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Report No.: GTI20161071F-4

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# TEST REPORT

**Product Name** .....: LTE/WCDMA/GSM(GPRS) Mutil-Mode Digital Mobile Phone

**Trademark** .....: /

**Model/Type reference** .....: ZTE BLADE V8 SE, ZTE BLADE V0820,  
ZTE BLADE V8 LITE, BLADE V8 SE

**FCC ID** .....: SRQ-BLADEV8SE

**Test Standards** .....: FCC CFR Title 47 Part 2  
FCC CFR Title 47 Part 24 Subpart E  
FCC CFR Title 47 Part 27 Subpart F  
FCC CFR Title 47 Part 27 Subpart H  
FCC CFR Title 47 Part 27 Subpart L  
FCC CFR Title 47 Part 27 Subpart M

**Applicant**.....: ZTE CORPORATION

**Address of Applicant**.....: ZTE Plaza, #55 Keji Road South, Hi-Tech, Industrial Park,  
Nanshan District, Shenzhen, Guangdong, 518057, P.R.  
China Shenzhen

**Date of Receipt** .....: Dec. 26, 2016

**Date of Test Date** .....: Dec. 27, 2016 - Jan. 17, 2017

**Data of Issue.** .....: Jan. 18, 2017

<b>Test result</b>	<b>Pass *</b>
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\* In the configuration tested, the EUT complied with the standards specified above





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# 1. SUMMARY

## 1.1. Test Standards

[FCC Part 24 Subpart E](#): PUBLIC MOBILE SERVICES

[FCC Part 27 Subpart F](#): Competitive Bidding Procedures for the 698-806 MHz Band

[FCC Part 27 Subpart H](#): Competitive Bidding Procedures for the 698-746 MHz Band

[FCC Part 27 Subpart L](#): 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 2110-2155 MHz, 2155-2180 MHz, 2180-2200 MHz Bands

[FCC Part 27 Subpart M](#): Broadband Radio Service and Educational Broadband Service

[TIA/EIA 603 D](#): Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

[FCC Part 2](#): FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

[ANSI C63.4:2013](#): Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

## 1.2. Test Description

Test Item	FCC Rule	Result
RF Output Power	Part 2.1046 Part 24.232(c) Part 27.50(b)(10) Part 27.50(c)(10) Part 27.50(d)(4) Part 27.50(h)(2)	Pass
Peak-to-Average Ratio	Part 24.232(d)	Pass
Modulation Characteristics	Part 2.1047	Pass
99% & -26 dB Occupied Bandwidth	Part 2.1049 Part 24.238 Part 27.53(c) Part 27.53(g) Part 27.53(h) Part 27.53(m)	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 2.1049 Part 24.238 Part 27.53(c) Part 27.53(g) Part 27.53(h) Part 27.53(m)	Pass
Field Strength of Radiation	Part 2.1053 Part 2.1049 Part 24.238 Part 27.53(c)(f) Part 27.53(g) Part 27.53(h) Part 27.53(m)	Pass
Effective Radiated Power	Part 24.232(c) Part 27.50(b)(10) Part 27.50(c)(10) Part 27.50(d)(4) Part 27.50(h)(2)	Pass
Out of band emission, Band Edge	Part 2.1051 Part 2.1049 Part 24.238 Part 27.53(c)(f) Part 27.53(g) Part 27.53(h) Part 27.53(m)	Pass
Frequency stability	Part 2.1055(a)(1)(b)(d)(1)(2)	Pass

### 1.3. Test Facility

#### Address of the test laboratory

**Shenzhen General Testing & Inspection Technology Co., Ltd.**

Add: 1F, 2 Block, Jiaquan Building, Guanlan High-tech Park Baoan District, Shenzhen, Guangdong, China

#### Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

#### IC Registration No.: 9783A

The 3m alternate test site of Shenzhen GTI Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Aug, 2011.

#### FCC-Registration No.:214666

Shenzhen GTI Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 214666, Sep 19, 2011

### 1.4. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements and is documented in the Shenzhen General Testing & Inspection Technology Co., Ltd quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for General Testing & Inspection laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power conducted	0.57 dB	(1)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-12.75 GHz	1.60 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	-----	(1)
Emission Mask	-----	(1)
Modulation Characteristic	-----	(1)
Transmitter Frequency Behavior	-----	(1)

101 This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

## 2. GENERAL INFORMATION

### 2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

### 2.2. General Description of EUT

Product Name:	LTE/WCDMA/GSM(GPRS) Mutil-Mode Digital Mobile Phone
Model:	ZTE BLADE V8 SE
Power supply:	DC 3.85V form 2500mAh by Rechargeable Li-ion Battery
Adapter information :	Model: STC-A515A-Z Input: AC 100-240V, 50Hz/60Hz, 300mA Output: DC 5V, 1500mA
<b>LTE</b>	
Operation Band:	FDD Band 2: UL: 1850MHz~1910MHz, DL: 1930MHz~1990MHz FDD Band 4: UL: 1710MHz~1755MHz, DL: 2110MHz~2155MHz FDD Band 7: UL: 2500MHz~2570MHz, DL: 2620MHz~2690MHz FDD Band 12: UL: 699MHz~716MHz, DL: 729MHz~746MHz FDD Band 13: UL: 777MHz~787MHz, DL: 746MHz~756MHz
Modulation Type:	QPSK, 16QAM
Antenna type:	Internal Antenna
Antenna Gain:	FDD Band 2: -0.25dBi FDD Band 4: 1.10dBi FDD Band 7: 1.60dBi FDD Band 12: -1.50dBi FDD Band 13: 0.52dBi

**Remark:** The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

### 2.3. Description of Test Modes and Test Frequency

The EUT has been tested under typical operating condition. The CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing.

**Test Frequency:**

Band 2			
Test channel	Bandwidth(MHz)	N <sub>UL</sub>	Frequency of Uplink (MHz)
Low Range	1.4	18607	1850.70
	3	18615	1851.50
	5	18625	1852.50
	10	18650	1855.00
	15	18675	1857.50
	20	18700	1860.00
Mid Range	1.4/3/5/10/15/20	18900	1880.00
High Range	1.4	19193	1909.30
	3	19185	1908.50
	5	19175	1907.50
	10	19150	1905.00
	15	19125	1902.50
	20	19100	1900.00

Band 4			
Test channel	Bandwidth(MHz)	N <sub>UL</sub>	Frequency of Uplink (MHz)
Low Range	1.4	19957	1710.70
	3	19965	1711.50
	5	19975	1712.50
	10	20000	1715.00
	15	20025	1717.50
	20	20050	1720.00
Mid Range	1.4/3/5/10/15/20	20175	1732.50
High Range	1.4	20393	1754.30
	3	20385	1753.50
	5	20375	1752.50
	10	20350	1750.00
	15	20325	1747.50
	20	20300	1745.00

Band 7			
Test channel	Bandwidth(MHz)	N <sub>UL</sub>	Frequency of Uplink (MHz)
Low Range	5	20775	2502.50
	10	20800	2505.00
	15	20825	2507.50
	20	20850	2510.00
Mid Range	5/10/15/20	21100	2535.00
High Range	5	21425	2567.50
	10	21400	2565.00
	15	21375	2562.50
	20	21350	2560.00

<b>Band 12</b>			
<b>Test channel</b>	<b>Bandwidth(MHz)</b>	<b>N<sub>UL</sub></b>	<b>Frequency of Uplink (MHz)</b>
Low Range	1.4	23017	699.70
	3	23025	700.50
	5	23035	701.50
	10	23060	704.00
Mid Range	1.4/3/5/10	23095	707.50
High Range	1.4	23173	715.30
	3	23165	714.50
	5	23155	713.50
	10	23130	711.00

<b>Band 13</b>			
<b>Test channel</b>	<b>Bandwidth(MHz)</b>	<b>N<sub>UL</sub></b>	<b>Frequency of Uplink (MHz)</b>
Low Range	5	23205	779.50
Mid Range	5/10	23230	782.00
High Range	5	23255	784.50

## 2.4. Measurement Instruments List

Output Power (Radiated) & Radiated Spurious Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	EMI Test Receiver	R&S	ESCI	100967	Jan. 07, 2018
2	High pass filter	Compliance Direction systems	BSU-6	34202	Jan. 07, 2018
3	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4180	Jan. 07, 2018
4	Log-Bicon Antenna	Schwarzbeck	CBL6141A	4181	Jan. 07, 2018
5	Spectrum Analyzer	HP	8563E	02052	Jan. 07, 2018
6	Horn Antenna	Schwarzbeck	BBHA 9120D	648	Jan. 07, 2018
7	Horn Antenna	Schwarzbeck	BBHA 9120D	649	Jan. 07, 2018
8	Ultra-Broadband Antenna	ShwarzBeck	BBHA9170	25841	Jan. 07, 2018
9	Ultra-Broadband Antenna	ShwarzBeck	BBHA9170	25842	Jan. 07, 2018
10	Pre-Amplifier	HP	8447D	1937A03050	Jan. 07, 2018
11	Pre-Amplifier	EMCI	EMC051835	980075	Jan. 07, 2018
12	Splitter	Mini-Circuit	ZAPD-4	400059	Jan. 07, 2018
13	Signal Generator	Agilent	N5182A	1019356	Jan. 07, 2018
14	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Jan. 07, 2018
15	Antenna Mast	UC	UC3000	N/A	N/A
16	Antenna mast	MATURO	TAM-4.0-P	N/A	N/A
17	Turn Table	UC	UC3000	N/A	N/A
18	Cable Below 1GHz	Schwarzbeck	AK9515E	33155	Jan. 07,2018
19	Cable Above 1GHz	Hubersuhner	SUCOFLEX102	DA1580	Jan. 07,2018



<b>Output Power(Conducted) &amp; Occupied Bandwidth &amp; Emission Bandwidth &amp; Band Edge Compliance &amp; Conducted Spurious Emission</b>					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Jan. 07, 2018
2	Spectrum Analyzer	Rohde & Schwarz	FSU	100105	Jan. 07, 2018
3	Splitter	Mini-Circuit	ZAPD-4	400059	Jan. 07, 2018

<b>Frequency Stability</b>					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	116410	Jan. 07, 2018
2	Spectrum Analyzer	Rohde & Schwarz	FSU	100105	Jan. 07, 2018
3	Splitter	Mini-Circuit	ZAPD-4	400059	Jan. 07, 2018
4	Climate Chamber	ESPEC	EL-10KA	05107008	Oct 25,2017

Note: 1. The Cal. Interval was one year.

2. The cable loss has calculated in test result which connection between each test instruments.

### 3. TEST ITEM AND RESULTS

#### 3.1. Conducted Output Power

##### LIMIT:

LTE FDD Band 2: 2W(33dBm) EIRP

LTE FDD Band 4: 1W(30dBm) EIRP

LTE FDD Band 7: 2W(33dBm) EIRP

LTE FDD Band 12: 3W(34.77dBm) EPR

LTE FDD Band 13: 3W(34.77dBm) ERP

The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

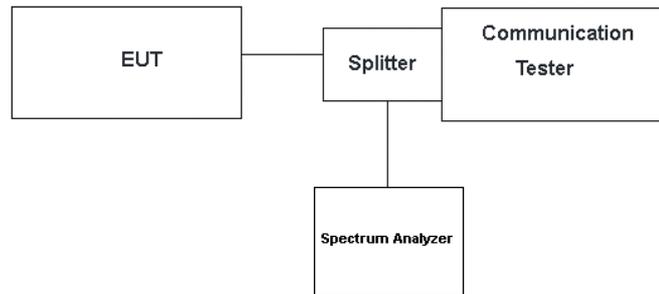
##### TEST CONFIGURATION

- For Conducted output Power



*Note: Measurement setup for testing on Antenna connector*

- For Peak-to-Average Ratio



##### TEST PROCEDURE

- For Conducted output Power

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure the maximum PK burst power and maximum Avg. burst power.

- For Peak-to-Average Ratio

1. The testing follows FCC KDB 971168 v02r02 Section 5.7.1.
2. The EUT was connected to spectrum and communication tester via a splitter
3. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
4. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1 %.
6. Record the deviation as Peak to Average Ratio.

**TEST RESULTS**

LTE Band 2							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
1.4MHz	1RB_low	1850.7	22.74	5.59	22.29	6.22	PASS
		1880	22.60	5.51	22.17	6.26	
		1909.3	22.62	5.45	22.07	6.24	
	1RB_mid	1850.7	22.70	5.64	22.33	6.55	
		1880	22.73	5.6	21.94	6.46	
		1909.3	22.58	5.53	22.14	6.48	
	1RB_high	1850.7	22.67	6.58	22.31	7.62	
		1880	22.83	4.33	21.87	5.17	
		1909.3	22.67	4.33	22.17	5.14	
	50%RB_low	1850.7	22.81	4.34	21.95	5.18	
		1880	22.84	4.58	21.90	5.51	
		1909.3	22.87	4.51	21.85	5.47	
	50%RB_mid	1850.7	22.78	4.53	21.94	5.44	
		1880	22.79	5.56	21.91	6.68	
		1909.3	22.85	2.97	21.87	4.00	
	50%RB_high	1850.7	22.82	2.94	21.97	4.01	
		1880	22.88	2.96	21.90	4.01	
		1909.3	22.89	3.24	21.89	4.15	
	100%RB	1850.7	21.84	3.24	20.84	4.19	
		1880	21.84	3.24	20.87	4.13	
		1909.3	21.87	4.68	20.87	5.64	

LTE Band 2							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
3MHz	1RB_low	1851.5	22.88	5.38	22.33	6.06	PASS
		1880	22.86	5.38	21.98	6.09	
		1908.5	23.04	5.38	21.98	6.12	
	1RB_mid	1851.5	22.90	6.29	22.39	7.47	
		1880	22.78	6.57	21.81	7.31	
		1908.5	22.84	6.41	21.73	7.37	
	1RB_high	1851.5	22.81	6.38	22.32	7.74	
		1880	22.84	4.25	22.03	5.01	
		1908.5	22.99	4.26	21.70	5.03	
	50%RB_low	1851.5	21.90	4.28	20.99	5.13	
		1880	21.94	5.39	21.02	6.59	
		1908.5	22.02	5.32	20.96	6.50	
	50%RB_mid	1851.5	21.89	5.6	21.03	6.36	
		1880	21.95	5.76	21.07	6.70	
		1908.5	21.92	3.04	21.07	4.09	
	50%RB_high	1851.5	21.86	2.82	20.99	3.84	
		1880	21.92	3.03	20.94	3.86	
		1908.5	21.94	4.51	20.81	5.44	
	100%RB	1851.5	21.91	4.36	21.04	5.27	
		1880	21.96	4.28	20.92	5.41	
		1908.5	21.98	5.2	20.97	6.06	

Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 2							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
5MHz	1RB_low	1852.5	22.89	5.16	22.03	6.20	PASS
		1880	22.83	5.07	21.94	6.15	
		1907.5	22.81	5.22	21.91	6.29	
	1RB_mid	1852.5	22.84	6.54	22.00	7.57	
		1880	22.95	6.59	22.37	7.76	
		1907.5	23.00	6.59	22.18	7.58	
	1RB_high	1852.5	22.80	6.73	22.19	7.51	
		1880	22.76	4.04	21.74	5.10	
		1907.5	22.86	4.07	22.11	5.12	
	50%RB_low	1852.5	21.78	4.19	20.83	5.22	
		1880	21.86	5.62	20.82	6.65	
		1907.5	21.93	5.62	20.89	6.58	
	50%RB_mid	1852.5	21.81	5.78	20.87	6.81	
		1880	21.87	6.11	20.84	6.66	
		1907.5	21.91	3.37	20.88	4.48	
	50%RB_high	1852.5	21.82	2.82	20.79	3.95	
		1880	21.89	2.75	20.82	3.85	
		1907.5	21.89	4.79	20.85	5.77	
	100%RB	1852.5	21.80	4.53	20.85	5.59	
		1880	21.85	4.64	20.89	5.65	
		1907.5	21.89	5.25	20.80	6.26	

LTE Band 2							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
10MHz	1RB_low	1855	22.80	5.07	22.28	5.80	PASS
		1880	22.93	5.14	22.28	6.01	
		1905	23.03	4.93	22.25	6.09	
	1RB_mid	1855	22.73	6.83	21.94	7.70	
		1880	22.79	7.11	22.02	7.88	
		1905	22.89	6.72	22.00	8.06	
	1RB_high	1855	22.75	6.83	21.81	8.21	
		1880	22.98	4.15	22.39	5.12	
		1905	22.91	3.94	22.03	4.81	
	50%RB_low	1855	21.75	4.22	20.82	4.98	
		1880	21.85	5.68	20.85	6.73	
		1905	21.95	6.03	20.98	7.01	
	50%RB_mid	1855	21.77	6.16	20.79	7.45	
		1880	21.90	6.58	20.90	7.24	
		1905	21.93	4.86	20.95	5.67	
	50%RB_high	1855	21.80	3.37	20.85	4.25	
		1880	21.85	2.67	20.90	3.58	
		1905	21.81	5.7	20.76	6.92	
	100%RB	1855	21.79	5.45	20.79	6.63	
		1880	21.89	5.85	20.86	6.82	
		1905	21.91	6.35	20.88	6.96	

Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 2							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
15MHz	1RB_low	1857.5	22.91	5.24	22.34	5.65	PASS
		1880	22.87	5.05	22.35	5.78	
		1902.5	23.03	5.04	22.34	5.74	
	1RB_mid	1857.5	22.72	6.19	22.31	7.38	
		1880	22.87	6.97	22.08	8.16	
		1902.5	22.91	6.57	22.13	7.76	
	1RB_high	1857.5	22.74	6.82	22.25	8.93	
		1880	22.94	4.62	22.13	5.64	
		1902.5	22.91	4.00	21.95	5.02	
	50%RB_low	1857.5	21.81	4.14	20.80	4.69	
		1880	21.92	5.85	20.89	6.92	
		1902.5	21.99	6.57	21.00	7.34	
	50%RB_mid	1857.5	21.78	6.68	20.80	7.98	
		1880	21.92	6.54	20.92	8.14	
		1902.5	22.00	4.51	20.99	5.02	
	50%RB_high	1857.5	21.79	4.10	20.79	5.20	
		1880	21.92	5.36	20.86	5.36	
		1902.5	21.90	6.17	20.91	7.34	
	100%RB	1857.5	21.82	6.18	20.82	7.66	
		1880	22.91	6.58	20.90	7.96	
		1902.5	22.91	7.02	20.94	8.39	

LTE Band 2							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
20MHz	1RB_low	1860	23.03	4.69	22.13	6.24	PASS
		1880	22.93	4.93	22.11	5.52	
		1900	23.16	5.51	22.28	6.74	
	1RB_mid	1860	22.71	7.32	21.99	8.59	
		1880	22.84	7.17	21.99	7.78	
		1900	23.05	7.98	22.26	9.47	
	1RB_high	1860	22.91	7.77	22.03	8.71	
		1880	23.04	6.32	22.54	7.52	
		1900	22.96	4.19	22.09	4.92	
	50%RB_low	1860	21.77	5.07	20.79	7.39	
		1880	21.97	6.44	20.98	7.67	
		1900	22.00	6.16	21.03	7.51	
	50%RB_mid	1860	21.82	7.57	20.79	8.45	
		1880	21.89	7.58	20.93	8.40	
		1900	22.02	6.21	21.03	7.52	
	50%RB_high	1860	21.84	4.87	20.77	6.71	
		1880	21.93	5.96	20.91	5.64	
		1900	21.97	6.80	20.99	6.98	
	100%RB	1860	21.79	7.00	20.78	8.49	
		1880	21.94	7.67	20.89	7.78	
		1900	21.98	7.62	20.97	9.21	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 4							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
1.4MHz	1RB_low	1710.7	22.76	4.79	22.21	5.45	PASS
		1732.5	22.84	5.00	21.76	5.68	
		1754.3	22.77	5.33	21.98	5.45	
	1RB_mid	1710.7	22.68	7.25	21.94	7.10	
		1732.5	22.84	6.48	22.09	6.88	
		1754.3	22.77	7.32	21.95	8.10	
	1RB_high	1710.7	22.74	7.95	21.95	7.94	
		1732.5	22.91	6.38	22.00	6.08	
		1754.3	22.59	4.01	22.10	3.86	
	50%RB_low	1710.7	22.81	4.94	21.84	5.34	
		1732.5	22.97	7.29	21.94	6.45	
		1754.3	22.86	5.83	21.98	6.09	
	50%RB_mid	1710.7	22.75	7.48	21.77	7.57	
		1732.5	22.90	7.33	21.98	8.29	
		1754.3	22.83	5.72	21.93	5.94	
	50%RB_high	1710.7	22.80	4.62	21.97	5.11	
		1732.5	22.93	5.71	21.85	6.41	
		1754.3	22.89	6.90	21.86	6.95	
	100%RB	1710.7	21.84	7.01	20.85	6.81	
		1732.5	21.93	7.44	20.97	7.50	
		1754.3	21.89	7.30	21.06	7.50	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 4							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
3MHz	1RB_low	1711.5	22.95	4.22	22.28	4.76	PASS
		1732.5	22.94	4.48	22.54	4.86	
		1753.5	22.89	5.71	22.42	5.44	
	1RB_mid	1711.5	22.93	6.76	22.40	7.17	
		1732.5	23.01	7.49	22.36	7.33	
		1753.5	22.87	7.64	22.44	7.91	
	1RB_high	1711.5	22.93	7.73	22.36	7.78	
		1732.5	22.97	6.57	22.20	6.29	
		1753.5	22.93	3.95	22.43	3.82	
	50%RB_low	1711.5	21.90	5.25	21.01	5.82	
		1732.5	22.02	6.55	21.10	5.82	
		1753.5	21.99	6.30	21.11	6.09	
	50%RB_mid	1711.5	21.90	7.03	20.97	7.60	
		1732.5	22.02	7.82	20.96	7.70	
		1753.5	21.96	5.93	21.05	6.79	
	50%RB_high	1711.5	21.92	5.42	21.04	4.52	
		1732.5	22.02	5.85	21.09	6.24	
		1753.5	21.96	6.30	21.12	6.64	
	100%RB	1711.5	21.93	7.17	20.96	6.53	
		1732.5	22.02	7.52	21.06	7.31	
		1753.5	21.96	7.01	21.02	7.10	

Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 4							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
5MHz	1RB_low	1712.5	22.77	4.72	21.90	4.61	PASS
		1732.5	22.90	5.00	22.27	4.71	
		1752.5	22.91	5.98	21.83	5.64	
	1RB_mid	1712.5	22.88	6.69	22.08	7.32	
		1732.5	22.94	6.96	22.17	6.77	
		1752.5	22.86	8.10	22.41	7.94	
	1RB_high	1712.5	22.87	7.74	22.38	7.69	
		1732.5	22.85	6.27	22.49	6.74	
		1752.5	22.92	4.44	22.39	3.56	
	50%RB_low	1712.5	21.83	5.26	20.86	5.18	
		1732.5	21.92	6.85	20.99	7.22	
		1752.5	21.91	5.57	20.99	6.54	
	50%RB_mid	1712.5	21.88	7.65	20.93	8.24	
		1732.5	21.98	7.37	21.01	7.71	
		1752.5	21.93	6.03	20.89	6.51	
	50%RB_high	1712.5	21.89	4.95	20.92	4.75	
		1732.5	21.96	5.75	21.03	5.95	
		1752.5	21.92	7.45	20.96	6.96	
	100%RB	1712.5	21.83	6.56	20.82	7.37	
		1732.5	21.94	7.03	20.95	7.37	
		1752.5	21.87	7.40	20.90	7.41	

Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 4							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
10MHz	1RB_low	1715	22.79	4.44	22.30	5.03	PASS
		1732.5	23.08	4.01	22.55	5.32	
		1750	22.97	5.45	21.99	4.92	
	1RB_mid	1715	22.88	7.49	22.47	7.74	
		1732.5	22.87	6.95	22.24	7.44	
		1750	22.87	7.75	22.49	8.26	
	1RB_high	1715	22.94	7.83	22.23	7.78	
		1732.5	23.02	6.45	22.51	6.44	
		1750	22.82	3.84	22.38	4.33	
	50%RB_low	1715	21.89	5.02	20.93	5.30	
		1732.5	21.94	6.04	20.96	7.20	
		1750	21.97	6.67	20.99	6.53	
	50%RB_mid	1715	21.91	7.59	20.95	7.81	
		1732.5	21.98	6.74	21.02	7.89	
		1750	21.93	6.85	20.96	6.36	
	50%RB_high	1715	21.90	5.37	20.84	4.71	
		1732.5	21.95	6.12	21.01	5.59	
		1750	21.91	7.17	20.88	7.21	
	100%RB	1715	21.91	6.84	20.88	6.73	
		1732.5	21.96	7.47	20.93	7.53	
		1750	21.95	7.35	20.95	6.91	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 4							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
15MHz	1RB_low	1717.5	22.92	4.46	21.99	4.13	PASS
		1732.5	23.07	5.81	22.25	5.09	
		1747.5	23.00	5.65	22.60	6.03	
	1RB_mid	1717.5	22.88	7.57	22.46	8.24	
		1732.5	22.93	7.22	22.47	7.05	
		1747.5	22.92	7.92	22.39	8.29	
	1RB_high	1717.5	23.01	7.18	22.15	7.30	
		1732.5	22.97	6.24	21.92	6.02	
		1747.5	22.93	4.79	21.89	3.93	
	50%RB_low	1717.5	21.94	5.46	20.91	5.27	
		1732.5	22.03	6.65	21.03	6.24	
		1747.5	22.01	6.35	20.98	6.35	
	50%RB_mid	1717.5	21.96	6.97	20.95	7.39	
		1732.5	22.00	7.71	21.01	7.46	
		1747.5	21.96	5.90	21.01	6.65	
	50%RB_high	1717.5	21.97	5.06	20.95	5.03	
		1732.5	21.99	6.00	21.00	6.10	
		1747.5	21.94	7.09	20.96	6.89	
	100%RB	1717.5	21.94	7.42	20.93	7.45	
		1732.5	21.99	6.96	20.99	7.62	
		1747.5	21.98	7.88	20.99	7.30	

LTE Band 4							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
20MHz	1RB_low	1720	22.98	5.02	22.51	5.03	PASS
		1732.5	23.13	4.76	22.22	5.28	
		1745	23.14	6.24	22.35	5.48	
	1RB_mid	1720	23.03	7.06	22.41	7.64	
		1732.5	22.96	7.38	22.15	7.72	
		1745	22.96	8.42	22.46	8.74	
	1RB_high	1720	23.01	7.62	22.11	8.16	
		1732.5	23.00	6.81	21.95	6.87	
		1745	22.98	4.17	22.43	4.56	
	50%RB_low	1720	21.99	5.14	21.02	4.57	
		1732.5	22.04	6.10	21.08	6.64	
		1745	22.05	6.96	21.13	5.53	
	50%RB_mid	1720	21.96	7.01	21.03	7.69	
		1732.5	22.00	7.74	20.99	7.62	
		1745	21.98	5.78	21.02	6.95	
	50%RB_high	1720	22.01	5.20	21.00	5.00	
		1732.5	21.97	5.92	20.96	5.37	
		1745	21.95	6.95	20.98	6.81	
	100%RB	1720	22.01	6.85	21.02	6.80	
		1732.5	22.04	7.06	20.99	7.21	
		1745	22.03	7.43	20.98	7.20	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 7							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
5MHz	1RB_low	2502.5	22.44	4.73	21.73	4.21	PASS
		2535	22.38	5.68	21.83	5.05	
		2567.5	22.67	6.21	21.78	6.04	
	1RB_mid	2502.5	22.38	7.10	21.85	7.07	
		2535	22.55	7.07	21.99	7.66	
		2567.5	22.69	7.67	21.84	7.72	
	1RB_high	2502.5	22.42	7.06	21.30	7.13	
		2535	22.49	6.72	21.69	6.26	
		2567.5	22.70	3.59	21.82	3.55	
	50%RB_low	2502.5	21.35	6.13	20.36	6.63	
		2535	21.49	7.31	20.48	6.88	
		2567.5	21.75	6.77	20.70	6.14	
	50%RB_mid	2502.5	21.48	7.44	20.37	7.54	
		2535	21.55	6.98	20.54	6.69	
		2567.5	21.77	7.05	20.74	6.74	
	50%RB_high	2502.5	21.47	4.99	20.41	4.96	
		2535	21.60	5.87	20.55	6.42	
		2567.5	21.75	7.15	20.73	7.52	
	100%RB	2502.5	21.43	7.05	20.37	7.10	
		2535	21.55	7.10	20.43	7.60	
		2567.5	21.72	7.67	20.63	7.20	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 7							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
10MHz	1RB_low	2505	22.39	3.51	21.43	3.18	PASS
		2535	22.46	5.65	21.60	5.17	
		2565	22.70	6.04	21.88	5.78	
	1RB_mid	2505	22.37	6.45	21.61	7.09	
		2535	22.50	7.12	21.86	7.80	
		2565	22.71	7.53	21.83	7.46	
	1RB_high	2505	22.58	7.58	22.03	7.23	
		2535	22.54	6.87	21.80	6.21	
		2565	22.69	4.04	21.90	3.63	
	50%RB_low	2505	21.38	6.49	20.32	5.97	
		2535	21.52	7.24	20.41	7.24	
		2565	21.79	5.91	20.68	6.75	
	50%RB_mid	2505	21.49	6.90	20.40	7.40	
		2535	21.58	6.77	20.51	6.96	
		2565	21.80	7.14	20.72	6.86	
	50%RB_high	2505	21.59	4.85	20.51	5.26	
		2535	21.57	6.41	20.53	6.61	
		2565	21.72	6.80	20.66	7.55	
	100%RB	2505	21.50	7.02	20.45	7.56	
		2535	21.56	7.46	20.57	7.38	
		2565	21.78	7.28	20.71	7.04	

Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 7							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
15MHz	1RB_low	2507.5	22.52	3.70	21.75	3.68	PASS
		2535	22.60	5.36	21.64	5.92	
		2562.5	22.79	6.17	22.15	5.98	
	1RB_mid	2507.5	22.49	7.09	21.38	6.63	
		2535	22.55	7.53	21.90	7.54	
		2562.5	22.78	7.22	21.66	7.91	
	1RB_high	2507.5	22.67	7.12	21.66	7.97	
		2535	22.70	6.34	21.81	6.10	
		2562.5	22.89	3.86	21.89	4.03	
	50%RB_low	2507.5	21.47	6.32	20.47	6.70	
		2535	21.59	6.67	20.52	7.10	
		2562.5	21.84	6.34	20.81	6.19	
	50%RB_mid	2507.5	21.54	6.87	20.50	6.95	
		2535	21.58	6.80	20.56	7.29	
		2562.5	21.83	6.58	20.79	6.35	
	50%RB_high	2507.5	21.64	4.88	20.64	4.84	
		2535	21.61	6.27	20.59	5.91	
		2562.5	21.78	7.61	20.81	7.32	
	100%RB	2507.5	21.59	7.24	20.55	7.79	
		2535	21.62	7.38	20.59	8.57	
		2562.5	21.80	7.44	20.78	7.94	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 7							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
20MHz	1RB_low	2510	22.82	3.63	21.85	3.64	PASS
		2535	22.69	5.50	22.20	5.33	
		2560	23.04	5.76	22.03	5.86	
	1RB_mid	2510	22.55	6.87	21.73	7.32	
		2535	22.52	7.91	21.99	7.99	
		2560	22.77	7.90	22.00	7.33	
	1RB_high	2510	22.64	7.48	21.49	7.35	
		2535	22.61	6.16	21.72	6.21	
		2560	22.85	4.43	21.99	4.05	
	50%RB_low	2510	21.64	6.68	20.58	6.42	
		2535	21.62	6.76	20.57	7.37	
		2560	21.87	6.37	20.80	6.78	
	50%RB_mid	2510	21.51	7.47	20.50	7.42	
		2535	21.63	7.46	20.58	7.03	
		2560	21.83	7.06	20.78	7.24	
	50%RB_high	2510	21.76	4.88	20.71	5.13	
		2535	21.69	6.19	20.64	6.62	
		2560	21.78	7.10	20.81	6.83	
	100%RB	2510	21.61	7.96	20.58	7.93	
		2535	21.64	7.87	20.62	7.47	
		2560	21.80	7.27	20.83	7.16	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 12							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
1.4MHz	1RB_low	699.7	22.50	3.85	21.95	3.86	PASS
		707.5	22.68	4.95	22.13	5.44	
		715.3	22.58	5.55	21.80	5.34	
	1RB_mid	699.7	22.55	6.37	21.94	7.51	
		707.5	22.67	7.18	21.90	7.33	
		715.3	22.56	7.88	22.00	8.74	
	1RB_high	699.7	22.64	8.14	21.71	7.92	
		707.5	22.68	5.99	21.83	6.08	
		715.3	22.65	3.49	22.18	4.43	
	50%RB_low	699.7	22.67	5.80	21.63	4.81	
		707.5	22.78	6.62	21.95	6.08	
		715.3	22.71	5.79	21.73	5.76	
	50%RB_mid	699.7	22.66	6.71	21.87	7.29	
		707.5	22.74	6.66	22.00	7.01	
		715.3	22.67	6.25	21.90	6.51	
	50%RB_high	699.7	22.72	4.54	21.82	4.71	
		707.5	22.78	5.70	21.85	6.21	
		715.3	22.76	6.63	21.70	6.81	
	100%RB	699.7	21.77	7.19	20.90	7.06	
		707.5	21.79	7.86	21.00	7.73	
		715.3	21.79	7.08	20.88	7.72	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 12							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
3MHz	1RB_low	700.5	22.65	4.61	21.99	3.91	PASS
		707.5	22.75	5.46	22.00	5.02	
		714.5	22.76	5.65	22.14	5.67	
	1RB_mid	700.5	22.76	7.80	21.99	7.73	
		707.5	22.77	7.13	22.04	7.21	
		714.5	22.65	7.32	22.20	7.44	
	1RB_high	700.5	22.76	7.80	21.94	7.20	
		707.5	22.75	6.56	21.82	6.88	
		714.5	22.79	3.62	22.34	4.24	
	50%RB_low	700.5	21.84	5.68	20.88	5.46	
		707.5	21.84	6.14	20.95	6.57	
		714.5	21.83	5.99	20.92	6.31	
	50%RB_mid	700.5	21.83	7.96	20.93	7.57	
		707.5	21.86	7.22	20.98	7.98	
		714.5	21.85	6.48	20.89	5.85	
	50%RB_high	700.5	21.81	5.63	20.80	4.31	
		707.5	21.87	5.30	20.98	5.46	
		714.5	21.83	6.30	20.99	6.57	
	100%RB	700.5	21.85	7.13	20.80	6.85	
		707.5	21.85	6.94	20.80	7.86	
		714.5	21.87	7.30	20.79	7.52	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 12							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
5MHz	1RB_low	701.5	22.69	4.66	21.93	4.55	PASS
		707.5	22.73	4.76	22.34	5.42	
		713.5	22.67	5.65	22.10	4.94	
	1RB_mid	701.5	22.78	6.71	21.89	7.67	
		707.5	22.75	7.27	21.85	6.59	
		713.5	22.79	8.10	22.15	8.02	
	1RB_high	701.5	22.70	7.53	22.23	8.24	
		707.5	22.76	6.35	22.00	6.43	
		713.5	22.66	4.11	21.67	4.34	
	50%RB_low	701.5	21.76	4.78	20.78	5.33	
		707.5	21.69	6.95	20.74	6.98	
		713.5	21.86	6.14	20.82	6.01	
	50%RB_mid	701.5	21.80	8.01	20.78	7.52	
		707.5	21.81	7.36	20.88	7.74	
		713.5	21.80	5.83	20.77	6.26	
	50%RB_high	701.5	21.68	5.13	20.73	4.73	
		707.5	21.91	5.91	20.95	6.24	
		713.5	21.67	6.60	20.61	6.19	
	100%RB	701.5	21.72	7.19	20.63	7.44	
		707.5	21.79	7.00	20.79	7.25	
		713.5	21.84	7.15	20.71	7.58	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 12							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
10MHz	1RB_low	704	22.75	4.21	21.85	5.03	PASS
		707.5	22.81	4.84	22.34	4.61	
		711	22.79	5.02	21.66	5.69	
	1RB_mid	704	22.57	7.66	22.11	7.18	
		707.5	22.66	6.93	22.22	8.14	
		711	22.67	7.60	22.27	7.87	
	1RB_high	704	22.80	7.82	22.39	6.94	
		707.5	22.78	5.73	21.66	6.35	
		711	22.79	3.98	22.29	3.73	
	50%RB_low	704	21.73	5.28	20.72	4.85	
		707.5	21.98	6.22	20.94	6.69	
		711	21.54	6.94	20.54	5.96	
	50%RB_mid	704	21.80	7.30	20.80	7.76	
		707.5	21.80	8.29	20.75	6.71	
		711	21.73	5.57	20.75	6.84	
	50%RB_high	704	21.91	5.14	20.95	5.49	
		707.5	21.96	5.67	20.94	5.70	
		711	21.48	6.32	20.51	6.86	
	100%RB	704	22.00	7.03	20.93	7.13	
		707.5	21.91	7.72	20.89	7.82	
		711	21.51	7.51	20.51	7.84	

Note: 1.Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 13							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
5MHz	1RB_low	779.5	22.33	4.64	21.51	4.19	PASS
		782	22.31	5.57	21.78	5.30	
		784.5	22.25	6.43	21.44	5.46	
	1RB_mid	779.5	22.35	7.95	21.87	7.91	
		782	22.39	7.15	21.84	7.01	
		784.5	22.40	7.21	21.84	7.74	
	1RB_high	779.5	22.24	7.53	21.47	7.11	
		782	22.26	6.87	21.25	6.76	
		784.5	22.28	4.60	21.30	3.82	
	50%RB_low	779.5	21.29	5.18	20.30	5.43	
		782	21.31	5.97	20.25	6.90	
		784.5	21.36	5.37	20.38	5.46	
	50%RB_mid	779.5	21.36	7.70	20.41	7.05	
		782	21.36	7.03	20.39	7.44	
		784.5	21.35	6.14	20.39	6.38	
	50%RB_high	779.5	21.35	4.81	20.37	4.70	
		782	21.30	5.59	20.3	6.44	
		784.5	21.34	6.79	20.35	6.97	
	100%RB	779.5	21.29	6.69	20.37	6.98	
		782	21.30	7.00	20.32	7.27	
		784.5	21.35	7.98	20.41	7.55	

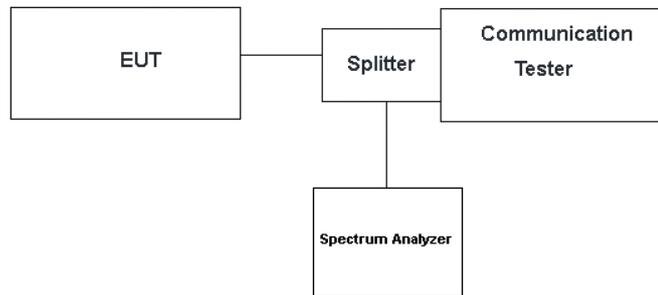
Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

LTE Band 13							
Test Bandwidth	RB	Frequency(MHz)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Average Output Power (dBm)	Peak to Average Ratio (dB)	Test Result
			QPSK		16QAM		
10MHz	1RB_low	782	22.42	4.71	21.88	5.64	PASS
	1RB_mid	782	22.35	5.13	21.52	4.23	
	1RB_high	782	22.35	4.97	21.59	4.95	
	50%RB_low	782	21.37	7.80	20.41	6.53	
	50%RB_mid	782	21.28	7.80	20.37	6.07	
	50%RB_high	782	21.26	7.21	20.32	7.92	
	100%RB	782	21.30	7.60	20.36	7.25	

Note: 1. Peak-to-Average Ratio= maximum PK burst power-maximum Avg. burst power.

