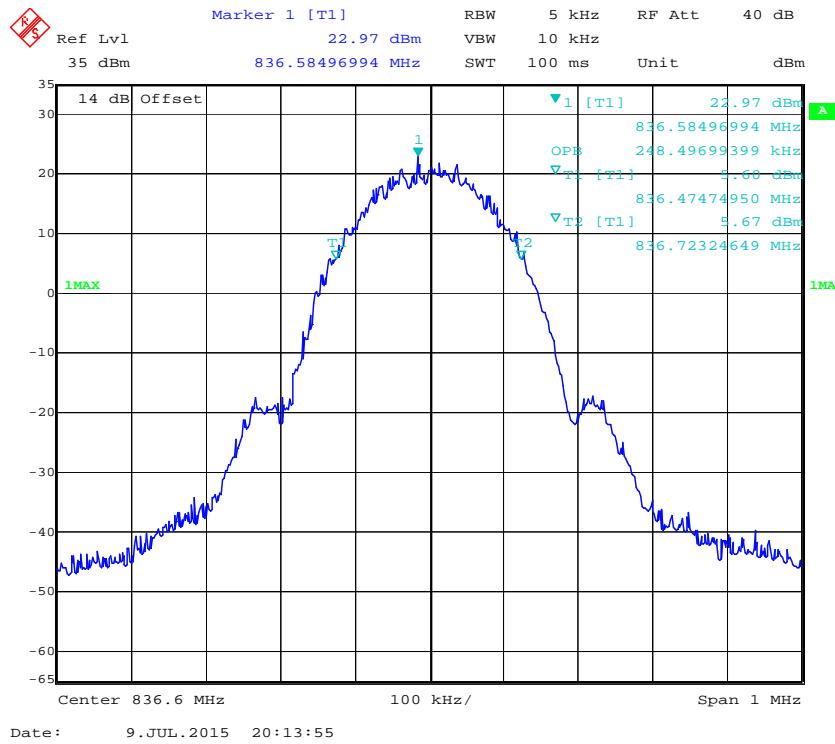
Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	836.6	244.489	314.629
EGPRS(8PSK)	836.6	248.497	308.617

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
WCDMA (BPSK)	836.6	4.208	4.890
HSUPA (BPSK)	836.6	4.208	4.890
HSDPA (16QAM)	836.6	4.228	4.890

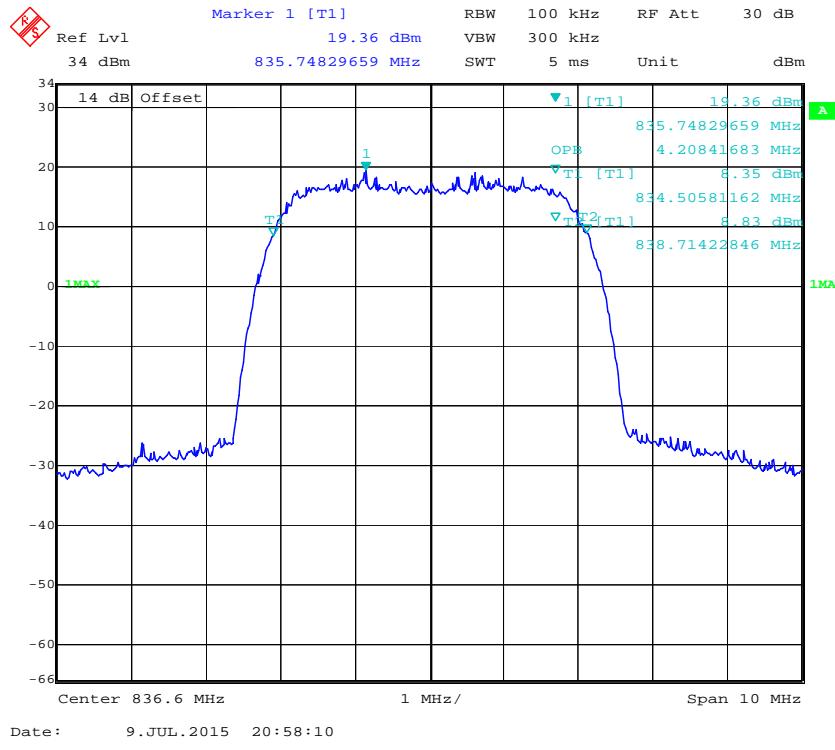
#### PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1880.0	244.489	318.637
EGPRS(8PSK)	1880.0	248.497	316.633

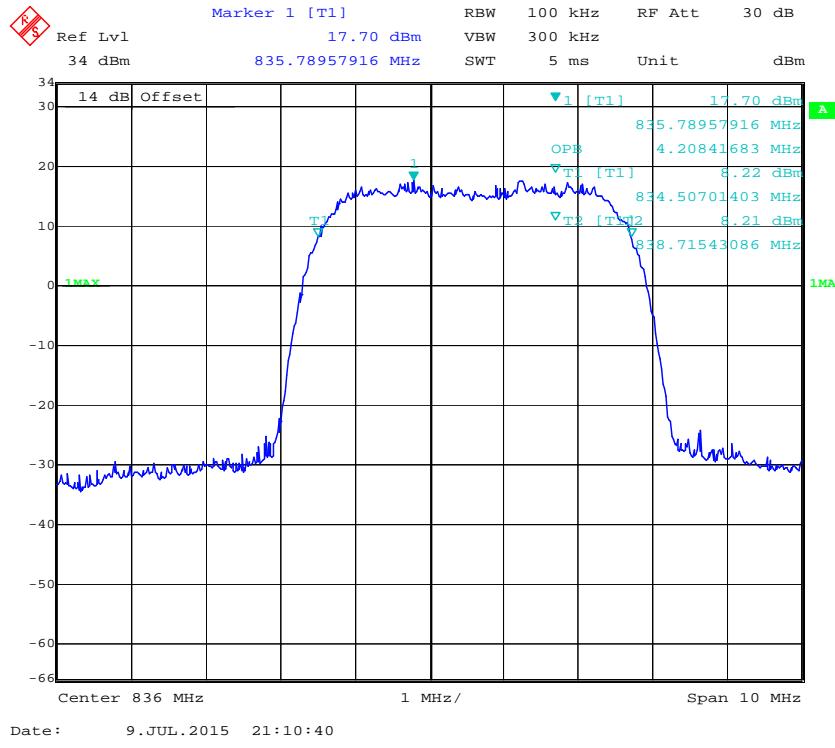
Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
WCDMA (BPSK)	1880.0	4.228	4.910
HSUPA (BPSK)	1880.0	4.228	4.870
HSDPA (16QAM)	1880.0	4.228	4.890

**Cellular Band (Part 22H)****99% Occupied Bandwidth for GSM (GMSK) Mode****99% Occupied Bandwidth for EDGE Mode**

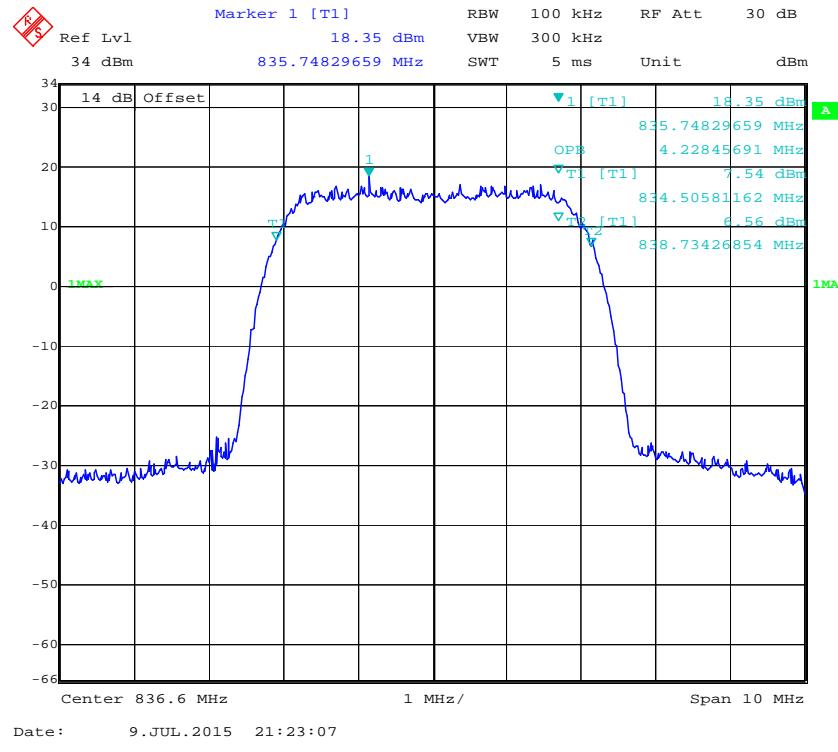
### 99% Occupied Bandwidth for WCDMA (BPSK) Mode



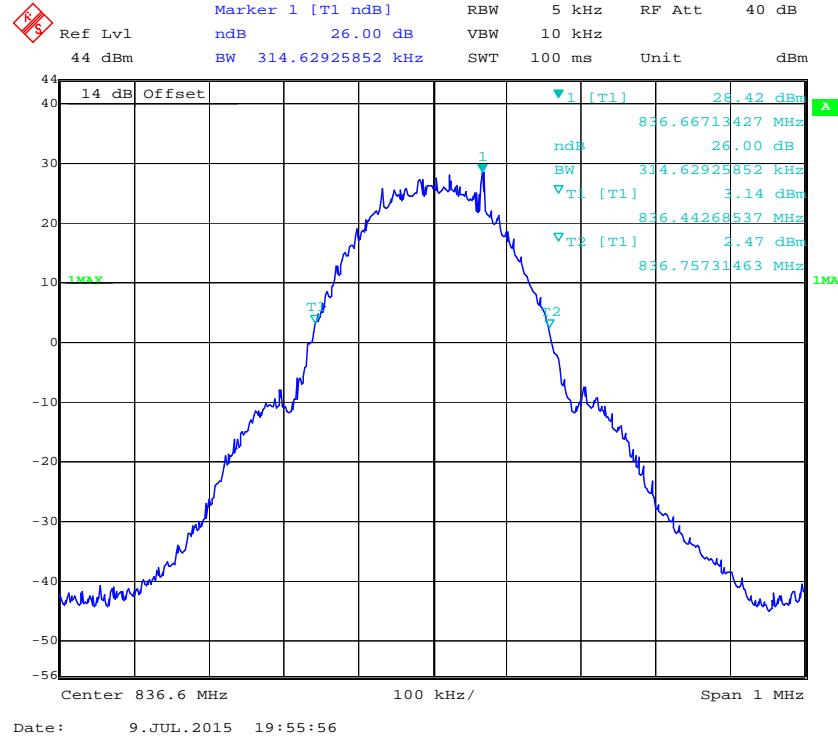
### 99% Occupied Bandwidth for HSUPA (BPSK) Mode



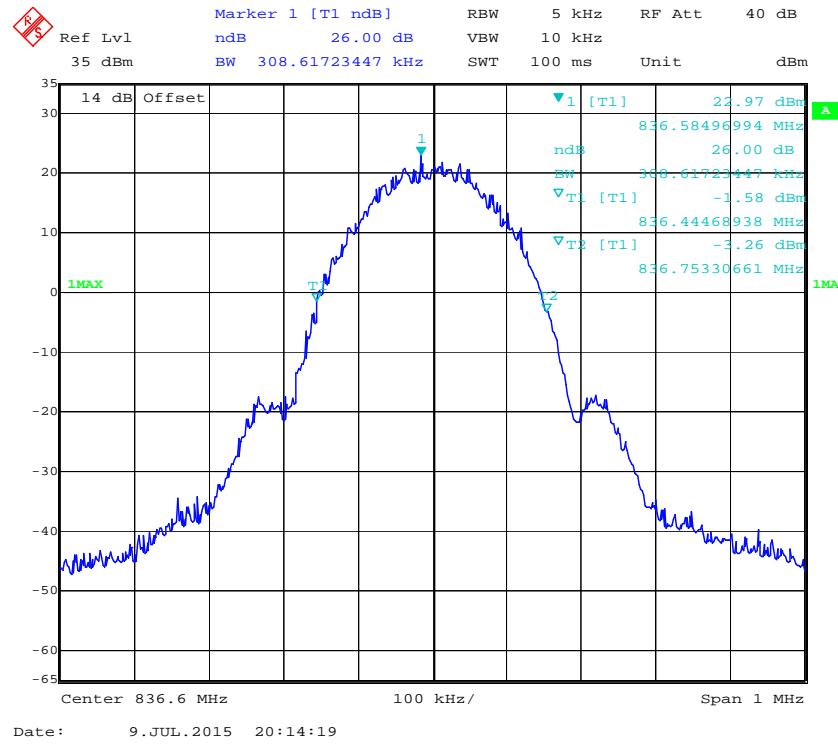
### 99% Occupied Bandwidth for HSDPA (16QAM) Mode



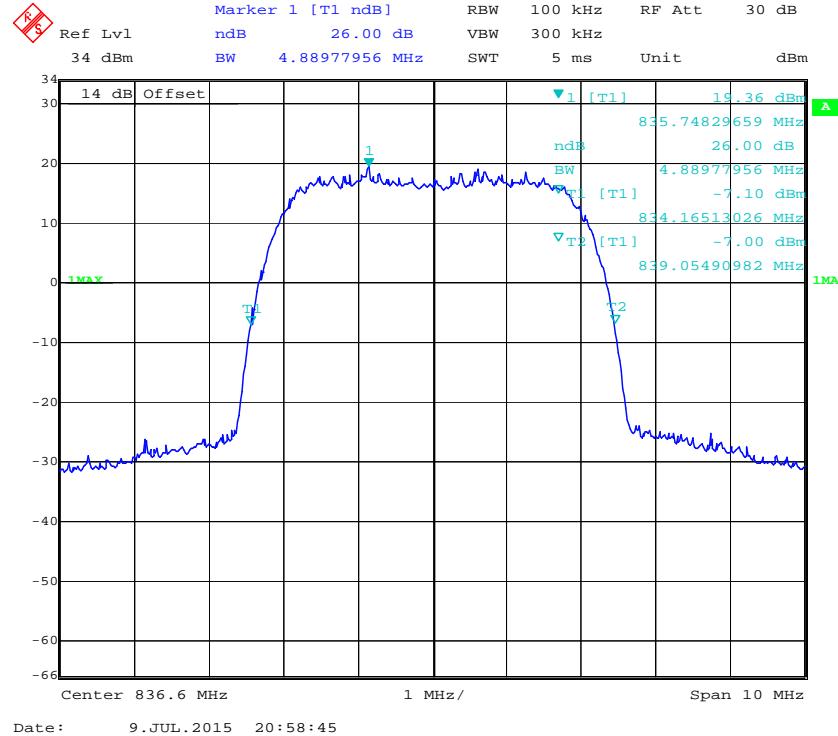
### 26 dB Emissions Bandwidth for GSM (GMSK) Mode



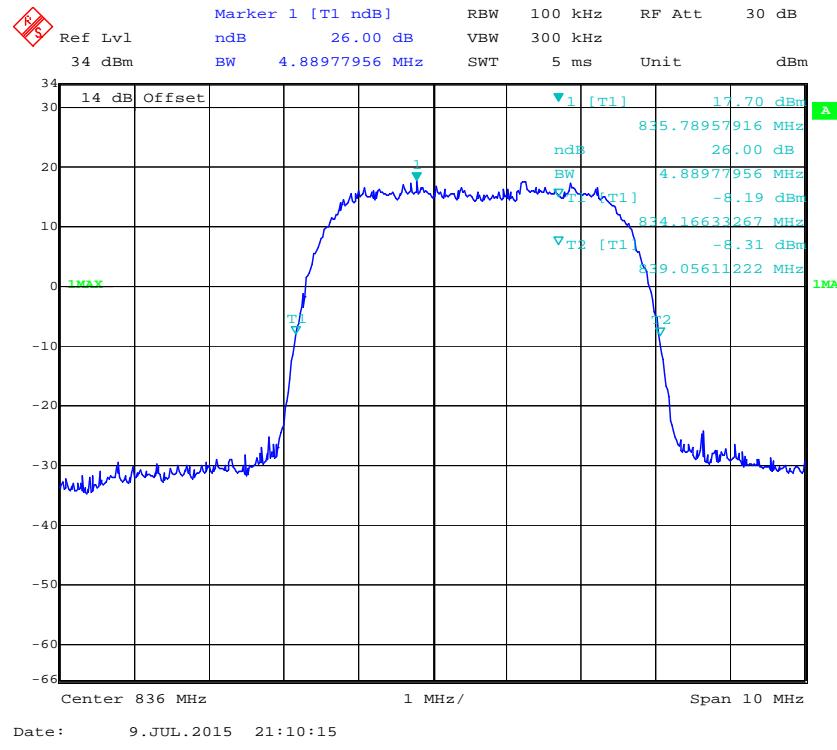
### 26 dB Emissions Bandwidth for EDGE Mode



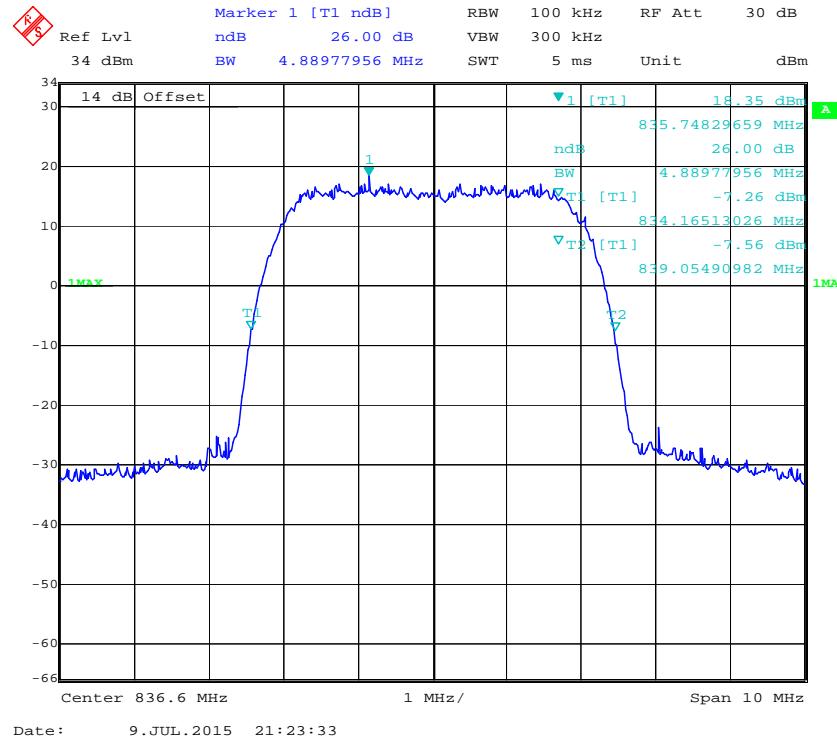
### 26 dB Emissions Bandwidth for WCDMA (BPSK) Mode

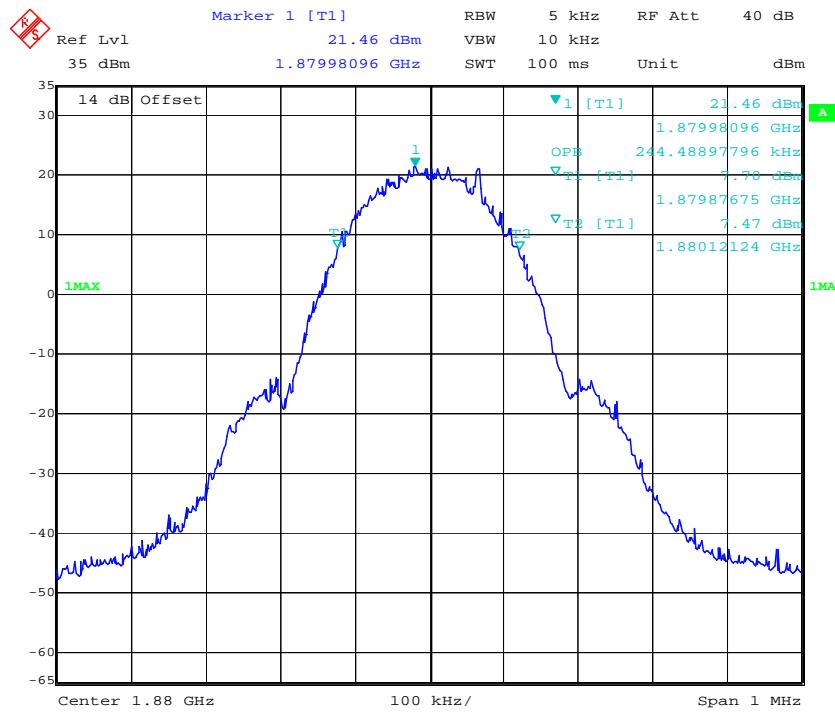
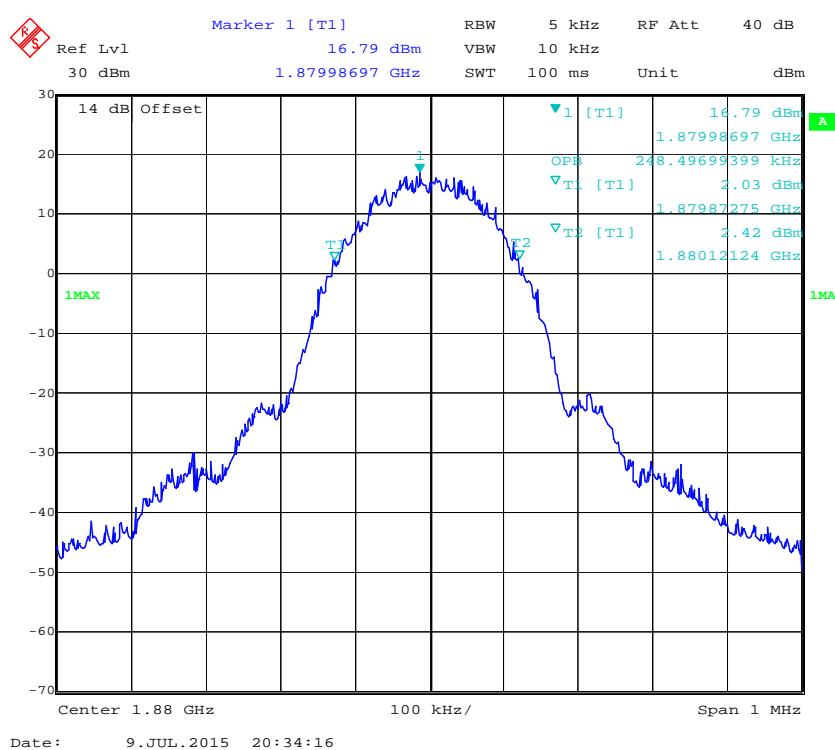


### 26 dB Emissions Bandwidth for HSUPA (BPSK) Mode

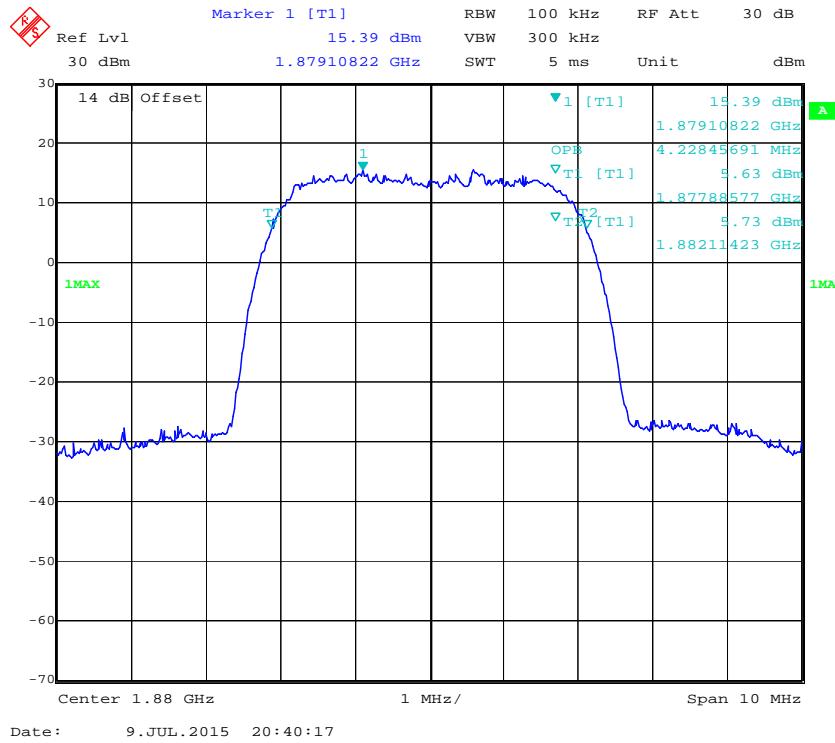


### 26 dB Emissions Bandwidth for HSDPA (16QAM) Mode

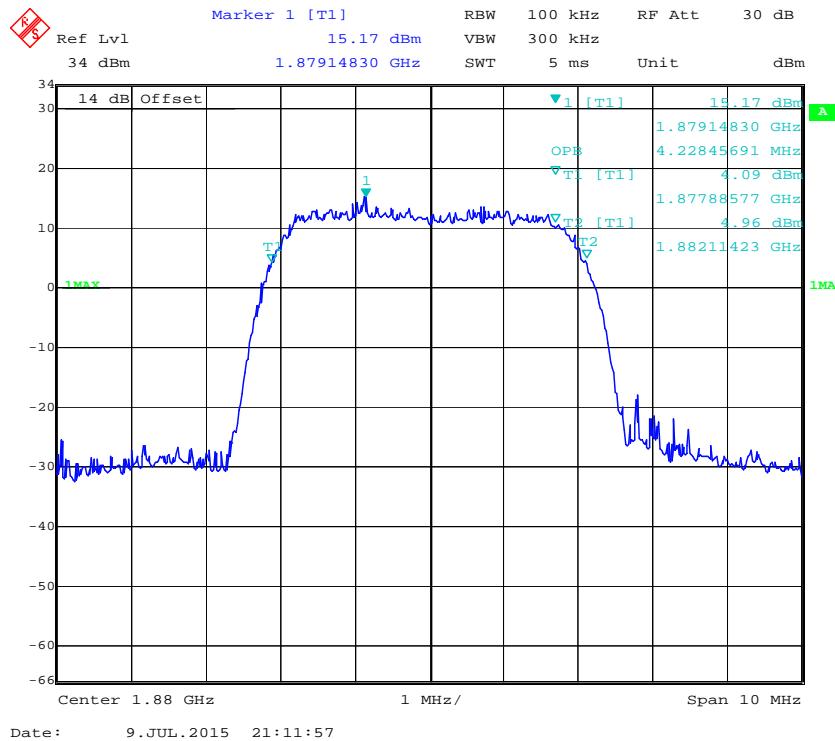


**PCS Band (Part 24E)****99% Occupied Bandwidth for GSM (GMSK) Mode****99% Occupied Bandwidth for EGPRS Mode**

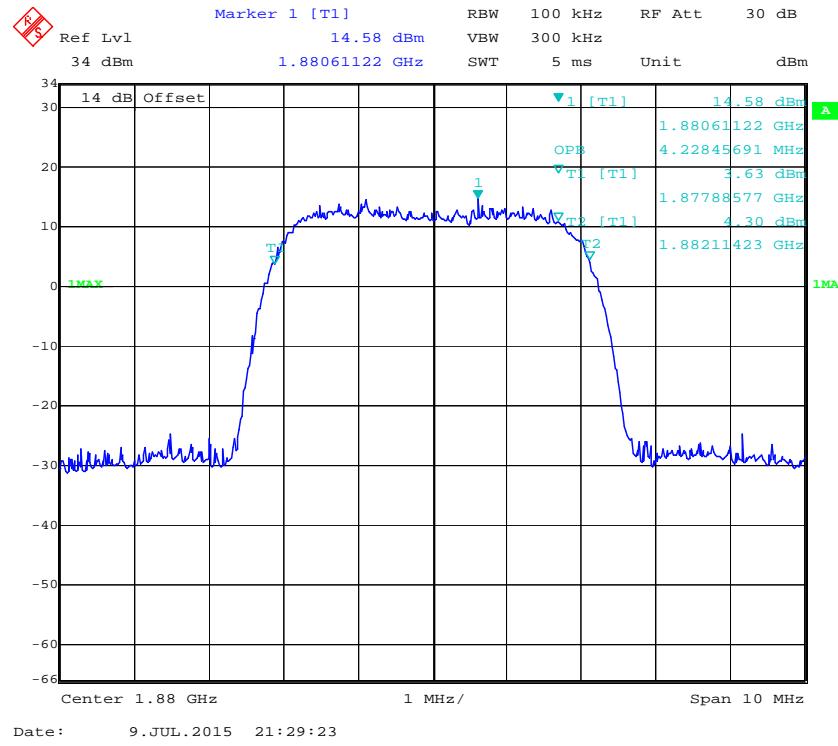
### 99% Occupied Bandwidth for WCDMA (BPSK) Mode



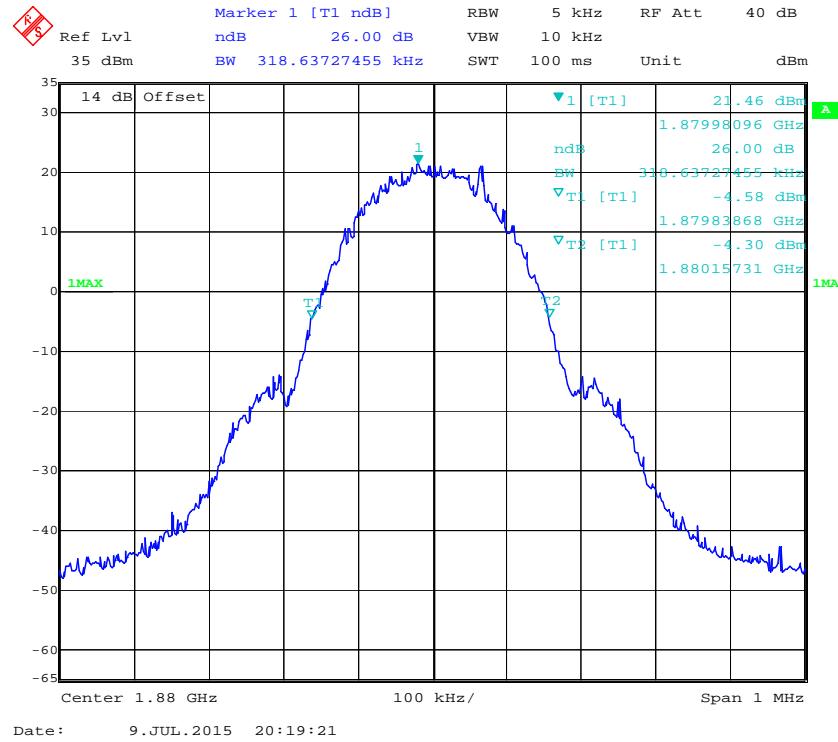
### 99% Occupied Bandwidth for HSUPA (BPSK) Mode



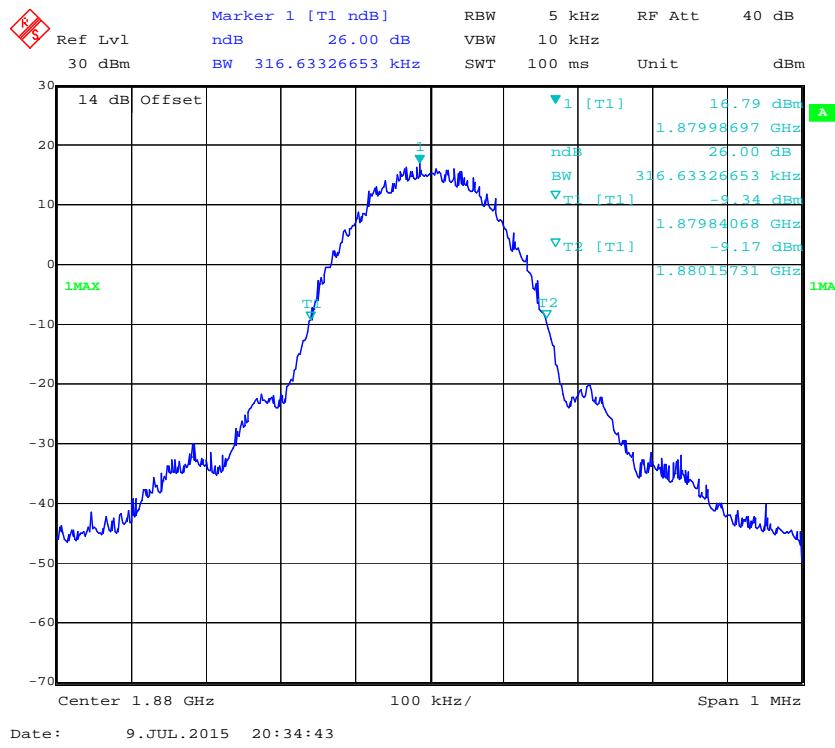
### 99% Occupied Bandwidth for HSDPA (16QAM) Mode



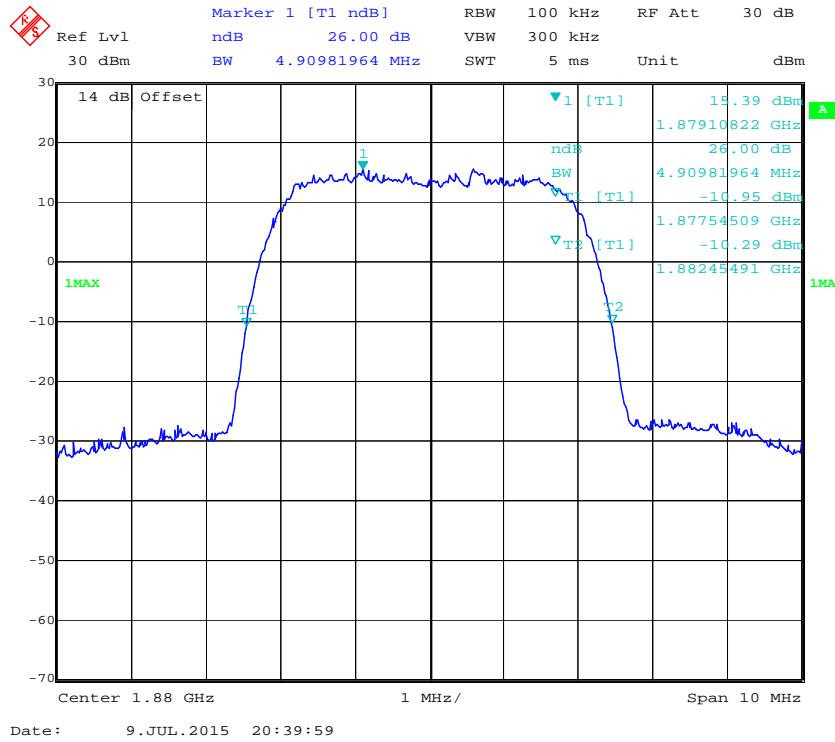
### 26 dB Emissions Bandwidth for GSM (GMSK) Mode



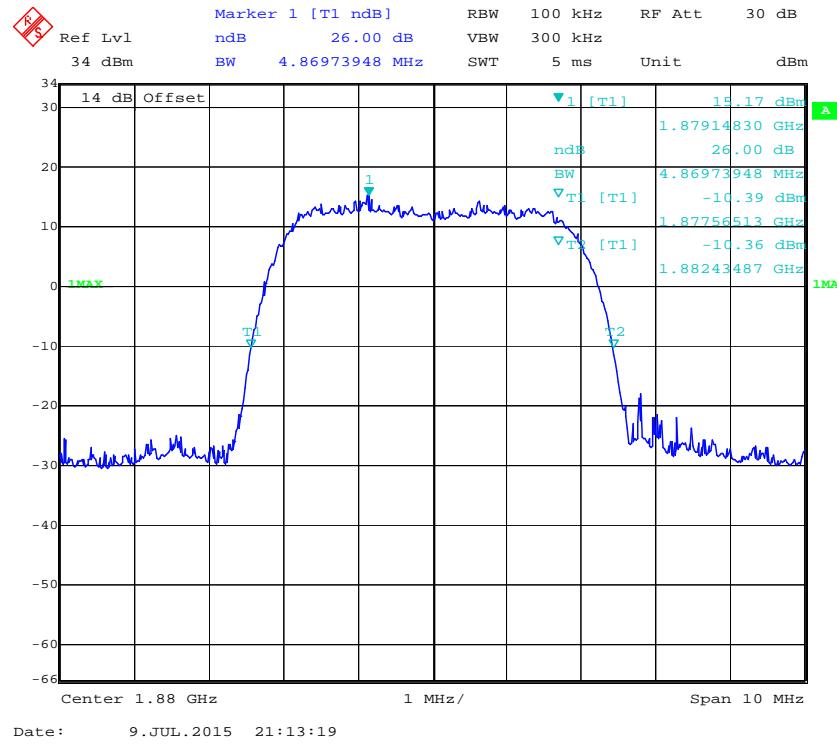
### 26 dB Emissions Bandwidth for EGPRS Mode



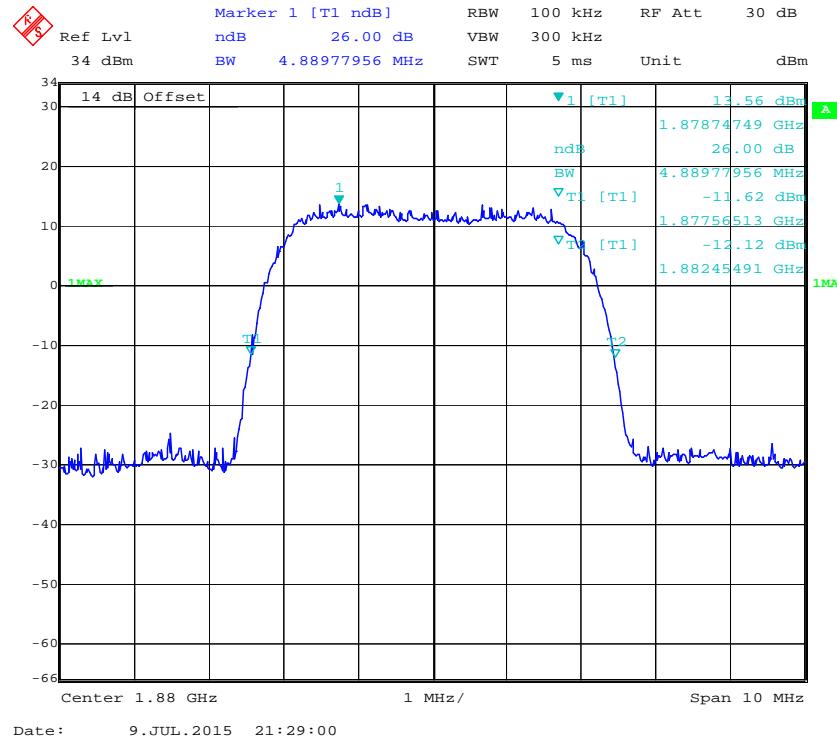
### 26 dB Emissions Bandwidth for WCDMA (BPSK) Mode



### 26 dB Emissions Bandwidth for HSUPA (BPSK) Mode

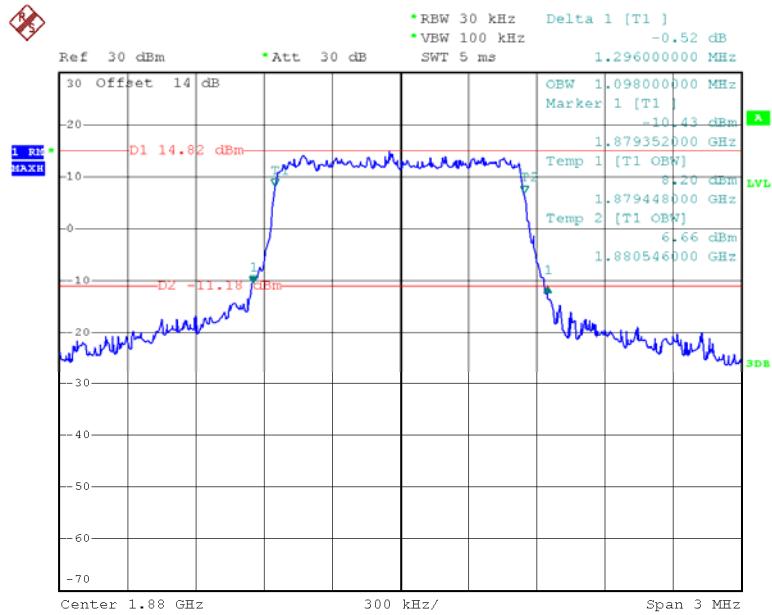


### 26 dB Emissions Bandwidth for HSDPA (16QAM) Mode

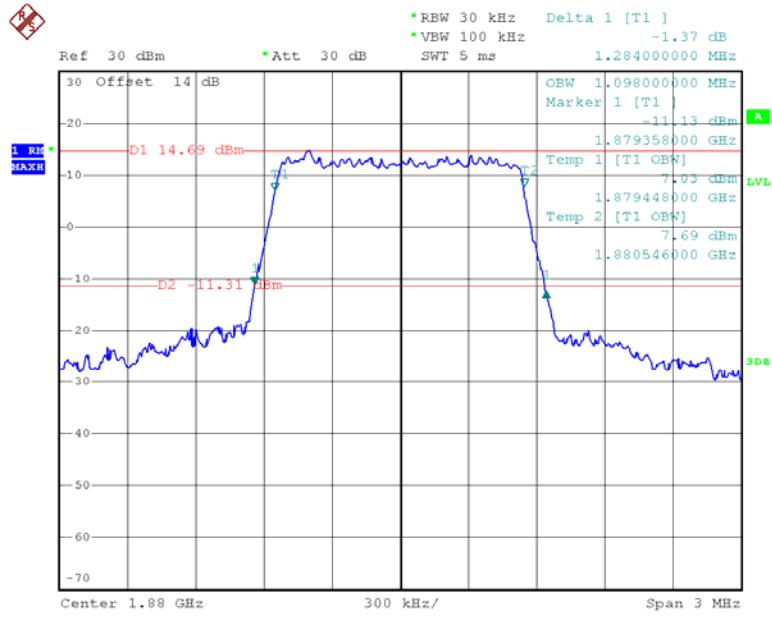


**Band 2: (Middle Channel)**

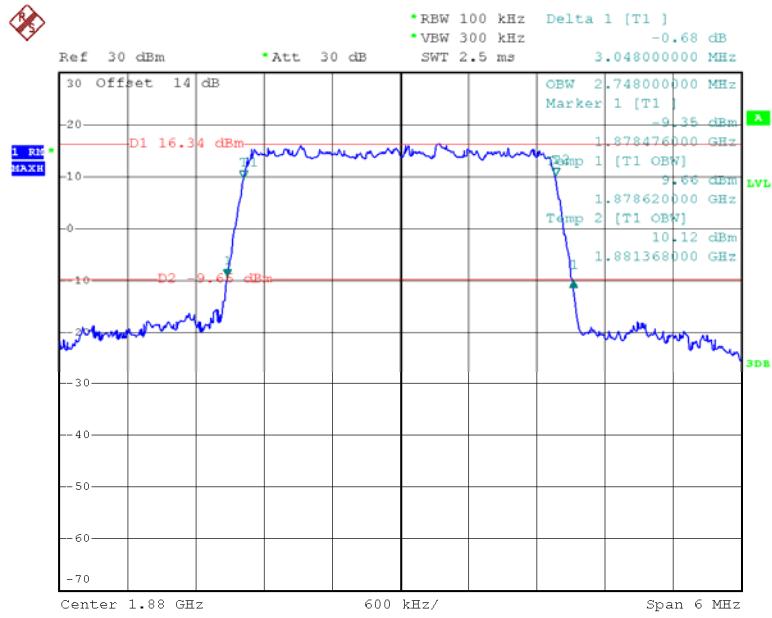
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4 MHz	QPSK	1.098	1.296
	16QAM	1.098	1.284
3.0 MHz	QPSK	2.748	3.048
	16QAM	2.748	3.042
5.0 MHz	QPSK	4.540	5.040
	16QAM	4.540	5.018
10.0 MHz	QPSK	9.160	10.120
	16QAM	9.120	10.240
15.0 MHz	QPSK	13.560	14.880
	16QAM	13.560	14.940
20.0 MHz	QPSK	17.887	19.276
	16QAM	18.080	19.360

**QPSK (1.4 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

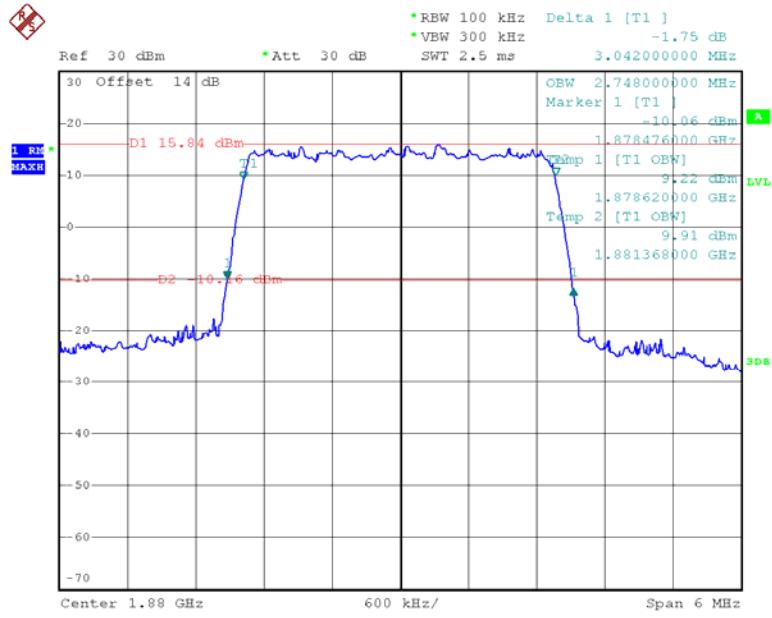
Date: 19.JUL.2015 11:05:39

**16-QAM (1.4 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

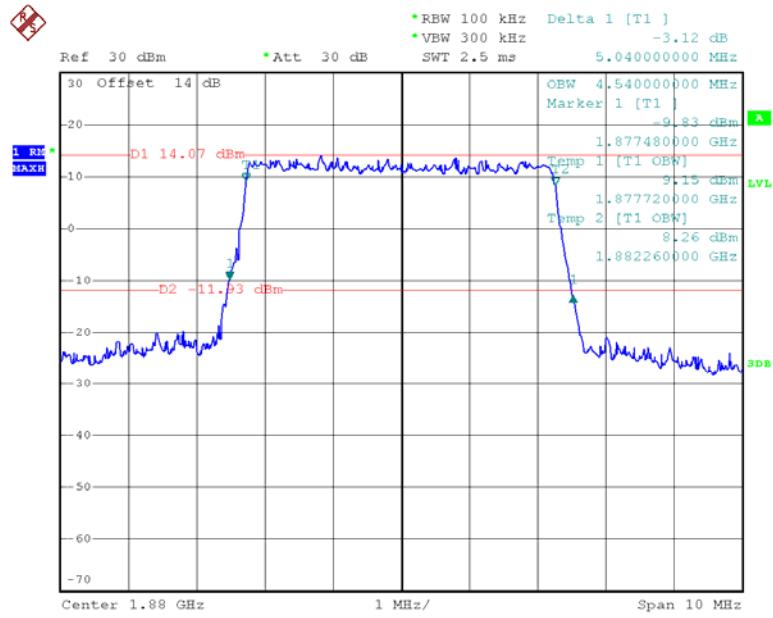
Date: 19.JUL.2015 11:37:04

**QPSK (3.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

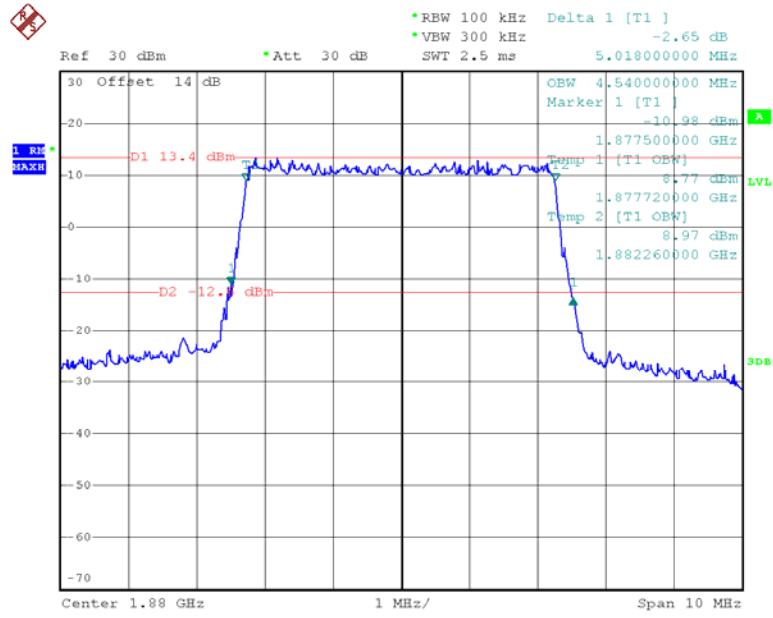
Date: 19.JUL.2015 11:10:13

**16-QAM (3.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

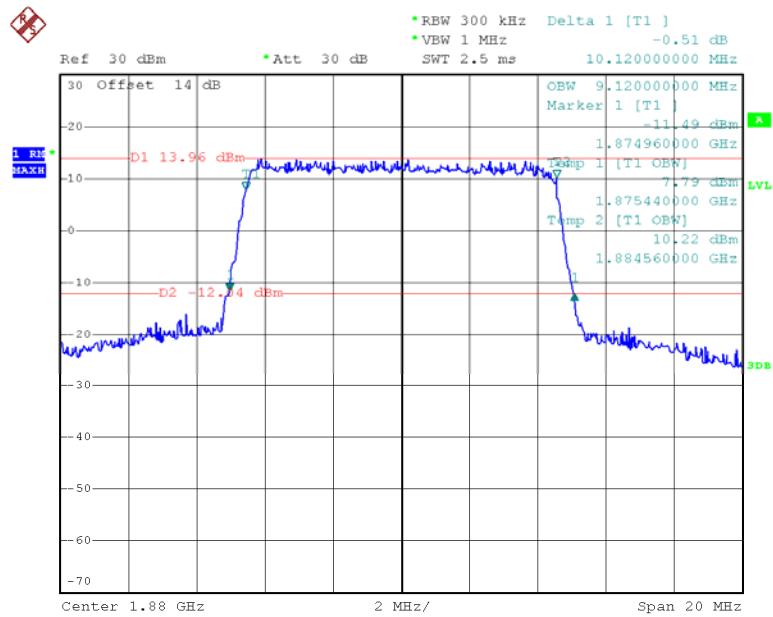
Date: 19.JUL.2015 11:38:43

**QPSK (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

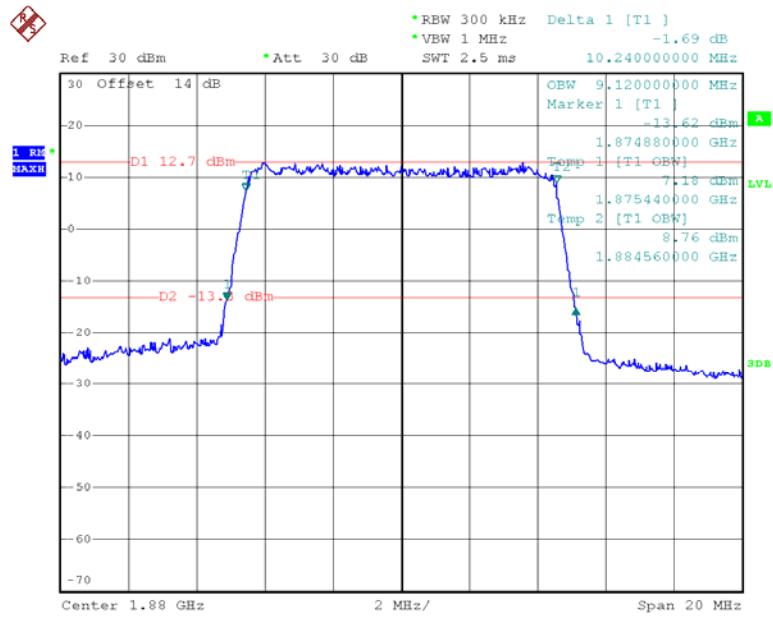
Date: 19.JUL.2015 11:11:32

**16-QAM (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

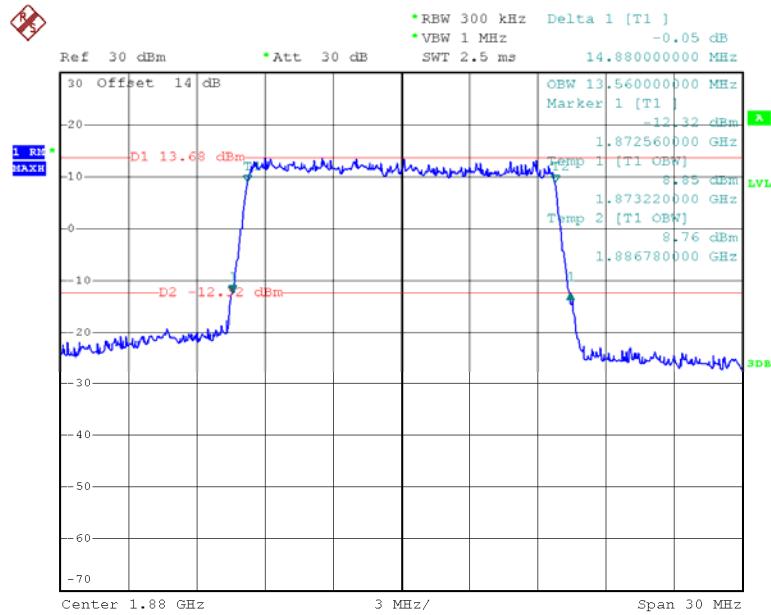
Date: 19.JUL.2015 11:39:49

**QPSK (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

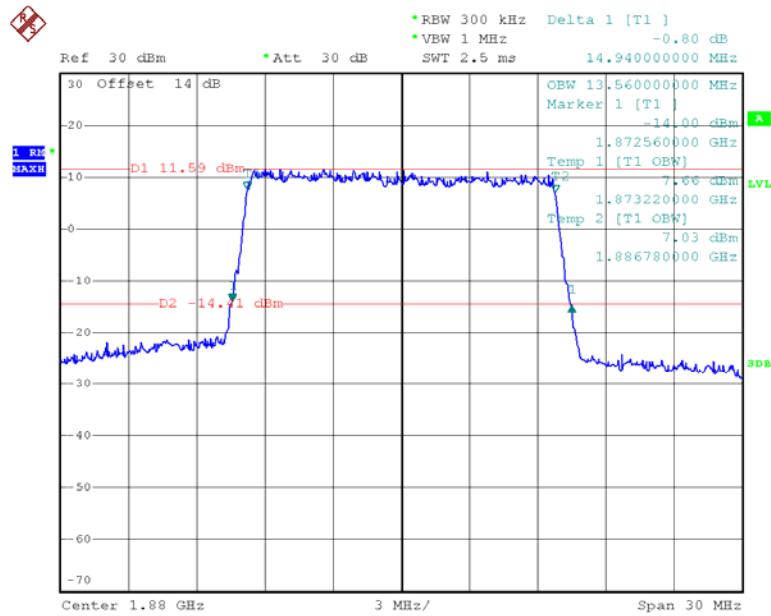
Date: 19.JUL.2015 11:14:04

**16-QAM (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

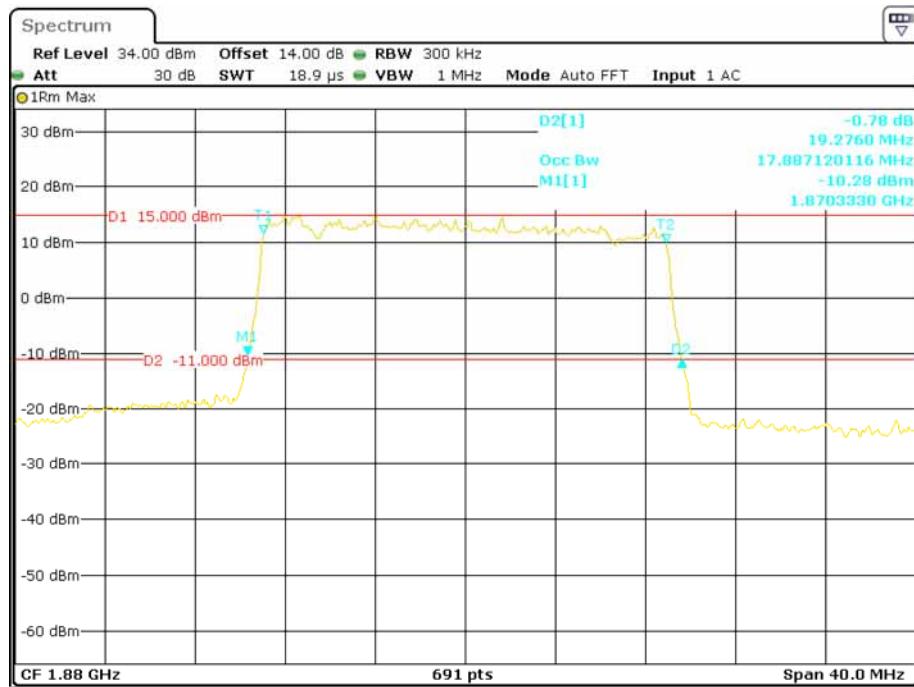
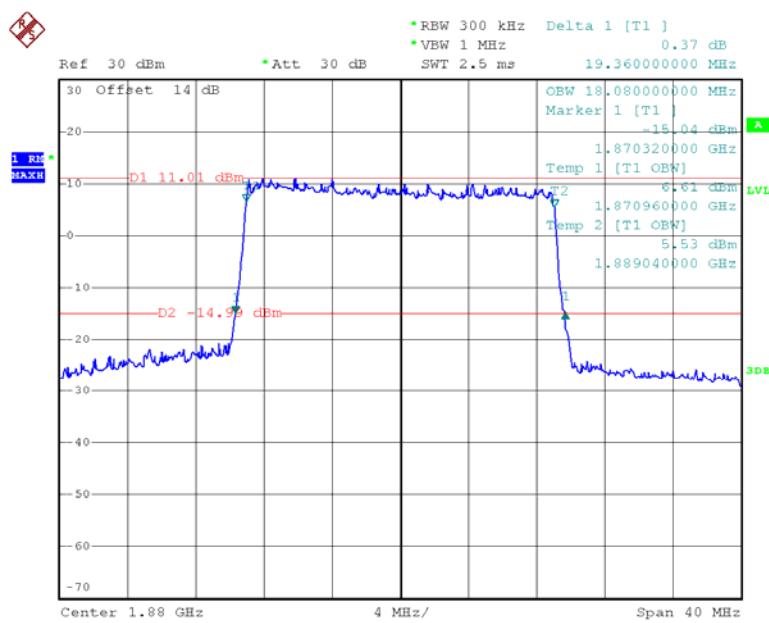
Date: 19.JUL.2015 11:41:41

