



FCC PART 22H, PART 24E

FCC PART 27

MEASUREMENT AND TEST REPORT

For

MAXWEST INTERNATIONAL LIMITED

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FCC ID: 2AEN3GRAVITY55LTE

Report Type: Original Report	Product Type: Mobile Phone
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FCC

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *MAXWEST INTERNATIONAL LIMITED*'s product, model number: *Gravity 5.5LTE (FCC ID: 2AEN3GRAVITY55LTE)* (the "EUT") in this report was a *Mobile Phone (named Gravity 5.5LTE by applicant)*, which was measured approximately: 15.5 cm (L) x 7.6 cm (W) x 0.8 cm (H), rated input voltage: DC3.7V rechargeable Li-ion battery or DC5.0V charging from adapter.

Adapter information:

Model:GRAVITY 5.5LTE

Input: AC100-240V, 50/60 Hz, 0.2A Max;

Output: DC 5V, 1000mAh

All measurement and test data in this report was gathered from production sample serial number: 150901001 (Assigned by applicant). The EUT was received on 2015-09-02.

Objective

This report is prepared on behalf of *MAXWEST INTERNATIONAL LIMITED*, in accordance with: Part 2-Subpart J, Part 22-Subpart H, and Part 24-Subpart E of the Federal Communications Commission's rules. Part 2, Part 27 of the Federal Communication Commissions rules.

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

Related Submittal(s)/Grant(s)

FCC Part 15B JBP submissions with FCC ID: 2AEN3GRAVITY55LTE

FCC Part 15C DSS submissions with FCC ID: 2AEN3GRAVITY55LTE

FCC Part 15C DTS submissions with FCC ID: 2AEN3GRAVITY55LTE

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/EIA 603-D-2010.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp.(Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications 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 February 06, 2015.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. 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-2010.

The test items were performed with the EUT operating at testing mode.

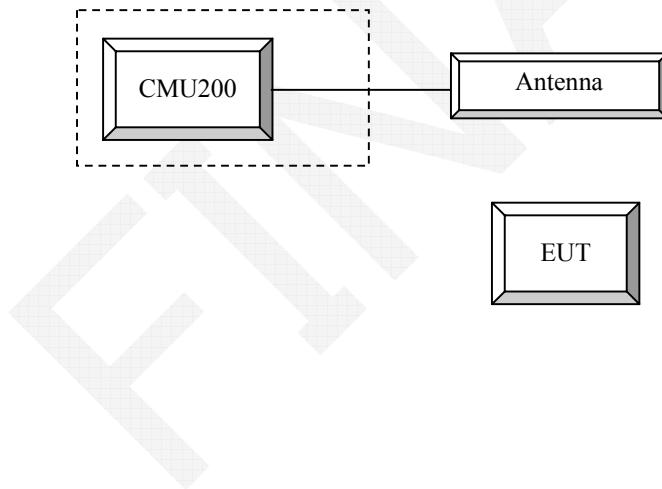
Equipment Modifications

No modification was made to the EUT.

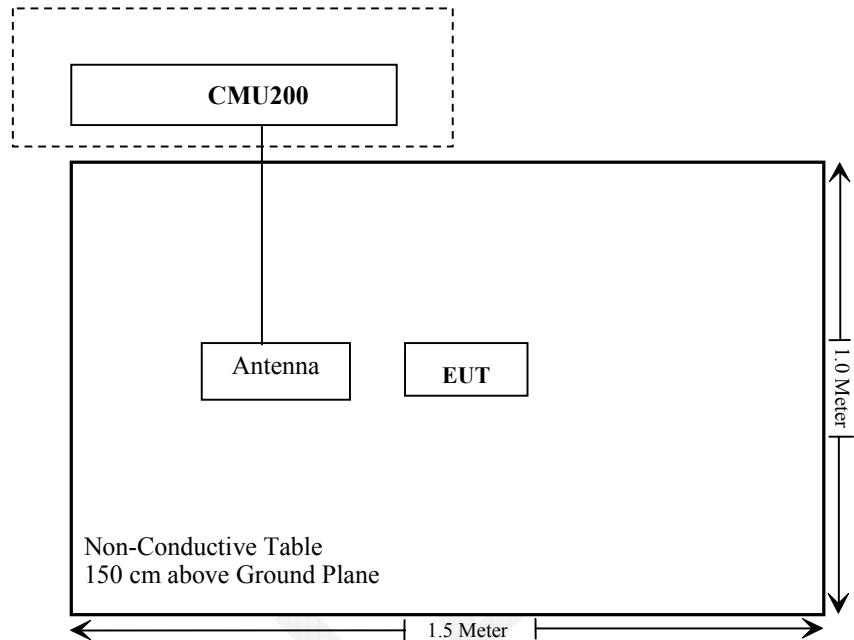
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
R&S	Universal Radio Communication Tester	CMU200	109038
R&S	Wideband Radio Communication Tester	CMW500	106891

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1310, §2.1093	RF Exposure	Compliance
§2.1046; § 22.913 (a); § 24.232 (c); §27.50	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905 § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliance
§ 2.1051, § 22.917 (a); § 24.238 (a); §27.53	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053 § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a); §27.53	Out of band emission, Band Edge	Compliance
§ 2.1055 § 22.355; § 24.235; §27.54	Frequency stability vs. temperature Frequency stability vs. voltage	Compliance

FCC §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RDG150901001-20A, RDG150901001-20B .

FINAL

FCC §2.1047 - MODULATION CHARACTERISTIC

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.

FINA

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

Applicable Standard

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 §24.232 (d) Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to FCC §2.1046 and §27.50 (c), (10) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

According to FCC §2.1046 and §27.50 (d), (4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC §2.1046 and §27.50 (h), (2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

Test Procedure

Test Procedure

GSM/GPRS/EGPRS

Function: Menu select > GSM Mobile Station > GSM 850/1900

Press Connection control to choose the different menus

Press RESET > choose all the reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM + GPRS or GSM + EGSM

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config Bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850

> 30 dBm for GPRS 1900

> 27 dBm for EGPRS 850

> 26 dBm for EGPRS 1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0 >	4 dB
Slot Config >	Unchanged (if already set under MS signal)
TCH >	choose desired test channel
Hopping >	Off
Main Timeslot >	3
Network	Coding Scheme > CS4 (GPRS) and MCS5 (EGPRS)
Bit Stream >	2E9-1 PSR Bit Stream
AF/RF Connection	Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input Press Signal on to turn on the signal and change settings

WCDMA-Release 99

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification. The EUT has a nominal maximum output power of 24dBm (+1.7/-3.7).

WCDMA General Settings	Loopback Mode	Test Mode 1		
	Rel99 RMC	12.2kbps RMC		
	Power Control Algorithm	Algorithm2		
	$\beta c / \beta d$	8/15		

WCDMA HSDPA

The following tests were conducted according to the test requirements outlines in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subset	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	$\beta c / \beta d$	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
HSDPA Specific Settings	MPR(dB)	0	0	0.5	0.5
	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	$Ahs = \beta hs / \beta c$	30/15			

WCDMA HSUPA

The following tests were conducted according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification.

	Mode	HSUPA	HSUPA	HSUPA	HSUPA	HSUPA
	Subset	1	2	3	4	5
WCDM A General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c / β_d	11/15	6/15	15/9	2/15	-
HSDPA Specific Settings	β_{hs}	22/15	12/15	30/15	4/15	5/15
	CM(dB)	1.0	3.0	2.0	3.0	1.0
	MPR(dB)	0	2	1	2	0
	DACK				8	
	DNAK				8	
	DCQI				8	
HSUPA Specific Settings	Ack-Nack repetition factor				3	
	CQI Feedback				4ms	
	CQI Repetition Factor				2	
	$A_{hs} = \beta_{hs} / \beta_c$				30/15	
	DE-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	ETFCI	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_FCl	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO4 E-TFCI 71 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO23 E-TFCI 75 E-TFCI PO26 E-TFCI 81 E-TFCI PO 27		

HSPA+

The following tests were conducted according to the test requirements in Table C.11.1.4 of 3GPP TS 34.121-1

Sub-test	β_c (Note 3)	β_d	β_{HS} (Note 1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	$\beta_{ed1}: 30/15$ $\beta_{ed2}: 30/15$	$\beta_{ed3}: 24/15$ $\beta_{ed4}: 24/15$	3.5	2.5	14	105	105

Note 1: $\Delta_{ACK}, \Delta_{NACK}$ and $\Delta_{CQI} = 30/15$ with $\beta_{hs} = 30/15 * \beta_c$.

Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).

Note 3: DPDCH is not configured, therefore the β_c is set to 1 and $\beta_d = 0$ by default.

Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.

Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

DC-HSDPA

The following tests were conducted according to the test requirements in Table C.8.1.12 of 3GPP TS 34.121-1

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

LTE:

The following tests were conducted according to the test requirements in 3GPP TS36.101

The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.

UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 3

Modulation	Channel bandwidth / Transmission bandwidth (RB)						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2

The allowed A-MPR values specified below in Table 6.2.4-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signalling Value of "NS_01".

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4, 10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10, 15, 20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23 ¹	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	*	*	*	*	*

Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.

Radiated method:

ANSI/TIA 603-D section 2.2.17

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-05-09	2016-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
R&S	Spectrum Analyzer	FSEM	DE31388	2015-05-09	2016-05-09
ETS LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
Giga	Signal Generator	1026	320408	2015-05-09	2016-05-09
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2012-09-06	2015-09-06

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

Test Data

Environmental Conditions

Temperature:	26.5~27.3 °C
Relative Humidity:	57~60%
ATM Pressure:	100~100.3kPa

The testing was performed by Dean Liu from 2015-09-06 to 2015-09-10.

Conducted Power**Cellular Band (Part 22H) & PCS Band (Part 24E)**

Band	Channel No.	Conducted Output Power (dBm)									
		GSM	GPRS 1 TX Slot	GPRS 2 TX Slot	GPRS 3 TX Slot	GPRS 4 TX Slot	EDGE 1 TX Slot	EDGE 2 TX Slot	EDGE 3 TX Slot	EDGE 4 TX Slot	
Cellular	128	32.74	33.25	32.49	31.02	29.57	26.94	25.80	23.52	22.64	
	190	32.82	33.30	32.61	30.94	29.71	26.95	25.77	23.84	22.98	
	251	32.97	33.48	32.73	31.11	29.63	26.97	25.98	23.25	22.95	
PCS	512	29.31	29.25	28.35	26.12	25.27	25.04	23.11	22.24	21.14	
	661	29.44	29.28	28.50	26.23	25.31	25.14	23.36	22.35	21.32	
	810	29.55	29.65	28.86	26.06	25.68	25.25	23.75	22.48	20.94	

WCDMA Band (PART 24E)

Mode	3GPP Sub Test	Average Output Power (dBm)					
		Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99	1	22.08	3.20	22.35	3.36	21.98	3.76
HSDPA	1	22.32	3.23	22.39	3.35	21.85	3.73
	2	22.16	3.22	22.27	3.36	21.92	3.74
	3	22.10	3.26	22.13	3.32	21.85	3.75
	4	22.05	3.25	22.06	3.31	21.64	3.71
HSUPA	1	22.09	3.18	22.01	3.30	21.83	3.72
	2	21.98	3.22	22.07	3.32	21.75	3.74
	3	21.95	3.24	21.98	3.34	21.59	3.72
	4	21.89	3.21	21.87	3.34	21.53	3.78
	5	21.76	3.20	21.73	3.32	21.47	3.71
DC-HSDPA	1	21.48	3.21	21.71	3.31	21.52	3.72
	2	21.63	3.24	21.66	3.31	21.58	3.74
	3	21.33	3.25	21.61	3.36	21.96	3.75
	4	21.32	3.21	21.53	3.35	21.82	3.76
HSPA+	1	20.48	3.23	20.77	3.31	20.34	3.77

WCDMA Band IV (PART 27)

Mode	3GPP Sub Test	Conducted Output Power (dBm)					
		Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99	1	22.84	2.40	21.75	2.28	22.08	2.52
HSDPA	1	22.25	2.38	20.86	2.26	21.72	2.49
	2	22.34	2.43	20.92	2.25	21.65	2.54
	3	22.22	2.42	20.93	2.24	21.62	2.53
	4	22.16	2.45	20.87	2.26	21.60	2.57
HSUPA	1	21.82	2.44	20.89	2.28	21.59	2.51
	2	22.21	2.39	20.83	2.24	21.54	2.57
	3	21.83	2.43	20.86	2.26	21.59	2.55
	4	21.37	2.46	20.83	2.22	21.57	2.58
	5	21.89	2.42	20.84	2.25	21.46	2.52
DC-HSDPA	1	21.68	2.46	20.82	2.21	21.43	2.50
	2	21.86	2.43	20.81	2.26	21.47	2.56
	3	21.62	2.44	20.79	2.21	21.45	2.54
	4	21.89	2.41	20.82	2.25	21.41	2.58
HSPA+	1	21.88	2.40	20.71	2.27	21.38	2.51

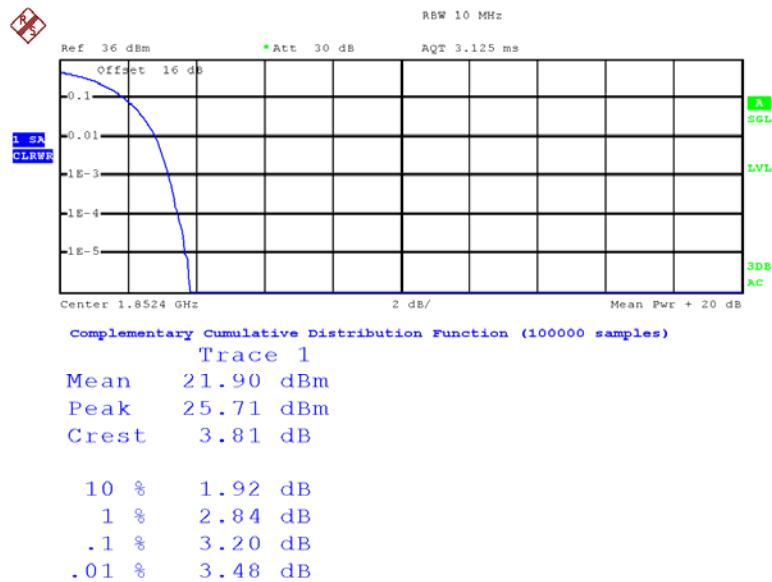
WCDMA Band V (PART 22H)

Mode	3GPP Sub Test	Average Output Power (dBm)					
		Low Channel (Ave. Power)	Low Channel (PAR)	Middle Channel (Ave. Power)	Middle Channel (PAR)	High Channel (Ave. Power)	High Channel (PAR)
Rel 99	1	22.26	3.88	22.24	2.92	21.97	4.08
HSDPA	1	22.31	3.24	22.23	3.31	21.79	3.67
	2	22.13	3.23	22.16	3.36	21.85	3.61
	3	22.22	3.22	22.15	3.30	21.73	3.64
	4	21.99	3.21	21.86	3.35	21.85	3.65
DC-HSDPA	1	22.21	3.23	22.22	3.36	21.72	3.68
	2	22.13	3.26	21.53	3.32	21.76	3.60
	3	21.99	3.24	22.15	3.31	21.95	3.62
	4	22.05	3.21	22.18	3.30	21.93	3.62
	5	21.91	3.20	21.99	3.36	21.91	3.65
HSUPA	1	22.16	3.23	21.94	3.35	22.13	3.68
	2	22.21	3.27	21.89	3.34	22.23	3.61
	3	22.06	3.26	21.87	3.32	22.18	3.62
	4	22.09	3.21	21.89	3.32	22.32	3.61
HSPA+	1	21.32	3.22	20.97	3.33	21.16	3.66

Note: peak-to-average ratio (PAR) <13 dB.

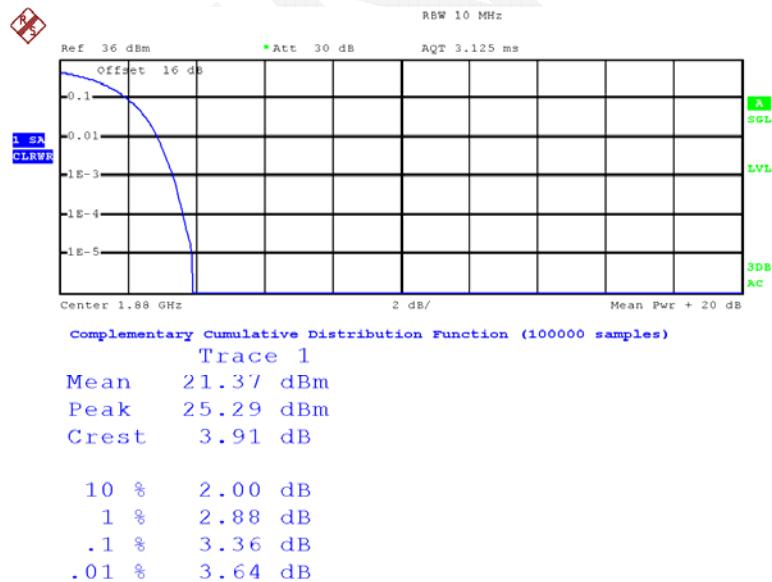
**Peak-to-average ratio (PAR)
WCDMA Band (PART 24E)**

Low Channel

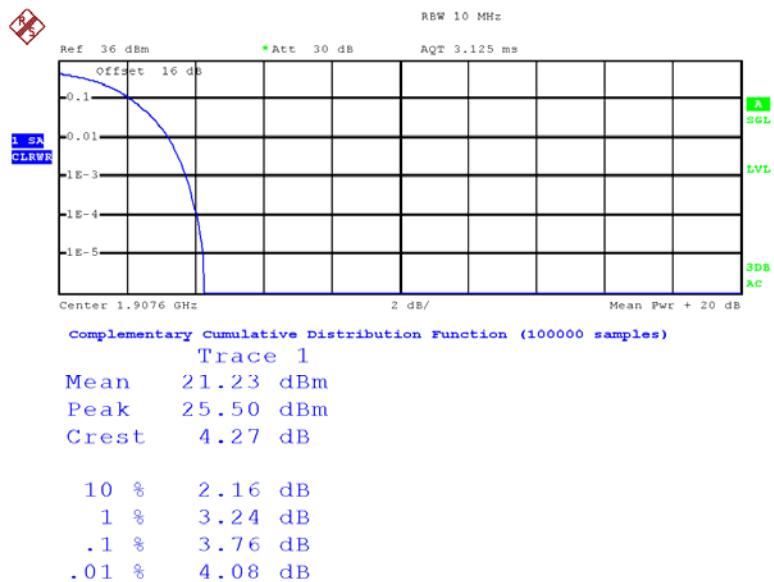


Date: 6.SEP.2015 19:47:39

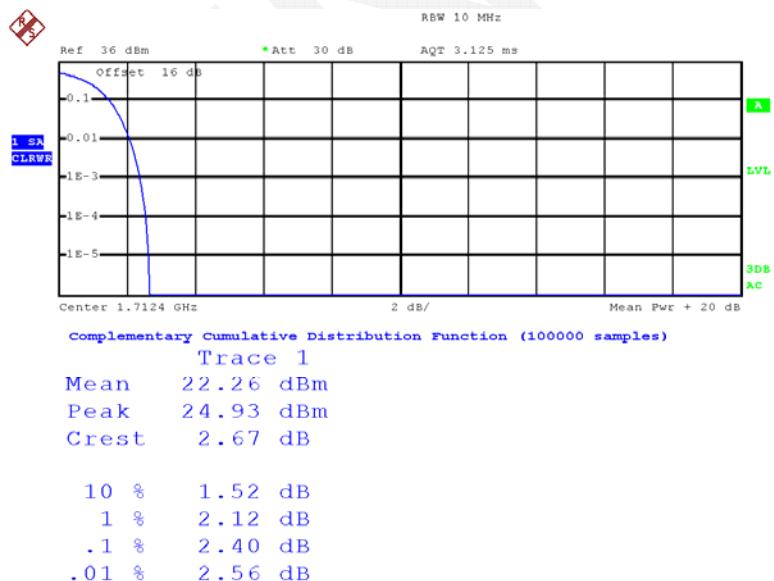
Middle Channel



Date: 6.SEP.2015 19:49:24

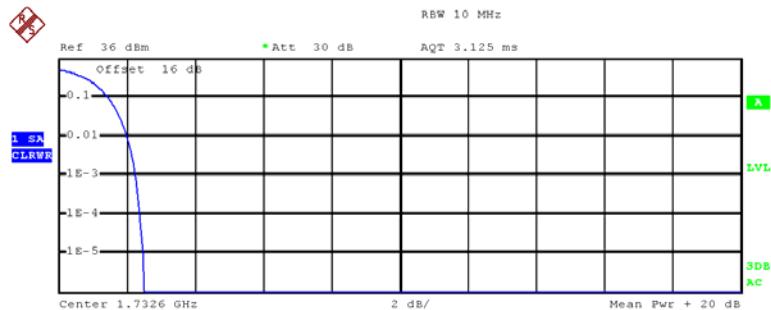
High Channel

Date: 6.SEP.2015 19:45:27

WCDMA Band IV (PART 27)**Low Channel**

Date: 9.SEP.2015 05:46:00

Middle Channel



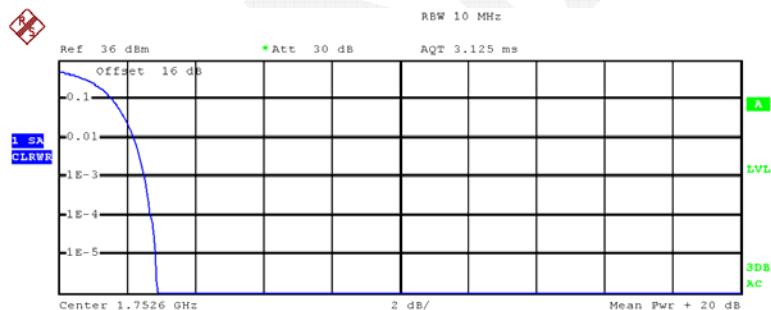
complementary Cumulative Distribution Function (100000 samples)

Trace 1
Mean 22.35 dBm
Peak 24.86 dBm
Crest 2.52 dB

10 % 1.48 dB
1 % 2.00 dB
.1 % 2.28 dB
.01 % 2.40 dB

Date: 9.SEP.2015 05:46:39

High Channel

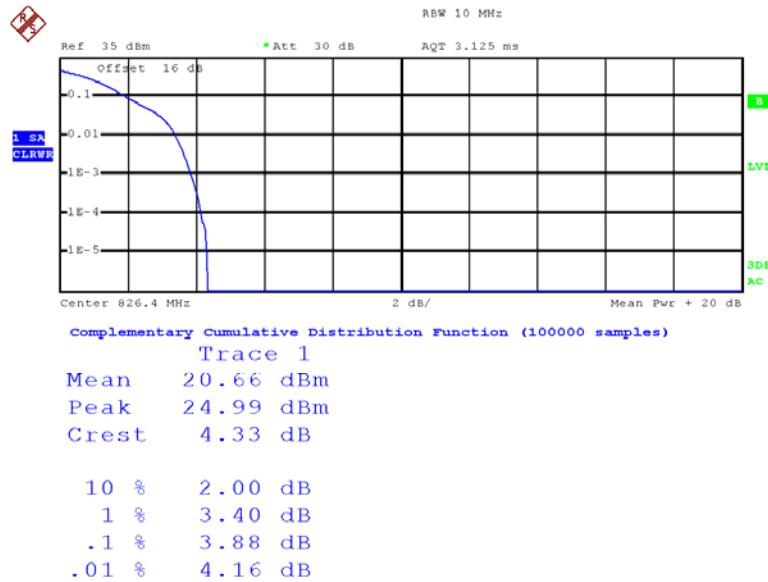


complementary Cumulative Distribution Function (100000 samples)

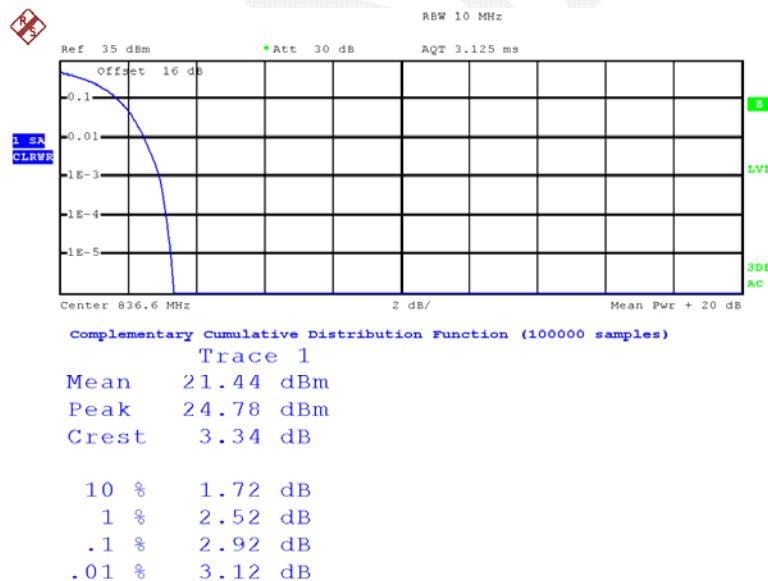
Trace 1
Mean 22.69 dBm
Peak 25.57 dBm
Crest 2.88 dB

10 % 1.60 dB
1 % 2.20 dB
.1 % 2.52 dB
.01 % 2.72 dB

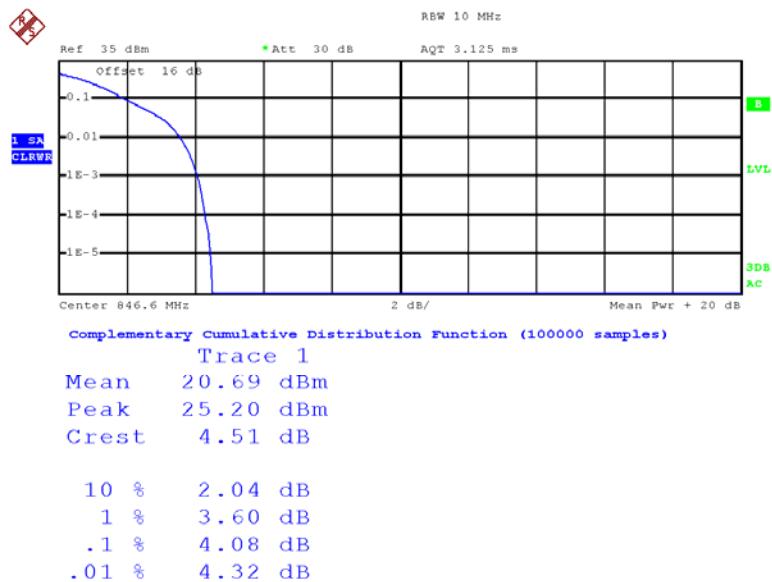
Date: 9.SEP.2015 05:47:27

WCDMA Band V (PART 22H)**Low Channel**

Date: 6.SEP.2015 21:47:45

Middle Channel

Date: 6.SEP.2015 21:48:22

High Channel

Date: 6.SEP.2015 21:48:59

FCC

LTE Band 2

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	22.80	22.89	22.55
		1#3	22.99	23.15	22.76
		1#5	22.89	22.96	22.66
		3#0	22.25	22.34	22.02
		3#1	22.17	22.22	21.94
		3#3	22.20	22.38	22.05
		6#0	21.69	21.98	21.70
	16-QAM	1#0	22.26	22.48	22.02
		1#3	22.29	22.56	22.27
		1#5	22.15	22.38	22.01
		3#0	21.58	21.60	21.22
		3#1	21.35	21.53	21.13
		3#3	21.32	21.58	21.39
		6#0	20.92	21.07	20.78
3M	QPSK	1#0	22.80	23.00	22.48
		1#7	22.95	22.98	22.63
		1#14	22.92	22.91	22.65
		8#0	22.34	22.57	22.03
		8#4	22.48	22.63	22.39
		8#7	22.33	22.49	22.25
		15#0	22.02	22.02	21.77
	16-QAM	1#0	22.50	22.54	22.21
		1#7	22.52	22.63	22.32
		1#14	22.33	22.55	22.17
		8#0	21.06	21.16	20.89
		8#4	21.31	21.44	21.19
		8#7	20.98	21.20	21.05
		15#0	20.98	21.08	20.83
5M	QPSK	1#0	22.82	23.02	22.80
		1#12	22.91	23.05	22.84
		1#24	22.85	23.08	22.70
		12#0	22.29	22.40	22.11
		12#6	22.24	22.49	22.14
		12#11	22.23	22.37	22.02
		25#0	21.83	21.87	21.67
	16-QAM	1#0	22.36	22.48	22.19
		1#12	22.46	22.56	22.18
		1#24	22.34	22.54	22.20
		12#0	21.37	21.60	21.39
		12#6	21.61	21.69	21.48
		12#11	21.46	21.76	21.49
		25#0	20.82	20.93	20.67

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	1#0	22.48	22.78	22.29
		1#24	22.61	22.92	22.46
		1#49	22.54	22.79	22.58
		25#0	22.08	22.19	21.90
		25#12	22.11	22.28	21.87
		25#24	22.13	22.21	21.85
		50#0	21.70	21.93	21.50
	16-QAM	1#0	22.12	22.13	21.98
		1#24	22.13	22.28	21.85
		1#49	22.13	22.17	21.85
		25#0	21.32	21.55	21.28
		25#12	21.37	21.58	21.20
		25#24	21.32	21.56	21.22
		50#0	20.78	20.92	20.70
15M	QPSK	1#0	22.99	23.02	22.71
		1#37	22.91	23.12	22.82
		1#74	22.79	23.03	22.65
		36#0	22.22	22.32	22.05
		36#17	22.29	22.43	22.10
		36#35	22.15	22.40	22.01
		75#0	21.52	21.72	21.46
	16-QAM	1#0	22.12	22.28	22.19
		1#37	22.16	22.33	22.10
		1#74	22.22	22.34	21.94
		36#0	21.27	21.53	21.24
		36#17	21.35	21.59	21.25
		36#35	21.28	21.33	21.12
		75#0	20.65	21.03	20.66
20M	QPSK	1#0	22.69	22.78	22.43
		1#49	22.50	22.70	22.45
		1#99	22.70	22.84	22.48
		50#0	21.82	22.11	21.76
		50#24	21.91	22.01	21.78
		50#49	21.85	22.10	21.80
		100#0	21.37	21.74	21.30
	16-QAM	1#0	21.81	22.01	21.58
		1#49	22.02	22.05	21.96
		1#99	21.84	21.99	21.86
		50#0	21.07	21.38	21.00
		50#24	21.21	21.22	20.97
		50#49	21.05	21.30	20.91
		100#0	20.65	20.74	20.47

LTE Band 4

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	22.80	22.62	22.35
		1#3	22.61	22.30	22.14
		1#5	22.71	22.45	22.25
		3#0	22.75	22.41	22.24
		3#1	22.42	22.32	22.25
		3#3	22.61	22.52	22.32
		6#0	21.81	21.41	21.24
	16-QAM	1#0	21.82	21.52	21.34
		1#3	21.72	21.52	21.22
		1#5	21.81	21.60	21.48
		3#0	21.73	21.59	21.35
		3#1	21.68	21.51	21.24
		3#3	21.72	21.69	21.56
		6#0	20.90	20.56	20.50
3M	QPSK	1#0	22.70	22.35	22.09
		1#7	22.39	22.17	21.99
		1#14	22.53	22.27	22.04
		8#0	22.37	22.08	21.95
		8#4	22.37	22.04	21.86
		8#7	22.35	22.03	21.96
		15#0	21.62	21.33	21.35
	16-QAM	1#0	22.15	21.94	21.73
		1#7	22.07	21.87	21.75
		1#14	22.09	21.95	21.67
		8#0	21.60	21.46	21.13
		8#4	21.51	21.27	21.12
		8#7	21.46	21.34	21.15
		15#0	20.67	20.64	20.32
5M	QPSK	1#0	22.67	22.38	22.39
		1#12	22.62	22.41	22.20
		1#24	22.73	22.63	22.44
		12#0	22.00	21.90	21.92
		12#6	22.15	21.87	21.74
		12#11	22.25	21.96	21.90
		25#0	21.59	21.39	21.28
	16-QAM	1#0	21.74	21.54	21.29
		1#12	21.45	21.39	21.15
		1#24	21.68	21.50	21.20
		12#0	21.16	21.16	21.15
		12#6	21.28	21.11	20.83
		12#11	21.29	21.15	20.97
		25#0	20.82	20.74	20.49

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
10M	QPSK	1#0	22.10	22.01	22.03
		1#24	22.17	22.10	21.90
		1#49	22.42	22.19	22.01
		25#0	21.84	21.66	21.48
		25#12	21.98	21.78	21.49
		25#24	22.12	21.80	21.74
		50#0	21.40	21.14	21.04
	16-QAM	1#0	21.63	21.46	21.43
		1#24	21.52	21.40	21.28
		1#49	21.71	21.45	21.34
		25#0	21.05	20.96	20.85
		25#12	21.05	20.92	20.78
		25#24	21.24	21.08	20.93
		50#0	20.51	20.31	20.09
15M	QPSK	1#0	22.11	22.02	21.71
		1#37	22.15	22.01	21.78
		1#74	21.98	21.86	21.85
		36#0	21.76	21.52	21.42
		36#17	21.68	21.57	21.27
		36#35	21.71	21.57	21.43
		75#0	21.16	20.98	20.80
	16-QAM	1#0	21.58	21.25	21.02
		1#37	21.46	21.15	21.07
		1#74	21.52	21.39	21.16
		36#0	21.00	20.89	20.72
		36#17	20.90	20.79	20.61
		36#35	21.09	21.01	20.76
		75#0	20.25	20.06	19.87
20M	QPSK	1#0	22.81	22.63	22.36
		1#49	22.65	22.30	22.16
		1#99	22.72	22.55	22.24
		50#0	22.70	22.45	22.24
		50#24	22.47	22.35	22.23
		50#49	22.67	22.53	22.36
		100#0	21.82	21.49	21.29
	16-QAM	1#0	21.23	21.07	20.68
		1#49	21.31	21.23	21.13
		1#99	21.21	21.13	20.87
		50#0	20.81	20.71	20.48
		50#24	21.84	21.56	21.27
		50#49	21.72	21.54	21.44
		100#0	20.04	19.80	19.61

LTE Band 7

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	22.54	22.88	22.34
		1#3	22.60	22.83	22.46
		1#5	22.42	22.79	22.13
		3#0	21.94	22.13	21.77
		3#1	21.87	22.31	21.62
		3#3	22.01	22.14	21.71
		6#0	21.42	21.69	21.31
	16-QAM	1#0	21.44	21.65	21.21
		1#3	21.32	21.67	21.24
		1#5	21.41	21.66	21.36
		3#0	21.13	21.05	20.59
		3#1	20.88	21.20	20.55
		3#3	20.99	21.27	20.75
		6#0	20.51	20.95	20.34
10M	QPSK	1#0	22.62	22.78	22.37
		1#7	22.80	22.94	22.42
		1#14	22.40	22.92	22.27
		8#0	21.93	22.04	21.49
		8#4	22.00	22.16	21.68
		8#7	21.99	22.10	21.54
		15#0	21.76	21.73	21.57
	16-QAM	1#0	21.93	22.25	21.75
		1#7	21.80	22.15	21.72
		1#14	21.82	22.02	21.70
		8#0	21.02	21.30	20.87
		8#4	21.09	21.33	20.82
		8#7	21.13	21.40	21.11
		15#0	20.53	20.91	20.46

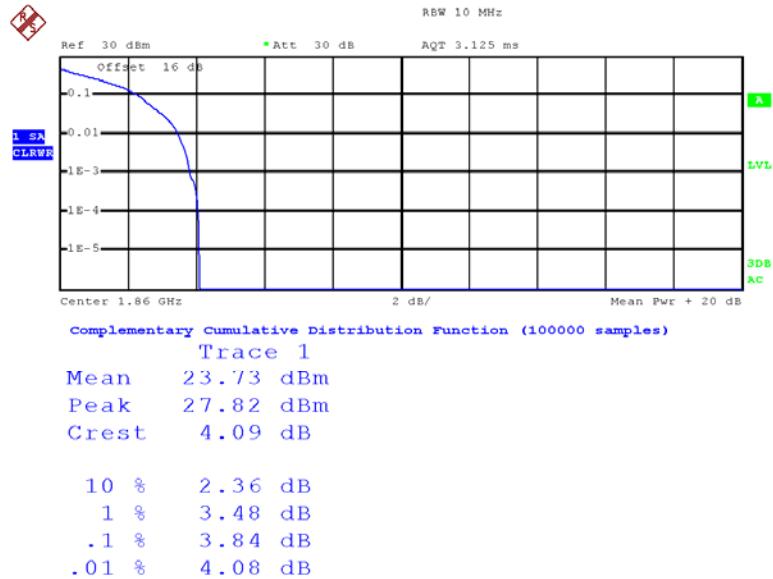
Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	22.57	22.87	22.57
		1#37	22.66	22.89	22.46
		1#74	22.68	22.98	22.29
		36#0	21.76	22.06	21.70
		36#17	21.82	22.13	21.39
		36#35	21.85	22.10	21.62
		75#0	21.61	21.78	21.34
	16-QAM	1#0	22.13	22.21	21.74
		1#37	22.05	22.40	21.90
		1#74	21.87	22.17	21.83
		36#0	21.15	21.44	21.14
		36#17	21.41	21.51	21.17
		36#35	21.23	21.42	20.83
		75#0	20.74	20.90	20.47
20M	QPSK	1#0	22.46	22.76	22.23
		1#49	22.79	22.83	22.44
		1#99	22.69	22.86	22.25
		50#0	21.70	21.77	21.20
		50#24	21.57	21.80	21.22
		50#49	21.58	21.83	21.43
		100#0	21.74	21.79	21.45
	16-QAM	1#0	21.86	21.93	21.49
		1#49	21.93	22.15	21.78
		1#99	21.70	22.05	21.74
		50#0	21.09	21.42	20.85
		50#24	21.26	21.37	20.78
		50#49	21.10	21.29	20.85
		100#0	20.53	20.84	20.36

LTE Band 17

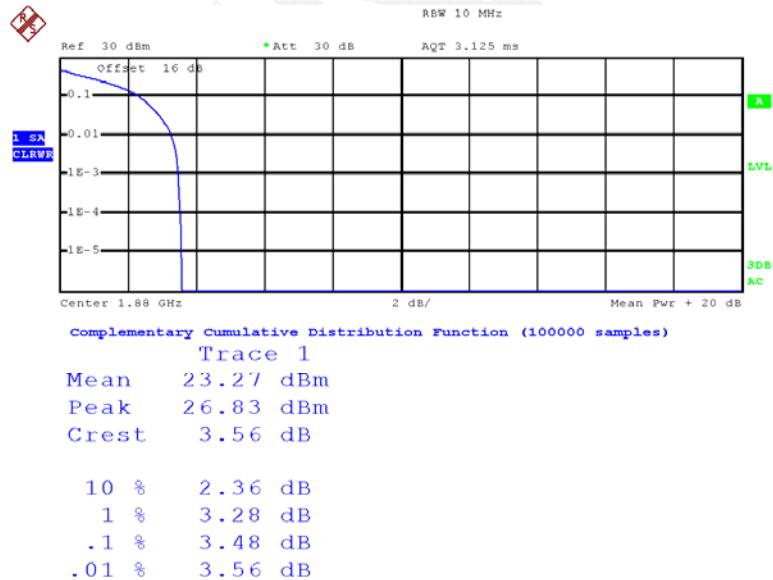
Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	22.49	22.78	22.29
		1#12	22.58	22.68	22.38
		1#24	22.67	22.79	22.45
		12#0	21.92	22.21	21.98
		12#6	21.90	22.21	21.91
		12#11	21.93	22.05	21.83
		25#0	21.32	21.68	21.33
	16-QAM	1#0	21.64	21.80	21.46
		1#12	21.46	21.73	21.38
		1#24	21.47	21.71	21.49
		12#0	20.75	21.14	20.89
		12#6	20.91	21.15	20.77
		12#11	20.81	20.93	20.81
		25#0	20.52	20.80	20.59
10M	QPSK	1#0	22.55	22.84	22.50
		1#24	22.54	22.76	22.52
		1#49	22.73	22.86	22.55
		25#0	21.82	21.98	21.69
		25#12	22.04	22.08	21.80
		25#24	21.83	22.00	21.80
		50#0	21.50	21.74	21.49
	16-QAM	1#0	21.77	22.12	21.74
		1#24	21.72	21.92	21.65
		1#49	21.82	21.98	21.57
		25#0	21.26	21.54	21.28
		25#12	21.44	21.58	21.25
		25#24	21.18	21.45	21.11
		50#0	20.77	21.00	20.54

Peak-to-average ratio (PAR)

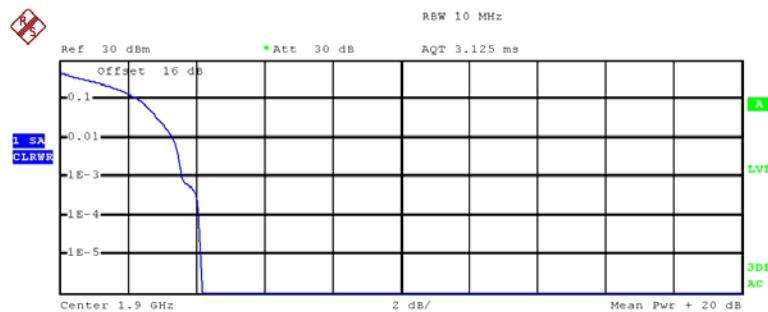
LTE Band	Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit (dB)
Band 2	QPSK	1 RB	20M	3.84	3.48	3.60	13
		Full RB		6.28	6.32	6.32	13
	16-QAM	1 RB		4.52	4.48	4.60	13
		Full RB		6.92	7.04	6.96	13
Band 4	QPSK	1 RB	20M	3.64	3.56	3.24	13
		Full RB		6.24	6.28	6.24	13
	16-QAM	1 RB		4.12	4.12	3.56	13
		Full RB		6.88	6.88	6.84	13
Band 7	QPSK	1 RB	20M	4.12	4.76	4.24	13
		Full RB		6.40	6.36	6.20	13
	16-QAM	1 RB		5.60	5.08	4.64	13
		Full RB		7.04	7.12	7.08	13
Band 17	QPSK	1 RB	10M	4.64	4.48	4.6	13
		Full RB		5.56	5.52	5.52	13
	16-QAM	1 RB		5.92	6.36	6.16	13
		Full RB		6.68	6.68	6.56	13