## 3.2. Occupy Bandwidth

### TEST CONFIGURATION



### TEST PROCEDURE

1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer
2. RBW was set to about 1% of emission BW,  $VBW \geq 3$  times RBW.
3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

**TEST RESULTS**

LTE Band 2				
Test Modulation	Test Bandwidth	Test Channel	99% Occupancy bandwidth (MHz)	-26dBc bandwidth (MHz)
QPSK	1.4MHz	L	1.077	1.203
		M	1.077	1.216
		H	1.081	1.203
	3MHz	L	2.692	2.837
		M	2.683	2.865
		H	2.692	2.856
	5MHz	L	4.471	4.679
		M	4.487	4.744
		H	4.487	4.744
	10MHz	L	8.942	9.295
		M	8.974	9.327
		H	8.910	9.295
	15MHz	L	13.413	13.798
		M	13.413	13.798
		H	13.365	13.798
	20MHz	L	17.885	18.718
		M	17.885	18.718
		H	17.821	18.718
16QAM	1.4MHz	L	1.077	1.203
		M	1.077	1.212
		H	1.077	1.194
	3MHz	L	2.692	2.856
		M	2.692	2.856
		H	2.692	2.865
	5MHz	L	4.471	4.696
		M	4.487	4.679
		H	4.487	4.712
	10MHz	L	8.942	9.327
		M	8.942	9.295
		H	8.910	9.327
	15MHz	L	13.365	13.798
		M	13.413	13.798
		H	13.365	13.798
	20MHz	L	17.885	18.782
		M	17.885	18.718
		H	17.885	18.718

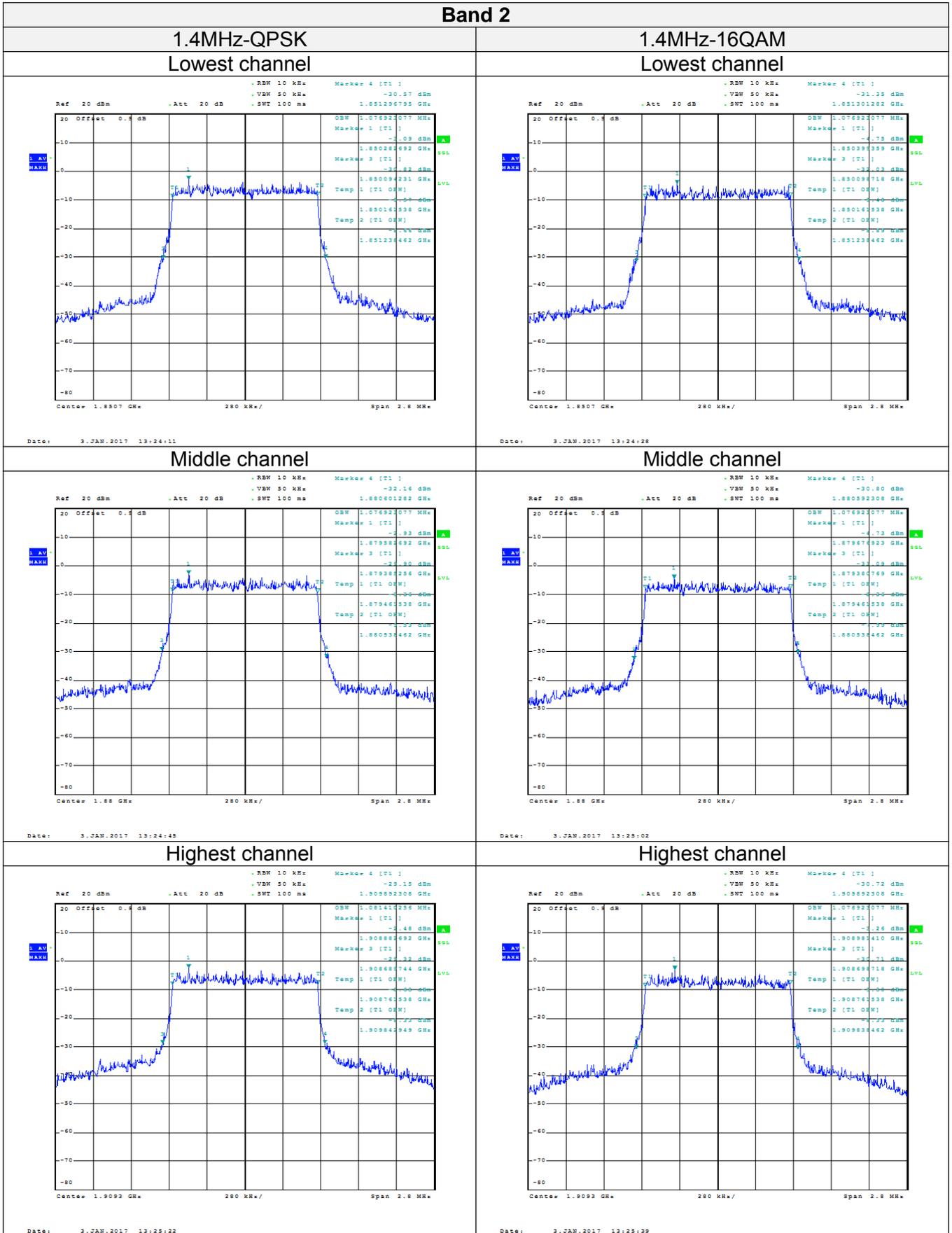
LTE Band 4				
Test Modulation	Test Bandwidth	Test Channel	99% Occupy bandwidth (MHz)	-26dBc bandwidth (MHz)
QPSK	1.4MHz	L	1.072	1.194
		M	1.077	1.207
		H	1.077	1.203
	3MHz	L	2.692	2.837
		M	2.692	2.856
		H	2.692	2.856
	5MHz	L	4.487	4.696
		M	4.471	4.712
		H	4.487	4.712
	10MHz	L	8.974	9.327
		M	8.974	9.327
		H	8.974	9.295
	15MHz	L	13.365	13.798
		M	13.413	13.798
		H	13.462	13.846
20MHz	L	17.885	18.718	
	M	17.885	18.718	
	H	17.821	18.718	
16QAM	1.4MHz	L	1.077	1.216
		M	1.077	1.203
		H	1.077	1.203
	3MHz	L	2.692	2.856
		M	2.692	2.846
		H	2.692	2.846
	5MHz	L	4.471	4.663
		M	4.471	4.696
		H	4.487	4.696
	10MHz	L	8.974	9.327
		M	8.942	9.327
		H	8.942	9.295
	15MHz	L	13.365	13.798
		M	13.413	13.846
		H	13.413	13.846
20MHz	L	17.885	18.718	
	M	17.885	18.782	
	H	17.949	18.718	

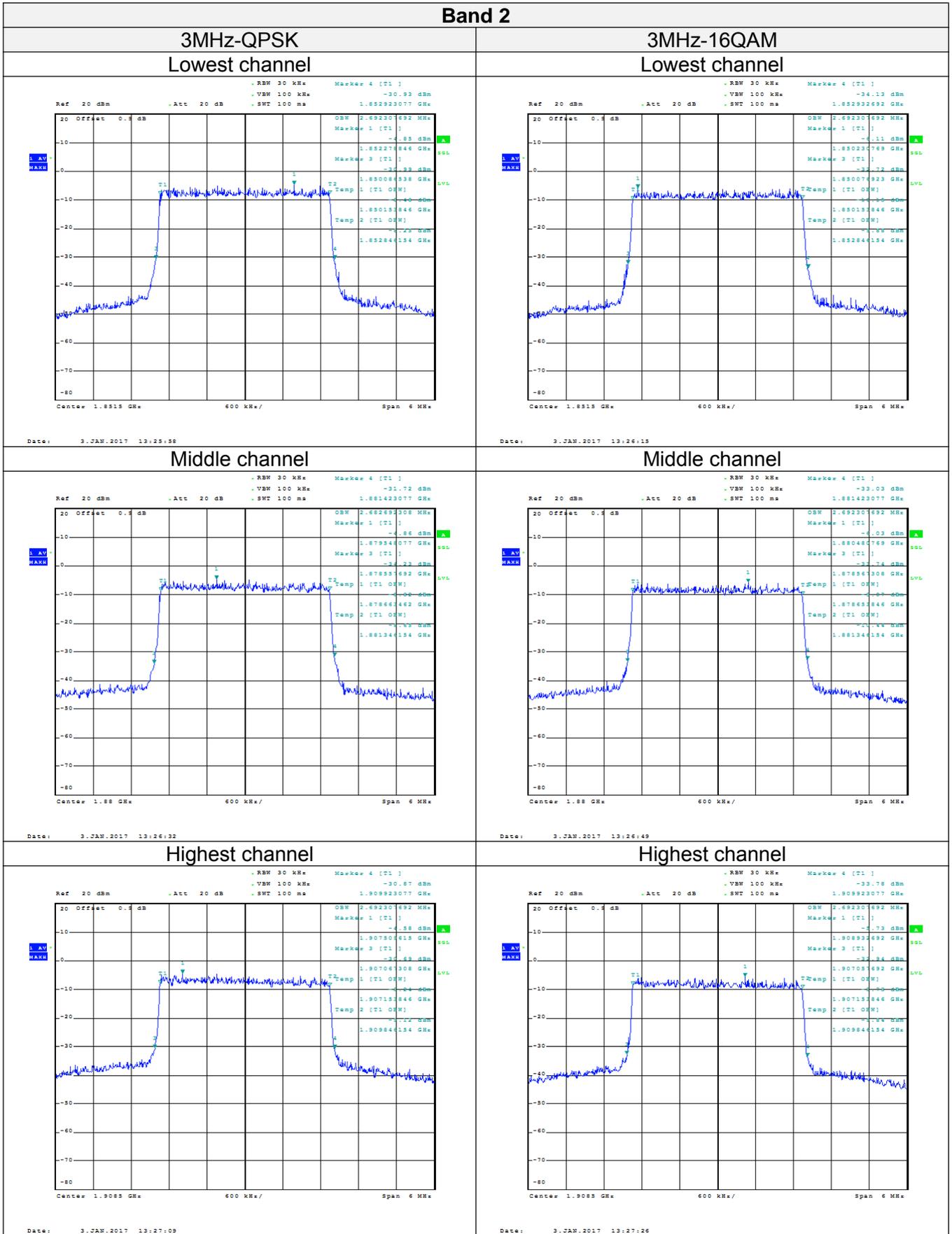
LTE Band 7				
Test Modulation	Test Bandwidth	Test Channel	99% Occupy bandwidth (MHz)	-26dBc bandwidth (MHz)
QPSK	5MHz	L	4.471	4.728
		M	4.487	4.679
		H	4.487	4.728
	10MHz	L	8.974	9.327
		M	8.974	9.327
		H	8.942	9.295
	15MHz	L	13.413	13.798
		M	13.413	13.846
		H	13.413	13.846
	20MHz	L	17.885	18.782
		M	17.949	18.718
		H	17.885	18.718
16QAM	5MHz	L	4.471	4.696
		M	4.471	4.744
		H	4.487	4.696
	10MHz	L	8.942	9.327
		M	8.942	9.295
		H	8.942	9.295
	15MHz	L	13.413	13.798
		M	13.413	13.846
		H	13.413	13.750
	20MHz	L	17.885	18.782
		M	17.885	18.782
		H	17.885	18.718

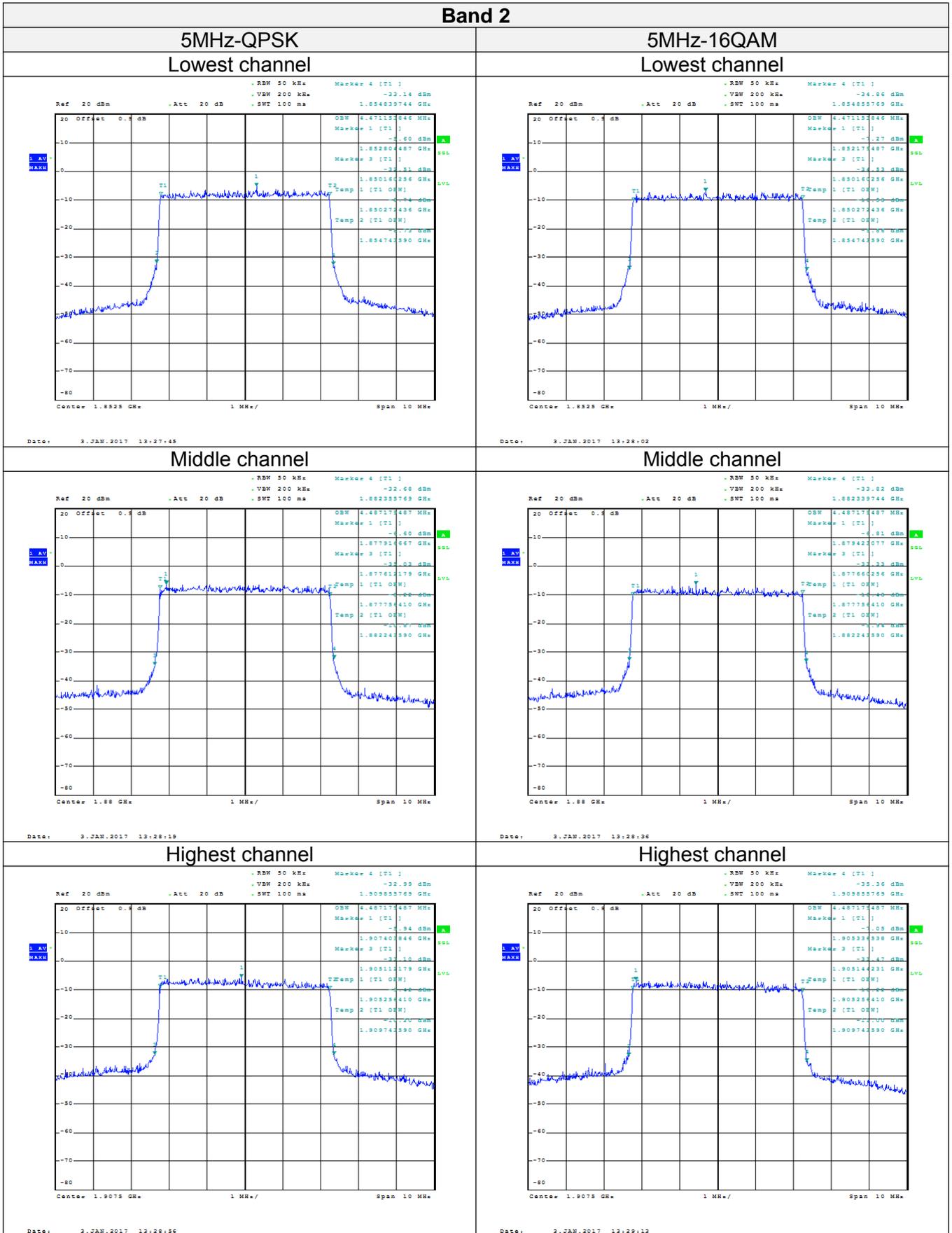
LTE Band 12				
Test Modulation	Test Bandwidth	Test Channel	99% Occupy bandwidth (MHz)	-26dBc bandwidth (MHz)
QPSK	1.4MHz	L	1.077	1.203
		M	1.072	1.203
		H	1.077	1.207
	3MHz	L	2.683	2.837
		M	2.692	2.846
		H	2.692	2.875
	5MHz	L	4.471	4.696
		M	4.487	4.696
		H	4.471	4.728
	10MHz	L	8.974	9.295
		M	8.974	9.359
		H	8.910	9.295
16QAM	1.4MHz	L	1.077	1.189
		M	1.077	1.203
		H	1.077	1.207
	3MHz	L	2.683	2.827
		M	2.692	2.856
		H	2.683	2.865
	5MHz	L	4.471	4.728
		M	4.471	4.679
		H	4.471	4.696
	10MHz	L	8.974	9.327
		M	8.942	9.327
		H	8.910	9.295

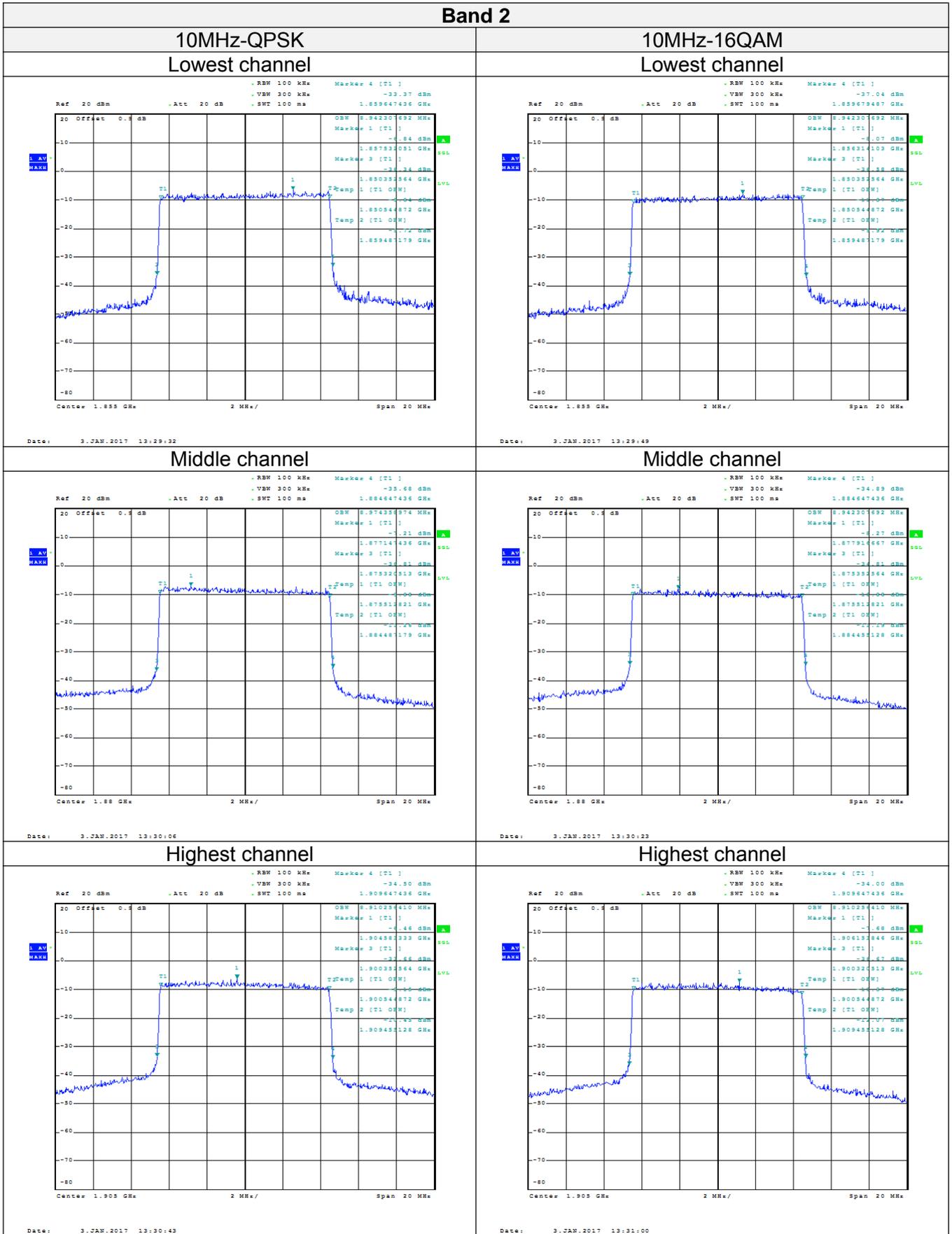
LTE Band 13				
Test Modulation	Test Bandwidth	Test Channel	99% Occupy bandwidth (MHz)	-26dBc bandwidth (MHz)
QPSK	5MHz	L	4.471	4.679
		M	4.455	4.696
		H	4.487	4.712
	10MHz	M	8.942	9.295
16QAM	5MHz	L	4.471	4.679
		M	4.455	4.712
		H	4.455	4.696
	10MHz	M	8.942	9.295

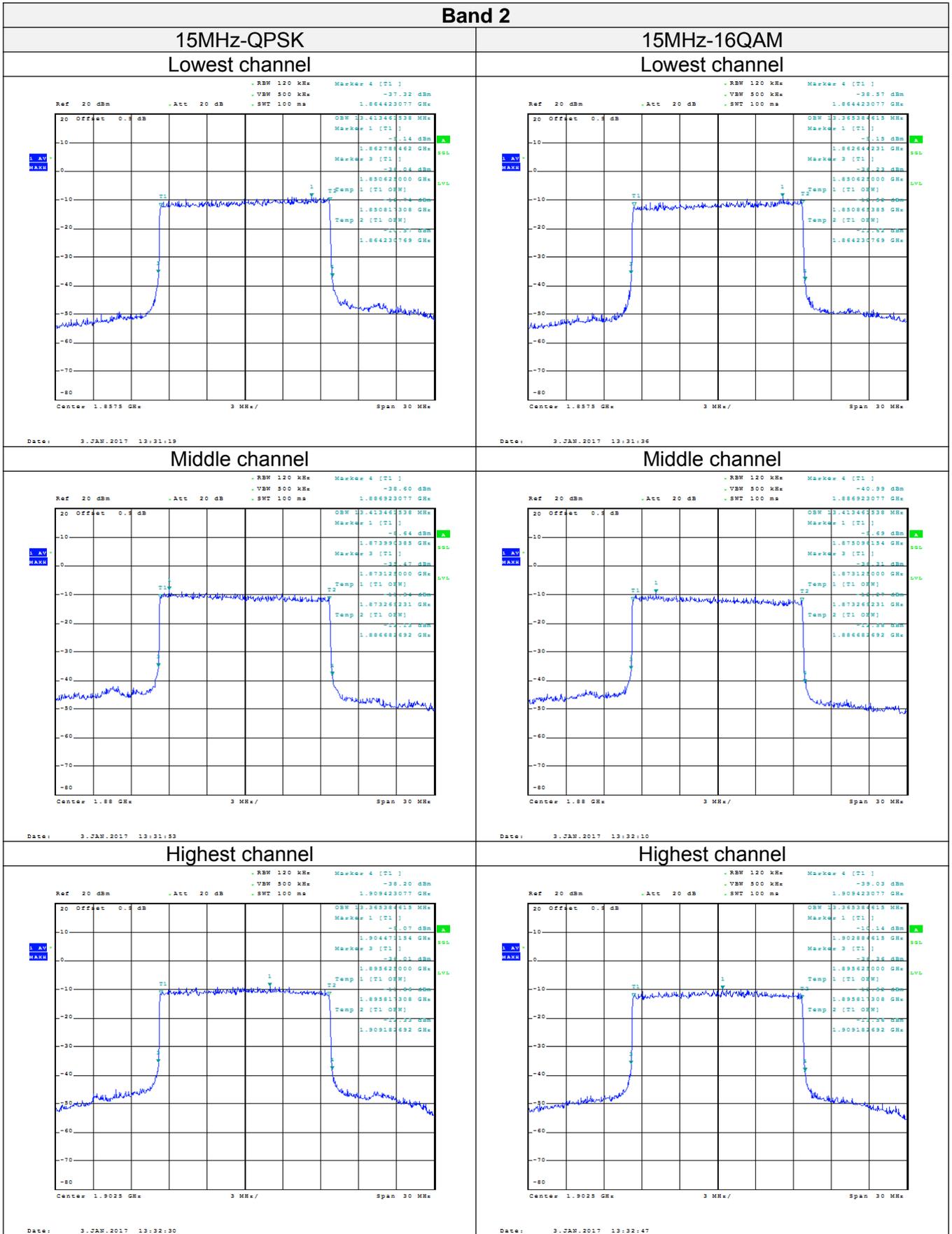
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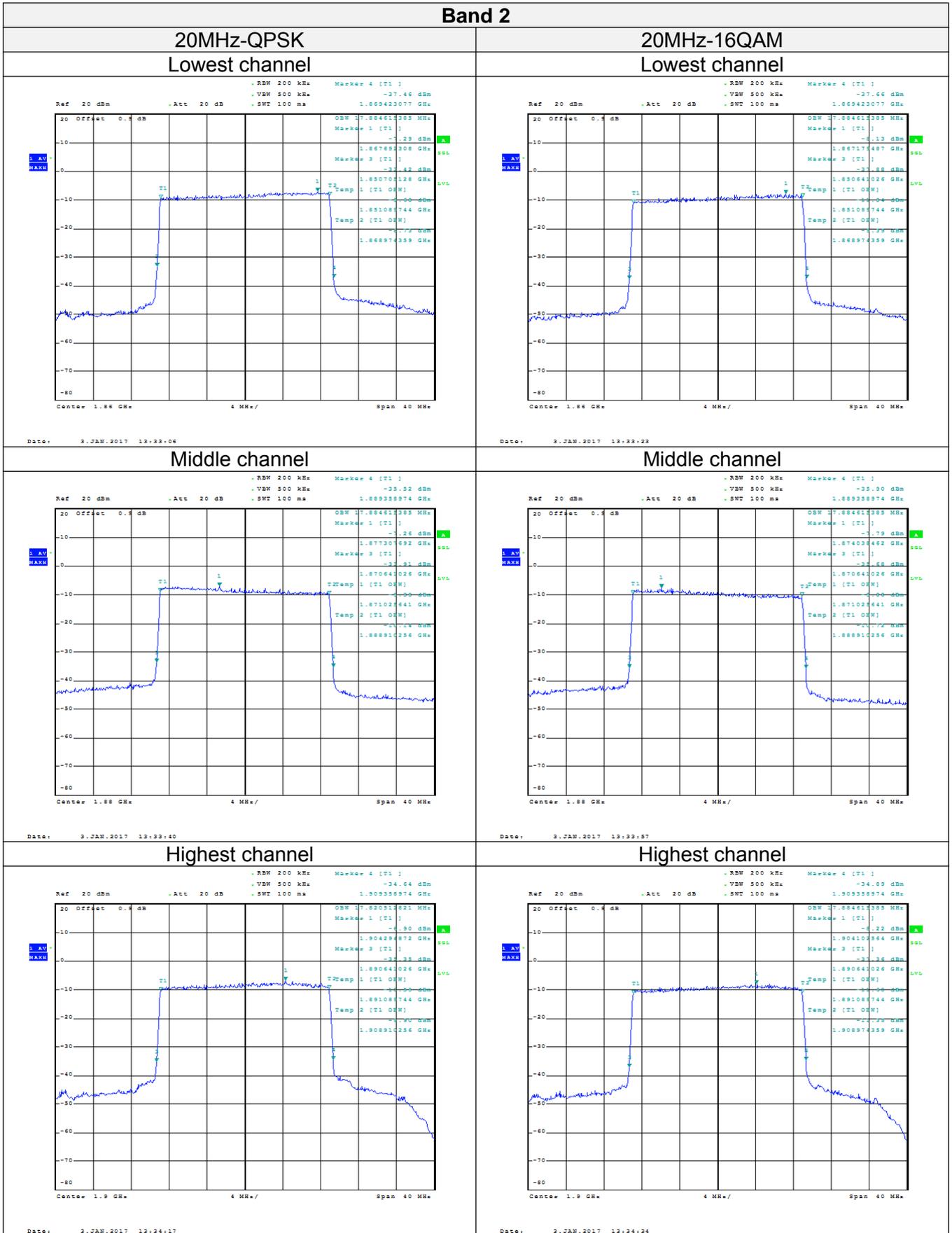




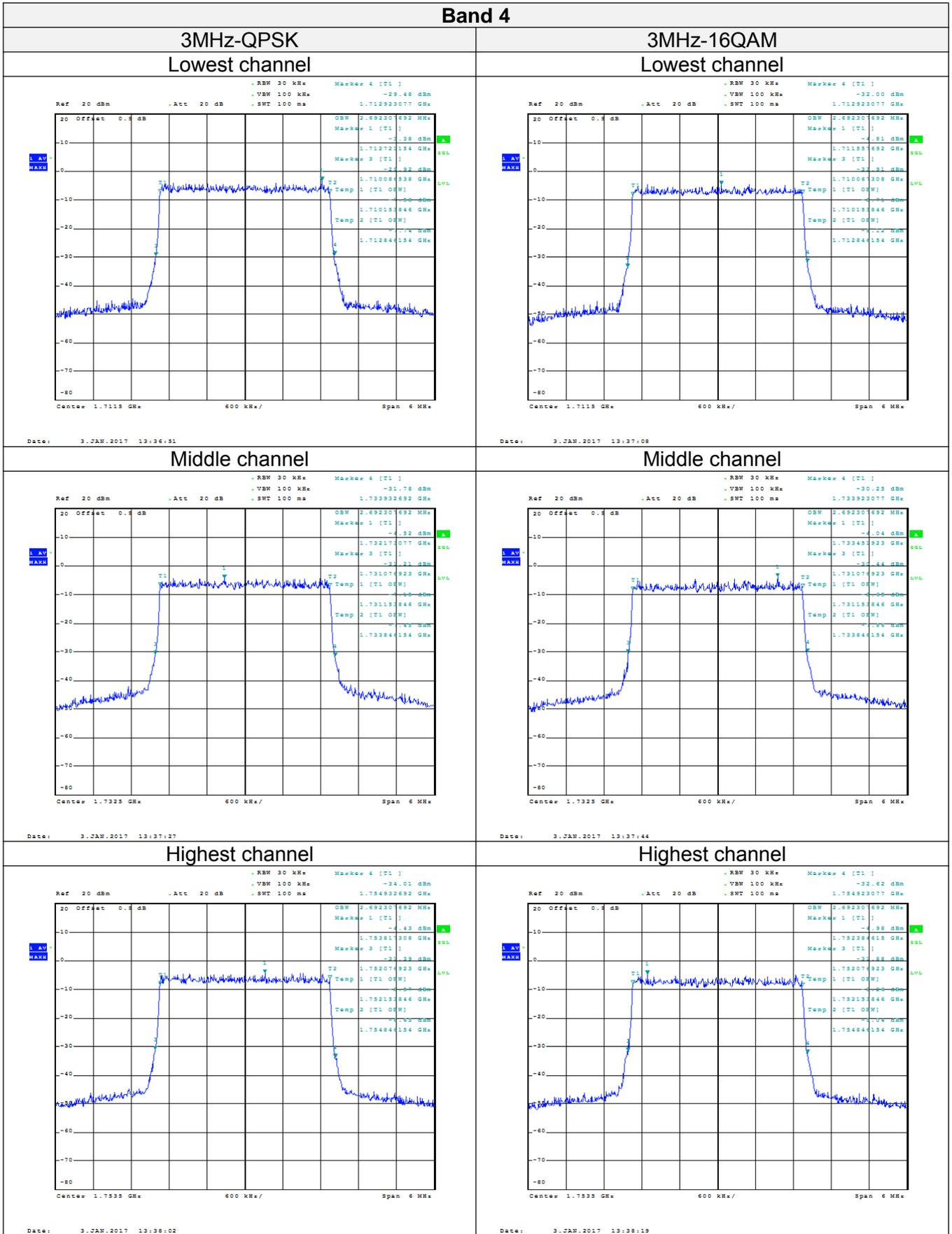


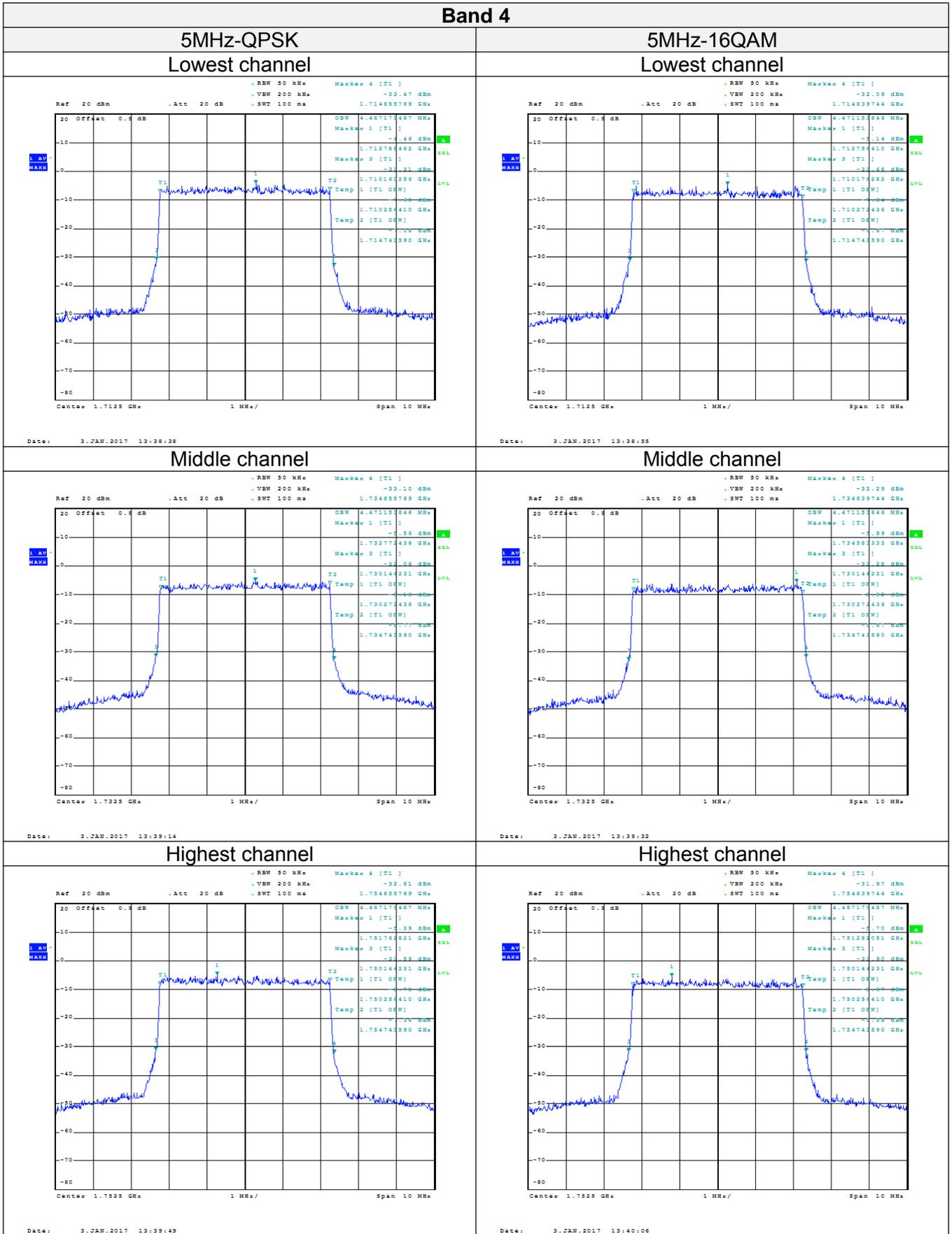




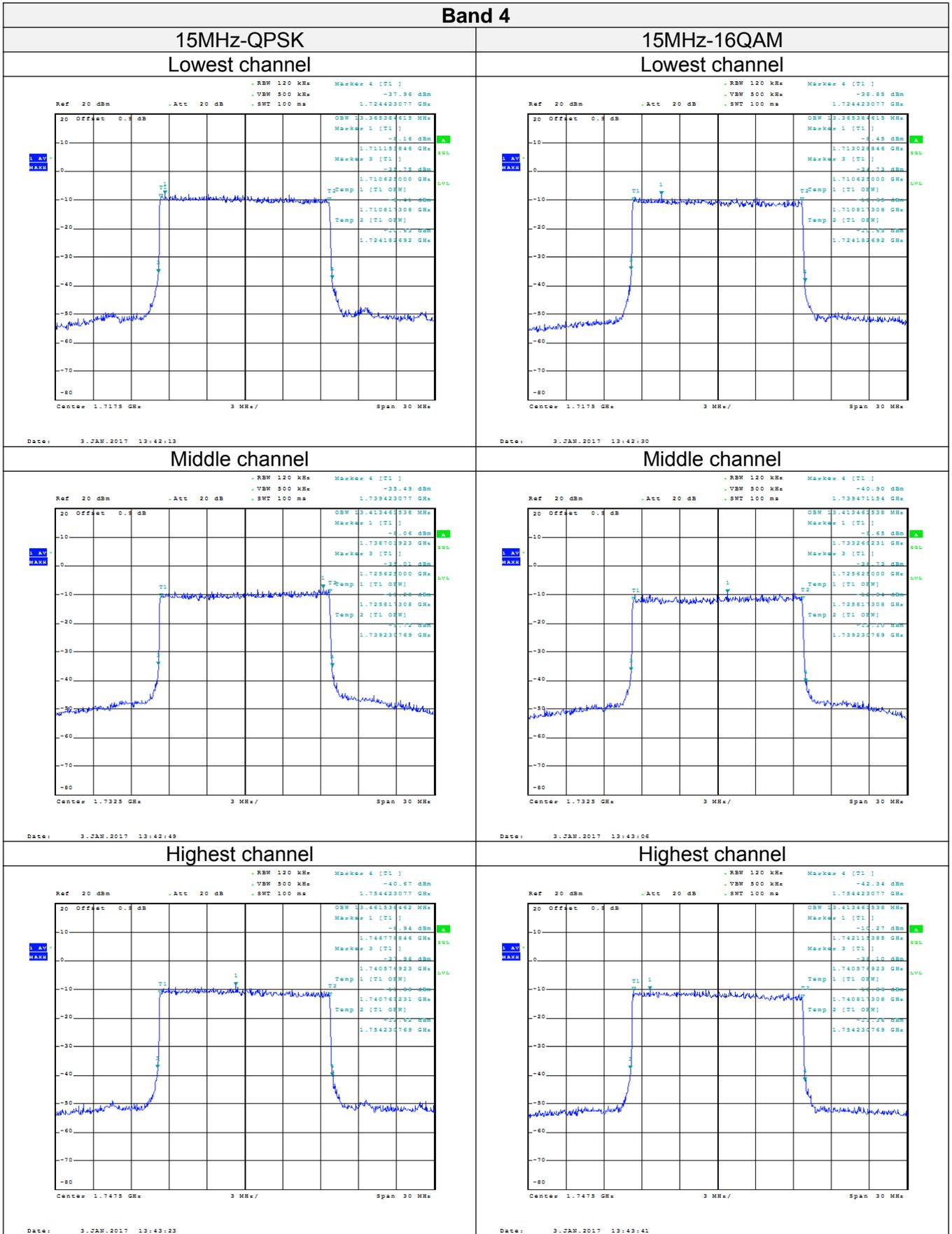


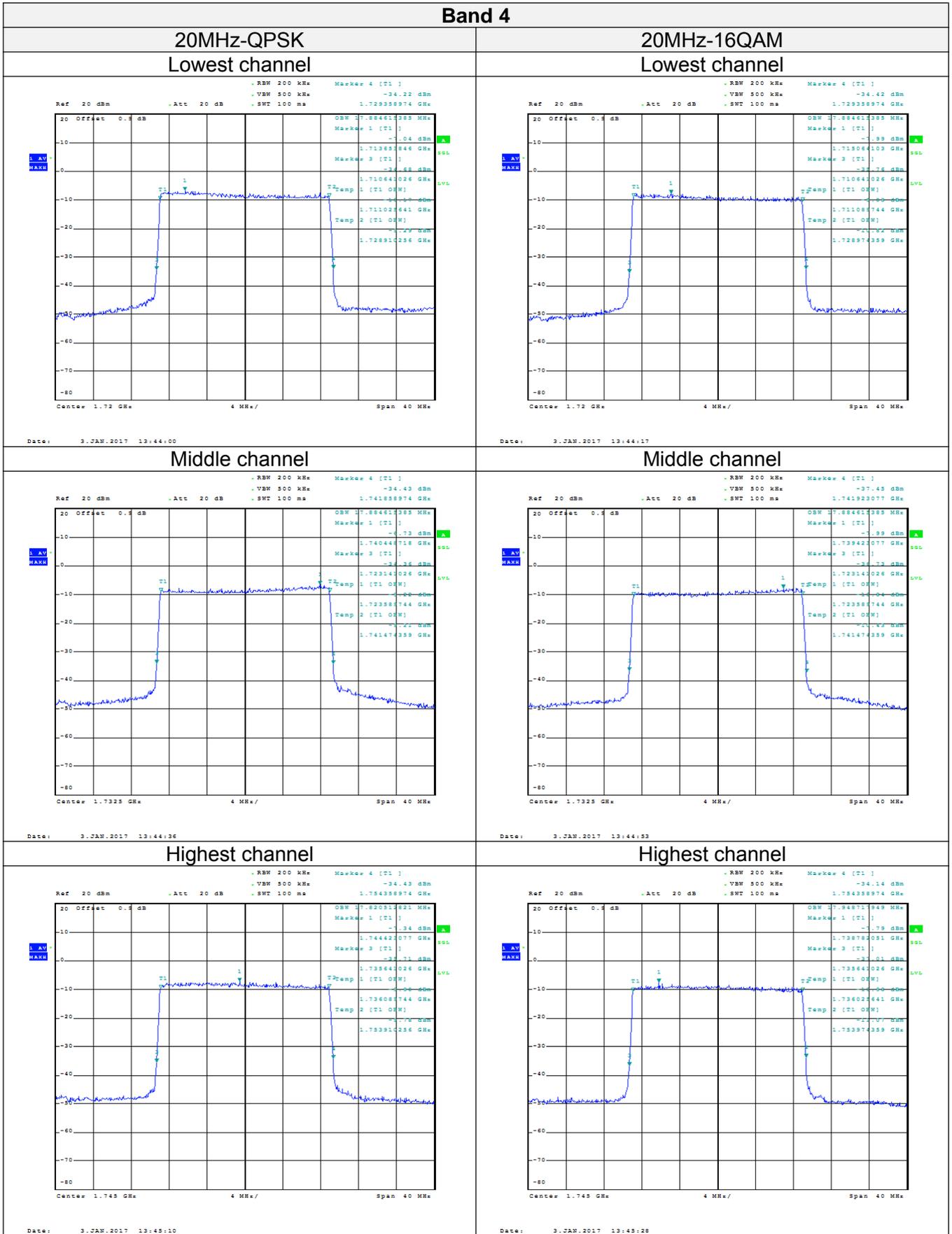






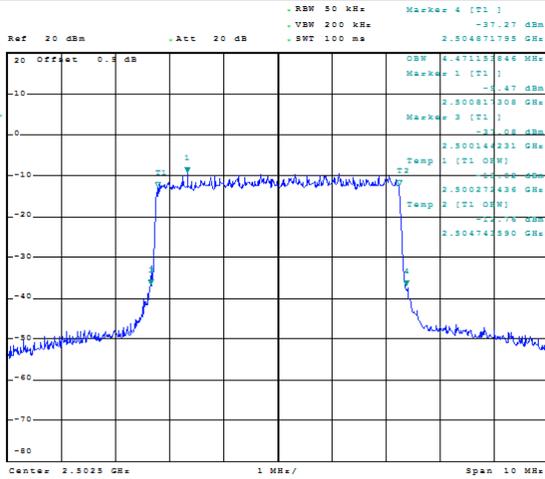




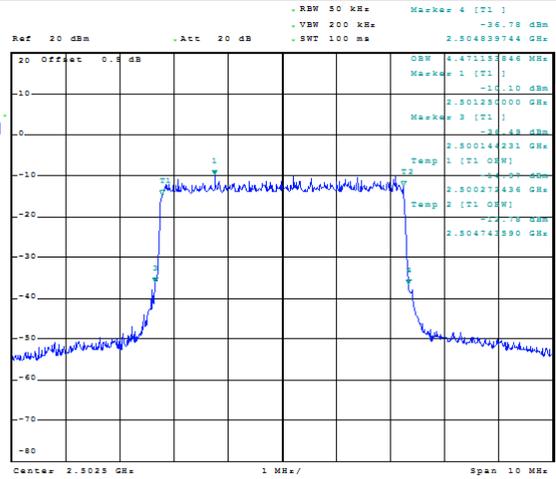


**Band 7**

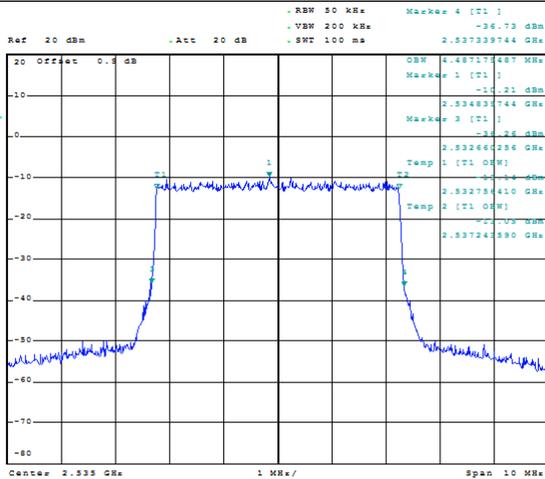
**5MHz-QPSK  
Lowest channel**



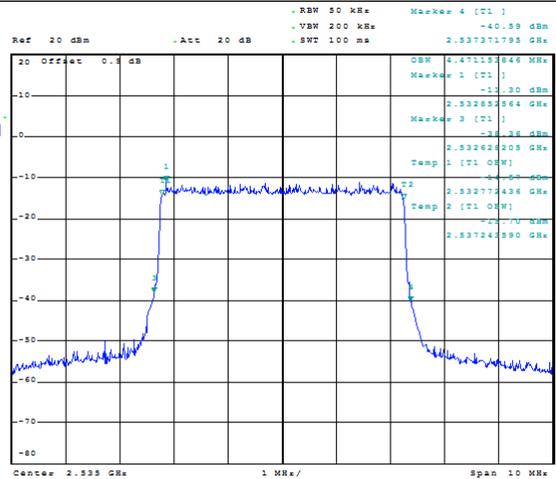
**5MHz-16QAM  
Lowest channel**



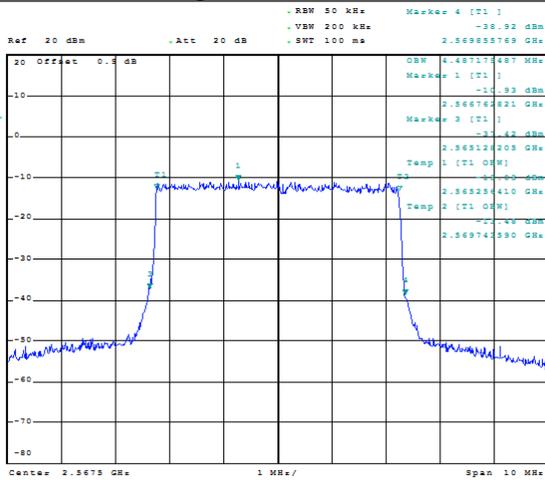
**Middle channel**



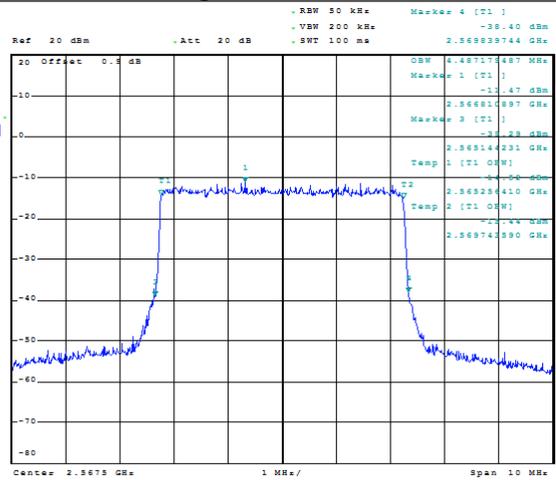
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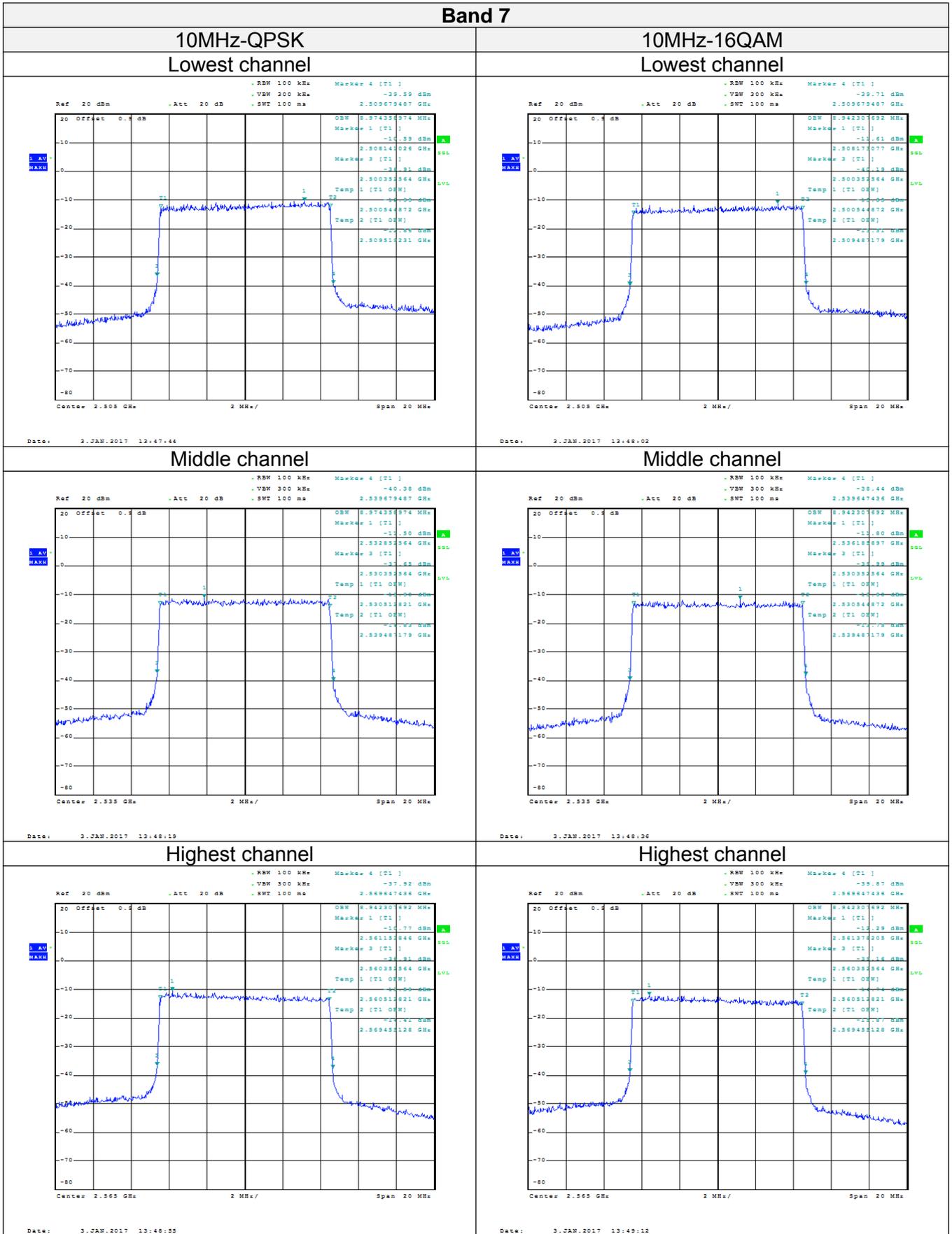