**QPSK (15.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

Date: 19.JUL.2015 11:29:36

**16-QAM (15.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

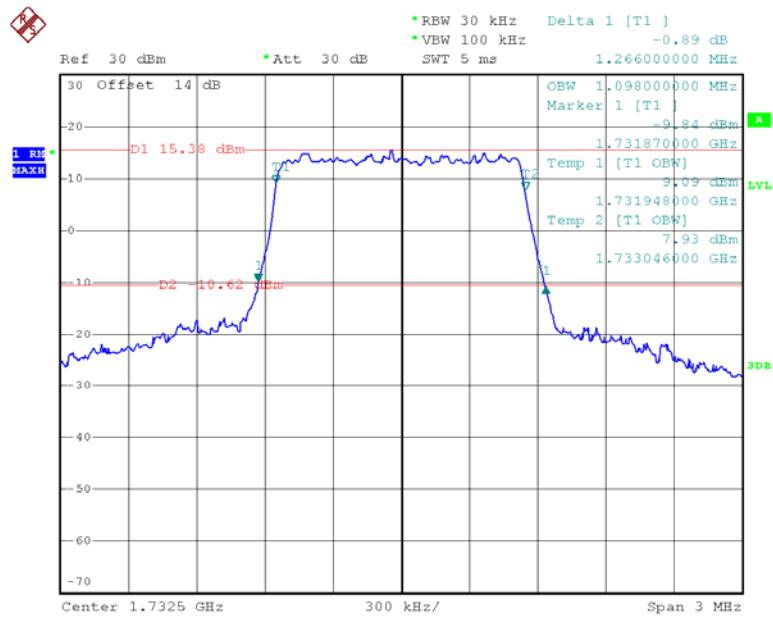
Date: 19.JUL.2015 11:43:10

**QPSK (20.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth****16-QAM (20.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

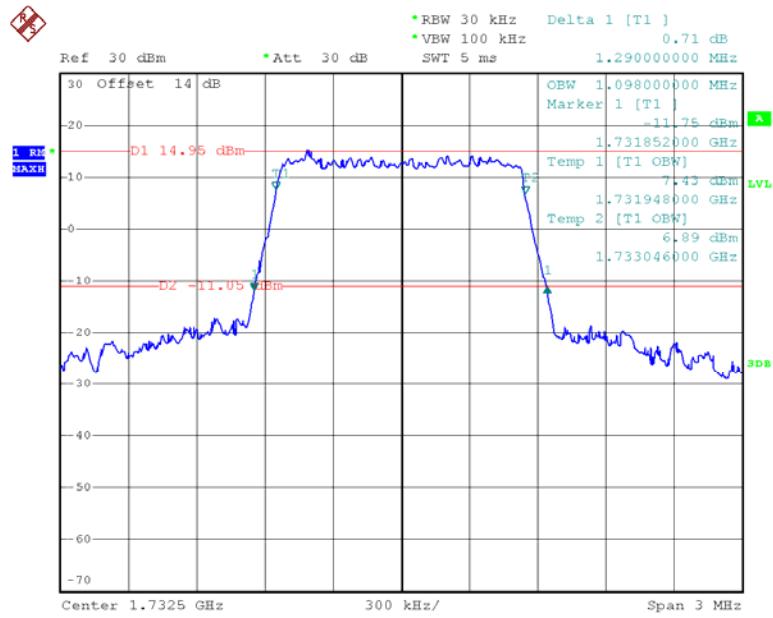
Date: 19.JUL.2015 12:30:47

**Band 4: (Middle Channel)**

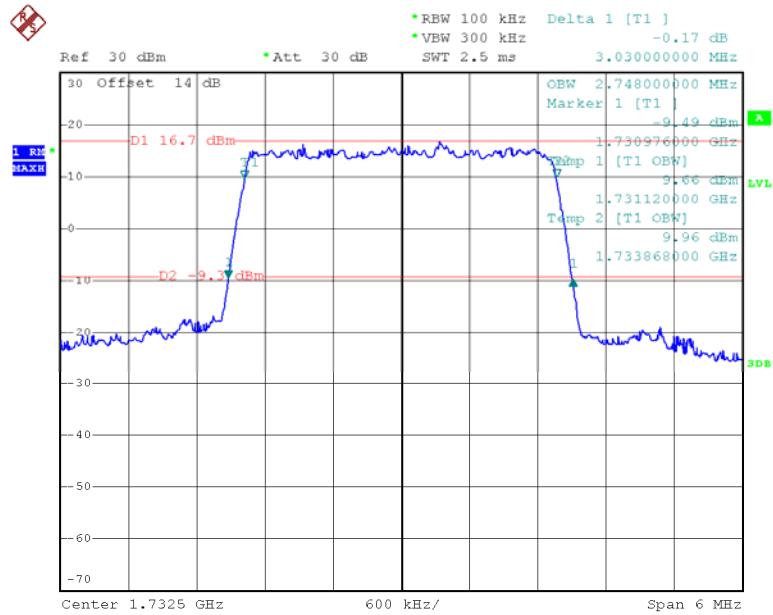
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
1.4 MHz	QPSK	1.098	1.266
	16QAM	1.098	1.290
3.0 MHz	QPSK	2.748	3.030
	16QAM	2.736	3.012
5.0 MHz	QPSK	4.540	5.080
	16QAM	4.520	5.060
10.0 MHz	QPSK	9.160	10.200
	16QAM	9.160	10.200
15.0 MHz	QPSK	13.560	14.960
	16QAM	13.560	14.820
20.0 MHz	QPSK	18.080	19.280
	16QAM	18.160	19.520

**QPSK (1.4 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

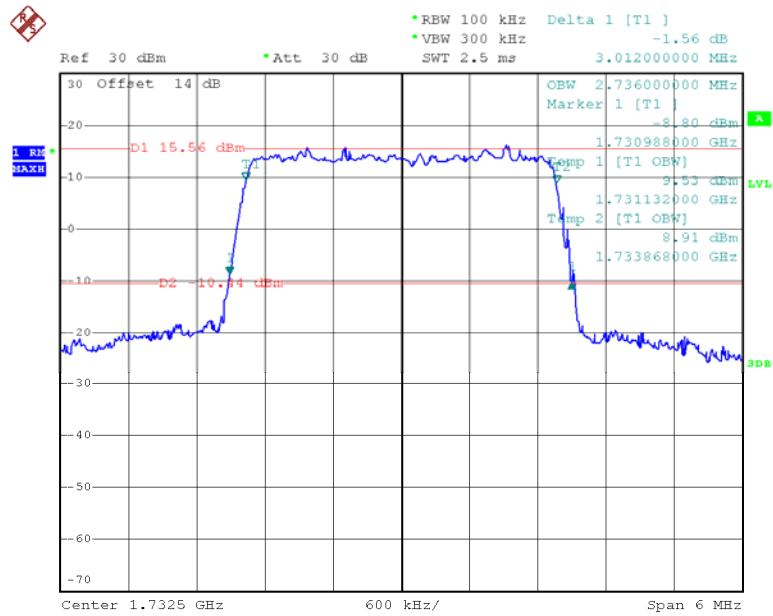
Date: 19.JUL.2015 11:51:36

**16-QAM (1.4 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

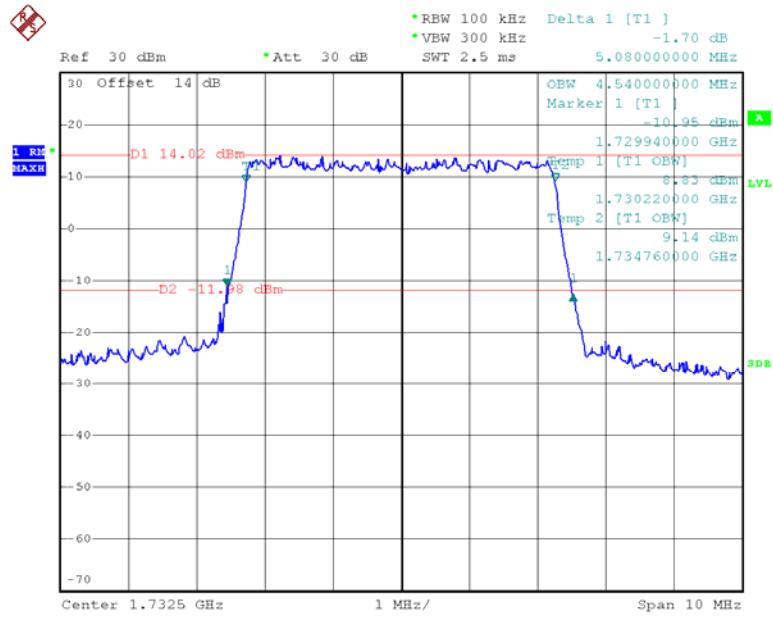
Date: 19.JUL.2015 11:53:07

**QPSK (3.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

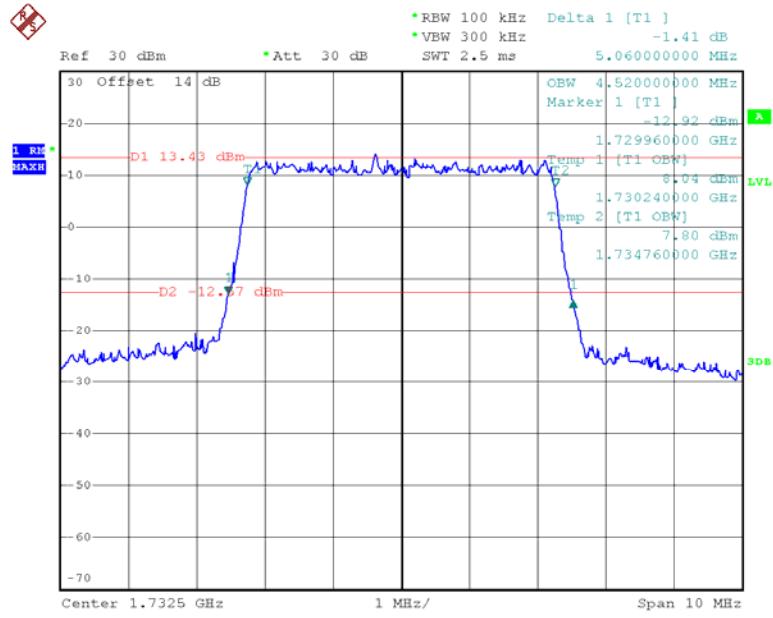
Date: 19.JUL.2015 11:54:51

**16-QAM (3.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

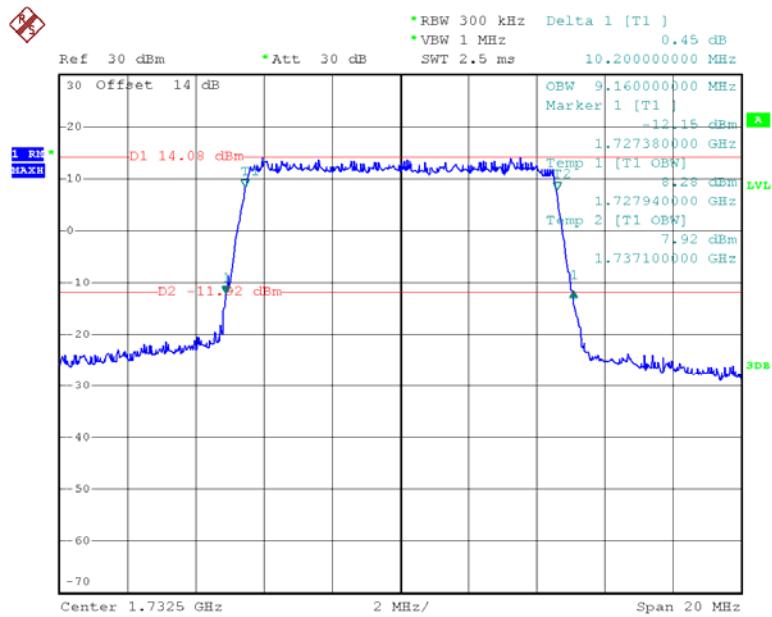
Date: 19.JUL.2015 11:56:19

**QPSK (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

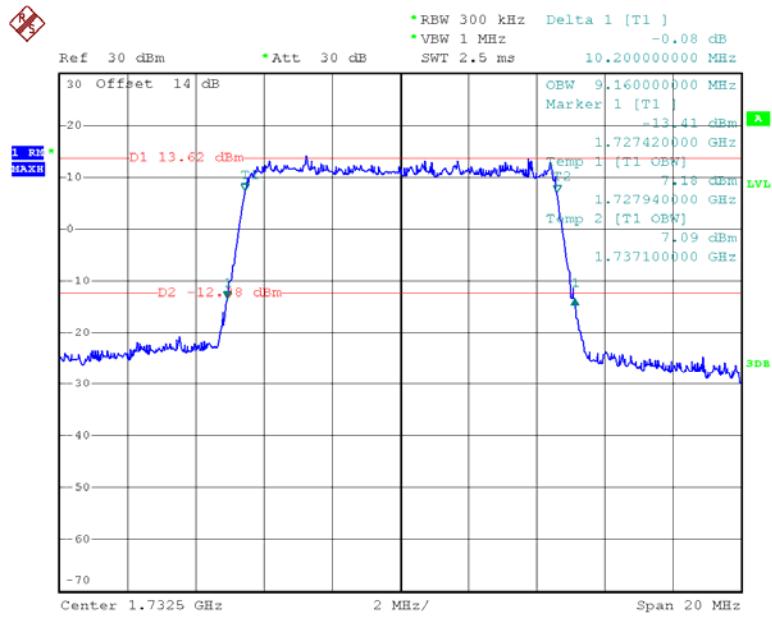
Date: 19.JUL.2015 11:58:20

**16-QAM (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

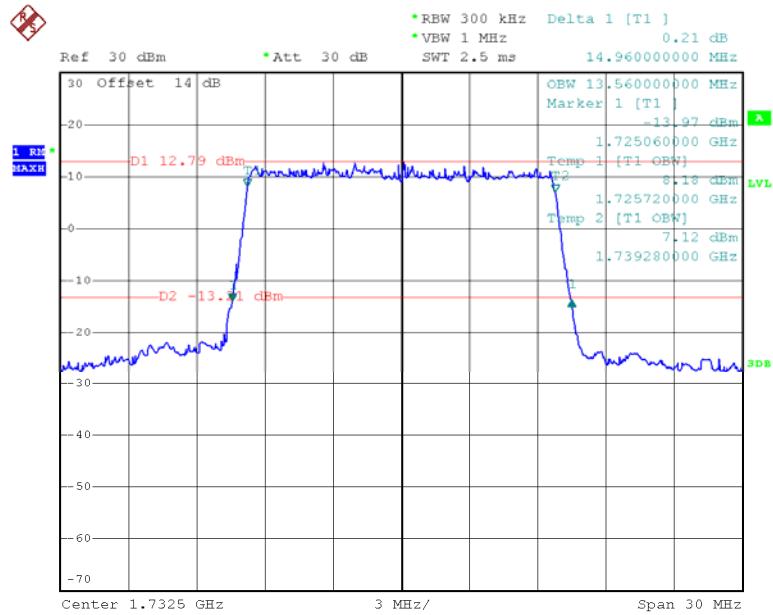
Date: 19.JUL.2015 11:59:41

**QPSK (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

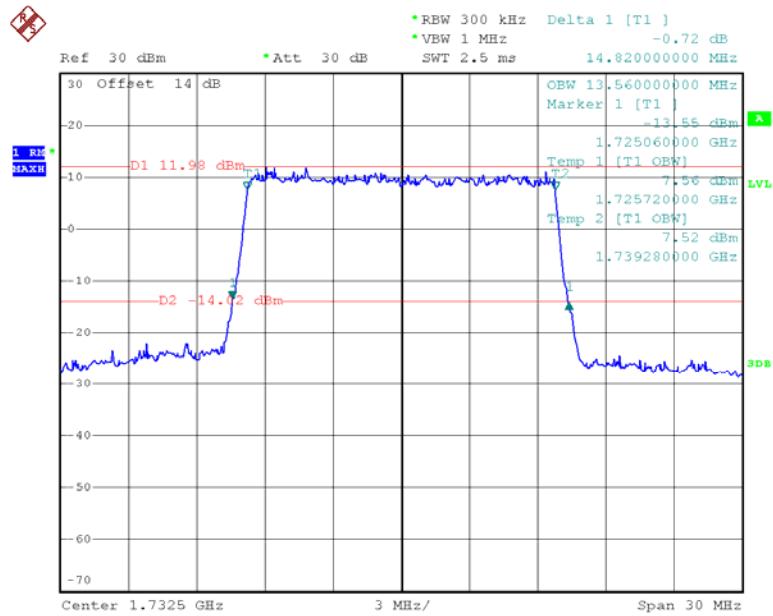
Date: 19.JUL.2015 12:01:29

**16-QAM (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

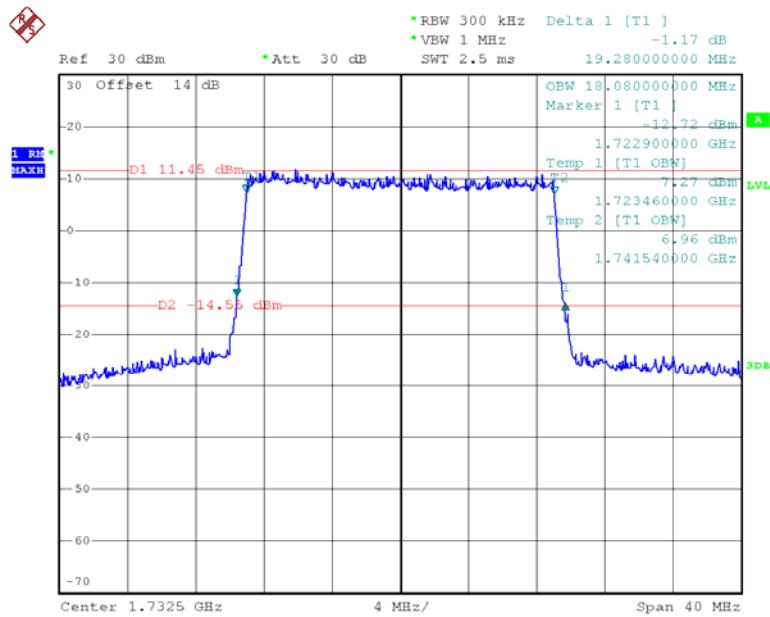
Date: 19.JUL.2015 12:02:54

**QPSK (15.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

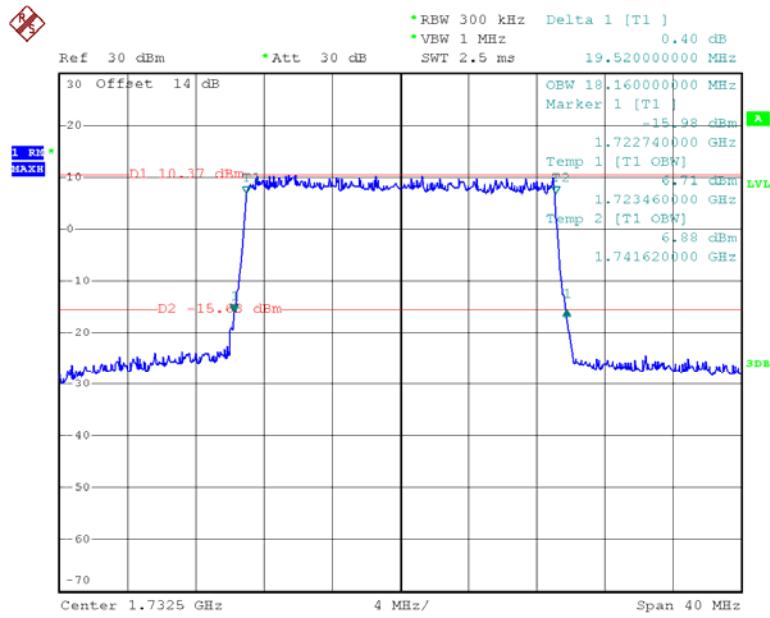
Date: 19.JUL.2015 12:04:22

**16-QAM (15.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

Date: 19.JUL.2015 12:05:40

**QPSK (20.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

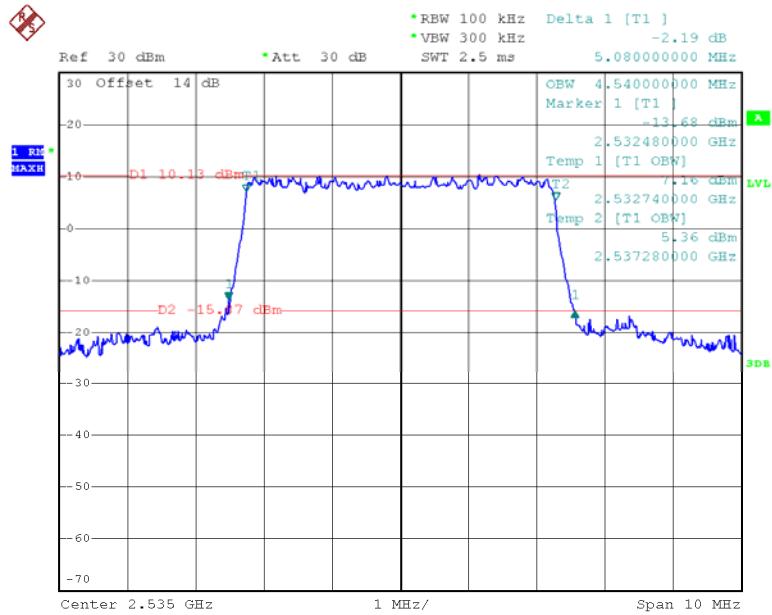
Date: 19.JUL.2015 12:34:45

**16-QAM (20.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

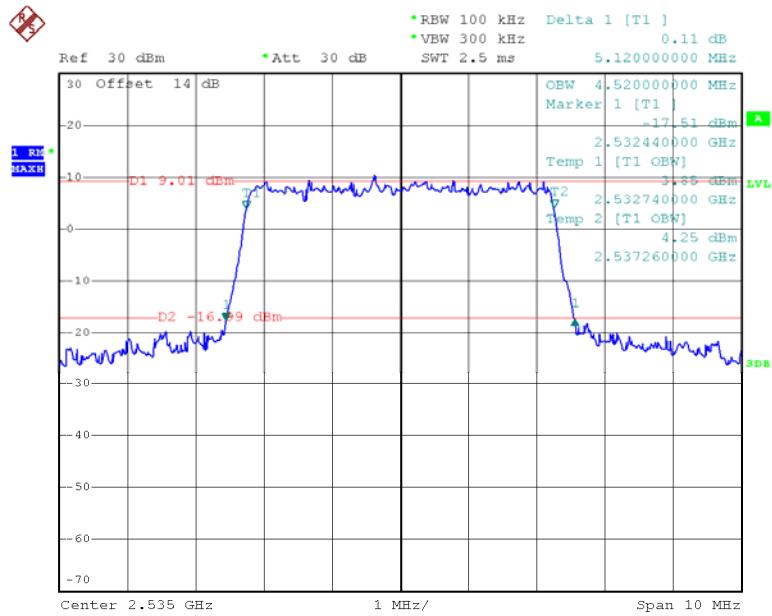
Date: 19.JUL.2015 12:36:26

**Band 7: (Middle Channel)**

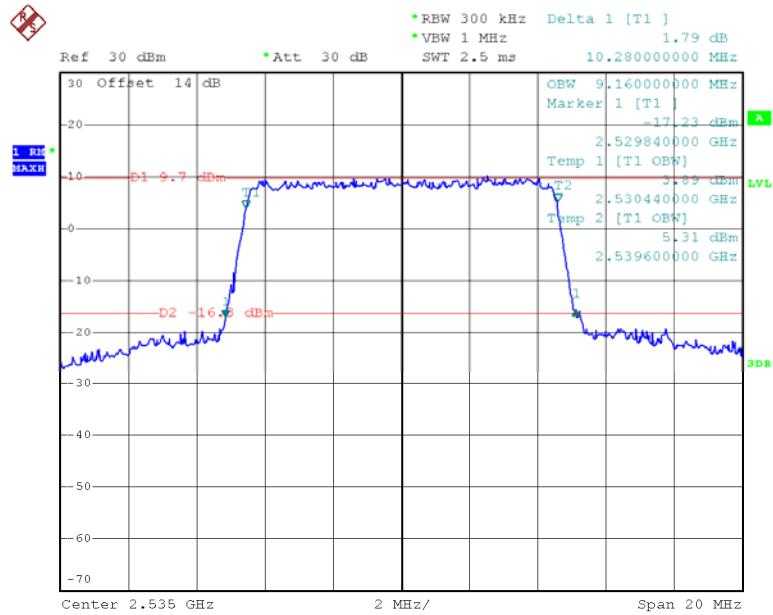
<b>Bandwidth (MHz)</b>	<b>Modulation</b>	<b>99% Occupied Bandwidth (MHz)</b>	<b>26 dB Emission Bandwidth (MHz)</b>
5.0 MHz	QPSK	4.540	5.080
	16QAM	4.520	5.120
10.0 MHz	QPSK	9.160	10.280
	16QAM	9.160	10.120
15.0 MHz	QPSK	13.620	14.940
	16QAM	13.620	14.880
20.0 MHz	QPSK	18.080	19.280
	16QAM	18.000	19.440

**QPSK (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

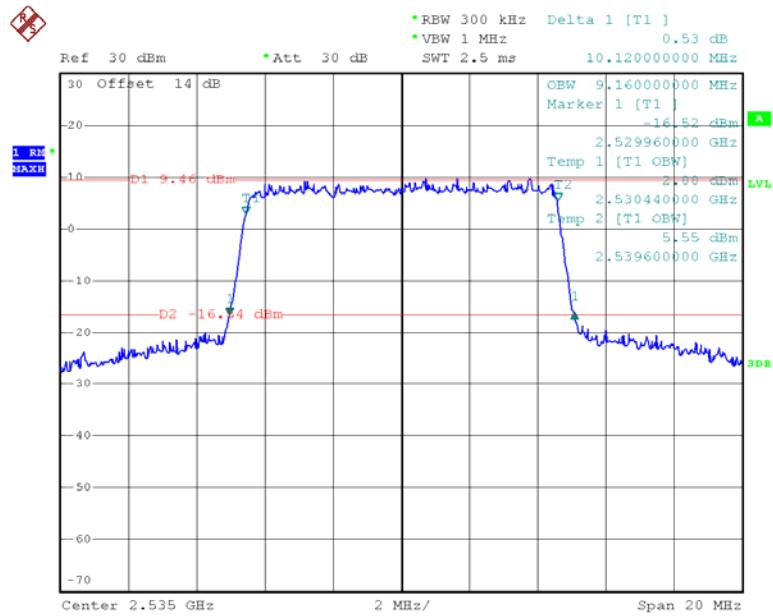
Date: 19.JUL.2015 12:08:37

**16-QAM (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

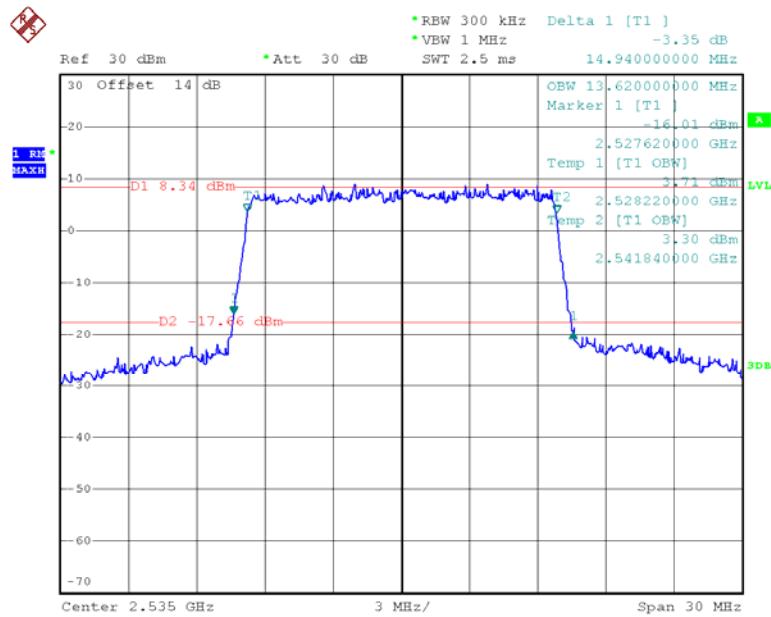
Date: 19.JUL.2015 12:10:23

**QPSK (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

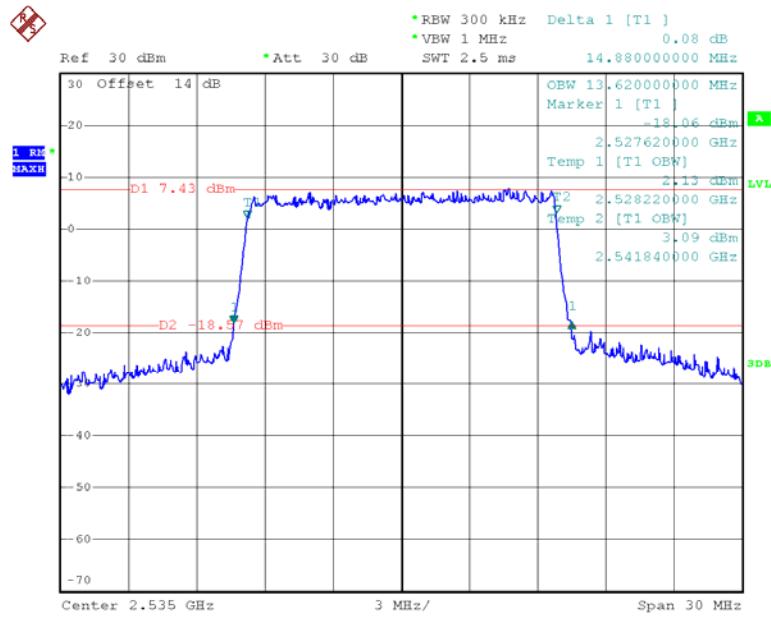
Date: 19.JUL.2015 12:12:17

**16-QAM (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

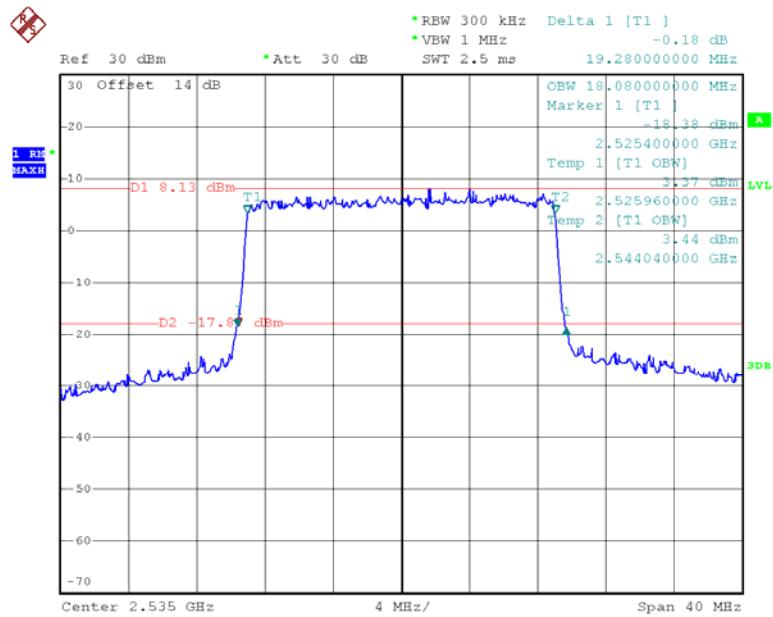
Date: 19.JUL.2015 12:13:35

**QPSK (15.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

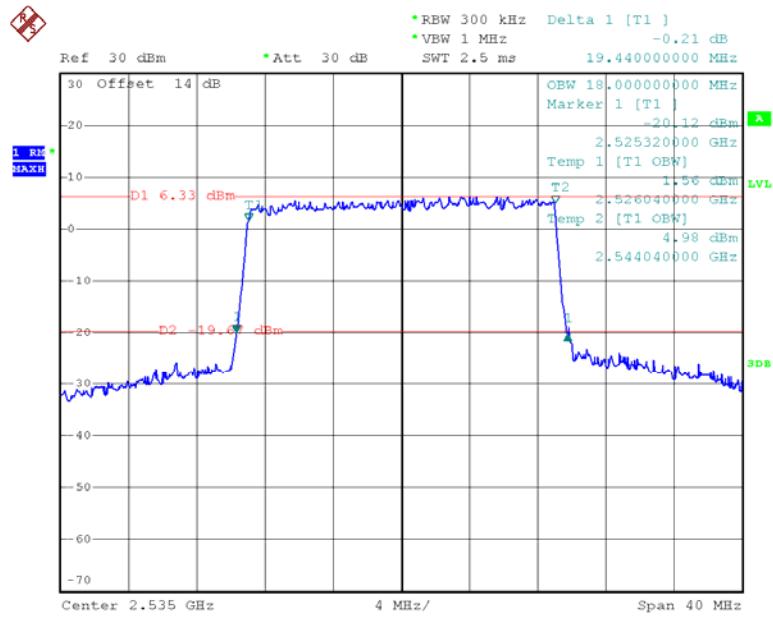
Date: 19.JUL.2015 12:15:06

**16-QAM (15.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

Date: 19.JUL.2015 12:16:34

**QPSK (20.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

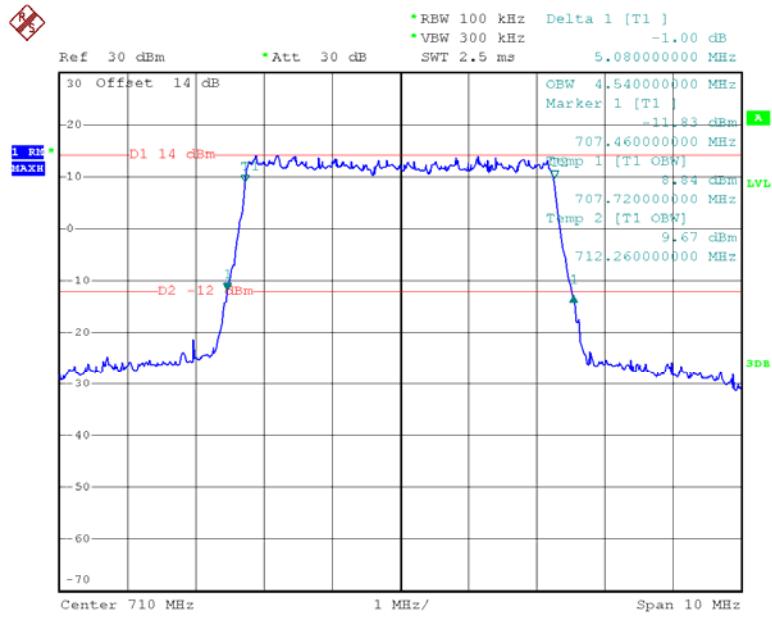
Date: 19.JUL.2015 12:38:28

**16-QAM (20.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

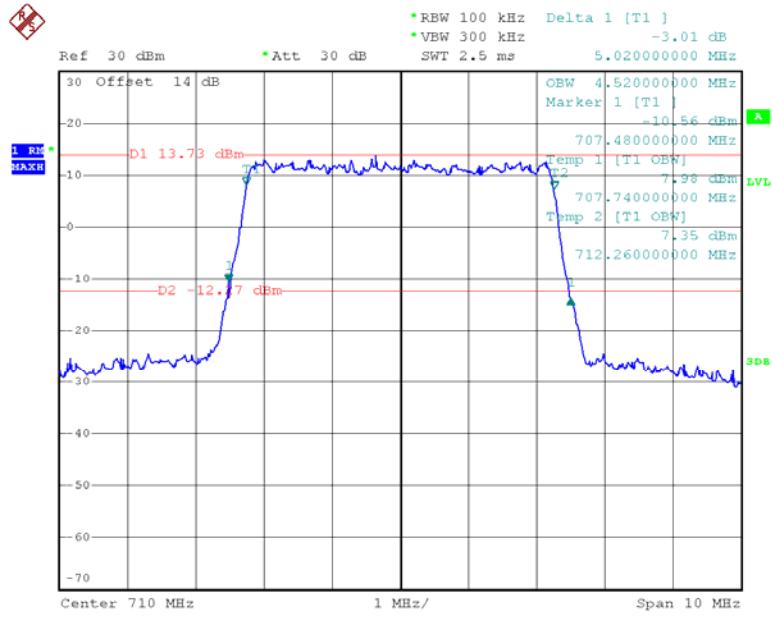
Date: 19.JUL.2015 12:39:53

**Band 17: (Middle Channel)**

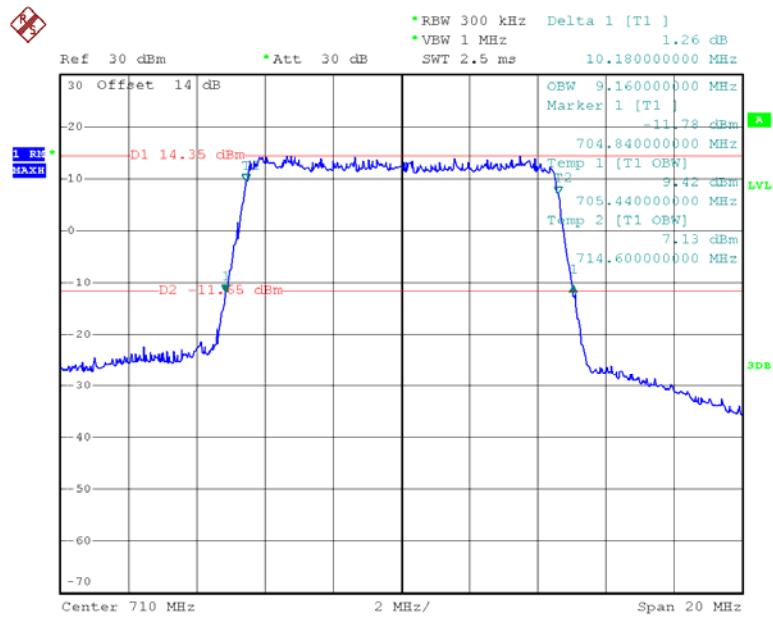
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0 MHz	QPSK	4.540	5.080
	16QAM	4.520	5.020
10.0 MHz	QPSK	9.160	10.180
	16QAM	9.160	10.100

**QPSK (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

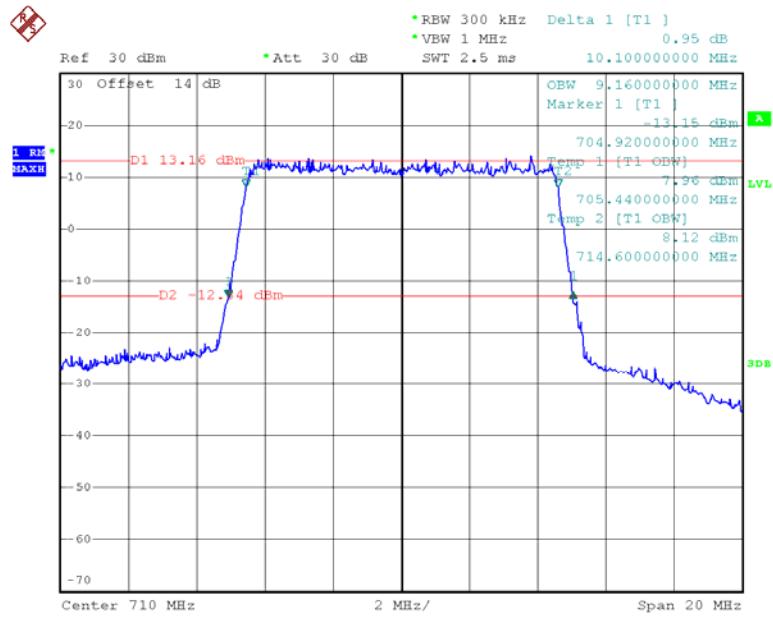
Date: 19.JUL.2015 12:21:09

**16-QAM (5.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

Date: 19.JUL.2015 12:22:56

**QPSK (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

Date: 19.JUL.2015 12:25:47

**16-QAM (10.0 MHz) - 99% Occupied Bandwidth & 26 dB Bandwidth**

Date: 19.JUL.2015 12:24:33

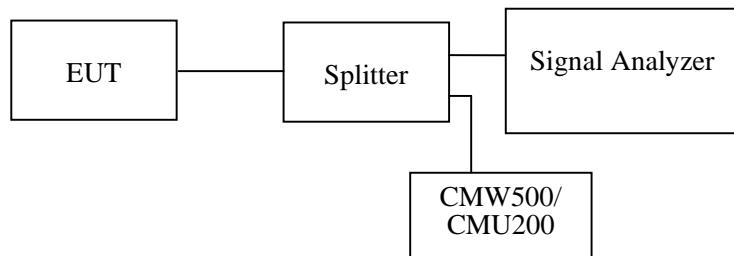
**FCC §2.1051, §22.917(a) & §24.238(a) & §27.53 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS****Applicable Standards**

FCC §2.10511, §22.917(a) and §24.238(a) and §27.53.

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 1MHz. Sufficient scans were taken to show any out of band emissions up to 10<sup>th</sup> harmonic.

**Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2015-04-27	2016-04-26
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

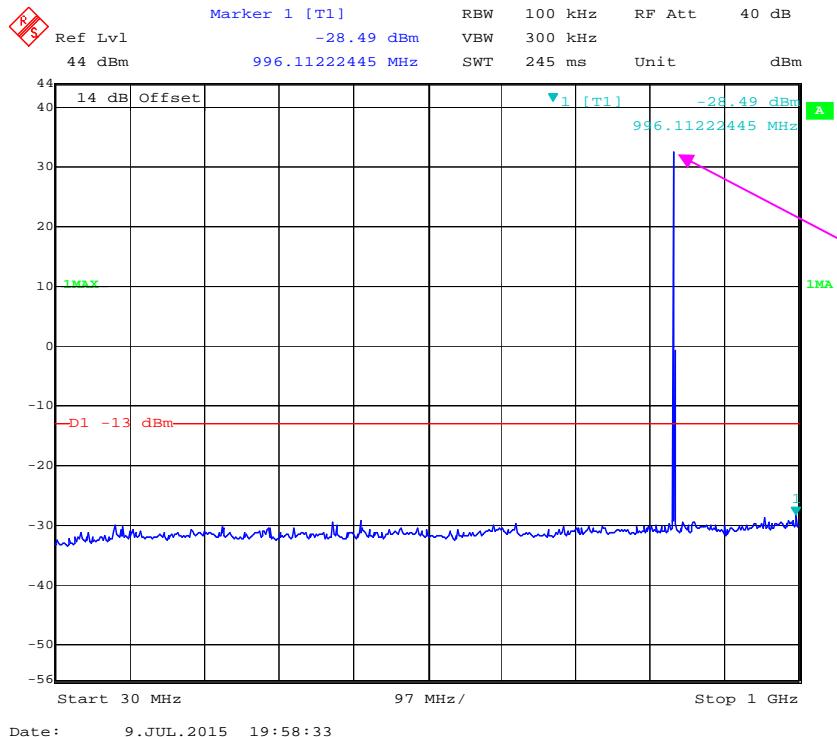
**\* Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

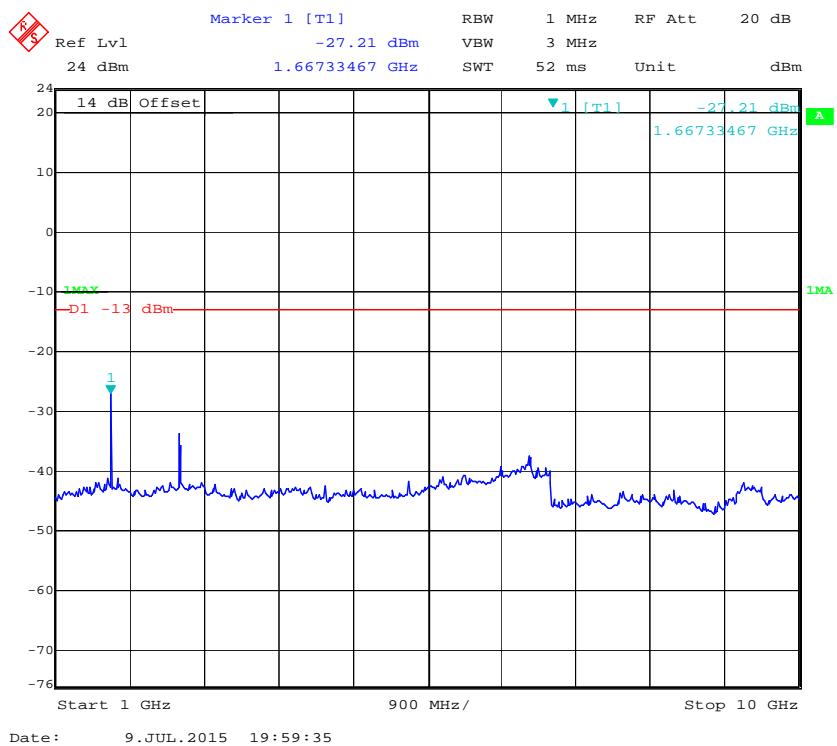
<b>Temperature:</b>	24~26
<b>Relative Humidity:</b>	48~52 %
<b>ATM Pressure:</b>	100.0~101.0 kPa

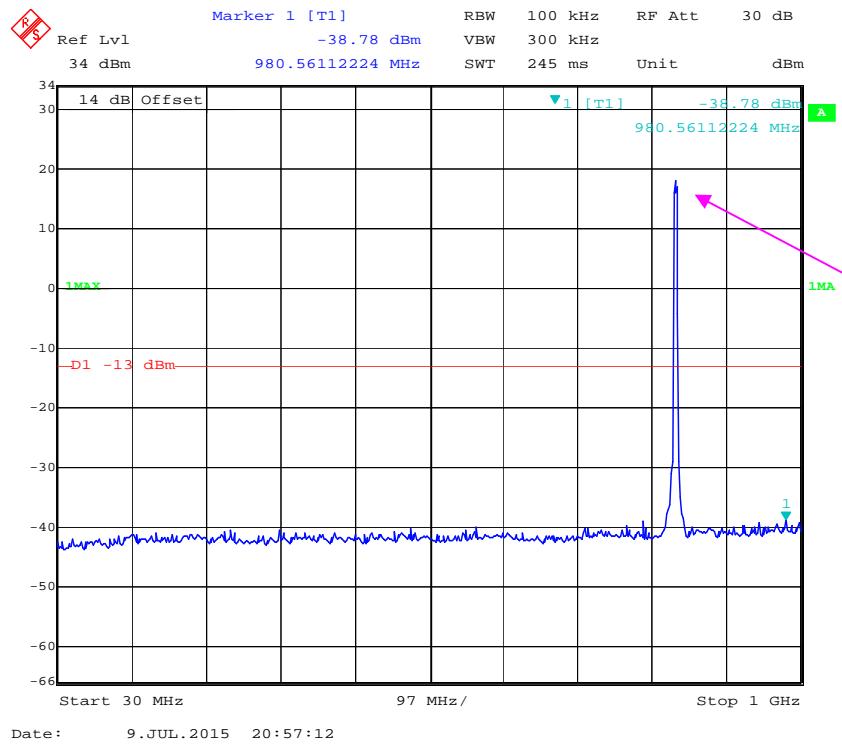
*The testing was performed by Xiangguang Kong from 2015-07-09 to 2015-07-24.*

Please refer to the following plots.