LTE Band 2**QPSK-1RB, 20M Low Channel**

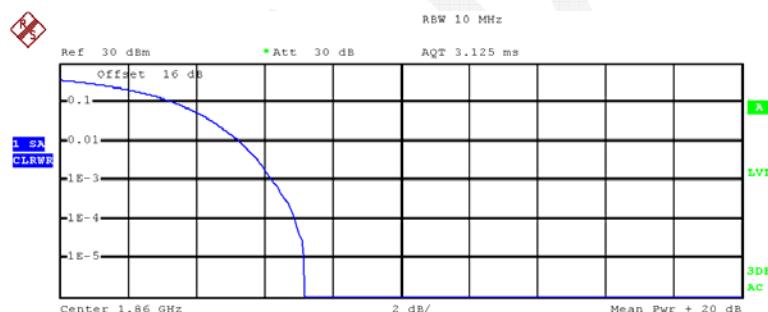
Date: 7.SEP.2015 19:40:20

QPSK-1RB, 20M Middle Channel

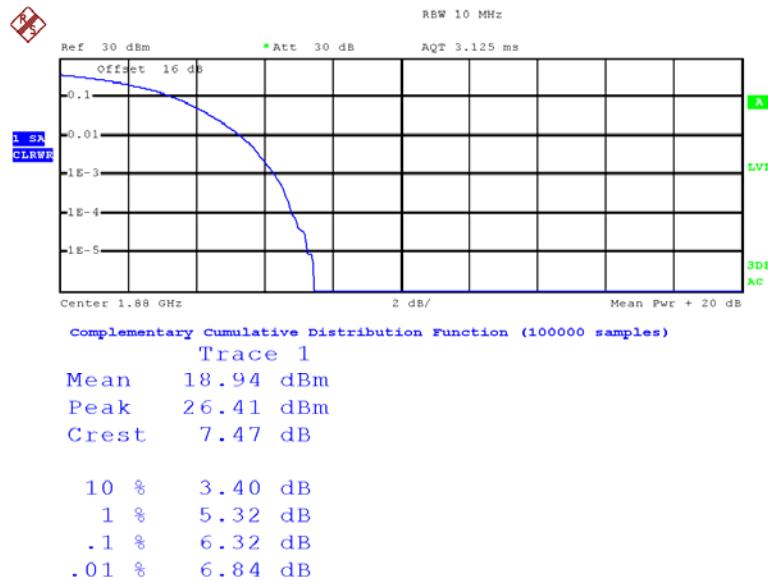
Date: 7.SEP.2015 19:40:00

QPSK-1RB, 20M High Channel

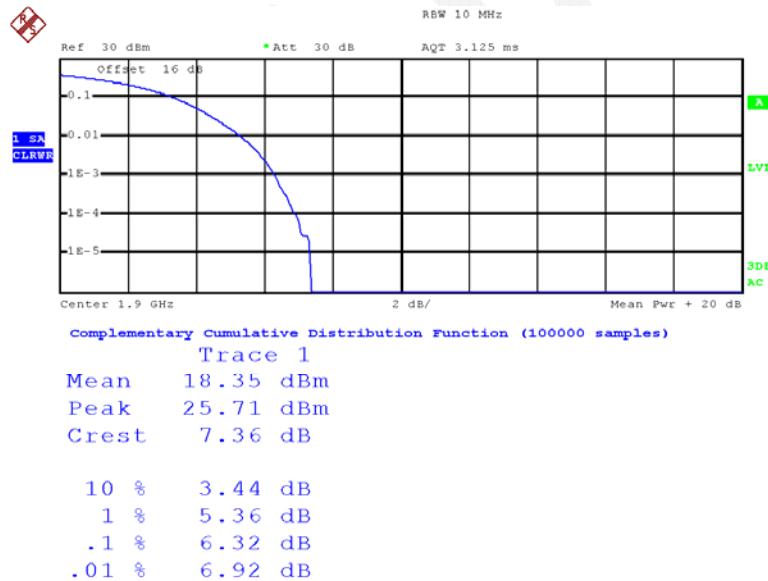
Date: 7.SEP.2015 19:38:45

QPSK- Full RB, 20M Low Channel

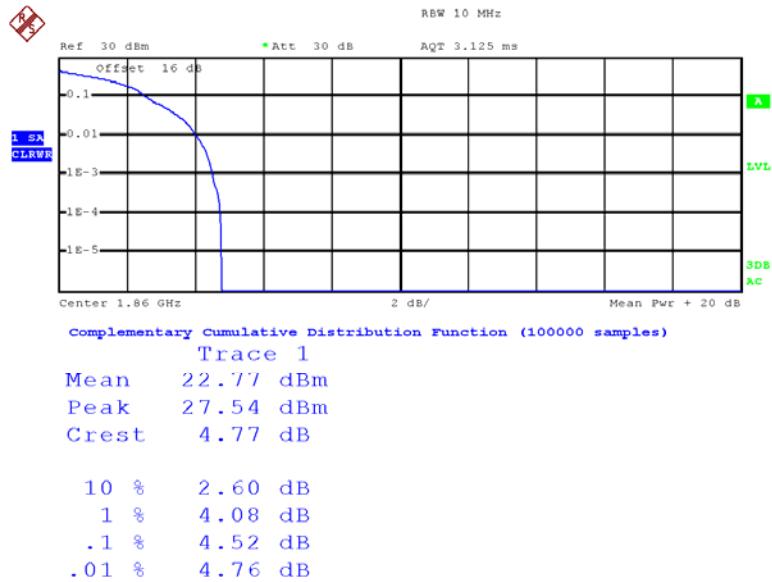
Date: 7.SEP.2015 19:41:37

QPSK- Full RB, 20M Middle Channel

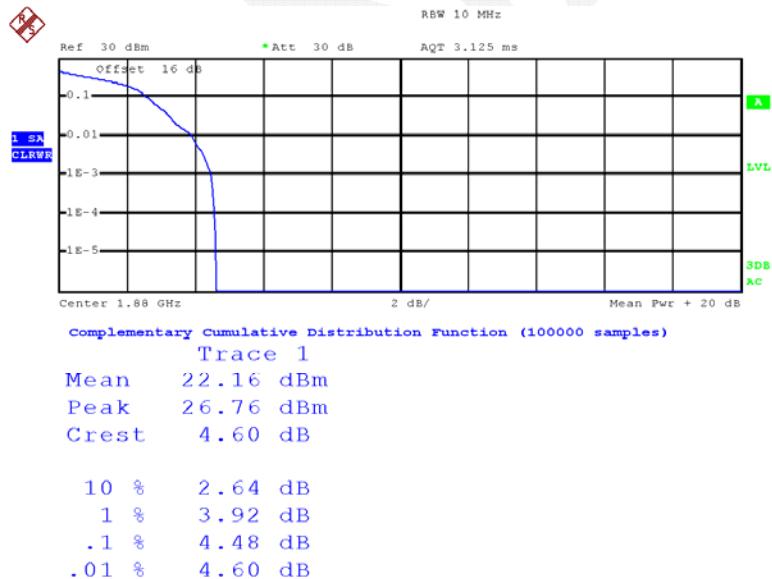
Date: 7.SEP.2015 19:42:16

QPSK- Full RB, 20M High Channel

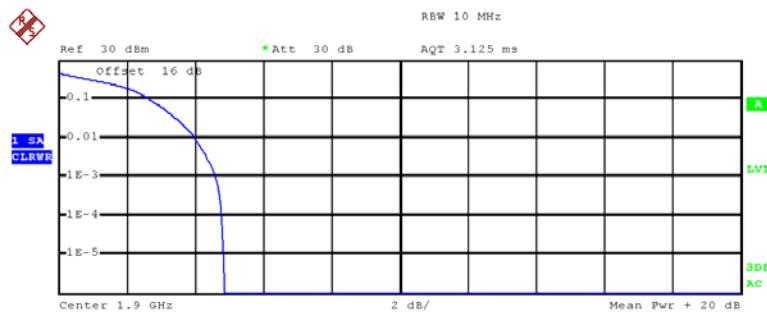
Date: 7.SEP.2015 19:42:37

16QAM- 1RB, 20M Low Channel

Date: 7.SEP.2015 19:48:20

16QAM- 1RB, 20M Middle Channel

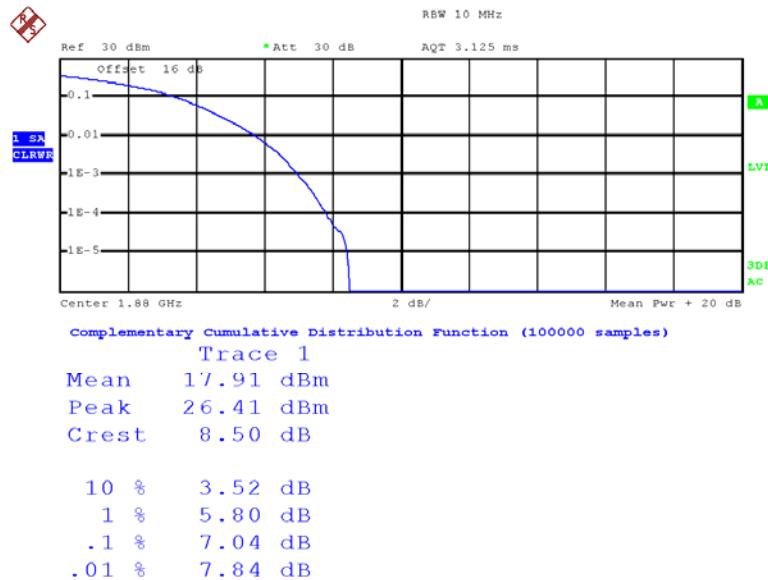
Date: 7.SEP.2015 19:48:37

16QAM- 1RB, 20M High Channel

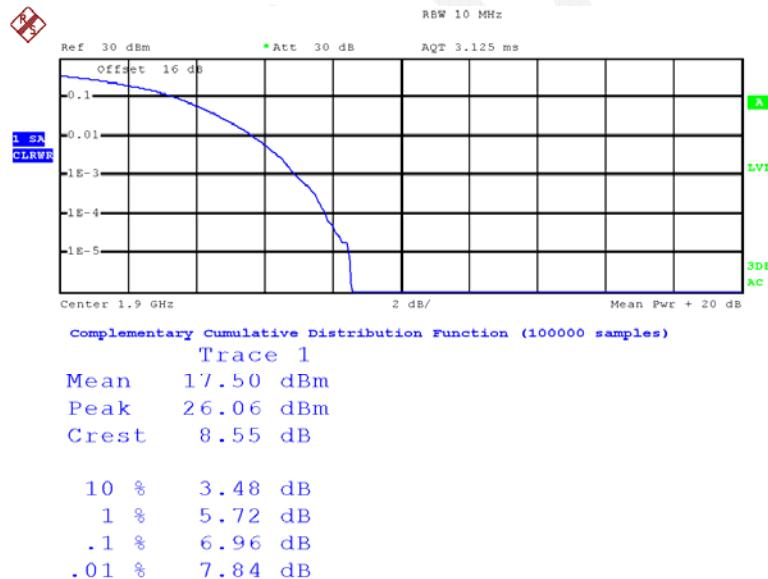
Date: 7.SEP.2015 19:48:51

16QAM- Full RB, 20M Low Channel

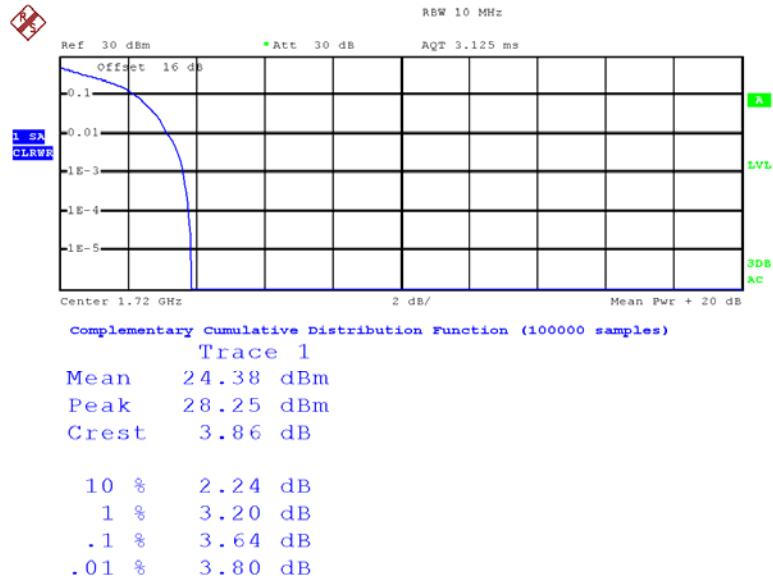
Date: 7.SEP.2015 19:47:24

16QAM- Full RB, 20M Middle Channel

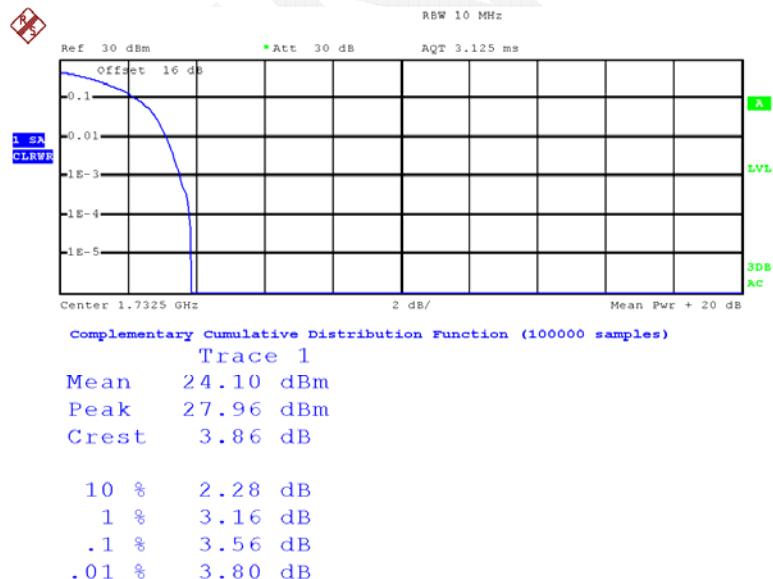
Date: 7.SEP.2015 19:47:05

16QAM- Full RB, 20M High Channel

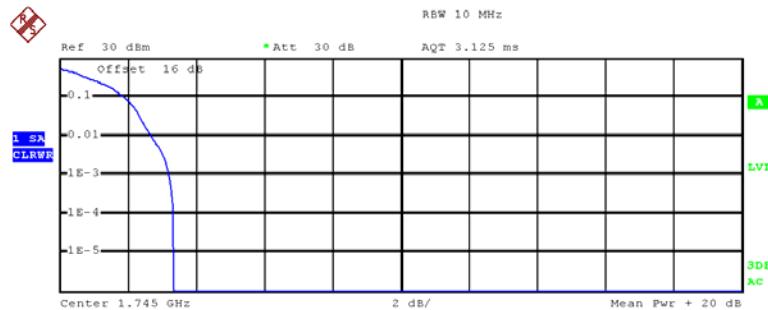
Date: 7.SEP.2015 19:45:08

LTE Band 4**QPSK-1RB, 20M Low Channel**

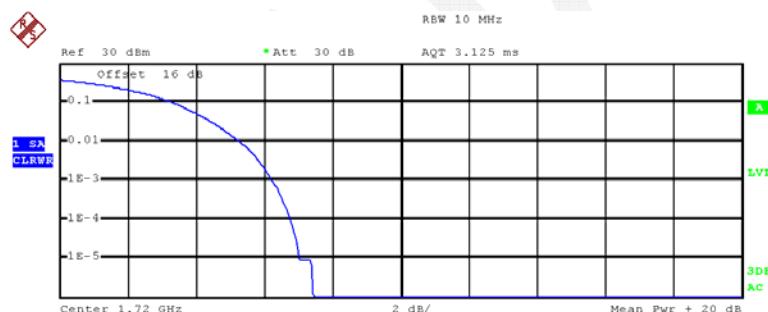
Date: 7.SEP.2015 20:15:52

QPSK-1RB, 20M Middle Channel

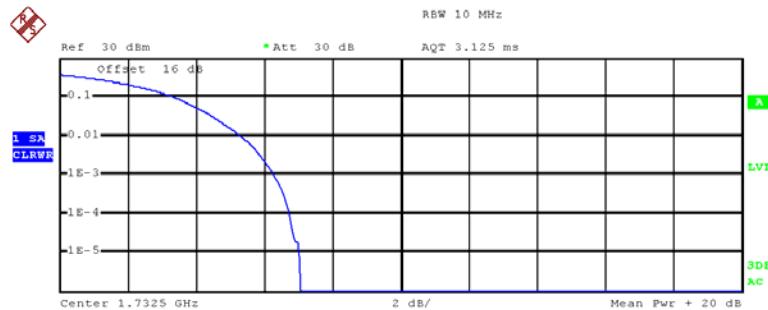
Date: 7.SEP.2015 20:15:41

QPSK-1RB, 20M High Channel

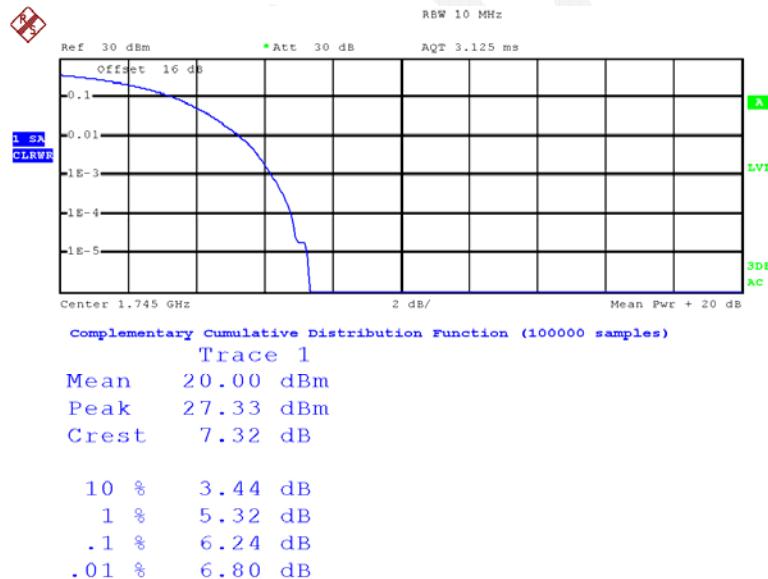
Date: 7.SEP.2015 20:15:26

QPSK- Full RB, 20M Low Channel

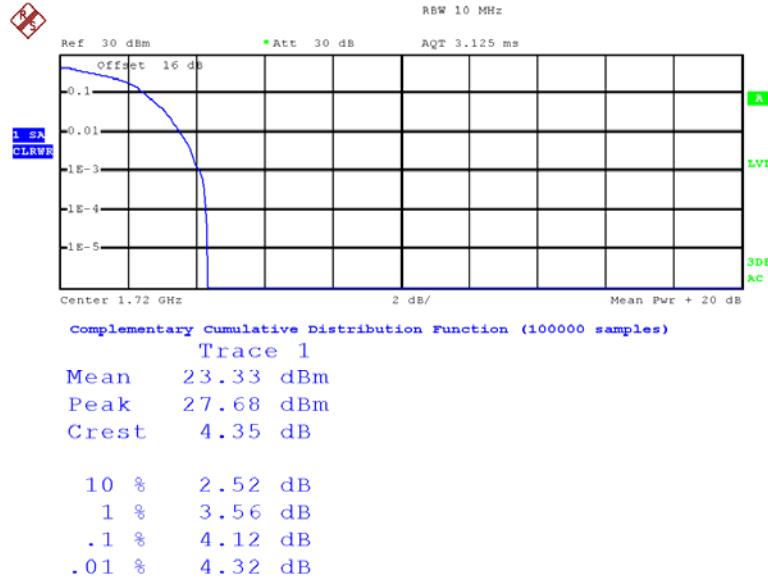
Date: 7.SEP.2015 20:13:46

QPSK- Full RB, 20M Middle Channel

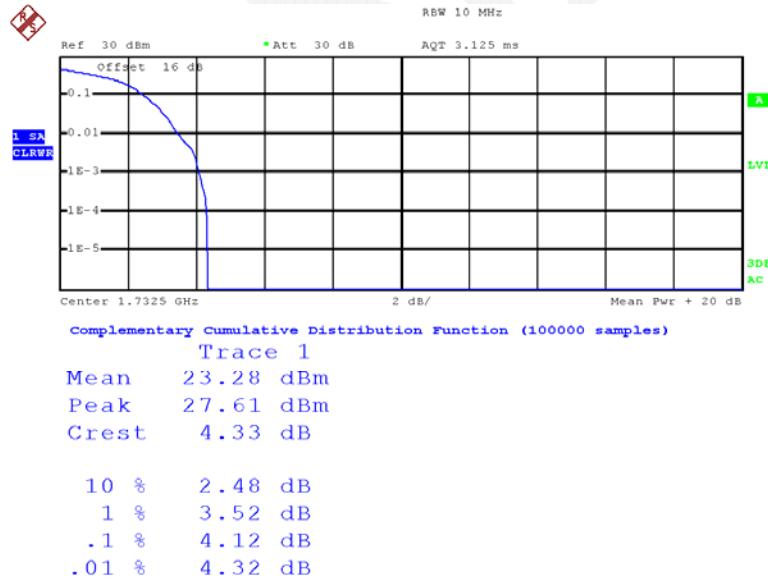
Date: 7.SEP.2015 20:14:34

QPSK- Full RB, 20M High Channel

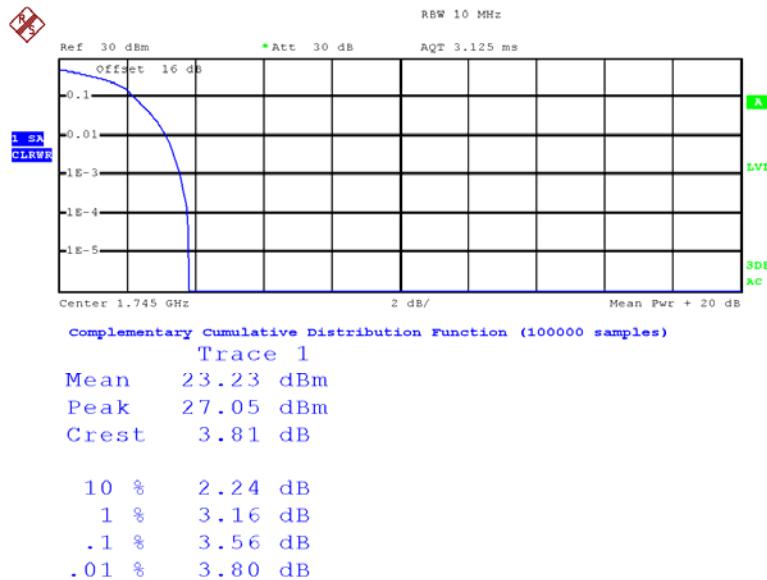
Date: 7.SEP.2015 20:14:50

16QAM- 1RB, 20M Low Channel

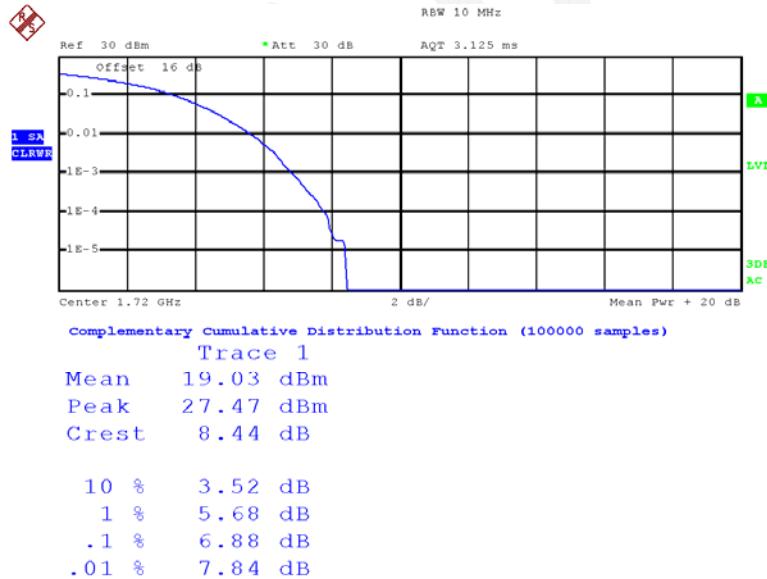
Date: 7.SEP.2015 19:53:18

16QAM- 1RB, 20M Middle Channel

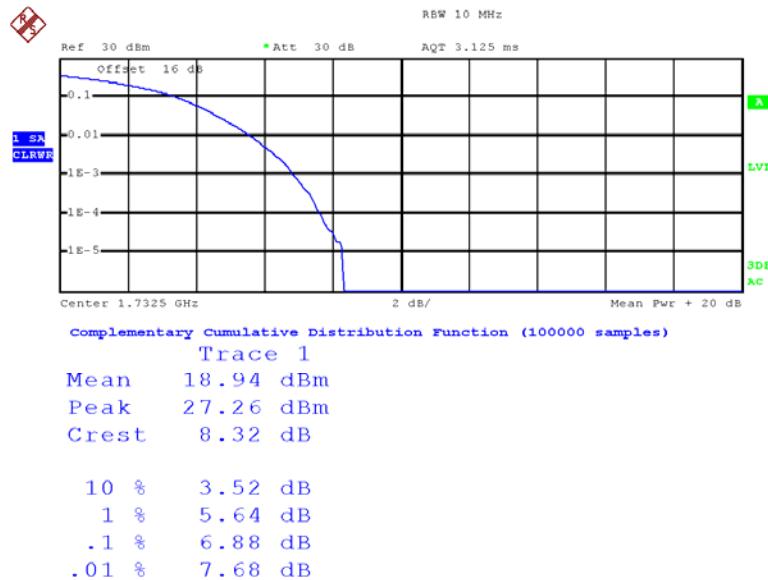
Date: 7.SEP.2015 19:53:01

16QAM- 1RB, 20M High Channel

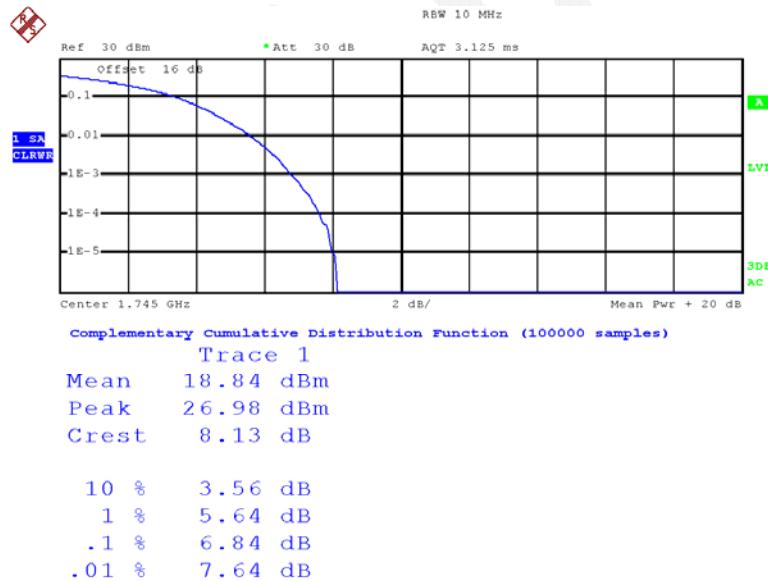
Date: 7.SEP.2015 19:53:53

16QAM- Full RB, 20M Low Channel

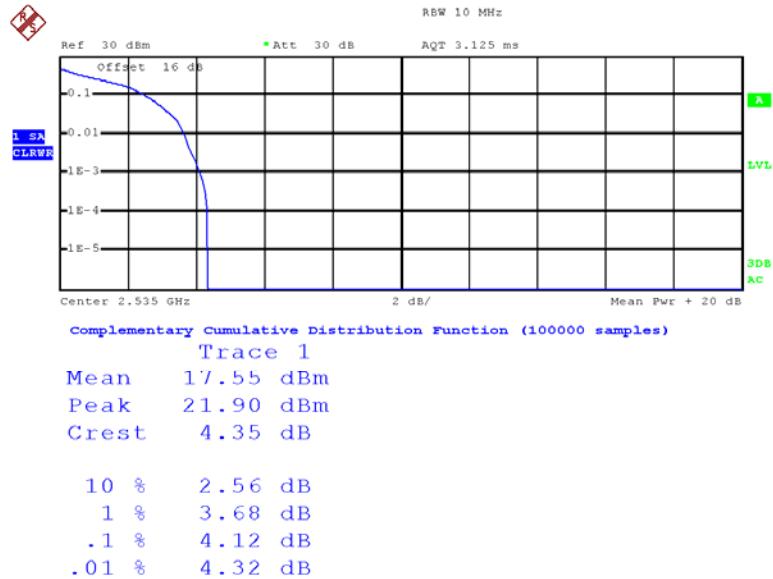
Date: 7.SEP.2015 19:55:19

16QAM- Full RB, 20M Middle Channel

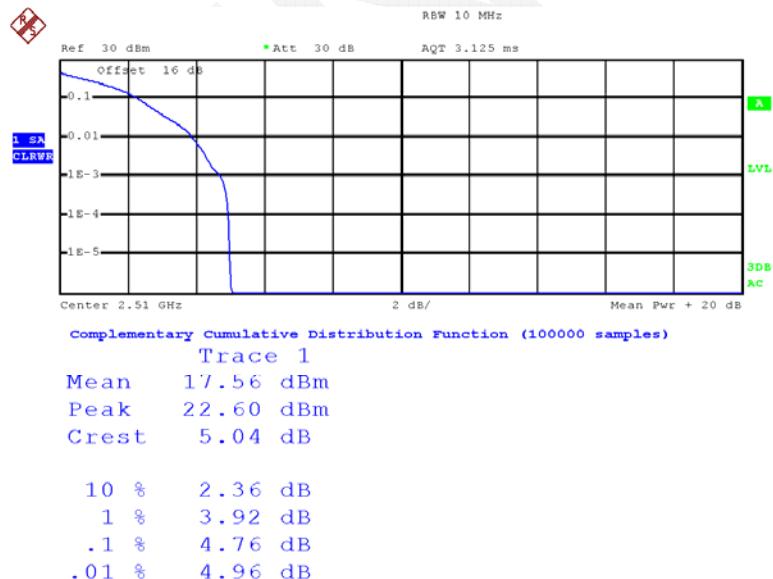
Date: 7.SEP.2015 19:54:56

16QAM- Full RB, 20M High Channel

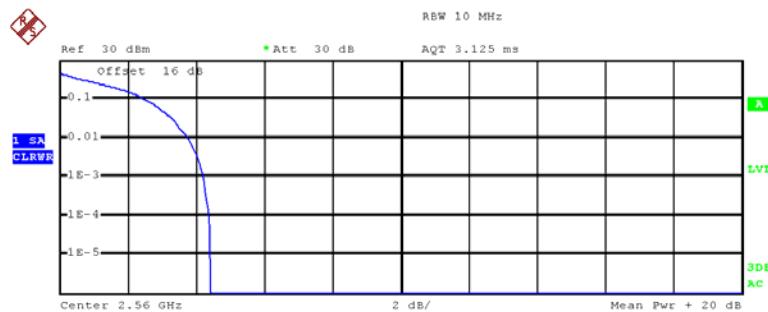
Date: 7.SEP.2015 19:54:24

LTE Band 7**QPSK-1RB, 20M Low Channel**

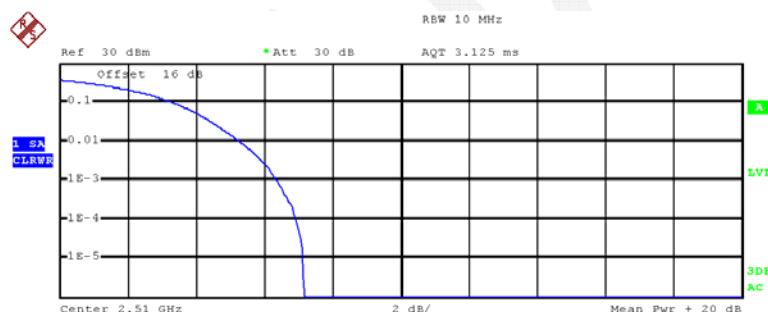
Date: 7.SEP.2015 20:19:01

QPSK-1RB, 20M Middle Channel

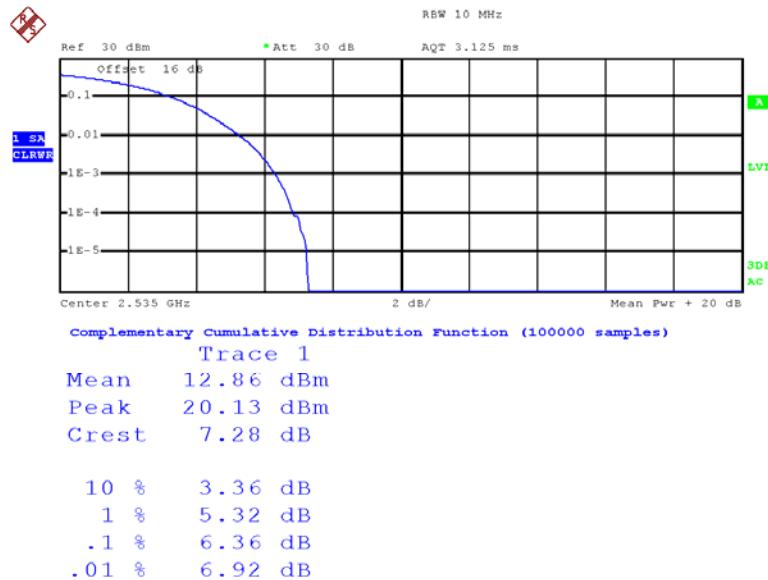
Date: 7.SEP.2015 20:19:23

QPSK-1RB, 20M High Channel

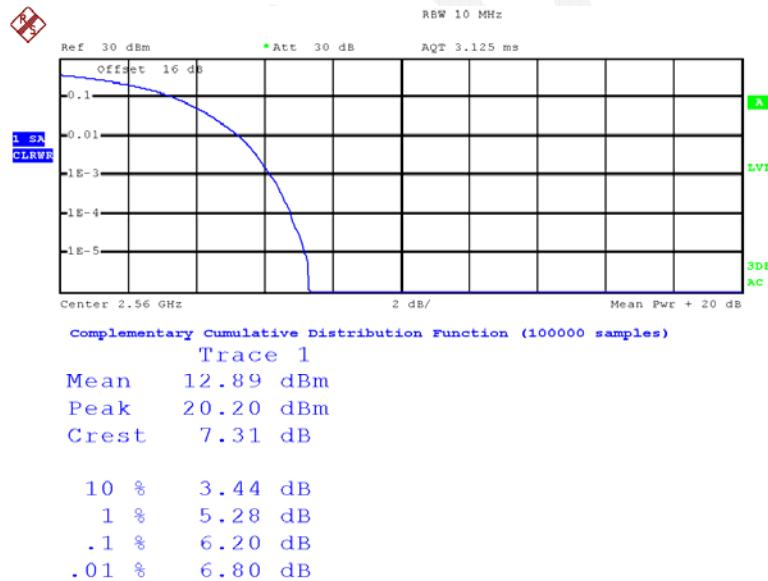
Date: 7.SEP.2015 20:22:10

QPSK- Full RB, 20M Low Channel

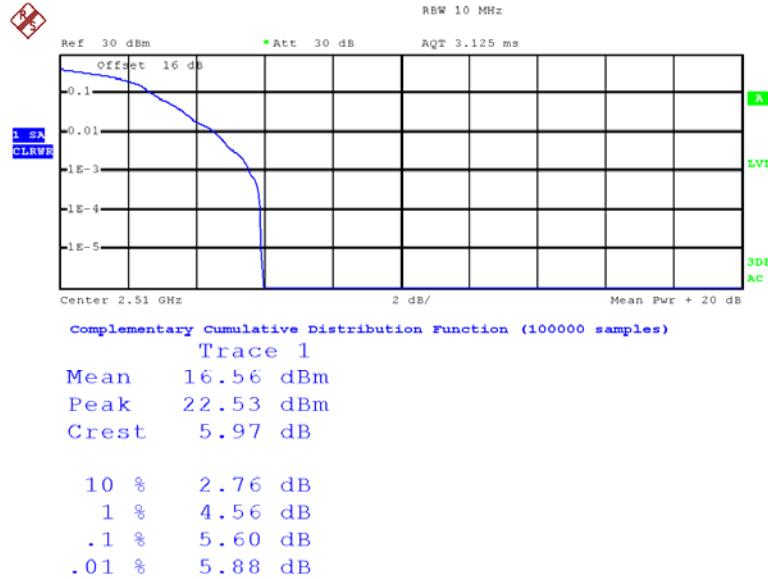
Date: 7.SEP.2015 20:22:55

QPSK- Full RB, 20M Middle Channel

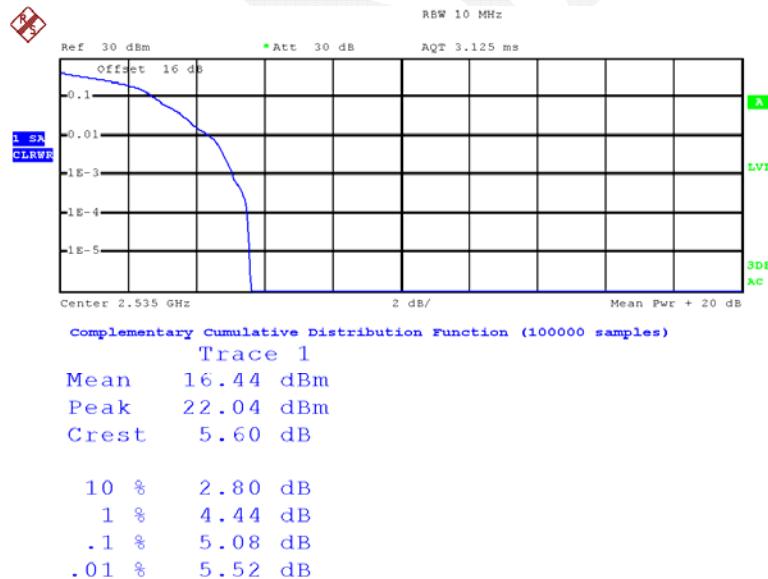
Date: 7.SEP.2015 20:22:42

QPSK- Full RB, 20M High Channel

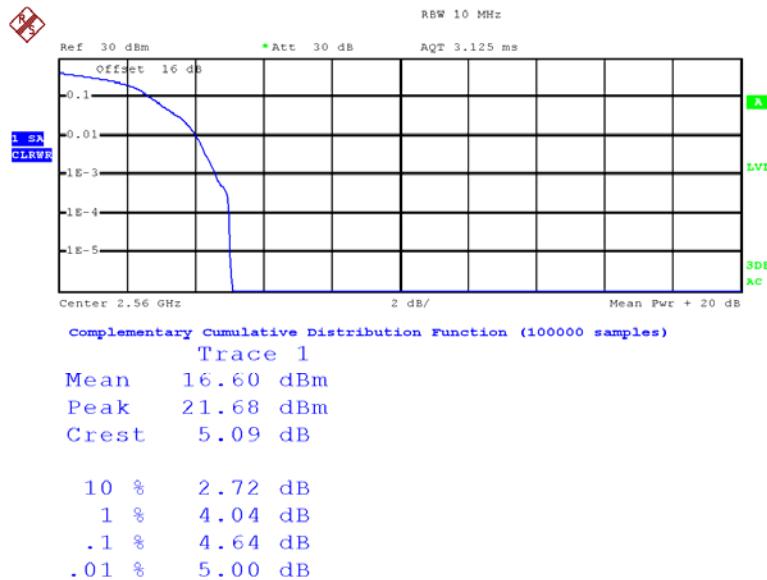
Date: 7.SEP.2015 20:22:28

16QAM- 1RB, 20M Low Channel

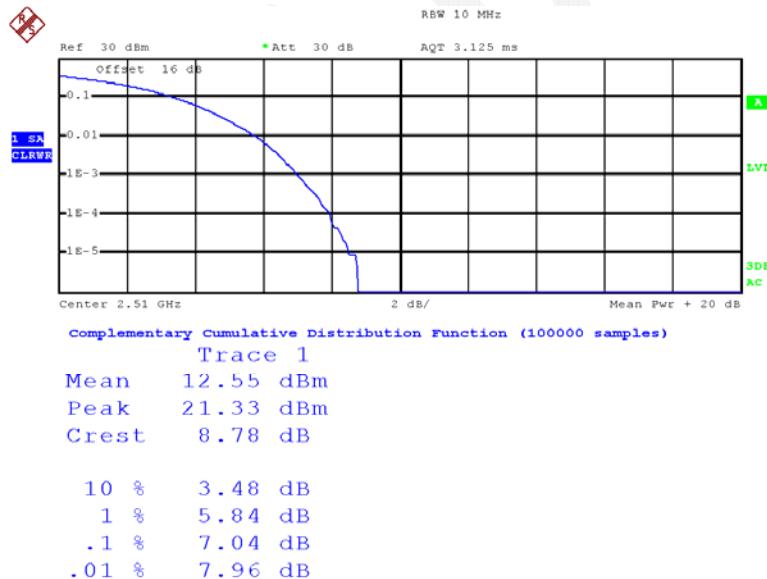
Date: 7.SEP.2015 20:34:18

16QAM- 1RB, 20M Middle Channel

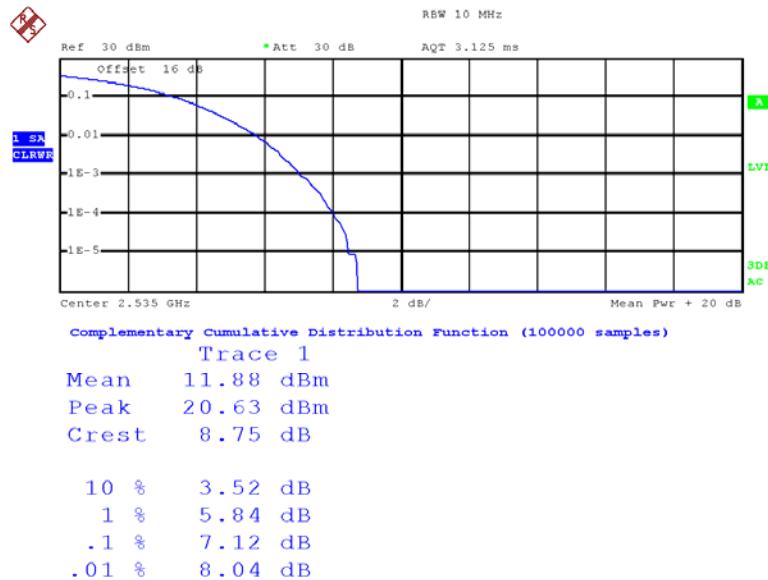
Date: 7.SEP.2015 20:34:08

16QAM- 1RB, 20M High Channel

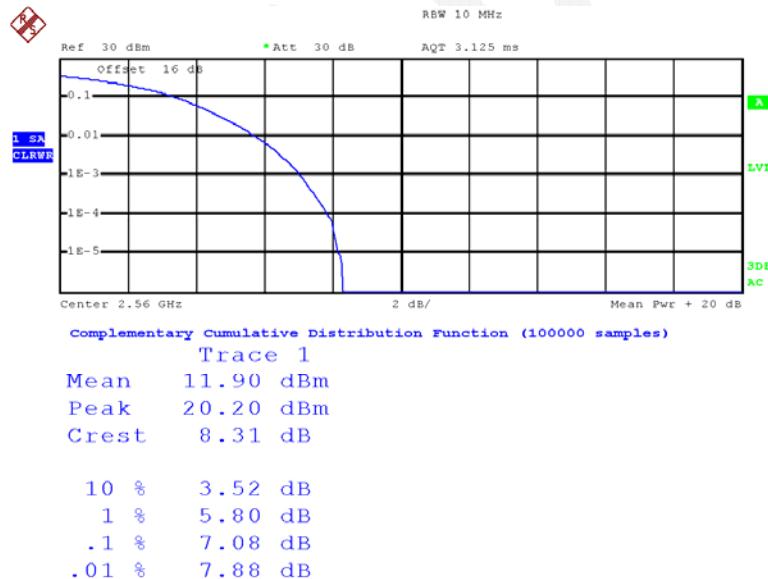
Date: 7.SEP.2015 20:33:49

16QAM- Full RB, 20M Low Channel

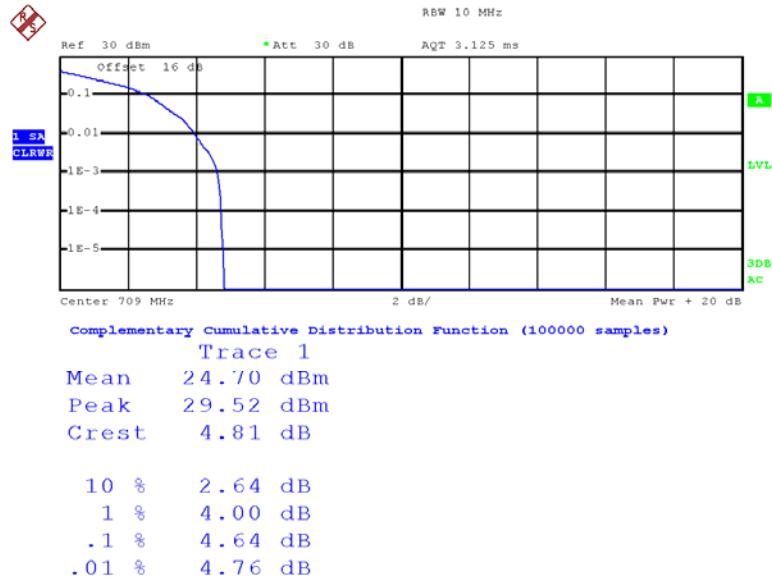
Date: 7.SEP.2015 20:24:09

16QAM- Full RB, 20M Middle Channel

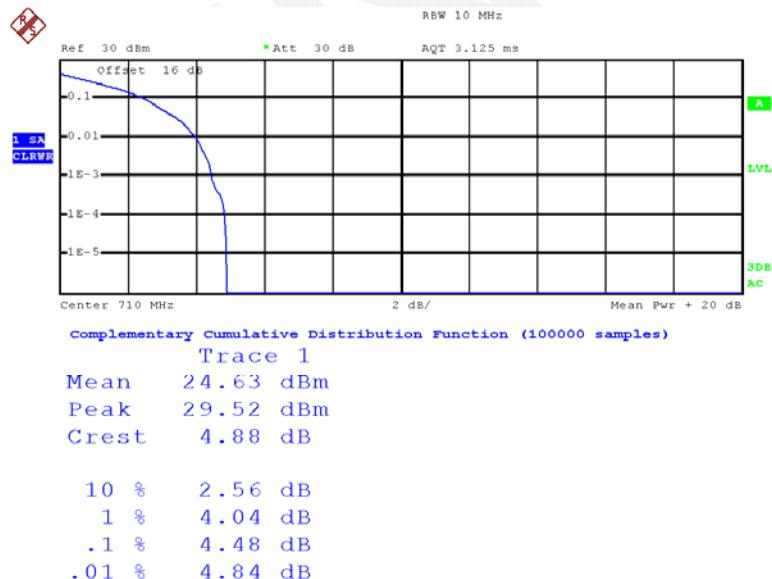
Date: 7.SEP.2015 20:24:54

16QAM- Full RB, 20M High Channel

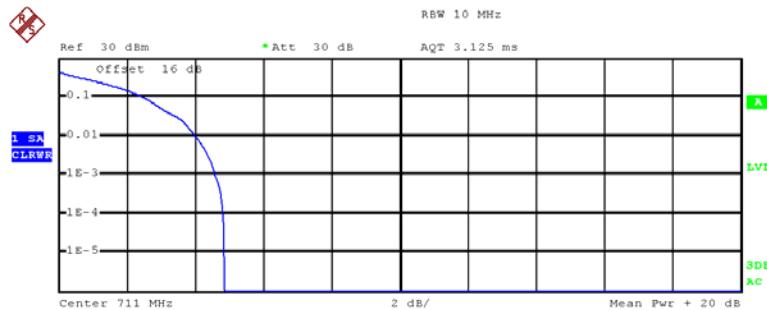
Date: 7.SEP.2015 20:33:29

LTE Band 17**QPSK-1RB, 10M Low Channel**

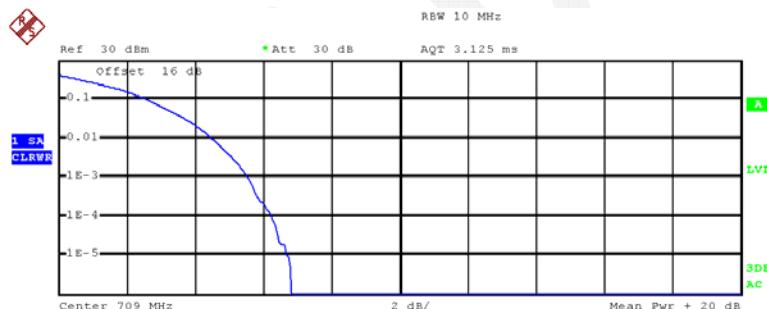
Date: 7.SEP.2015 20:44:40

QPSK-1RB, 10M Middle Channel

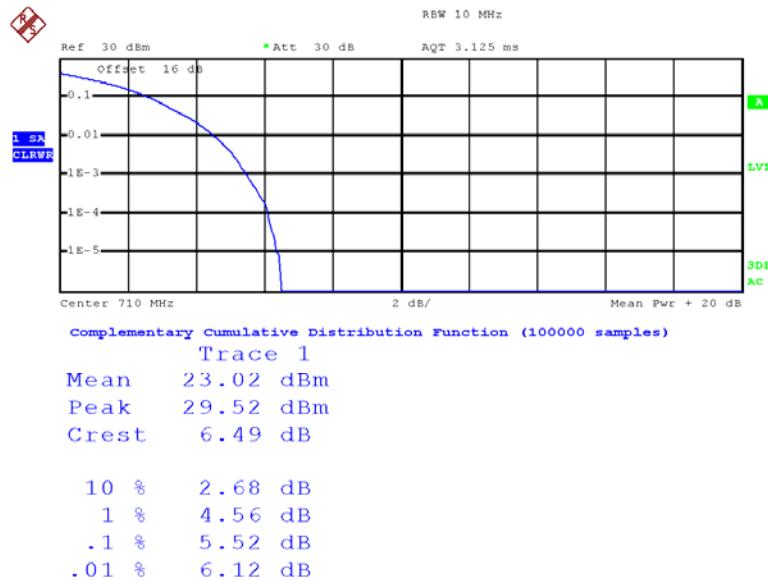
Date: 7.SEP.2015 20:45:18

QPSK-1RB, 10M High Channel

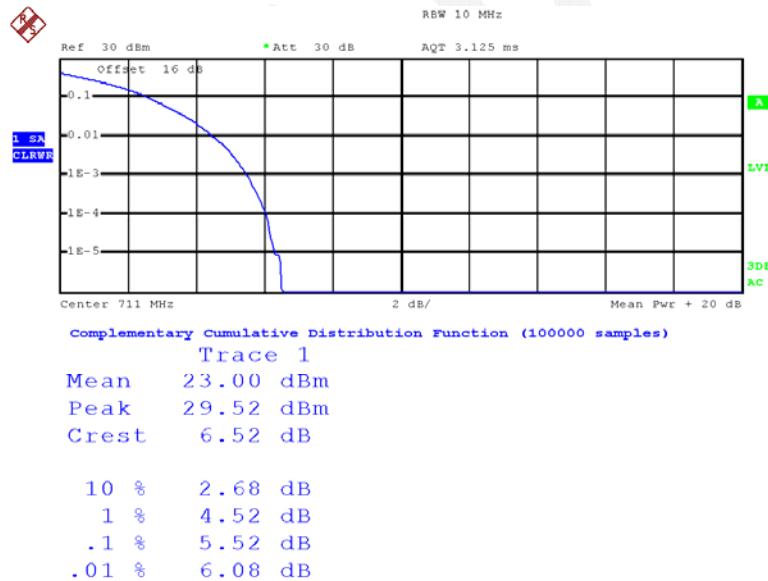
Date: 7.SEP.2015 20:45:31

QPSK- Full RB, 10M Low Channel

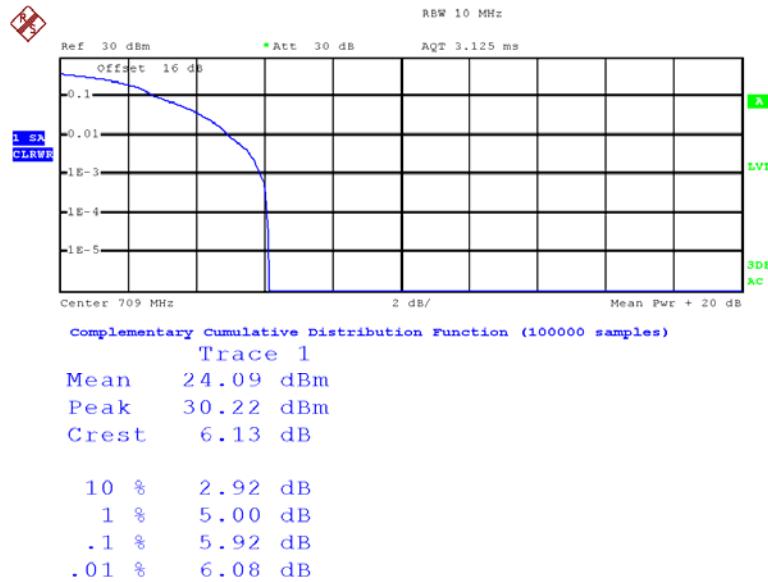
Date: 7.SEP.2015 20:46:46

QPSK- Full RB, 10M Middle Channel

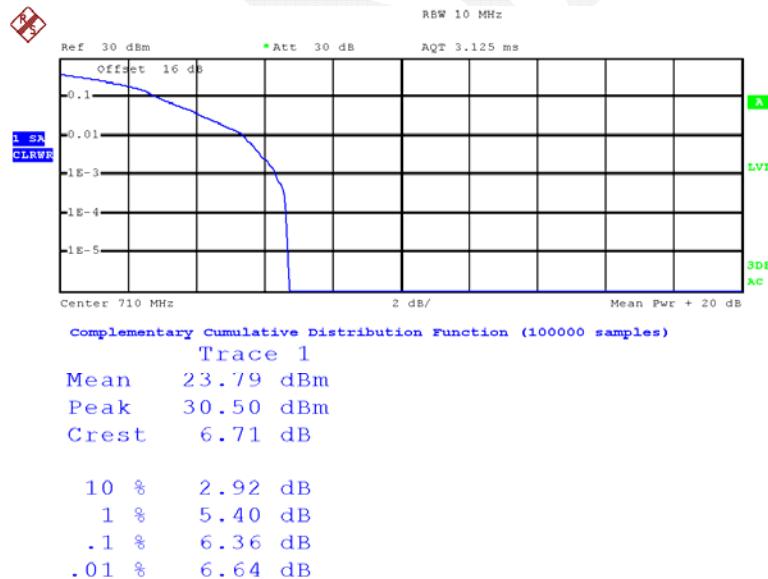
Date: 7.SEP.2015 20:46:05

QPSK- Full RB, 10M High Channel

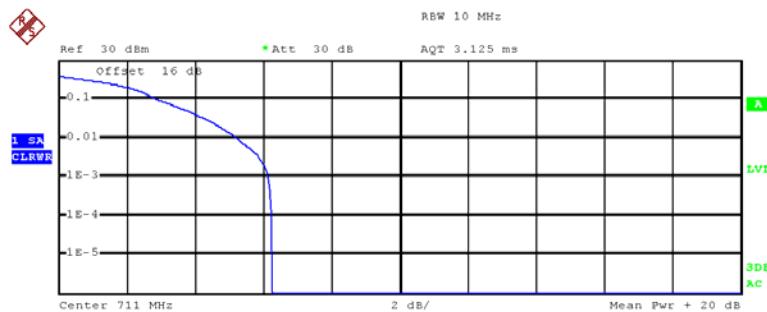
Date: 7.SEP.2015 20:45:57

16QAM- 1RB, 10M Low Channel

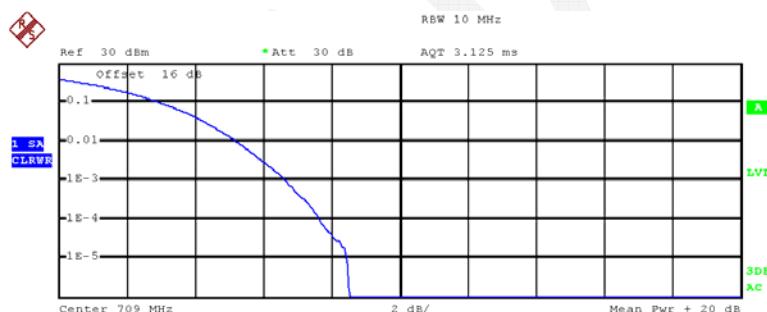
Date: 7.SEP.2015 21:11:57

16QAM- 1RB, 10M Middle Channel

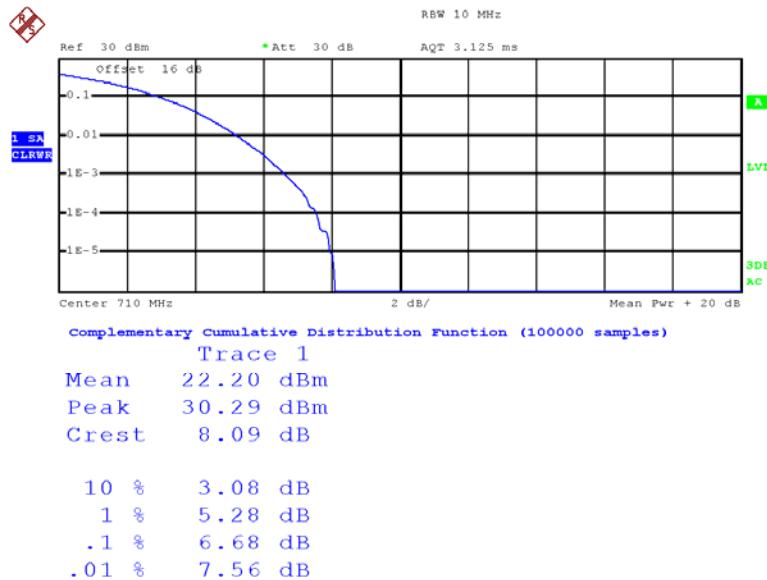
Date: 7.SEP.2015 21:11:47

16QAM- 1RB, 10M High Channel

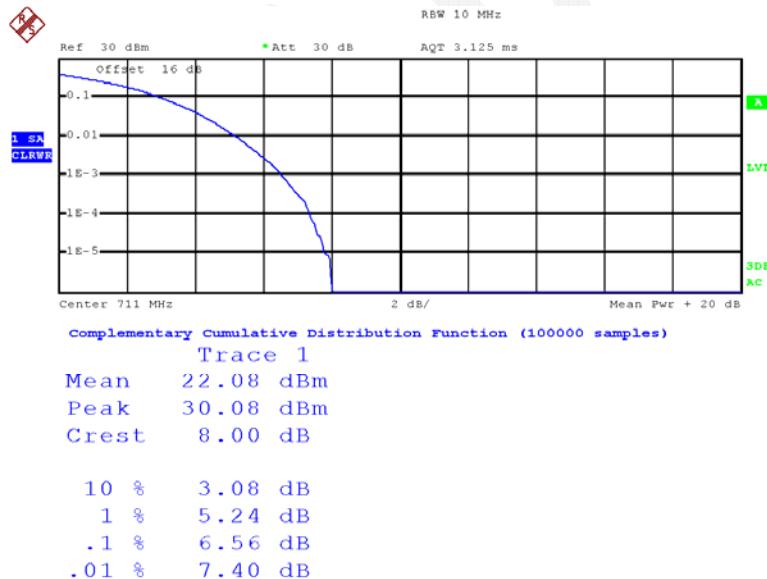
Date: 7.SEP.2015 21:11:38

16QAM- Full RB, 10M Low Channel

Date: 7.SEP.2015 21:10:41

16QAM- Full RB, 10M Middle Channel

Date: 7.SEP.2015 21:10:55

16QAM- Full RB, 10M High Channel

Date: 7.SEP.2015 21:11:13

ERP & EIRP

PART 22H

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM 850 Middle Channel								
836.600	H	101.49	26.6	0.0	1.0	25.6	38.5	12.9
836.600	V	103.45	31.7	0.0	1.0	30.7	38.5	7.8
EGPRS 850 Middle Channel								
836.600	H	98.13	23.2	0.0	1.0	22.2	38.5	16.3
836.600	V	96.86	25.1	0.0	1.0	24.1	38.5	14.4
WCDMA Band V Middle Channel								
836.600	H	92.51	17.6	0.0	1.0	16.6	38.5	21.9
836.600	V	93.28	21.5	0.0	1.0	20.5	38.5	18.0

PART 24E

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
PCS 1900 Middle Channel								
1880.000	H	89.37	17.8	11.7	1.4	28.1	33.0	4.9
1880.000	V	84.23	12.8	11.7	1.4	23.1	33.0	9.9
EGPRS 1900 Middle Channel								
1880.000	H	86.64	15	11.7	1.4	25.3	33.0	7.7
1880.000	V	81.82	10.4	11.7	1.4	20.7	33.0	12.3
WCDMA Band II Middle Channel								
1880.000	H	82.26	10.7	11.7	1.4	21.0	33.0	12.0
1880.000	V	76.93	5.5	11.7	1.4	15.8	33.0	17.2

PART 27

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
WCDMA Band IV Middle Channel								
1732.600	H	84.45	11.4	10.9	1.4	20.9	30.0	9.1
1732.600	V	81.11	7.8	10.9	1.4	17.3	30.0	12.7

LTE Band 2

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 1.4M BW Middle Channel								
1880.000	H	82.40	10.8	11.7	1.4	21.1	33.00	11.9
1880.000	V	76.14	4.7	11.7	1.4	15.0	33.00	18.0
QPSK 3M BW Middle Channel								
1880.000	H	82.03	10.4	11.7	1.4	20.7	33.00	12.3
1880.000	V	76.62	5.2	11.7	1.4	15.5	33.00	17.5
QPSK 5M BW Middle Channel								
1880.000	H	83.49	11.9	11.7	1.4	22.2	33.00	10.8
1880.000	V	77.14	5.7	11.7	1.4	16.0	33.00	17.0
QPSK 10M BW Middle Channel								
1880.000	H	83.82	12.2	11.7	1.4	22.5	33.00	10.5
1880.000	V	77.74	6.3	11.7	1.4	16.6	33.00	16.4
QPSK 15M BW Middle Channel								
1880.000	H	83.46	11.9	11.7	1.4	22.2	33.00	10.8
1880.000	V	77.35	5.9	11.7	1.4	16.2	33.00	16.8
QPSK 20M BW Middle Channel								