**Highest channel**



**Highest channel**

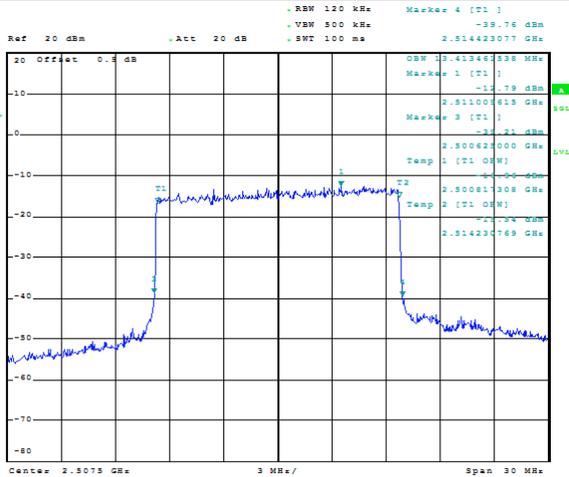




**Band 7**

**15MHz-QPSK**

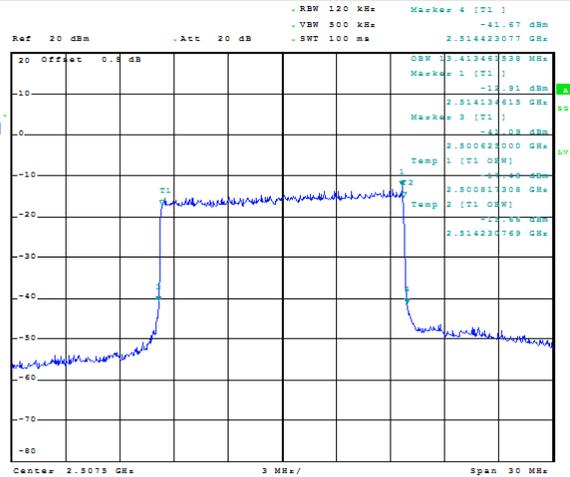
**Lowest channel**



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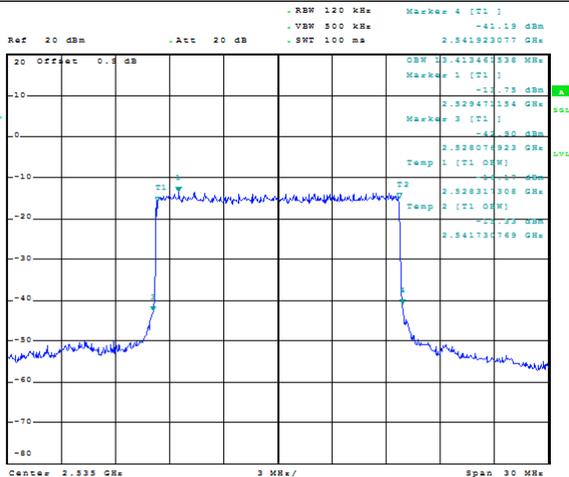
**15MHz-16QAM**

**Lowest channel**



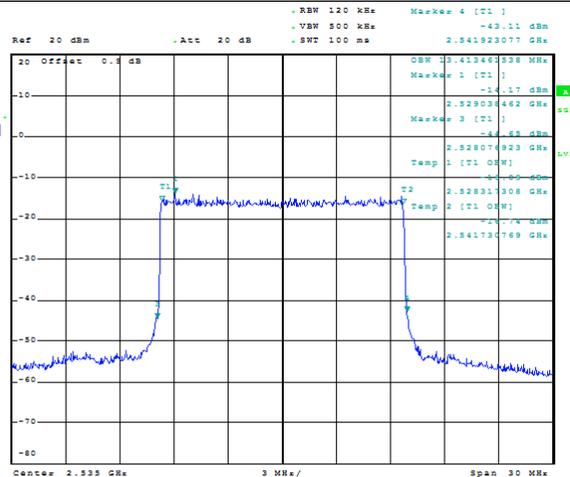
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**Middle channel**



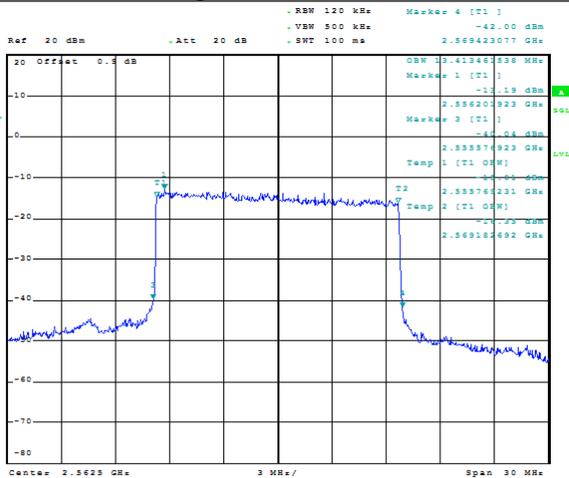
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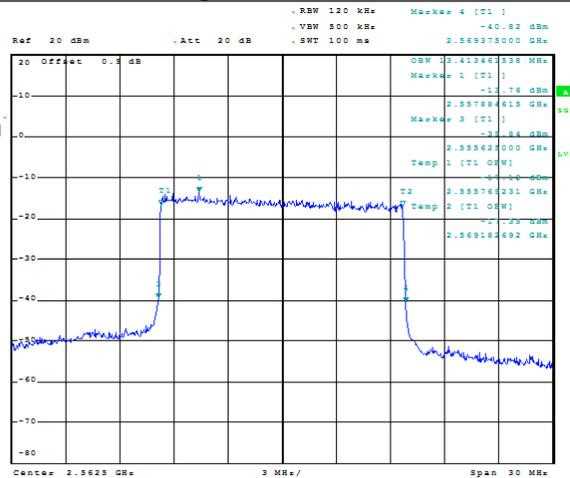
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**Highest channel**

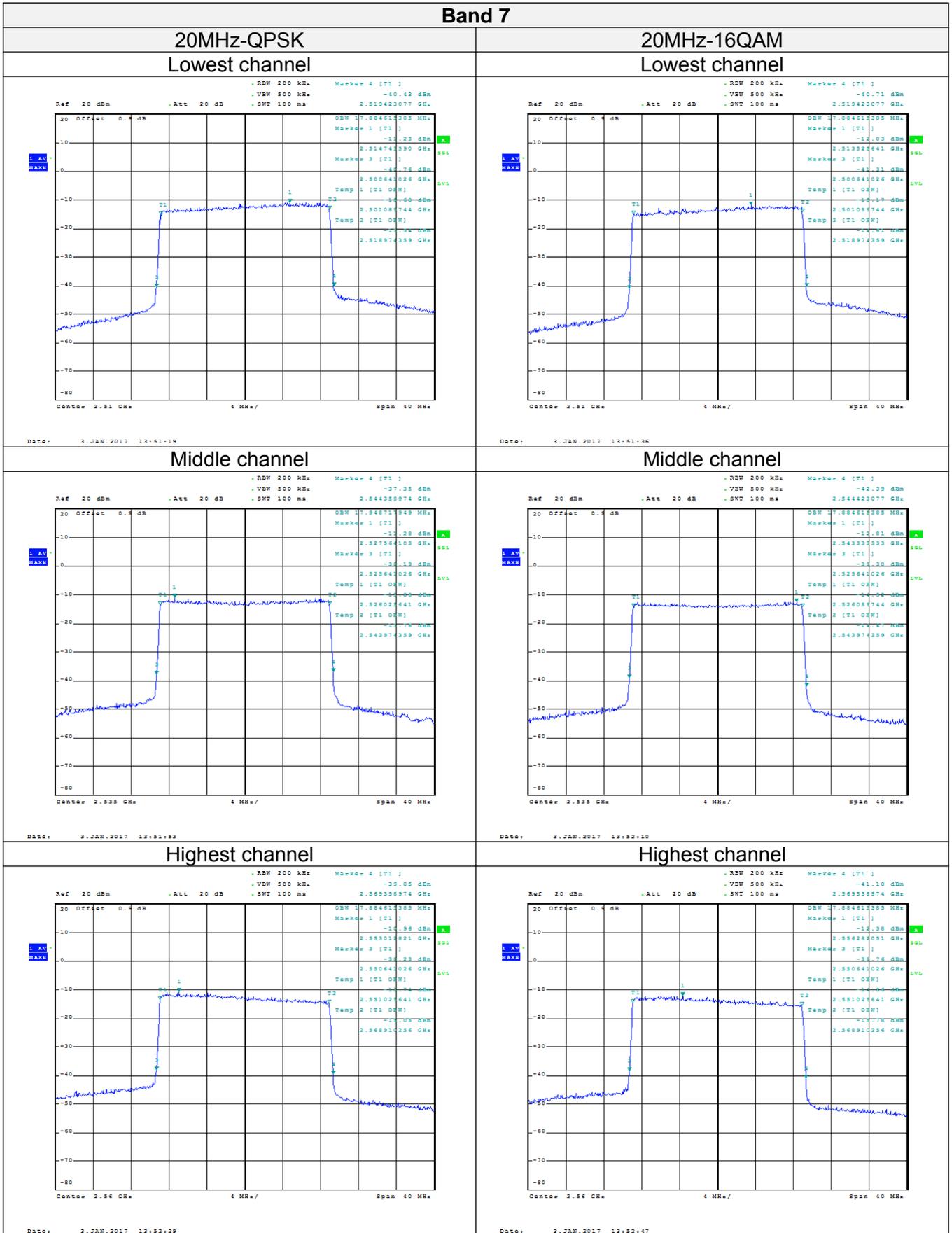


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**Highest channel**

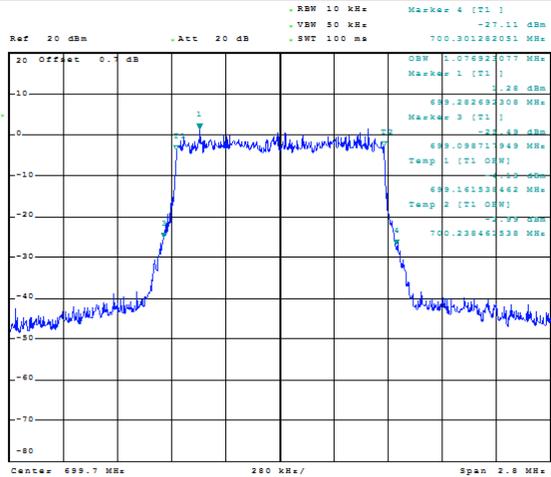


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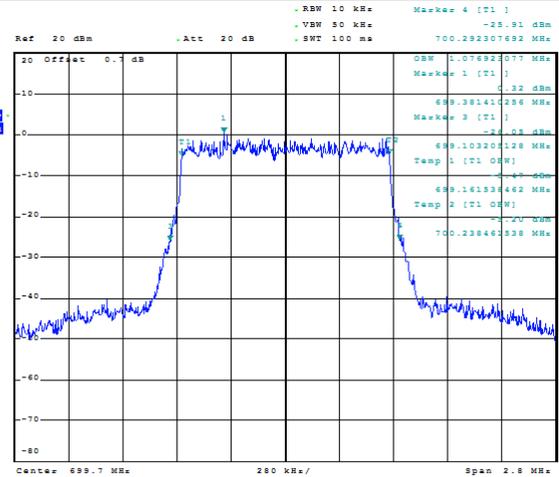


**Band 12**

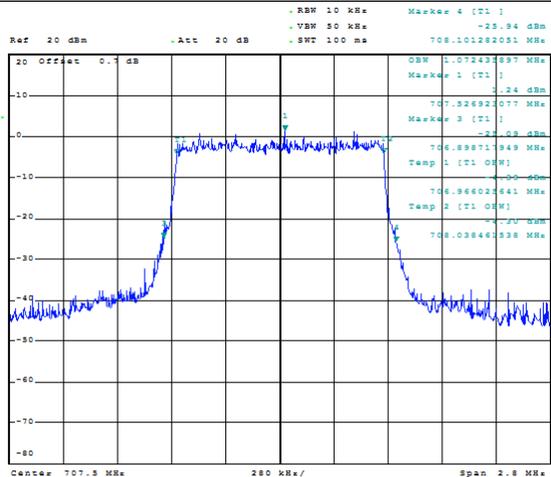
**1.4MHz-QPSK  
Lowest channel**



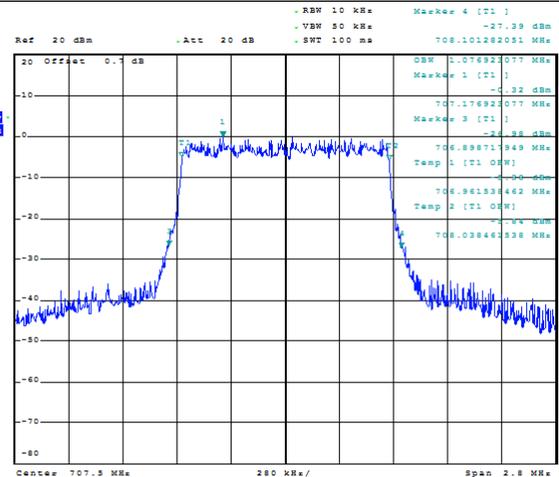
**1.4MHz-16QAM  
Lowest channel**



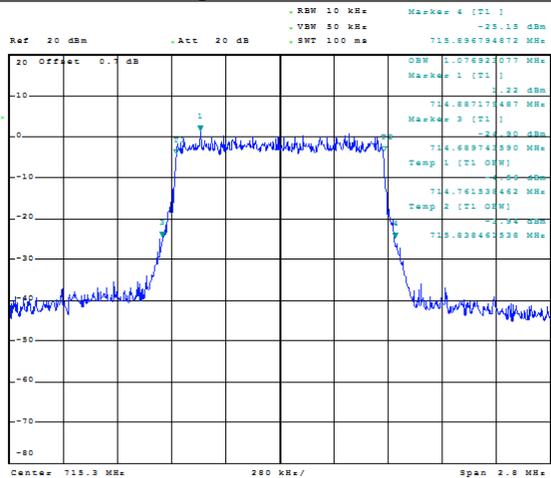
**Middle channel**



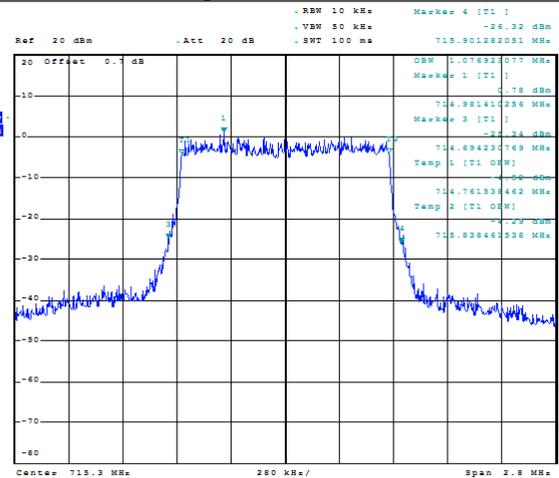
**Middle channel**

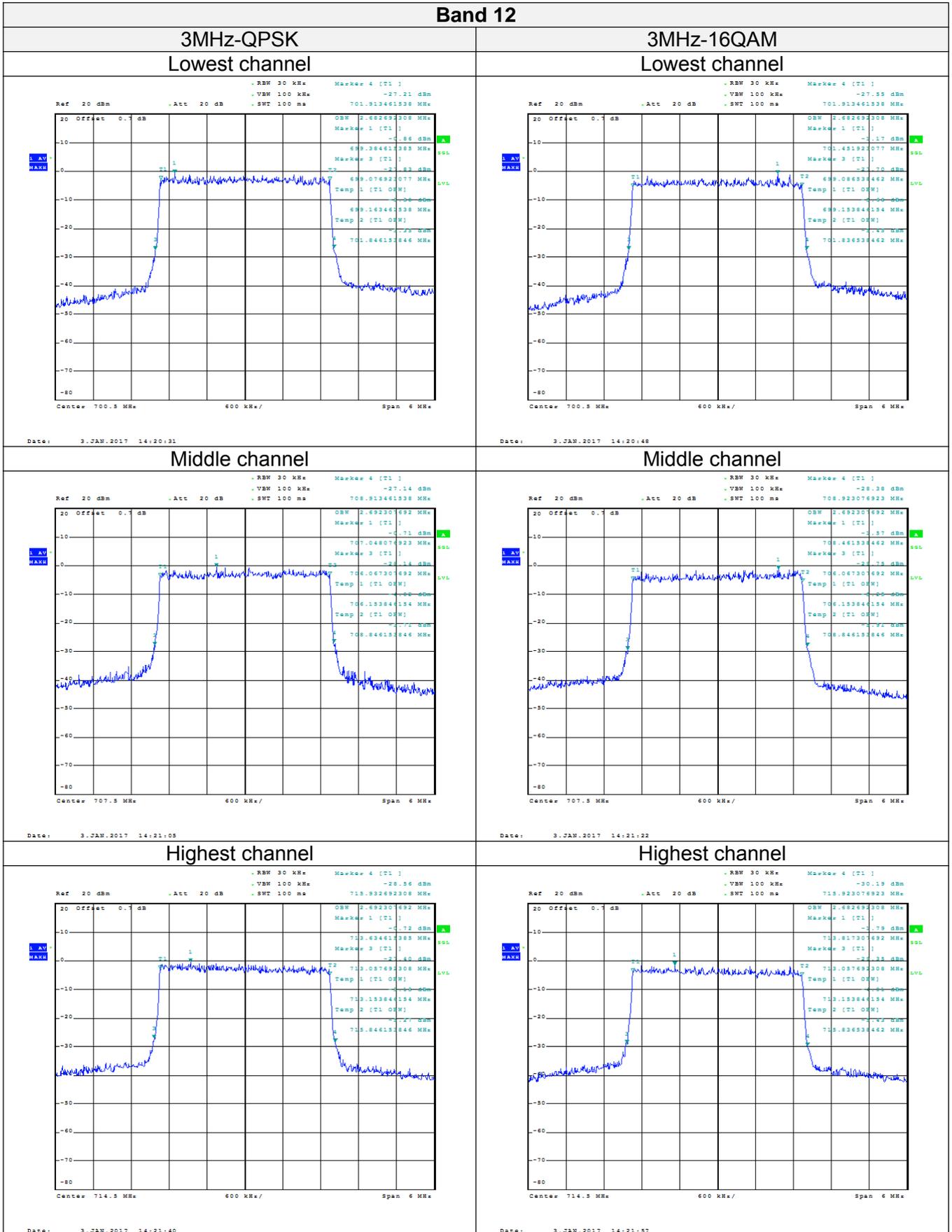


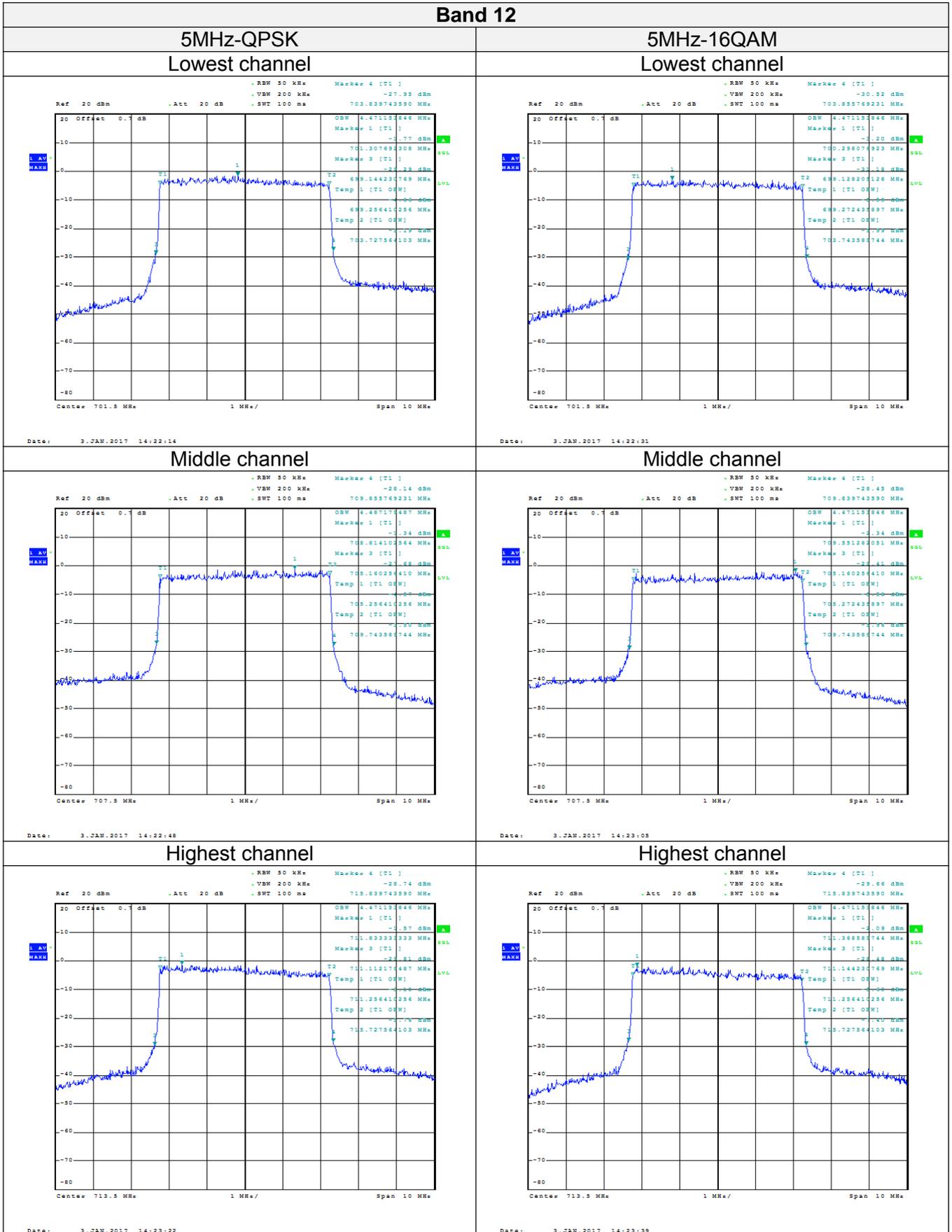
**Highest channel**

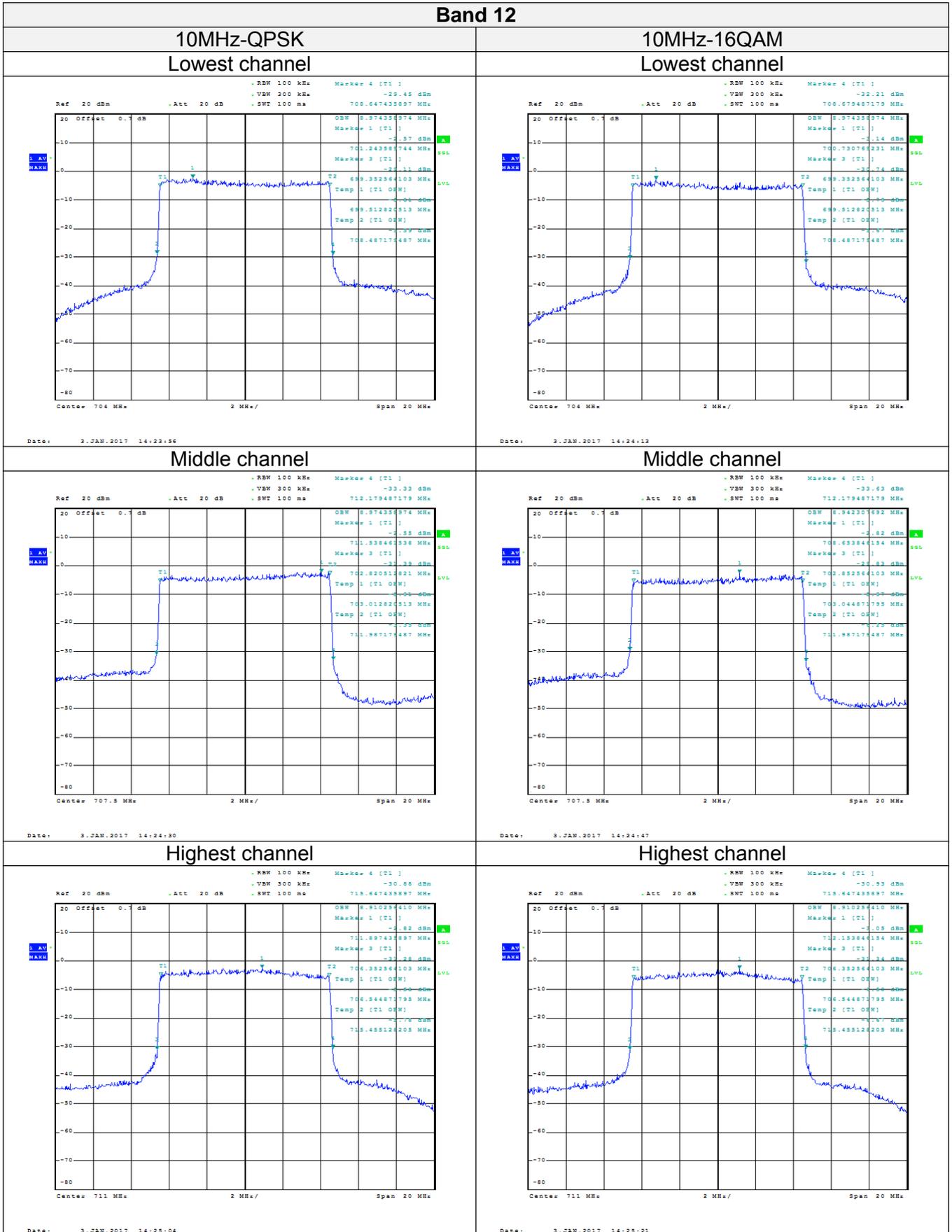


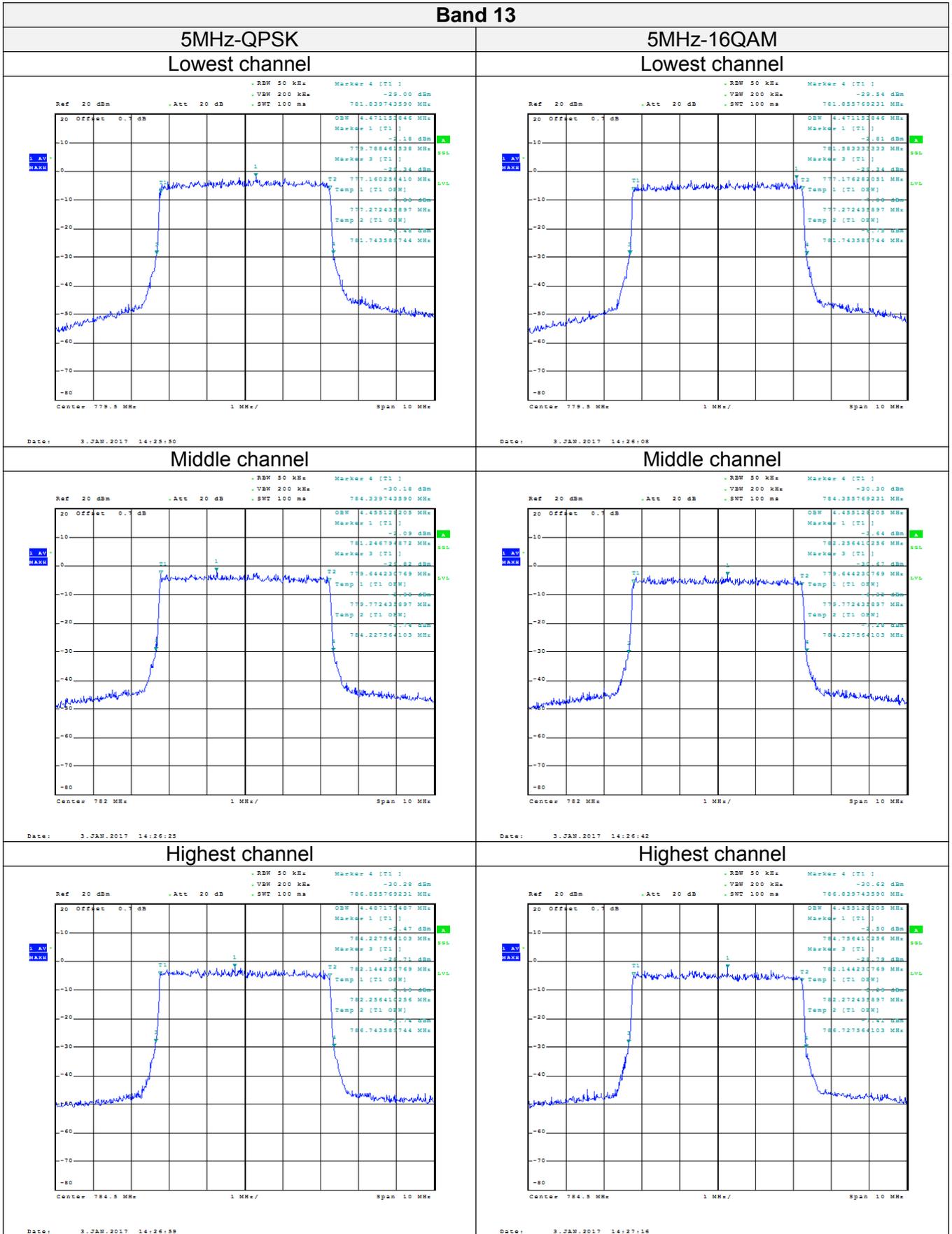
**Highest channel**

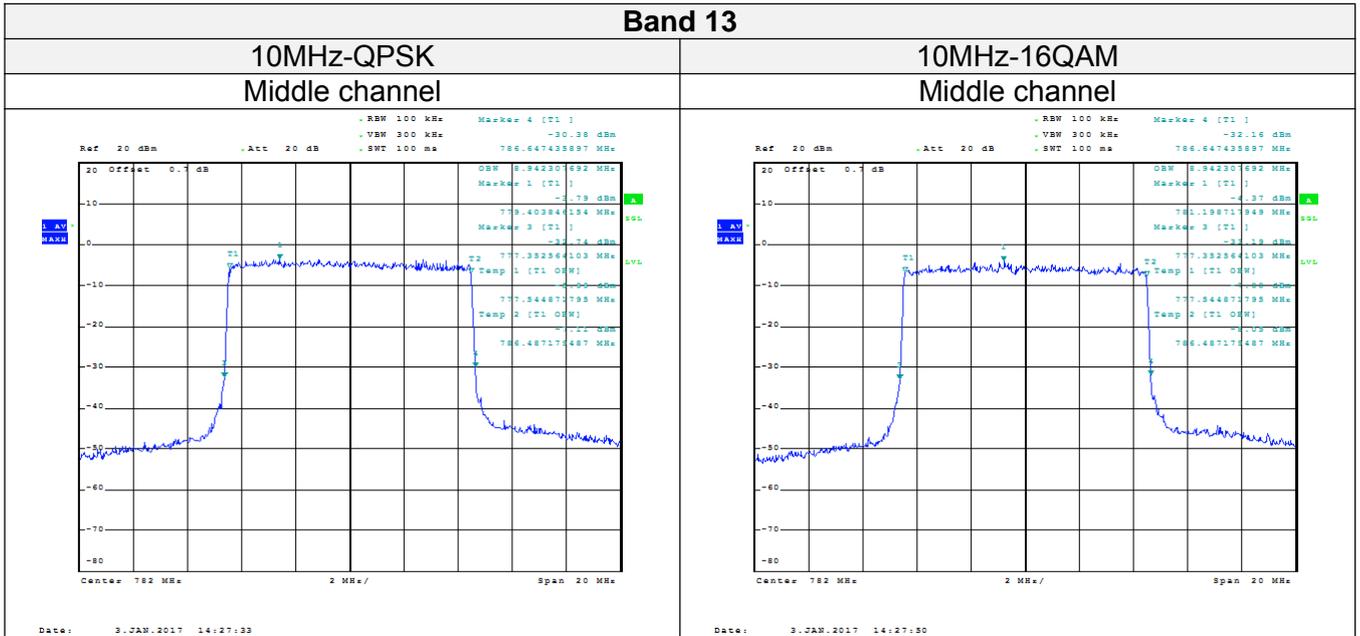












### 3.3. Out of band emission at antenna terminals

#### LIMIT

**FDD Band 2:** 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.

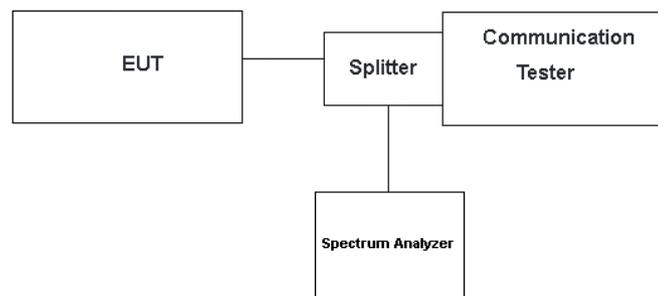
**FDD Band 4:** The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  dB.

**FDD Band 7:** 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.

**FDD Band 12:** the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB.

**FDD Band 13:** The power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB.

#### TEST CONFIGURATION

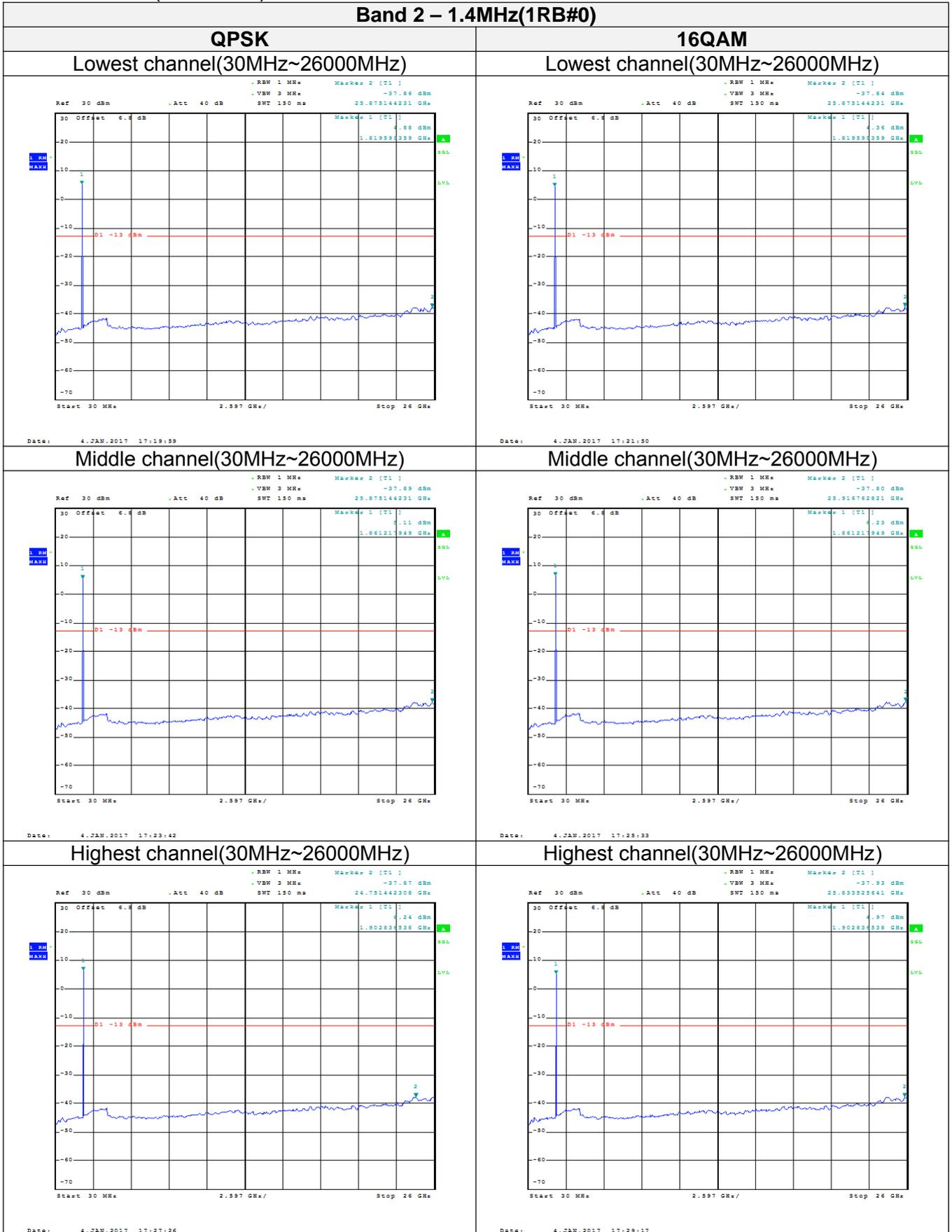


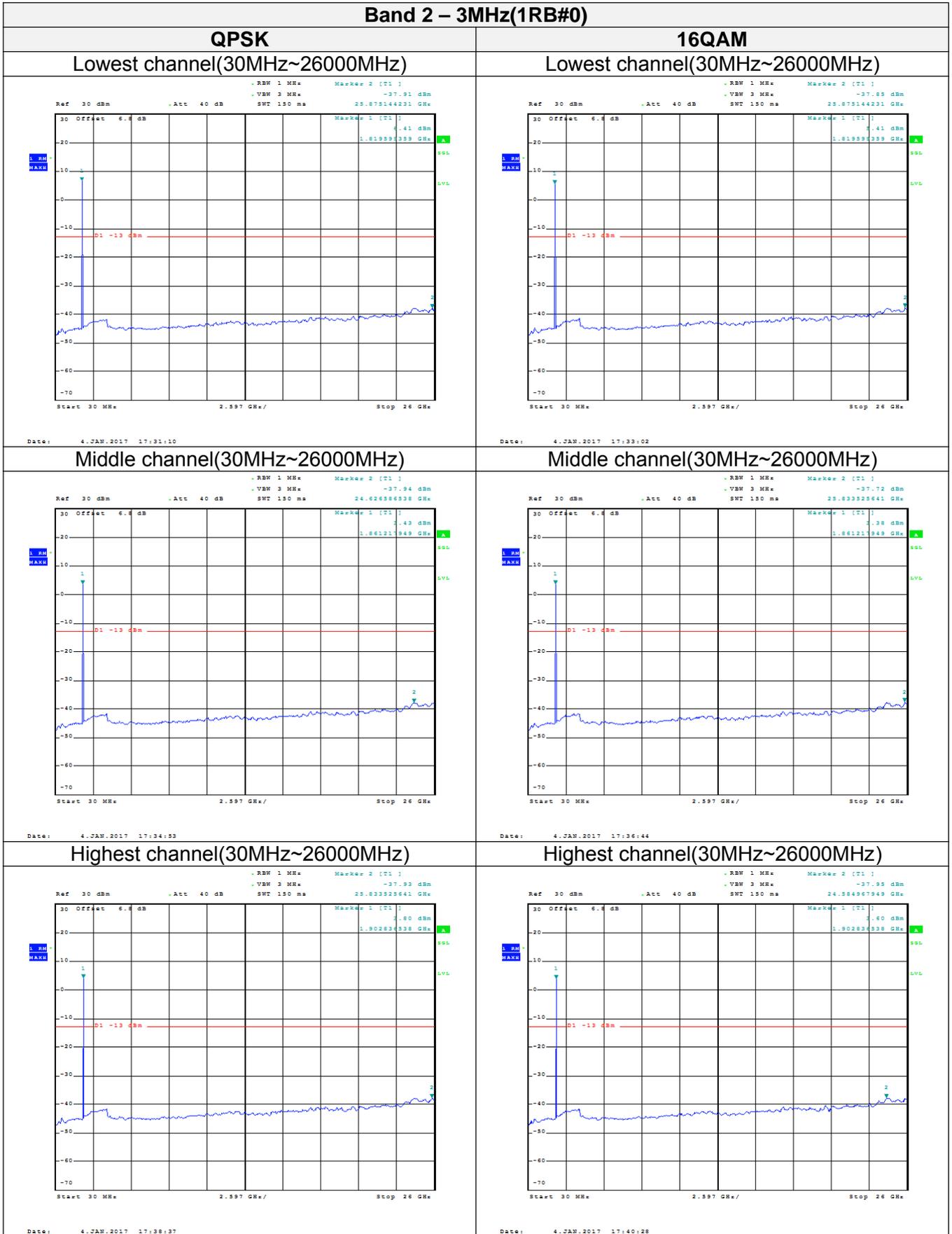
#### TEST PROCEDURE

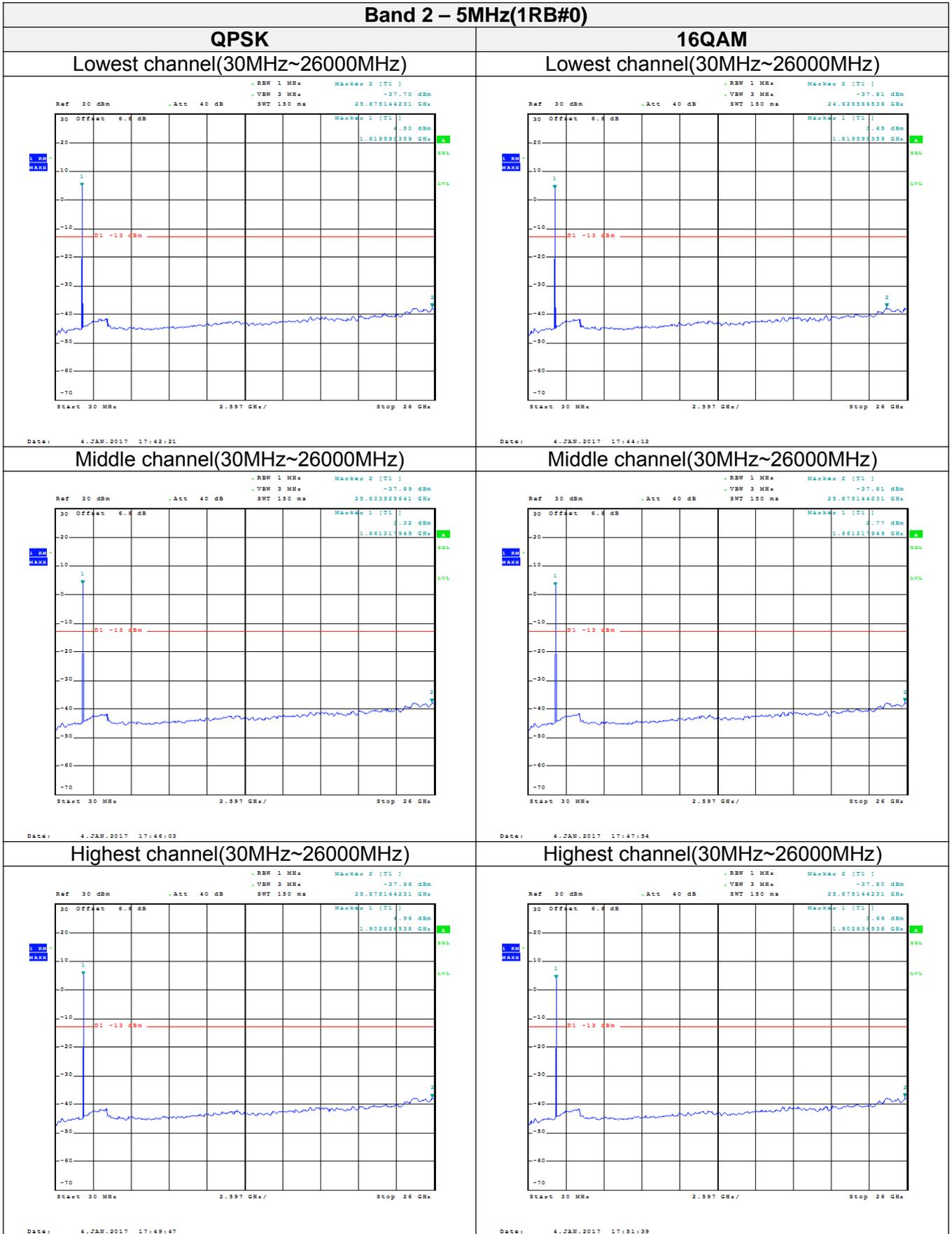
1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set at 1MHz; sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.
3. For the out of band: Set the RBW = 1MHz VBW  $\geq 3$  times RBW, Start=30MHz, Stop= 10th harmonic.