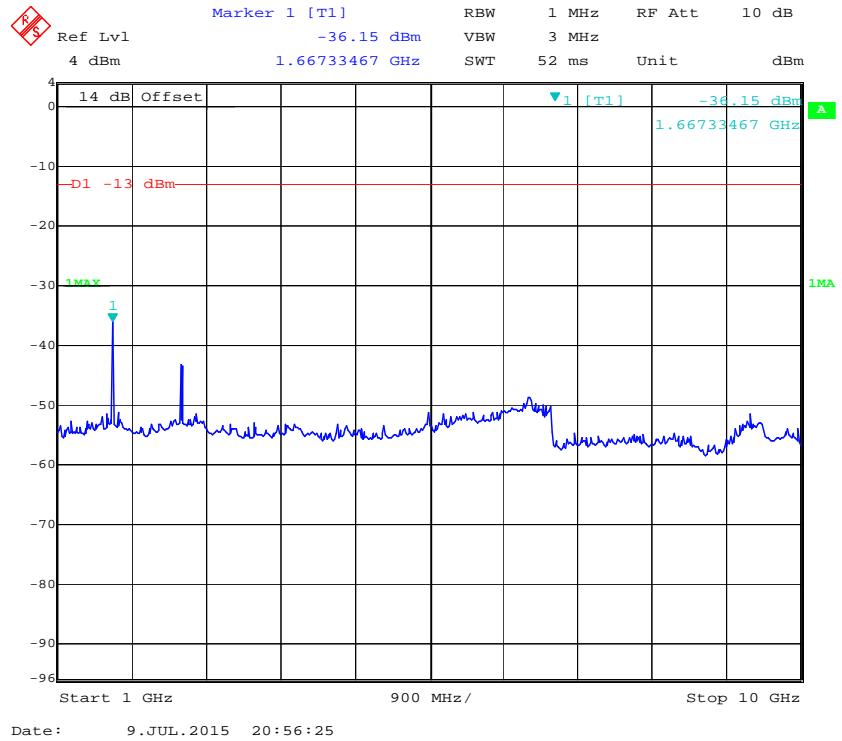
**Cellular Band (Part 22H)****30 MHz – 1 GHz (GSM Mode)**

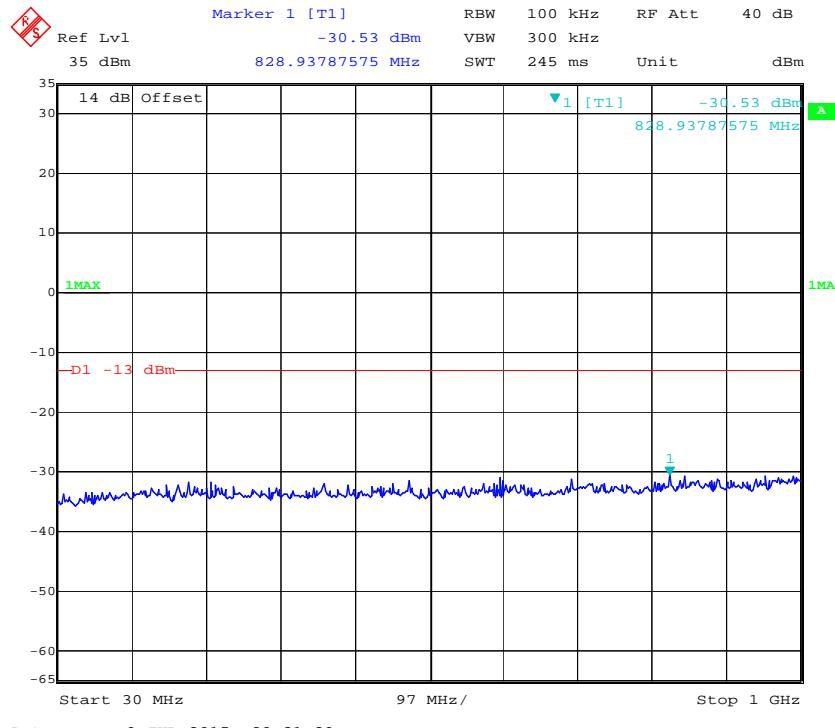
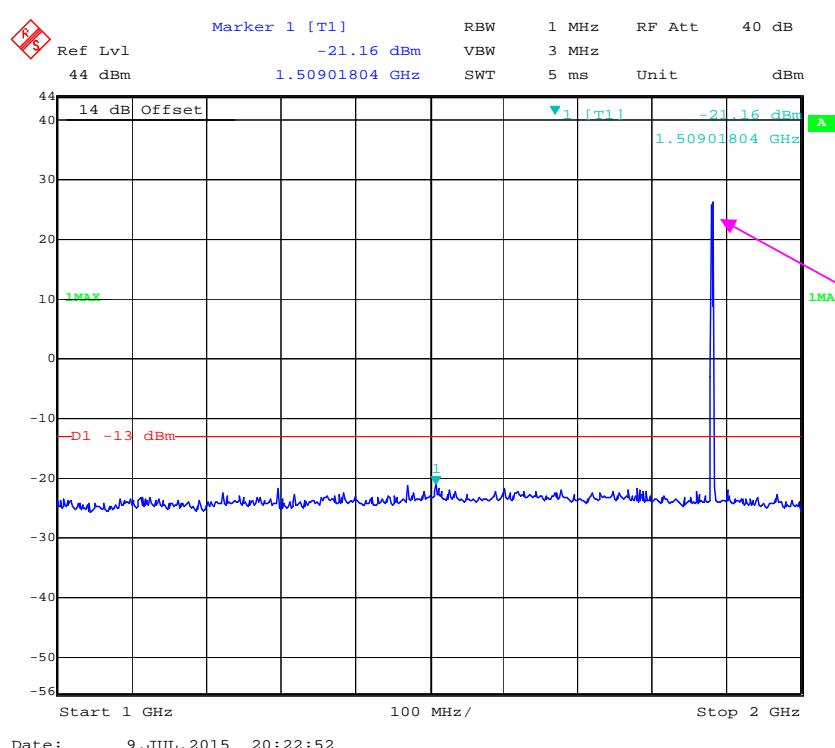
Fundamental test with notch filter

**1 GHz – 10 GHz (GSM Mode)**

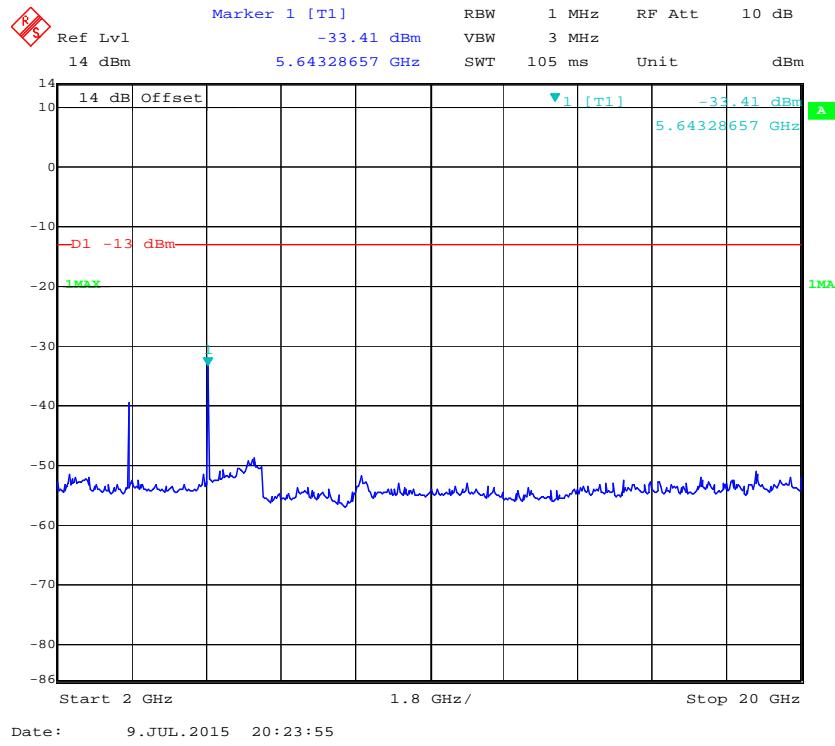
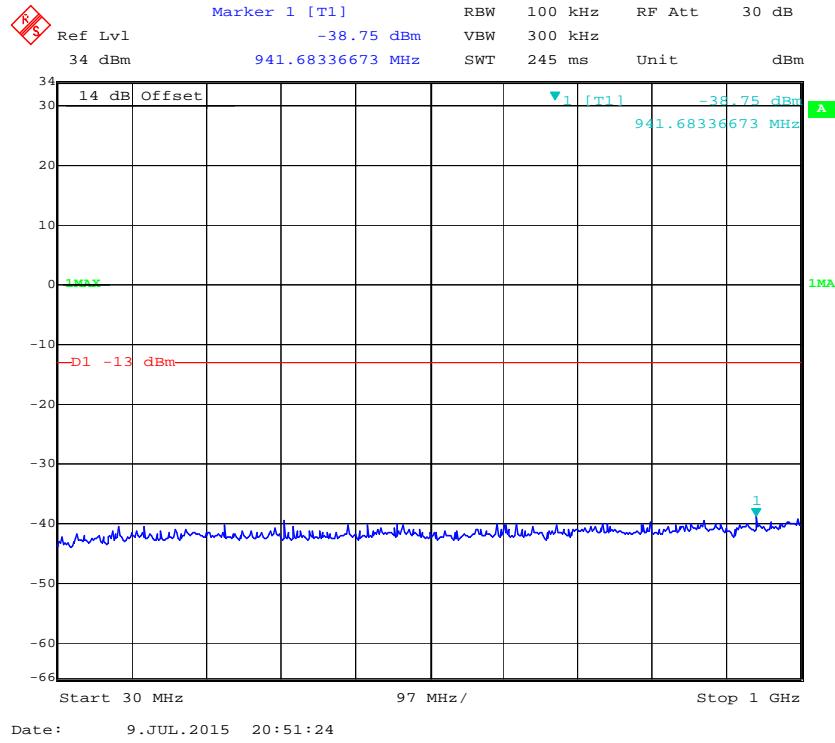
**30 MHz – 1 GHz (WCDMA Mode)**

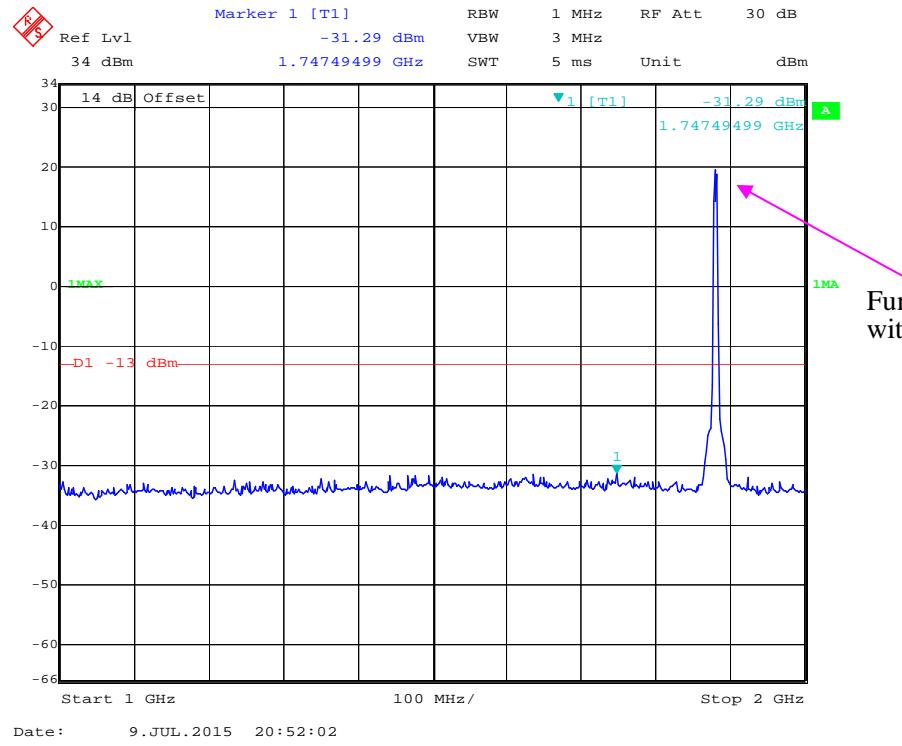
Fundamental test  
with notch filter

**1 GHz – 10 GHz (WCDMA Mode)**

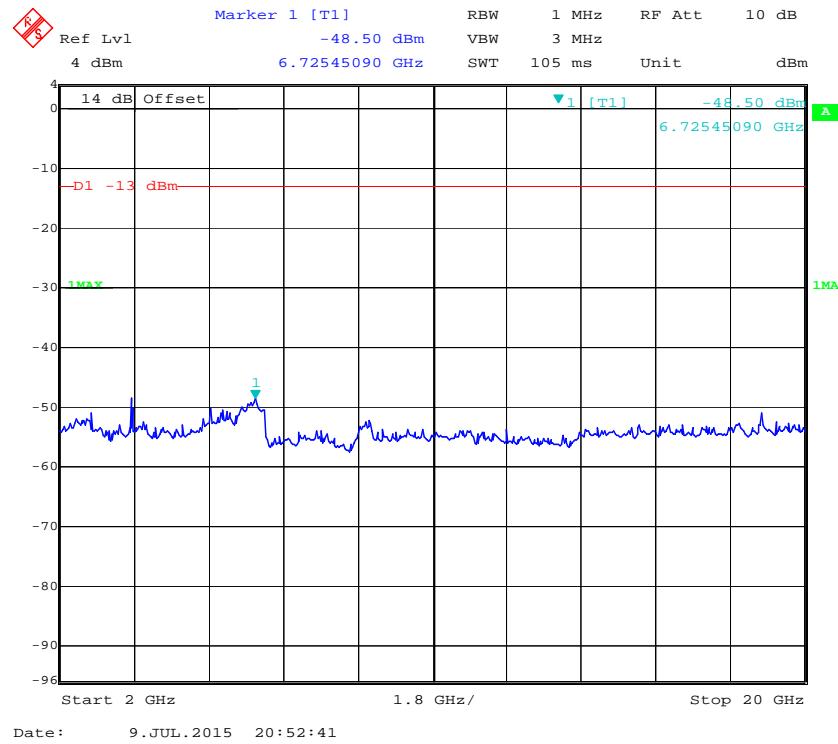
**PCS Band (Part 24E)****30 MHz – 1 GHz (GSM Mode)****1 GHz – 2 GHz (GSM Mode)**

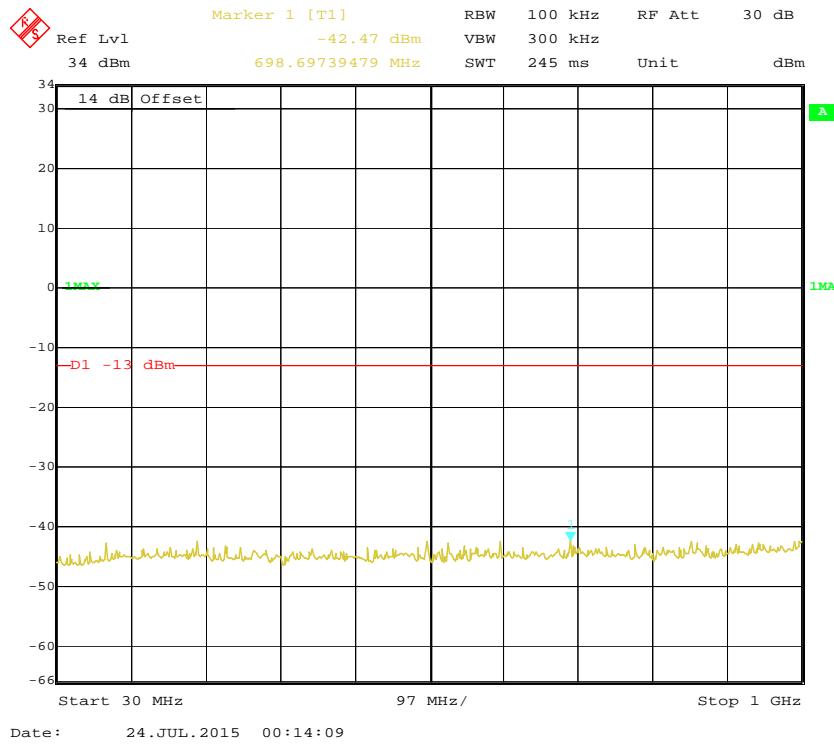
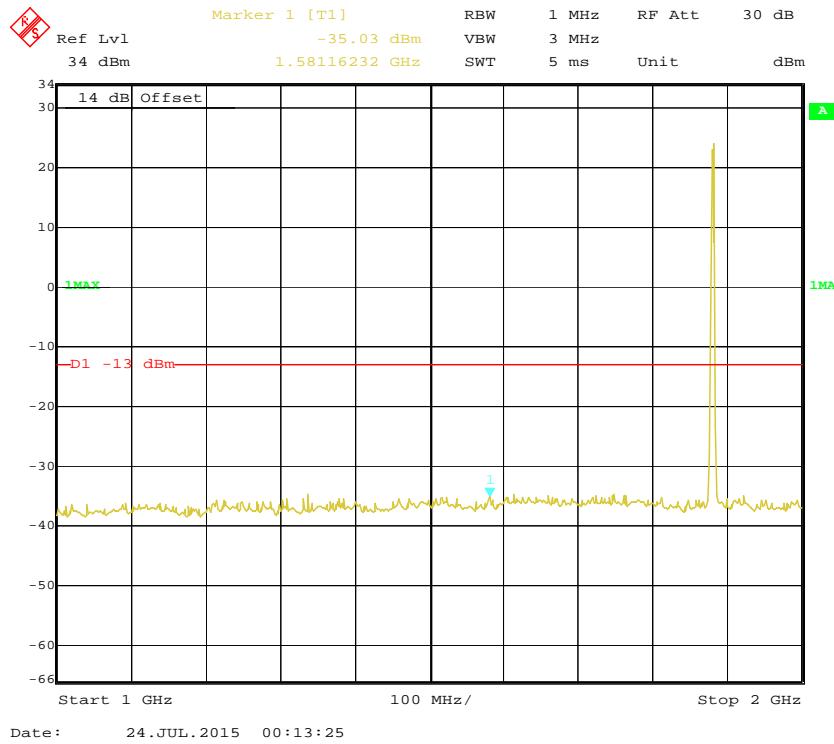
Fundamental test  
with notch filter

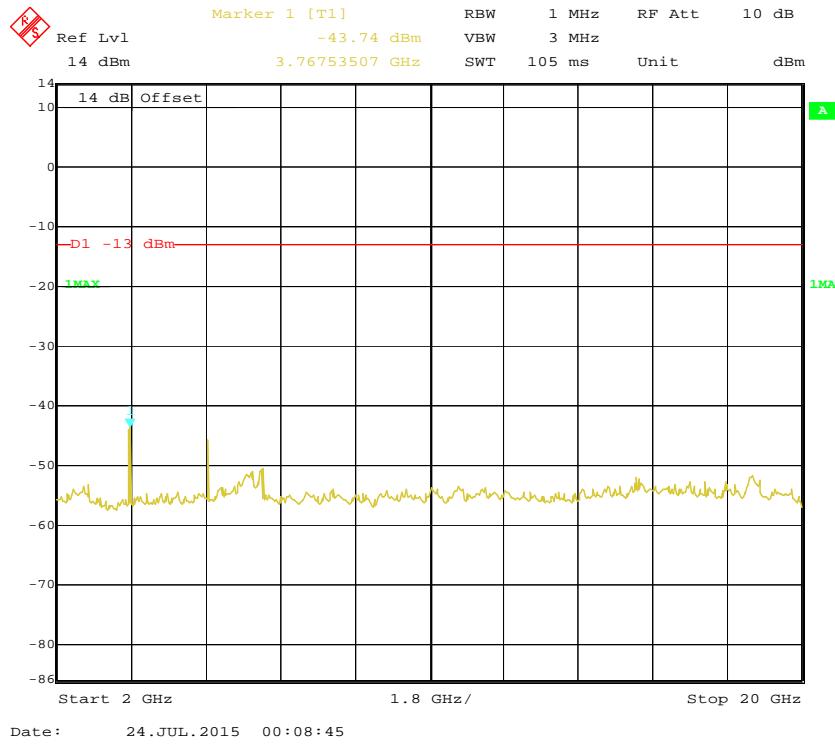
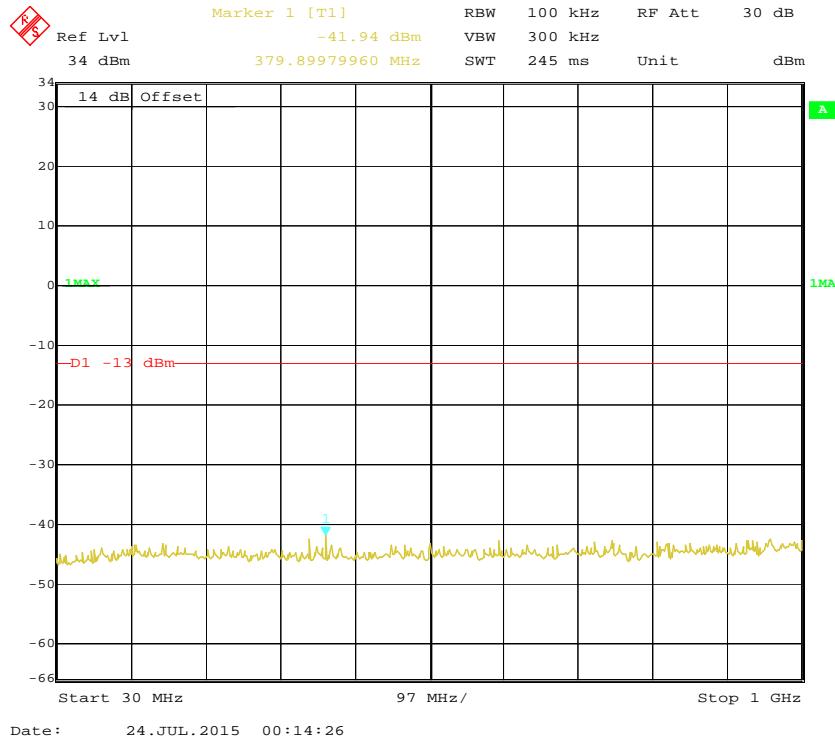
**2 GHz – 20 GHz (GSM Mode)****30 MHz – 1 GHz (WCDMA Mode)**

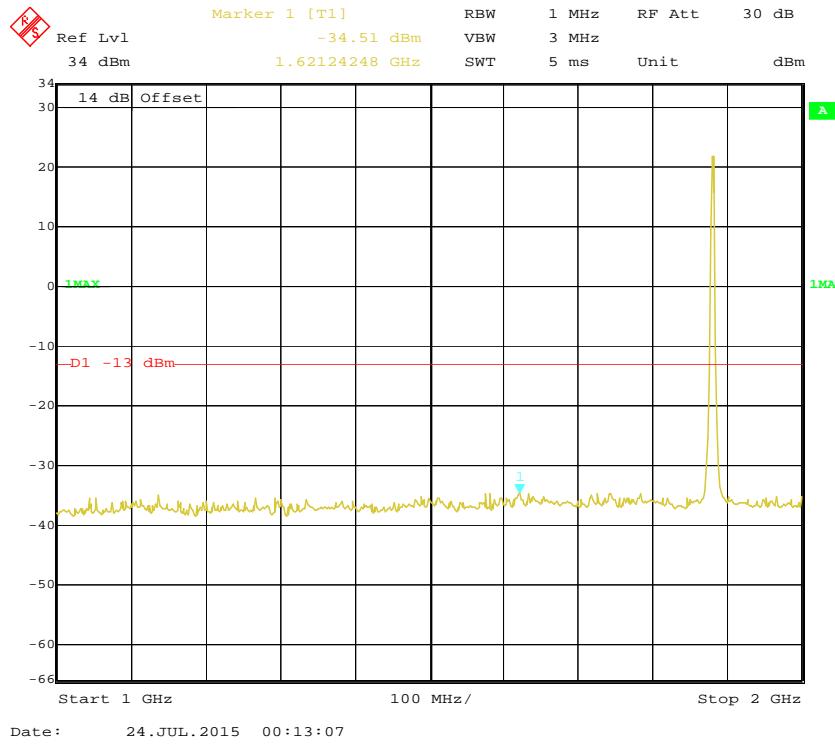
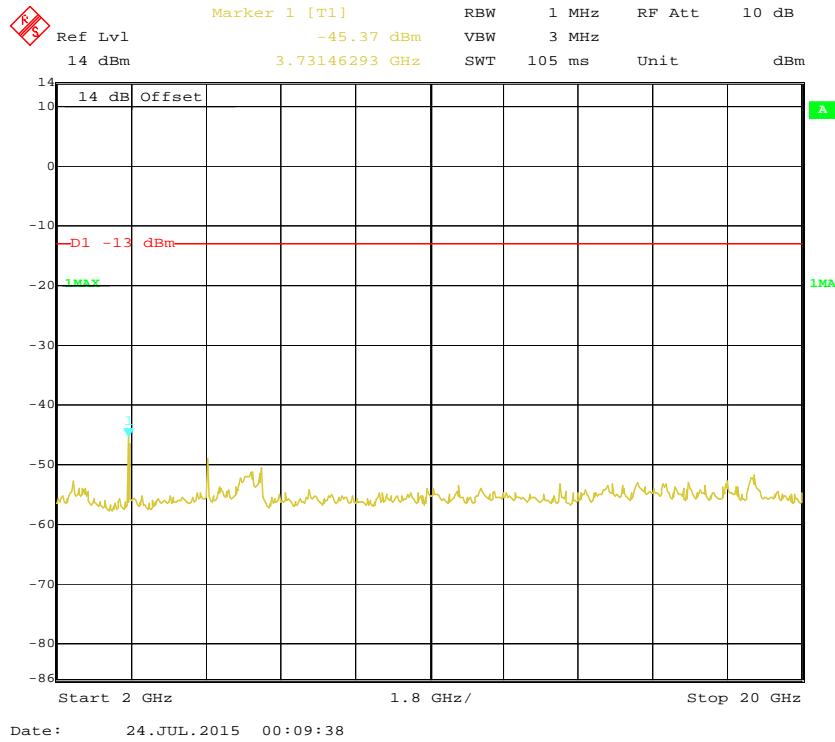
**1 GHz – 2 GHz (WCDMA Mode)**

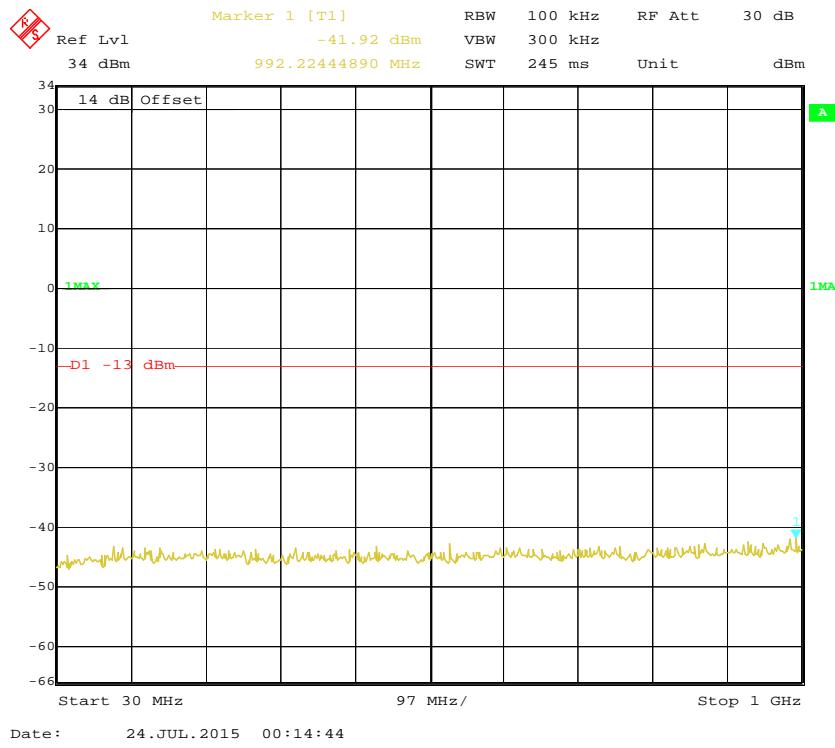
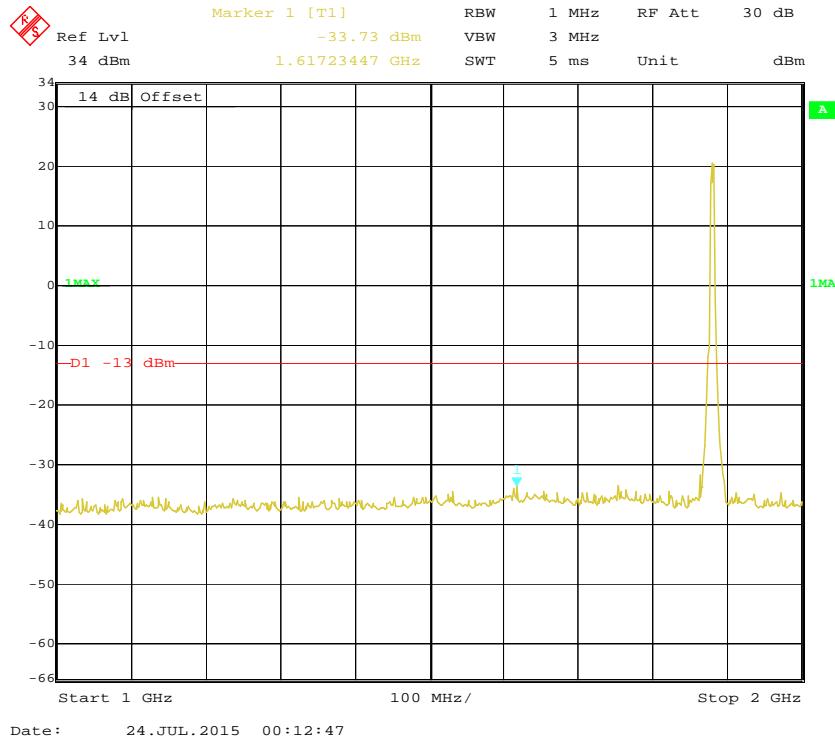
Fundamental test with notch filter

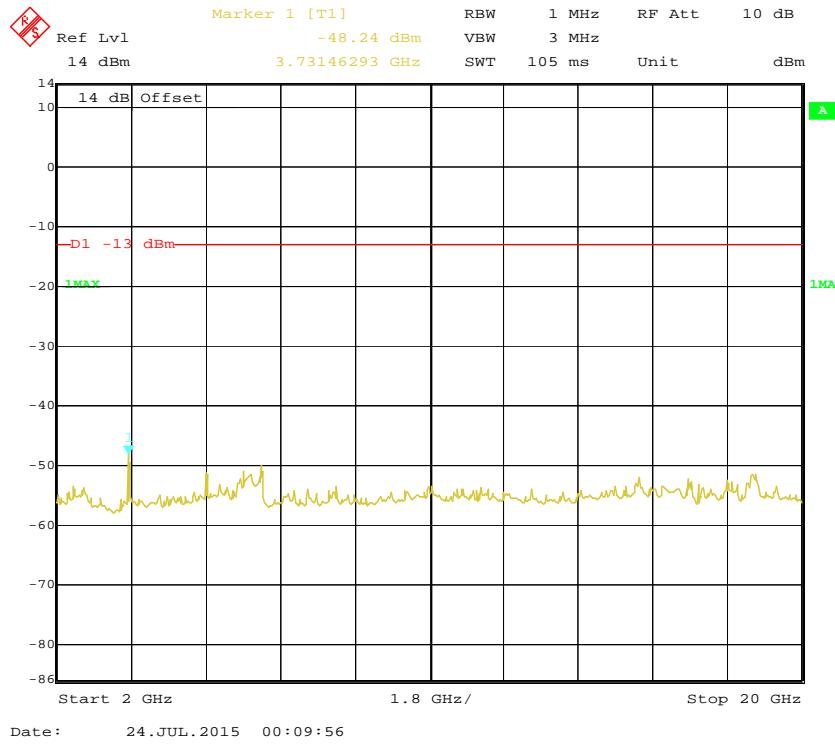
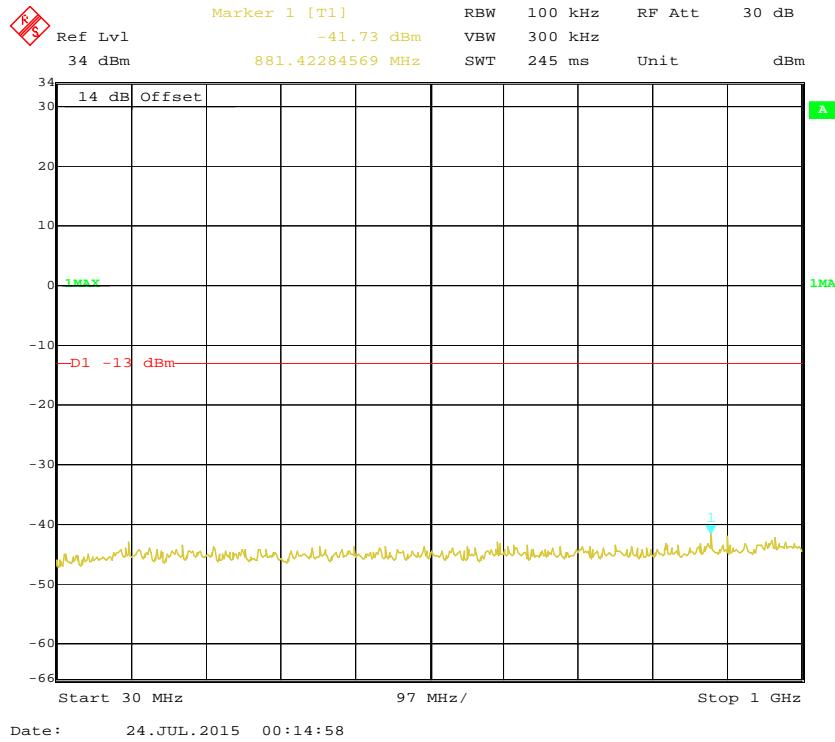
**2 GHz – 20 GHz (WCDMA Mode)**

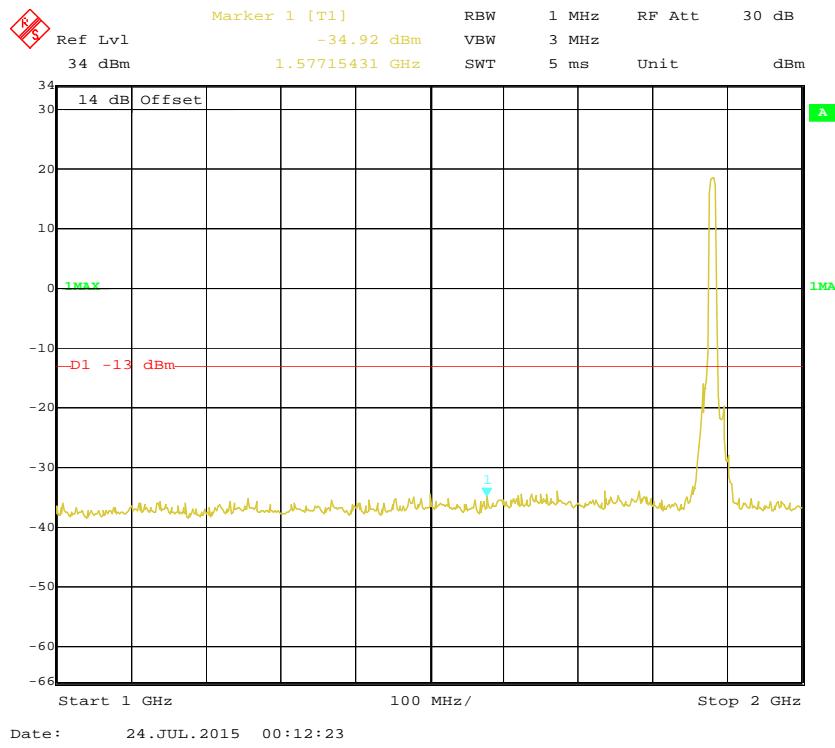
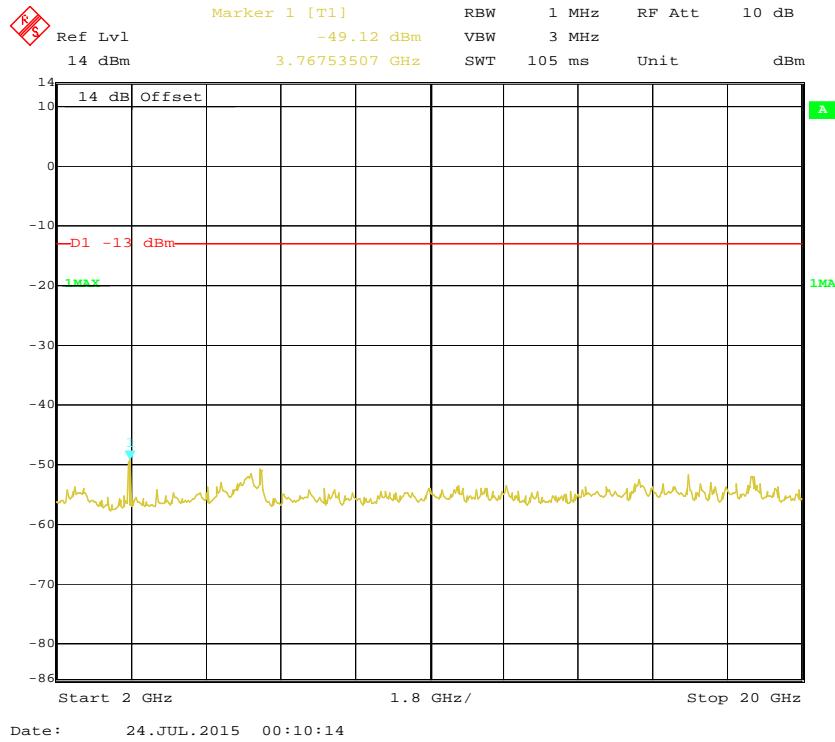
**Band 2:****30 MHz - 1 GHz (1.4 MHz, Middle Channel)****1 GHz – 2 GHz (1.4 MHz, Middle Channel)**

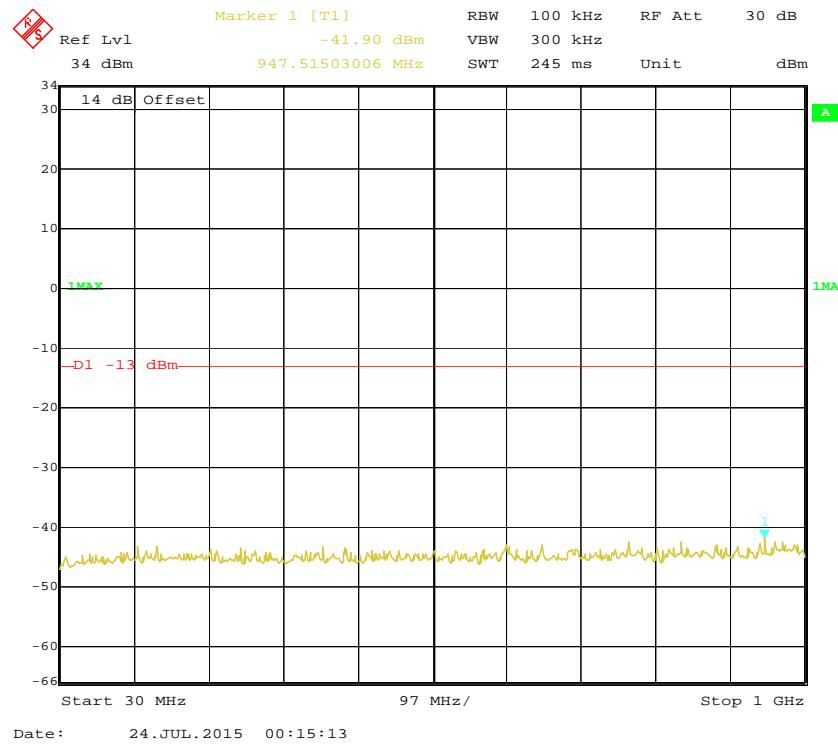
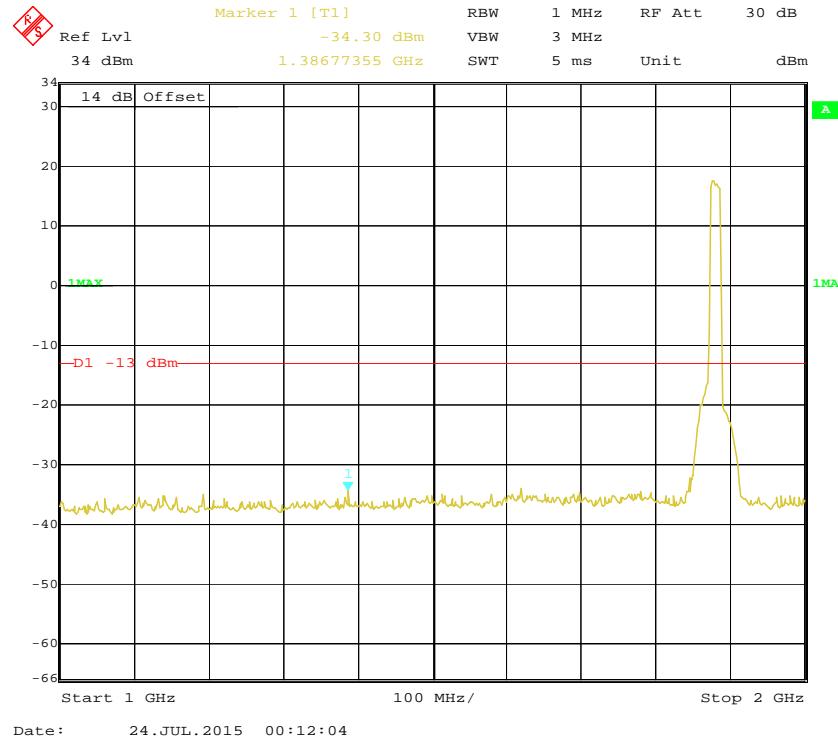
**2 GHz – 20 GHz (1.4 MHz, Middle Channel)****30 MHz - 1 GHz (3.0 MHz, Middle Channel)**

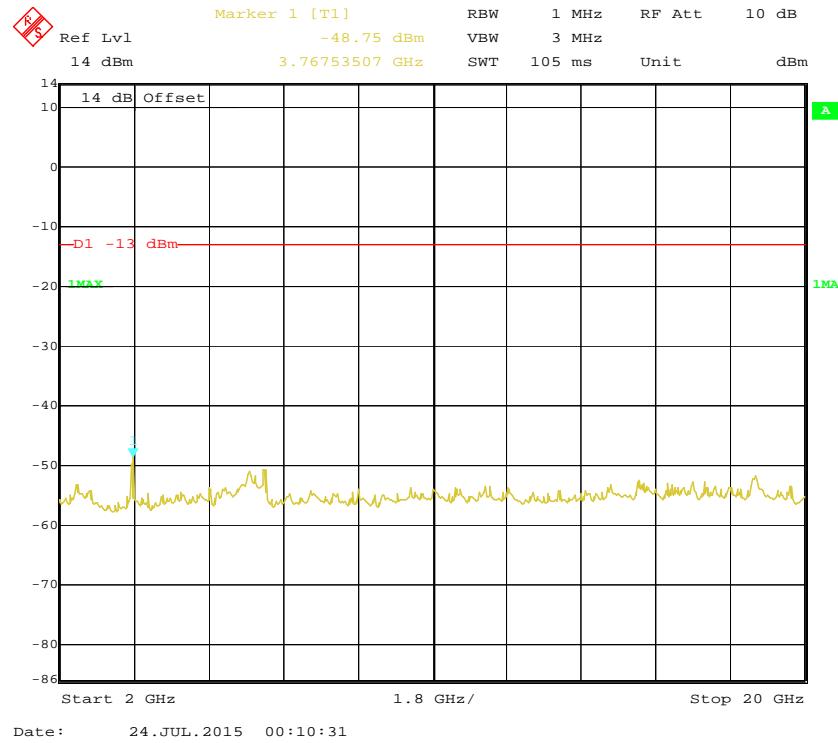
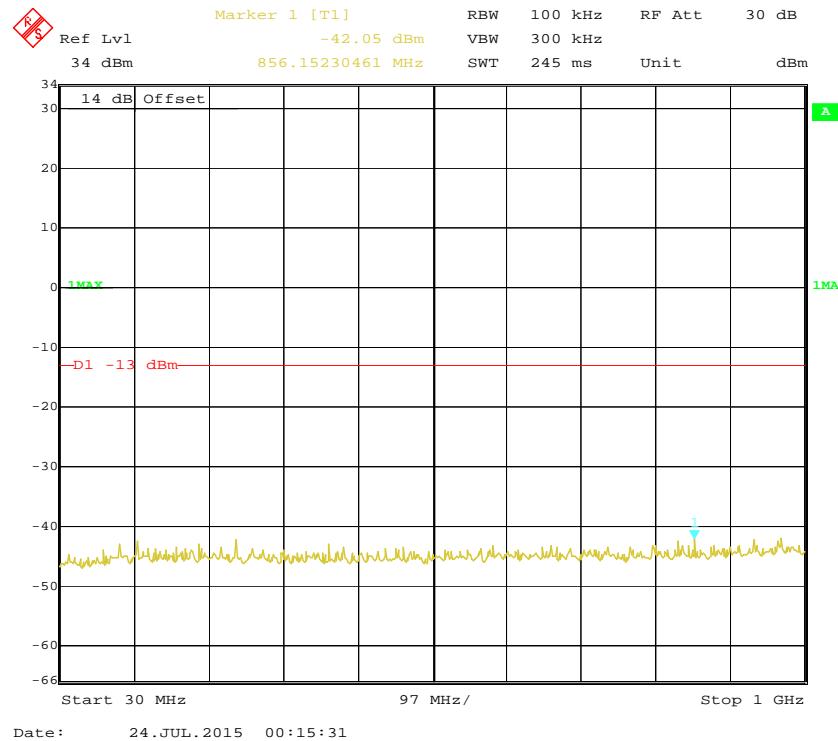
**1 GHz – 2 GHz (3.0 MHz, Middle Channel)****2 GHz – 20 GHz (3.0 MHz, Middle Channel)**

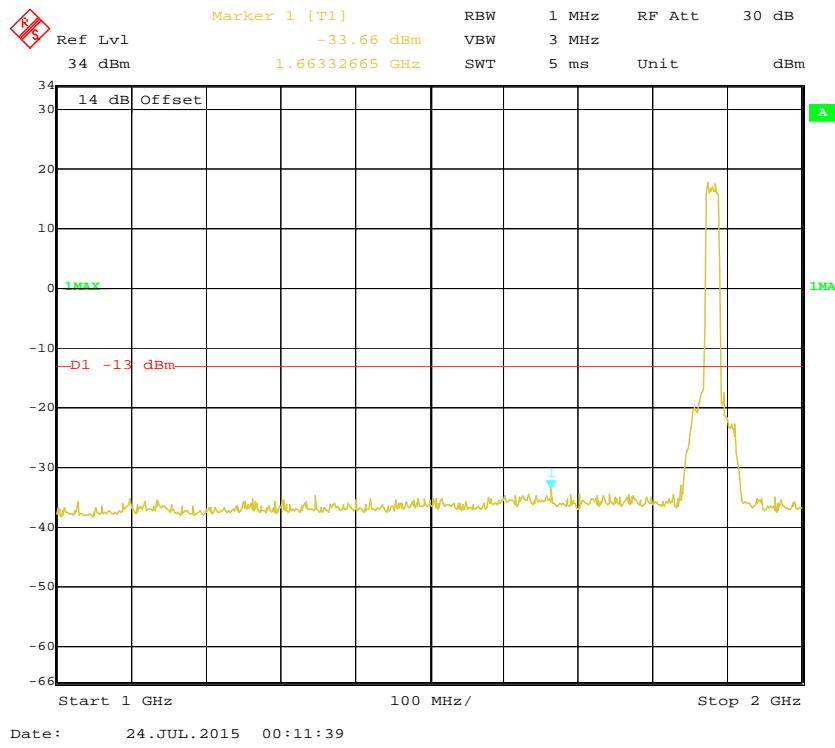
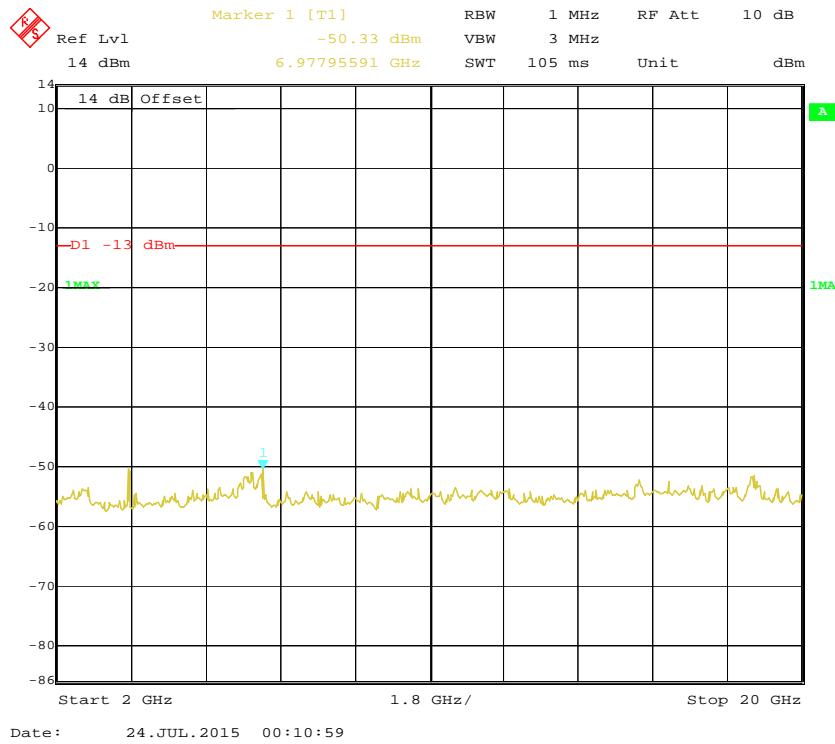
**30 MHz - 1 GHz (5.0 MHz, Middle Channel)****1 GHz - 2 GHz (5.0 MHz, Middle Channel)**