1880.000	H	82.66	11.1	11.7	1.4	21.4	33.00	11.6
1880.000	V	76.43	5	11.7	1.4	15.3	33.00	17.7
16-QAM 1.4M BW Middle Channel								
1880.000	H	83.15	11.6	11.7	1.4	21.9	33.00	11.1
1880.000	V	76.75	5.3	11.7	1.4	15.6	33.00	17.4
16-QAM 3M BW Middle Channel								
1880.000	H	82.06	10.5	11.7	1.4	20.8	33.00	12.2
1880.000	V	76.62	5.2	11.7	1.4	15.5	33.00	17.5
16-QAM 5M BW Middle Channel								
1880.000	H	83.24	11.6	11.7	1.4	21.9	33.00	11.1
1880.000	V	76.57	5.1	11.7	1.4	15.4	33.00	17.6
16-QAM 10M BW Middle Channel								
1880.000	H	83.11	11.5	11.7	1.4	21.8	33.00	11.2
1880.000	V	76.34	4.9	11.7	1.4	15.2	33.00	17.8
16-QAM 15M BW Middle Channel								
1880.000	H	83.96	12.4	11.7	1.4	22.7	33.00	10.3
1880.000	V	77.21	5.8	11.7	1.4	16.1	33.00	16.9
16-QAM 20M BW Middle Channel								
1880.000	H	83.87	12.3	11.7	1.4	22.6	33.00	10.4
1880.000	V	77.38	5.9	11.7	1.4	16.2	33.00	16.8

LTE Band 4

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 1.4M BW Middle Channel								
1732.500	H	85.25	12.2	10.9	1.4	21.7	30.00	8.3
1732.500	V	79.66	6.3	10.9	1.4	15.8	30.00	14.2
QPSK 3M BW Middle Channel								
1732.500	H	84.71	11.7	10.9	1.4	21.2	30.00	8.8
1732.500	V	79.15	5.8	10.9	1.4	15.3	30.00	14.7
QPSK 5M BW Middle Channel								
1732.500	H	85.23	12.2	10.9	1.4	21.7	30.00	8.3
1732.500	V	79.74	6.4	10.9	1.4	15.9	30.00	14.1
QPSK 10M BW Middle Channel								
1732.500	H	83.68	10.7	10.9	1.4	20.2	30.00	9.8
1732.500	V	78.33	5	10.9	1.4	14.5	30.00	15.5
QPSK 15M BW Middle Channel								
1732.500	H	83.27	10.3	10.9	1.4	19.8	30.00	10.2
1732.500	V	77.75	4.4	10.9	1.4	13.9	30.00	16.1
QPSK 20M BW Middle Channel								
1732.500	H	82.89	9.9	10.9	1.4	19.4	30.00	10.6
1732.500	V	77.16	3.8	10.9	1.4	13.3	30.00	16.7
16-QAM 1.4M BW Middle Channel								
1732.500	H	85.84	12.8	10.9	1.4	22.3	30.00	7.7
1732.500	V	80.15	6.8	10.9	1.4	16.3	30.00	13.7
16-QAM 3M BW Middle Channel								
1732.500	H	85.62	12.6	10.9	1.4	22.1	30.00	7.9
1732.500	V	80.23	6.9	10.9	1.4	16.4	30.00	13.6
16-QAM 5M BW Middle Channel								
1732.500	H	85.33	12.3	10.9	1.4	21.8	30.00	8.2
1732.500	V	79.86	6.5	10.9	1.4	16.0	30.00	14.0
16-QAM 10M BW Middle Channel								
1732.500	H	84.42	11.4	10.9	1.4	20.9	30.00	9.1
1732.500	V	78.47	5.1	10.9	1.4	14.6	30.00	15.4
16-QAM 15M BW Middle Channel								
1732.500	H	83.15	10.1	10.9	1.4	19.6	30.00	10.4
1732.500	V	77.32	4	10.9	1.4	13.5	30.00	16.5
16-QAM 20M BW Middle Channel								
1732.500	H	83.25	10.2	10.9	1.4	19.7	30.00	10.3
1732.500	V	77.08	3.8	10.9	1.4	13.3	30.00	16.7

LTE Band 7

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 5M BW Middle Channel								
2535.000	H	82.24	11	13.1	2.5	21.6	33.00	11.4
2535.000	V	75.88	6.1	13.1	2.5	16.7	33.00	16.3
QPSK 10M BW Middle Channel								
2535.000	H	81.69	10.5	13.1	2.5	21.1	33.00	11.9
2535.000	V	75.28	5.5	13.1	2.5	16.1	33.00	16.9
QPSK 15M BW Middle Channel								
2535.000	H	81.11	9.9	13.1	2.5	20.5	33.00	12.5
2535.000	V	74.72	5	13.1	2.5	15.6	33.00	17.4
QPSK 20M BW Middle Channel								
2535.000	H	81.54	10.3	13.1	2.5	20.9	33.00	12.1
2535.000	V	75.13	5.4	13.1	2.5	16.0	33.00	17.0
16-QAM 5M BW Middle Channel								
2535.000	H	80.98	9.8	13.1	2.5	20.4	33.00	12.6
2535.000	V	75.62	5.9	13.1	2.5	16.5	33.00	16.5
16-QAM 10M BW Middle Channel								
2535.000	H	81.51	10.3	13.1	2.5	20.9	33.00	12.1
2535.000	V	76.53	6.8	13.1	2.5	17.4	33.00	15.6
16-QAM 15M BW Middle Channel								
2535.000	H	81.03	9.8	13.1	2.5	20.4	33.00	12.6
2535.000	V	76.69	6.9	13.1	2.5	17.5	33.00	15.5
16-QAM 20M BW Middle Channel								
2535.000	H	80.68	9.5	13.1	2.5	20.1	33.00	12.9
2535.000	V	76.75	7	13.1	2.5	17.6	33.00	15.4

LTE Band 17

Frequency (MHz)	Polar (H/V)	Receiver Reading (dB μ V)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 5M BW Middle Channel								
710.000	H	98.12	21.3	0.0	0.9	20.4	34.77	14.4
710.000	V	92.16	17.8	0.0	0.9	16.9	34.77	17.9
QPSK 10M BW Middle Channel								
710.000	H	98.23	21.4	0.0	0.9	20.5	34.77	14.3
710.000	V	92.52	18.2	0.0	0.9	17.3	34.77	17.5
16-QAM 5M BW Middle Channel								
710.000	H	97.99	21.2	0.0	0.9	20.3	34.77	14.5
710.000	V	92.37	18	0.0	0.9	17.1	34.77	17.7
16-QAM 10M BW Middle Channel								
710.000	H	97.86	21	0.0	0.9	20.1	34.77	14.7
710.000	V	92.43	18.1	0.0	0.9	17.2	34.77	17.6

Note:

- 1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
- 2) Absolute Level = SG Level - Cable loss + Antenna Gain
- 3) Margin = Limit-Absolute Level

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

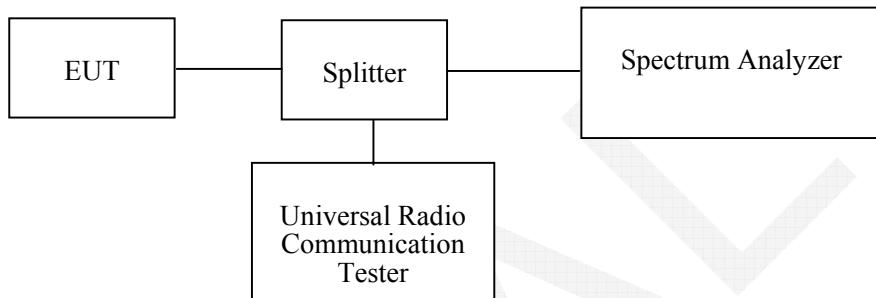
Applicable Standard

FCC §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 26 dB & 99% bandwidth was recorded.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
R&S	Universal Radio Communication Tester	CMU200	109038	2015-05-09	2016-05-09
R&S	Wideband Radio Communication Tester	CMW500	106891	2014-11-23	2015-11-23

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

Test Data

Environmental Conditions

Temperature:	26.7~27.1 °C
Relative Humidity:	54~59%
ATM Pressure:	100~100.2 kPa

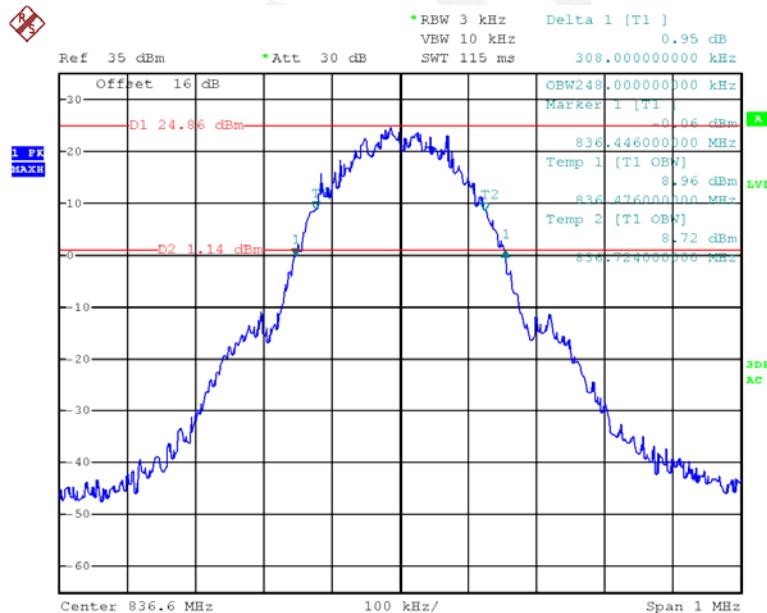
The testing was performed by Dean Liu from 2015-09-06 to 2015-09-10.

Test Mode: Transmitting

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

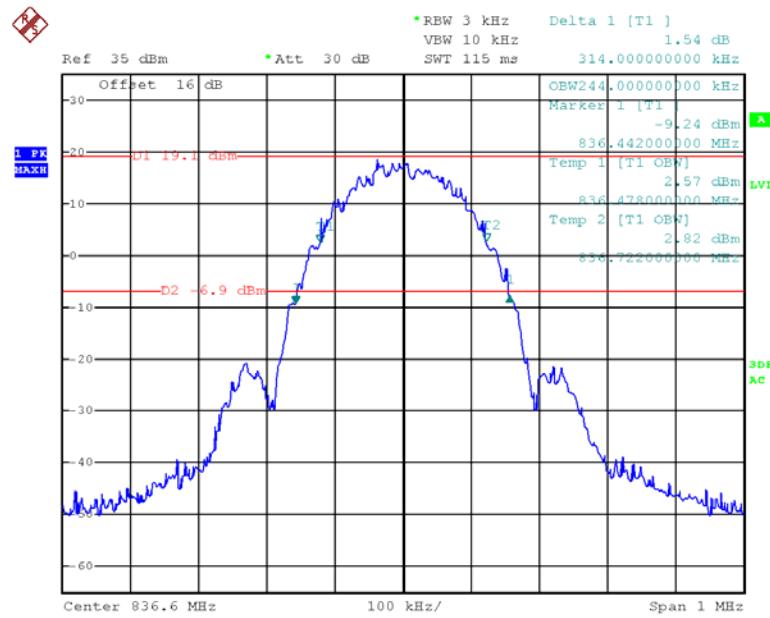
Band	Channel No.	Mode	99% Occupied Bandwidth (kHz)	26 dB Occupied Bandwidth (kHz)
Cellular	190	GSM	248	308
		EDGE	244	314
PCS	661	PCS	242	314
		EDGE	246	314
WCDMA Band	9400	Rel 99	4240	4880
	9400	HSDPA	4220	4880
	9400	HSUPA	4220	4900
WCDMA Band V	4183	Rel 99	4220	4860
	4183	HSDPA	4240	4940
	4183	HSUPA	4240	4880
WCDMA Band IV	1413	Rel 99	4289	5030
	1413	HSDPA	4269	4990
	1413	HSUPA	4269	4970

GMSK 850 Cellular Band



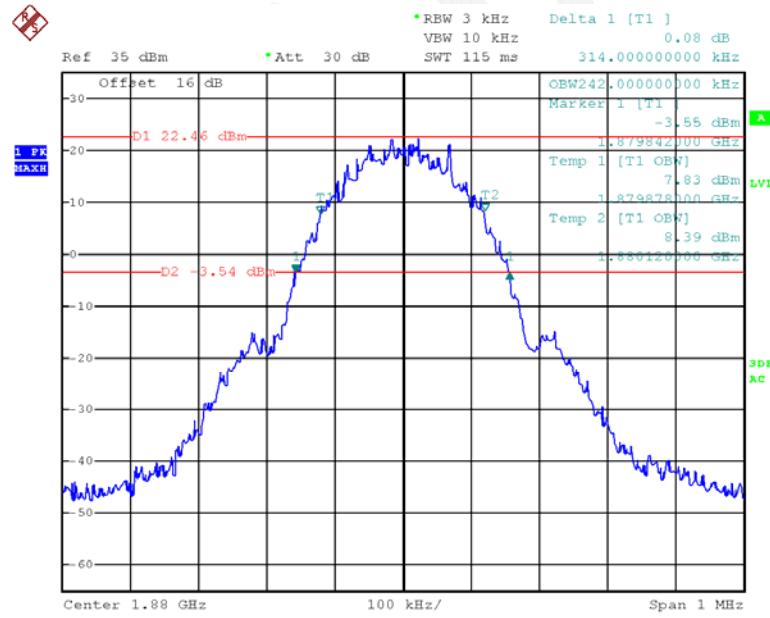
Date: 6.SEP.2015 20:33:28

EDGE 850 Cellular Band

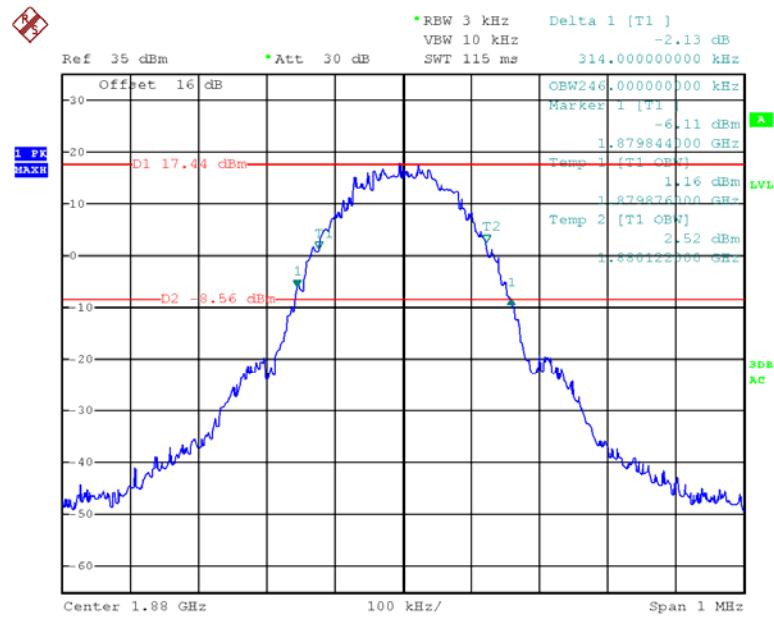


Date: 6.SEP.2015 20:37:42

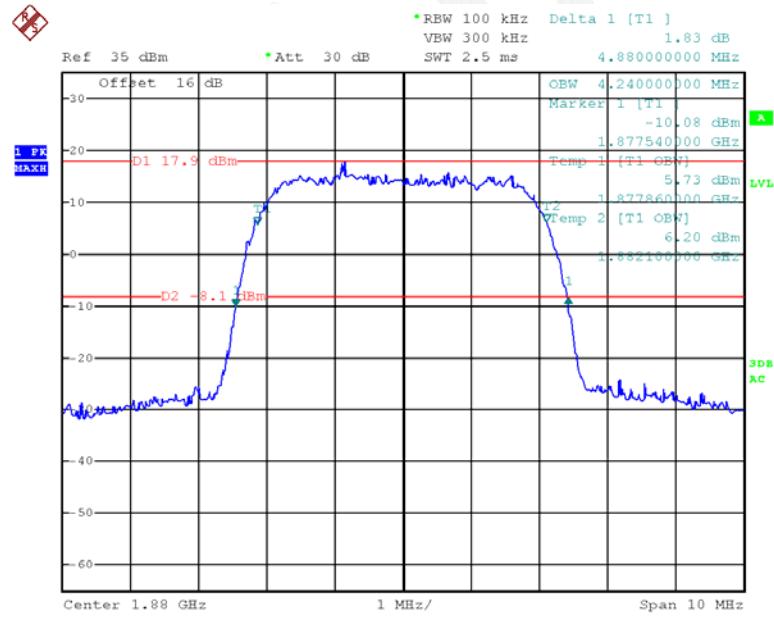
GMSK PCS Band



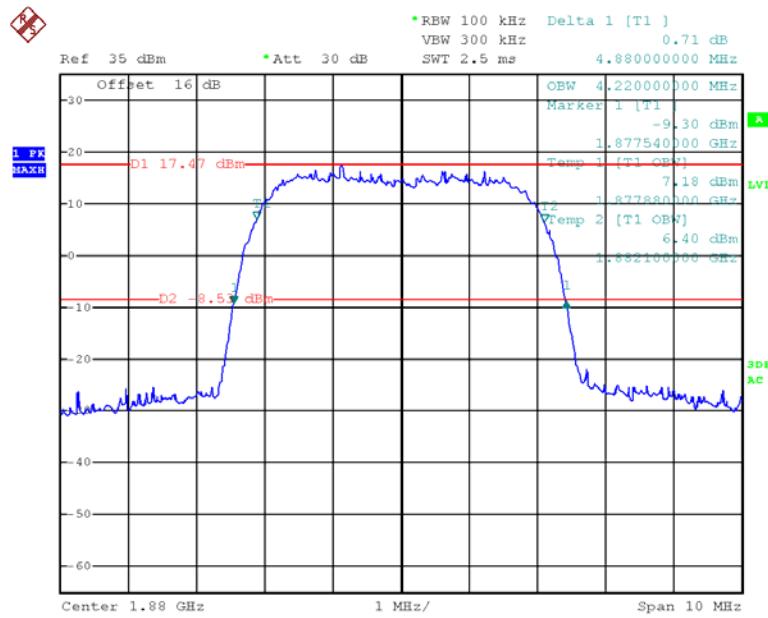
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EDGE PCS Band

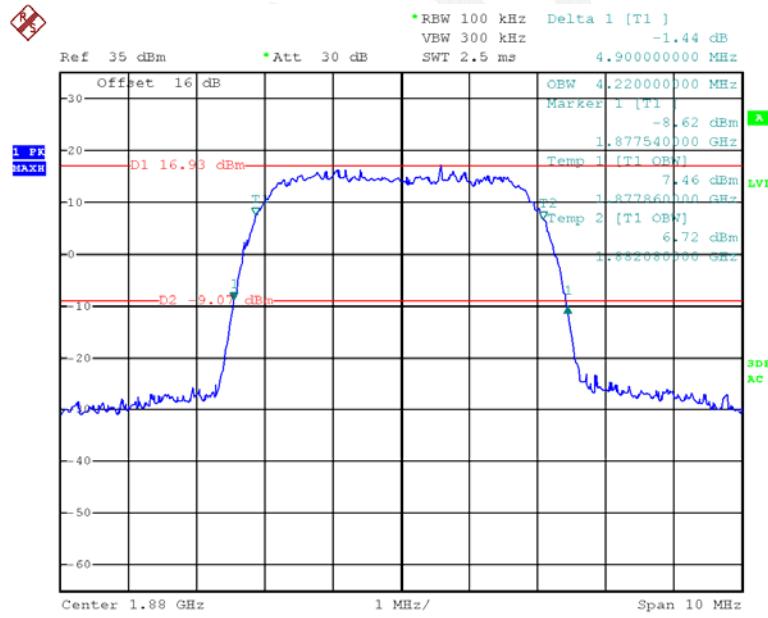
Date: 6.SEP.2015 20:45:22

REL99 Band II

Date: 6.SEP.2015 20:06:55

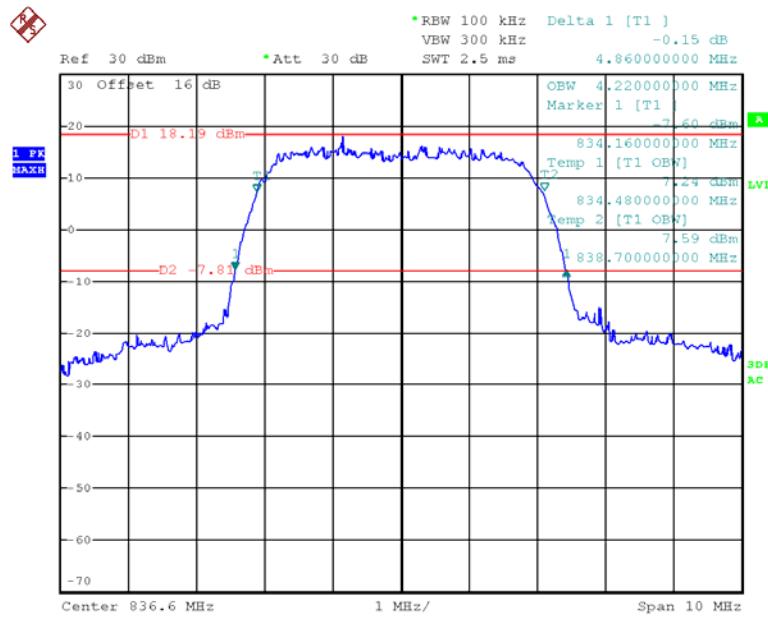
HSDPA Band II

Date: 6.SEP.2015 20:09:47

HSUPA Band II

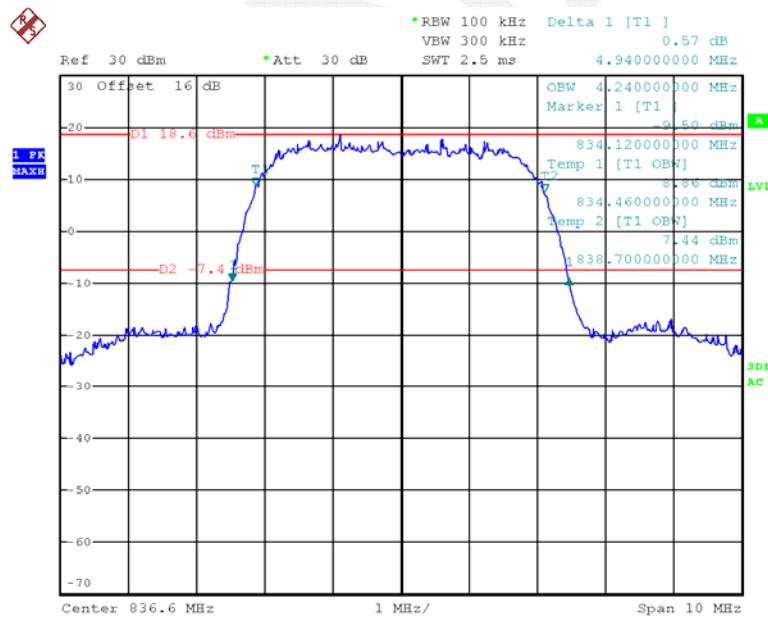
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REL99 Band V

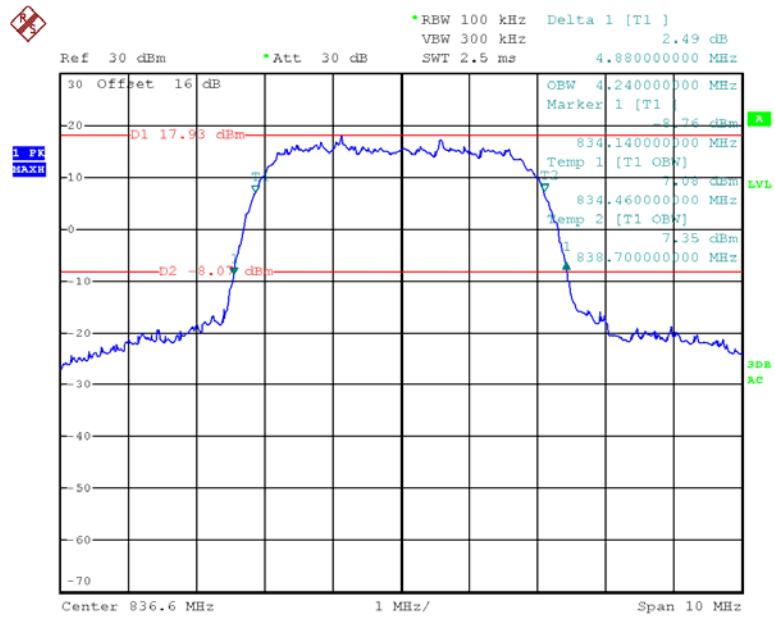


Date: 6.SEP.2015 20:23:42

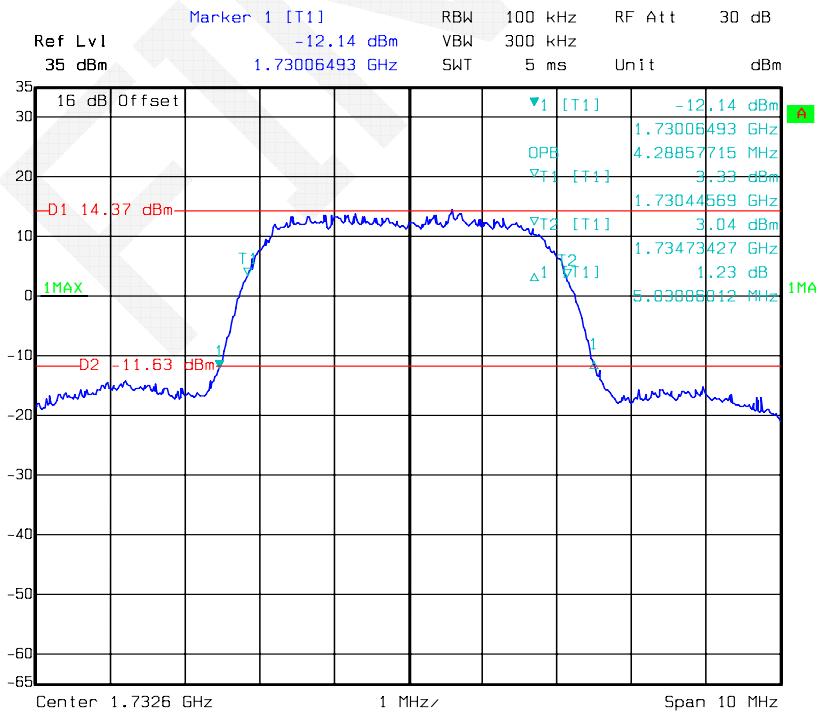
HSDPA Band V



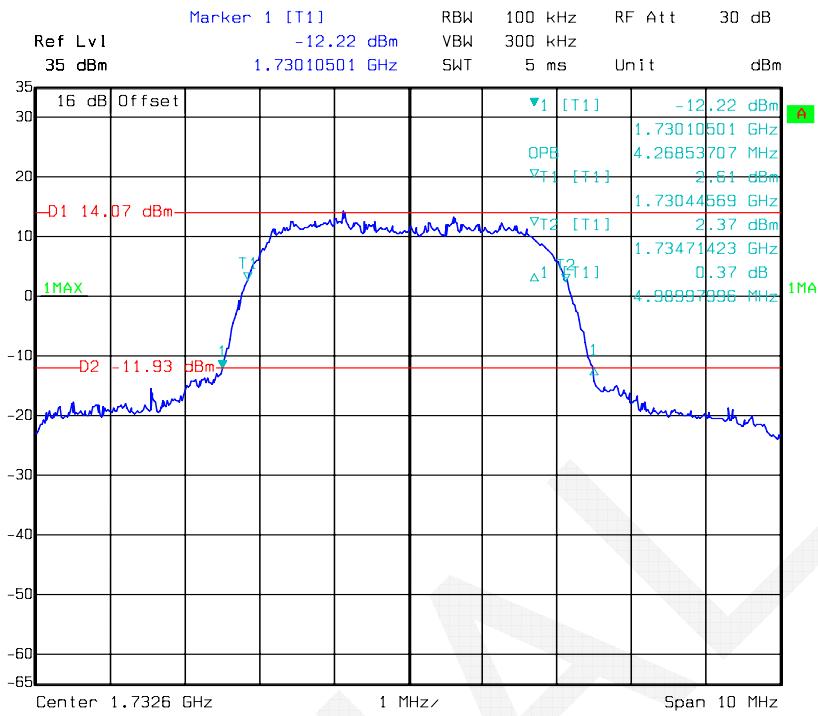
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HSUPA Band V