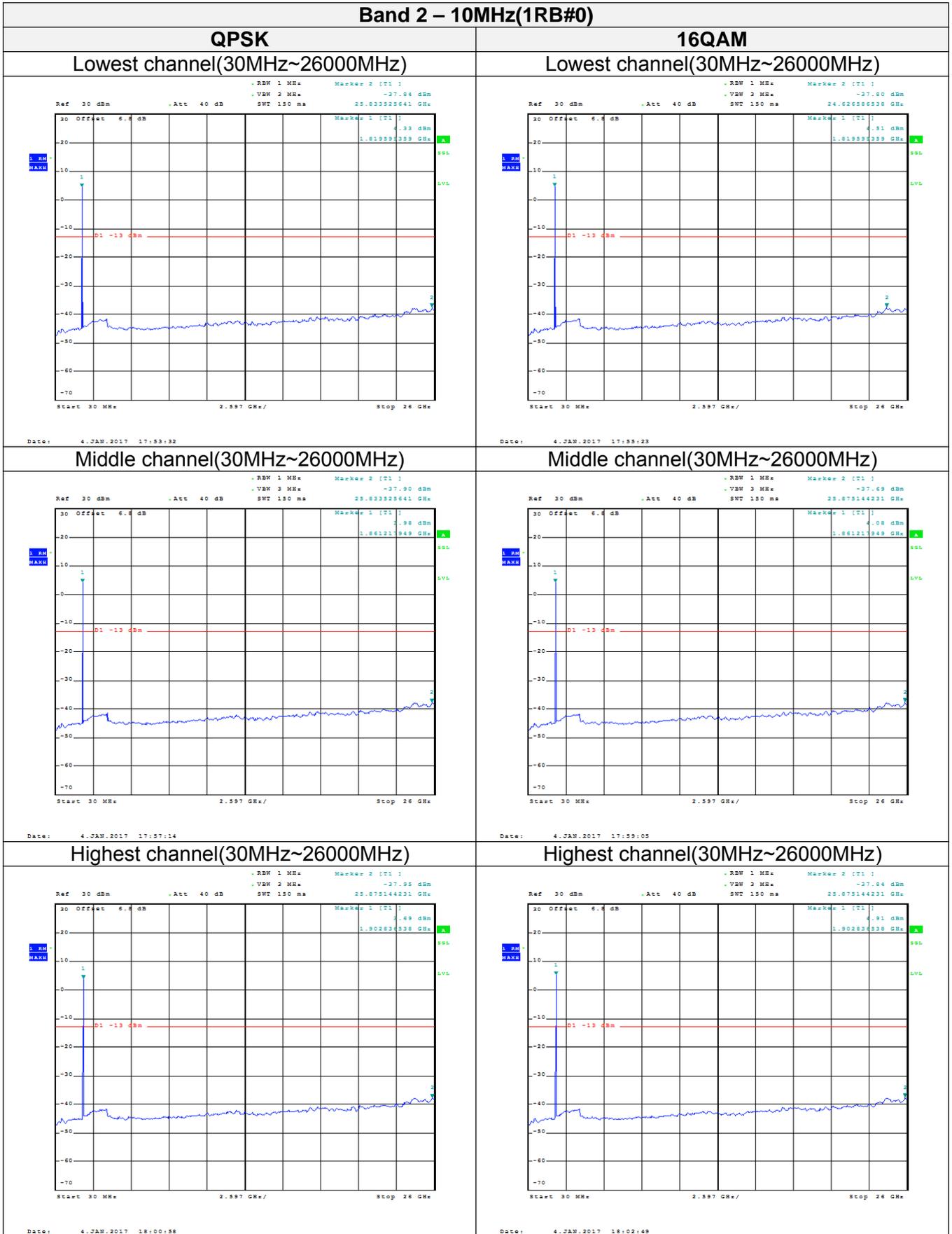
**TEST RESULTS**

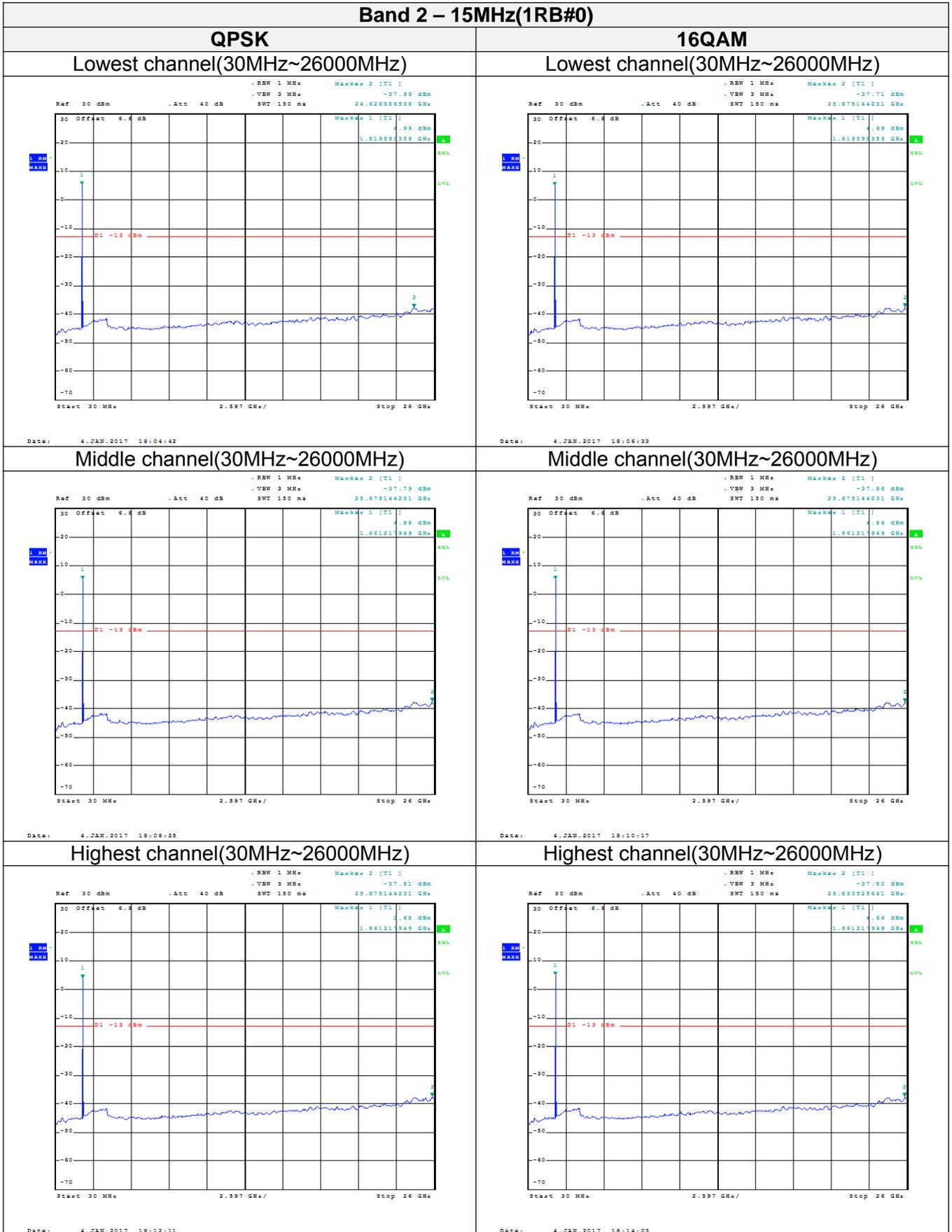
Measured data (worst case):