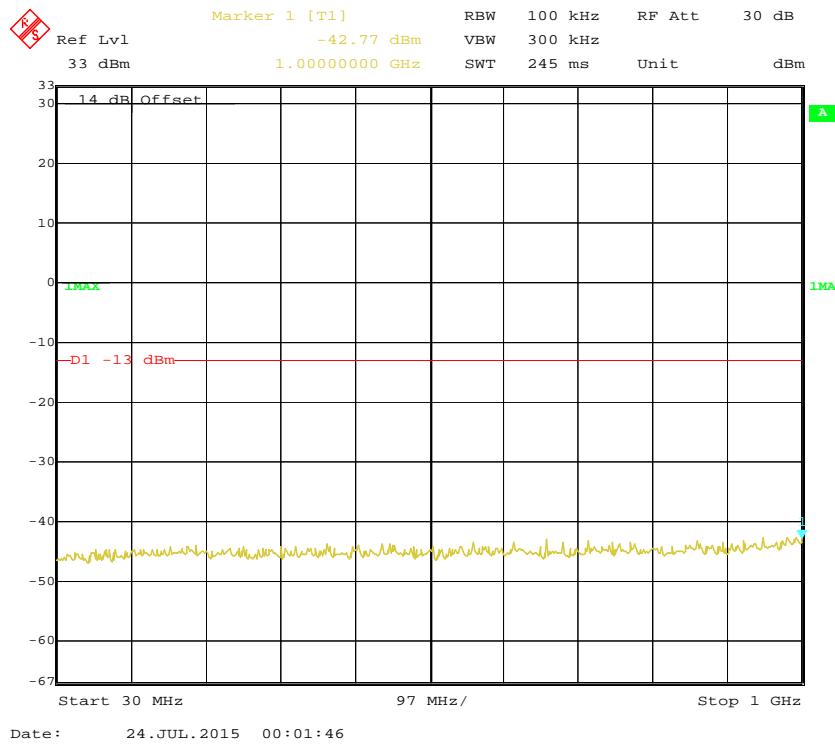
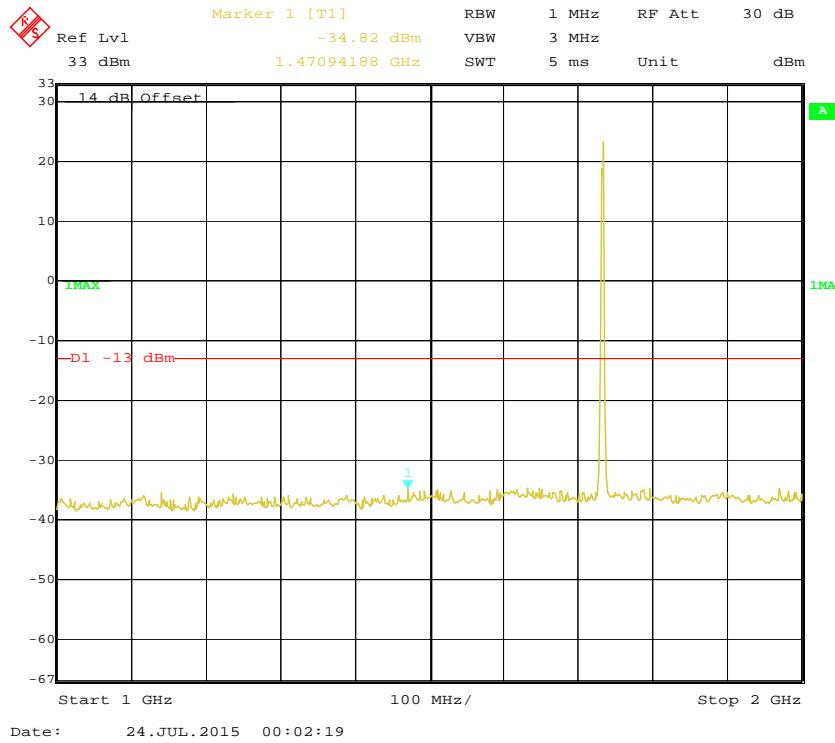
**2 GHz – 20 GHz (5.0 MHz, Middle Channel)****30 MHz - 1 GHz (10.0 MHz, Middle Channel)**

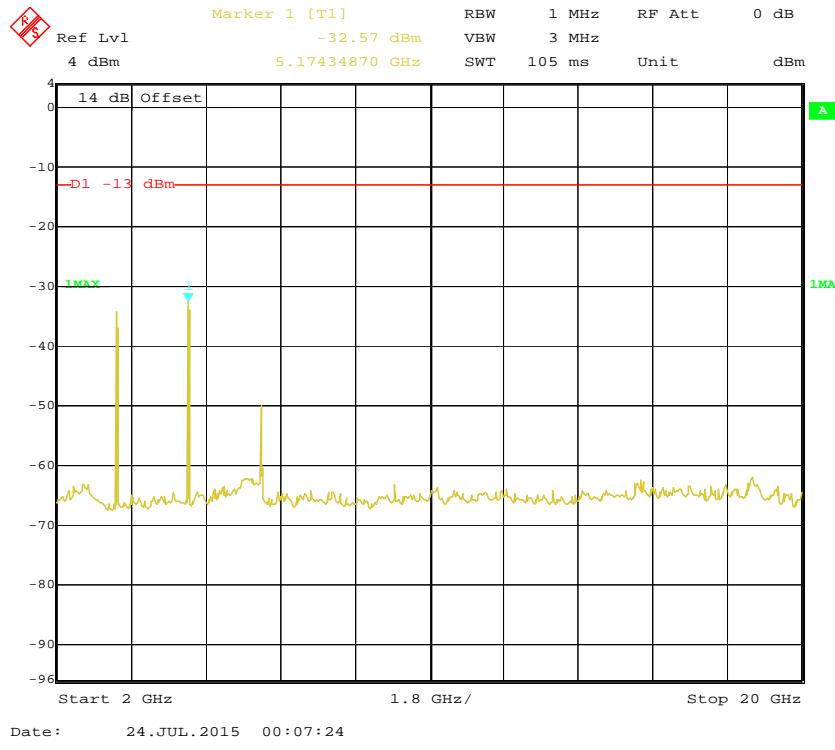
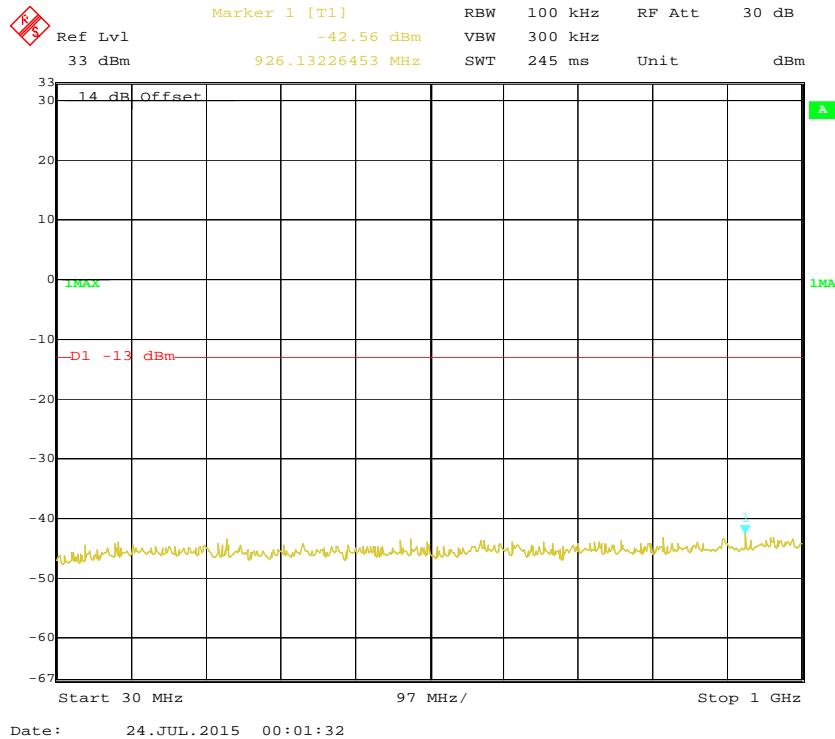
**1 GHz – 2 GHz (10.0 MHz, Middle Channel)****2 GHz – 20 GHz (10.0 MHz, Middle Channel)**

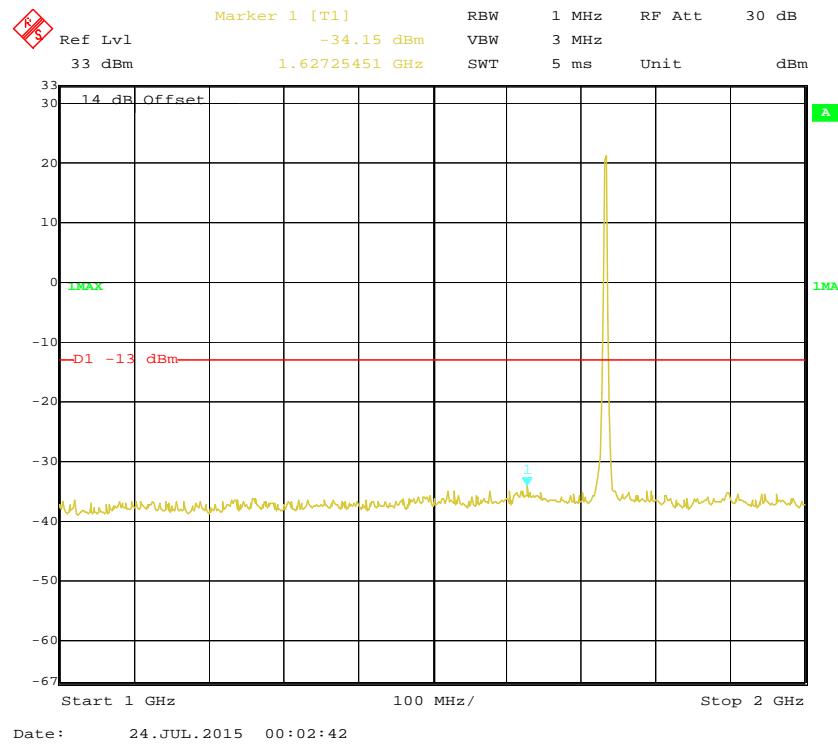
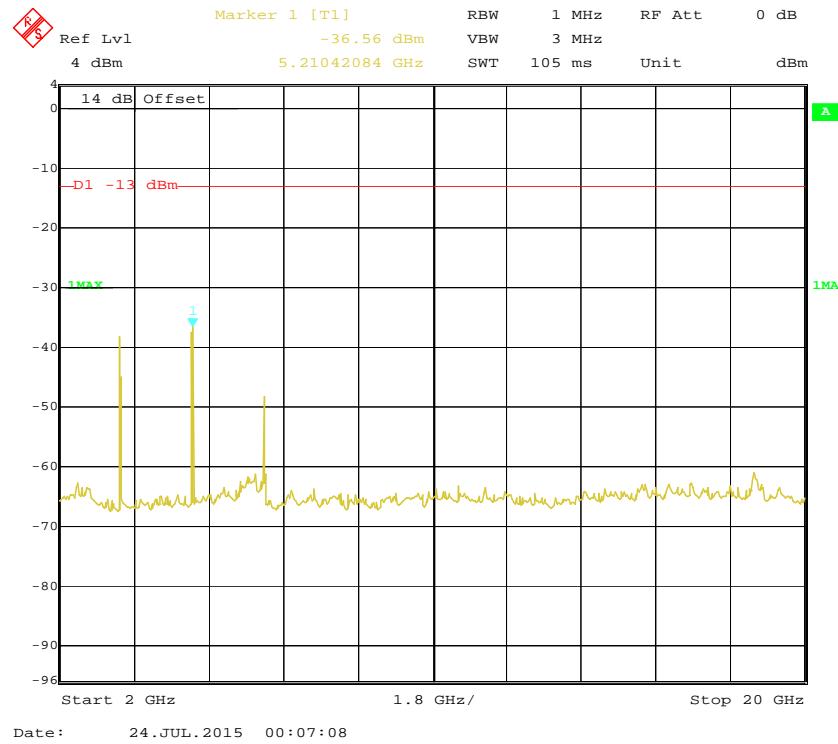
**30 MHz - 1 GHz (15.0 MHz, Middle Channel)****1 GHz - 2 GHz (15.0 MHz, Middle Channel)**

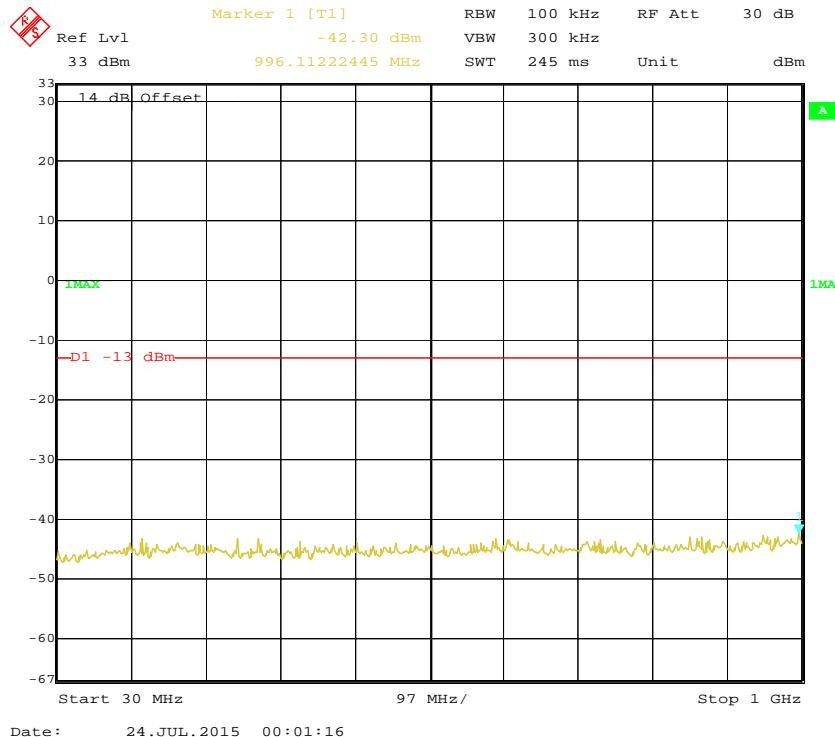
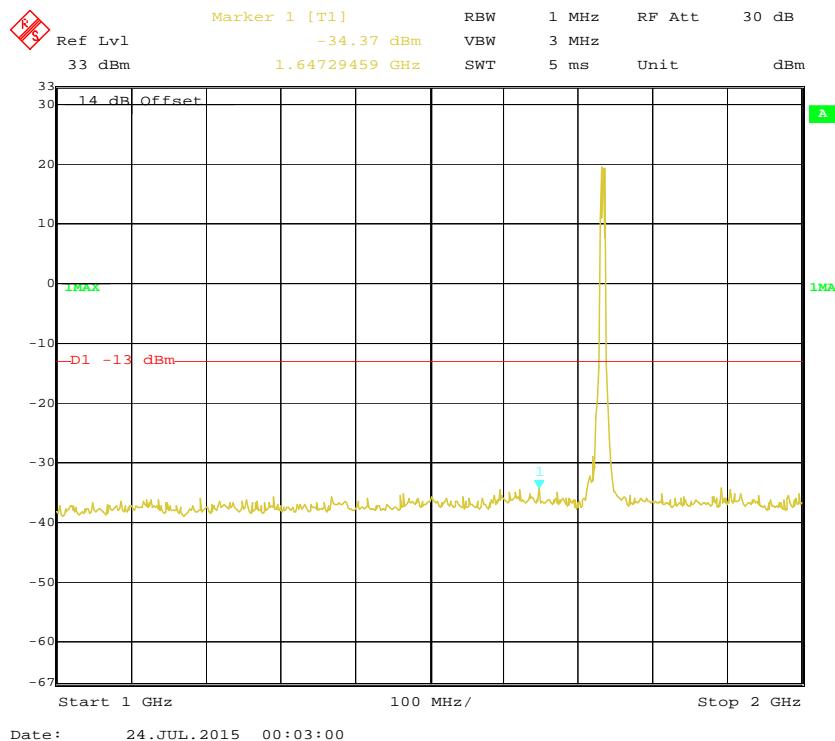
**2 GHz – 20 GHz (15.0 MHz, Middle Channel)****30 MHz - 1 GHz (20.0 MHz, Middle Channel)**

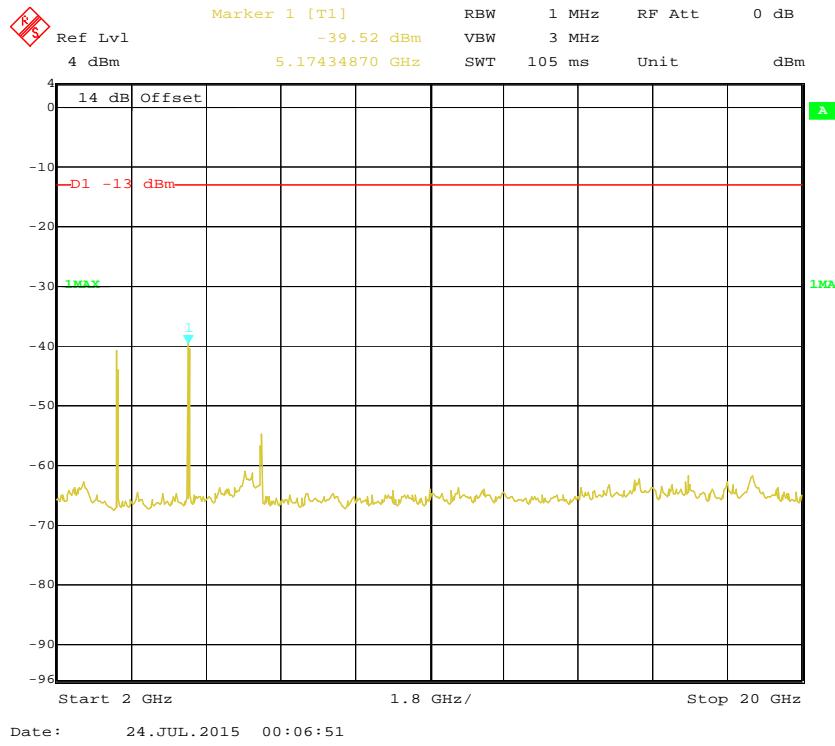
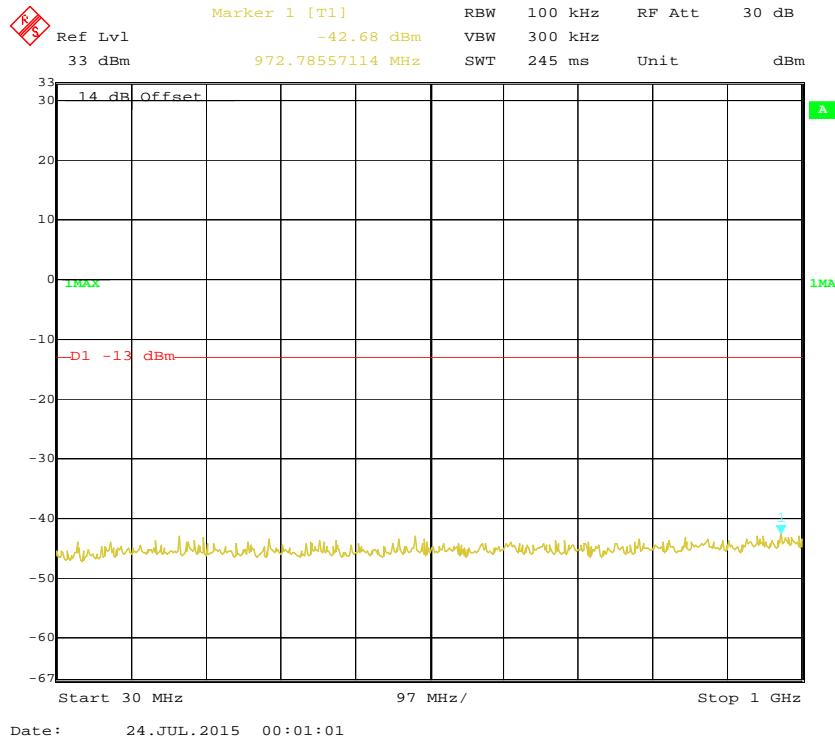
**1 GHz – 2 GHz (20.0 MHz, Middle Channel)****2 GHz – 20 GHz (20.0 MHz, Middle Channel)**

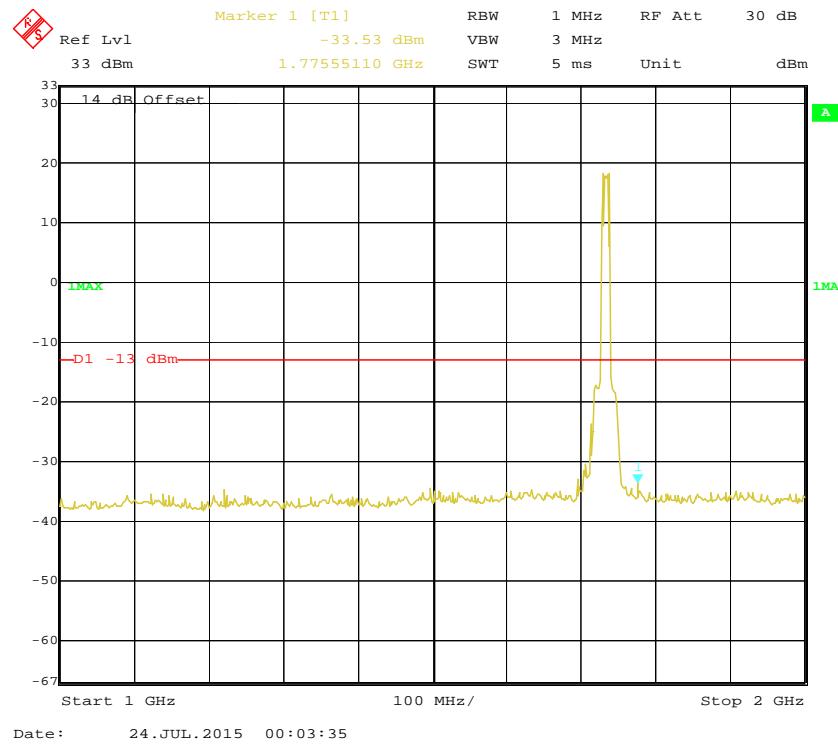
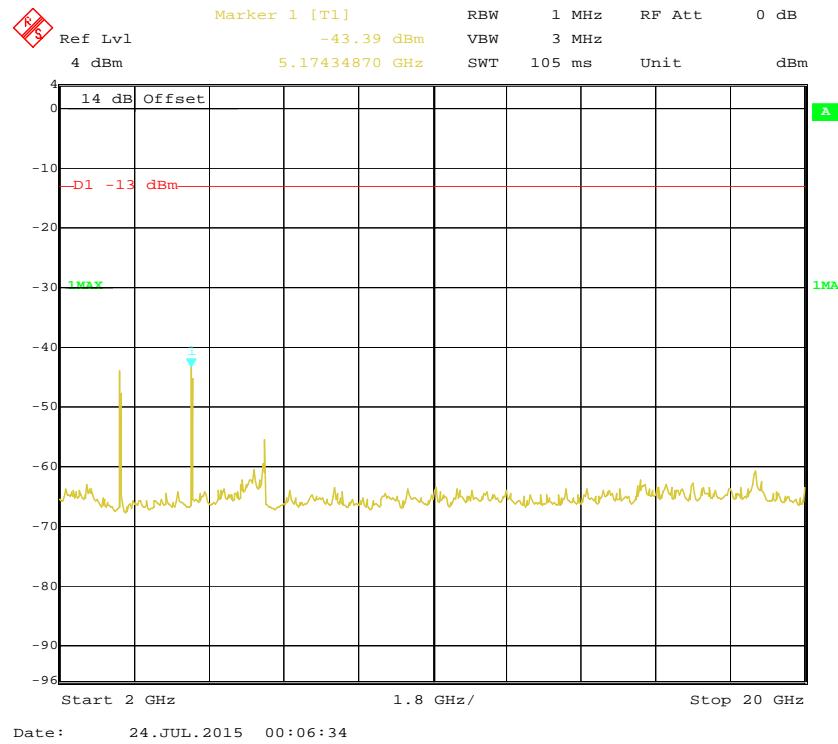
**Band 4:****30 MHz - 1 GHz (1.4 MHz, Middle Channel)****1 GHz - 2 GHz (1.4 MHz, Middle Channel)**

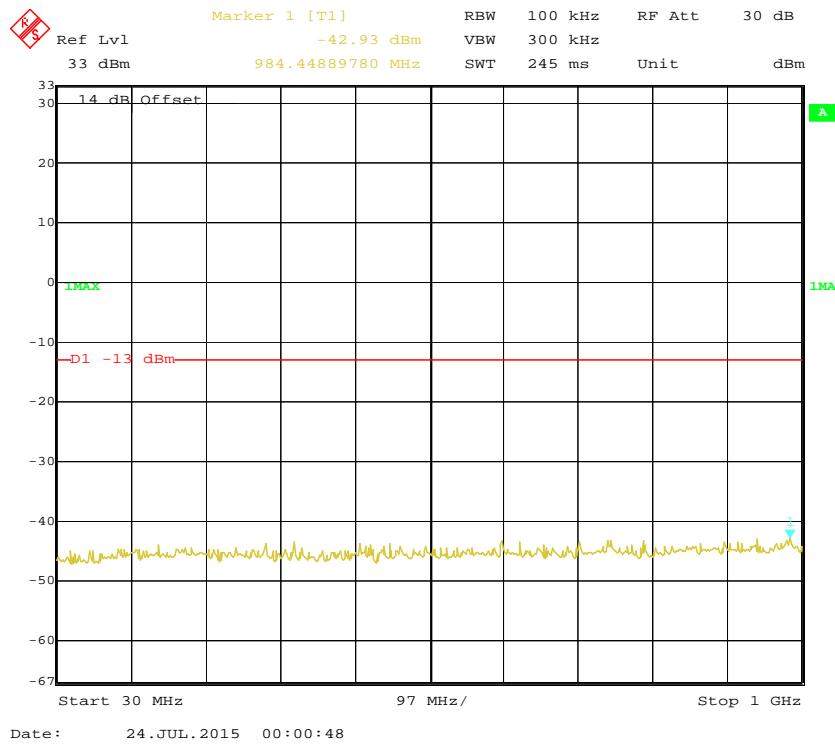
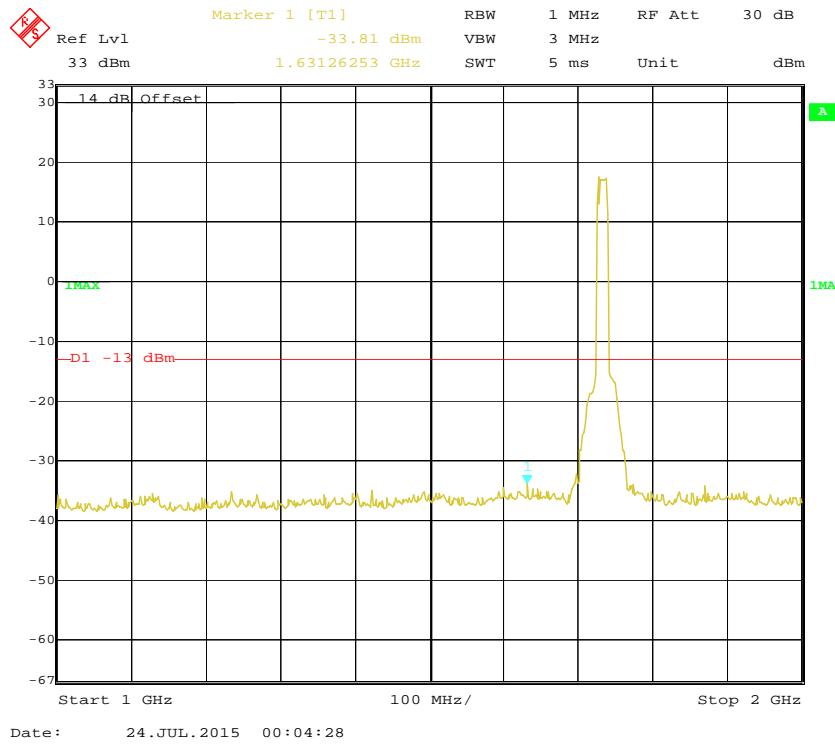
**2 GHz – 20 GHz (1.4 MHz, Middle Channel)****30 MHz - 1 GHz (3.0 MHz, Middle Channel)**

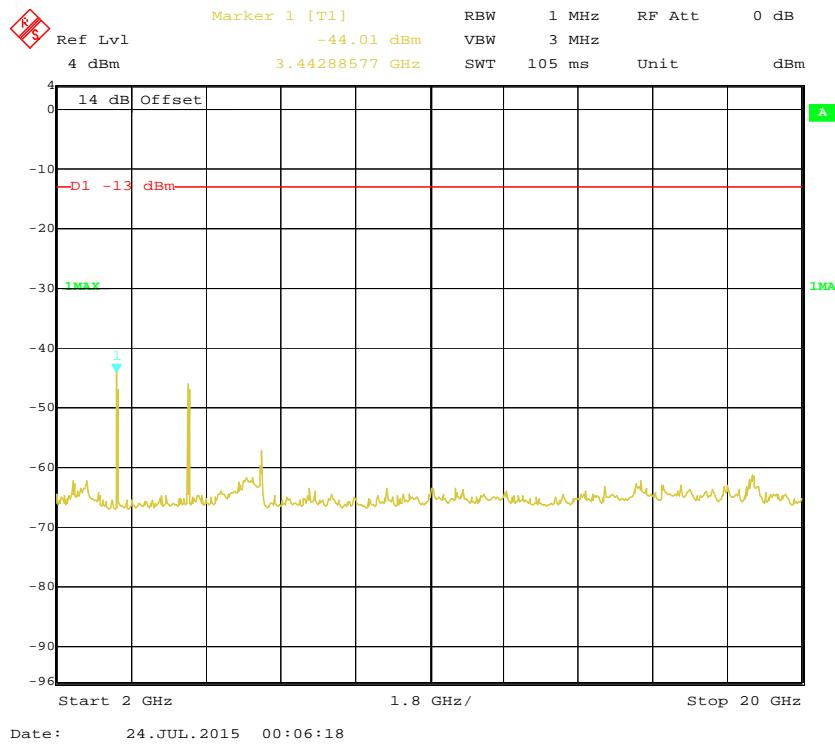
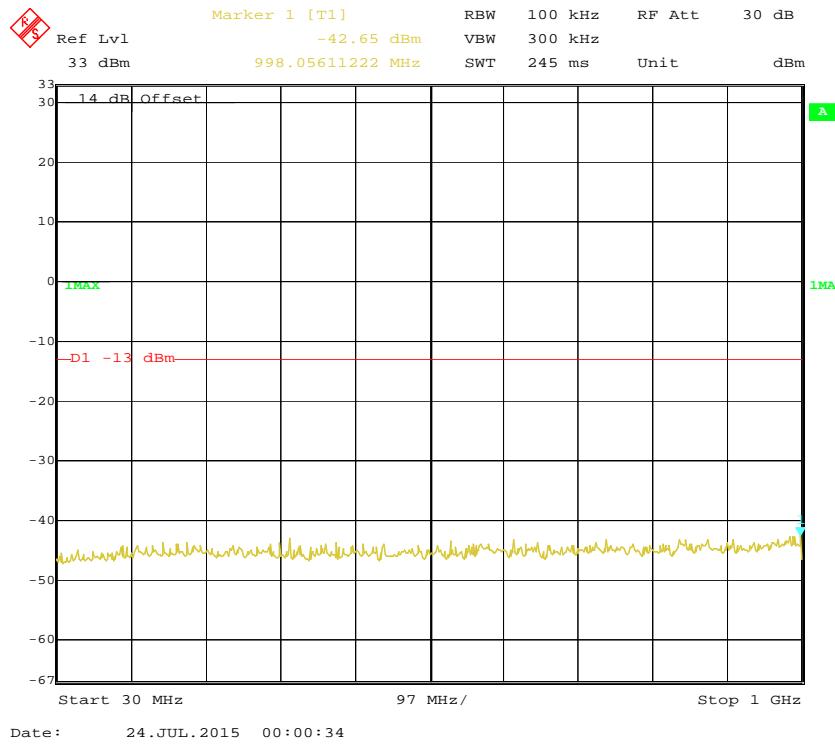
**1 GHz – 2 GHz (3.0 MHz, Middle Channel)****2 GHz – 20 GHz (3.0 MHz, Middle Channel)**

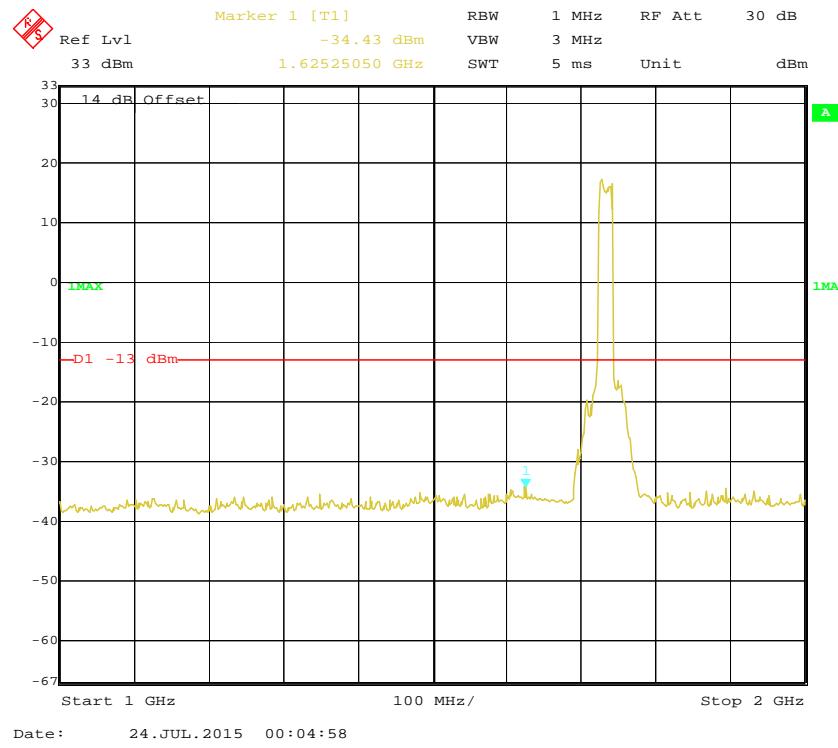
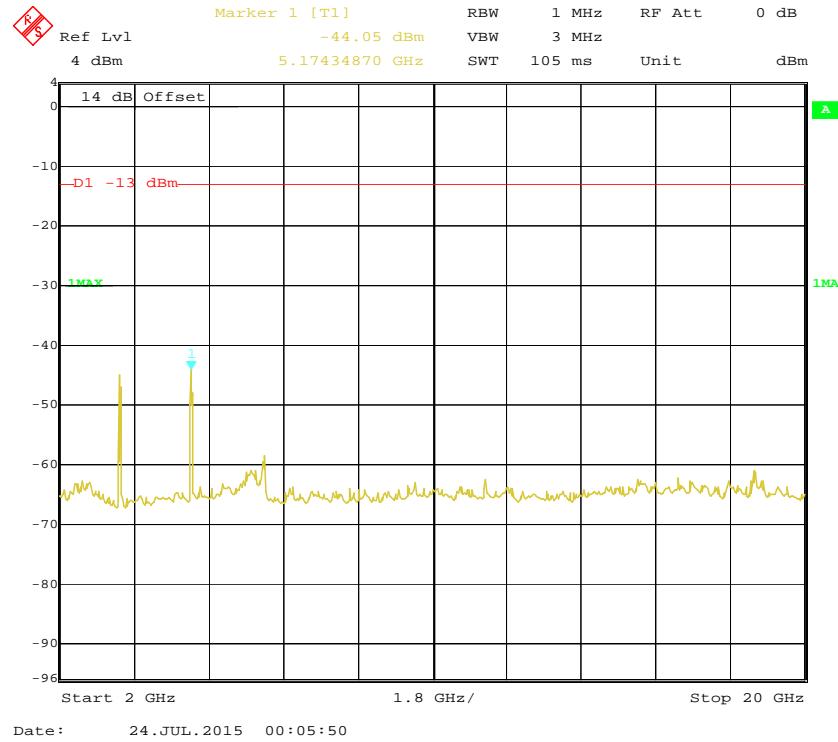
**30 MHz - 1 GHz (5.0 MHz, Middle Channel)****1 GHz – 2 GHz (5.0 MHz, Middle Channel)**

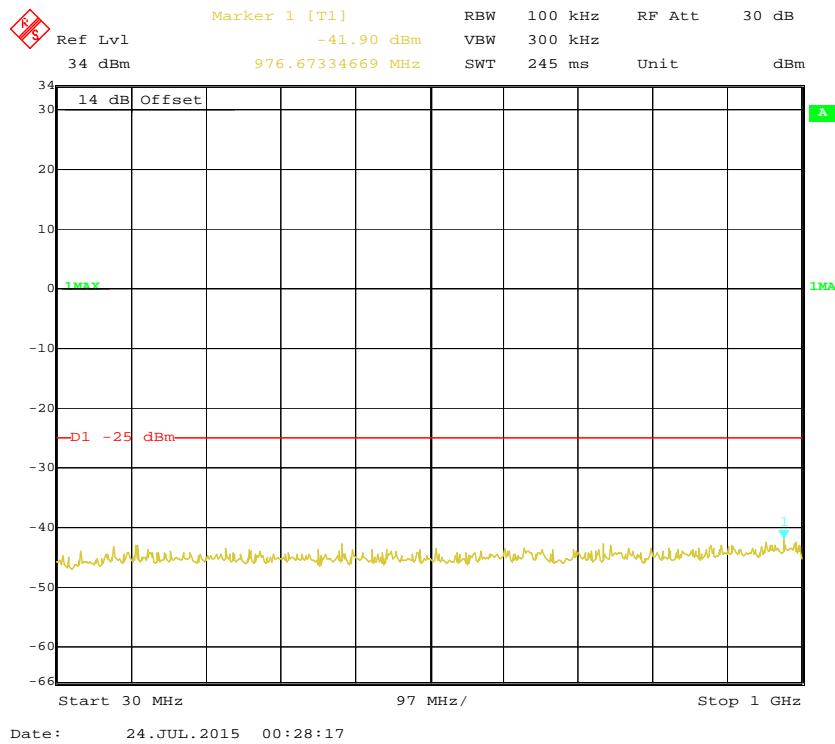
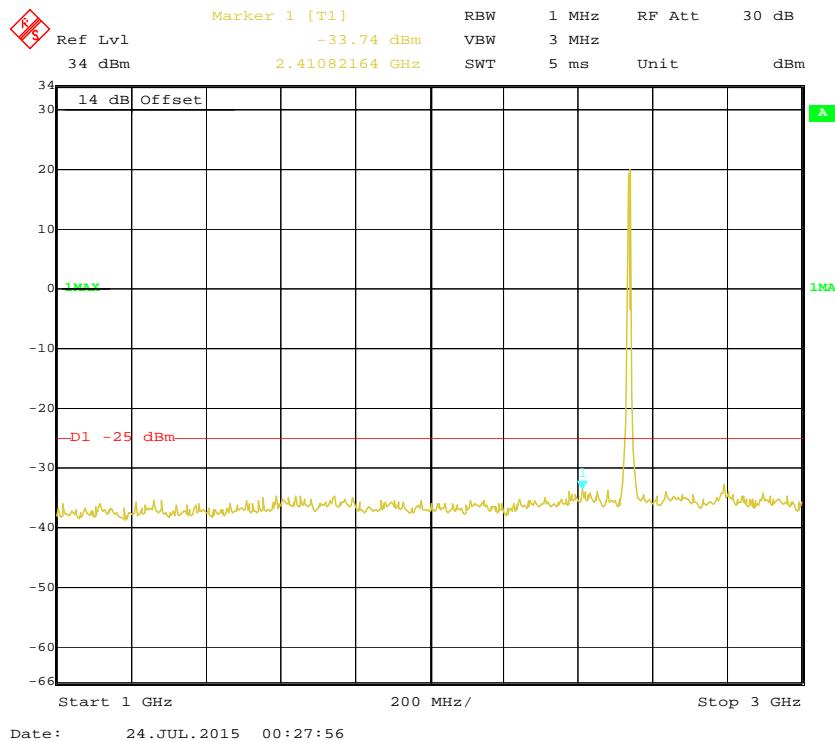
**2 GHz – 20 GHz (5.0 MHz, Middle Channel)****30 MHz - 1 GHz (10.0 MHz, Middle Channel)**

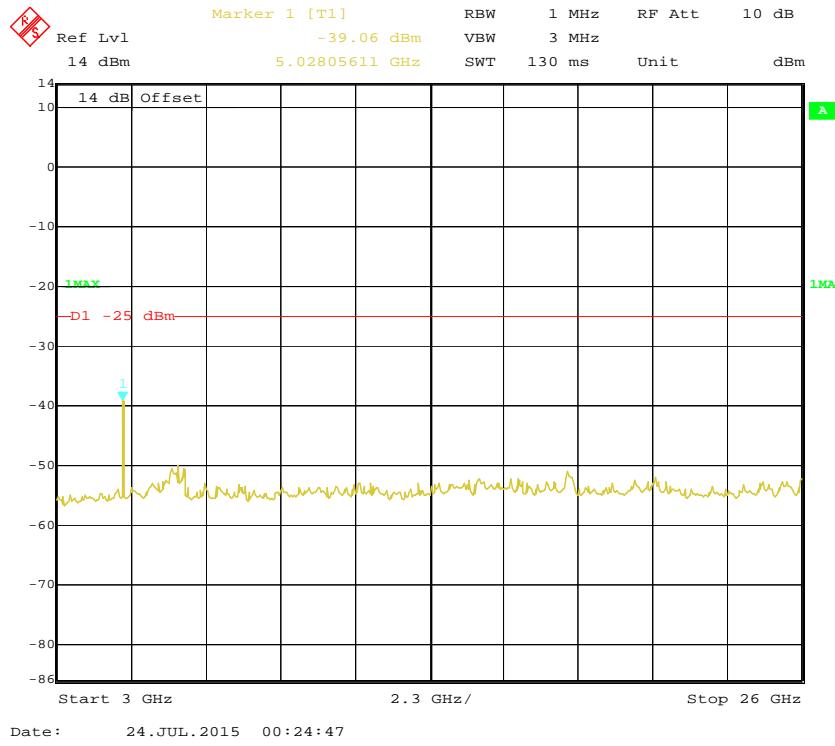
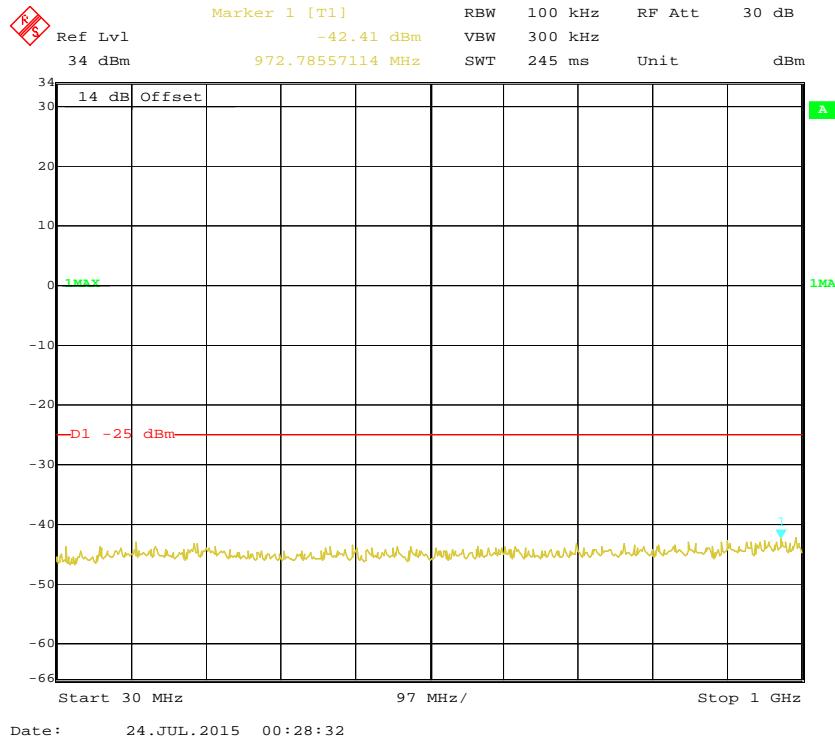
**1 GHz – 2 GHz (10.0 MHz, Middle Channel)****2 GHz – 20 GHz (10.0 MHz, Middle Channel)**

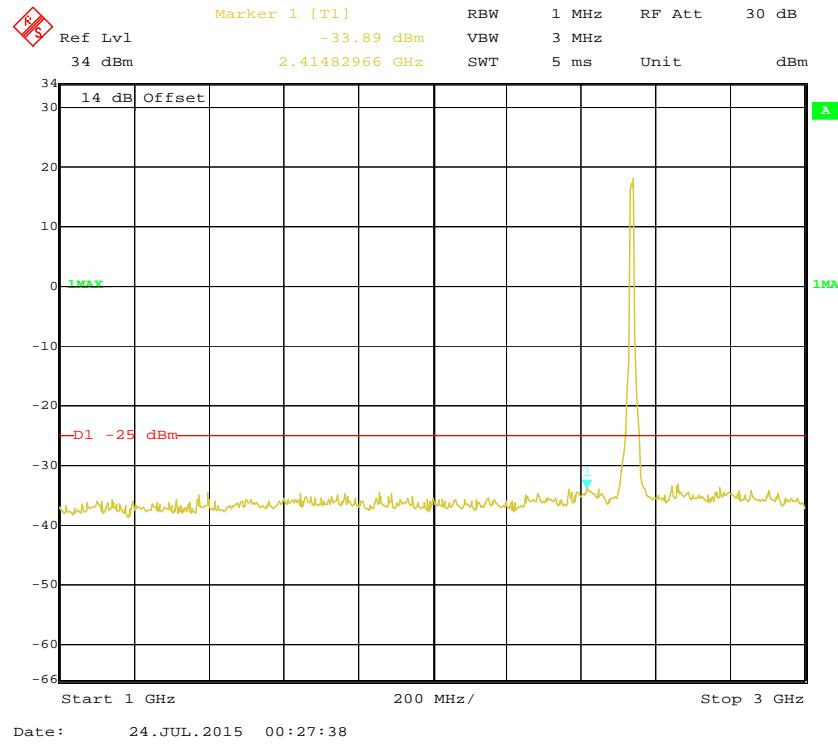
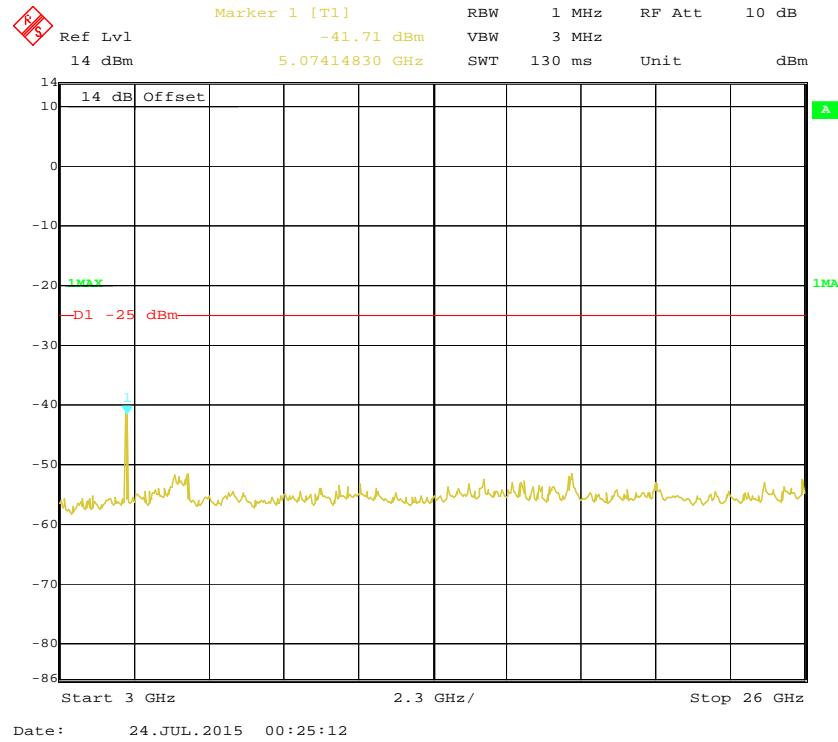
**30 MHz - 1 GHz (15.0 MHz, Middle Channel)****1 GHz - 2 GHz (15.0 MHz, Middle Channel)**