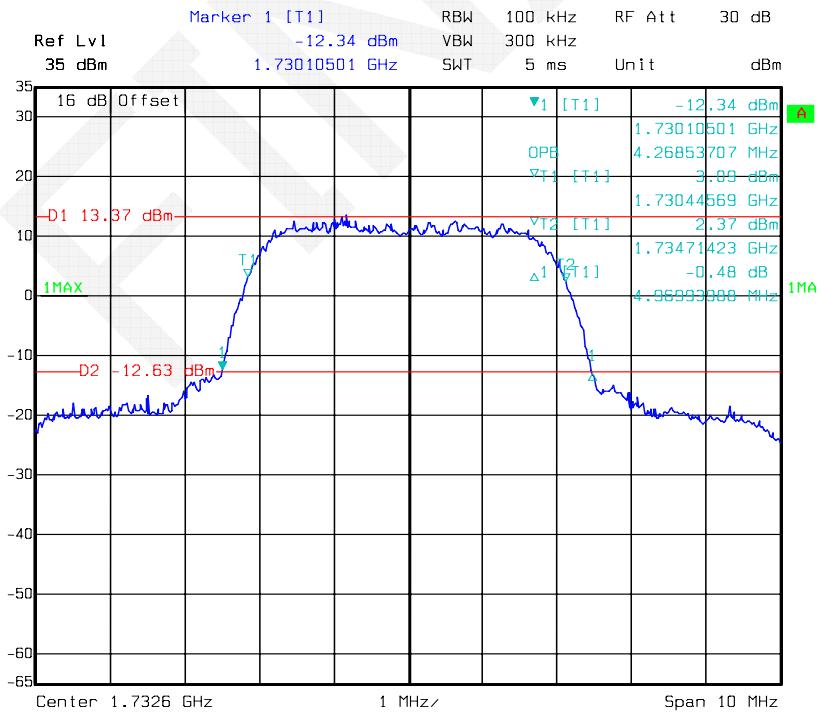
Date: 6.SEP.2015 20:22:04

REL99 Band IV

Date: 10.SEP.2015 11:47:00

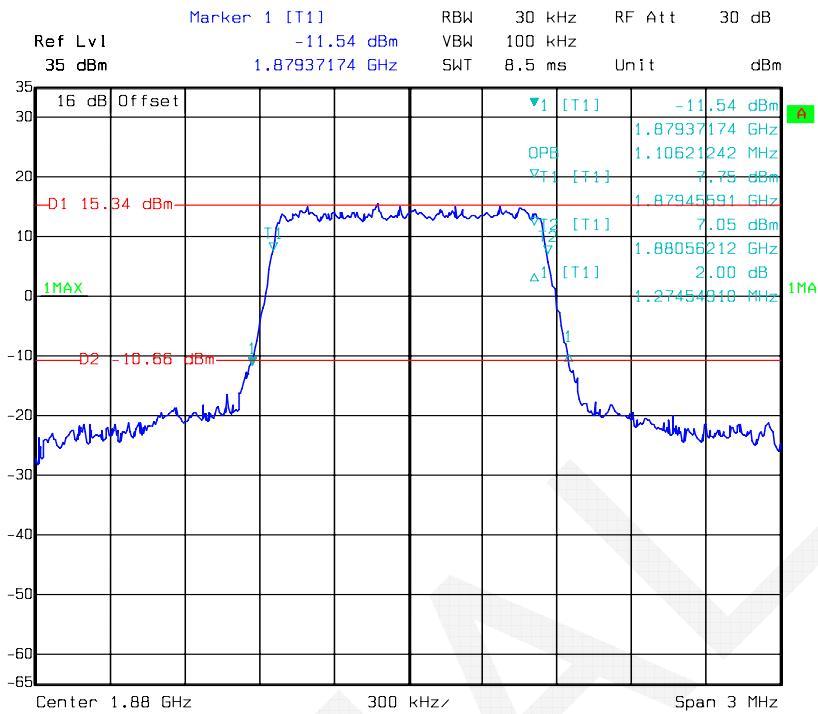
HSDPA Band IV

Date: 10.SEP.2015 11:39:26

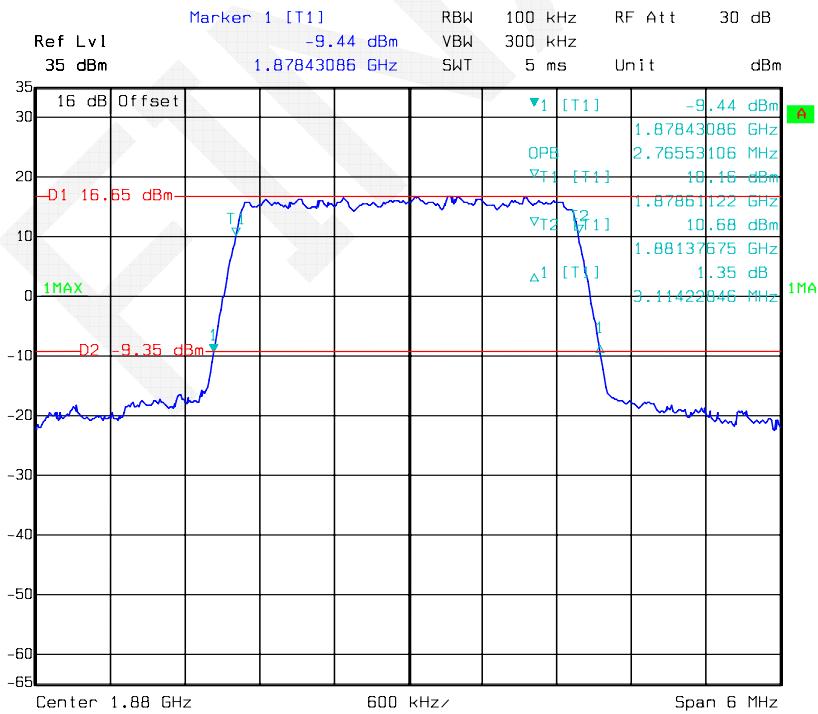
HSUPA Band IV

Date: 10.SEP.2015 11:41:27

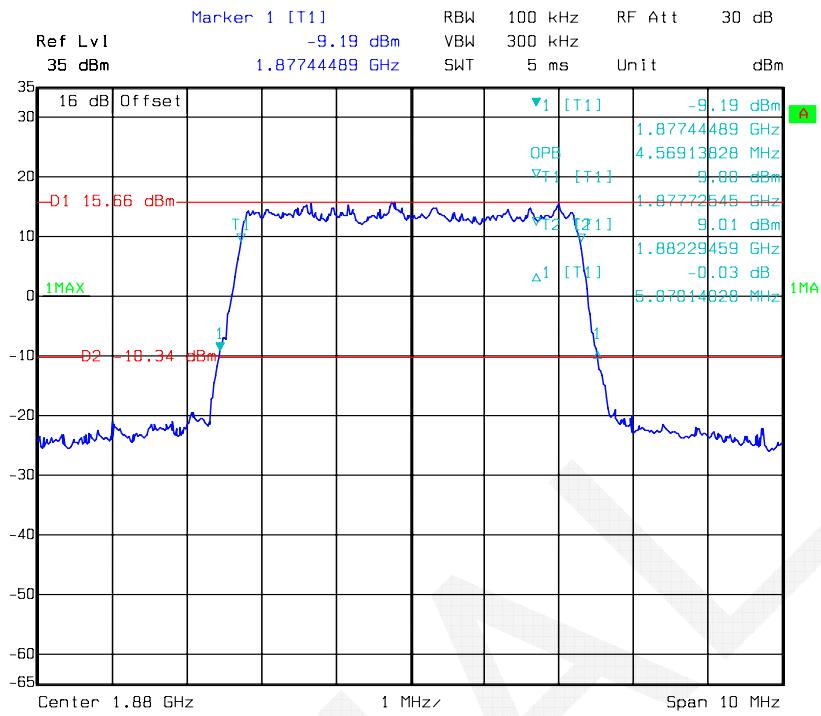
LTE Band	Test Modulation	Test Bandwidth	Test Channel	99% Occupied Bandwidth	26 dB Bandwidth
				MHz	MHz
Band 2	QPSK	1.4M	Middle	1.106	1.275
		3M		2.766	3.144
		5M		4.569	5.070
		10M		9.098	10.381
		15M		13.587	15.090
		20M		18.196	20.040
	16-QAM	1.4M	Middle	1.112	1.281
		3M		2.778	3.138
		5M		4.549	5.070
		10M		9.098	10.261
		15M		13.587	15.090
		20M		18.277	20.040
Band 4	QPSK	1.4M	Middle	1.106	1.299
		3M		2.766	3.114
		5M		4.549	5.110
		10M		9.098	10.341
		15M		13.527	14.970
		20M		18.116	20.120
	16-QAM	1.4M	Middle	1.112	1.281
		3M		2.778	3.102
		5M		4.549	5.090
		10M		9.098	10.261
		15M		13.527	14.970
		20M		18.116	20.040
Band 7	QPSK	5M	Middle	4.569	5.090
		10M		9.138	10.341
		15M		13.587	15.150
		20M		18.277	20.200
	16-QAM	5M	Middle	4.549	5.090
		10M		9.138	10.341
		15M		13.587	15.030
		20M		18.277	20.040
Band 17	QPSK	5M	Middle	4.549	5.090
		10M		9.138	10.421
	16-QAM	5M	Middle	4.549	5.110
		10M		9.138	10.341

QPSK, Band 2-1.4M

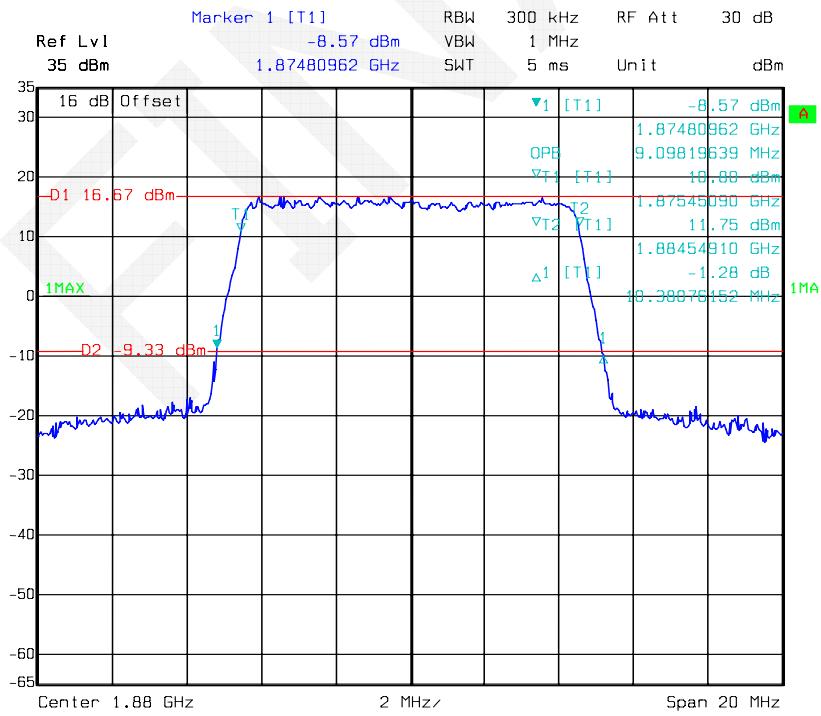
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QPSK, Band 2-3M

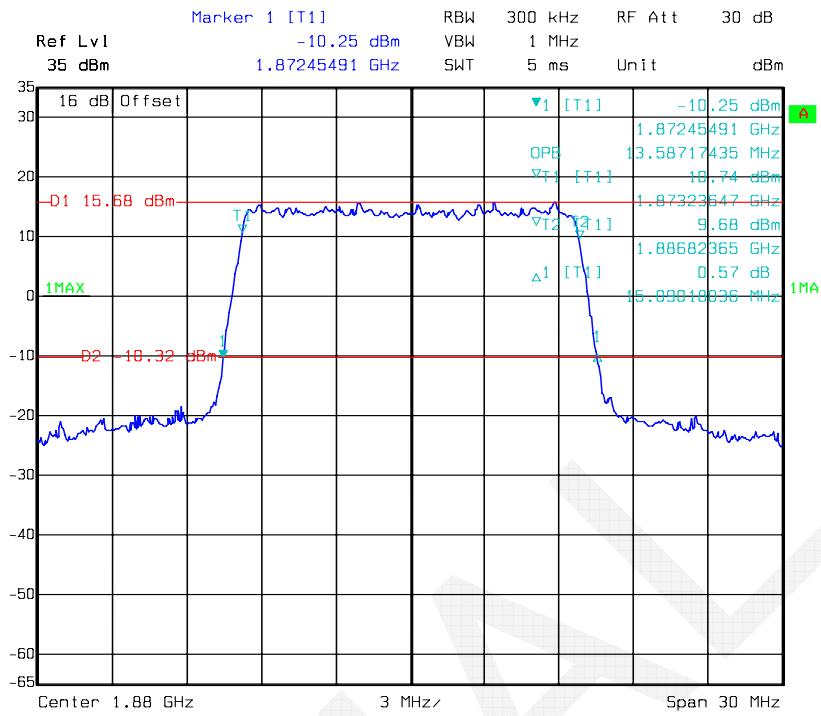
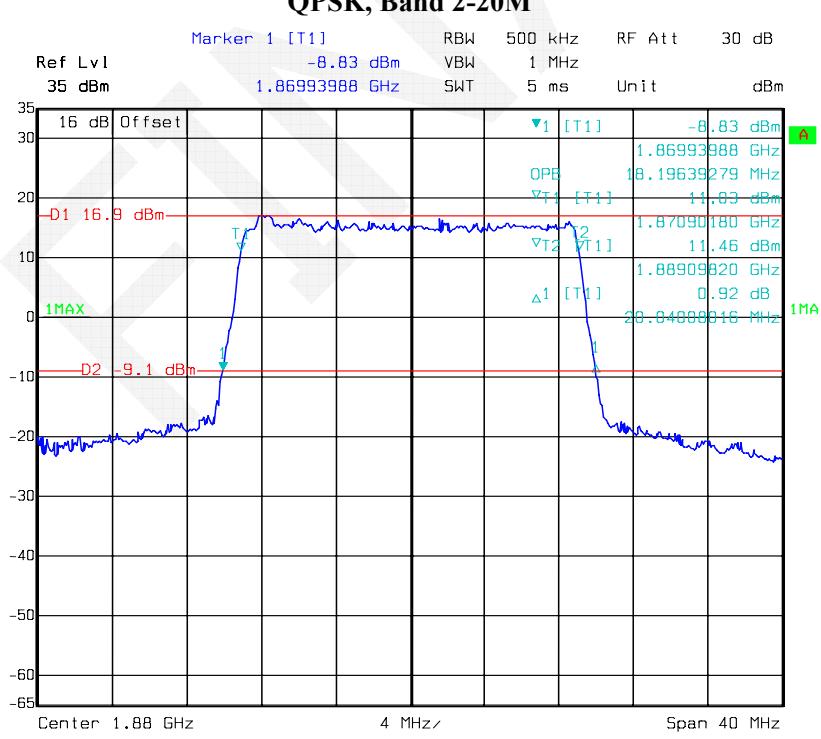
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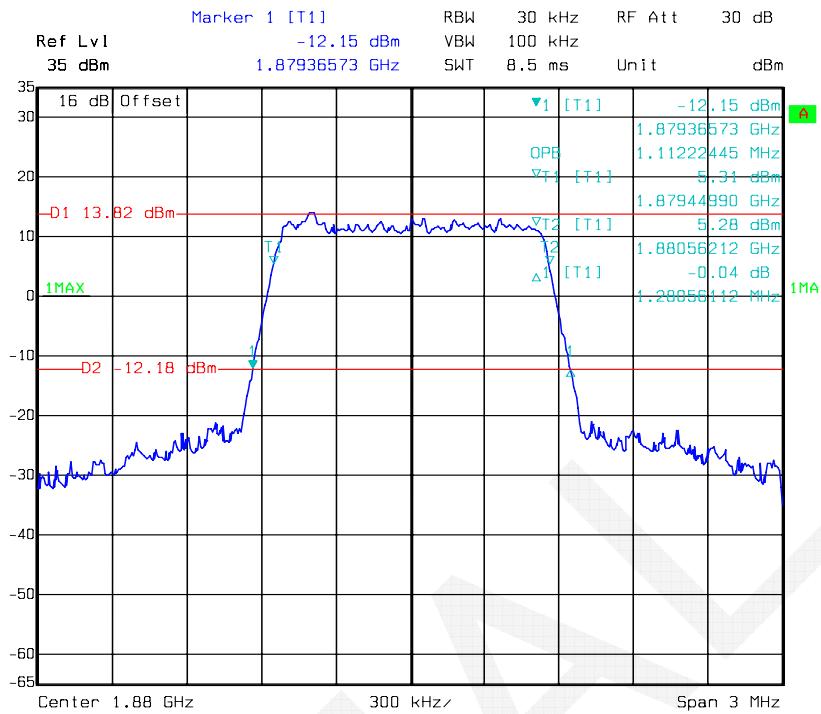
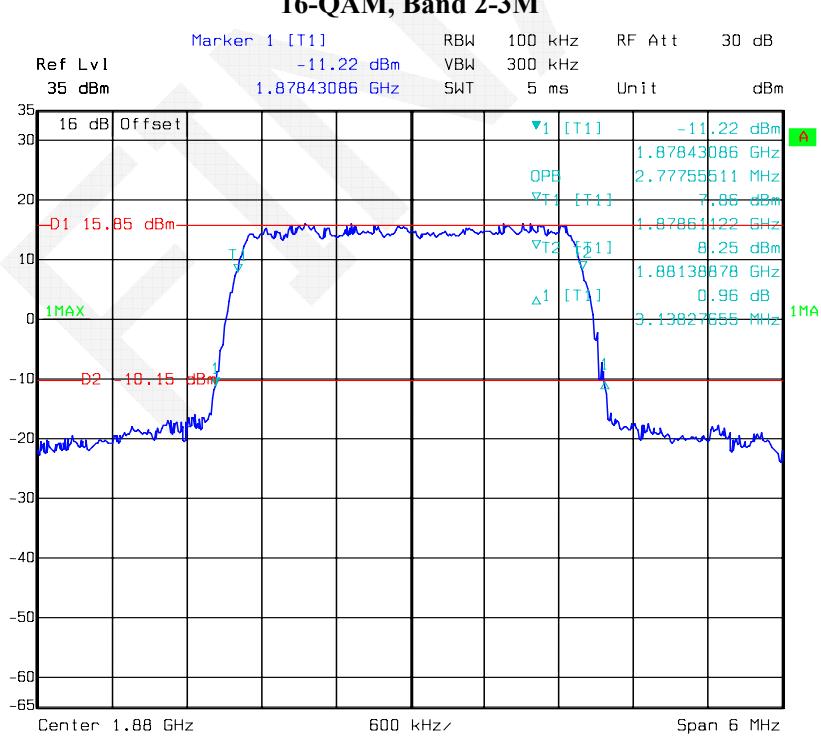
QPSK, Band 2-5M

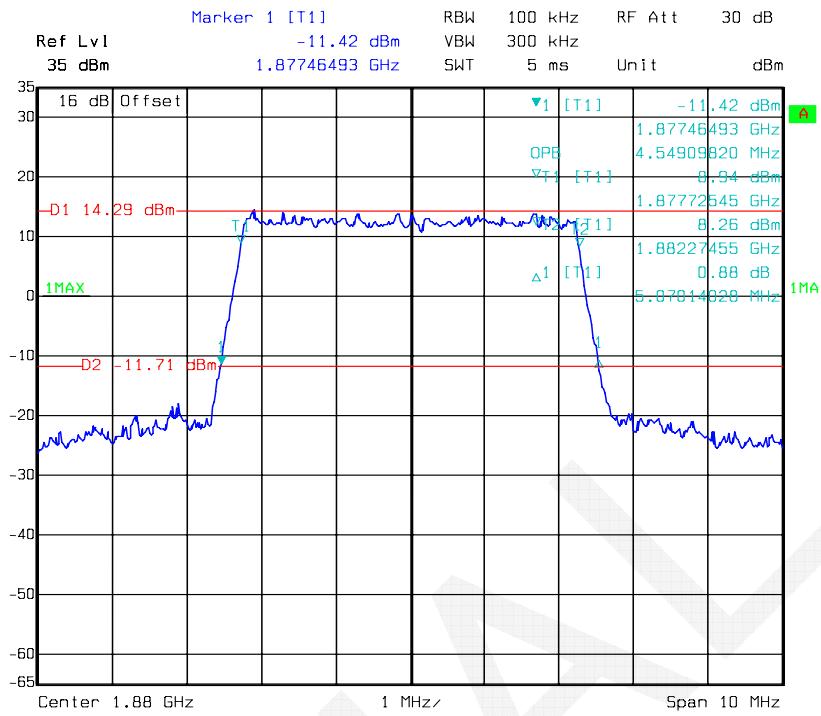
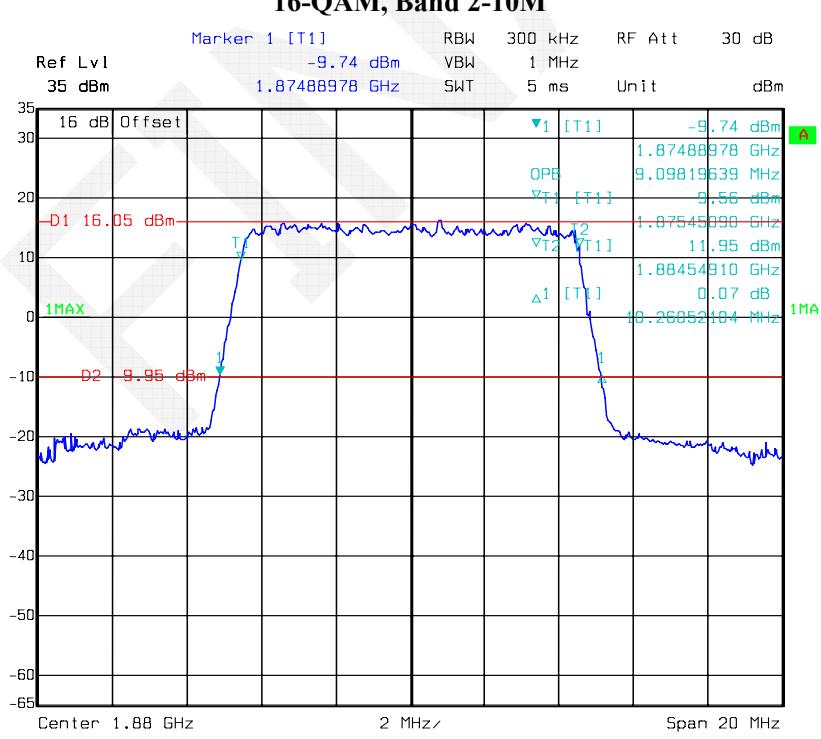
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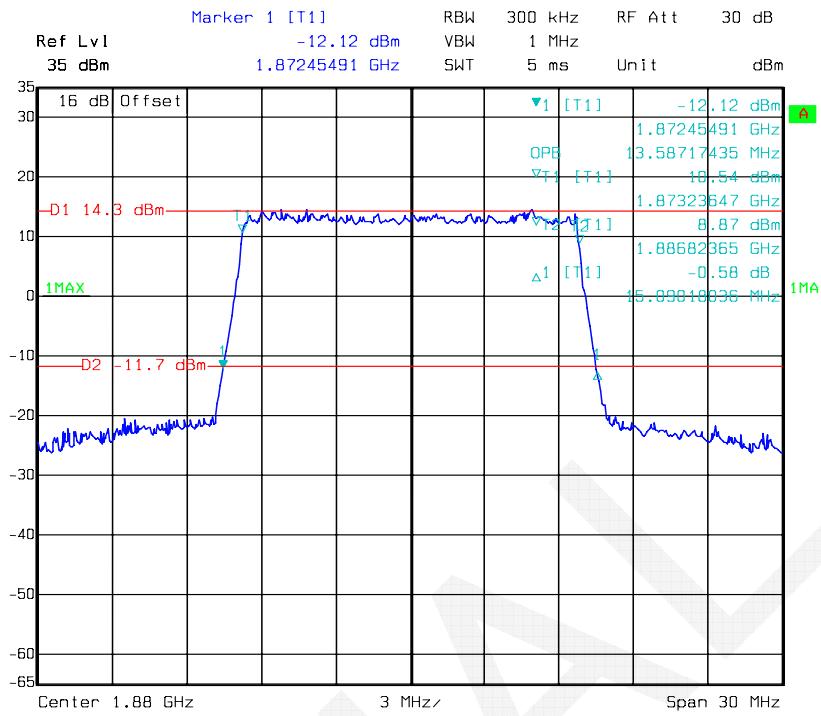
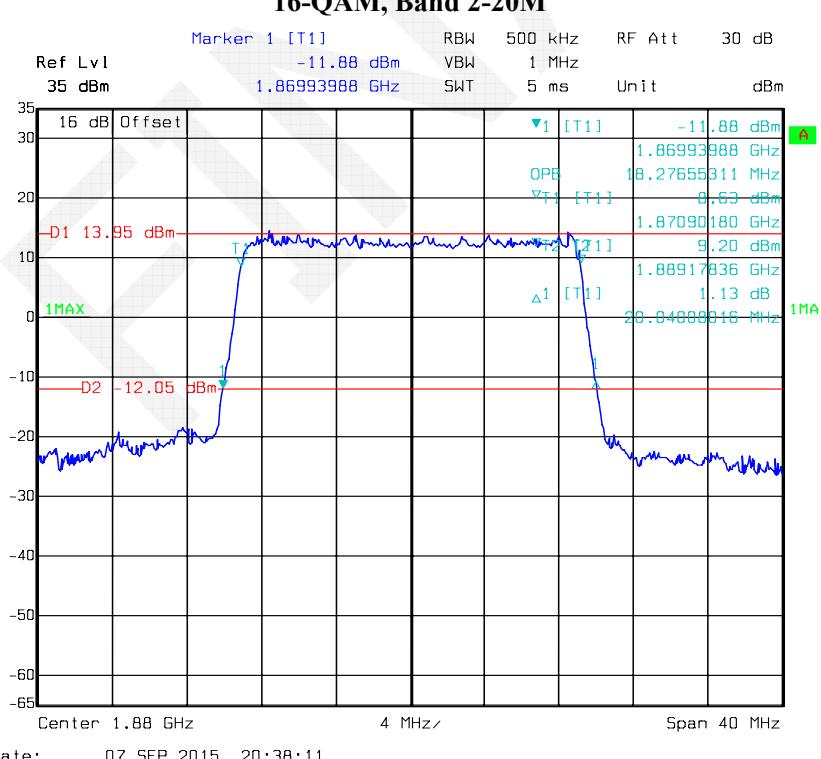
QPSK, Band 2-10M

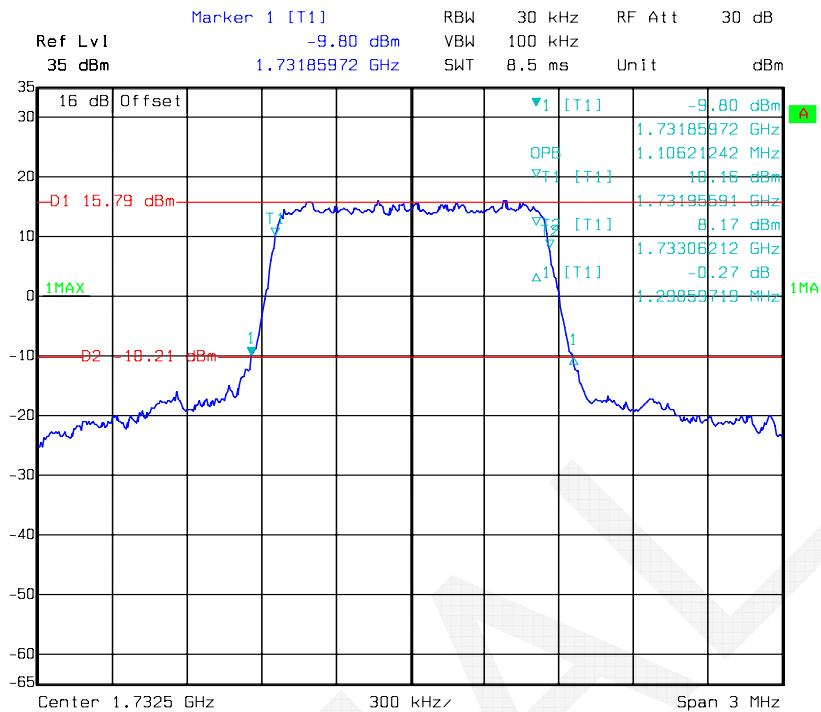
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QPSK, Band 2-15M**QPSK, Band 2-20M**

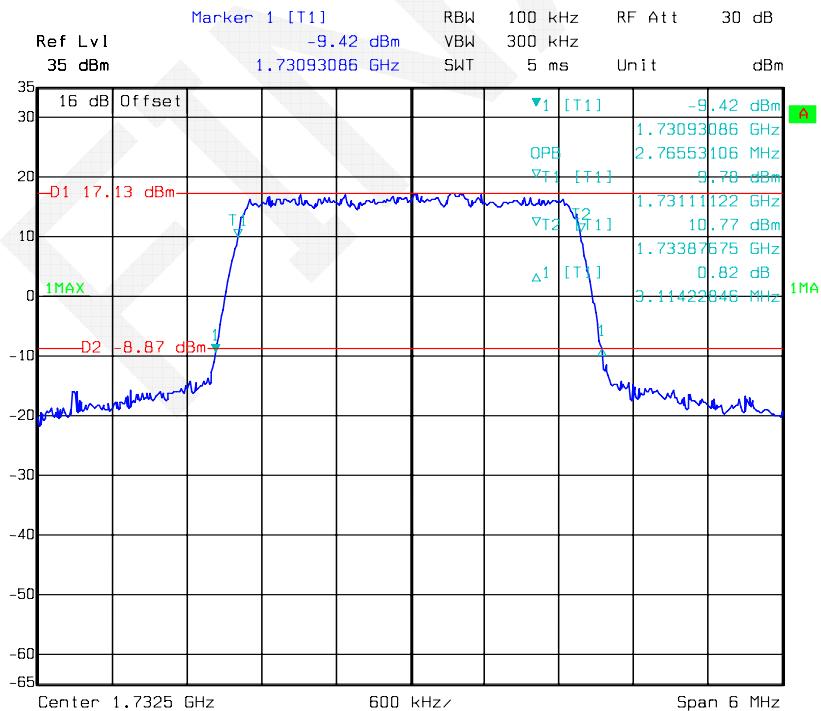
16-QAM, Band 2-1.4M**16-QAM, Band 2-3M**

16-QAM, Band 2-5M**16-QAM, Band 2-10M**

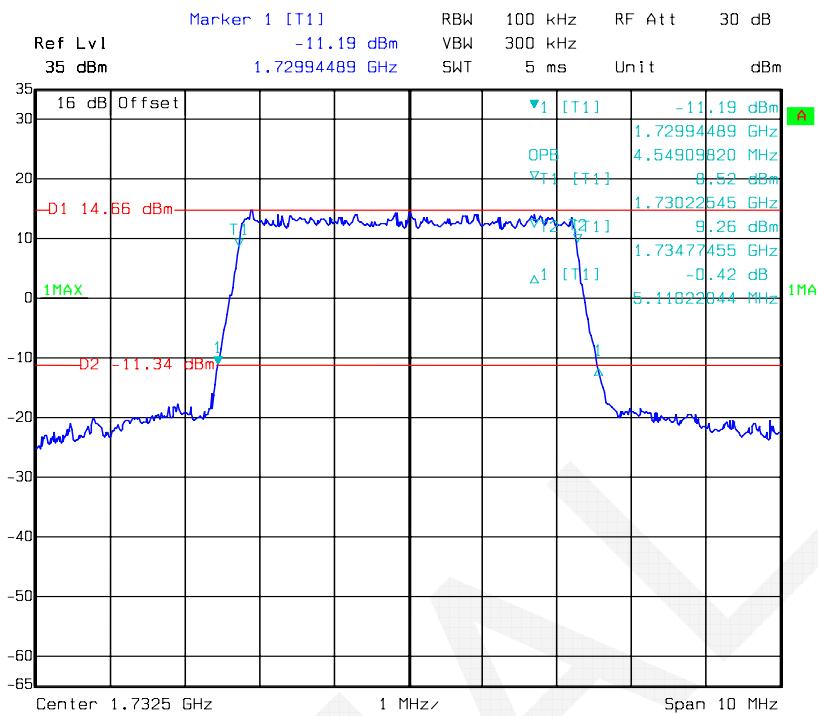
16-QAM, Band 2-15M**16-QAM, Band 2-20M**

QPSK, Band 4-1.4M

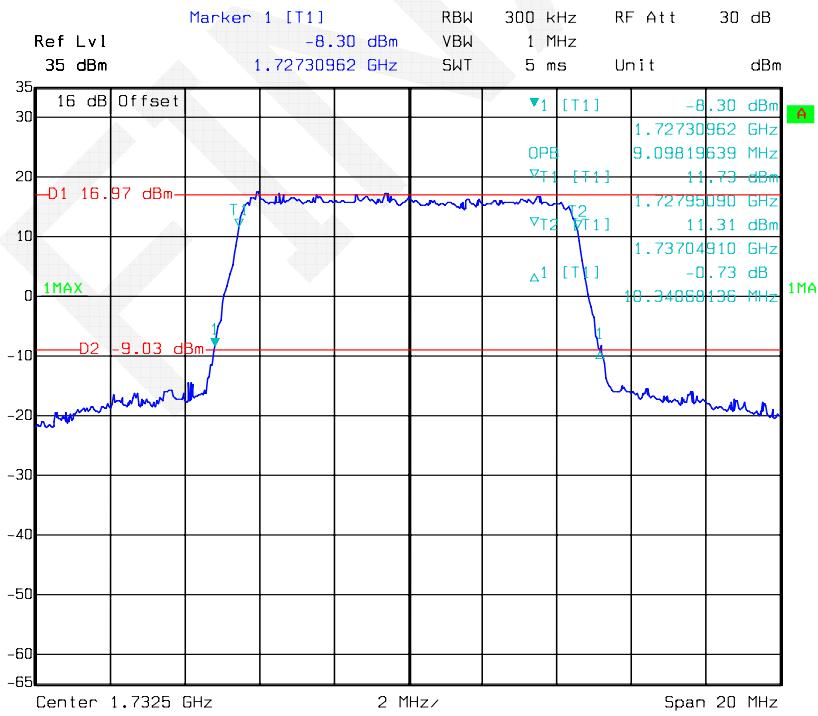
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QPSK, Band 4-3M

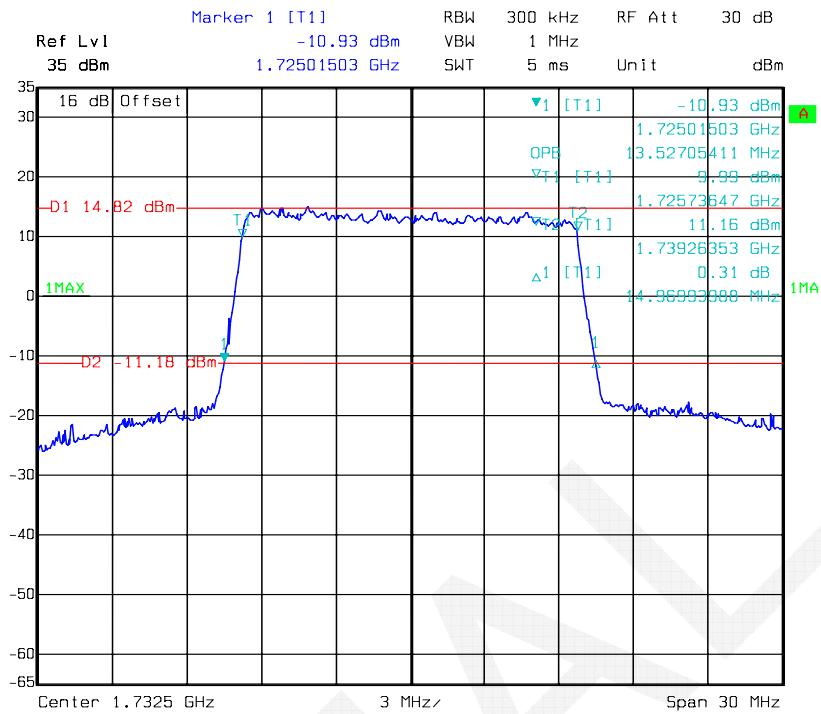
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QPSK, Band 4-5M

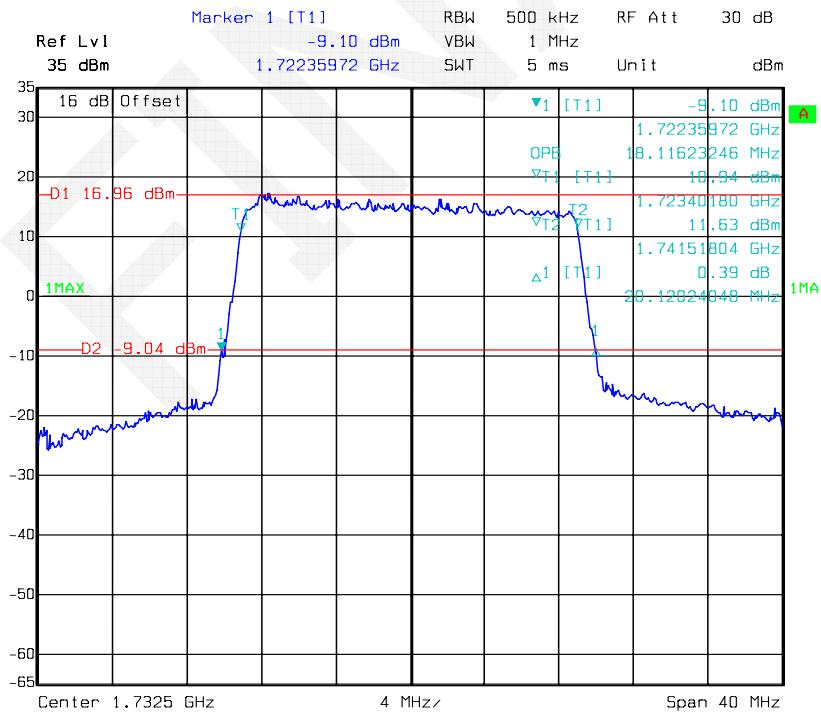
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QPSK, Band 4-10M

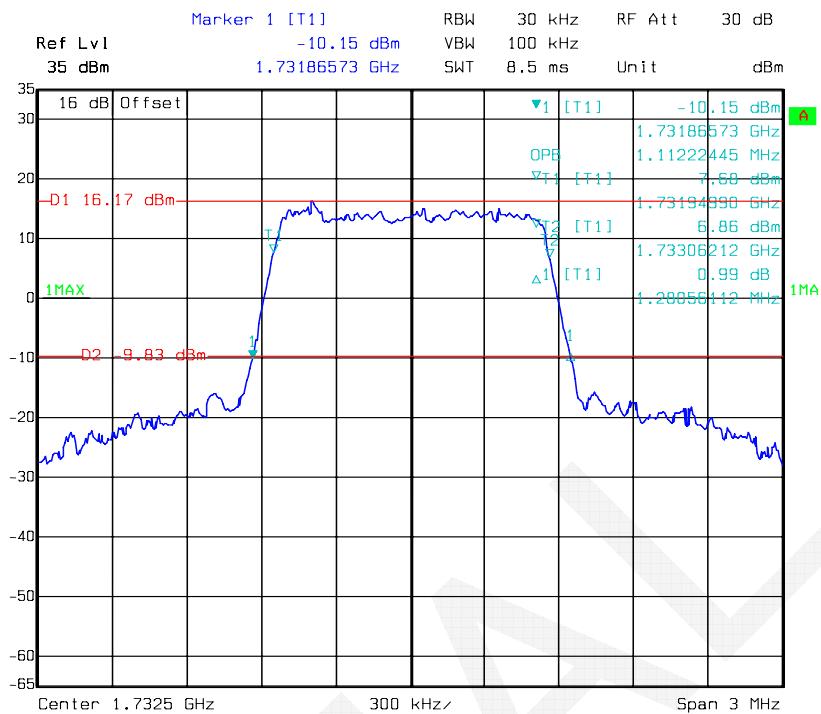
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QPSK, Band 4-15M

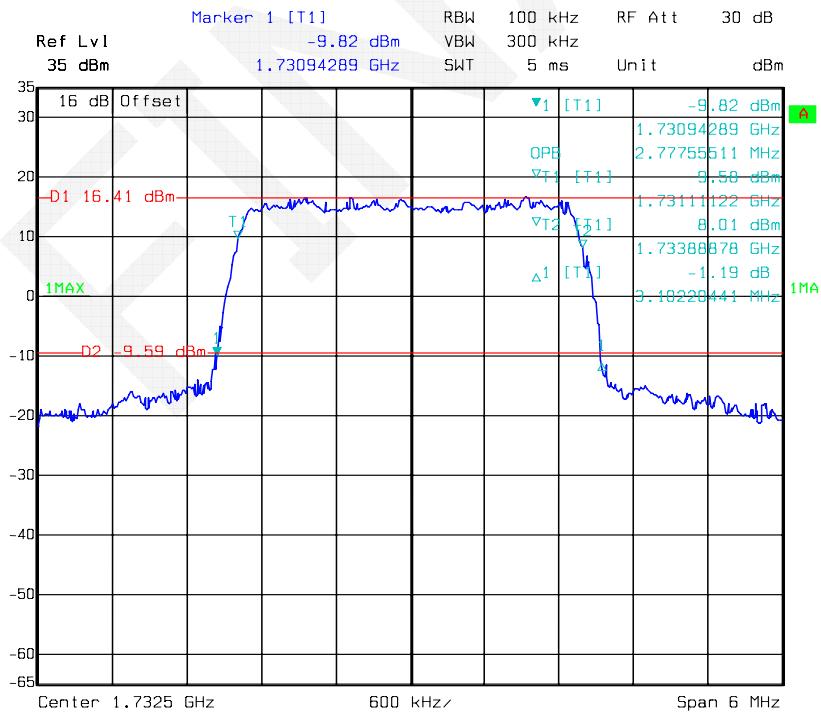
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QPSK, Band 4-20M

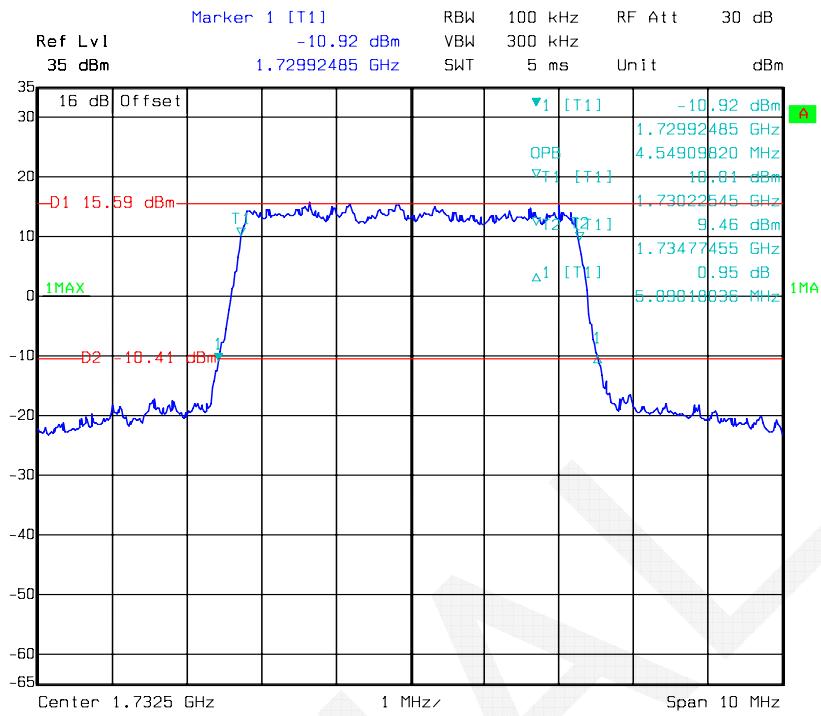
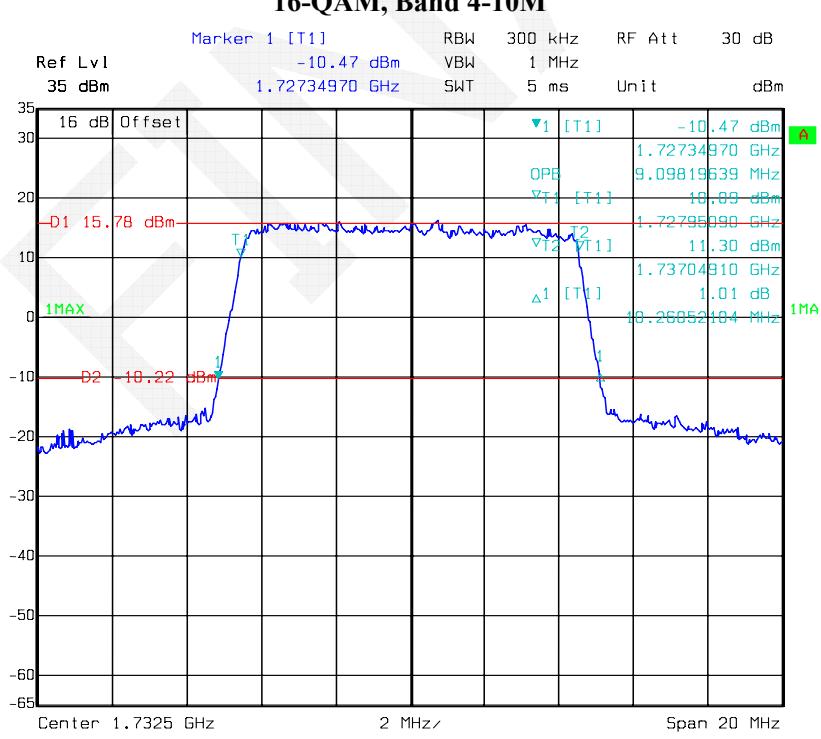
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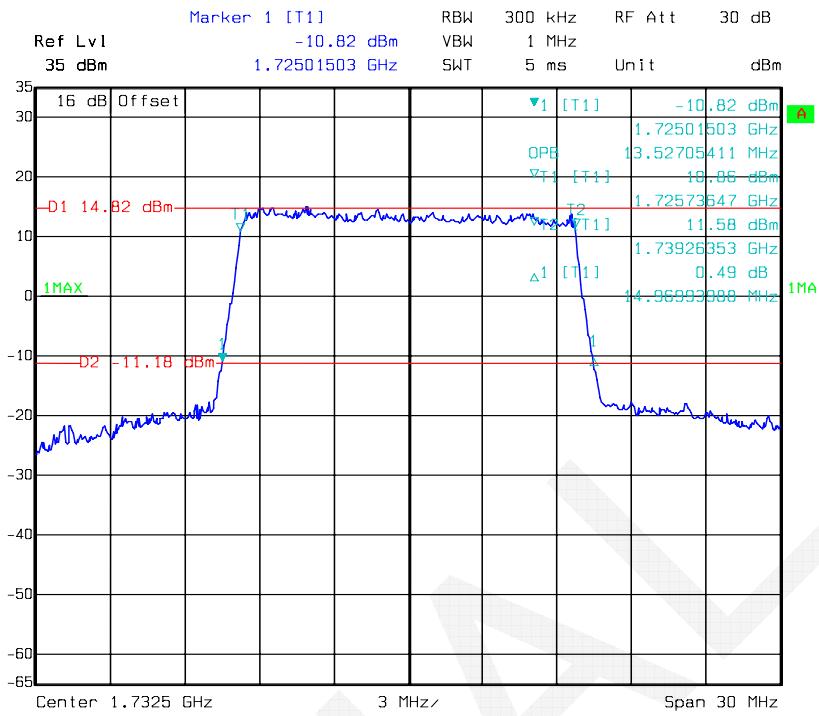
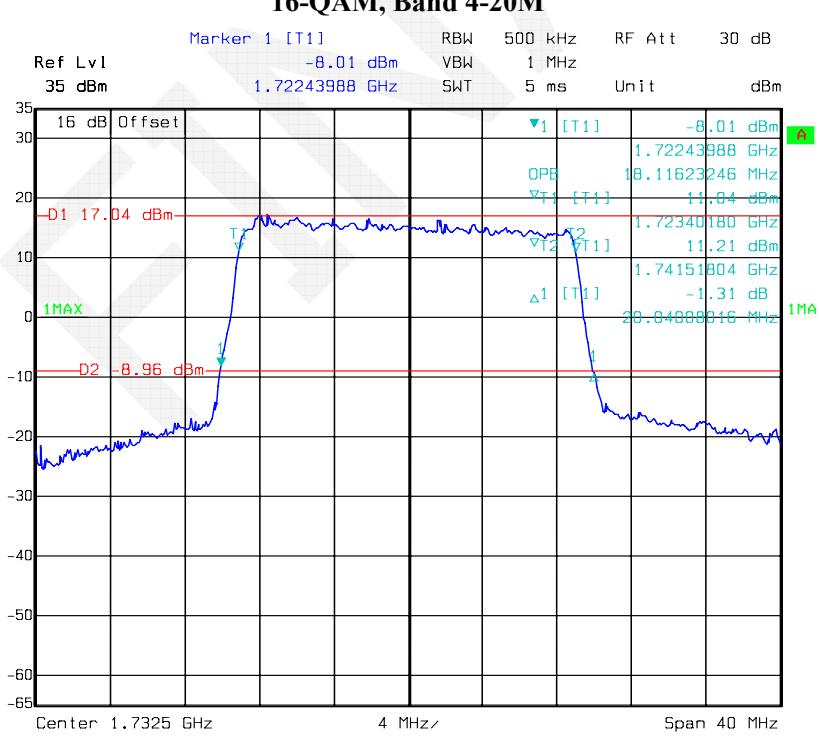
16-QAM, Band 4-1.4M