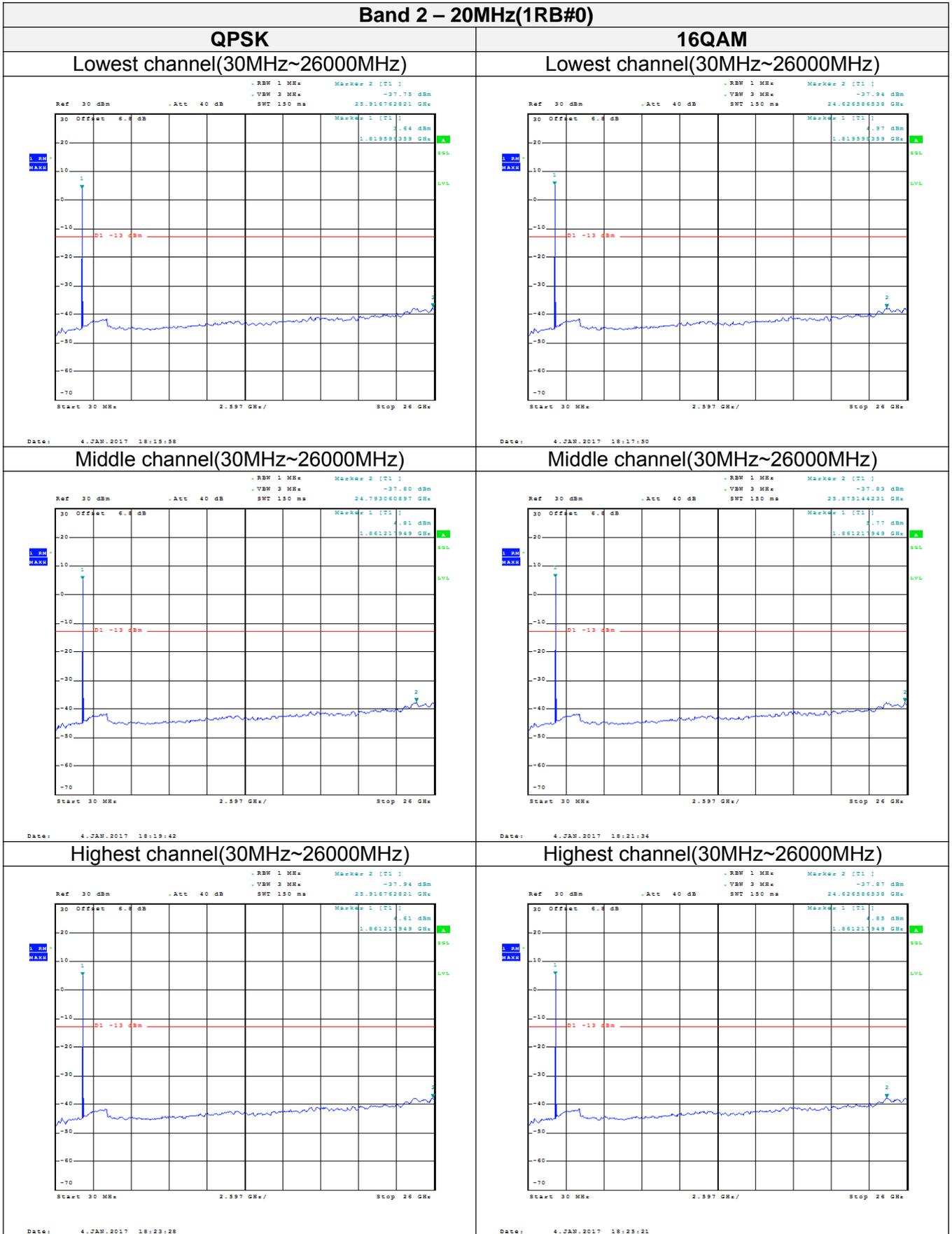


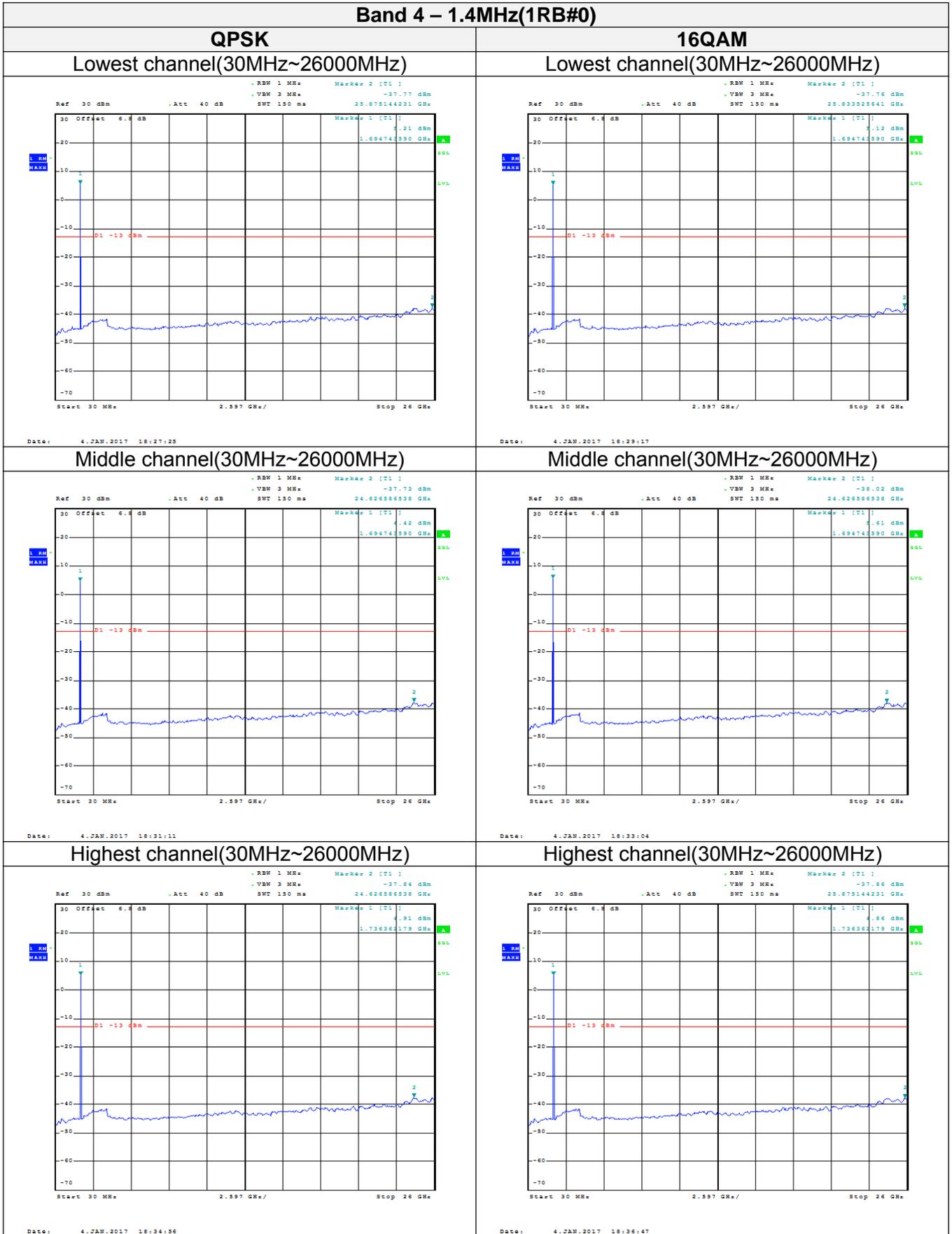


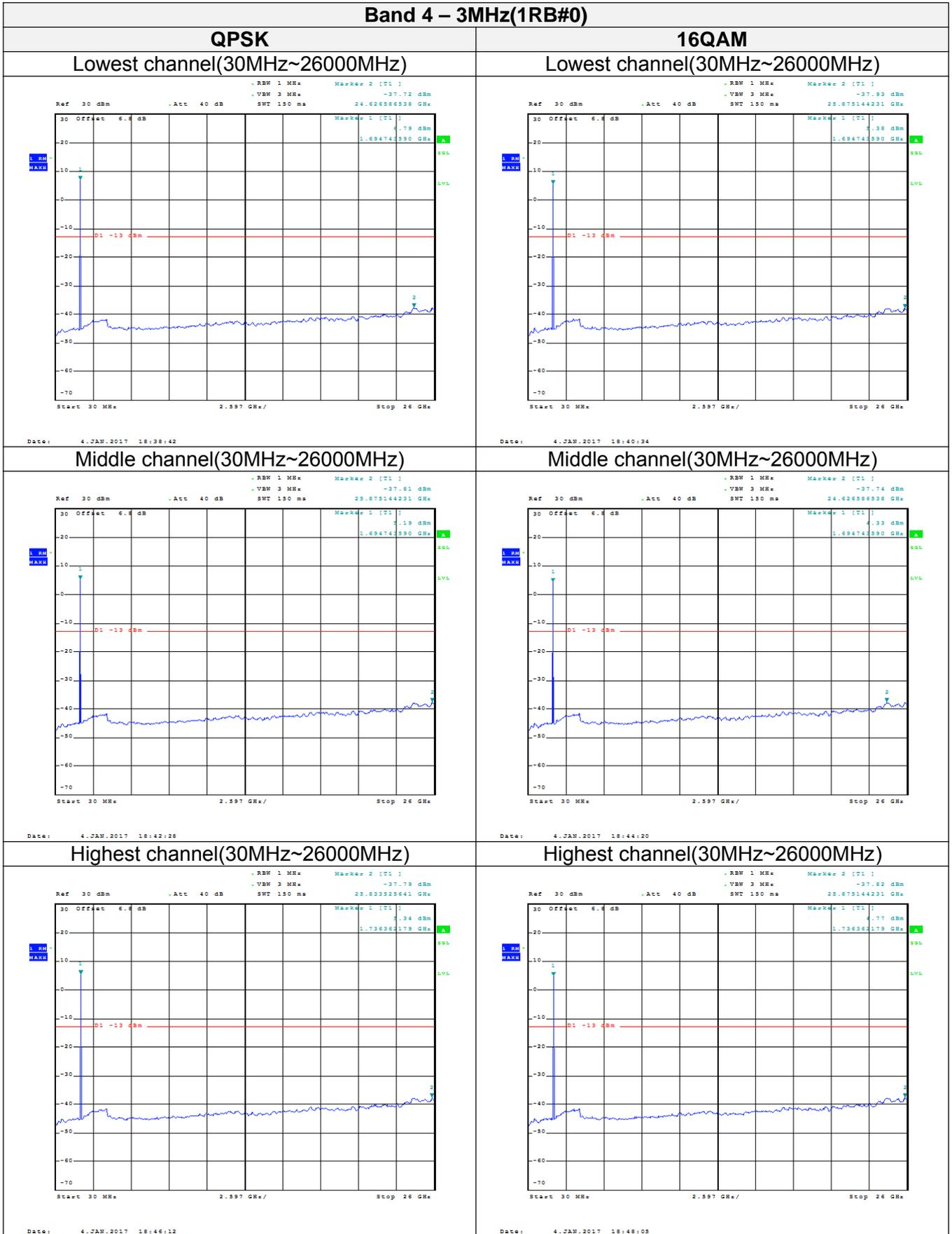


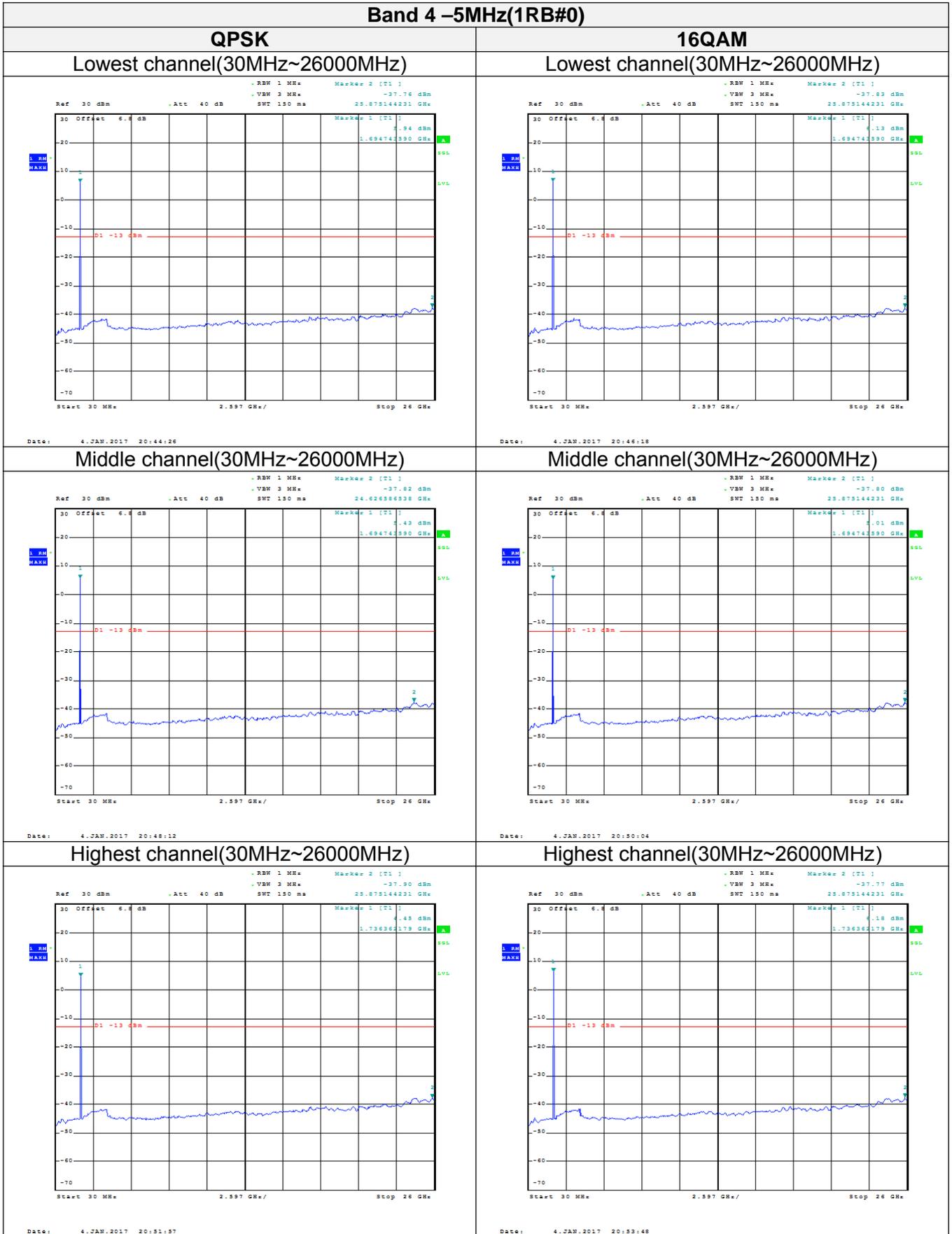


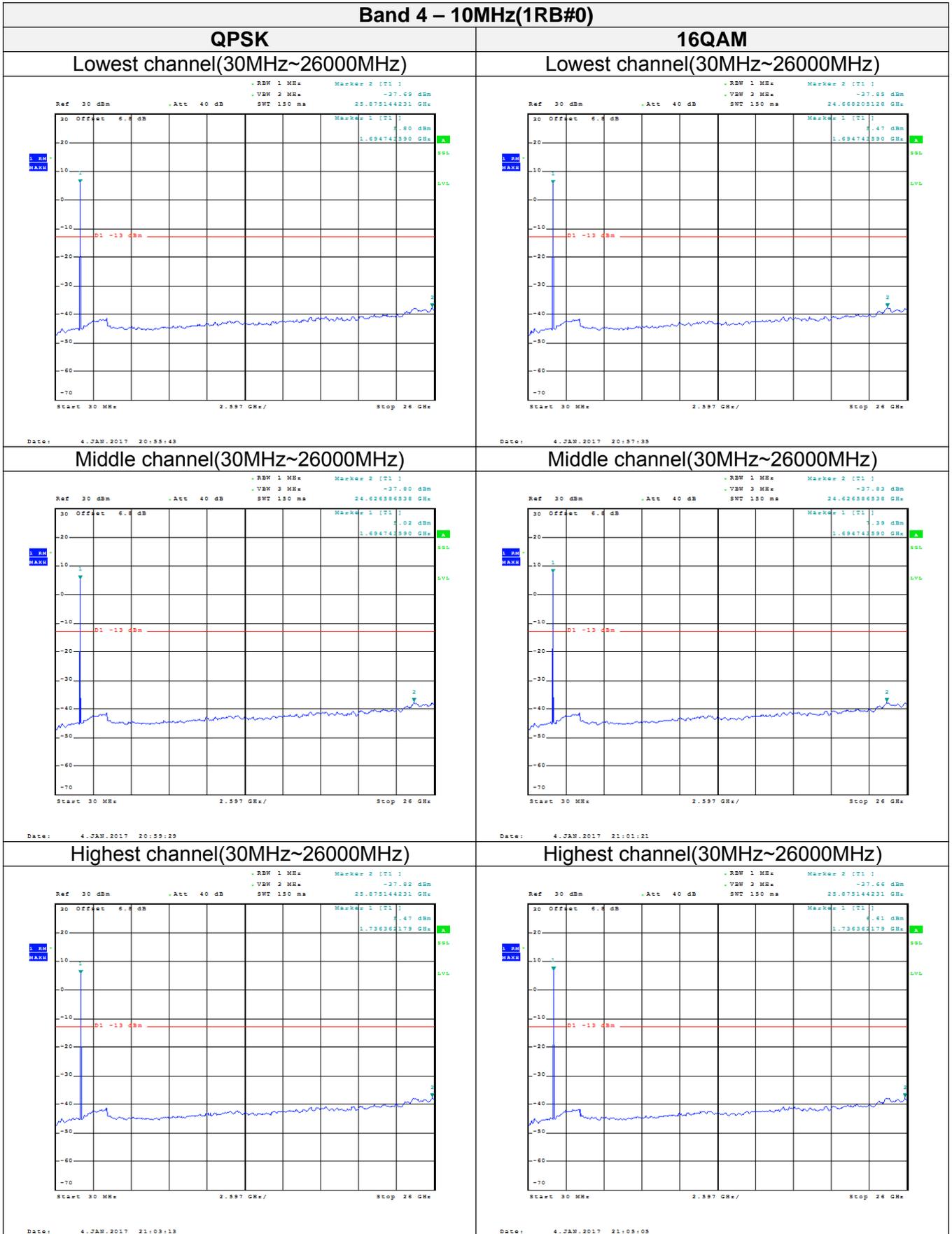


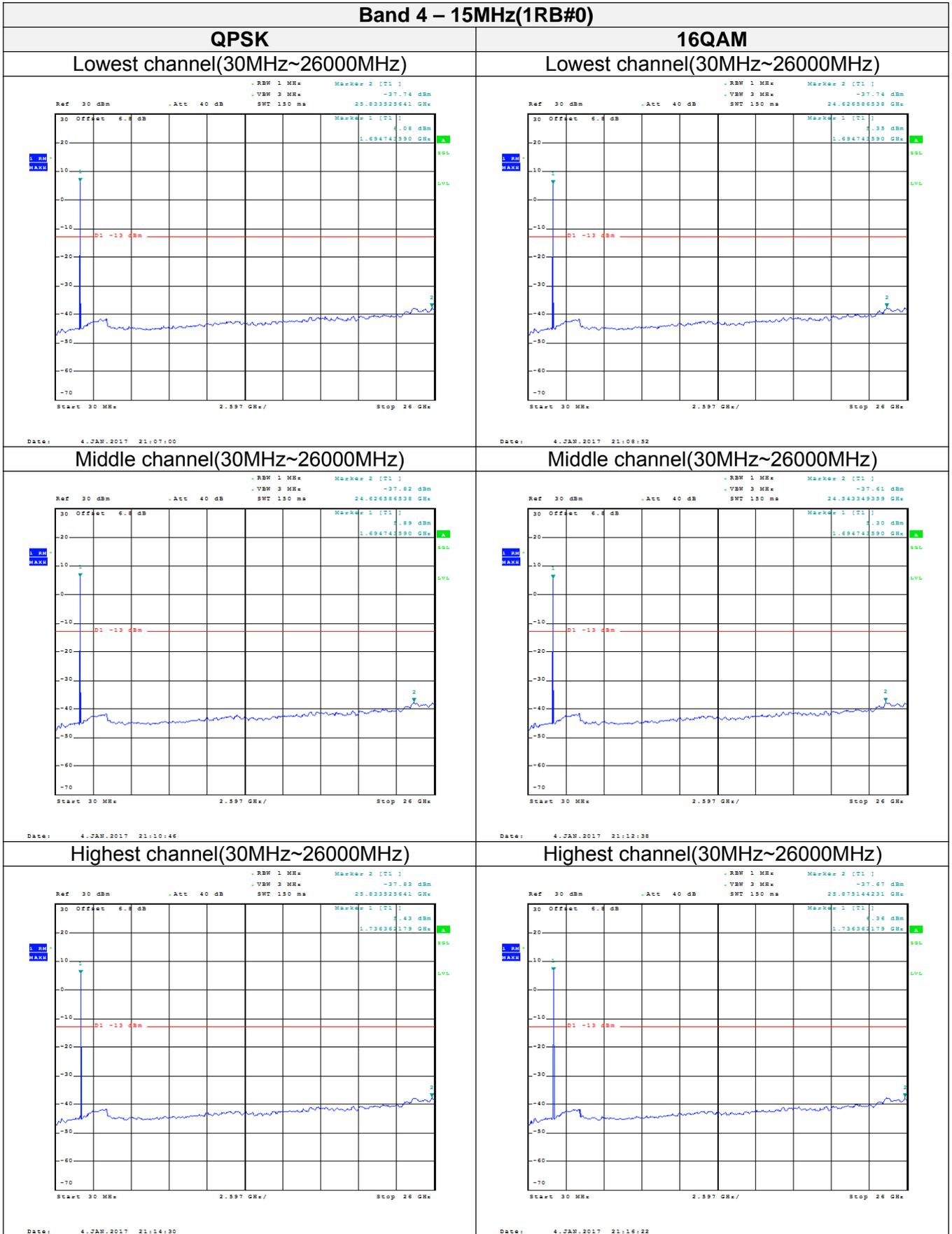


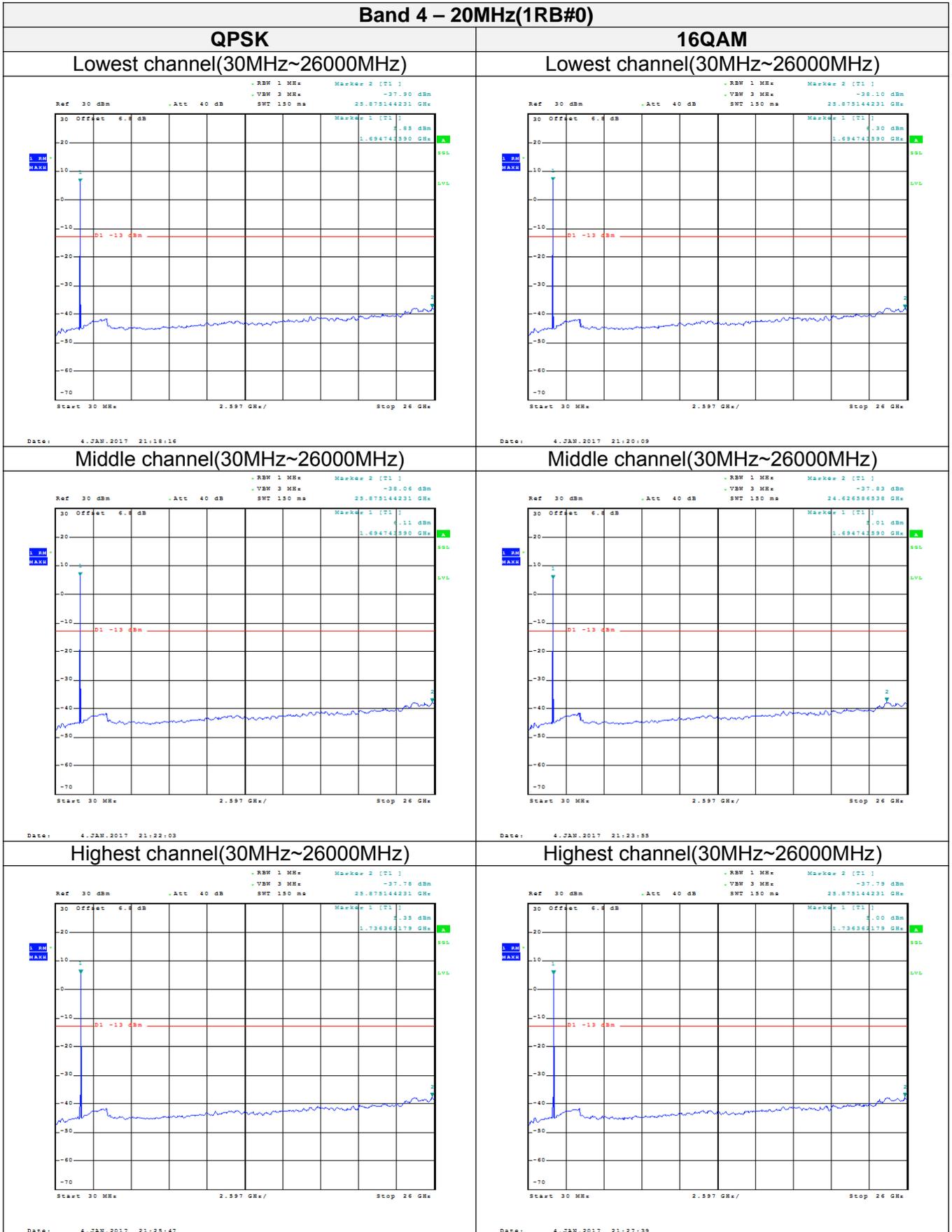


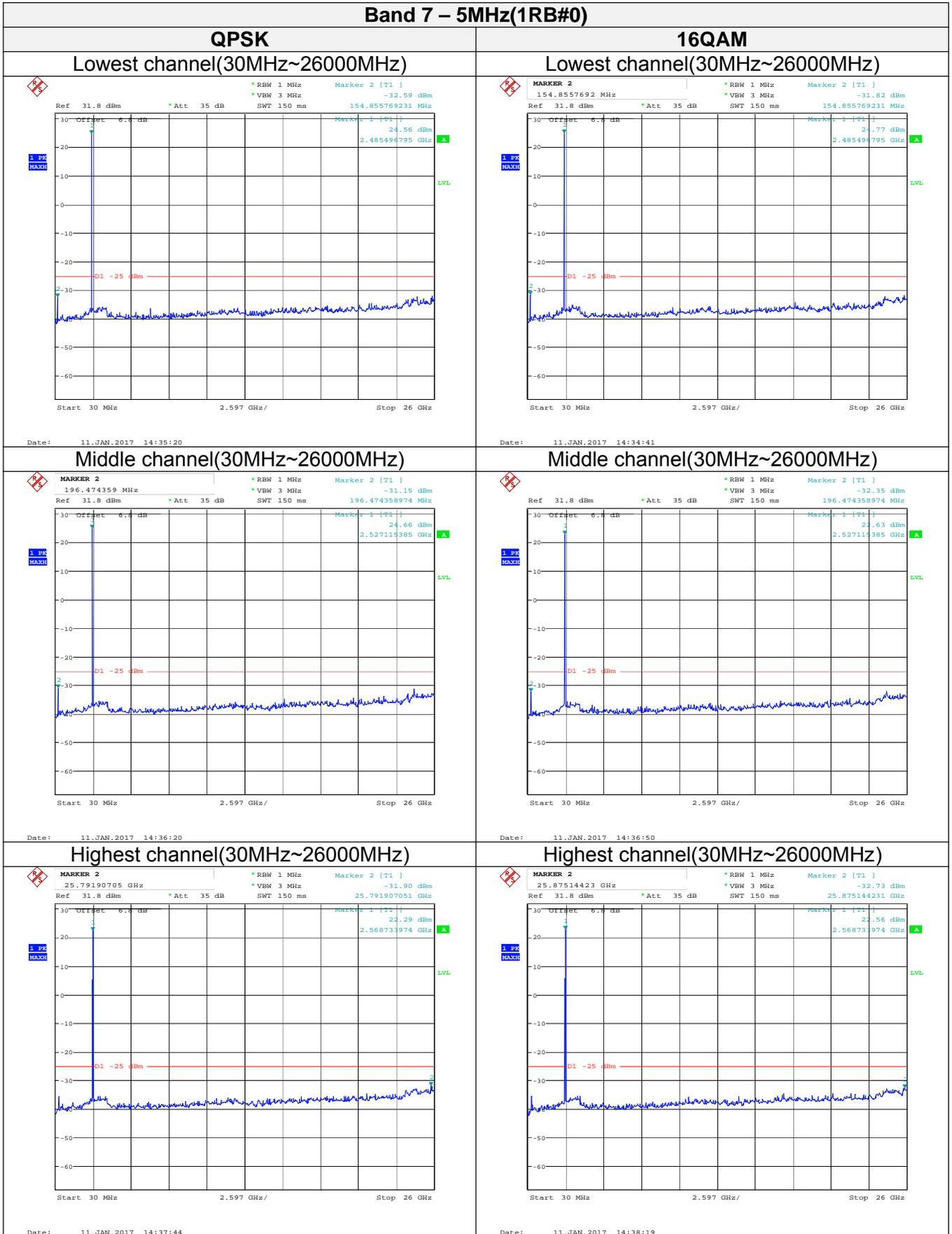


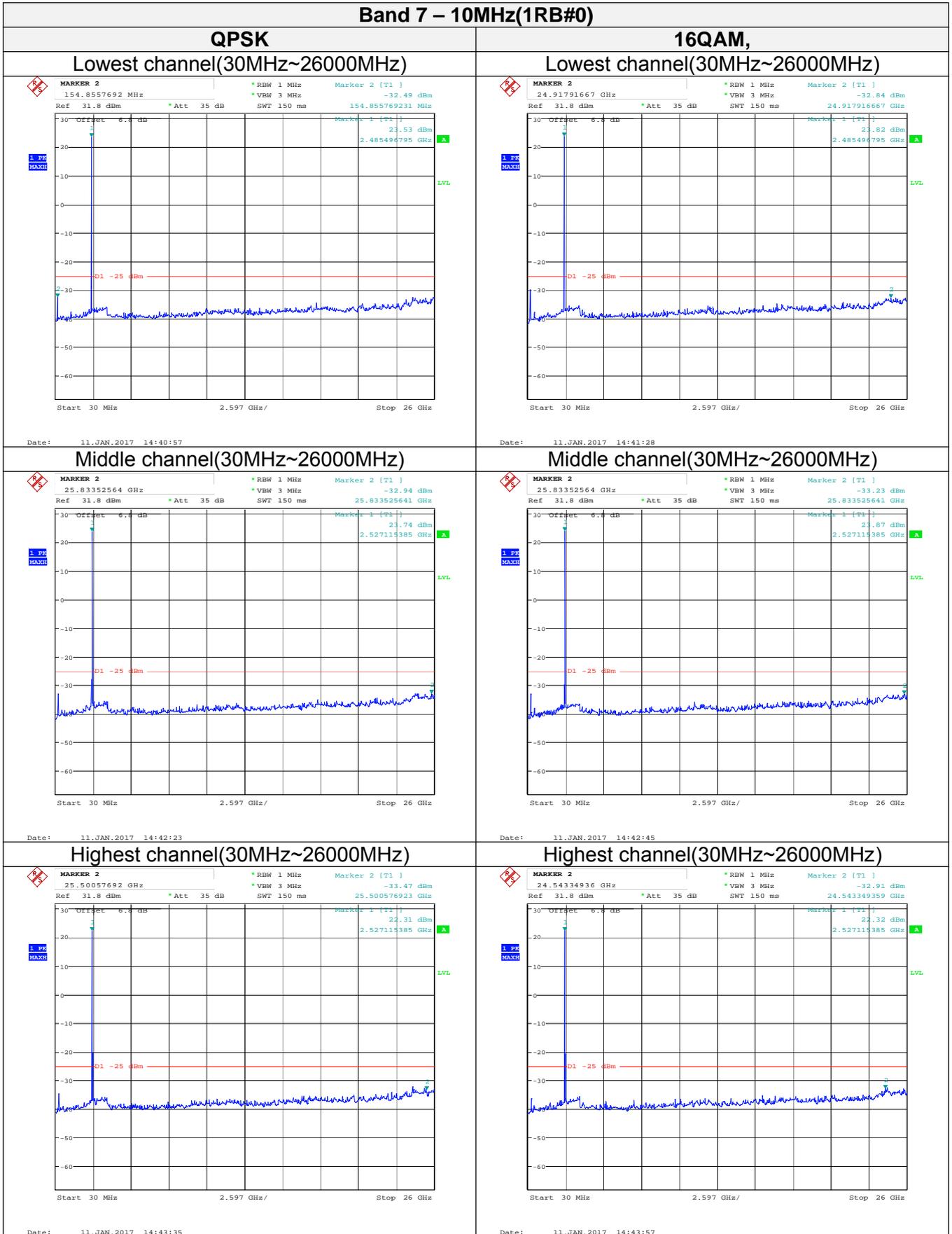


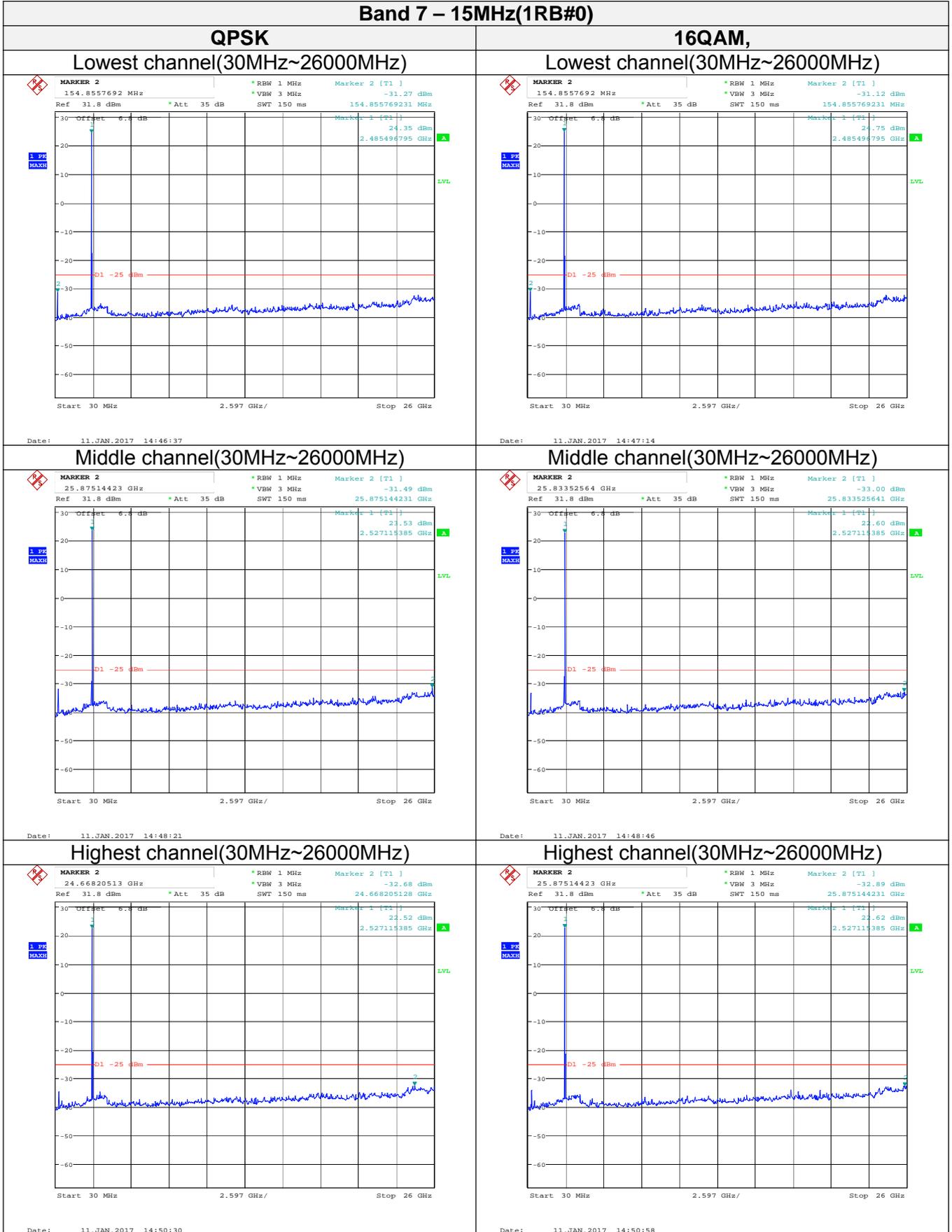


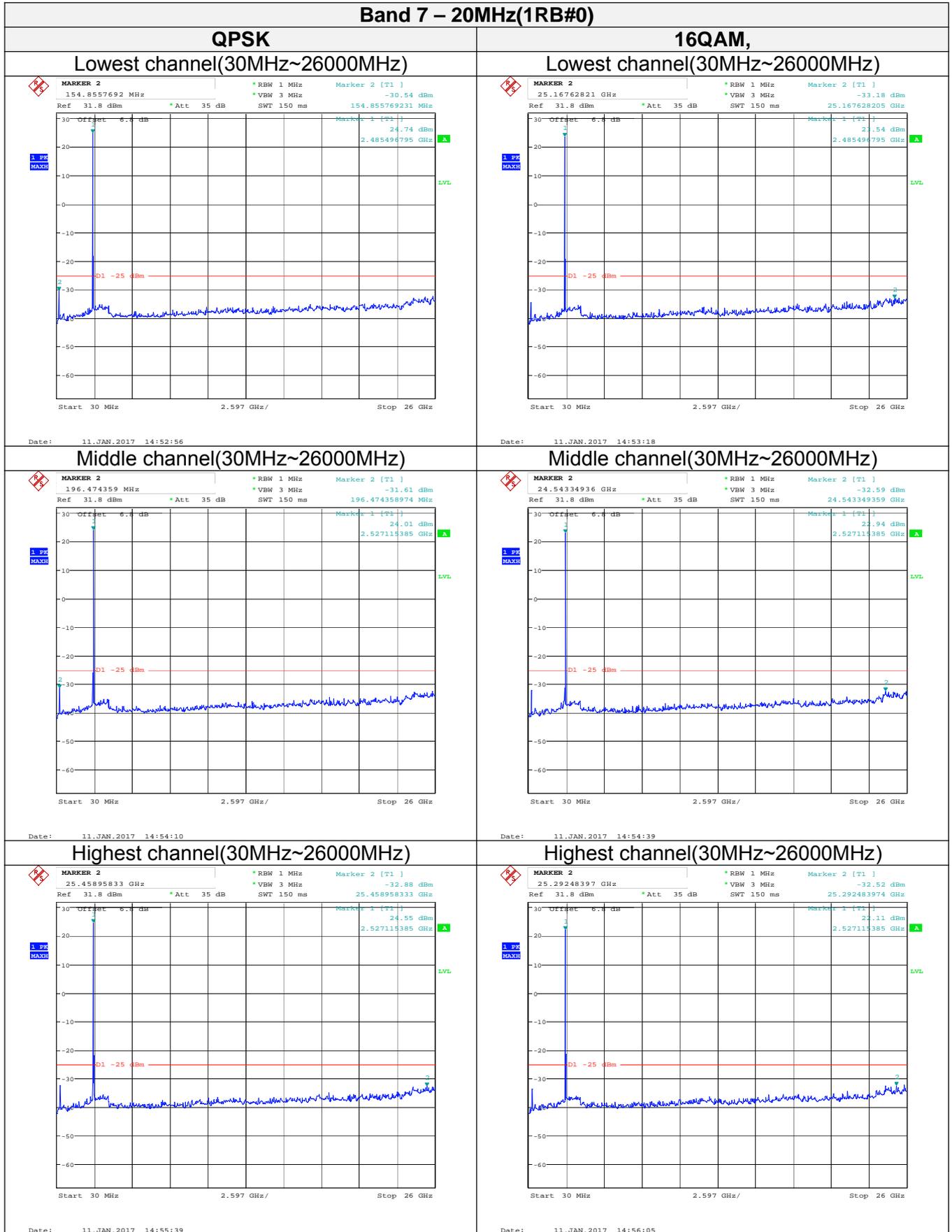


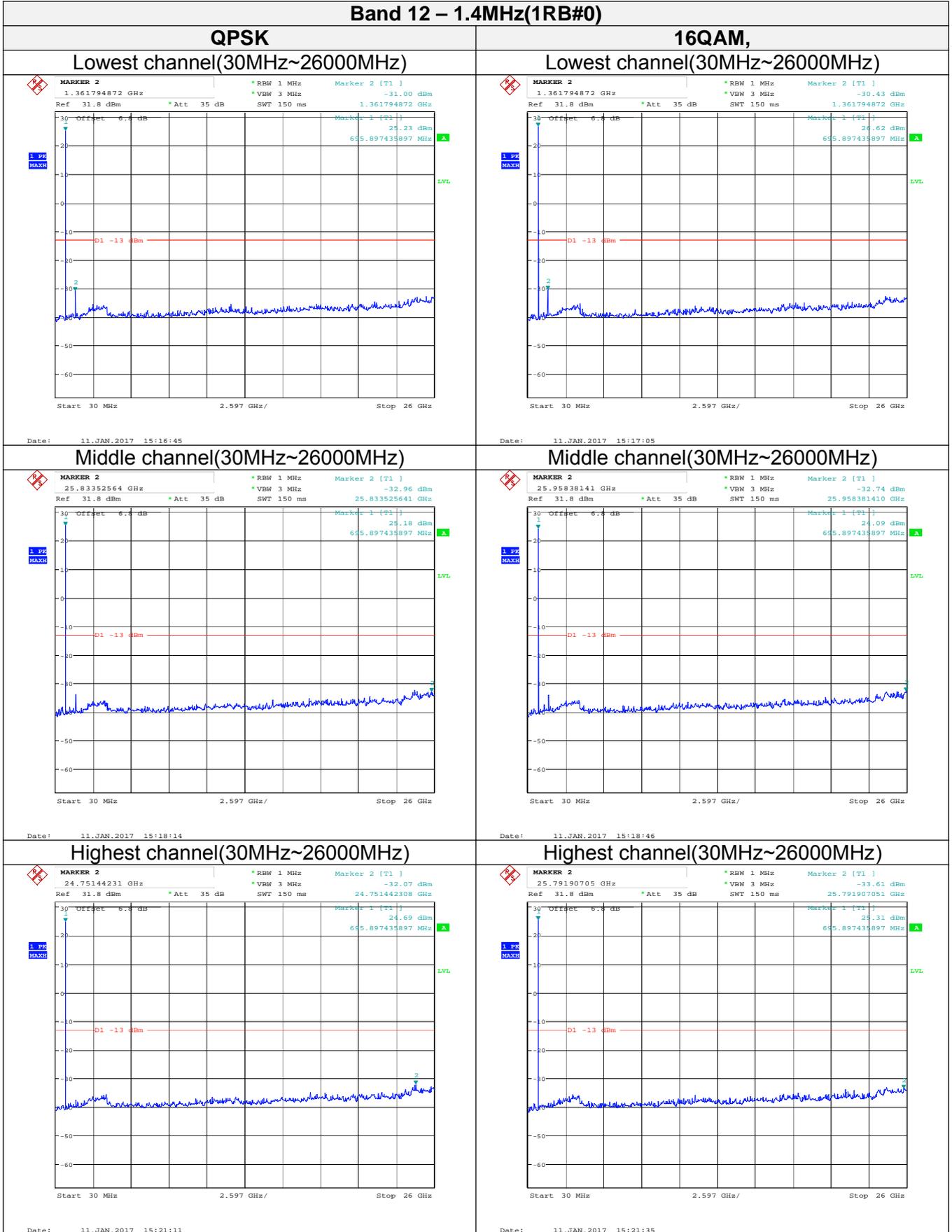


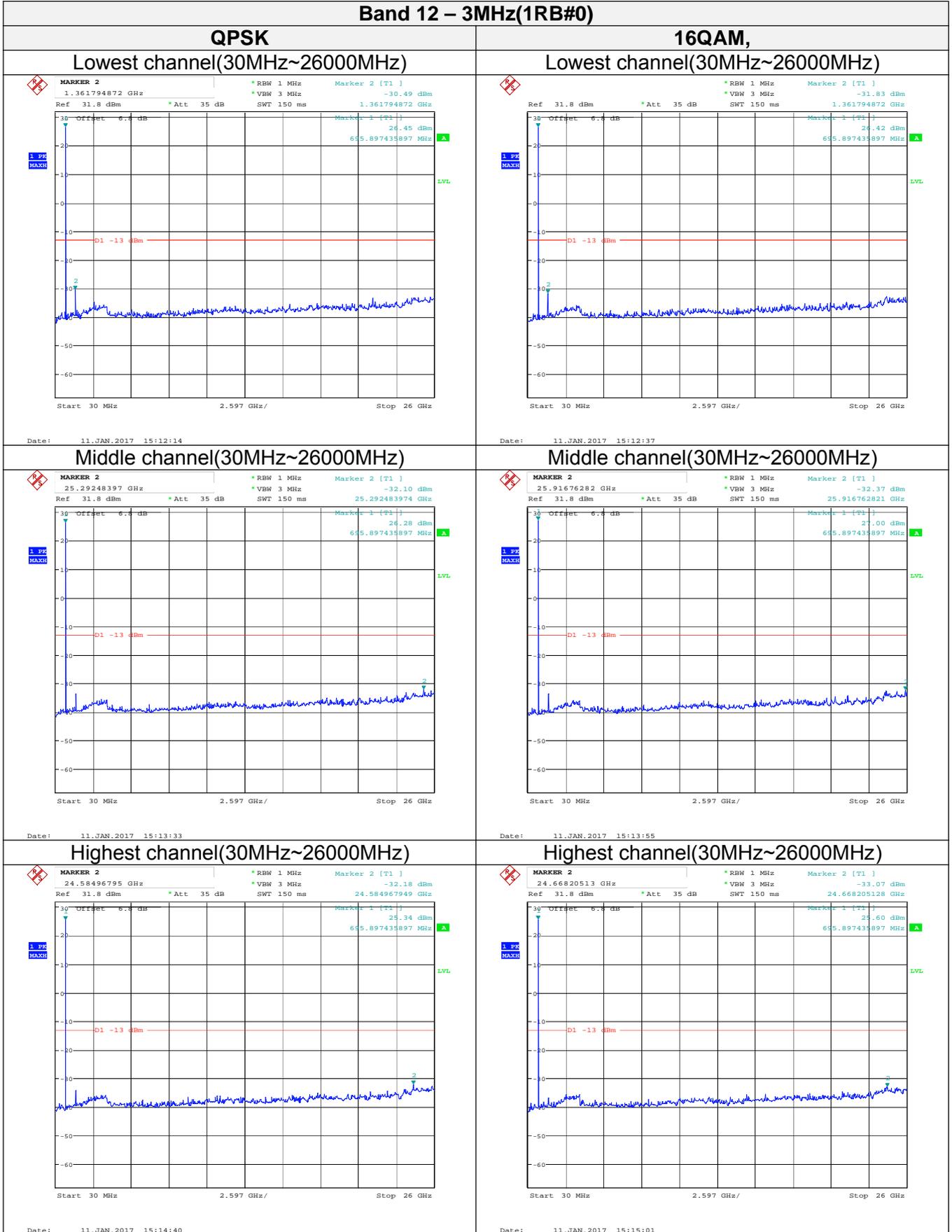


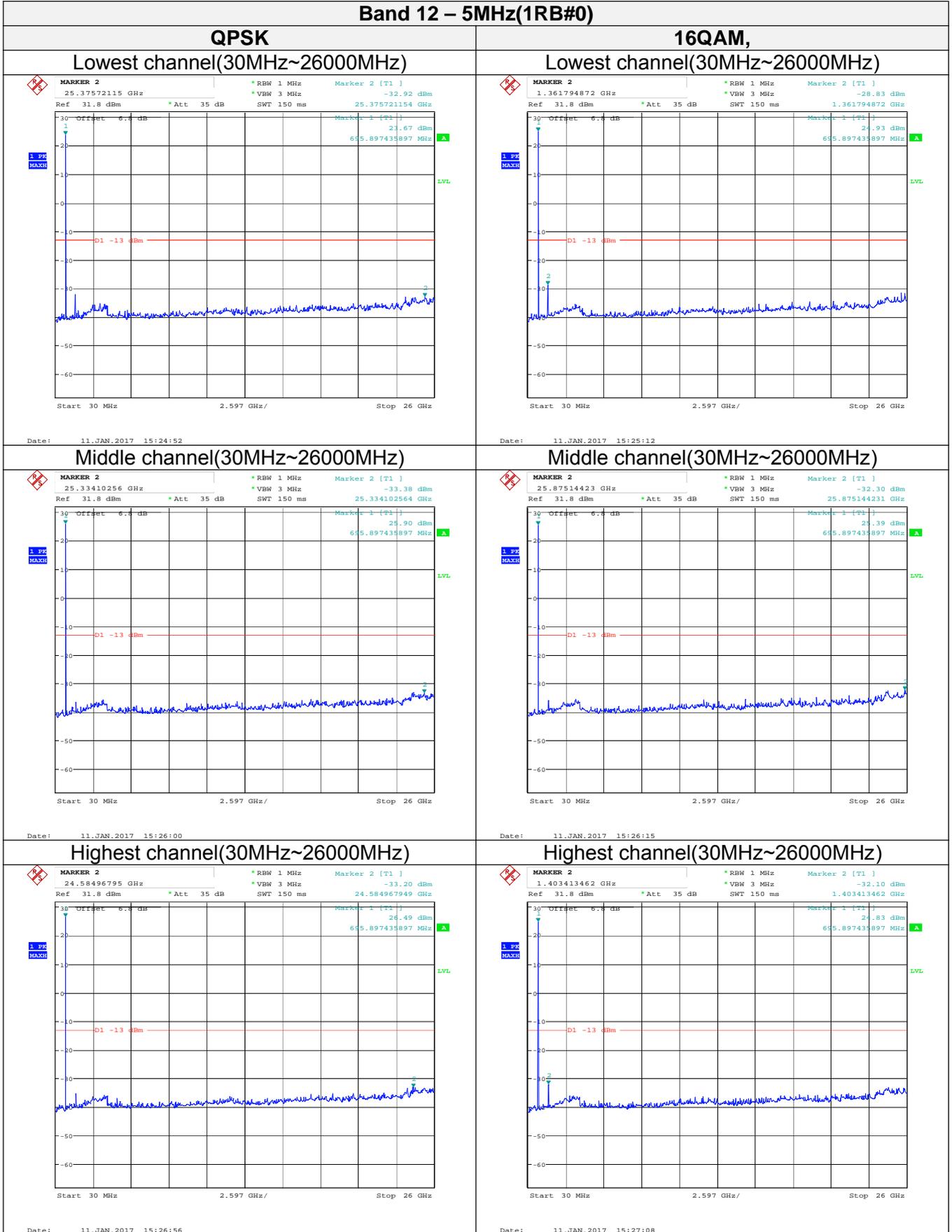


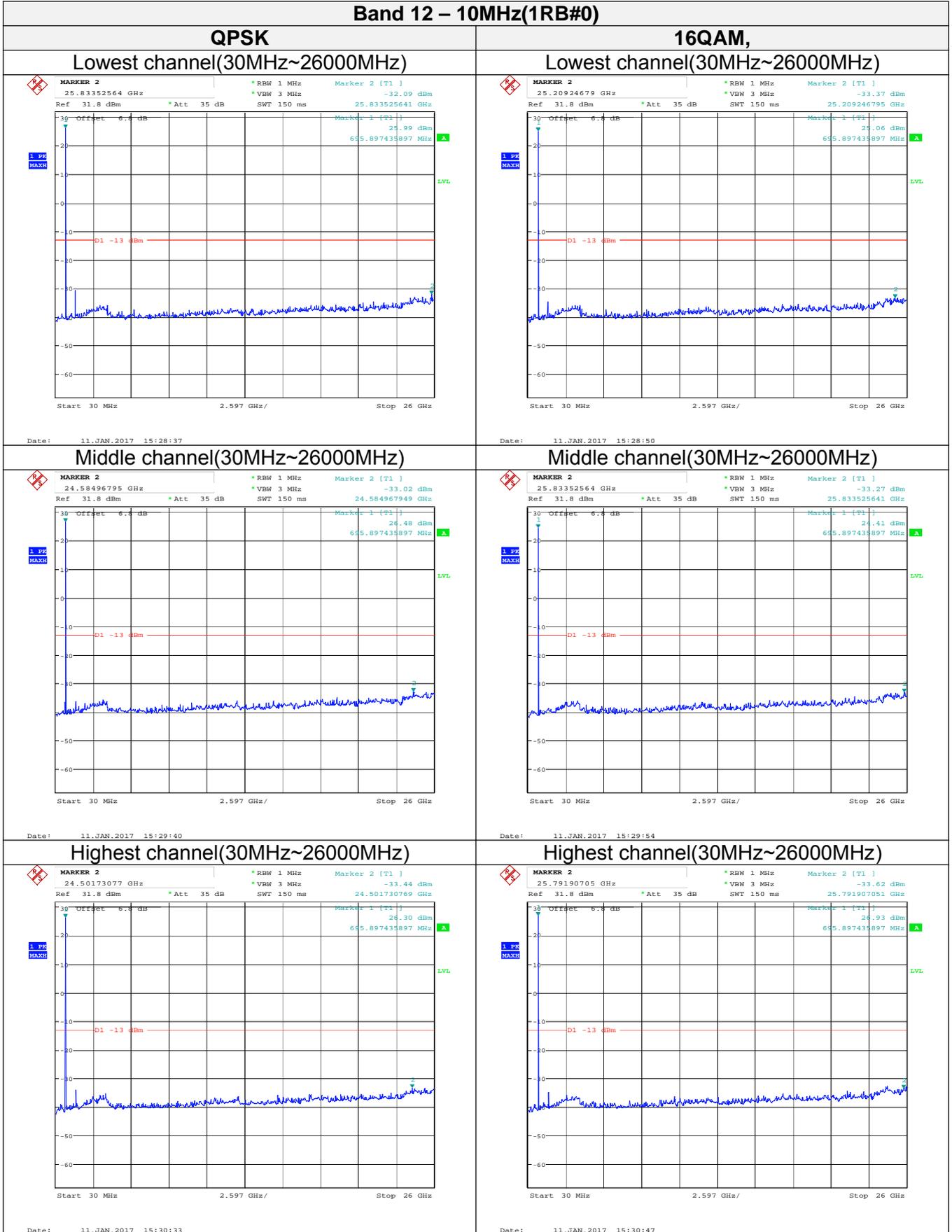


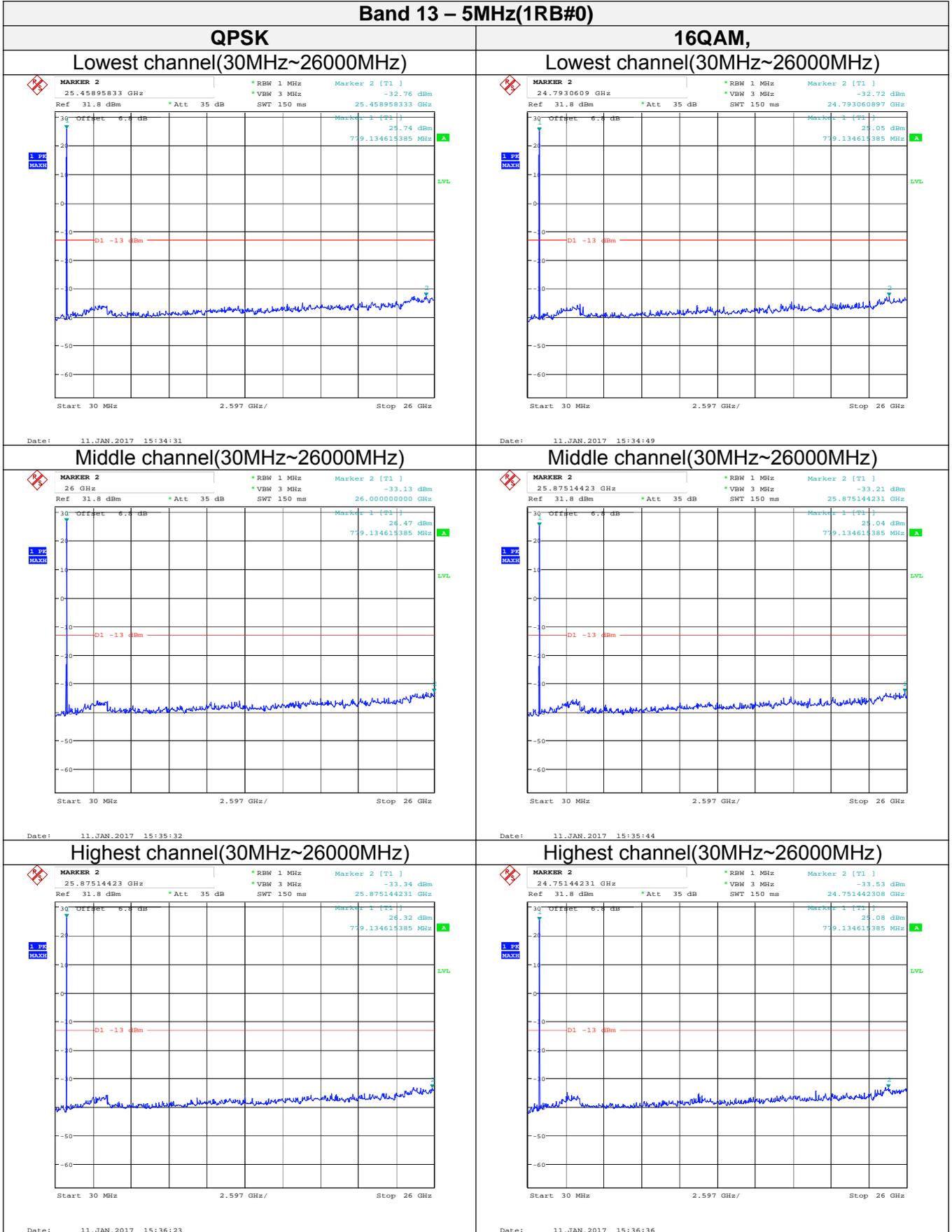


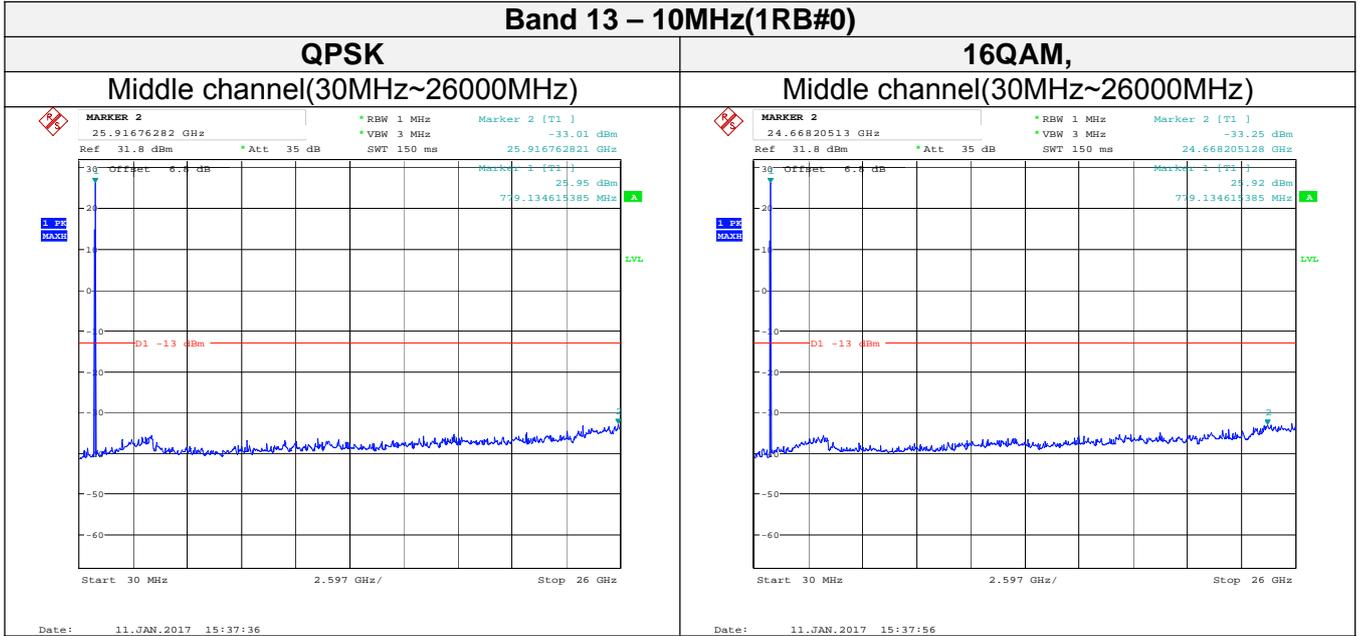












### 3.4. Band Edge compliance

#### LIMIT

**FDD Band 2:** 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.

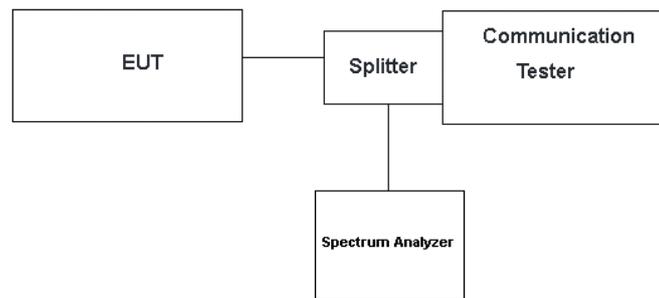
**FDD Band 4:** The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  dB.

**FDD Band 7:** 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.

**FDD Band 12:** the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB.

**FDD Band 13:** The power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB. For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to  $-70$  dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and  $-80$  dBW EIRP for discrete emissions of less than 700 Hz bandwidth.

#### TEST CONFIGURATION

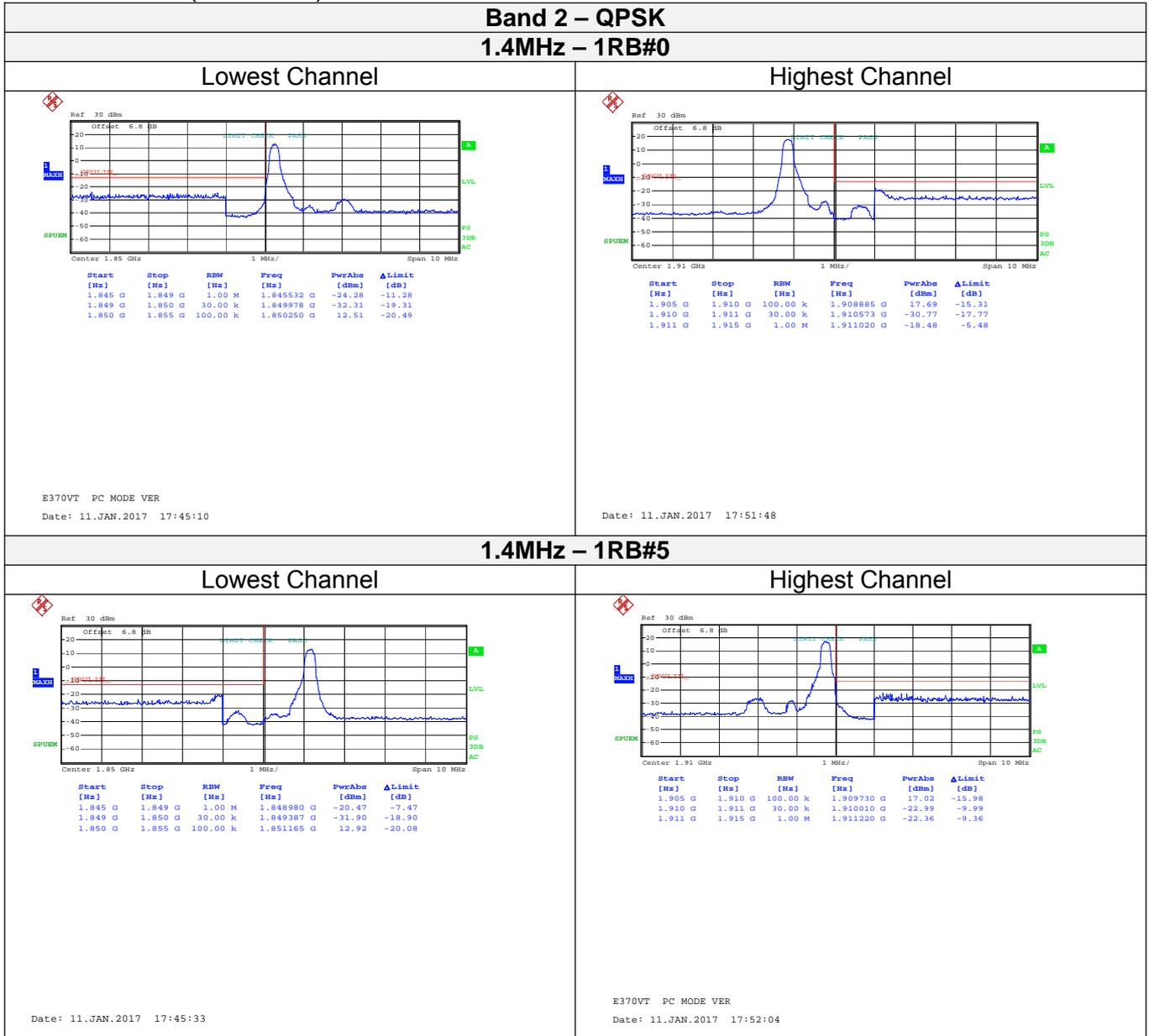


#### TEST PROCEDURE

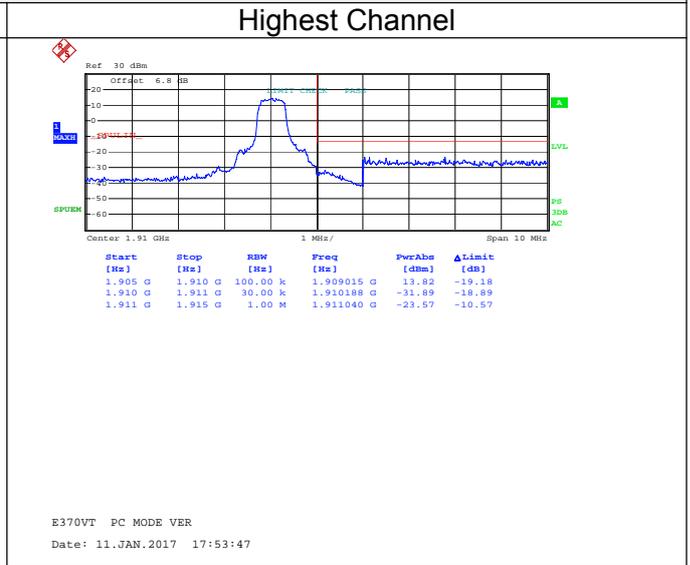
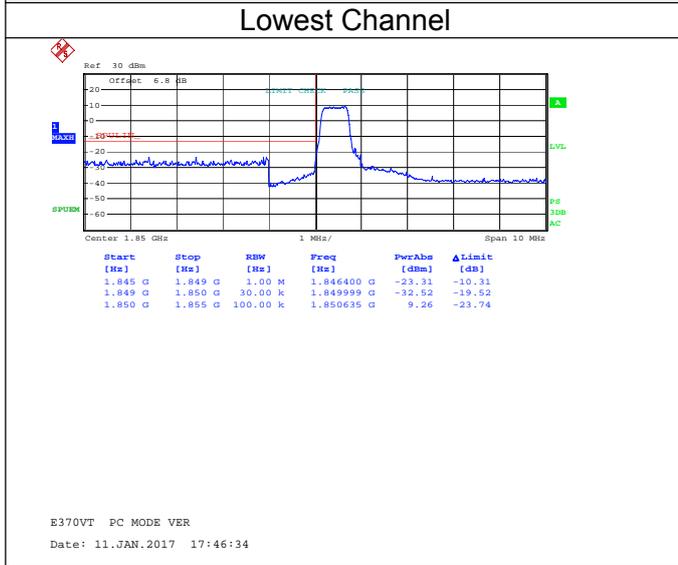
1. The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation.
2. RBW was set to about 1% of emission BW,  $VBW \geq 3$  times RBW.