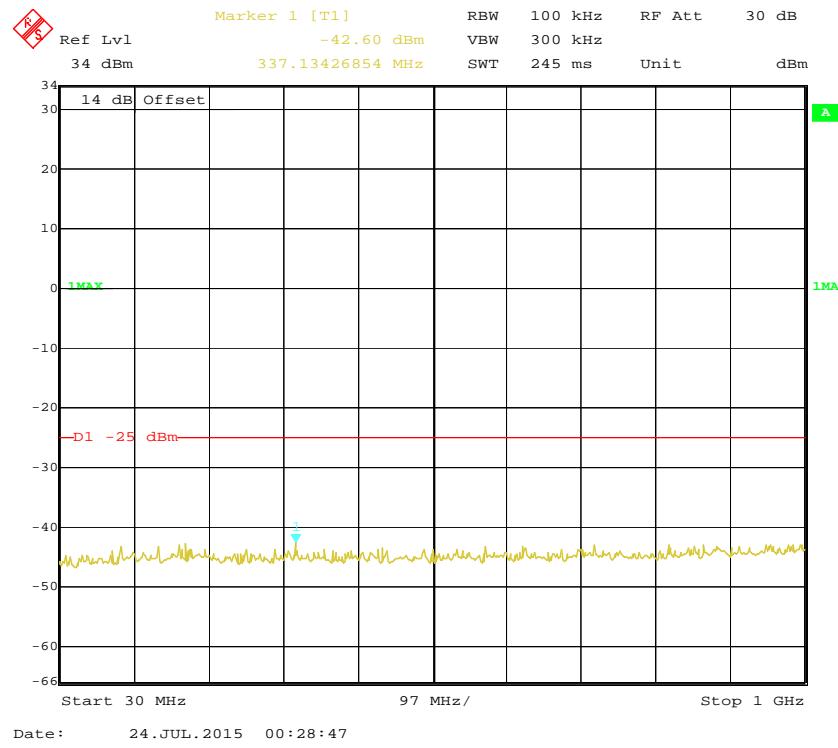
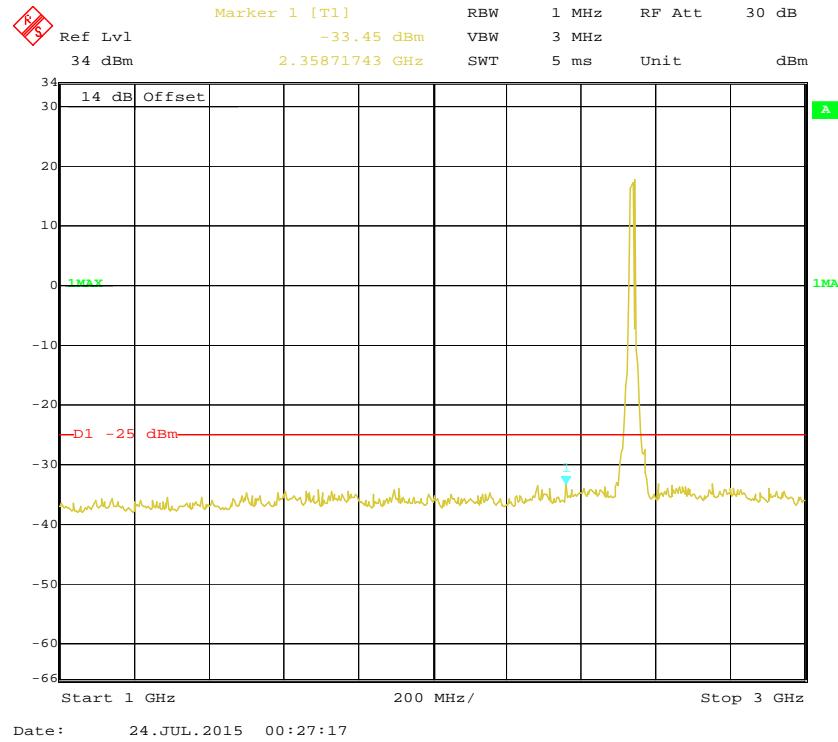
**2 GHz –20 GHz (15.0 MHz, Middle Channel)****30 MHz - 1 GHz (20.0 MHz, Middle Channel)**

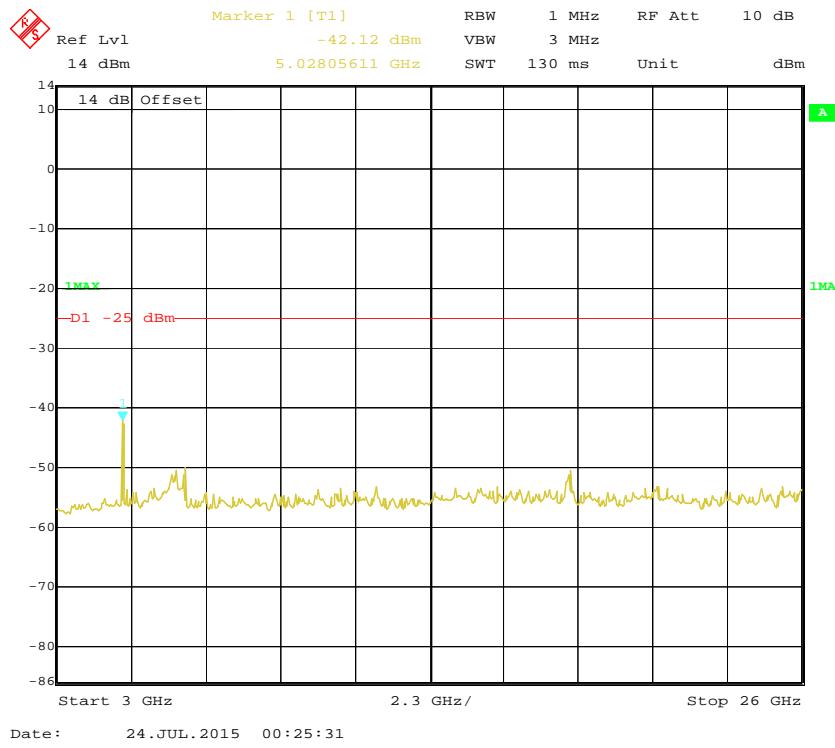
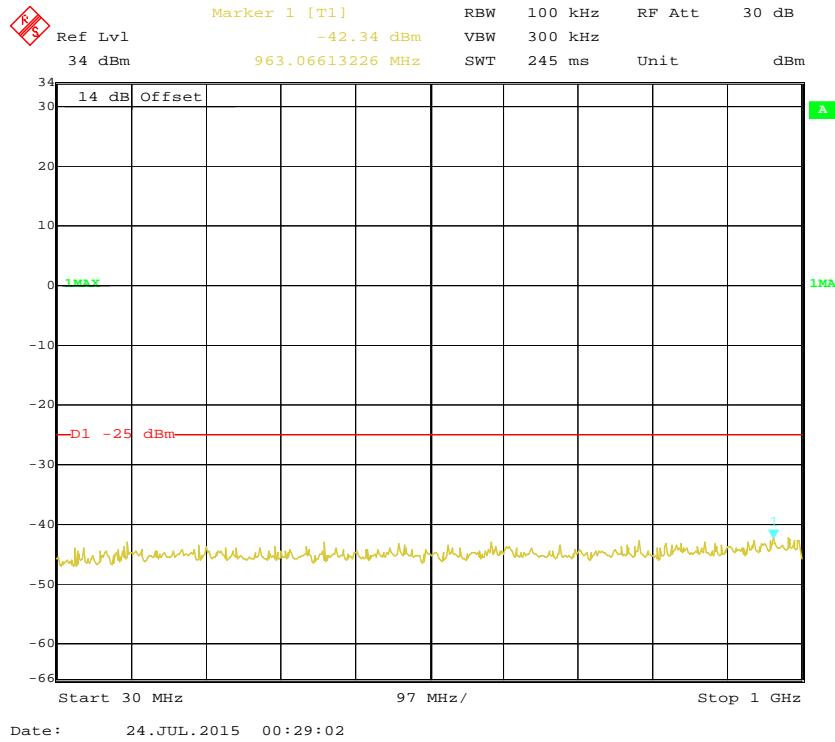
**1 GHz –2 GHz (20.0 MHz, Middle Channel)****2 GHz –20 GHz (20.0 MHz, Middle Channel)**

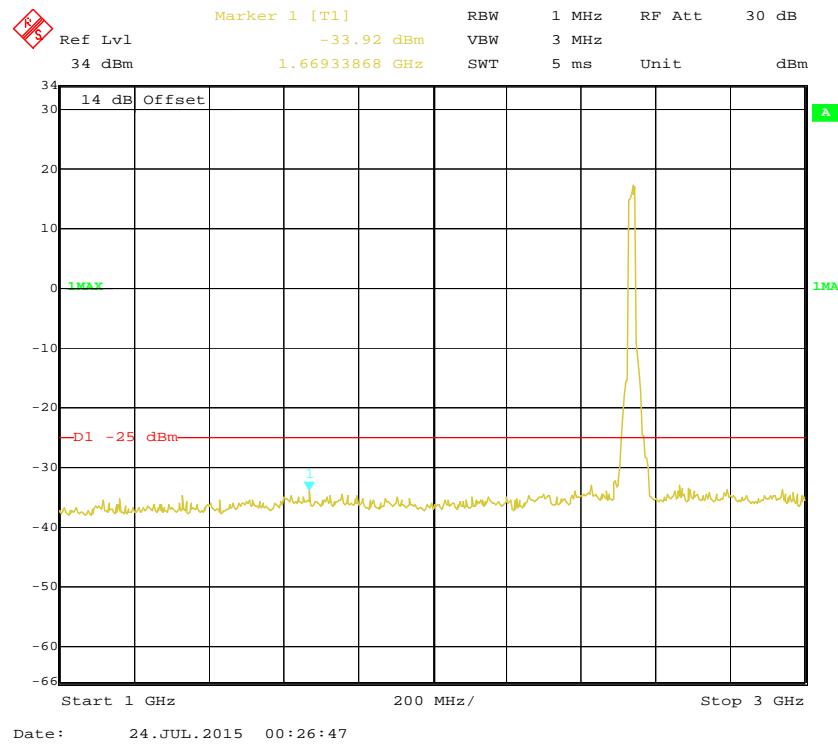
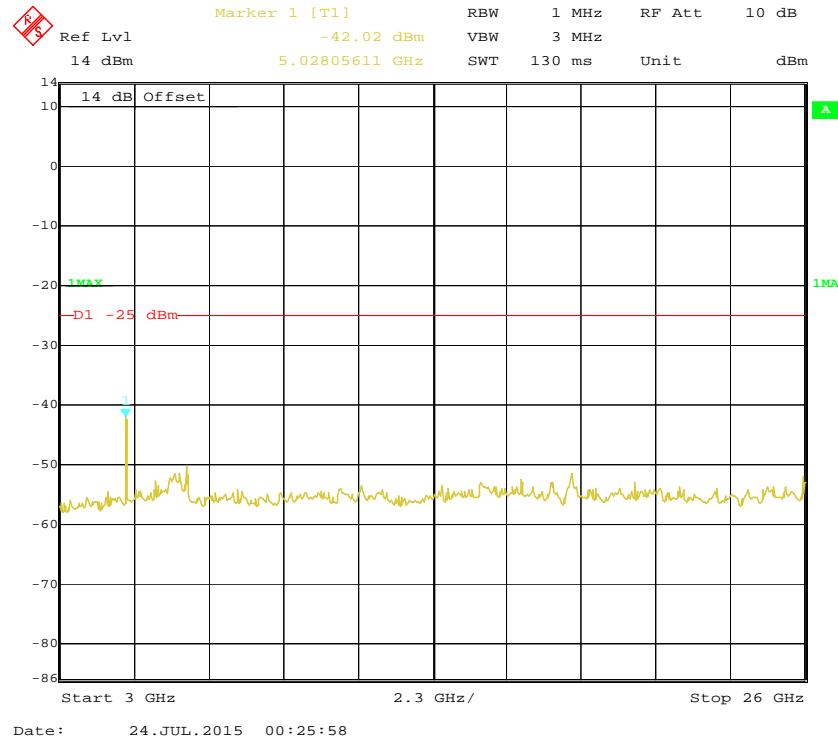
**Band 7****30 MHz - 1 GHz (5.0 MHz, Middle Channel)****1 GHz – 3 GHz (5.0 MHz, Middle Channel)**

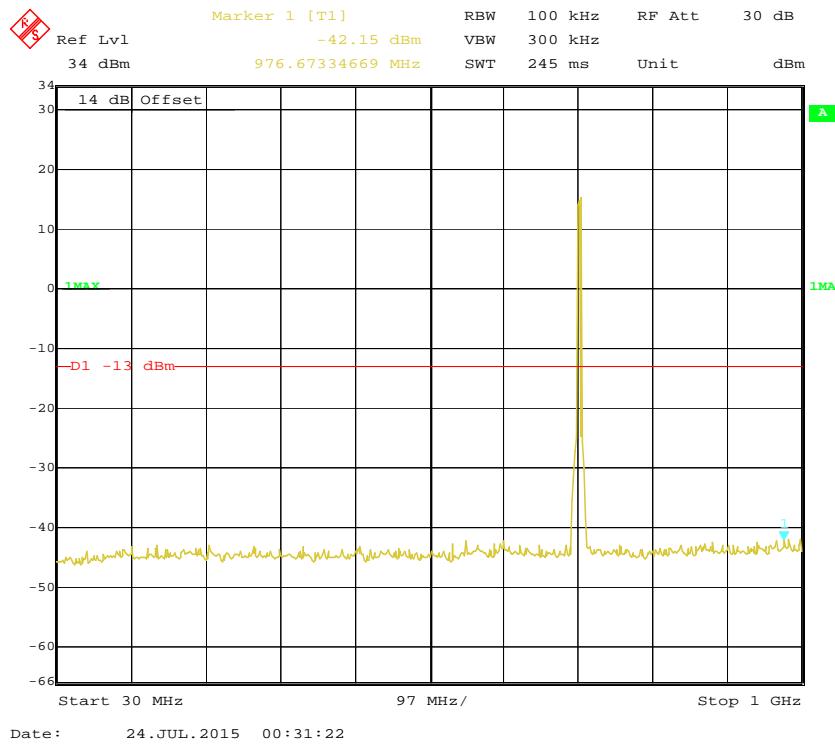
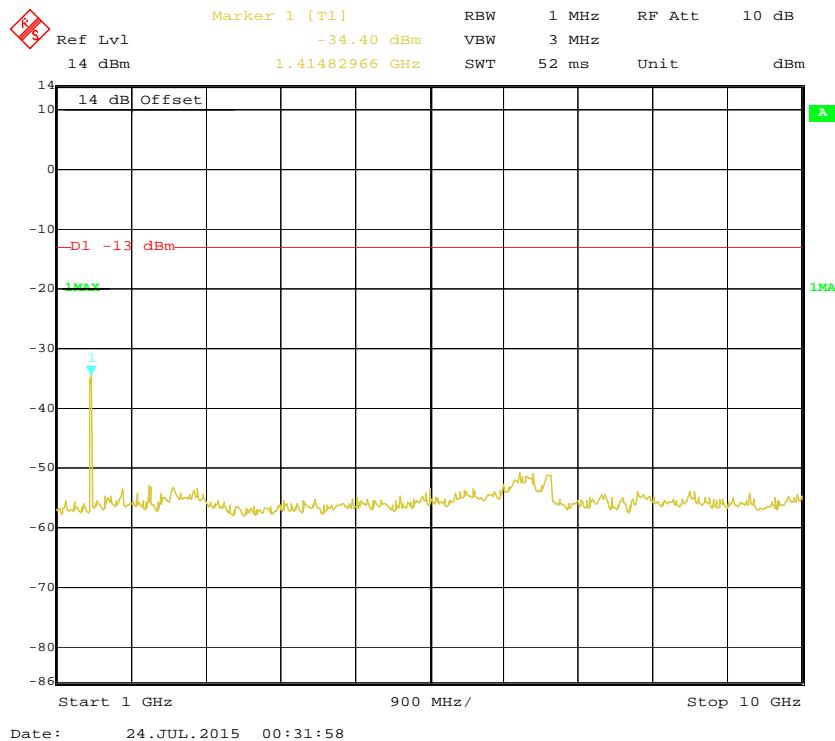
**3 GHz – 26 GHz (5.0 MHz, Middle Channel)****30 MHz - 1 GHz (10.0 MHz, Middle Channel)**

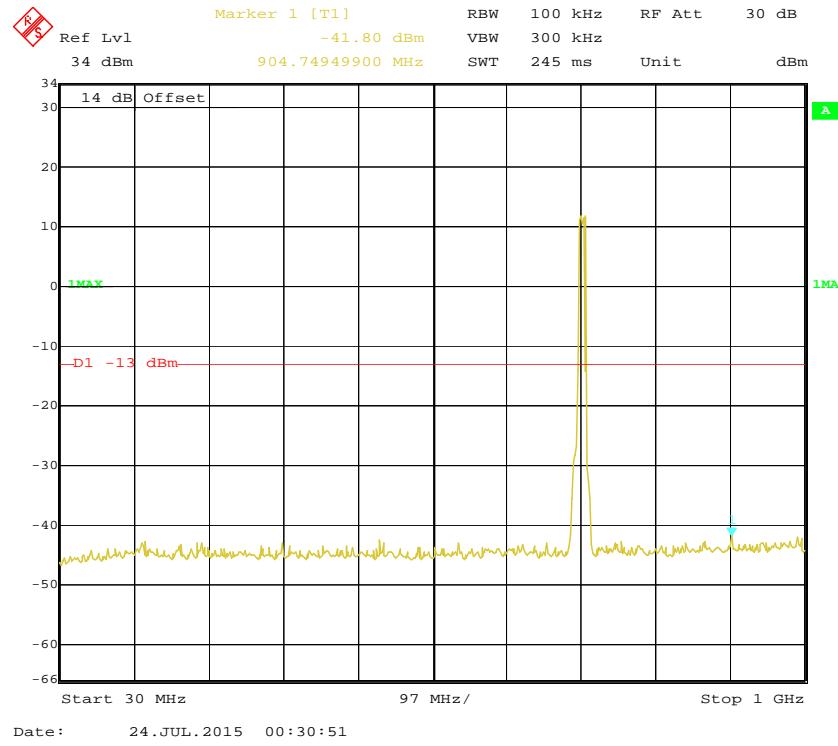
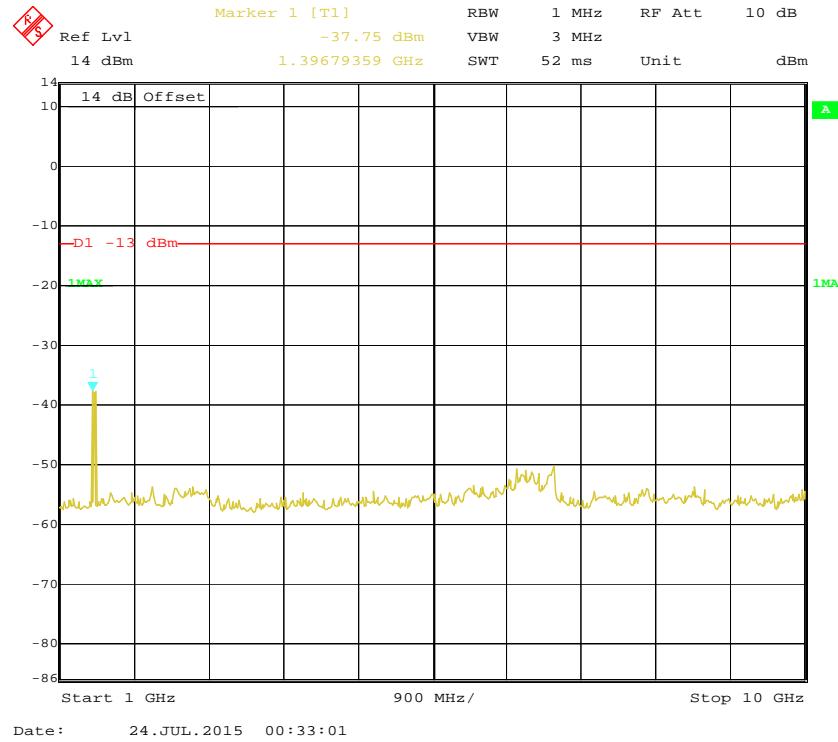
**1 GHz – 3 GHz (10.0 MHz, Middle Channel)****3 GHz – 26 GHz (10.0 MHz, Middle Channel)**

**30 MHz - 1 GHz (15.0 MHz, Middle Channel)****1 GHz - 3 GHz (15.0 MHz, Middle Channel)**

**3 GHz – 26 GHz (15.0 MHz, Middle Channel)****30 MHz - 1 GHz (20.0 MHz, Middle Channel)**

**1 GHz – 3 GHz (20.0 MHz, Middle Channel)****3 GHz – 26 GHz (20.0 MHz, Middle Channel)**

**Band 17:****30 MHz - 1 GHz (5.0 MHz, Middle Channel)****1 GHz – 10 GHz (5.0 MHz, Middle Channel)**

**30 MHz - 1 GHz (10.0 MHz, Middle Channel)****1 GHz – 10 GHz (10.0 MHz, Middle Channel)**

## FCC §2.1053, §22.917 & §24.238 & §27.53 - SPURIOUS RADIATED EMISSIONS

### Applicable Standards

FCC § 2.1053, §22.917 and § 24.238 and § 27.53.

For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log(P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log(P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log(P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log(P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log(P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

### Test Procedure

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

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

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

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

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

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

## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2014-12-01	2015-11-30
Sunol Sciences	Bi-log Antenna	JB1	A040904-2	2014-12-07	2017-12-06
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2015-04-27	2016-04-26
Mini-Circuits	Amplifier	ZVA-213+	N/A	NCR	NCR
HP	Amplifier	HP8447E	1937A01046	2015-05-06	2016-05-06
HP	Signal Generator	8341B	2624A00116	2015-06-03	2016-06-03
COM POWER	Dipole Antenna	AD-100	041000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2013-02-11	2016-02-10
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2014-11-03	2015-11-03
Electro-Mechanics	Horn Antenna	3116	9510-2270	2013-10-14	2016-10-13
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

\* **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

<b>Temperature:</b>	26
<b>Relative Humidity:</b>	50 %
<b>ATM Pressure:</b>	101.0 kPa

The testing was performed by Xiangguang Kong on 2015-07-28.

*Test mode: Transmitting (Pre-scan with all the bandwidth, and worse case as below)*

**30 MHz ~ 10 GHz:**

**Cellular Band (Part 22H)**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
GSM Mode, Low channel										
231.43	34.31	44	1.8	H	-62.7	0.31	0	-63.01	-13	50.01
231.43	35.96	72	1.7	V	-61.0	0.31	0	-61.31	-13	48.31
1648.40	42.35	8	1.9	H	-54.7	1.30	6.70	-49.30	-13	36.30
1648.40	40.28	135	2.2	V	-56.3	1.30	6.70	-50.90	-13	37.90
2472.60	38.17	235	2.3	H	-55.4	1.70	8.60	-48.50	-13	35.50
2472.60	39.57	190	1.5	V	-54.3	1.70	8.60	-47.40	-13	34.40
3296.80	38.25	145	1.8	H	-52.1	1.90	9.80	-44.20	-13	31.20
3296.80	37.61	98	2.2	V	-53.4	1.90	9.80	-45.50	-13	32.50
WCDMA Mode, High channel										
231.43	35.15	197	2.0	H	-61.8	0.31	0	-62.11	-13	49.11
231.43	34.07	275	2.1	V	-62.9	0.31	0	-63.21	-13	50.21
1693.20	39.24	125	2.3	H	-56.5	1.60	6.90	-51.20	-13	38.20
1693.20	38.62	80	1.7	V	-57.5	1.60	6.90	-52.20	-13	39.20
2539.80	38.13	272	1.9	H	-55.4	1.70	8.60	-48.50	-13	35.50
2539.80	36.37	297	1.1	V	-57.5	1.70	8.60	-50.60	-13	37.60

**30 MHz ~ 20 GHz:****PCS Band (Part 24E)**

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	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)
GSM Mode, High channel										
231.43	35.24	219	1.5	H	-61.8	0.31	0	-62.11	-13	49.11
231.43	34.50	347	1.8	V	-62.5	0.31	0	-62.81	-13	49.81
3819.60	40.14	351	1.3	H	-46.9	1.90	9.90	-38.90	-13	25.90
3819.60	39.34	68	1.1	V	-47.3	1.90	9.90	-39.30	-13	26.30
5729.40	38.67	126	2.0	H	-45.7	2.10	10.30	-37.50	-13	24.50
5729.40	37.58	28	1.9	V	-46.3	2.10	10.30	-38.10	-13	25.10
WCDMA Mode, High channel										
231.43	35.38	343	1.8	H	-61.6	0.31	0	-61.91	-13	48.91
231.43	34.88	297	2.1	V	-62.1	0.31	0	-62.41	-13	49.41
3815.20	38.98	250	1.2	H	-50.1	1.90	9.90	-42.10	-13	29.10
3815.20	37.24	36	1.2	V	-51.4	1.90	9.90	-43.40	-13	30.40
5722.80	37.83	218	2.1	H	-48.7	2.10	10.30	-40.50	-13	27.50
5722.80	36.62	123	1.6	V	-49.4	2.10	10.30	-41.20	-13	28.20

Frequency (MHz)	Receiver Reading (dB $\mu$ V)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27	
			Height (m)	Polar (H/V)	SG Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
<b>Band 2</b>										
231.43	33.65	232	1.2	H	-63.3	0.31	0	-63.61	-13	50.61
231.43	32.69	103	2.4	V	-64.3	0.31	0	-64.61	-13	51.61
3760.00	39.31	107	2.0	H	-47.7	1.90	9.90	-39.70	-13	26.70
3760.00	38.54	286	1.5	V	-48.1	1.90	9.90	-40.10	-13	27.10
5640.00	38.71	221	1.3	H	-43.8	2.10	10.30	-35.60	-13	22.60
5640.00	37.66	120	2.5	V	-44.3	2.10	10.30	-36.10	-13	23.10
<b>Band 4</b>										
231.43	33.49	258	2.3	H	-63.5	0.31	0	-63.81	-13	50.81
231.43	32.42	15	2.2	V	-64.6	0.31	0	-64.91	-13	51.91
3465.00	39.04	281	2.0	H	-44.8	1.90	10.00	-36.70	-13	23.70
3465.00	38.41	123	1.7	V	-45.6	1.90	10.00	-37.50	-13	24.50
5197.50	41.35	163	2.5	H	-40.9	1.80	10.10	-32.60	-13	19.60
5197.50	39.40	19	2.4	V	-42.2	1.80	10.10	-33.90	-13	20.90
<b>Band 7</b>										
231.43	33.89	140	2.2	H	-63.1	0.31	0	-63.41	-25	38.41
231.43	32.23	259	1.4	V	-64.8	0.31	0	-65.11	-25	40.11
5070.00	39.47	293	1.3	H	-47.7	2.30	10.10	-39.90	-25	14.90
5070.00	38.21	243	1.5	V	-48.2	2.30	10.10	-40.40	-25	15.40
7605.00	37.63	37	1.8	H	-40.2	4.70	10.80	-34.10	-25	9.10
7605.00	38.11	22	2.5	V	-40.6	4.70	10.80	-34.50	-25	9.50
<b>Band 7</b>										
231.43	33.88	168	2.5	H	-63.1	0.31	0	-63.41	-13	50.41
231.43	32.35	293	2.3	V	-64.6	0.31	0	-64.91	-13	51.91
1420.00	41.35	17	1.5	H	-55.3	1.20	6.40	-50.10	-13	37.10
1420.00	40.69	218	1.7	V	-56.0	1.20	6.40	-50.80	-13	37.80
2130.00	38.46	140	1.2	H	-54.1	1.60	7.80	-47.90	-13	34.90
2130.00	37.48	214	1.8	V	-54.7	1.60	7.80	-48.50	-13	35.50

**Note:**

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

## FCC §22.917(a) & §24.238(a) & §27.53 - BAND EDGES

### Applicable Standards

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

According to §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.

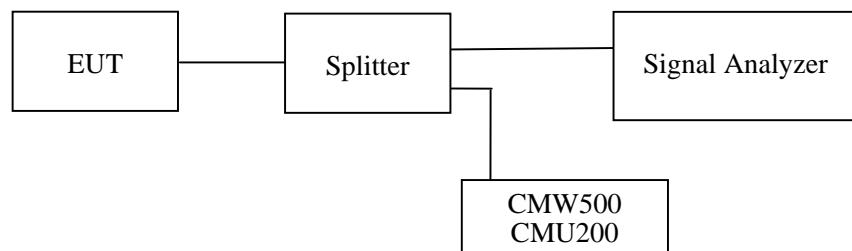
According to FCC §27.53, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

### 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	EMI Test Receiver	ESR	1316.3003K03-101746-zn	2015-06-13	2016-06-13
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2015-04-27	2016-04-26
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

\* **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).

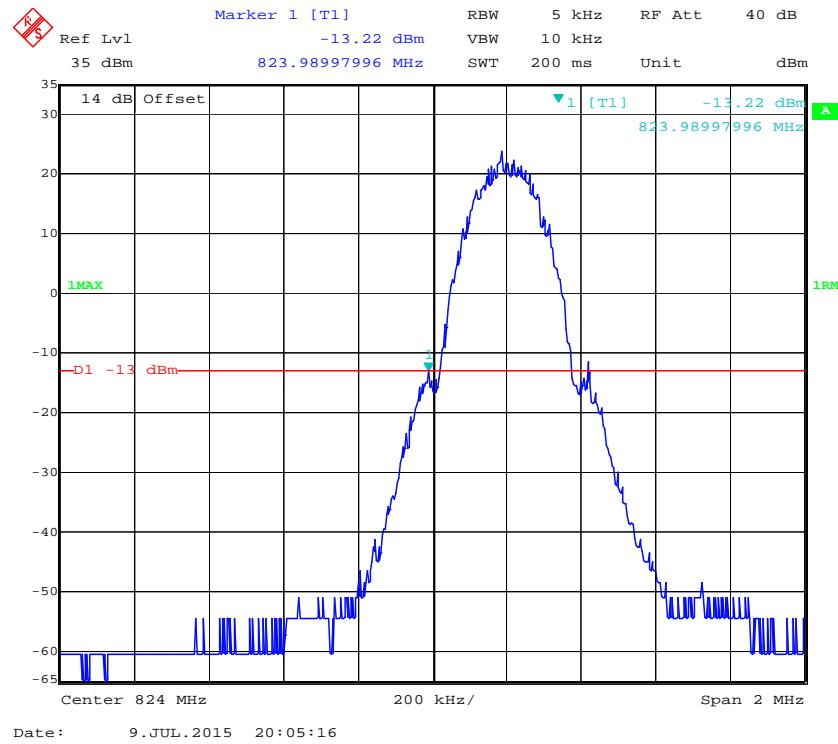
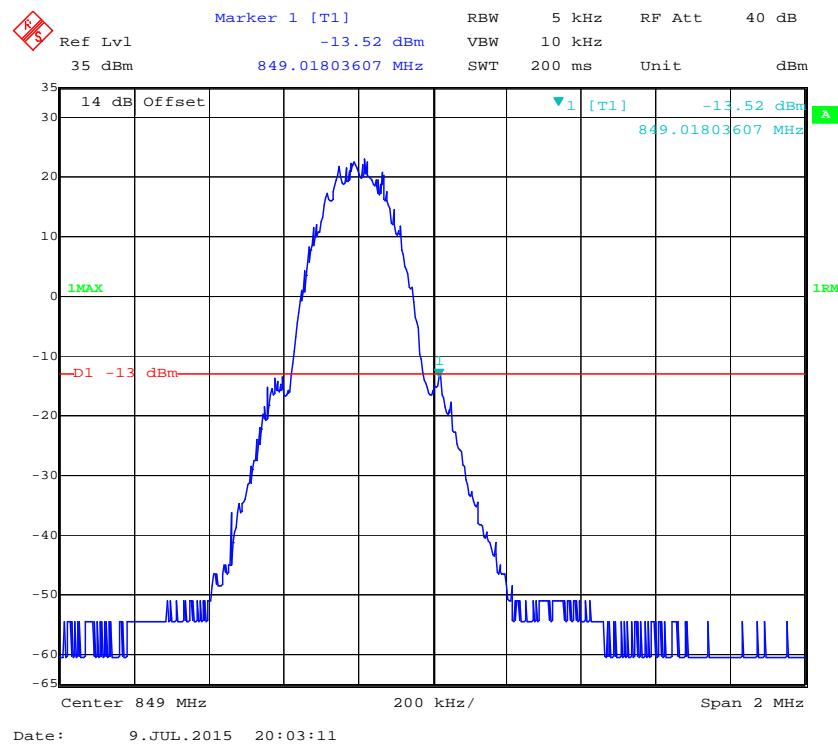
**Test Data****Environmental Conditions**

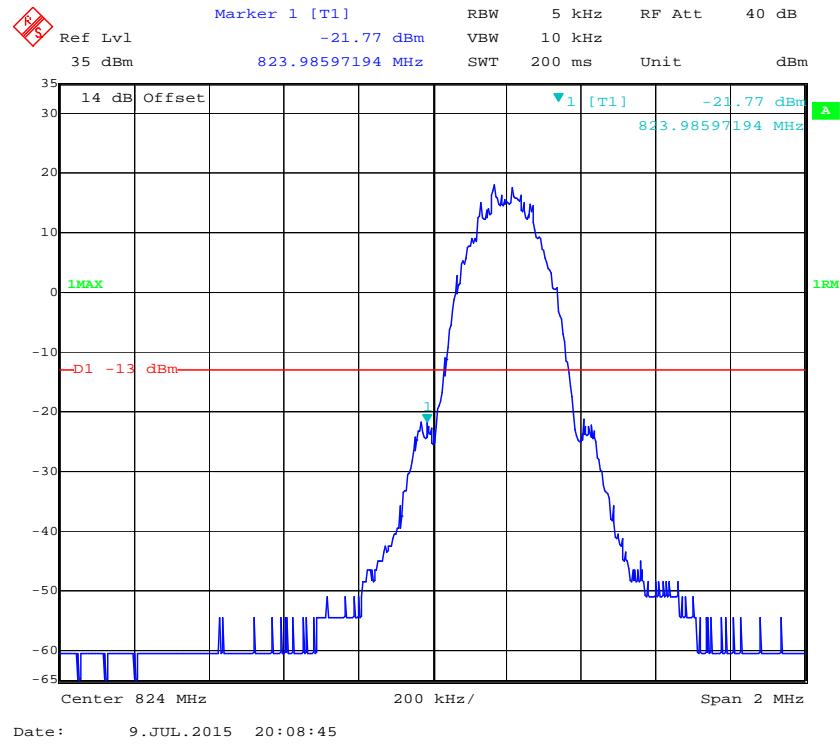
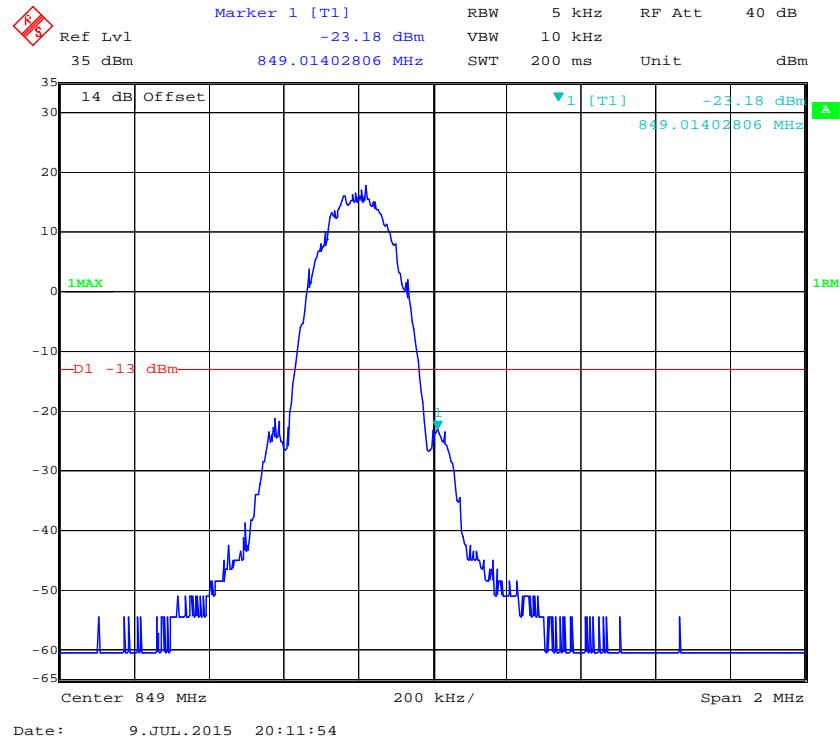
<b>Temperature:</b>	23~26
<b>Relative Humidity:</b>	48~53 %
<b>ATM Pressure:</b>	100.0~101.0 kPa

*The testing was performed by Xiangguang Kong from 2015-07-09 to 2015-07-29.*

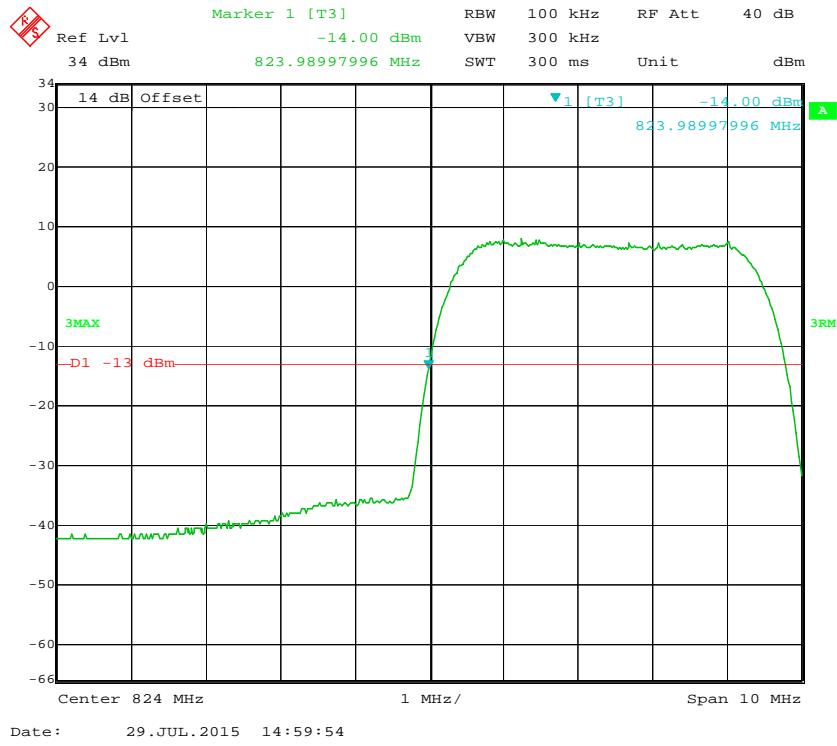
*EUT operation mode: Transmitting*

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

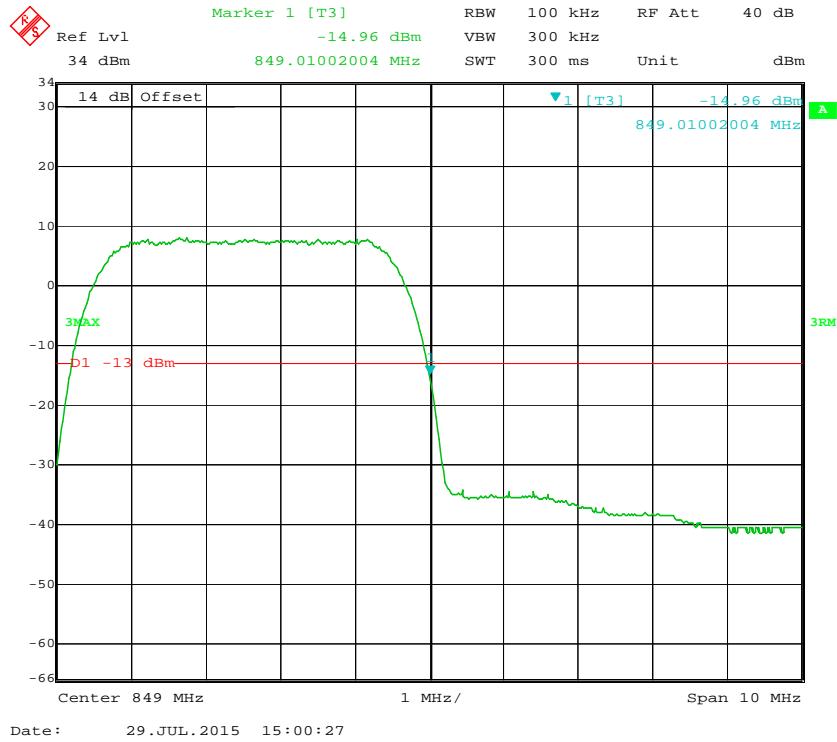
**Cellular Band, Left Band Edge for GSM (GMSK) Mode****Cellular Band, Right Band Edge for GSM (GMSK) Mode**

**Cellular Band, Left Band Edge for EGPRS Mode****Cellular Band, Right Band Edge for EGPRS Mode**

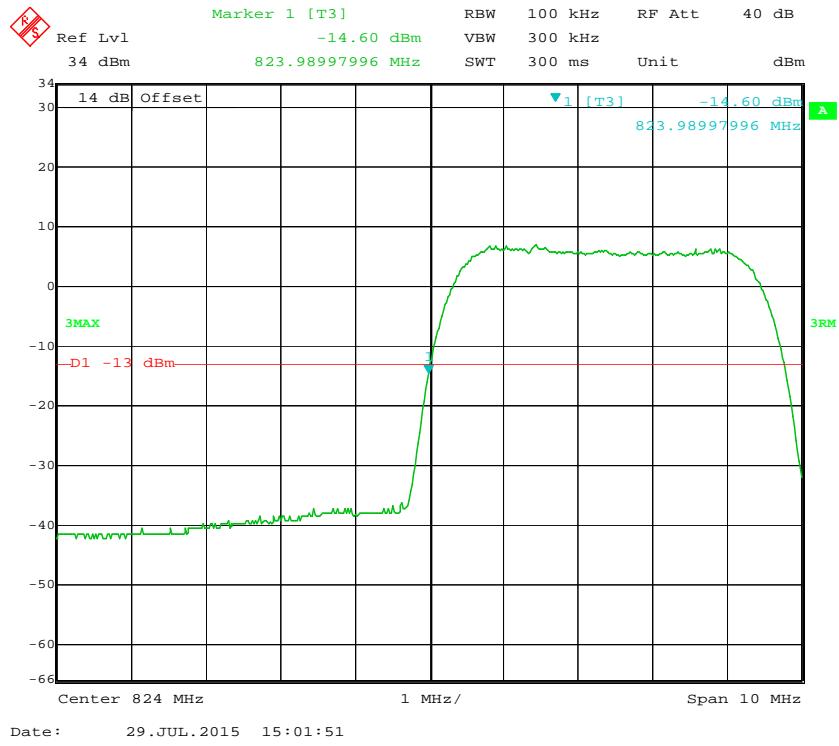
### Cellular Band, Left Band Edge for WCDMA (BPSK) Mode



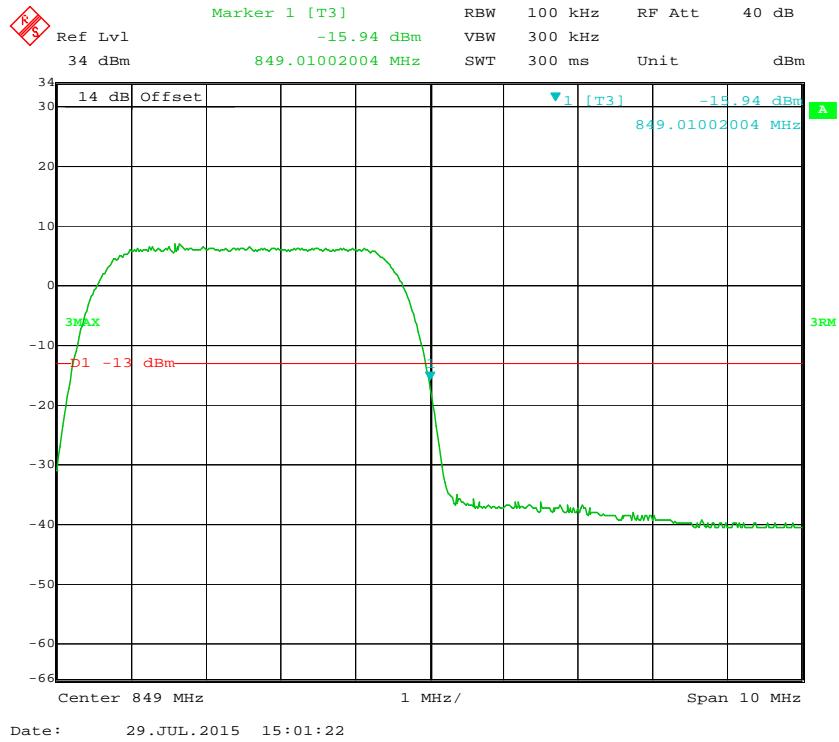
### Cellular Band, Right Band Edge for WCDMA (BPSK) Mode

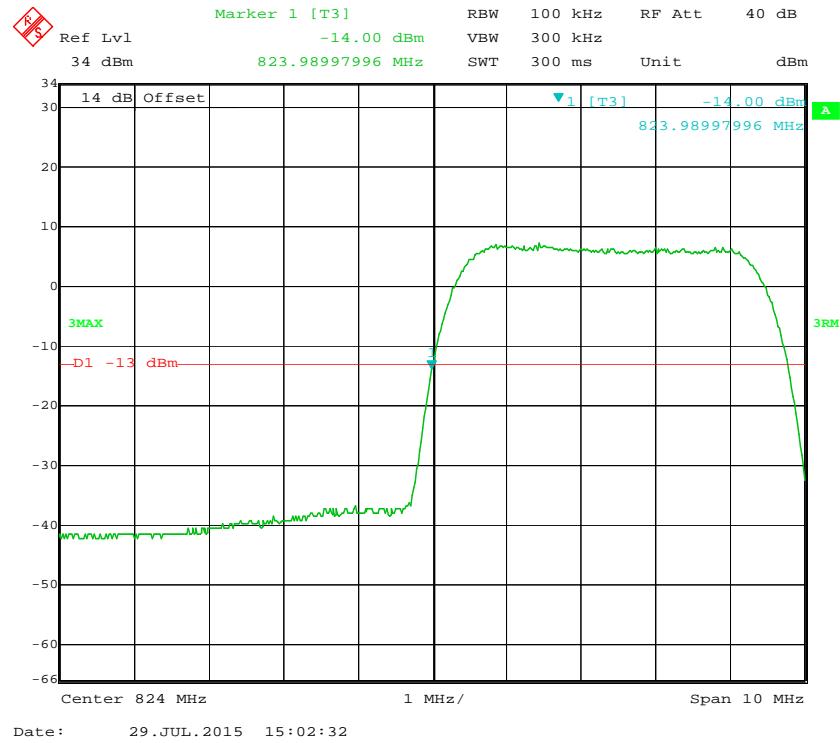
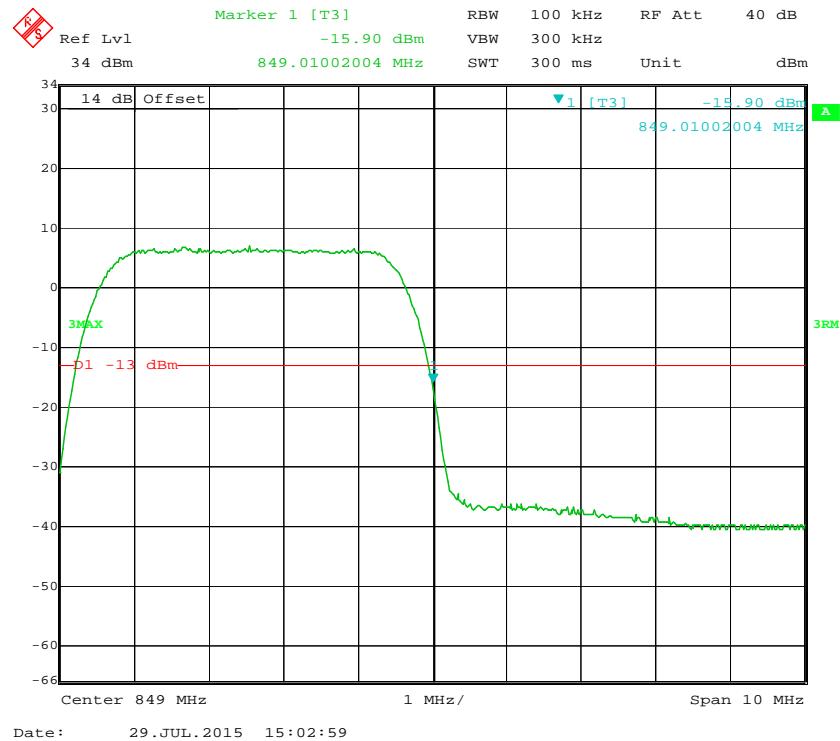


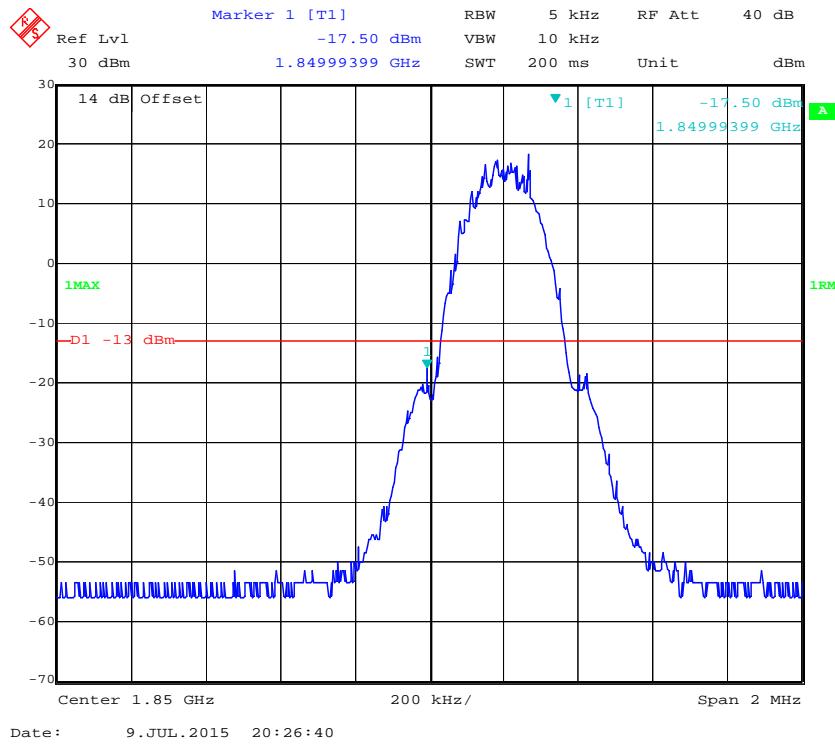
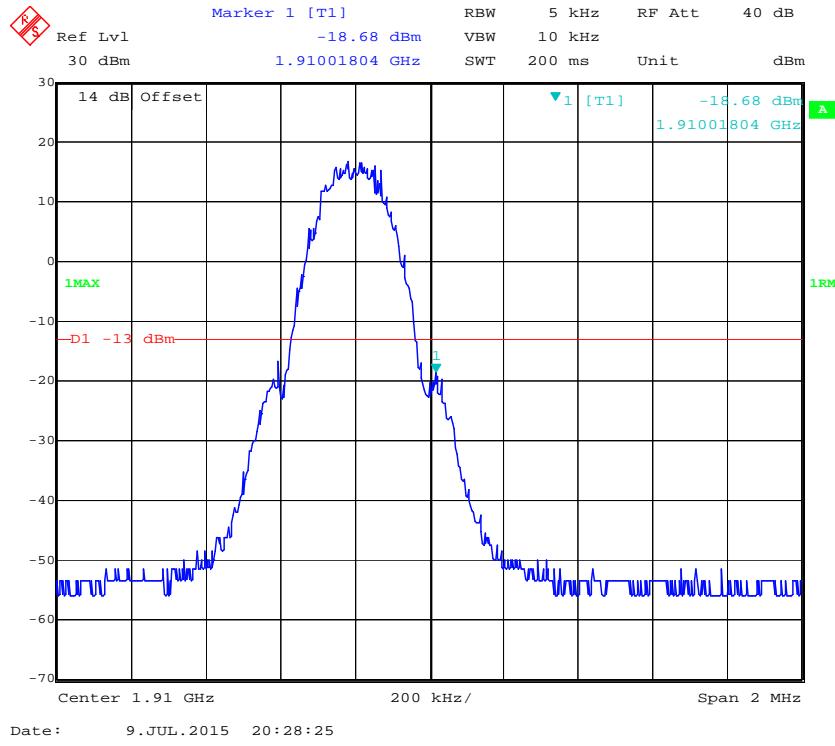
### Cellular Band, Left Band Edge for HSDPA (16QAM) Mode