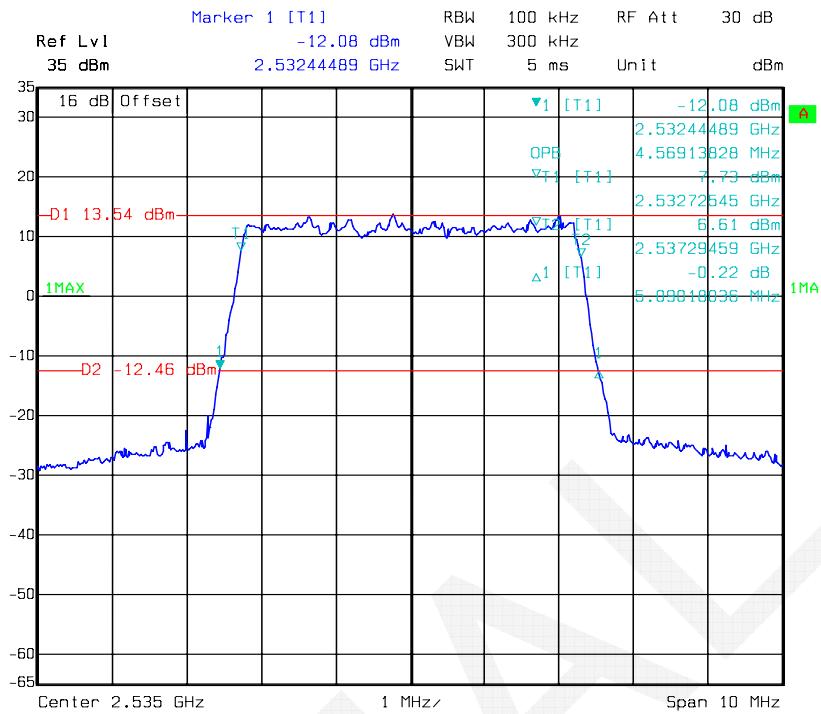
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16-QAM, Band 4-3M

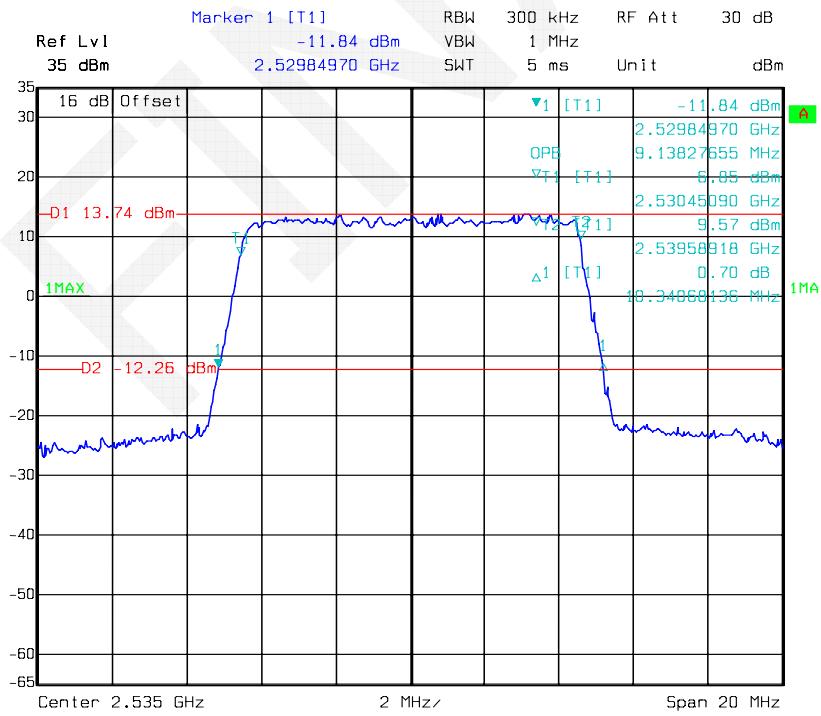
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16-QAM, Band 4-5M**16-QAM, Band 4-10M**

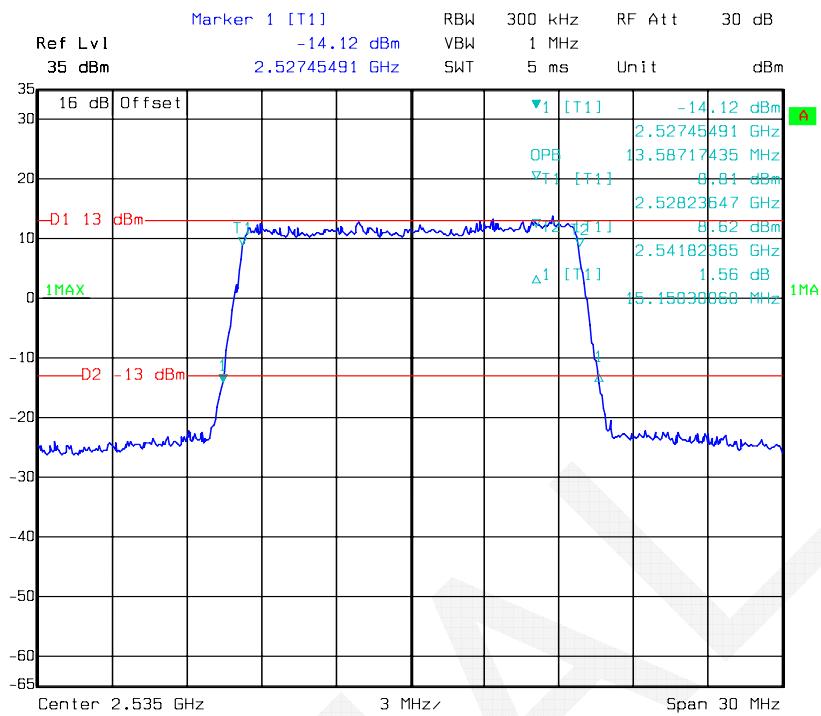
16-QAM, Band 4-15M**16-QAM, Band 4-20M**

QPSK, Band 7-5M

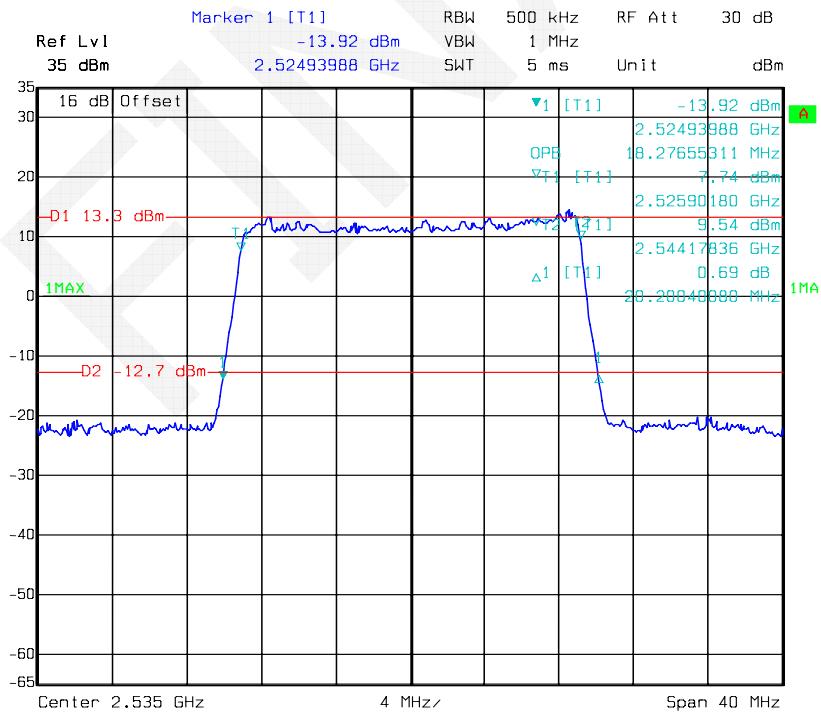
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QPSK, Band 7-10M

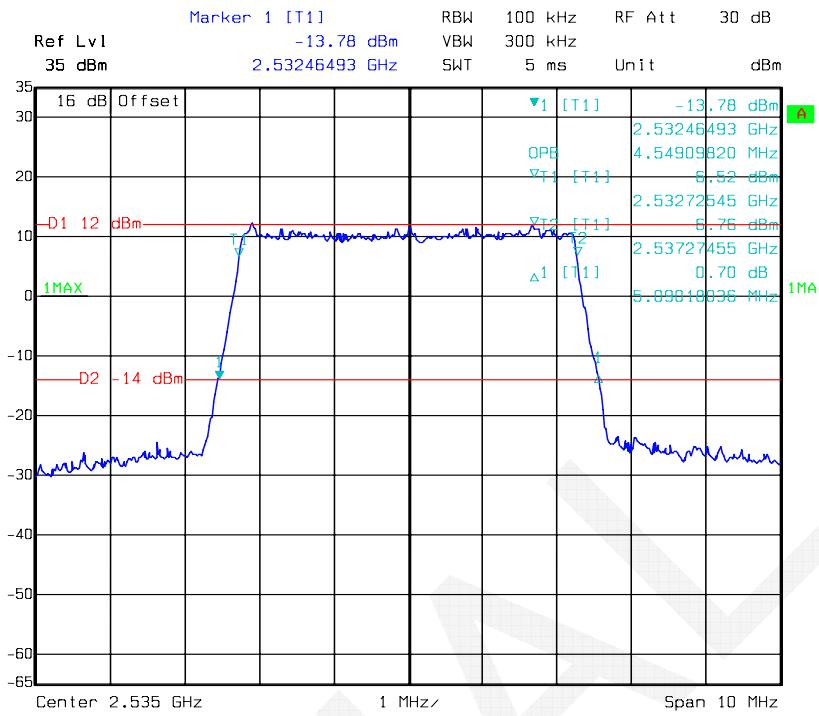
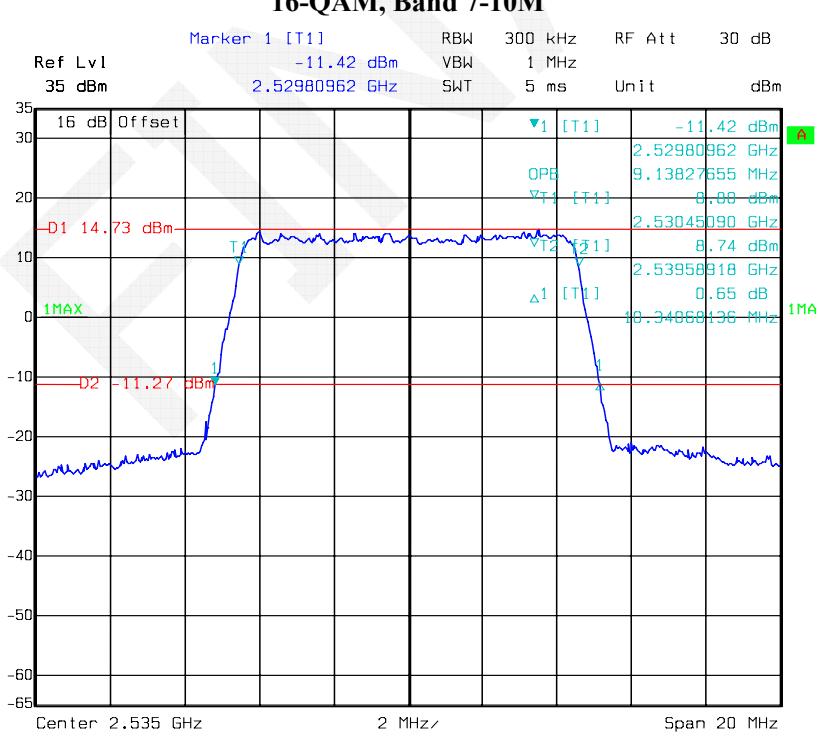
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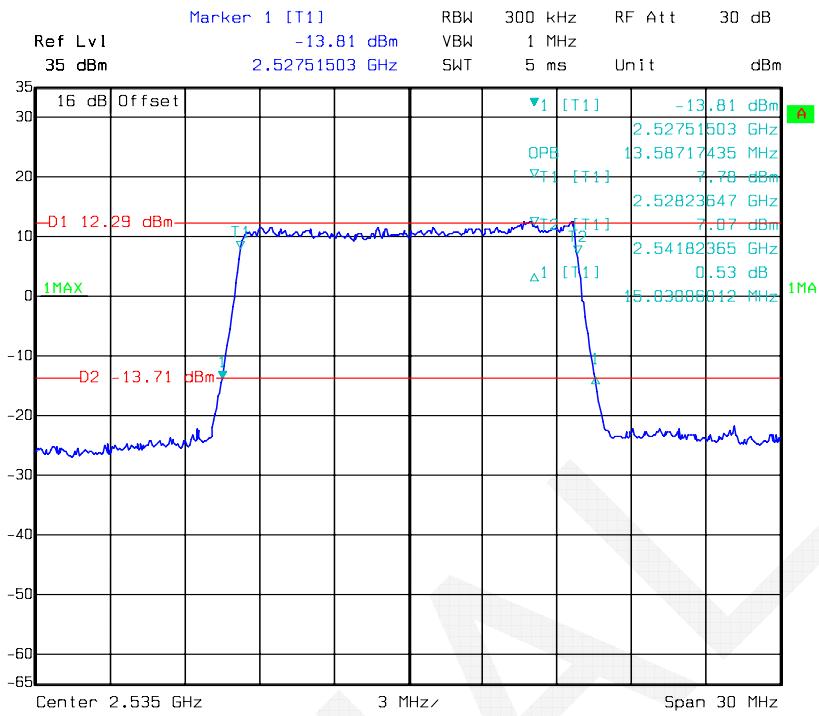
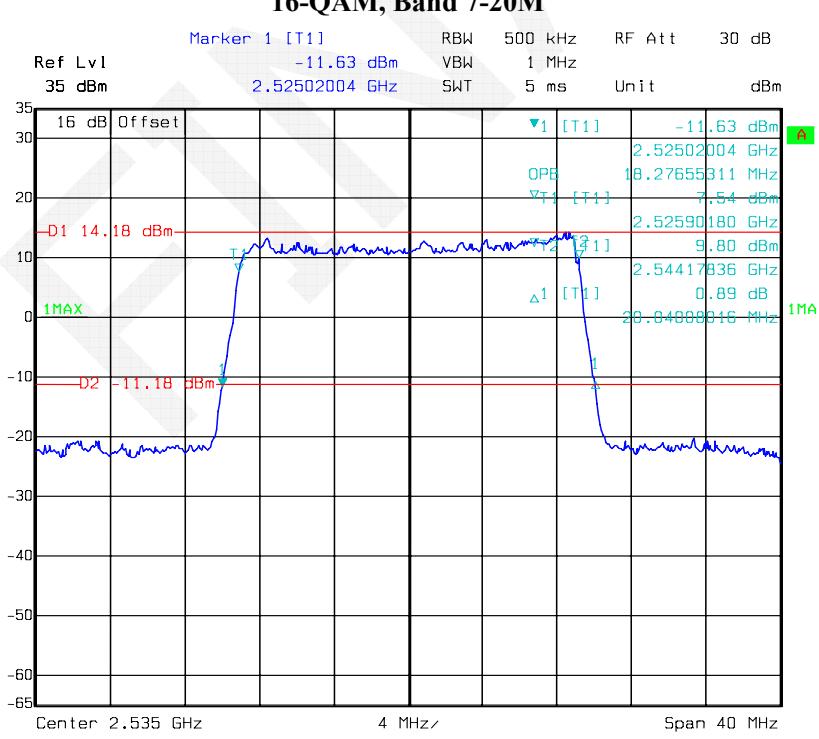
QPSK, Band 7-15M

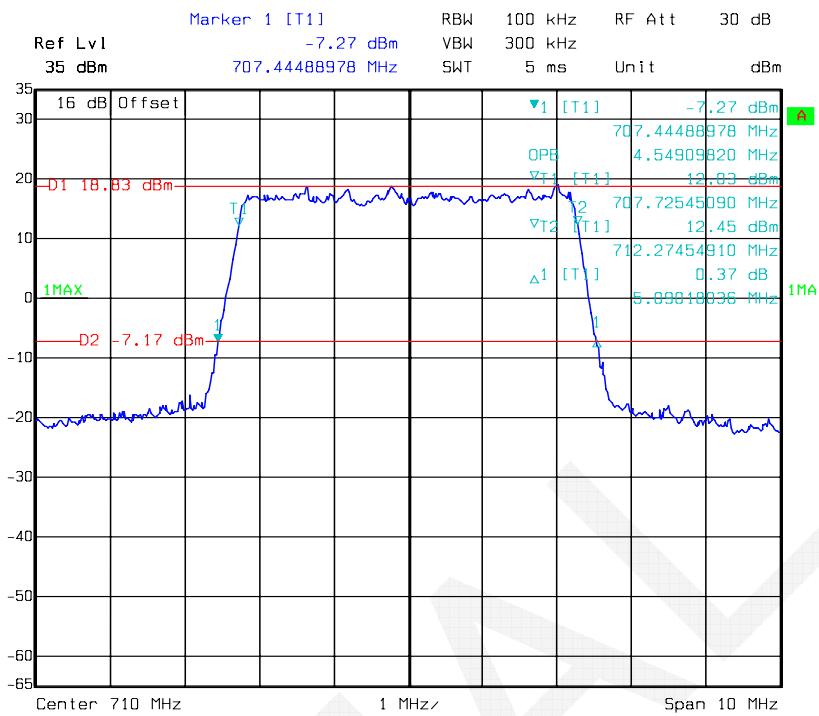
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QPSK, Band 7-20M

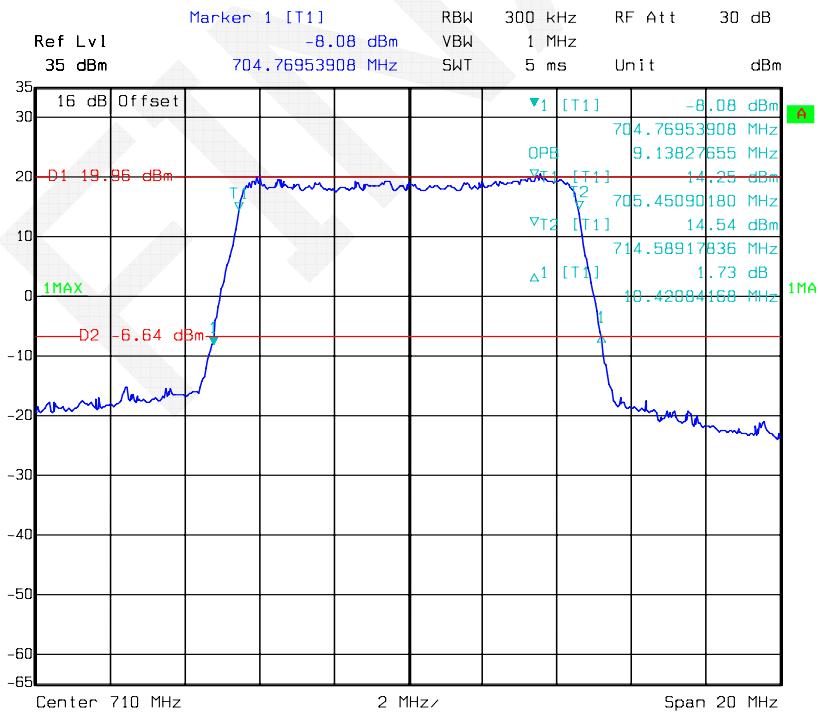
Date: 07.SEP.2015 21:09:46

16-QAM, Band 7-5M**16-QAM, Band 7-10M**

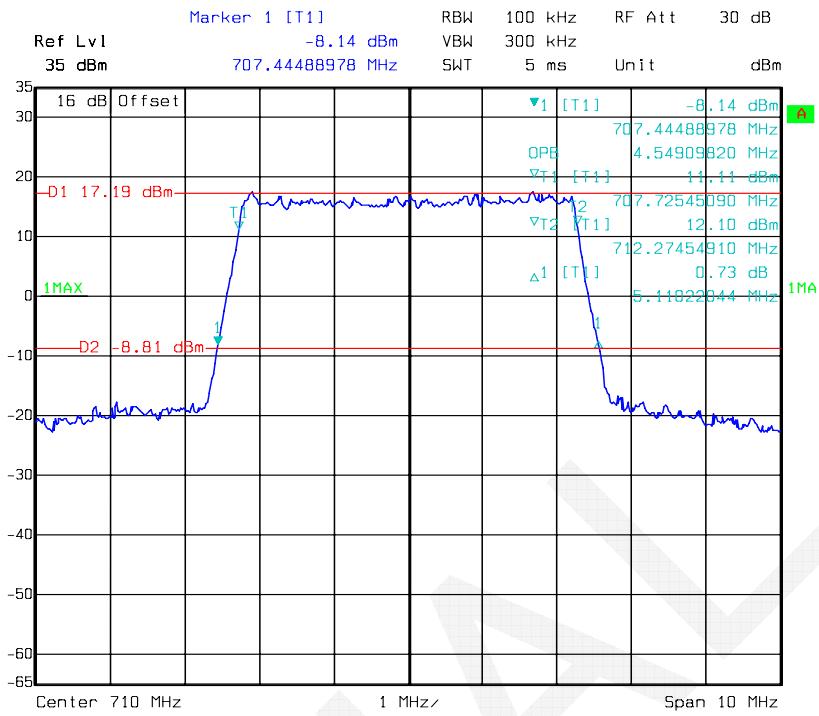
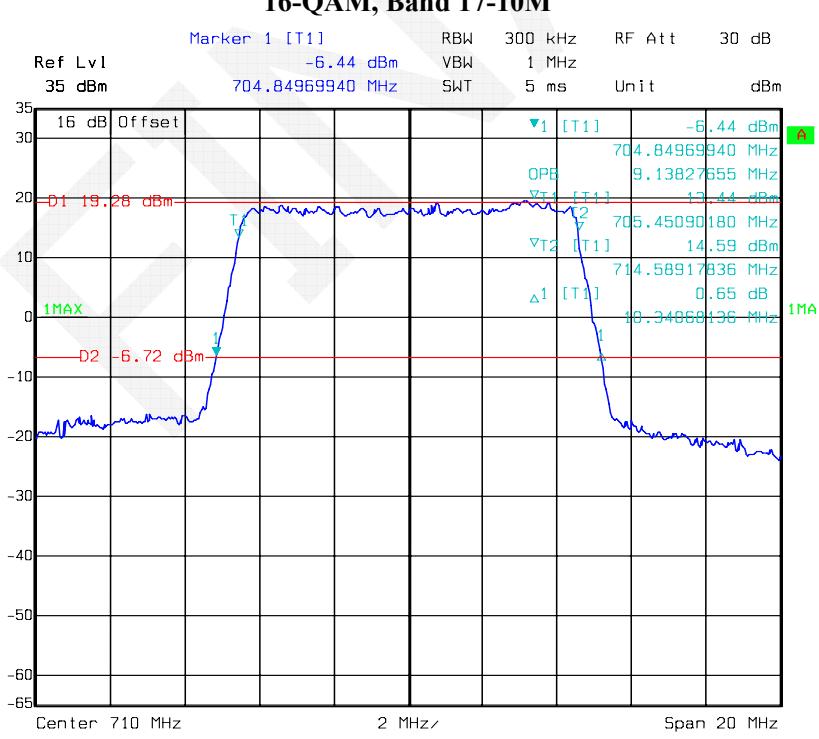
16-QAM, Band 7-15M**16-QAM, Band 7-20M**

QPSK, Band 17-5M

Date: 07.SEP.2015 20:10:57

QPSK, Band 17-10M

Date: 07.SEP.2015 20:16:56

16-QAM, Band 17-5M**16-QAM, Band 17-10M**

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

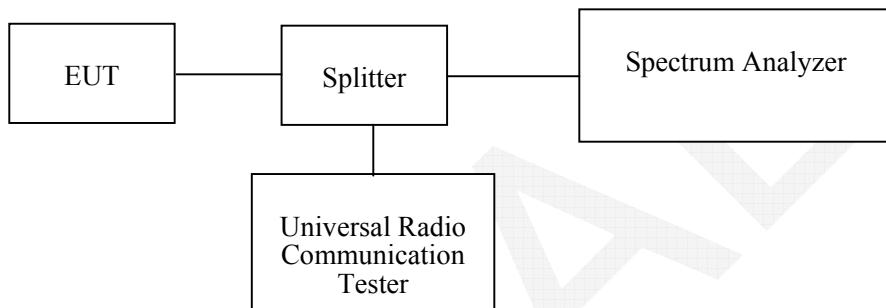
Applicable Standard

FCC §2.1051, §22.917(a), §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. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
R&S	Universal Radio Communication Tester	CMU200	109038	2015-05-09	2016-05-09
R&S	Wideband Radio Communication Tester	CMW500	106891	2014-11-23	2015-11-23

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

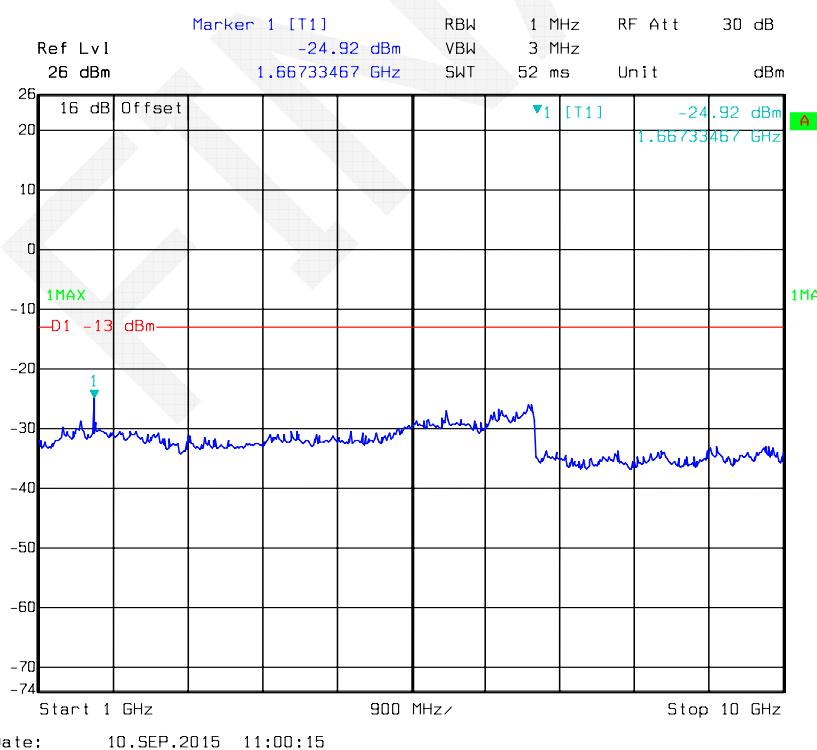
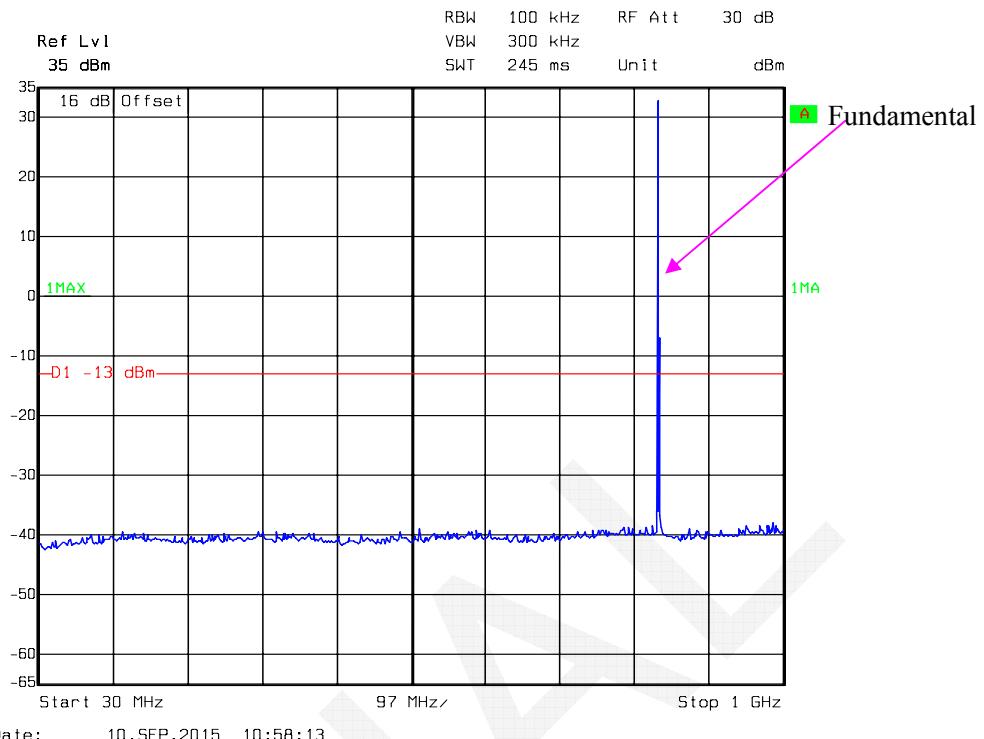
Test Data

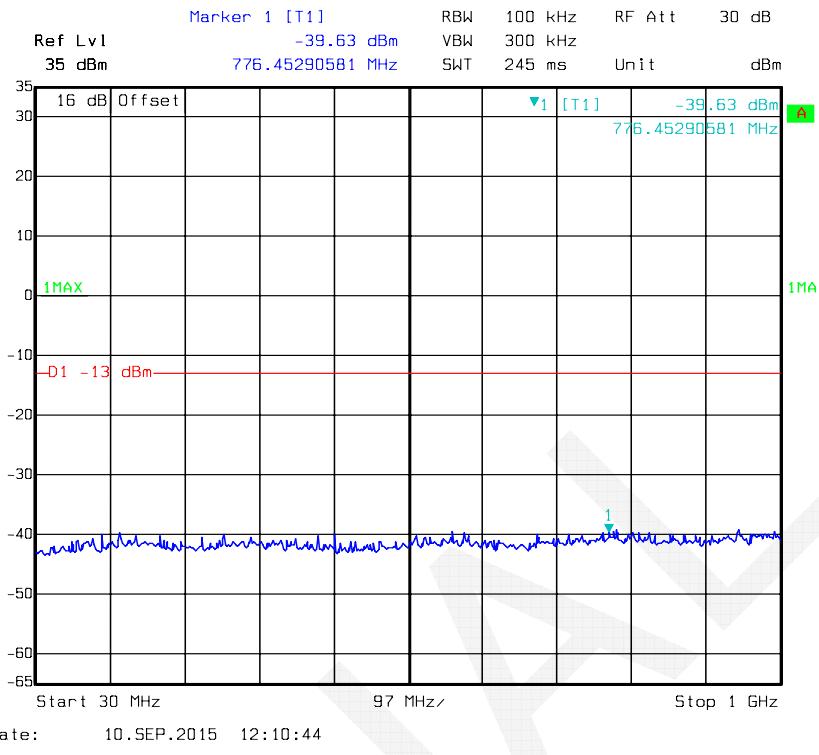
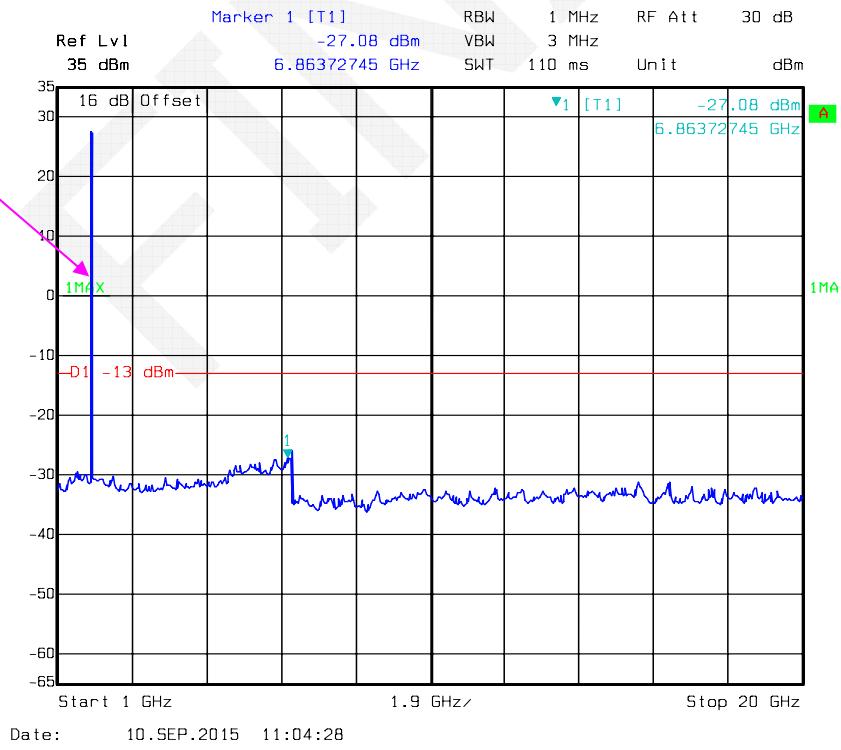
Environmental Conditions

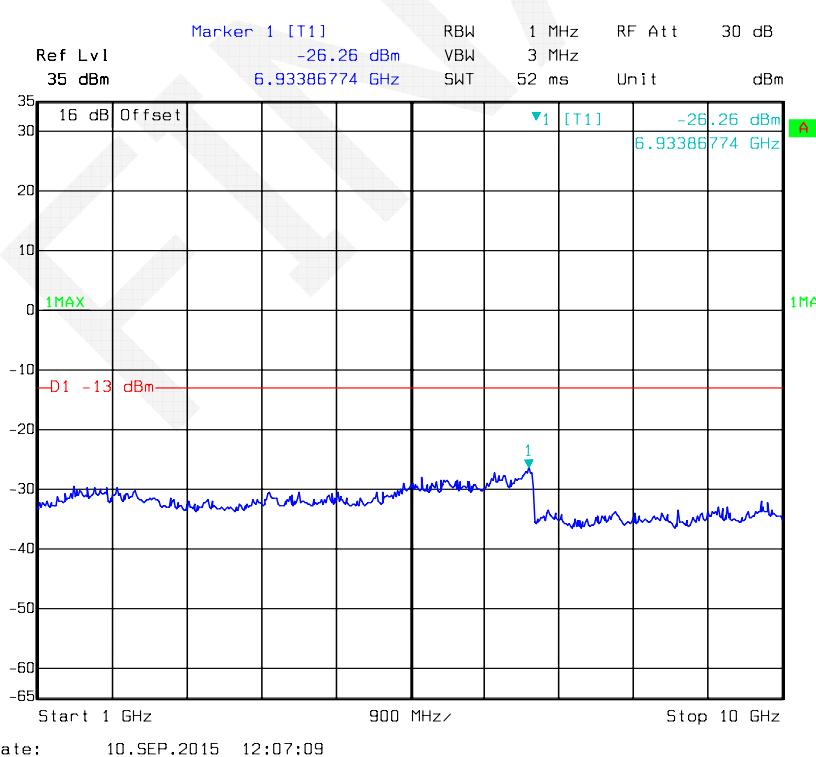
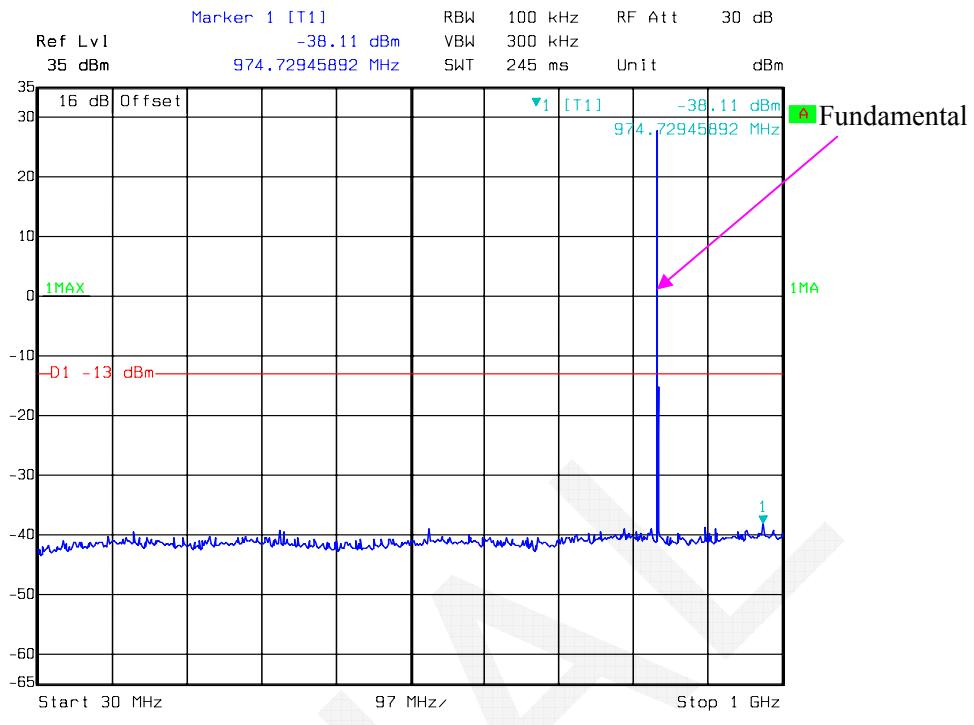
Temperature:	26.8~27.1 °C
Relative Humidity:	59~61 %
ATM Pressure:	100~100.3 kPa

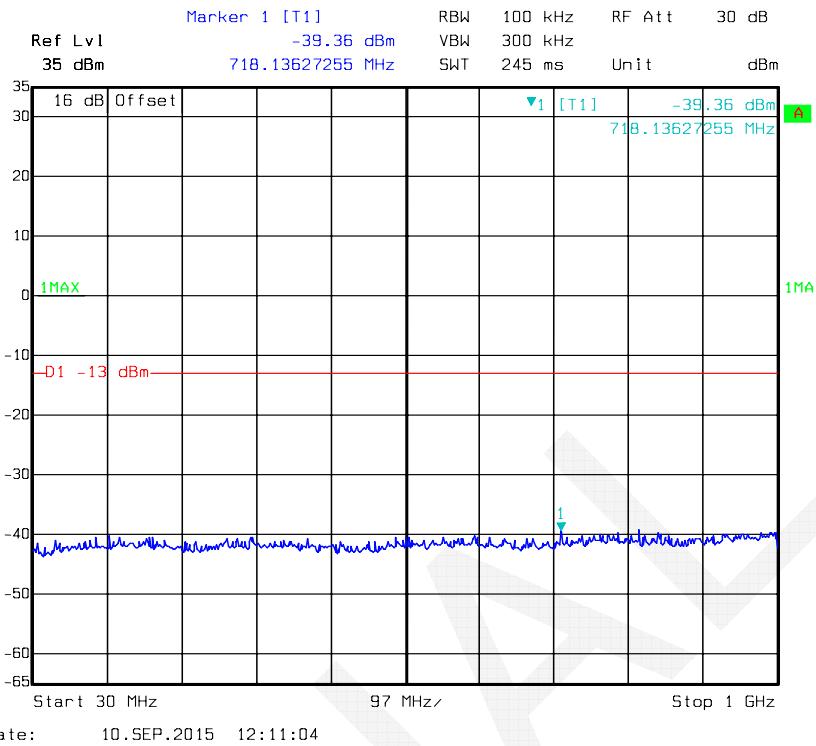
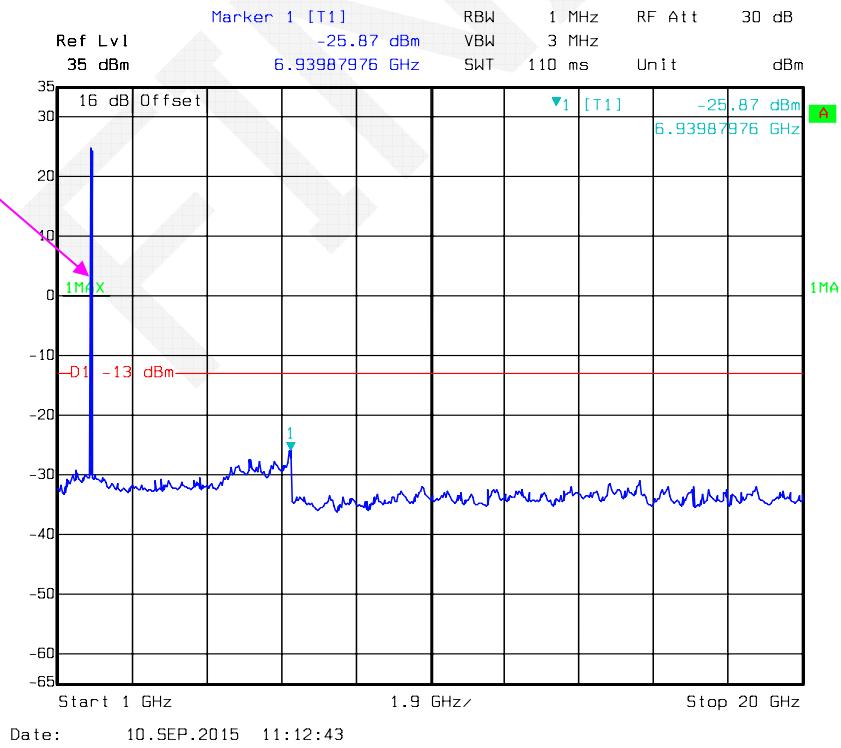
The testing was performed by Dean Liu from 2015-09-07 to 2015-09-10.

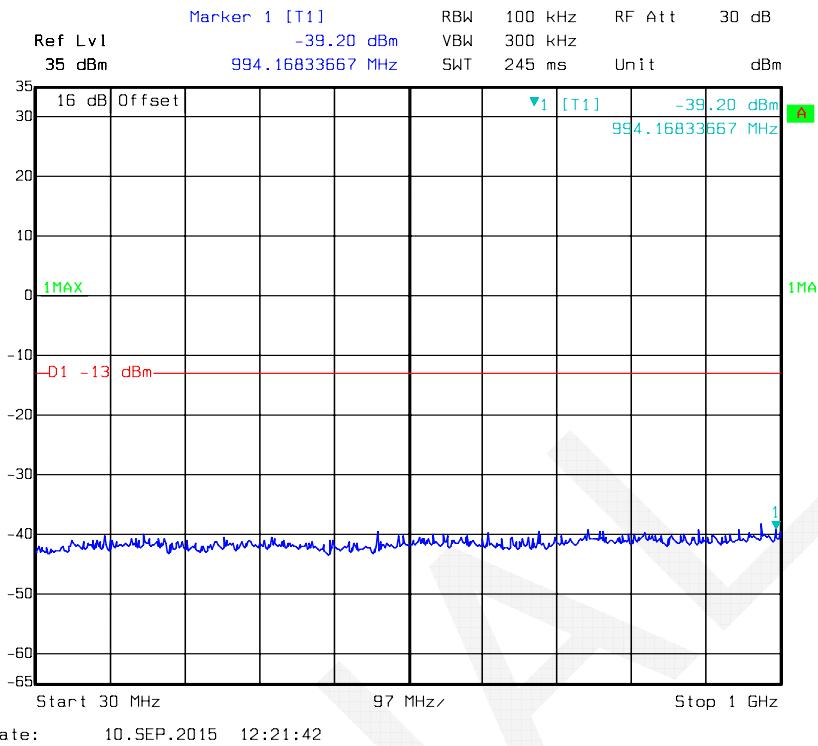
Please refer to the following plots.