**TEST RESULTS**

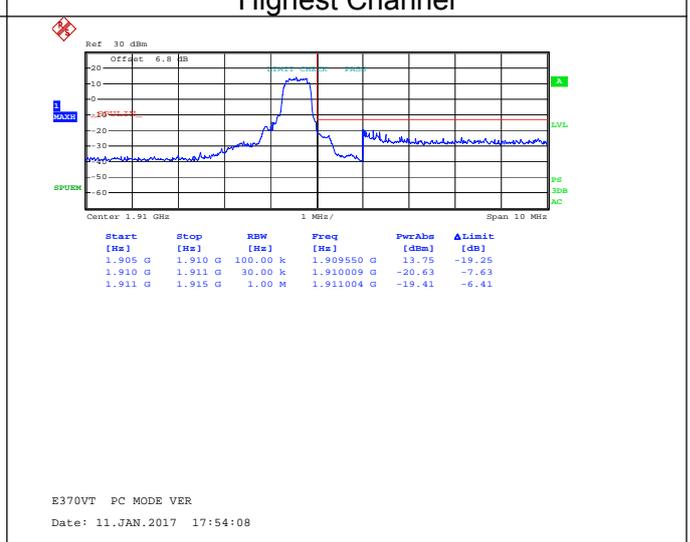
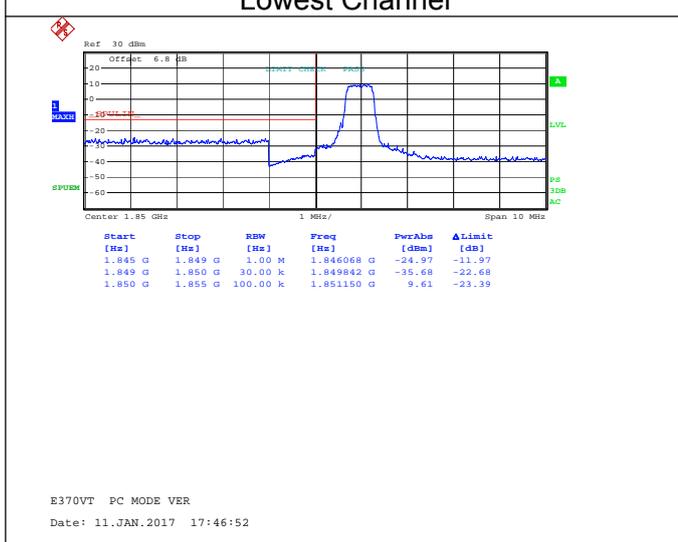
Measured data (worst case):

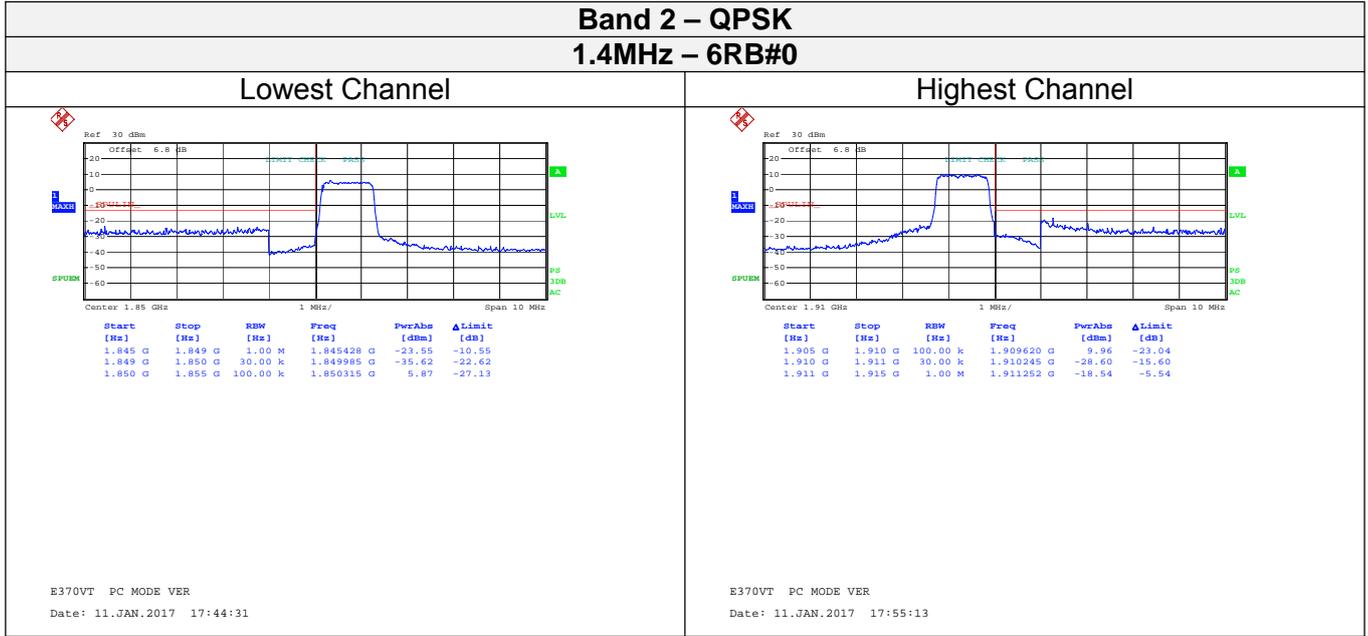


**Band 2 – QPSK**  
**1.4MHz – 3RB#0**



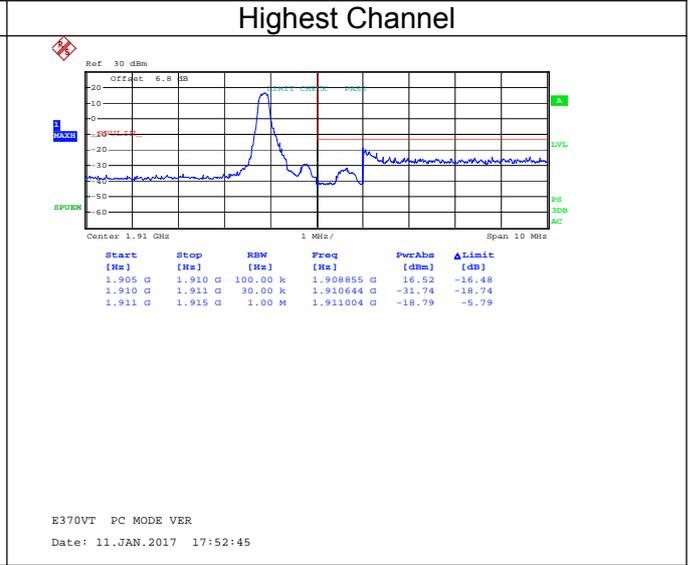
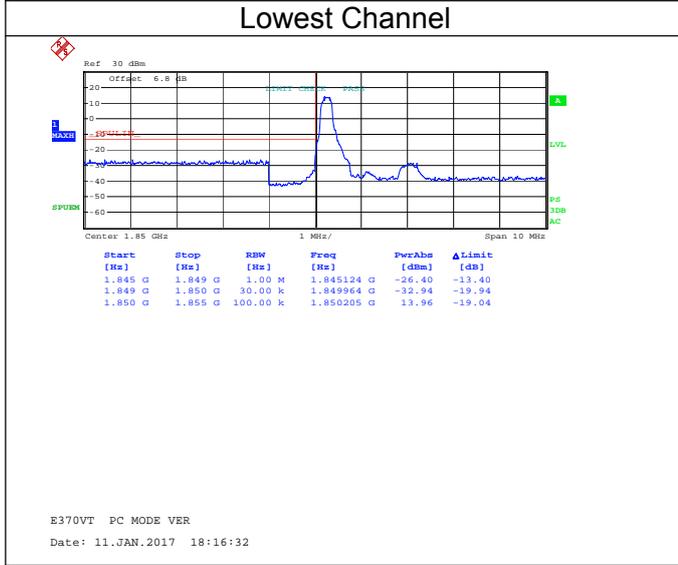
**1.4MHz – 3RB#2**



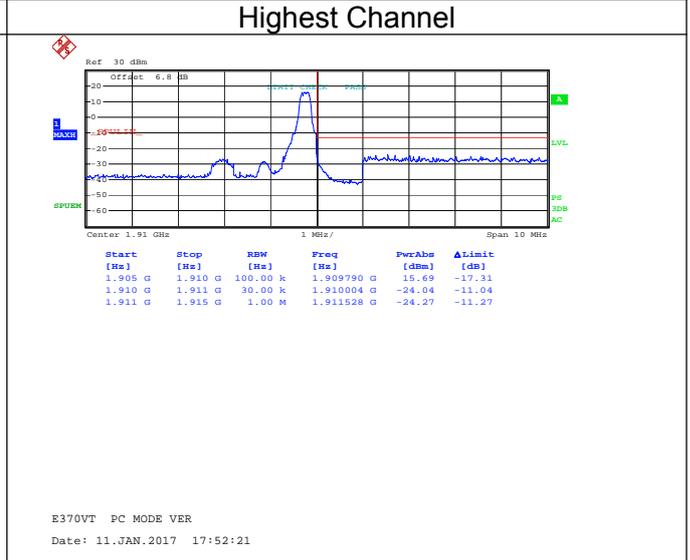
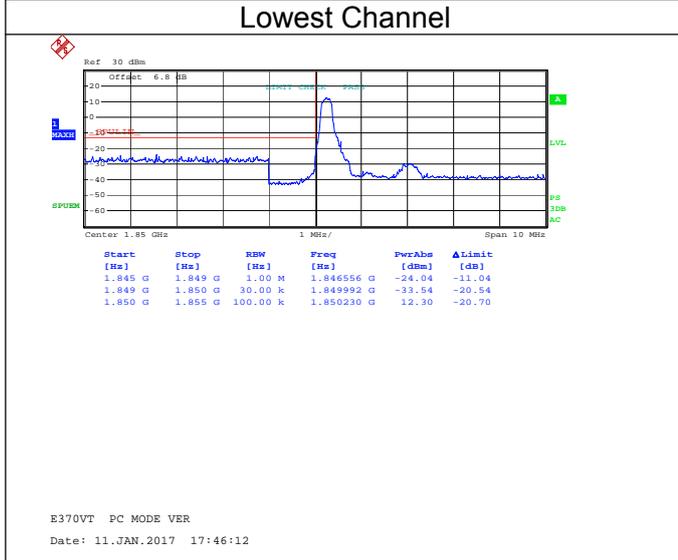


**Band 2 – 16QAM**

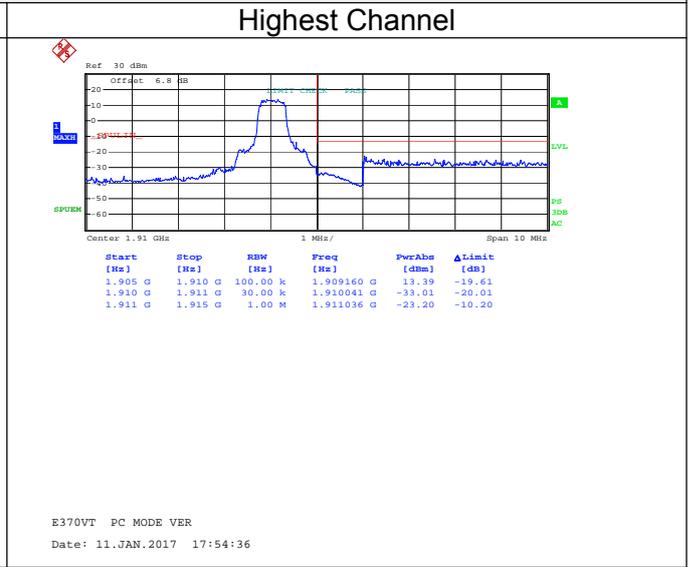
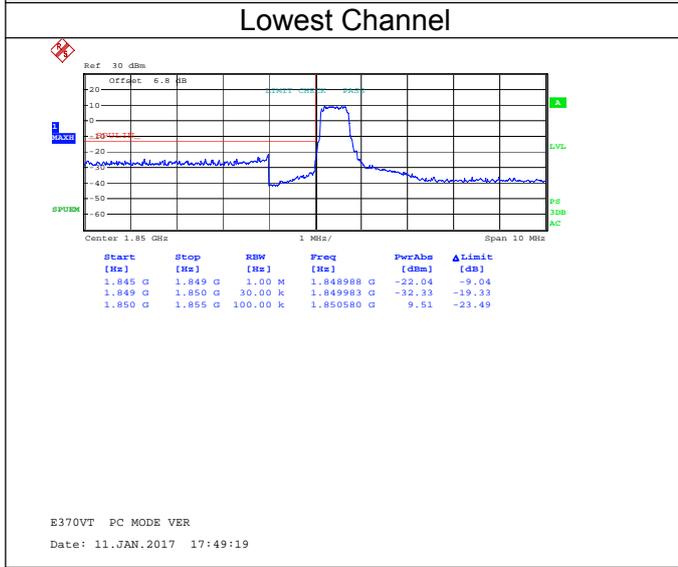
**1.4MHz – 1RB#0**



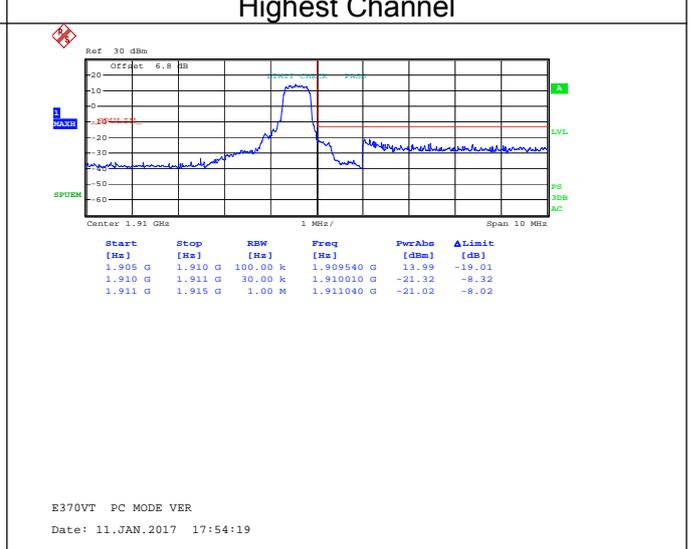
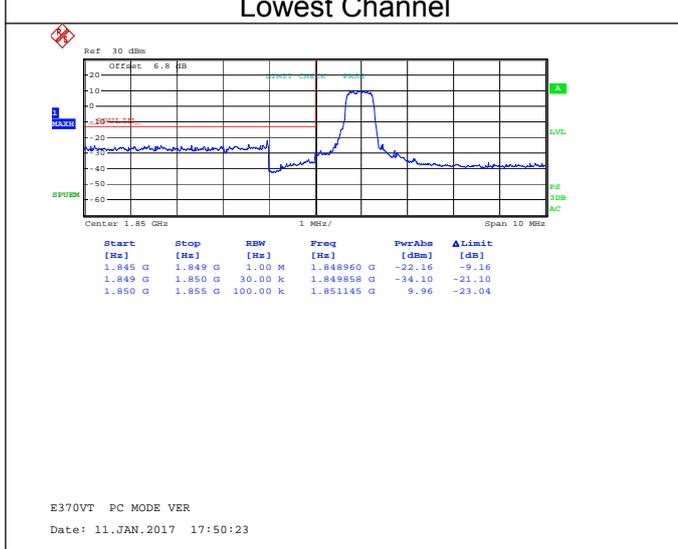
**1.4MHz – 1RB#5**

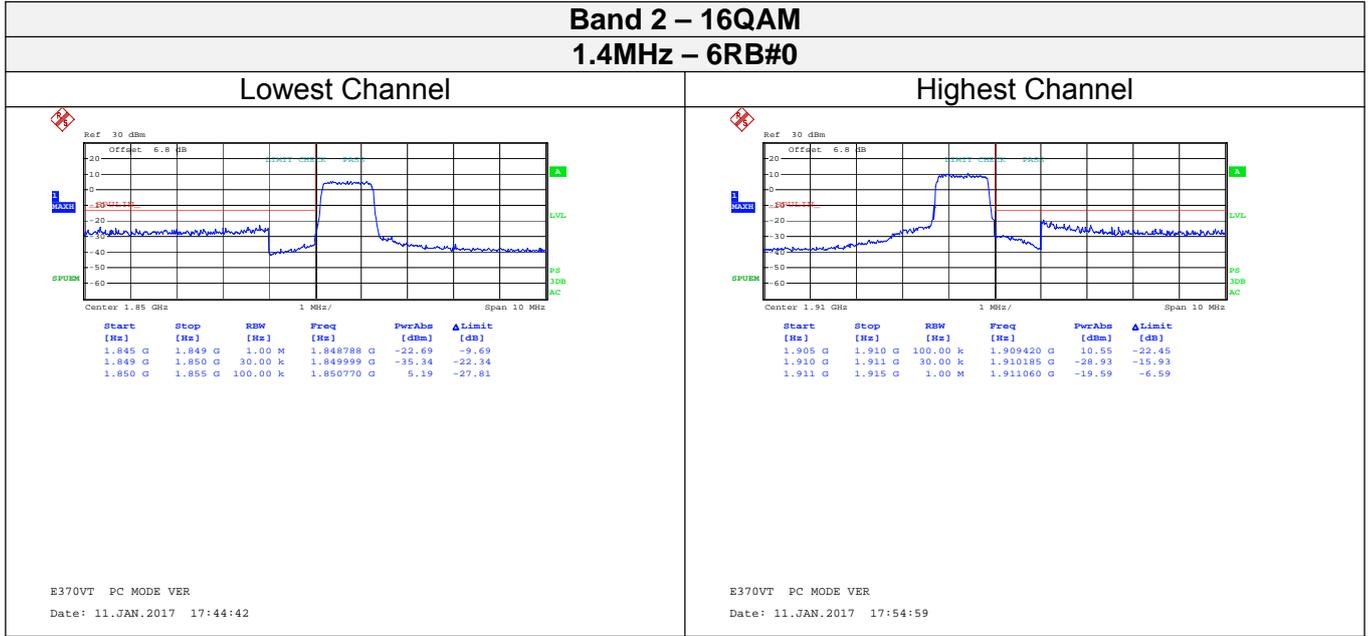


**Band 2 – 16QAM  
1.4MHz – 3RB#0**

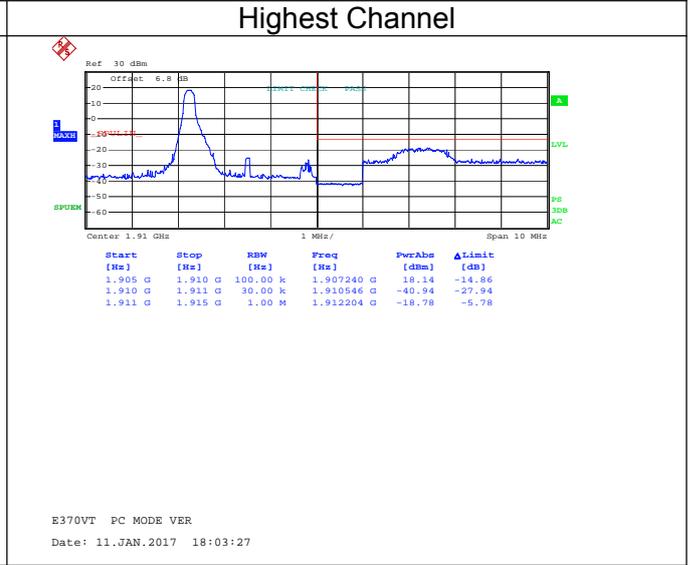
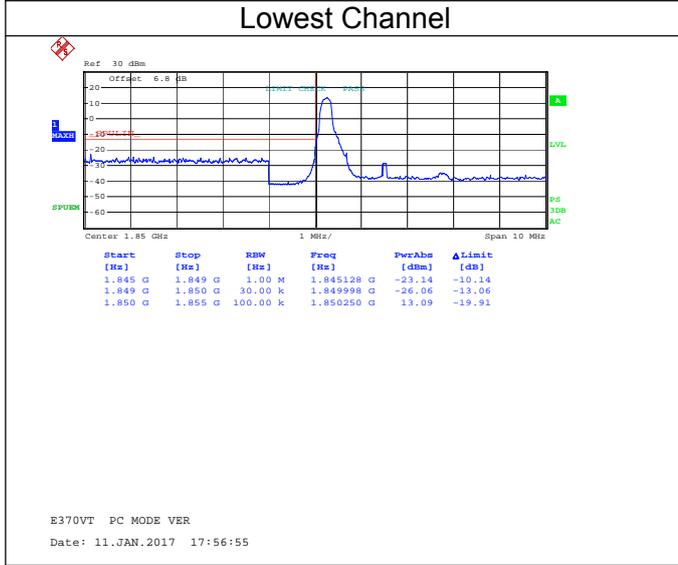


**1.4MHz – 3RB#2**

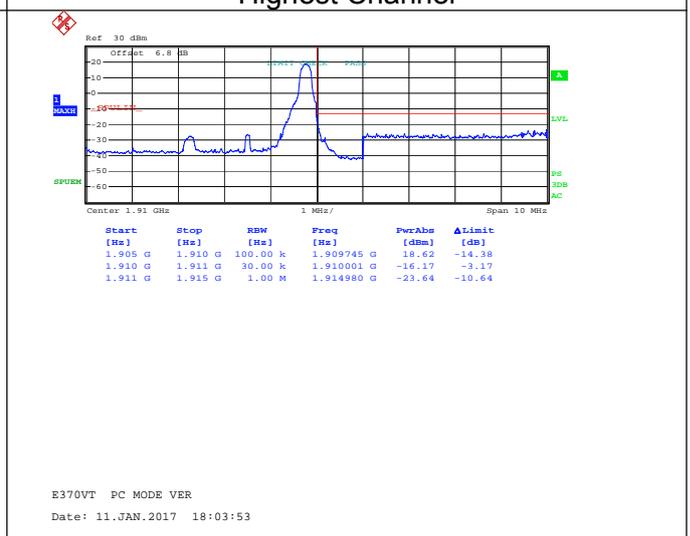
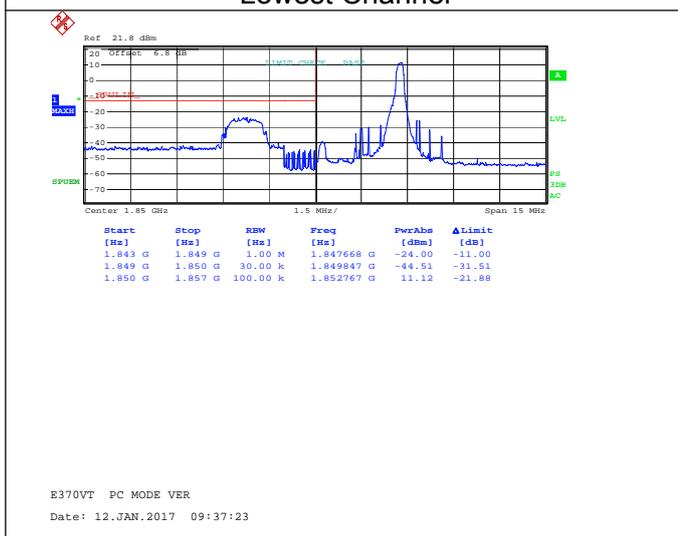




**Band 2 – QPSK  
3MHz – 1RB#0**



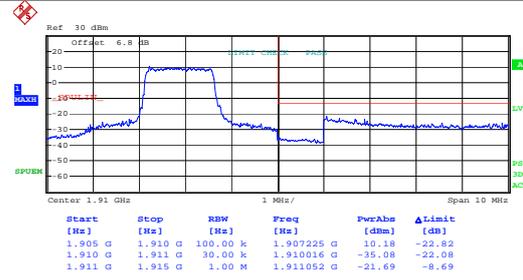
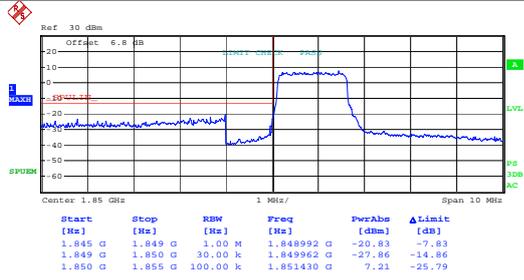
**3MHz – 1RB#14**



**Band 2 – QPSK  
3MHz – 8RB#0**

**Lowest Channel**

**Highest Channel**



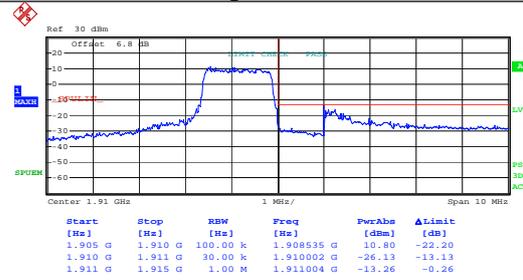
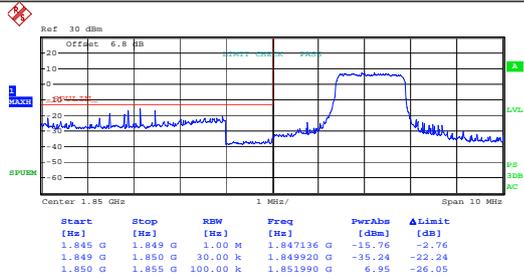
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E370VT PC MODE VER  
Date: 11.JAN.2017 18:12:00

**3MHz – 8RB#7**

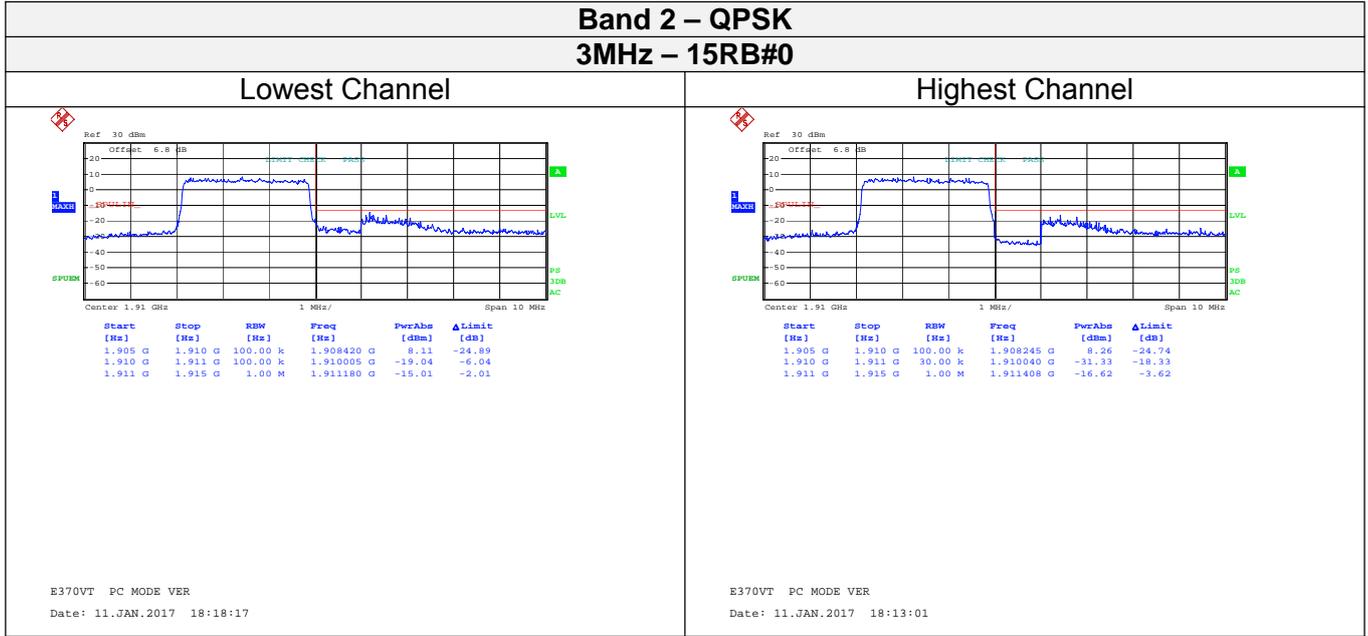
**Lowest Channel**

**Highest Channel**

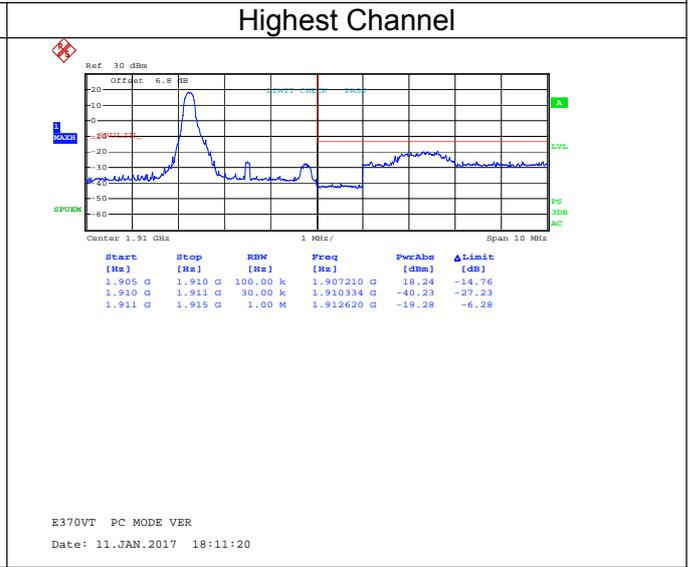
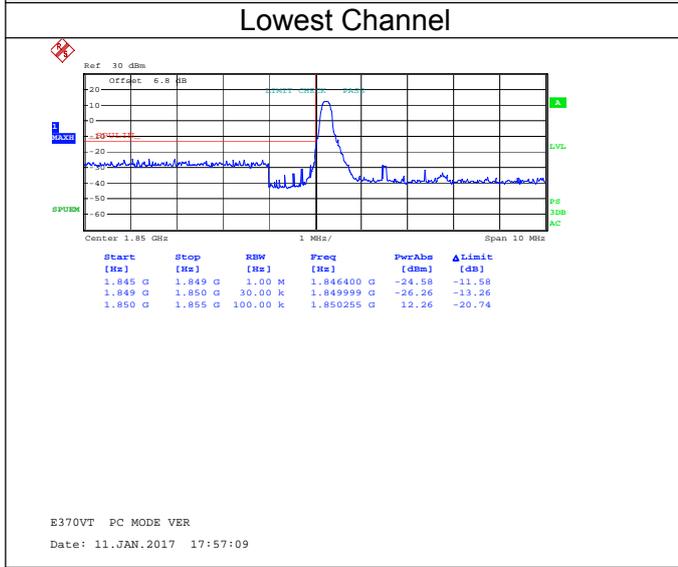


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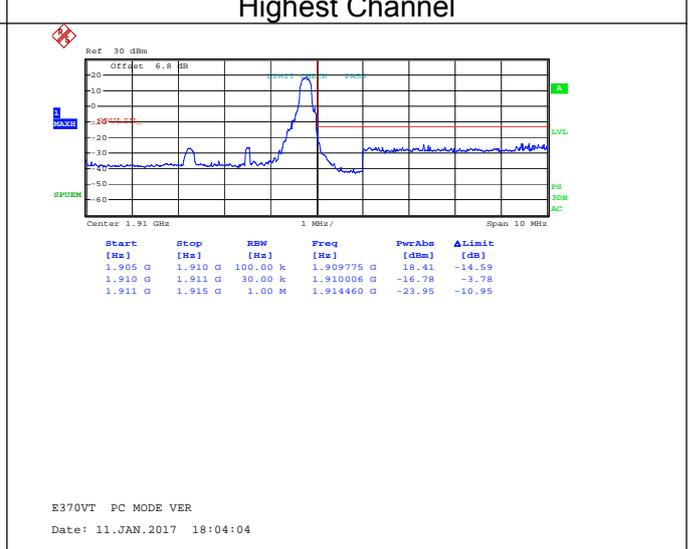
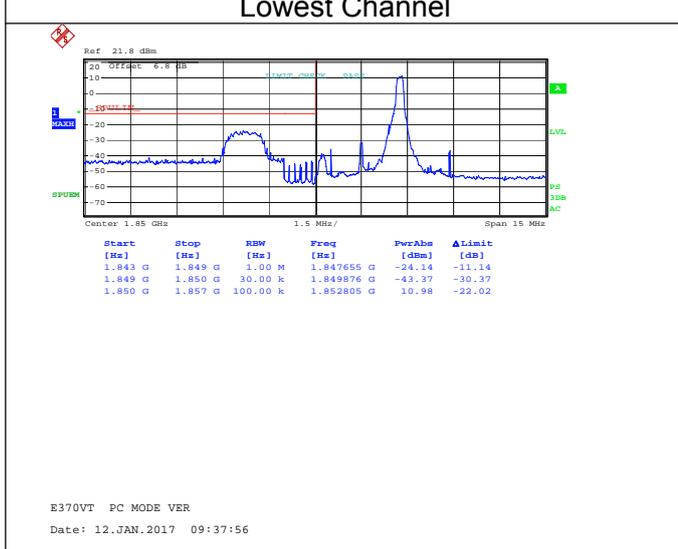
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**Band 2 – 16QAM  
3MHz – 1RB#0**

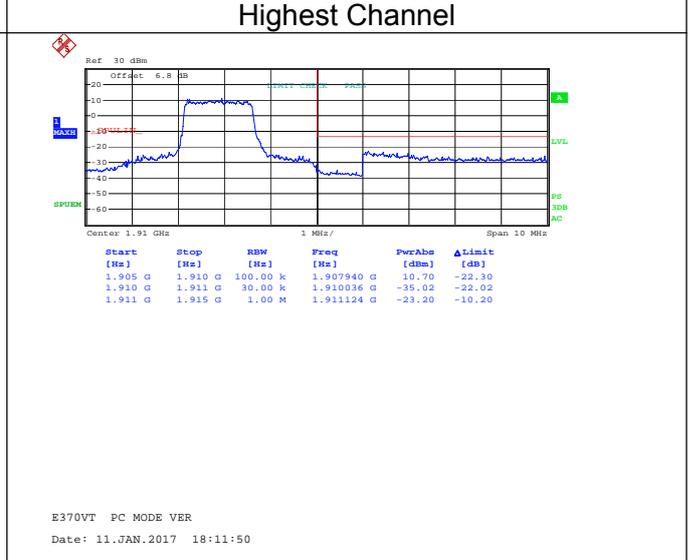
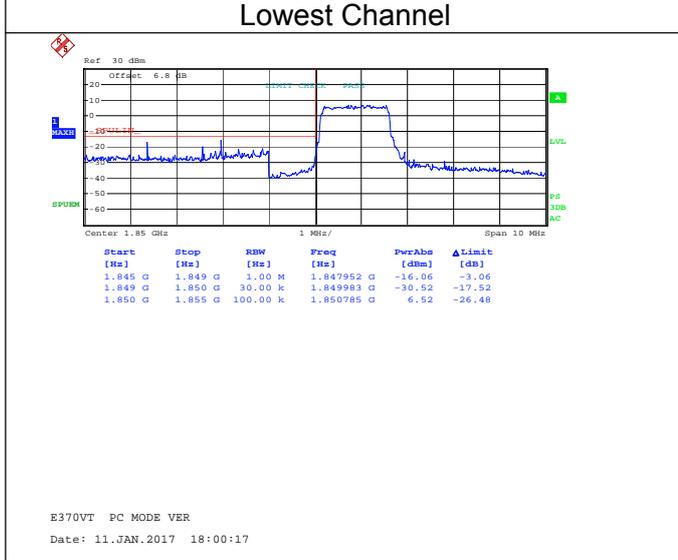


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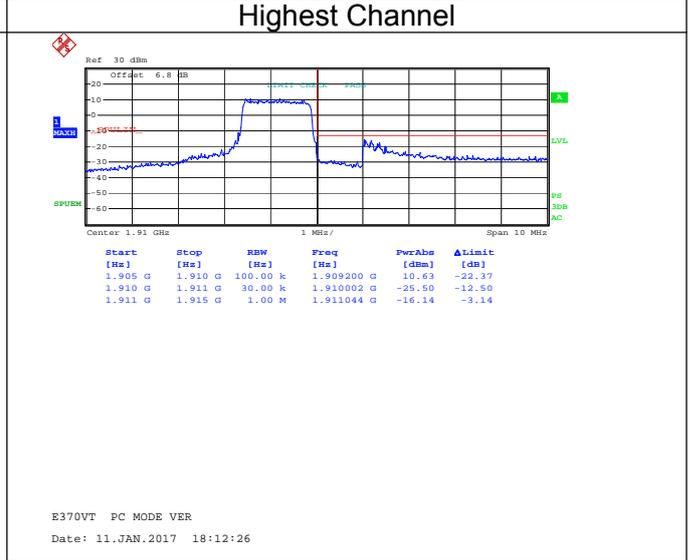
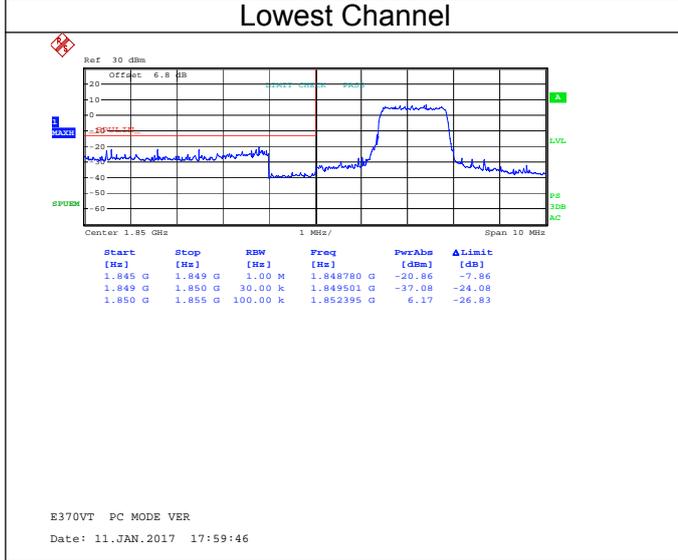


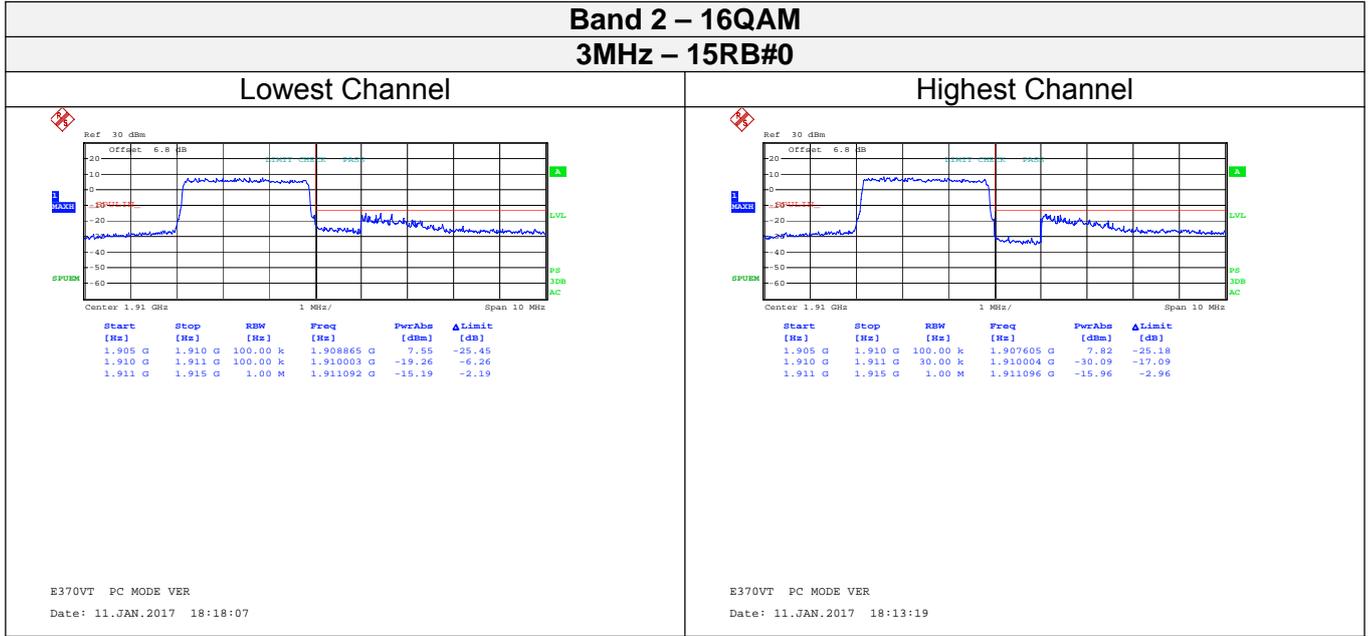
**Band 2 – 16QAM**

**3MHz – 8RB#0**

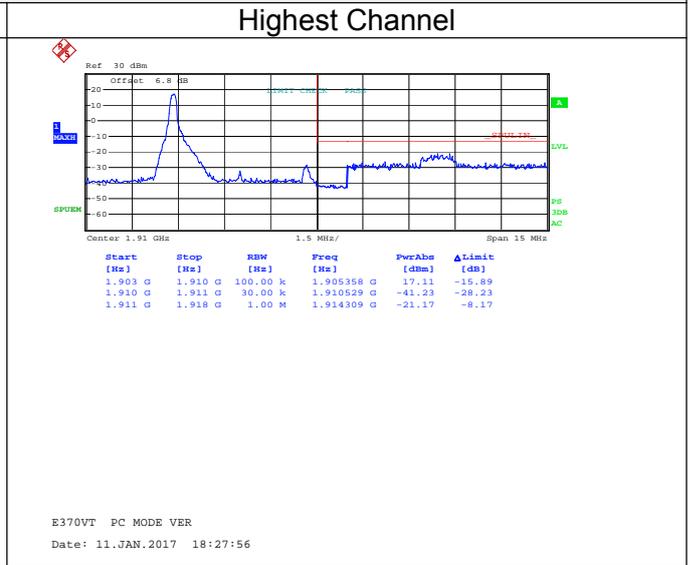
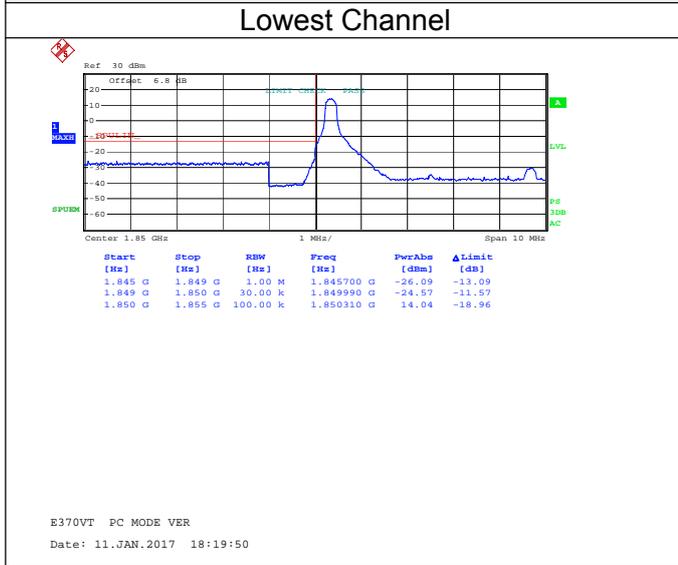


**3MHz – 8RB#7**

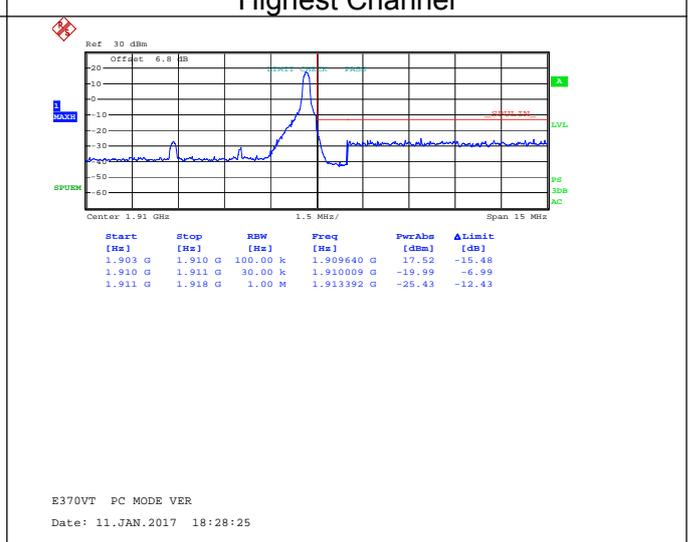
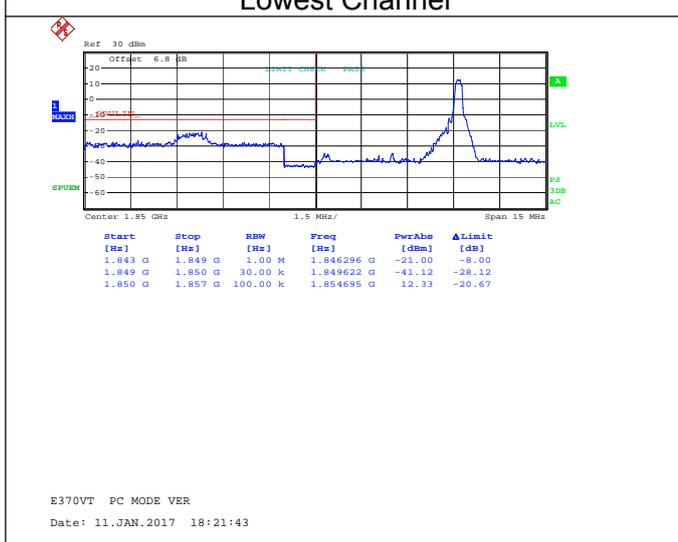




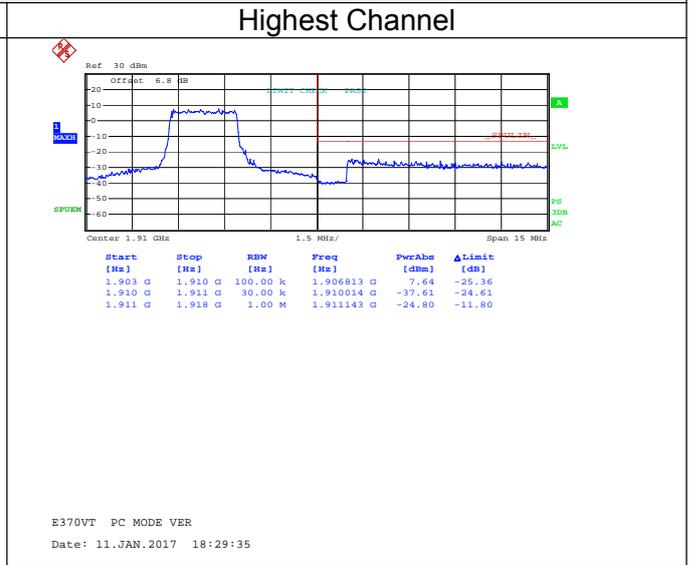
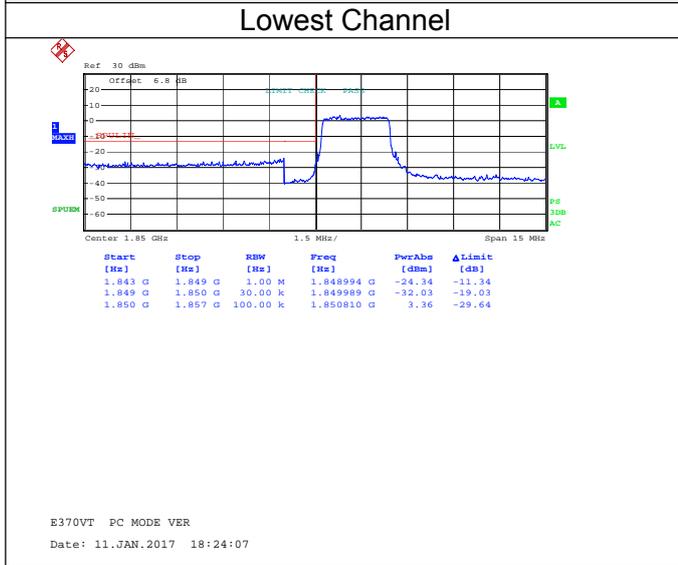
**Band 2 – QPSK  
5MHz – 1RB#0**