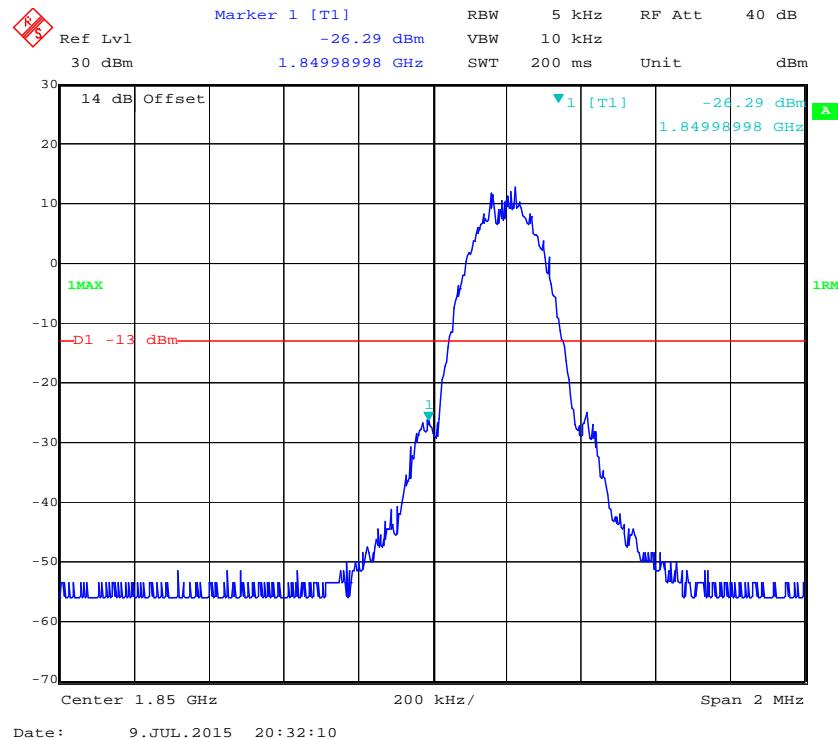
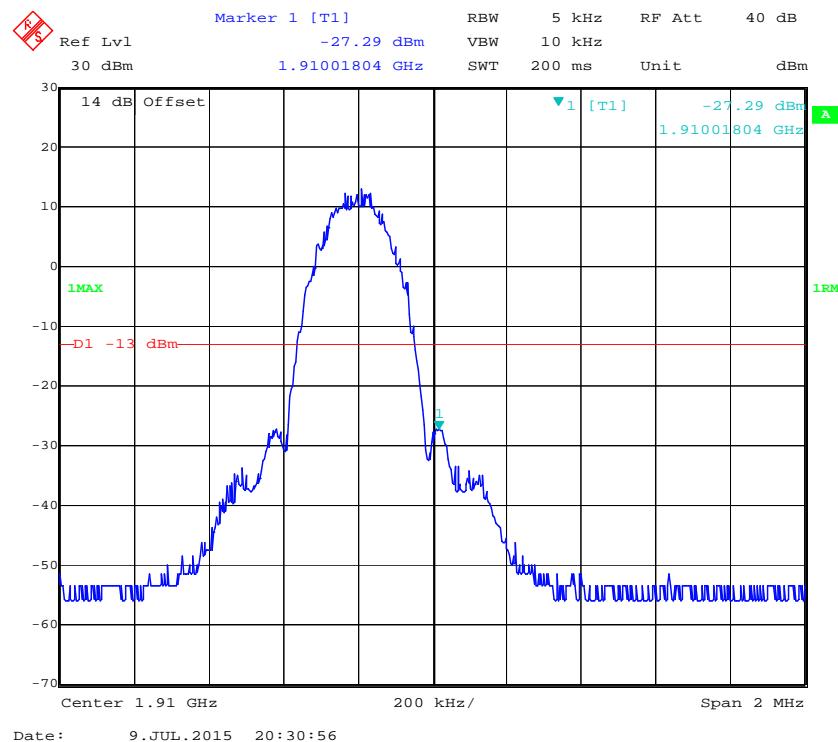


### Cellular Band, Right Band Edge for HSDPA (16QAM) Mode

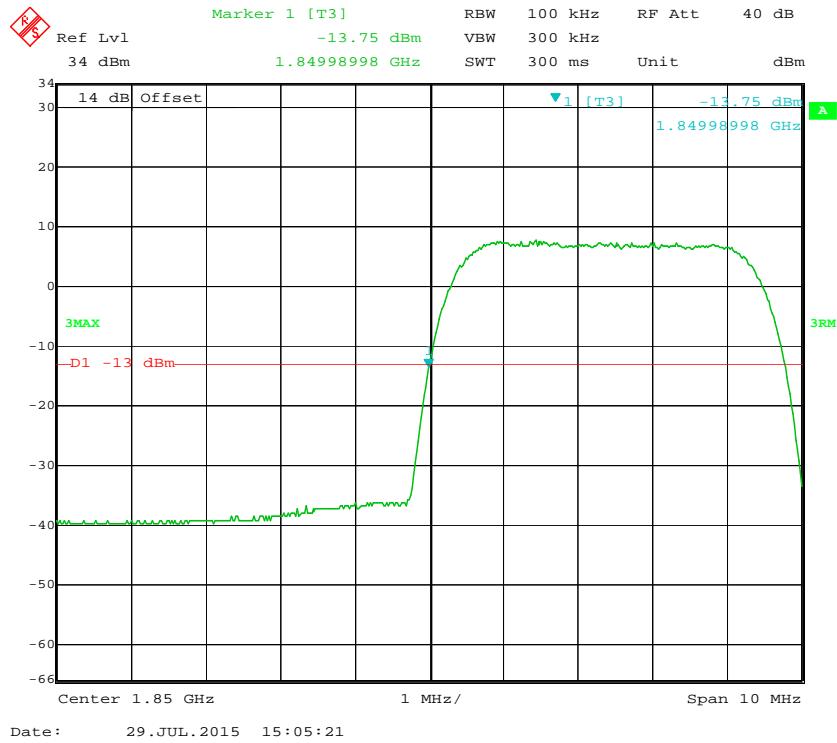


**Cellular Band, Left Band Edge for HSUPA (BPSK) Mode****Cellular Band, Right Band Edge for HSUPA (BPSK) Mode**

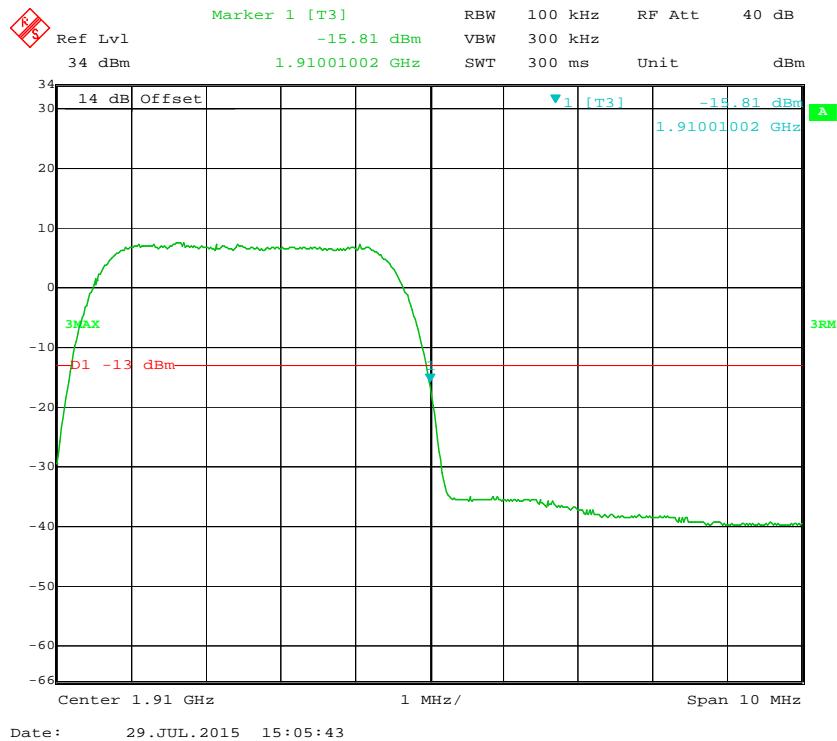
**PCS Band, Left Band Edge for GSM (GMSK) Mode****PCS Band, Right Band Edge for GSM (GMSK) Mode**

**PCS Band, Left Band Edge for EGPRS Mode****PCS Band, Right Band Edge for EGPRS Mode**

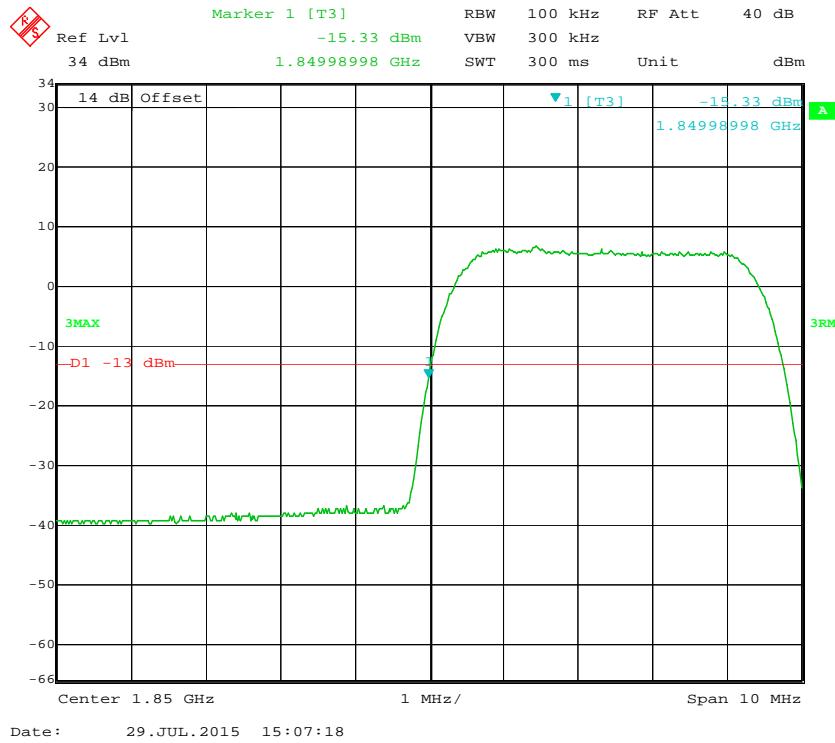
### PCS Band, Left Band Edge for WCDMA (BPSK) Mode



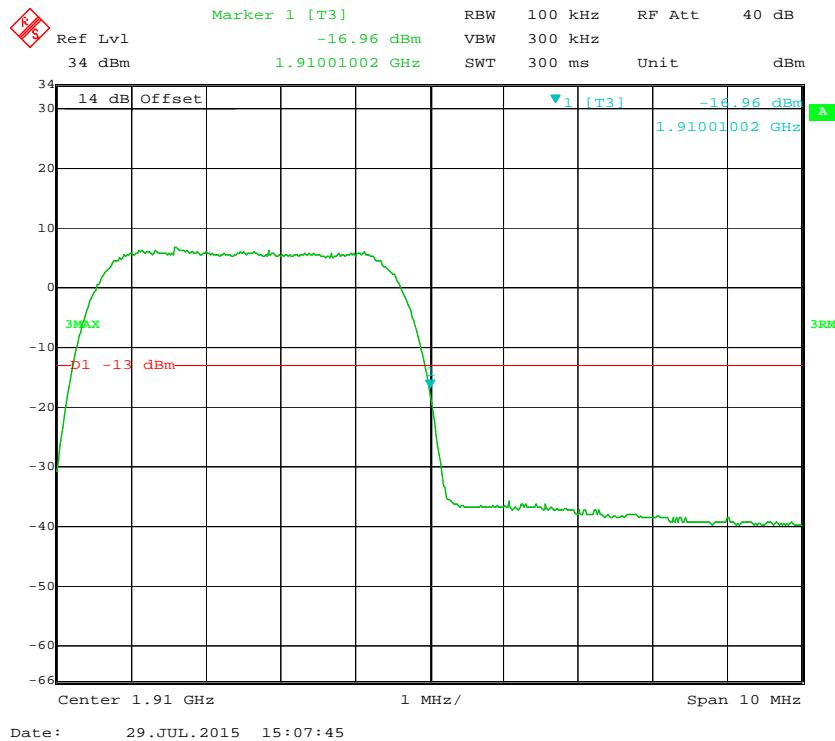
### PCS Band, Right Band Edge for WCDMA (BPSK) Mode

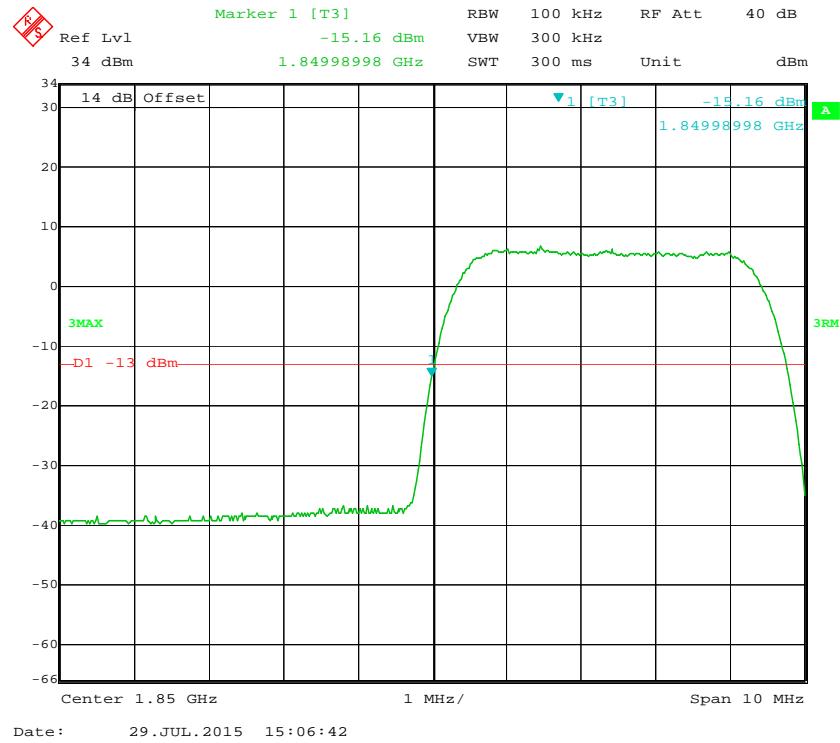
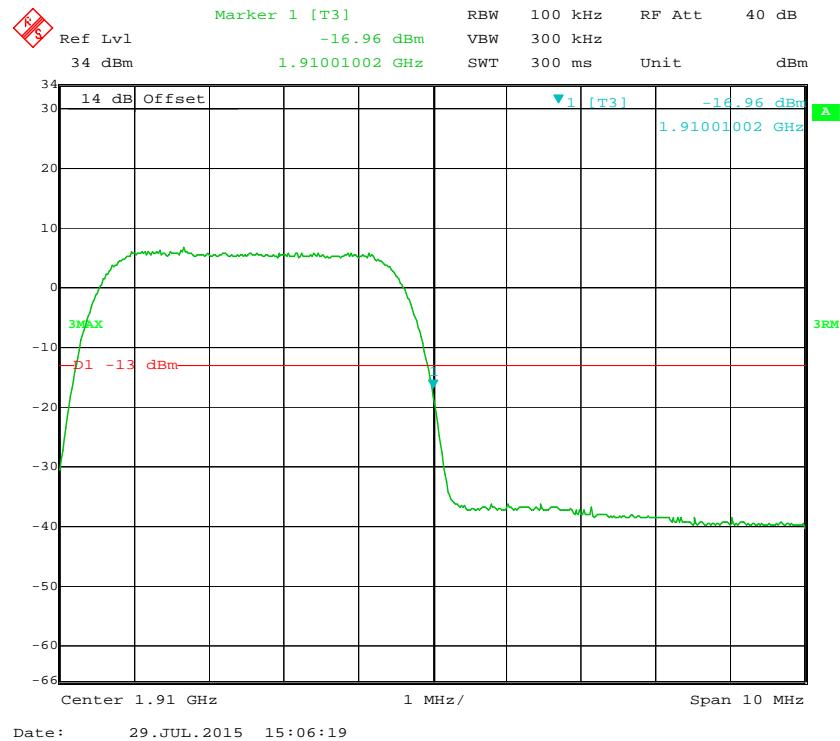


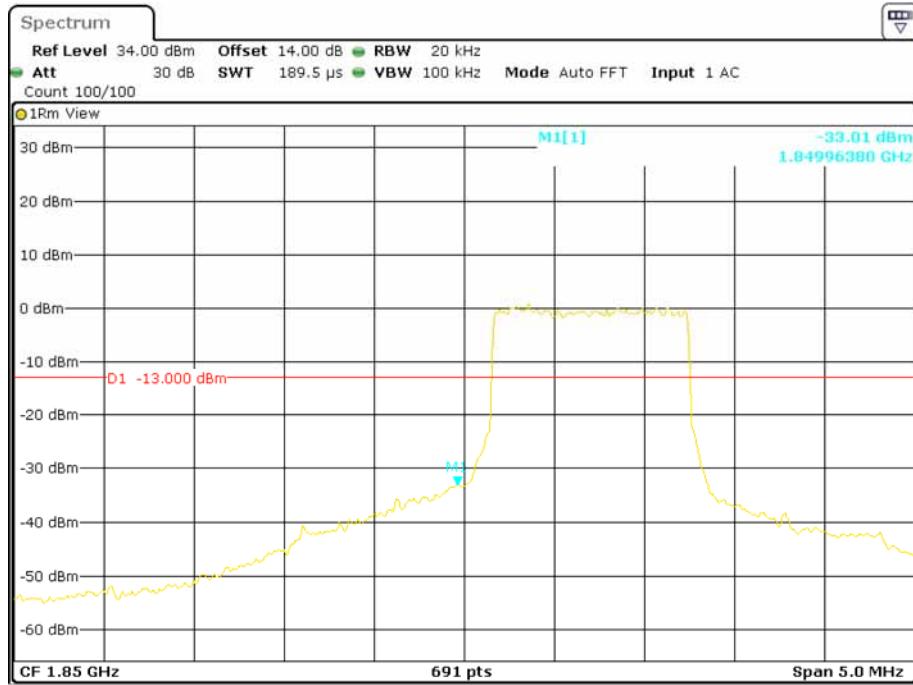
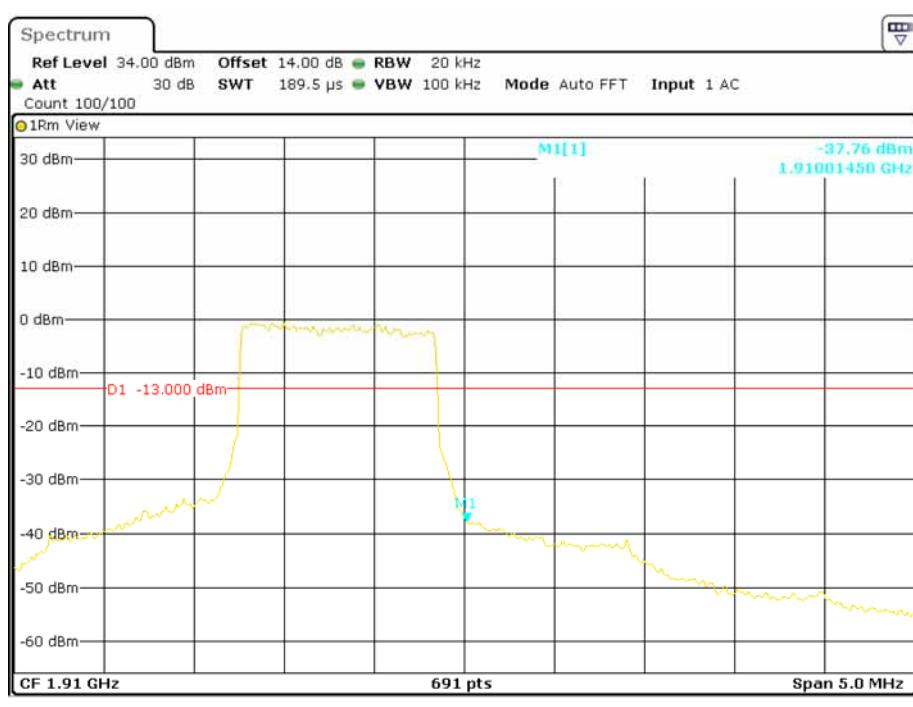
### PCS Band, Left Band Edge for HSDPA (16QAM) Mode

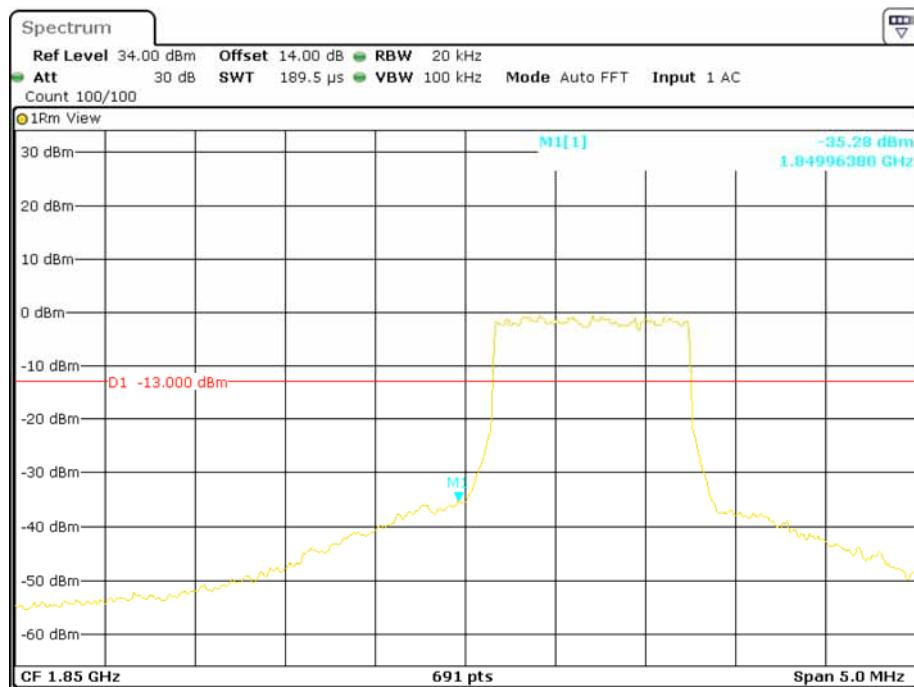
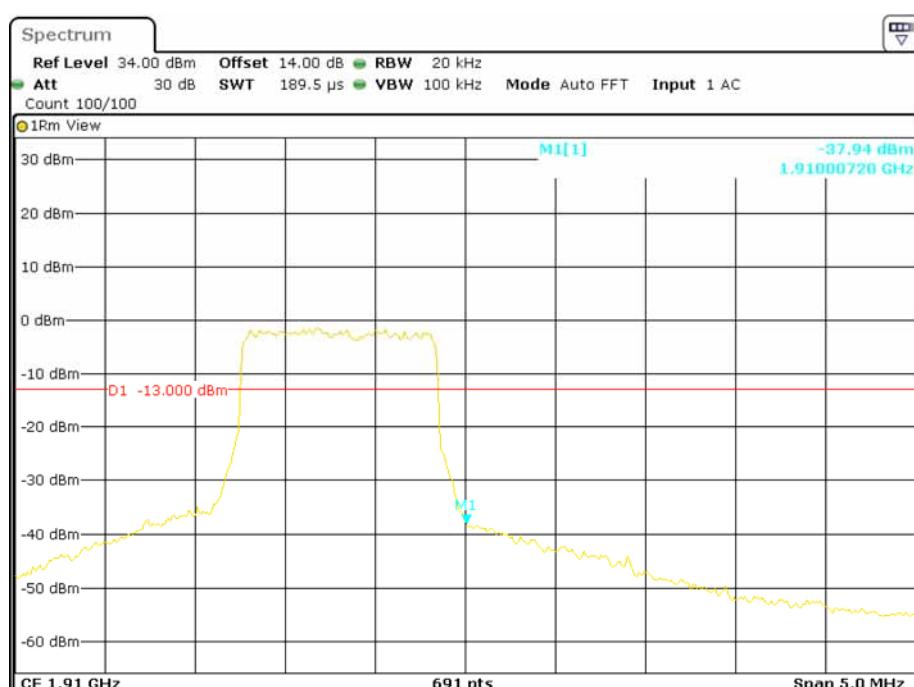


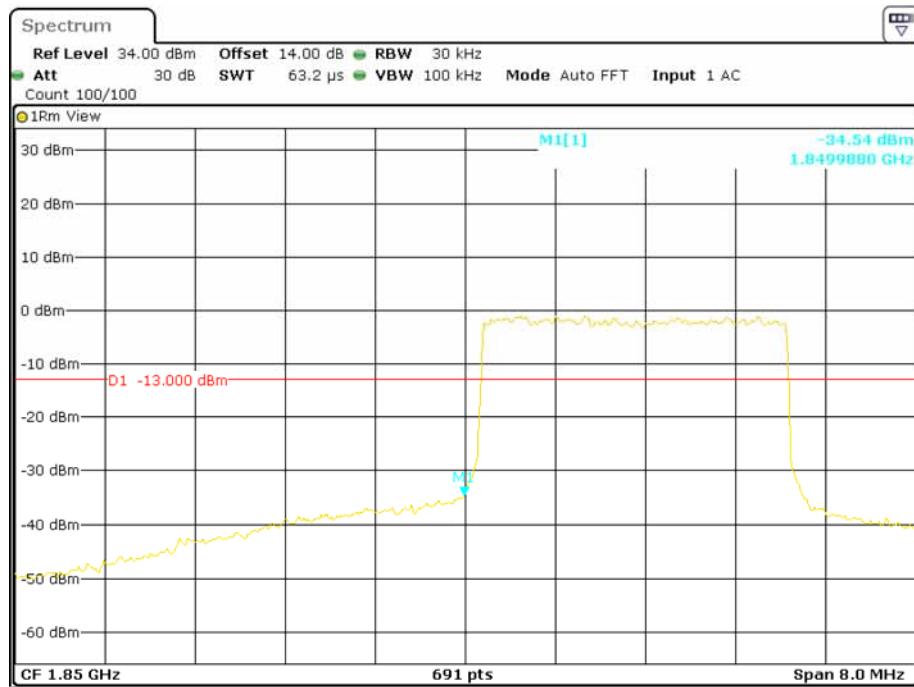
### PCS Band, Right Band Edge for HSDPA (16QAM) Mode



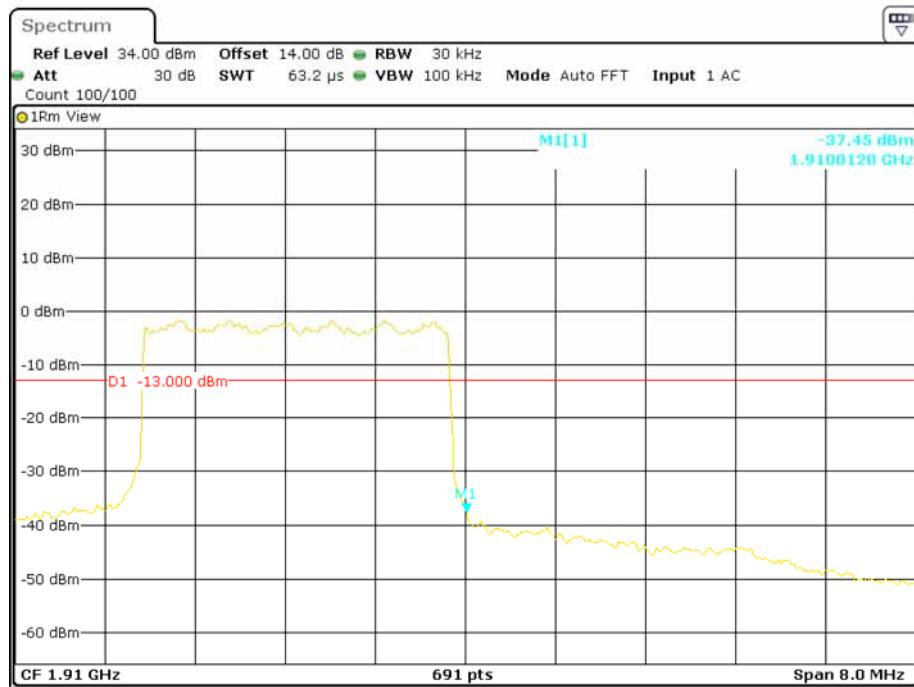
**PCS Band, Left Band Edge for HSUPA (BPSK) Mode****PCS Band, Right Band Edge for HSUPA (BPSK) Mode**

**Band 2:****QPSK (1.4 MHz, FULL RB) - Left Band Edge****QPSK (1.4 MHz, FULL RB) - Right Band Edge**

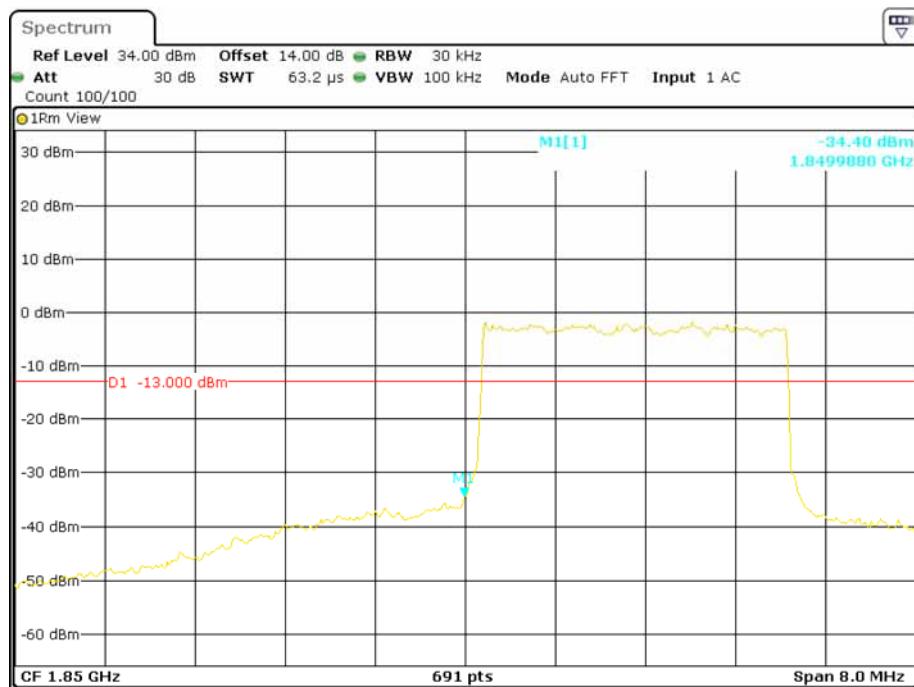
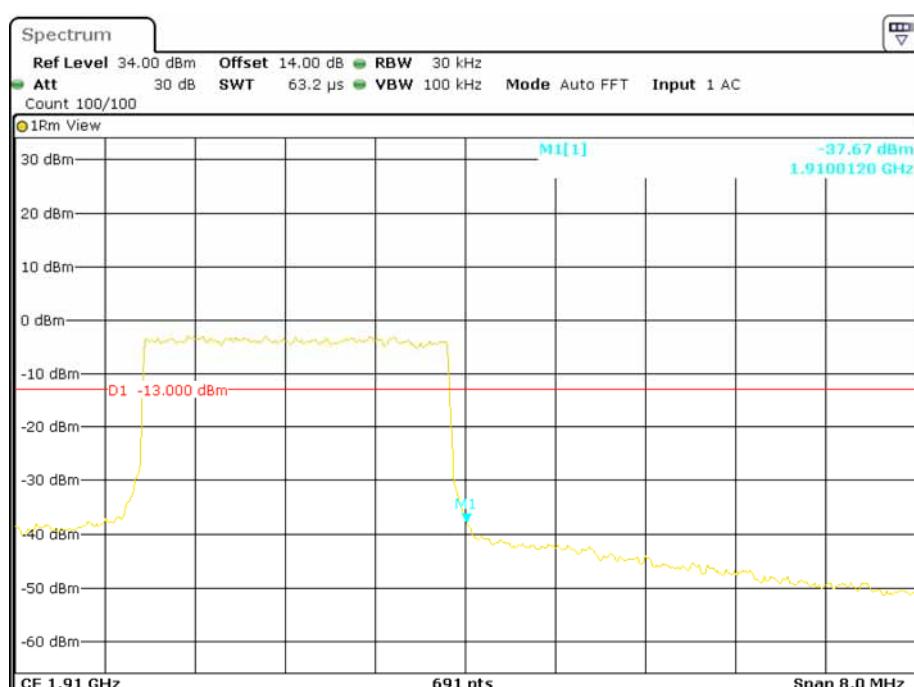
**16-QAM (1.4 MHz, FULL RB) - Left Band Edge****16-QAM (1.4 MHz, FULL RB) - Right Band Edge**

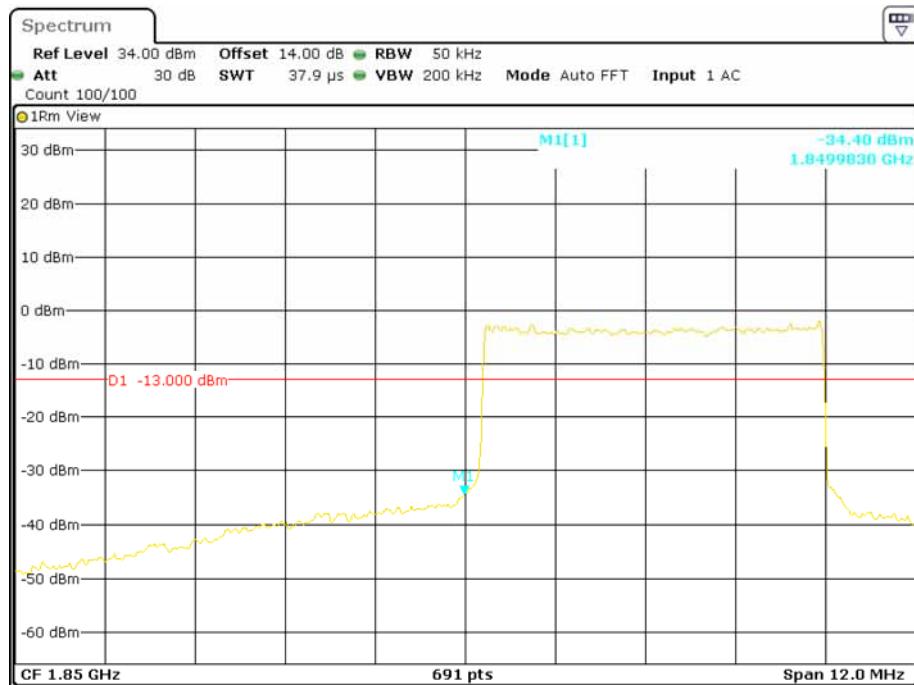
**QPSK (3.0 MHz, FULL RB) - Left Band Edge**

Date: 22.JUL.2015 20:43:03

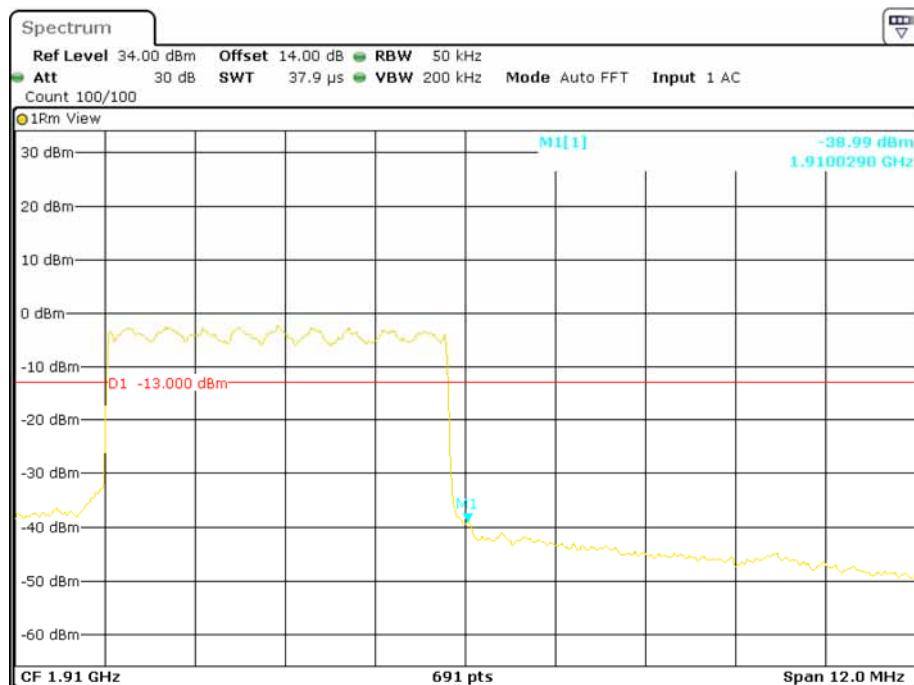
**QPSK (3.0 MHz, FULL RB) - Right Band Edge**

Date: 22.JUL.2015 20:44:18

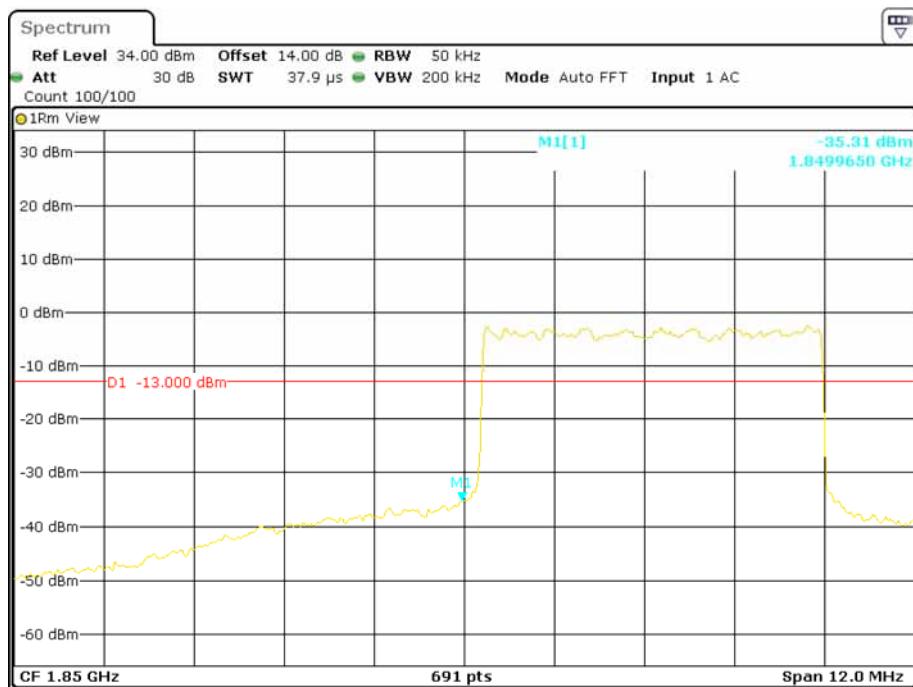
**16-QAM (3.0 MHz, FULL RB) - Left Band Edge****16-QAM (3.0 MHz, FULL RB) - Right Band Edge**

**QPSK (5.0 MHz, FULL RB) - Left Band Edge**

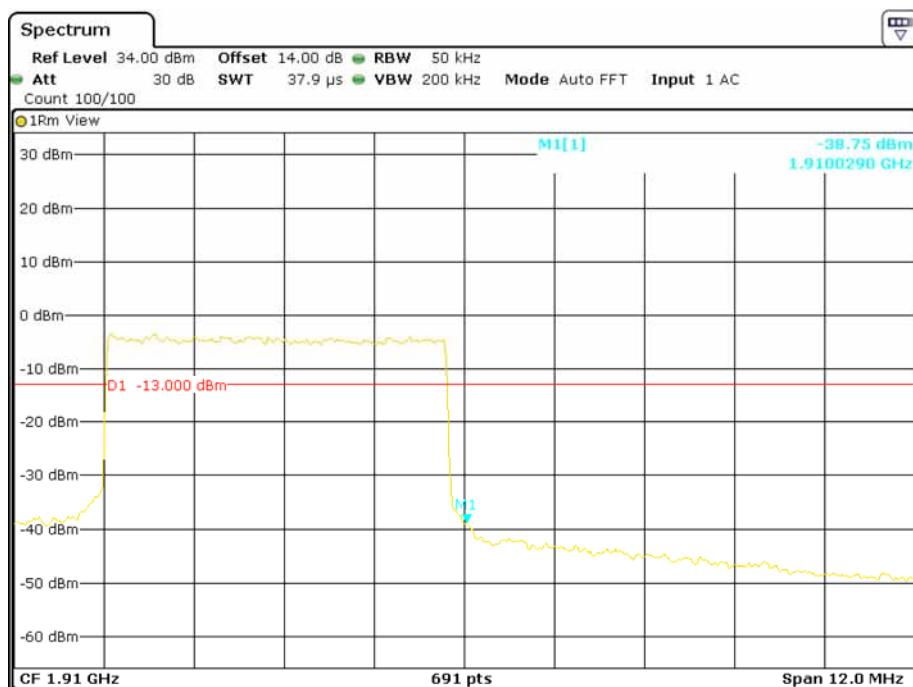
Date: 22.JUL.2015 20:55:04

**QPSK (5.0 MHz, FULL RB) - Right Band Edge**

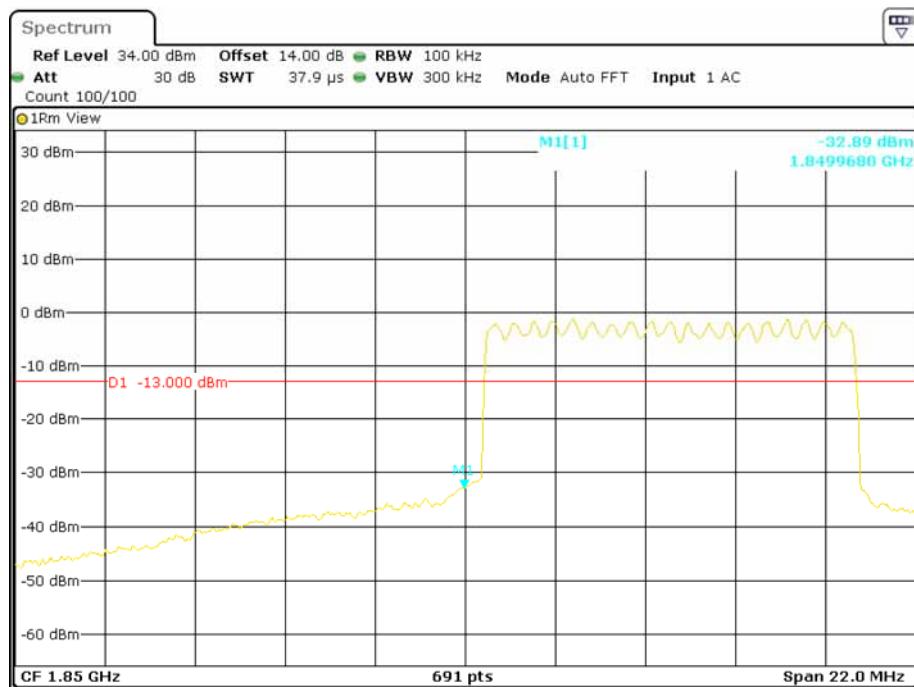
Date: 22.JUL.2015 20:51:38

**16-QAM (5.0 MHz, FULL RB) - Left Band Edge**

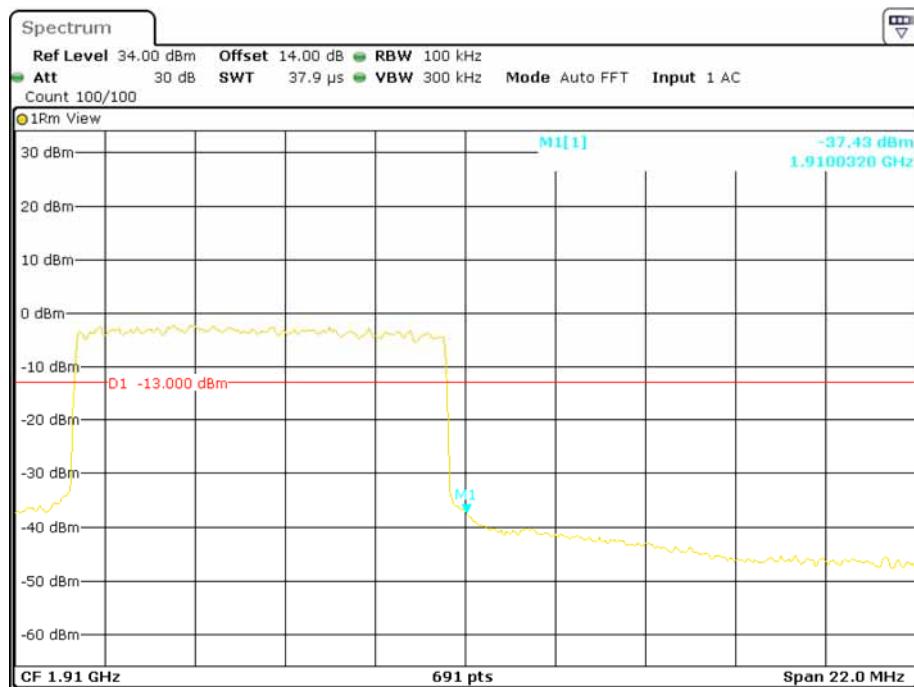
Date: 22.JUL.2015 20:54:33

**16-QAM (5.0 MHz, FULL RB) - Right Band Edge**

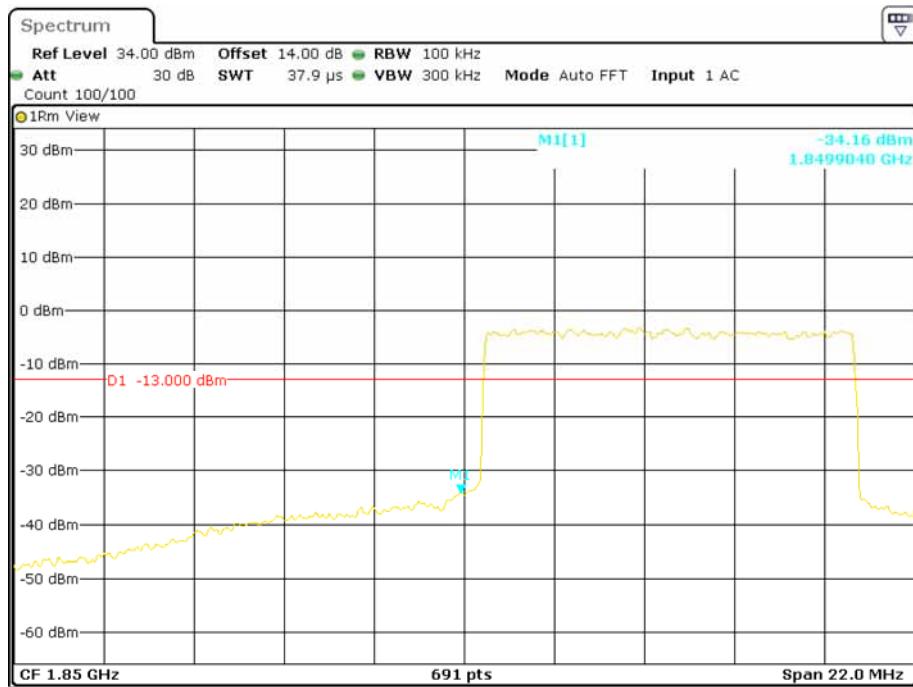
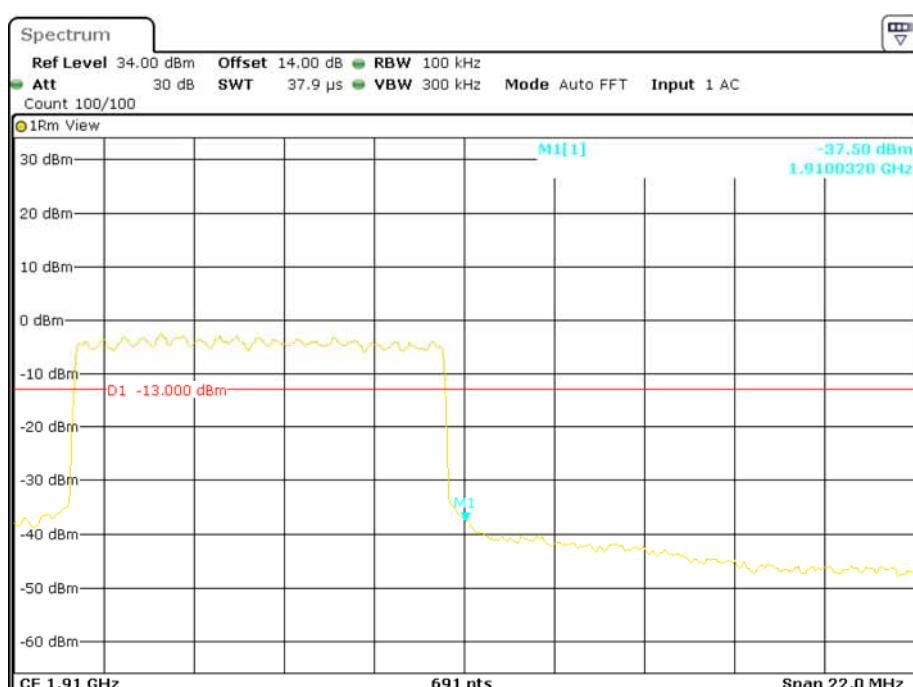
Date: 22.JUL.2015 20:51:07

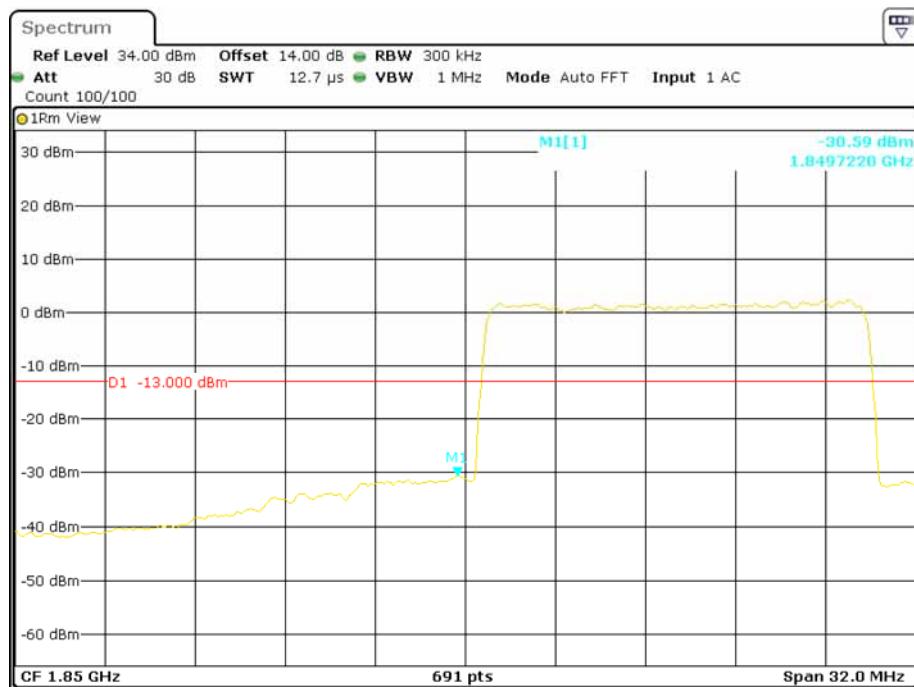
**QPSK (10.0 MHz, FULL RB) - Left Band Edge**