GSM850_Middle Channel

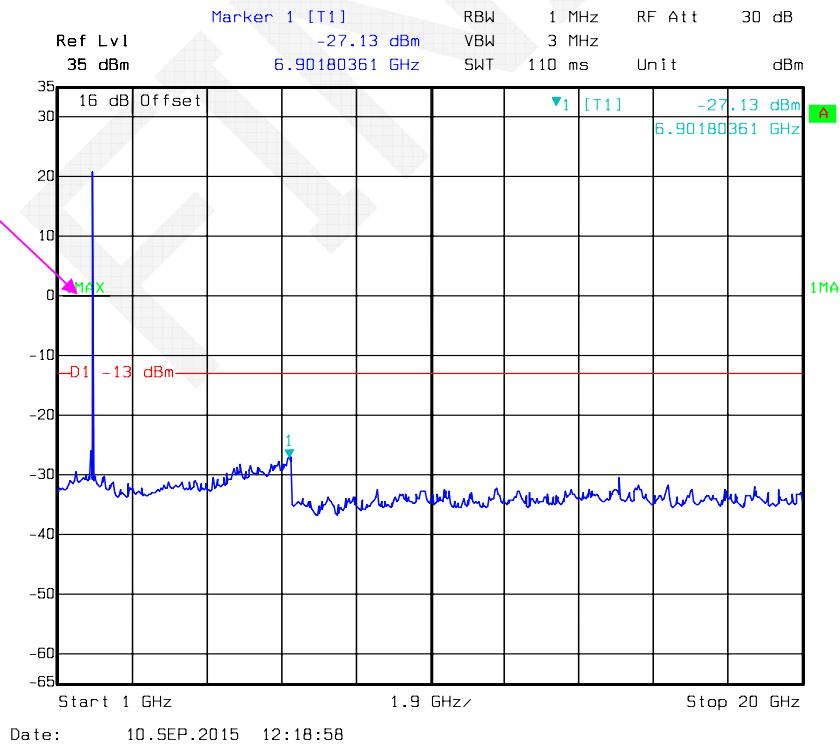
PCS 1900_Middle Channel**Fundamental**

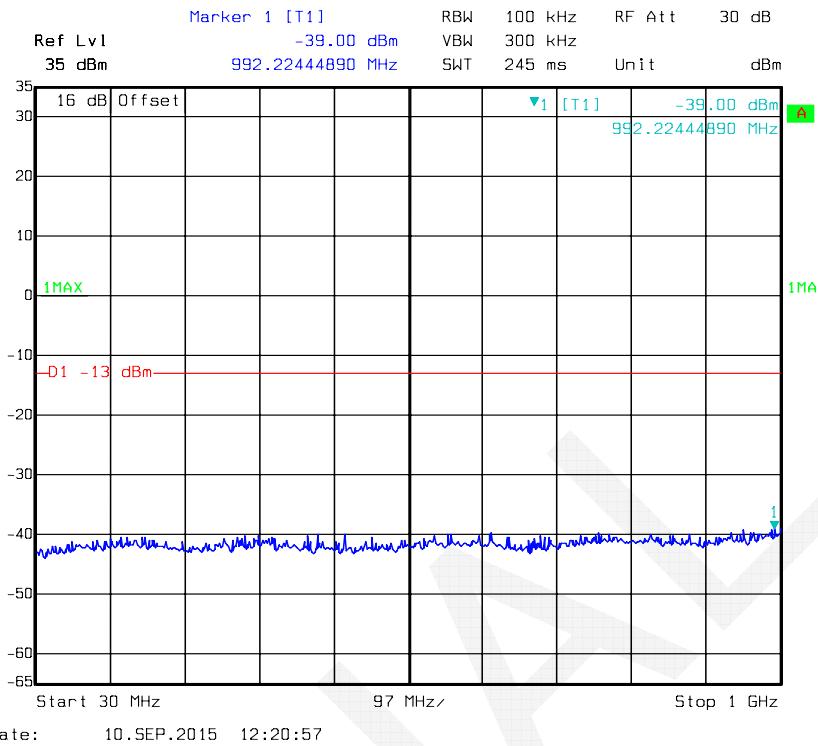
EDGE850_Middle Channel

EDGE1900_Middle Channel**Fundamental**

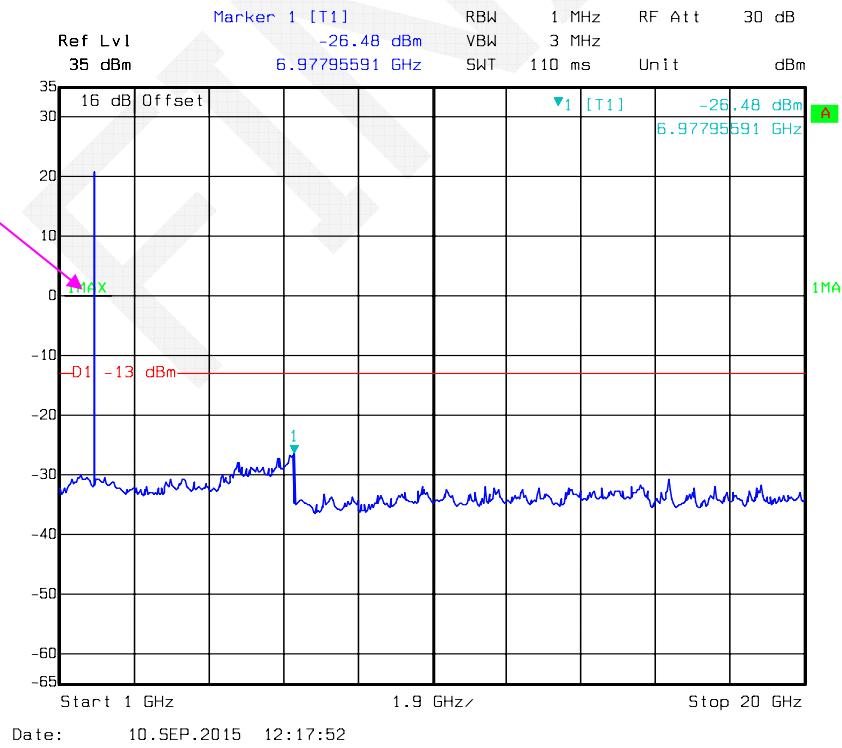
REL99 Band II_ Middle Channel

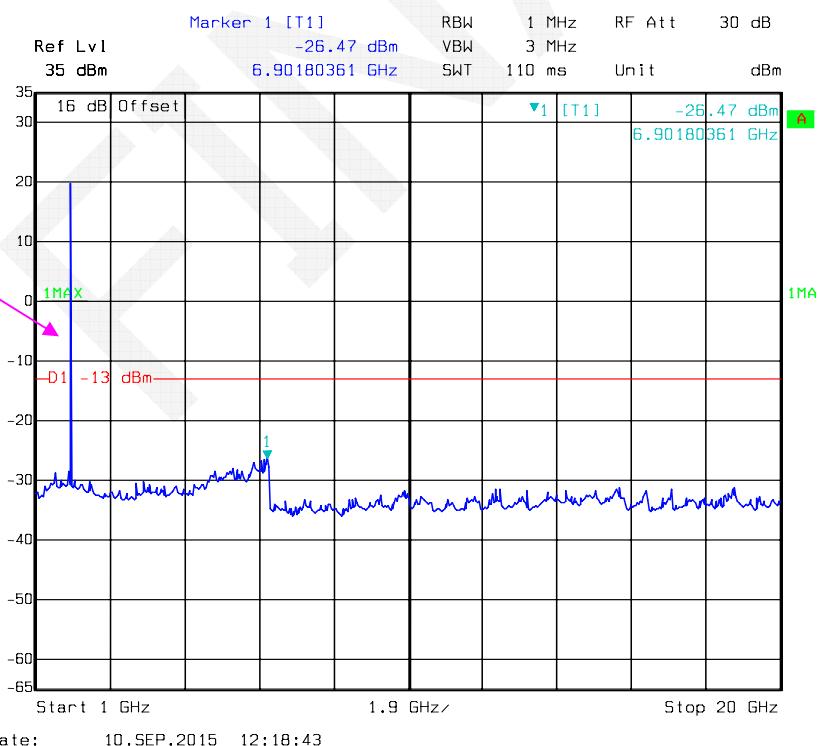
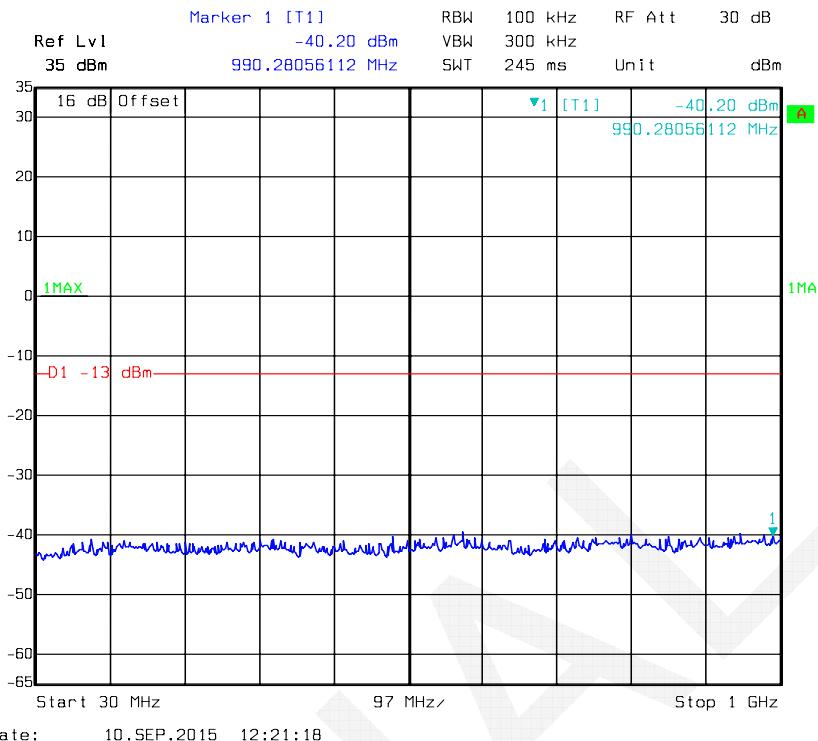
Fundamental



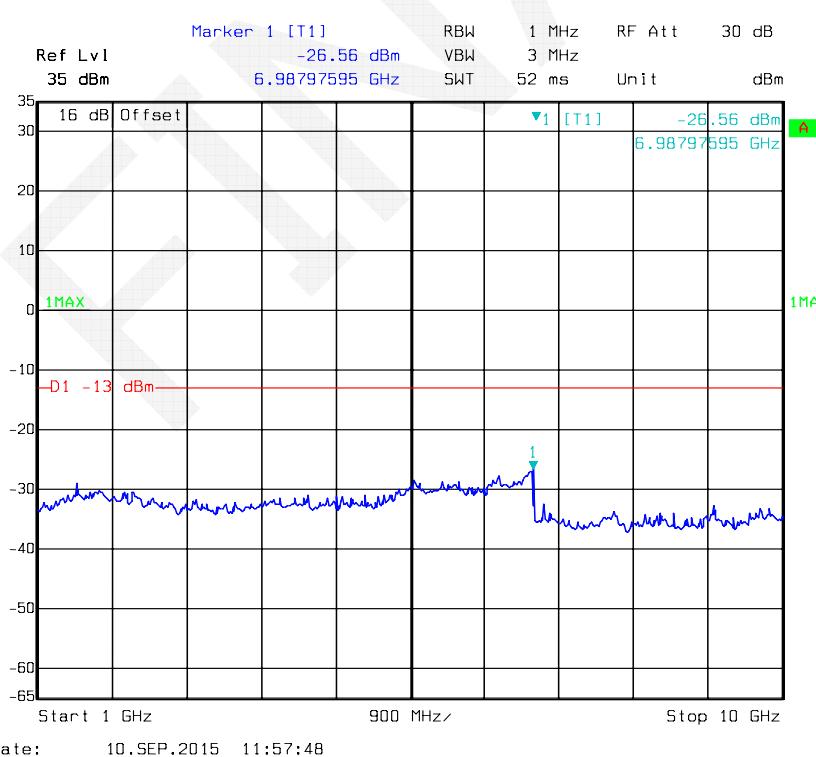
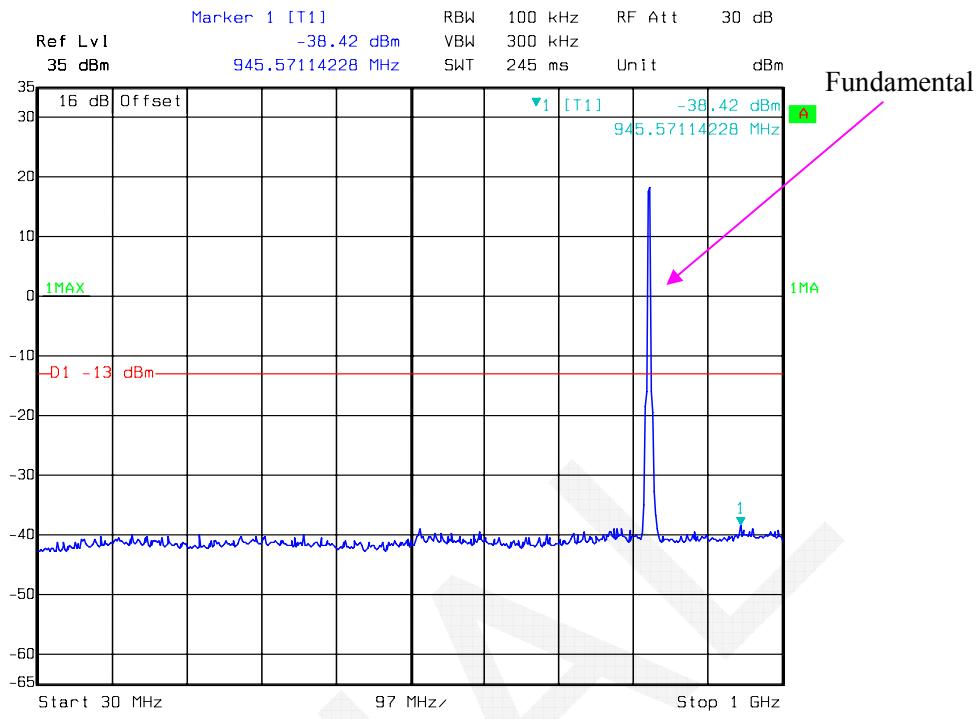
HSDPA Band II _ Middle Channel

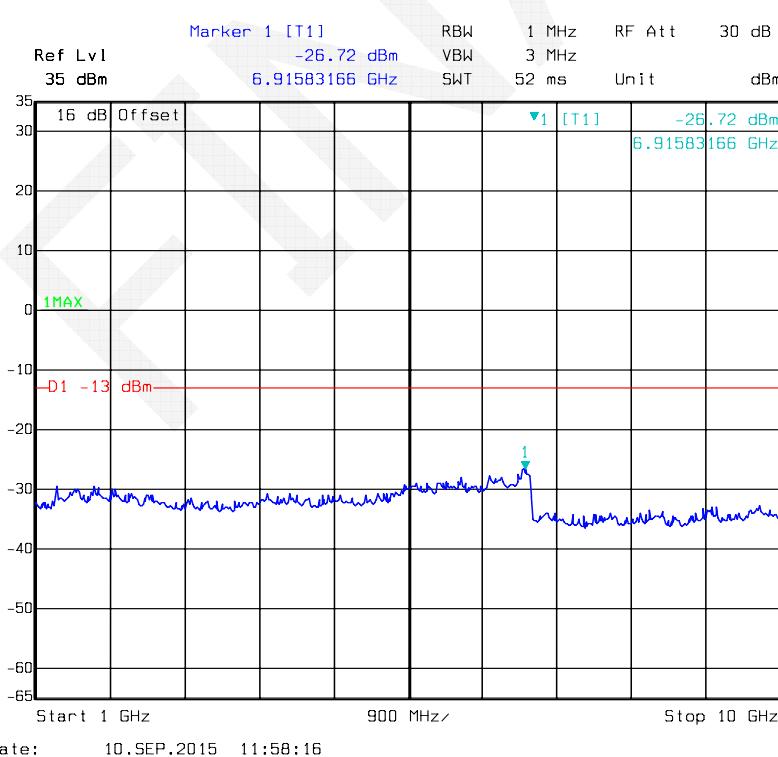
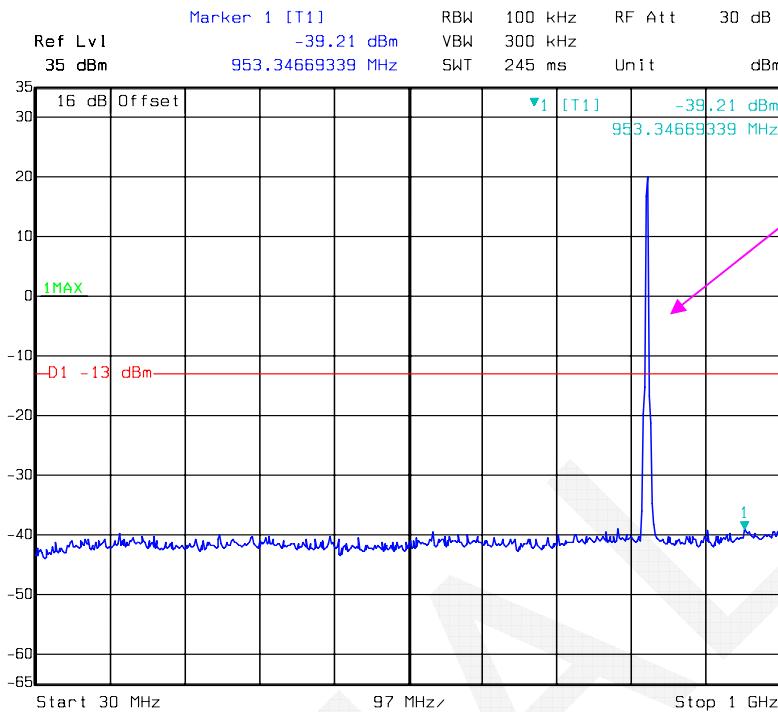
Fundamental

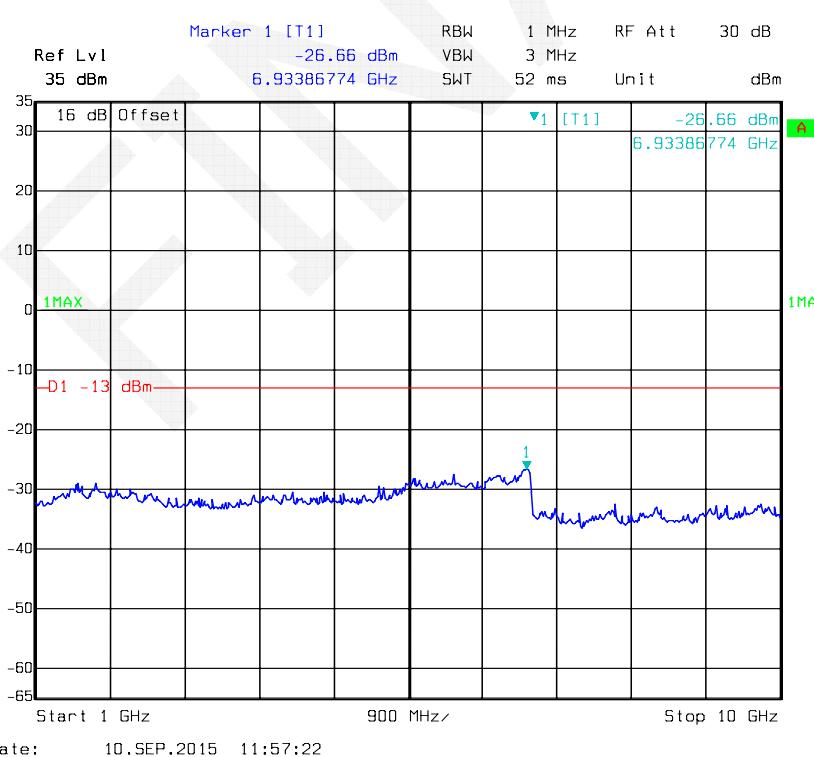
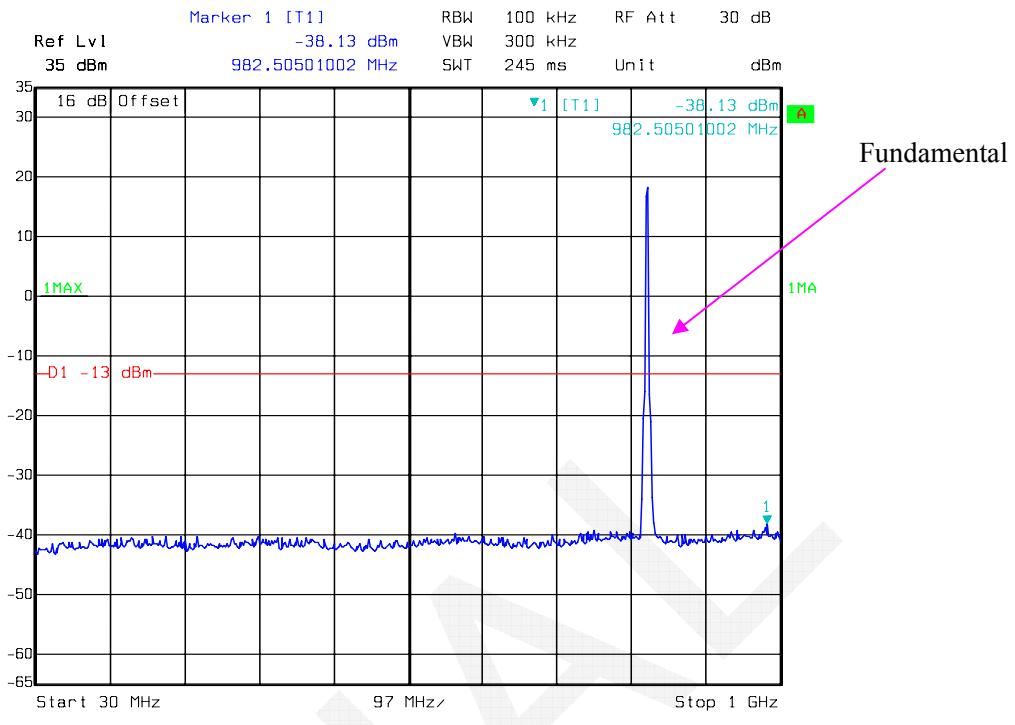


HSUPA Band II _ Middle Channel

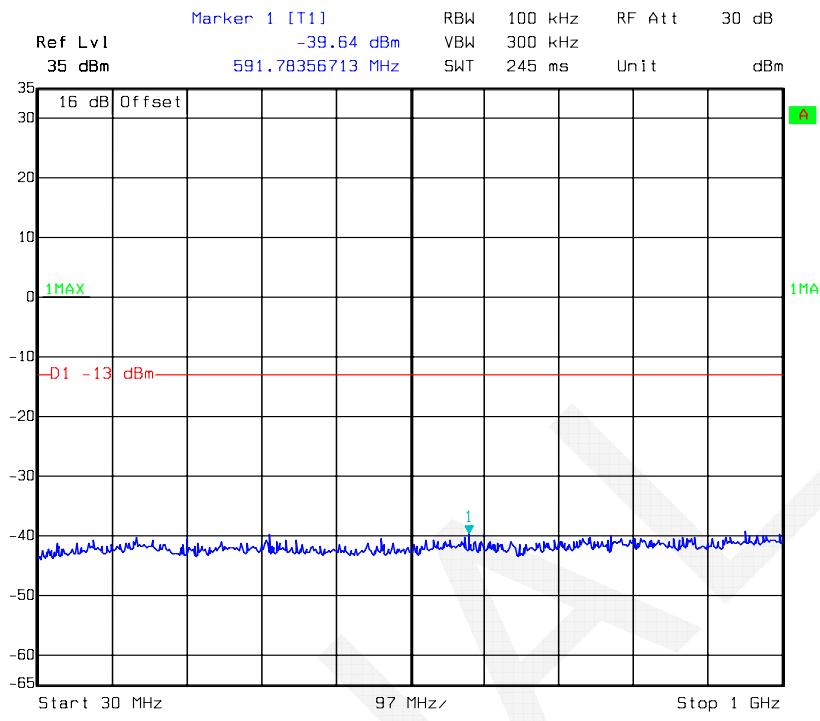
Fundamental

REL99 Band V_Middle Channel

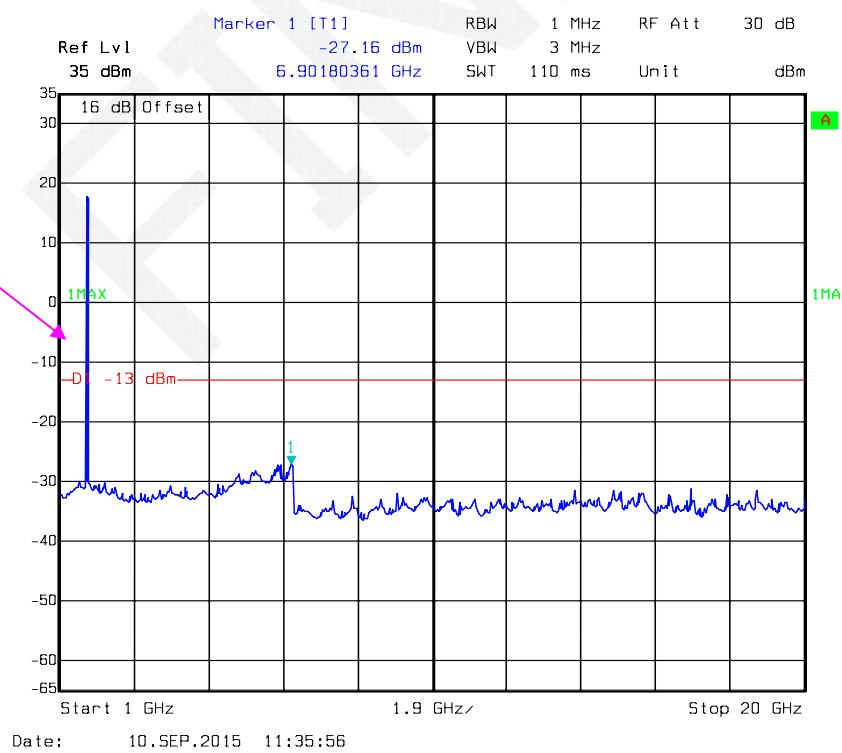
HSDPA Band V_Middle Channel

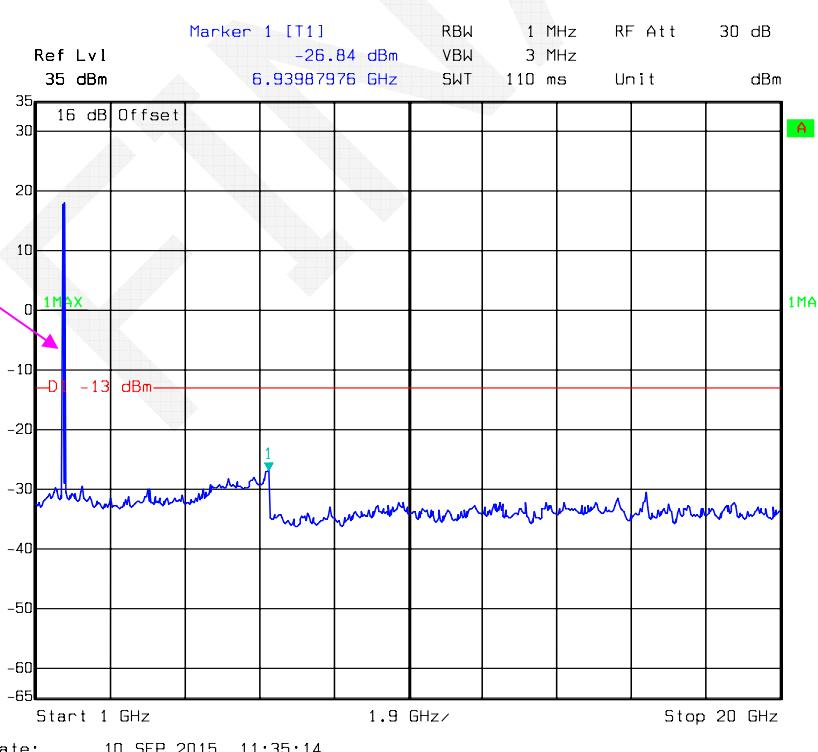
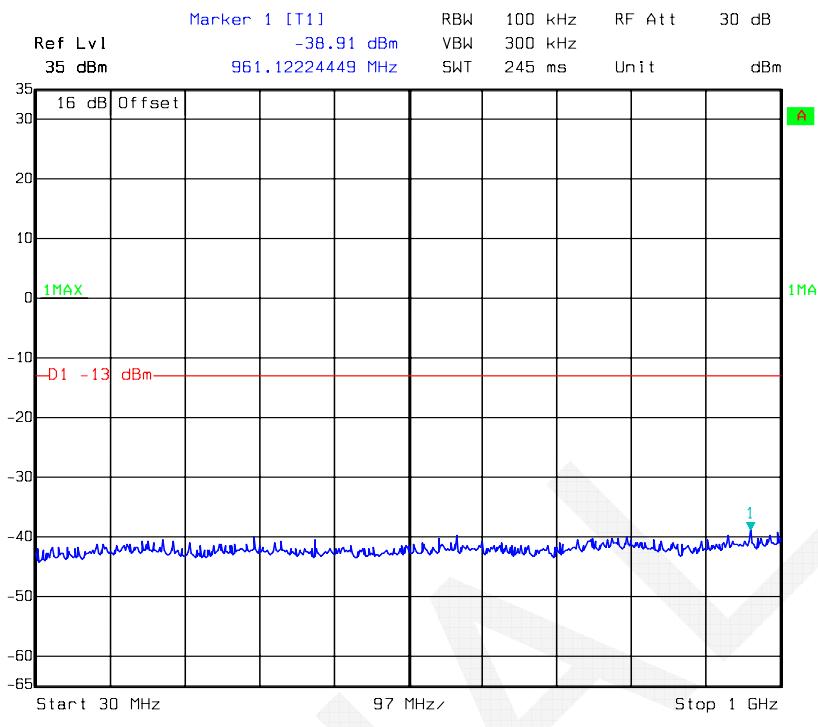
HSUPA Band V_Middle Channel

WCDMA Band IV

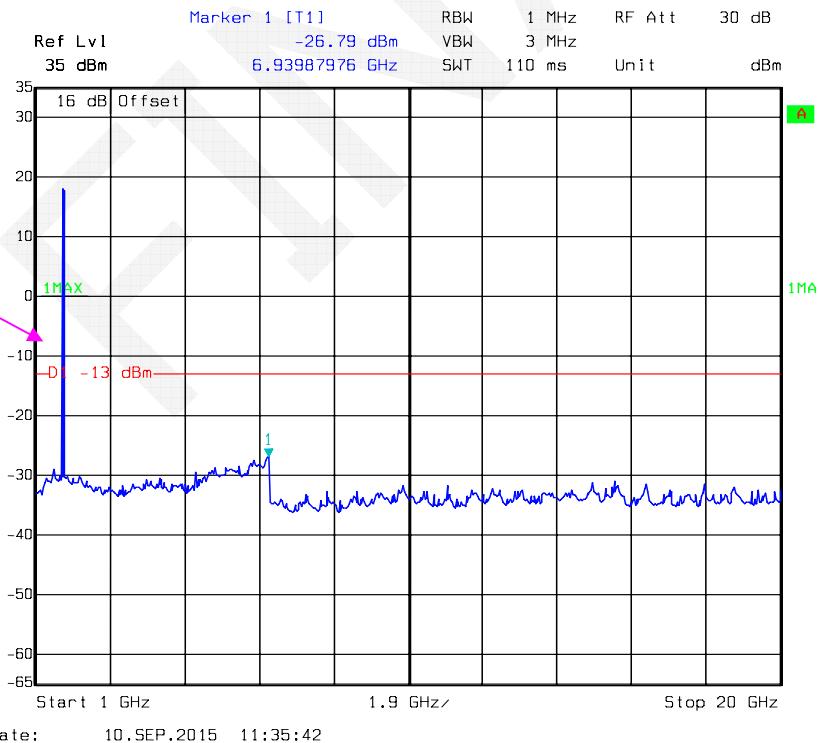
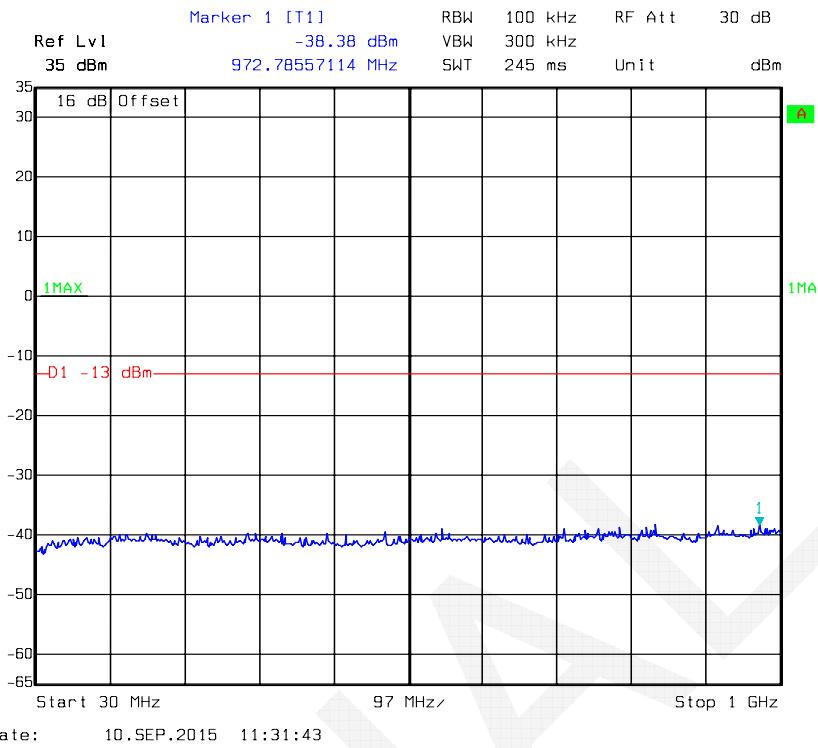
REL99 Band IV_Middle Channel

Fundamental



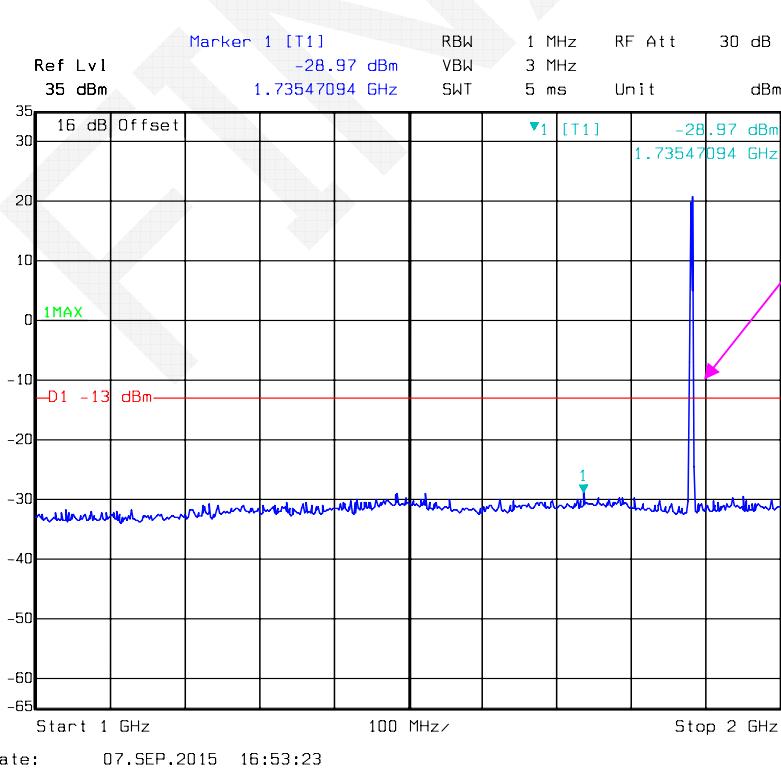
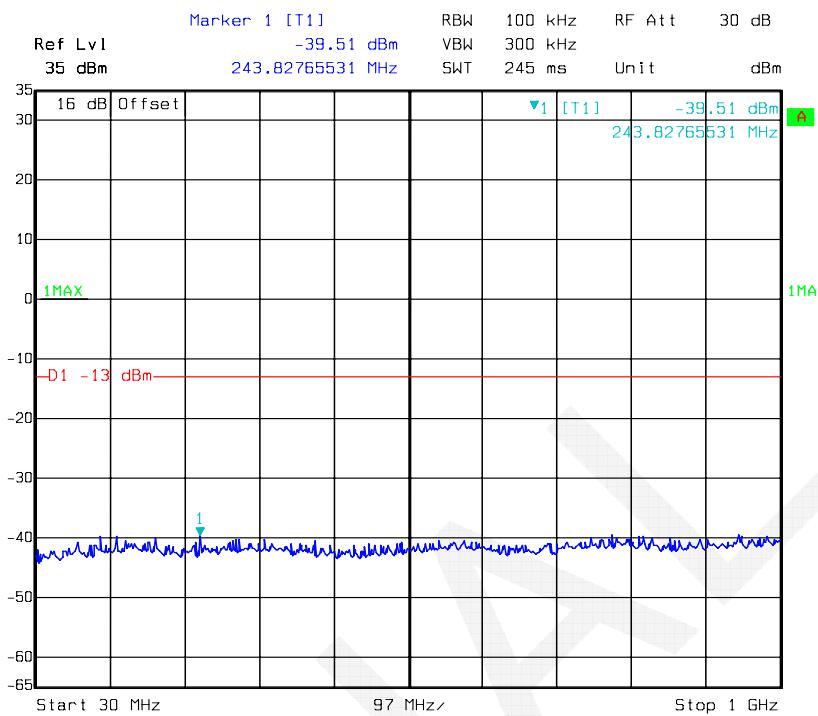
HSDPA Band IV _Middle Channel

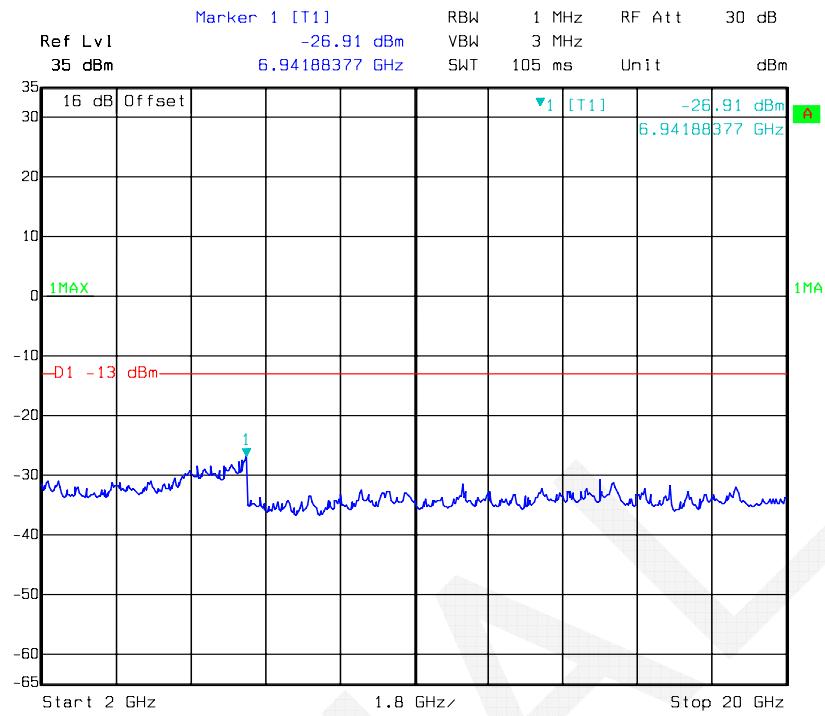
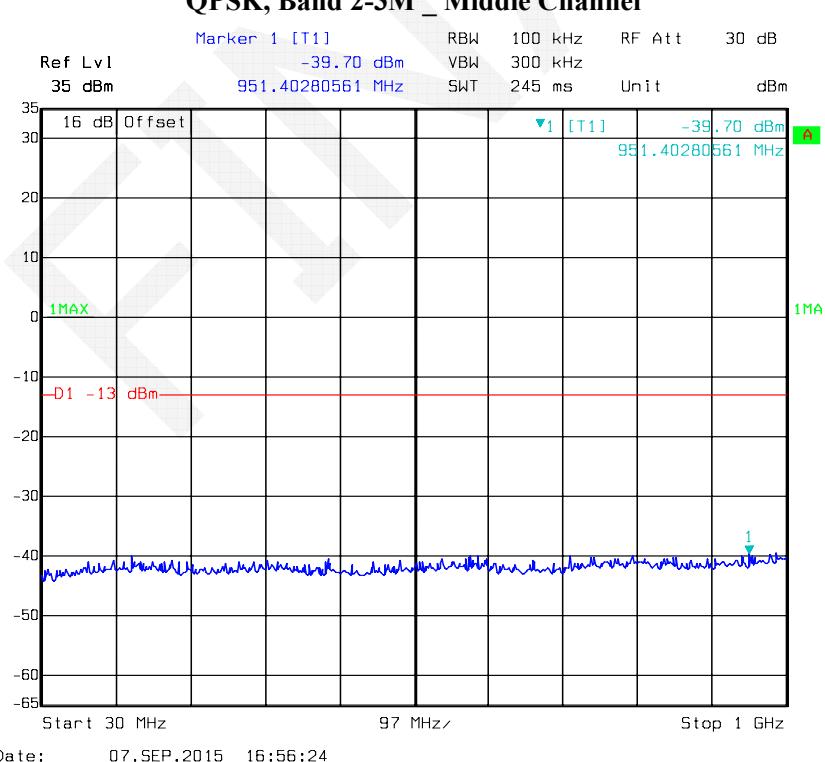
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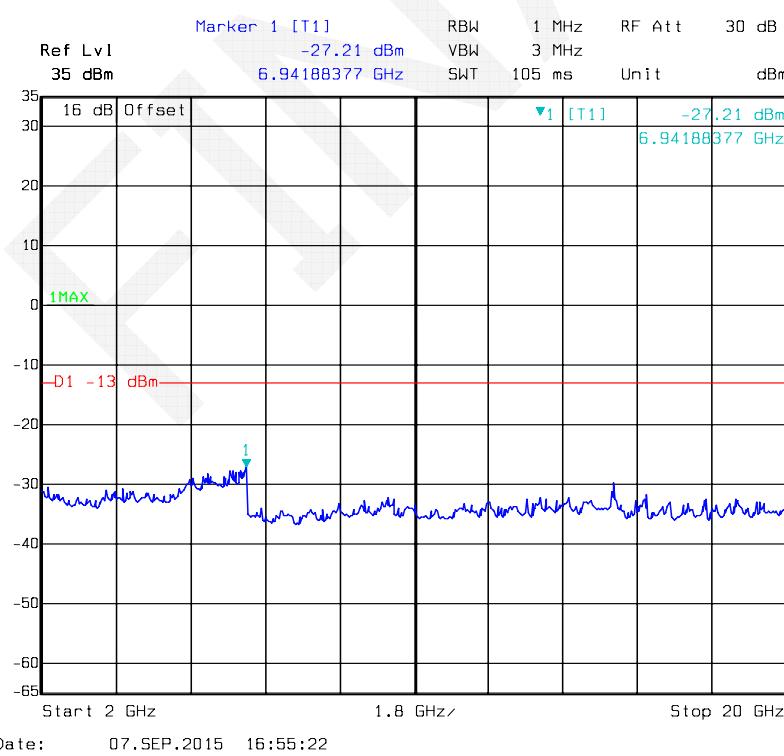
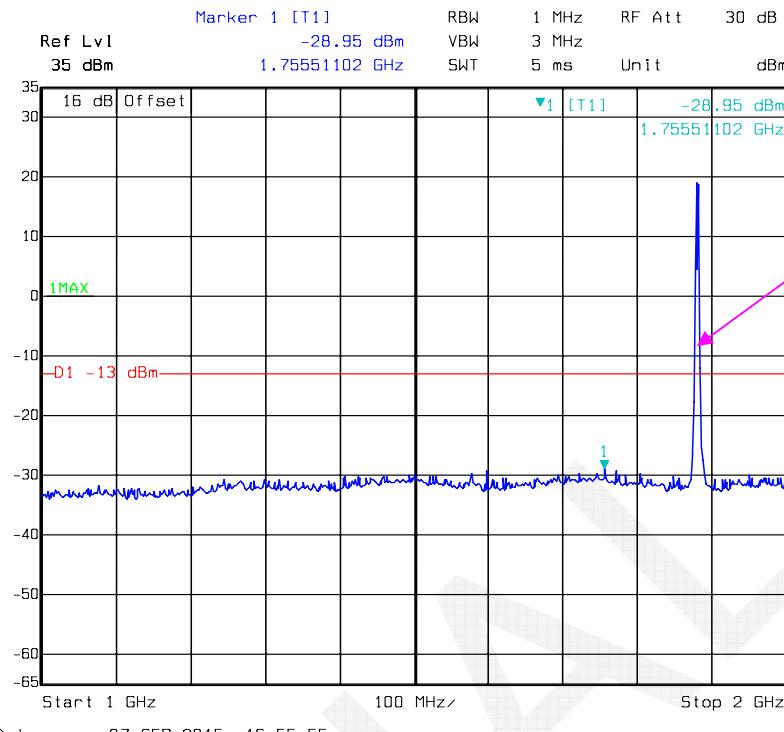
HSUPA Band IV _ Middle Channel

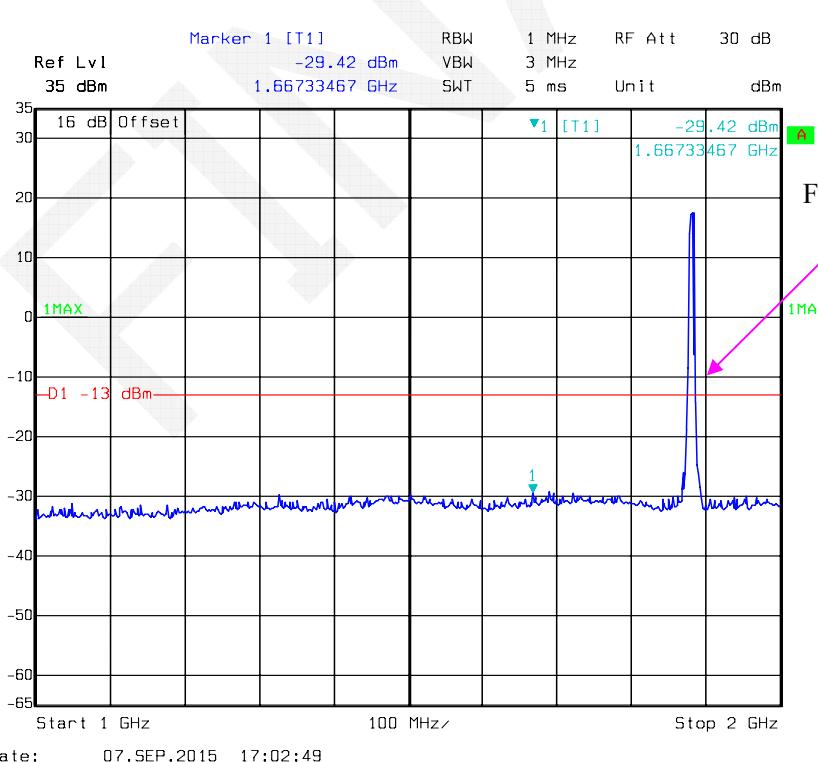
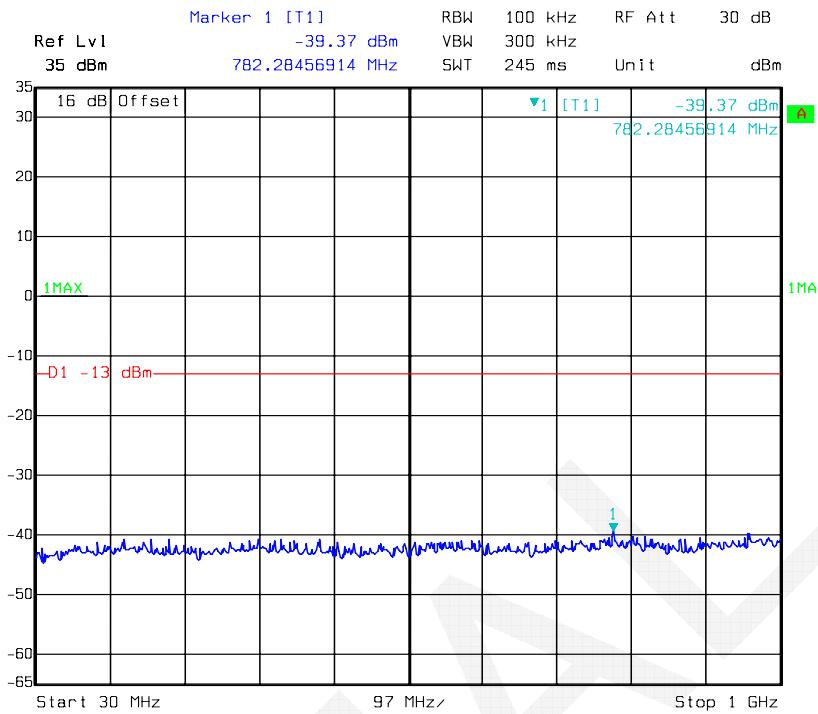
Fundamental