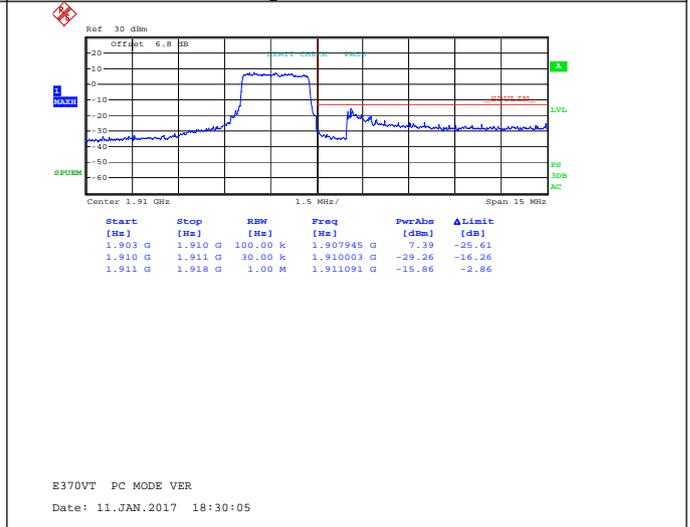
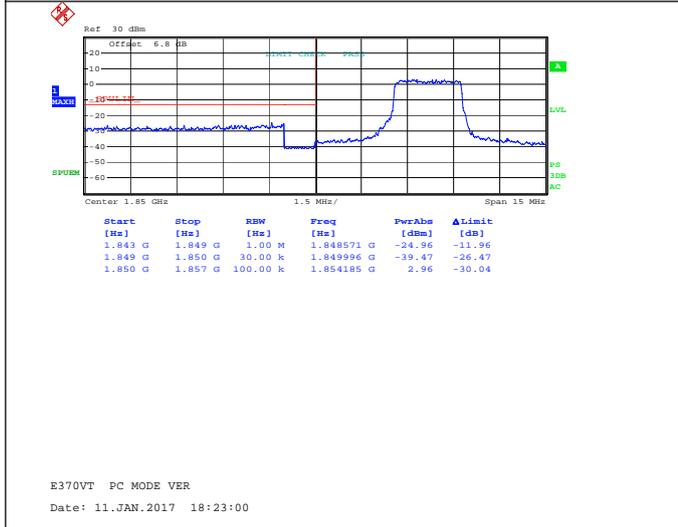
**5MHz – 1RB#24**

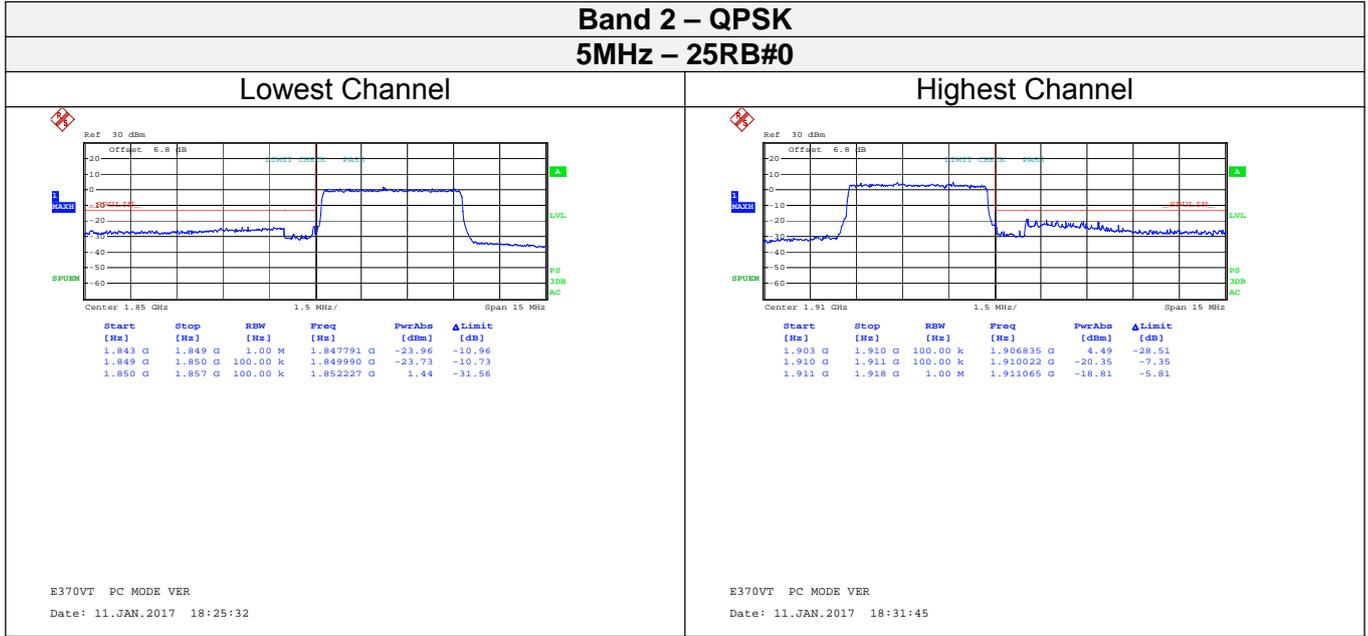


**Band 2 – QPSK  
5MHz – 12RB#0**

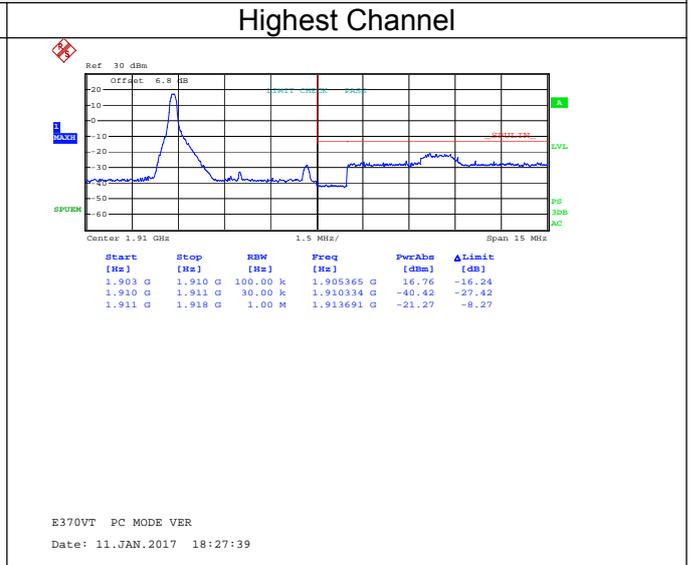
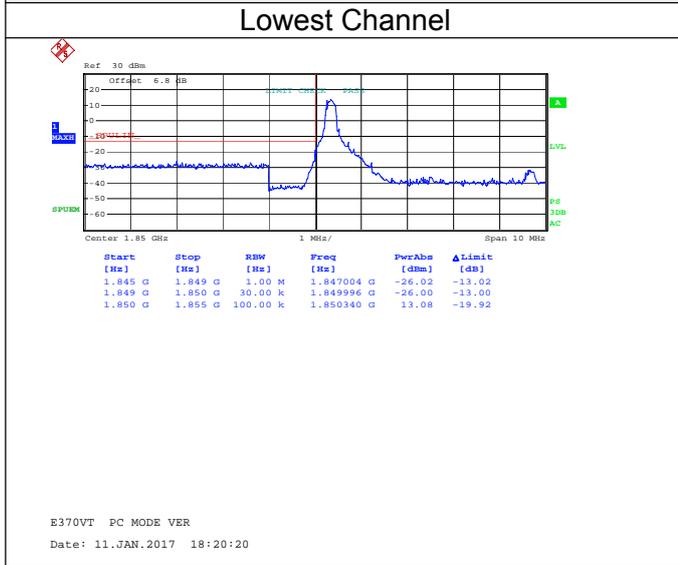


**5MHz – 12RB#11**

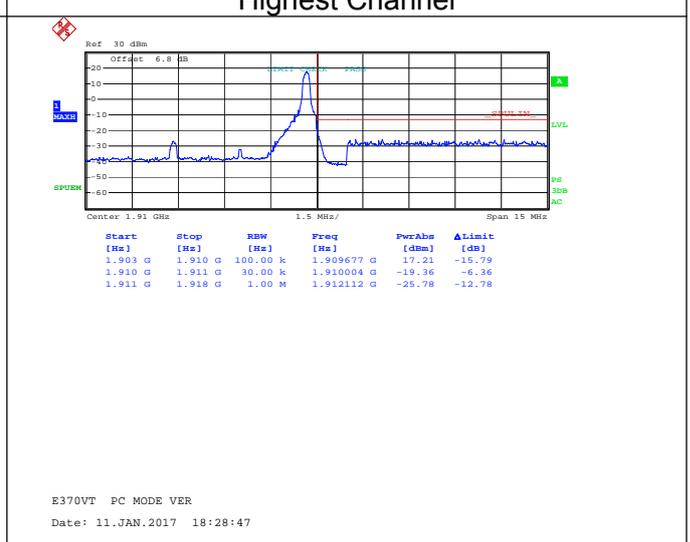
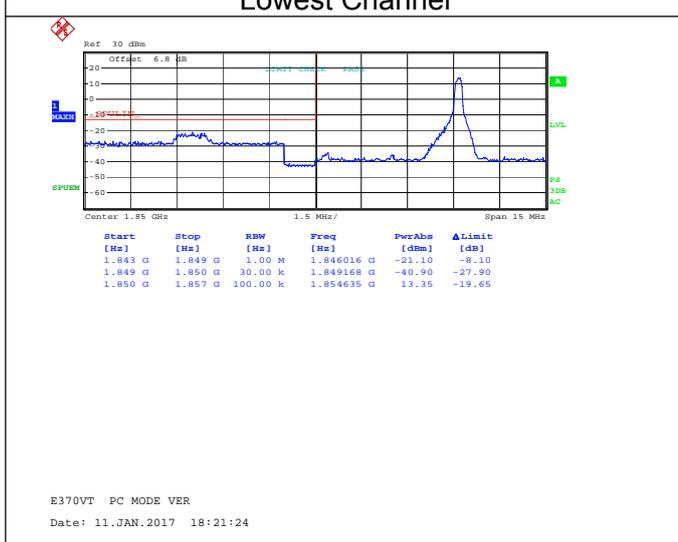




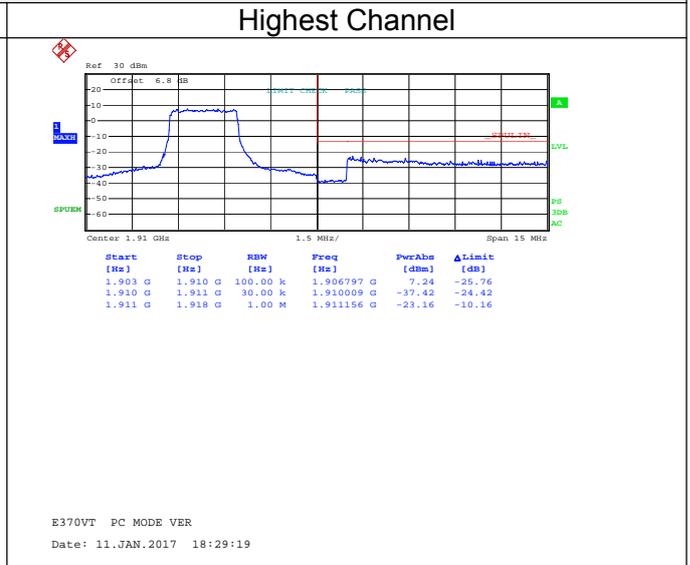
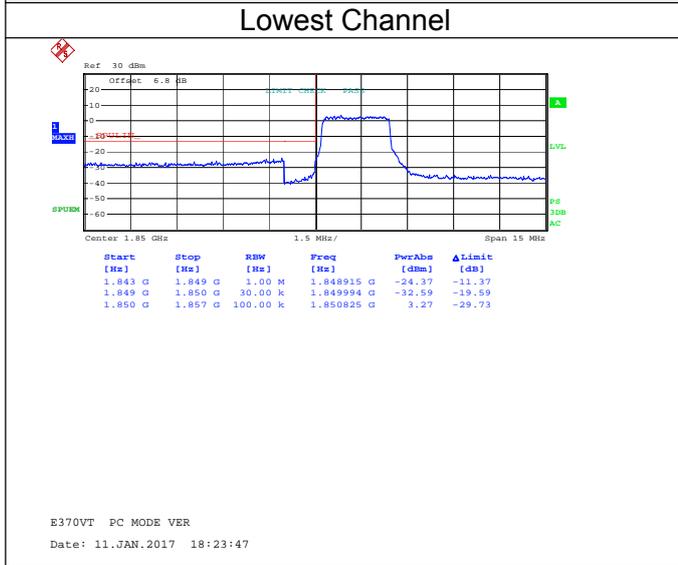
**Band 2 – 16QAM  
5MHz – 1RB#0**



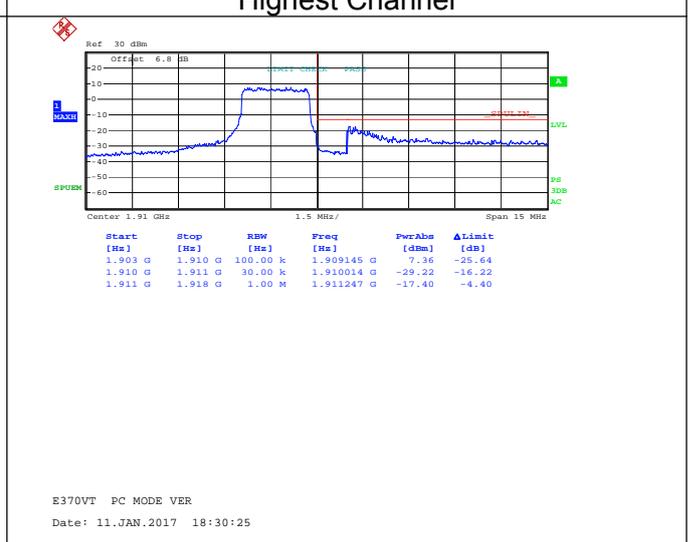
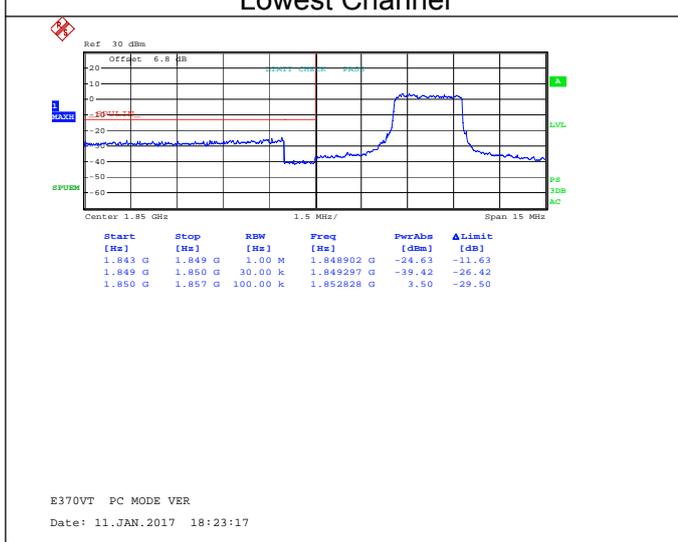
**5MHz – 1RB#24**

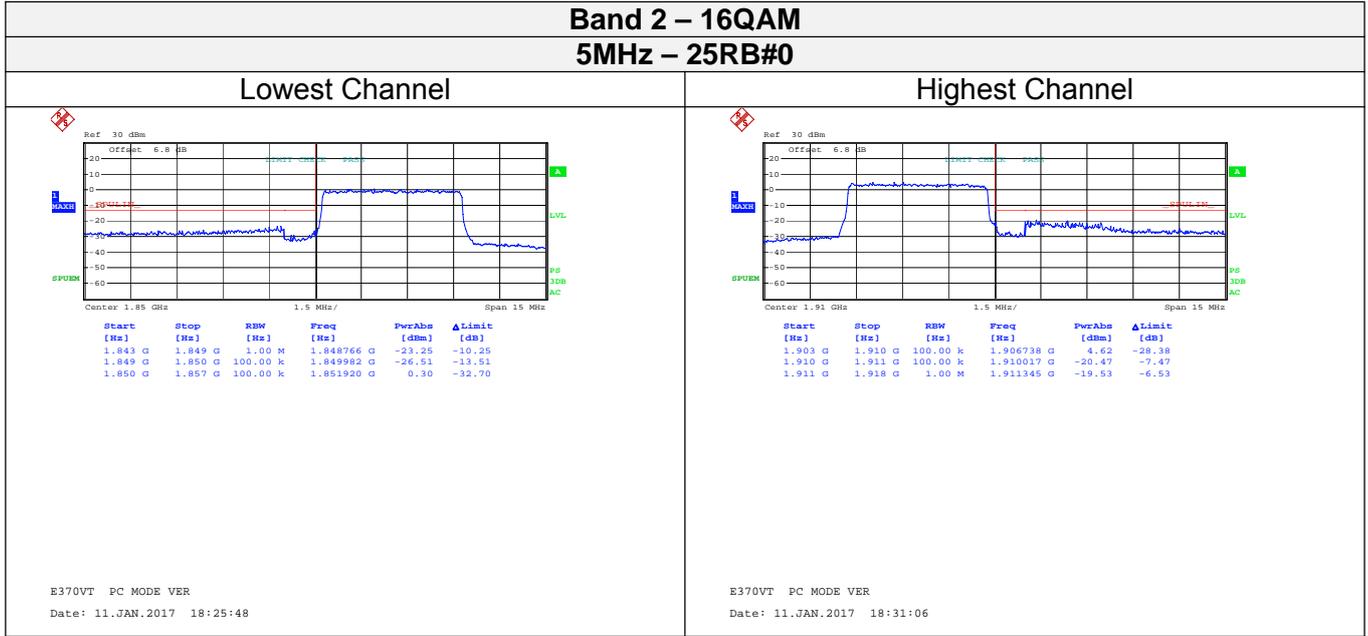


**Band 2 – 16QAM  
5MHz – 12RB#0**

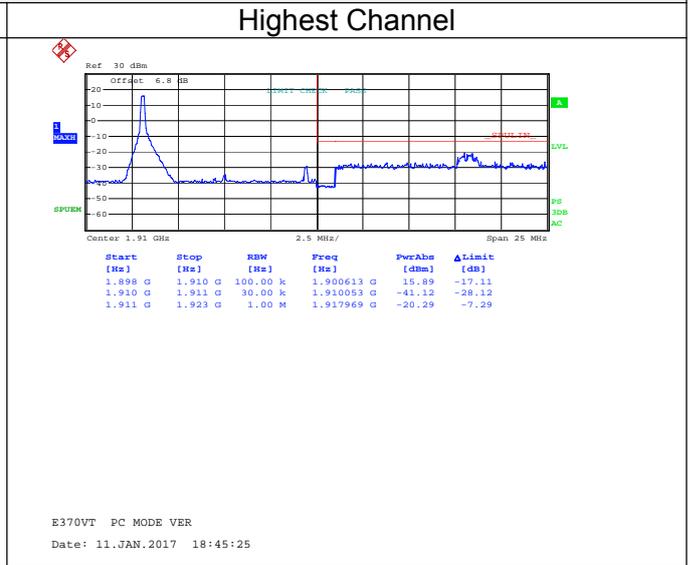
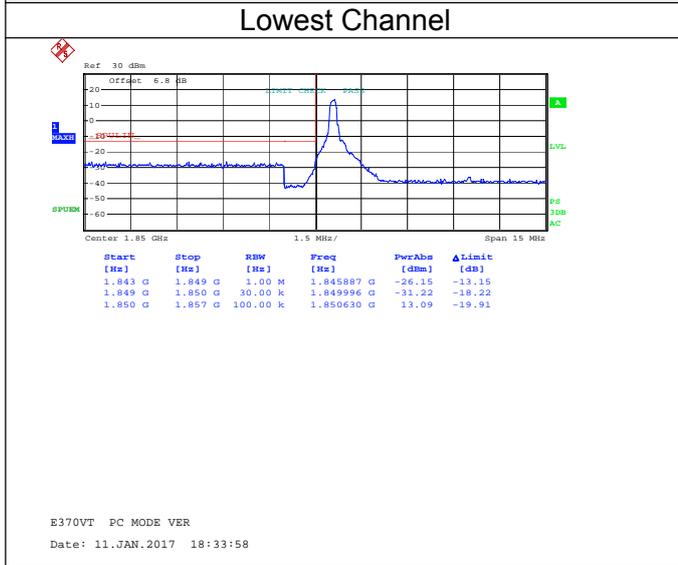


**5MHz – 12RB#11**

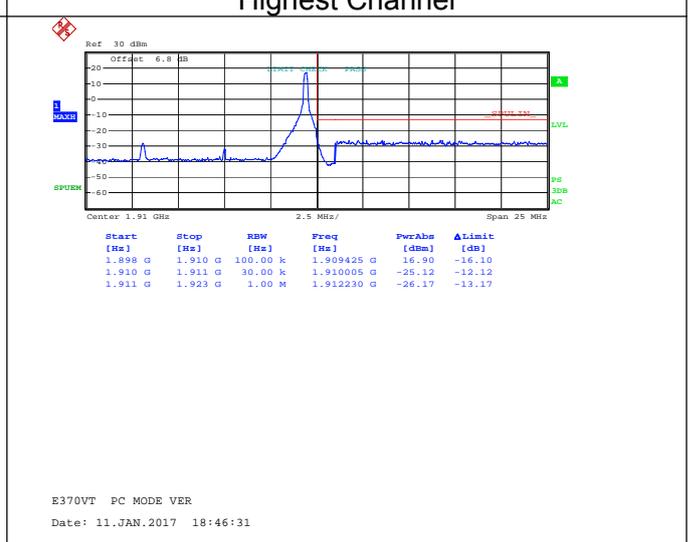
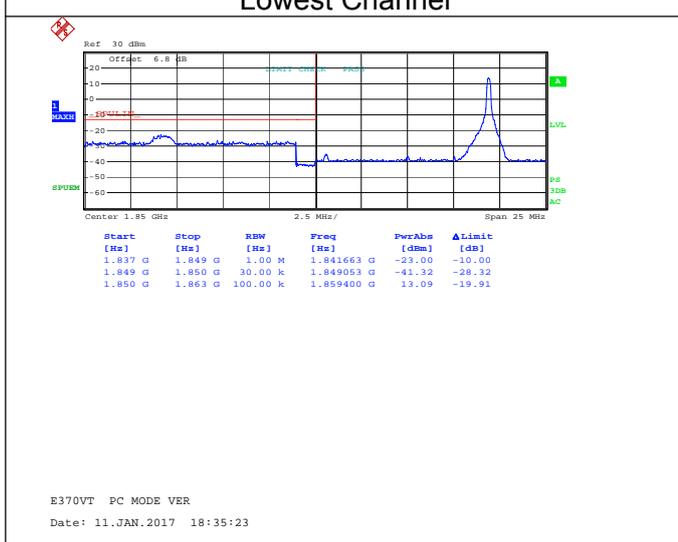




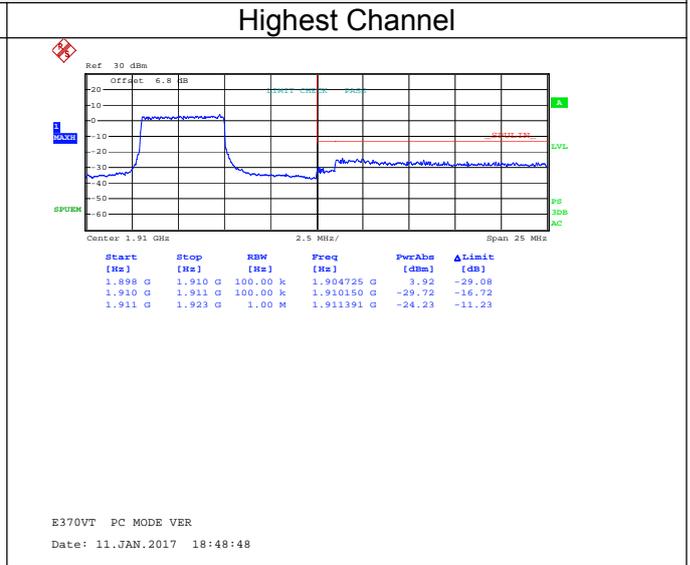
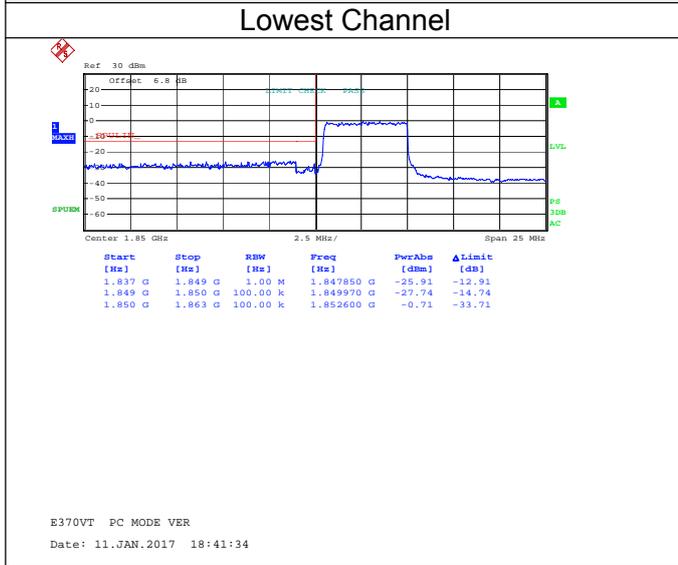
**Band 2 – QPSK  
10MHz – 1RB#0**



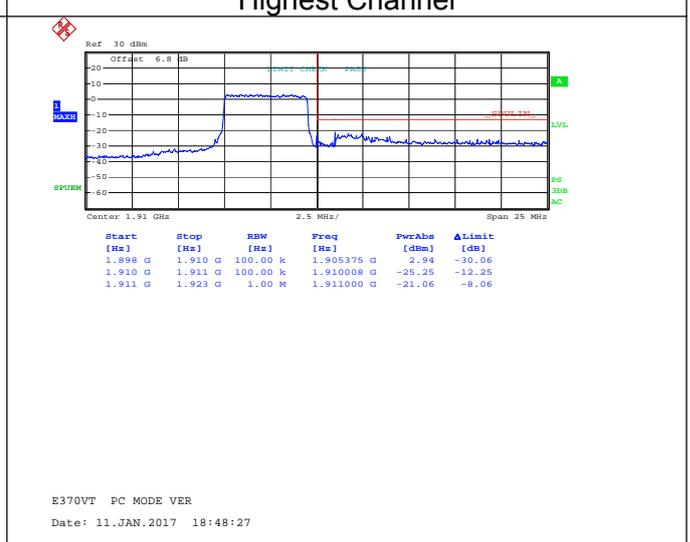
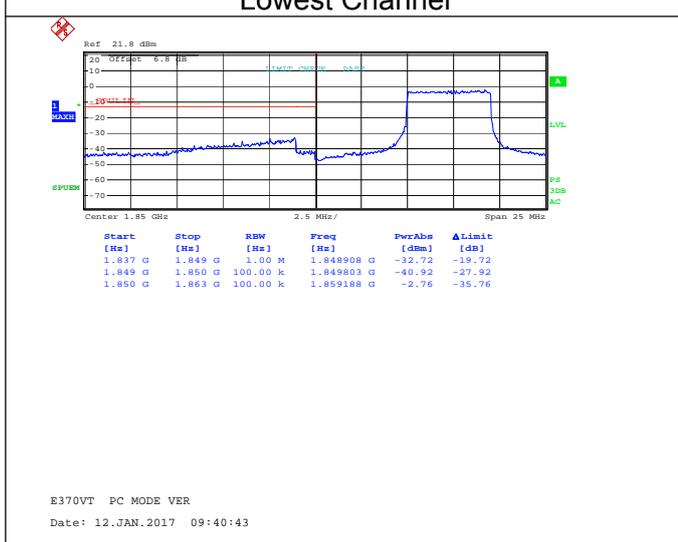
**10MHz – 1RB#49**

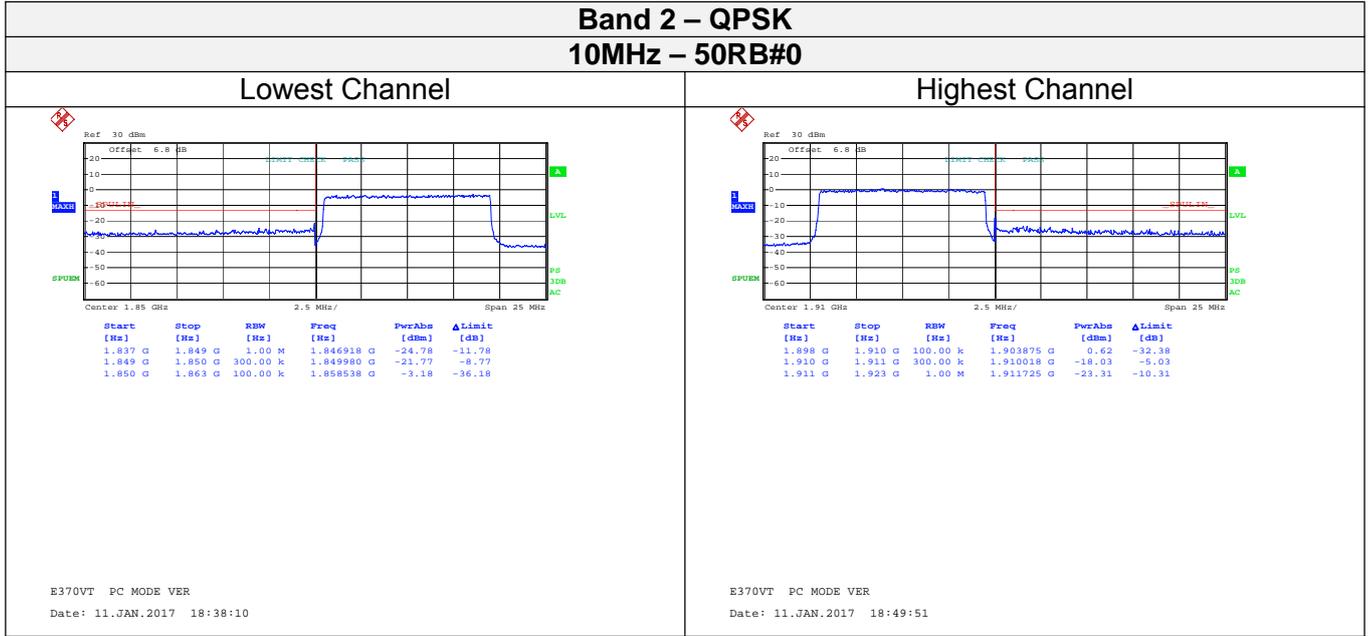


**Band 2 – QPSK  
10MHz – 25RB#0**



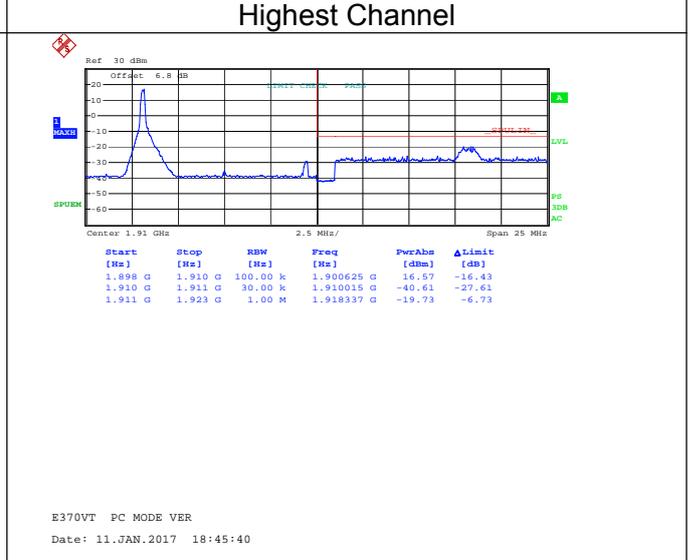
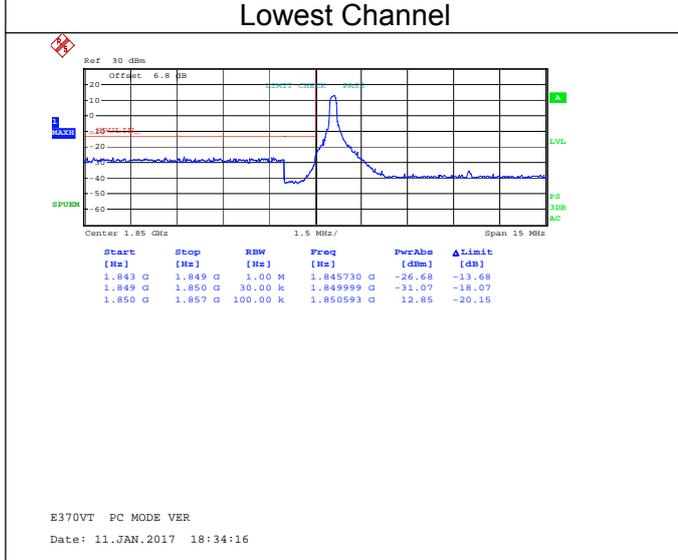
**10MHz – 25RB#24**



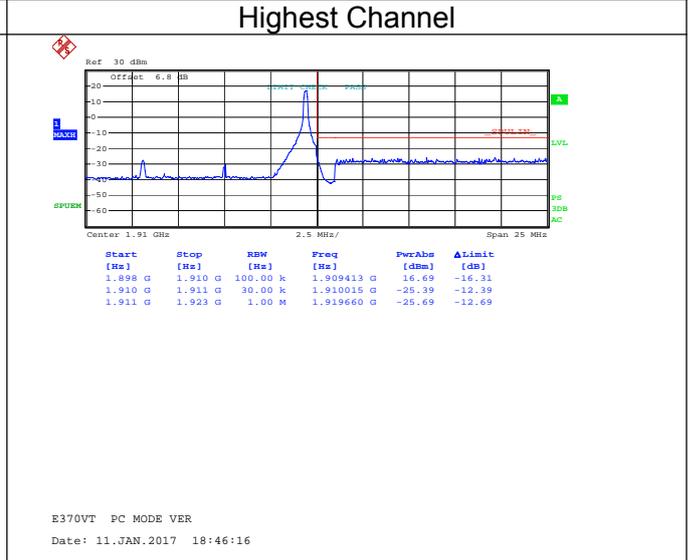
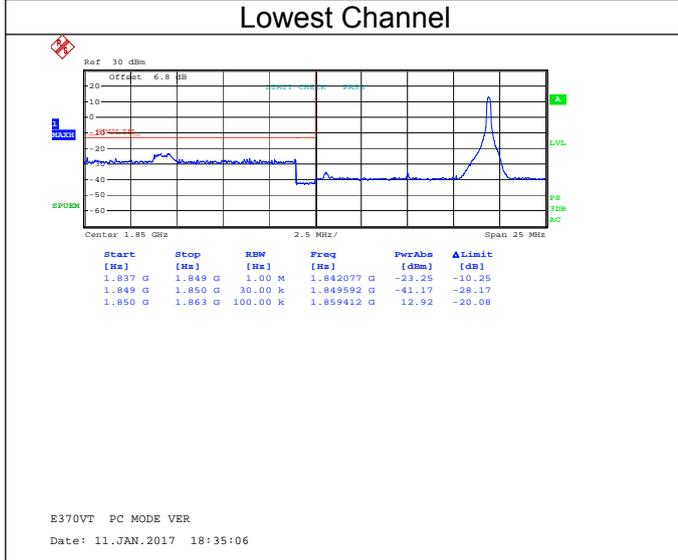


**Band 2 – 16QAM**

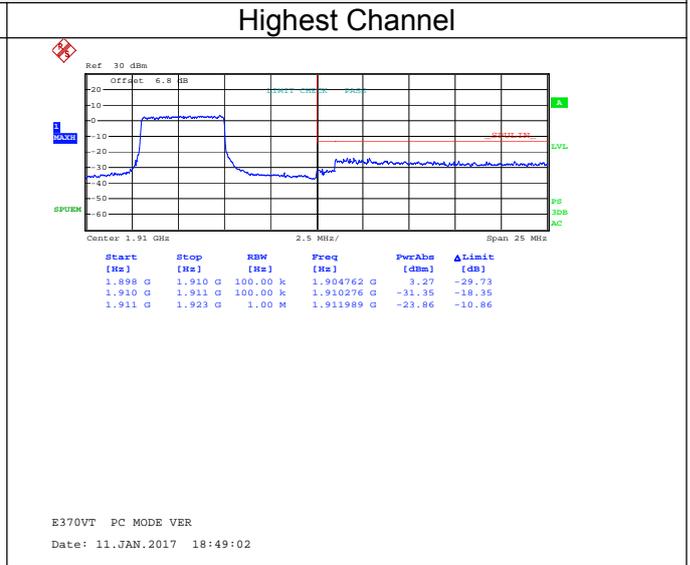
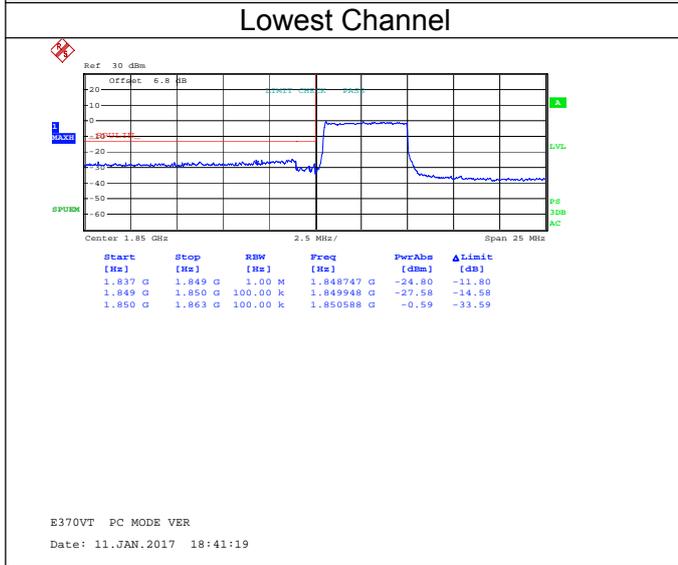
**10MHz – 1RB#0**



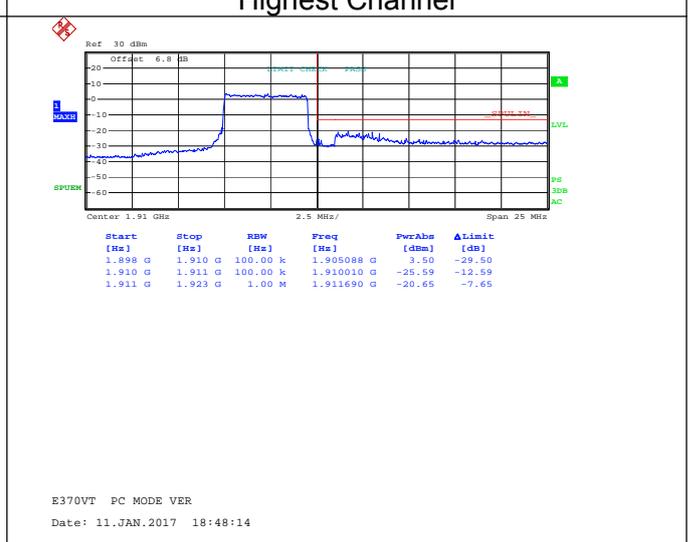
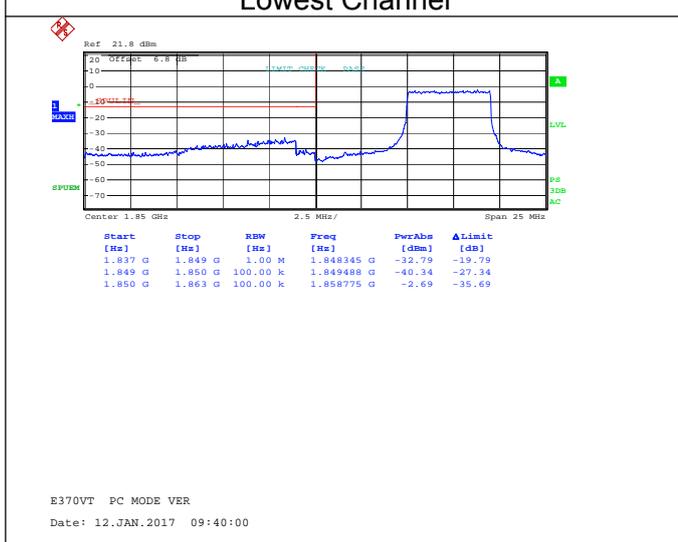
**10MHz – 1RB#49**