Date: 22.JUL.2015 20:59:19

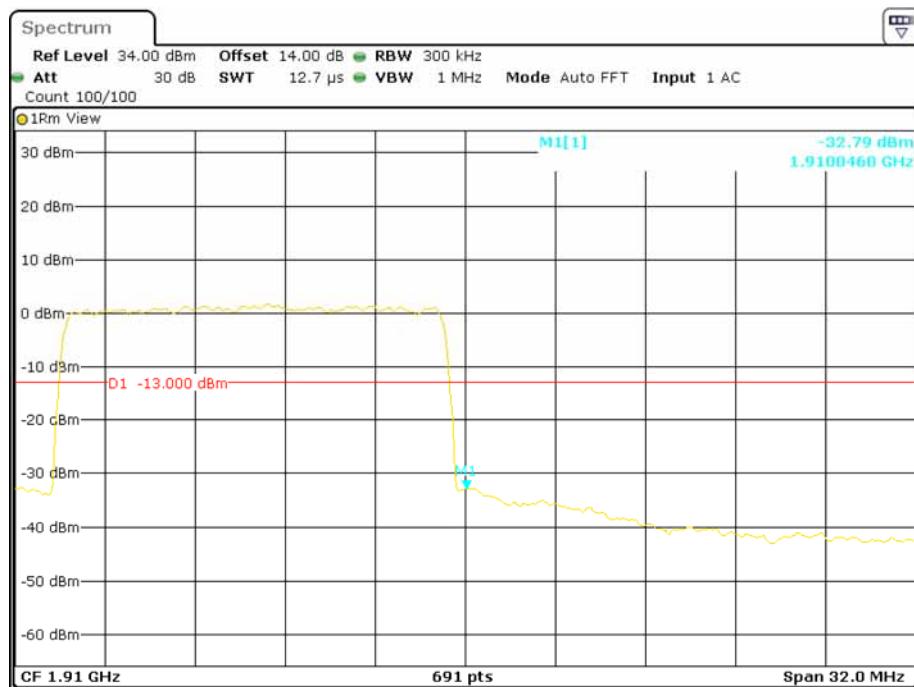
**QPSK (10.0 MHz, FULL RB) - Right Band Edge**

Date: 22.JUL.2015 21:00:21

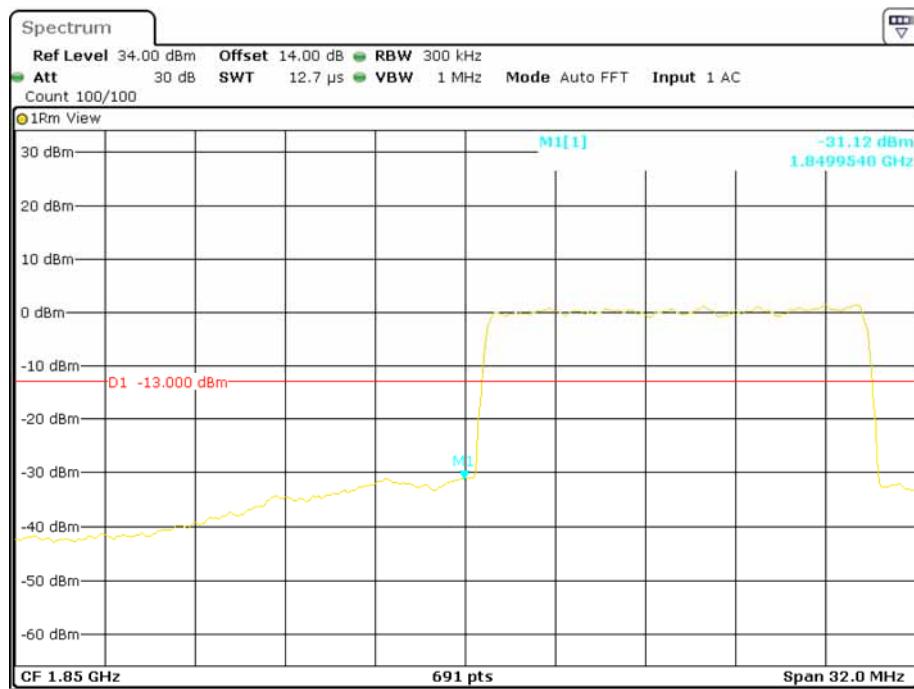
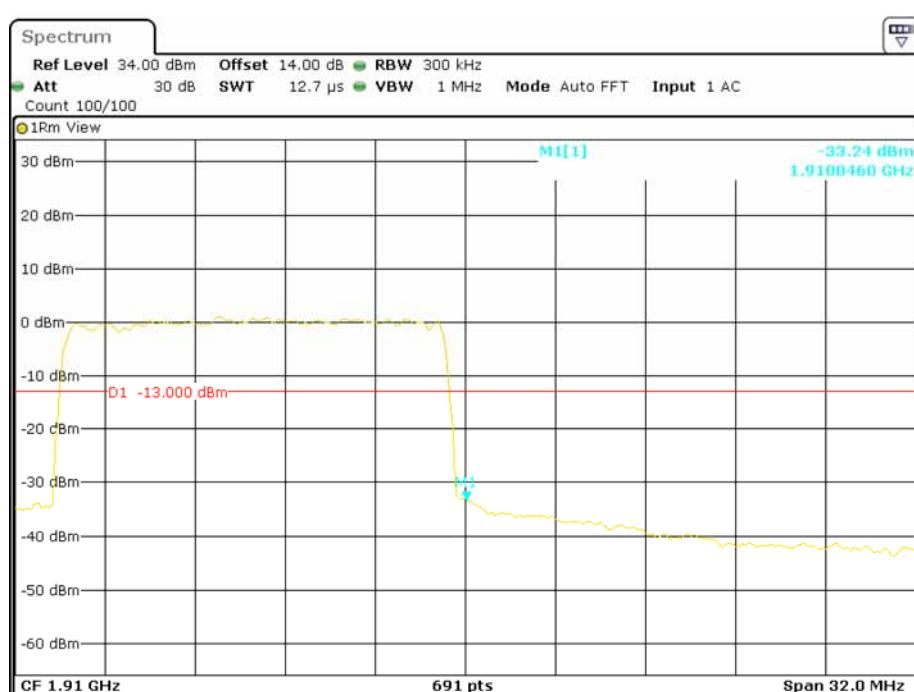
**16-QAM (10.0 MHz, FULL RB) - Left Band Edge****16-QAM (10.0 MHz, FULL RB) - Right Band Edge**

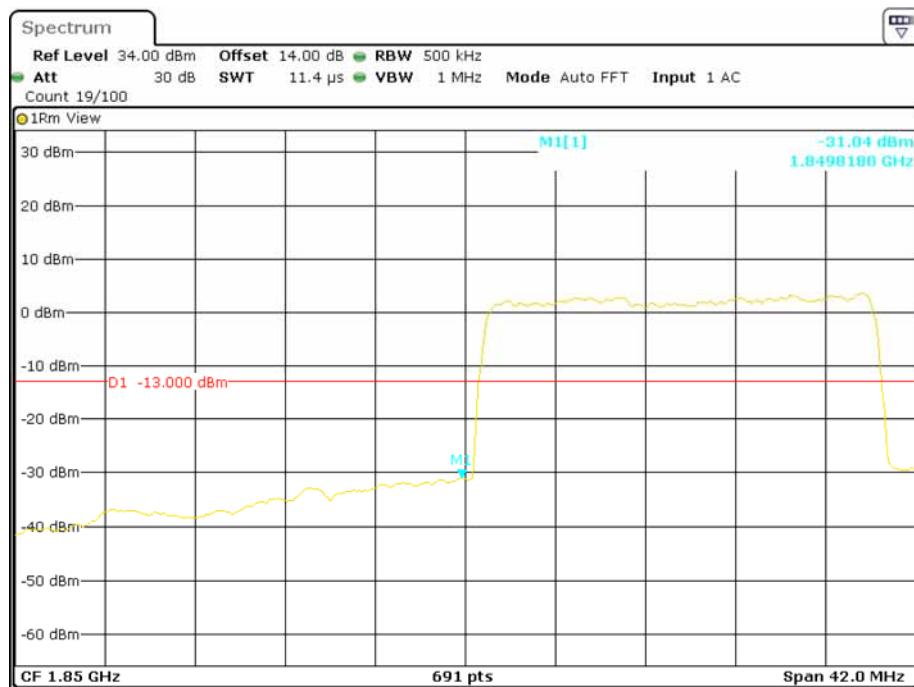
**QPSK (15.0 MHz, FULL RB) - Left Band Edge**

Date: 22.JUL.2015 21:06:53

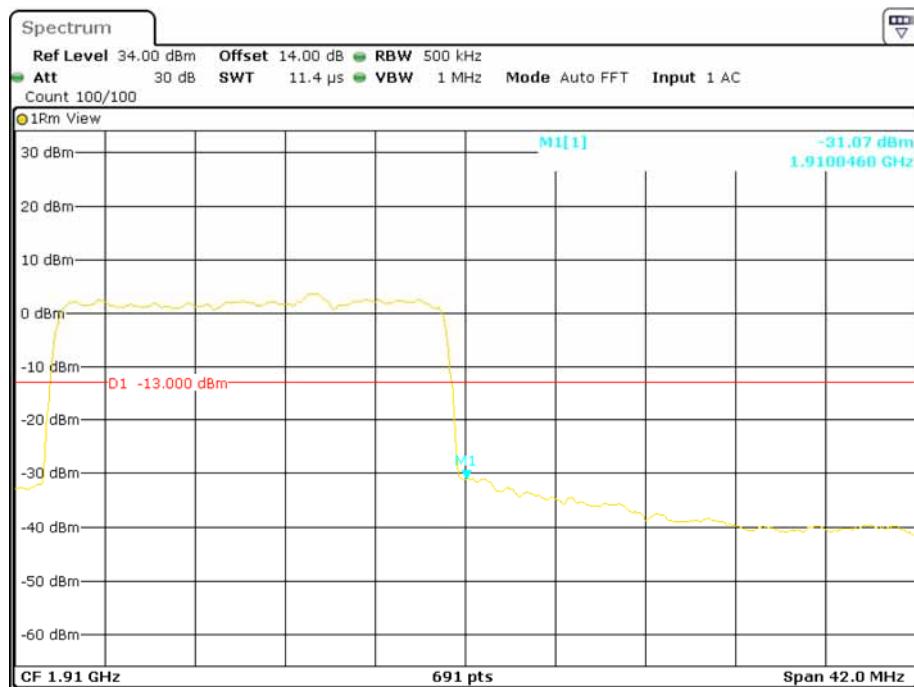
**QPSK (15.0 MHz, FULL RB) - Right Band Edge**

Date: 22.JUL.2015 21:08:00

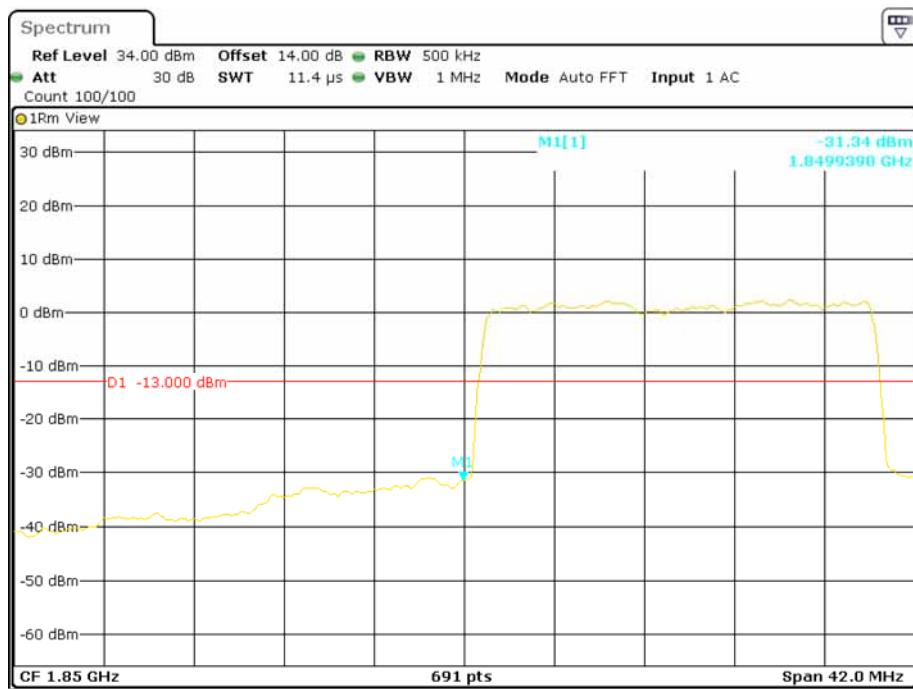
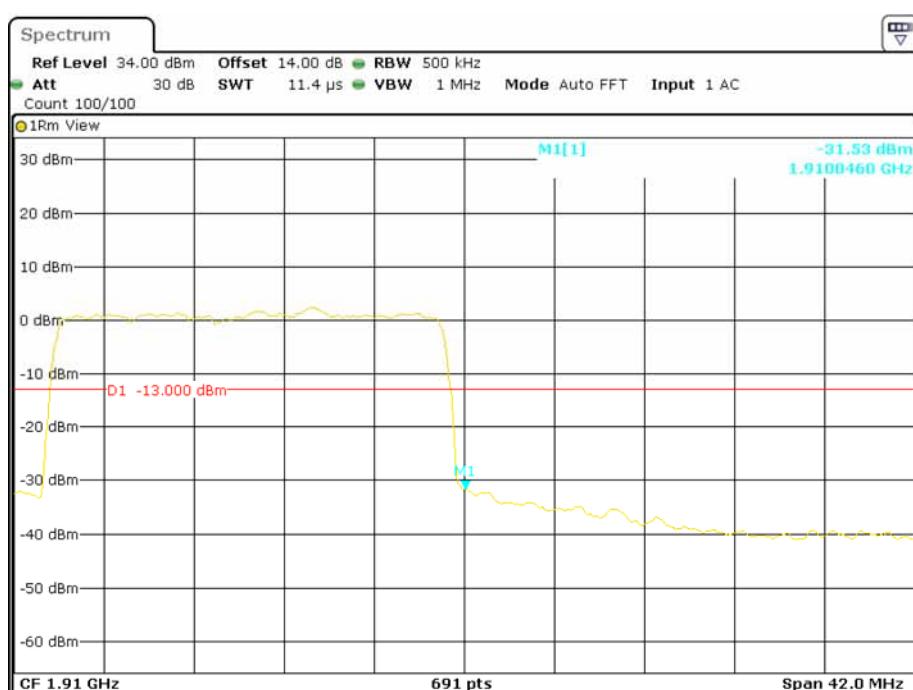
**16-QAM (15.0 MHz, FULL RB) - Left Band Edge****16-QAM (15.0 MHz, FULL RB) - Right Band Edge**

**QPSK (20.0 MHz, FULL RB) - Left Band Edge**

Date: 22.JUL.2015 21:24:56

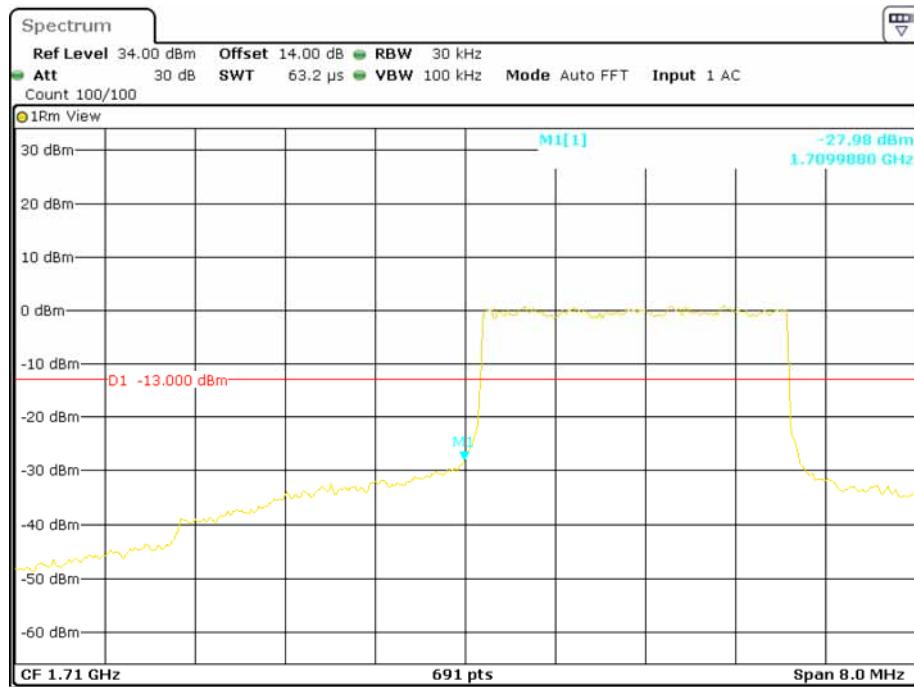
**QPSK (20.0 MHz, FULL RB) - Right Band Edge**

Date: 22.JUL.2015 21:23:52

**16-QAM (20.0 MHz, FULL RB) - Left Band Edge****16-QAM (20.0 MHz, FULL RB) - Right Band Edge**

**Band 4:****QPSK (1.4 MHz, FULL RB) - Left Band Edge****QPSK (1.4 MHz, FULL RB) - Right Band Edge**

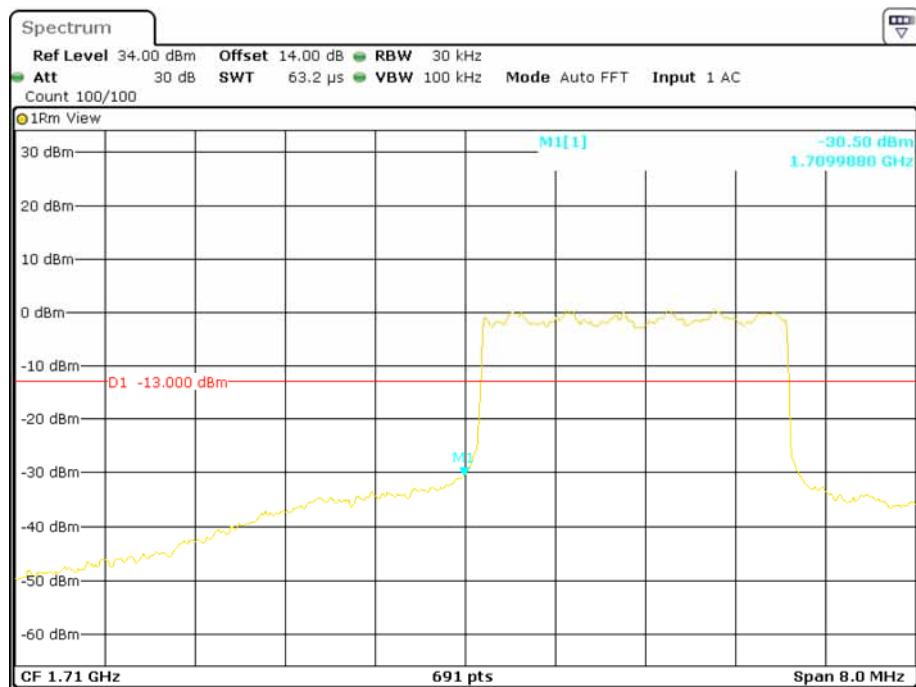
**16-QAM (1.4 MHz, FULL RB) - Left Band Edge****16-QAM (1.4 MHz, FULL RB) - Right Band Edge**

**QPSK (3.0 MHz, FULL RB) - Left Band Edge**

Date: 23.JUL.2015 22:04:44

**QPSK (3.0 MHz, FULL RB) - Right Band Edge**

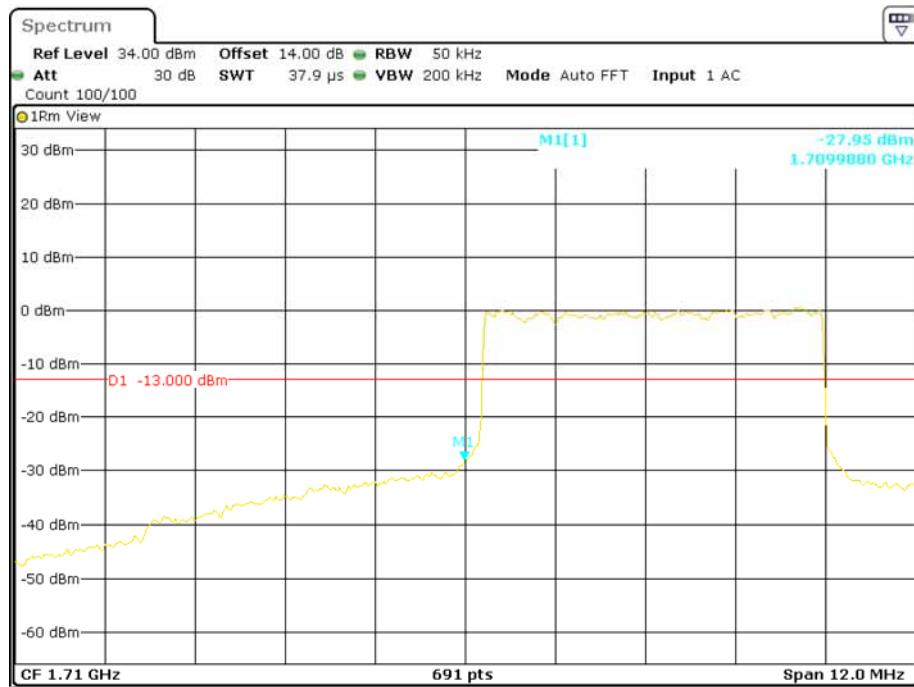
Date: 23.JUL.2015 22:00:28

**16-QAM (3.0 MHz, FULL RB) - Left Band Edge**

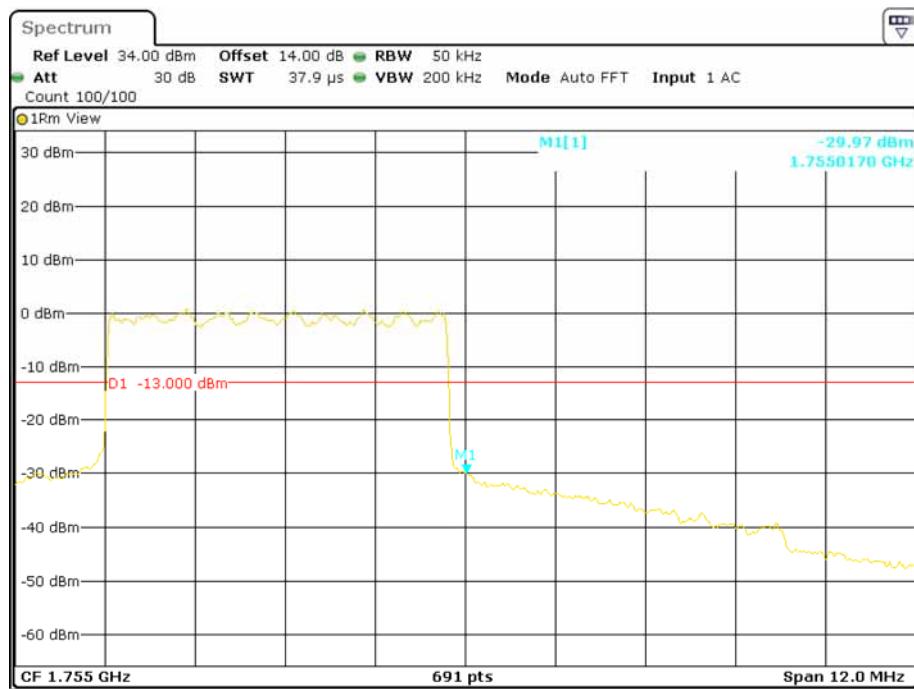
Date: 23.JUL.2015 22:11:32

**16-QAM (3.0 MHz, FULL RB) - Right Band Edge**

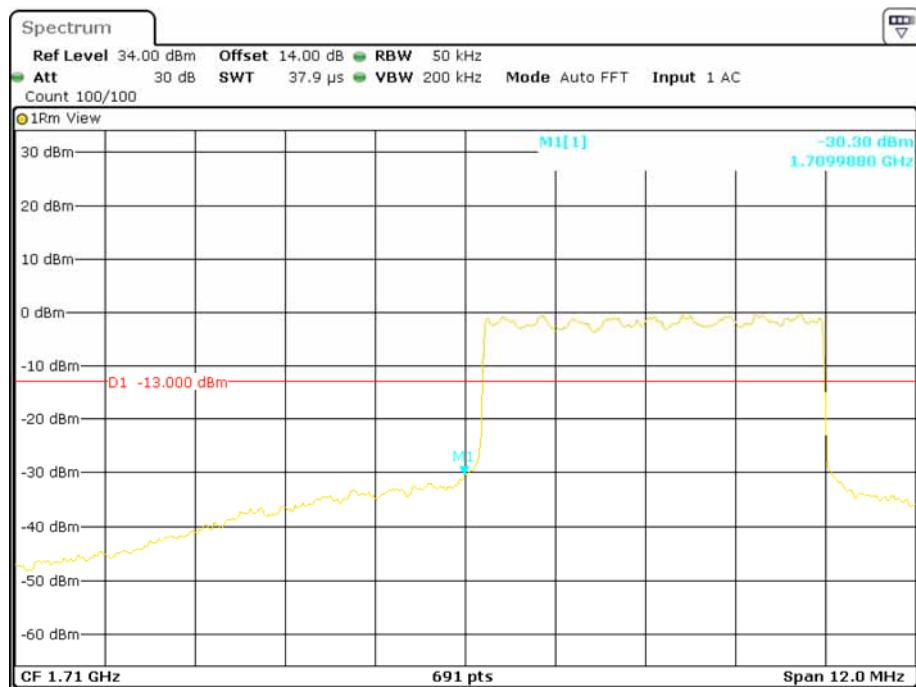
Date: 23.JUL.2015 22:01:27

**QPSK (5.0 MHz, FULL RB) - Left Band Edge**

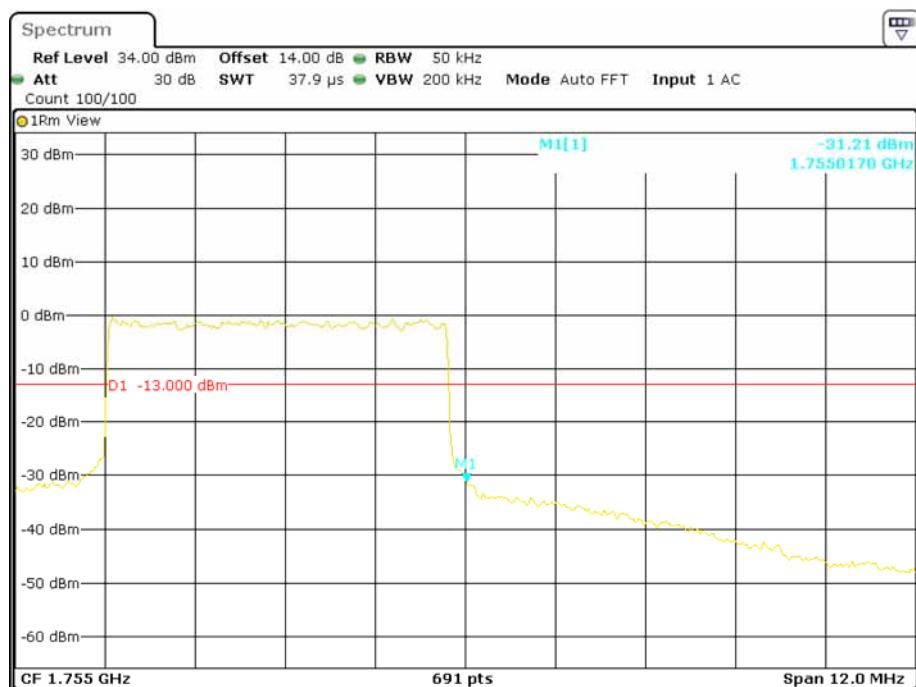
Date: 23.JUL.2015 22:06:55

**QPSK (5.0 MHz, FULL RB) - Right Band Edge**

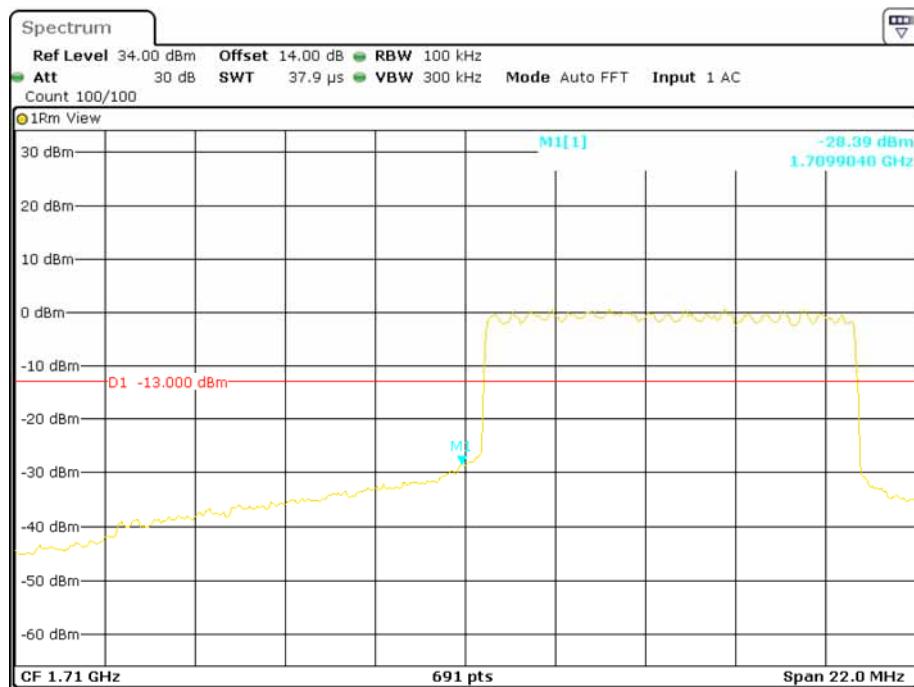
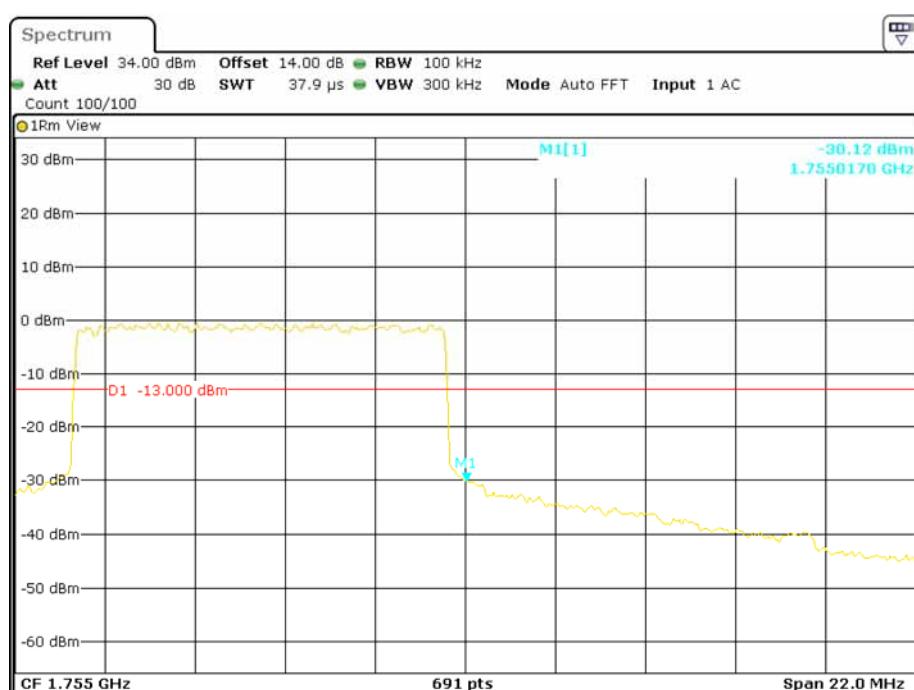
Date: 23.JUL.2015 22:16:14

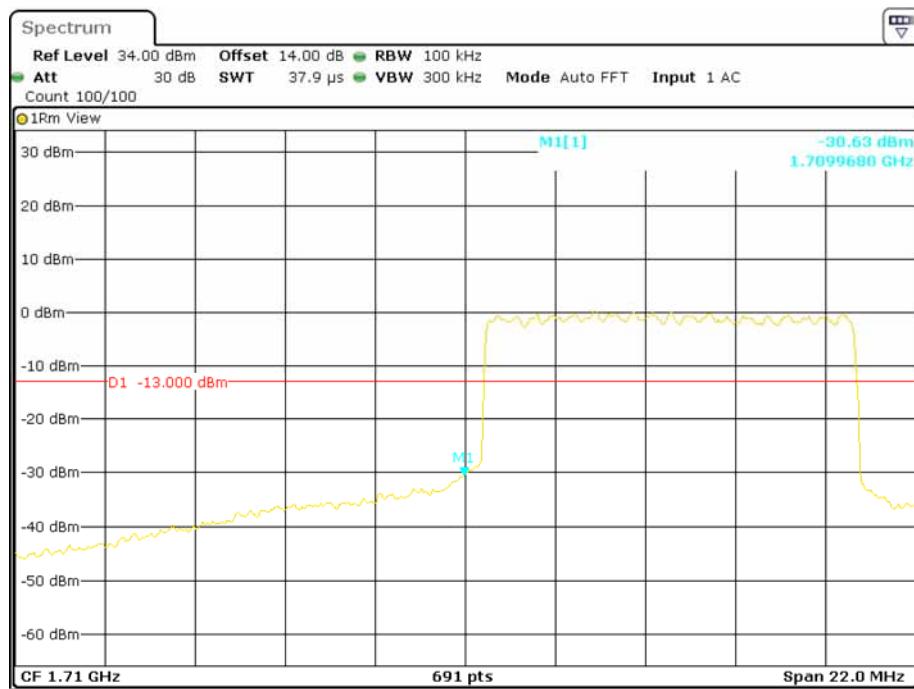
**16-QAM (5.0 MHz, FULL RB) - Left Band Edge**

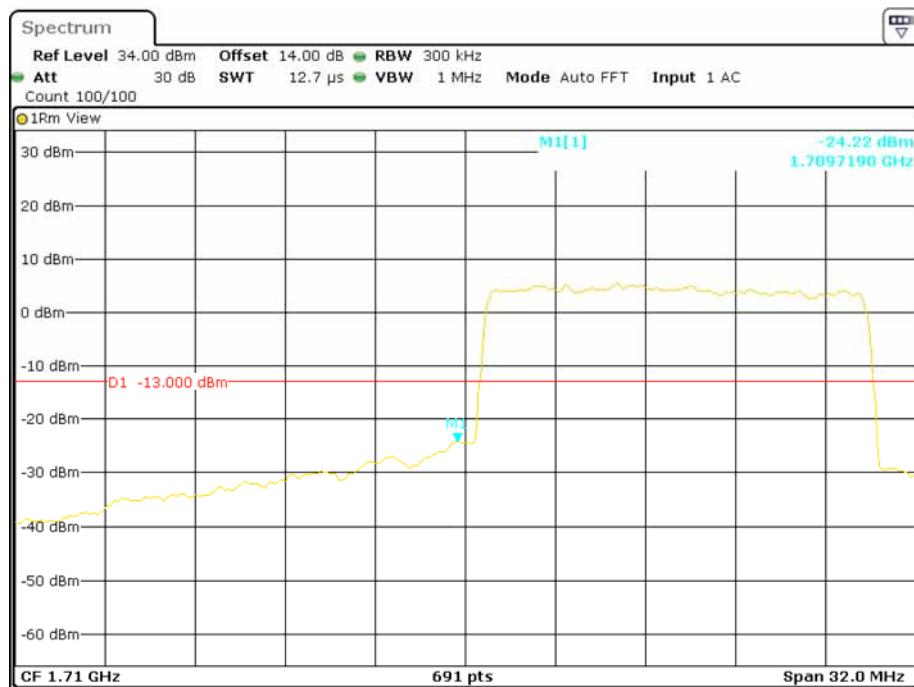
Date: 23.JUL.2015 22:09:43

**16-QAM (5.0 MHz, FULL RB) - Right Band Edge**

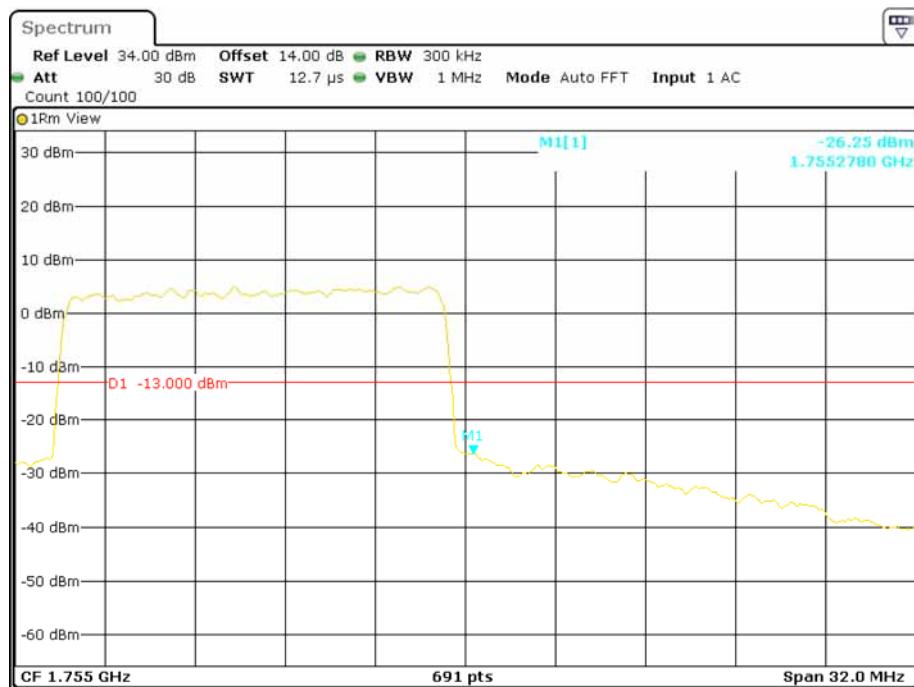
Date: 23.JUL.2015 22:15:40

**QPSK (10.0 MHz, FULL RB) - Left Band Edge****QPSK (10.0 MHz, FULL RB) - Right Band Edge**

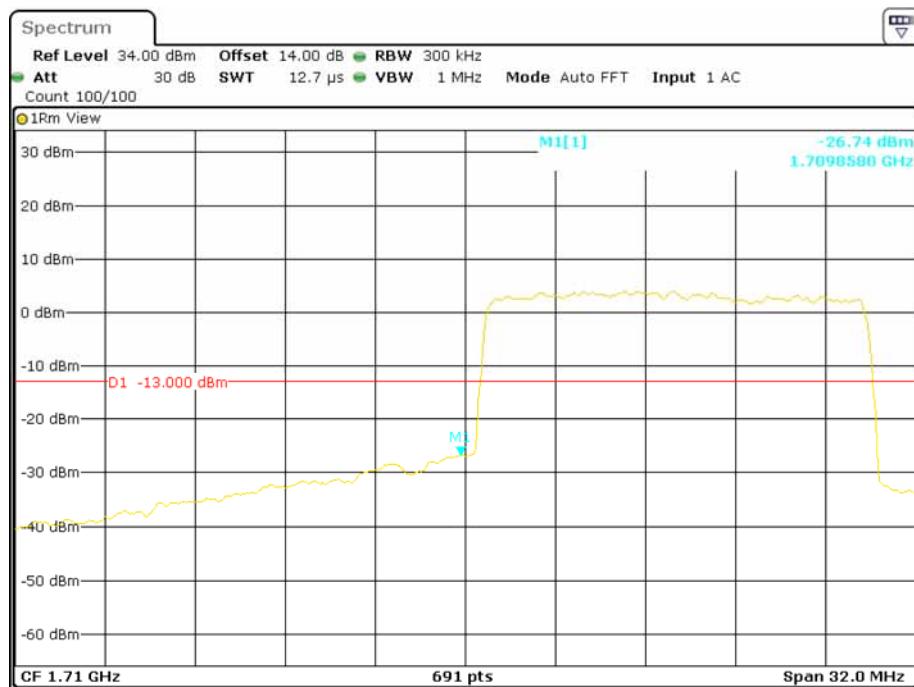
**16-QAM (10.0 MHz, FULL RB) - Left Band Edge****16-QAM (10.0 MHz, FULL RB) - Right Band Edge**

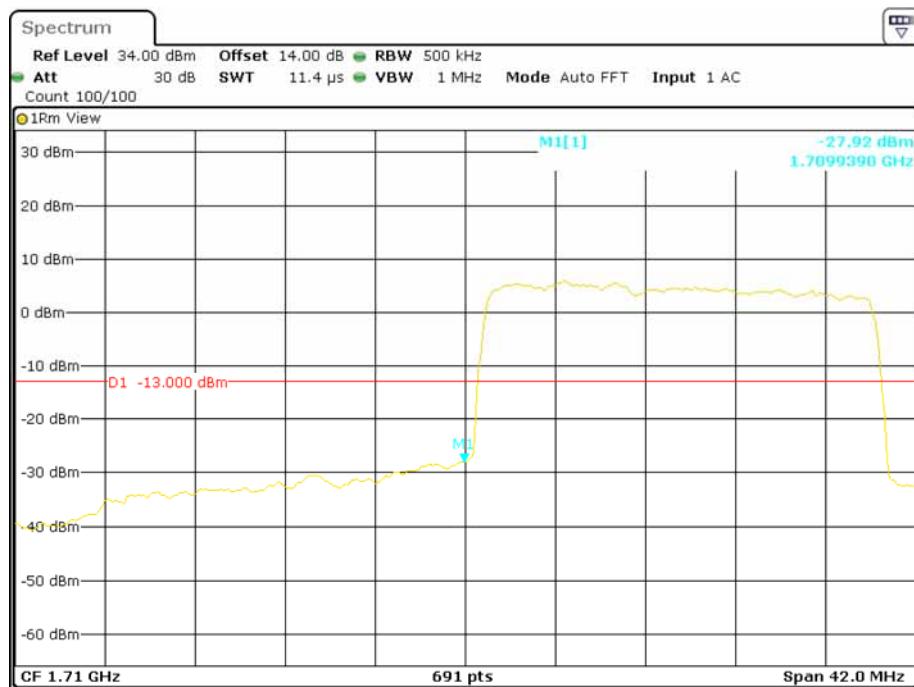
**QPSK (15.0 MHz, FULL RB) - Left Band Edge**

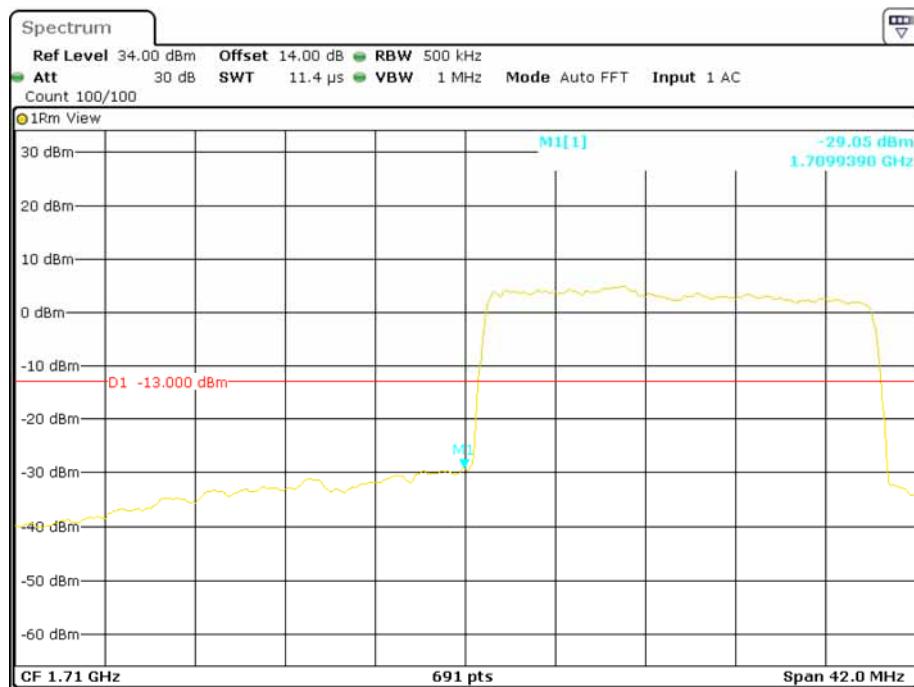
Date: 23.JUL.2015 22:26:16

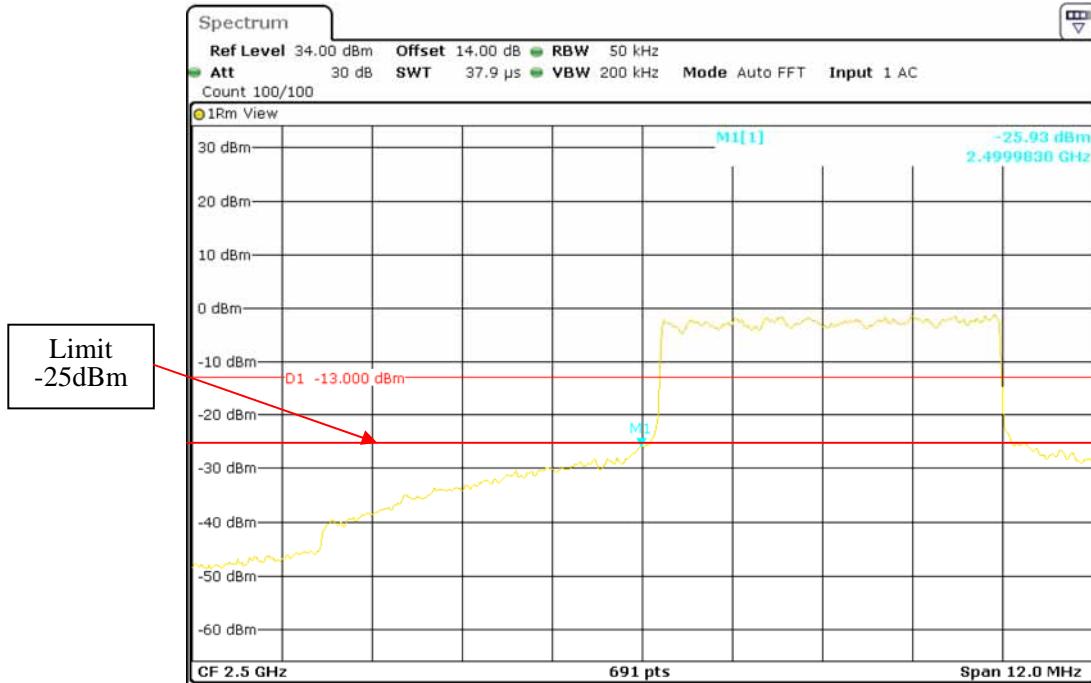
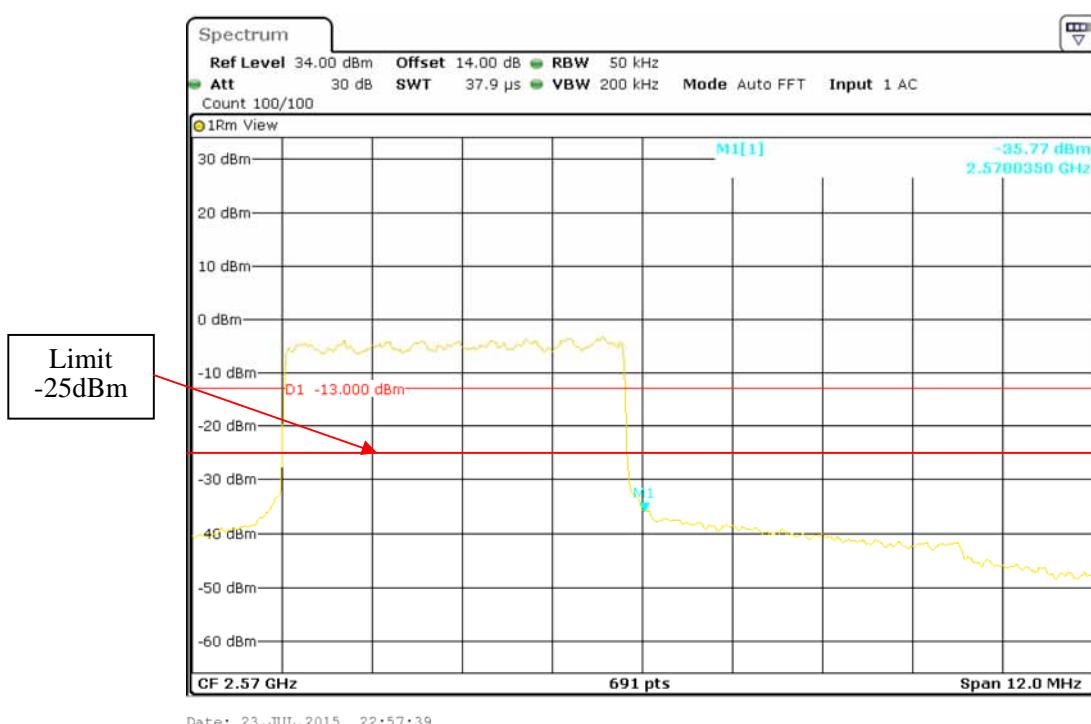
**QPSK (15.0 MHz, FULL RB) - Right Band Edge**

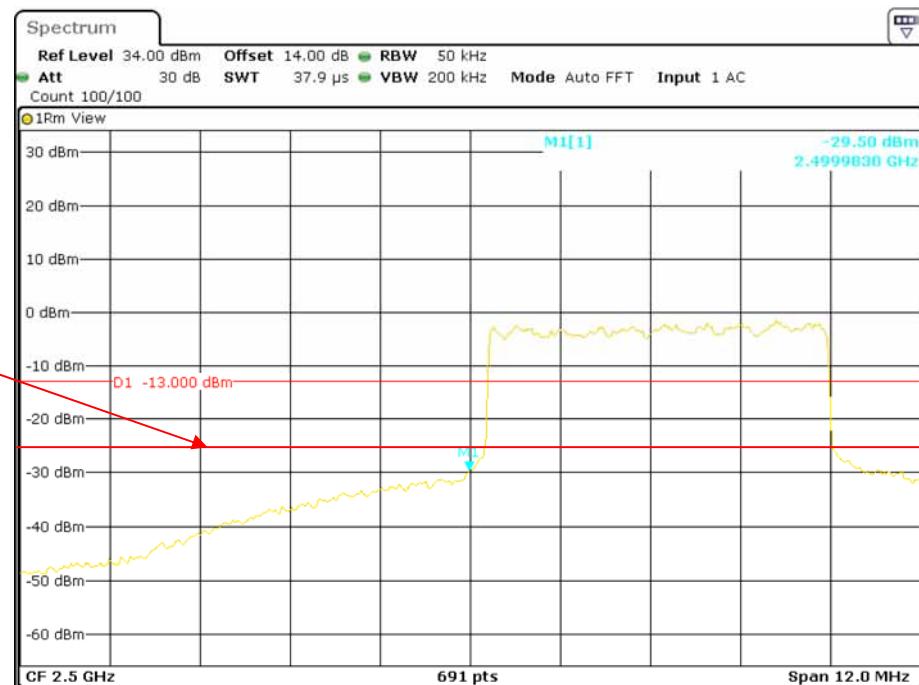
Date: 23.JUL.2015 22:31:18

**16-QAM (15.0 MHz, FULL RB) - Left Band Edge****16-QAM (15.0 MHz, FULL RB) - Right Band Edge**

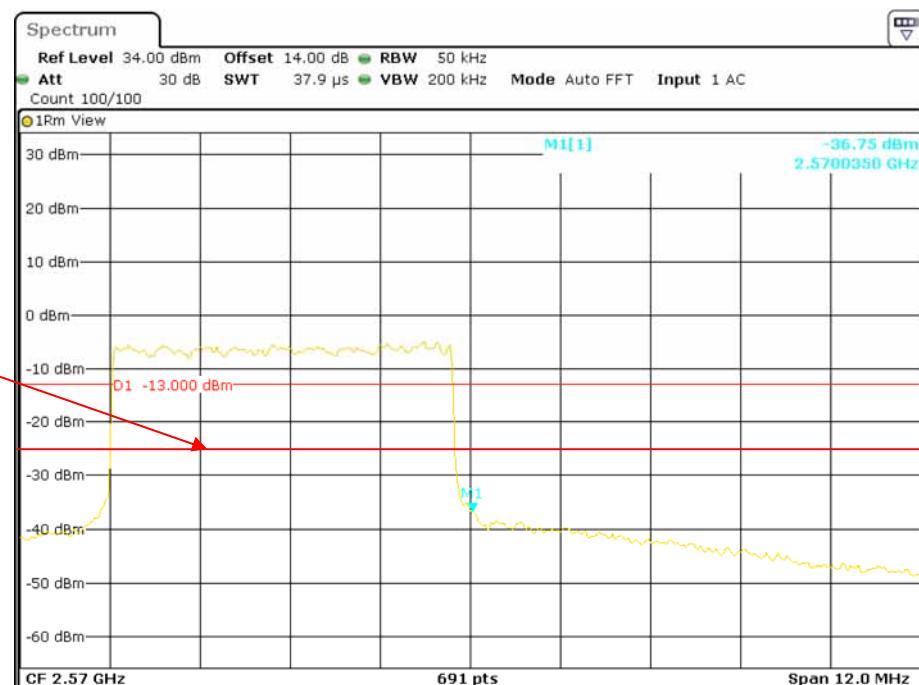
**QPSK (20.0 MHz, FULL RB) - Left Band Edge****QPSK (20.0 MHz, FULL RB) - Right Band Edge**