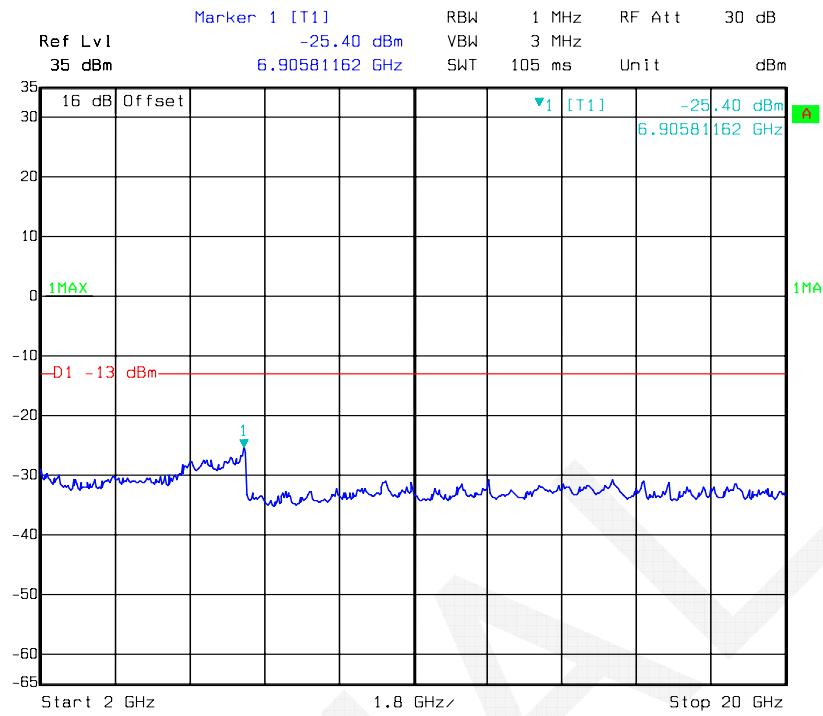
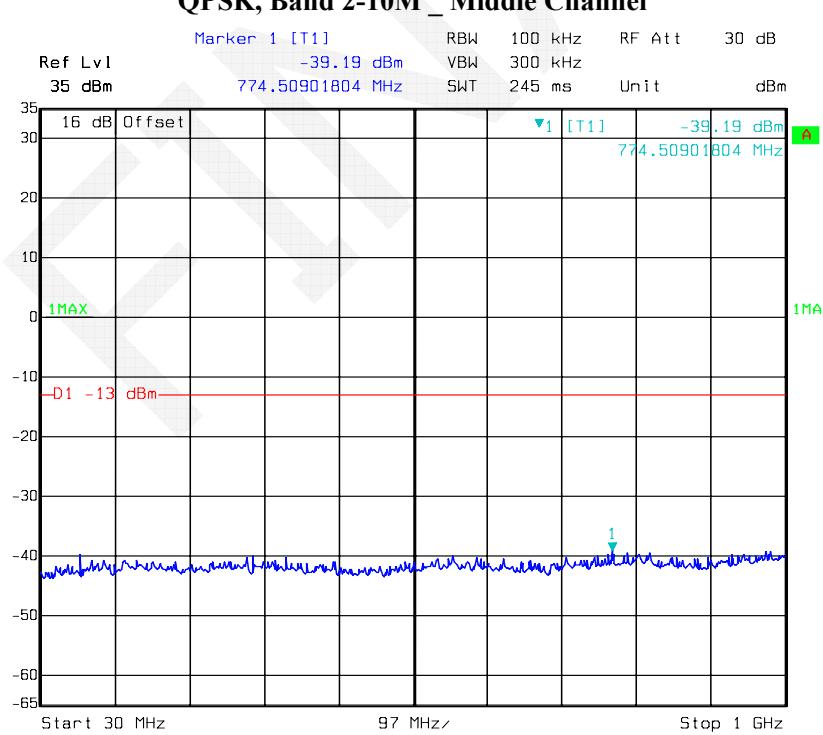
LTE Band:

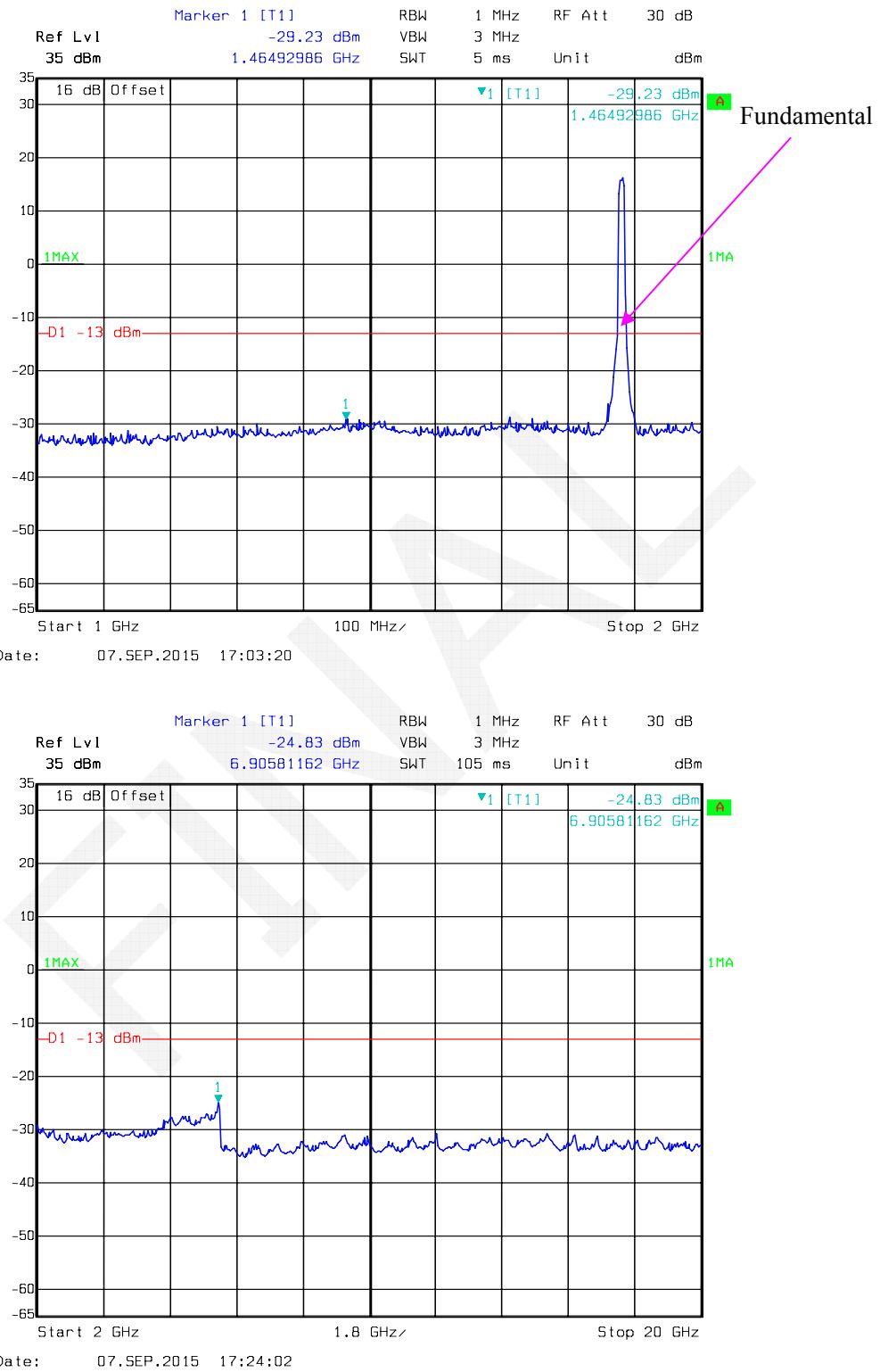
QPSK, Band 2-1.4M _ Middle Channel

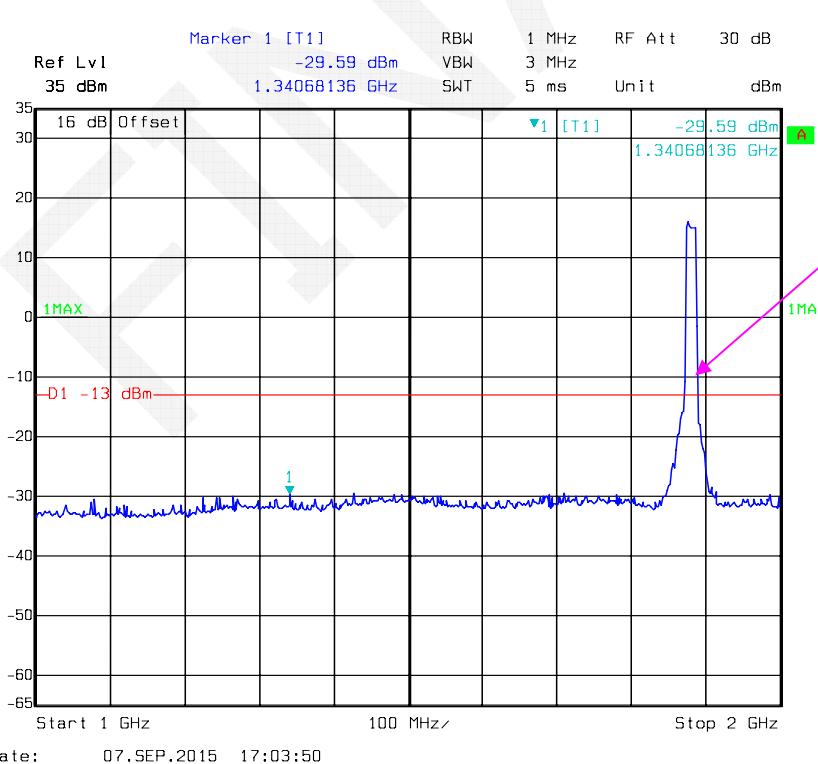
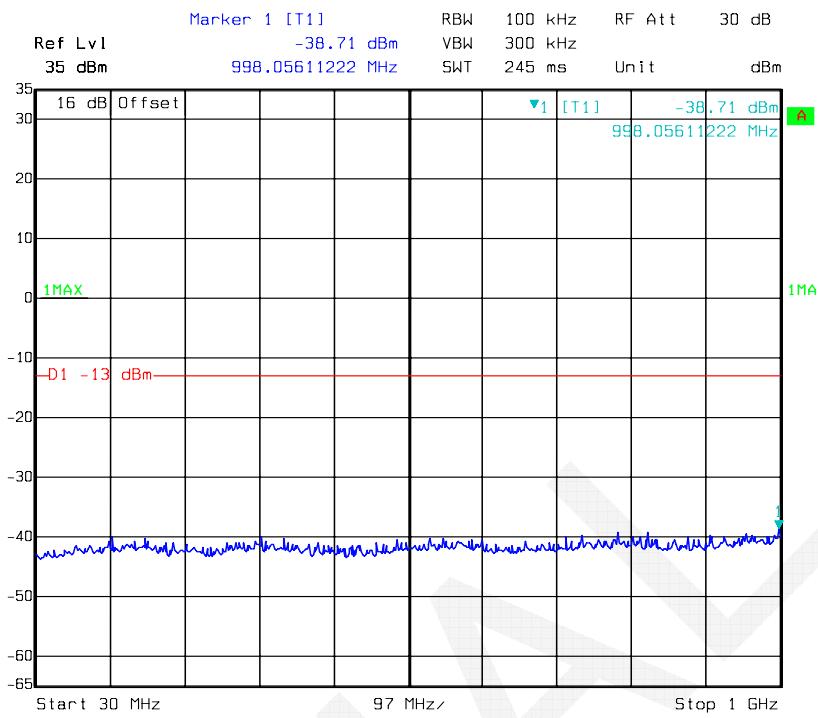
**QPSK, Band 2-3M _ Middle Channel**

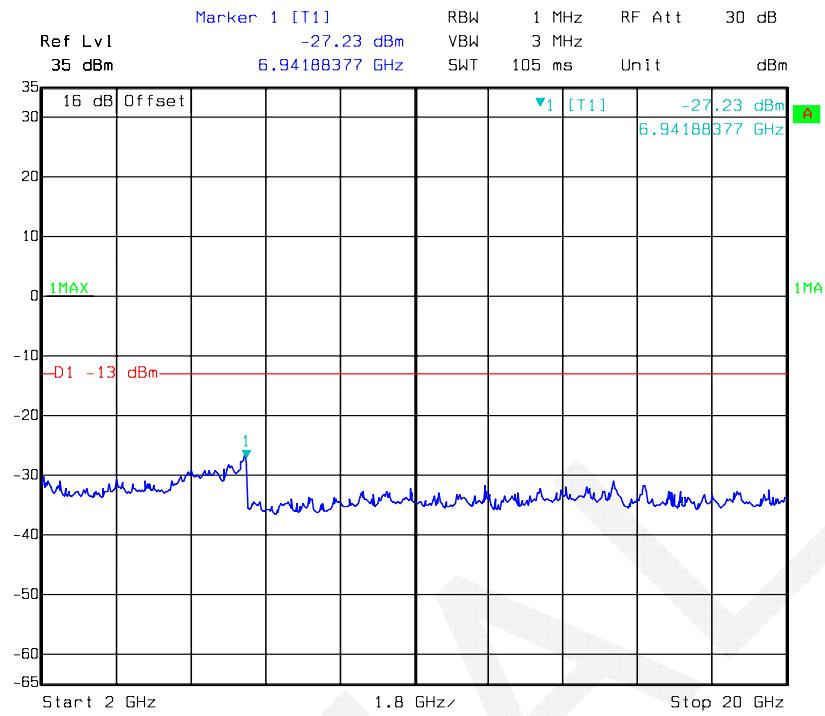
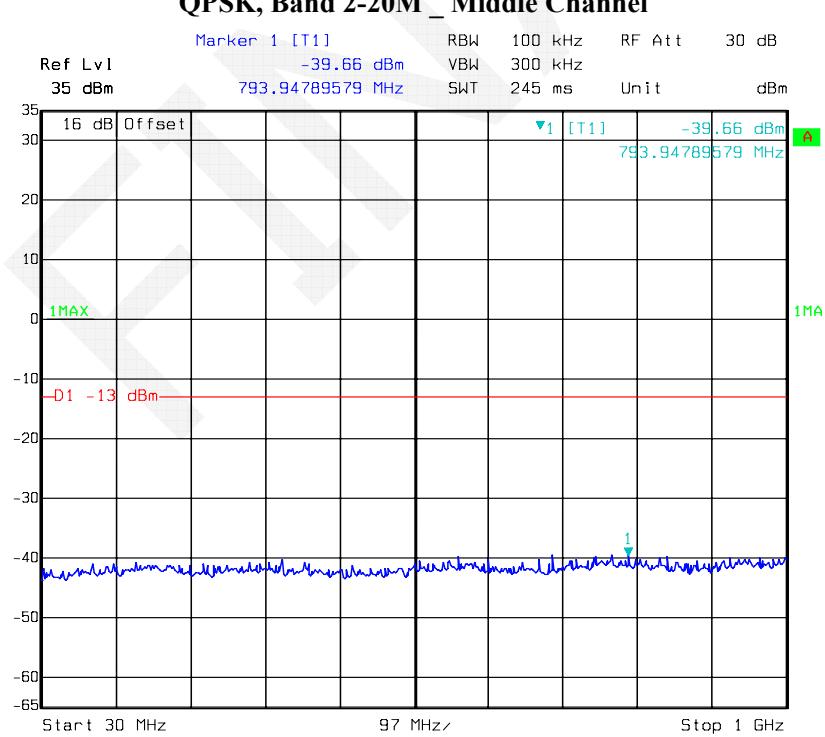


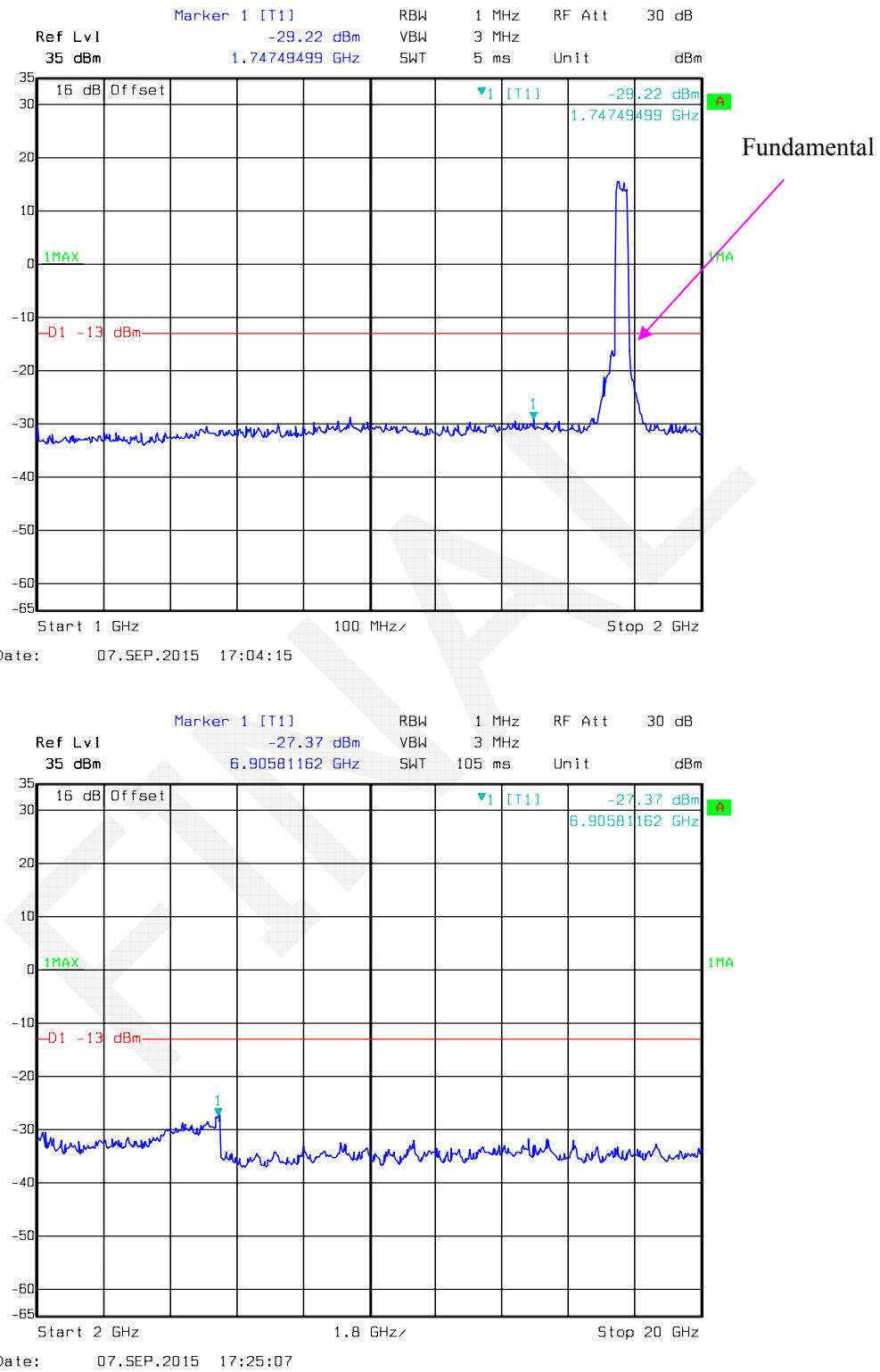
QPSK, Band 2-5M _ Middle Channel

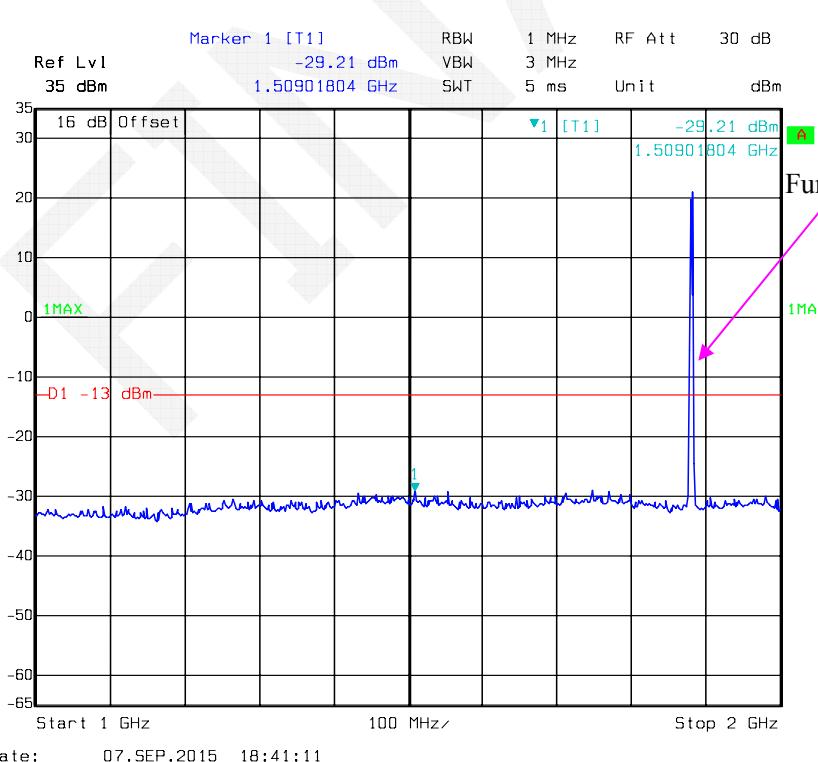
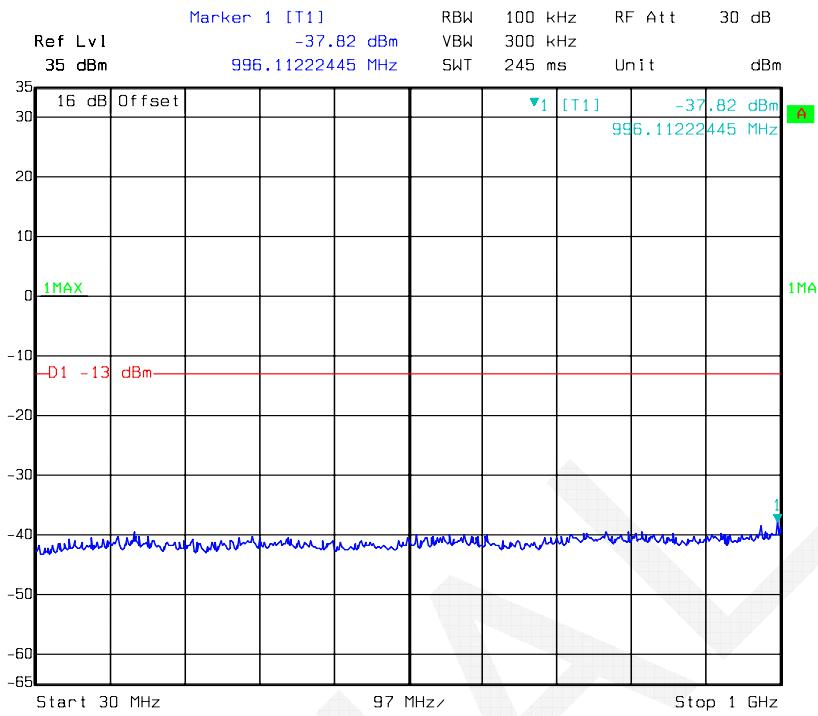
**QPSK, Band 2-10M _ Middle Channel**

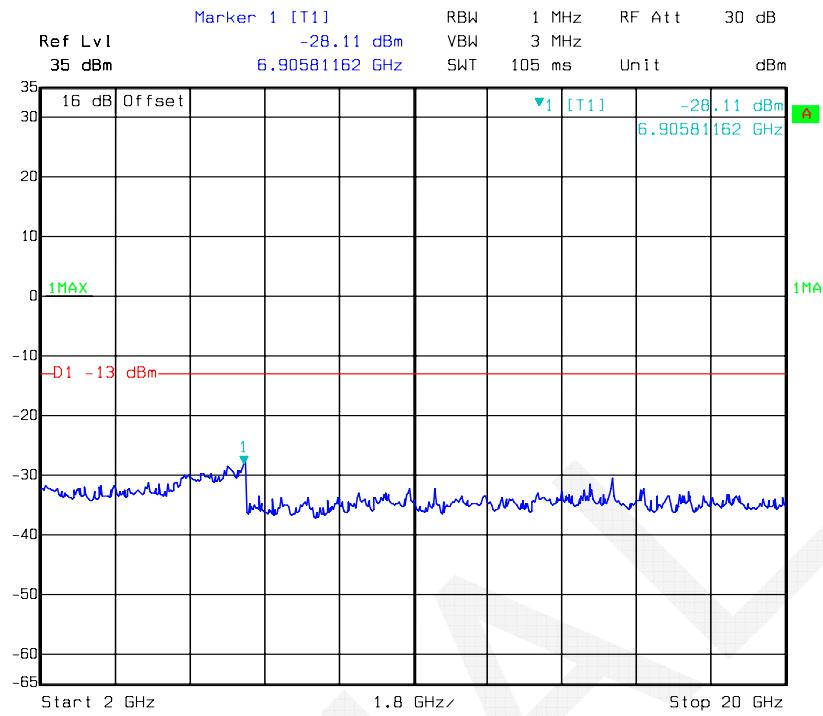
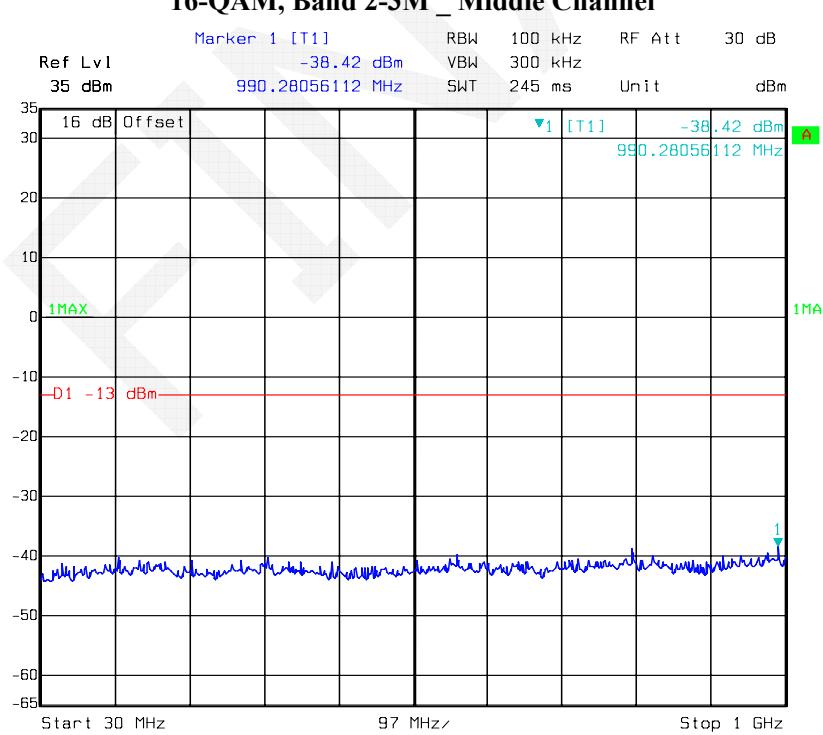


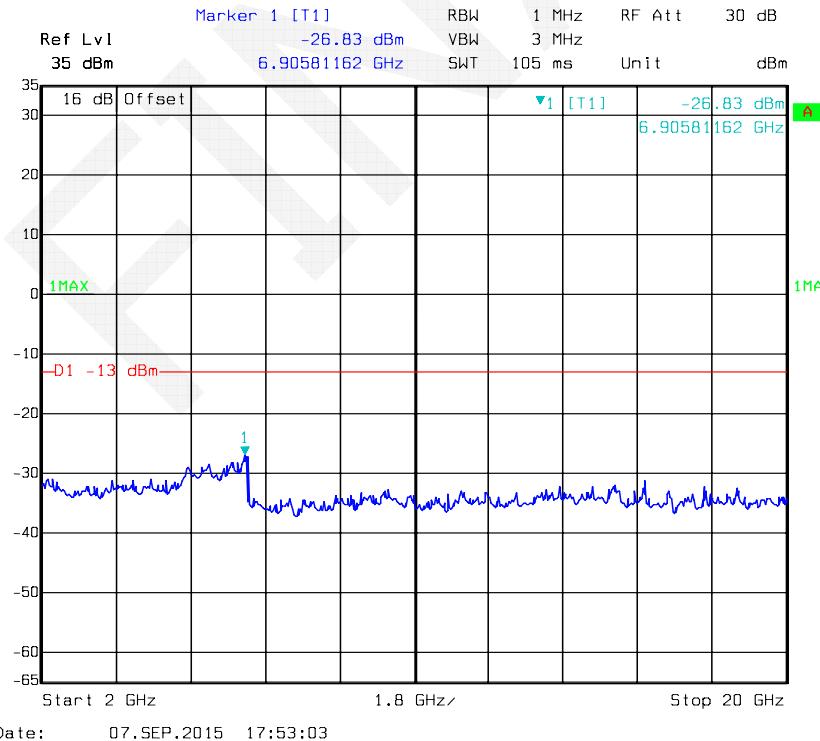
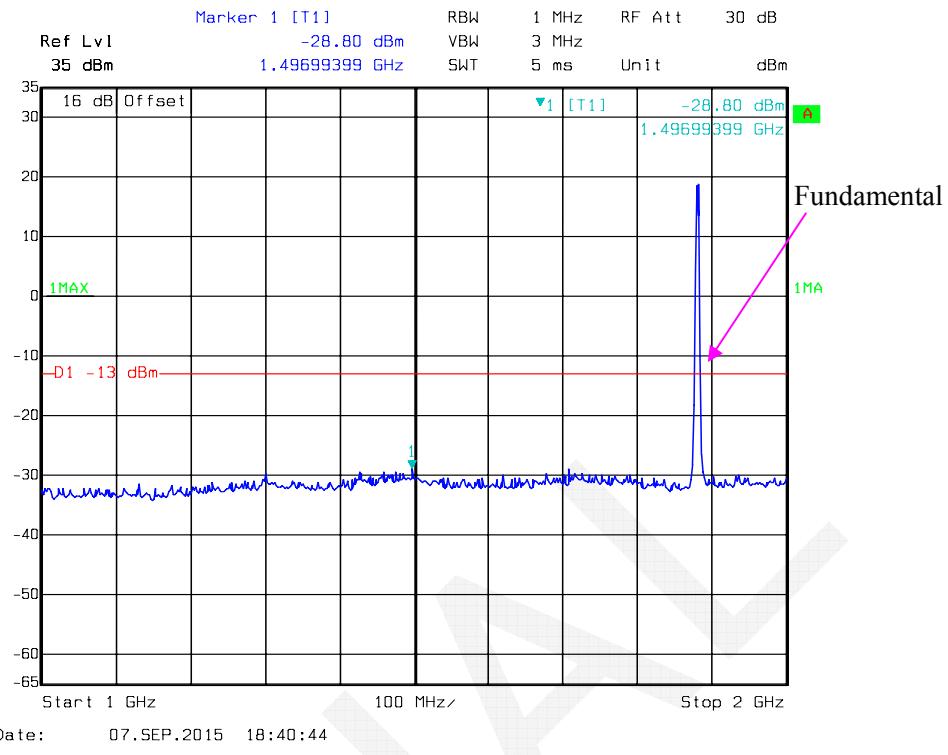
QPSK, Band 2-15M _ Middle Channel

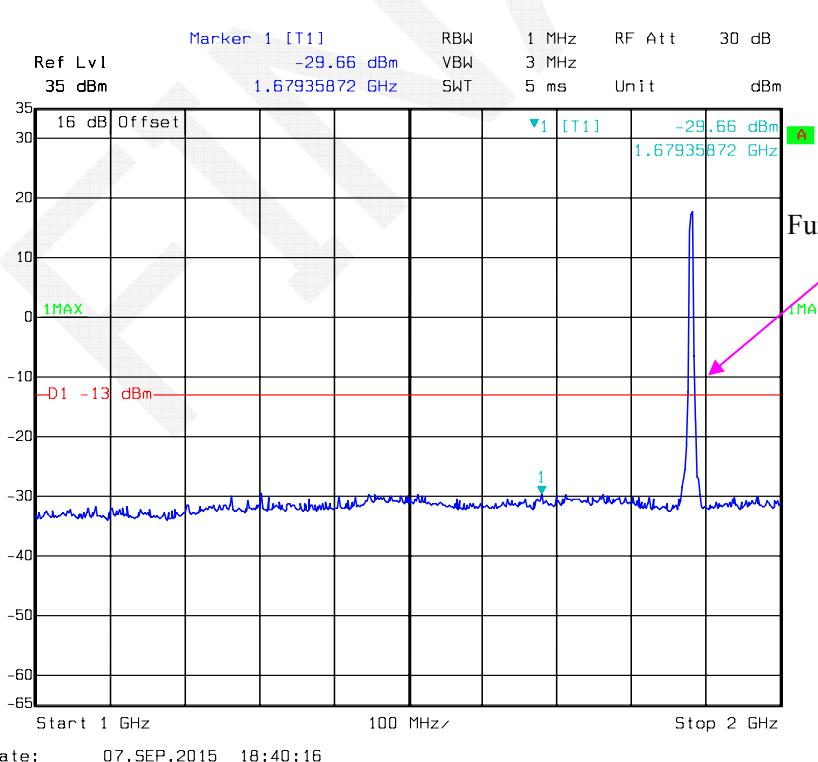
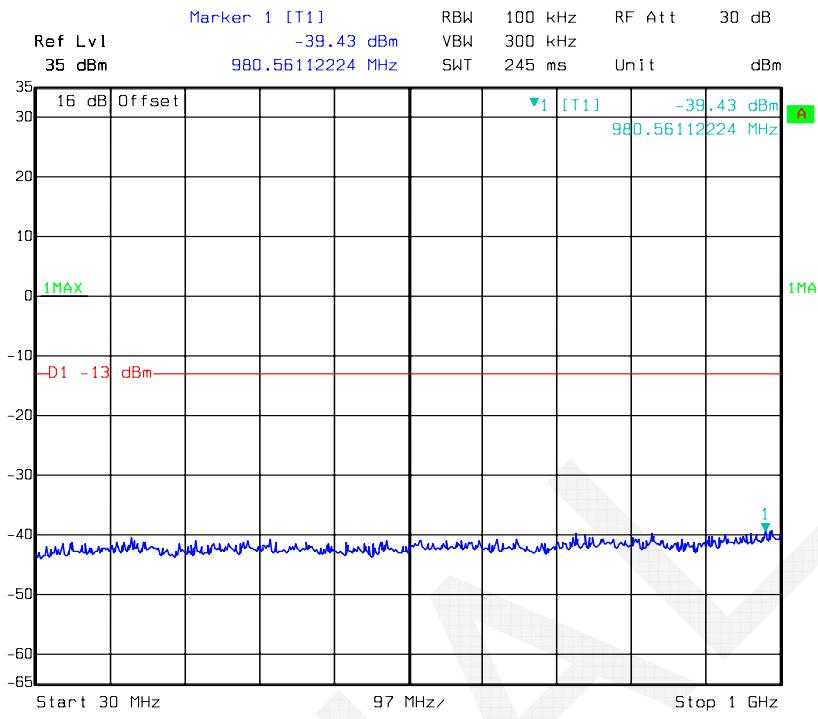
**QPSK, Band 2-20M _ Middle Channel**

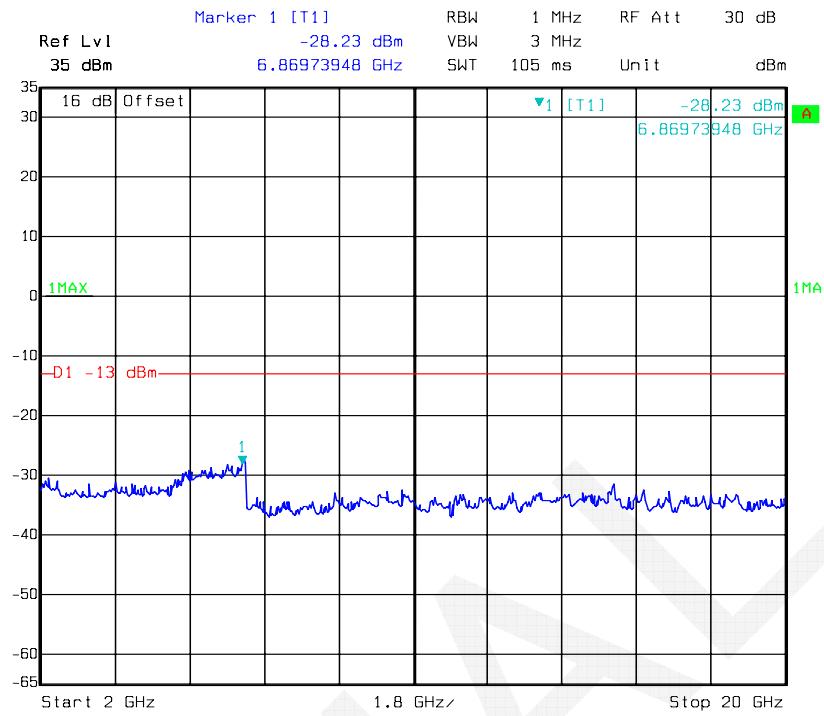
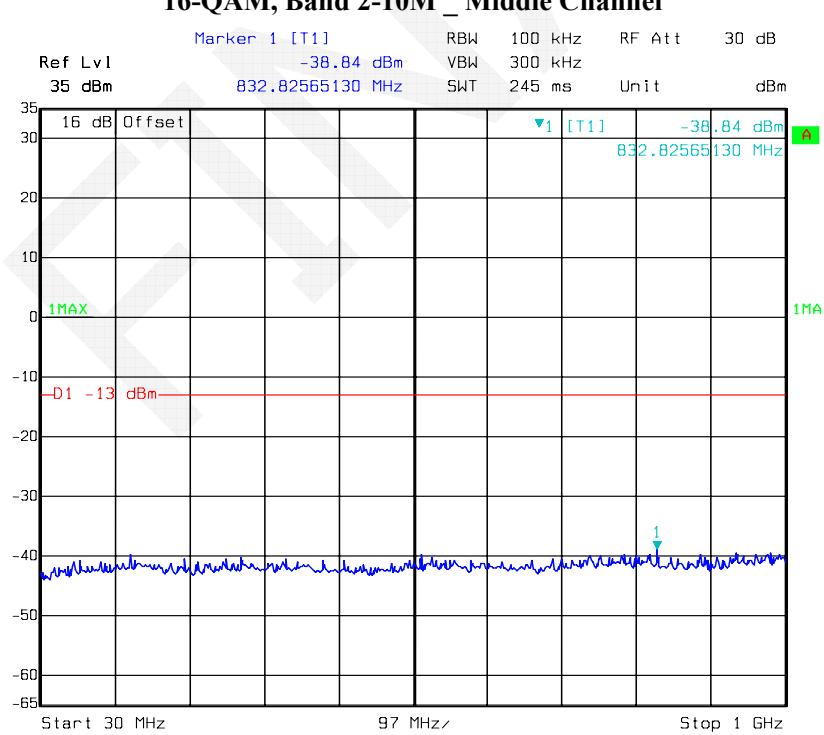


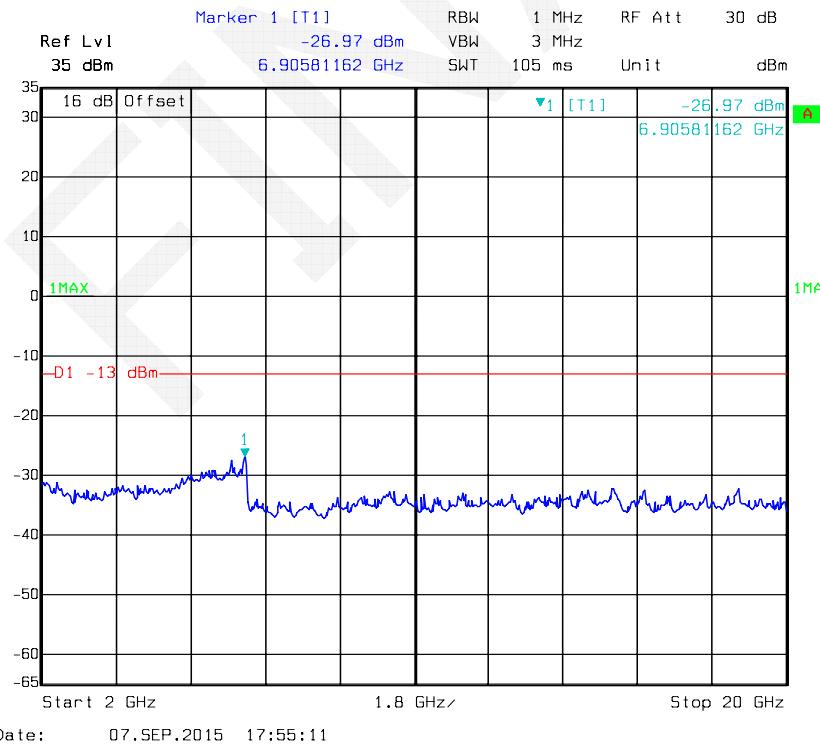
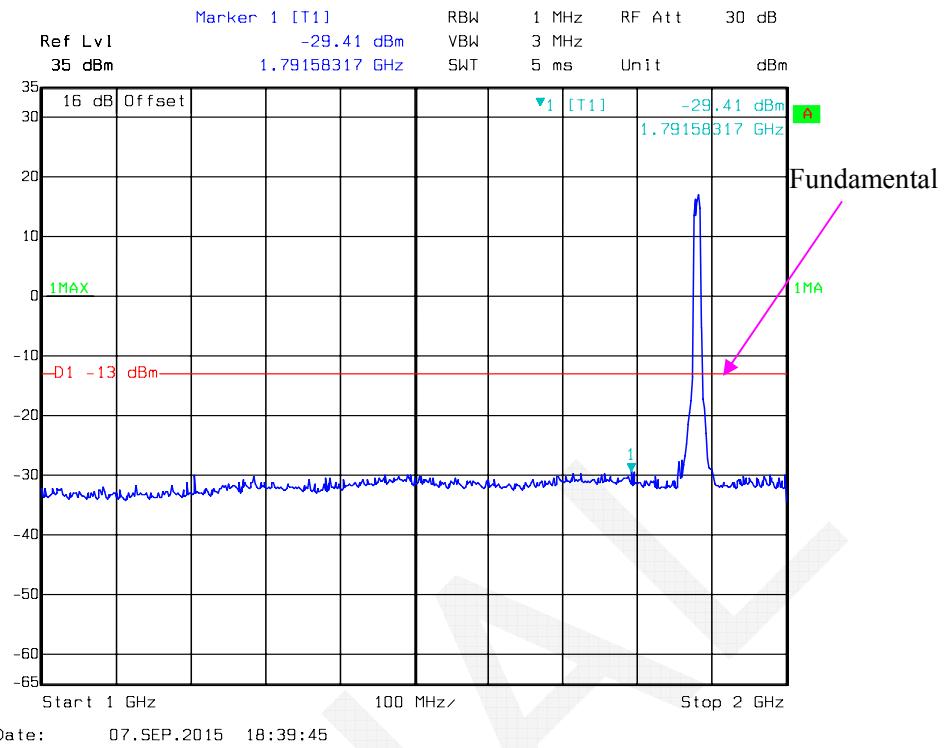
16-QAM, Band 2-1.4M _ Middle Channel

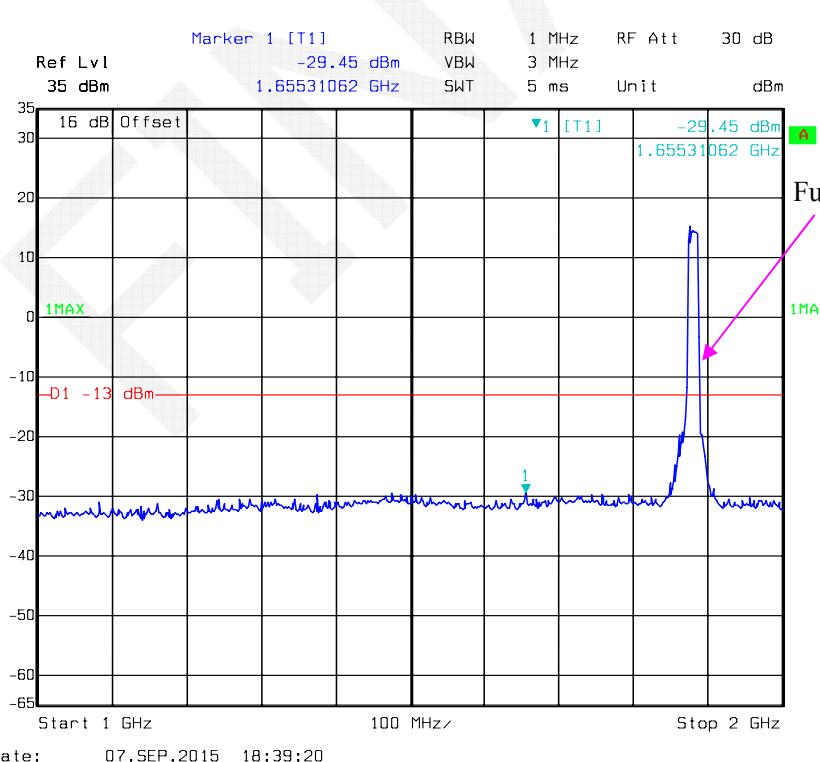
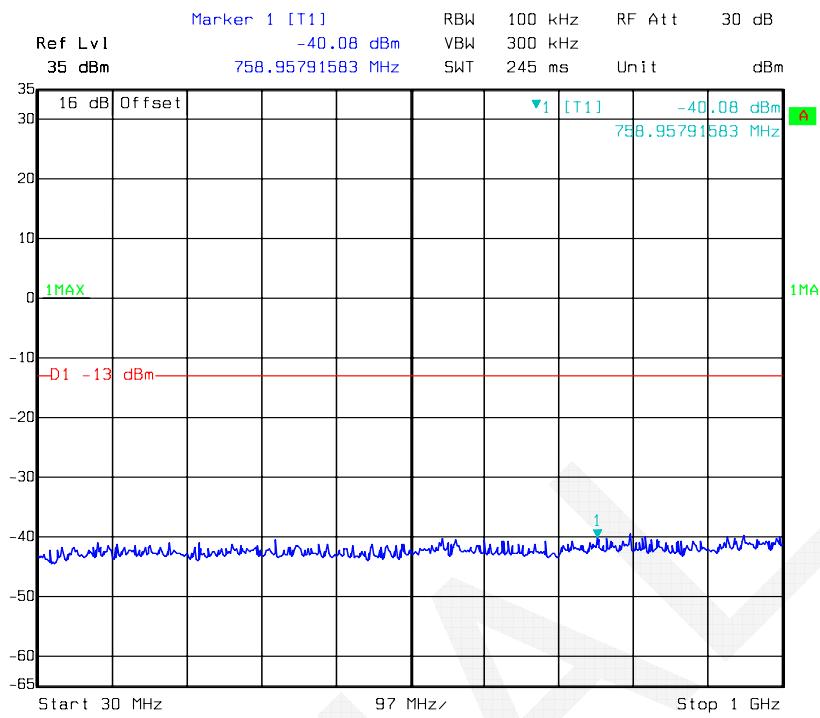
**16-QAM, Band 2-3M _ Middle Channel**