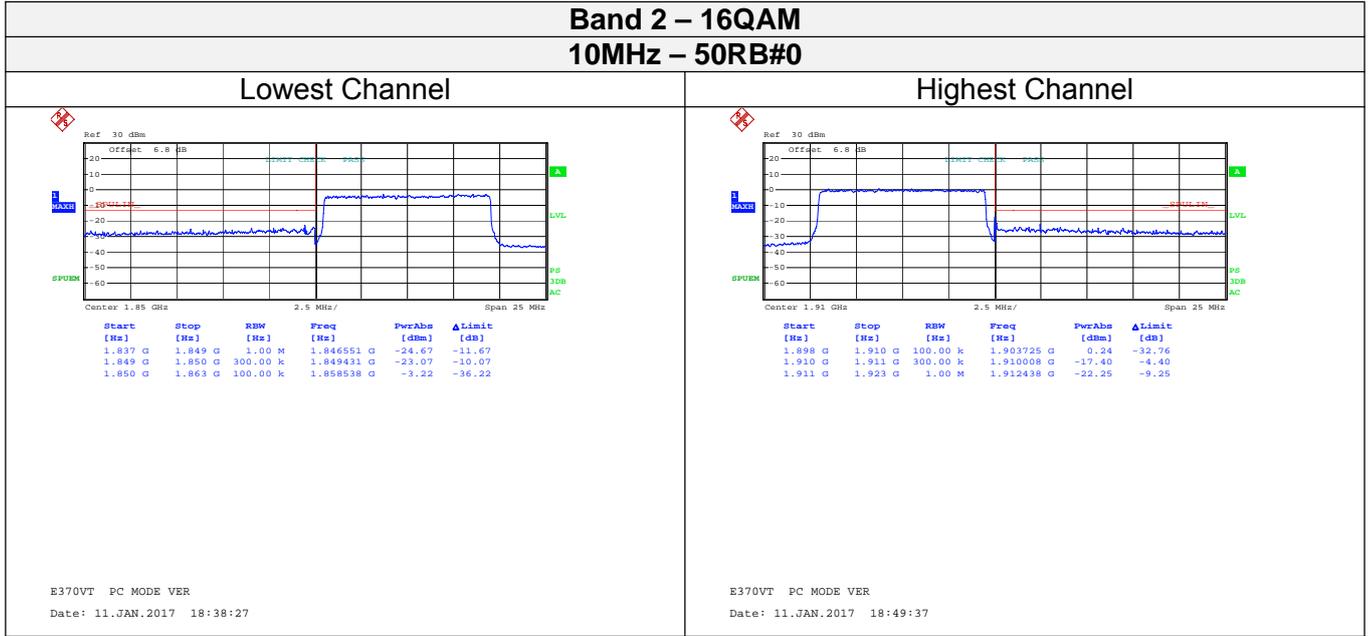


**Band 2 – 16QAM  
10MHz – 25RB#0**

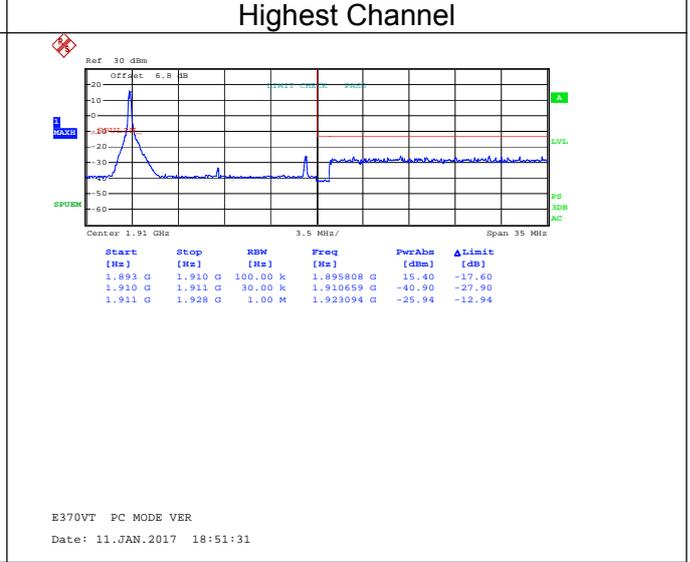
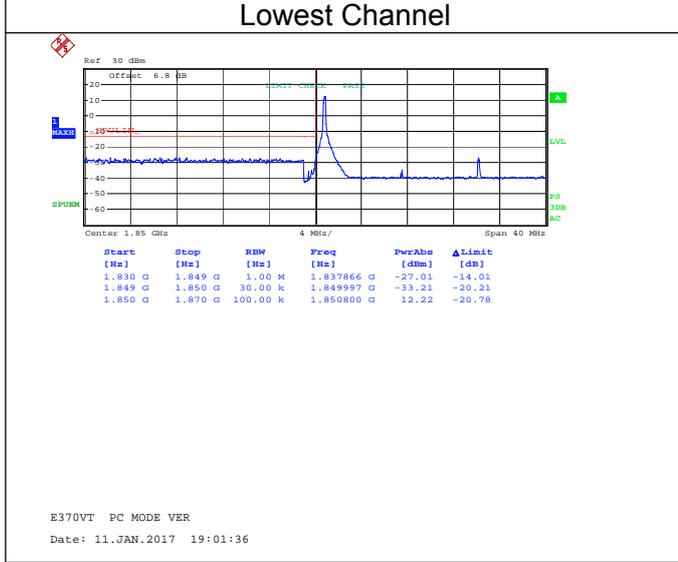


**10MHz – 25RB#24**

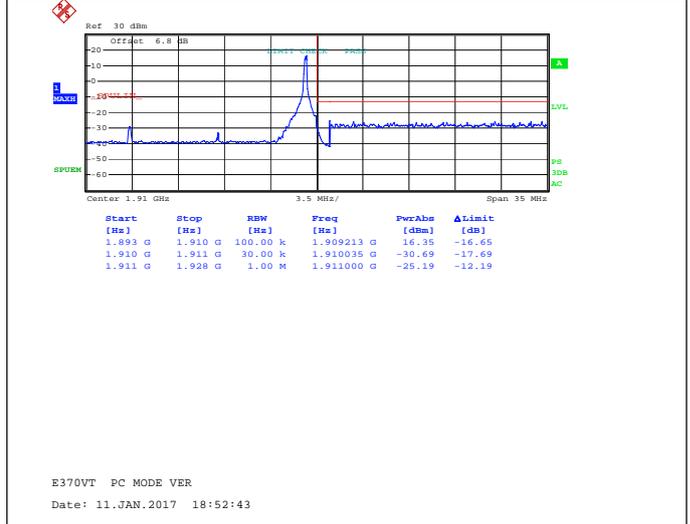
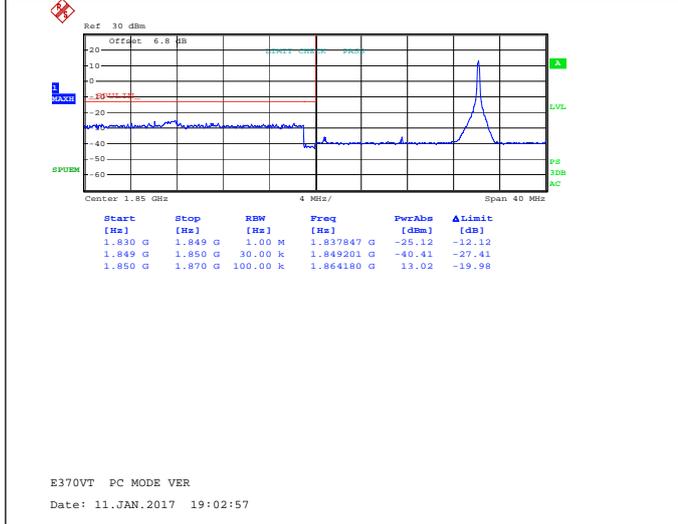




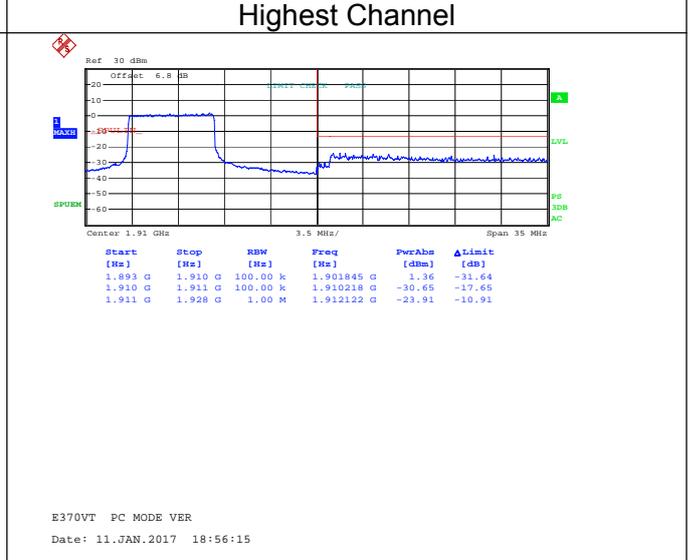
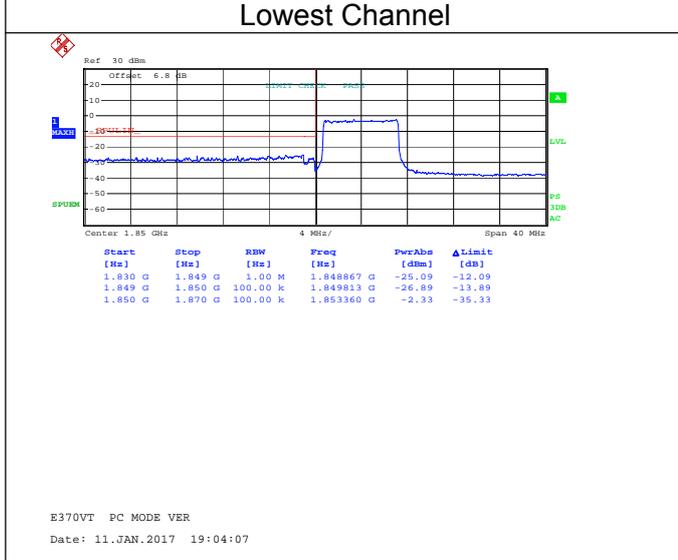
**Band 2 – QPSK  
15MHz – 1RB#0**



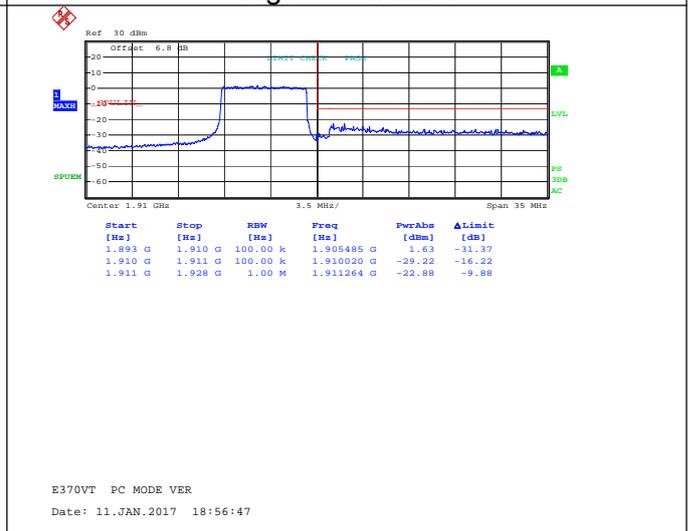
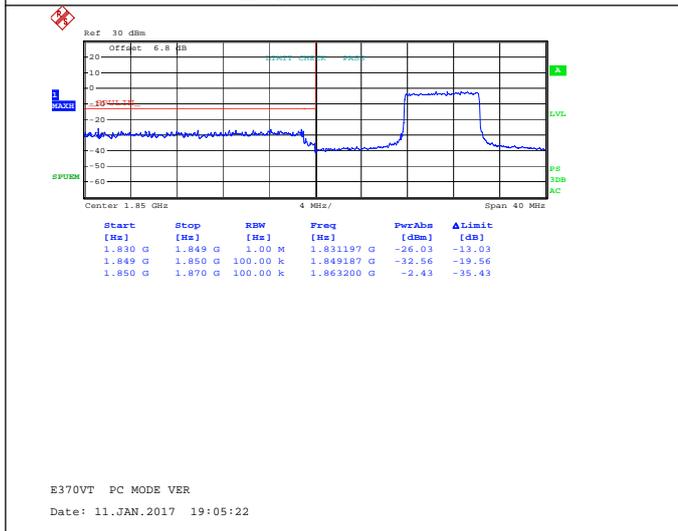
**15MHz – 1RB#74**

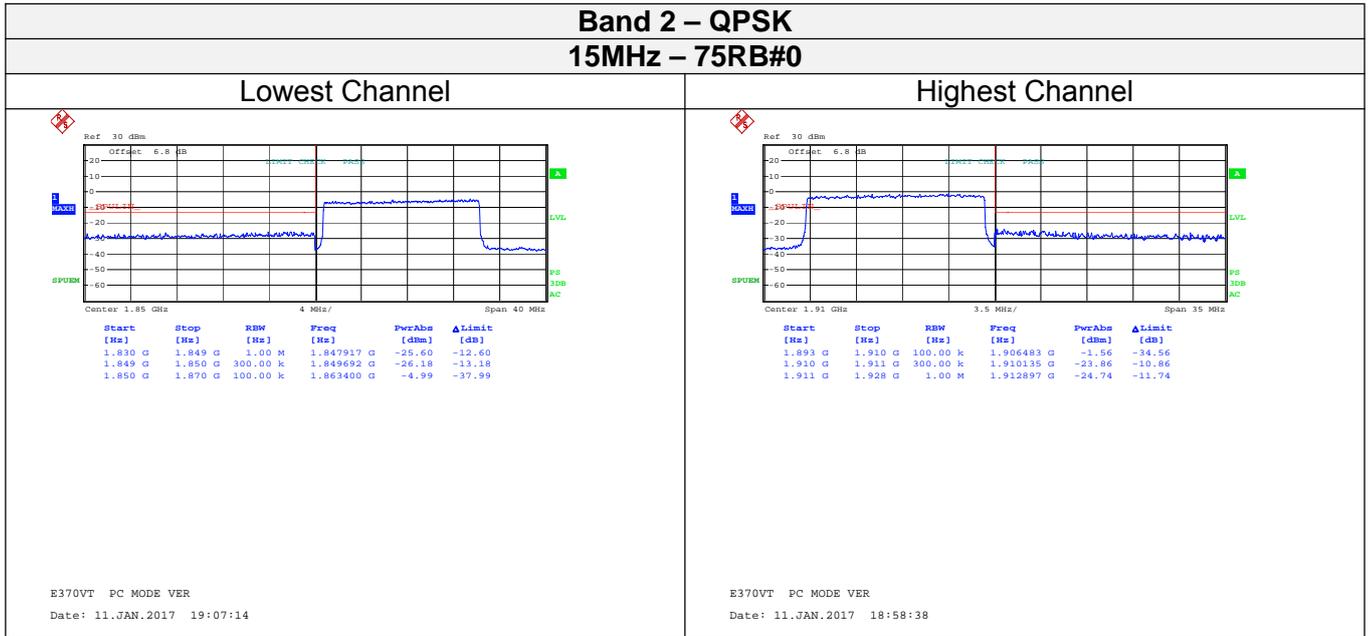


**Band 2 – QPSK**  
**15MHz – 36RB#0**



**15MHz – 36RB#35**



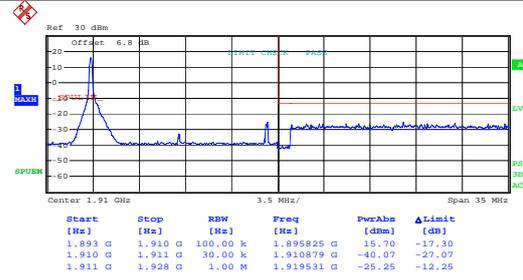
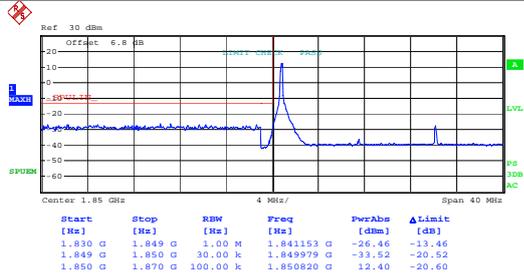


**Band 2 – 16QAM**

**15MHz – 1RB#0**

**Lowest Channel**

**Highest Channel**



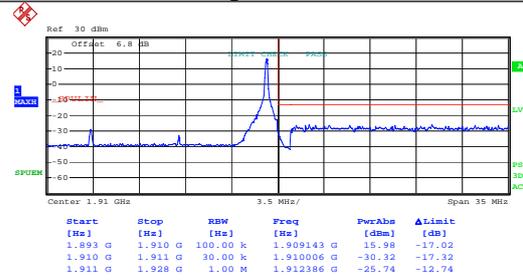
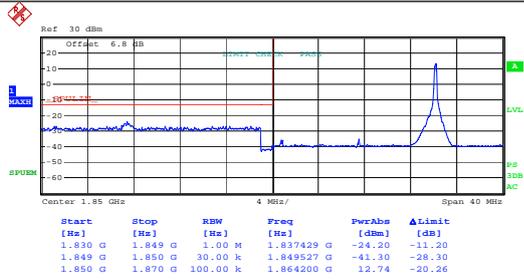
E370VT PC MODE VER  
Date: 11.JAN.2017 19:01:52

E370VT PC MODE VER  
Date: 11.JAN.2017 18:51:50

**15MHz – 1RB#74**

**Lowest Channel**

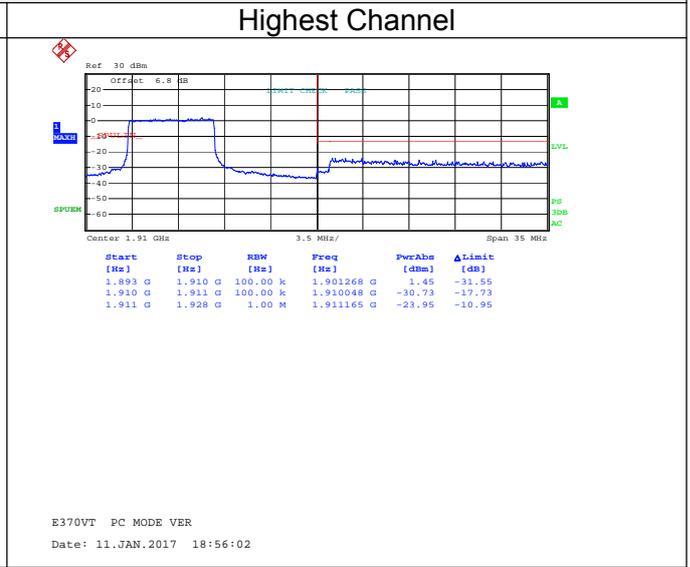
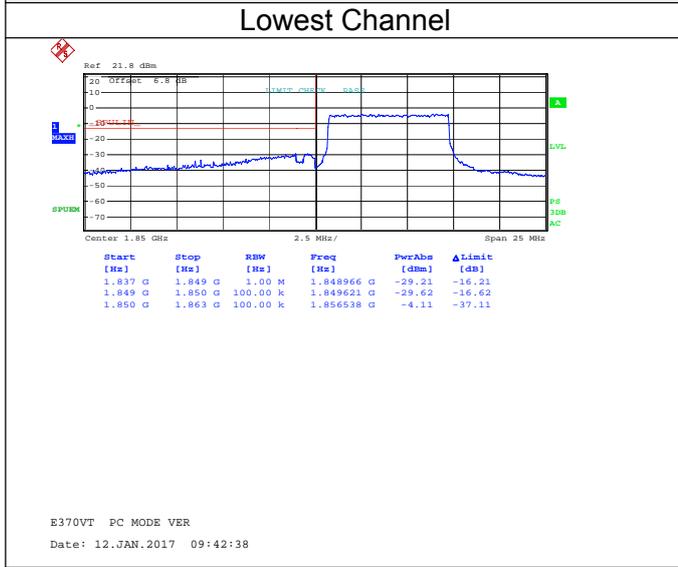
**Highest Channel**



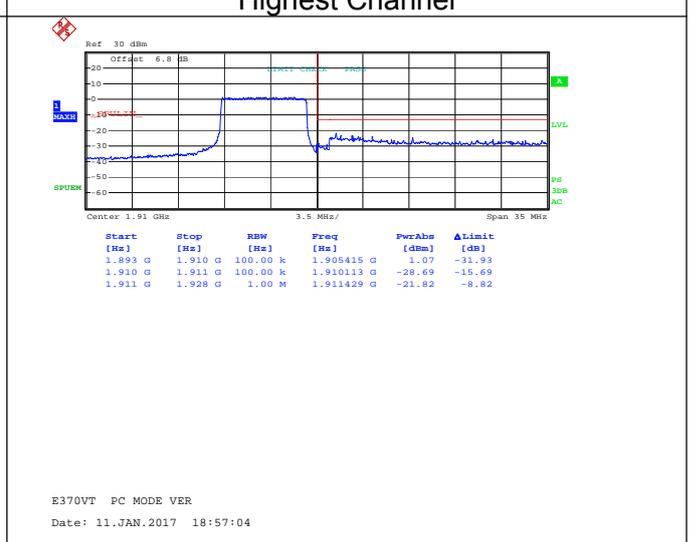
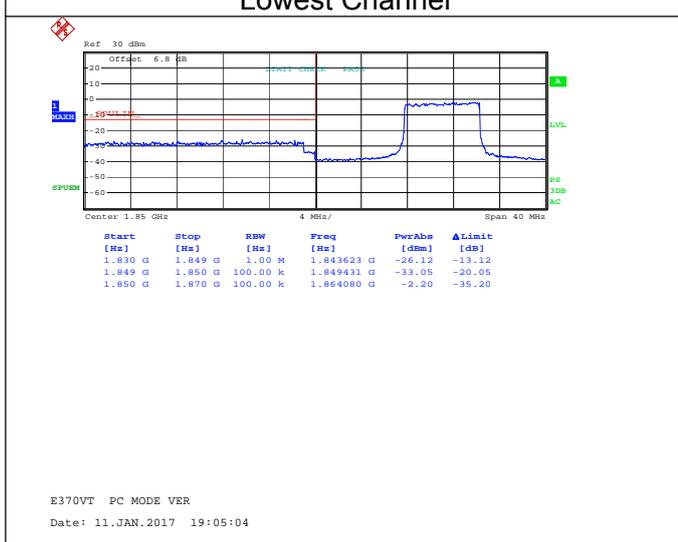
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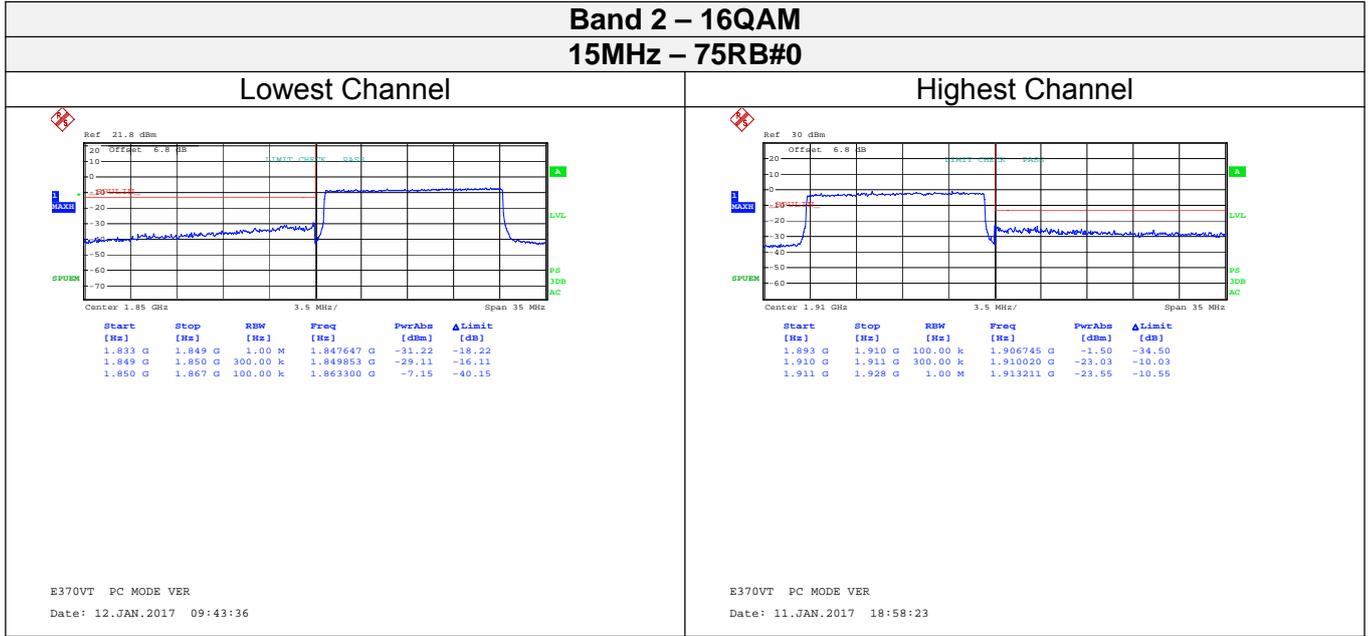
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**Band 2 – 16QAM  
15MHz – 36RB#0**

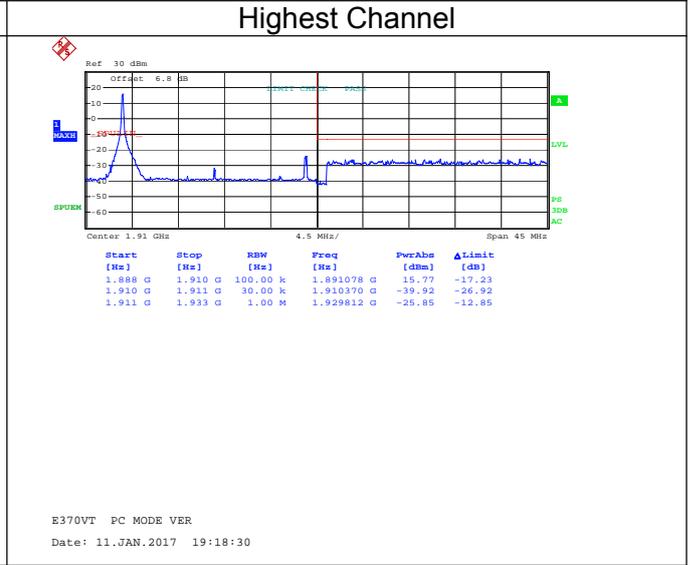
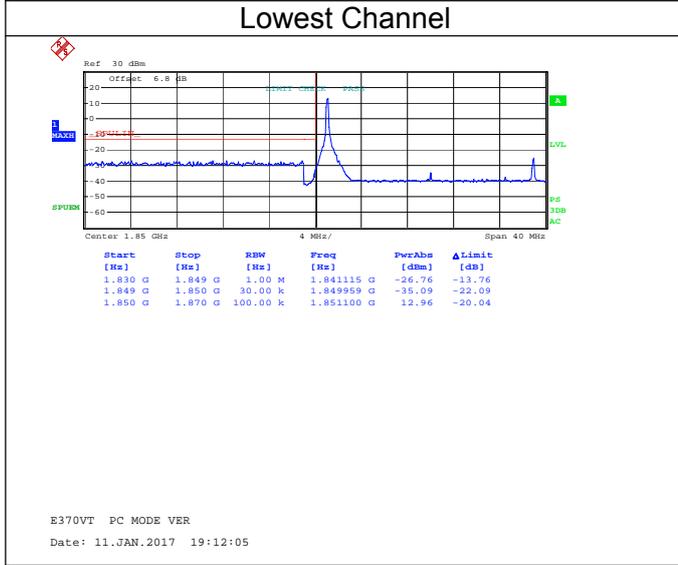


**15MHz – 36RB#35**

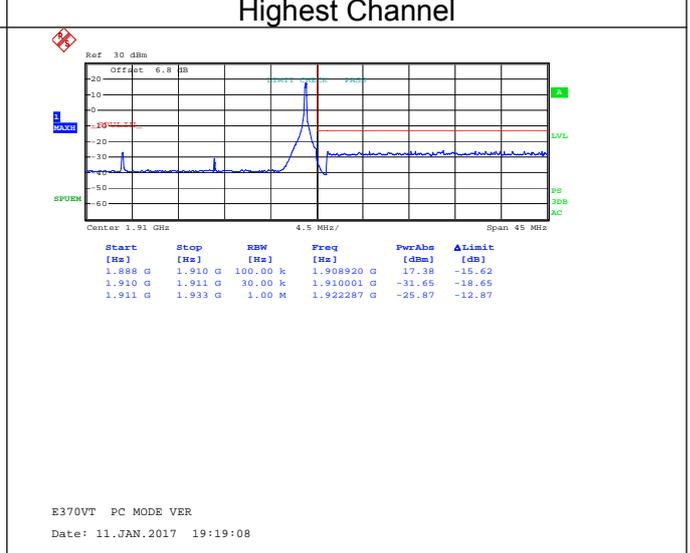
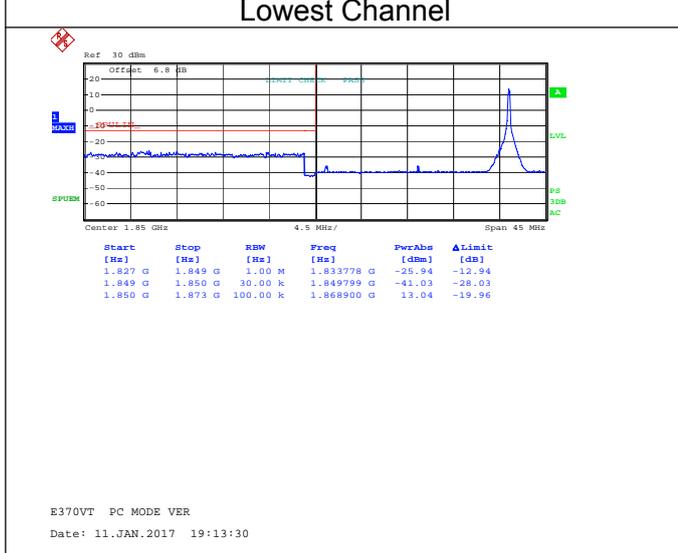




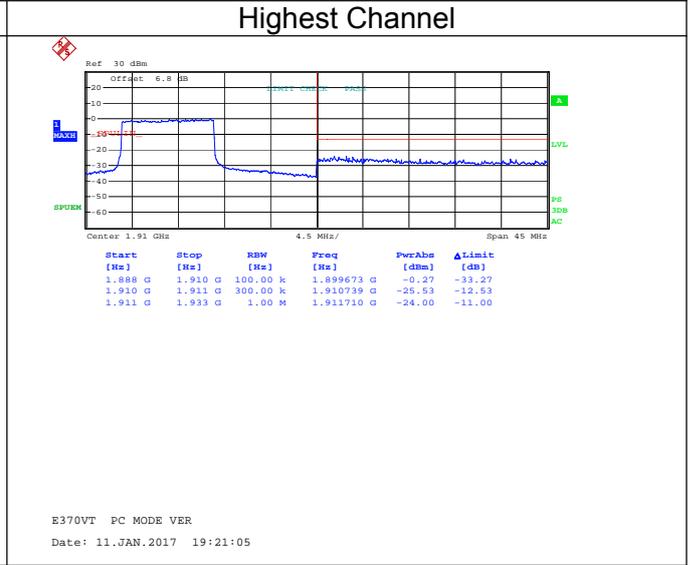
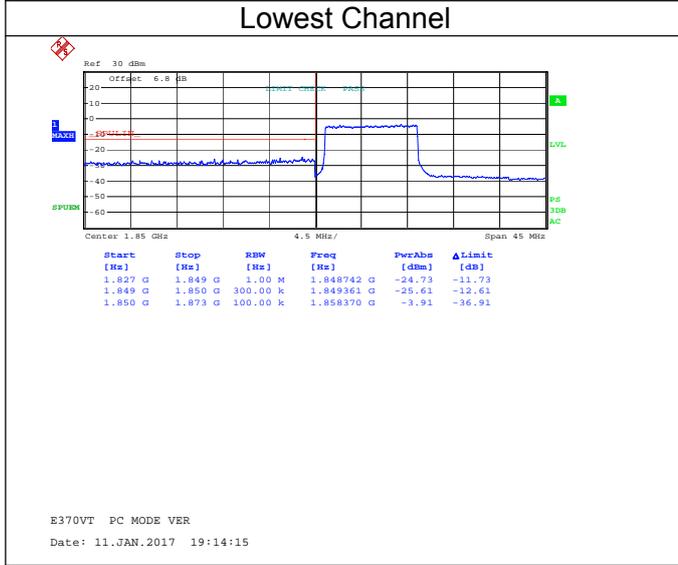
**Band 2 – QPSK  
20MHz – 1RB#0**



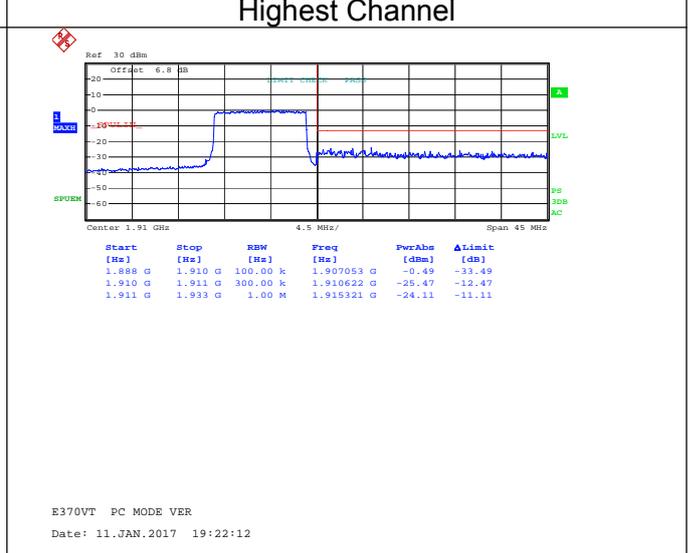
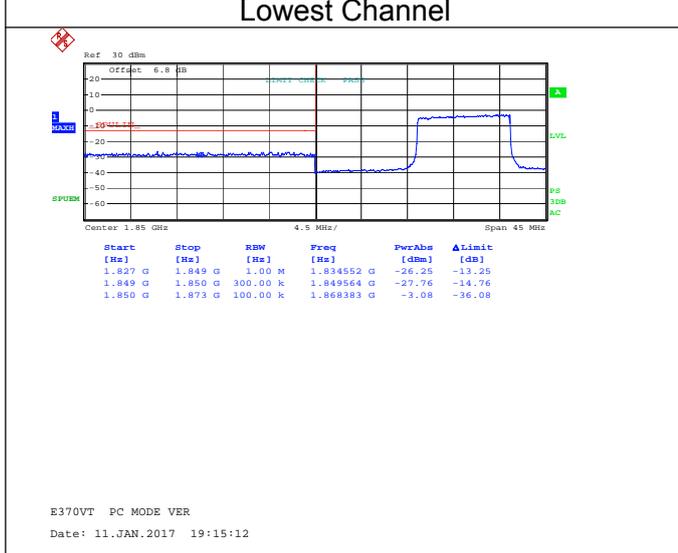
**20MHz – 1RB#99**

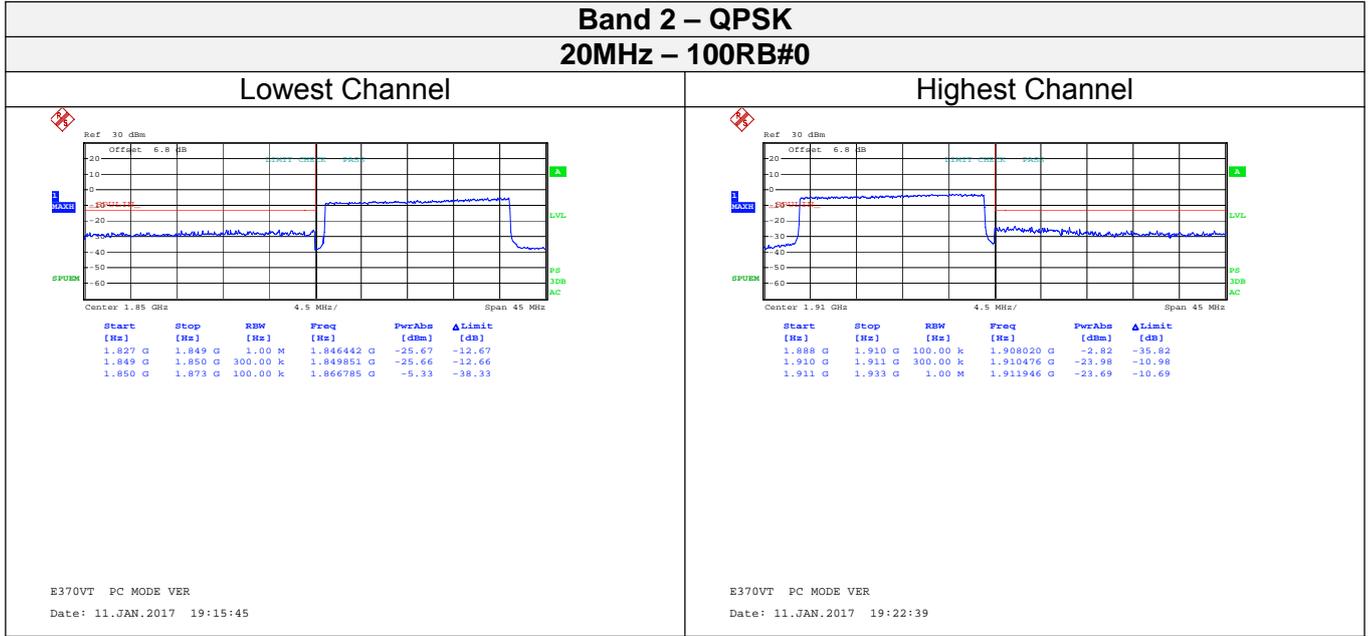


**Band 2 – QPSK**  
**20MHz – 50RB#0**

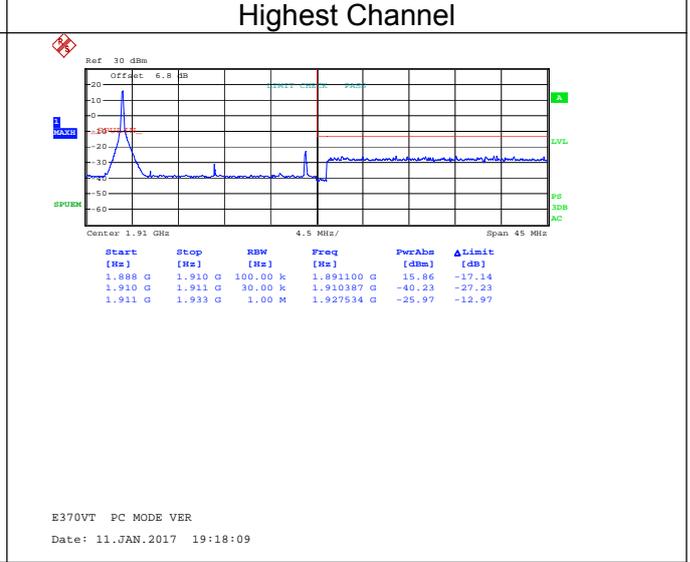
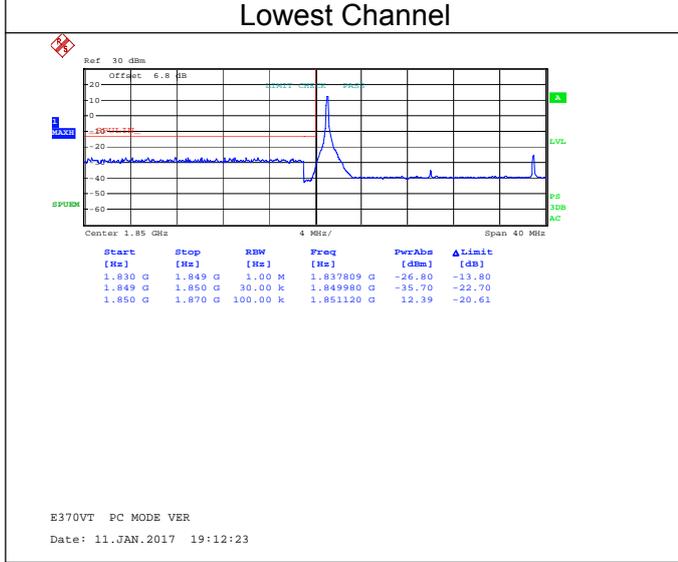


**20MHz – 50RB#49**

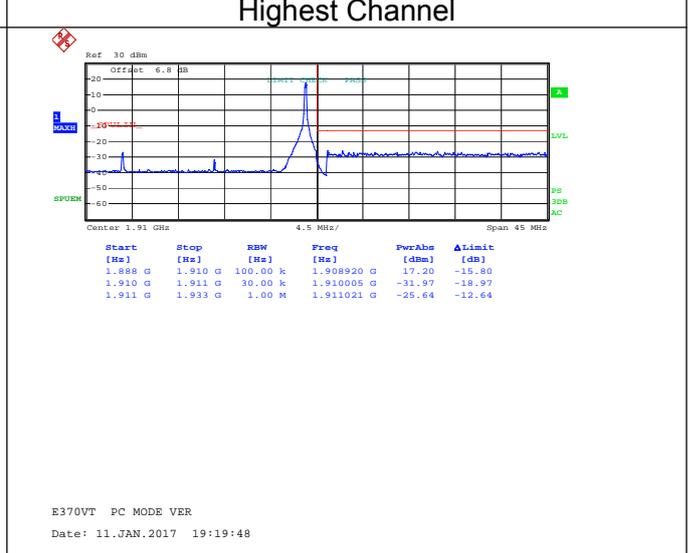
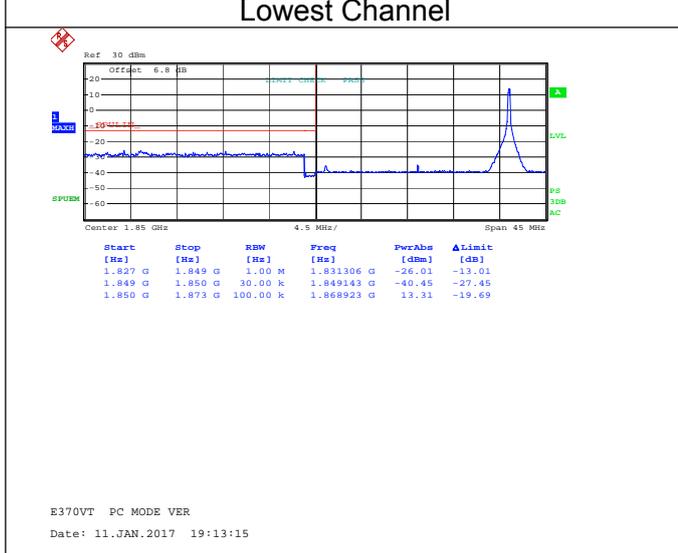




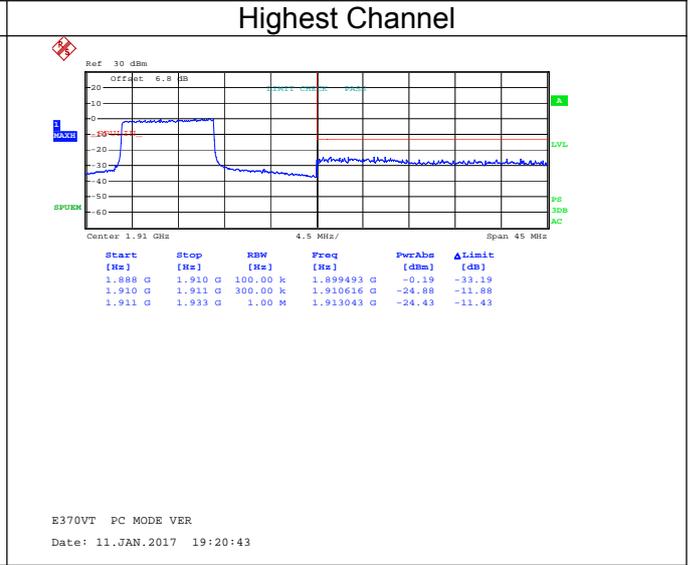
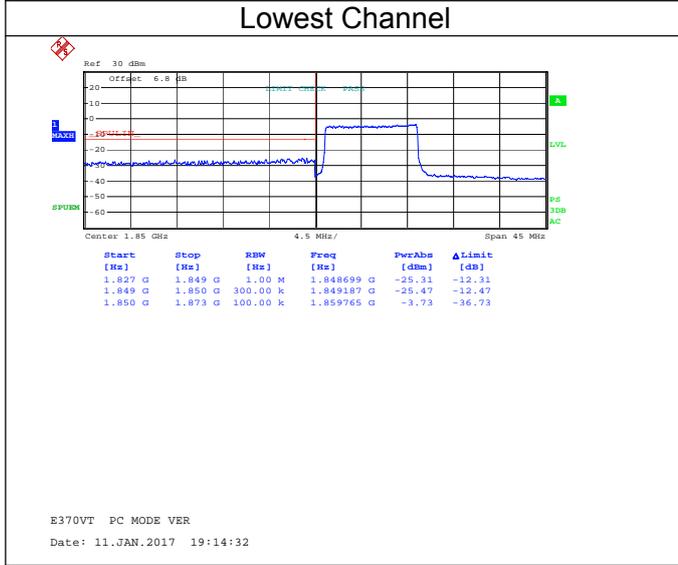
**Band 2 – 16QAM  
20MHz – 1RB#0**



**20MHz – 1RB#99**



**Band 2 – 16QAM  
20MHz – 50RB#0**



**20MHz – 50RB#49**