**16-QAM (20.0 MHz, FULL RB) - Left Band Edge****16-QAM (20.0 MHz, FULL RB) - Right Band Edge**

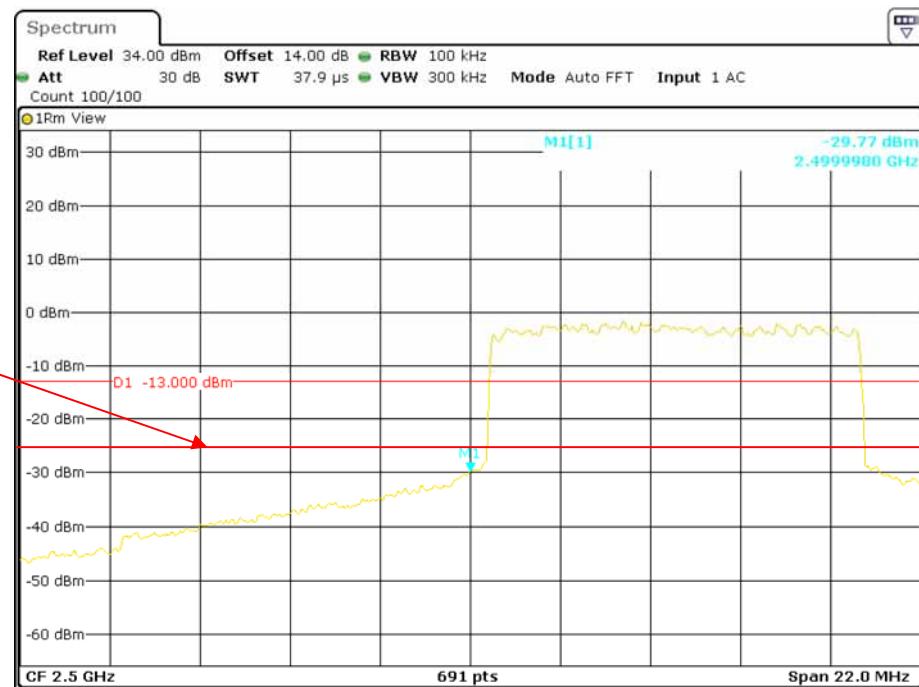
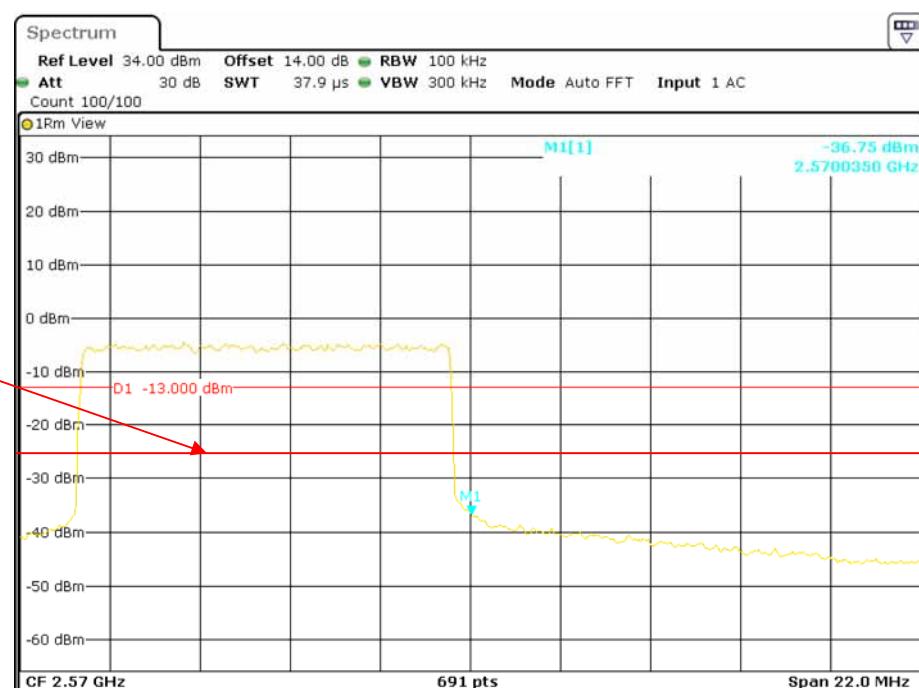
**Band 7:****QPSK (5.0 MHz, FULL RB) - Left Band Edge****QPSK (5.0 MHz, FULL RB) - Right Band Edge**

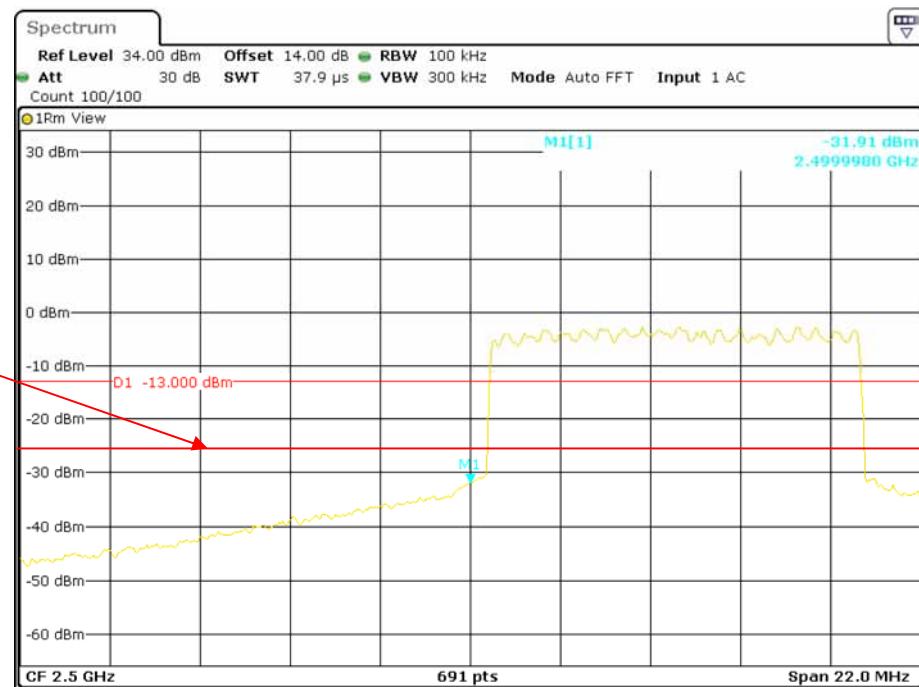
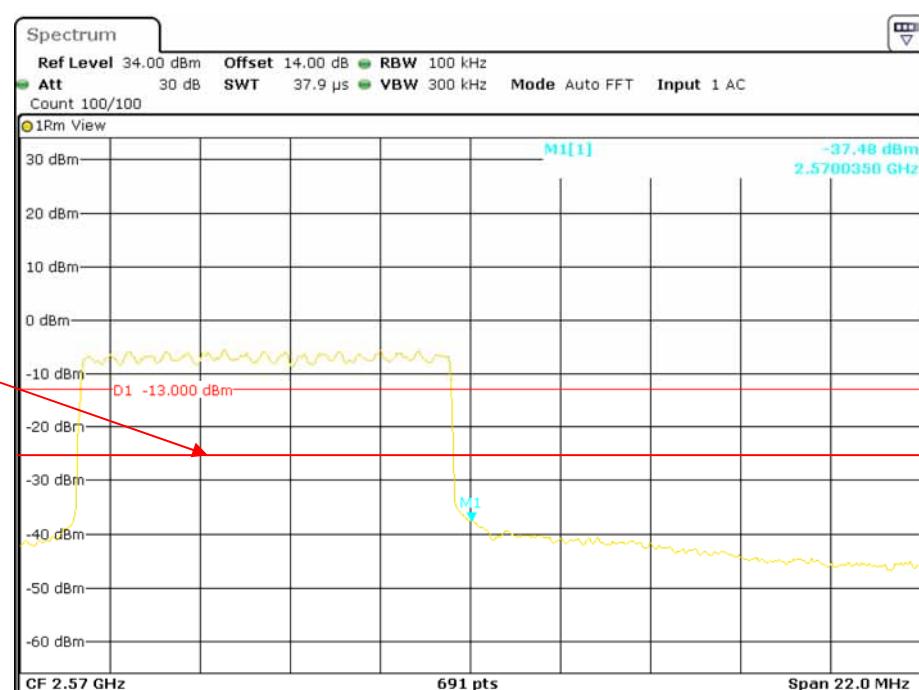
**16-QAM (5.0 MHz, FULL RB) - Left Band Edge**

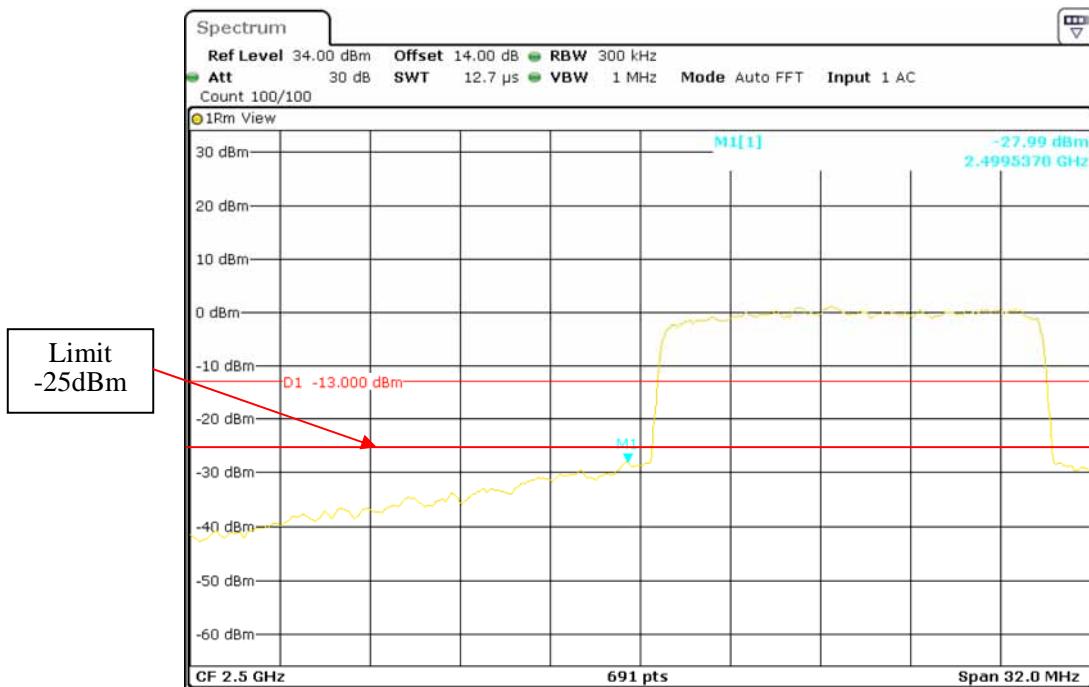
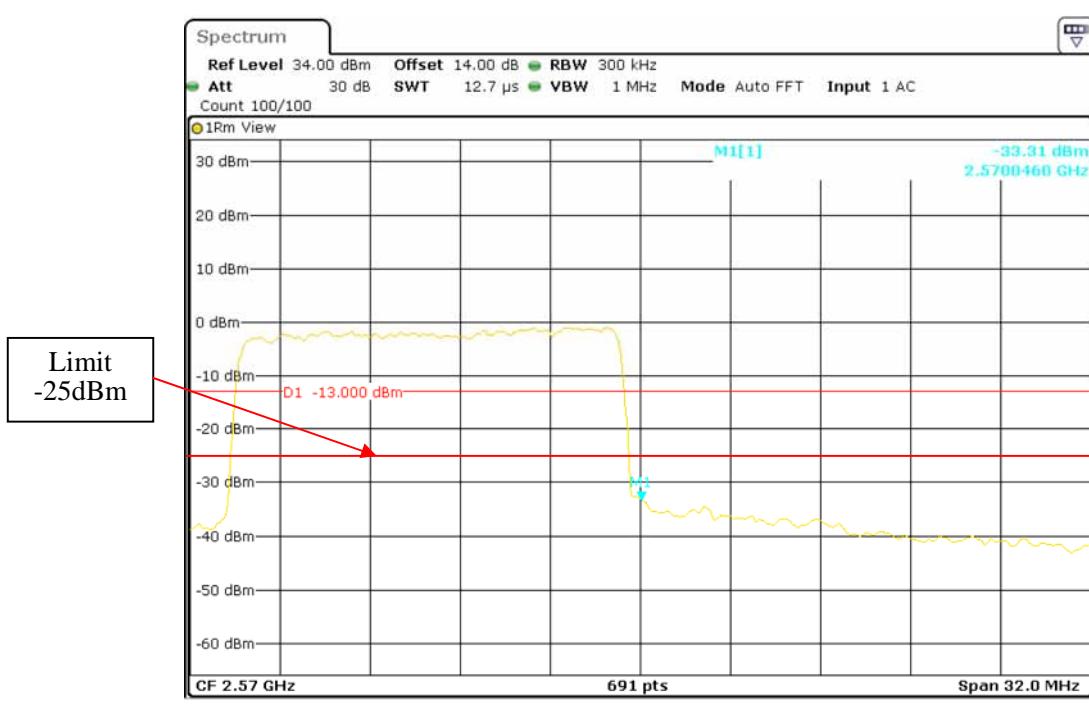
Date: 23.JUL.2015 22:53:15

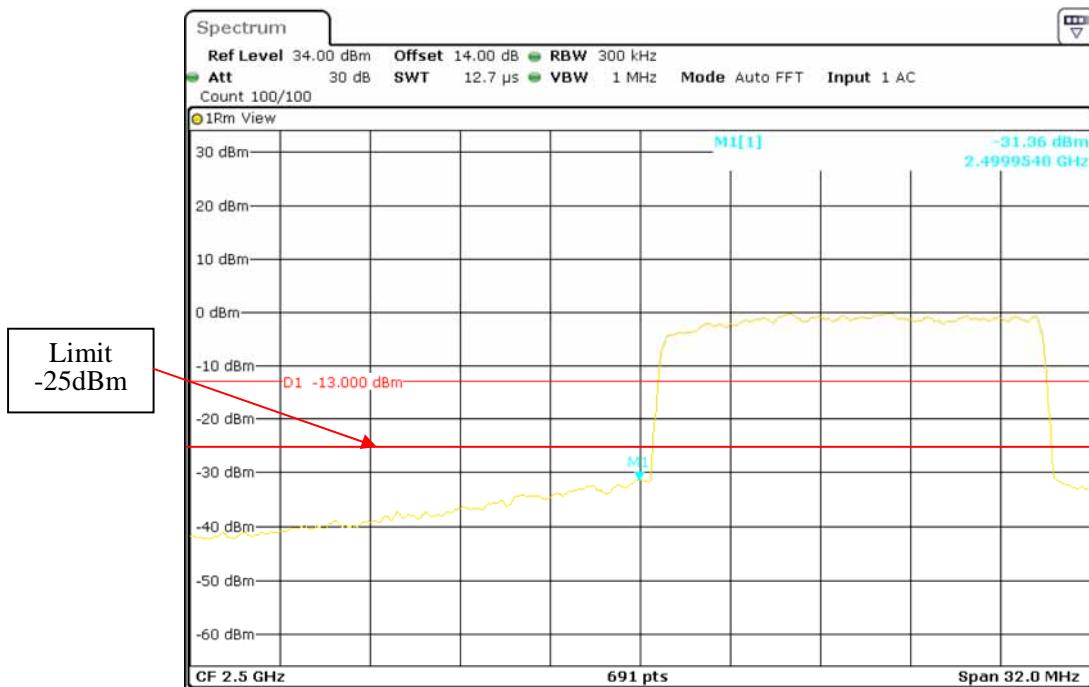
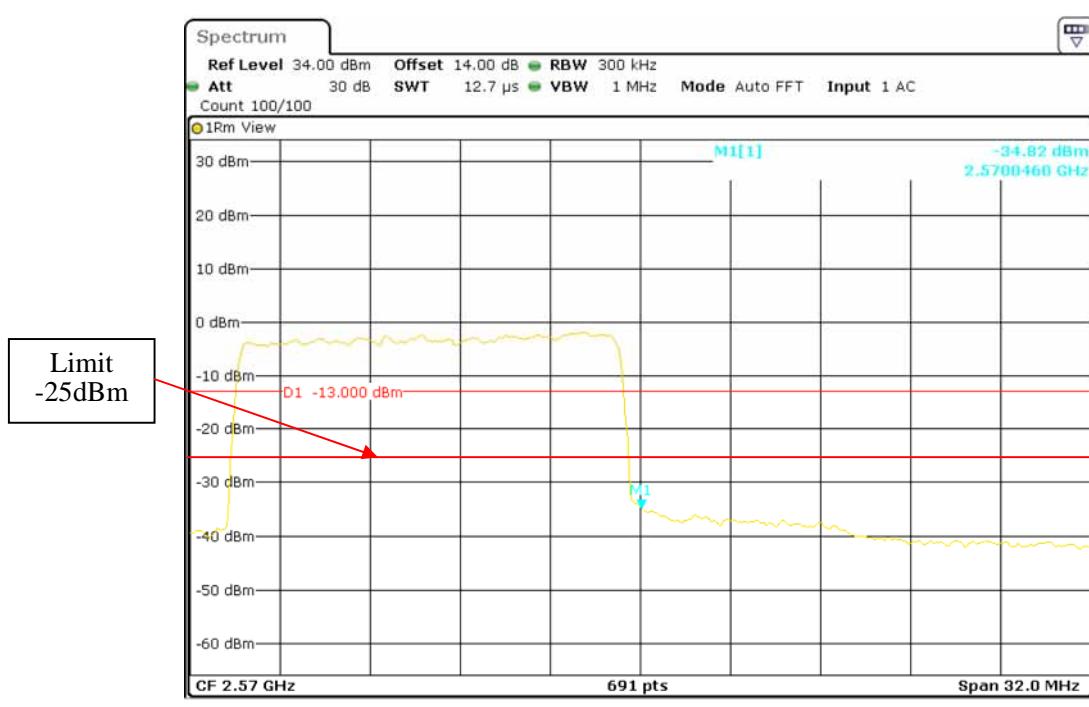
**16-QAM (5.0 MHz, FULL RB) - Right Band Edge**

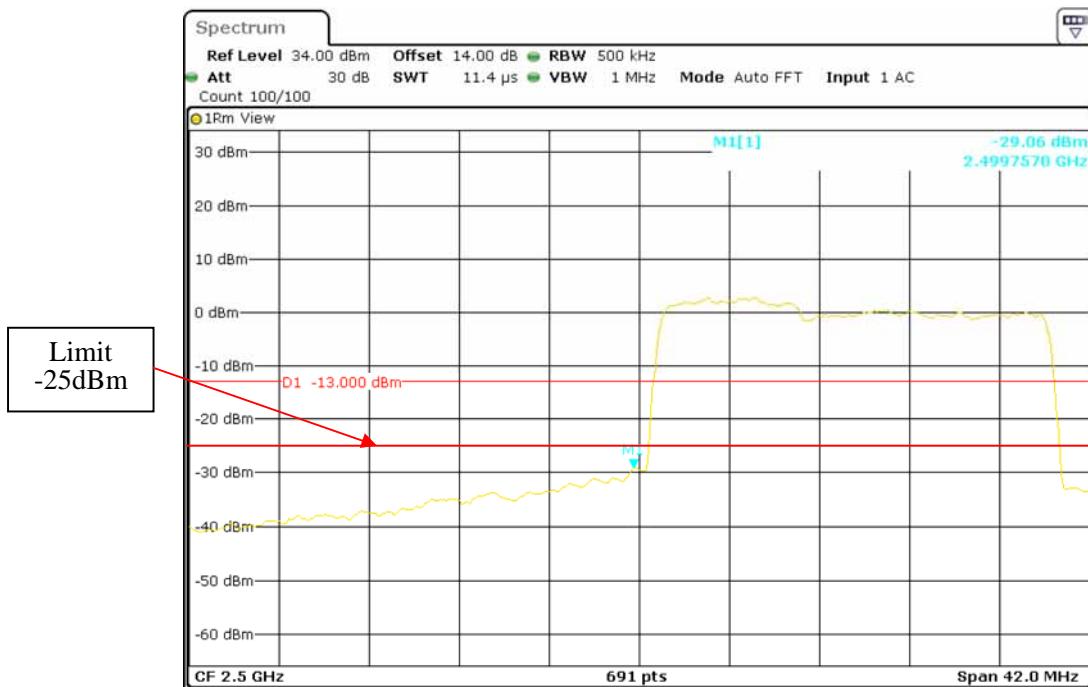
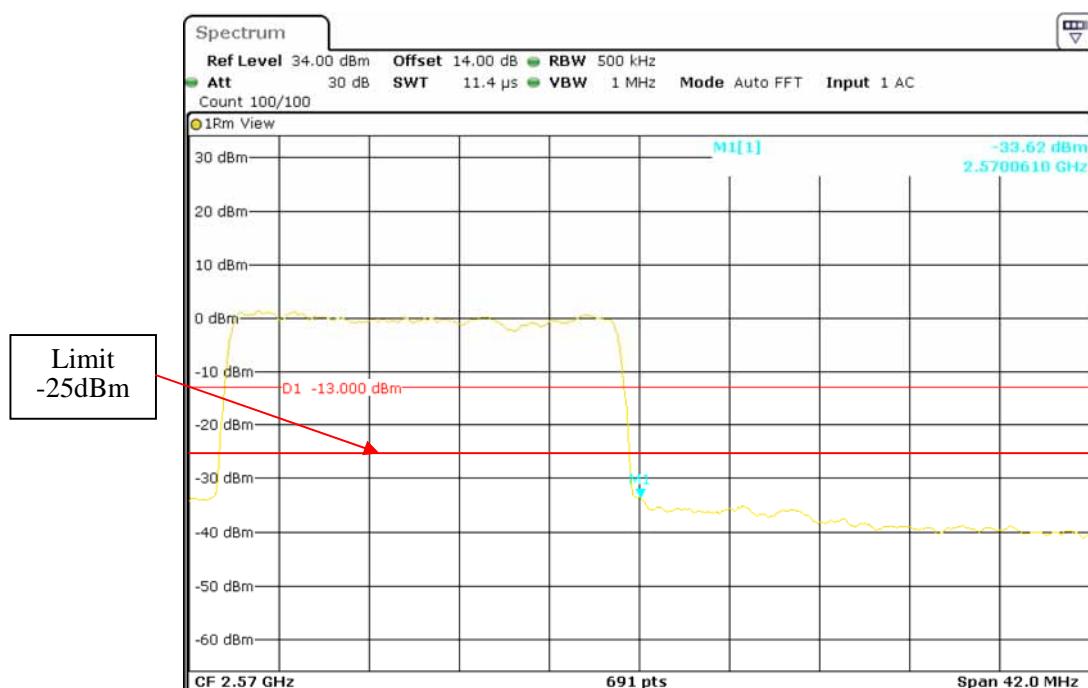
Date: 23.JUL.2015 22:56:49

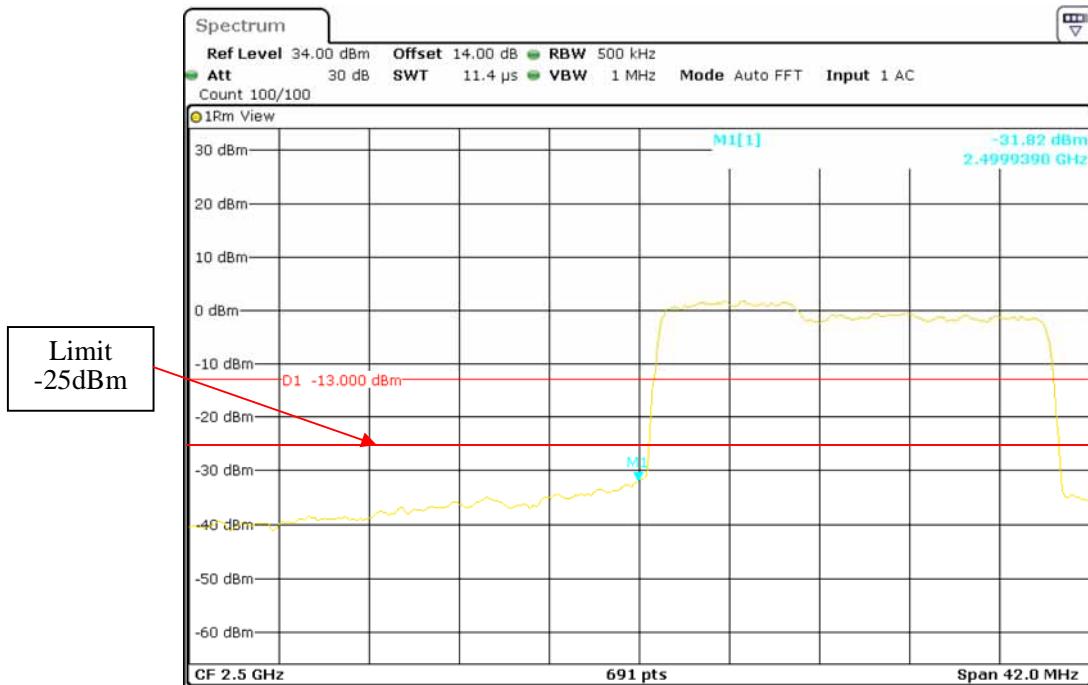
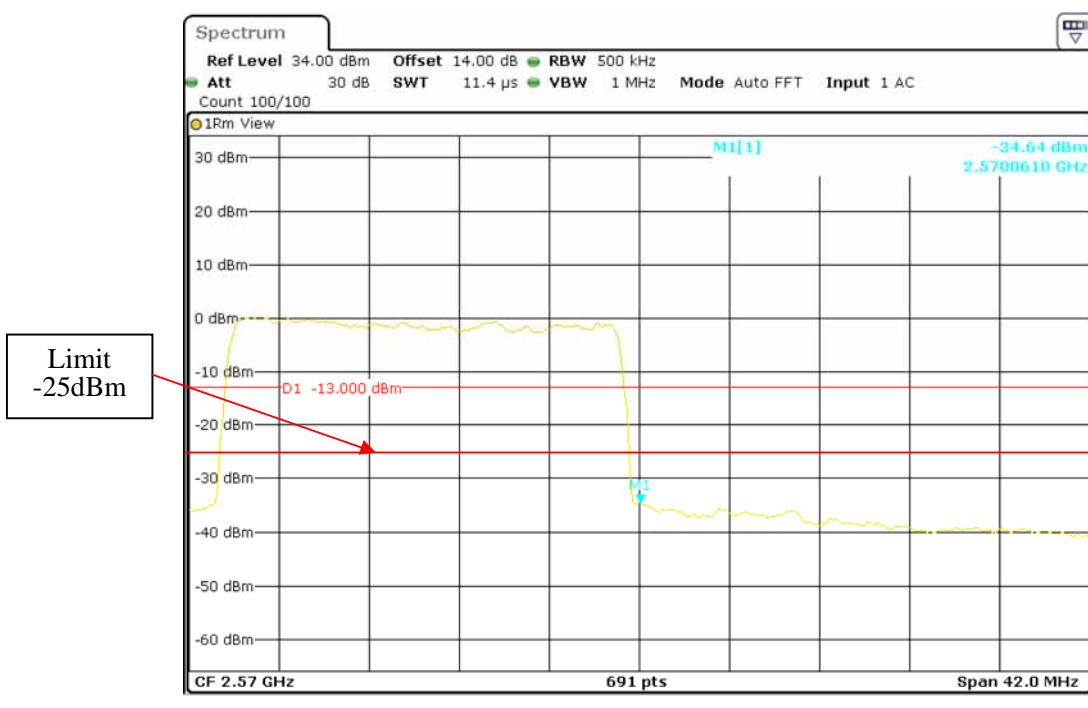
**QPSK (10.0 MHz, FULL RB) - Left Band Edge****QPSK (10.0 MHz, FULL RB) - Right Band Edge**

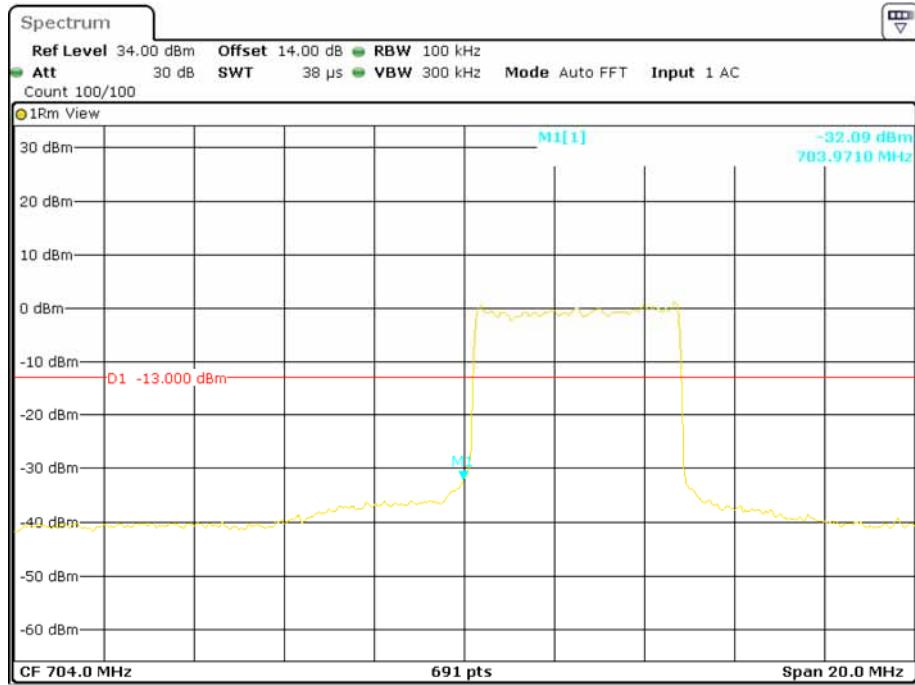
**16-QAM (10.0 MHz, FULL RB) - Left Band Edge****16-QAM (10.0 MHz, FULL RB) - Right Band Edge**

**QPSK (15.0 MHz, FULL RB) - Left Band Edge****QPSK (15.0 MHz, FULL RB) - Right Band Edge**

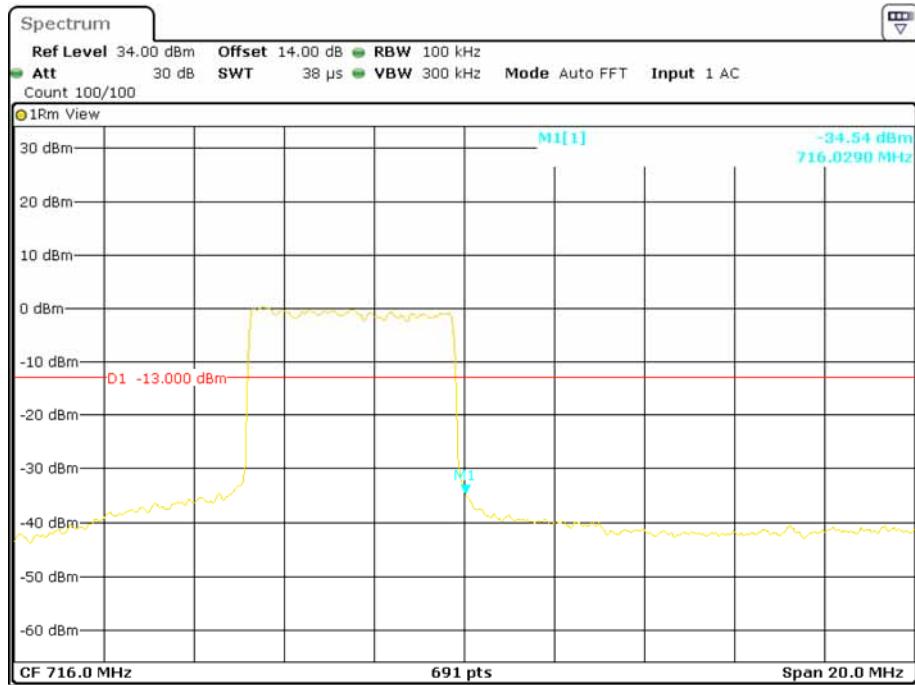
**16-QAM (15.0 MHz, FULL RB) - Left Band Edge****16-QAM (15.0 MHz, FULL RB) - Right Band Edge**

**QPSK (20.0 MHz, FULL RB) - Left Band Edge****QPSK (20.0 MHz, FULL RB) - Right Band Edge**

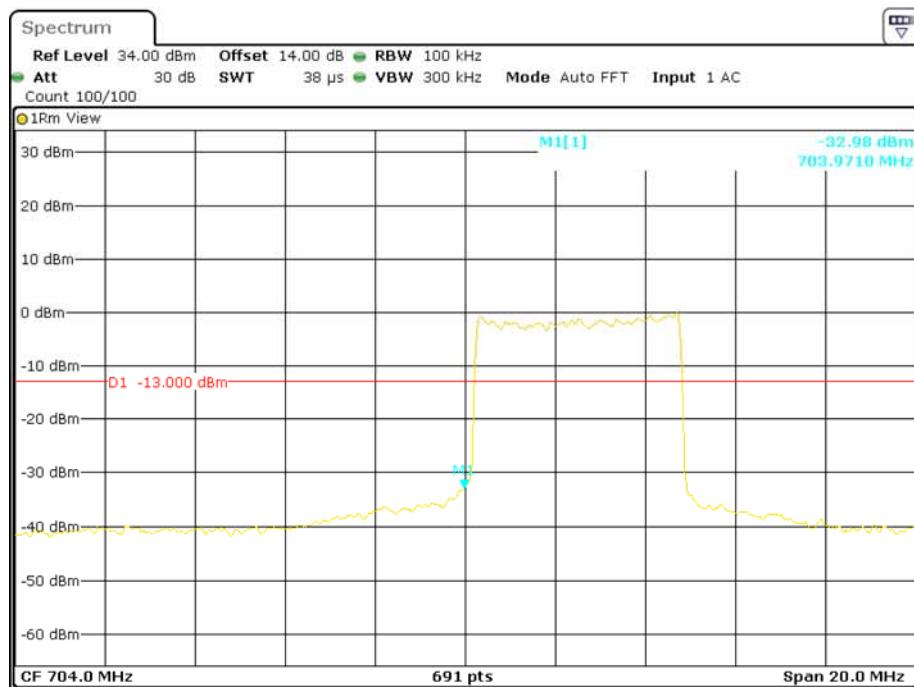
**16-QAM (20.0 MHz, FULL RB) - Left Band Edge****16-QAM (20.0 MHz, FULL RB) - Right Band Edge**

**Band 17:****QPSK (5.0 MHz, FULL RB) - Left Band Edge**

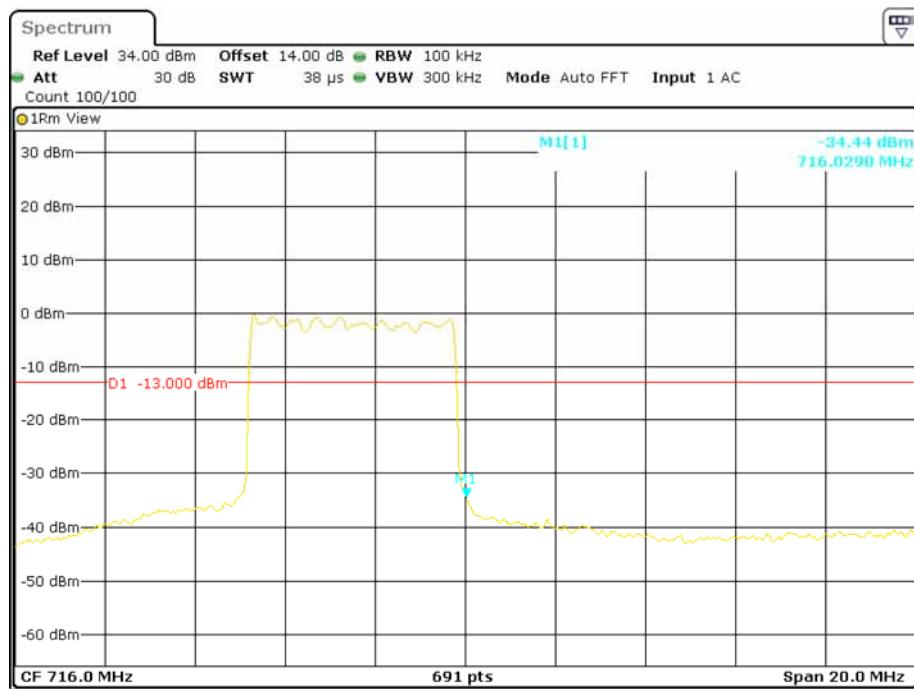
Date: 22.JUL.2015 14:46:44

**QPSK (5.0 MHz, FULL RB) - Right Band Edge**

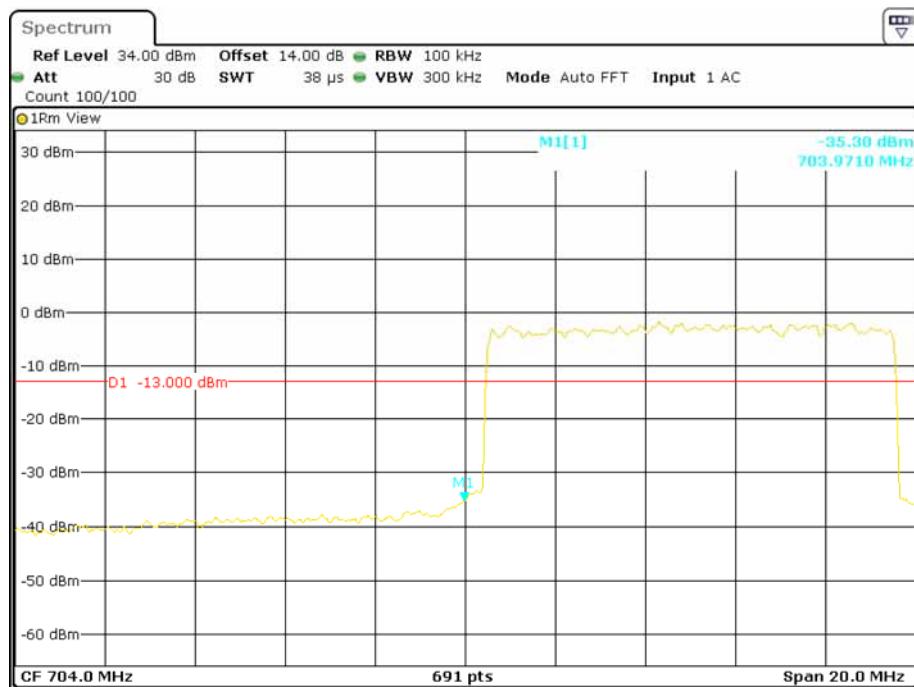
Date: 22.JUL.2015 14:37:16

**16-QAM (5.0 MHz, FULL RB) - Left Band Edge**

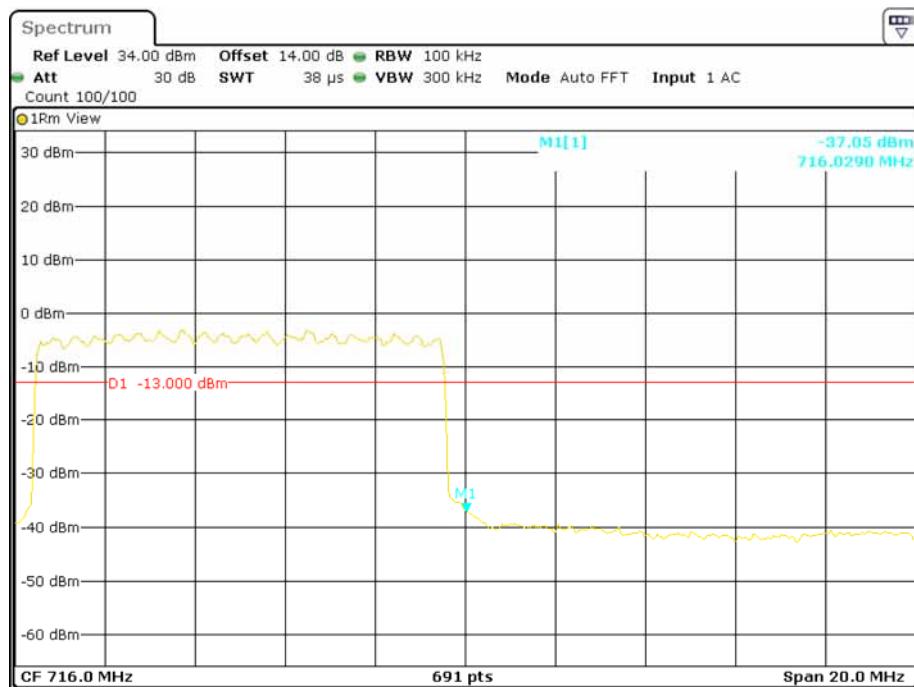
Date: 22.JUL.2015 14:45:05

**16-QAM (5.0 MHz, FULL RB) - Right Band Edge**

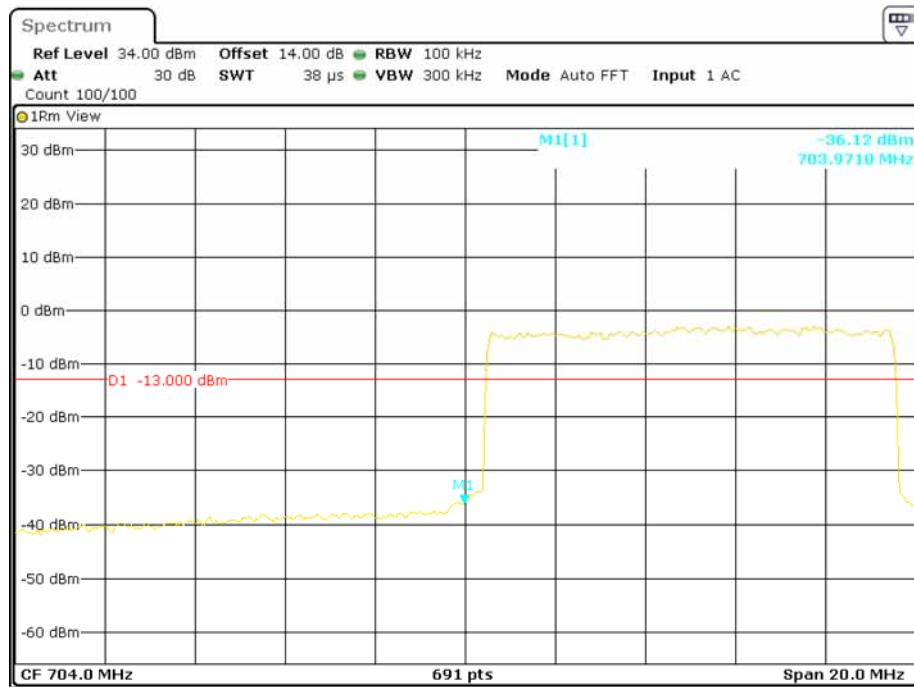
Date: 22.JUL.2015 14:38:08

**QPSK (10.0 MHz, FULL RB) - Left Band Edge**

Date: 22.JUL.2015 14:31:50

**QPSK (10.0 MHz, FULL RB) - Right Band Edge**

Date: 22.JUL.2015 14:27:11

**16-QAM (10.0 MHz, FULL RB) - Left Band Edge****16-QAM (10.0 MHz, FULL RB) - Right Band Edge**

## FCC §2.1055, §22.355 & §24.235 & §27.54 - FREQUENCY STABILITY

### Applicable Standards

FCC § 2.1055, §22.355, §24.235 and & §27.54.

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

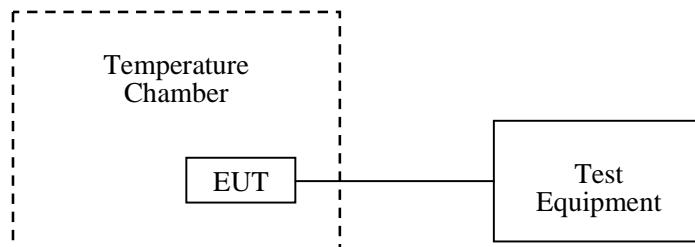
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

### Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



## Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2014-11-01	2015-11-01
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2014-11-23	2015-11-23

\* **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:	26
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Xiangguang Kong on 2015-07-28.

EUT operation mode: Transmitting

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

### Cellular Band (Part 22H)

### GSM Mode

Middle Channel, $f_o=836.6$ MHz				
Temperature (°)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.8	-3	-0.003590	2.5
-20		1	0.001195	2.5
-10		-4	-0.004780	2.5
0		0	0	2.5
10		-2	-0.002390	2.5
20		-3	-0.003590	2.5
30		-1	-0.001200	2.5
40		0	0	2.5
50		2	0.002391	2.5
25	V min.= 3.5	-1	-0.001200	2.5
25	V max.= 4.2	3	0.003586	2.5

**EDGE Mode**

Middle Channel, $f_o=836.6$ MHz				
Temperature (°)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.8	-3	-0.00359	2.5
-20		-4	-0.00478	2.5
-10		-2	-0.00239	2.5
0		-3	-0.00359	2.5
10		-1	-0.00120	2.5
20		-3	-0.00359	2.5
30		0	0	2.5
40		-3	-0.00359	2.5
50		-2	-0.00239	2.5
25	V min.= 3.5	2	0.00239	2.5
25	V max.= 4.2	4	0.00478	2.5

**WCDMA Mode**

Middle Channel, $f_o=836.6$ MHz				
Temperature (°)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.8	3	0.003586	2.5
-20		5	0.005977	2.5
-10		3	0.003586	2.5
0		0	0	2.5
10		2	0.002391	2.5
20		1	0.001195	2.5
30		4	0.004781	2.5
40		2	0.002391	2.5
50		5	0.005977	2.5
25	V min.= 3.5	-1	-0.001200	2.5
25	V max.= 4.2	3	0.003586	2.5

**PCS Band (Part 24E)****GSM Mode**

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.8	2	0.001064	Pass
-20		-1	-0.000530	Pass
-10		-4	-0.002130	Pass
0		1	0.000532	Pass
10		-5	-0.002660	Pass
20		0	0	Pass
30		-2	-0.001060	Pass
40		1	0.000532	Pass
50		-3	-0.001600	Pass
25	V min.= 3.5	2	0.001064	Pass
25	V max.= 4.2	-4	-0.002130	Pass

**EDGE Mode**

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°)	Power Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.8	6	0.003191	Pass
-20		7	0.003723	Pass
-10		3	0.001596	Pass
0		4	0.002128	Pass
10		2	0.001064	Pass
20		6	0.003191	Pass
30		5	0.002660	Pass
40		7	0.003723	Pass
50		3	0.001596	Pass
25	V min.= 3.5	1	0.000532	Pass
25	V max.= 4.2	8	0.004255	Pass

**WCDMA Mode**

<b>Middle Channel, <math>f_o=1880.0</math> MHz</b>				
<b>Temperature (<math>^{\circ}</math>)</b>	<b>Power Supplied (V<sub>DC</sub>)</b>	<b>Frequency Error (Hz)</b>	<b>Frequency Error (ppm)</b>	<b>Result</b>
-30	3.8	6	0.003191	Pass
-20		-1	-0.000530	Pass
-10		6	0.003191	Pass
0		2	0.001064	Pass
10		4	0.002128	Pass
20		3	0.001596	Pass
30		0	0	Pass
40		-2	-0.001060	Pass
50		1	0.000532	Pass
25	V min.= 3.5	4	0.002128	Pass
25	V max.= 4.2	5	0.002660	Pass

**Band 2:**

	<b>Temperature (°C)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
<b>10.0 MHz, Middle Channel</b>	-30	29	0.0154	Pass
	-20	27	0.0144	Pass
	-10	24	0.0128	Pass
	0	26	0.0138	Pass
	10	28	0.0149	Pass
	20	22	0.0117	Pass
	30	26	0.0138	Pass
	40	25	0.0133	Pass
	50	28	0.0149	Pass
	<b>Voltage (V<sub>DC</sub>)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
	3.8	26	0.0138	Pass
	3.6	24	0.0128	Pass
	4.2	28	0.0149	Pass

**Band 4:**

	<b>Temperature (°C)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
<b>10.0 MHz, Middle Channel</b>	-30	24	0.0139	Pass
	-20	22	0.0127	Pass
	-10	19	0.0110	Pass
	0	20	0.0115	Pass
	10	23	0.0133	Pass
	20	19	0.0110	Pass
	30	22	0.0127	Pass
	40	18	0.0104	Pass
	50	19	0.0110	Pass
	<b>Voltage (V<sub>DC</sub>)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
	3.8	20	0.0115	Pass
	3.6	22	0.0127	Pass
	4.2	25	0.0144	Pass

**Band 7:**

	<b>Temperature (°C)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
<b>10.0 MHz, Middle Channel</b>	-30	33	0.0130	Pass
	-20	32	0.0126	Pass
	-10	29	0.0114	Pass
	0	27	0.0107	Pass
	10	30	0.0118	Pass
	20	25	0.0099	Pass
	30	26	0.0103	Pass
	40	28	0.0110	Pass
	50	29	0.0114	Pass
	<b>Voltage (V<sub>DC</sub>)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
	3.8	31	0.0122	Pass
	3.6	33	0.0130	Pass
	4.2	30	0.0118	Pass

**Band 17:**

	<b>Temperature (°C)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
<b>10.0 MHz, Middle Channel</b>	-30	9	0.0127	Pass
	-20	8	0.0113	Pass
	-10	6	0.0085	Pass
	0	7	0.0099	Pass
	10	8	0.0113	Pass
	20	9	0.0127	Pass
	30	6	0.0085	Pass
	40	5	0.0070	Pass
	50	7	0.0099	Pass
	<b>Voltage (V<sub>DC</sub>)</b>	<b>QPSK (Hz)</b>	<b>QPSK (ppm)</b>	<b>Result</b>
	3.8	8	0.0113	Pass
	3.6	6	0.0085	Pass
	4.2	9	0.0127	Pass

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