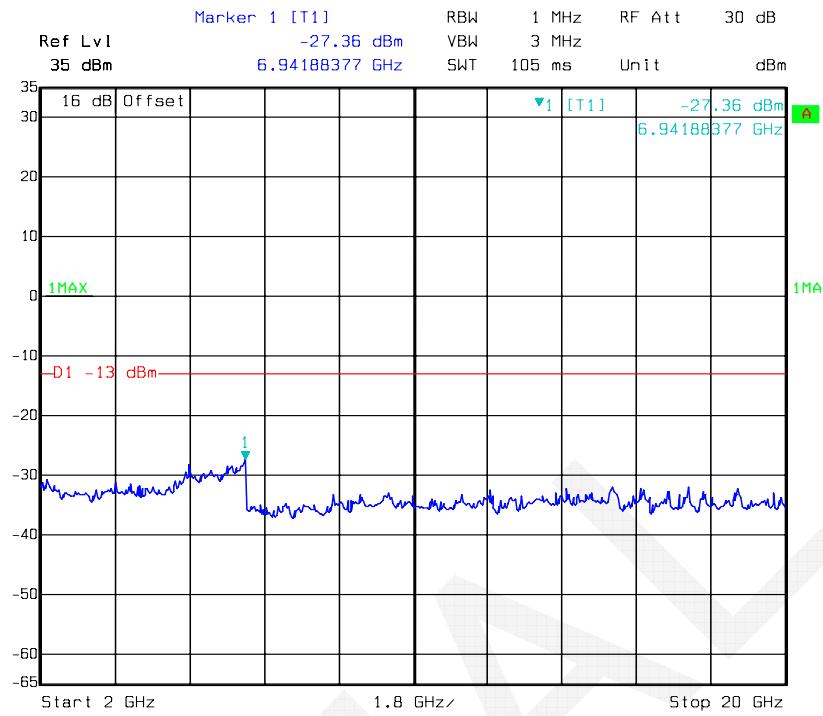
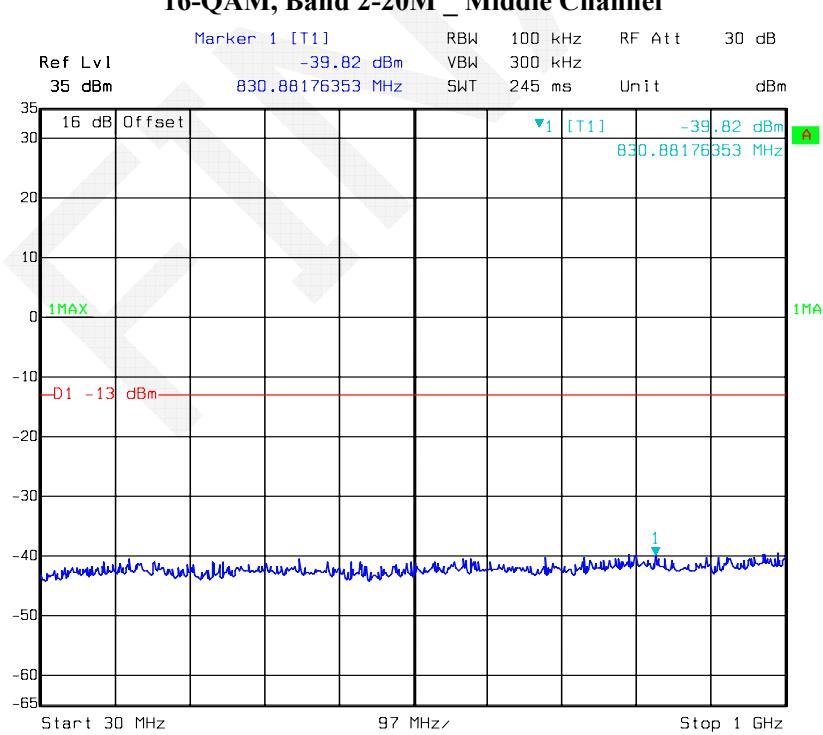


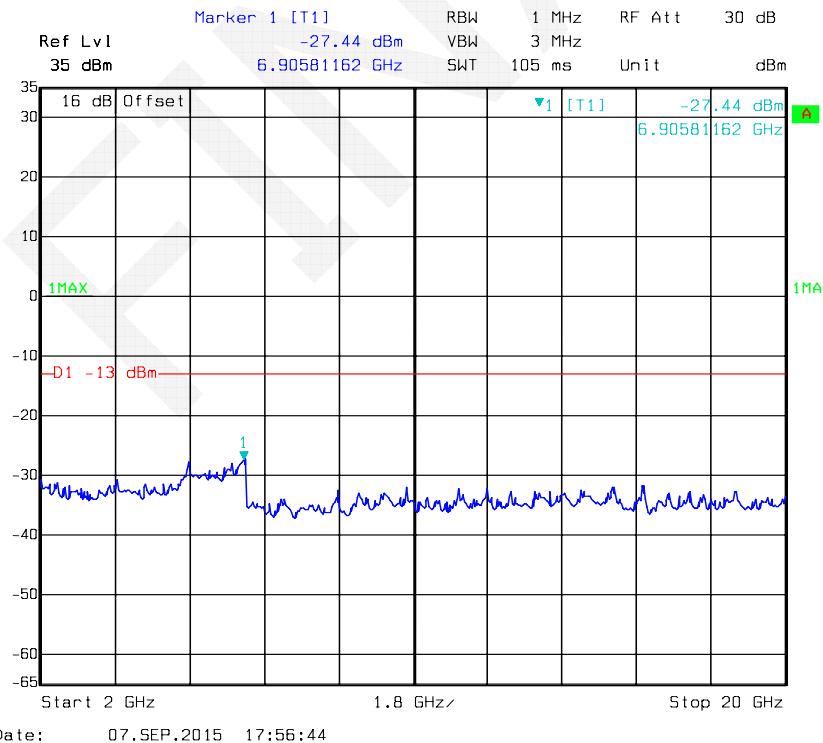
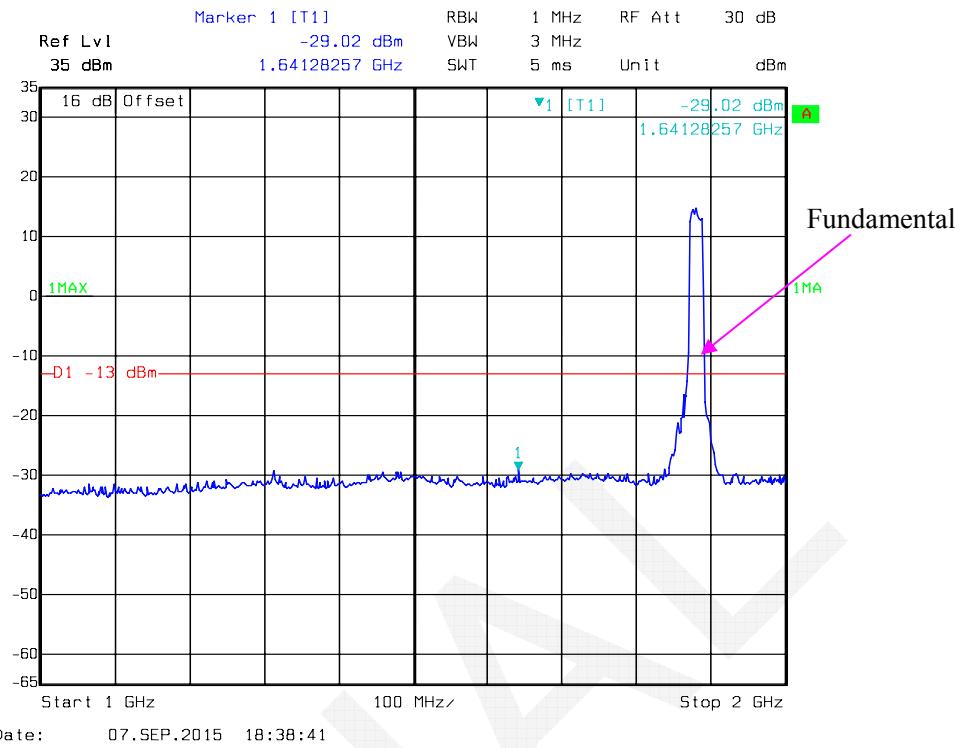
16-QAM, Band 2-5M _ Middle Channel

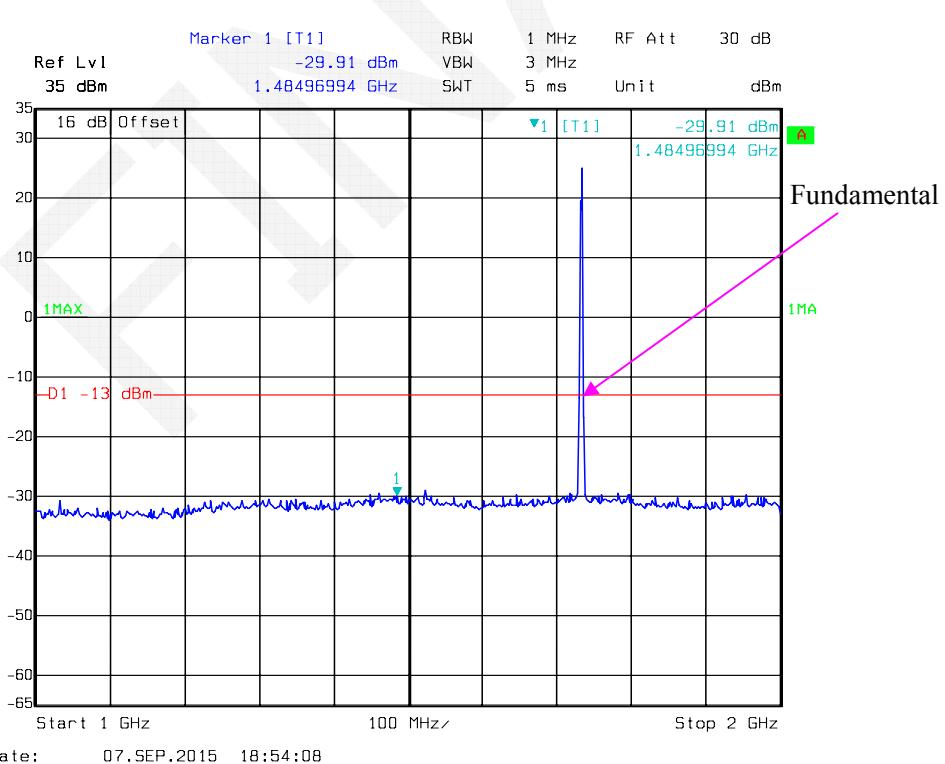
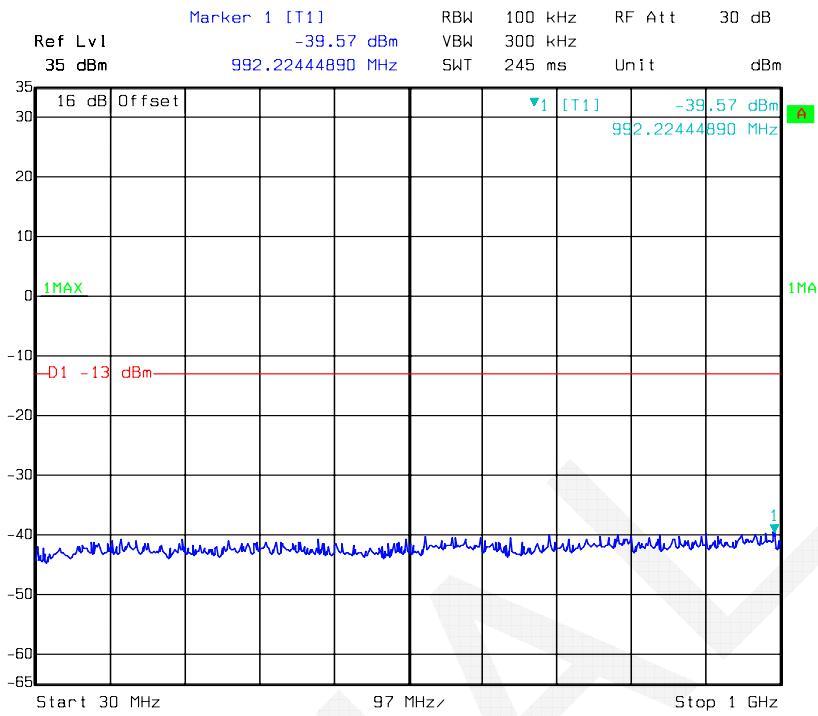
**16-QAM, Band 2-10M _ Middle Channel**

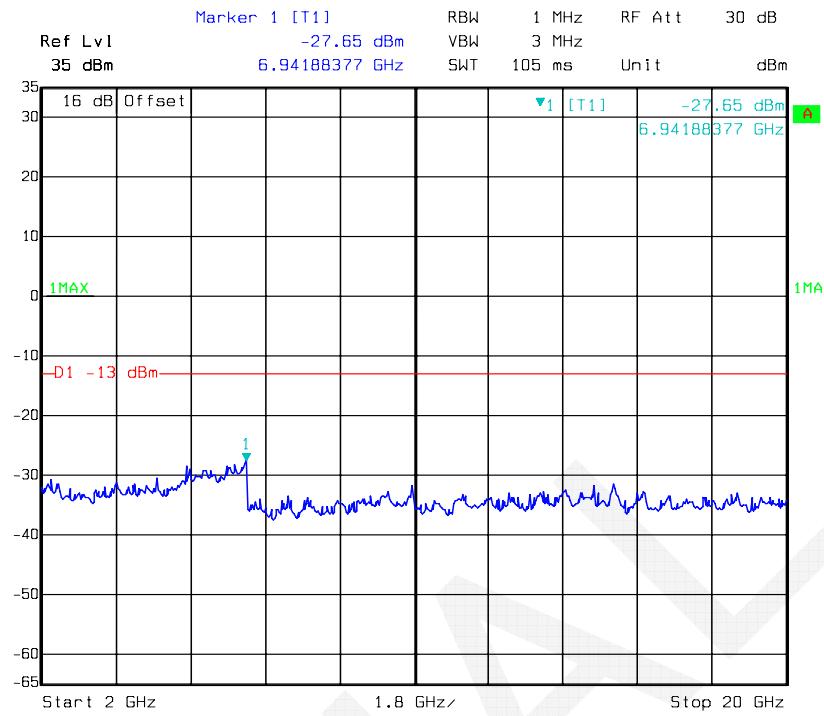
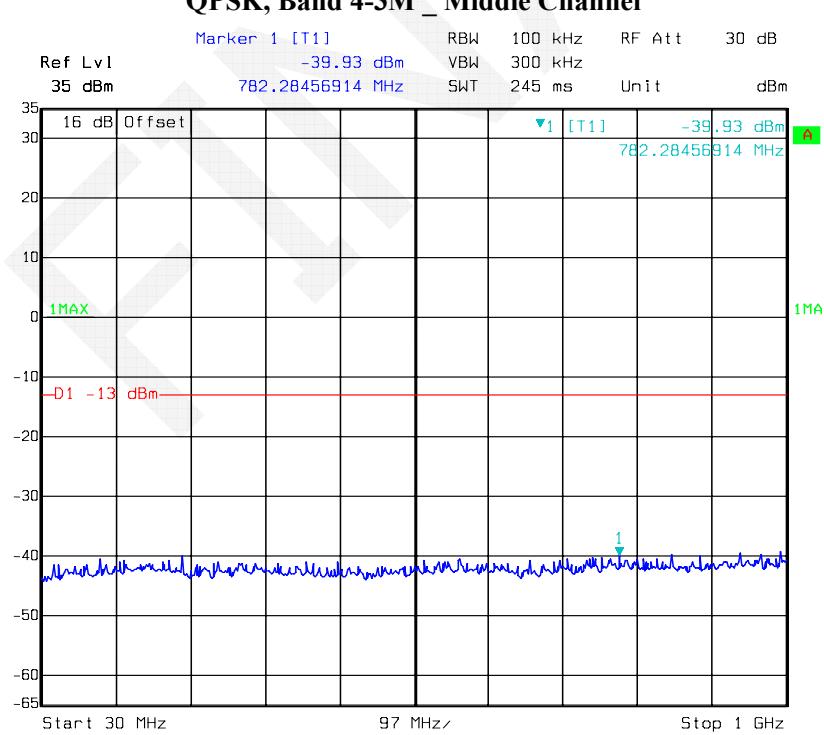


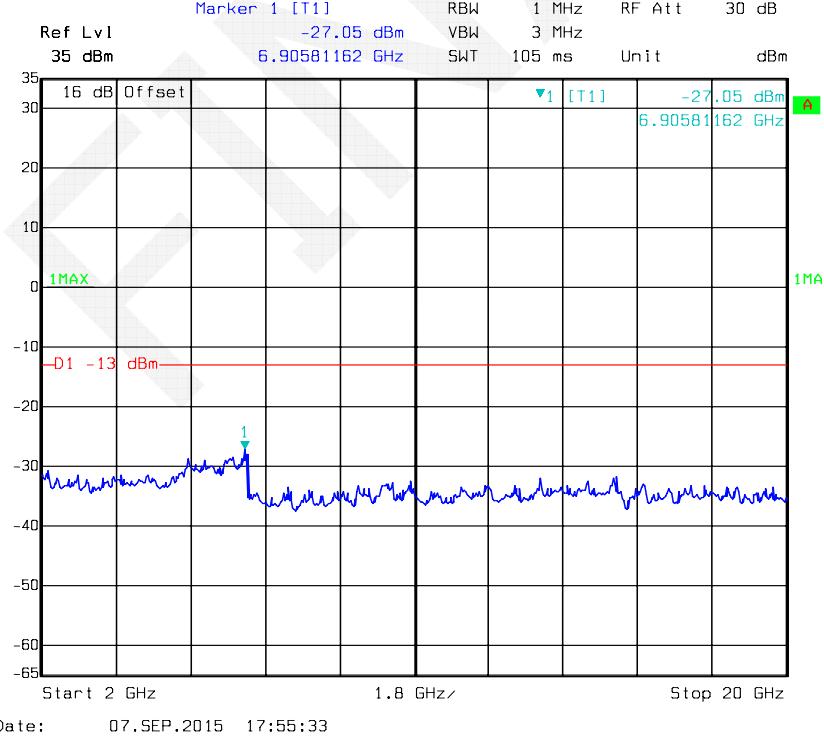
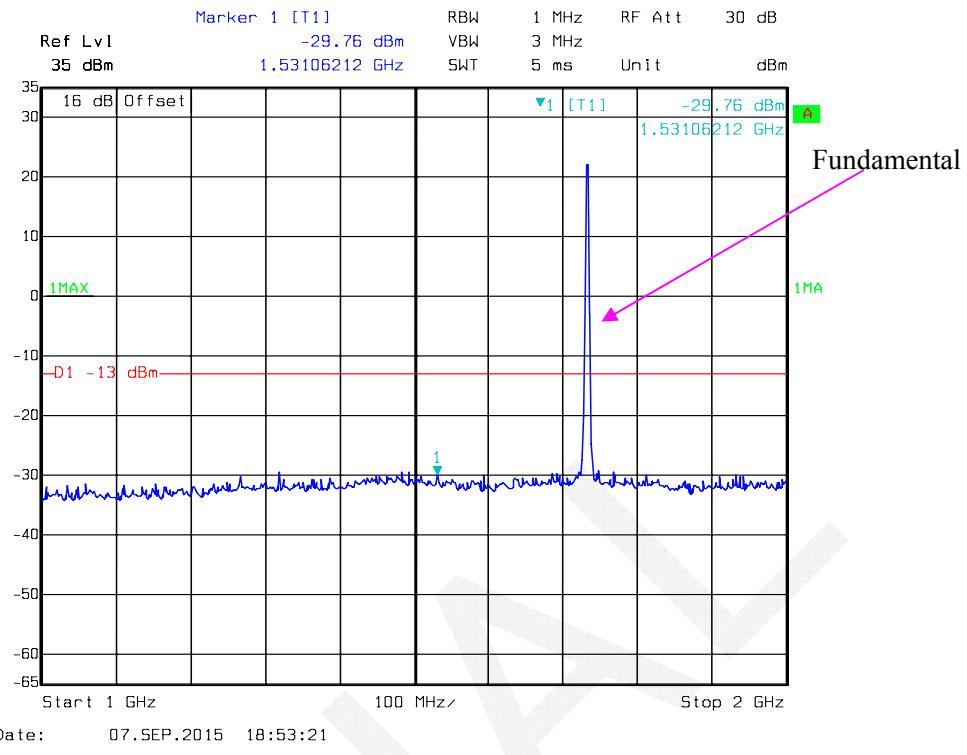
16-QAM, Band 2-15M _ Middle Channel

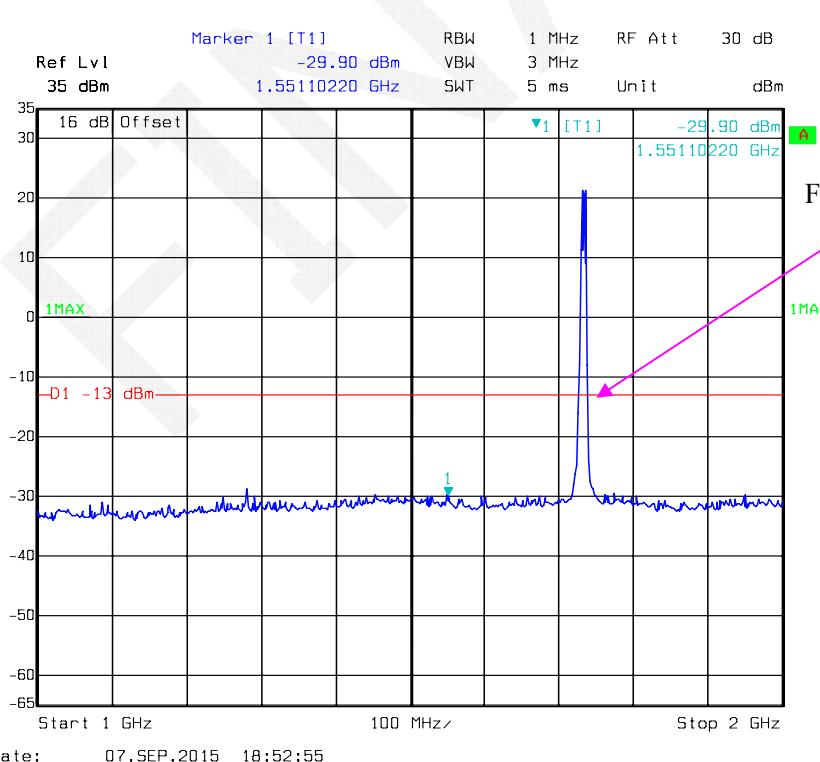
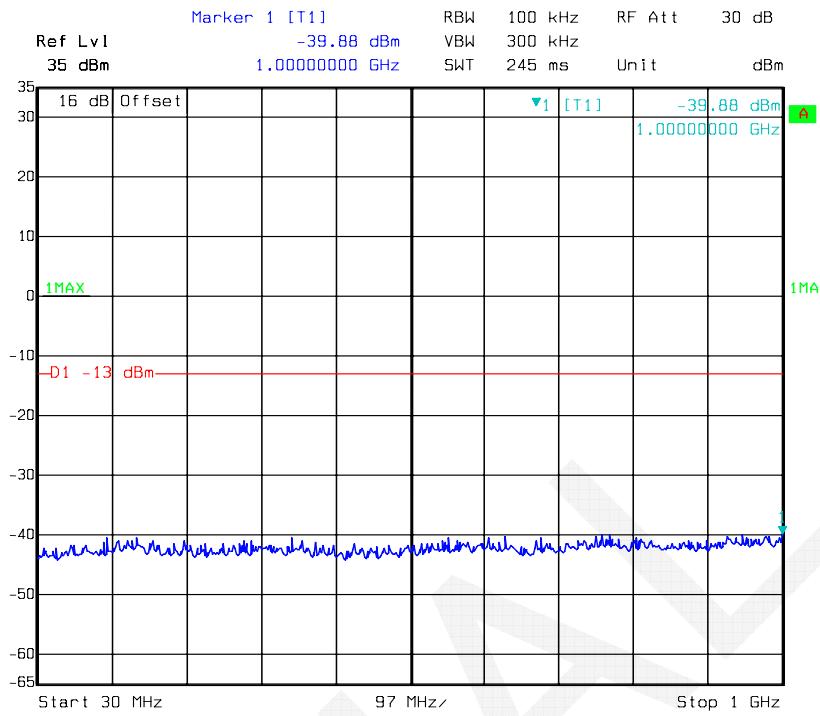
**16-QAM, Band 2-20M _ Middle Channel**

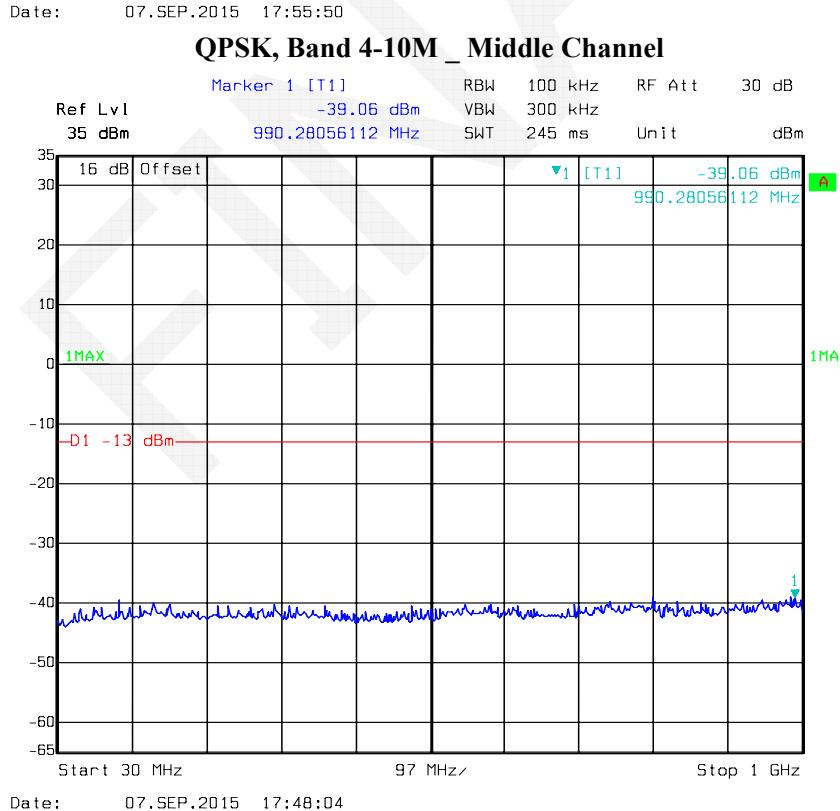
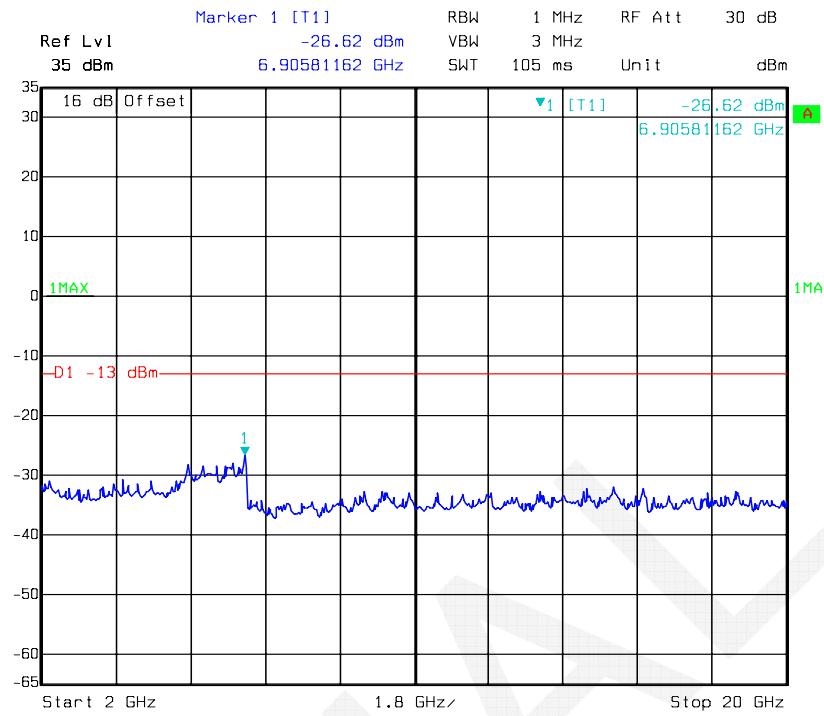


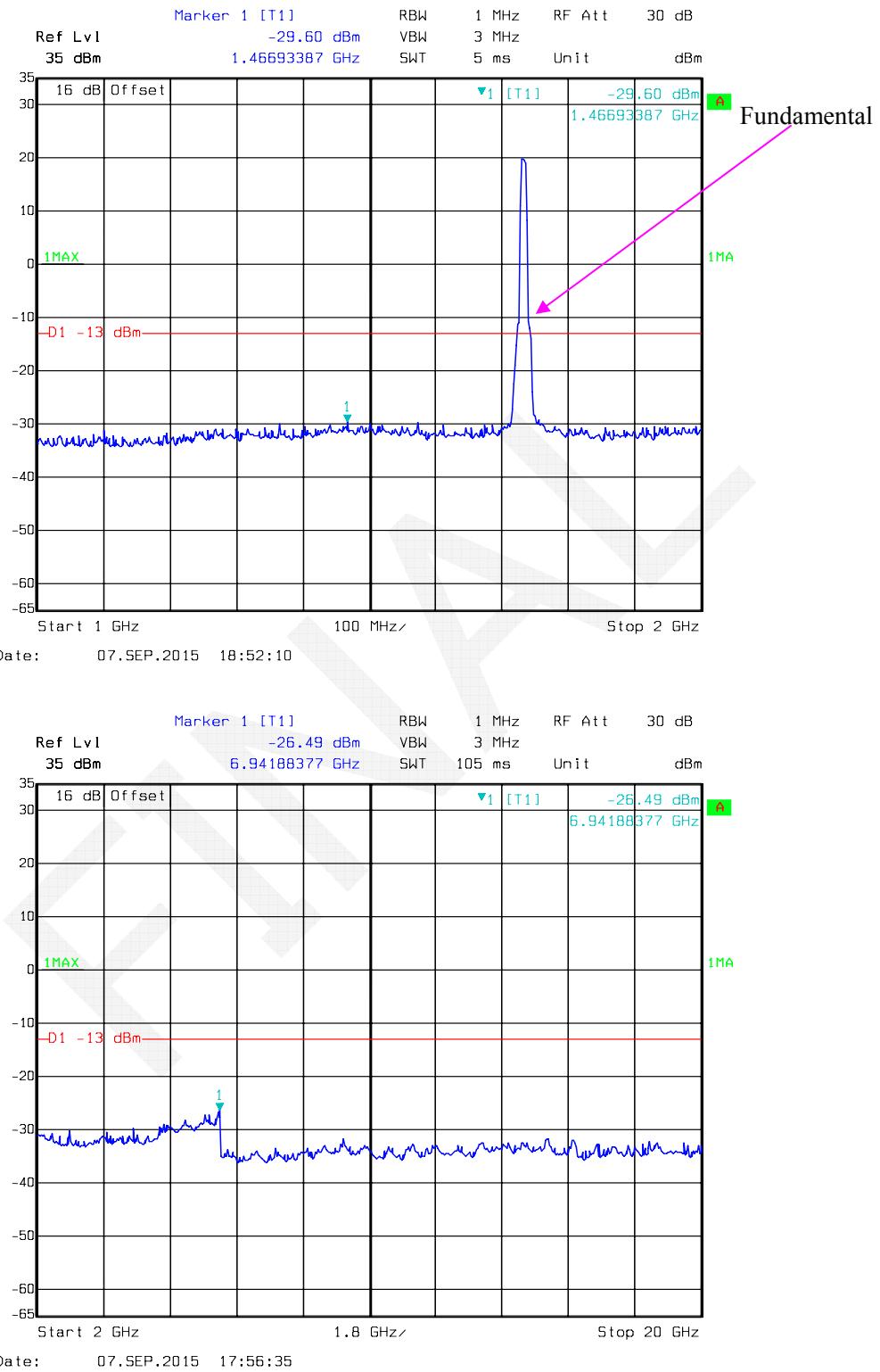
QPSK, Band 4-1.4M _ Middle Channel

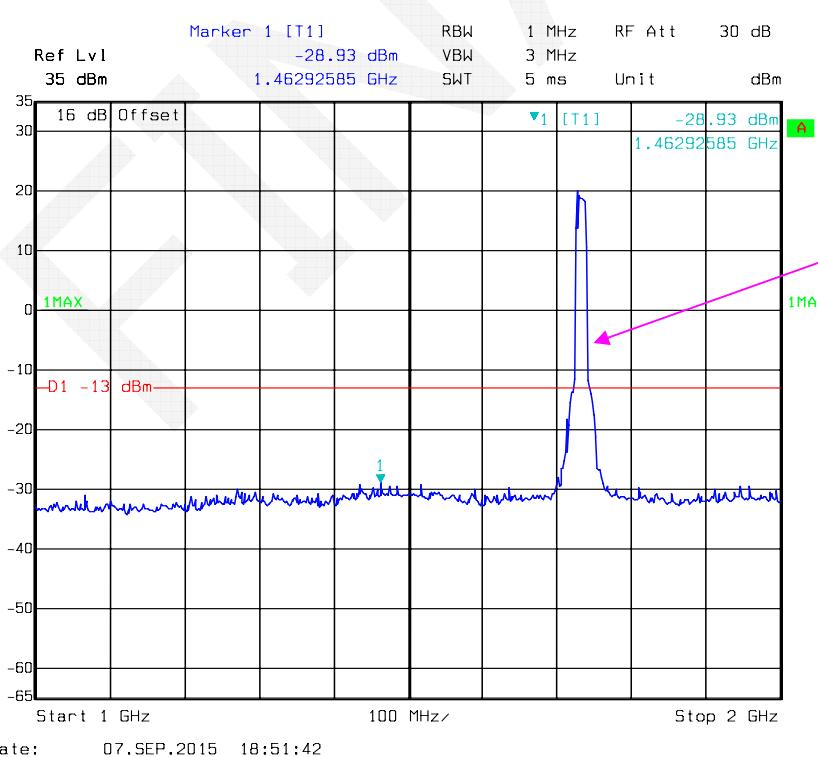
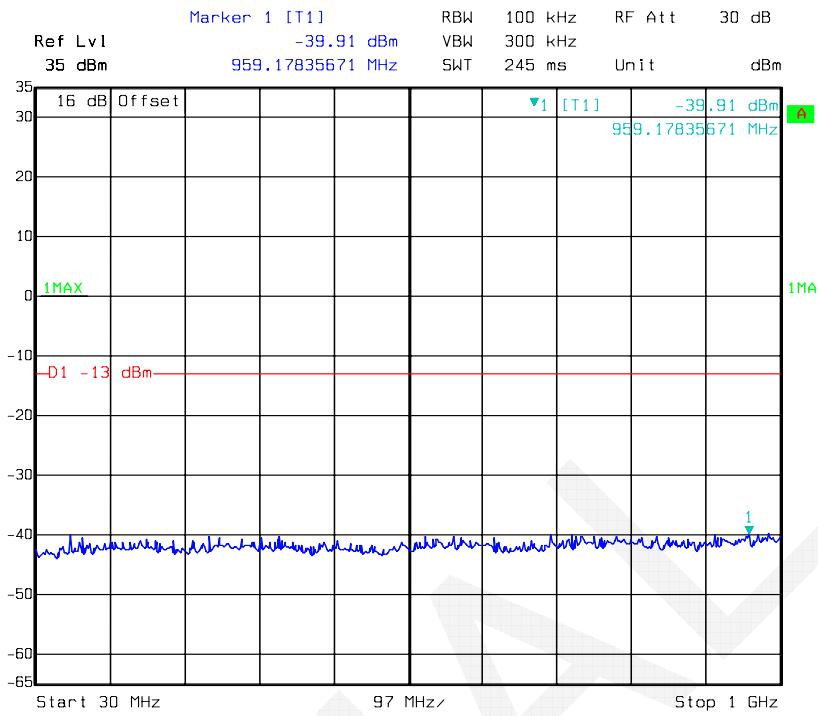
**QPSK, Band 4-3M _ Middle Channel**

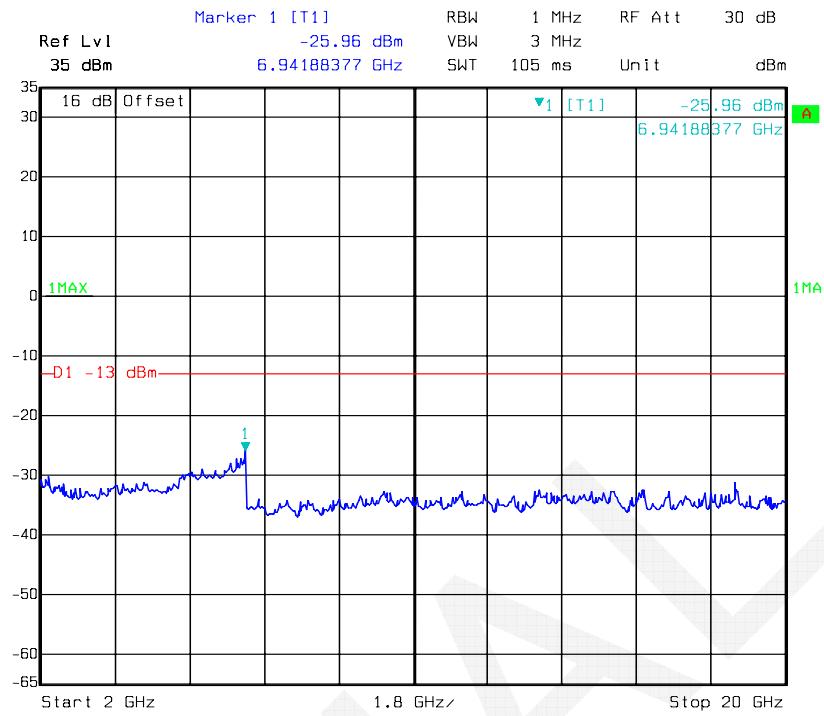
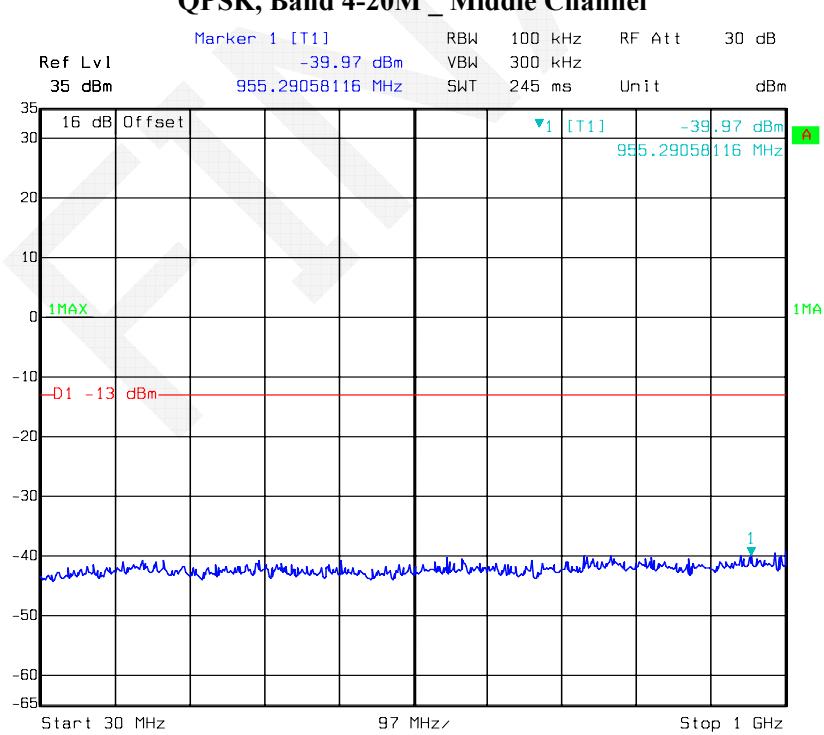


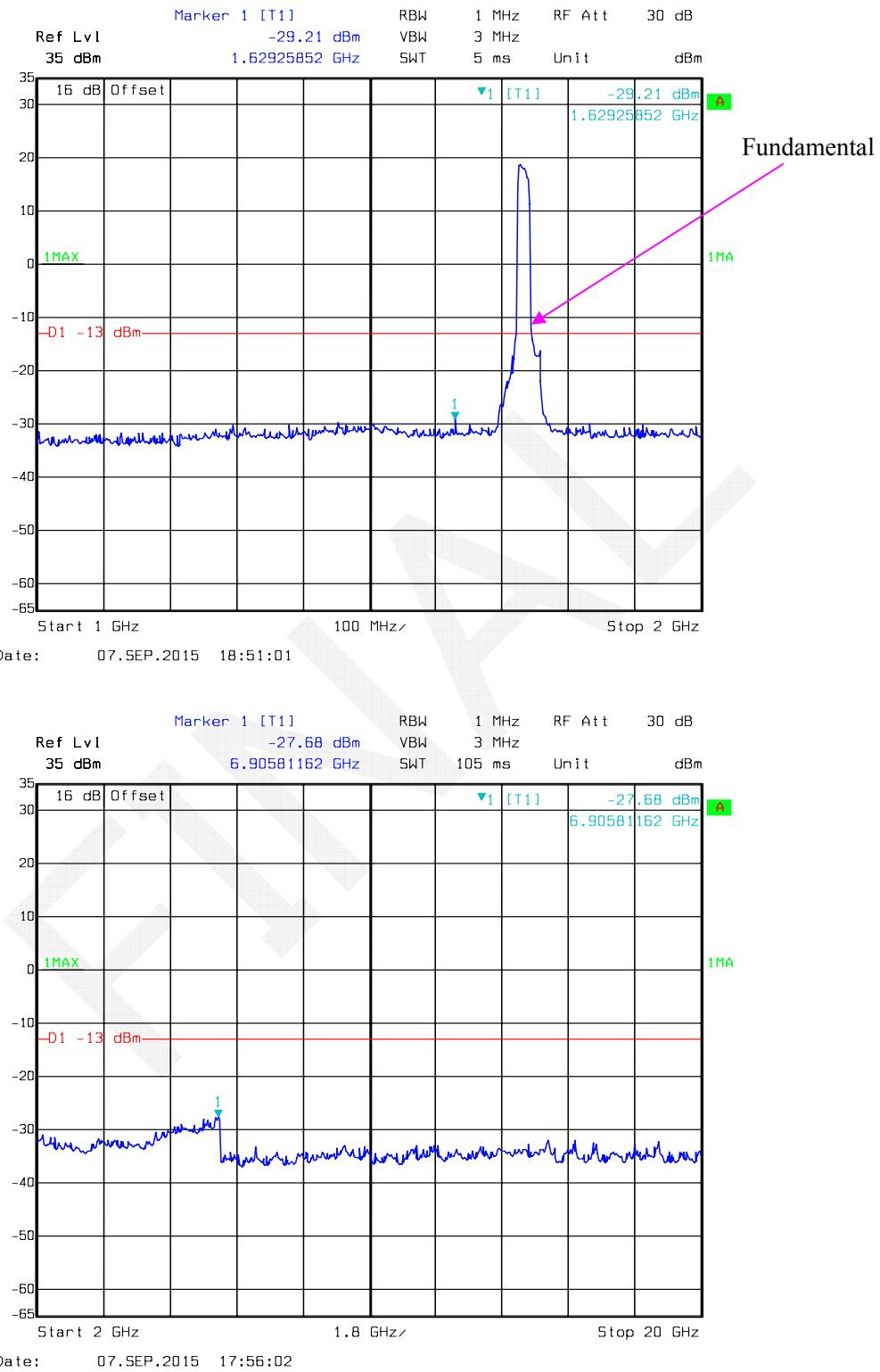
QPSK, Band 4-5M _ Middle Channel





QPSK, Band 4-15M _ Middle Channel

**QPSK, Band 4-20M _ Middle Channel**



16-QAM, Band 4-1.4M _ Middle Channel